

# SPURIOUS CONDUCTED EMISSIONS BAND 25



XMI 2019.09.05

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 | Keysight     | N9010A     | AFM | 19-Mar-19 | 19-Mar-20 |
| Generator - Signal           | Keysight     | N5171B-506 | TEW | 2-May-18  | 2-May-21  |
| Generator - Signal           | Keysight     | N5183A     | TID | 26-Apr-19 | 26-Apr-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 22 GHz. The peak 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 KDB971168 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 frequency band after the first 1.0 MHz bands immediately outside and adjacent to the frequency block.

Per section FCC 24.238(a) and RSS 133 6.5 (ii), the power of any emission outside of the authorized operating frequency range cannot exceed -13 dBm for a 1 MHz measurement bandwidth. The limit is adjusted to -19 dBm  $[-13 \text{ dBm} - 10 \log(4)]$  per FCC KDB 662911D01 v02r01 because the BTS may operate as a 4 port MIMO transmitter. .

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.:  $-49\text{dBm} = -19\text{dBm} - 10\log(1\text{MHz}/1\text{kHz})$ ]. 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.:  $-39\text{dBm} = -19\text{dBm} - 10\log(1\text{MHz}/10\text{kHz})$ ]. The required limit of -19dBm with a RBW of > 1MHz was used for all other frequency ranges.

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|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |              |                             |       |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-----------------------------|-------|
| EUT: AHFIA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |              | Work Order: NOKI0008        |       |
| Serial Number: K9174623559                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |              | Date: 20-Feb-20             |       |
| Customer: Nokia of America Corporation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |              | Temperature: 22.1 °C        |       |
| Attendees: Mitch Hill, John Rattanaovong                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |              | Humidity: 46.5% RH          |       |
| Project: None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |              | Barometric Pres.: 1015 mbar |       |
| Tested by: Brandon Hobbs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Power: 54VDC | Job Site: TX09              |       |
| TEST SPECIFICATIONS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |              | Test Method                 |       |
| FCC 24E:2020                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |              | ANSI C63.26:2015            |       |
| RSS-133:2018, RSS-Gen:2019                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |              | RSS-133:2018, RSS-Gen:2019  |       |
| COMMENTS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |              |                             |       |
| All measurement path losses were accounted for in the reference level offset including any attenuators, filters and DC blocks. All measurement path losses were accounted for in the reference level offset including any attenuators, filters and DC blocks. The data was taken on the mid channel in the band while using the highest output power port which was found in the original client provided test report. Ranges 1 and 2 used configuration 1. Range 3 used configuration 2. Ranges 4 and 5 used configuration 3. Range 6 used configuration 4. |              |                             |       |
| DEVIATIONS FROM TEST STANDARD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |              |                             |       |
| None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |              |                             |       |
| Configuration #                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 1,2,3,4      | Signature                   |       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |              | Value                       | Limit |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |              | Result                      |       |

|                                                 |        |     |      |
|-------------------------------------------------|--------|-----|------|
| 5G Band 25, 1930 MHz - 1995 MHz                 |        |     |      |
| (Single Carrier) Port 4, Mid Channel 1962.5 MHz |        |     |      |
| 5 MHz Bandwidth                                 |        |     |      |
| QPSK Modulation                                 |        |     |      |
| Range 1, 9 kHz - 150 kHz                        | -56.88 | -49 | Pass |
| Range 2, 150 kHz - 20 MHz                       | -55.46 | -39 | Pass |
| Range 3, 20 MHz - 3 GHz                         | -29.15 | -19 | Pass |
| Range 4, 3 GHz - 6 GHz                          | -35.39 | -19 | Pass |
| Range 5, 6 GHz - 18 GHz                         | -29.47 | -19 | Pass |
| Range 6, 18 GHz - 22 GHz                        | -21.21 | -19 | Pass |
| 16-QAM Modulation                               |        |     |      |
| Range 1, 9 kHz - 150 kHz                        | -58.05 | -49 | Pass |
| Range 2, 150 kHz - 20 MHz                       | -55.23 | -39 | Pass |
| Range 3, 20 MHz - 3 GHz                         | -29.45 | -19 | Pass |
| Range 4, 3 GHz - 6 GHz                          | -35.57 | -19 | Pass |
| Range 5, 6 GHz - 18 GHz                         | -29.89 | -19 | Pass |
| Range 6, 18 GHz - 22 GHz                        | -21.29 | -19 | Pass |
| 64-QAM Modulation                               |        |     |      |
| Range 1, 9 kHz - 150 kHz                        | -56.65 | -49 | Pass |
| Range 2, 150 kHz - 20 MHz                       | -55.43 | -39 | Pass |
| Range 3, 20 MHz - 3 GHz                         | -29.37 | -19 | Pass |
| Range 4, 3 GHz - 6 GHz                          | -34.92 | -19 | Pass |
| Range 5, 6 GHz - 18 GHz                         | -29.80 | -19 | Pass |
| Range 6, 18 GHz - 22 GHz                        | -21.31 | -19 | Pass |
| 256-QAM Modulation                              |        |     |      |
| Range 1, 9 kHz - 150 kHz                        | -57.71 | -49 | Pass |
| Range 2, 150 kHz - 20 MHz                       | -55.37 | -39 | Pass |
| Range 3, 20 MHz - 3 GHz                         | -29.61 | -19 | Pass |
| Range 4, 3 GHz - 6 GHz                          | -34.95 | -19 | Pass |
| Range 5, 6 GHz - 18 GHz                         | -29.15 | -19 | Pass |
| Range 6, 18 GHz - 22 GHz                        | -21.09 | -19 | Pass |
| 10 MHz Bandwidth                                |        |     |      |
| 256-QAM Modulation                              |        |     |      |
| Range 1, 9 kHz - 150 kHz                        | -56.93 | -49 | Pass |
| Range 2, 150 kHz - 20 MHz                       | -54.69 | -39 | Pass |
| Range 3, 20 MHz - 3 GHz                         | -29.09 | -19 | Pass |
| Range 4, 3 GHz - 6 GHz                          | -35.46 | -19 | Pass |
| Range 5, 6 GHz - 18 GHz                         | -30.11 | -19 | Pass |
| Range 6, 18 GHz - 22 GHz                        | -21.09 | -19 | Pass |
| 15 MHz Bandwidth                                |        |     |      |
| 256-QAM Modulation                              |        |     |      |
| Range 1, 9 kHz - 150 kHz                        | -55.94 | -49 | Pass |
| Range 2, 150 kHz - 20 MHz                       | -55.11 | -39 | Pass |
| Range 3, 20 MHz - 3 GHz                         | -29.08 | -19 | Pass |
| Range 4, 3 GHz - 6 GHz                          | -35.52 | -19 | Pass |
| Range 5, 6 GHz - 18 GHz                         | -29.58 | -19 | Pass |
| Range 6, 18 GHz - 22 GHz                        | -20.47 | -19 | Pass |
| 20 MHz Bandwidth                                |        |     |      |
| 256-QAM Modulation                              |        |     |      |
| Range 1, 9 kHz - 150 kHz                        | -57.02 | -49 | Pass |
| Range 2, 150 kHz - 20 MHz                       | -55.73 | -39 | Pass |
| Range 3, 20 MHz - 3 GHz                         | -29.09 | -19 | Pass |
| Range 4, 3 GHz - 6 GHz                          | -35.79 | -19 | Pass |
| Range 5, 6 GHz - 18 GHz                         | -30.12 | -19 | Pass |
| Range 6, 18 GHz - 22 GHz                        | -21.01 | -19 | Pass |

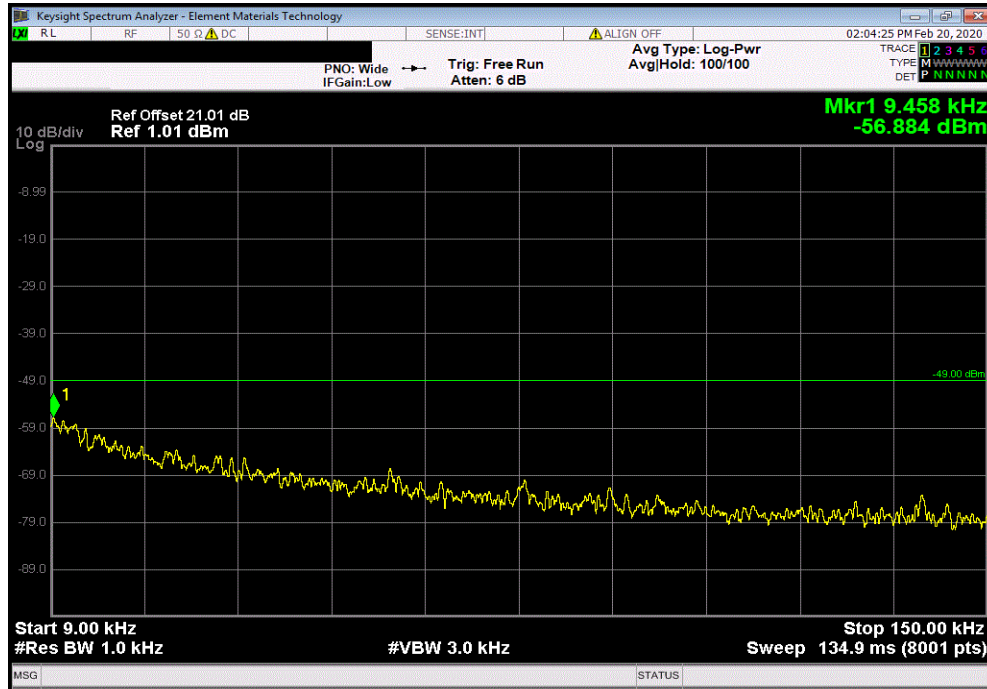
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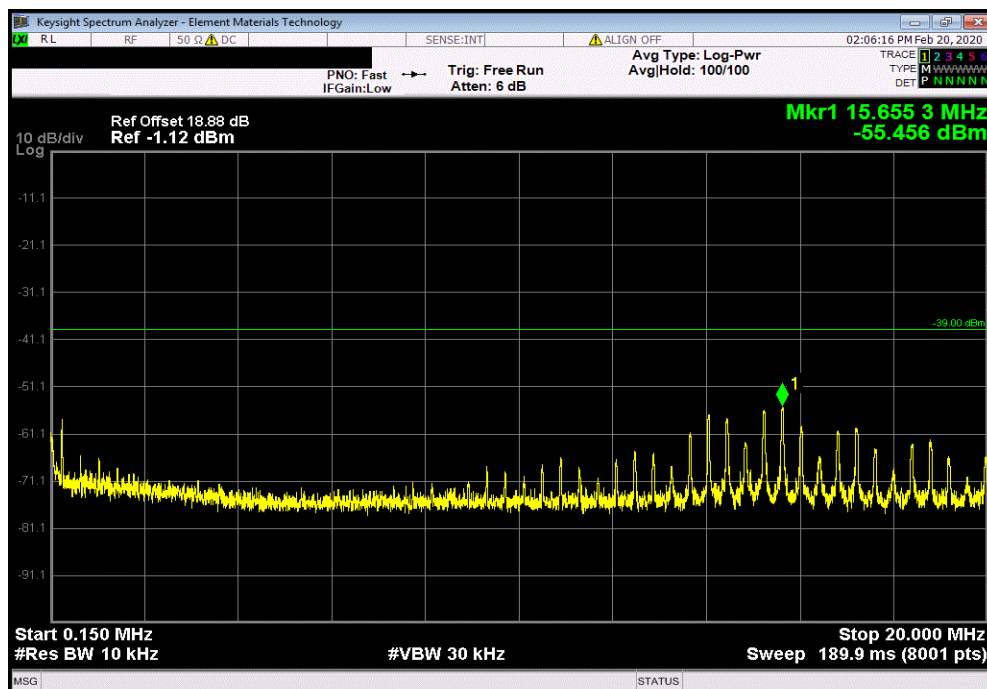
5G Band 25, 1930 MHz - 1995 MHz, (Single Carrier) Port 4, Mid Channel 1962.5 MHz, 5 MHz Bandwidth, QPSK Modulation , Range 1, 9 kHz - 150 kHz

|  | Value   | Limit | Result |
|--|---------|-------|--------|
|  | -56.884 | -49   | Pass   |



5G Band 25, 1930 MHz - 1995 MHz, (Single Carrier) Port 4, Mid Channel 1962.5 MHz, 5 MHz Bandwidth, QPSK Modulation , Range 2, 150 kHz - 20 MHz

|  | Value   | Limit | Result |
|--|---------|-------|--------|
|  | -55.456 | -39   | Pass   |

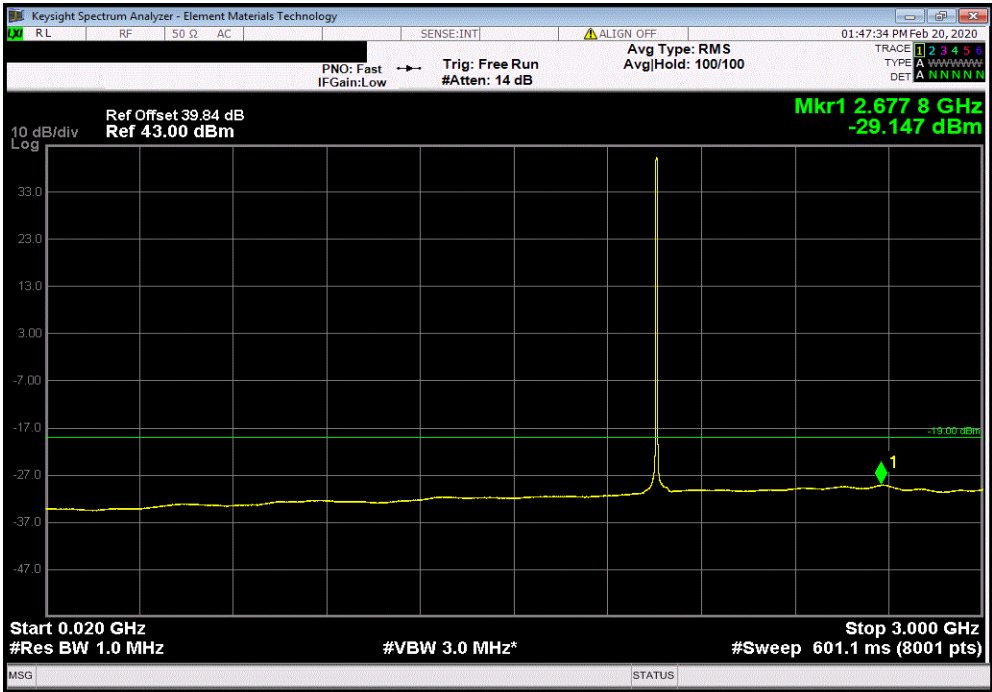


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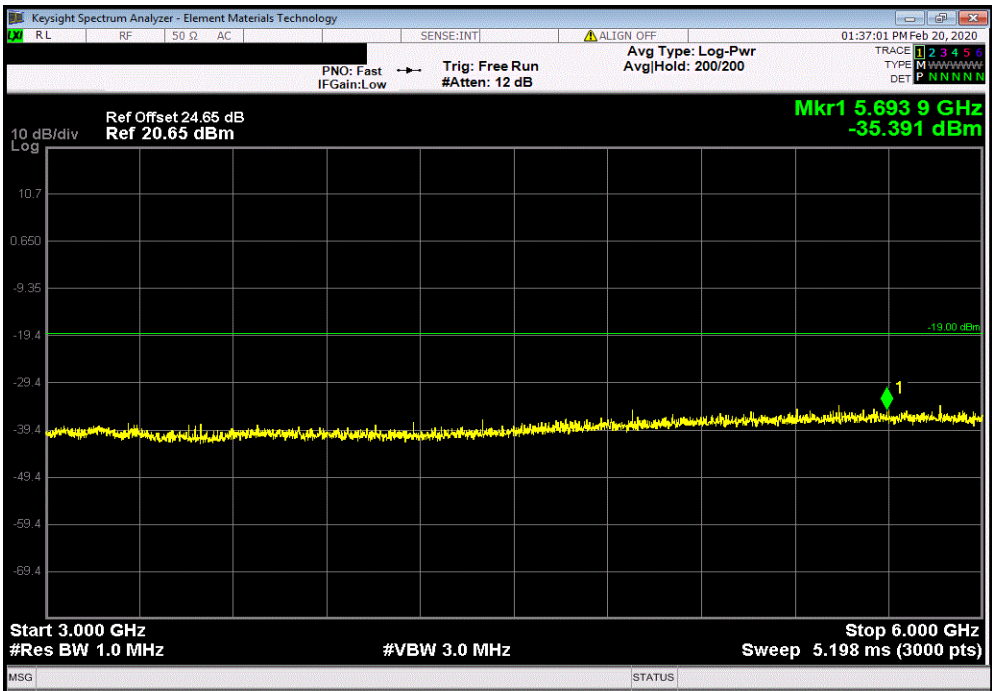


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|                                                                                                                                              |  |  |  |         |       |        |
|----------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|---------|-------|--------|
| 5G Band 25, 1930 MHz - 1995 MHz, (Single Carrier) Port 4, Mid Channel 1962.5 MHz, 5 MHz Bandwidth, QPSK Modulation , Range 3, 20 MHz - 3 GHz |  |  |  |         |       |        |
|                                                                                                                                              |  |  |  | Value   | Limit | Result |
|                                                                                                                                              |  |  |  | -29.147 | -19   | Pass   |



|                                                                                                                                             |  |  |  |         |       |        |
|---------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|---------|-------|--------|
| 5G Band 25, 1930 MHz - 1995 MHz, (Single Carrier) Port 4, Mid Channel 1962.5 MHz, 5 MHz Bandwidth, QPSK Modulation , Range 4, 3 GHz - 6 GHz |  |  |  |         |       |        |
|                                                                                                                                             |  |  |  | Value   | Limit | Result |
|                                                                                                                                             |  |  |  | -35.391 | -19   | Pass   |



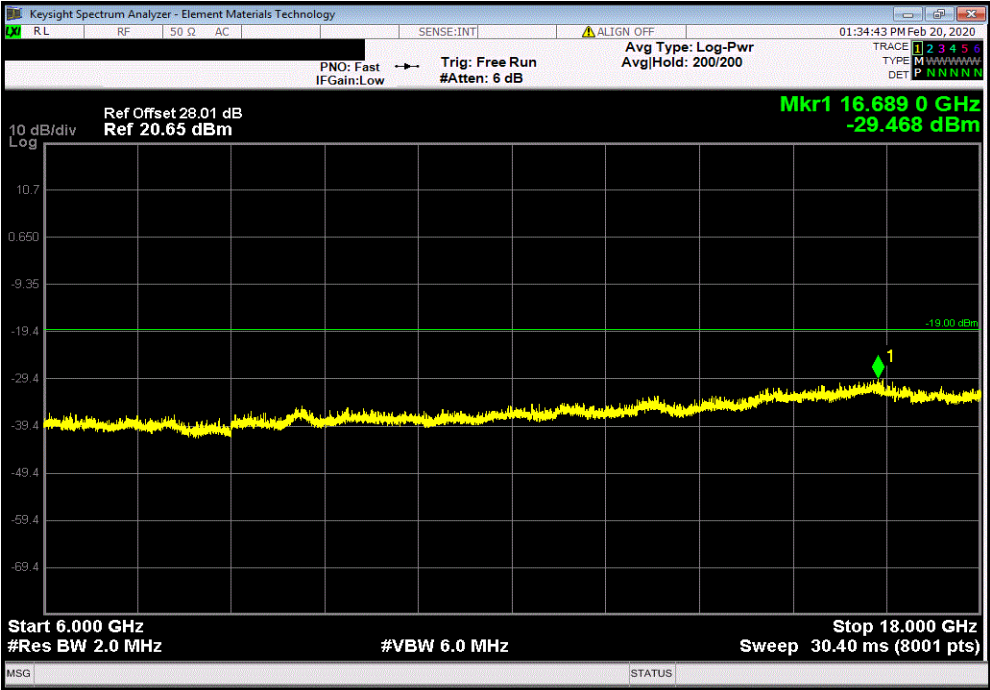
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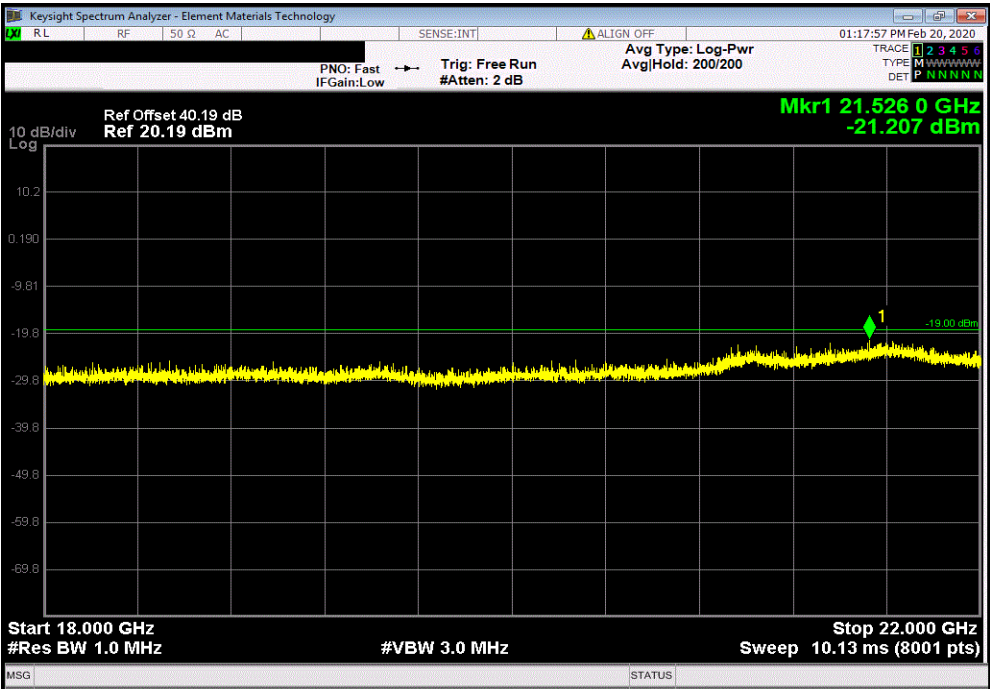
5G Band 25, 1930 MHz - 1995 MHz, (Single Carrier) Port 4, Mid Channel 1962.5 MHz, 5 MHz Bandwidth, QPSK Modulation , Range 5, 6 GHz - 18 GHz

|  | Value   | Limit | Result |
|--|---------|-------|--------|
|  | -29.468 | -19   | Pass   |



5G Band 25, 1930 MHz - 1995 MHz, (Single Carrier) Port 4, Mid Channel 1962.5 MHz, 5 MHz Bandwidth, QPSK Modulation , Range 6, 18 GHz - 22 GHz

|  | Value   | Limit | Result |
|--|---------|-------|--------|
|  | -21.207 | -19   | Pass   |



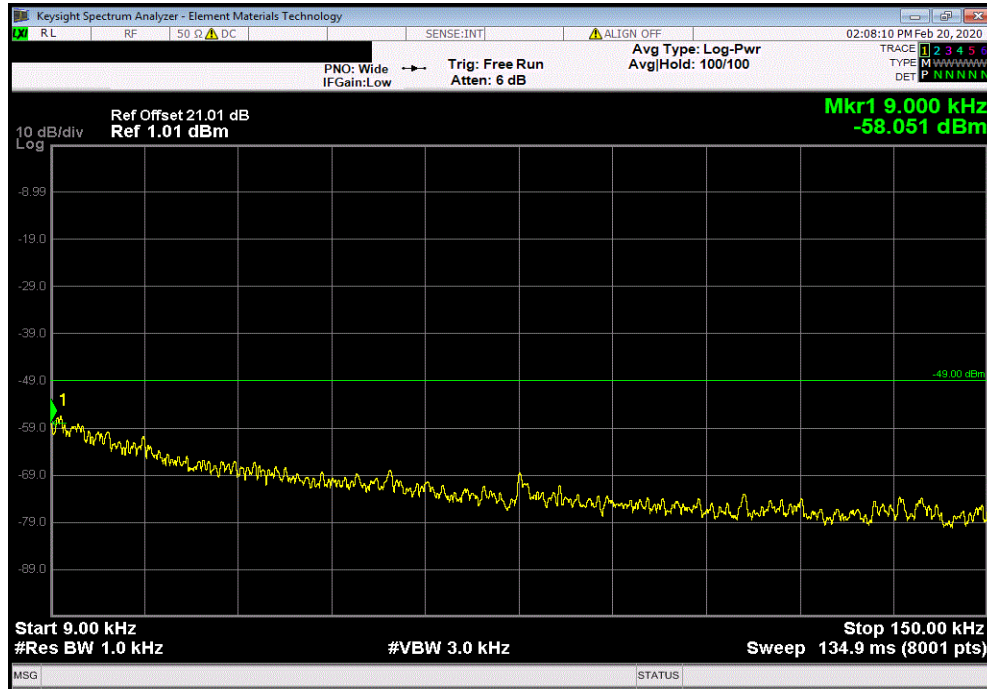
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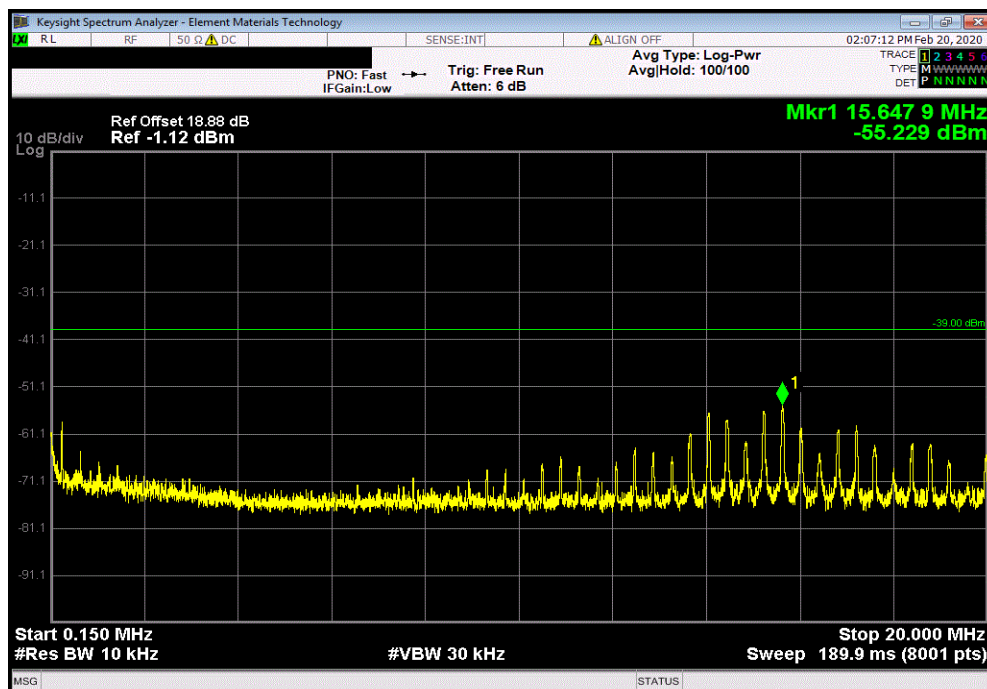
5G Band 25, 1930 MHz - 1995 MHz, (Single Carrier) Port 4, Mid Channel 1962.5 MHz, 5 MHz Bandwidth, 16-QAM Modulation, Range 1, 9 kHz - 150 kHz

|  |  |  |  | Value   | Limit | Result |
|--|--|--|--|---------|-------|--------|
|  |  |  |  | -58.051 | -49   | Pass   |



5G Band 25, 1930 MHz - 1995 MHz, (Single Carrier) Port 4, Mid Channel 1962.5 MHz, 5 MHz Bandwidth, 16-QAM Modulation, Range 2, 150 kHz - 20 MHz

|  |  |  |  | Value   | Limit | Result |
|--|--|--|--|---------|-------|--------|
|  |  |  |  | -55.229 | -39   | Pass   |



