

# SPURIOUS CONDUCTED EMISSIONS 5G



XMIT 2020.03.25.0

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  |
|------------------------------|--------------|------------|-----|-----------|-----------|
| Analyzer - Spectrum Analyzer | Agilent      | N9010A     | AFL | 27-Feb-20 | 27-Feb-21 |
| Generator - Signal           | Keysight     | N5171B-506 | TEW | 2-May-18  | 2-May-21  |

## TEST DESCRIPTION

The antenna port spurious emissions were measured at the RF output terminal of the EUT through 4 different attenuation configurations which continues through to the RF input of the spectrum analyzer. Analyzer plots utilizing a resolution bandwidth called out by the client's test plan were made for each modulation type from 9 KHz to 27 GHz. The conducted power of spurious emissions, up to the 10th harmonic of the transmit frequency, were investigated to ensure they were less than the limits also called out by the client's test plan shown below.

The measurement methods are detailed in KDB 971168 D01v03 section 6 and ANSI C63.26-2015.

Per FCC 2.1057(a)(1) and RSS Gen 6.13, the upper level of measurement is the 10th harmonic of the highest fundamental frequency.

These measurements are for the frequency band after the first 1.0 MHz bands immediately outside and adjacent to the frequency block.

RF conducted emissions testing was performed only on one port. The AZHL antenna ports are essentially electrically identical (the RF power variation between antenna ports is small as shown in output power 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.

Per FCC Part 27.53(m)(2), the power of any emission outside of the authorized operating frequency range cannot exceed -13 dBm. The BTS may operate as a 8 port MIMO transmitter with transmitter outputs connected to four cross-polarized antennas [four transmitter outputs are connected to (+) radiators and four transmitter outputs are connected to (-) radiators]. The limit is adjusted to -19 dBm [-13 dBm -10 log (4)] per FCC KDB 662911D01 v02r01, ANSI C63.26-2015 section 6.4.6.3 b)2) and KDB 662911 D02v01 page 3 example (2) since the transmitter outputs to each antenna are 90 degree-phase shifted relative to each other (cross-polarized radiators).

Per FCC 27.53(m)(6), "Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.....A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 1 megahertz or 1 percent of emission bandwidth, as specified)".

The limit for the 9kHz to 150kHz frequency range was adjusted to -49dBm to correct for a spectrum analyzer RBW of 1kHz versus required RBW of 1MHz [i.e.: -49dBm = -19dBm -10log(1MHz/1kHz)]. The limit for the 150kHz to 20MHz frequency range was adjusted to -39dBm to correct for a spectrum analyzer RBW of 10kHz versus required RBW of 1MHz [i.e.: -39dBm = -19dBm -10log(1MHz/10kHz)]. The required limit of -19dBm with a RBW of  $\geq$  1MHz was used for all other frequency ranges. (See ANSI C63.26-2015 paragraph 5.7.2a for details on the Limit/RBW scaling method)

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TWTx 2019.08.30.0 XMR 2020.12.30.0

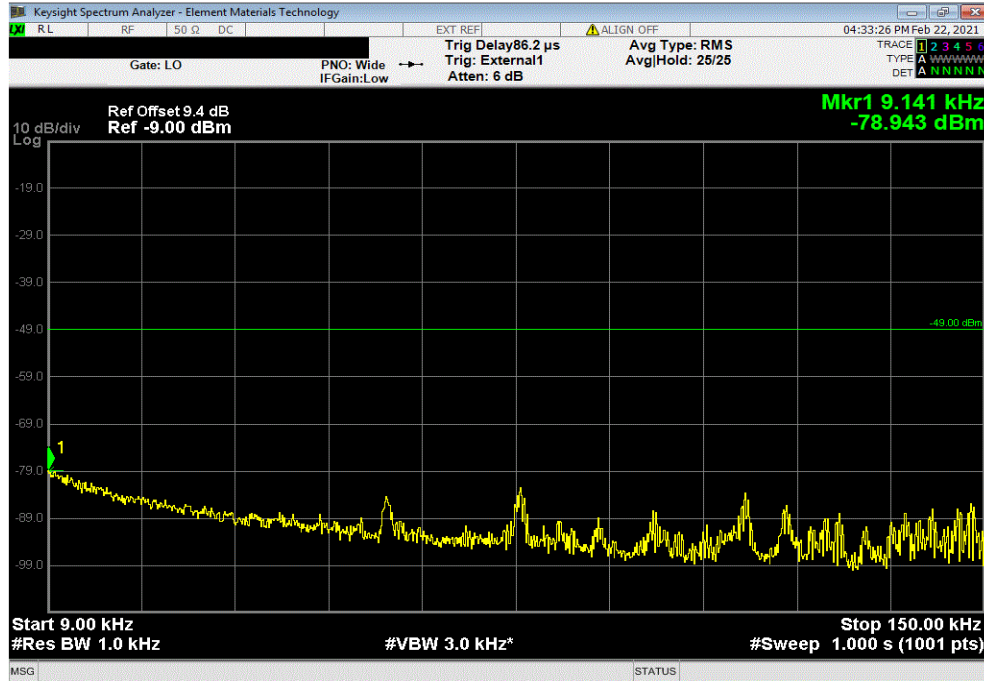
|                                                                                                                                                                                                                                                                                                                                                                                                         |                         |                                                                                             |                     |                 |               |        |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|---------------------------------------------------------------------------------------------|---------------------|-----------------|---------------|--------|
| EUT: AZHL                                                                                                                                                                                                                                                                                                                                                                                               |                         | Work Order: NOKI0018                                                                        |                     |                 |               |        |
| Serial Number: YK203400016                                                                                                                                                                                                                                                                                                                                                                              |                         | Date: 22-Feb-21                                                                             |                     |                 |               |        |
| Customer: Nokia Solutions and Networks                                                                                                                                                                                                                                                                                                                                                                  |                         | Temperature: 23.6 °C                                                                        |                     |                 |               |        |
| Attendees: John Rattanavong, Mitchell Hill, David Le                                                                                                                                                                                                                                                                                                                                                    |                         | Humidity: 14.9% RH                                                                          |                     |                 |               |        |
| Project: None                                                                                                                                                                                                                                                                                                                                                                                           |                         | Barometric Pres.: 1037 mbar                                                                 |                     |                 |               |        |
| Tested by: Mark Baytan                                                                                                                                                                                                                                                                                                                                                                                  |                         | Power: 54 VDC                                                                               | Job Site: TX05      |                 |               |        |
| TEST SPECIFICATIONS                                                                                                                                                                                                                                                                                                                                                                                     |                         | Test Method                                                                                 |                     |                 |               |        |
| FCC 27:2021                                                                                                                                                                                                                                                                                                                                                                                             |                         | ANSI C63.26:2015                                                                            |                     |                 |               |        |
| COMMENTS                                                                                                                                                                                                                                                                                                                                                                                                |                         |                                                                                             |                     |                 |               |        |
| External 1 gating was set using a trig delay = 86.2us and a gate length = 3.714ms. Reference level offset adjusted to include (2) coax cables, DC block, and attenuator. Reference level offset adjusted to include coax cables, DC blocks, attenuators, and band pass filters. This was accounted for based on the frequency range being tested. The carrier power was set to maximum for all testing. |                         |                                                                                             |                     |                 |               |        |
| DEVIATIONS FROM TEST STANDARD                                                                                                                                                                                                                                                                                                                                                                           |                         |                                                                                             |                     |                 |               |        |
| None                                                                                                                                                                                                                                                                                                                                                                                                    |                         |                                                                                             |                     |                 |               |        |
| Configuration #                                                                                                                                                                                                                                                                                                                                                                                         | 1, 2, 3, 4              | Signature  |                     |                 |               |        |
|                                                                                                                                                                                                                                                                                                                                                                                                         |                         | Frequency Range                                                                             | Measured Freq (MHz) | Max Value (dBm) | Limit < (dBm) | Result |
| 5G NR, Band n41, 2496 MHz - 2690 MHz                                                                                                                                                                                                                                                                                                                                                                    |                         |                                                                                             |                     |                 |               |        |
| Port 1                                                                                                                                                                                                                                                                                                                                                                                                  |                         |                                                                                             |                     |                 |               |        |
| NR20 (20MHz)                                                                                                                                                                                                                                                                                                                                                                                            |                         |                                                                                             |                     |                 |               |        |
| 256QAM                                                                                                                                                                                                                                                                                                                                                                                                  |                         |                                                                                             |                     |                 |               |        |
|                                                                                                                                                                                                                                                                                                                                                                                                         | Mid Channel 2592.99 MHz | 9 kHz - 150 kHz                                                                             | 0.01                | -78.94          | -49           | Pass   |
|                                                                                                                                                                                                                                                                                                                                                                                                         | Mid Channel 2592.99 MHz | 150 kHz - 20 MHz                                                                            | 10.41               | -72.24          | -39           | Pass   |
|                                                                                                                                                                                                                                                                                                                                                                                                         | Mid Channel 2592.99 MHz | 20 MHz - 4 GHz                                                                              | 3795.53             | -28.07          | -19           | Pass   |
|                                                                                                                                                                                                                                                                                                                                                                                                         | Mid Channel 2592.99 MHz | 4 GHz - 11 GHz                                                                              | 4776.3              | -44.1           | -19           | Pass   |
|                                                                                                                                                                                                                                                                                                                                                                                                         | Mid Channel 2592.99 MHz | 11 GHz - 18 GHz                                                                             | 14341.45            | -42.92          | -19           | Pass   |
|                                                                                                                                                                                                                                                                                                                                                                                                         | Mid Channel 2592.99 MHz | 18 GHz - 27 GHz                                                                             | 26211.15            | -47.54          | -19           | Pass   |
| NR40 (40MHz)                                                                                                                                                                                                                                                                                                                                                                                            |                         |                                                                                             |                     |                 |               |        |
| 256QAM                                                                                                                                                                                                                                                                                                                                                                                                  |                         |                                                                                             |                     |                 |               |        |
|                                                                                                                                                                                                                                                                                                                                                                                                         | Mid Channel 2592.99 MHz | 9 kHz - 150 kHz                                                                             | 0.01                | -78.34          | -49           | Pass   |
|                                                                                                                                                                                                                                                                                                                                                                                                         | Mid Channel 2592.99 MHz | 150 kHz - 20 MHz                                                                            | 0.15                | -79.53          | -39           | Pass   |
|                                                                                                                                                                                                                                                                                                                                                                                                         | Mid Channel 2592.99 MHz | 20 MHz - 4 GHz                                                                              | 3802.49             | -28             | -19           | Pass   |
|                                                                                                                                                                                                                                                                                                                                                                                                         | Mid Channel 2592.99 MHz | 4 GHz - 11 GHz                                                                              | 4787.15             | -44.09          | -19           | Pass   |
|                                                                                                                                                                                                                                                                                                                                                                                                         | Mid Channel 2592.99 MHz | 11 GHz - 18 GHz                                                                             | 13609.25            | -43.01          | -19           | Pass   |
|                                                                                                                                                                                                                                                                                                                                                                                                         | Mid Channel 2592.99 MHz | 18 GHz - 27 GHz                                                                             | 26225.1             | -47.59          | -19           | Pass   |
| NR60 (60MHz)                                                                                                                                                                                                                                                                                                                                                                                            |                         |                                                                                             |                     |                 |               |        |
| 256QAM                                                                                                                                                                                                                                                                                                                                                                                                  |                         |                                                                                             |                     |                 |               |        |
|                                                                                                                                                                                                                                                                                                                                                                                                         | Mid Channel 2592.99 MHz | 9 kHz - 150 kHz                                                                             | 0.01                | -79.03          | -49           | Pass   |
|                                                                                                                                                                                                                                                                                                                                                                                                         | Mid Channel 2592.99 MHz | 150 kHz - 20 MHz                                                                            | 19.41               | -77.32          | -39           | Pass   |
|                                                                                                                                                                                                                                                                                                                                                                                                         | Mid Channel 2592.99 MHz | 20 MHz - 4 GHz                                                                              | 3799.01             | -28.06          | -19           | Pass   |
|                                                                                                                                                                                                                                                                                                                                                                                                         | Mid Channel 2592.99 MHz | 4 GHz - 11 GHz                                                                              | 4776.3              | -44.11          | -19           | Pass   |
|                                                                                                                                                                                                                                                                                                                                                                                                         | Mid Channel 2592.99 MHz | 11 GHz - 18 GHz                                                                             | 13600.5             | -43.02          | -19           | Pass   |
|                                                                                                                                                                                                                                                                                                                                                                                                         | Mid Channel 2592.99 MHz | 18 GHz - 27 GHz                                                                             | 26246.25            | -47.35          | -19           | Pass   |
| NR80 (80MHz)                                                                                                                                                                                                                                                                                                                                                                                            |                         |                                                                                             |                     |                 |               |        |
| 256QAM                                                                                                                                                                                                                                                                                                                                                                                                  |                         |                                                                                             |                     |                 |               |        |
|                                                                                                                                                                                                                                                                                                                                                                                                         | Mid Channel 2592.99 MHz | 9 kHz - 150 kHz                                                                             | 0.01                | -78.29          | -49           | Pass   |
|                                                                                                                                                                                                                                                                                                                                                                                                         | Mid Channel 2592.99 MHz | 150 kHz - 20 MHz                                                                            | 19.57               | -76.93          | -39           | Pass   |
|                                                                                                                                                                                                                                                                                                                                                                                                         | Mid Channel 2592.99 MHz | 20 MHz - 4 GHz                                                                              | 3802.49             | -28.13          | -19           | Pass   |
|                                                                                                                                                                                                                                                                                                                                                                                                         | Mid Channel 2592.99 MHz | 4 GHz - 11 GHz                                                                              | 4775.6              | -44.08          | -19           | Pass   |
|                                                                                                                                                                                                                                                                                                                                                                                                         | Mid Channel 2592.99 MHz | 11 GHz - 18 GHz                                                                             | 14358.6             | -43.05          | -19           | Pass   |
|                                                                                                                                                                                                                                                                                                                                                                                                         | Mid Channel 2592.99 MHz | 18 GHz - 27 GHz                                                                             | 26262.9             | -47.5           | -19           | Pass   |
| NR100 (100MHz)                                                                                                                                                                                                                                                                                                                                                                                          |                         |                                                                                             |                     |                 |               |        |
| QPSK                                                                                                                                                                                                                                                                                                                                                                                                    |                         |                                                                                             |                     |                 |               |        |
|                                                                                                                                                                                                                                                                                                                                                                                                         | Mid Channel 2592.99 MHz | 9 kHz - 150 kHz                                                                             | 0.01                | -78.57          | -49           | Pass   |
|                                                                                                                                                                                                                                                                                                                                                                                                         | Mid Channel 2592.99 MHz | 150 kHz - 20 MHz                                                                            | 18.12               | -72.85          | -39           | Pass   |
|                                                                                                                                                                                                                                                                                                                                                                                                         | Mid Channel 2592.99 MHz | 20 MHz - 4 GHz                                                                              | 3750.75             | -28.35          | -19           | Pass   |
|                                                                                                                                                                                                                                                                                                                                                                                                         | Mid Channel 2592.99 MHz | 4 GHz - 11 GHz                                                                              | 4771.4              | -44.16          | -19           | Pass   |
|                                                                                                                                                                                                                                                                                                                                                                                                         | Mid Channel 2592.99 MHz | 11 GHz - 18 GHz                                                                             | 13600.85            | -42.95          | -19           | Pass   |
|                                                                                                                                                                                                                                                                                                                                                                                                         | Mid Channel 2592.99 MHz | 18 GHz - 27 GHz                                                                             | 26266.05            | -47.52          | -19           | Pass   |
| 16QAM                                                                                                                                                                                                                                                                                                                                                                                                   |                         |                                                                                             |                     |                 |               |        |
|                                                                                                                                                                                                                                                                                                                                                                                                         | Mid Channel 2592.99 MHz | 9 kHz - 150 kHz                                                                             | 0.01                | -78.79          | -49           | Pass   |
|                                                                                                                                                                                                                                                                                                                                                                                                         | Mid Channel 2592.99 MHz | 150 kHz - 20 MHz                                                                            | 15.12               | -72.69          | -39           | Pass   |
|                                                                                                                                                                                                                                                                                                                                                                                                         | Mid Channel 2592.99 MHz | 20 MHz - 4 GHz                                                                              | 3859.21             | -28.25          | -19           | Pass   |
|                                                                                                                                                                                                                                                                                                                                                                                                         | Mid Channel 2592.99 MHz | 4 GHz - 11 GHz                                                                              | 4781.55             | -44.12          | -19           | Pass   |
|                                                                                                                                                                                                                                                                                                                                                                                                         | Mid Channel 2592.99 MHz | 11 GHz - 18 GHz                                                                             | 13600.5             | -43.04          | -19           | Pass   |
|                                                                                                                                                                                                                                                                                                                                                                                                         | Mid Channel 2592.99 MHz | 18 GHz - 27 GHz                                                                             | 26261.1             | -47.56          | -19           | Pass   |
| 64QAM                                                                                                                                                                                                                                                                                                                                                                                                   |                         |                                                                                             |                     |                 |               |        |
|                                                                                                                                                                                                                                                                                                                                                                                                         | Mid Channel 2592.99 MHz | 9 kHz - 150 kHz                                                                             | 0.01                | -78.6           | -49           | Pass   |
|                                                                                                                                                                                                                                                                                                                                                                                                         | Mid Channel 2592.99 MHz | 150 kHz - 20 MHz                                                                            | 17.04               | -72.48          | -39           | Pass   |
|                                                                                                                                                                                                                                                                                                                                                                                                         | Mid Channel 2592.99 MHz | 20 MHz - 4 GHz                                                                              | 3754.73             | -28.4           | -19           | Pass   |
|                                                                                                                                                                                                                                                                                                                                                                                                         | Mid Channel 2592.99 MHz | 4 GHz - 11 GHz                                                                              | 4784.7              | -44.06          | -19           | Pass   |
|                                                                                                                                                                                                                                                                                                                                                                                                         | Mid Channel 2592.99 MHz | 11 GHz - 18 GHz                                                                             | 13602.6             | -42.92          | -19           | Pass   |
|                                                                                                                                                                                                                                                                                                                                                                                                         | Mid Channel 2592.99 MHz | 18 GHz - 27 GHz                                                                             | 26217.45            | -47.56          | -19           | Pass   |
| 256QAM                                                                                                                                                                                                                                                                                                                                                                                                  |                         |                                                                                             |                     |                 |               |        |
|                                                                                                                                                                                                                                                                                                                                                                                                         | Mid Channel 2592.99 MHz | 9 kHz - 150 kHz                                                                             | 0.01                | -78.34          | -49           | Pass   |
|                                                                                                                                                                                                                                                                                                                                                                                                         | Mid Channel 2592.99 MHz | 150 kHz - 20 MHz                                                                            | 16.68               | -72.94          | -39           | Pass   |
|                                                                                                                                                                                                                                                                                                                                                                                                         | Mid Channel 2592.99 MHz | 20 MHz - 4 GHz                                                                              | 3802.49             | -28.21          | -19           | Pass   |
|                                                                                                                                                                                                                                                                                                                                                                                                         | Mid Channel 2592.99 MHz | 4 GHz - 11 GHz                                                                              | 4769.65             | -44.04          | -19           | Pass   |
|                                                                                                                                                                                                                                                                                                                                                                                                         | Mid Channel 2592.99 MHz | 11 GHz - 18 GHz                                                                             | 14355.45            | -43.03          | -19           | Pass   |
|                                                                                                                                                                                                                                                                                                                                                                                                         | Mid Channel 2592.99 MHz | 18 GHz - 27 GHz                                                                             | 26237.7             | -47.51          | -19           | Pass   |

