

XMit 2023.02.14.0

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

TEST EQUIPMENT

| Description | Manufacturer | Model | ID | Last Cal. | Cal. Due |
|------------------------------|--------------------|-------------|------|------------|------------|
| Signal Analyzer | Keysight | N9030B | R332 | 2022-07-28 | 2023-07-28 |
| Analyzer - Spectrum Analyzer | Keysight | N9010A | AFQ | 2023-02-09 | 2024-02-09 |
| Block - DC | Fairview Microwave | SD3235-2148 | ANF | 2023-05-24 | 2024-05-24 |
| Generator - Signal | Agilent | N5173B | TIW | 2020-07-17 | 2023-07-17 |

TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer.

Because the conducted Output Power was measured using a RMS Average detector, the Peak to Average Power Ratio (PAPR) was measured to show that the maximum peak-max-hold spectrum to the maximum of the average spectrum does not exceed the rule part defined limit.

The PAPR measurement method is described in ANSI C63.26 section 5.2.3.4. The PAPR was measured using the CCDF function of the spectrum analyzer.

Per FCC part 24.232(d), the PAPR limit shall not exceed 13 dB for more than the ANSI described 0.1% of the time.

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

Report No. NOKI0053.0

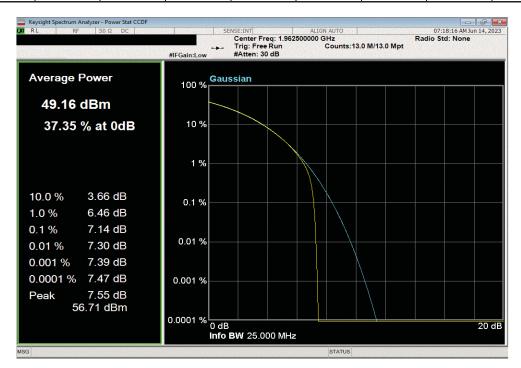


| | | | TbtTx 2022.05.02.0 | XMit 2023. |
|--------------------------------|---|--|----------------------------------|-------------------------------|
| EUT: AHFIG (FCC C2 | | Work Order: | | |
| Serial Number: See Configurati | | | 06/14/2023 | |
| Customer: Nokia Solutions | | Temperature: | | |
| Attendees: John Rattanavo | ng, Mitchell Hill | Humidity: | | |
| Project: None | | Barometric Pres.: | | |
| Tested by: Brandon Hobbs | | Job Site: | TX07 | |
| ST SPECIFICATIONS | Test Method | | | |
| C 24E:2023 | ANSI C63.26:2015 | | | |
| | | | | |
| DMMENTS | | | | |
| measurement path losses were | accounted for in the reference level offest including any attenuators, filters and DC blocks. Ba | and n25 carriers are enabled at maximum powe | er (80 watts/carrier). | |
| | | | | |
| VIATIONS FROM TEST STANDA | RD | | | |
| one | | | | |
| | 2 6 | | | |
| onfiguration # NOKI0053 | 3-2 Cinnature | | | |
| | Signature | | | |
| | | 0.1% PAPR | 0.1% PAPR | |
| | | Value (dB) | Limit (dB) | Result |
| Port 1 | All le Des Avidale | | | |
| 25 | MHz Bandwidth QPSK Modulation | | | |
| | Mid Channel 1962.5 MHz | 7.14 | 13 | Pass |
| | 16-QAM Modulation | 7.14 | 13 | FdSS |
| | Mid Channel 1962.5 MHz | 7.2 | 13 | |
| | Wild Chariffer 1902.5 Wil iz | 1.2 | | Dace |
| | 64-OAM Modulation | | 13 | Pass |
| | 64-QAM Modulation | 7 15 | | |
| | Mid Channel 1962.5 MHz | 7.15 | 13 | Pass Pass |
| | Mid Channel 1962.5 MHz 256-QAM Modulation | | 13 | Pass |
| | Mid Channel 1962.5 MHz 256-QAM Modulation Low Channel 1942.5 MHz | 7.44 | 13 | Pass Pass |
| | Mid Channel 1962.5 MHz 256-QAM Modulation Low Channel 1942.5 MHz Mid Channel 1962.5 MHz | 7.44 7.15 | 13 13 13 | Pass Pass Pass |
| 30 | Mid Channel 1962.5 MHz 256-QAM Modulation Low Channel 1942.5 MHz Mid Channel 1962.5 MHz High Channel 1982.5 MHz | 7.44 | 13 | Pass Pass |
| 30 | Mid Channel 1962.5 MHz 256-QAM Modulation Low Channel 1942.5 MHz Mid Channel 1962.5 MHz High Channel 1982.5 MHz MHz Bandwidth | 7.44 7.15 | 13 13 13 | Pass Pass Pass |
| 30 | Mid Channel 1962.5 MHz 256-QAM Modulation Low Channel 1942.5 MHz Mid Channel 1962.5 MHz High Channel 1982.5 MHz MHz Bandwidth QPSK Modulation | 7.44 7.15 7.18 | 13 13 13 13 | Pass Pass Pass Pass |
| 30 | Mid Channel 1962.5 MHz 256-QAM Modulation Low Channel 1942.5 MHz Mid Channel 1962.5 MHz High Channel 1982.5 MHz MHz Bandwidth QPSK Modulation Mid Channel 1962.5 MHz | 7.44 7.15 | 13 13 13 | Pass Pass Pass |
| 30 | Mid Channel 1962.5 MHz 256-QAM Modulation Low Channel 1942.5 MHz Mid Channel 1962.5 MHz High Channel 1982.5 MHz MHz Bandwidth QPSK Modulation Mid Channel 1962.5 MHz 16-QAM Modulation | 7.44 7.15 7.18 7.69 | 13 13 13 13 13 | Pass Pass Pass Pass Pass |
| 30 | Mid Channel 1962.5 MHz 256-QAM Modulation Low Channel 1942.5 MHz Mid Channel 1962.5 MHz High Channel 1982.5 MHz MHz Bandwidth QPSK Modulation Mid Channel 1962.5 MHz 16-QAM Modulation Mid Channel 1962.5 MHz | 7.44 7.15 7.18 | 13 13 13 13 | Pass Pass Pass Pass |
| 30 | Mid Channel 1962.5 MHz 256-QAM Modulation Low Channel 1942.5 MHz Mid Channel 1962.5 MHz High Channel 1982.5 MHz MHz Bandwidth QPSK Modulation Mid Channel 1962.5 MHz 16-QAM Modulation Mid Channel 1962.5 MHz 64-QAM Modulation | 7.44 7.15 7.18 7.69 7.53 | 13 13 13 13 13 | Pass Pass Pass Pass Pass |
| 30 | Mid Channel 1962.5 MHz 256-QAM Modulation Low Channel 1942.5 MHz Mid Channel 1962.5 MHz High Channel 1982.5 MHz MHz Bandwidth QPSK Modulation Mid Channel 1962.5 MHz 16-QAM Modulation Mid Channel 1962.5 MHz | 7.44 7.15 7.18 7.69 | 13 13 13 13 13 | Pass Pass Pass Pass |
| 301 | Mid Channel 1962.5 MHz 256-QAM Modulation Low Channel 1942.5 MHz Mid Channel 1962.5 MHz High Channel 1982.5 MHz MHz Bandwidth QPSK Modulation Mid Channel 1962.5 MHz 16-QAM Modulation Mid Channel 1962.5 MHz 64-QAM Modulation Mid Channel 1962.5 MHz | 7.44 7.15 7.18 7.69 7.53 | 13 13 13 13 13 13 | Pass Pass Pass Pass Pass |
| 30 | Mid Channel 1962.5 MHz 256-QAM Modulation Low Channel 1942.5 MHz Mid Channel 1962.5 MHz High Channel 1982.5 MHz MHz Bandwidth QPSK Modulation Mid Channel 1962.5 MHz 16-QAM Modulation Mid Channel 1962.5 MHz 64-QAM Modulation Mid Channel 1962.5 MHz 65-QAM Modulation Mid Channel 1962.5 MHz | 7.44 7.15 7.18 7.69 7.53 7.45 | 13 13 13 13 13 | Pass Pass Pass Pass Pass Pass |

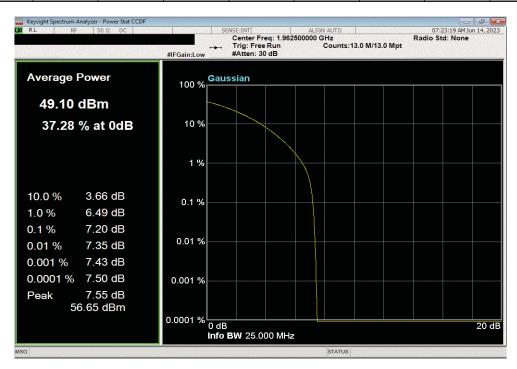
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Band n25 1930 MHz - 1995 MHz, 5G NR , Port 1, 25 MHz Bandwidth, QPSK Modulation, Mid Channel 1962.5 MHz
0.1% PAPR 0.1% PAPR
Value (dB) Limit (dB) Result
7.14 13 Pass



| | Band n25 1930 MHz - 1995 MHz, 5G NR , Port 1, 25 MHz Bandwidth, 16-QAM Modulation, Mid Channel 1962.5 MHz | | | | | | | | | |
|---|---|--|--|--|------------|------------|--------|--|--|--|
| | | | | | 0.1% PAPR | 0.1% PAPR | | | | |
| | | | | | Value (dB) | Limit (dB) | Result | | | |
| 1 | | | | | 7.2 | 13 | Pass | | | |



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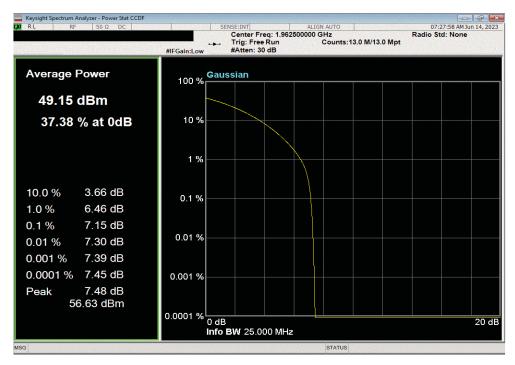


Band n25 1930 MHz - 1995 MHz, 5G NR , Port 1, 25 MHz Bandwidth, 64-QAM Modulation, Mid Channel 1962.5 MHz

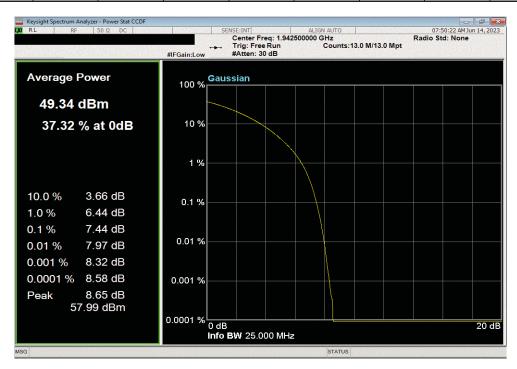
0.1% PAPR

Value (dB) Limit (dB) Result

7 15 13 Pass



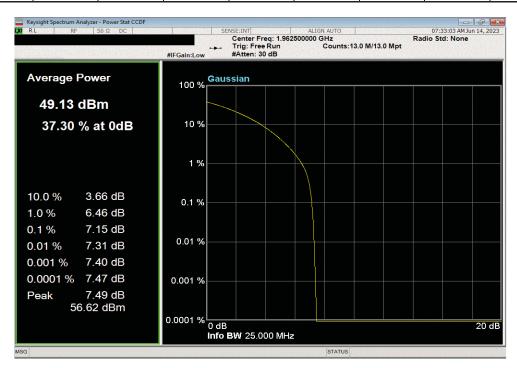
| | Band n25 1930 I | MHz - 1995 MHz, | 5G NR , Port 1, 2 | 25 MHz Bandwidt | h, 256-QAM Mod | ulation, Low Cha | nnel 1942.5 MHz |
|---|-----------------|-----------------|-------------------|-----------------|----------------|------------------|-----------------|
| | | | | | 0.1% PAPR | 0.1% PAPR | |
| | | | | | Value (dB) | Limit (dB) | Result |
| 1 | | | | | 7.44 | 13 | Pass |



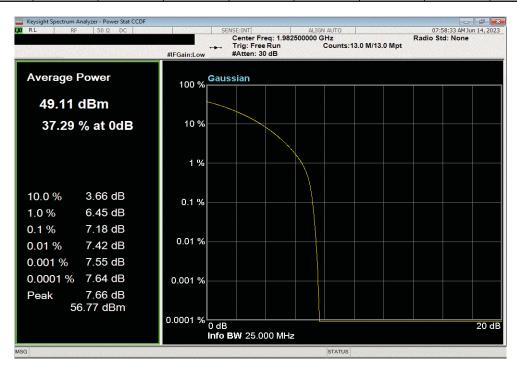
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Band n25 1930 MHz - 1995 MHz, 5G NR , Port 1, 25 MHz Bandwidth, 256-QAM Modulation, Mid Channel 1962.5 MHz
0.1% PAPR
0.1% PAPR
Value (dB) Limit (dB) Result
7.15 13 Pass



| Band n25 1930 MHz - 1995 MHz, 5G NR , Port 1, 25 MHz Bandwidth, 256-QAM Modulation, High Channel 1982.5 MHz | | | | | | | | |
|---|--|--|--|------------|------------|--------|--|--|
| | | | | 0.1% PAPR | 0.1% PAPR | | | |
| | | | | Value (dB) | Limit (dB) | Result | | |
| | | | | 7.18 | 13 | Pass | | |

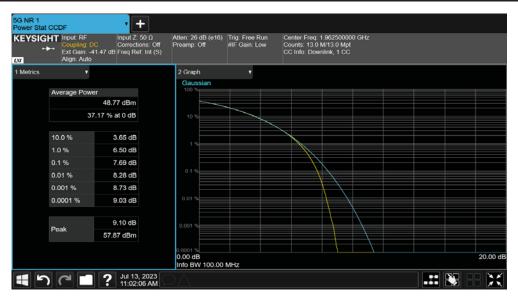


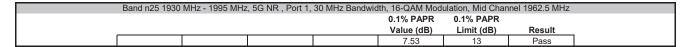
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Band n25 1930 MHz - 1995 MHz, 5G NR , Port 1, 30 MHz Bandwidth, QPSK Modulation, Mid Channel 1962.5 MHz

0.1% PAPR
0.1% PAPR
Value (dB) Limit (dB) Result
7.69 13 Pass

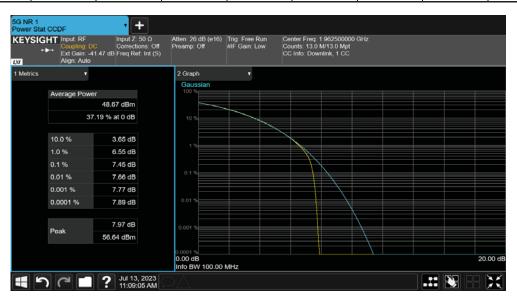


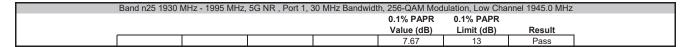




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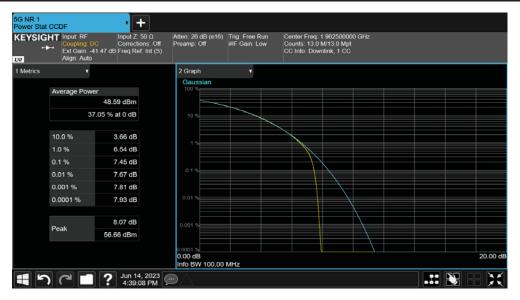


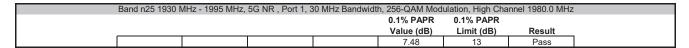
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Band n25 1930 MHz - 1995 MHz, 5G NR , Port 1, 30 MHz Bandwidth, 256-QAM Modulation, Mid Channel 1962.5 MHz

0.1% PAPR
0.1% PAPR
Value (dB) Limit (dB) Result
7.45 13 Pass







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XMit 2023.02.14.0

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TEST EQUIPMENT

| Description | Manufacturer | Model | ID | Last Cal. | Cal. Due |
|------------------------------|--------------------|-------------|------|------------|------------|
| Block - DC | Fairview Microwave | SD3235-2148 | ANF | 2023-05-24 | 2024-05-24 |
| Analyzer - Spectrum Analyzer | Keysight | N9010A | AFQ | 2023-02-09 | 2024-02-09 |
| Generator - Signal | Agilent | N5173B | TIW | 2020-07-17 | 2023-07-17 |
| Signal Analyzer | Keysight | N9030B | R332 | 2022-07-28 | 2023-07-28 |

TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer.

Because the conducted Output Power was measured using a RMS Average detector, the Peak to Average Power Ratio (PAPR) was measured to show that the maximum peak-max-hold spectrum to the maximum of the average spectrum does not exceed the rule part defined limit.

The PAPR measurement method is described in ANSI C63.26 section 5.2.3.4. The PAPR was measured using the CCDF function of the spectrum analyzer.

Per FCC part 27.50(d)(5) and RSS-139 section 5.5. the maximum peak-to-average power ratio (PAPR) is 13dB.