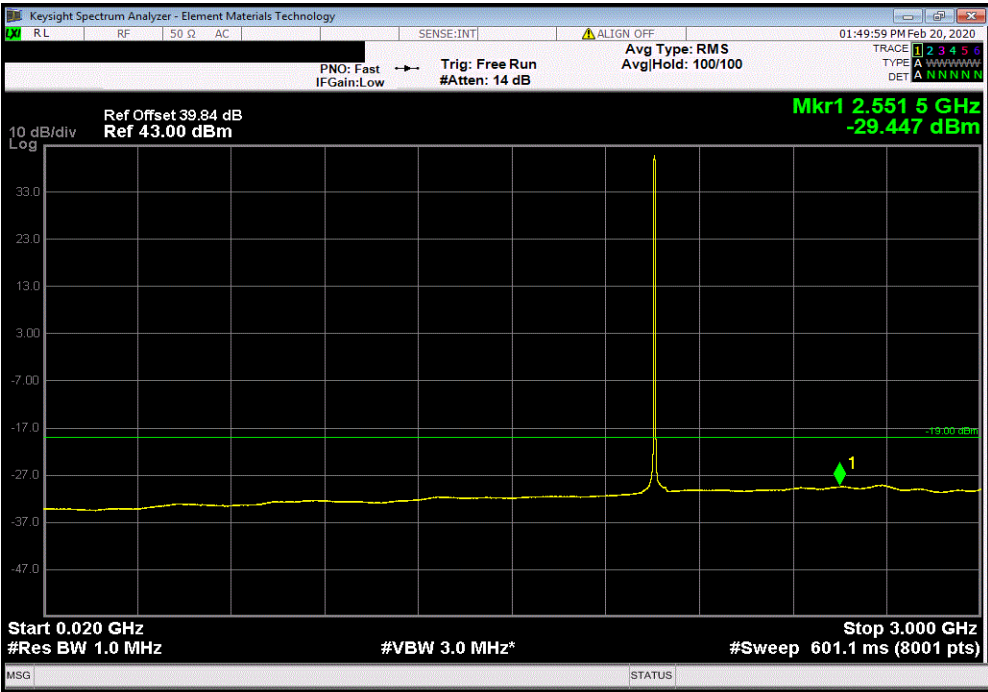
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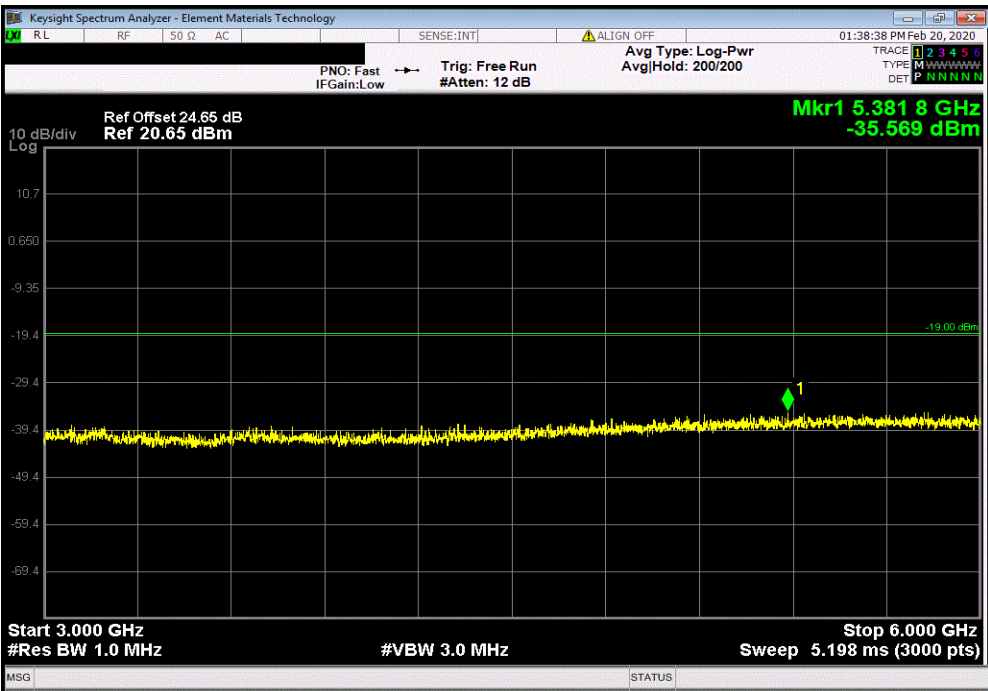
5G Band 25, 1930 MHz - 1995 MHz, (Single Carrier) Port 4, Mid Channel 1962.5 MHz, 5 MHz Bandwidth, 16-QAM Modulation, Range 3, 20 MHz - 3 GHz

|  |  |  |  | Value   | Limit | Result |
|--|--|--|--|---------|-------|--------|
|  |  |  |  | -29.447 | -19   | Pass   |



5G Band 25, 1930 MHz - 1995 MHz, (Single Carrier) Port 4, Mid Channel 1962.5 MHz, 5 MHz Bandwidth, 16-QAM Modulation, Range 4, 3 GHz - 6 GHz

|  |  |  |  | Value   | Limit | Result |
|--|--|--|--|---------|-------|--------|
|  |  |  |  | -35.569 | -19   | Pass   |



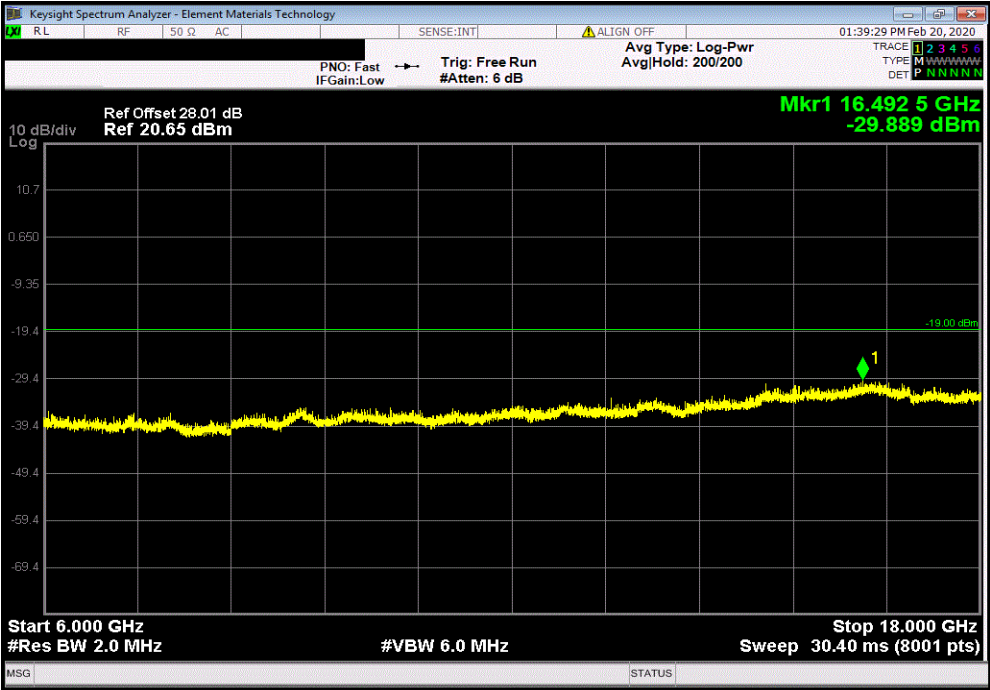
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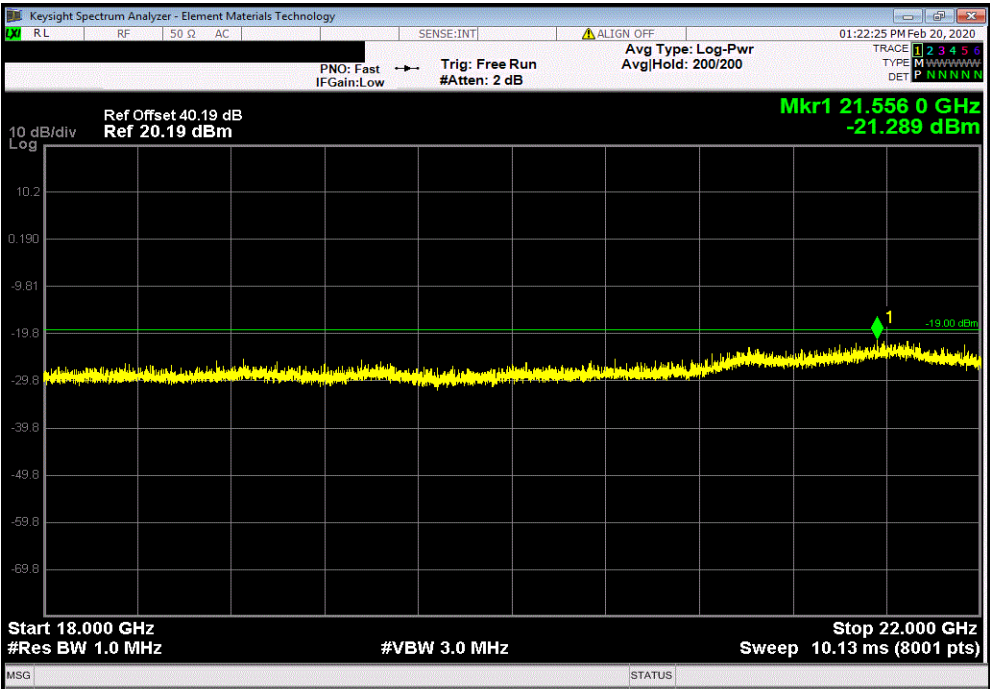
5G Band 25, 1930 MHz - 1995 MHz, (Single Carrier) Port 4, Mid Channel 1962.5 MHz, 5 MHz Bandwidth, 16-QAM Modulation, Range 5, 6 GHz - 18 GHz

|  |  |  |  | Value   | Limit | Result |
|--|--|--|--|---------|-------|--------|
|  |  |  |  | -29.889 | -19   | Pass   |



5G Band 25, 1930 MHz - 1995 MHz, (Single Carrier) Port 4, Mid Channel 1962.5 MHz, 5 MHz Bandwidth, 16-QAM Modulation, Range 6, 18 GHz - 22 GHz

|  |  |  |  | Value   | Limit | Result |
|--|--|--|--|---------|-------|--------|
|  |  |  |  | -21.289 | -19   | Pass   |



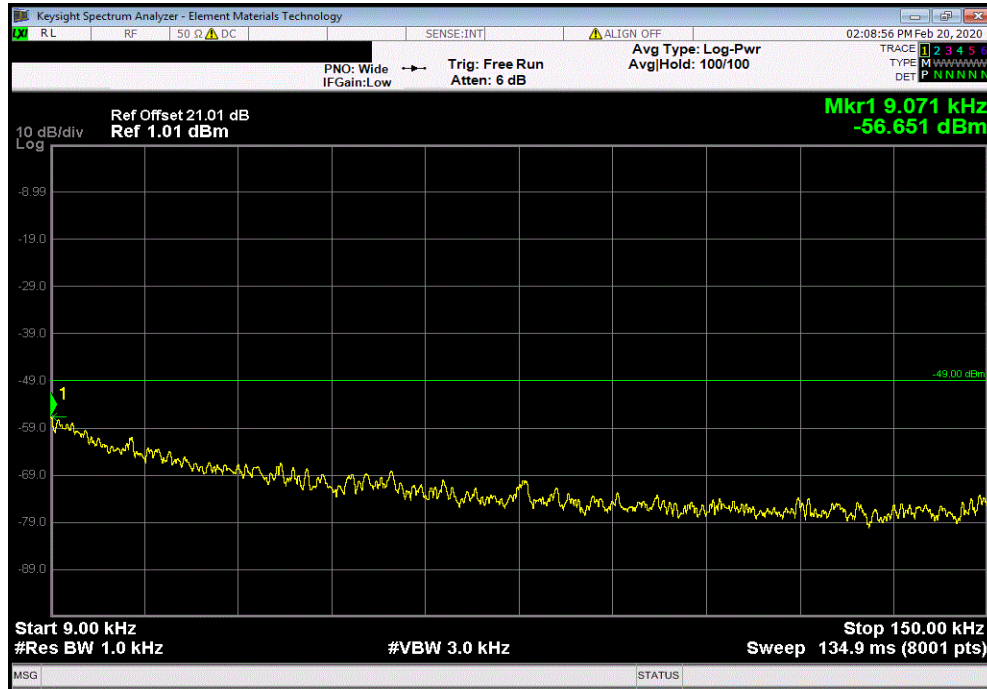
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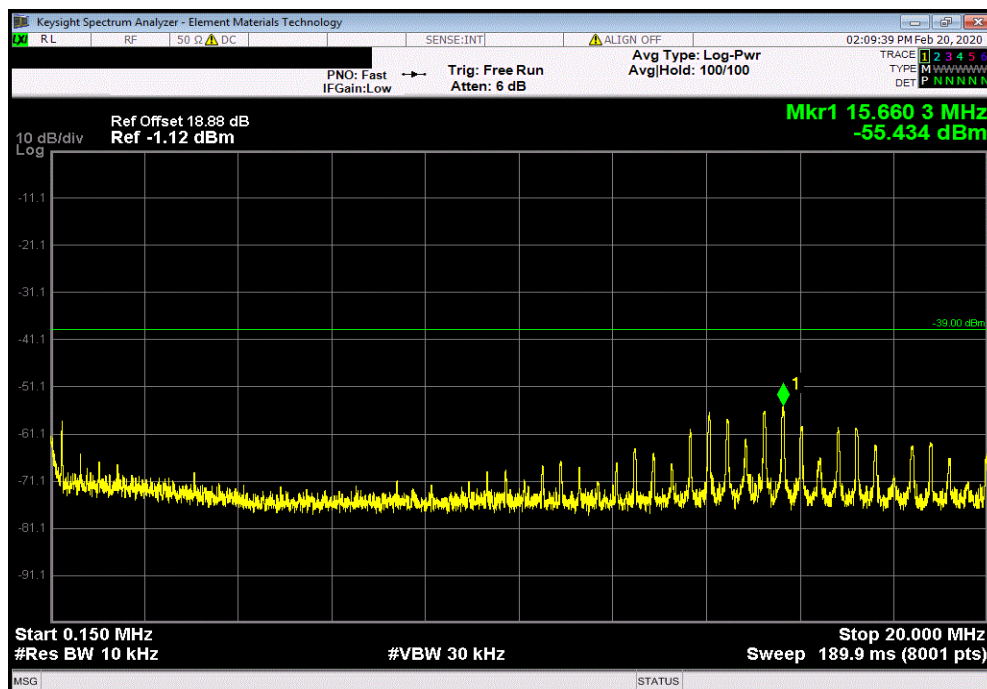
5G Band 25, 1930 MHz - 1995 MHz, (Single Carrier) Port 4, Mid Channel 1962.5 MHz, 5 MHz Bandwidth, 64-QAM Modulation, Range 1, 9 kHz - 150 kHz

|  | Value   | Limit | Result |
|--|---------|-------|--------|
|  | -56.651 | -49   | Pass   |



5G Band 25, 1930 MHz - 1995 MHz, (Single Carrier) Port 4, Mid Channel 1962.5 MHz, 5 MHz Bandwidth, 64-QAM Modulation, Range 2, 150 kHz - 20 MHz

|  | Value   | Limit | Result |
|--|---------|-------|--------|
|  | -55.434 | -39   | Pass   |



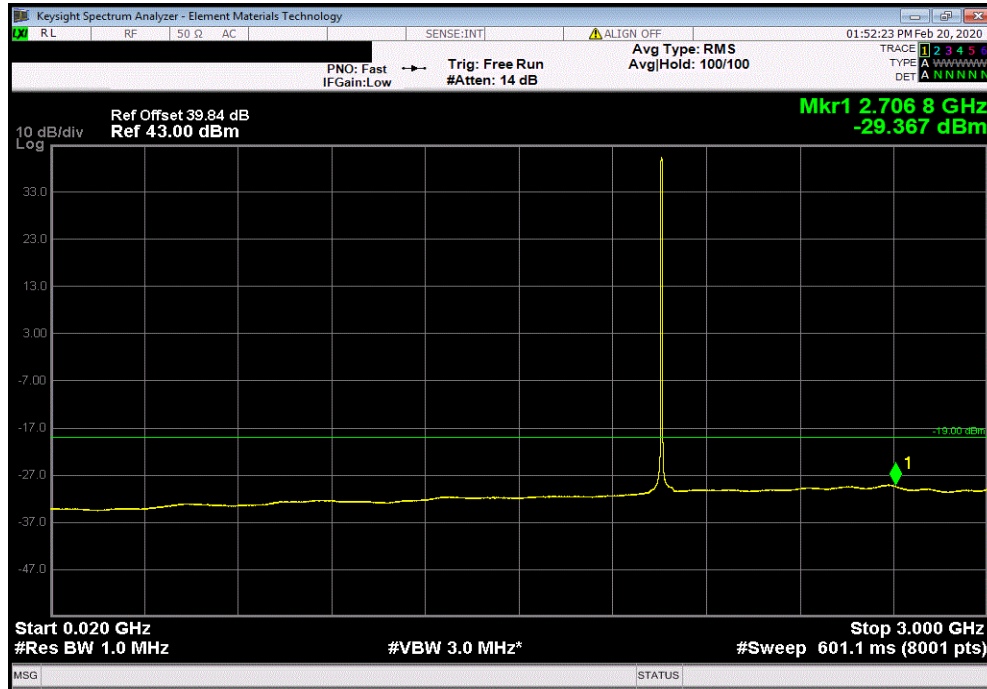
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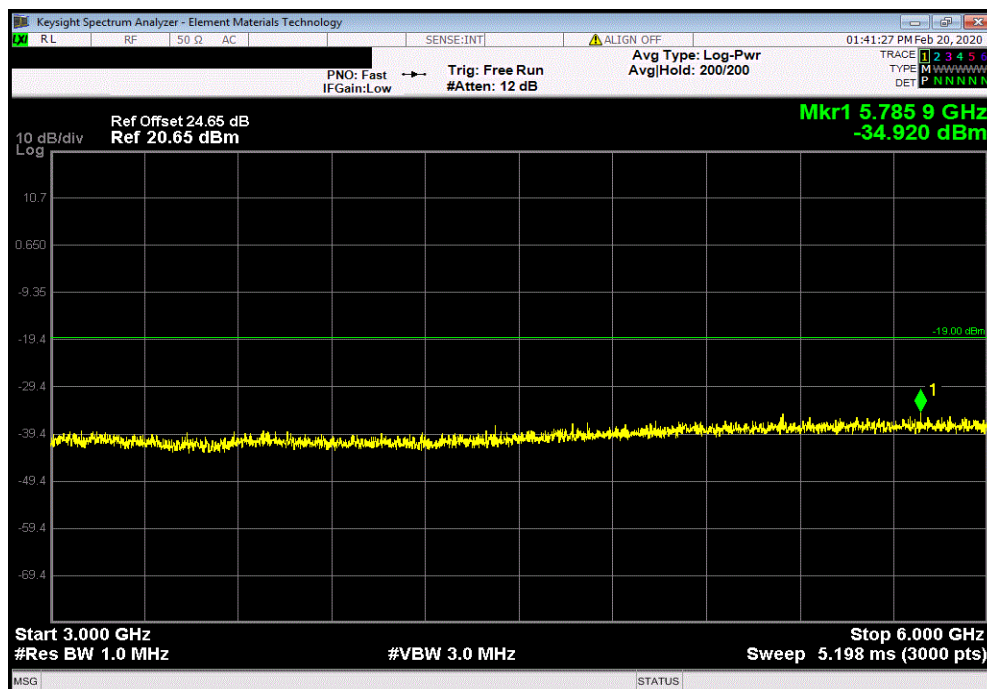
5G Band 25, 1930 MHz - 1995 MHz, (Single Carrier) Port 4, Mid Channel 1962.5 MHz, 5 MHz Bandwidth, 64-QAM Modulation, Range 3, 20 MHz - 3 GHz

|  |  |  |  | Value   | Limit | Result |
|--|--|--|--|---------|-------|--------|
|  |  |  |  | -29.367 | -19   | Pass   |



5G Band 25, 1930 MHz - 1995 MHz, (Single Carrier) Port 4, Mid Channel 1962.5 MHz, 5 MHz Bandwidth, 64-QAM Modulation, Range 4, 3 GHz - 6 GHz

|  |  |  |  | Value  | Limit | Result |
|--|--|--|--|--------|-------|--------|
|  |  |  |  | -34.92 | -19   | Pass   |



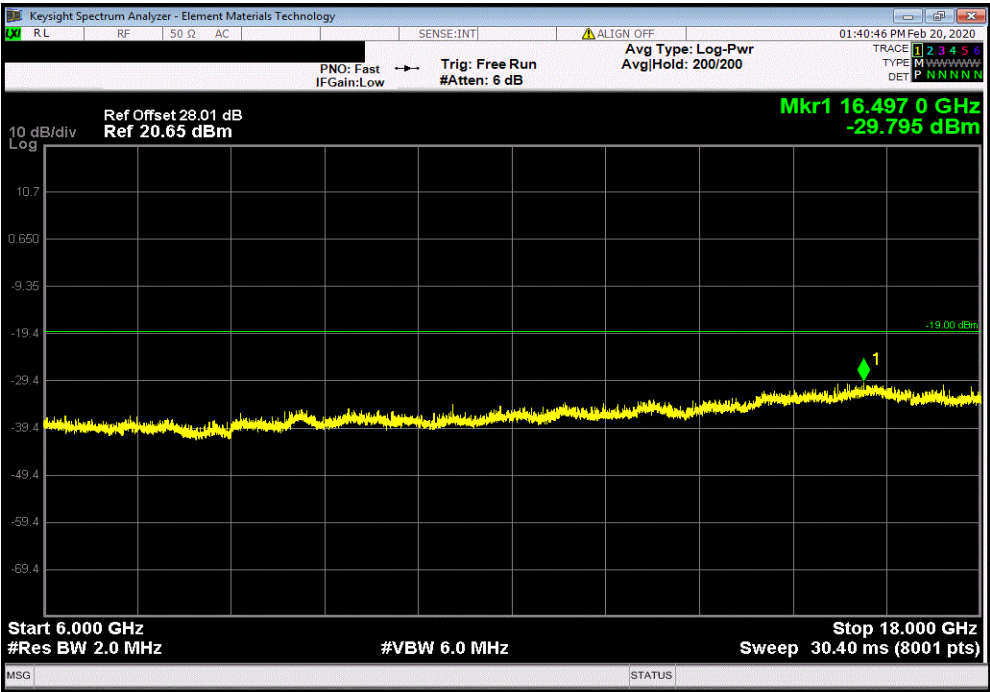
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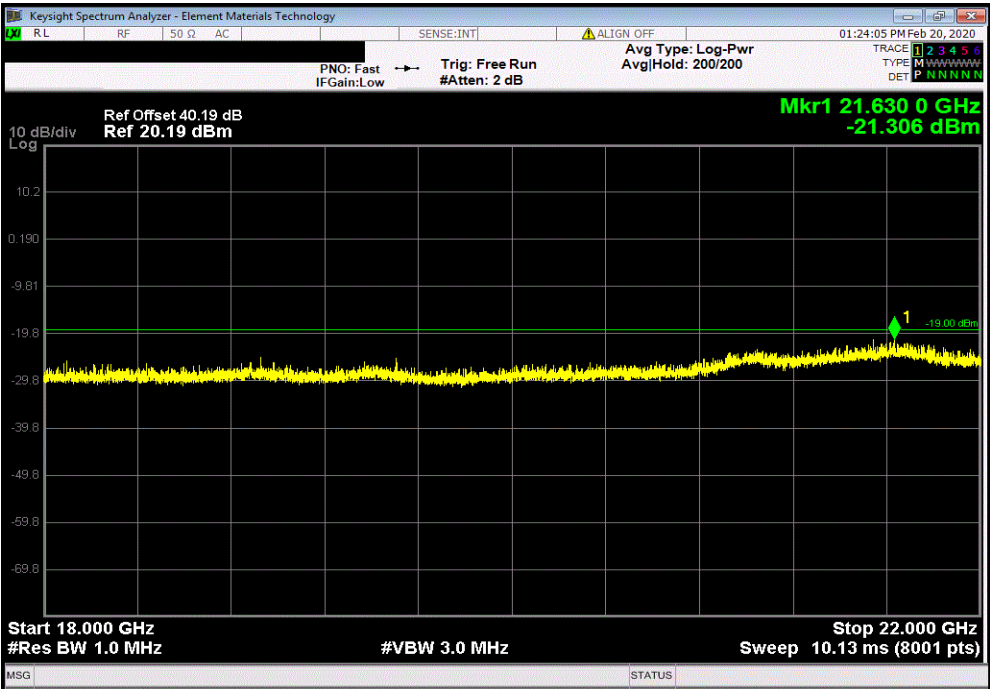
5G Band 25, 1930 MHz - 1995 MHz, (Single Carrier) Port 4, Mid Channel 1962.5 MHz, 5 MHz Bandwidth, 64-QAM Modulation, Range 5, 6 GHz - 18 GHz

|  | Value   | Limit | Result |
|--|---------|-------|--------|
|  | -29.795 | -19   | Pass   |



5G Band 25, 1930 MHz - 1995 MHz, (Single Carrier) Port 4, Mid Channel 1962.5 MHz, 5 MHz Bandwidth, 64-QAM Modulation, Range 6, 18 GHz - 22 GHz

|  | Value   | Limit | Result |
|--|---------|-------|--------|
|  | -21.306 | -19   | Pass   |



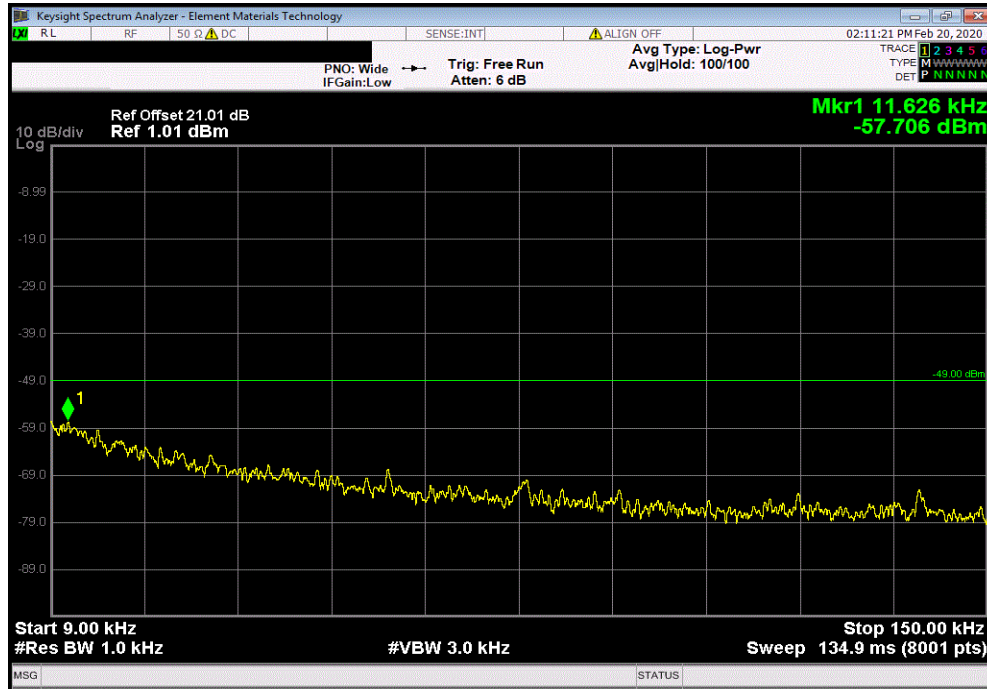
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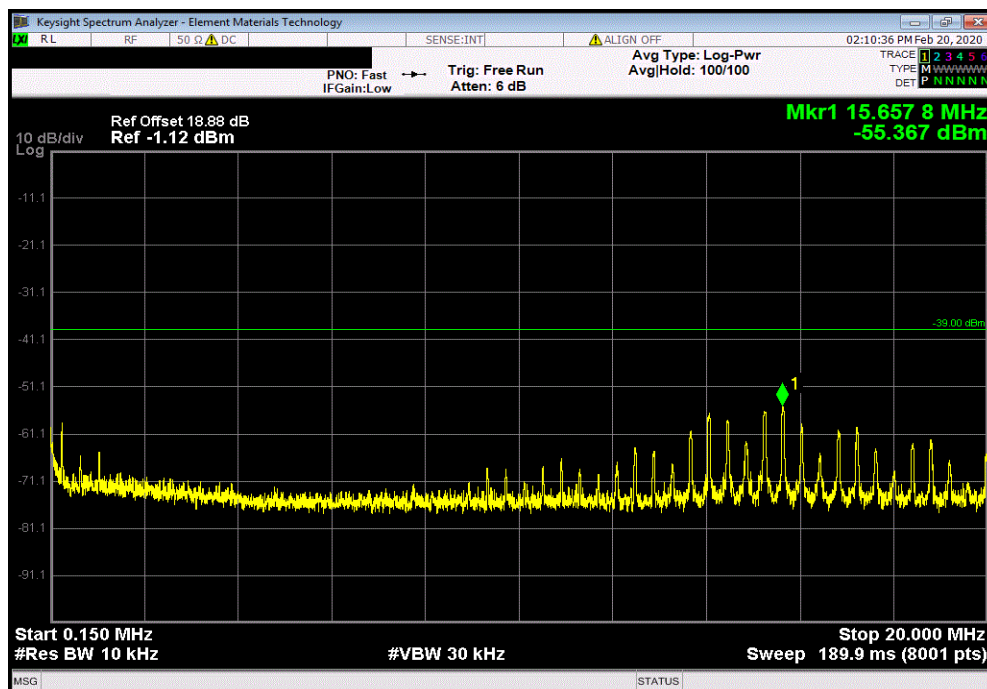
5G Band 25, 1930 MHz - 1995 MHz, (Single Carrier) Port 4, Mid Channel 1962.5 MHz, 5 MHz Bandwidth, 256-QAM Modulation, Range 1, 9 kHz - 150 kHz

|  | Value   | Limit | Result |
|--|---------|-------|--------|
|  | -57.706 | -49   | Pass   |



5G Band 25, 1930 MHz - 1995 MHz, (Single Carrier) Port 4, Mid Channel 1962.5 MHz, 5 MHz Bandwidth, 256-QAM Modulation, Range 2, 150 kHz - 20 MHz

|  | Value   | Limit | Result |
|--|---------|-------|--------|
|  | -55.367 | -39   | Pass   |