# SPURIOUS CONDUCTED EMISSIONS 5G

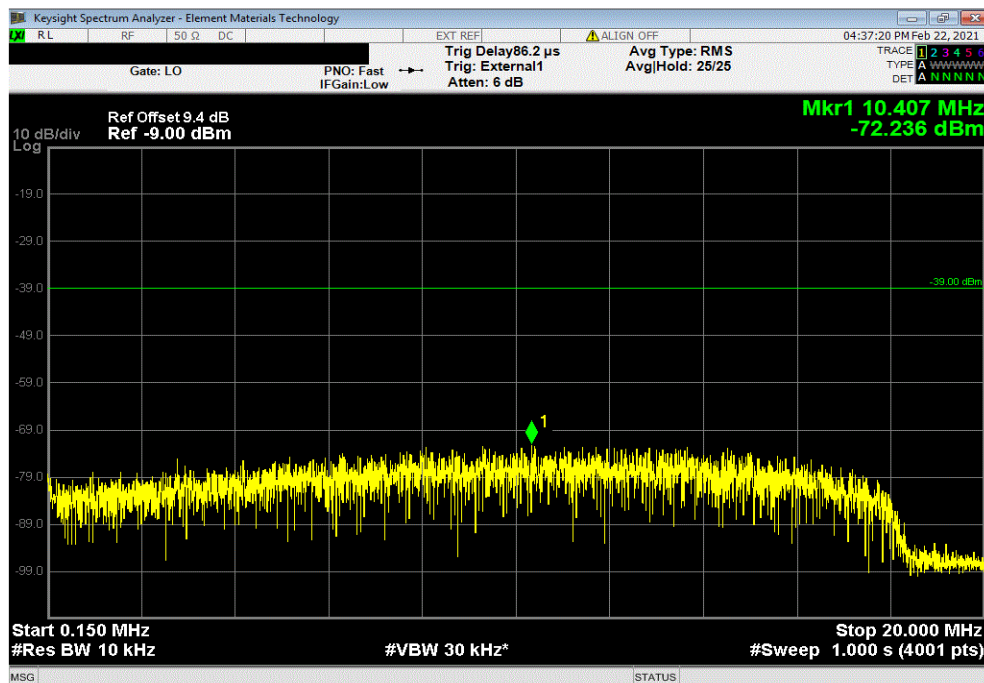


TbTx 2019.08.30.0 XMt 2020.12.30.0

| 5G NR, Band n41, 2496 MHz - 2690 MHz, Port 1, NR20 (20MHz), 256QAM, Mid Channel 2592.99 MHz |                     |                 |               |        |  |
|---------------------------------------------------------------------------------------------|---------------------|-----------------|---------------|--------|--|
| Frequency Range                                                                             | Measured Freq (MHz) | Max Value (dBm) | Limit < (dBm) | Result |  |
| 9 kHz - 150 kHz                                                                             | 0.01                | -78.94          | -49           | Pass   |  |



| 5G NR, Band n41, 2496 MHz - 2690 MHz, Port 1, NR20 (20MHz), 256QAM, Mid Channel 2592.99 MHz |                     |                 |               |        |  |
|---------------------------------------------------------------------------------------------|---------------------|-----------------|---------------|--------|--|
| Frequency Range                                                                             | Measured Freq (MHz) | Max Value (dBm) | Limit < (dBm) | Result |  |
| 150 kHz - 20 MHz                                                                            | 10.41               | -72.24          | -39           | Pass   |  |

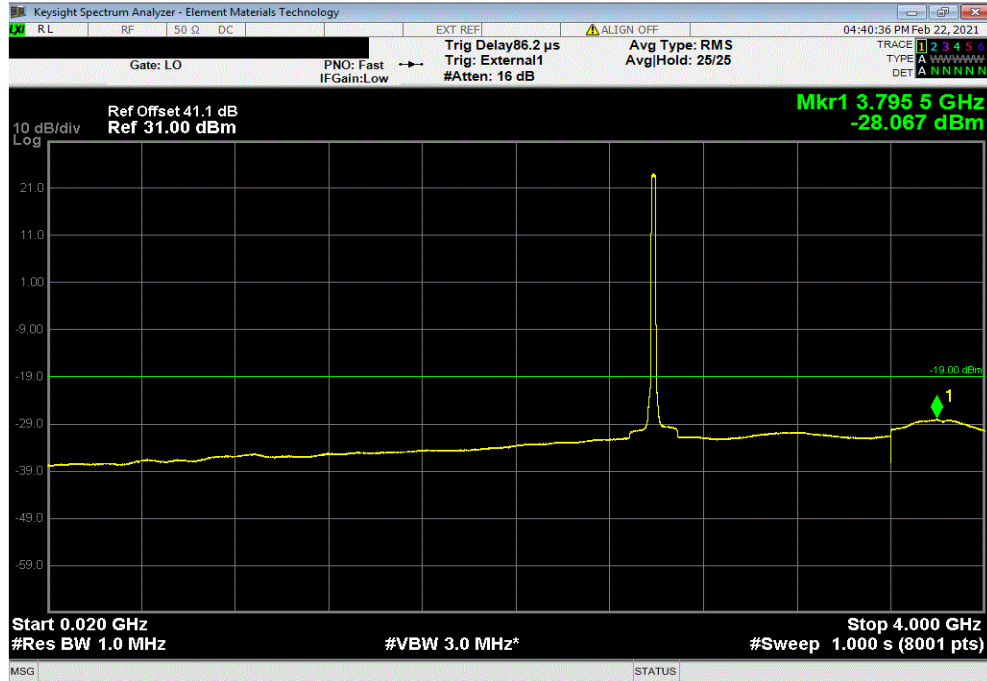


# SPURIOUS CONDUCTED EMISSIONS 5G

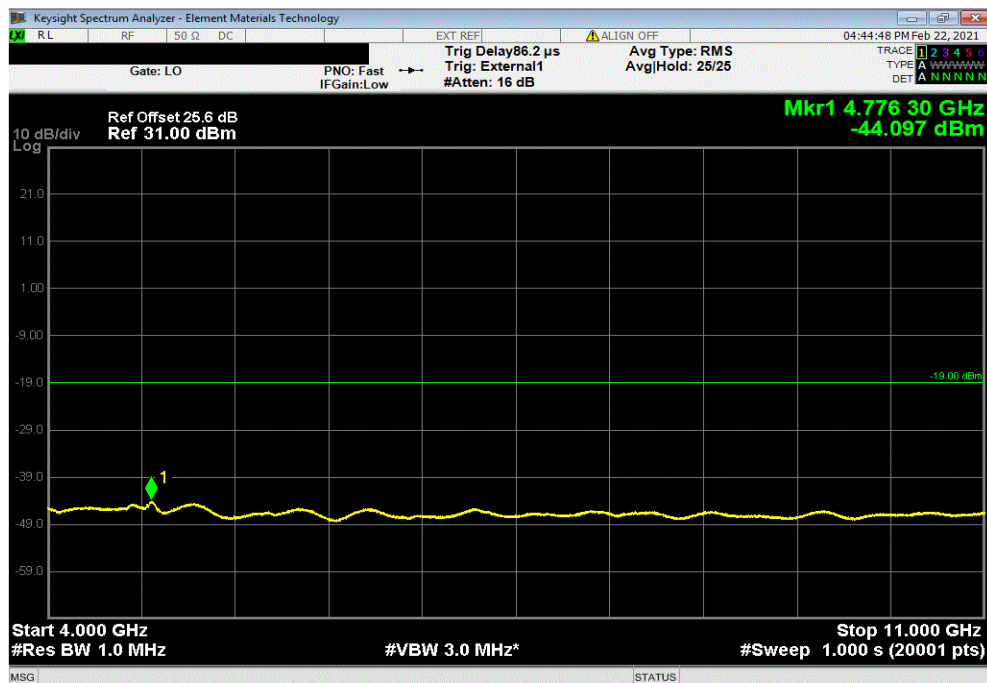


TbTx 2019.08.30.0 XbTx 2020.12.30.0

| 5G NR, Band n41, 2496 MHz - 2690 MHz, Port 1, NR20 (20MHz), 256QAM, Mid Channel 2592.99 MHz |                     |                 |               |        |  |
|---------------------------------------------------------------------------------------------|---------------------|-----------------|---------------|--------|--|
| Frequency Range                                                                             | Measured Freq (MHz) | Max Value (dBm) | Limit < (dBm) | Result |  |
| 20 MHz - 4 GHz                                                                              | 3795.53             | -28.07          | -19           | Pass   |  |



| 5G NR, Band n41, 2496 MHz - 2690 MHz, Port 1, NR20 (20MHz), 256QAM, Mid Channel 2592.99 MHz |                     |                 |               |        |  |
|---------------------------------------------------------------------------------------------|---------------------|-----------------|---------------|--------|--|
| Frequency Range                                                                             | Measured Freq (MHz) | Max Value (dBm) | Limit < (dBm) | Result |  |
| 4 GHz - 11 GHz                                                                              | 4776.3              | -44.1           | -19           | Pass   |  |

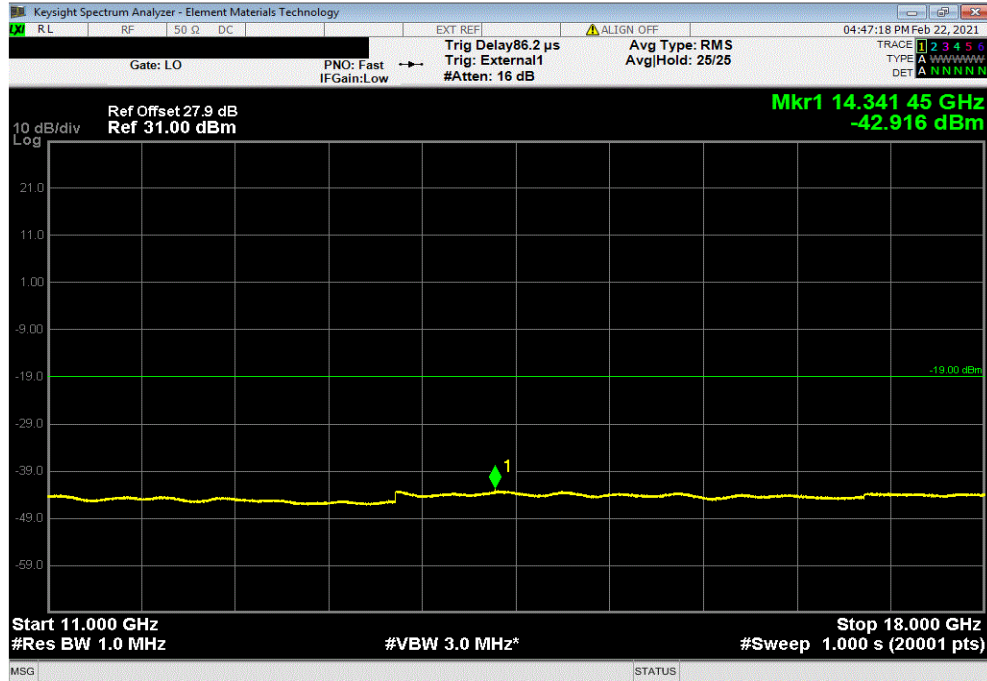


# SPURIOUS CONDUCTED EMISSIONS 5G

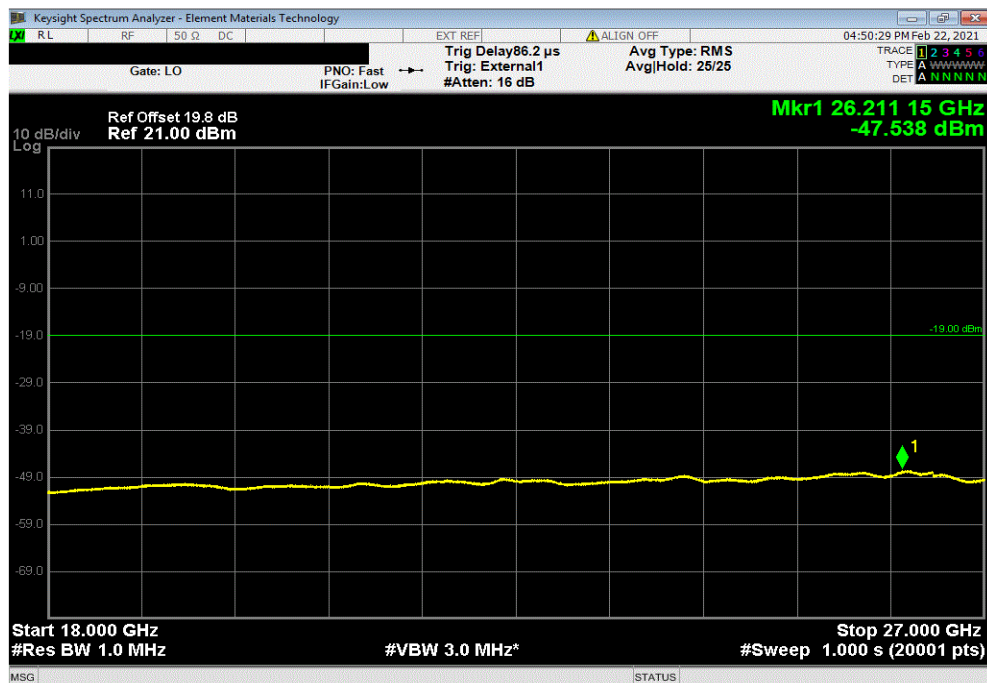


TbTx 2019.08.30.0 XMt 2020.12.30.0

| 5G NR, Band n41, 2496 MHz - 2690 MHz, Port 1, NR20 (20MHz), 256QAM, Mid Channel 2592.99 MHz |                     |                 |               |        |  |
|---------------------------------------------------------------------------------------------|---------------------|-----------------|---------------|--------|--|
| Frequency Range                                                                             | Measured Freq (MHz) | Max Value (dBm) | Limit < (dBm) | Result |  |
| 11 GHz - 18 GHz                                                                             | 14341.45            | -42.92          | -19           | Pass   |  |



| 5G NR, Band n41, 2496 MHz - 2690 MHz, Port 1, NR20 (20MHz), 256QAM, Mid Channel 2592.99 MHz |                     |                 |               |        |  |
|---------------------------------------------------------------------------------------------|---------------------|-----------------|---------------|--------|--|
| Frequency Range                                                                             | Measured Freq (MHz) | Max Value (dBm) | Limit < (dBm) | Result |  |
| 18 GHz - 27 GHz                                                                             | 26211.15            | -47.54          | -19           | Pass   |  |



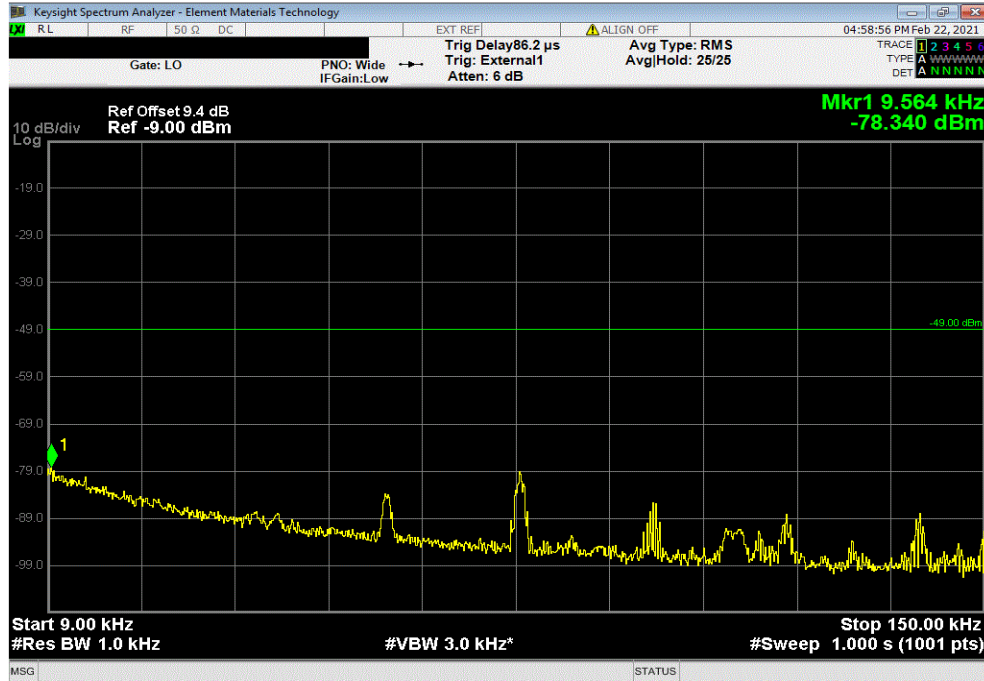


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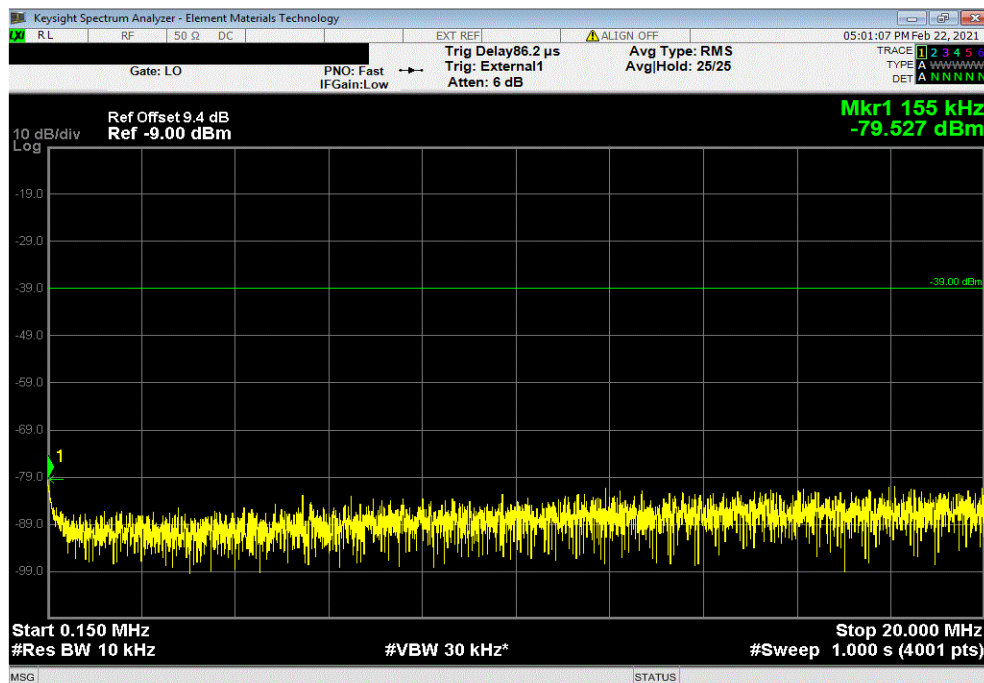