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

Report No. NOKI0053.0



| | | | TbtTx 2022.05.02.0 | XMit 2023.0 |
|----------------------------|--|--|-----------------------|-------------|
| EUT: AHFIG (FC | | Work Order: | | |
| Serial Number: See Config | | | 06/14/2023 | |
| Customer: Nokia Solu | itions and Networks | Temperature: | 21.1°C | |
| Attendees: John Ratta | anavong, Mitchell Hill | Humidity: | | |
| Project: None | | Barometric Pres.: | | |
| Tested by: Brandon H | | Job Site: | TX07 | |
| ST SPECIFICATIONS | Test Method | | | |
| C 27:2023 | ANSI C63.26:2015 | | | |
| | | | | |
| DMMENTS | | | | |
| measurement path losses v | were accounted for in the reference level offest including any attenuators, filters and DC blocks. | Band n66 carriers are enabled at maximum power | r (40 watts/carrier). | |
| EVIATIONS FROM TEST STA | NDAPD | | | |
| ne | ALICANIA MARCHANIA MARCHAN | | | |
| nie | | | | |
| onfiguration # NOK | (10053-2 | | | |
| ingulation # | Signature | | | |
| | Signature | 0.1% PAPR | 0.1% PAPR | |
| | | Value (dB) | Limit (dB) | Result |
| nd n66 2110 MHz - 2200 MHz | 5 SC NP | | - (, , | |
| Port 1 | | | | |
| | 25 MHz Bandwidth | | | |
| | QPSK Modulation | 7.10 | 40 | |
| | Mid Channel 2155 MHz | 7.10 | 13 | Pass |
| | 16-QAM Modulation | 7.00 | 40 | |
| | Mid Channel 2155 MHz | 7.20 | 13 | Pass |
| | 64-QAM Modulation | 7.10 | 40 | |
| | Mid Channel 2155 MHz | 7.10 | 13 | Pass |
| | 256-QAM Modulation | | | _ |
| | Low Channel 2122.5 MHz | 7.21 | 13 | Pass |
| | Mid Channel 2155 MHz | 7.14 | 13 | Pass |
| | High Channel 2187.5 MHz | 7.24 | 13 | Pass |
| | 30 MHz Bandwidth | | | |
| | QPSK Modulation | | | |
| | Mid Channel 2155 MHz | 7.49 | 13 | Pass |
| | 16-QAM Modulation | | | |
| | Mid Channel 2155 MHz | 7.51 | 13 | Pass |
| | 64-QAM Modulation | | | |
| | Mid Channel 2155 MHz | 7.45 | 13 | Pass |
| | | | | |
| | 256-QAM Modulation | | | |
| | 256-QAM Modulation Low Channel 2125 MHz | 7.52 | 13 | Pass |
| | 256-QAM Modulation | 7.52 7.52 7.55 | 13 13 13 | |

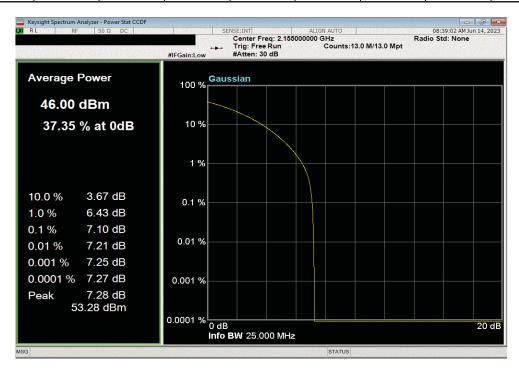
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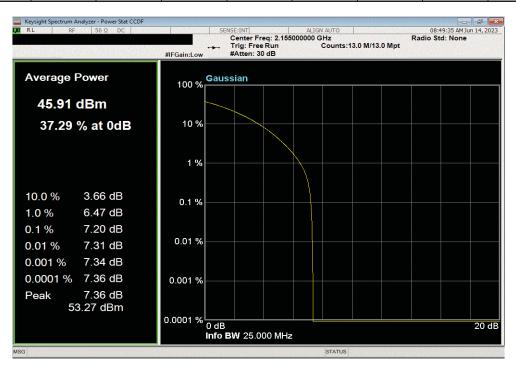
Band n66 2110 MHz - 2200 MHz, 5G NR , Port 1, 25 MHz Bandwidth, QPSK Modulation, Mid Channel 2155 MHz

0.1% PAPR
0.1% PAPR
Value (dB) Limit (dB) Result

7.1 13 Pass



| Band n66 2110 | 0 MHz - 2200 MH | z, 5G NR , Port 1 | , 25 MHz Bandwi | dth, 16-QAM Mod | dulation, Mid Cha | nnel 2155 MHz | |
|---------------|-----------------|-------------------|-----------------|-----------------|-------------------|---------------|--|
| | | | | 0.1% PAPR | 0.1% PAPR | | |
| | | | | Value (dB) | Limit (dB) | Result | |
| | | | | 7.2 | 13 | Pass | |



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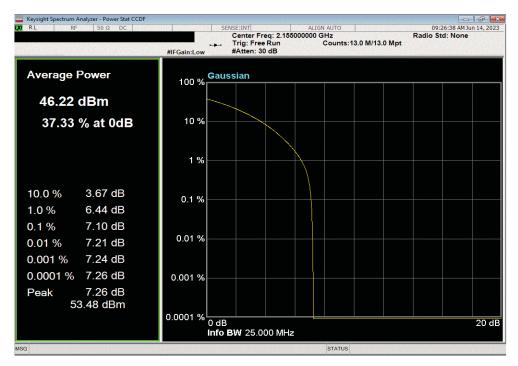


Band n66 2110 MHz - 2200 MHz, 5G NR , Port 1, 25 MHz Bandwidth, 64-QAM Modulation, Mid Channel 2155 MHz

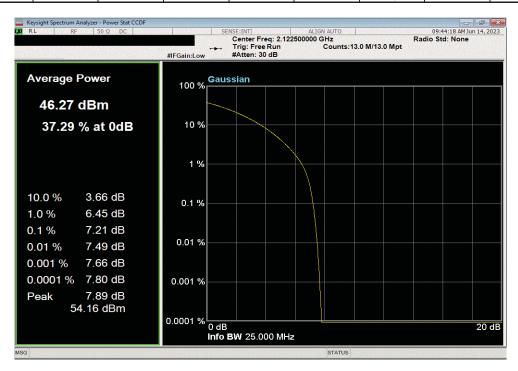
0.1% PAPR

Value (dB) Limit (dB) Result

7.1 13 Pass



| Band n66 2110 I | MHz - 2200 MHz, | 5G NR , Port 1, 2 | 25 MHz Bandwidt | h, 256-QAM Mod | ulation, Low Cha | nnel 2122.5 MHz | |
|-----------------|-----------------|-------------------|-----------------|----------------|------------------|-----------------|--|
| | | | | 0.1% PAPR | 0.1% PAPR | | |
| | | | | Value (dB) | Limit (dB) | Result | |
| | | | | 7.21 | 13 | Pass | |



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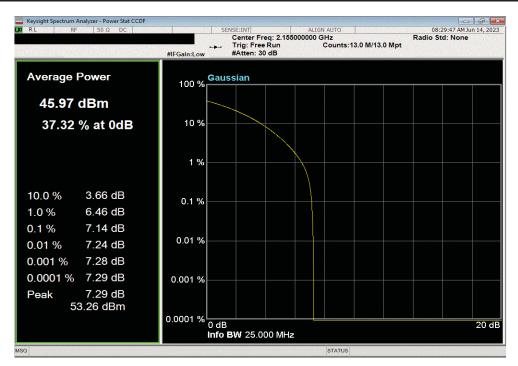


Band n66 2110 MHz - 2200 MHz, 5G NR , Port 1, 25 MHz Bandwidth, 256-QAM Modulation, Mid Channel 2155 MHz

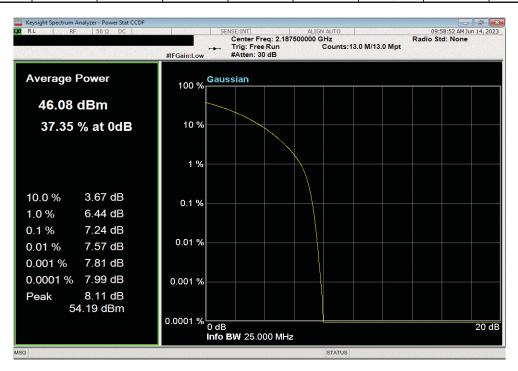
0.1% PAPR

Value (dB) Limit (dB) Result

7.14 13 Pass



| Band n66 2110 N | ИНz - 2200 МНz, | 5G NR, Port 1, 2 | 25 MHz Bandwidt | h, 256-QAM Mod | ulation, High Cha | nnel 2187.5 MHz | |
|-----------------|-----------------|------------------|-----------------|----------------|-------------------|-----------------|--|
| | | | | 0.1% PAPR | 0.1% PAPR | | |
| | | | | Value (dB) | Limit (dB) | Result | |
| | | | | 7.24 | 13 | Pass | |

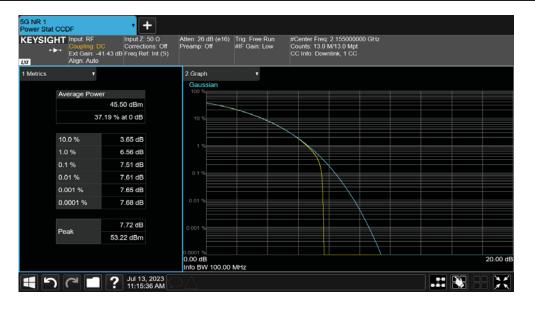


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| Band n66 2110 |) MHz - 2200 MH | z, 5G NR , Port 1 | , 30 MHz Bandwi | dth, 16-QAM Mod | dulation, Mid Cha | nnel 2155 MHz | |
|---------------|-----------------|-------------------|-----------------|-----------------|-------------------|---------------|---|
| | | | | 0.1% PAPR | 0.1% PAPR | | |
| | | | | Value (dB) | Limit (dB) | Result | |
| | | | | 7.51 | 13 | Pass | i |



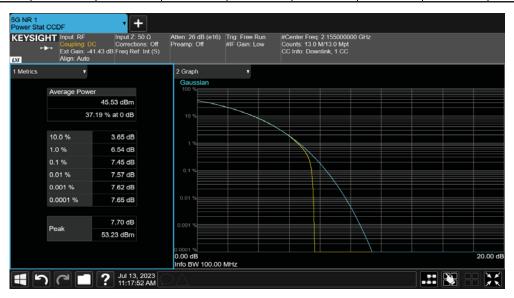
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Band n66 2110 MHz - 2200 MHz, 5G NR , Port 1, 30 MHz Bandwidth, 64-QAM Modulation, Mid Channel 2155 MHz

0.1% PAPR 0.1% PAPR
Value (dB) Limit (dB) Result

7.45 13 Pass



| Band n66 2110 | MHz - 2200 MHz | , 5G NR , Port 1, | 30 MHz Bandwid | lth, 256-QAM Mo | dulation, Low Cha | annel 2125 MHz |
|---------------|----------------|-------------------|----------------|-----------------|-------------------|----------------|
| | | | | 0.1% PAPR | 0.1% PAPR | |
| | | | | Value (dB) | Limit (dB) | Result |
| | | | | 7.52 | 13 | Pass |

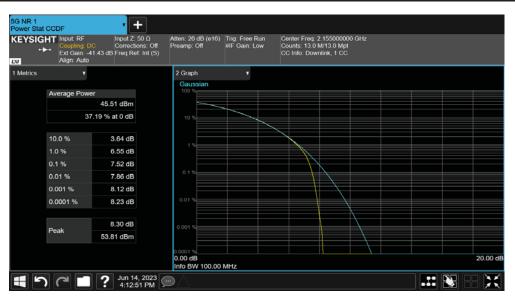


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Band n66 2110 MHz - 2200 MHz, 5G NR , Port 1, 30 MHz Bandwidth, 256-QAM Modulation, Mid Channel 2155 MHz

0.1% PAPR
0.1% PAPR
Value (dB) Limit (dB) Result
7.52 13 Pass



| | Band n66 2110 | MHz - 2200 MHz | , 5G NR , Port 1, | 30 MHz Bandwid | th, 256-QAM Mod | dulation, High Ch | annel 2185 MHz |
|---|---------------|----------------|-------------------|----------------|-----------------|-------------------|----------------|
| | | | | | 0.1% PAPR | 0.1% PAPR | |
| | | | | | Value (dB) | Limit (dB) | Result |
| I | | | | | 7.55 | 13 | Pass |



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TEST EQUIPMENT

| Description | Manufacturer | Model | ID | Last Cal. | Cal. Due |
|------------------------------|--------------------|-------------|-----|------------|------------|
| Generator - Signal | Agilent | N5173B | TIW | 2020-07-17 | 2023-07-17 |
| Analyzer - Spectrum Analyzer | Keysight | N9010A | AFQ | 2023-02-09 | 2024-02-09 |
| Block - DC | Fairview Microwave | SD3235-2148 | ANF | 2023-05-24 | 2024-05-24 |

TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. The spurious RF conducted emissions at the edges of the authorized bands were measured with the EUT set to low and high transmit frequencies in the available band. The channels closest to the band edges were selected. The EUT was transmitting at the data rate(s) listed in the datasheet.

The spectrum was scanned below the lower band edge and above the higher band edge.

All limits were adjusted by a factor of [-10*log(4)] dB to account for the device operation as a 4 port MIMO transmitter, as per FCC KDB 622911.

Per section 27.53(h)(1) and 24.238(a), the power of any emission outside of the authorized operating frequency range cannot exceed -13 dBm. The limit is adjusted to -19 dBm [-13 dBm -10 log (4)] per FCC KDB 662911D01 v02r01 because the BTS may operate as a 4 port MIMO transmitter.

Per 27.53(h)(3) and 24.238(b), emissions seen up to 1 MHz outside of authorized operating frequency range band edges shell be measured with a RBW of 1% of the measured emission bandwidth Any emission seen to be > 1 MHz further outside the band edges shall be measured with a RBW of 1 MHz. However, a narrower RBW of at least 1% of the emission bandwidth is still allowed provided that the measured power is integrated over the full reference bandwidth of 1 MHz.

Multicarrier Test Case 1 (PCS Multicarrier LBE): In the PCS band _Two NR 30MHz carriers (with minimum spacing between carrier frequencies) at the lower band edge (1945 & 1975MHz). In AWS band NR 5MHz carrier is enable at middle channel (2155.0MHz) at full power (40W). The largest channel bandwidth is selected to maximize carrier OBW. The carriers are operated at maximum power (~40W/PCS carrier and 40W/AWS carrier) with a total port power of 120 watts.

Multicarrier Test Case 2 (PCS Multicarrier UBE): In the PCS band _Two NR 30MHz carriers (with minimum spacing between carrier frequencies) at the upper band edge (1950 & 1980MHz). In AWS band NR 5MHz carrier is enable at middle channel (2155.0MHz) at full power (40W). The largest channel bandwidth is selected to maximize carrier OBW. The carriers are operated at maximum power (~40W/PCS carrier and 40W/AWS carrier) with a total port power of 120 watts.

Multicarrier Test Case 3 (AWS Multicarrier LBE): In the AWS band _Two NR 30MHz carriers (with minimum spacing between carrier frequencies) at the lower band edge (2125 & 2155MHz). In PCS band NR 5MHz carrier is enable at middle channel (1962.5MHz) at full power (80W). The largest channel bandwidth is selected to maximize carrier OBW. The carriers are operated at maximum power (~20W/AWS carrier and 80W/PCS carrier) with a total port power of 120 watts.

Multicarrier Test Case 4 (AWS Multicarrier UBE): In the AWS band _Two NR 30MHz carriers (with minimum spacing between carrier frequencies) at the upper band edge (2185 & 2155MHz). In PCS band NR 5MHz carrier is enable at middle channel (1962.5MHz) at full power (80W). The largest channel bandwidth is selected to maximize carrier OBW. The carriers are operated at maximum power (~20W/AWS carrier and 80W/PCS carrier) with a total port power of 120 watts.

Multicarrier Multiband Test Case 5: In the PCS band _Three NR 5MHz carriers with Two NR 5MHz (minimum spacing between carrier frequencies) at the lower band edge (1932.5 & 1937.5 MHz) and one NR 5MHz carrier (maximum spacing with other two) at the upper band edge (1992.5 MHz). In AWS band_Three NR 5MHz carriers with Two NR 5MHz (minimum spacing between carrier frequencies) at the lower band edge (2112.5 & 2117.5 MHz) and one NR 5MHz carrier (maximum spacing with other two) at the upper band edge (2197.5 MHz). The smallest channel bandwidth was selected to maximize carrier power spectral density. The carriers are operated at maximum power (~13.3W/AWS carrier and ~26.6W/PCS carrier) with a total port power of 120 watts.

maximize carrier power spectral density. The carriers are operated at maximum power (~13.3W/AWS carrier and ~26.6W/PCS carrier) with a total port power of 120 watts.

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

The band edge testing was performed using only one modulation type because the Occupied Bandwidth variation between modulation types is small, the average output power variation between modulation types is small, and there was small variation in band edge measurements over modulation types from previous certification testing for other channel bandwidths. (See ANSI C63.26. clause 5.7.2e).

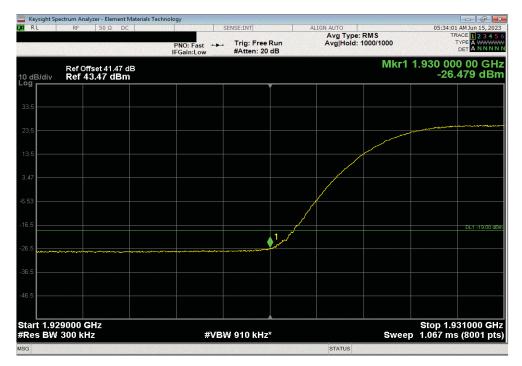
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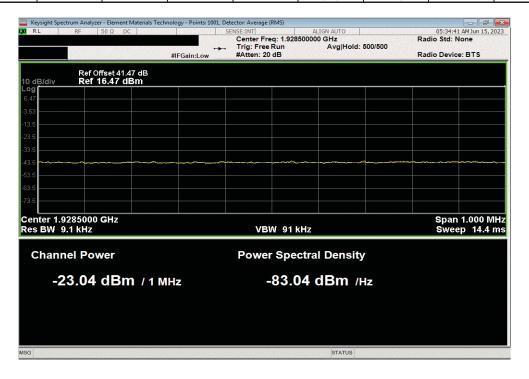
| | | | | | TbtTx 2022.05.02.0 | XMit 202 |
|------------------|---|--|--|-------------------------------|--------------------|----------|
| | AHFIG (FCC C2PC) | | | Work Order: | | |
| | See Configuration | | | | 06/14/2023 | |
| | Nokia Solutions and No | | | Temperature: | | |
| | John Rattanavong, Mite | chell Hill | | Humidity: | | |
| Project: | | | | Barometric Pres.: | | |
| | Brandon Hobbs | | Power: 54 VDC | Job Site: | TX07 | |
| ST SPECIFICATI | IONS | | Test Method | | | |
| CC 24E:2023 | | | ANSI C63.26:2015 | | | |
| C 27:2023 | | | ANSI C63.26:2015 | | | |
| OMMENTS | | | | | | |
| I measurement pa | ath losses were accoun | ted for in the reference level offest includir | g any attenuators, filters and DC blocks. Power per carrier is | called out in the data below. | | |
| EVIATIONS FROM | I TEST STANDARD | | | | | |
| ліе | | | | | | |
| onfiguration # | NOKI0053-2 | | 1-1 | | | |
| | | Signature | Frequency | Max Value | Limit | |
| | | | Range | (dBm) | (dBm) | Result |
| | nd and AWS Band, MultiC QPSK MulitCarrier | Test Case 1 | | | | |
| | | Low 1945 MHz n25 NR30 40W (PCS) | 1 | -26.5 | -19 | Pass |
| | | Low 1945 MHz n25 NR30 40W (PCS) | 2 | -32.0 | -19 | Pass |
| | | Low 1945 MHz n25 NR30 40W (PCS) | 3 | -22.5 | -19 | Pass |
| | MulitCarrier | Test Case 2 | | | | |
| | | High 1980 MHz n25 NR30 40W (PCS) | 1 | -25.3 | -19 | Pass |
| | | High 1980 MHz n25 NR30 40W (PCS) | 2 | -21.5 | -19 | Pass |
| | | High 1980 MHz n25 NR30 40W (PCS) | 3 | -20.6 | -19 | Pass |
| | MulitCarrier | Test Case 3 | | | | |
| | | Low 2125 MHz n66 NR30 20W (AWS) | 1 | -31.0 | -19 | Pass |
| | | Low 2125 MHz n66 NR30 20W (AWS) | 2 | -28.7 | -19 | Pass |
| | | Low 2125 MHz n66 NR30 20W (AWS) | 3 | -28.2 | -19 | Pass |
| | MulitCarrier | Test Case 4 | | | | |
| | | High 2185 MHz n66 NR30 20W (AWS) | 1 | -30.6 | -19 | Pass |
| | | High 2185 MHz n66 NR30 20W (AWS) | 2 | -27.8 | -19 | Pass |
| | | High 2185 MHz n66 NR30 20W (AWS) | 3 | -27.4 | -19 | Pass |
| | MulitCarrier | Test Case 5 | | | | |
| | | Low 1932.5 MHz n25 NR5 26.6W (PCS) | 1 | -26.4 | -19 | Pass |
| | | Low 1932.5 MHz n25 NR5 26.6W (PCS) | 2 | -20.3 | -19 | Pass |
| | | Low 1932.5 MHz n25 NR5 26.6W (PCS) | 3 | -20.1 | -19 | Pass |
| | | High 1992.5 MHz n25 NR5 26.6W (PCS) | 1 | -25.2 | -19 | Pass |
| | | High 1992.5 MHz n25 NR5 26.6W (PCS) | 2 | -19.8 | -19 | Pass |
| | | High 1992.5 MHz n25 NR5 26.6W (PCS) | 3 | -20.0 | -19 | Pass |
| | | Low 2112.5 MHz n66 NR5 13.3W (AWS) | 1 | -28.7 | -19 | Pass |
| | | Low 2112.5 MHz n66 NR5 13.3W (AWS) | 2 | -24.0 | -19 | Pass |
| | | Low 2112.5 MHz n66 NR5 13.3W (AWS) | 3 | -23.6 | -19 | Pass |
| | | High 2197.5 MHz n66 NR5 13.3W (AWS) | 1 | -27.6 | -19 | Pass |
| | | High 2197.5 MHz n66 NR5 13.3W (AWS) | 2 | -21.9 | -19 | Pass |
| | | High 2197.5 MHz n66 NR5 13.3W (AWS) | 3 | -22.1 | -19 | Pas |

