

NR band 77/78_High Band



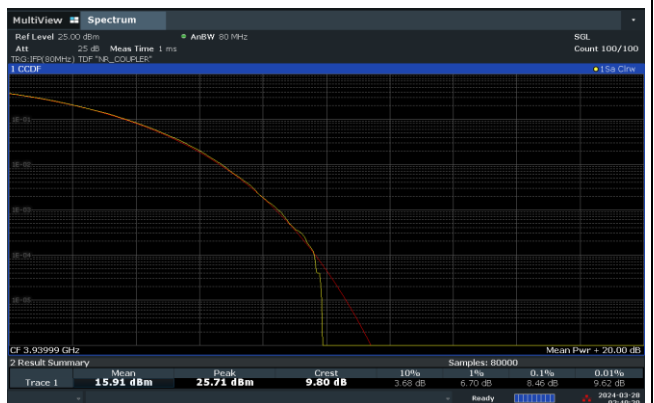
80 MHz Low Channel - Full RB - DFT-S-OFDM

80 MHz Low Channel - Full RB - CP-OFDM



80 MHz Middle Channel - Full RB - DFT-S-OFDM

80 MHz Middle Channel - Full RB - CP-OFDM



80 MHz High Channel - Full RB - DFT-S-OFDM

80 MHz High Channel - Full RB - CP-OFDM

NR band 77/78_High Band



90 MHz Low Channel - Full RB - DFT-S-OFDM



90 MHz Low Channel - Full RB - CP-OFDM



90 MHz Middle Channel - Full RB - DFT-S-OFDM



90 MHz Middle Channel - Full RB - CP-OFDM



90 MHz High Channel - Full RB - DFT-S-OFDM



90 MHz High Channel - Full RB - CP-OFDM

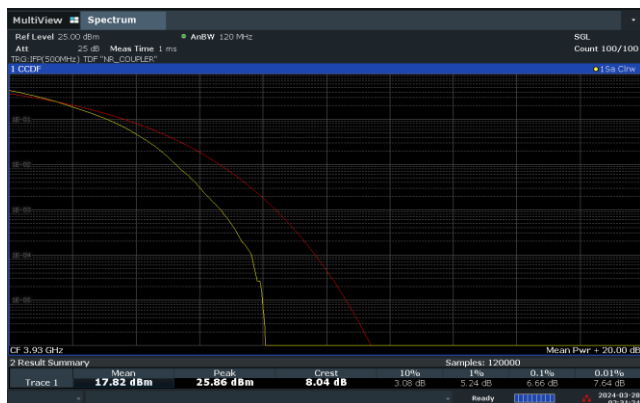
NR band 77/78_High Band



100 MHz Low Channel - Full RB - DFT-S-OFDM



100 MHz Middle Channel - Full RB - DFT-S-OFDM



100 MHz High Channel - Full RB - DFT-S-OFDM

100 MHz High Channel - Full RB - CP-OFDM

6. Spurious Emissions at Antenna Terminal

6.1. Limit

- §27.53(l)(2), for mobile operations in the 3 700-3 980 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed -13 dBm/MHz. Compliance with this paragraph (l)(2) 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, the minimum resolution bandwidth for the measurement shall be either one percent of the emission bandwidth of the fundamental emission of the transmitter or 350 kHz. In the bands between 1 and 5 MHz removed from the licensee's frequency block, the minimum resolution bandwidth for the measurement shall be 500 kHz. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

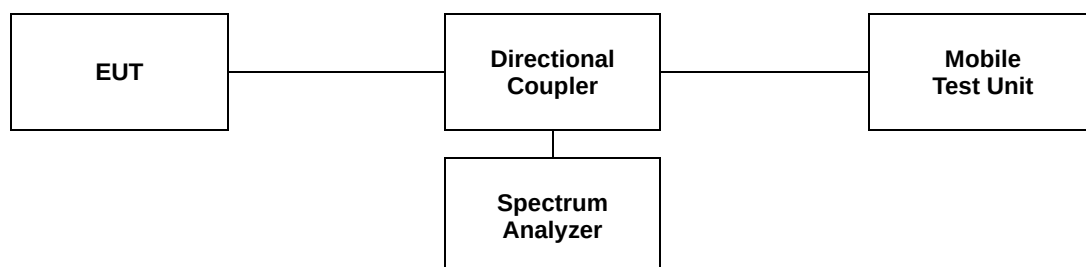
- §27.53(m)(4), for mobile digital stations, the attenuation factor shall be not less than $40 + 10 \log_{10}(P)$ dB on all frequencies between the channel edge and 5 megahertz from the channel edge, $43 + 10 \log_{10}(P)$ dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and $55 + 10 \log_{10}(P)$ dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less than $43 + 10 \log_{10}(P)$ dB on all frequencies between 2 490.5 MHz and 2 496 MHz and $55 + 10 \log_{10}(P)$ dB at or below 2 490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2 495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

- §27.53(n)(2), for mobile operations in the 3 450-3 550 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed -13 dBm/MHz. Compliance with this paragraph (n)(2) 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, but limited to a maximum of 200 kHz. In the bands between 1 and 5 MHz removed from the licensee's frequency block, the minimum resolution bandwidth for the measurement shall be 500 kHz. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

6.2. Test Procedure

The test follows section 5.7 of ANSI C63.26-2015.

1. Start frequency was set to 9 kHz and stop frequency was set to at least 10* the fundamental frequency.
2. Detector = RMS.
3. Trace mode = Max hold.
4. Sweep time = Auto couple.
5. The trace was allowed to stabilize.
6. Please see notes below for RBW and VBW settings.
7. For plots showing conducted spurious emissions from 9 kHz to 40 GHz, all path loss of wide frequency range was investigated and compensated to spectrum analyzer as TDF function.



Note;

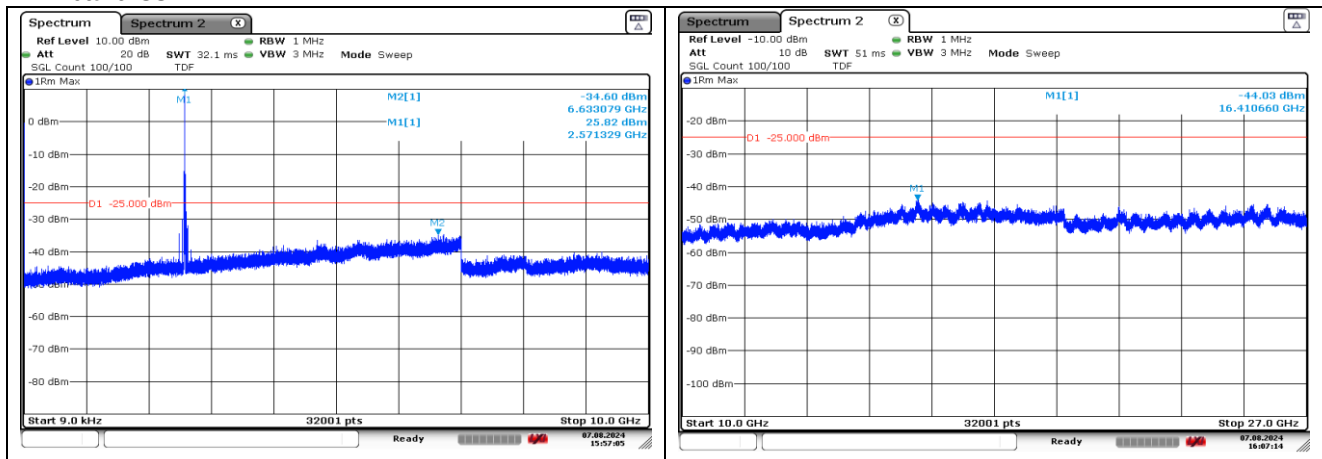
Compliance with the applicable limits is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater for frequencies less than 1 GHz and frequencies greater than 1 GHz. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. The emission bandwidth is defined as the width of the signal between two point, one below the carrier center frequency and one above the carrier center frequency, outside of which all emission are attenuated at least 26 dB below the transmitter power.