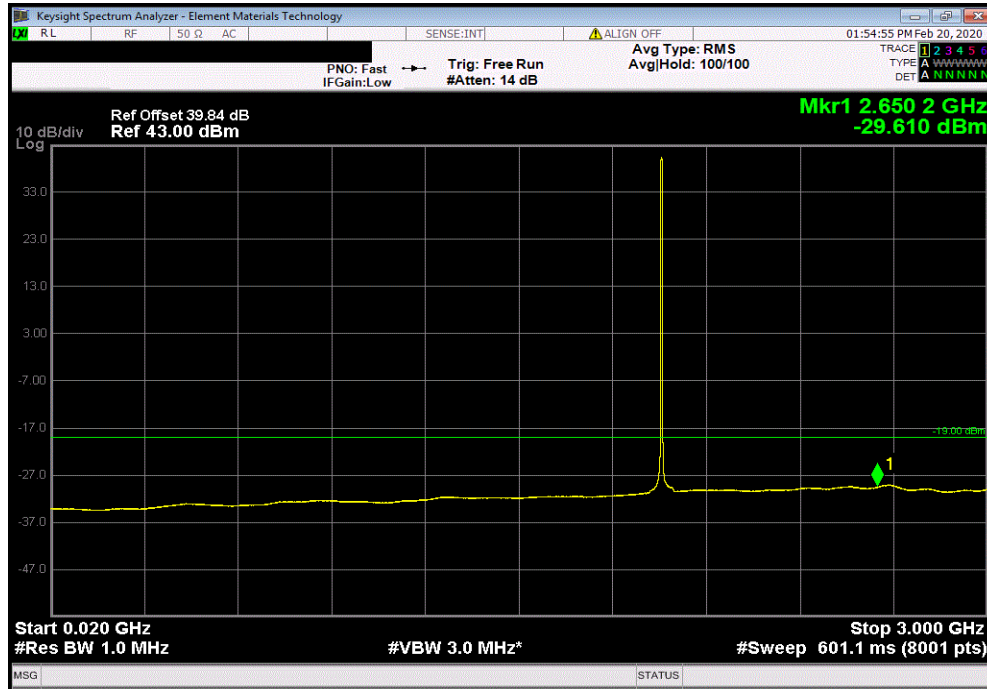
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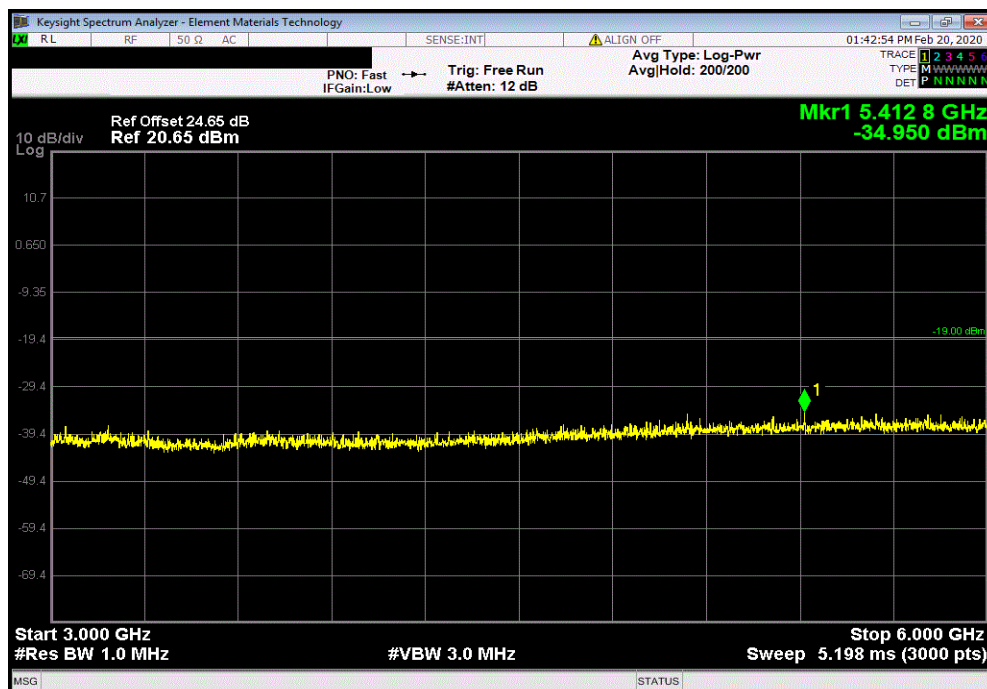
5G Band 25, 1930 MHz - 1995 MHz, (Single Carrier) Port 4, Mid Channel 1962.5 MHz, 5 MHz Bandwidth, 256-QAM Modulation, Range 3, 20 MHz - 3 GHz

|  |  |  |  | Value  | Limit | Result |
|--|--|--|--|--------|-------|--------|
|  |  |  |  | -29.61 | -19   | Pass   |



5G Band 25, 1930 MHz - 1995 MHz, (Single Carrier) Port 4, Mid Channel 1962.5 MHz, 5 MHz Bandwidth, 256-QAM Modulation, Range 4, 3 GHz - 6 GHz

|  |  |  |  | Value  | Limit | Result |
|--|--|--|--|--------|-------|--------|
|  |  |  |  | -34.95 | -19   | Pass   |



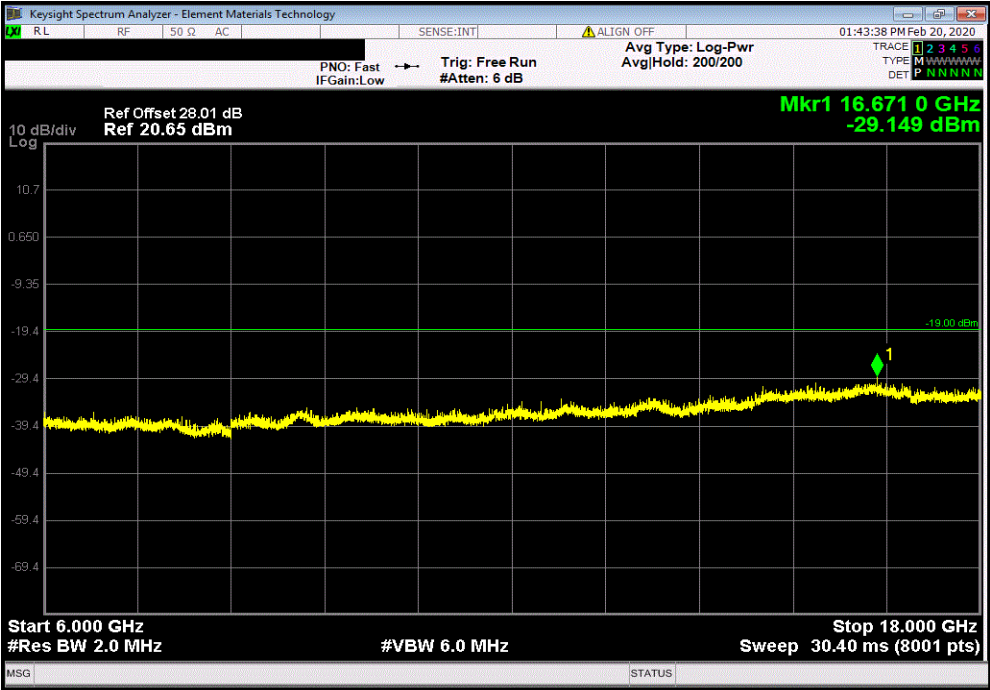
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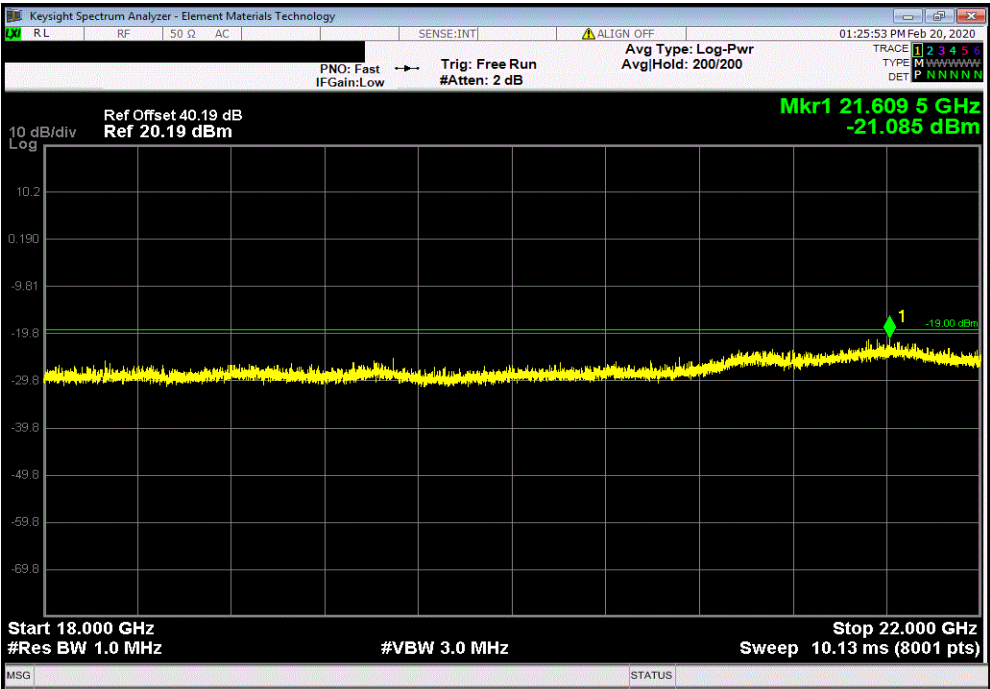
5G Band 25, 1930 MHz - 1995 MHz, (Single Carrier) Port 4, Mid Channel 1962.5 MHz, 5 MHz Bandwidth, 256-QAM Modulation, Range 5, 6 GHz - 18 GHz

|  | Value   | Limit | Result |
|--|---------|-------|--------|
|  | -29.149 | -19   | Pass   |



5G Band 25, 1930 MHz - 1995 MHz, (Single Carrier) Port 4, Mid Channel 1962.5 MHz, 5 MHz Bandwidth, 256-QAM Modulation, Range 6, 18 GHz - 22 GHz

|  | Value   | Limit | Result |
|--|---------|-------|--------|
|  | -21.085 | -19   | Pass   |



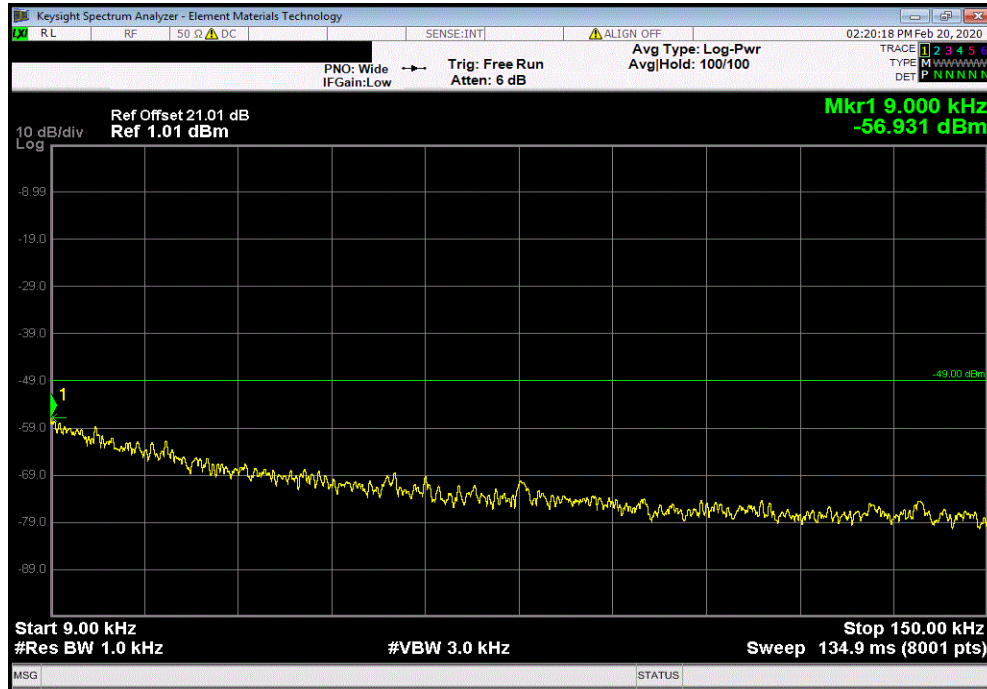
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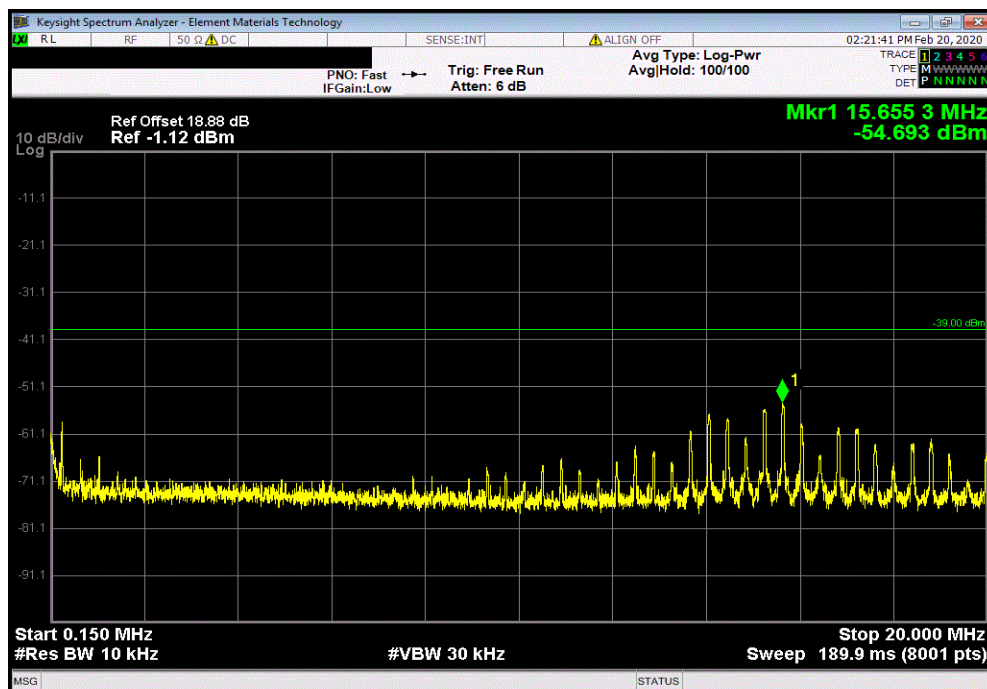
5G Band 25, 1930 MHz - 1995 MHz, (Single Carrier) Port 4, Mid Channel 1962.5 MHz, 10 MHz Bandwidth, 256-QAM Modulation, Range 1, 9 kHz - 150 kHz

| Value   | Limit | Result |
|---------|-------|--------|
| -56.931 | -49   | Pass   |



5G Band 25, 1930 MHz - 1995 MHz, (Single Carrier) Port 4, Mid Channel 1962.5 MHz, 10 MHz Bandwidth, 256-QAM Modulation, Range 2, 150 kHz - 20 MHz

| Value   | Limit | Result |
|---------|-------|--------|
| -54.693 | -39   | Pass   |



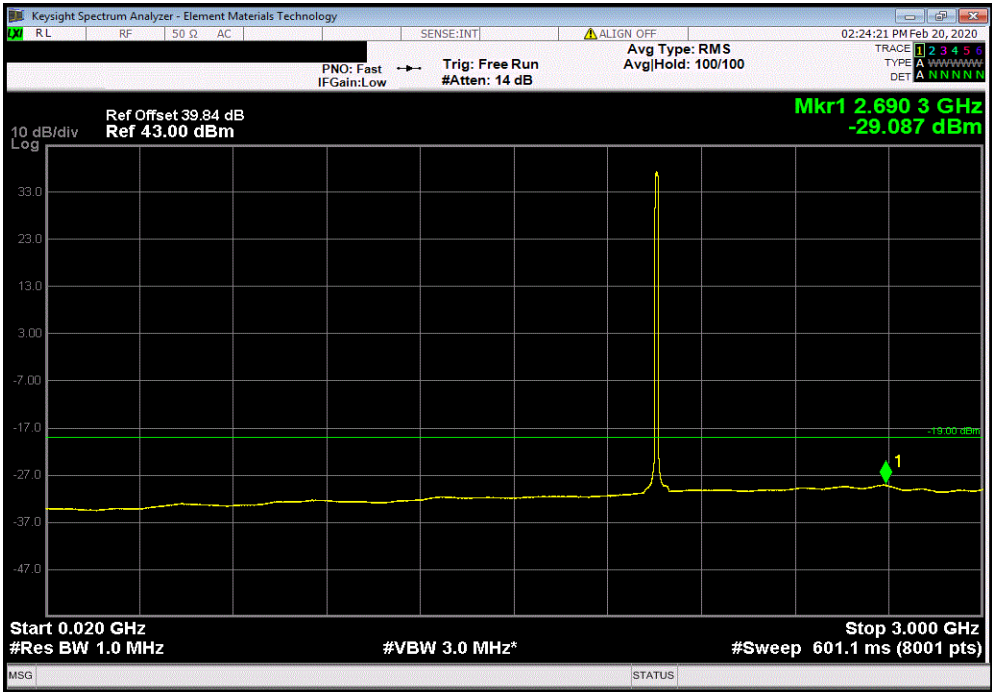
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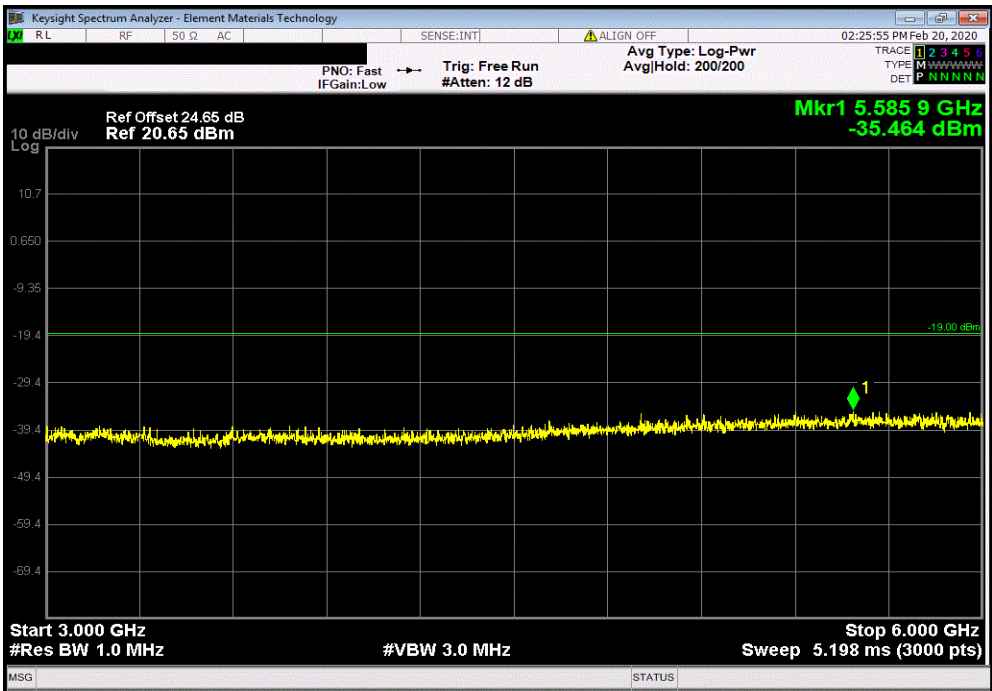
5G Band 25, 1930 MHz - 1995 MHz, (Single Carrier) Port 4, Mid Channel 1962.5 MHz, 10 MHz Bandwidth, 256-QAM Modulation, Range 3, 20 MHz - 3 GHz

|  |  |  |  | Value   | Limit | Result |
|--|--|--|--|---------|-------|--------|
|  |  |  |  | -29.087 | -19   | Pass   |



5G Band 25, 1930 MHz - 1995 MHz, (Single Carrier) Port 4, Mid Channel 1962.5 MHz, 10 MHz Bandwidth, 256-QAM Modulation, Range 4, 3 GHz - 6 GHz

|  |  |  |  | Value   | Limit | Result |
|--|--|--|--|---------|-------|--------|
|  |  |  |  | -35.464 | -19   | Pass   |



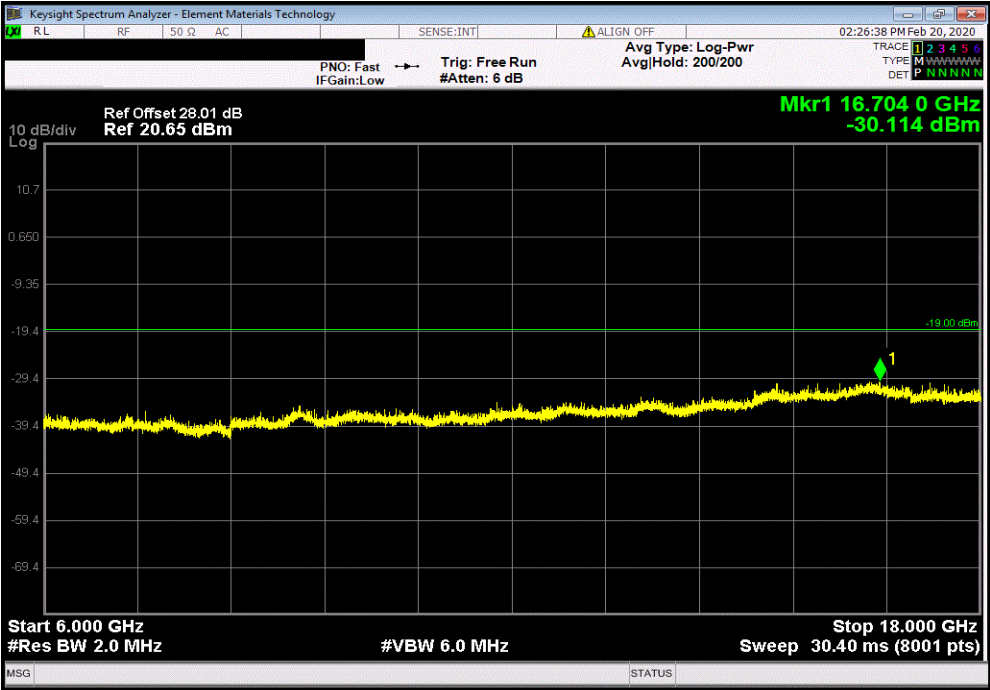
# SPURIOUS CONDUCTED EMISSIONS BAND 25



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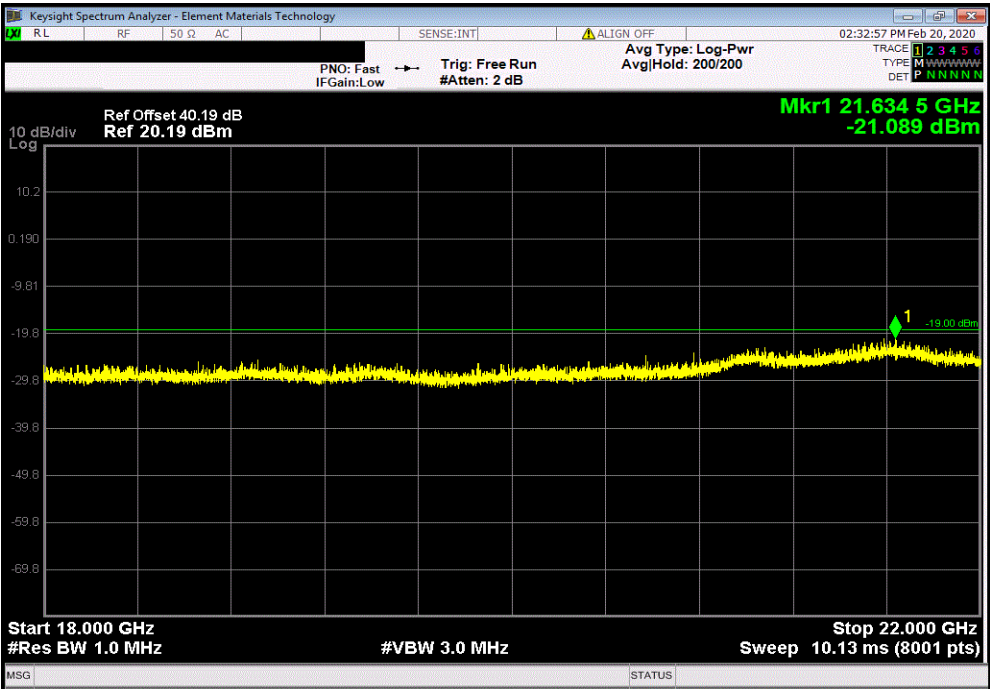
5G Band 25, 1930 MHz - 1995 MHz, (Single Carrier) Port 4, Mid Channel 1962.5 MHz, 10 MHz Bandwidth, 256-QAM Modulation, Range 5, 6 GHz - 18 GHz

|  |  |  |  | Value   | Limit | Result |
|--|--|--|--|---------|-------|--------|
|  |  |  |  | -30.114 | -19   | Pass   |



5G Band 25, 1930 MHz - 1995 MHz, (Single Carrier) Port 4, Mid Channel 1962.5 MHz, 10 MHz Bandwidth, 256-QAM Modulation, Range 6, 18 GHz - 22 GHz

|  |  |  |  | Value   | Limit | Result |
|--|--|--|--|---------|-------|--------|
|  |  |  |  | -21.089 | -19   | Pass   |



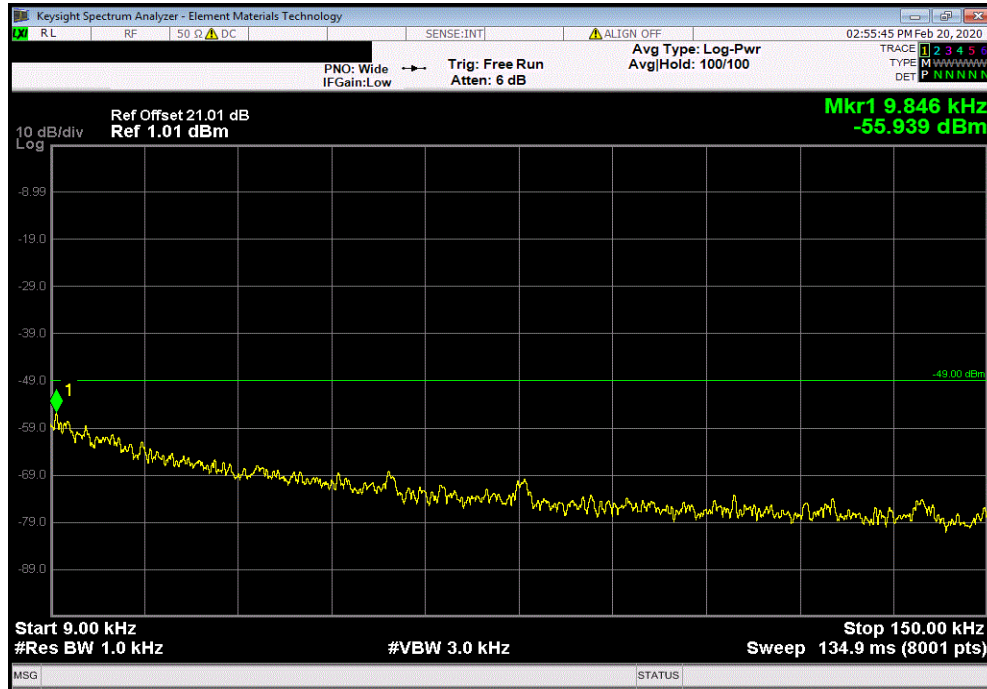
# SPURIOUS CONDUCTED EMISSIONS BAND 25



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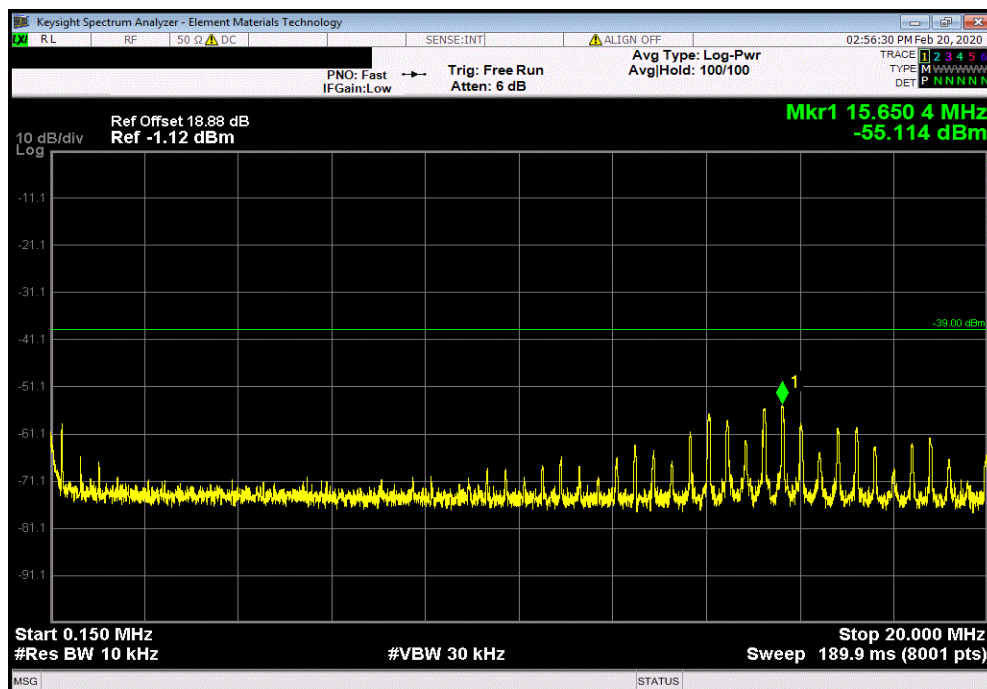
5G Band 25, 1930 MHz - 1995 MHz, (Single Carrier) Port 4, Mid Channel 1962.5 MHz, 15 MHz Bandwidth, 256-QAM Modulation, Range 1, 9 kHz - 150 kHz

|  | Value   | Limit | Result |
|--|---------|-------|--------|
|  | -55.939 | -49   | Pass   |