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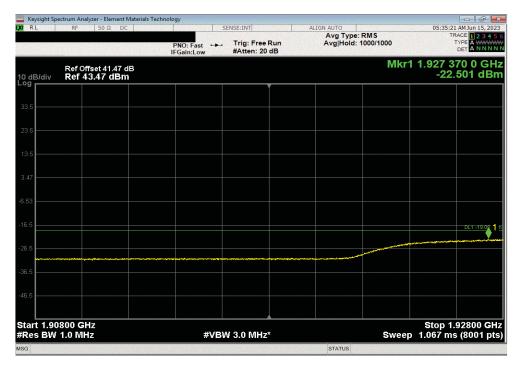


| | Port 1, NR, PCS Band and AWS Band, MultiCarrier, QPSK, MulitCarrier Test Case 1, Low 1945 MHz n25 NR30 40W (PCS) | | | | | | | | |
|-----------|--|---|--|--|-----------|-------|--------|--|--|
| Frequency | | | | | Max Value | Limit | | | |
| | Range | | | | | (dBm) | Result | | |
| | | 2 | | | -32.04 | -19 | Pass | | |



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| F | ort 1, NR, PCS Ba | and and AWS Bar | nd, MultiCarrier, C | QPSK, MulitCarrie | er Test Case 2, H | igh 1980 MHz n2 | 5 NR30 40W (PC | S) |
|---|-------------------|-----------------|---------------------|-------------------|-------------------|-----------------|----------------|----|
| | Frequency | | | | | | | |
| | Range | | | | | (dBm) | Result | |
| | | 1 | | | -25.26 | -19 | Pass | |



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Port 1, NR, PCS Band and AWS Band, MultiCarrier, QPSK, MulitCarrier Test Case 2, High 1980 MHz n25 NR30 40W (PCS)

Frequency

Range

(dBm)

(dBm)

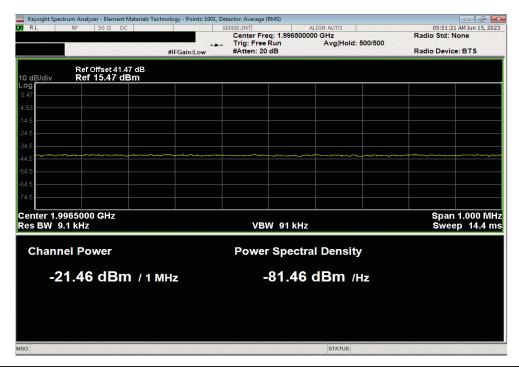
Result

2

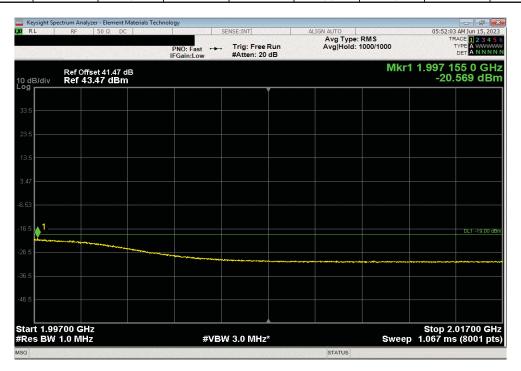
-21.46

-19

Pass



| Р | ort 1, NR, PCS Ba | and and AWS Bar | nd, MultiCarrier, C | PSK, MulitCarrie | r Test Case 2, H | igh 1980 MHz n2 | 25 NR30 40W (PC | S) |
|---|-------------------|-----------------|---------------------|------------------|------------------|-----------------|-----------------|----|
| | | Frequency | | | Max Value | Limit | | |
| | | Range | | | (dBm) | (dBm) | Result | |
| 1 | | 3 | | | -20.57 | -19 | Pass | |



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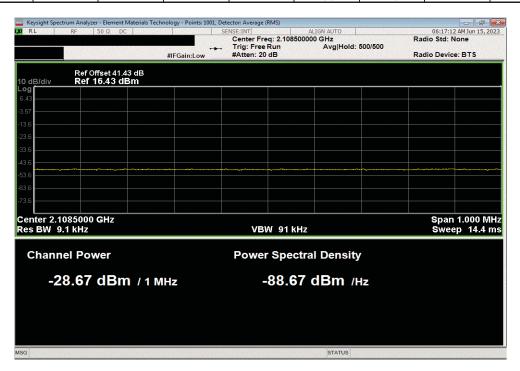


Port 1, NR, PCS Band and AWS Band, MultiCarrier, QPSK, MulitCarrier Test Case 3, Low 2125 MHz n66 NR30 20W (AWS)

Frequency
Max Value
Limit
Range
(dBm)
(dBm)
Result
1
-31.03
-19
Pass



| Port 1, NR, PCS Ba | Port 1, NR, PCS Band and AWS Band, MultiCarrier, QPSK, MulitCarrier Test Case 3, Low 2125 MHz n66 NR30 20W (AWS) | | | | | | | | | |
|--------------------|--|--|--|-----------|-------|--------|--|--|--|--|
| | Frequency | | | Max Value | Limit | | | | | |
| Range | | | | | | Result | | | | |
| | 2 | | | -28.67 | -19 | Pass | | | | |



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Port 1, NR, PCS Band and AWS Band, MultiCarrier, QPSK, MulitCarrier Test Case 3, Low 2125 MHz n66 NR30 20W (AWS)

Frequency

Range

(dBm)

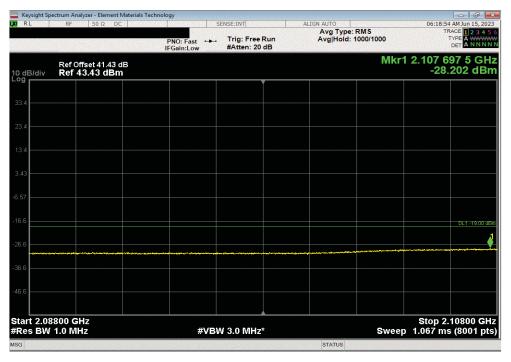
(dBm)

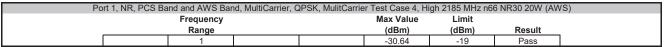
Result

3

-28.20
-19

Pass







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Port 1, NR, PCS Band and AWS Band, MultiCarrier, QPSK, MulitCarrier Test Case 4, High 2185 MHz n66 NR30 20W (AWS)

Frequency

Range

(dBm)

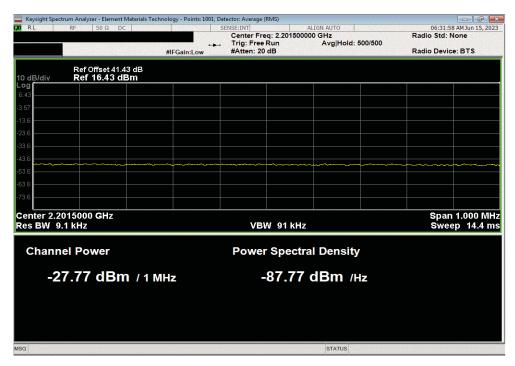
(dBm)

Result

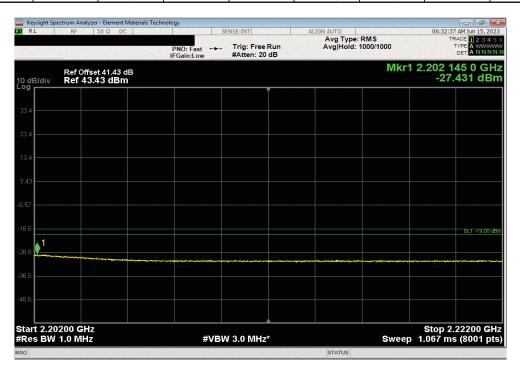
2

-27.77
-19

Pass

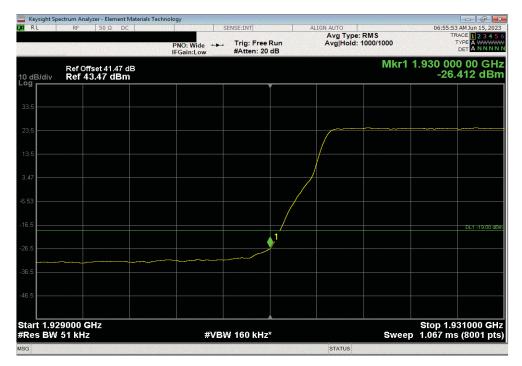


| Po | Port 1, NR, PCS Band and AWS Band, MultiCarrier, QPSK, MulitCarrier Test Case 4, High 2185 MHz n66 NR30 20W (AWS) | | | | | | | | | |
|----|---|---|--|--|--------|-------|--------|--|--|--|
| | Frequency | | | | | Limit | | | | |
| | Range | | | | | (dBm) | Result | | | |
| | | 3 | | | -27.43 | -19 | Pass | | | |

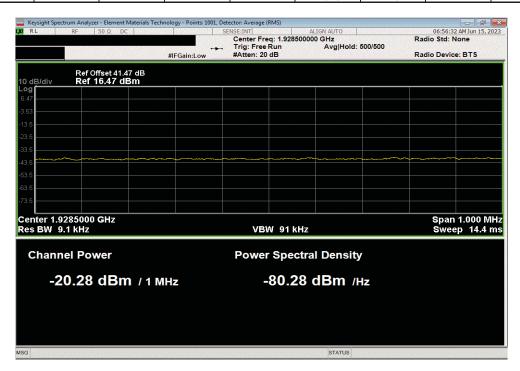


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| Por | t 1, NR, PCS Bar | nd and AWS Band | d, MultiCarrier, Q | PSK, MulitCarrie | r Test Case 5, Lo | Port 1, NR, PCS Band and AWS Band, MultiCarrier, QPSK, MulitCarrier Test Case 5, Low 1932.5 MHz n25 NR5 26.6W (PCS) | | | | | | | | | | |
|-----|------------------|-----------------|--------------------|------------------|-------------------|---|--------|--|--|--|--|--|--|--|--|--|
| | Frequency | | | | | | | | | | | | | | | |
| | | Range | | | (dBm) | (dBm) | Result | | | | | | | | | |
| I | | 2 | | | -20.28 | -19 | Pass | | | | | | | | | |



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Port 1, NR, PCS Band and AWS Band, MultiCarrier, QPSK, MulitCarrier Test Case 5, Low 1932.5 MHz n25 NR5 26.6W (PCS)

Frequency

Range

(dBm)

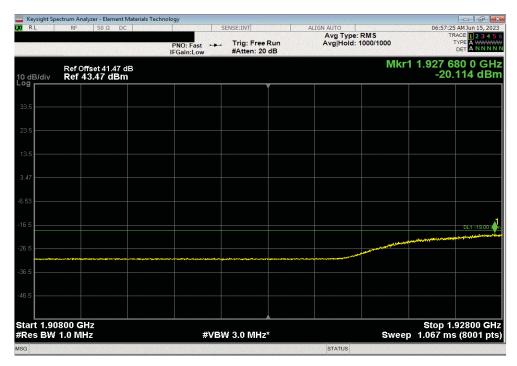
(dBm)

Result

3

-20.11
-19

Pass



| P | ort 1, NR, PCS Bar | nd and AWS Band | d, MultiCarrier, Ql | PSK, MulitCarrier | Test Case 5, Hig | gh 1992.5 MHz n2 | 25 NR5 26.6W (P | CS) |
|---|--------------------|-----------------|---------------------|-------------------|------------------|------------------|-----------------|-----|
| | Frequency | | | | | | | |
| | | Range | | | (dBm) | (dBm) | Result | |
| | | 1 | | | -25.18 | -19 | Pass | |



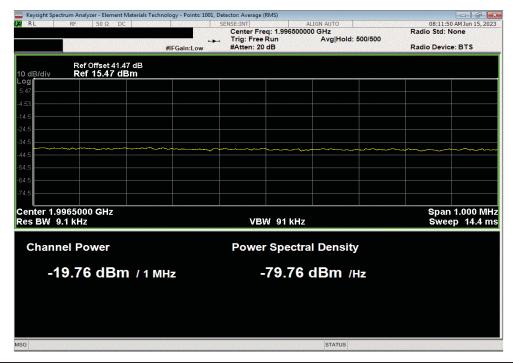
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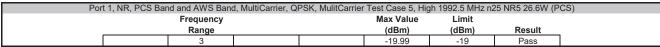


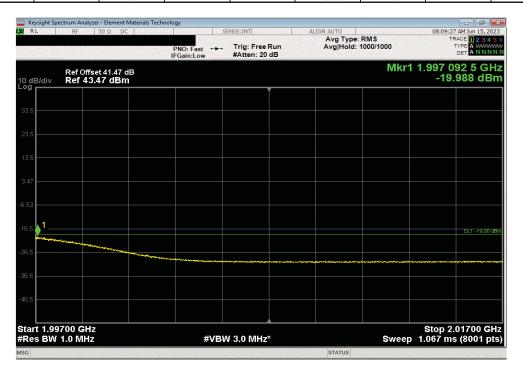
Port 1, NR, PCS Band and AWS Band, MultiCarrier, QPSK, MulitCarrier Test Case 5, High 1992.5 MHz n25 NR5 26.6W (PCS)

Frequency
Max Value
Limit
Range
(dBm)
(dBm)
Result

2
-19.76
-19
Pass







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Port 1, NR, PCS Band and AWS Band, MultiCarrier, QPSK, MulitCarrier Test Case 5, Low 2112.5 MHz n66 NR5 13.3W (AWS)

Frequency

Range

(dBm)

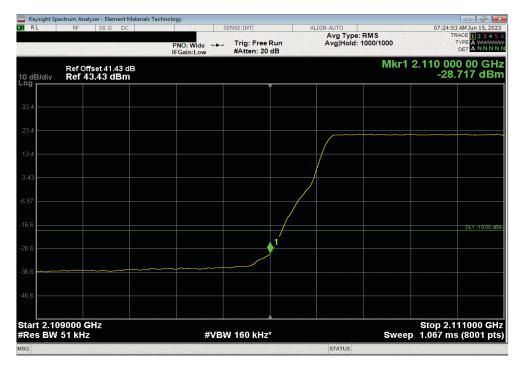
(dBm)

Result

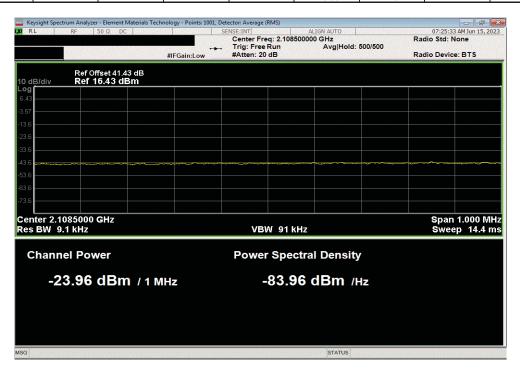
1

-28.72
-19

Pass



| Poi | t 1, NR, PCS Bar | id and AWS Band | d, MultiCarrier, QF | PSK, MulitCarrier | Test Case 5, Lov | v 2112.5 MHz n6 | 6 NR5 13.3W (A) | NS) | |
|-----|---------------------------|-----------------|---------------------|-------------------|------------------|-----------------|-----------------|-----|--|
| | Frequency Max Value Limit | | | | | | | | |
| | | | | (dBm) | (dBm) | Result | | | |
| | | 2 | | | -23.96 | -19 | Pass | | |



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Port 1, NR, PCS Band and AWS Band, MultiCarrier, QPSK, MulitCarrier Test Case 5, Low 2112.5 MHz n66 NR5 13.3W (AWS)

Frequency

Range

(dBm)

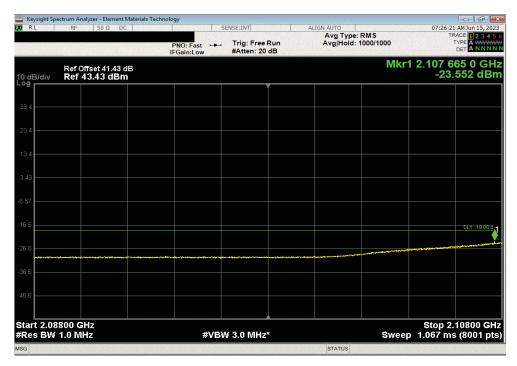
(dBm)

Result

3

-23.55
-19

Pass



| Γ | Port 1, NR, PCS Band and AWS Band, MultiCarrier, QF | PSK, MulitCarrier | Test Case 5, Hig | h 2197.5 MHz n6 | 6 NR5 13.3W (A) | WS) |
|---|---|-------------------|------------------|-----------------|-----------------|-----|
| ı | Frequency | Max Value | Limit | | | |
| ı | Range | | (dBm) | (dBm) | Result | |
| ı | 1 | | -27.59 | -19 | Pass | |

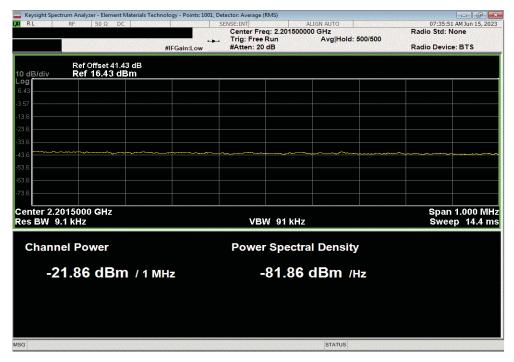


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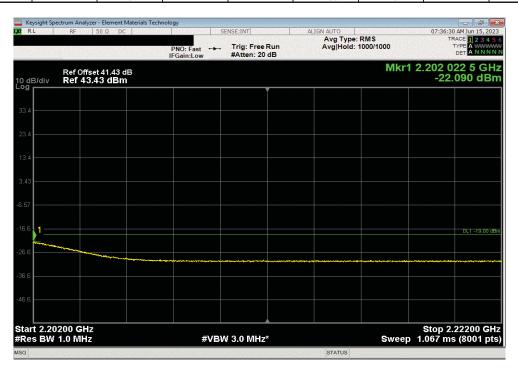


Port 1, NR, PCS Band and AWS Band, MultiCarrier, QPSK, MulitCarrier Test Case 5, High 2197.5 MHz n66 NR5 13.3W (AWS)

Frequency
Range
(dBm)
(dBm)
Result
2
-21.86
-19
Pass



| Port | 1, NR, PCS Ban | d and AWS Band | , MultiCarrier, QF | PSK, MulitCarrier | Test Case 5, Hig | jh 2197.5 MHz n6 | 6 NR5 13.3W (A | WS) |
|------|----------------|----------------|--------------------|-------------------|------------------|------------------|----------------|-----|
| | | Frequency | | | Max Value | Limit | | |
| 1 | | Range | | | (dBm) | (dBm) | Result | |
| | | 3 | | | -22.09 | -19 | Pass | |



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XMit 2023.02.14.0

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

TEST EQUIPMENT

| Description | Manufacturer | Model | ID | Last Cal. | Cal. Due |
|------------------------------|--------------------|-------------|-----|------------|------------|
| Generator - Signal | Agilent | N5173B | TIW | 2020-07-17 | 2023-07-17 |
| Analyzer - Spectrum Analyzer | Keysight | N9010A | AFQ | 2023-02-09 | 2024-02-09 |
| Block - DC | Fairview Microwave | SD3235-2148 | ANF | 2023-05-24 | 2024-05-24 |

TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. The spurious RF conducted emissions at the edges of the authorized bands were measured with the EUT set to low and high transmit frequencies in the available band. The channels closest to the band edges were selected. The EUT was transmitting at the data rate(s) listed in the datasheet.