6.3. Test Results

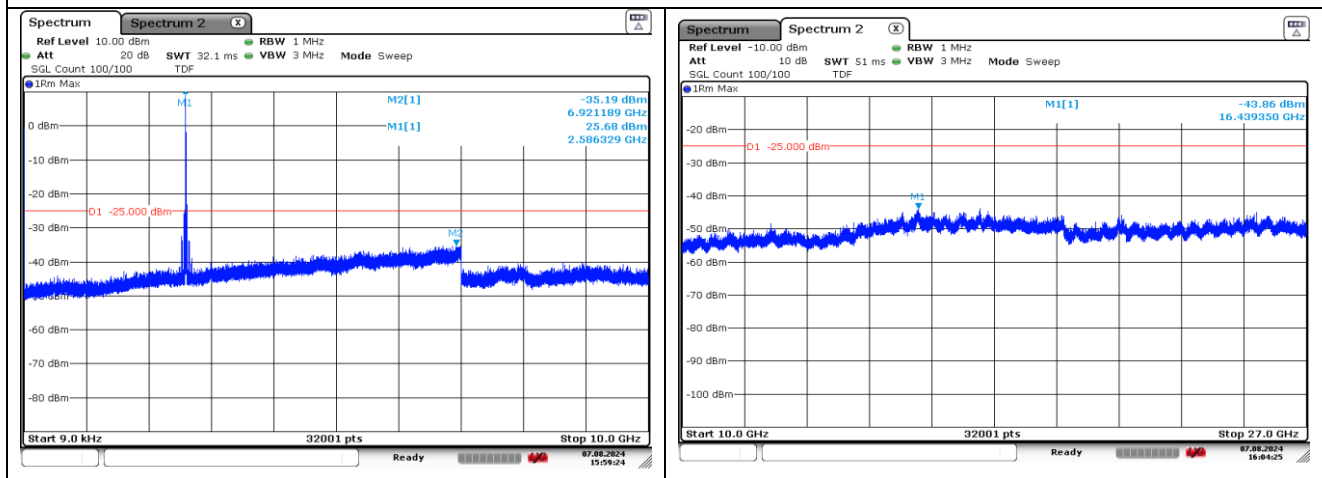
Ambient temperature : $(23 \pm 1) ^\circ\text{C}$
 Relative humidity : 47 % R.H.