5G Band 25, 1930 MHz - 1995 MHz, (Single Carrier) Port 4, Mid Channel 1962.5 MHz, 15 MHz Bandwidth, 256-QAM Modulation, Range 2, 150 kHz - 20 MHz

|  | Value   | Limit | Result |
|--|---------|-------|--------|
|  | -55.114 | -39   | Pass   |



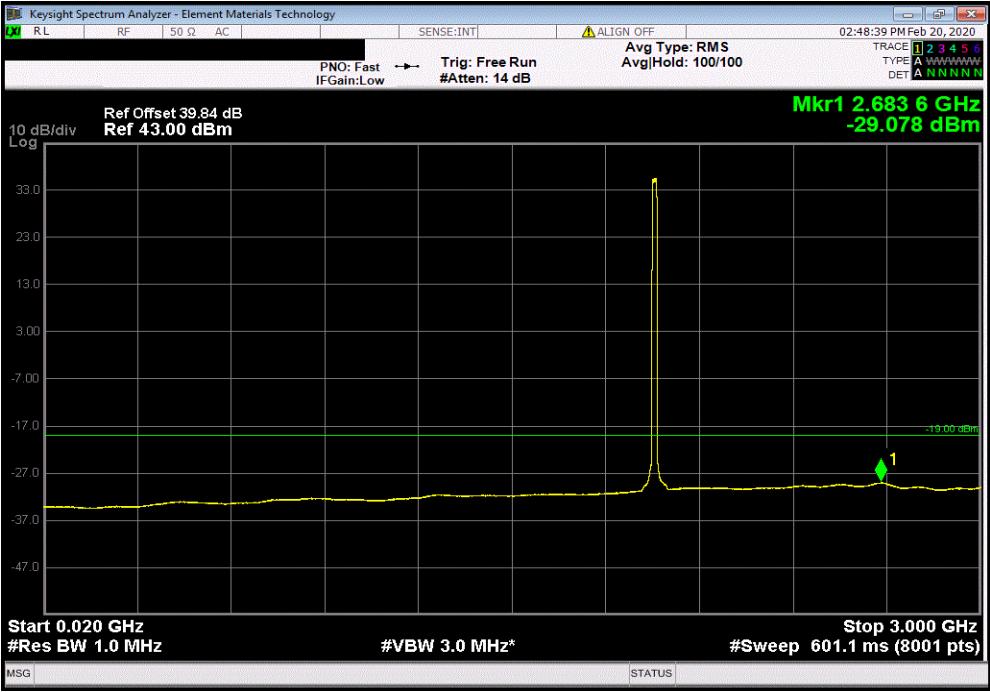
# SPURIOUS CONDUCTED EMISSIONS BAND 25



XMI 2019.09.05

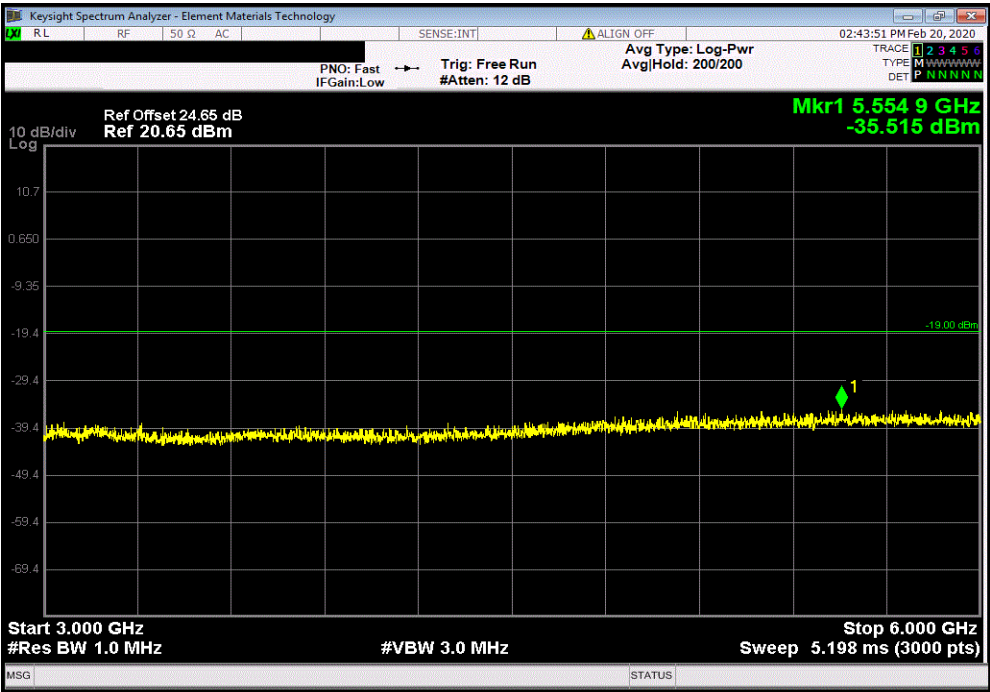
5G Band 25, 1930 MHz - 1995 MHz, (Single Carrier) Port 4, Mid Channel 1962.5 MHz, 15 MHz Bandwidth, 256-QAM Modulation, Range 3, 20 MHz - 3 GHz

|  |  |  |  | Value   | Limit | Result |
|--|--|--|--|---------|-------|--------|
|  |  |  |  | -29.078 | -19   | Pass   |



5G Band 25, 1930 MHz - 1995 MHz, (Single Carrier) Port 4, Mid Channel 1962.5 MHz, 15 MHz Bandwidth, 256-QAM Modulation, Range 4, 3 GHz - 6 GHz

|  |  |  |  | Value   | Limit | Result |
|--|--|--|--|---------|-------|--------|
|  |  |  |  | -35.515 | -19   | Pass   |



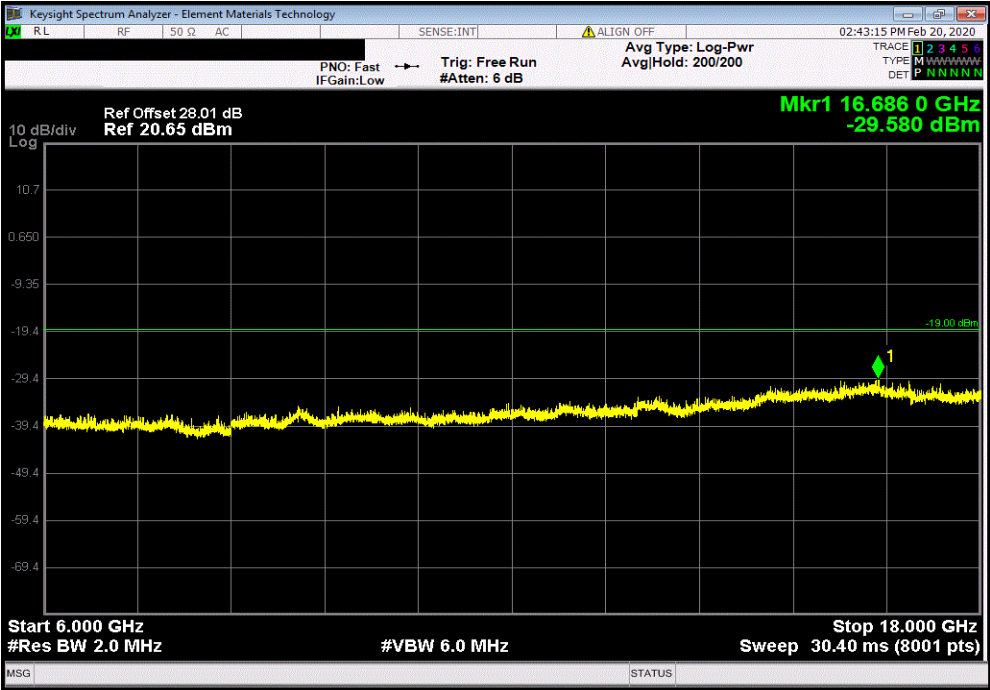
# SPURIOUS CONDUCTED EMISSIONS BAND 25



XMI 2019.09.05

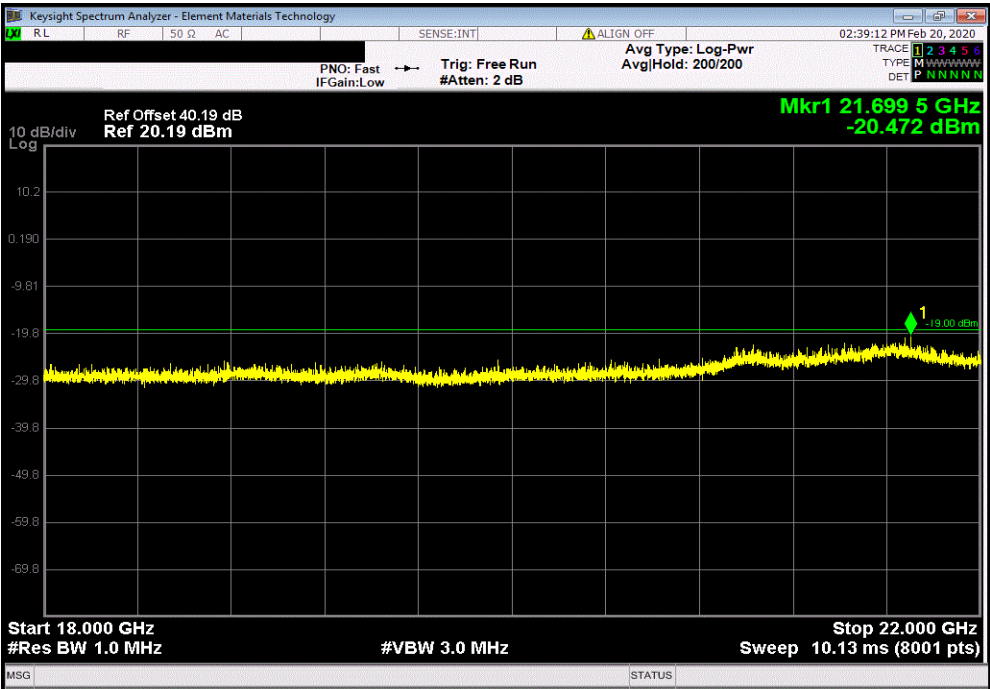
5G Band 25, 1930 MHz - 1995 MHz, (Single Carrier) Port 4, Mid Channel 1962.5 MHz, 15 MHz Bandwidth, 256-QAM Modulation, Range 5, 6 GHz - 18 GHz

|  |  |  |  | Value  | Limit | Result |
|--|--|--|--|--------|-------|--------|
|  |  |  |  | -29.58 | -19   | Pass   |



5G Band 25, 1930 MHz - 1995 MHz, (Single Carrier) Port 4, Mid Channel 1962.5 MHz, 15 MHz Bandwidth, 256-QAM Modulation, Range 6, 18 GHz - 22 GHz

|  |  |  |  | Value   | Limit | Result |
|--|--|--|--|---------|-------|--------|
|  |  |  |  | -20.472 | -19   | Pass   |



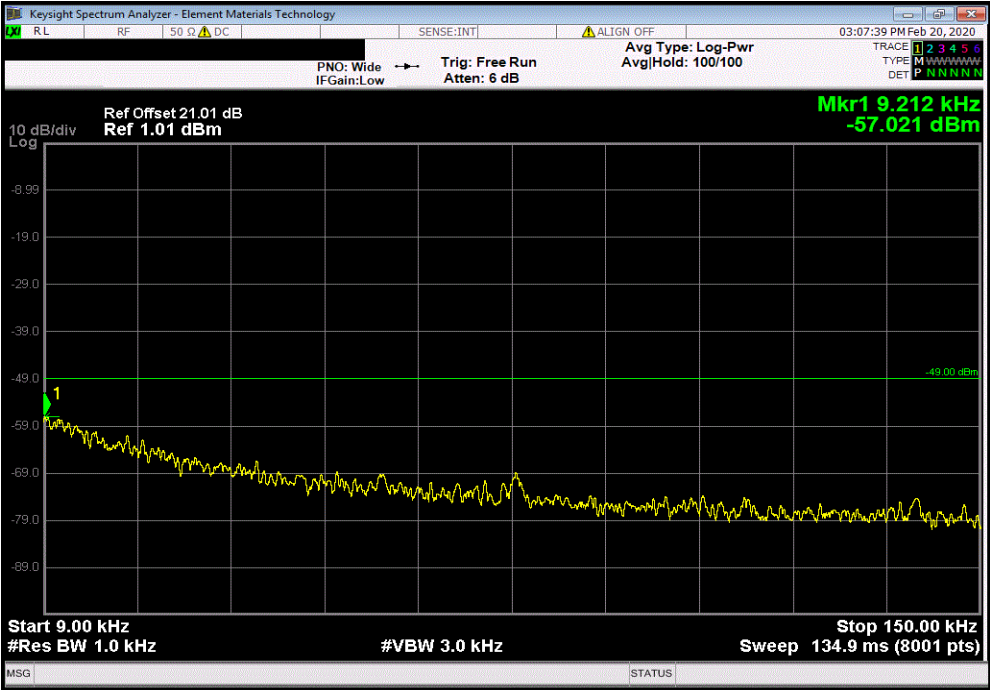
# SPURIOUS CONDUCTED EMISSIONS BAND 25



XMI 2019.09.05

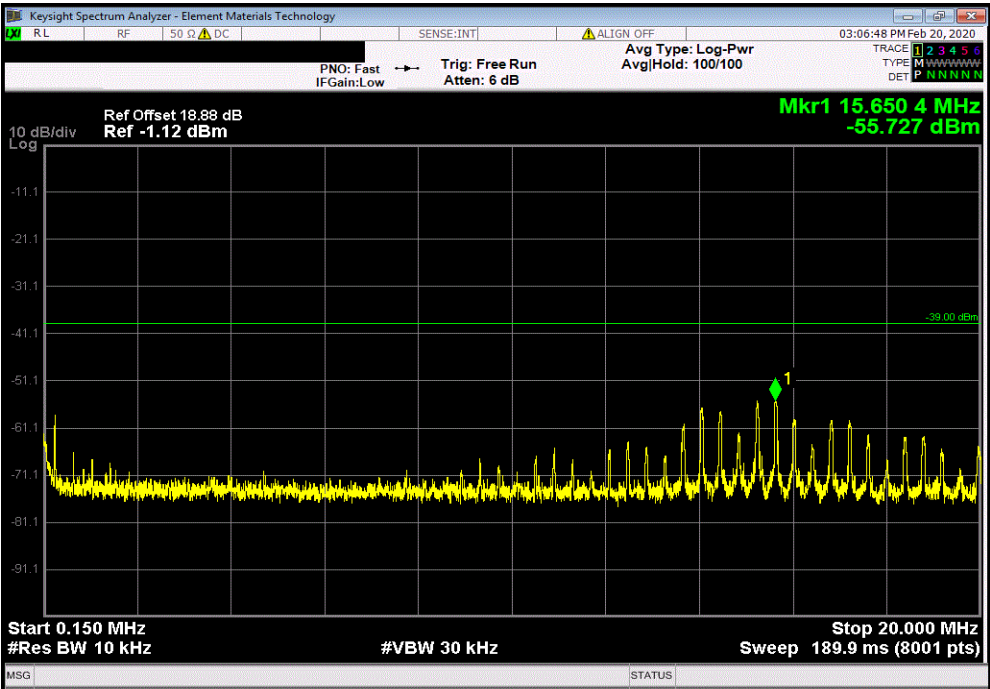
5G Band 25, 1930 MHz - 1995 MHz, (Single Carrier) Port 4, Mid Channel 1962.5 MHz, 20 MHz Bandwidth, 256-QAM Modulation, Range 1, 9 kHz - 150 kHz

|  | Value   | Limit | Result |
|--|---------|-------|--------|
|  | -57.021 | -49   | Pass   |



5G Band 25, 1930 MHz - 1995 MHz, (Single Carrier) Port 4, Mid Channel 1962.5 MHz, 20 MHz Bandwidth, 256-QAM Modulation, Range 2, 150 kHz - 20 MHz

|  | Value   | Limit | Result |
|--|---------|-------|--------|
|  | -55.727 | -39   | Pass   |



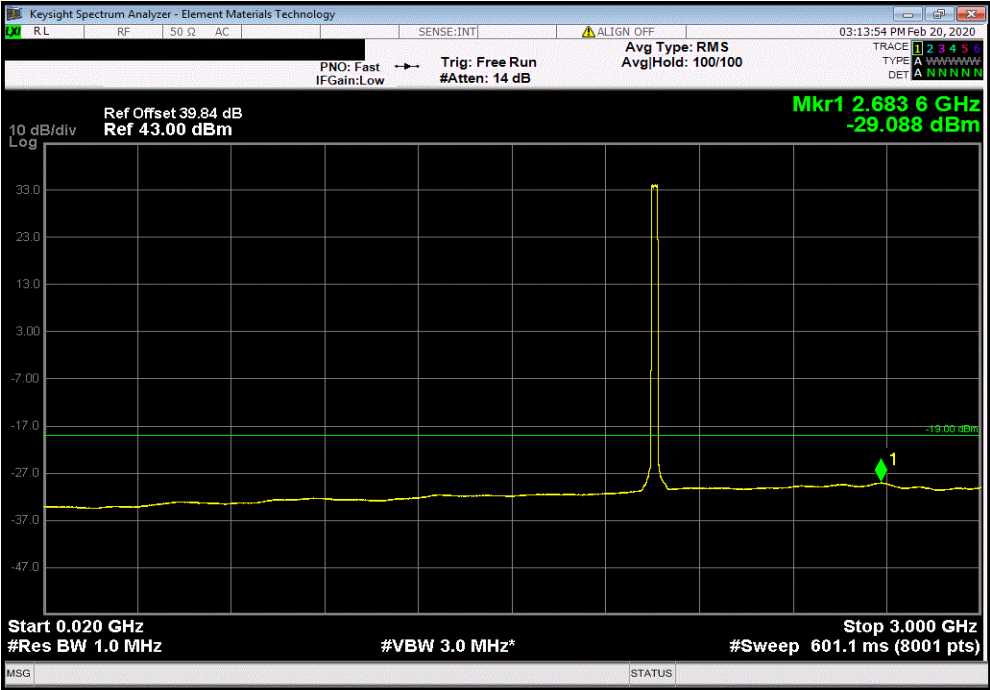
# SPURIOUS CONDUCTED EMISSIONS BAND 25



XMI 2019.09.05

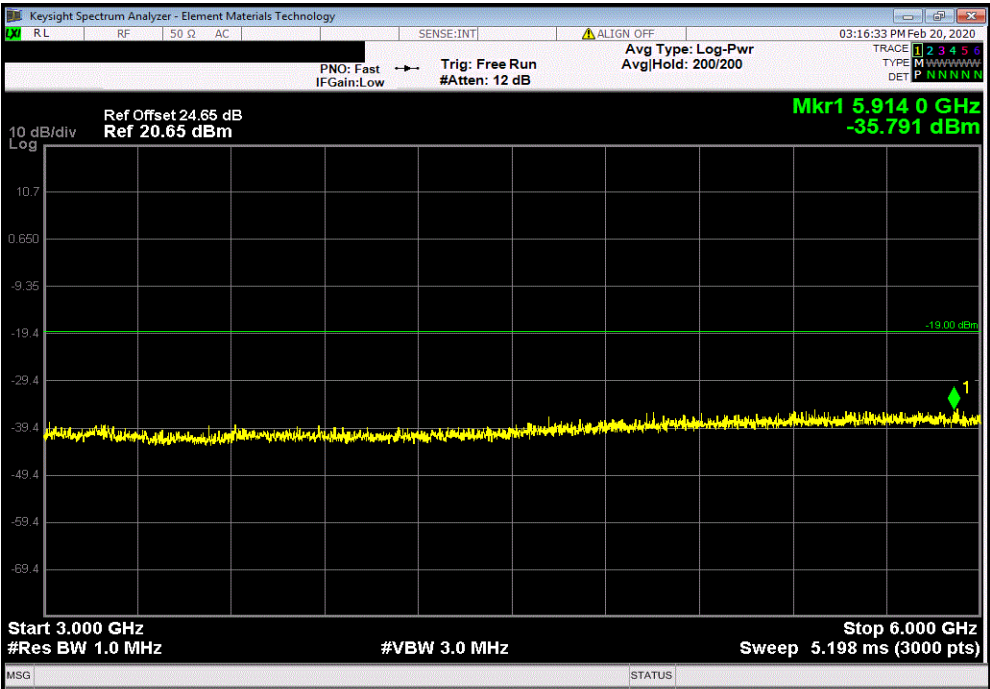
5G Band 25, 1930 MHz - 1995 MHz, (Single Carrier) Port 4, Mid Channel 1962.5 MHz, 20 MHz Bandwidth, 256-QAM Modulation, Range 3, 20 MHz - 3 GHz

|  |  |  |  | Value   | Limit | Result |
|--|--|--|--|---------|-------|--------|
|  |  |  |  | -29.088 | -19   | Pass   |



5G Band 25, 1930 MHz - 1995 MHz, (Single Carrier) Port 4, Mid Channel 1962.5 MHz, 20 MHz Bandwidth, 256-QAM Modulation, Range 4, 3 GHz - 6 GHz

|  |  |  |  | Value   | Limit | Result |
|--|--|--|--|---------|-------|--------|
|  |  |  |  | -35.791 | -19   | Pass   |



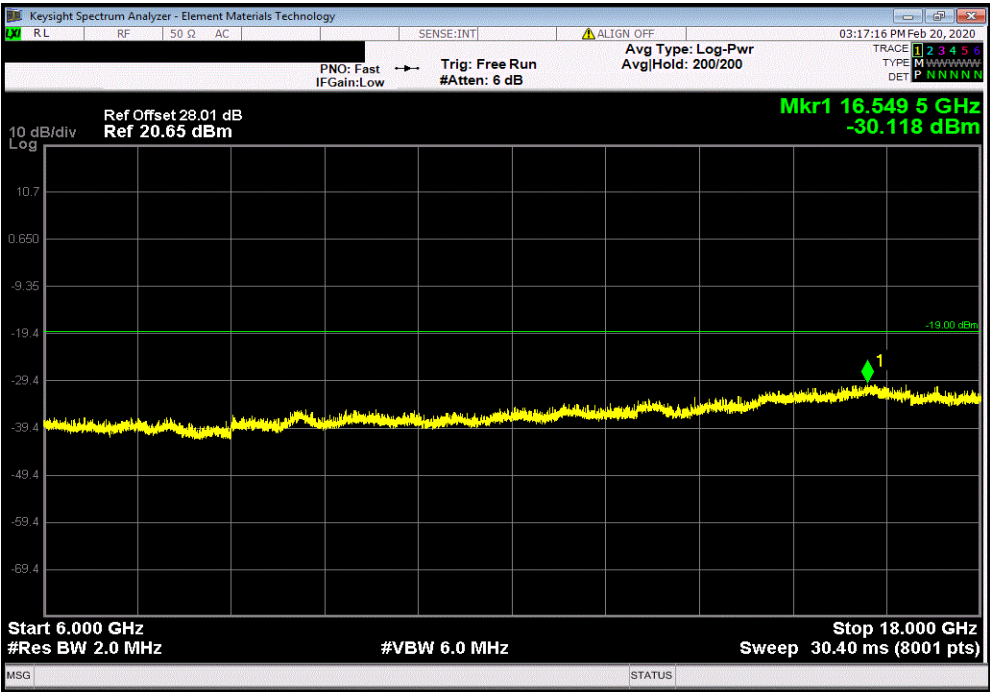
# SPURIOUS CONDUCTED EMISSIONS BAND 25



XMI 2019.09.05

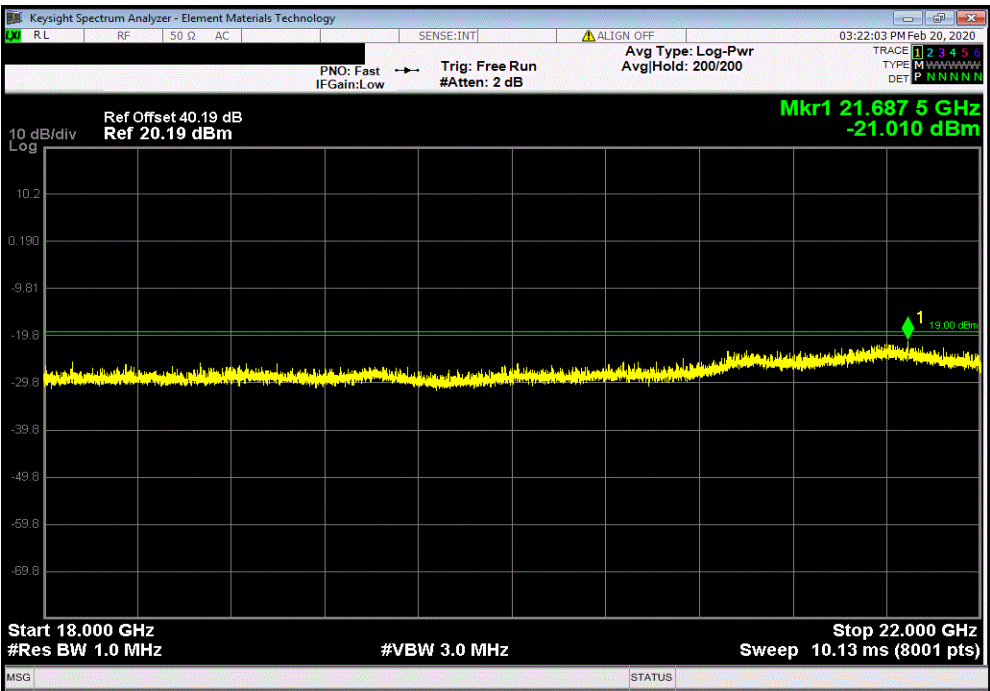
5G Band 25, 1930 MHz - 1995 MHz, (Single Carrier) Port 4, Mid Channel 1962.5 MHz, 20 MHz Bandwidth, 256-QAM Modulation, Range 5, 6 GHz - 18 GHz

|  | Value   | Limit | Result |
|--|---------|-------|--------|
|  | -30.118 | -19   | Pass   |



5G Band 25, 1930 MHz - 1995 MHz, (Single Carrier) Port 4, Mid Channel 1962.5 MHz, 20 MHz Bandwidth, 256-QAM Modulation, Range 6, 18 GHz - 22 GHz

|  | Value  | Limit | Result |
|--|--------|-------|--------|
|  | -21.01 | -19   | Pass   |



# SPURIOUS CONDUCTED EMISSIONS

## BAND 66a



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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 | Keysight     | N9010A     | AFM | 19-Mar-19 | 19-Mar-20 |
| Generator - Signal           | Keysight     | N5171B-506 | TEW | 2-May-18  | 2-May-21  |
| Analyzer - Spectrum Analyzer | Keysight     | N5183A     | TID | 26-Apr-19 | 26-Apr-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 22 GHz. The peak 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 KDB971168 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 frequency band after the first 1.0 MHz bands immediately outside and adjacent to the frequency block.

Per section FCC 27.53(h)(1) and RSS-139 6.6, the power of any emission outside of the authorized operating frequency range cannot exceed -13 dBm for a 1 MHz measurement bandwidth. The limit is adjusted to -19 dBm  $[-13 \text{ dBm} - 10 \log(4)]$  per FCC KDB 662911D01 v02r01 because the BTS may operate as a 4 port MIMO transmitter. The requirements for FCC measurements are detailed in KDB971168 D01 v02r02.

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.:  $-49\text{dBm} = -19\text{dBm} - 10\log(1\text{MHz}/1\text{kHz})$ ]. 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.:  $-39\text{dBm} = -19\text{dBm} - 10\log(1\text{MHz}/10\text{kHz})$ ]. The required limit of -19dBm with a RBW of > 1MHz was used for all other frequency ranges.