The spectrum was scanned below the lower band edge and above the higher band edge.

All limits were adjusted by a factor of [-10*log(4)] dB to account for the device operation as a 4 port MIMO transmitter, as per FCC KDB 622911.

Per FCC 24.238(a), the power of any emission outside of the authorized operating frequency range cannot exceed -13 dBm. The limit is adjusted to -19 dBm [-13 dBm -10 log (4)] per FCC KDB 662911D01 v02r01 because the BTS may operate as a 4 port MIMO transmitter.

Per FCC 24.238(b), emissions seen up to 1 MHz outside of authorized operating frequency range band edges shell be measured with a RBW of 1% of the measured emission bandwidth. Any emission seen to be > 1 MHz further outside the band edges shall be measured with a RBW of 1 MHz. However, a narrower RBW of at least 1% of the emission bandwidth is still allowed provided that the measured power is integrated over the full reference bandwidth of 1 MHz.

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

The band edge testing was performed using only one modulation type because the Occupied Bandwidth variation between modulation types is small, the average output power variation between modulation types is small, and there was small variation in band edge measurements over modulation types from previous certification testing for other channel bandwidths. (See ANSI C63.26. clause 5.7.2e).

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| | | | | | | TbtTx 2022.05.02.0 | XMit 2023. |
|-----------------|---|---|---|---------------------------------|---|--|--|
| | AHFIG (FCC C2PC) | | | V | Vork Order: N | | |
| | See Configuration | | • | | | 6/13/2023 | |
| Customer: | Nokia Solutions and Networks | | | Te | mperature: 2 | | |
| | John Rattanavong, Mitchell Hill | | | | Humidity: 5 | | |
| Project: | | | | Barom | etric Pres.: 1 | | |
| | Brandon Hobbs | Power: | 54 VDC | | Job Site: T | X07 | |
| EST SPECIFICATI | ONS | | Test Method | | | | |
| C 24E:2023 | | | ANSI C63.26:2015 | | | | |
| | | | | | | | |
| OMMENTS | | | - | | | | |
| measurement p | ath losses were accounted for in the reference level offe | est including any attenuato | rs, filters and DC blocks. Band i | 125 carriers are enabled at max | imum power (| 80 watts/carrier). | |
| | | | | | | | |
| VIATIONS FROM | 1 TEST STANDARD | | | | | | |
| ne | | | | - | | | |
| | | | <i>(</i> | | | | |
| onfiguration # | NOKI0053-2 | | 111 | | | | |
| | Signature | 7 (|) - | | | | |
| | | | Frequency | Ma | x Value | Limit | |
| | | | | | | | |
| | | | Range | | dBm) | (dBm) | Result |
| | - 1995 MHz, 5G NR | | | | | (dBm) | Result |
| | Port 1 | | | | | (dBm) | Result |
| | Port 1 25 MHz Bandwidth | | | | | (dBm) | Result |
| | Port 1 25 MHz Bandwidth 256-QAM Modulation | | | | dBm) | , , | |
| | Port 1 25 MHz Bandwidth 256-QAM Modulation Low Channel 1942 | | | | -27.4 | -19 | Pass |
| | Port 1 25 MHz Bandwidth 256-QAM Modulation Low Channel 1942 Low Channel 1942 | 2.5 MHz | | | -27.4 -25.2 | -19 -19 | Pass Pass |
| | Port 1 25 MHz Bandwidth 256-QAM Modulation Low Channel 1942 Low Channel 1942 Low Channel 1942 | 2.5 MHz 2.5 MHz | | | -27.4 -25.2 -24.8 | -19 | Pass Pass Pass |
| | Port 1 25 MHz Bandwidth 256-QAM Modulation Low Channel 1942 Low Channel 1942 Low Channel 1942 High Channel 1983 | 2.5 MHz 2.5 MHz 2.5 MHz | | | -27.4 -25.2 -24.8 -26.0 | -19 -19 -19 -19 | Pass Pass Pass Pass |
| | Port 1 25 MHz Bandwidth 256-QAM Modulation Low Channel 1942 Low Channel 1942 High Channel 1983 High Channel 1983 | 2.5 MHz 2.5 MHz 2.5 MHz 2.5 MHz | | | -27.4 -25.2 -24.8 -26.0 -23.5 | -19 -19 -19 -19 -19 | Pass Pass Pass Pass Pass |
| | Port 1 25 MHz Bandwidth 256-QAM Modulation Low Channel 1942 Low Channel 1942 High Channel 1983 High Channel 1983 High Channel 1983 | 2.5 MHz 2.5 MHz 2.5 MHz 2.5 MHz | 1 2 3 1 | | -27.4 -25.2 -24.8 -26.0 | -19 -19 -19 -19 | Pass Pass Pass Pass |
| | Port 1 25 MHz Bandwidth 256-QAM Modulation Low Channel 1942 Low Channel 1942 Low Channel 1942 High Channel 1982 High Channel 1983 High Channel 1983 | 2.5 MHz 2.5 MHz 2.5 MHz 2.5 MHz | Range 1 2 3 1 2 2 | | -27.4 -25.2 -24.8 -26.0 -23.5 | -19 -19 -19 -19 -19 | Pass Pass Pass Pass Pass |
| | Port 1 25 MHz Bandwidth 256-QAM Modulation Low Channel 1942 Low Channel 1942 High Channel 1942 High Channel 1983 High Channel 1983 30 MHz Bandwidth 256-QAM Modulation | 2.5 MHz 2.5 MHz 2.5 MHz 2.5 MHz 2.5 MHz | Range 1 2 3 1 2 2 | | -27.4 -25.2 -24.8 -26.0 -23.5 -23.2 | -19 -19 -19 -19 -19 | Pass Pass Pass Pass Pass Pass |
| | Port 1 25 MHz Bandwidth 256-QAM Modulation Low Channel 1942 Low Channel 1942 High Channel 1983 High Channel 1983 30 MHz Bandwidth 256-QAM Modulation Low Channel 1984 | 2.5 MHz 2.5 MHz 2.5 MHz 2.5 MHz 2.5 MHz | 1 2 3 1 2 3 3 1 1 2 2 3 3 1 1 2 2 3 3 1 1 2 2 3 3 1 1 2 2 3 3 1 1 1 1 | | -27.4 -25.2 -24.8 -26.0 -23.5 -23.2 | -19 -19 -19 -19 -19 -19 | Pass Pass Pass Pass Pass |
| | Port 1 25 MHz Bandwidth 256-QAM Modulation Low Channel 1942 Low Channel 1942 High Channel 1942 High Channel 1983 High Channel 1983 30 MHz Bandwidth 256-QAM Modulation | 2.5 MHz 2.5 MHz 2.5 MHz 2.5 MHz 2.5 MHz | Range 1 2 3 1 2 2 | | -27.4 -25.2 -24.8 -26.0 -23.5 -23.2 | -19 -19 -19 -19 -19 -19 | Pass Pass Pass Pass Pass Pass |
| | Port 1 25 MHz Bandwidth 256-QAM Modulation Low Channel 1942 Low Channel 1942 High Channel 1983 High Channel 1983 30 MHz Bandwidth 256-QAM Modulation Low Channel 1984 | 2.5 MHz 2.5 MHz 2.5 MHz 2.5 MHz 2.5 MHz 5.0 MHz | 1 2 3 1 2 3 3 1 1 2 2 3 3 1 1 2 2 3 3 1 1 2 2 3 3 1 1 2 2 3 3 1 1 1 1 | | -27.4 -25.2 -24.8 -26.0 -23.5 -23.2 | -19 -19 -19 -19 -19 -19 | Pass Pass Pass Pass Pass Pass |
| | Port 1 25 MHz Bandwidth 256-QAM Modulation Low Channel 1942 Low Channel 1942 Low Channel 1942 High Channel 1982 High Channel 1982 High Channel 1982 So MHz Bandwidth 256-QAM Modulation Low Channel 1945 Low Channel 1945 Low Channel 1945 | 2.5 MHz 2.5 MHz 2.5 MHz 2.5 MHz 2.5 MHz 5.0 MHz 5.0 MHz 5.0 MHz | 1 2 3 1 2 3 3 1 1 2 2 3 3 1 1 2 2 3 3 1 1 2 2 3 3 1 1 2 2 3 3 1 1 1 1 | | -27.4 -25.2 -24.8 -26.0 -23.5 -23.2 | -19 -19 -19 -19 -19 -19 -19 | Pass Pass Pass Pass Pass Pass |
| | Port 1 25 MHz Bandwidth 256-QAM Modulation Low Channel 1942 Low Channel 1942 High Channel 1982 High Channel 1983 High Channel 1983 High Channel 1985 256-QAM Modulation Low Channel 1945 | 2.5 MHz 2.5 MHz 2.5 MHz 2.5 MHz 2.5 MHz 5.0 MHz 5.0 MHz 5.0 MHz 5.0 MHz | 1 2 3 1 2 3 3 1 1 2 2 3 3 1 1 2 2 3 3 1 1 2 2 3 3 1 1 2 2 3 3 1 1 1 1 | | -27.4 -25.2 -24.8 -25.5 -23.5 -23.2 -25.8 -24.5 -24.5 | -19 -19 -19 -19 -19 -19 -19 -19 | Pass Pass Pass Pass Pass Pass |

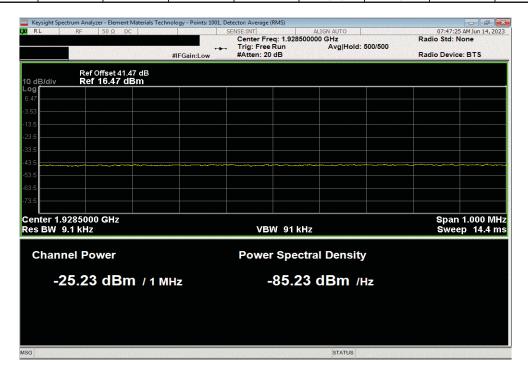
Report No. NOKI0053.0 120/162



Band n25 1930 MHz - 1995 MHz, 5G NR , Port 1, 25 MHz Bandwidth, 256-QAM Modulation, Low Channel 1942.5 MHz
Frequency Max Value Limit
Range (dBm) (dBm) Result
1 -27.42 -19 Pass



| | Band n25 1930 MHz - 1995 MHz, 5G NR, Port 1, 25 MHz Bandwidth, 256-QAM Modulation, Low Channel 1942.5 MHz | | | | | | | |
|---|---|-----------|--|--|-----------|-------|--------|--|
| | | Frequency | | | Max Value | Limit | | |
| _ | | Range | | | (dBm) | (dBm) | Result | |
| ĺ | | 2 | | | -25.23 | -19 | Pass | |



Report No. NOKI0053.0 121/162

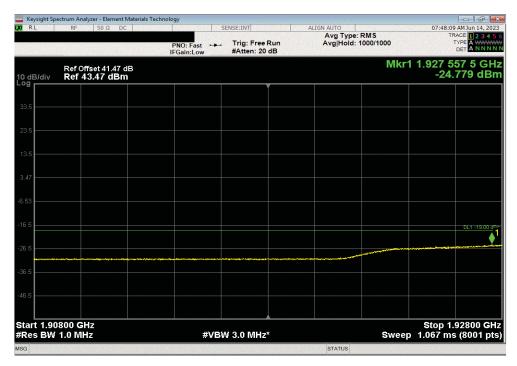


 Band n25 1930 MHz - 1995 MHz, 5G NR , Port 1, 25 MHz Bandwidth, 256-QAM Modulation, Low Channel 1942.5 MHz

 Frequency
 Max Value
 Limit

 Range
 (dBm)
 (dBm)
 Result

 3
 -24.78
 -19
 Pass



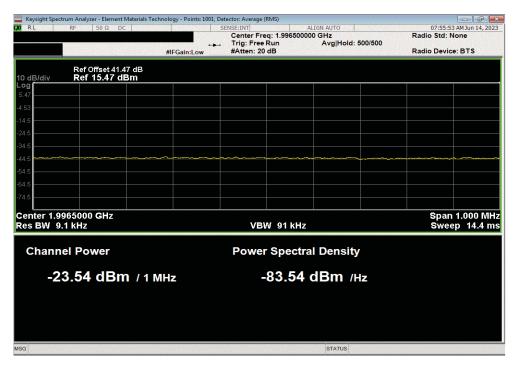
| | Band n25 1930 N | ИНz - 1995 МНz, | 5G NR , Port 1, 2 | 5 MHz Bandwidt | n, 256-QAM Mod | ulation, High Cha | nnel 1982.5 MHz | |
|---|-----------------|-----------------|-------------------|----------------|----------------|-------------------|-----------------|--|
| | | Frequency | | | Max Value | Limit | | |
| | | Range | | | (dBm) | (dBm) | Result | |
| i | | 1 | | | -25.97 | -19 | Pass | |



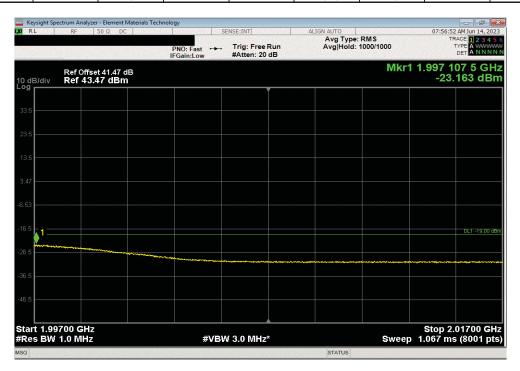
Report No. NOKI0053.0 122/162



Band n25 1930 MHz - 1995 MHz, 5G NR , Port 1, 25 MHz Bandwidth, 256-QAM Modulation, High Channel 1982.5 MHz
Frequency Max Value Limit
Range (dBm) (dBm) Result
2 -23.54 -19 Pass



| | Band n25 1930 N | ИНz - 1995 МНz, | 5G NR , Port 1, 2 | 5 MHz Bandwidt | n, 256-QAM Mod | ulation, High Cha | nnel 1982.5 MHz | |
|---|-----------------|-----------------|-------------------|----------------|----------------|-------------------|-----------------|--|
| | | Frequency | | | Max Value | Limit | | |
| | | Range | | | (dBm) | (dBm) | Result | |
| 1 | | 3 | | | -23.16 | -19 | Pass | |



Report No. NOKI0053.0 123/162



 Band n25 1930 MHz - 1995 MHz, 5G NR , Port 1, 30 MHz Bandwidth, 256-QAM Modulation, Low Channel 1945.0 MHz

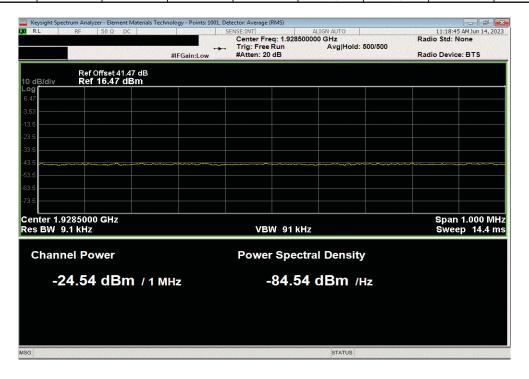
 Frequency
 Max Value
 Limit

 Range
 (dBm)
 (dBm)
 Result

 1
 -25.81
 -19
 Pass



| | Band n25 1930 N | MHz - 1995 MHz, | 5G NR, Port 1, 3 | 30 MHz Bandwidt | h, 256-QAM Mod | ulation, Low Cha | nnel 1945.0 MHz | |
|---|-----------------|-----------------|------------------|-----------------|----------------|------------------|-----------------|--|
| | | Frequency | | | Max Value | Limit | | |
| | | Range | | | (dBm) | (dBm) | Result | |
| l | | 2 | | | -24.54 | -19 | Pass | |



Report No. NOKI0053.0 124/162

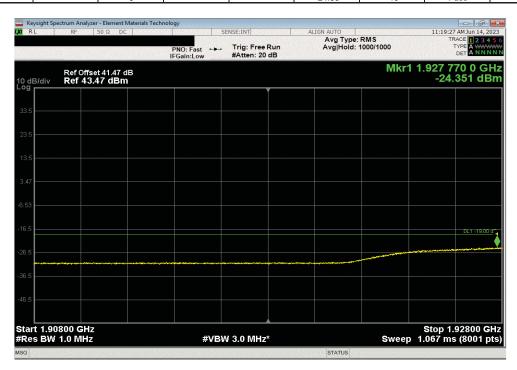


 Band n25 1930 MHz - 1995 MHz, 5G NR , Port 1, 30 MHz Bandwidth, 256-QAM Modulation, Low Channel 1945.0 MHz

 Frequency
 Max Value
 Limit

 Range
 (dBm)
 (dBm)
 Result

 3
 -24.35
 -19
 Pass



| E | Band n25 1930 N | ИНz - 1995 МНz, | 5G NR , Port 1, 3 | 0 MHz Bandwidt | n, 256-QAM Mod | ulation, High Cha | nnel 1980.0 MHz | |
|---|-----------------|-----------------|-------------------|----------------|----------------|-------------------|-----------------|--|
| | | Frequency | | | Max Value | Limit | | |
| _ | | Range | | | (dBm) | (dBm) | Result | |
| Г | | 1 | | | -25.38 | -19 | Pass | |



Report No. NOKI0053.0 125/162

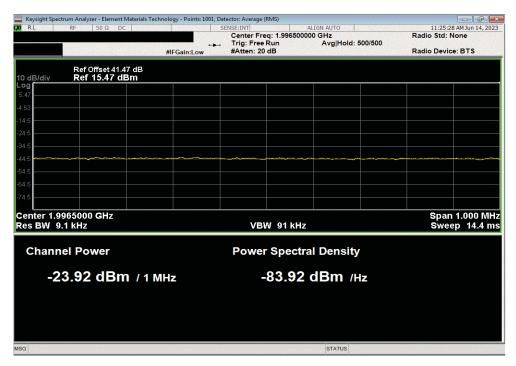


 Band n25 1930 MHz - 1995 MHz, 5G NR , Port 1, 30 MHz Bandwidth, 256-QAM Modulation, High Channel 1980.0 MHz

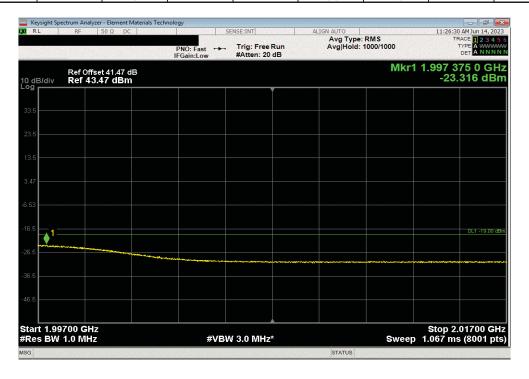
 Frequency
 Max Value
 Limit

 Range
 (dBm)
 (dBm)
 Result

 2
 -23.92
 -19
 Pass



| Ba | Band n25 1930 MHz - 1995 MHz, 5G NR , Port 1, 30 MHz Bandwidth, 256-QAM Modulation, High Channel 1980.0 MHz | | | | | | | |
|----|---|-----------|--|--|-----------|-------|--------|--|
| | | Frequency | | | Max Value | Limit | | |
| _ | | Range | | | (dBm) | (dBm) | Result | |
| | | 3 | | | -23.32 | -19 | Pass | |



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XMit 2023.02.14.0

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

TEST EQUIPMENT

| Description | Manufacturer | Model | ID | Last Cal. | Cal. Due |
|------------------------------|--------------------|-------------|-----|------------|------------|
| Generator - Signal | Agilent | N5173B | TIW | 2020-07-17 | 2023-07-17 |
| Analyzer - Spectrum Analyzer | Keysight | N9010A | AFQ | 2023-02-09 | 2024-02-09 |
| Block - DC | Fairview Microwave | SD3235-2148 | ANF | 2023-05-24 | 2024-05-24 |

TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. The spurious RF conducted emissions at the edges of the authorized bands were measured with the EUT set to low and high transmit frequencies in the available band. The channels closest to the band edges were selected. The EUT was transmitting at the data rate(s) listed in the datasheet.