- Test plots

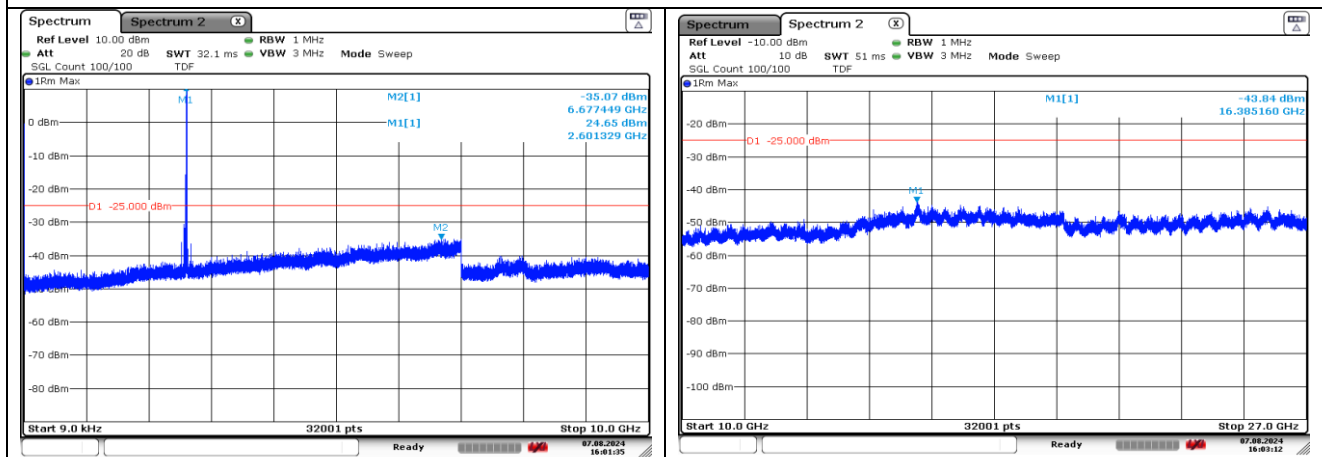
NR band 38



DFT-S-OFDM BPSK - 20 MHz Low Channel - 1 RB

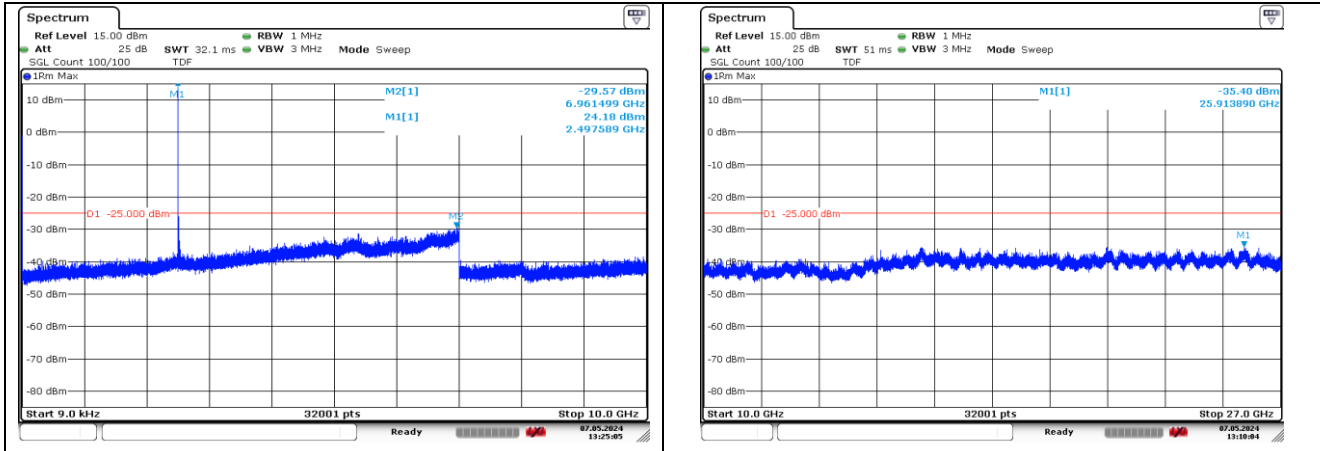


DFT-S-OFDM BPSK - 20 MHz Middle Channel - 1 RB

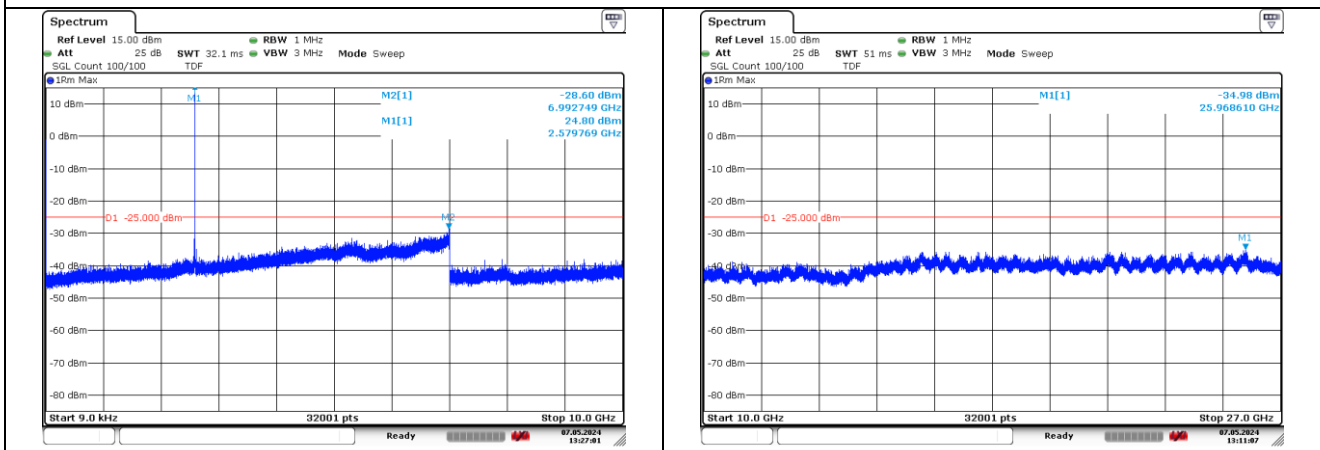


DFT-S-OFDM BPSK - 20 MHz High Channel - 1 RB

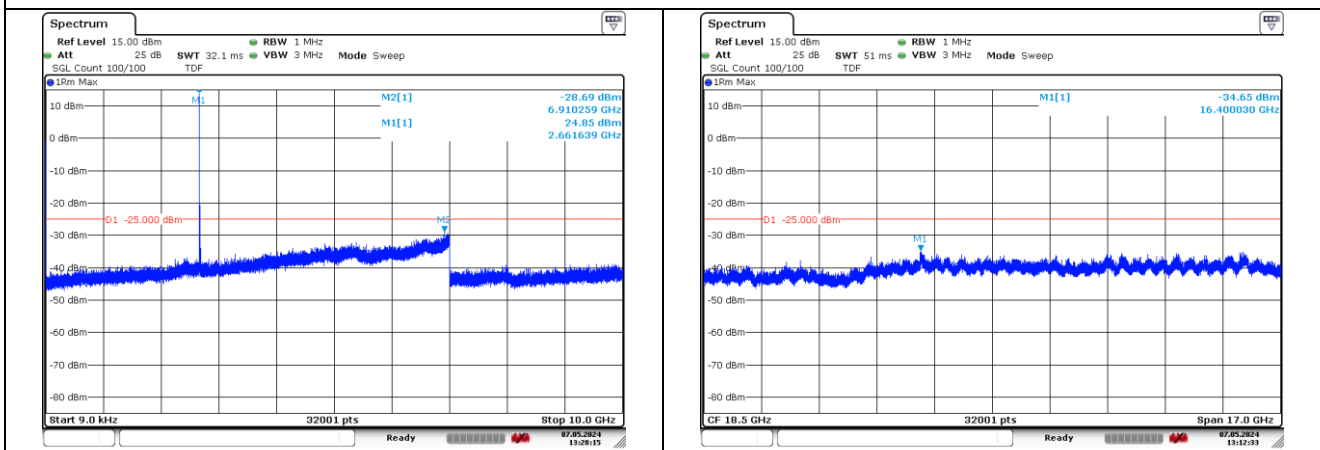
NR band 41



DFT-S-OFDM BPSK - 30 MHz Low Channel - 1 RB



DFT-S-OFDM BPSK - 30 MHz Middle Channel - 1 RB

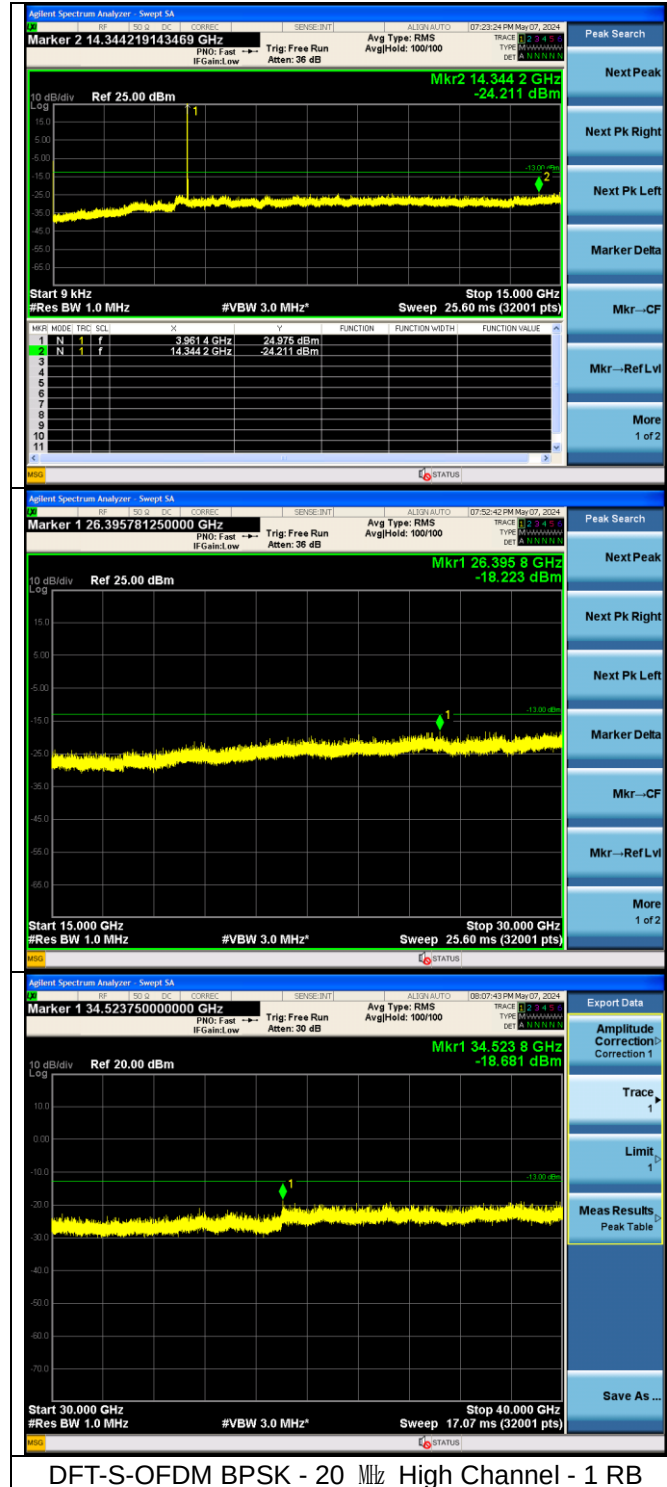


DFT-S-OFDM BPSK - 30 MHz High Channel - 1 RB

NR band 77/78 Low Band



NR band 77/78_Low Band



DFT-S-OFDM BPSK - 20 MHz High Channel - 1 RB

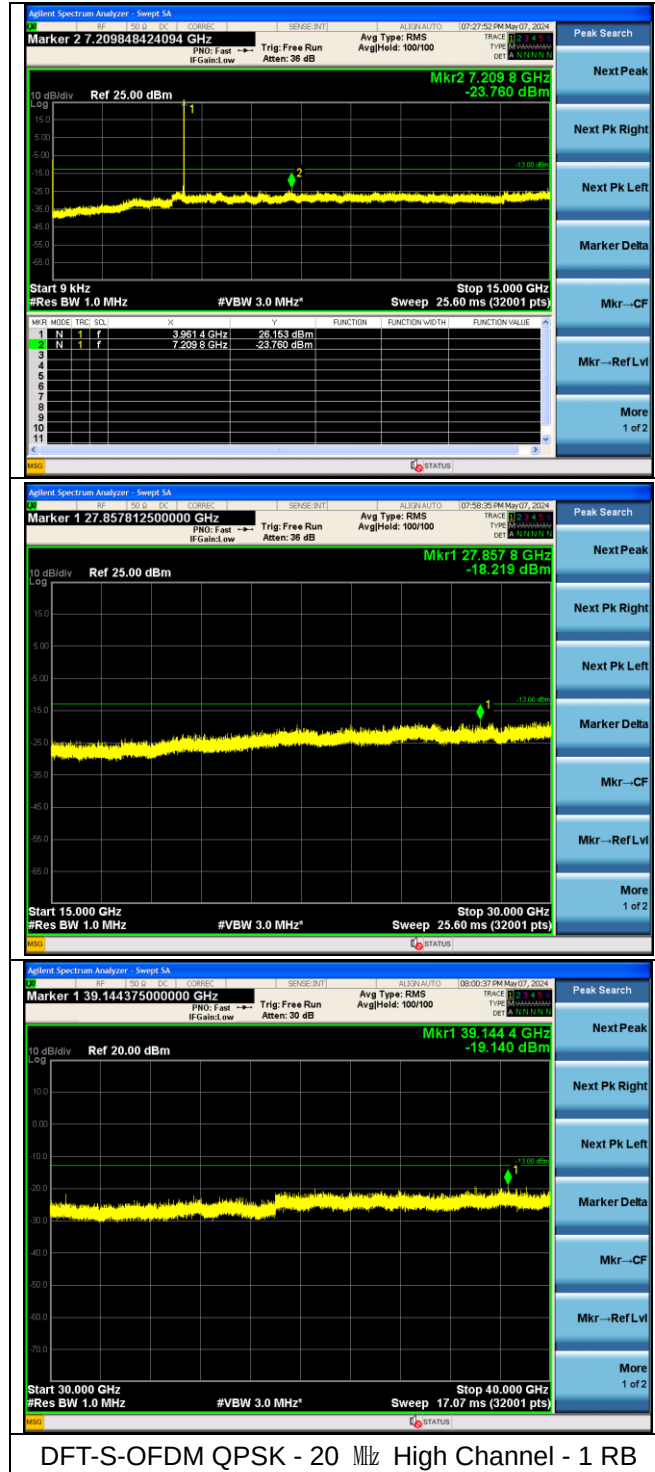
NR band 77/78_High Band



DFT-S-OFDM BPSK - 20 MHz Low Channel - 1 RB

DFT-S-OFDM BPSK - 20 MHz Middle Channel - 1 RB

NR band 77/78_High Band



7. Band Edge and Emission Mask

7.1. Limit

- §27.53(l)(2), for mobile operations in the 3 700-3 980 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed -13 dBm/MHz. Compliance with this paragraph (l)(2) 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, the minimum resolution bandwidth for the measurement shall be either one percent of the emission bandwidth of the fundamental emission of the transmitter or 350 kHz. In the bands between 1 and 5 MHz removed from the licensee's frequency block, the minimum resolution bandwidth for the measurement shall be 500 kHz. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

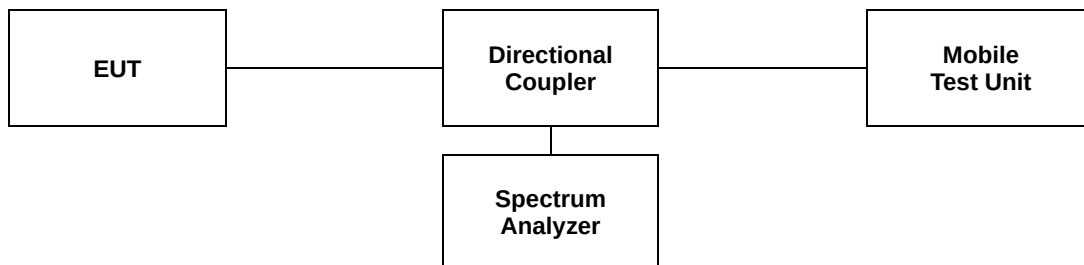