# SPURIOUS CONDUCTED EMISSIONS BAND 66a



XMM 2019-08-05

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                              |                                                                                                        |                            |             |        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|--------------------------------------------------------------------------------------------------------|----------------------------|-------------|--------|
| EUT:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | AHFIA                        |                                                                                                        | Work Order:                | NOKI0008    |        |
| Serial Number:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | K9174623559                  |                                                                                                        | Date:                      | 20-Feb-20   |        |
| Customer:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Nokia of America Corporation |                                                                                                        | Temperature:               | 23 °C       |        |
| Attendees:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Mitch Hill, John Rattanavong |                                                                                                        | Humidity:                  | 44.4% RH    |        |
| Project:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | None                         |                                                                                                        | Barometric Pres.:          | 1018 mbar   |        |
| Tested by:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Brandon Hobbs                | Power:                                                                                                 | 54VDC                      | Job Site:   | TX09   |
| TEST SPECIFICATIONS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                              |                                                                                                        | Test Method                |             |        |
| FCC 27:2020                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                              |                                                                                                        | ANSI C63.26:2015           |             |        |
| RSS-139:2015, RSS-Gen:2019                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                              |                                                                                                        | RSS-139:2015, RSS-Gen:2019 |             |        |
| COMMENTS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                              |                                                                                                        |                            |             |        |
| All measurement path losses were accounted for in the reference level offset including any attenuators, filters and DC blocks. All measurement path losses were accounted for in the reference level offset including any attenuators, filters and DC blocks. The data was taken on the mid channel in the band while using the highest output power port which was found in the original client provided test report. Ranges 1 and 2 used configuration 1. Range 3 used configuration 2. Ranges 4 and 5 used configuration 3. Range 6 used configuration 4. |                              |                                                                                                        |                            |             |        |
| DEVIATIONS FROM TEST STANDARD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                              |                                                                                                        |                            |             |        |
| None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                              |                                                                                                        |                            |             |        |
| Configuration #                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 1,2,3,4                      | <div>Signature</div>  |                            |             |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                              |                                                                                                        | Value (dBm)                | Limit (dBm) | Result |
| 5G Band 66a 2110 MHz - 2180 MHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                              |                                                                                                        |                            |             |        |
| (Single Carrier) Port 4, Mid Channel 2145 MHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                              |                                                                                                        |                            |             |        |
| 5 MHz Bandwidth                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                              |                                                                                                        |                            |             |        |
| QPSK Modulation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                              |                                                                                                        |                            |             |        |
| Range 1, 9 kHz - 150 kHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                              |                                                                                                        | -57.40                     | -49         | Pass   |
| Range 2, 150 kHz - 20 MHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                              |                                                                                                        | -55.40                     | -39         | Pass   |
| Range 3, 20 MHz - 3 GHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                              |                                                                                                        | -29.19                     | -19         | Pass   |
| Range 4, 3 GHz - 6 GHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                              |                                                                                                        | -34.90                     | -19         | Pass   |
| Range 5, 6 GHz - 18 GHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                              |                                                                                                        | -29.02                     | -19         | Pass   |
| Range 6, 18 GHz - 22 GHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                              |                                                                                                        | -21.37                     | -19         | Pass   |
| 16-QAM Modulation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                              |                                                                                                        |                            |             |        |
| Range 1, 9 kHz - 150 kHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                              |                                                                                                        | -56.79                     | -49         | Pass   |
| Range 2, 150 kHz - 20 MHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                              |                                                                                                        | -55.36                     | -39         | Pass   |
| Range 3, 20 MHz - 3 GHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                              |                                                                                                        | -29.10                     | -19         | Pass   |
| Range 4, 3 GHz - 6 GHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                              |                                                                                                        | -35.75                     | -19         | Pass   |
| Range 5, 6 GHz - 18 GHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                              |                                                                                                        | -28.68                     | -19         | Pass   |
| Range 6, 18 GHz - 22 GHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                              |                                                                                                        | -21.02                     | -19         | Pass   |
| 64-QAM Modulation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                              |                                                                                                        |                            |             |        |
| Range 1, 9 kHz - 150 kHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                              |                                                                                                        | -58.66                     | -49         | Pass   |
| Range 2, 150 kHz - 20 MHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                              |                                                                                                        | -55.36                     | -39         | Pass   |
| Range 3, 20 MHz - 3 GHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                              |                                                                                                        | -29.09                     | -19         | Pass   |
| Range 4, 3 GHz - 6 GHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                              |                                                                                                        | -34.82                     | -19         | Pass   |
| Range 5, 6 GHz - 18 GHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                              |                                                                                                        | -29.15                     | -19         | Pass   |
| Range 6, 18 GHz - 22 GHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                              |                                                                                                        | -21.04                     | -19         | Pass   |
| 256-QAM Modulation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                              |                                                                                                        |                            |             |        |
| Range 1, 9 kHz - 150 kHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                              |                                                                                                        | -57.59                     | -49         | Pass   |
| Range 2, 150 kHz - 20 MHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                              |                                                                                                        | -55.70                     | -39         | Pass   |
| Range 3, 20 MHz - 3 GHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                              |                                                                                                        | -29.44                     | -19         | Pass   |
| Range 4, 3 GHz - 6 GHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                              |                                                                                                        | -34.86                     | -19         | Pass   |
| Range 5, 6 GHz - 18 GHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                              |                                                                                                        | -29.65                     | -19         | Pass   |
| Range 6, 18 GHz - 22 GHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                              |                                                                                                        | -21.12                     | -19         | Pass   |
| 10 MHz Bandwidth                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                              |                                                                                                        |                            |             |        |
| 256-QAM Modulation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                              |                                                                                                        |                            |             |        |
| Range 1, 9 kHz - 150 kHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                              |                                                                                                        | -58.35                     | -49         | Pass   |
| Range 2, 150 kHz - 20 MHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                              |                                                                                                        | -55.63                     | -39         | Pass   |
| Range 3, 20 MHz - 3 GHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                              |                                                                                                        | -29.06                     | -19         | Pass   |
| Range 4, 3 GHz - 6 GHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                              |                                                                                                        | -35.70                     | -19         | Pass   |
| Range 5, 6 GHz - 18 GHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                              |                                                                                                        | -30.17                     | -19         | Pass   |
| Range 6, 18 GHz - 22 GHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                              |                                                                                                        | -20.96                     | -19         | Pass   |
| 15 MHz Bandwidth                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                              |                                                                                                        |                            |             |        |
| 256-QAM Modulation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                              |                                                                                                        |                            |             |        |
| Range 1, 9 kHz - 150 kHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                              |                                                                                                        | -56.95                     | -49         | Pass   |
| Range 2, 150 kHz - 20 MHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                              |                                                                                                        | -54.95                     | -39         | Pass   |
| Range 3, 20 MHz - 3 GHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                              |                                                                                                        | -29.05                     | -19         | Pass   |
| Range 4, 3 GHz - 6 GHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                              |                                                                                                        | -34.75                     | -19         | Pass   |
| Range 5, 6 GHz - 18 GHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                              |                                                                                                        | -29.65                     | -19         | Pass   |
| Range 6, 18 GHz - 22 GHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                              |                                                                                                        | -21.22                     | -19         | Pass   |
| 20 MHz Bandwidth                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                              |                                                                                                        |                            |             |        |
| 256-QAM Modulation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                              |                                                                                                        |                            |             |        |
| Range 1, 9 kHz - 150 kHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                              |                                                                                                        | -55.50                     | -49         | Pass   |
| Range 2, 150 kHz - 20 MHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                              |                                                                                                        | -55.14                     | -39         | Pass   |
| Range 3, 20 MHz - 3 GHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                              |                                                                                                        | -29.19                     | -19         | Pass   |
| Range 4, 3 GHz - 6 GHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                              |                                                                                                        | -34.89                     | -19         | Pass   |
| Range 5, 6 GHz - 18 GHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                              |                                                                                                        | -29.44                     | -19         | Pass   |
| Range 6, 18 GHz - 22 GHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                              |                                                                                                        | -21.72                     | -19         | Pass   |

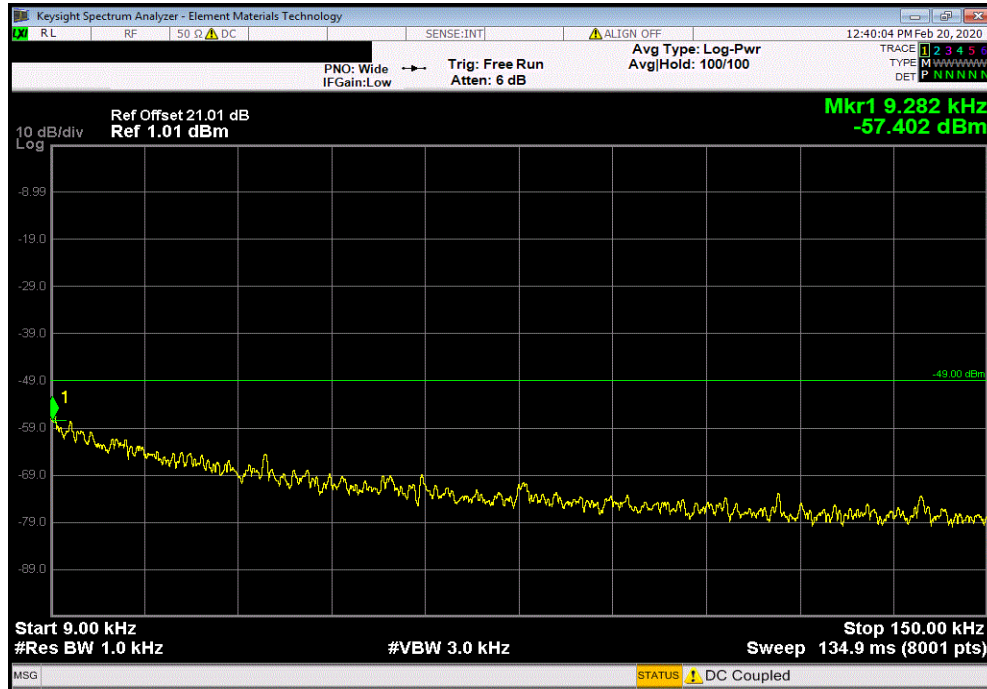
# SPURIOUS CONDUCTED EMISSIONS BAND 66a



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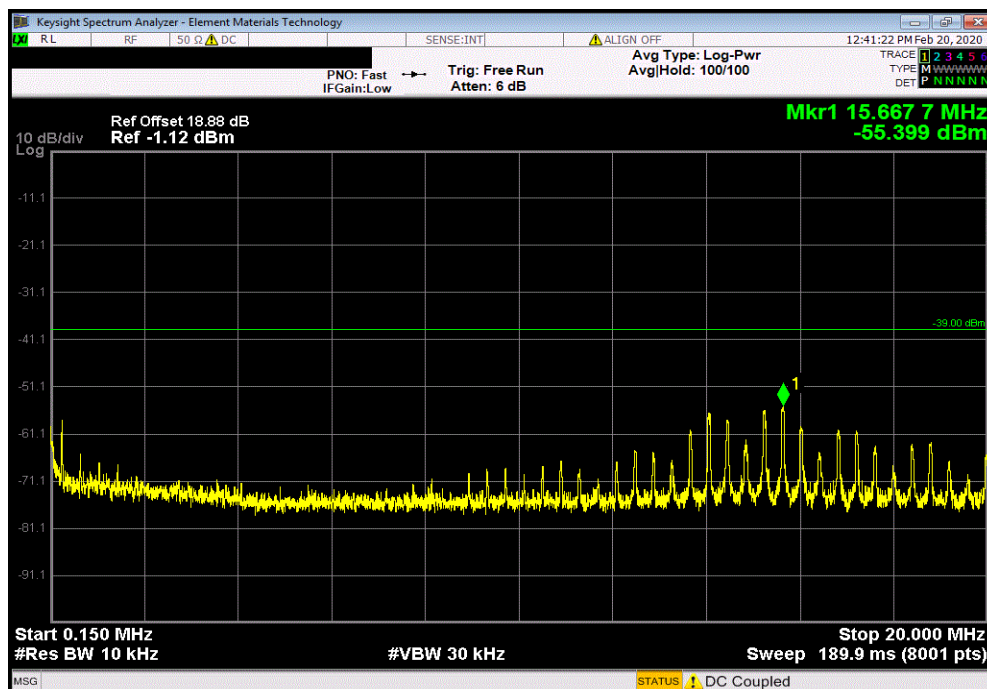
5G Band 66a 2110 MHz - 2180 MHz , (Single Carrier) Port 4, Mid Channel 2145 MHz, QPSK Modulation , Range 1, 9 kHz - 150 kHz

|  | Value<br>(dBm) | Limit<br>(dBm) | Result |
|--|----------------|----------------|--------|
|  | -57.402        | -49            | Pass   |



5G Band 66a 2110 MHz - 2180 MHz , (Single Carrier) Port 4, Mid Channel 2145 MHz, QPSK Modulation , Range 2, 150 kHz - 20 MHz

|  | Value<br>(dBm) | Limit<br>(dBm) | Result |
|--|----------------|----------------|--------|
|  | -55.399        | -39            | Pass   |

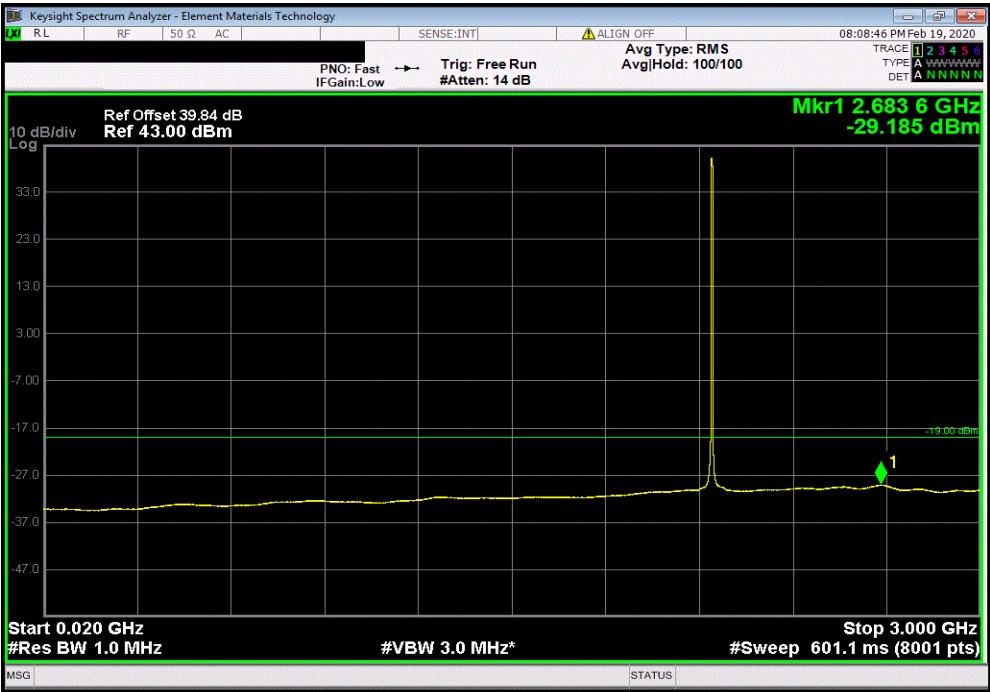


# SPURIOUS CONDUCTED EMISSIONS BAND 66a

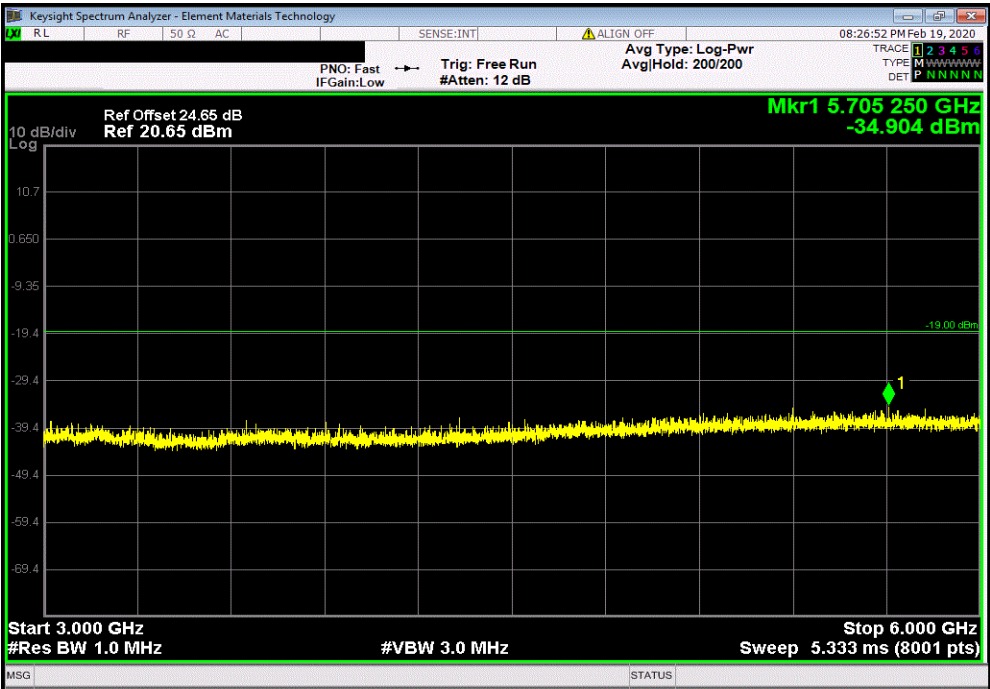


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| 5G Band 66a 2110 MHz - 2180 MHz , (Single Carrier) Port 4, Mid Channel 2145 MHz, 5 MHz Bandwidth, QPSK Modulation , Range 3, 20 MHz - 3 GHz |         |       |        |  |  |  |
|---------------------------------------------------------------------------------------------------------------------------------------------|---------|-------|--------|--|--|--|
|                                                                                                                                             | Value   | Limit | Result |  |  |  |
|                                                                                                                                             | (dBm)   | (dBm) |        |  |  |  |
|                                                                                                                                             | -29.185 | -19   | Pass   |  |  |  |



| 5G Band 66a 2110 MHz - 2180 MHz , (Single Carrier) Port 4, Mid Channel 2145 MHz, 5 MHz Bandwidth, QPSK Modulation , Range 4, 3 GHz - 6 GHz |         |       |        |  |  |  |
|--------------------------------------------------------------------------------------------------------------------------------------------|---------|-------|--------|--|--|--|
|                                                                                                                                            | Value   | Limit | Result |  |  |  |
|                                                                                                                                            | (dBm)   | (dBm) |        |  |  |  |
|                                                                                                                                            | -34.904 | -19   | Pass   |  |  |  |

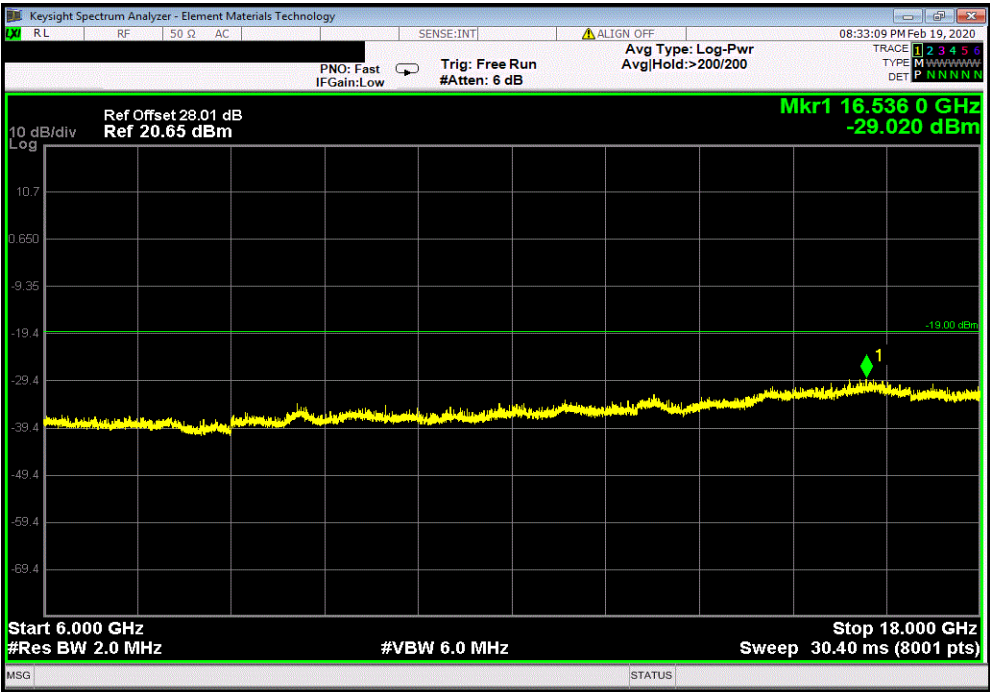


# SPURIOUS CONDUCTED EMISSIONS BAND 66a

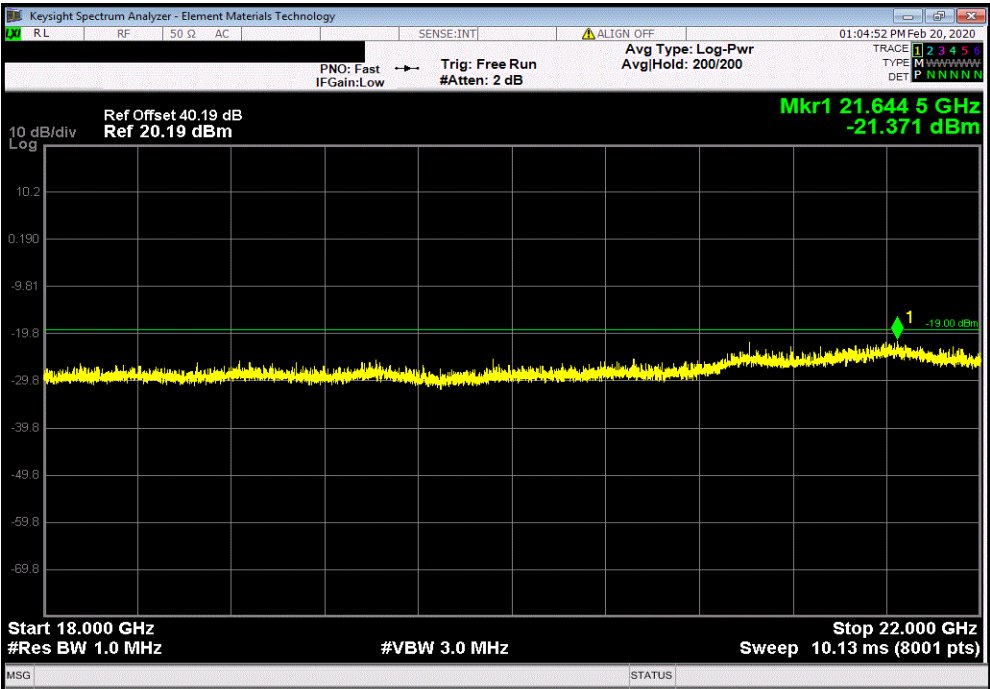


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| 5G Band 66a 2110 MHz - 2180 MHz , (Single Carrier) Port 4, Mid Channel 2145 MHz, 5 MHz Bandwidth, QPSK Modulation , Range 5, 6 GHz - 18 GHz |  |  |  |                |                |        |
|---------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|----------------|----------------|--------|
|                                                                                                                                             |  |  |  | Value<br>(dBm) | Limit<br>(dBm) | Result |
|                                                                                                                                             |  |  |  | -29.02         | -19            | Pass   |



| 5G Band 66a 2110 MHz - 2180 MHz , (Single Carrier) Port 4, Mid Channel 2145 MHz, 5 MHz Bandwidth, QPSK Modulation , Range 6, 18 GHz - 22 GHz |  |  |  |                |                |        |
|----------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|----------------|----------------|--------|
|                                                                                                                                              |  |  |  | Value<br>(dBm) | Limit<br>(dBm) | Result |
|                                                                                                                                              |  |  |  | -21.371        | -19            | Pass   |



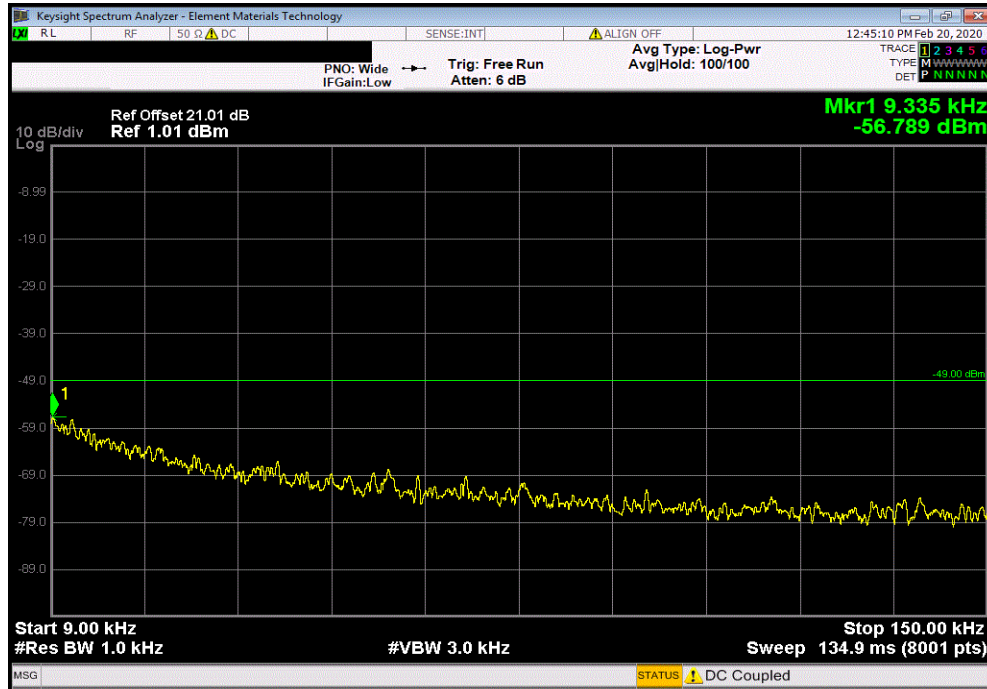
# SPURIOUS CONDUCTED EMISSIONS BAND 66a



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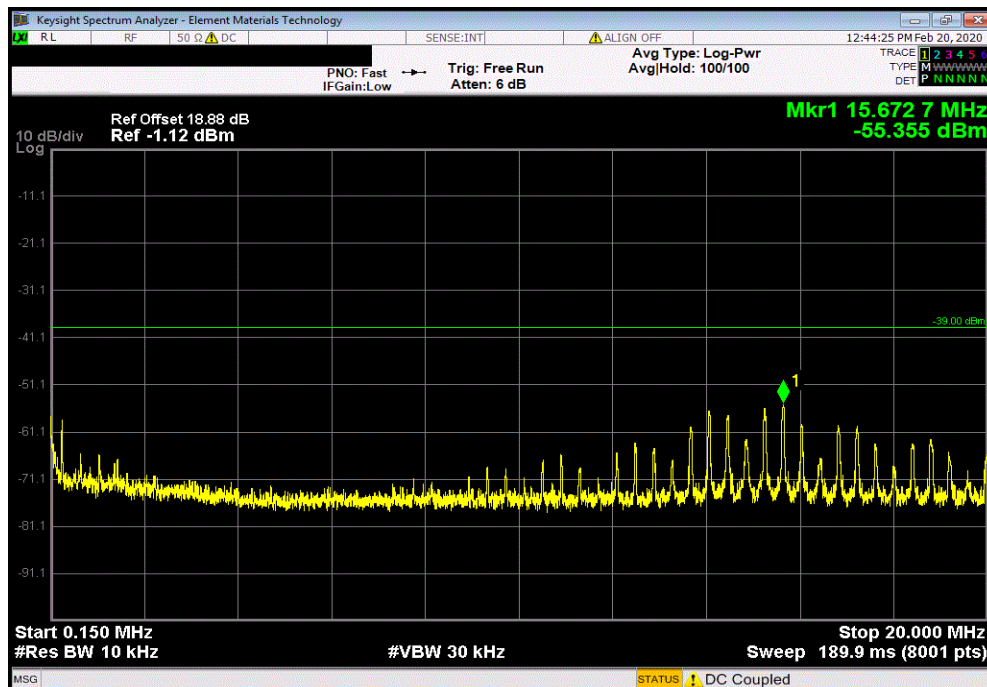
5G Band 66a 2110 MHz - 2180 MHz , (Single Carrier) Port 4, Mid Channel 2145 MHz, 5 MHz Bandwidth, 16-QAM Modulation , Range 1, 9 kHz - 150 kHz

|  | Value<br>(dBm) | Limit<br>(dBm) | Result |
|--|----------------|----------------|--------|
|  | -56.789        | -49            | Pass   |



5G Band 66a 2110 MHz - 2180 MHz , (Single Carrier) Port 4, Mid Channel 2145 MHz, 5 MHz Bandwidth, 16-QAM Modulation , Range 2, 150 kHz - 20 MHz

|  | Value<br>(dBm) | Limit<br>(dBm) | Result |
|--|----------------|----------------|--------|
|  | -55.355        | -39            | Pass   |