The spectrum was scanned below the lower band edge and above the higher band edge.

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

All limits were adjusted by a factor of [-10*log(4)] dB to account for the device operation as a 4 port MIMO transmitter, as per FCC KDB 622911

Per section FCC 27.53(h)(1), the power of any emission outside of the authorized operating frequency range cannot exceed -13 dBm. The limit is adjusted to -19 dBm [-13 dBm -10 log (4)] per FCC KDB 662911D01 v02r01 because the BTS may operate as a 4 port MIMO transmitter.

The RBW to be used for these measurements are per 27.53(h)(3). Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater. However, in the 1 megahertz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 1 MHz or 1 percent of emission bandwidth, as specified). The requirements for FCC/IC measurements are detailed in KDB971168 D01 v03r01 and ANSI 63.26.

The band edge testing was performed using only one modulation type because the Occupied Bandwidth variation between modulation types is small, the average output power variation between modulation types is small, and there was small variation in band edge measurements over modulation types from previous certification testing for other channel bandwidths. (See ANSI C63.26. clause 5.7.2e).

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| EUT: | | | | TbtTx 2022.05.02.0 | XMit 2023.0 |
|-----------------------|--|--|--|--|--|
| | AHFIG (FCC C2PC) | | Work Order: N | | |
| | See Configuration | | | 6/13/2023 | · · · · · · · · · · · · · · · · · · · |
| Customer: | Nokia Solutions and Networks | | Temperature: 2 | | |
| | John Rattanavong, Mitchell Hill | | Humidity: 5 | | |
| Project: | | | Barometric Pres.: 1 | | |
| | Brandon Hobbs | Power: 54 VDC | Job Site: T | X07 | |
| EST SPECIFICATION | ONS | Test Method | | | |
| CC 27:2023 | | ANSI C63.26:2015 | | | |
| | | | | | |
| OMMENTS | | | | | |
| measurement pa | th losses were accounted for in the reference level offest inclu | uding any attenuators, filters and DC blocks. Band n66 | carriers are enabled at maximum power (4 | 10 watts/carrier). | |
| | | | | | |
| THATIONS FROM | TEGT OTANDARD | | | | |
| EVIATIONS FROM one | TEST STANDARD | | | | |
| ne | | | | | |
| onfiguration # | NOKI0053-2 | 7 /1 1 | | | |
| Jilliguration # | Signature | 1 | | | |
| | Signature | Frequency | Max Value | Limit | |
| | | rrequericy | | | |
| | | Range | (dBm) | < (dBm) | Result |
| nd n66 2110 MHz | - 2200 MHz 5G NR | Range | (dBm) | < (dBm) | Result |
| | - 2200 MHz, 5G NR Port 1 | Range | (dBm) | < (dBm) | Result |
| | Port 1 | Range | (dBm) | < (dBm) | Result |
| | | Range | (dBm) | < (dBm) | Result |
| | Port 1 25 MHz Bandwidth | _ | (dBm) -29.9 | < (dBm) | Result |
| | Port 1 25 MHz Bandwidth 256-QAM Modulation | 1 | , , | , , | |
| | Port 1 25 MHz Bandwidth 256-QAM Modulation Low Channel 2122.5 MHz | 1 2 | -29.9 | -19 | Pass |
| | Port 1 25 MHz Bandwidth 256-QAM Modulation Low Channel 2122.5 MHz Low Channel 2122.5 MHz | 1 2 3 | -29.9 -28.1 | -19 -19 | Pass Pass |
| | Port 1 25 MHz Bandwidth 256-QAM Modulation Low Channel 2122.5 MHz Low Channel 2122.5 MHz Low Channel 2122.5 MHz High Channel 2187.5 MHz High Channel 2187.5 MHz | 1 2 3 1 1 | -29.9 -28.1 -27.5 -20.4 -27.1 | -19 -19 -19 | Pass Pass Pass |
| | Port 1 25 MHz Bandwidth 256-QAM Modulation Low Channel 2122.5 MHz Low Channel 2122.5 MHz Low Channel 2122.5 MHz High Channel 2187.5 MHz High Channel 2187.5 MHz High Channel 2187.5 MHz | 1 2 3 1 1 | -29.9 -28.1 -27.5 -20.4 | -19 -19 -19 -19 | Pass Pass Pass Pass |
| | Port 1 25 MHz Bandwidth 256-QAM Modulation Low Channel 2122.5 MHz Low Channel 2122.5 MHz Low Channel 2122.5 MHz High Channel 2187.5 MHz | 1 2 3 1 1 | -29.9 -28.1 -27.5 -20.4 -27.1 | -19 -19 -19 -19 | Pass Pass Pass Pass Pass |
| | Port 1 25 MHz Bandwidth 256-QAM Modulation Low Channel 2122.5 MHz Low Channel 2122.5 MHz Low Channel 2122.5 MHz High Channel 2187.5 MHz High Channel 2187.5 MHz High Channel 2187.5 MHz High Channel 2187.5 MHz 30 MHz Bandwidth 256-QAM Modulation | 1 2 3 1 1 | -29.9 -28.1 -27.5 -20.4 -27.1 -27.1 | -19 -19 -19 -19 -19 -19 | Pass Pass Pass Pass Pass Pass |
| | Port 1 25 MHz Bandwidth 256-QAM Modulation Low Channel 2122.5 MHz Low Channel 2122.5 MHz Low Channel 2122.5 MHz High Channel 2187.5 MHz High Channel 2187.5 MHz High Channel 2187.5 MHz High Channel 2187.5 MHz Low Channel 21287.5 MHz Low Channel 2125 MHz Low Channel 2125 MHz | 1 2 3 2 1 2 2 2 3 | -29.9 -28.1 -27.5 -20.4 -27.1 -27.1 | -19 -19 -19 -19 -19 -19 | Pass Pass Pass Pass Pass Pass |
| | Port 1 25 MHz Bandwidth 256-QAM Modulation Low Channel 2122.5 MHz Low Channel 2122.5 MHz Low Channel 2122.5 MHz High Channel 2122.5 MHz High Channel 2187.5 MHz High Channel 2187.5 MHz High Channel 2187.5 MHz High Channel 2187.5 MHz Albandwidth 256-QAM Modulation Low Channel 2125 MHz Low Channel 2125 MHz Low Channel 2125 MHz | 1 2 3 1 1 | -29.9 -28.1 -27.5 -20.4 -27.1 -27.1 | -19 -19 -19 -19 -19 -19 | Pass Pass Pass Pass Pass Pass |
| | Port 1 25 MHz Bandwidth 256-QAM Modulation Low Channel 2122.5 MHz Low Channel 2122.5 MHz Low Channel 2122.5 MHz High Channel 2187.5 MHz High Channel 2187.5 MHz High Channel 2187.5 MHz High Channel 2187.5 MHz Low Channel 2125 MHz Low Channel 2125 MHz Low Channel 2125 MHz | 1 2 3 2 1 2 2 2 3 | -29.9 -28.1 -27.5 -20.4 -27.1 -27.1 -29.3 -28.5 -28.2 | -19 -19 -19 -19 -19 -19 -19 -19 | Pass Pass Pass Pass Pass Pass |
| | Port 1 25 MHz Bandwidth 256-QAM Modulation Low Channel 2122.5 MHz Low Channel 2122.5 MHz Low Channel 2122.5 MHz High Channel 2187.5 MHz High Channel 2187.5 MHz High Channel 2187.5 MHz High Channel 2187.5 MHz Low Channel 2125 MHz Low Channel 2125 MHz Low Channel 2125 MHz Low Channel 2125 MHz High Channel 2185 MHz | 1 2 3 2 1 2 2 3 | -29.9 -28.1 -27.5 -20.4 -27.1 -27.1 -29.3 -28.5 -28.2 -29.3 | -19 -19 -19 -19 -19 -19 -19 -19 | Pass Pass Pass Pass Pass Pass Pass Pass |
| | Port 1 25 MHz Bandwidth 256-QAM Modulation Low Channel 2122.5 MHz Low Channel 2122.5 MHz Low Channel 2122.5 MHz High Channel 2187.5 MHz High Channel 2187.5 MHz High Channel 2187.5 MHz High Channel 2187.5 MHz Low Channel 2125 MHz Low Channel 2125 MHz Low Channel 2125 MHz | 1 2 3 2 1 2 2 3 | -29.9 -28.1 -27.5 -20.4 -27.1 -27.1 -29.3 -28.5 -28.2 | -19 -19 -19 -19 -19 -19 -19 -19 | Pass Pass Pass Pass Pass Pass |

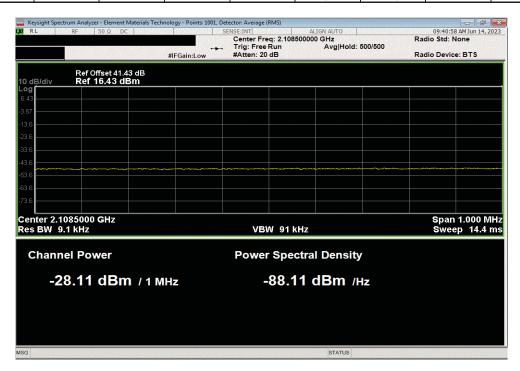
Report No. NOKI0053.0 128/162



Band n66 2110 MHz - 2200 MHz, 5G NR , Port 1, 25 MHz Bandwidth, 256-QAM Modulation, Low Channel 2122.5 MHz
Frequency Max Value Limit
Range (dBm) < (dBm) Result
1 -29.92 -19 Pass



| | Band n66 2110 MHz - 2200 MHz, 5G NR , Port 1, 25 MHz Bandwidth, 256-QAM Modulation, Low Channel 2122.5 MHz | | | | | | |
|---|--|-----------|--|--|-----------|---------|--------|
| | | Frequency | | | Max Value | Limit | |
| | | Range | | | (dBm) | < (dBm) | Result |
| 1 | | 2 | | | -28.11 | -19 | Pass |



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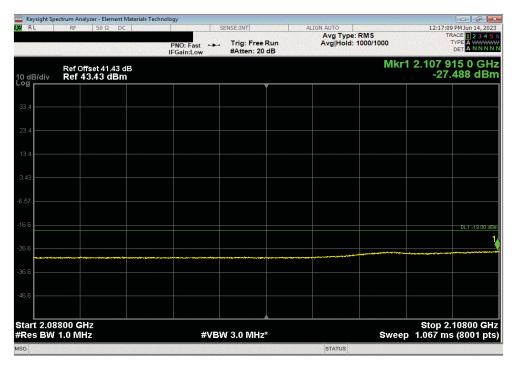


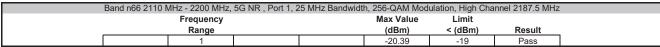
 Band n66 2110 MHz - 2200 MHz, 5G NR , Port 1, 25 MHz Bandwidth, 256-QAM Modulation, Low Channel 2122.5 MHz

 Frequency
 Max Value
 Limit

 Range
 (dBm)
 < (dBm)</th>
 Result

 3
 -32.92
 -19
 Pass





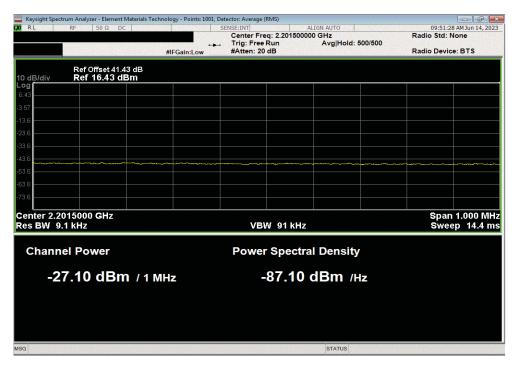


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Band n66 2110 MHz - 2200 MHz, 5G NR , Port 1, 25 MHz Bandwidth, 256-QAM Modulation, High Channel 2187.5 MHz

Frequency
Range
(dBm) < (dBm)
Result
2 -27.10 -19 Pass



| | Band n66 2110 MHz - 2200 MHz, 5G NR , Port 1, 25 MHz Bandwidth, 256-QAM Modulation, High Channel 2187.5 MHz | | | | | | |
|-----|---|-----------|--|--|-----------|---------|--------|
| | | Frequency | | | Max Value | Limit | |
| | | Range | | | (dBm) | < (dBm) | Result |
| 1 [| | 3 | | | -27.10 | -19 | Pass |



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Band n66 2110 MHz - 2200 MHz, 5G NR , Port 1, 30 MHz Bandwidth, 256-QAM Modulation, Low Channel 2125 MHz

Frequency

Range

(dBm)

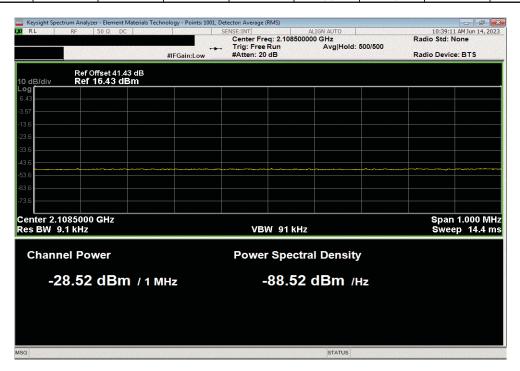
-29.26

-19

Pass

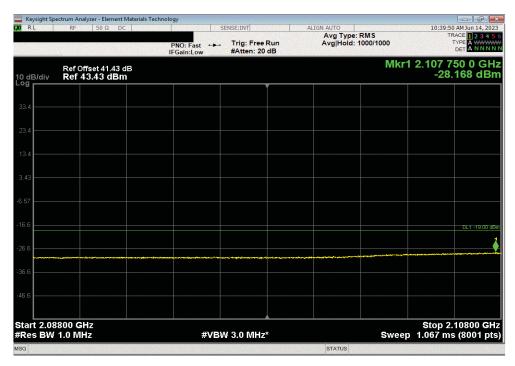


| | Band n66 2110 MHz - 2200 MHz, 5G NR , Port 1, 30 MHz Bandwidth, 256-QAM Modulation, Low Channel 2125 MHz | | | | | | |
|---|--|-----------|--|--|-----------|---------|--------|
| | | Frequency | | | Max Value | Limit | |
| | | Range | | | (dBm) | < (dBm) | Result |
| 1 | | 2 | | | -28.52 | -19 | Pass |

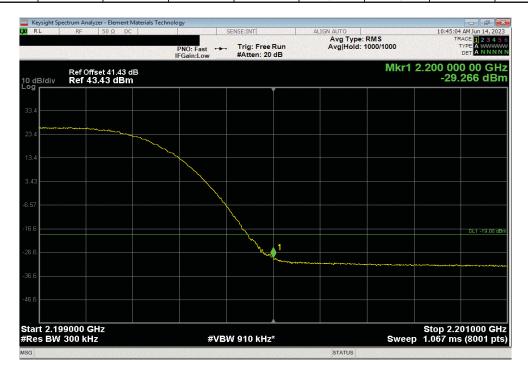


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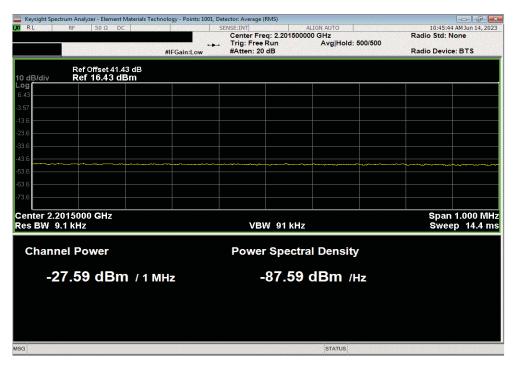
| | Band n66 2110 | MHz - 2200 MHz | 5G NR , Port 1, | 30 MHz Bandwid | th, 256-QAM Mod | dulation, High Ch | annel 2185 MHz |
|---|---------------|----------------|-----------------|----------------|-----------------|-------------------|----------------|
| | | Frequency | | | Max Value | Limit | |
| _ | | Range | | | (dBm) | < (dBm) | Result |
| | | 1 | | | -29.27 | -19 | Pass |



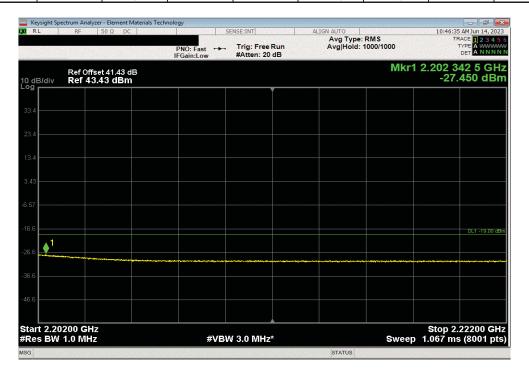
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Band n66 2110 MHz - 2200 MHz, 5G NR , Port 1, 30 MHz Bandwidth, 256-QAM Modulation, High Channel 2185 MHz
Frequency Max Value Limit
Range (dBm) < (dBm) Result
2 -27.59 -19 Pass



| Band n66 2110 |) MHz - 2200 MHz, | 5G NR , Port 1, | 30 MHz Bandwid | th, 256-QAM Mod | dulation, High Ch | annel 2185 MHz |
|---------------|-------------------|-----------------|----------------|-----------------|-------------------|----------------|
| | Frequency | | | Max Value | Limit | |
| | Range | | | (dBm) | < (dBm) | Result |
| | 3 | | | -27.45 | -19 | Pass |



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XMit 2023.02.14.0

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

TEST EQUIPMENT

| Description | Manufacturer | Model | ID | Last Cal. | Cal. Due |
|------------------------------|--------------------|-------------|-----|------------|------------|
| Analyzer - Spectrum Analyzer | Keysight | N9010A | AFQ | 2023-02-09 | 2024-02-09 |
| Block - DC | Fairview Microwave | SD3379 | AMM | 2022-09-09 | 2023-09-09 |
| Block - DC | Fairview Microwave | SD3235-2148 | ANF | 2023-05-24 | 2024-05-24 |
| Generator - Signal | Agilent | N5173B | TIW | 2020-07-17 | 2023-07-17 |

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), 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 FCC 27.53 (h) (1), the power of any emission outside of the authorized operating frequency range cannot exceed -13sBm for a 1 MHz measurement bandwidth. The limit is adjusted to -19dBm [-13 dBm -10log (4)] per FCC KDB 662911D01v02r01 because the BTS may operate as a 4 port MIMO.