- §27.53(m)(4), for mobile digital stations, the attenuation factor shall be not less than $40 + 10 \log_{10} (P)$ dB on all frequencies between the channel edge and 5 megahertz from the channel edge, $43 + 10 \log_{10} (P)$ dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and $55 + 10 \log_{10} (P)$ dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less than $43 + 10 \log_{10} (P)$ dB on all frequencies between 2 490.5 MHz and 2 496 MHz and $55 + 10 \log_{10} (P)$ dB at or below 2 490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2 495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

- §27.53(n)(2), for mobile operations in the 3 450-3 550 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed -13 dBm/MHz. Compliance with this paragraph (n)(2) 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, but limited to a maximum of 200 kHz. In the bands between 1 and 5 MHz removed from the licensee's frequency block, the minimum resolution bandwidth for the measurement shall be 500 kHz. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

7.2. Test Procedure

The test follows section 5.7 of ANSI C63.26-2015.

- a. Span was set large enough so as to capture all out of band emissions near the band edge.
- b. RBW ≥ 1 % of OBW
- c. VBW $\geq 3 \times$ RBW.
- d. Detector = RMS.
- e. Trace mode = Average.
- f. Sweep time = Auto.
- g. The trace was allowed to stabilize.
- h. All path loss of frequency range was investigated and compensated to spectrum analyzer as TDF function.