TbTx 2019.08.30.0 XMt 2020.12.30.0

| 5G NR, Band n41, 2496 MHz - 2690 MHz, Port 1, NR40 (40MHz), 256QAM, Mid Channel 2592.99 MHz |                     |                 |               |        |  |
|---------------------------------------------------------------------------------------------|---------------------|-----------------|---------------|--------|--|
| Frequency Range                                                                             | Measured Freq (MHz) | Max Value (dBm) | Limit < (dBm) | Result |  |
| 9 kHz - 150 kHz                                                                             | 0.01                | -78.34          | -49           | Pass   |  |



| 5G NR, Band n41, 2496 MHz - 2690 MHz, Port 1, NR40 (40MHz), 256QAM, Mid Channel 2592.99 MHz |                     |                 |               |        |  |
|---------------------------------------------------------------------------------------------|---------------------|-----------------|---------------|--------|--|
| Frequency Range                                                                             | Measured Freq (MHz) | Max Value (dBm) | Limit < (dBm) | Result |  |
| 150 kHz - 20 MHz                                                                            | 0.15                | -79.53          | -39           | Pass   |  |

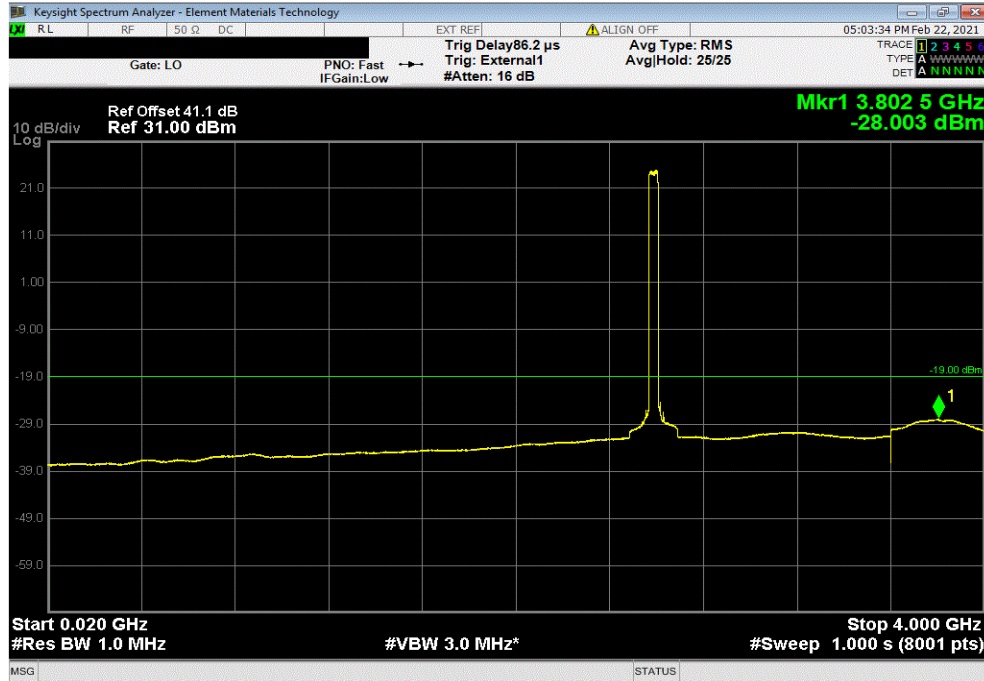


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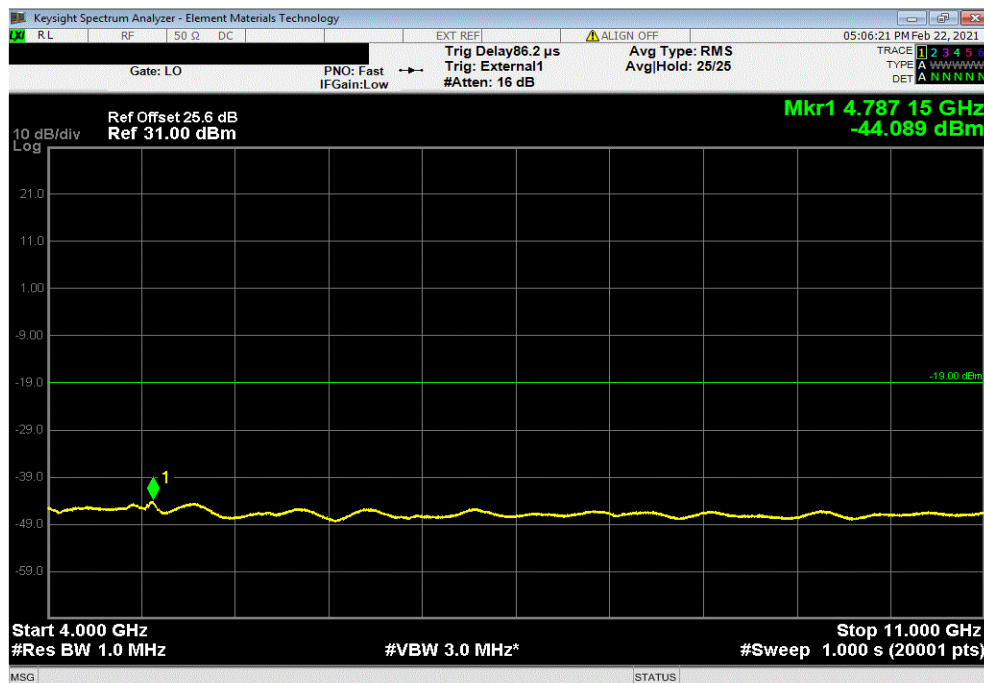


TbTtX 2019.08.30.0 XMt 2020.12.30.0

| 5G NR, Band n41, 2496 MHz - 2690 MHz, Port 1, NR40 (40MHz), 256QAM, Mid Channel 2592.99 MHz |                     |                 |               |        |  |
|---------------------------------------------------------------------------------------------|---------------------|-----------------|---------------|--------|--|
| Frequency Range                                                                             | Measured Freq (MHz) | Max Value (dBm) | Limit < (dBm) | Result |  |
| 20 MHz - 4 GHz                                                                              | 3802.49             | -28             | -19           | Pass   |  |



| 5G NR, Band n41, 2496 MHz - 2690 MHz, Port 1, NR40 (40MHz), 256QAM, Mid Channel 2592.99 MHz |                     |                 |               |        |  |
|---------------------------------------------------------------------------------------------|---------------------|-----------------|---------------|--------|--|
| Frequency Range                                                                             | Measured Freq (MHz) | Max Value (dBm) | Limit < (dBm) | Result |  |
| 4 GHz - 11 GHz                                                                              | 4787.15             | -44.09          | -19           | Pass   |  |

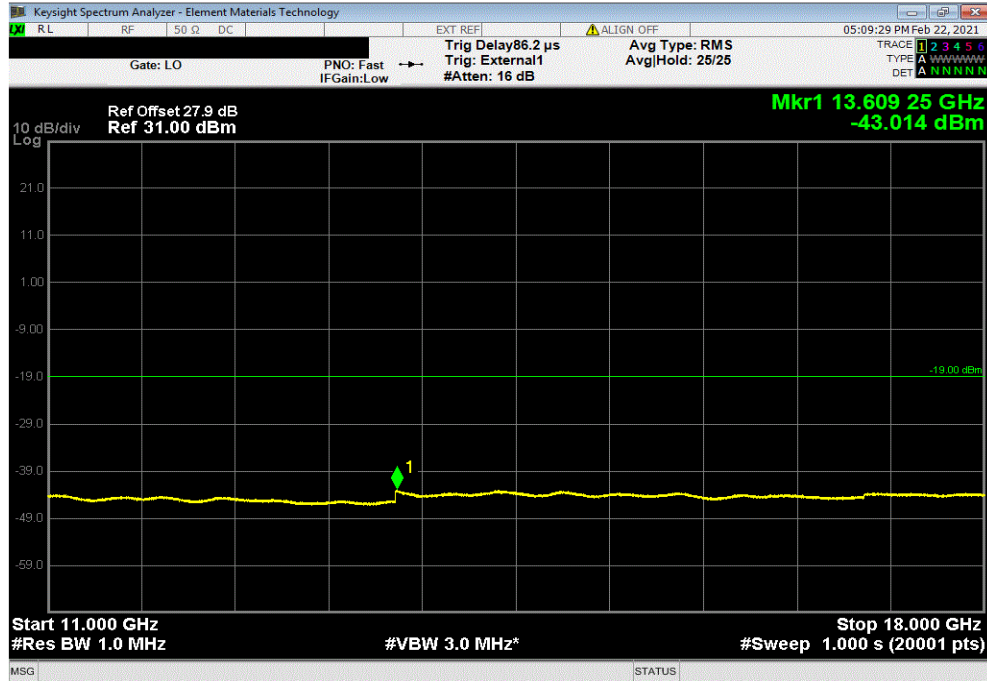


# SPURIOUS CONDUCTED EMISSIONS 5G

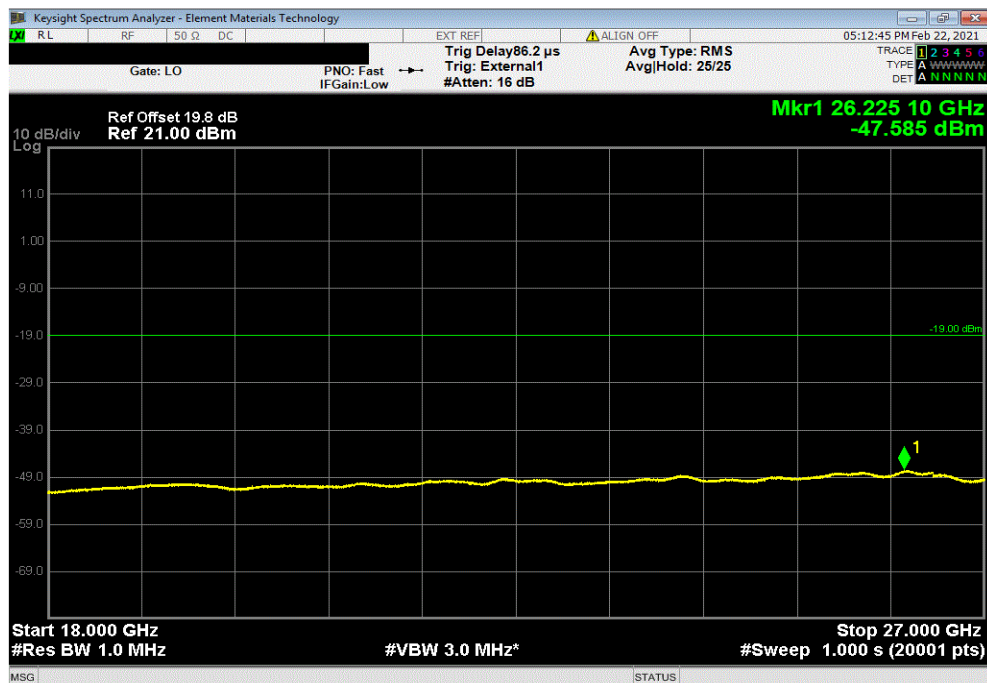


TbTtx 2019.08.30.0 XMt 2020.12.30.0

| 5G NR, Band n41, 2496 MHz - 2690 MHz, Port 1, NR40 (40MHz), 256QAM, Mid Channel 2592.99 MHz |                     |                 |               |        |  |
|---------------------------------------------------------------------------------------------|---------------------|-----------------|---------------|--------|--|
| Frequency Range                                                                             | Measured Freq (MHz) | Max Value (dBm) | Limit < (dBm) | Result |  |
| 11 GHz - 18 GHz                                                                             | 13609.25            | -43.01          | -19           | Pass   |  |



| 5G NR, Band n41, 2496 MHz - 2690 MHz, Port 1, NR40 (40MHz), 256QAM, Mid Channel 2592.99 MHz |                     |                 |               |        |  |
|---------------------------------------------------------------------------------------------|---------------------|-----------------|---------------|--------|--|
| Frequency Range                                                                             | Measured Freq (MHz) | Max Value (dBm) | Limit < (dBm) | Result |  |
| 18 GHz - 27 GHz                                                                             | 26225.1             | -47.59          | -19           | Pass   |  |



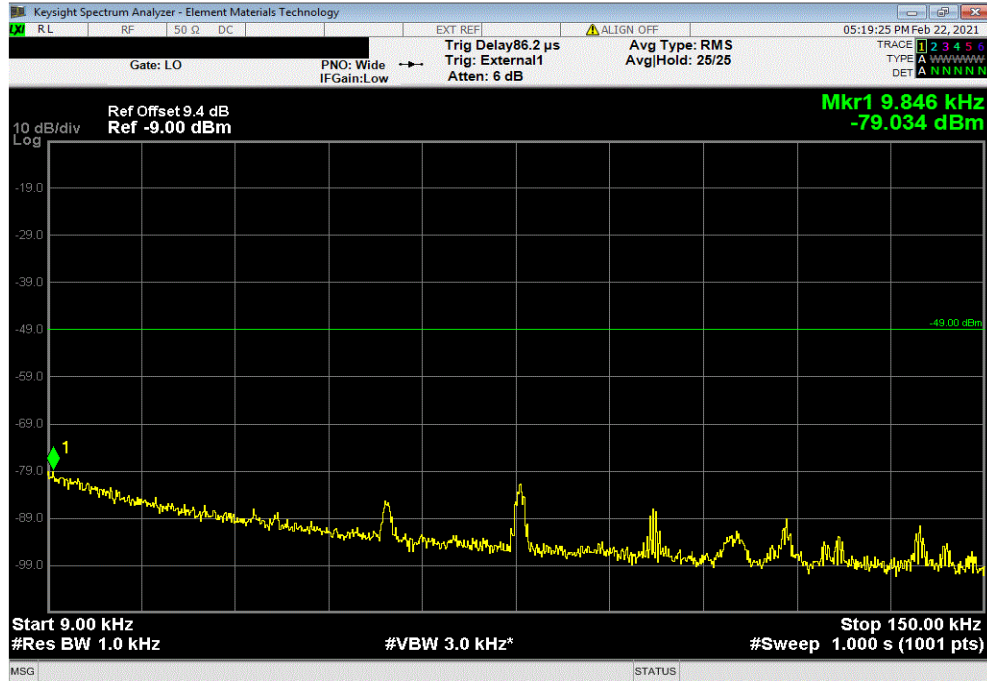


# SPURIOUS CONDUCTED EMISSIONS 5G

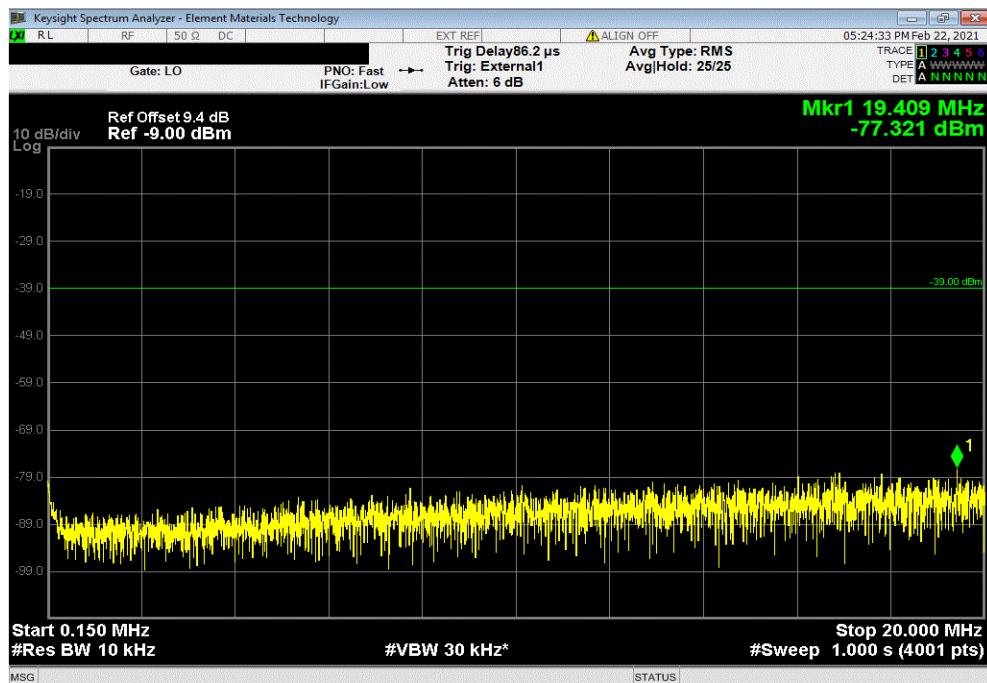


TbTx 2019.08.30.0 XMt 2020.12.30.0

| 5G NR, Band n41, 2496 MHz - 2690 MHz, Port 1, NR60 (60MHz), 256QAM, Mid Channel 2592.99 MHz |                     |                 |               |        |  |
|---------------------------------------------------------------------------------------------|---------------------|-----------------|---------------|--------|--|
| Frequency Range                                                                             | Measured Freq (MHz) | Max Value (dBm) | Limit < (dBm) | Result |  |
| 9 kHz - 150 kHz                                                                             | 0.01                | -79.03          | -49           | Pass   |  |



| 5G NR, Band n41, 2496 MHz - 2690 MHz, Port 1, NR60 (60MHz), 256QAM, Mid Channel 2592.99 MHz |                     |                 |               |        |  |
|---------------------------------------------------------------------------------------------|---------------------|-----------------|---------------|--------|--|
| Frequency Range                                                                             | Measured Freq (MHz) | Max Value (dBm) | Limit < (dBm) | Result |  |
| 150 kHz - 20 MHz                                                                            | 19.41               | -77.32          | -39           | Pass   |  |