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

The limit for the 9kHz to 150kHz frequency range was adjusted to –49dBm to correct for a spectrum analyzer RBW of 1kHz versus required RBW of 1MHz [i.e.: -49dBm = -19dBm -10log(1MHz/1kHz)]. The limit for the 150kHz to 20MHz frequency range was adjusted to –39dBm to correct for a spectrum analyzer RBW of 10kHz versus required RBW of 1MHz [i.e.: -39dBm = -19dBm -10log(1MHz/10kHz)]. The required limit of -19dBm with a RBW of > 1MHz was used for all other frequency ranges.

The spurious emission testing was performed using only one modulation type because the Occupied Bandwidth variation between modulation types is small, the average output power variation between modulation types is small, and there is significant passing. (See ANSI C63.26. clause 5.7.2e).

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MultiCarrier Test Case 5

MultiCarrier Test Case 5



EUT: AHFIG (FCC C2PC) Work Order: NOKI0053 Serial Number: See Configuration
Customer: Nokia Solutions and Networks Date: 06/14/2023 21.6°C Temperature: Attendees: John Rattanavong, Mitchell Hill Humidity: 61.7% Barometric Pres.: 1006 mba Project: None Tested by: Brandon Hobbs
TEST SPECIFICATIONS Power: 54 VDC
Test Method Job Site: TX07 FCC 24E:2023 COMMENTS All measurement path losses were accounted for in the reference level offest including any attenuators, filters and DC blocks. Multi carrier test case 1 and 2: The carriers are operated at maximum power (40W/PCS carrier and 40W/AWS carrier) with a total port power of 120 watts. Multi carrier test case 3 and 4: The carriers are operated at maximum power (~20W/AWS carrier and 80W/PCS carrier) with a total port power of 120 watts. Multi carrier test case 5: The carriers are operated at maximum power (~13.3W/AWS carrier and ~26.6W/PCS carrier) with a total port power of 120 watts DEVIATIONS FROM TEST STANDARD NOKI0053-1 NOKI0053-2 Configuration # NOKI0053-3 Signature NOKI0053-4 Frequency Measured Max Value Limit (dBm) < (dBm) Result Range Freq (MHz) Port 1, NR, PCS Band and AWS Band, MultiCarrier QPSK 9 kHz - 150 kHz MultiCarrier Test Case 1 0.13 -61.3 -49 Pass MultiCarrier Test Case 150 kHz - 20 MHz Pass MultiCarrier Test Case 1 20 MHz - 3.5 GHz 3117.20 -26.4 -19 Pass MultiCarrier Test Case 1 1900 MHz - 2500 GHz 2201.70 -27.7 -19 Pass MultiCarrier Test Case 1 3.5 GHz - 13 GHz 4037.23 -49.1 -19 Pass MultiCarrier Test Case 13 GHz - 22 GHz -31.9 Pass MultiCarrier Test Case 2 9 kHz - 150 kHz 0.13 -61.5 -49 Pass -39 -19 MultiCarrier Test Case 2 150 kHz - 20 MHz -56.6 Pass MultiCarrier Test Case 2 20 MHz - 3.5 GHz 3139.39 -26.5 Pass MultiCarrier Test Case 2 1900 MHz - 2500 GHz Pass MultiCarrier Test Case 2 3.5 GHz - 13 GHz 4002.08 -49.2 -19 Pass MultiCarrier Test Case 2 13 GHz - 22 GHz 21652.15 -32.0 -19 Pass MultiCarrier Test Case 3 9 kHz - 150 kHz 0.13 -66.3 -49 Pass MultiCarrier Test Case 3 150 kHz - 20 MHz MultiCarrier Test Case 3 20 MHz - 3.5 GHz 3106.30 -26.5 -19 Pass MultiCarrier Test Case 3 1900 MHz - 2500 GHz 2230.44 -28.0 -19 Pass MultiCarrier Test Case 3 3.5 GHz - 13 GHz 5886.40 -39.9 -19 Pass 13 GHz - 22 GHz MultiCarrier Test Case 3 Pass 9 kHz - 150 kHz MultiCarrier Test Case 4 0.13 -60.9 -49 Pass -39 -19 MultiCarrier Test Case 4 150 kHz - 20 MHz Pass MultiCarrier Test Case 4 20 MHz - 3.5 GHz 3175.06 -26.3 Pass MultiCarrier Test Case 4 1900 MHz - 2500 GHz -27.8 Pass MultiCarrier Test Case 4 3.5 GHz - 13 GHz 5887.35 -46.8 -19 Pass 13 GHz - 22 GHz 21990.55 -31.9 -19 Pass MultiCarrier Test Case 5 9 kHz - 150 kHz 0.13 -61.2 -49 Pass MultiCarrier Test Case 5 150 kHz - 20 MHz 8.71 Pass MultiCarrier Test Case 5 20 MHz - 3.5 GHz 3191.59 -26.5 -19 Pass 1900 MHz - 2500 GHz 2230.44 -27.9 -19 MultiCarrier Test Case 5 Pass

3.5 GHz - 13 GHz

4016.80

-49.4

-19

Pass

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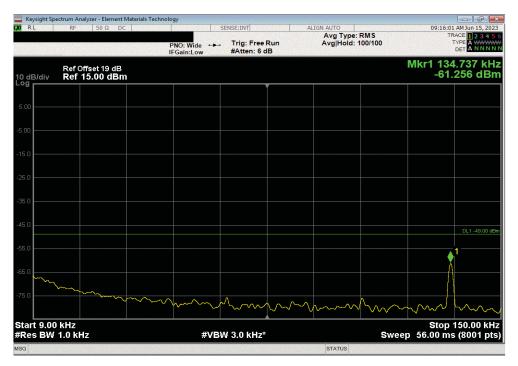


 Port 1, NR, PCS Band and AWS Band, MultiCarrier, QPSK, Mid, MultiCarrier Test Case 1

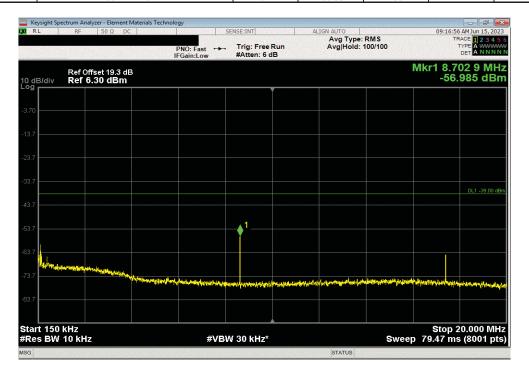
 Frequency
 Measured
 Max Value
 Limit

 Range
 Freq (MHz)
 (dBm)
 < (dBm)</th>
 Result

 9 kHz - 150 kHz
 0.13
 -61.26
 -49
 Pass



| | Port 1, NR, PCS Band and AWS Band, MultiCarrier, QPSK, Mid, MultiCarrier Test Case 1 | | | | | | |
|---|--|------------|-----------|---------|--------|--|--|
| | Frequency | Measured | Max Value | Limit | | | |
| | Range | Freq (MHz) | (dBm) | < (dBm) | Result | | |
| i | 150 kHz - 20 MHz | 8.7 | -56.99 | -39 | Pass | | |



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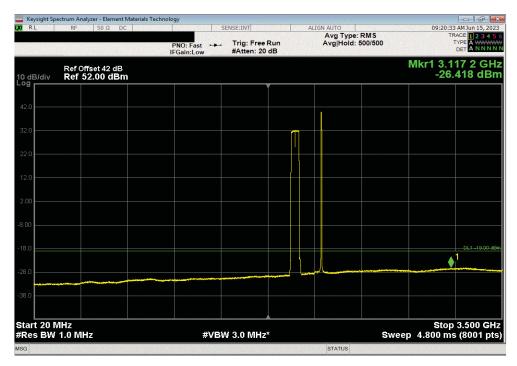


 Port 1, NR, PCS Band and AWS Band, MultiCarrier, QPSK, Mid, MultiCarrier Test Case 1

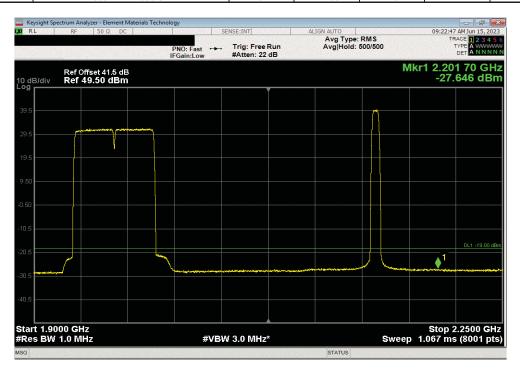
 Frequency
 Measured
 Max Value
 Limit

 Range
 Freq (MHz)
 (dBm)
 < (dBm)</th>
 Result

 20 MHz - 3.5 GHz
 3117.2
 -26.42
 -19
 Pass



| Port 1, NR, PCS Band and AWS E | Port 1, NR, PCS Band and AWS Band, MultiCarrier, QPSK, Mid, MultiCarrier Test Case 1 | | | | | | |
|--------------------------------|--|-----------|---------|--------|--|--|--|
| Frequency | Measured | Max Value | Limit | | | | |
| Range | Freq (MHz) | (dBm) | < (dBm) | Result | | | |
| 1900 MHz - 2500 GHz | 2201.7 | -27.65 | -19 | Pass | | | |



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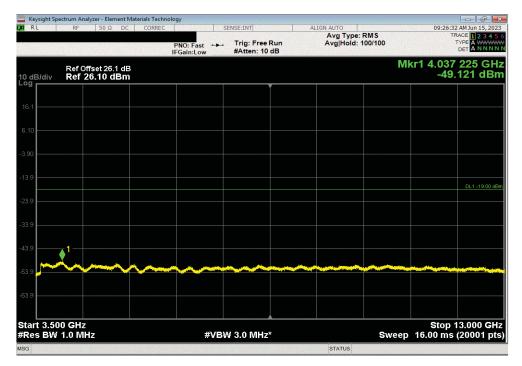


Port 1, NR, PCS Band and AWS Band, MultiCarrier, QPSK, Mid, MultiCarrier Test Case 1

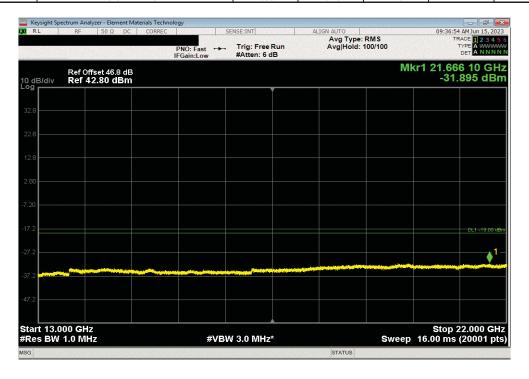
Frequency Measured Max Value Limit

Range Freq (MHz) (dBm) < (dBm) Result

3.5 GHz - 13 GHz 4037.23 -49.12 -19 Pass



| | Port 1, NR, PCS Band and AWS Band, MultiCarrier, QPSK, Mid, MultiCarrier Test Case 1 | | | | | |
|---|--|------------|-----------|---------|--------|--|
| | Frequency | Measured | Max Value | Limit | | |
| _ | Range | Freq (MHz) | (dBm) | < (dBm) | Result | |
| l | 13 GHz - 22 GHz | 21666.1 | -31.9 | -19 | Pass | |



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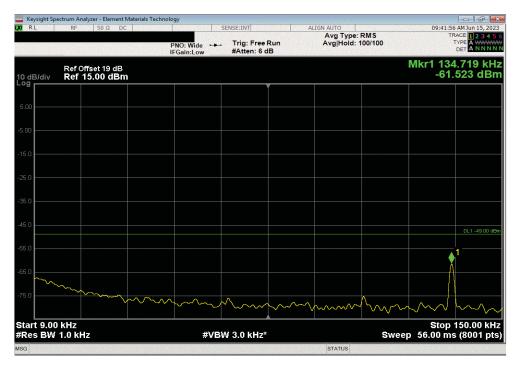


 Port 1, NR, PCS Band and AWS Band, MultiCarrier, QPSK, Mid, MultiCarrier Test Case 2

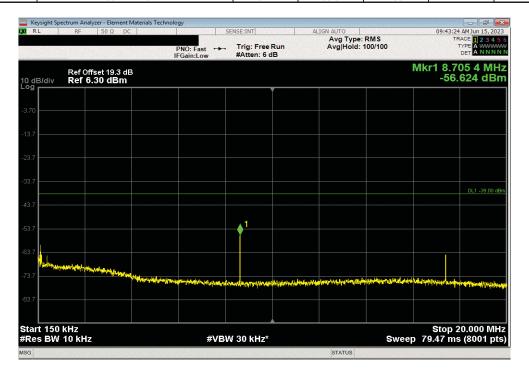
 Frequency
 Measured
 Max Value
 Limit

 Range
 Freq (MHz)
 (dBm)
 < (dBm)</th>
 Result

 9 kHz - 150 kHz
 0.13
 -61.52
 -49
 Pass



| Port 1, NR, PCS Band and AWS Band, MultiCarrier, QPSK, Mid, MultiCarrier Test Case 2 | | | | | |
|--|------------|-----------|---------|--------|--|
| Frequency | Measured | Max Value | Limit | | |
| Range | Freq (MHz) | (dBm) | < (dBm) | Result | |
| 150 kHz - 20 MHz | 8.71 | -56.62 | -39 | Pass | |



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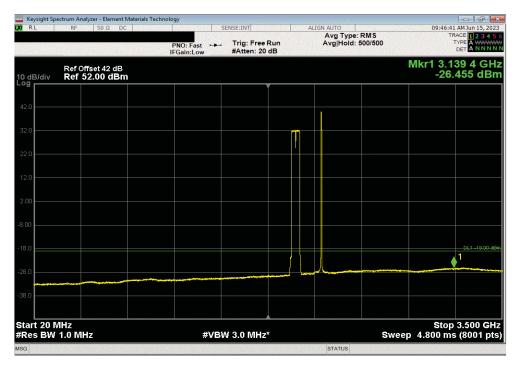


 Port 1, NR, PCS Band and AWS Band, MultiCarrier, QPSK, Mid, MultiCarrier Test Case 2

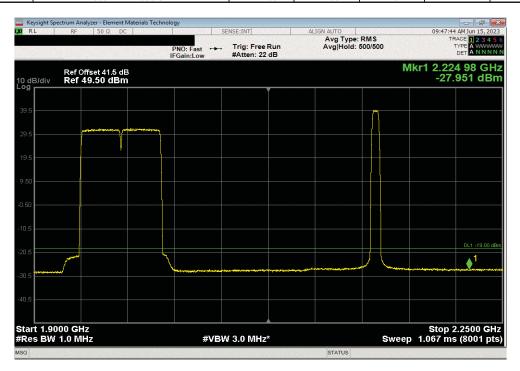
 Frequency
 Measured
 Max Value
 Limit

 Range
 Freq (MHz)
 (dBm)
 < (dBm)</th>
 Result

 20 MHz - 3.5 GHz
 3139.39
 -26.46
 -19
 Pass



| Port 1, NR, PCS Band and AWS B | Port 1, NR, PCS Band and AWS Band, MultiCarrier, QPSK, Mid, MultiCarrier Test Case 2 | | | | | |
|--------------------------------|--|-----------|---------|--------|--|--|
| Frequency | Measured | Max Value | Limit | | | |
| Range | Freq (MHz) | (dBm) | < (dBm) | Result | | |
| 1900 MHz - 2500 GHz | 2224.98 | -27.95 | -19 | Pass | | |



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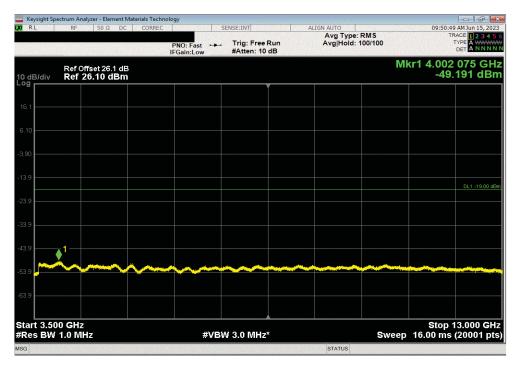


 Port 1, NR, PCS Band and AWS Band, MultiCarrier, QPSK, Mid, MultiCarrier Test Case 2

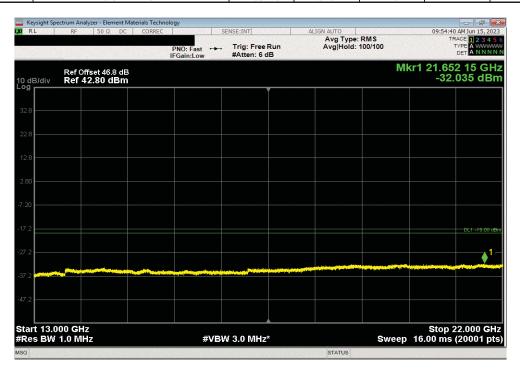
 Frequency
 Measured
 Max Value
 Limit

 Range
 Freq (MHz)
 (dBm)
 < (dBm)</th>
 Result

 3.5 GHz - 13 GHz
 4002.08
 -49.19
 -19
 Pass



| | Port 1, NR, PCS Band and AWS Band, MultiCarrier, QPSK, Mid, MultiCarrier Test Case 2 | | | | | |
|---|--|------------|-----------|---------|--------|--|
| | Frequency | Measured | Max Value | Limit | | |
| | Range | Freq (MHz) | (dBm) | < (dBm) | Result | |
| i | 13 GHz - 22 GHz | 21652.15 | -32.04 | -19 | Pass | |



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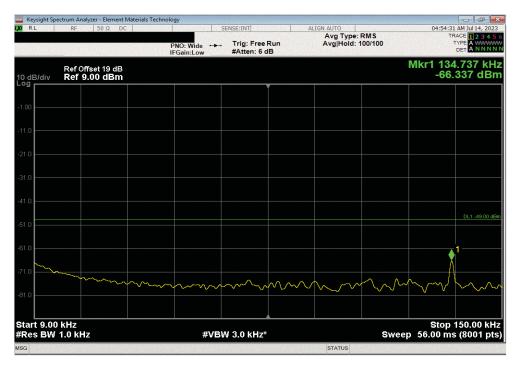


 Port 1, NR, PCS Band and AWS Band, MultiCarrier, QPSK, Mid, MultiCarrier Test Case 3