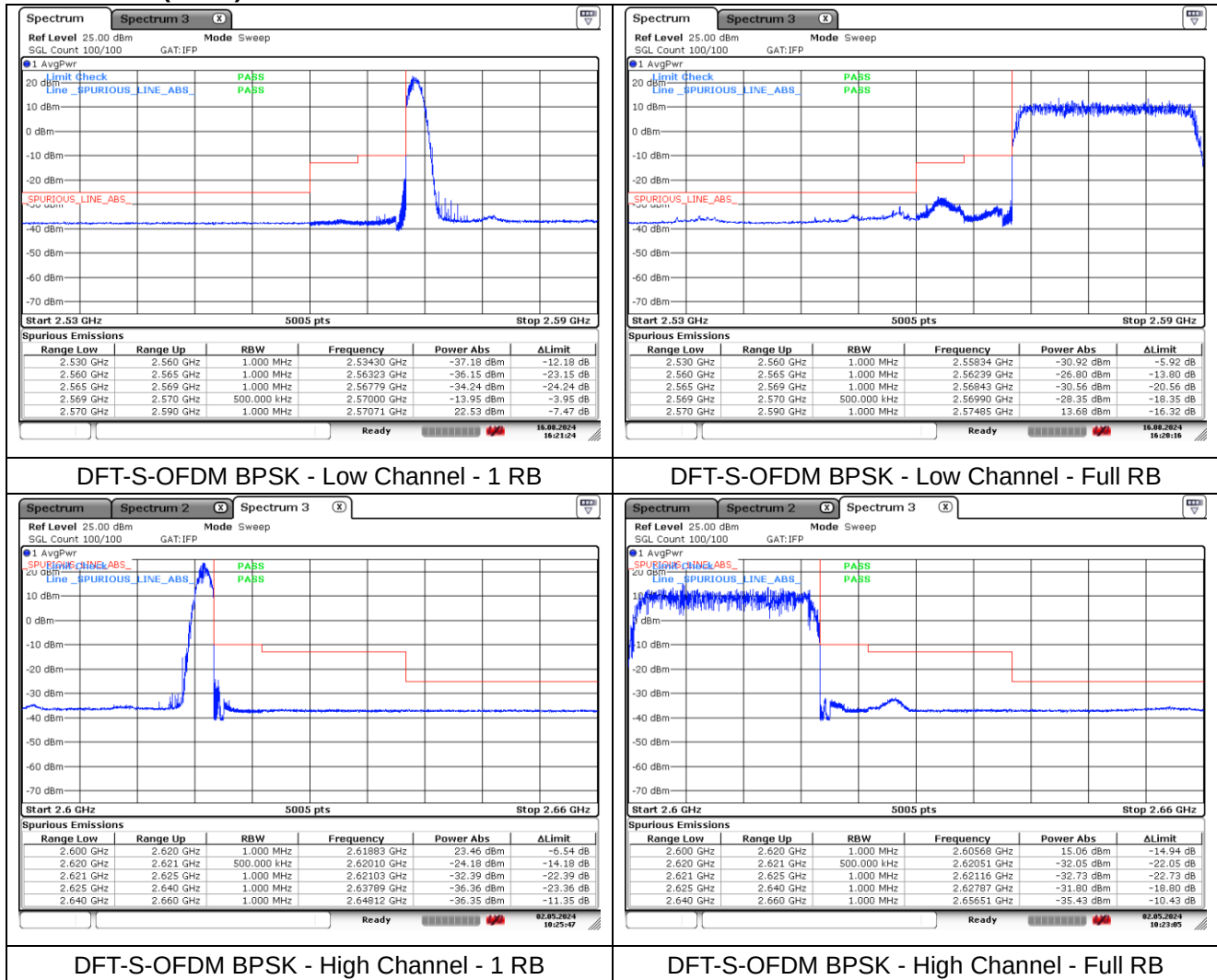


7.3. Test Results

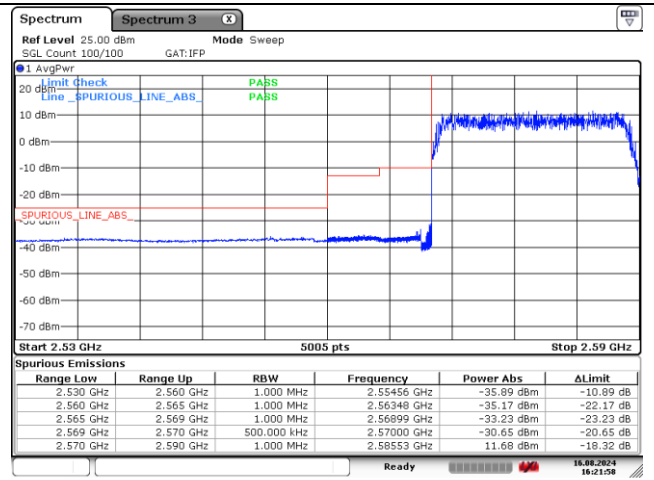
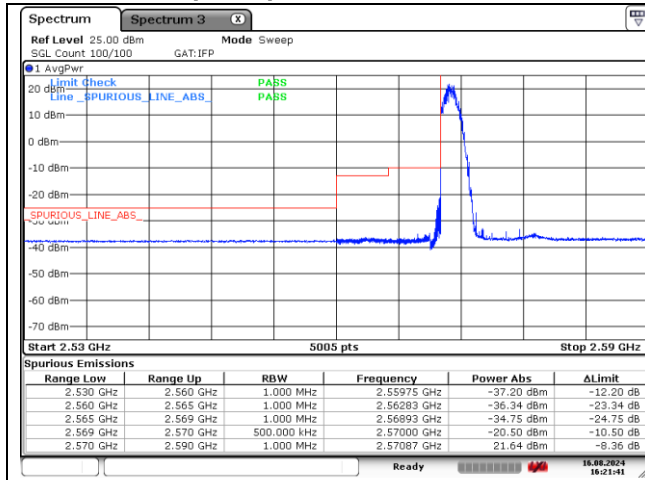
Ambient temperature : $(23 \pm 1) ^\circ\text{C}$
 Relative humidity : 47 % R.H.

- Test plots

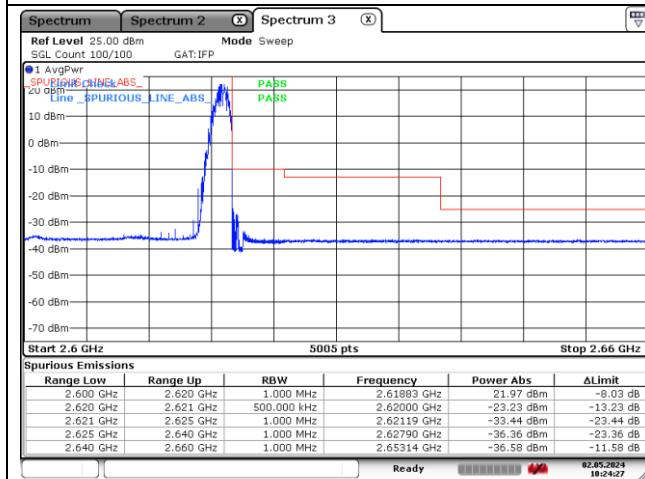
NR band 38 (20 MHz)



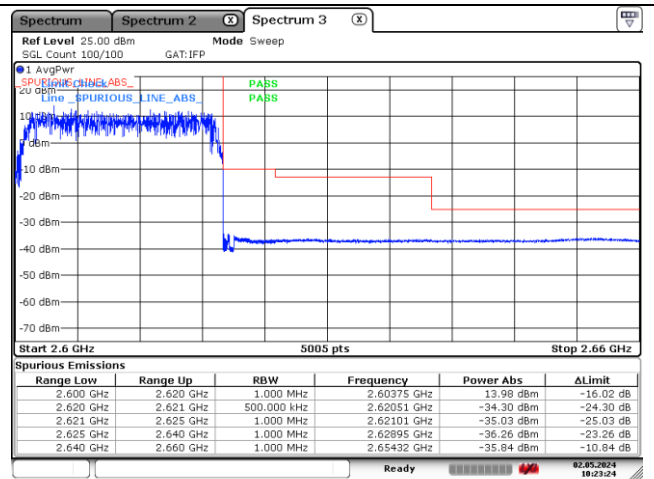
NR band 38 (20 MHz)



DFT-S-OFDM 16QAM - Low Channel - 1 RB



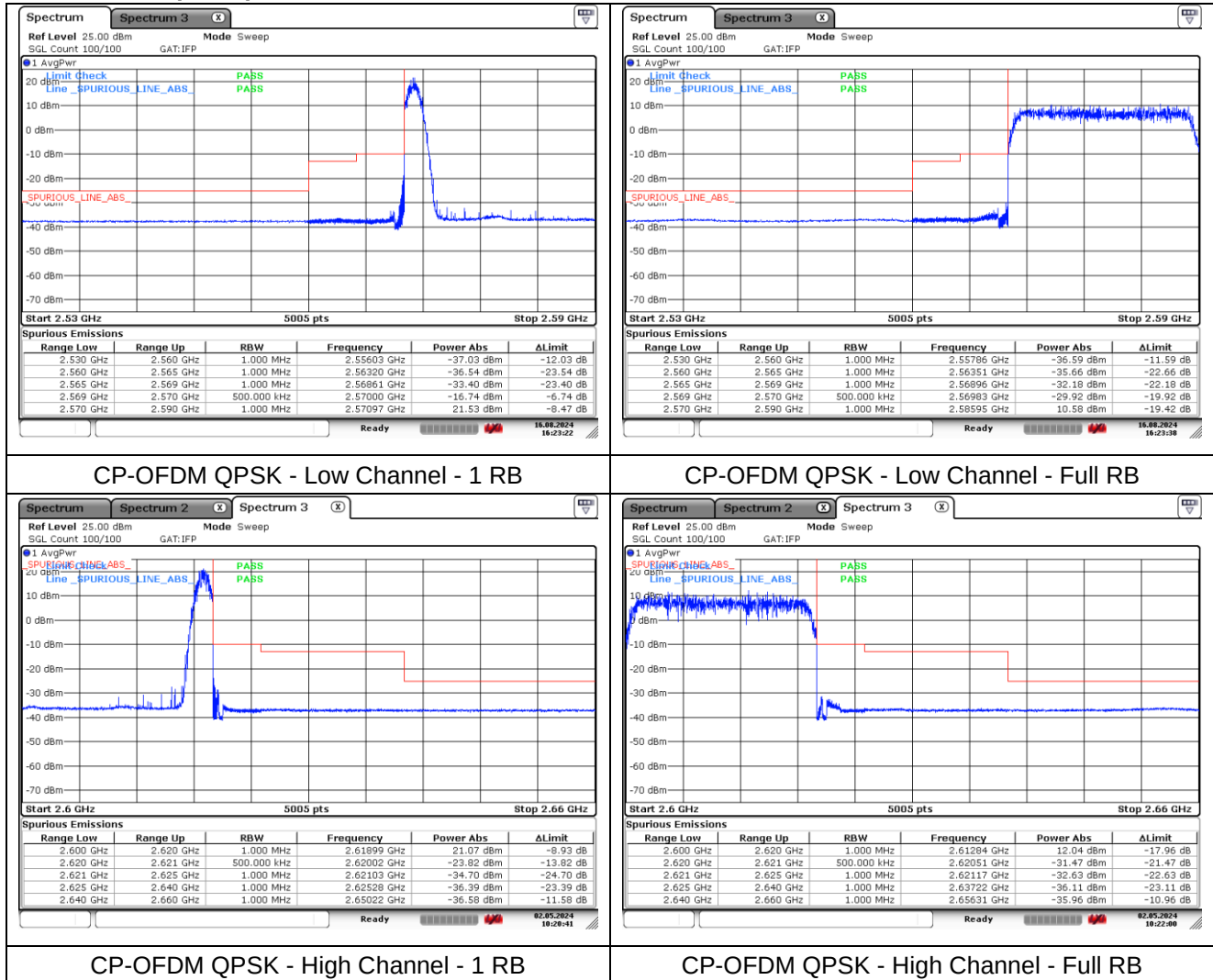
DFT-S-OFDM 16QAM - Low Channel - Full RB