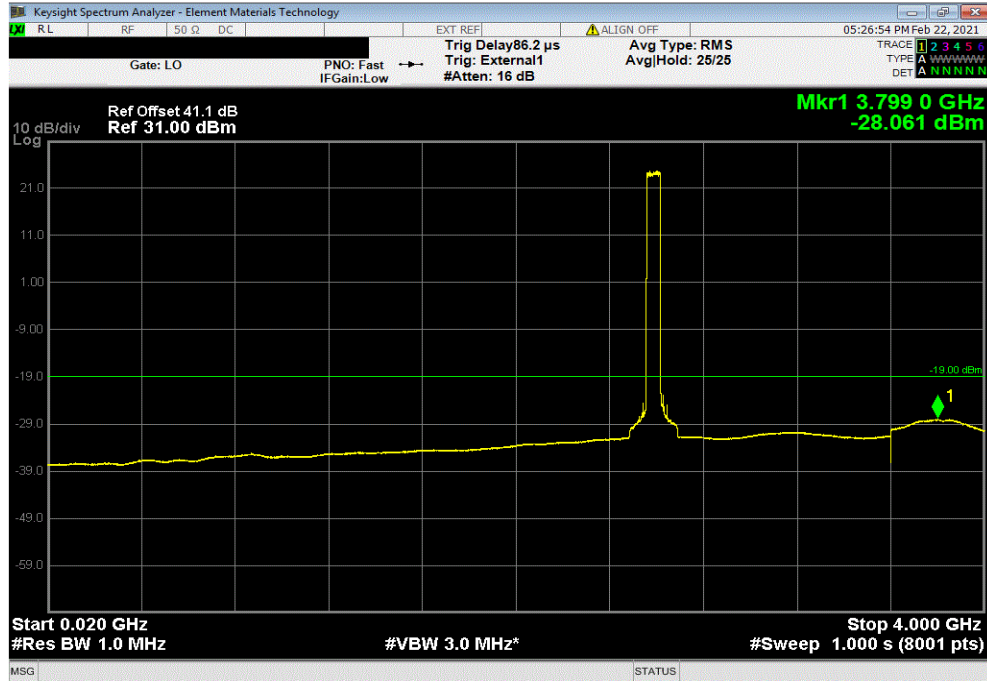


# SPURIOUS CONDUCTED EMISSIONS 5G

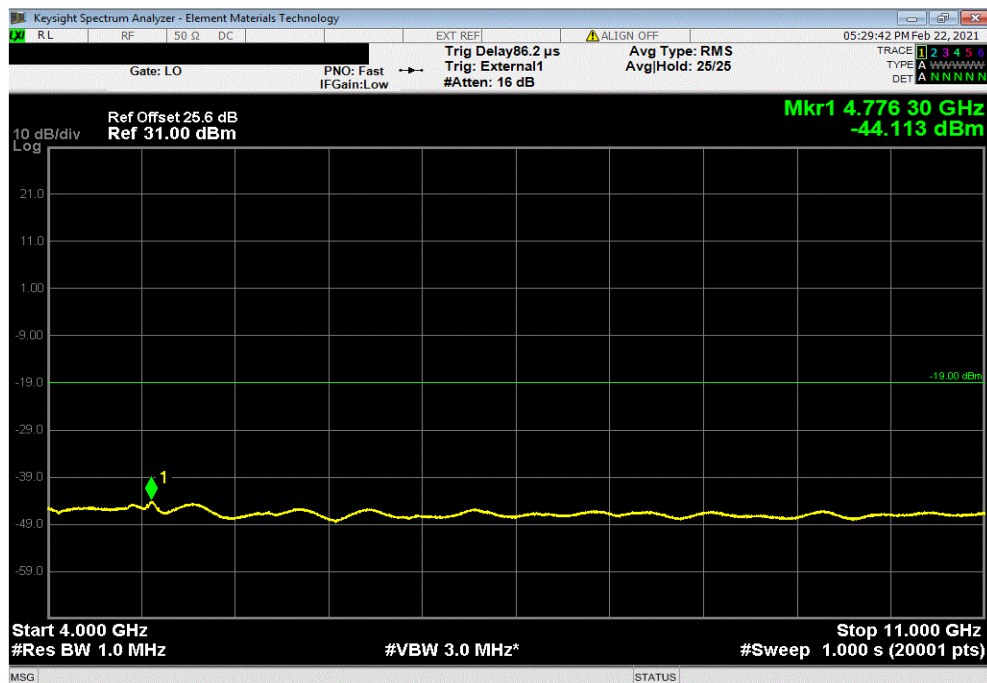


TbTtX 2019.08.30.0 XMt 2020.12.30.0

| 5G NR, Band n41, 2496 MHz - 2690 MHz, Port 1, NR60 (60MHz), 256QAM, Mid Channel 2592.99 MHz |                     |                 |               |        |  |
|---------------------------------------------------------------------------------------------|---------------------|-----------------|---------------|--------|--|
| Frequency Range                                                                             | Measured Freq (MHz) | Max Value (dBm) | Limit < (dBm) | Result |  |
| 20 MHz - 4 GHz                                                                              | 3799.01             | -28.06          | -19           | Pass   |  |



| 5G NR, Band n41, 2496 MHz - 2690 MHz, Port 1, NR60 (60MHz), 256QAM, Mid Channel 2592.99 MHz |                     |                 |               |        |  |
|---------------------------------------------------------------------------------------------|---------------------|-----------------|---------------|--------|--|
| Frequency Range                                                                             | Measured Freq (MHz) | Max Value (dBm) | Limit < (dBm) | Result |  |
| 4 GHz - 11 GHz                                                                              | 4776.3              | -44.11          | -19           | Pass   |  |

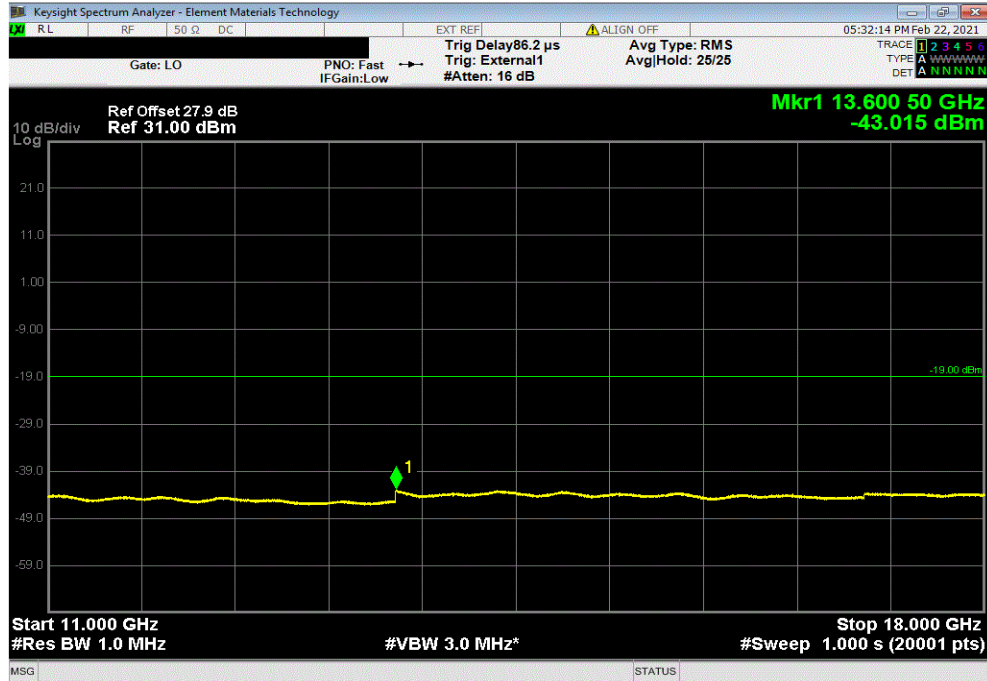


# SPURIOUS CONDUCTED EMISSIONS 5G

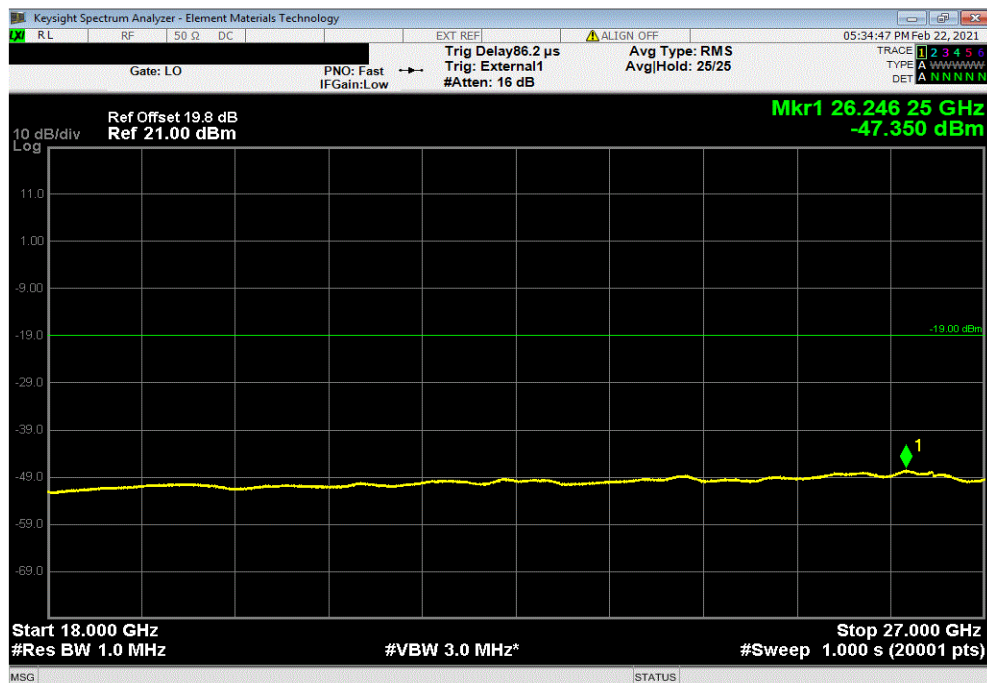


TbTx 2019.08.30.0 XMt 2020.12.30.0

| 5G NR, Band n41, 2496 MHz - 2690 MHz, Port 1, NR60 (60MHz), 256QAM, Mid Channel 2592.99 MHz |                     |                 |               |        |  |
|---------------------------------------------------------------------------------------------|---------------------|-----------------|---------------|--------|--|
| Frequency Range                                                                             | Measured Freq (MHz) | Max Value (dBm) | Limit < (dBm) | Result |  |
| 11 GHz - 18 GHz                                                                             | 13600.5             | -43.02          | -19           | Pass   |  |



| 5G NR, Band n41, 2496 MHz - 2690 MHz, Port 1, NR60 (60MHz), 256QAM, Mid Channel 2592.99 MHz |                     |                 |               |        |  |
|---------------------------------------------------------------------------------------------|---------------------|-----------------|---------------|--------|--|
| Frequency Range                                                                             | Measured Freq (MHz) | Max Value (dBm) | Limit < (dBm) | Result |  |
| 18 GHz - 27 GHz                                                                             | 26246.25            | -47.35          | -19           | Pass   |  |

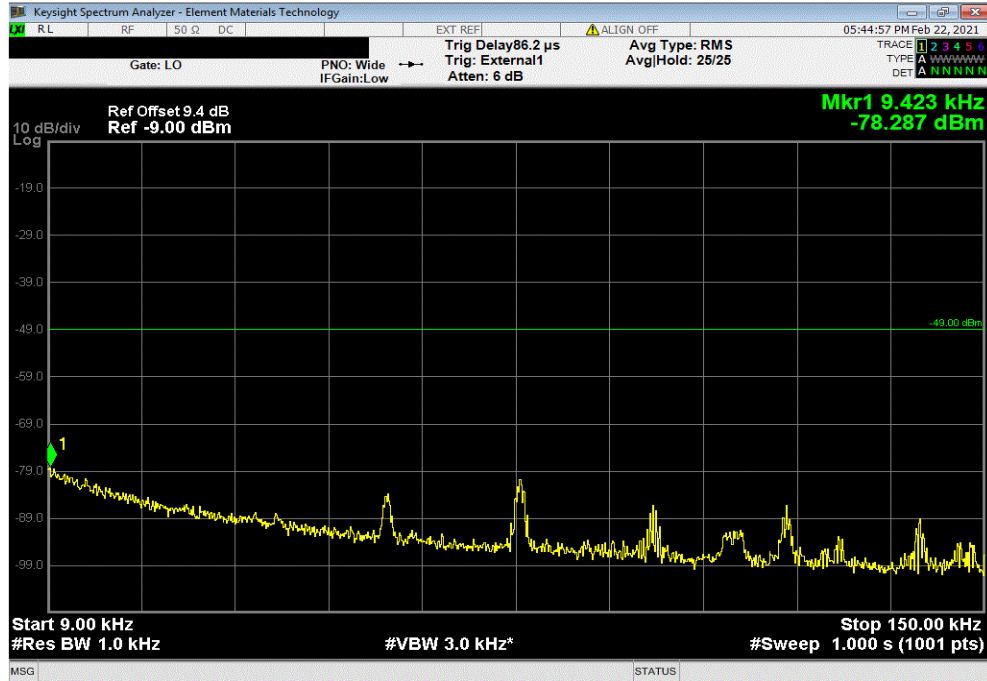


# SPURIOUS CONDUCTED EMISSIONS 5G

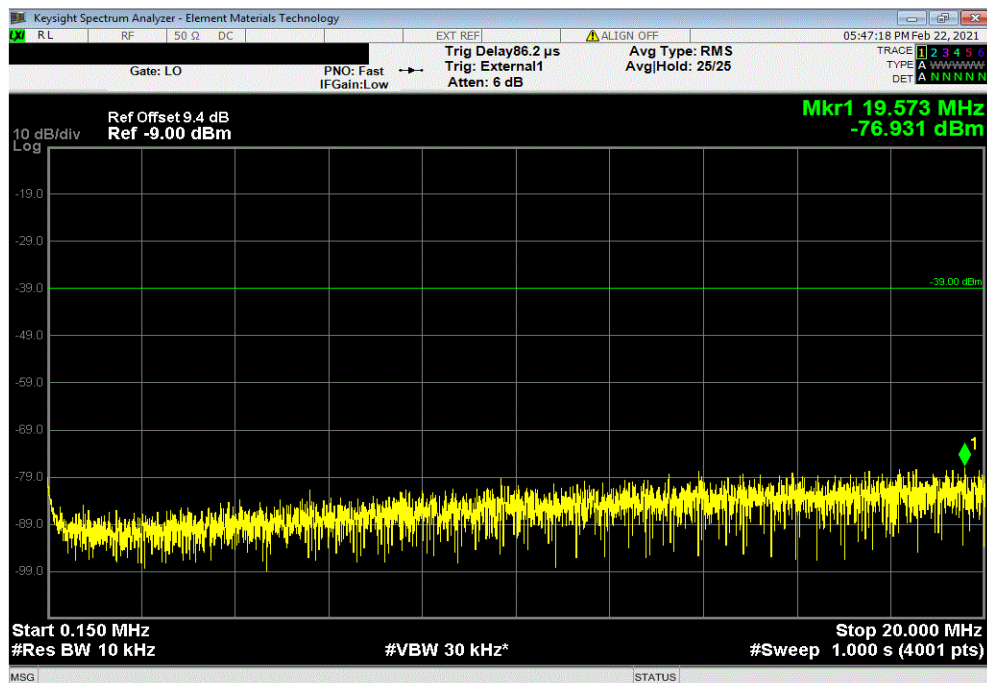


TbTx 2019.08.30.0 XMt 2020.12.30.0

| 5G NR, Band n41, 2496 MHz - 2690 MHz, Port 1, NR80 (80MHz), 256QAM, Mid Channel 2592.99 MHz |                     |                 |               |        |  |
|---------------------------------------------------------------------------------------------|---------------------|-----------------|---------------|--------|--|
| Frequency Range                                                                             | Measured Freq (MHz) | Max Value (dBm) | Limit < (dBm) | Result |  |
| 9 kHz - 150 kHz                                                                             | 0.01                | -78.29          | -49           | Pass   |  |



| 5G NR, Band n41, 2496 MHz - 2690 MHz, Port 1, NR80 (80MHz), 256QAM, Mid Channel 2592.99 MHz |                     |                 |               |        |  |
|---------------------------------------------------------------------------------------------|---------------------|-----------------|---------------|--------|--|
| Frequency Range                                                                             | Measured Freq (MHz) | Max Value (dBm) | Limit < (dBm) | Result |  |
| 150 kHz - 20 MHz                                                                            | 19.57               | -76.93          | -39           | Pass   |  |