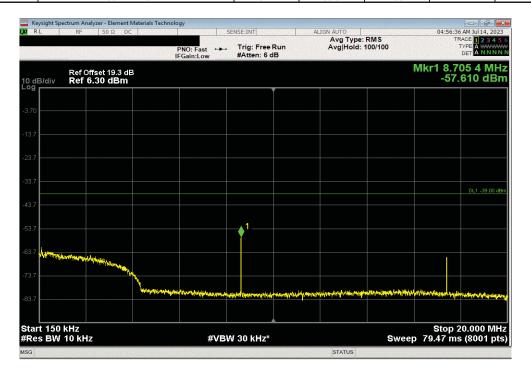
 Frequency
 Measured
 Max Value
 Limit

 Range
 Freq (MHz)
 (dBm)
 < (dBm)</th>
 Result

 9 kHz - 150 kHz
 0.1347
 -66.34
 -49
 Pass



| Port 1, NR, PCS Band and AWS Band, MultiCarrier, QPSK, Mid, MultiCarrier Test Case 3 | | | | | |
|--|------------|-----------|---------|--------|--|
| Frequency | Measured | Max Value | Limit | | |
| Range | Freq (MHz) | (dBm) | < (dBm) | Result | |
| 150 kHz - 20 MHz | 8.71 | -56.61 | -39 | Pass | |



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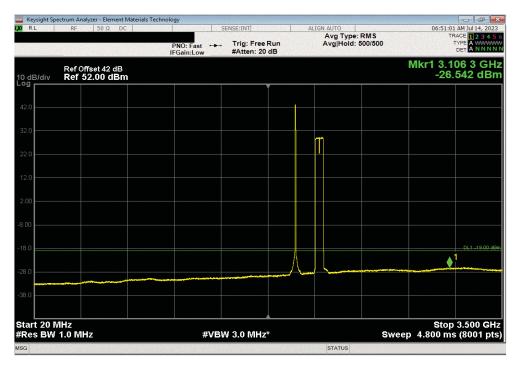


 Port 1, NR, PCS Band and AWS Band, MultiCarrier, QPSK, Mid, MultiCarrier Test Case 3

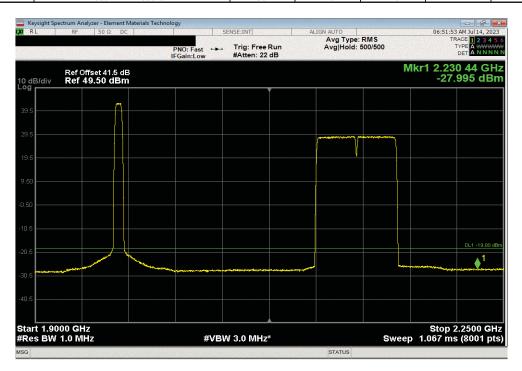
 Frequency
 Measured
 Max Value
 Limit

 Range
 Freq (MHz)
 (dBm)
 < (dBm)</th>
 Result

 20 MHz - 3.5 GHz
 3106.3
 -26.54
 -19
 Pass



| Port 1, NR, PCS Band and AWS Ba | Port 1, NR, PCS Band and AWS Band, MultiCarrier, QPSK, Mid, MultiCarrier Test Case 3 | | | | | |
|---------------------------------|--|-----------|---------|--------|--|--|
| Frequency | Measured | Max Value | Limit | | | |
| Range | Freq (MHz) | (dBm) | < (dBm) | Result | | |
| 1900 MHz - 2500 GHz | 2230.44 | -28 | -19 | Pass | | |



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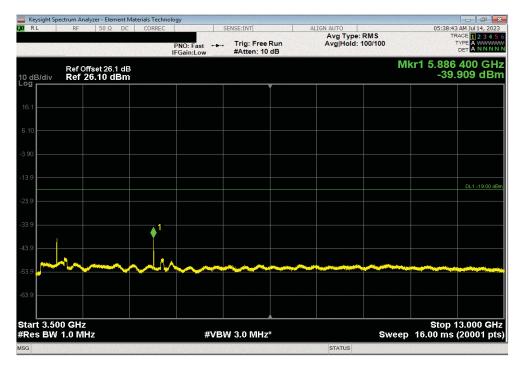


Port 1, NR, PCS Band and AWS Band, MultiCarrier, QPSK, Mid, MultiCarrier Test Case 3

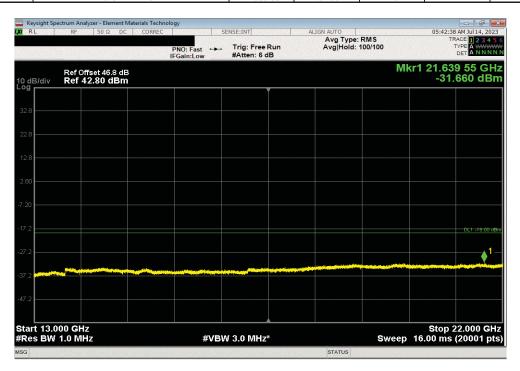
Frequency Measured Max Value Limit

Range Freq (MHz) (dBm) < (dBm) Result

3.5 GHz - 13 GHz 5886.4 -39.91 -19 Pass



| Port 1, NR, PCS Band and AWS Band, MultiCarrier, QPSK, Mid, MultiCarrier Test Case 3 | | | | | |
|--|------------|-----------|---------|--------|--|
| Frequency | Measured | Max Value | Limit | | |
| Range | Freq (MHz) | (dBm) | < (dBm) | Result | |
| 13 GHz - 22 GHz | 21639.55 | -31.66 | -19 | Pass | |



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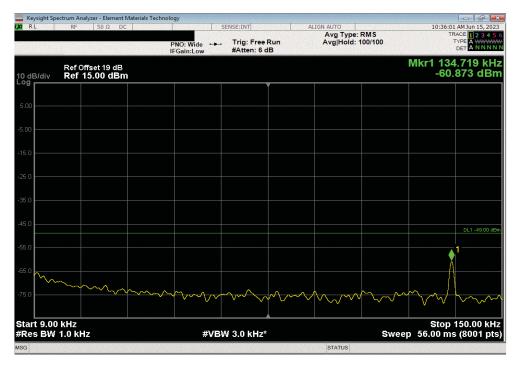


 Port 1, NR, PCS Band and AWS Band, MultiCarrier, QPSK, Mid, MultiCarrier Test Case 4

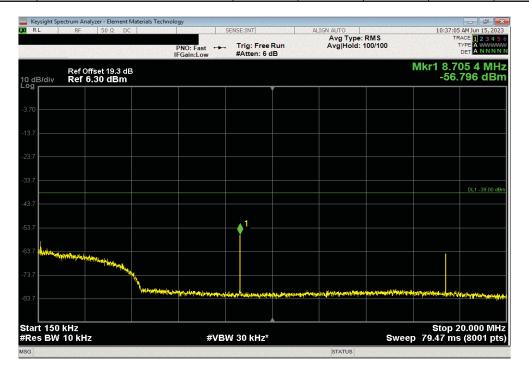
 Frequency
 Measured
 Max Value
 Limit

 Range
 Freq (MHz)
 (dBm)
 < (dBm)</th>
 Result

 9 kHz - 150 kHz
 0.13
 -60.87
 -49
 Pass



| | Port 1, NR, PCS Band and AWS Band, MultiCarrier, QPSK, Mid, MultiCarrier Test Case 4 | | | | | |
|-----|--|------------|-----------|---------|--------|--|
| | Frequency | Measured | Max Value | Limit | | |
| _ | Range | Freq (MHz) | (dBm) | < (dBm) | Result | |
| 1 [| 150 kHz - 20 MHz | 8.71 | -56.8 | -39 | Pass | |



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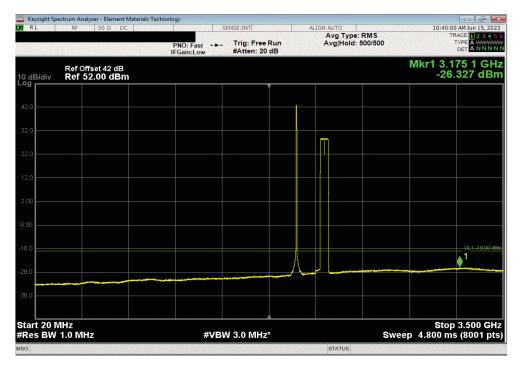


 Port 1, NR, PCS Band and AWS Band, MultiCarrier, QPSK, Mid, MultiCarrier Test Case 4

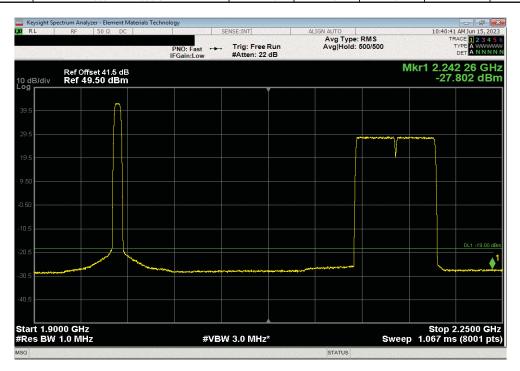
 Frequency
 Measured
 Max Value
 Limit

 Range
 Freq (MHz)
 (dBm)
 < (dBm)</th>
 Result

 20 MHz - 3.5 GHz
 3175.06
 -26.33
 -19
 Pass



| Port 1, NR, PCS Band and AWS B | Port 1, NR, PCS Band and AWS Band, MultiCarrier, QPSK, Mid, MultiCarrier Test Case 4 | | | | | |
|--------------------------------|--|-----------|---------|--------|--|--|
| Frequency | Measured | Max Value | Limit | | | |
| Range | Freq (MHz) | (dBm) | < (dBm) | Result | | |
| 1900 MHz - 2500 GHz | 2242.26 | -27.8 | -19 | Pass | | |



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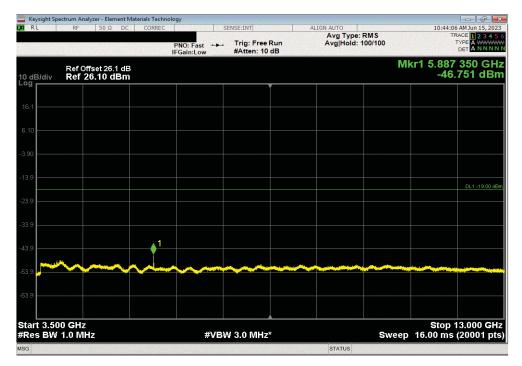


 Port 1, NR, PCS Band and AWS Band, MultiCarrier, QPSK, Mid, MultiCarrier Test Case 4

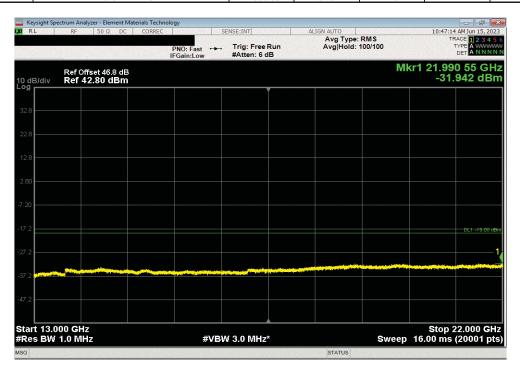
 Frequency
 Measured
 Max Value
 Limit

 Range
 Freq (MHz)
 (dBm)
 < (dBm)</th>
 Result

 3.5 GHz - 13 GHz
 5887.35
 -46.75
 -19
 Pass



| Port 1, NR, PCS Band and AWS Band, MultiCarrier, QPSK, Mid, MultiCarrier Test Case 4 | | | | | |
|--|------------|-----------|---------|--------|--|
| Frequency | Measured | Max Value | Limit | | |
| Range | Freq (MHz) | (dBm) | < (dBm) | Result | |
| 13 GHz - 22 GHz | 21990.55 | -31.94 | -19 | Pass | |



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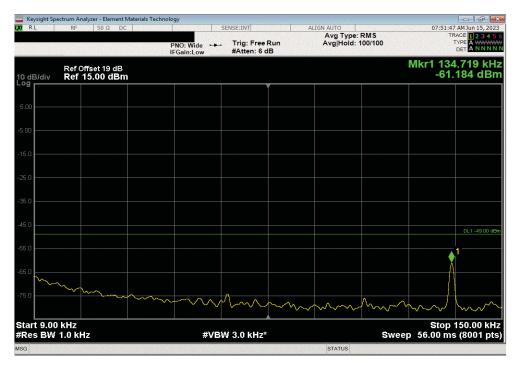


 Port 1, NR, PCS Band and AWS Band, MultiCarrier, QPSK, Mid, MultiCarrier Test Case 5

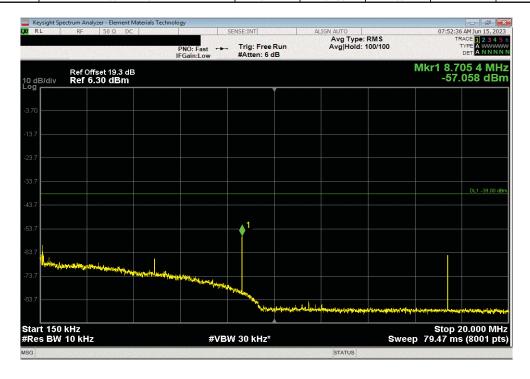
 Frequency
 Measured
 Max Value
 Limit

 Range
 Freq (MHz)
 (dBm)
 < (dBm)</th>
 Result

 9 kHz - 150 kHz
 0.13
 -61.18
 -49
 Pass



| Port 1, NR, PCS Band and AWS Band, MultiCarrier, QPSK, Mid, MultiCarrier Test Case 5 | | | | | |
|--|------------|-----------|---------|--------|--|
| Frequency | Measured | Max Value | Limit | | |
| Range | Freq (MHz) | (dBm) | < (dBm) | Result | |
| 150 kHz - 20 MHz | 8.71 | -57.06 | -39 | Pass | |



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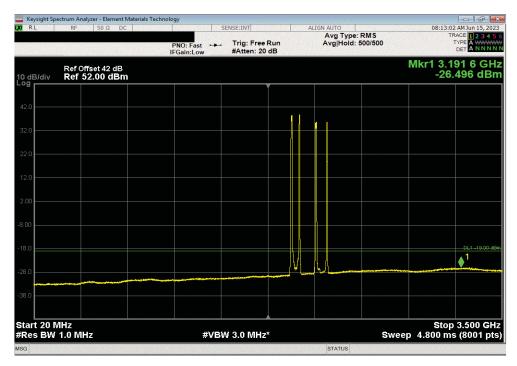


Port 1, NR, PCS Band and AWS Band, MultiCarrier, QPSK, Mid, MultiCarrier Test Case 5

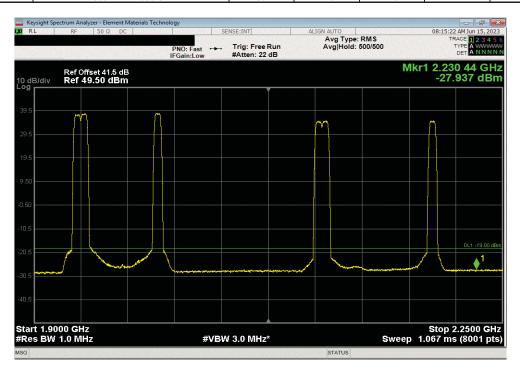
Frequency Measured Max Value Limit

Range Freq (MHz) (dBm) < (dBm) Result

20 MHz - 3.5 GHz 3191.59 -26.5 -19 Pass

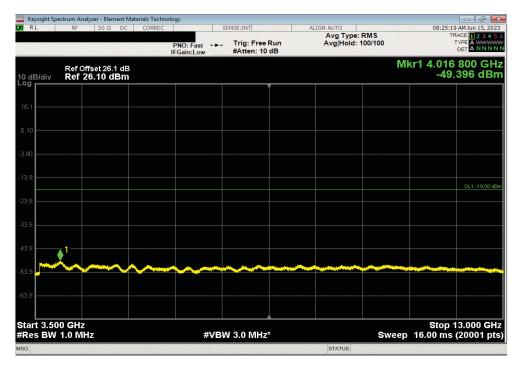


| Port 1, NR, PCS Band and AWS Ba | Port 1, NR, PCS Band and AWS Band, MultiCarrier, QPSK, Mid, MultiCarrier Test Case 5 | | | | | |
|---------------------------------|--|-----------|---------|--------|--|--|
| Frequency | Measured | Max Value | Limit | | | |
| Range | Freq (MHz) | (dBm) | < (dBm) | Result | | |
| 1900 MHz - 2500 GHz | 2230.44 | -27.94 | -19 | Pass | | |

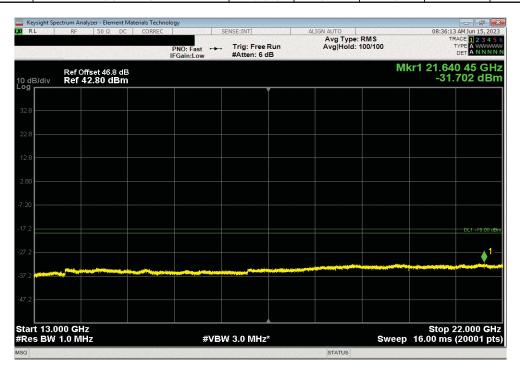


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| | Port 1, NR, PCS Band and AWS B | and, MultiCarrier, | QPSK, Mid, Multi | Carrier Test Case | 5 |
|---|--------------------------------|--------------------|------------------|-------------------|--------|
| | Frequency | Measured | Max Value | Limit | |
| | Range | Freq (MHz) | (dBm) | < (dBm) | Result |
| i | 13 GHz - 22 GHz | 21640.45 | -31.7 | -19 | Pass |



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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 |
|------------------------------|--------------------|-------------|-----|------------|------------|
| Block - DC | Fairview Microwave | SD3379 | AMM | 2022-09-09 | 2023-09-09 |
| Block - DC | Fairview Microwave | SD3235-2148 | ANF | 2023-05-24 | 2024-05-24 |
| Analyzer - Spectrum Analyzer | Keysight | N9010A | AFQ | 2023-02-09 | 2024-02-09 |
| Generator - Signal | Agilent | N5173B | TIW | 2020-07-17 | 2023-07-17 |

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), 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 FCC 27.53 (h) (1), the power of any emission outside of the authorized operating frequency range cannot exceed -13sBm for a 1 MHz measurement bandwidth. The limit is adjusted To -19dBm [-13 dBm -10log (4)] per FCC KDB 662911D01v02r01 because the BTS may operate as a 4 port MIMO.

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

The limit for the 9kHz to 150kHz frequency range was adjusted to -49dBm to correct for a spectrum analyzer RBW of 1kHz versus required RBW of 1MHz [i.e.: -49dBm = -19dBm -10log(1MHz/1kHz)]. The limit for the 150kHz to 20MHz frequency range was adjusted to -39dBm to correct for a spectrum analyzer RBW of 10kHz versus required RBW of 1MHz [i.e.: -39dBm = -19dBm -10log(1MHz/10kHz)]. The required limit of -19dBm with a RBW of > 1MHz was used for all other frequency ranges.

The spurious emission testing was performed using only one modulation type because the Occupied Bandwidth variation between modulation types is small, the average output power variation between modulation types is small, and there is significant passing margin. (See ANSI C63.26. clause 5.7.2e).