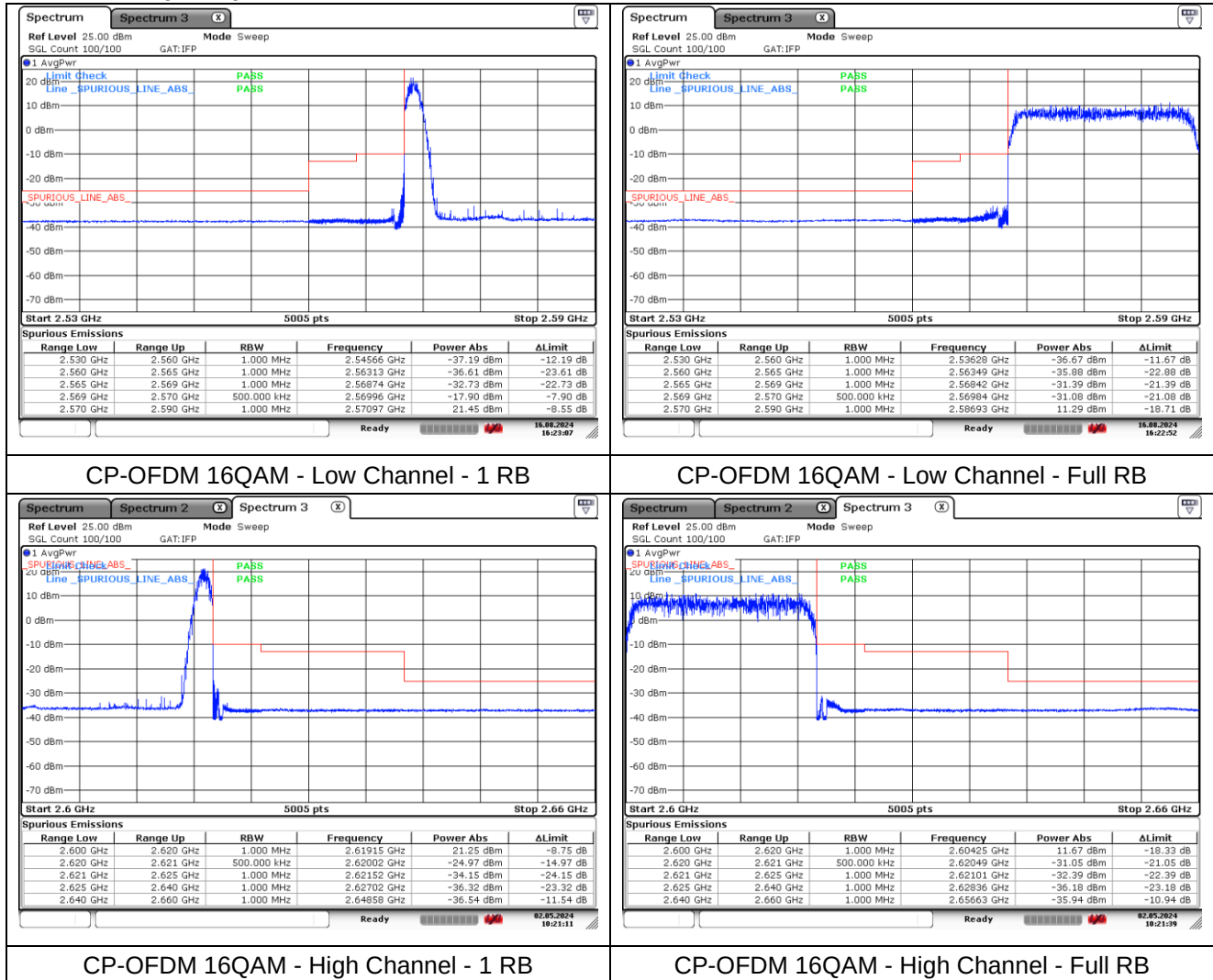
DFT-S-OFDM 16QAM - High Channel - 1 RB

DFT-S-OFDM 16QAM - High Channel - Full RB

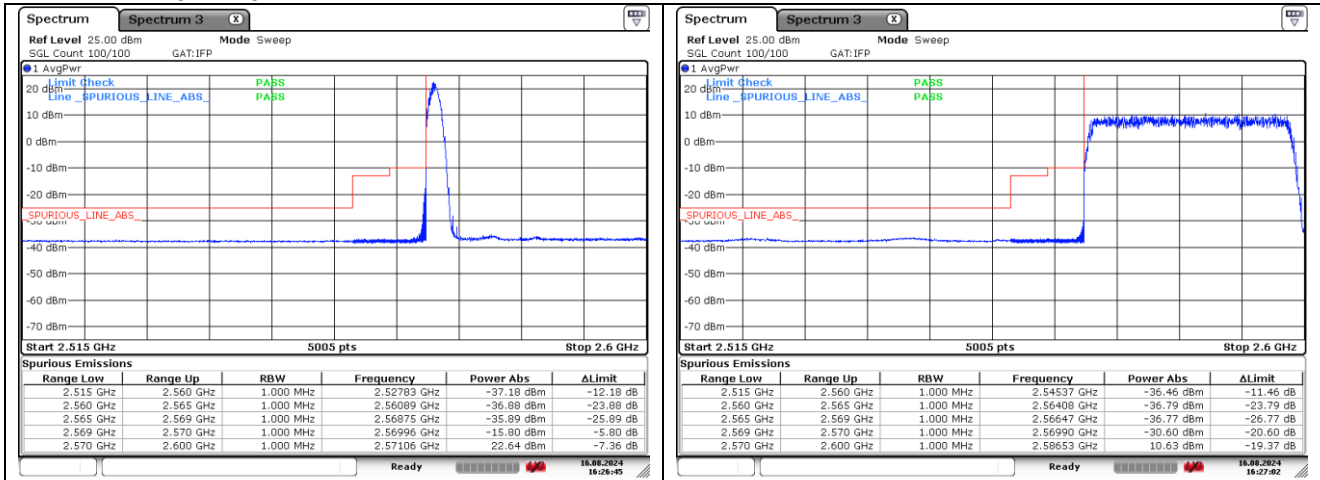
NR band 38 (20 MHz)



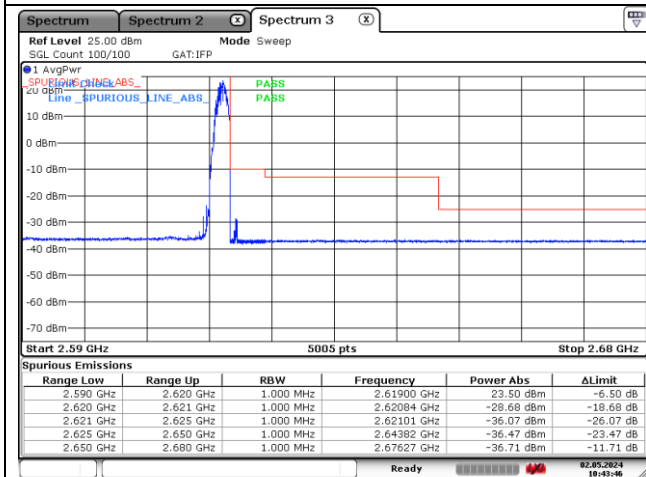
NR band 38 (20 MHz)