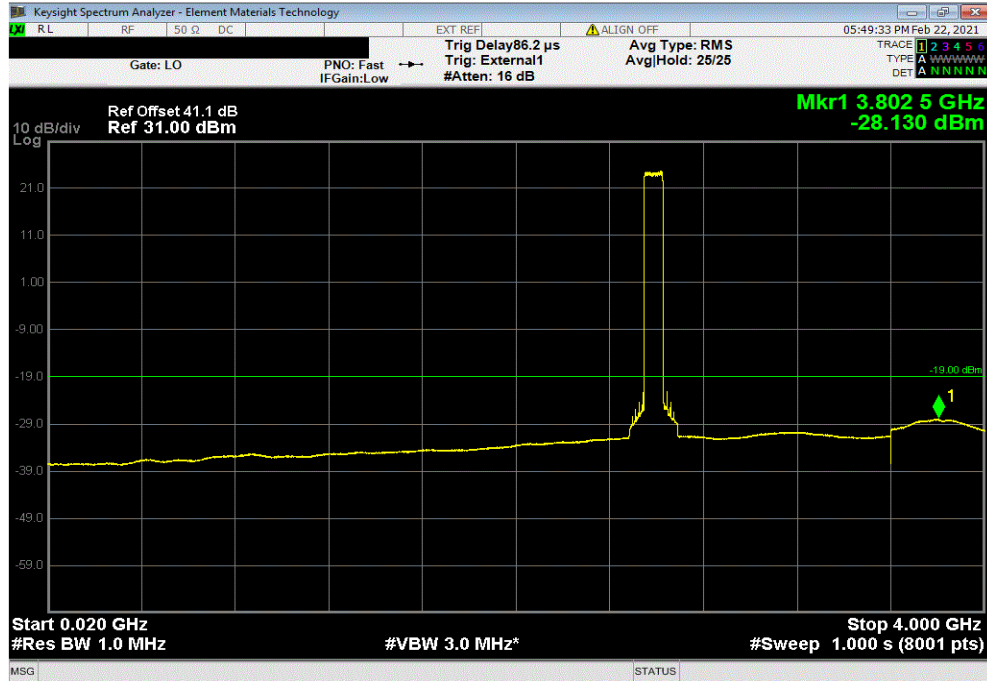


# SPURIOUS CONDUCTED EMISSIONS 5G

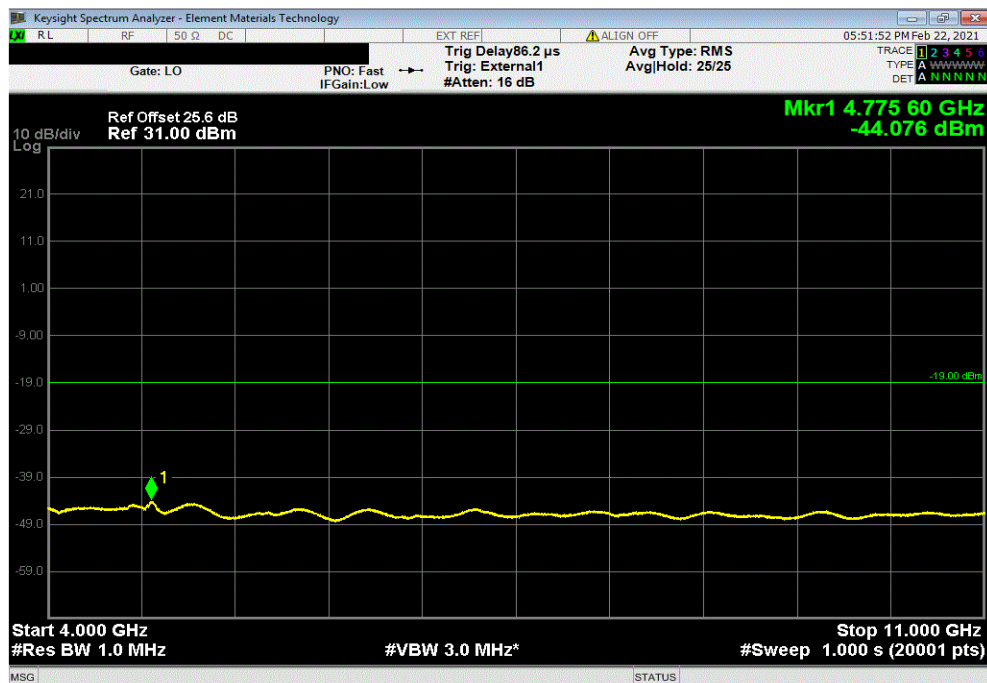


TbTtX 2019.08.30.0 XMt 2020.12.30.0

| 5G NR, Band n41, 2496 MHz - 2690 MHz, Port 1, NR80 (80MHz), 256QAM, Mid Channel 2592.99 MHz |                     |                 |               |        |  |
|---------------------------------------------------------------------------------------------|---------------------|-----------------|---------------|--------|--|
| Frequency Range                                                                             | Measured Freq (MHz) | Max Value (dBm) | Limit < (dBm) | Result |  |
| 20 MHz - 4 GHz                                                                              | 3802.49             | -28.13          | -19           | Pass   |  |



| 5G NR, Band n41, 2496 MHz - 2690 MHz, Port 1, NR80 (80MHz), 256QAM, Mid Channel 2592.99 MHz |                     |                 |               |        |  |
|---------------------------------------------------------------------------------------------|---------------------|-----------------|---------------|--------|--|
| Frequency Range                                                                             | Measured Freq (MHz) | Max Value (dBm) | Limit < (dBm) | Result |  |
| 4 GHz - 11 GHz                                                                              | 4775.6              | -44.08          | -19           | Pass   |  |



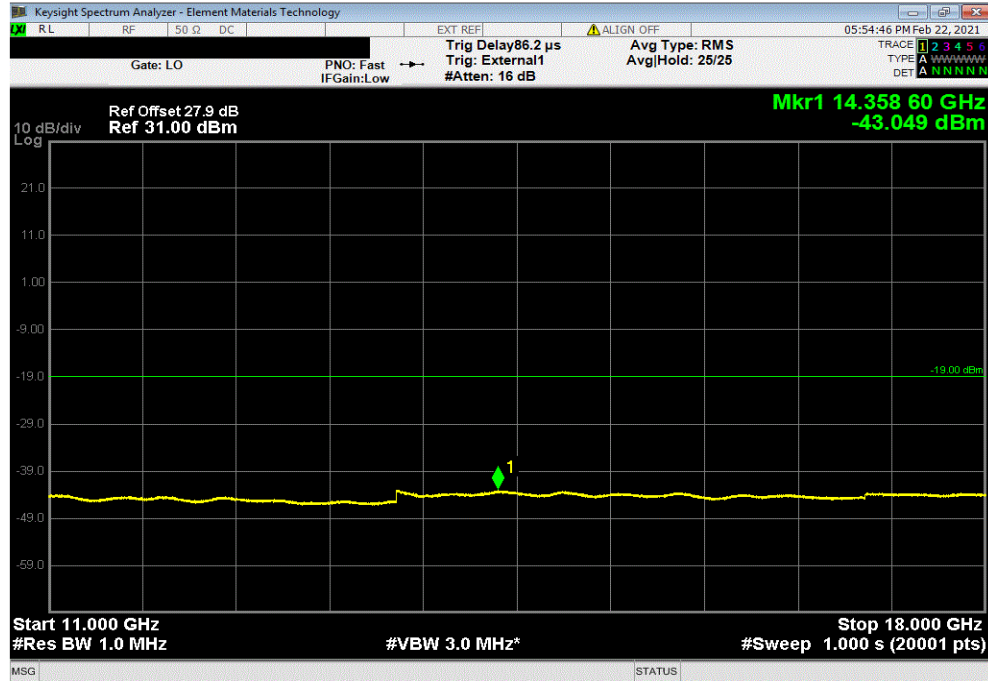


# SPURIOUS CONDUCTED EMISSIONS 5G

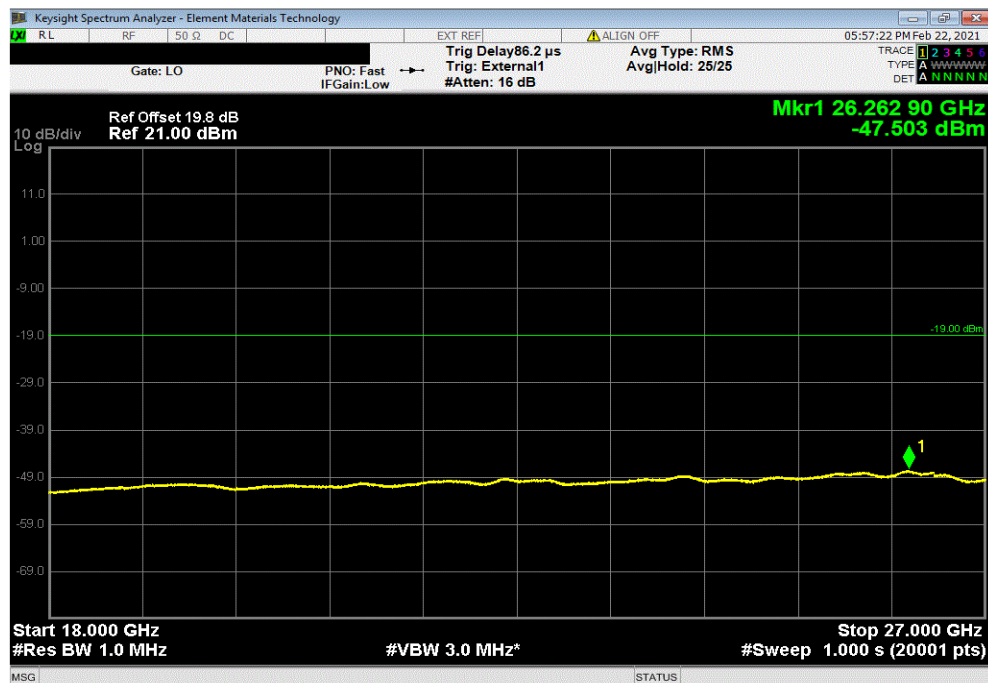


TbTtx 2019.08.30.0 XMt 2020.12.30.0

| 5G NR, Band n41, 2496 MHz - 2690 MHz, Port 1, NR80 (80MHz), 256QAM, Mid Channel 2592.99 MHz |                     |                 |               |        |  |
|---------------------------------------------------------------------------------------------|---------------------|-----------------|---------------|--------|--|
| Frequency Range                                                                             | Measured Freq (MHz) | Max Value (dBm) | Limit < (dBm) | Result |  |
| 11 GHz - 18 GHz                                                                             | 14358.6             | -43.05          | -19           | Pass   |  |



| 5G NR, Band n41, 2496 MHz - 2690 MHz, Port 1, NR80 (80MHz), 256QAM, Mid Channel 2592.99 MHz |                     |                 |               |        |  |
|---------------------------------------------------------------------------------------------|---------------------|-----------------|---------------|--------|--|
| Frequency Range                                                                             | Measured Freq (MHz) | Max Value (dBm) | Limit < (dBm) | Result |  |
| 18 GHz - 27 GHz                                                                             | 26262.9             | -47.5           | -19           | Pass   |  |

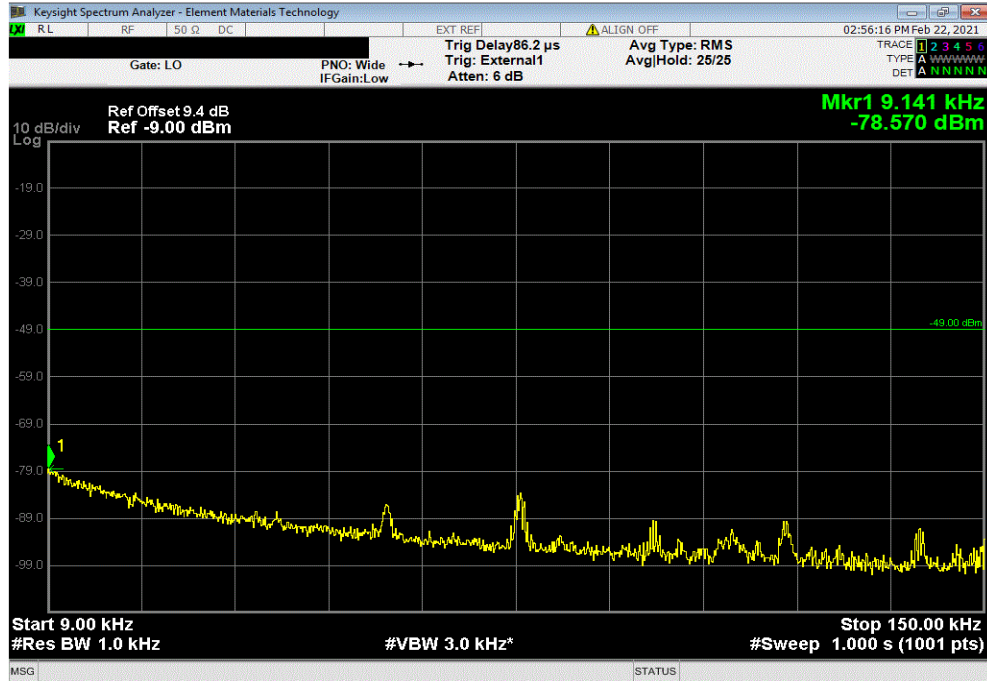


# SPURIOUS CONDUCTED EMISSIONS 5G

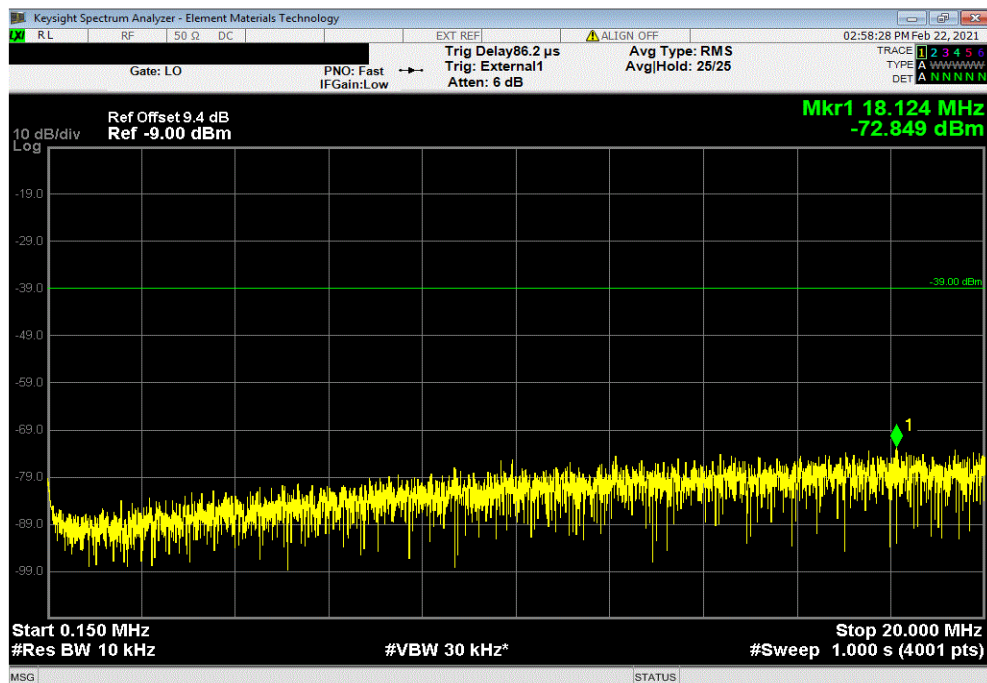


TbTx 2019.08.30.0 XMt 2020.12.30.0

| 5G NR, Band n41, 2496 MHz - 2690 MHz, Port 1, NR100 (100MHz), QPSK, Mid Channel 2592.99 MHz |                     |                 |               |        |  |
|---------------------------------------------------------------------------------------------|---------------------|-----------------|---------------|--------|--|
| Frequency Range                                                                             | Measured Freq (MHz) | Max Value (dBm) | Limit < (dBm) | Result |  |
| 9 kHz - 150 kHz                                                                             | 0.01                | -78.57          | -49           | Pass   |  |



| 5G NR, Band n41, 2496 MHz - 2690 MHz, Port 1, NR100 (100MHz), QPSK, Mid Channel 2592.99 MHz |                     |                 |               |        |  |
|---------------------------------------------------------------------------------------------|---------------------|-----------------|---------------|--------|--|
| Frequency Range                                                                             | Measured Freq (MHz) | Max Value (dBm) | Limit < (dBm) | Result |  |
| 150 kHz - 20 MHz                                                                            | 18.12               | -72.85          | -39           | Pass   |  |

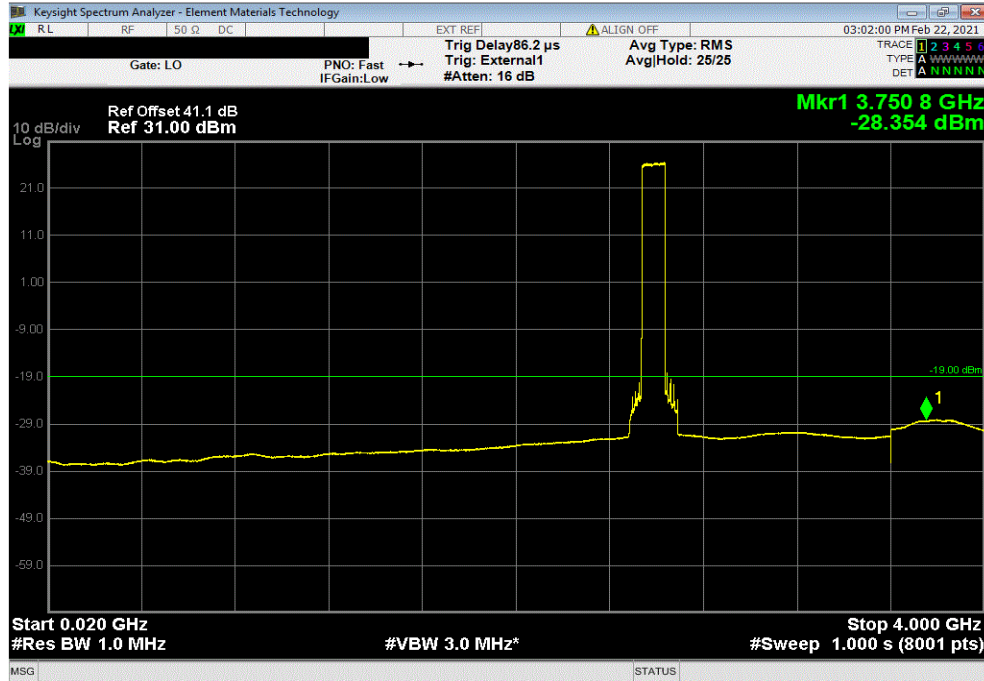


# SPURIOUS CONDUCTED EMISSIONS 5G

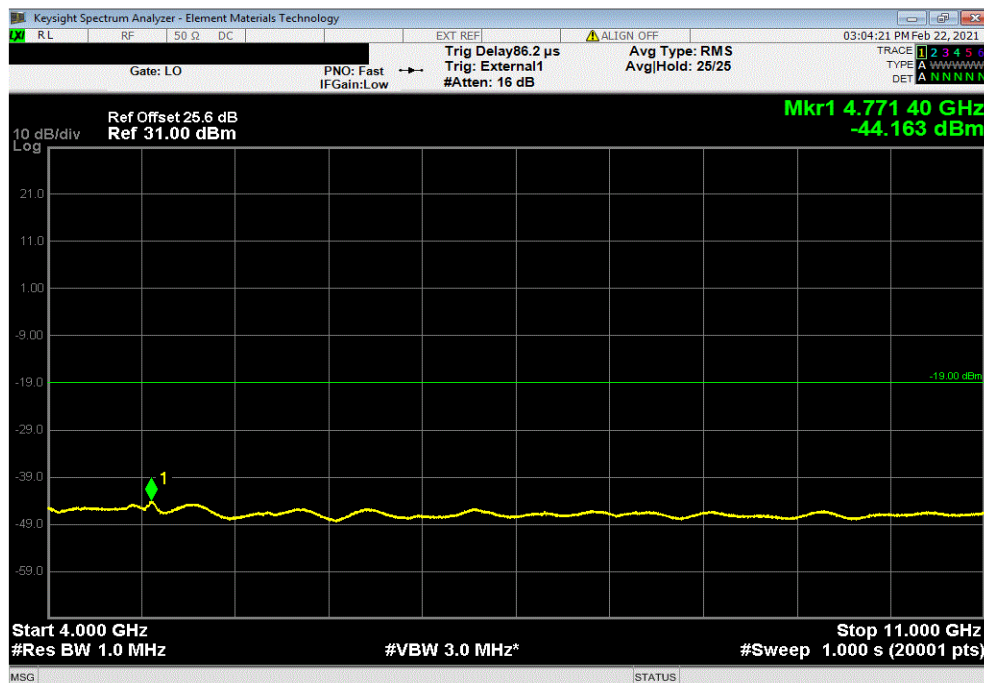


TbTtX 2019.08.30.0 XMt 2020.12.30.0

| 5G NR, Band n41, 2496 MHz - 2690 MHz, Port 1, NR100 (100MHz), QPSK, Mid Channel 2592.99 MHz |                     |                 |               |        |  |
|---------------------------------------------------------------------------------------------|---------------------|-----------------|---------------|--------|--|
| Frequency Range                                                                             | Measured Freq (MHz) | Max Value (dBm) | Limit < (dBm) | Result |  |
| 20 MHz - 4 GHz                                                                              | 3750.75             | -28.35          | -19           | Pass   |  |



| 5G NR, Band n41, 2496 MHz - 2690 MHz, Port 1, NR100 (100MHz), QPSK, Mid Channel 2592.99 MHz |                     |                 |               |        |  |
|---------------------------------------------------------------------------------------------|---------------------|-----------------|---------------|--------|--|
| Frequency Range                                                                             | Measured Freq (MHz) | Max Value (dBm) | Limit < (dBm) | Result |  |
| 4 GHz - 11 GHz                                                                              | 4771.4              | -44.16          | -19           | Pass   |  |