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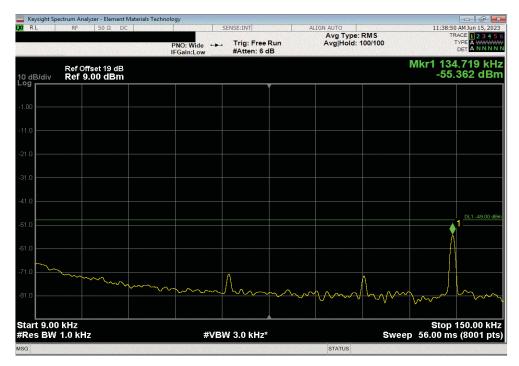
EUT: AHFIG (FCC C2PC) Work Order: NOKI0053 Serial Number: See Configuration
Customer: Nokia Solutions and Networks
Attendees: John Rattanavong, Mitchell Hill Date: 06/14/2023
Temperature: 21.7°C
Humidity: 61.4% Project: None
Tested by: Brandon Hobbs
TEST SPECIFICATIONS Barometric Pres.: 1006 mbar Job Site: TX07 Power: 54 VDC Test Method FCC 24E:2023 ANSI C63.26:2015 COMMENTS NoneAll measurement path losses were accounted for in the reference level offest including any attenuators, filters and DC blocks. The Band n25 carrier was enabled at maximum power (80 watts/carrier). The Band n66 carrier was enabled on the middle channel (2155MHz) at 40 watts with the same channel bandwidth and modulation type as the Band n25 carrier. The port power was set at the maximum level of 120 Watts [Band n25 carrier (80W) and Band n66 carrier (40W)1.
DEVIATIONS FROM TEST STANDARD None NOKI0053-1 NOKI0053-2 NOKI0053-3 Configuration # NOKI0053-4 Signature Frequency Range Measured Max Value Limit < (dBm) Freq (MHz) Result (dBm) Band n25 1930 MHz - 1995 MHz and n66 2110 MHz - 2200 MHz, 5G NR Port 1 25 MHz Bandwidth 256-QAM Modulation Mid Channels, 1962.5 MHz and 2155 MHz Mid Channels, 1962.5 MHz and 2155 MHz 9 kHz - 150 kHz 150 kHz - 20 MHz 0.13 0.27 -55.4 -54.7 Pass Pass -49 -39 -26.6 -27.9 Mid Channels, 1962.5 MHz and 2155 MHz Mid Channels, 1962.5 MHz and 2155 MHz 20 MHz - 3.5 GHz 3157.66 -19 -19 Pass 1900 MHz - 2500 GHz 2224.36 Pass Mid Channels, 1962.5 MHz and 2155 MHz 3.5 GHz - 13 GHz 4020.60 -49.1 -19 Pass Mid Channels, 1962.5 MHz and 2155 MHz 13 GHz - 22 GHz 21497.80

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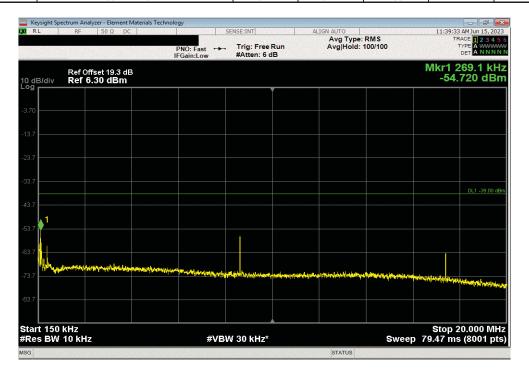


Band n25 1930 MHz - 1995 MHz and n66 2110 MHz - 2200 MHz, 5G NR, Port 1, 25 MHz Bandwidth, 256-QAM Modulation, Mid Channels, 1962.5 MHz and 2155 MHz

Frequency
Range
Freq (MHz)
9 kHz - 150 kHz
0.13
-55.36
-49
Pass

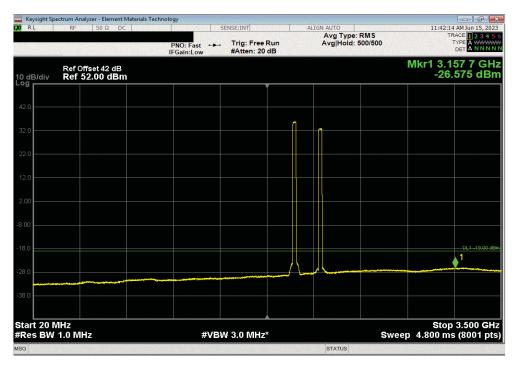


| Band n25 1930 MHz - 1995 MHz and n66 2110 MHz - 2200 MHz, 50 | G NR, Port 1, 25 MHz B | andwidth, 256-Q/ | AM Modulation, | Mid Channels, 19 | 962.5 MHz and 2155 MHz |
|--|------------------------|------------------|----------------|------------------|------------------------|
| Frequency | Measured | Max Value | Limit | | |
| Range | Freq (MHz) | (dBm) | < (dBm) | Result | |
| 150 kHz - 20 MHz | 0.27 | -54.72 | -39 | Pass | |

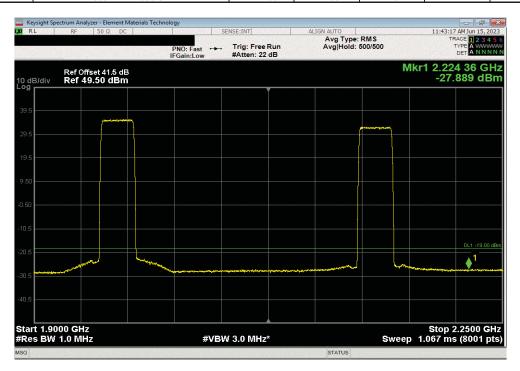


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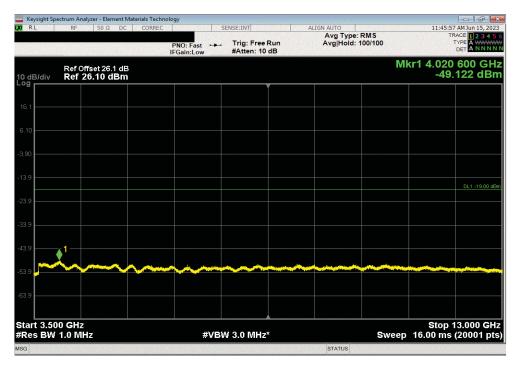


| Band n25 1930 MHz - 1995 MHz and n66 2110 MHz - 2200 MHz, 5 | GNR, Port 1, 25 MHz B | andwidth, 256-Q | AM Modulation, | Mid Channels, 19 | 962.5 MHz and 2155 MHz |
|---|-----------------------|-----------------|----------------|------------------|------------------------|
| Frequency | Measured | Max Value | Limit | | |
| Range | Freq (MHz) | (dBm) | < (dBm) | Result | |
| 1900 MHz - 2500 GHz | 2224.36 | -27.89 | -19 | Pass | |

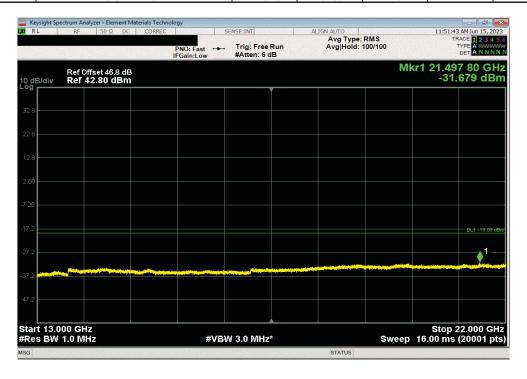


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| Band n25 1930 MHz - 1995 MHz and n66 2110 MHz - 2200 MHz, 50 | G NR, Port 1, 25 MHz B | andwidth, 256-Q/ | AM Modulation, | Mid Channels, 19 | 962.5 MHz and 2155 MHz |
|--|------------------------|------------------|----------------|------------------|------------------------|
| Frequency | Measured | Max Value | Limit | | |
| Range | Freq (MHz) | (dBm) | < (dBm) | Result | |
| 13 GHz - 22 GHz | 21497.8 | -31.68 | -19 | Pass | 7 |



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XMit 2023.02.14.0

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

TEST EQUIPMENT

| Description | Manufacturer | Model | ID | Last Cal. | Cal. Due |
|------------------------------|--------------------|-------------|-----|------------|------------|
| Generator - Signal | Agilent | N5173B | TIW | 2020-07-17 | 2023-07-17 |
| Analyzer - Spectrum Analyzer | Keysight | N9010A | AFQ | 2023-02-09 | 2024-02-09 |
| Block - DC | Fairview Microwave | SD3235-2148 | ANF | 2023-05-24 | 2024-05-24 |
| Block - DC | Fairview Microwave | SD3379 | AMM | 2022-09-09 | 2023-09-09 |

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), 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 FCC 27.53 (h) (1), the power of any emission outside of the authorized operating frequency range cannot exceed -13sBm for a 1 MHz measurement bandwidth. The limit is adjusted To -19dBm [-13 dBm -10log (4)] per FCC KDB 662911D01v02r01 because the BTS may operate as a 4 port MIMO.

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

The limit for the 9kHz to 150kHz frequency range was adjusted to -49dBm to correct for a spectrum analyzer RBW of 1kHz versus required RBW of 1MHz [i.e.: -49dBm = -19dBm -10log(1MHz/1kHz)]. The limit for the 150kHz to 20MHz frequency range was adjusted to -39dBm to correct for a spectrum analyzer RBW of 10kHz versus required RBW of 1MHz [i.e.: -39dBm = -19dBm -10log(1MHz/10kHz)]. The required limit of -19dBm with a RBW of > 1MHz was used for all other frequency ranges.

The spurious emission testing was performed using only one modulation type because the Occupied Bandwidth variation between modulation types is small, the average output power variation between modulation types is small, and there is significant passing. (See ANSI C63.26. clause 5.7.2e).

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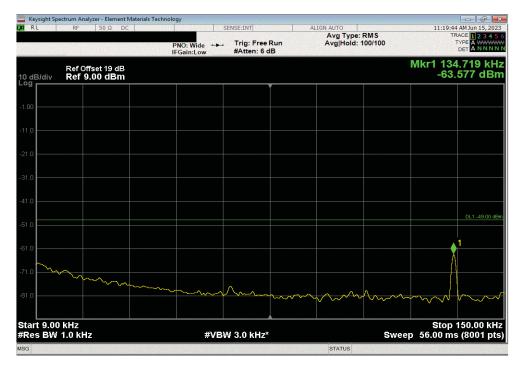
| | | | | | | 1bt1x 2022.05.02.0 | XMrt 2023.02. |
|---------------------|-----------------------|--|--|-----------------------|-------------------|----------------------|------------------|
| EUT: | AHFIG (FCC C2PC) | | | | Work Order: | NOKI0053 | |
| Serial Number: | See Configuration | | | | | 06/14/2023 | |
| Customer: | Nokia Solutions and N | Networks | | | Temperature: | 21.7°C | |
| Attendees: | John Rattanavong, M | itchell Hill | | | Humidity: | 61.5% | |
| Project: | | | | | Barometric Pres.: | 1006 mbar | |
| | Brandon Hobbs | | Power: 54 VDC | | Job Site: | TX07 | |
| TEST SPECIFICATI | IONS | | Test Method | | | | |
| FCC 24E:2023 | | | ANSI C63.26:2015 | | | | |
| FCC 27:2023 | | | ANSI C63.26:2015 | | | | |
| COMMENTS | | | | | | | |
| NoneAll measurem | ent path losses were | accounted for in the reference level offest includi | ing any attenuators, filters and DC blocks. The Band n | 25 carrier was enable | d at maximum pov | ver (80 watts/carrie | er). The Band ne |
| carrier was enabled | d on the middle chann | el (2155MHz) at 40 watts with the same channel b | bandwidth and modulation type as the Band n25 carrie | . The port power was | set at the maximu | ım level of 120 Wat | ts [Band n25 |
| carrier (80W) and B | and n66 carrier (40W) | 1. | | | | | |
| | // TEST STANDARD | | | | | | |
| None | | | | | | | |
| | NOKI0053-1 | | | | | | |
| Configuration # | NOKI0053-2 | 1 | 11-1 | | | | |
| oomiguration # | NOKI0053-3 | | | | | | |
| | NOKI0053-4 | Signature | | | | | |
| | | | Frequency | Measured | Max Value | Limit | |
| | | | Range | Freq (MHz) | (dBm) | < (dBm) | Result |
| Band n25 1930 MHz | - 1995 MHz and n66 2 | 110 MHz - 2200 MHz, 5G NR | | | | | |
| | Port 1 | | | | | | |
| | 30 MHz B | | | | | | |
| | | 256-QAM Modulation | | | | | |
| | | Mid Channels, 1962.5 MHz and 2155 | 9 kHz - 150 kHz | 0.13 | -63.6 | -49 | Pass |
| | | Mid Channels, 1962.5 MHz and 2155 | 150 kHz - 20 MHz | 8.70 | -56.5 | -39 | Pass |
| | | Mid Channels, 1962.5 MHz and 2155 | 20 MHz - 3.5 GHz | 3168.10 | -26.7 | -19 | Pass |
| | | | 4000 MUL 0500 OUL | 2228.13 | -28.1 | -19 | Pass |
| | | Mid Channels, 1962.5 MHz and 2155 | 1900 MHz - 2500 GHz | | | -19 | |
| | | Mid Channels, 1962.5 MHz and 2155 Mid Channels, 1962.5 MHz and 2155 | 3.5 GHz - 13 GHz | 4033.43 | -49.1 | -19 | Pass |
| | | | | | | | |

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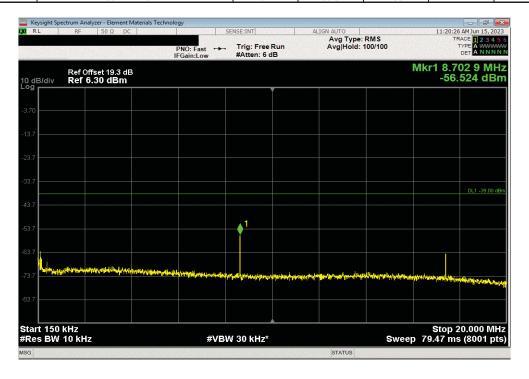


Band n25 1930 MHz - 1995 MHz and n66 2110 MHz - 2200 MHz, 5G NR, Port 1, 30 MHz Bandwidth, 256-QAM Modulation, Mid Channels, 1962.5 MHz and 2155 MHz

Frequency
Range
Freq (MHz)
9 kHz - 150 kHz
0.13
-63.58
-49
Pass

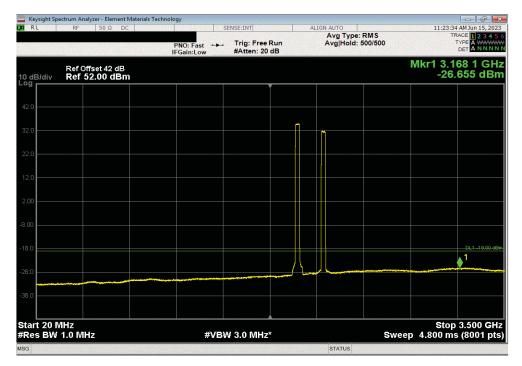


| Band n25 1930 MHz - 1995 MHz and n66 2110 MHz - 2200 MHz, | 5G NR , Port 1, 30 MHz B | andwidth, 256-Q | AM Modulation, | Mid Channels, 19 | 62.5 MHz and 2155 MHz |
|---|--------------------------|-----------------|----------------|------------------|-----------------------|
| Frequency | Measured | Max Value | Limit | | |
| Range | Freq (MHz) | (dBm) | < (dBm) | Result | |
| 150 kHz - 20 MHz | 8.7 | -56.52 | -39 | Pass | |

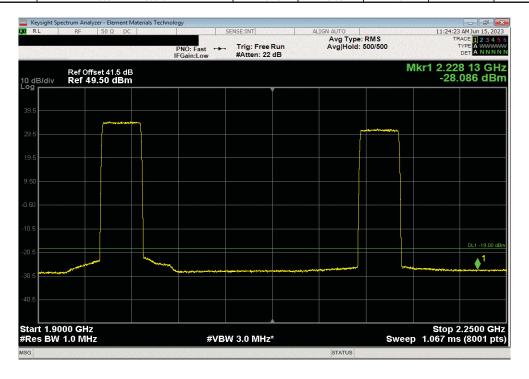


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| Band n25 1930 MHz - 1995 MHz and n66 2110 MHz - 2200 MHz, 5G N | IR , Port 1, 30 MHz B | andwidth, 256-Q | AM Modulation, | Mid Channels, 1 | 962.5 MHz and 2155 MHz |
|--|-----------------------|-----------------|----------------|-----------------|------------------------|
| Frequency | Measured | Max Value | Limit | | |
| Range | Freq (MHz) | (dBm) | < (dBm) | Result | |
| 1900 MHz - 2500 GHz | 2228.13 | -28.09 | -19 | Pass | |



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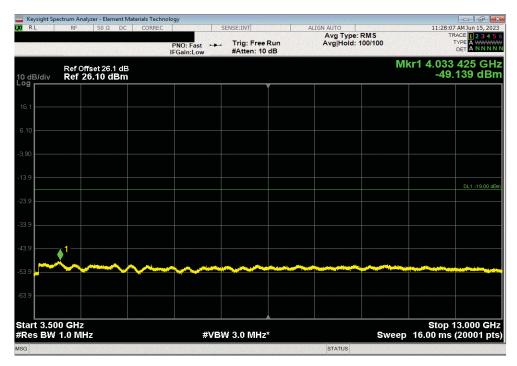


Band n25 1930 MHz - 1995 MHz and n66 2110 MHz - 2200 MHz, 5G NR , Port 1, 30 MHz Bandwidth, 256-QAM Modulation, Mid Channels, 1962.5 MHz and 2155 MHz

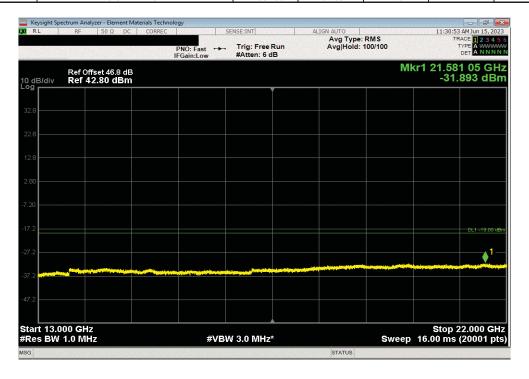
Frequency Measured Max Value Limit

Range Freq (MHz) (dBm) < (dBm) Result

3.5 GHz - 13 GHz 4033.43 -49.14 -19 Pass



| Г | Band n25 1930 MHz - 1995 MHz and n66 2110 MHz - 2200 MHz, 5 | GNR, Po | rt 1, 30 MHz | Bandwidth, | 256-Q | AM Modulation, | Mid Channels, | 1962.5 MHz and 2155 MHz |
|---|---|---------|--------------|------------|-------|----------------|---------------|-------------------------|
| Г | Frequency | | Measured | Max V | /alue | Limit | | |
| L | Range | | Freq (MHz) | (dB | m) | < (dBm) | Result | |
| ı | 13 GHz - 22 GHz | | 21581.05 | -31. | .89 | -19 | Pass | |



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End of Test Report

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