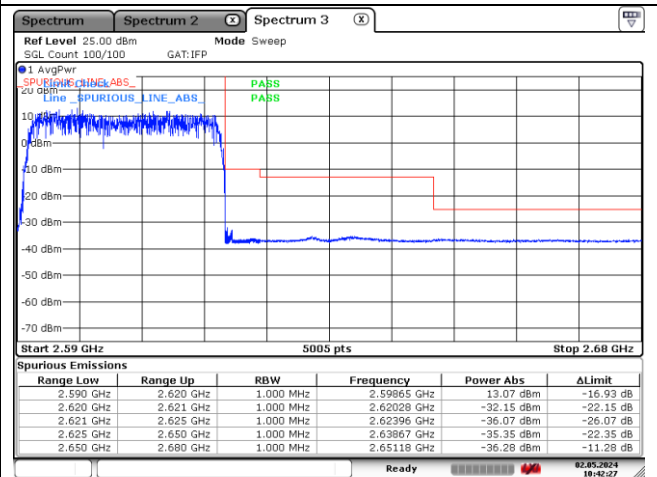
NR band 38 (30 MHz)



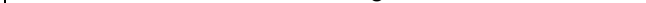
DFT-S-OFDM BPSK - Low Channel - 1 RB



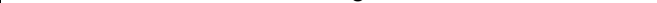
DFT-S-OFDM BPSK - Low Channel - Full RB



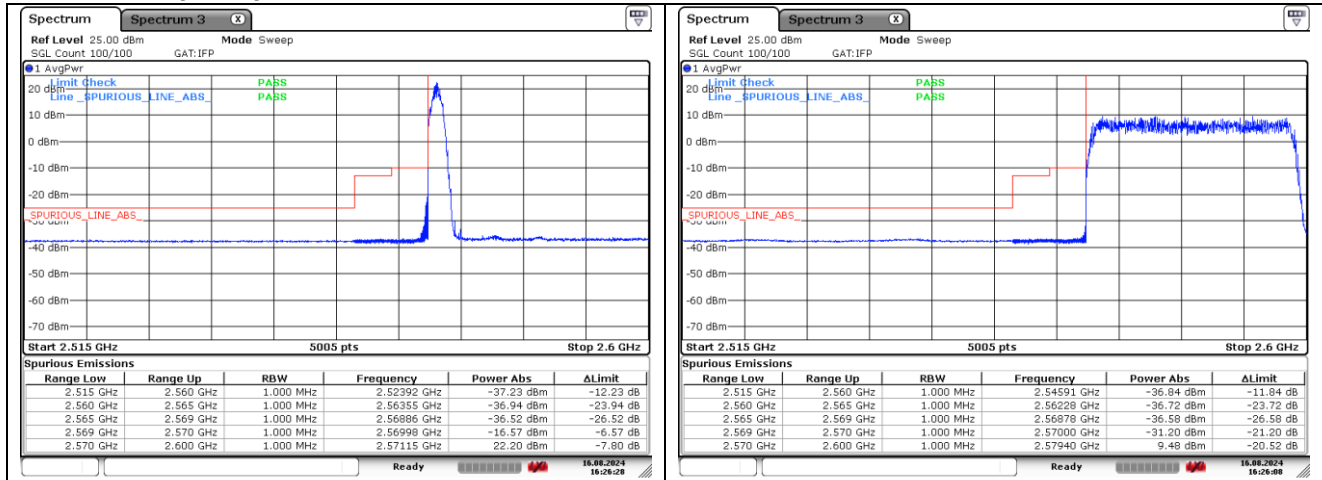
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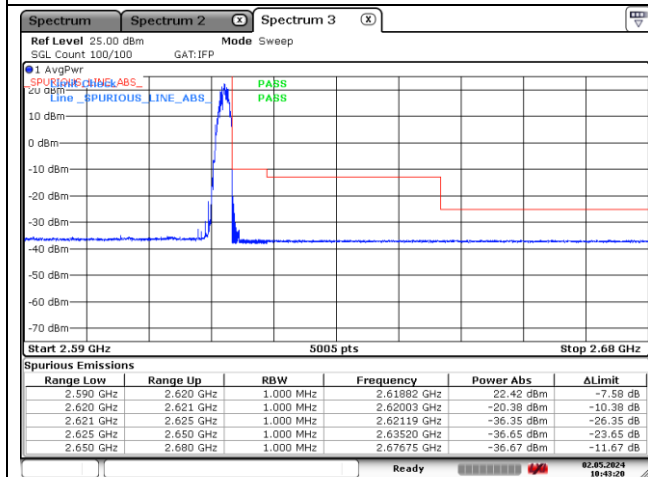
DFT-S-OFDM BPSK - High Channel - Full RB



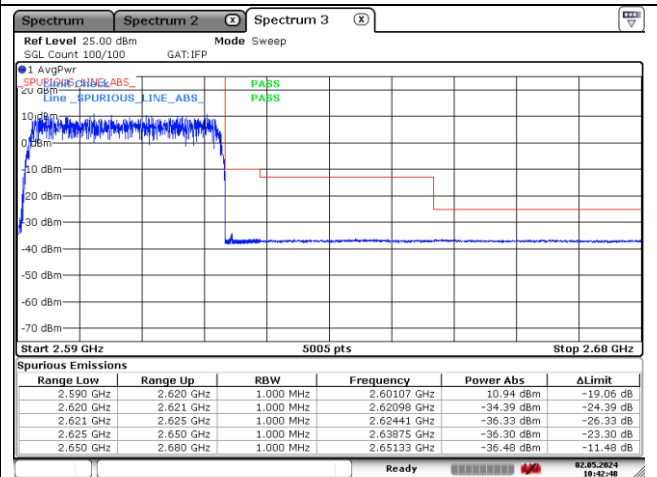
NR band 38 (30 MHz)



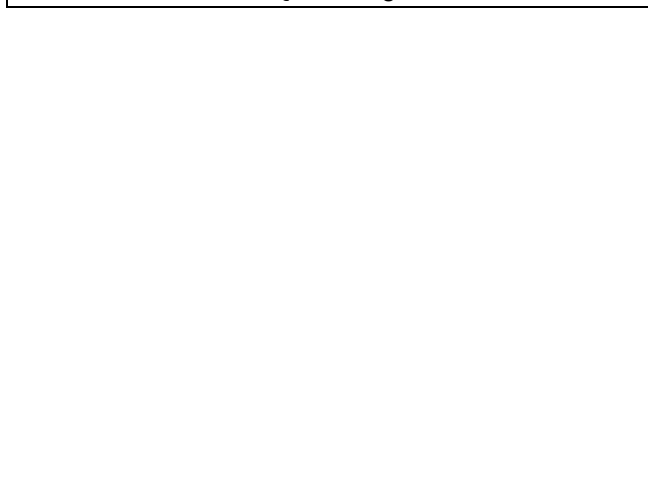
DFT-S-OFDM 16QAM - Low Channel - 1 RB



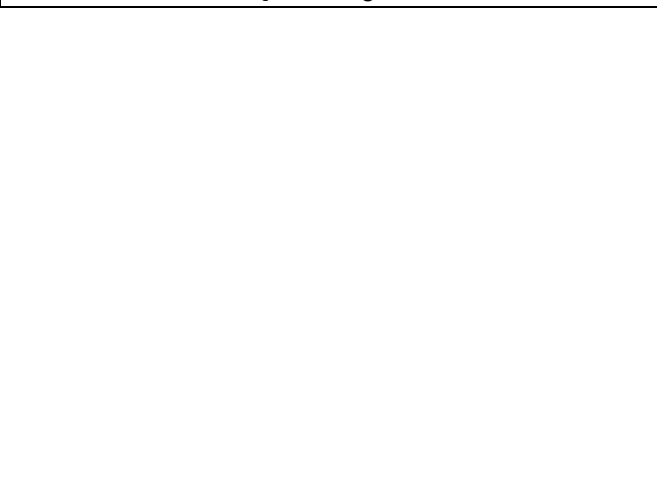
DFT-S-OFDM 16QAM - Low Channel - Full RB