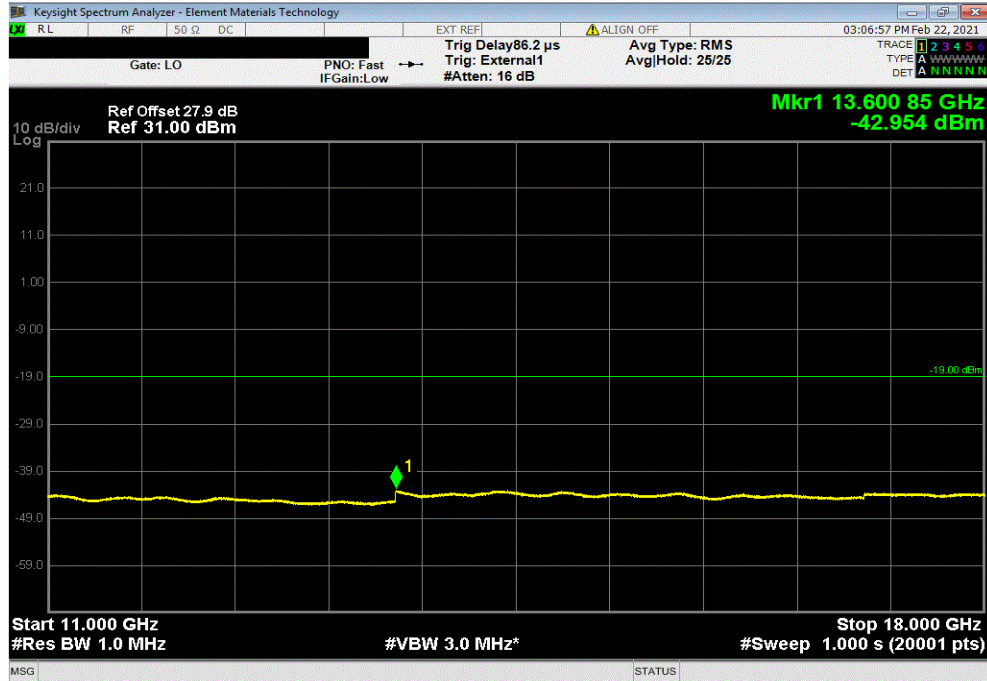


# SPURIOUS CONDUCTED EMISSIONS 5G

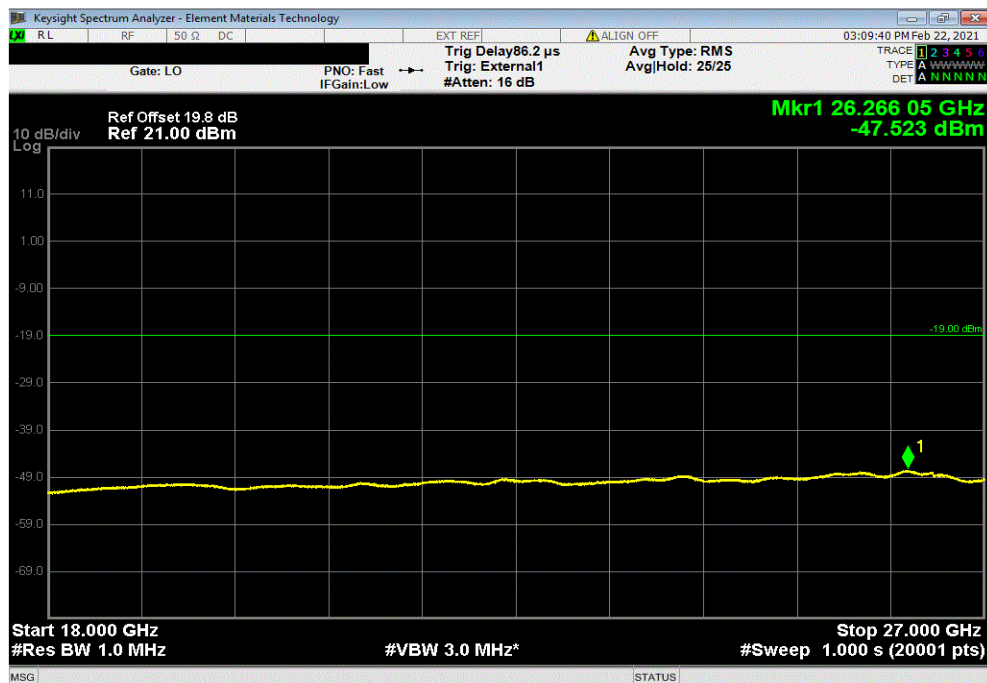


TbTtx 2019.08.30.0 XMt 2020.12.30.0

| 5G NR, Band n41, 2496 MHz - 2690 MHz, Port 1, NR100 (100MHz), QPSK, Mid Channel 2592.99 MHz |                     |                 |               |        |  |
|---------------------------------------------------------------------------------------------|---------------------|-----------------|---------------|--------|--|
| Frequency Range                                                                             | Measured Freq (MHz) | Max Value (dBm) | Limit < (dBm) | Result |  |
| 11 GHz - 18 GHz                                                                             | 13600.85            | -42.95          | -19           | Pass   |  |



| 5G NR, Band n41, 2496 MHz - 2690 MHz, Port 1, NR100 (100MHz), QPSK, Mid Channel 2592.99 MHz |                     |                 |               |        |  |
|---------------------------------------------------------------------------------------------|---------------------|-----------------|---------------|--------|--|
| Frequency Range                                                                             | Measured Freq (MHz) | Max Value (dBm) | Limit < (dBm) | Result |  |
| 18 GHz - 27 GHz                                                                             | 26266.05            | -47.52          | -19           | Pass   |  |

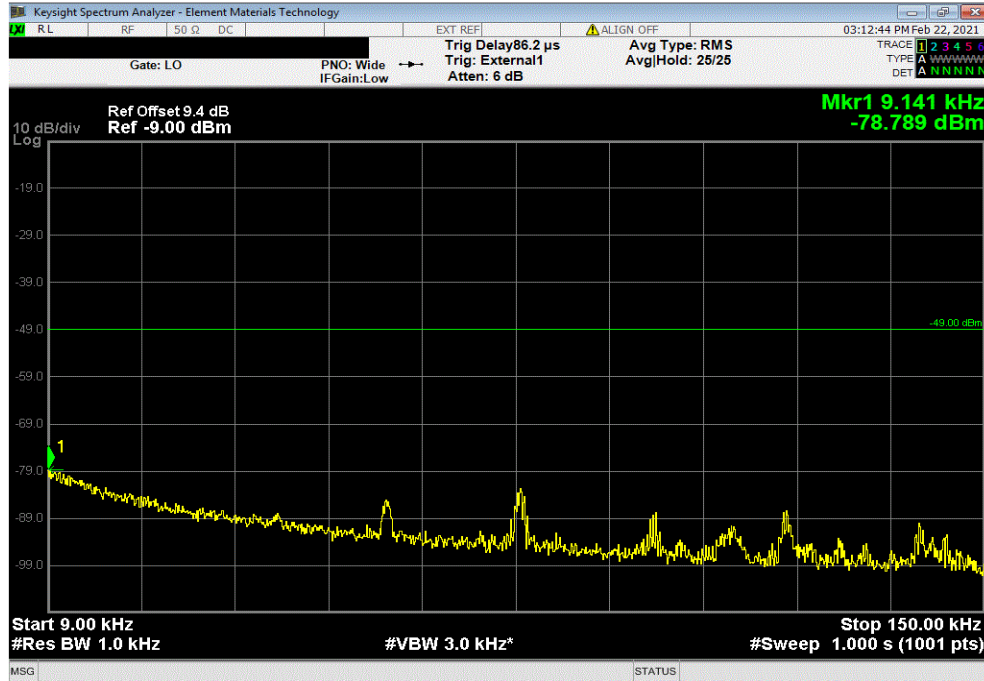


# SPURIOUS CONDUCTED EMISSIONS 5G

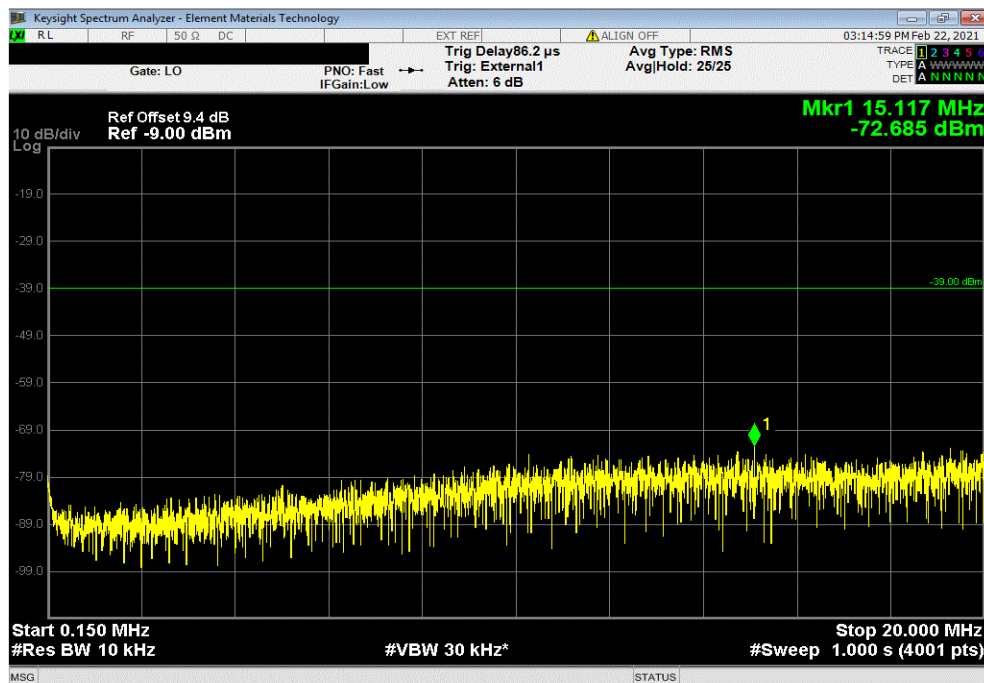


TbTx 2019.08.30.0 XMt 2020.12.30.0

| 5G NR, Band n41, 2496 MHz - 2690 MHz, Port 1, NR100 (100MHz), 16QAM, Mid Channel 2592.99 MHz |                     |                 |               |        |  |
|----------------------------------------------------------------------------------------------|---------------------|-----------------|---------------|--------|--|
| Frequency Range                                                                              | Measured Freq (MHz) | Max Value (dBm) | Limit < (dBm) | Result |  |
| 9 kHz - 150 kHz                                                                              | 0.01                | -78.79          | -49           | Pass   |  |



| 5G NR, Band n41, 2496 MHz - 2690 MHz, Port 1, NR100 (100MHz), 16QAM, Mid Channel 2592.99 MHz |                     |                 |               |        |  |
|----------------------------------------------------------------------------------------------|---------------------|-----------------|---------------|--------|--|
| Frequency Range                                                                              | Measured Freq (MHz) | Max Value (dBm) | Limit < (dBm) | Result |  |
| 150 kHz - 20 MHz                                                                             | 15.12               | -72.69          | -39           | Pass   |  |



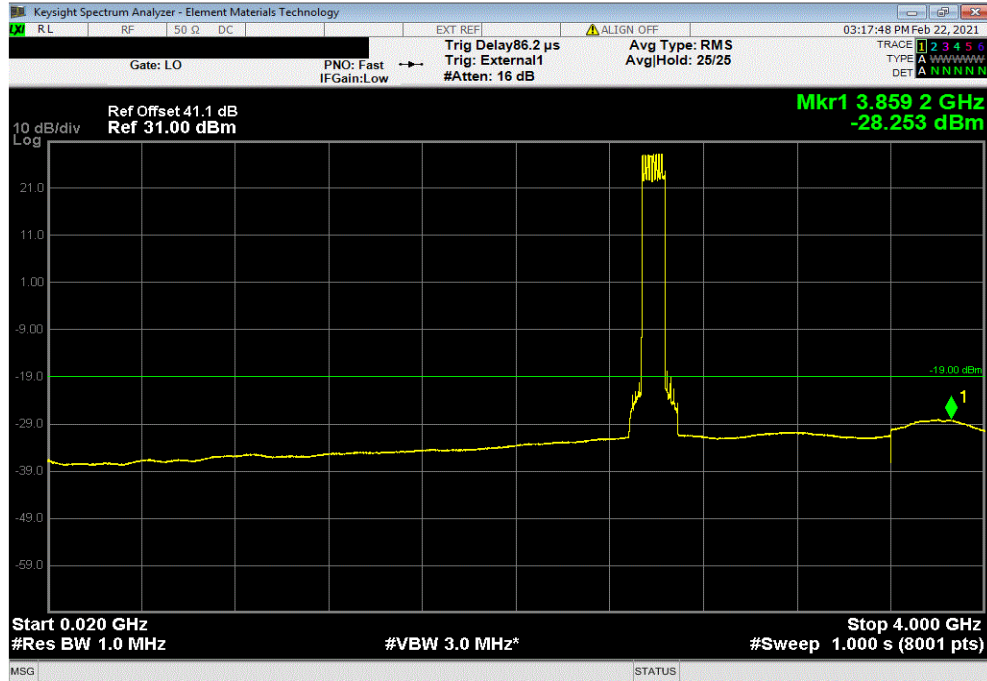


# SPURIOUS CONDUCTED EMISSIONS 5G

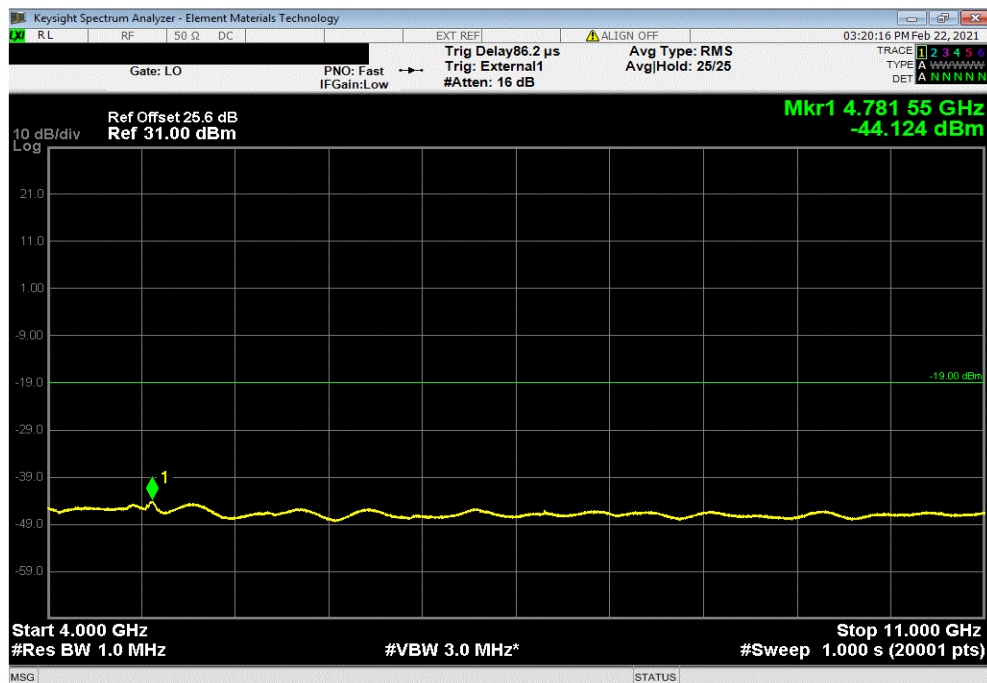


TbTtX 2019.08.30.0 XMt 2020.12.30.0

| 5G NR, Band n41, 2496 MHz - 2690 MHz, Port 1, NR100 (100MHz), 16QAM, Mid Channel 2592.99 MHz |                     |                 |               |        |  |
|----------------------------------------------------------------------------------------------|---------------------|-----------------|---------------|--------|--|
| Frequency Range                                                                              | Measured Freq (MHz) | Max Value (dBm) | Limit < (dBm) | Result |  |
| 20 MHz - 4 GHz                                                                               | 3859.21             | -28.25          | -19           | Pass   |  |



| 5G NR, Band n41, 2496 MHz - 2690 MHz, Port 1, NR100 (100MHz), 16QAM, Mid Channel 2592.99 MHz |                     |                 |               |        |  |
|----------------------------------------------------------------------------------------------|---------------------|-----------------|---------------|--------|--|
| Frequency Range                                                                              | Measured Freq (MHz) | Max Value (dBm) | Limit < (dBm) | Result |  |
| 4 GHz - 11 GHz                                                                               | 4781.55             | -44.12          | -19           | Pass   |  |