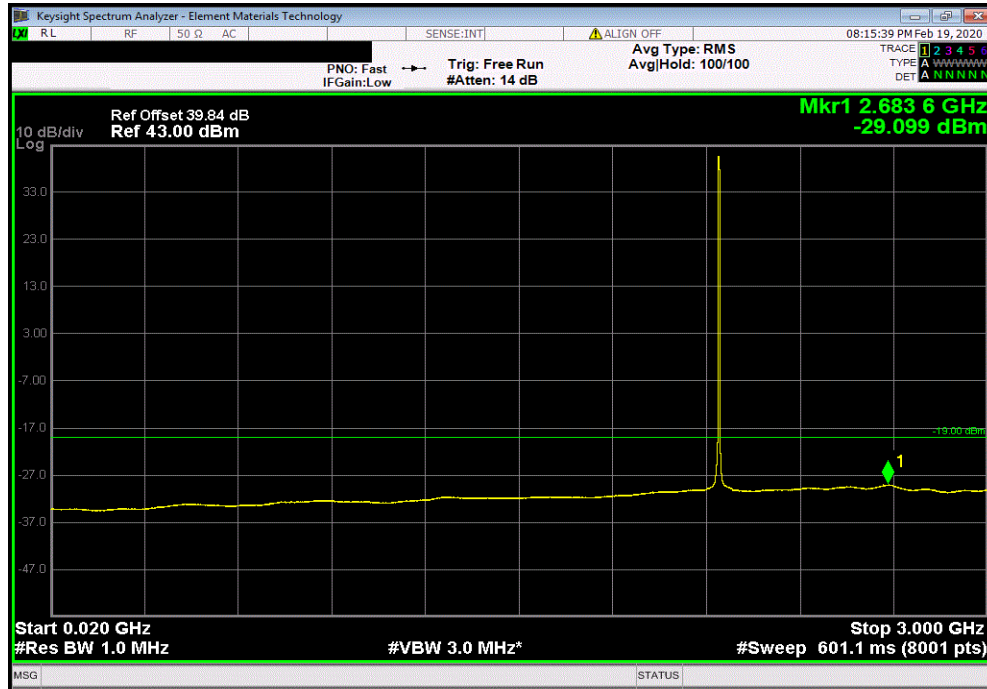
# SPURIOUS CONDUCTED EMISSIONS BAND 66a



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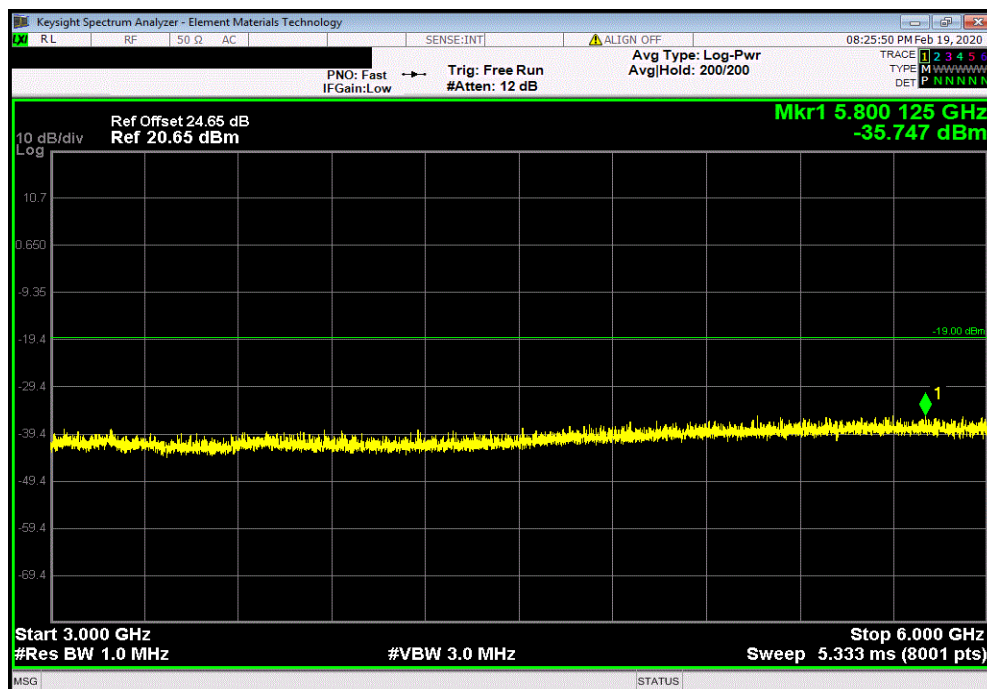
5G Band 66a 2110 MHz - 2180 MHz , (Single Carrier) Port 4, Mid Channel 2145 MHz, 5 MHz Bandwidth, 16-QAM Modulation , Range 3, 20 MHz - 3 GHz

|  |  |  |  | Value<br>(dBm) | Limit<br>(dBm) | Result |
|--|--|--|--|----------------|----------------|--------|
|  |  |  |  | -29.099        | -19            | Pass   |



5G Band 66a 2110 MHz - 2180 MHz , (Single Carrier) Port 4, Mid Channel 2145 MHz, 5 MHz Bandwidth, 16-QAM Modulation , Range 4, 3 GHz - 6 GHz

|  |  |  |  | Value<br>(dBm) | Limit<br>(dBm) | Result |
|--|--|--|--|----------------|----------------|--------|
|  |  |  |  | -35.747        | -19            | Pass   |



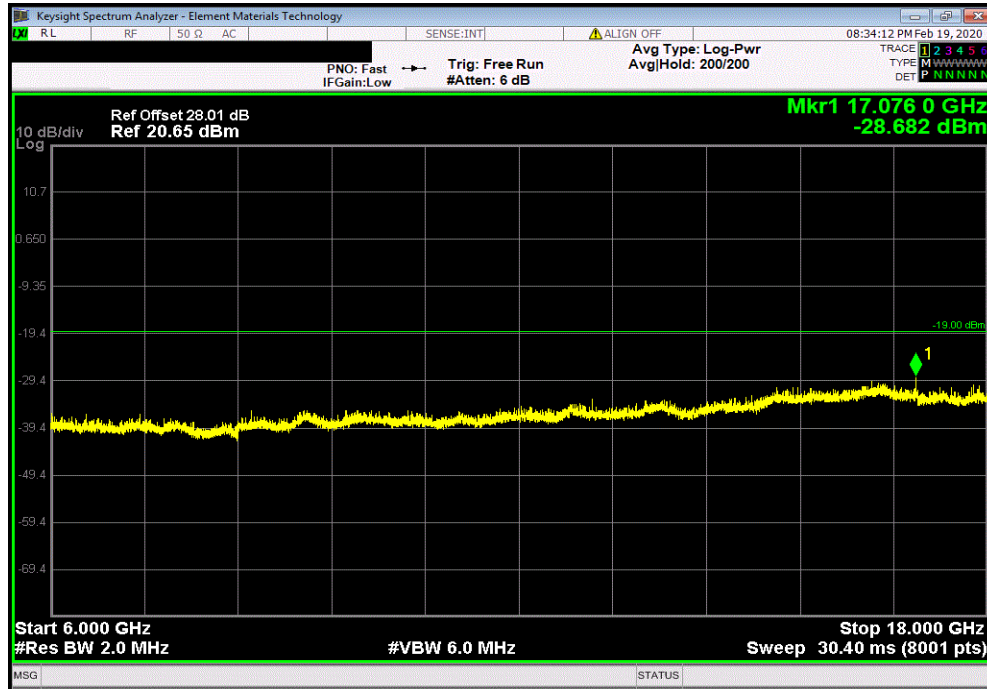
# SPURIOUS CONDUCTED EMISSIONS BAND 66a



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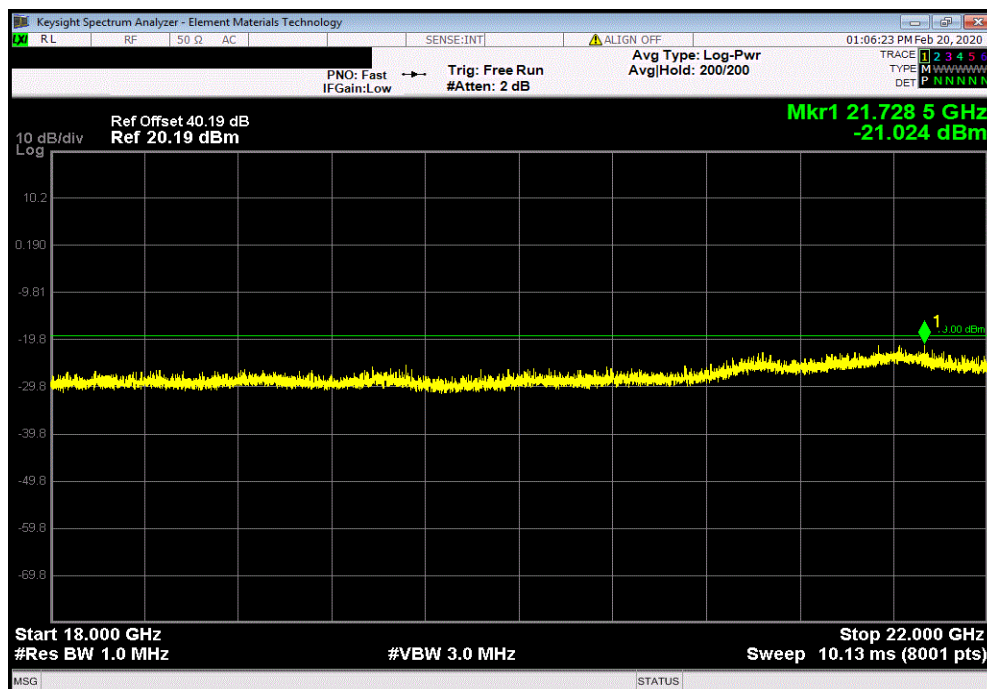
5G Band 66a 2110 MHz - 2180 MHz , (Single Carrier) Port 4, Mid Channel 2145 MHz, 5 MHz Bandwidth, 16-QAM Modulation , Range 5, 6 GHz - 18 GHz

|  |  |  |  | Value<br>(dBm) | Limit<br>(dBm) | Result |
|--|--|--|--|----------------|----------------|--------|
|  |  |  |  | -28.682        | -19            | Pass   |



5G Band 66a 2110 MHz - 2180 MHz , (Single Carrier) Port 4, Mid Channel 2145 MHz, 5 MHz Bandwidth, 16-QAM Modulation , Range 6, 18 GHz - 22 GHz

|  |  |  |  | Value<br>(dBm) | Limit<br>(dBm) | Result |
|--|--|--|--|----------------|----------------|--------|
|  |  |  |  | -21.024        | -19            | Pass   |



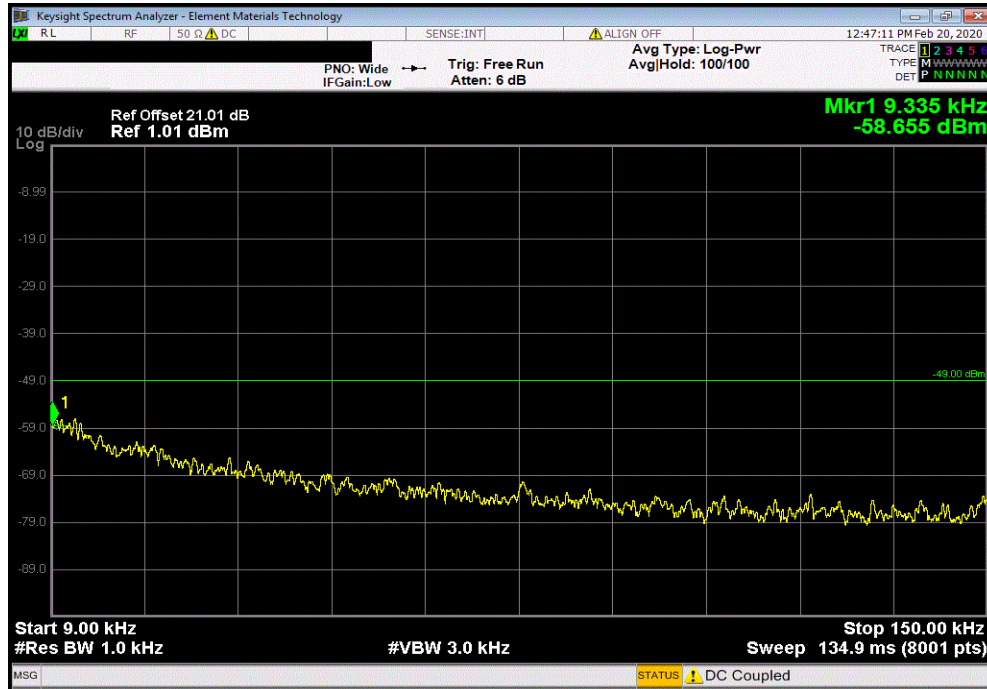
# SPURIOUS CONDUCTED EMISSIONS BAND 66a



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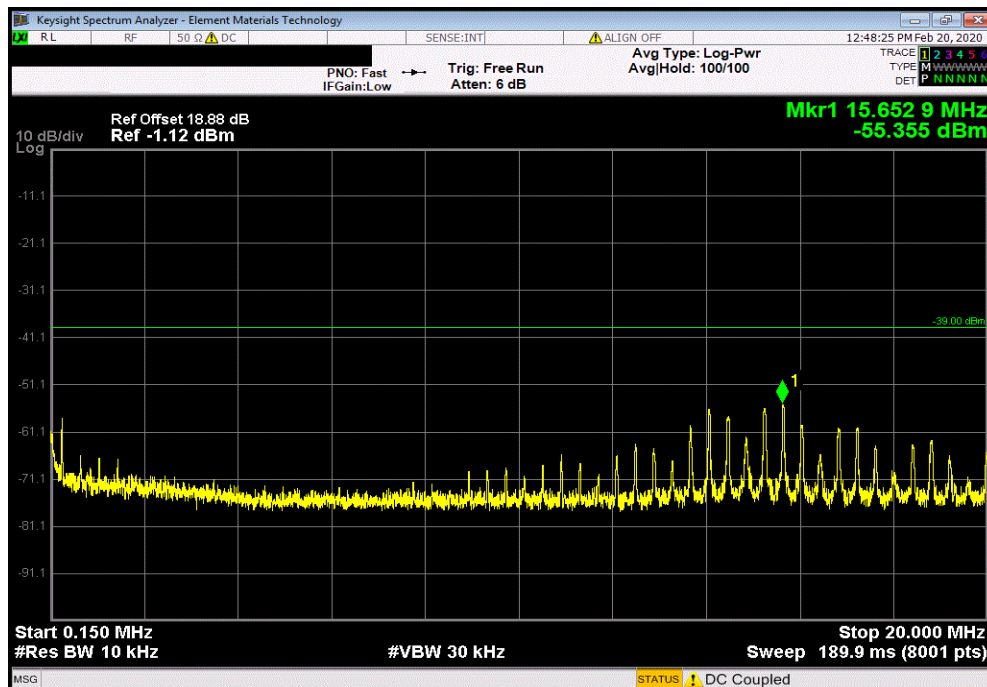
5G Band 66a 2110 MHz - 2180 MHz , (Single Carrier) Port 4, Mid Channel 2145 MHz, 5 MHz Bandwidth, 64-QAM Modulation , Range 1, 9 kHz - 150 kHz

|  | Value<br>(dBm) | Limit<br>(dBm) | Result |
|--|----------------|----------------|--------|
|  | -58.655        | -49            | Pass   |



5G Band 66a 2110 MHz - 2180 MHz , (Single Carrier) Port 4, Mid Channel 2145 MHz, 5 MHz Bandwidth, 64-QAM Modulation , Range 2, 150 kHz - 20 MHz

|  | Value<br>(dBm) | Limit<br>(dBm) | Result |
|--|----------------|----------------|--------|
|  | -55.355        | -39            | Pass   |



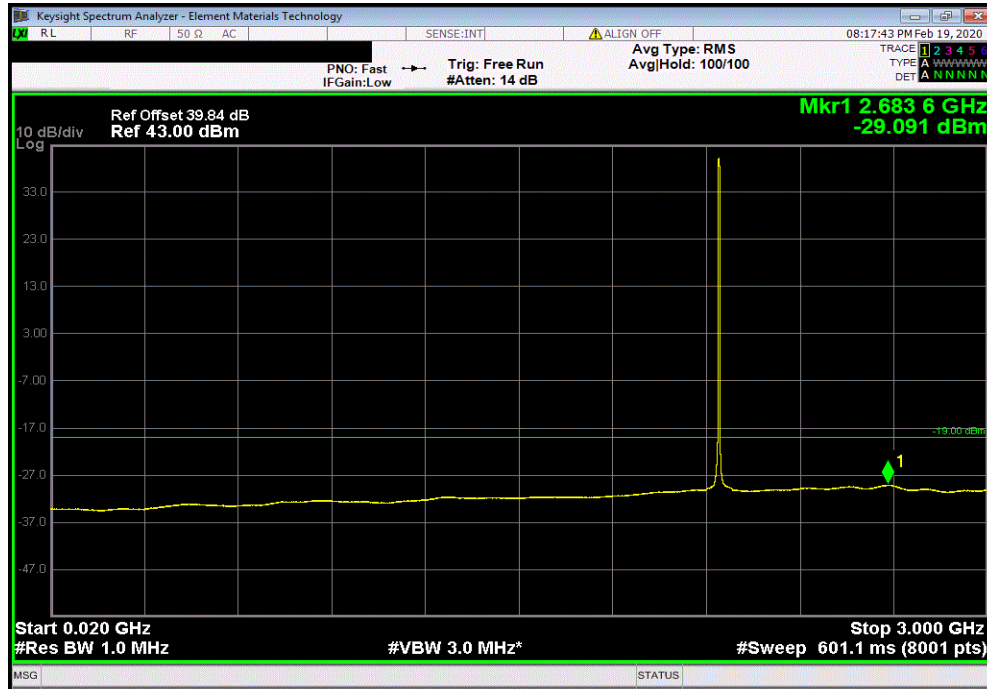
# SPURIOUS CONDUCTED EMISSIONS BAND 66a



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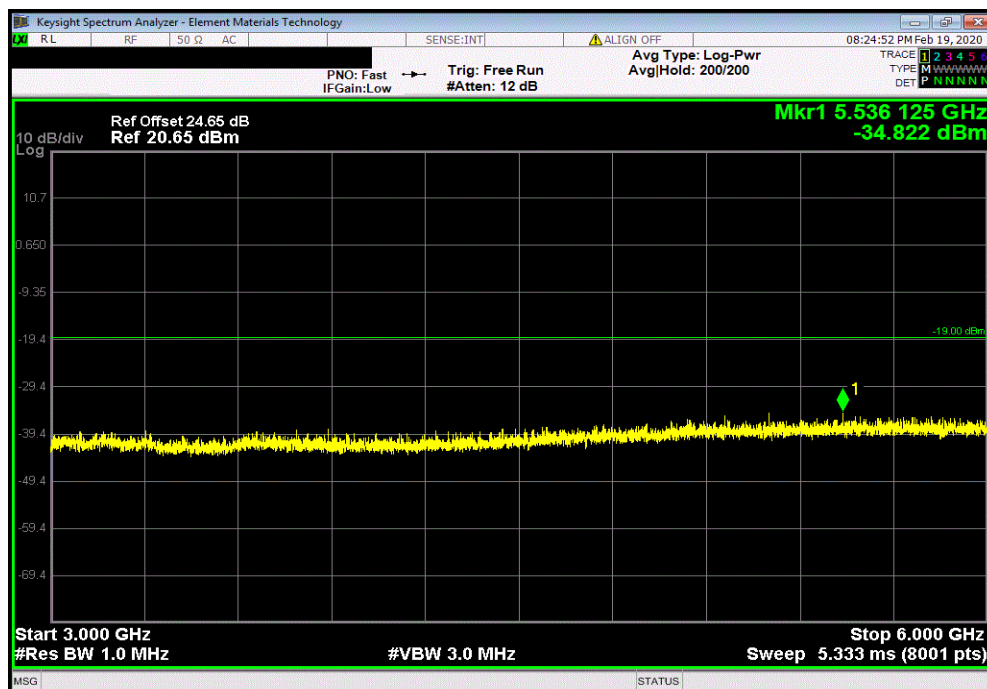
5G Band 66a 2110 MHz - 2180 MHz , (Single Carrier) Port 4, Mid Channel 2145 MHz, 5 MHz Bandwidth, 64-QAM Modulation , Range 3, 20 MHz - 3 GHz

|  |  |  |  | Value<br>(dBm) | Limit<br>(dBm) | Result |
|--|--|--|--|----------------|----------------|--------|
|  |  |  |  | -29.091        | -19            | Pass   |



5G Band 66a 2110 MHz - 2180 MHz , (Single Carrier) Port 4, Mid Channel 2145 MHz, 5 MHz Bandwidth, 64-QAM Modulation , Range 4, 3 GHz - 6 GHz

|  |  |  |  | Value<br>(dBm) | Limit<br>(dBm) | Result |
|--|--|--|--|----------------|----------------|--------|
|  |  |  |  | -34.822        | -19            | Pass   |



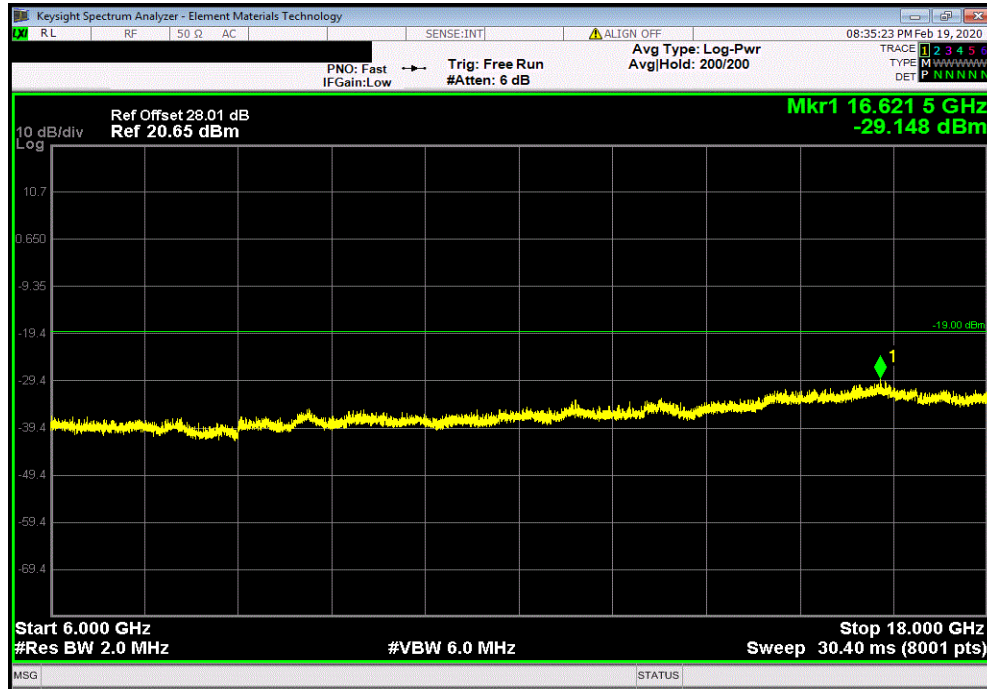
# SPURIOUS CONDUCTED EMISSIONS BAND 66a



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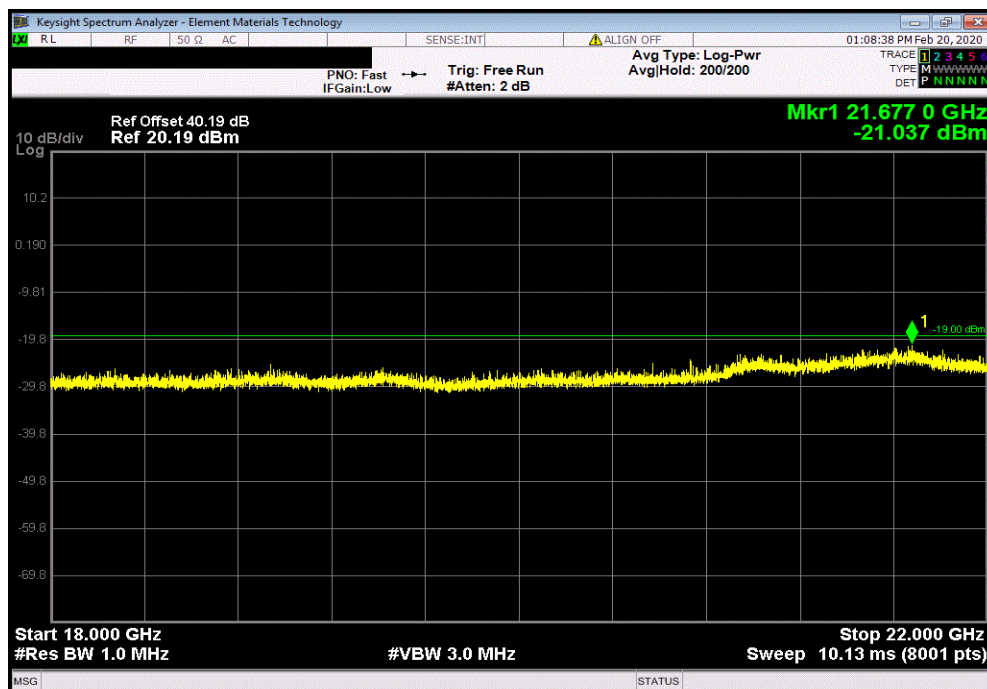
5G Band 66a 2110 MHz - 2180 MHz , (Single Carrier) Port 4, Mid Channel 2145 MHz, 5 MHz Bandwidth, 64-QAM Modulation , Range 5, 6 GHz - 18 GHz

|  |  |  |  | Value<br>(dBm) | Limit<br>(dBm) | Result |
|--|--|--|--|----------------|----------------|--------|
|  |  |  |  | -29.148        | -19            | Pass   |



5G Band 66a 2110 MHz - 2180 MHz , (Single Carrier) Port 4, Mid Channel 2145 MHz, 5 MHz Bandwidth, 64-QAM Modulation , Range 6, 18 GHz - 22 GHz

|  |  |  |  | Value<br>(dBm) | Limit<br>(dBm) | Result |
|--|--|--|--|----------------|----------------|--------|
|  |  |  |  | -21.037        | -19            | Pass   |



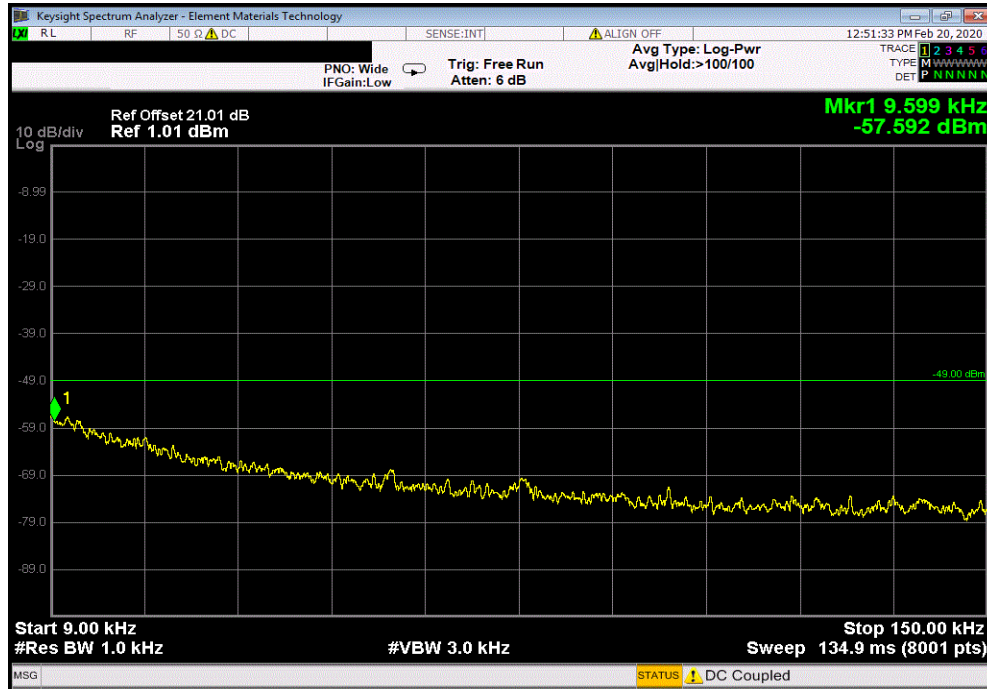
# SPURIOUS CONDUCTED EMISSIONS BAND 66a



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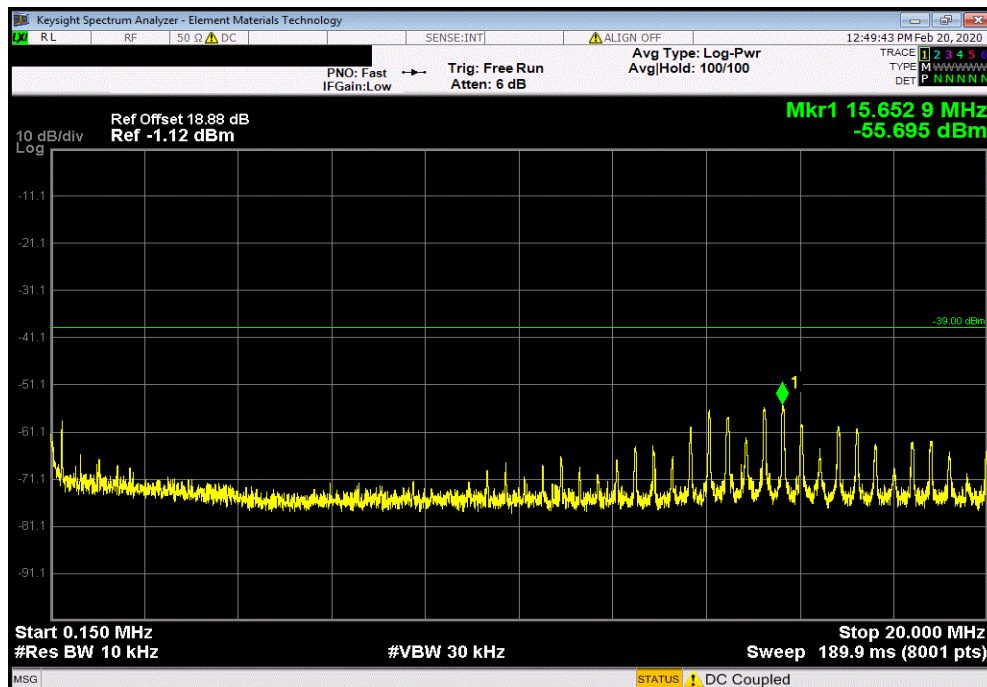
5G Band 66a 2110 MHz - 2180 MHz , (Single Carrier) Port 4, Mid Channel 2145 MHz, 5 MHz Bandwidth, 256-QAM Modulation , Range 1, 9 kHz - 150 kHz

|  |  |  |  | Value<br>(dBm) | Limit<br>(dBm) | Result |
|--|--|--|--|----------------|----------------|--------|
|  |  |  |  | -57.592        | -49            | Pass   |