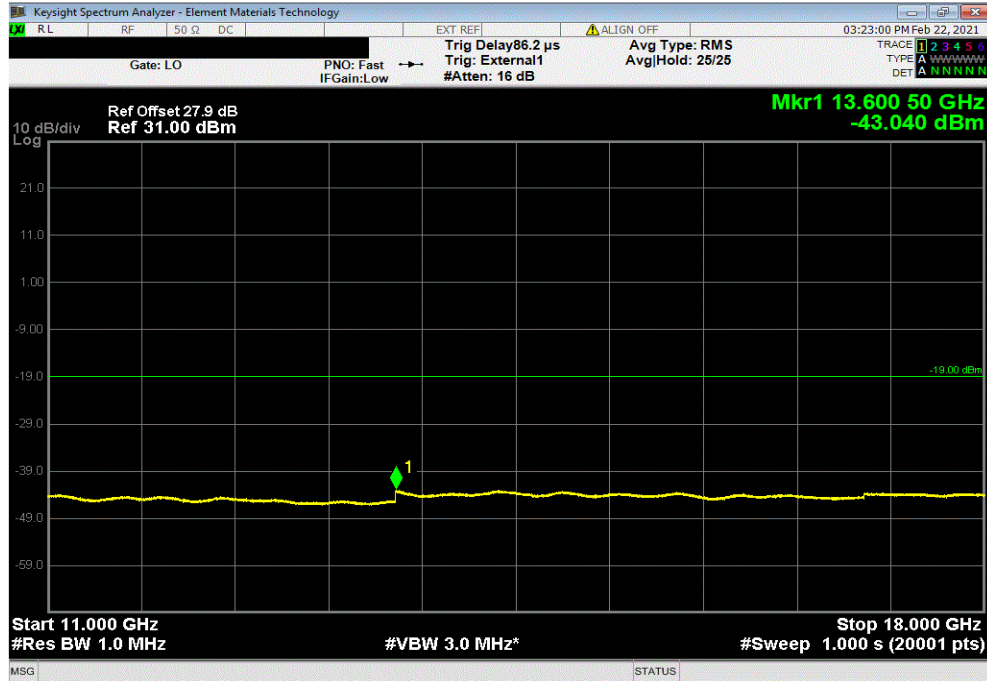


# SPURIOUS CONDUCTED EMISSIONS 5G

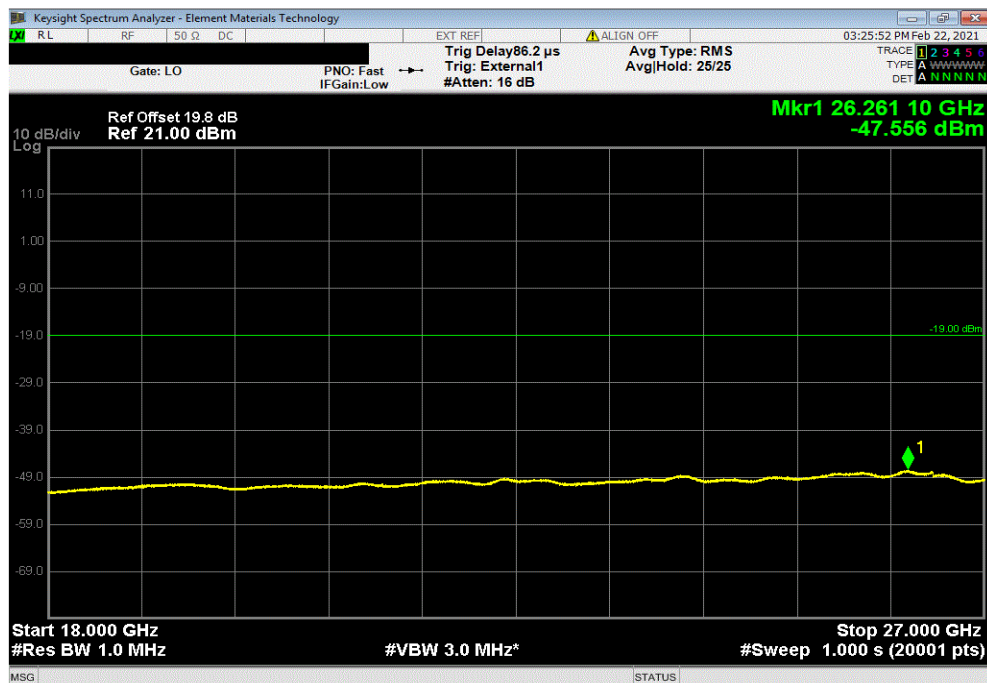


TbTx 2019.08.30.0 XMt 2020.12.30.0

| 5G NR, Band n41, 2496 MHz - 2690 MHz, Port 1, NR100 (100MHz), 16QAM, Mid Channel 2592.99 MHz |                     |                 |               |        |  |
|----------------------------------------------------------------------------------------------|---------------------|-----------------|---------------|--------|--|
| Frequency Range                                                                              | Measured Freq (MHz) | Max Value (dBm) | Limit < (dBm) | Result |  |
| 11 GHz - 18 GHz                                                                              | 13600.5             | -43.04          | -19           | Pass   |  |



| 5G NR, Band n41, 2496 MHz - 2690 MHz, Port 1, NR100 (100MHz), 16QAM, Mid Channel 2592.99 MHz |                     |                 |               |        |  |
|----------------------------------------------------------------------------------------------|---------------------|-----------------|---------------|--------|--|
| Frequency Range                                                                              | Measured Freq (MHz) | Max Value (dBm) | Limit < (dBm) | Result |  |
| 18 GHz - 27 GHz                                                                              | 26261.1             | -47.56          | -19           | Pass   |  |

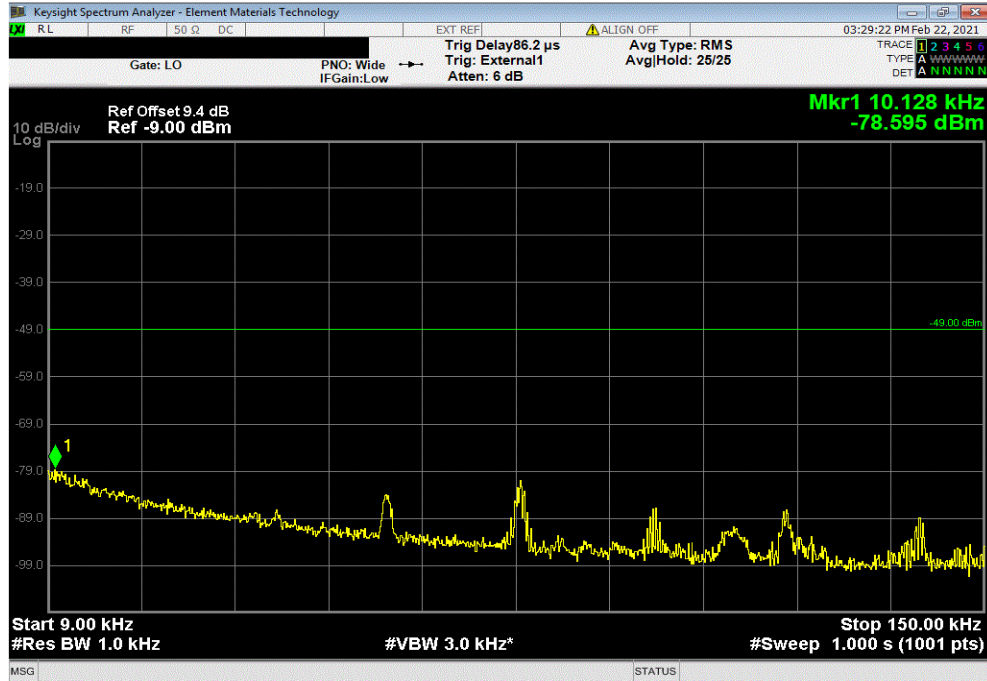


# SPURIOUS CONDUCTED EMISSIONS 5G

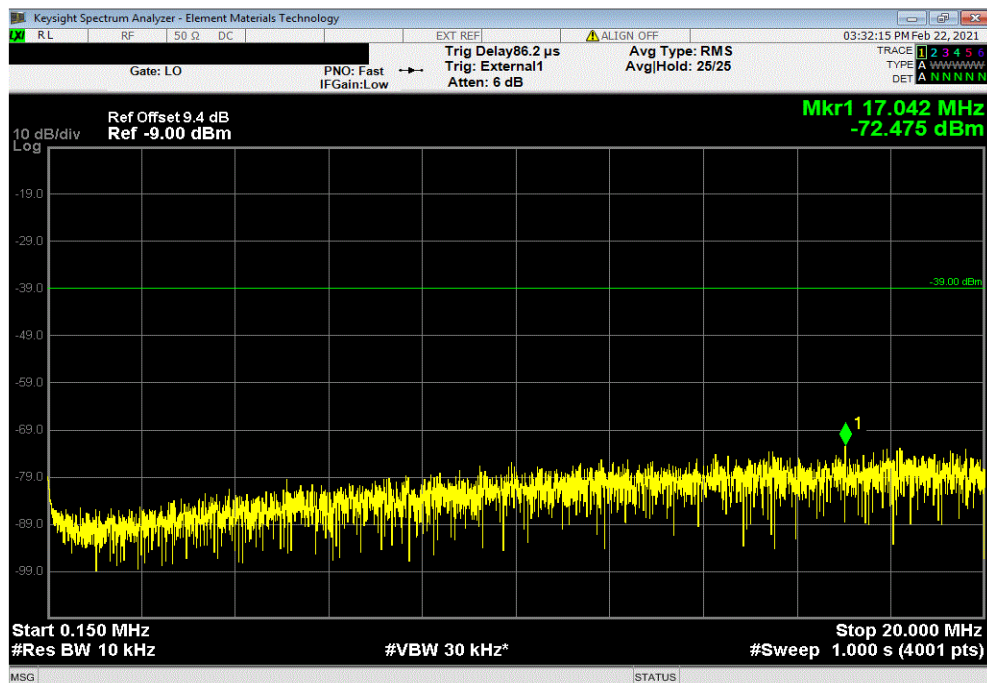


TbTx 2019.08.30.0 XMR 2020.12.30.0

| 5G NR, Band n41, 2496 MHz - 2690 MHz, Port 1, NR100 (100MHz), 64QAM, Mid Channel 2592.99 MHz |                     |                 |               |        |  |
|----------------------------------------------------------------------------------------------|---------------------|-----------------|---------------|--------|--|
| Frequency Range                                                                              | Measured Freq (MHz) | Max Value (dBm) | Limit < (dBm) | Result |  |
| 9 kHz - 150 kHz                                                                              | 0.01                | -78.6           | -49           | Pass   |  |



| 5G NR, Band n41, 2496 MHz - 2690 MHz, Port 1, NR100 (100MHz), 64QAM, Mid Channel 2592.99 MHz |                     |                 |               |        |  |
|----------------------------------------------------------------------------------------------|---------------------|-----------------|---------------|--------|--|
| Frequency Range                                                                              | Measured Freq (MHz) | Max Value (dBm) | Limit < (dBm) | Result |  |
| 150 kHz - 20 MHz                                                                             | 17.04               | -72.48          | -39           | Pass   |  |

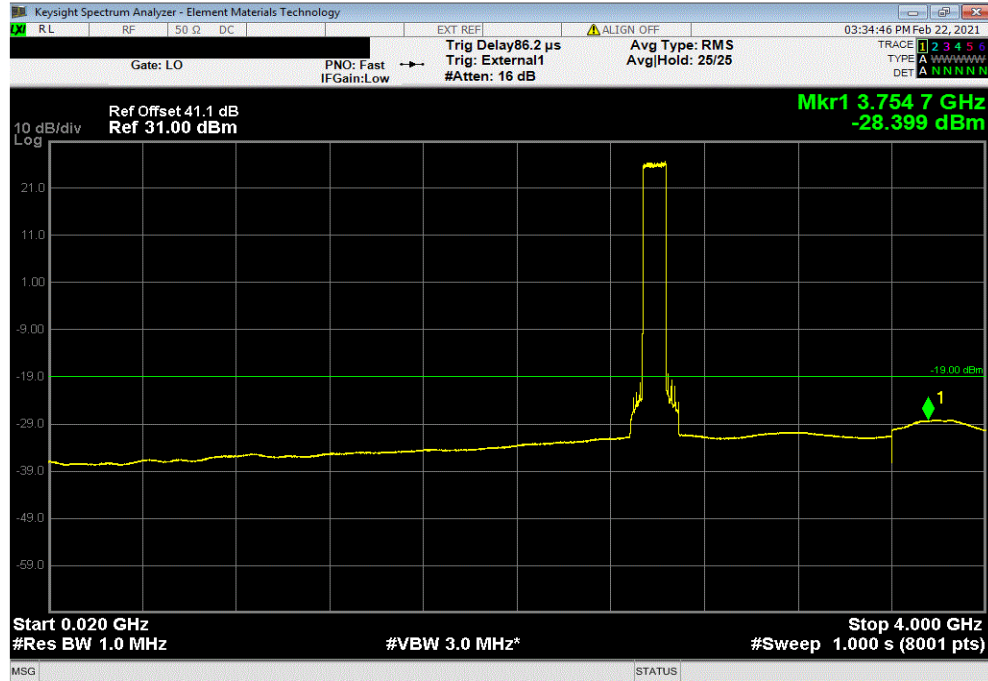


# SPURIOUS CONDUCTED EMISSIONS 5G

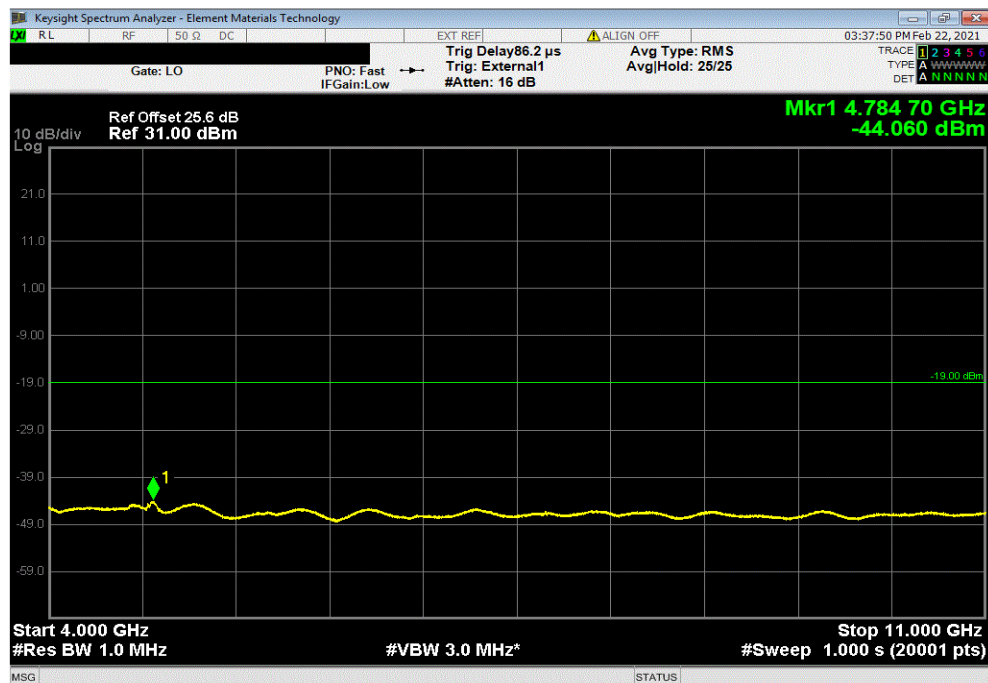


TbTx 2019.08.30.0 XMt 2020.12.30.0

| 5G NR, Band n41, 2496 MHz - 2690 MHz, Port 1, NR100 (100MHz), 64QAM, Mid Channel 2592.99 MHz |                     |                 |               |        |  |
|----------------------------------------------------------------------------------------------|---------------------|-----------------|---------------|--------|--|
| Frequency Range                                                                              | Measured Freq (MHz) | Max Value (dBm) | Limit < (dBm) | Result |  |
| 20 MHz - 4 GHz                                                                               | 3754.73             | -28.4           | -19           | Pass   |  |



| 5G NR, Band n41, 2496 MHz - 2690 MHz, Port 1, NR100 (100MHz), 64QAM, Mid Channel 2592.99 MHz |                     |                 |               |        |  |
|----------------------------------------------------------------------------------------------|---------------------|-----------------|---------------|--------|--|
| Frequency Range                                                                              | Measured Freq (MHz) | Max Value (dBm) | Limit < (dBm) | Result |  |
| 4 GHz - 11 GHz                                                                               | 4784.7              | -44.06          | -19           | Pass   |  |

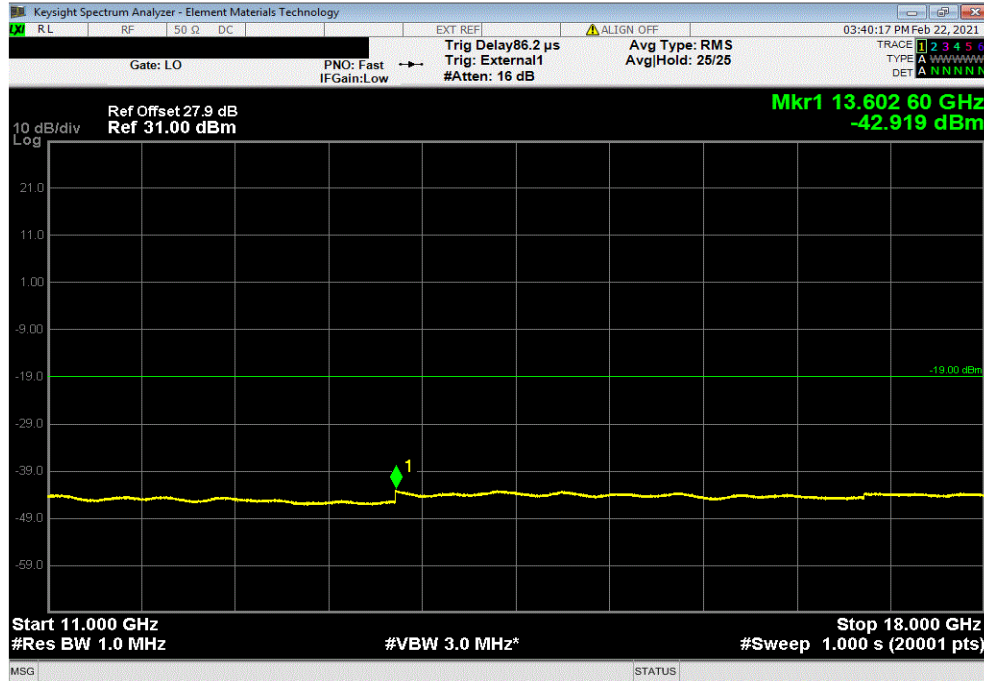


# SPURIOUS CONDUCTED EMISSIONS 5G

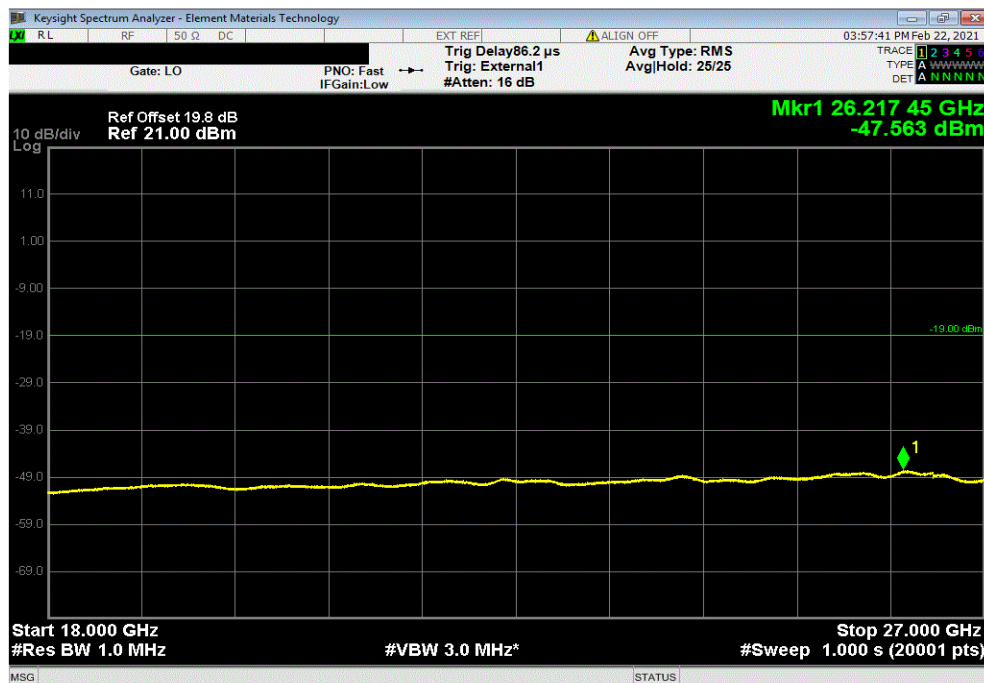


TbTx 2019.08.30.0 XMt 2020.12.30.0

| 5G NR, Band n41, 2496 MHz - 2690 MHz, Port 1, NR100 (100MHz), 64QAM, Mid Channel 2592.99 MHz |                     |                 |               |        |  |
|----------------------------------------------------------------------------------------------|---------------------|-----------------|---------------|--------|--|
| Frequency Range                                                                              | Measured Freq (MHz) | Max Value (dBm) | Limit < (dBm) | Result |  |
| 11 GHz - 18 GHz                                                                              | 13602.6             | -42.92          | -19           | Pass   |  |



| 5G NR, Band n41, 2496 MHz - 2690 MHz, Port 1, NR100 (100MHz), 64QAM, Mid Channel 2592.99 MHz |                     |                 |               |        |  |
|----------------------------------------------------------------------------------------------|---------------------|-----------------|---------------|--------|--|
| Frequency Range                                                                              | Measured Freq (MHz) | Max Value (dBm) | Limit < (dBm) | Result |  |
| 18 GHz - 27 GHz                                                                              | 26217.45            | -47.56          | -19           | Pass   |  |



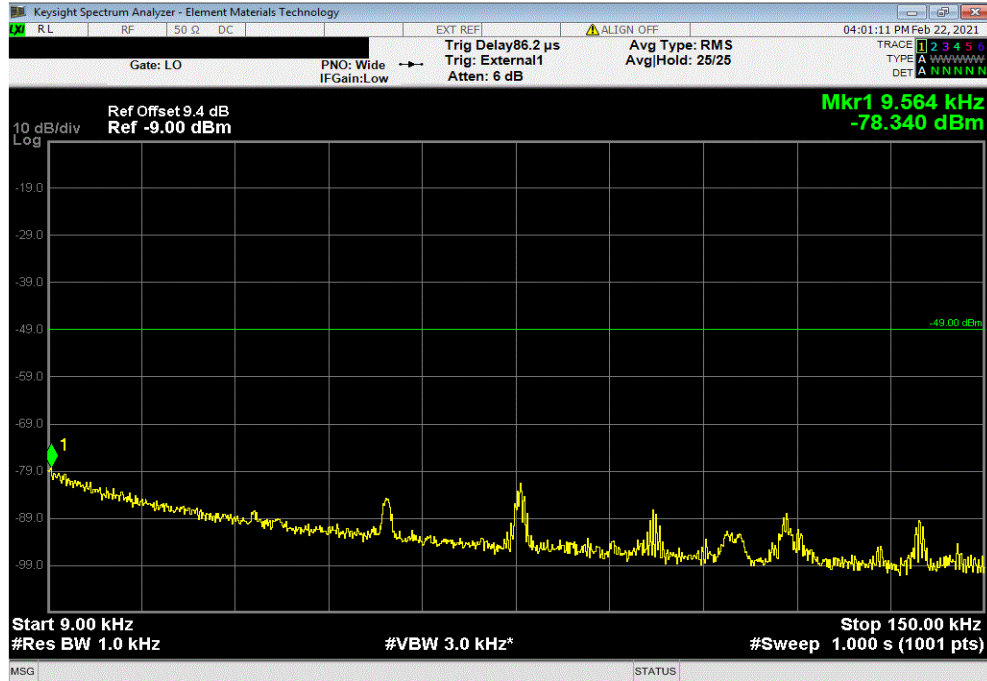


# SPURIOUS CONDUCTED EMISSIONS 5G

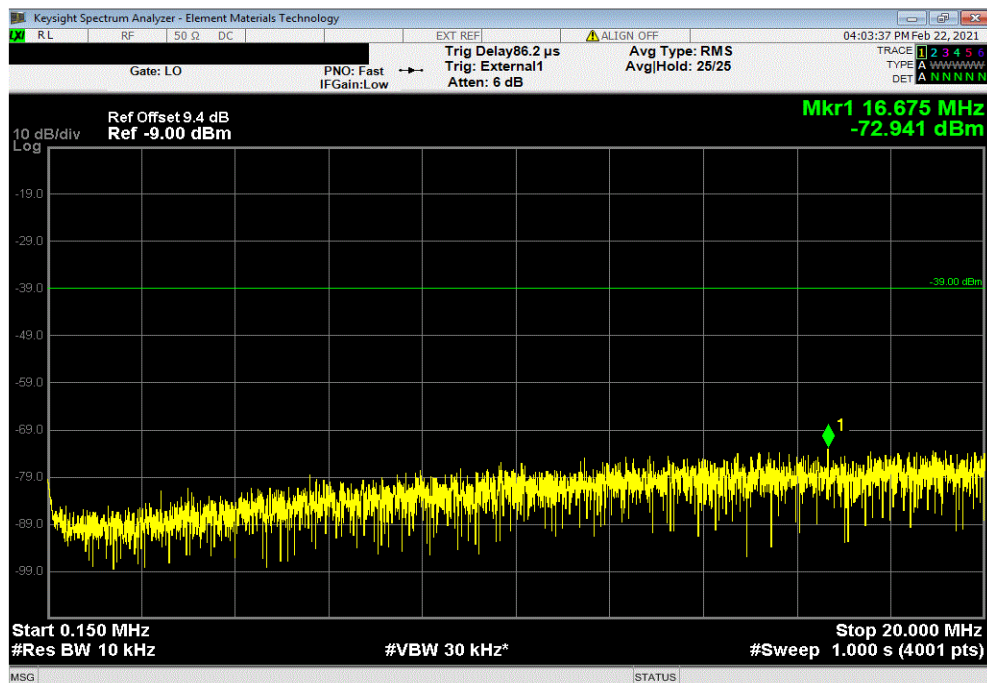


TbTx 2019.08.30.0 XMt 2020.12.30.0

| 5G NR, Band n41, 2496 MHz - 2690 MHz, Port 1, NR100 (100MHz), 256QAM, Mid Channel 2592.99 MHz |                     |                 |               |        |  |
|-----------------------------------------------------------------------------------------------|---------------------|-----------------|---------------|--------|--|
| Frequency Range                                                                               | Measured Freq (MHz) | Max Value (dBm) | Limit < (dBm) | Result |  |
| 9 kHz - 150 kHz                                                                               | 0.01                | -78.34          | -49           | Pass   |  |



| 5G NR, Band n41, 2496 MHz - 2690 MHz, Port 1, NR100 (100MHz), 256QAM, Mid Channel 2592.99 MHz |                     |                 |               |        |  |
|-----------------------------------------------------------------------------------------------|---------------------|-----------------|---------------|--------|--|
| Frequency Range                                                                               | Measured Freq (MHz) | Max Value (dBm) | Limit < (dBm) | Result |  |
| 150 kHz - 20 MHz                                                                              | 16.68               | -72.94          | -39           | Pass   |  |

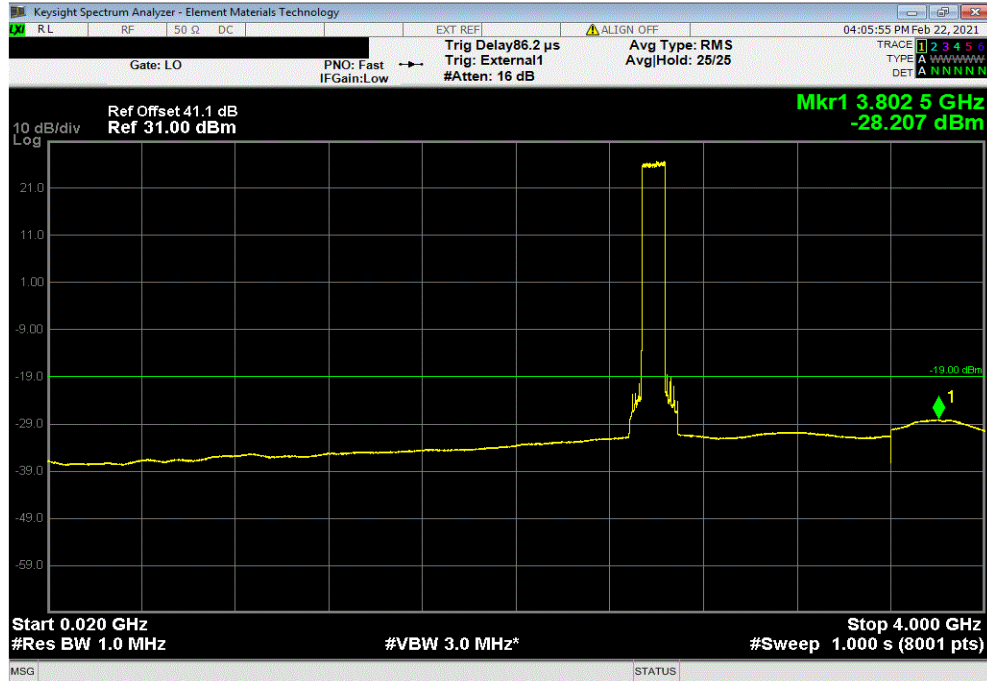


# SPURIOUS CONDUCTED EMISSIONS 5G

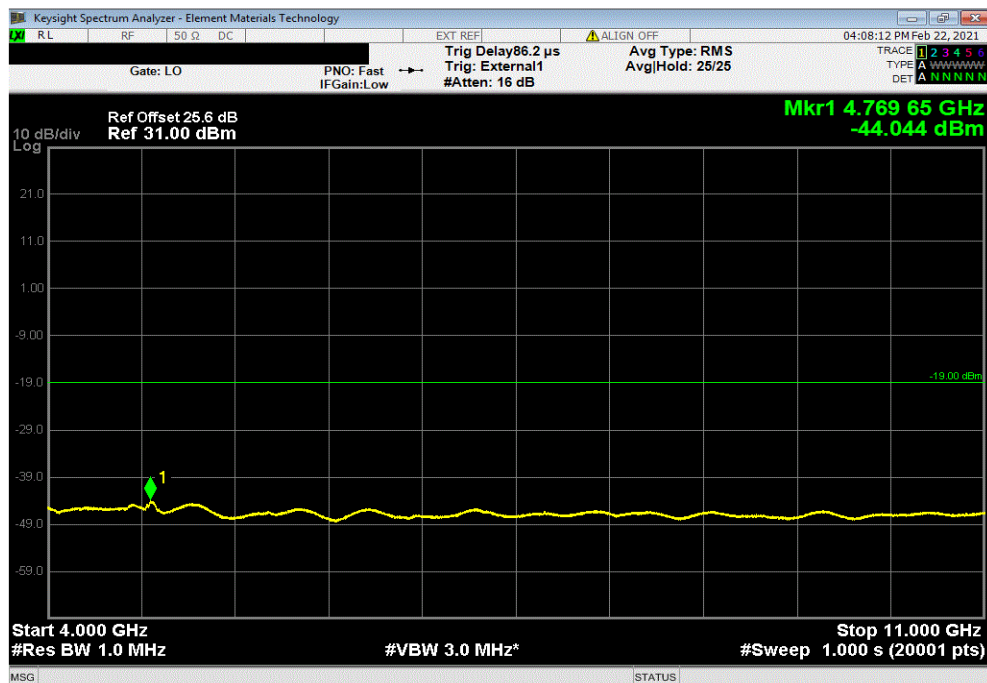


TbTx 2019.08.30.0 XMt 2020.12.30.0

| 5G NR, Band n41, 2496 MHz - 2690 MHz, Port 1, NR100 (100MHz), 256QAM, Mid Channel 2592.99 MHz |                     |                 |               |        |  |
|-----------------------------------------------------------------------------------------------|---------------------|-----------------|---------------|--------|--|
| Frequency Range                                                                               | Measured Freq (MHz) | Max Value (dBm) | Limit < (dBm) | Result |  |
| 20 MHz - 4 GHz                                                                                | 3802.49             | -28.21          | -19           | Pass   |  |



| 5G NR, Band n41, 2496 MHz - 2690 MHz, Port 1, NR100 (100MHz), 256QAM, Mid Channel 2592.99 MHz |                     |                 |               |        |  |
|-----------------------------------------------------------------------------------------------|---------------------|-----------------|---------------|--------|--|
| Frequency Range                                                                               | Measured Freq (MHz) | Max Value (dBm) | Limit < (dBm) | Result |  |
| 4 GHz - 11 GHz                                                                                | 4769.65             | -44.04          | -19           | Pass   |  |

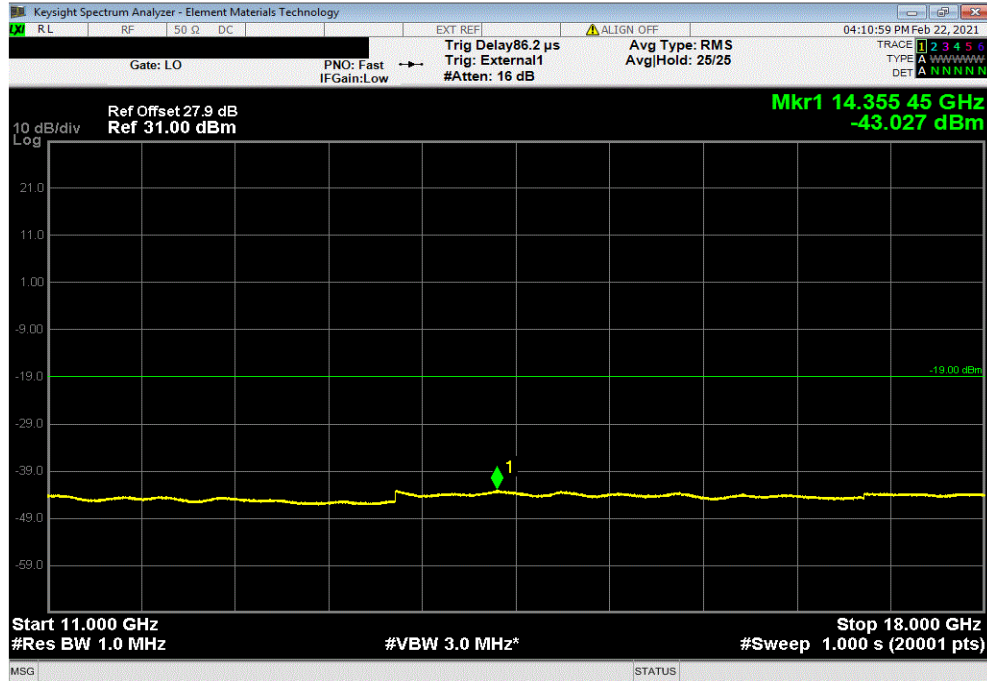


# SPURIOUS CONDUCTED EMISSIONS 5G



TbTx 2019.08.30.0 XMt 2020.12.30.0

| 5G NR, Band n41, 2496 MHz - 2690 MHz, Port 1, NR100 (100MHz), 256QAM, Mid Channel 2592.99 MHz |                     |                 |               |        |  |
|-----------------------------------------------------------------------------------------------|---------------------|-----------------|---------------|--------|--|
| Frequency Range                                                                               | Measured Freq (MHz) | Max Value (dBm) | Limit < (dBm) | Result |  |
| 11 GHz - 18 GHz                                                                               | 14355.45            | -43.03          | -19           | Pass   |  |



| 5G NR, Band n41, 2496 MHz - 2690 MHz, Port 1, NR100 (100MHz), 256QAM, Mid Channel 2592.99 MHz |                     |                 |               |        |  |
|-----------------------------------------------------------------------------------------------|---------------------|-----------------|---------------|--------|--|
| Frequency Range                                                                               | Measured Freq (MHz) | Max Value (dBm) | Limit < (dBm) | Result |  |
| 18 GHz - 27 GHz                                                                               | 26237.7             | -47.51          | -19           | Pass   |  |