5G Band 66a 2110 MHz - 2180 MHz , (Single Carrier) Port 4, Mid Channel 2145 MHz, 5 MHz Bandwidth, 256-QAM Modulation , Range 2, 150 kHz - 20 MHz

|  |  |  |  | Value<br>(dBm) | Limit<br>(dBm) | Result |
|--|--|--|--|----------------|----------------|--------|
|  |  |  |  | -55.695        | -39            | Pass   |

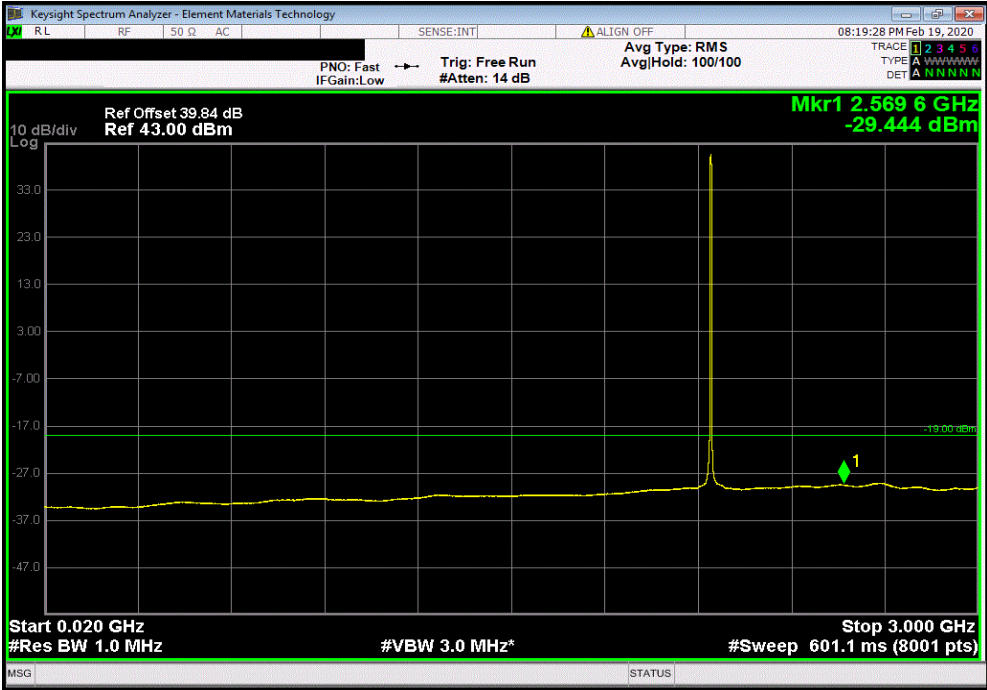


# SPURIOUS CONDUCTED EMISSIONS BAND 66a

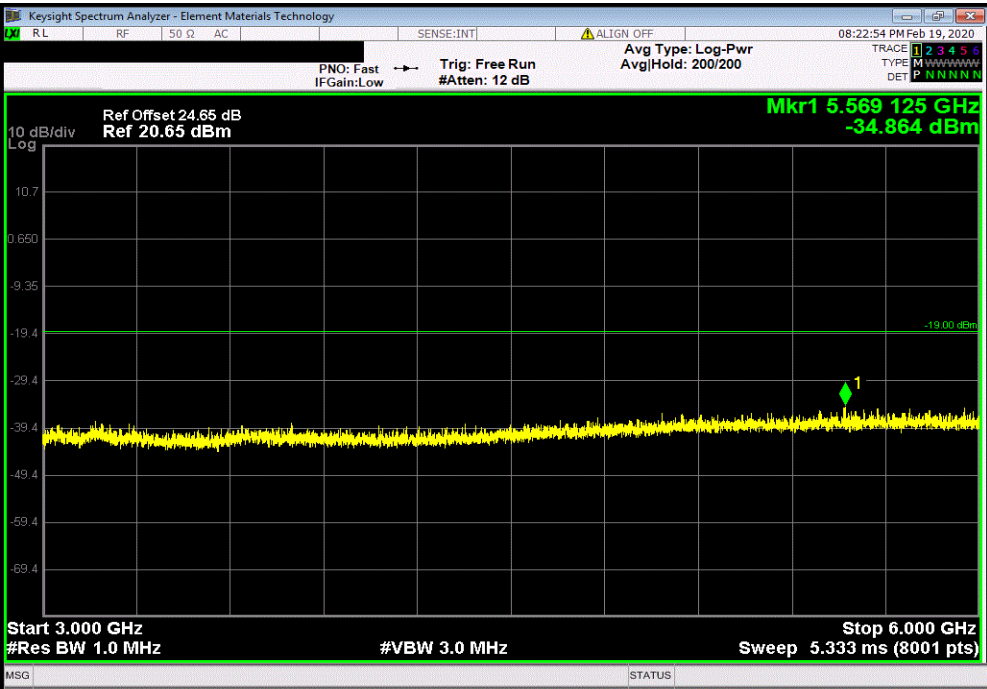


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| 5G Band 66a 2110 MHz - 2180 MHz , (Single Carrier) Port 4, Mid Channel 2145 MHz, 5 MHz Bandwidth, 256-QAM Modulation , Range 3, 20 MHz - 3 GHz |  |  |  |                |                |        |
|------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|----------------|----------------|--------|
|                                                                                                                                                |  |  |  | Value<br>(dBm) | Limit<br>(dBm) | Result |
|                                                                                                                                                |  |  |  | -29.444        | -19            | Pass   |



| 5G Band 66a 2110 MHz - 2180 MHz , (Single Carrier) Port 4, Mid Channel 2145 MHz, 5 MHz Bandwidth, 256-QAM Modulation , Range 4, 3 GHz - 6 GHz |  |  |  |                |                |        |
|-----------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|----------------|----------------|--------|
|                                                                                                                                               |  |  |  | Value<br>(dBm) | Limit<br>(dBm) | Result |
|                                                                                                                                               |  |  |  | -34.864        | -19            | Pass   |

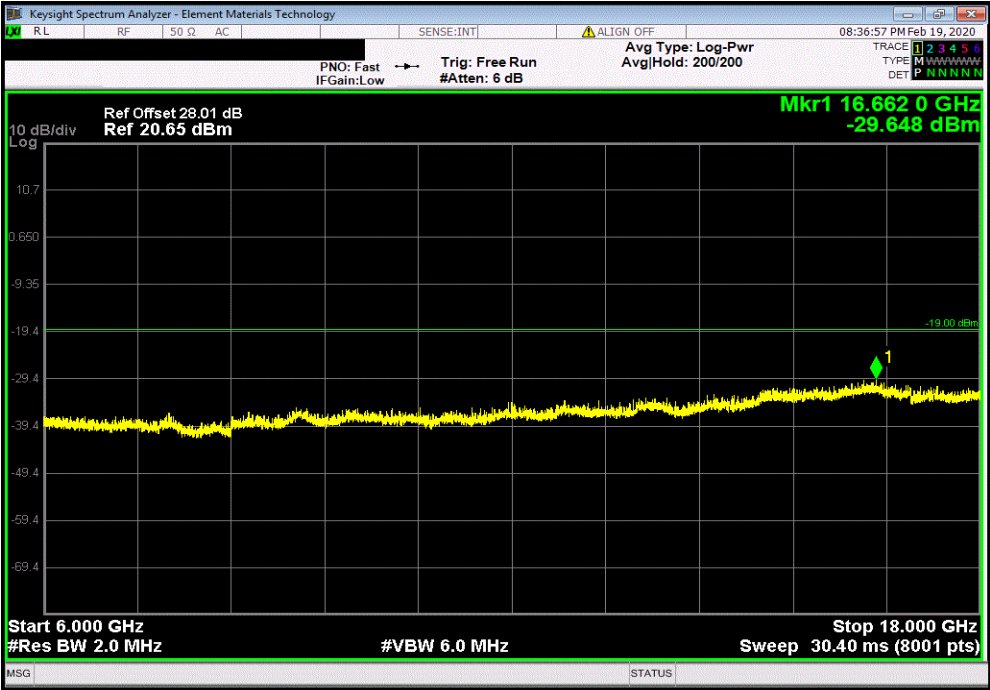


SPURIOUS CONDUCTED EMISSIONS BAND 66a

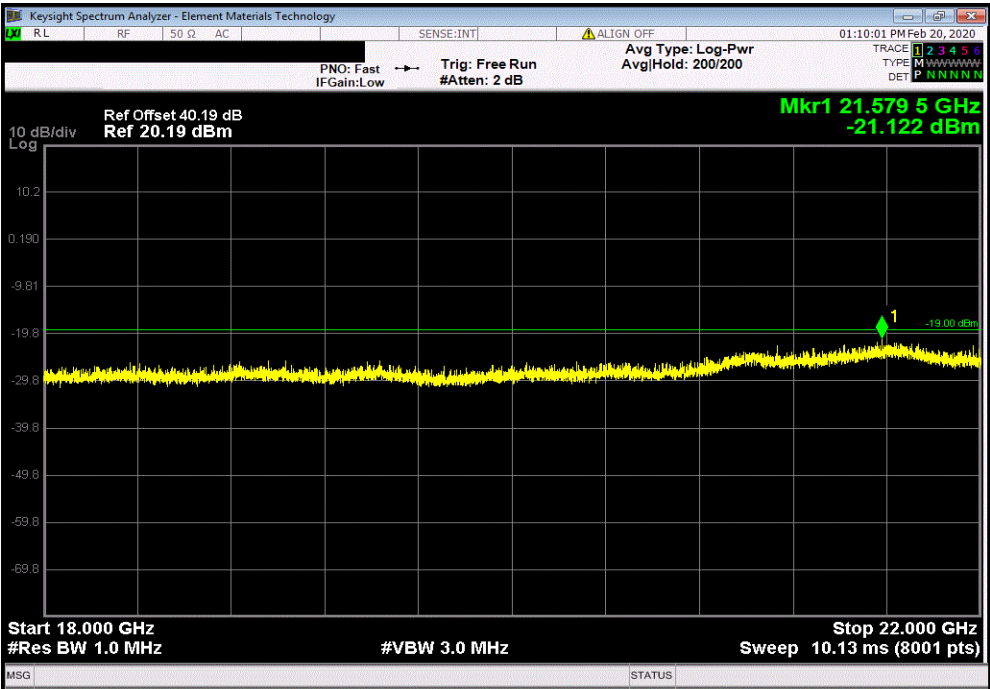


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| 5G Band 66a 2110 MHz - 2180 MHz , (Single Carrier) Port 4, Mid Channel 2145 MHz, 5 MHz Bandwidth, 256-QAM Modulation , Range 5, 6 GHz - 18 GHz |         |       |        |  |  |  |
|------------------------------------------------------------------------------------------------------------------------------------------------|---------|-------|--------|--|--|--|
|                                                                                                                                                | Value   | Limit | Result |  |  |  |
|                                                                                                                                                | (dBm)   | (dBm) |        |  |  |  |
|                                                                                                                                                | -29.648 | -19   | Pass   |  |  |  |



| 5G Band 66a 2110 MHz - 2180 MHz , (Single Carrier) Port 4, Mid Channel 2145 MHz, 5 MHz Bandwidth, 256-QAM Modulation , Range 6, 18 GHz - 22 GHz |         |       |        |  |  |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------|---------|-------|--------|--|--|--|
|                                                                                                                                                 | Value   | Limit | Result |  |  |  |
|                                                                                                                                                 | (dBm)   | (dBm) |        |  |  |  |
|                                                                                                                                                 | -21.122 | -19   | Pass   |  |  |  |



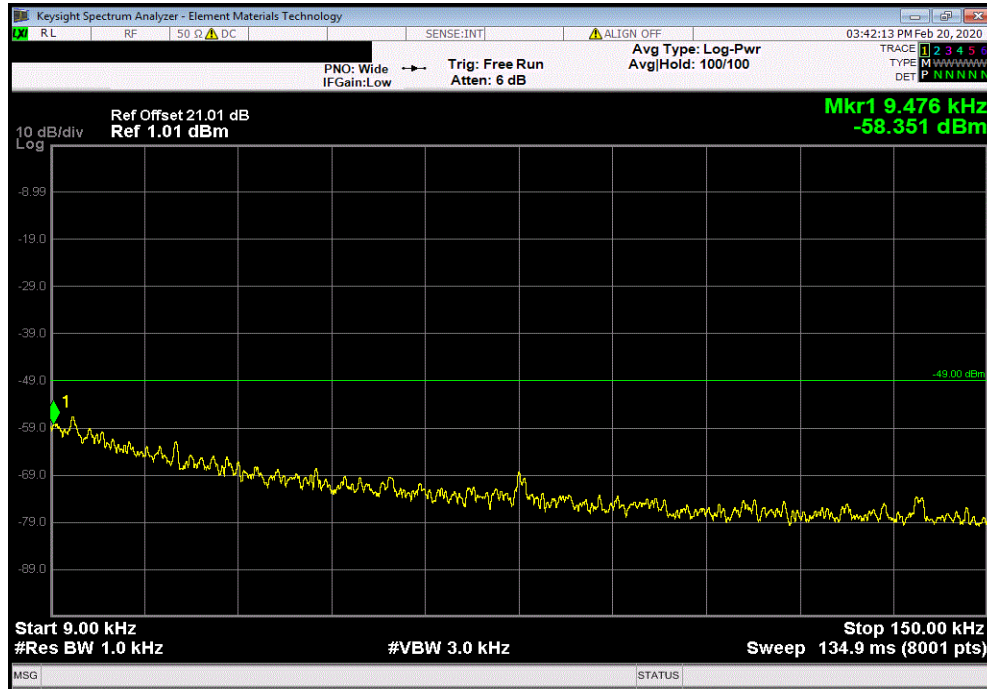
# SPURIOUS CONDUCTED EMISSIONS BAND 66a



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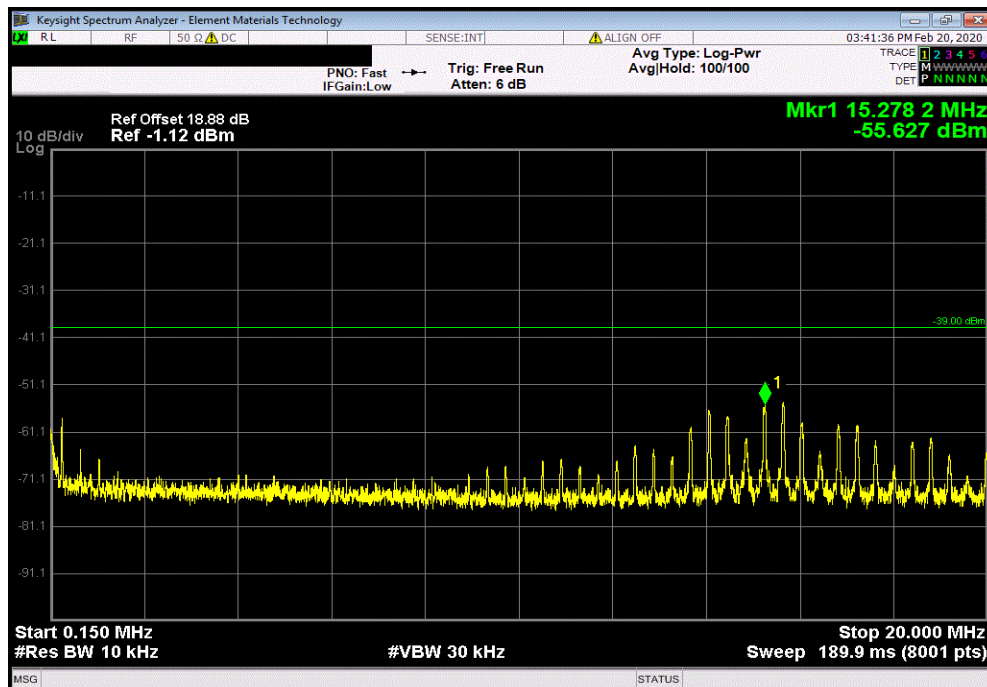
5G Band 66a 2110 MHz - 2180 MHz , (Single Carrier) Port 4, Mid Channel 2145 MHz, 10 MHz Bandwidth, 256-QAM Modulation , Range 1, 9 kHz - 150 kHz

|  | Value<br>(dBm) | Limit<br>(dBm) | Result |
|--|----------------|----------------|--------|
|  | -58.351        | -49            | Pass   |



5G Band 66a 2110 MHz - 2180 MHz , (Single Carrier) Port 4, Mid Channel 2145 MHz, 10 MHz Bandwidth, 256-QAM Modulation , Range 2, 150 kHz - 20 MHz

|  | Value<br>(dBm) | Limit<br>(dBm) | Result |
|--|----------------|----------------|--------|
|  | -55.627        | -39            | Pass   |

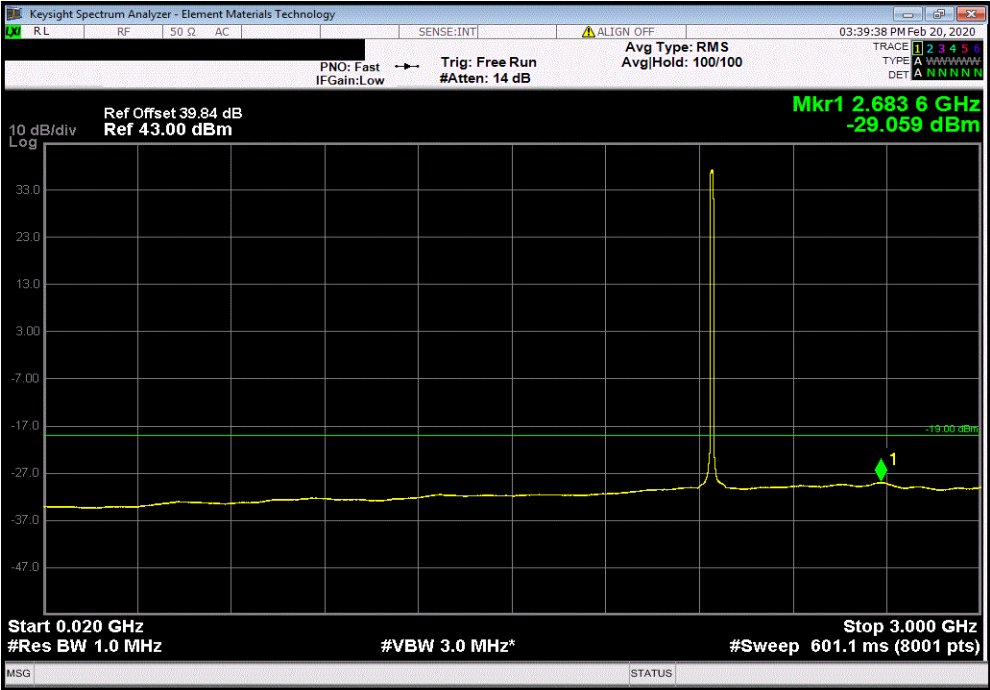


# SPURIOUS CONDUCTED EMISSIONS BAND 66a

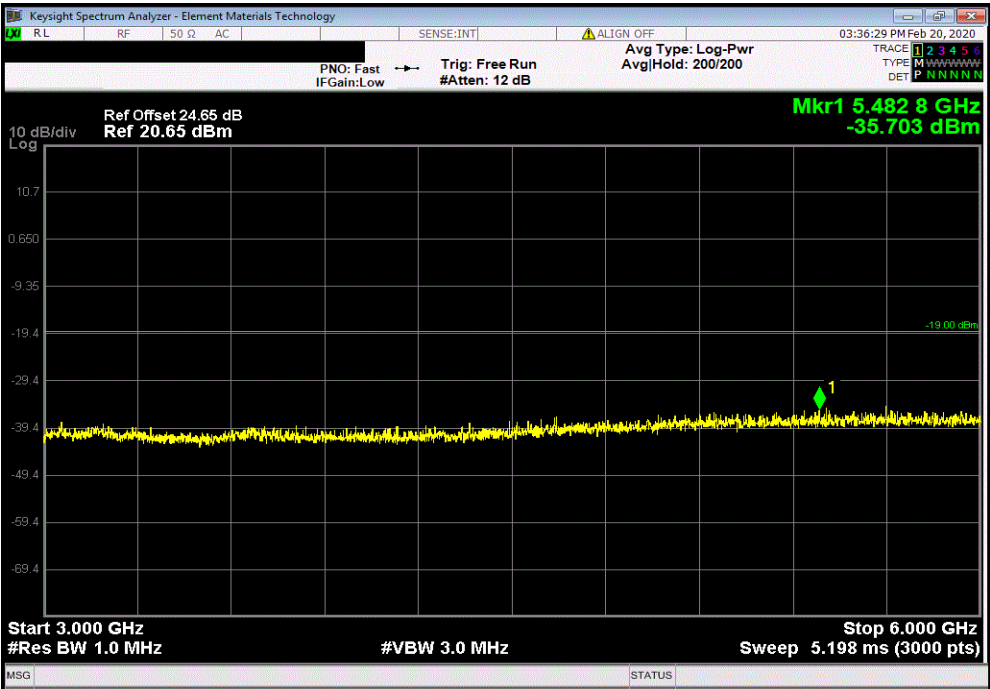


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| 5G Band 66a 2110 MHz - 2180 MHz , (Single Carrier) Port 4, Mid Channel 2145 MHz, 10 MHz Bandwidth, 256-QAM Modulation , Range 3, 20 MHz - 3 GHz |  |  |  |                |                |        |
|-------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|----------------|----------------|--------|
|                                                                                                                                                 |  |  |  | Value<br>(dBm) | Limit<br>(dBm) | Result |
|                                                                                                                                                 |  |  |  | -29.059        | -19            | Pass   |



| 5G Band 66a 2110 MHz - 2180 MHz , (Single Carrier) Port 4, Mid Channel 2145 MHz, 10 MHz Bandwidth, 256-QAM Modulation , Range 4, 3 GHz - 6 GHz |  |  |  |                |                |        |
|------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|----------------|----------------|--------|
|                                                                                                                                                |  |  |  | Value<br>(dBm) | Limit<br>(dBm) | Result |
|                                                                                                                                                |  |  |  | -35.703        | -19            | Pass   |

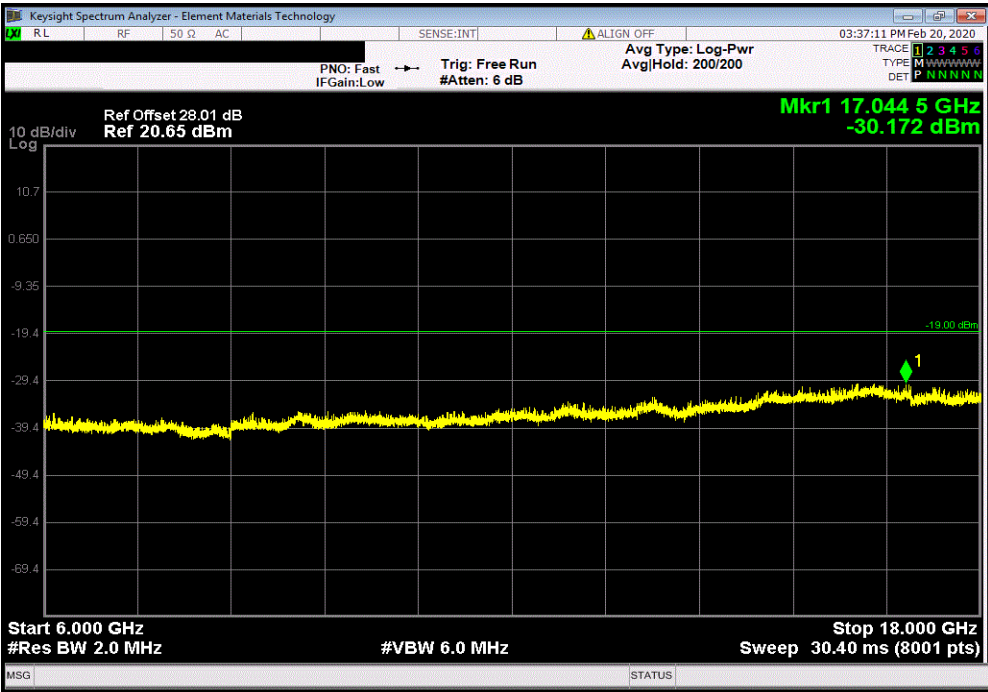


# SPURIOUS CONDUCTED EMISSIONS BAND 66a

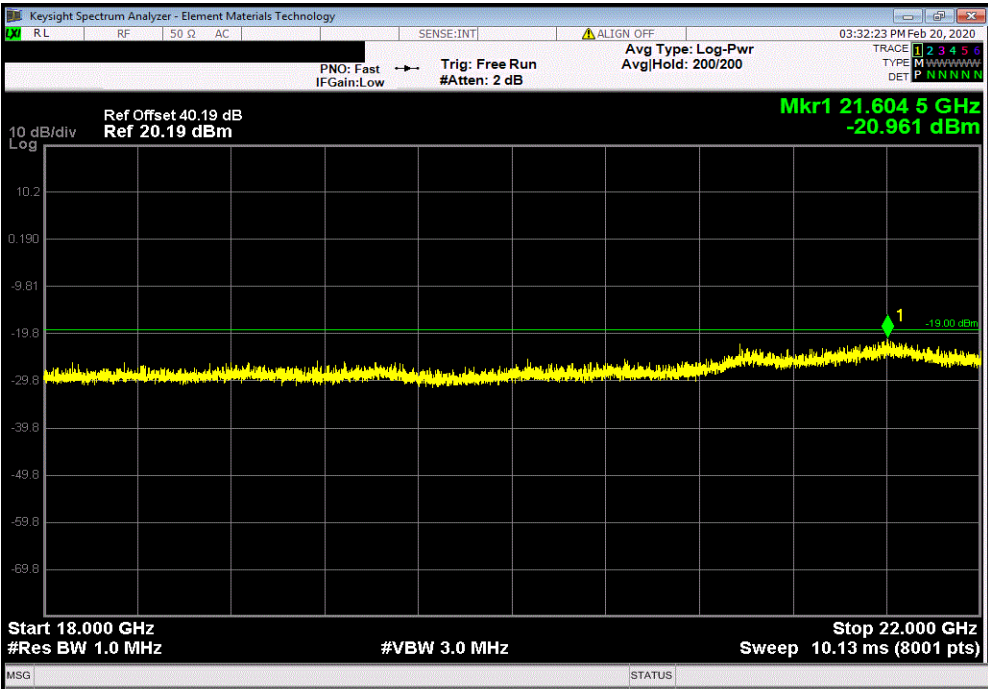


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| 5G Band 66a 2110 MHz - 2180 MHz , (Single Carrier) Port 4, Mid Channel 2145 MHz, 10 MHz Bandwidth, 256-QAM Modulation , Range 5, 6 GHz - 18 GHz |         |       |        |  |  |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------|---------|-------|--------|--|--|--|
|                                                                                                                                                 | Value   | Limit | Result |  |  |  |
|                                                                                                                                                 | (dBm)   | (dBm) |        |  |  |  |
|                                                                                                                                                 | -30.172 | -19   | Pass   |  |  |  |



| 5G Band 66a 2110 MHz - 2180 MHz , (Single Carrier) Port 4, Mid Channel 2145 MHz, 10 MHz Bandwidth, 256-QAM Modulation , Range 6, 18 GHz - 22 GHz |         |       |        |  |  |  |
|--------------------------------------------------------------------------------------------------------------------------------------------------|---------|-------|--------|--|--|--|
|                                                                                                                                                  | Value   | Limit | Result |  |  |  |
|                                                                                                                                                  | (dBm)   | (dBm) |        |  |  |  |
|                                                                                                                                                  | -20.961 | -19   | Pass   |  |  |  |



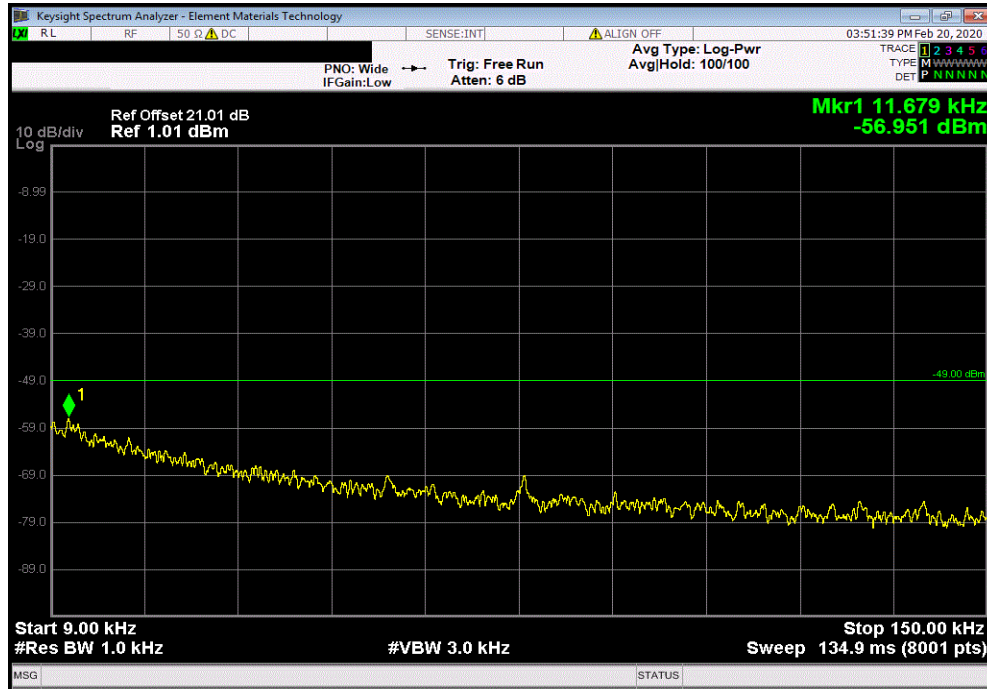
# SPURIOUS CONDUCTED EMISSIONS BAND 66a



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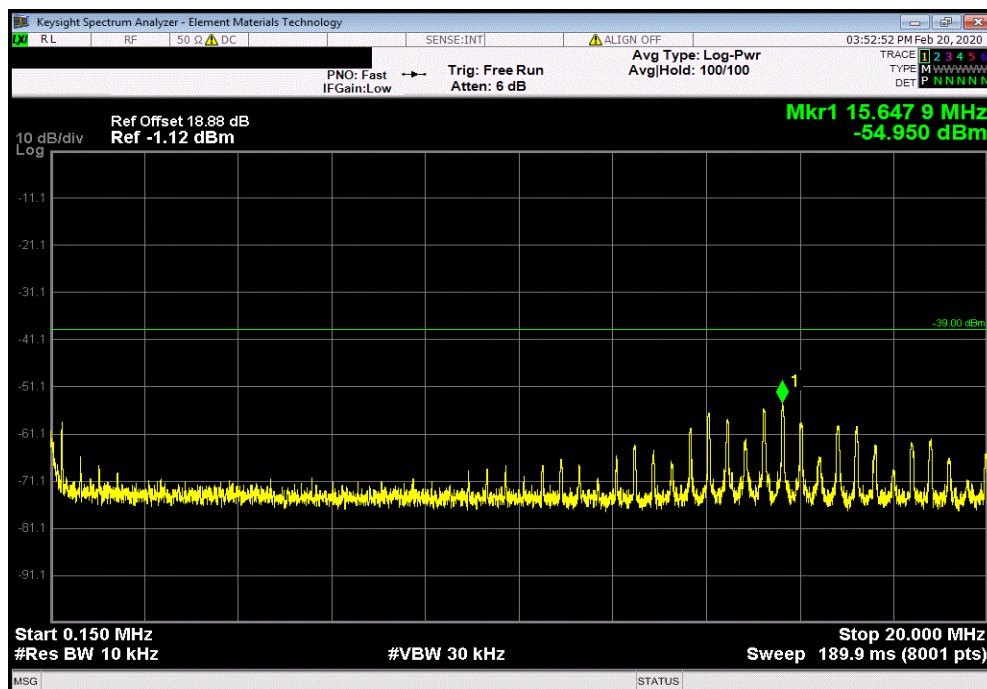
5G Band 66a 2110 MHz - 2180 MHz , (Single Carrier) Port 4, Mid Channel 2145 MHz, 15 MHz Bandwidth, 256-QAM Modulation , Range 1, 9 kHz - 150 kHz

|  | Value<br>(dBm) | Limit<br>(dBm) | Result |
|--|----------------|----------------|--------|
|  | -56.951        | -49            | Pass   |



5G Band 66a 2110 MHz - 2180 MHz , (Single Carrier) Port 4, Mid Channel 2145 MHz, 15 MHz Bandwidth, 256-QAM Modulation , Range 2, 150 kHz - 20 MHz

|  | Value<br>(dBm) | Limit<br>(dBm) | Result |
|--|----------------|----------------|--------|
|  | -54.95         | -39            | Pass   |



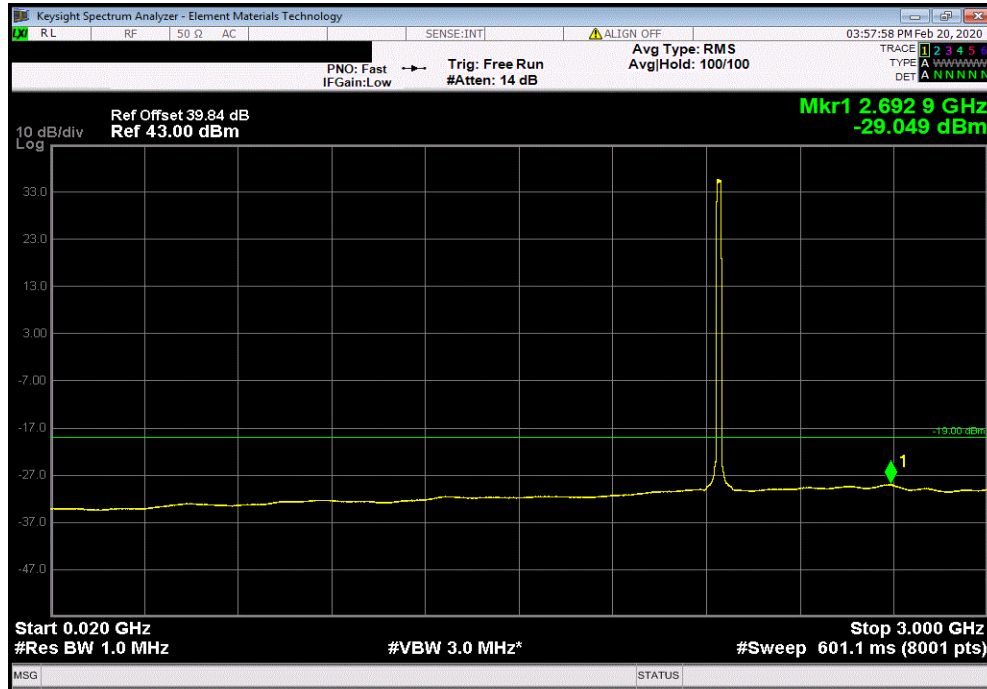
# SPURIOUS CONDUCTED EMISSIONS BAND 66a



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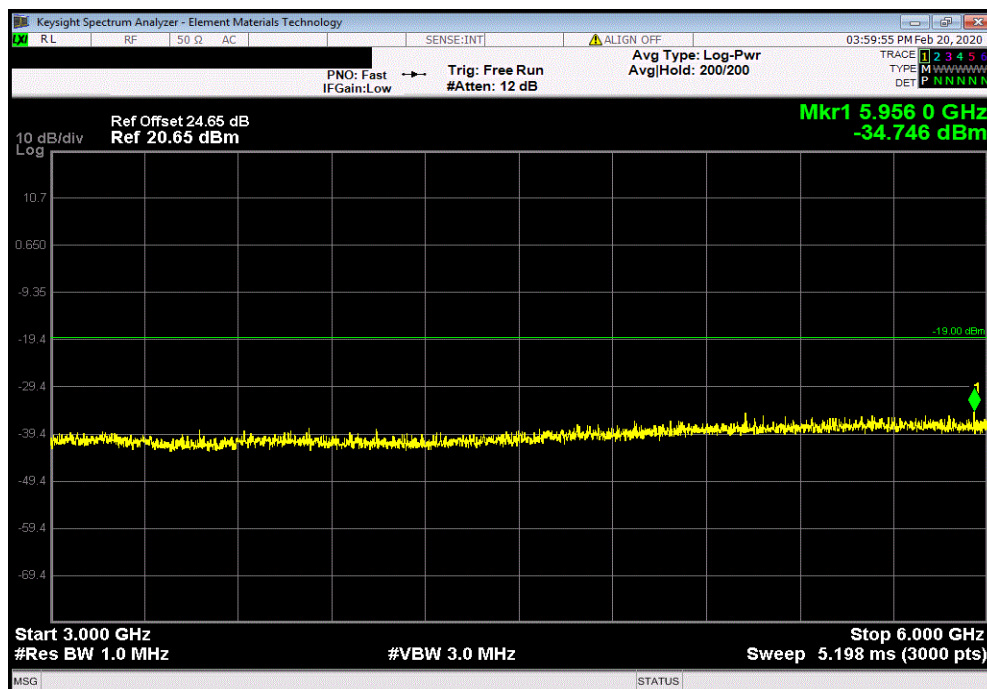
5G Band 66a 2110 MHz - 2180 MHz , (Single Carrier) Port 4, Mid Channel 2145 MHz, 15 MHz Bandwidth, 256-QAM Modulation , Range 3, 20 MHz - 3 GHz

|  |  |  |  | Value<br>(dBm) | Limit<br>(dBm) | Result |
|--|--|--|--|----------------|----------------|--------|
|  |  |  |  | -29.049        | -19            | Pass   |



5G Band 66a 2110 MHz - 2180 MHz , (Single Carrier) Port 4, Mid Channel 2145 MHz, 15 MHz Bandwidth, 256-QAM Modulation , Range 4, 3 GHz - 6 GHz

|  |  |  |  | Value<br>(dBm) | Limit<br>(dBm) | Result |
|--|--|--|--|----------------|----------------|--------|
|  |  |  |  | -34.746        | -19            | Pass   |



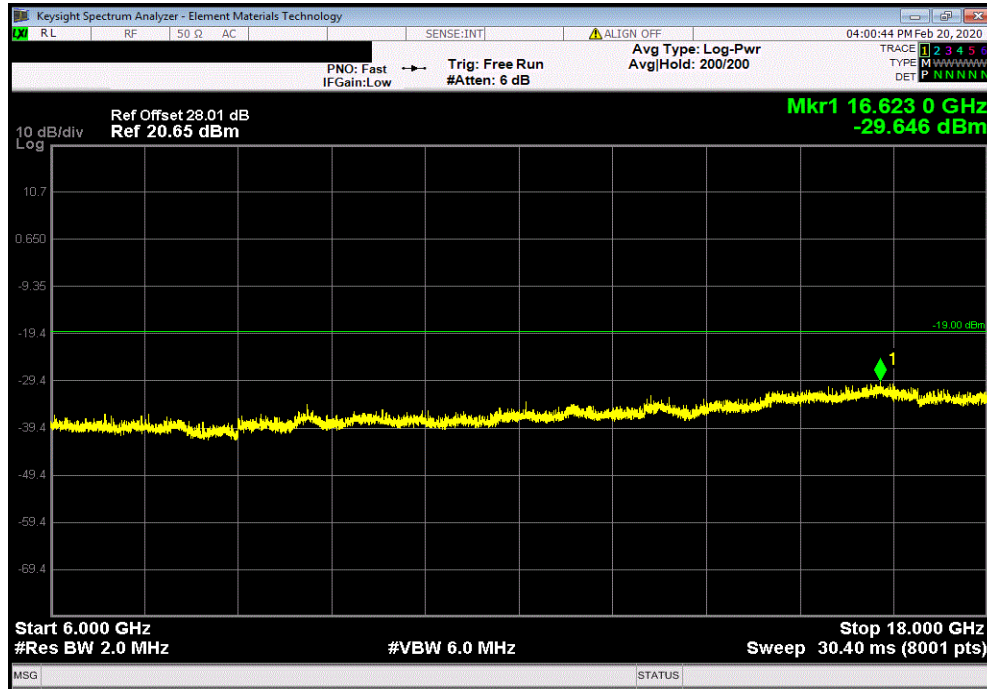
# SPURIOUS CONDUCTED EMISSIONS BAND 66a



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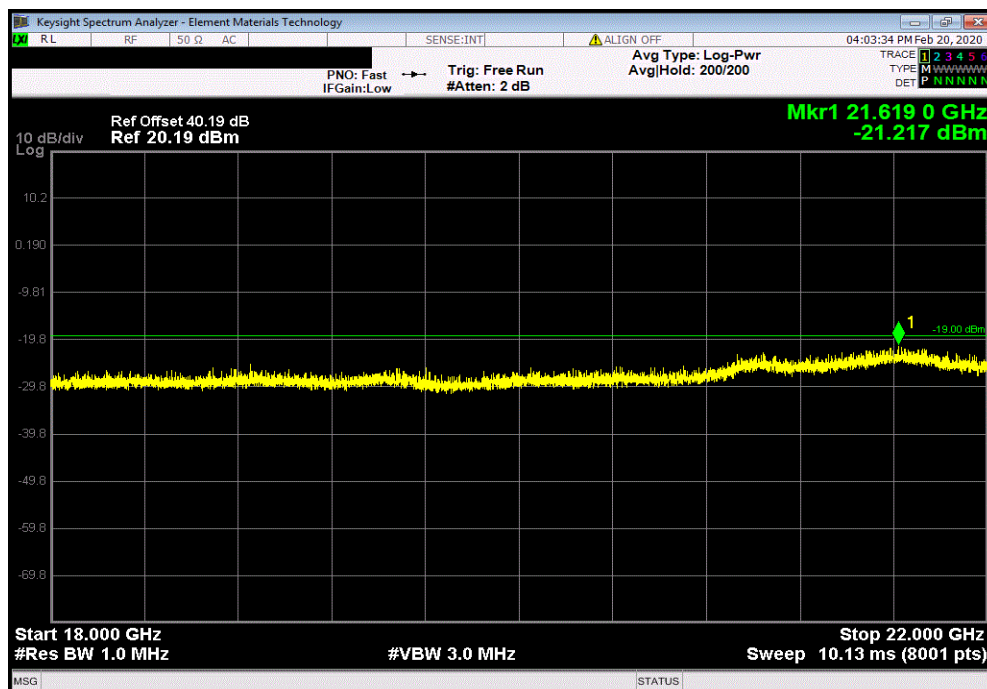
5G Band 66a 2110 MHz - 2180 MHz , (Single Carrier) Port 4, Mid Channel 2145 MHz, 15 MHz Bandwidth, 256-QAM Modulation , Range 5, 6 GHz - 18 GHz

|  |  |  |  | Value<br>(dBm) | Limit<br>(dBm) | Result |
|--|--|--|--|----------------|----------------|--------|
|  |  |  |  | -29.646        | -19            | Pass   |



5G Band 66a 2110 MHz - 2180 MHz , (Single Carrier) Port 4, Mid Channel 2145 MHz, 15 MHz Bandwidth, 256-QAM Modulation , Range 6, 18 GHz - 22 GHz

|  |  |  |  | Value<br>(dBm) | Limit<br>(dBm) | Result |
|--|--|--|--|----------------|----------------|--------|
|  |  |  |  | -21.217        | -19            | Pass   |



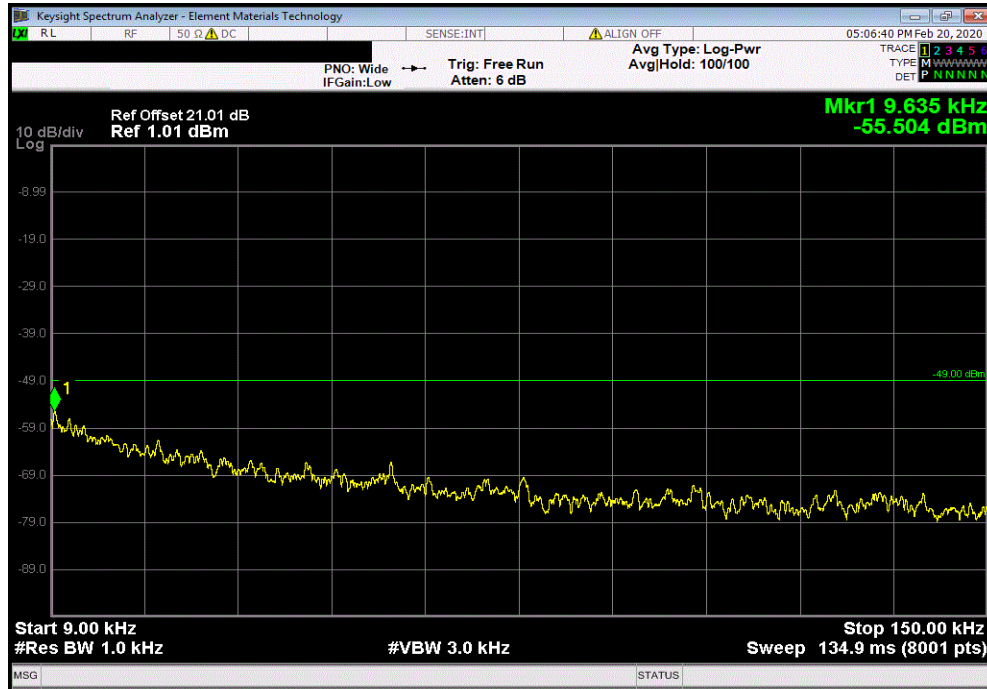
# SPURIOUS CONDUCTED EMISSIONS BAND 66a



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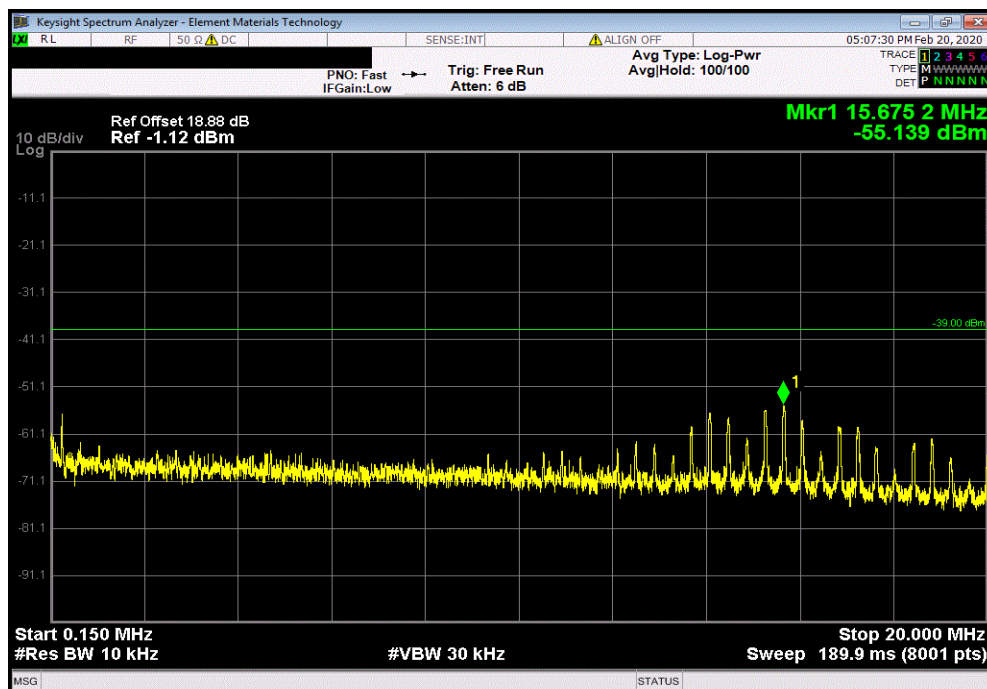
5G Band 66a 2110 MHz - 2180 MHz , (Single Carrier) Port 4, Mid Channel 2145 MHz, 20 MHz Bandwidth, 256-QAM Modulation , Range 1, 9 kHz - 150 kHz

|  |  |  |  | Value<br>(dBm) | Limit<br>(dBm) | Result |
|--|--|--|--|----------------|----------------|--------|
|  |  |  |  | -55.504        | -49            | Pass   |



5G Band 66a 2110 MHz - 2180 MHz , (Single Carrier) Port 4, Mid Channel 2145 MHz, 20 MHz Bandwidth, 256-QAM Modulation , Range 2, 150 kHz - 20 MHz

|  |  |  |  | Value<br>(dBm) | Limit<br>(dBm) | Result |
|--|--|--|--|----------------|----------------|--------|
|  |  |  |  | -55.139        | -39            | Pass   |



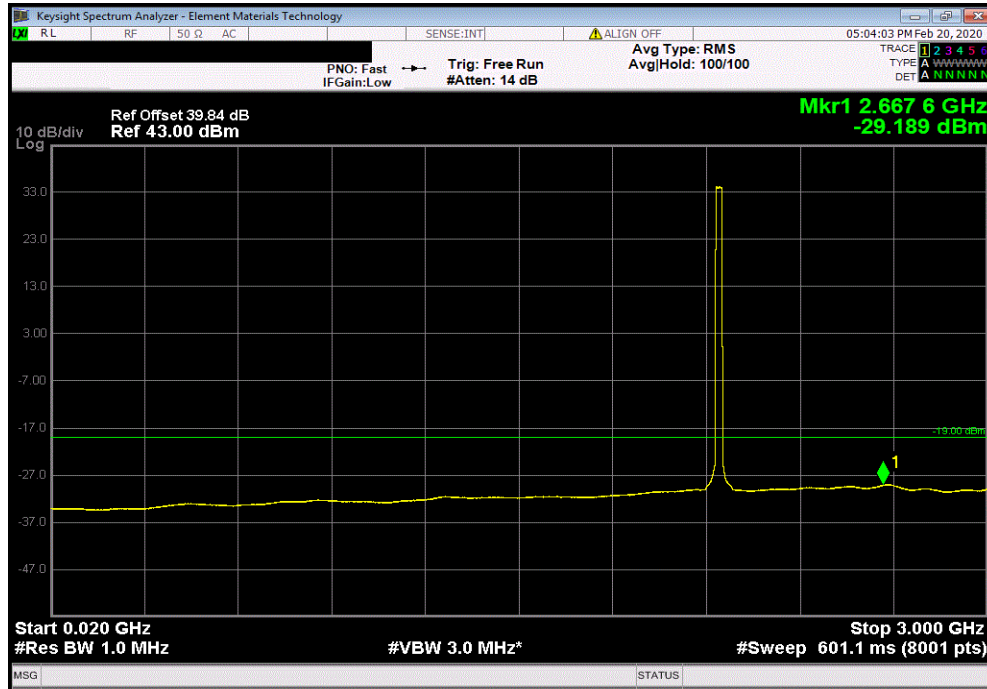
# SPURIOUS CONDUCTED EMISSIONS BAND 66a



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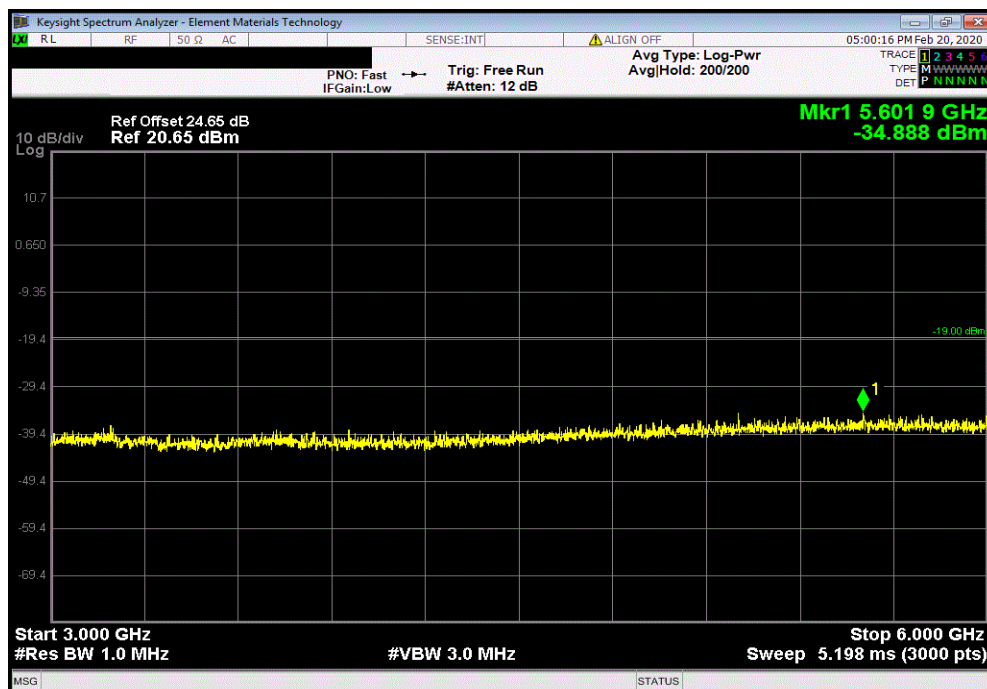
5G Band 66a 2110 MHz - 2180 MHz , (Single Carrier) Port 4, Mid Channel 2145 MHz, 20 MHz Bandwidth, 256-QAM Modulation , Range 3, 20 MHz - 3 GHz

|  |  |  |  | Value<br>(dBm) | Limit<br>(dBm) | Result |
|--|--|--|--|----------------|----------------|--------|
|  |  |  |  | -29.189        | -19            | Pass   |



5G Band 66a 2110 MHz - 2180 MHz , (Single Carrier) Port 4, Mid Channel 2145 MHz, 20 MHz Bandwidth, 256-QAM Modulation , Range 4, 3 GHz - 6 GHz

|  |  |  |  | Value<br>(dBm) | Limit<br>(dBm) | Result |
|--|--|--|--|----------------|----------------|--------|
|  |  |  |  | -34.888        | -19            | Pass   |

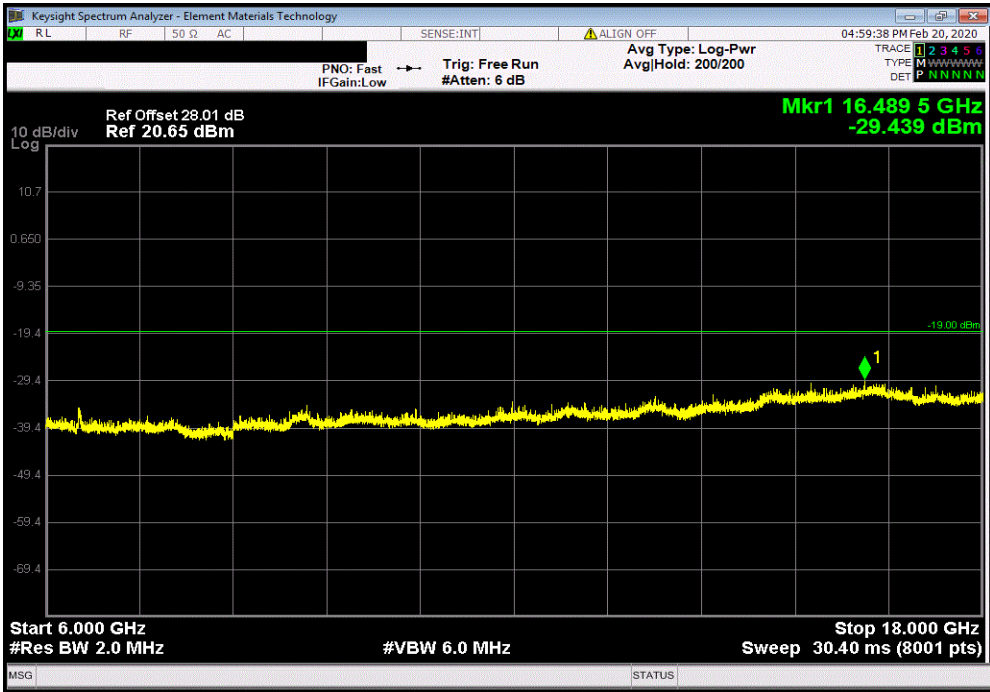


SPURIOUS CONDUCTED EMISSIONS BAND 66a



XMM 2019.09.05

| 5G Band 66a 2110 MHz - 2180 MHz , (Single Carrier) Port 4, Mid Channel 2145 MHz, 20 MHz Bandwidth, 256-QAM Modulation , Range 5, 6 GHz - 18 GHz |  |  |  |                |                |        |
|-------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|----------------|----------------|--------|
|                                                                                                                                                 |  |  |  | Value<br>(dBm) | Limit<br>(dBm) | Result |
|                                                                                                                                                 |  |  |  | -29.439        | -19            | Pass   |



| 5G Band 66a 2110 MHz - 2180 MHz , (Single Carrier) Port 4, Mid Channel 2145 MHz, 20 MHz Bandwidth, 256-QAM Modulation , Range 6, 18 GHz - 22 GHz |  |  |  |                |                |        |
|--------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|----------------|----------------|--------|
|                                                                                                                                                  |  |  |  | Value<br>(dBm) | Limit<br>(dBm) | Result |
|                                                                                                                                                  |  |  |  | -21.723        | -19            | Pass   |