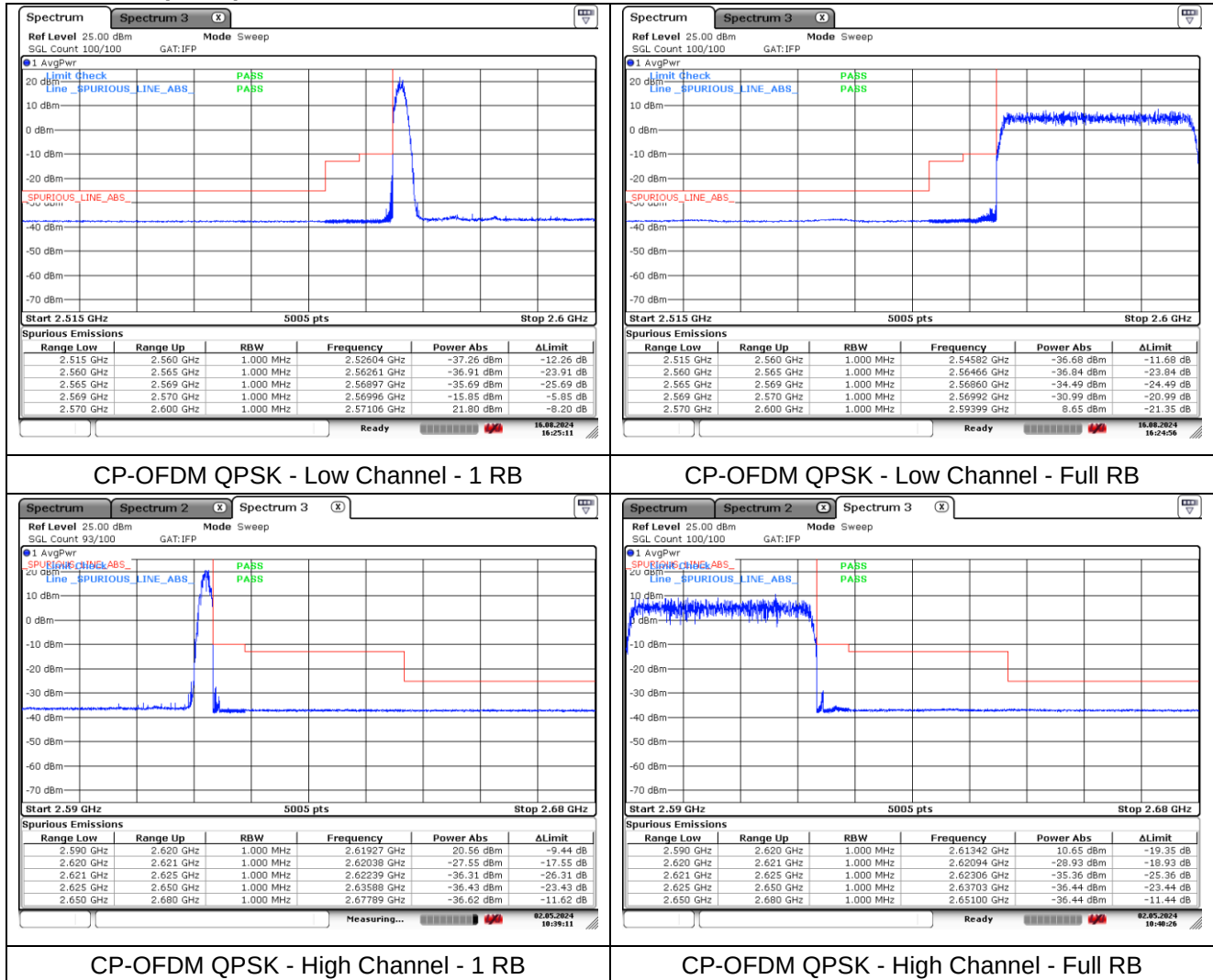
DFT-S-OFDM 16QAM - High Channel - 1 RB



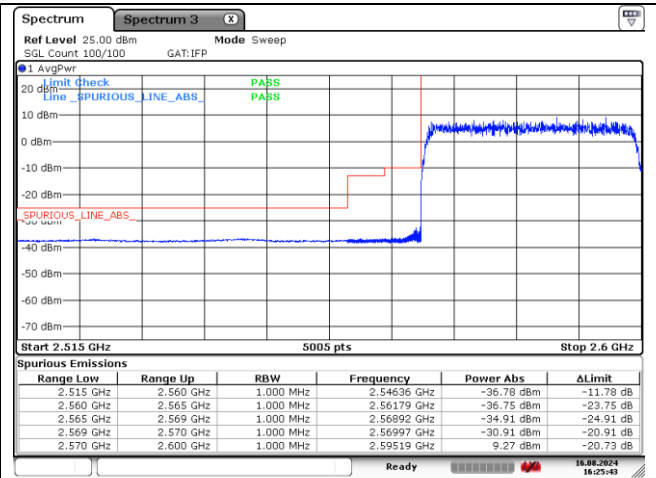
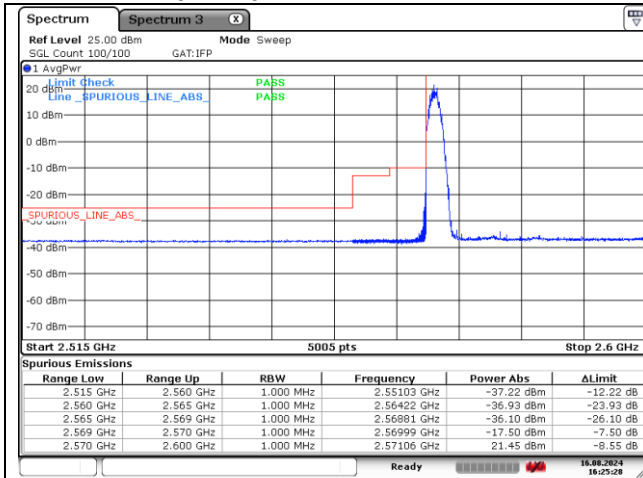
DFT-S-OFDM 16QAM - High Channel - Full RB



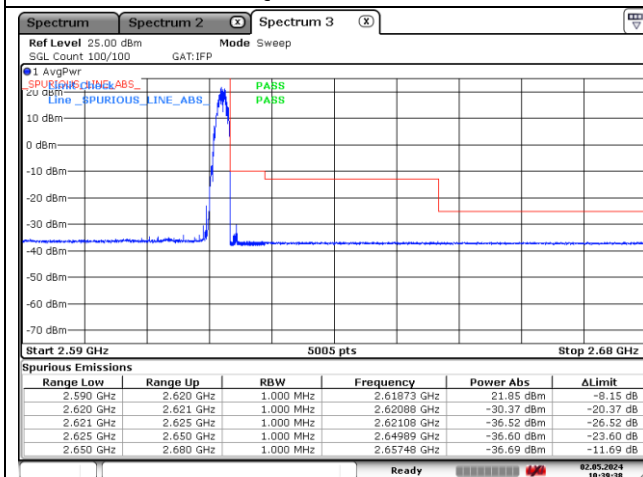
NR band 38 (30 MHz)



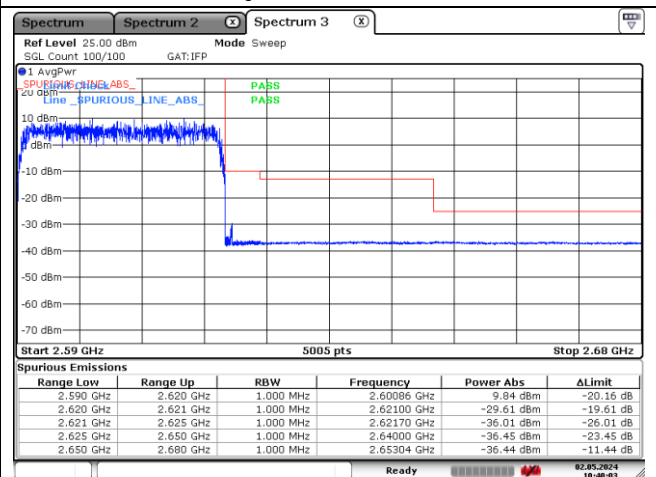
NR band 38 (30 MHz)



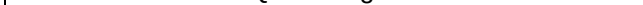
CP-OFDM 16QAM - Low Channel - 1 RB



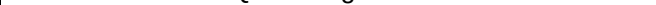
CP-OFDM 16QAM - Low Channel - Full RB



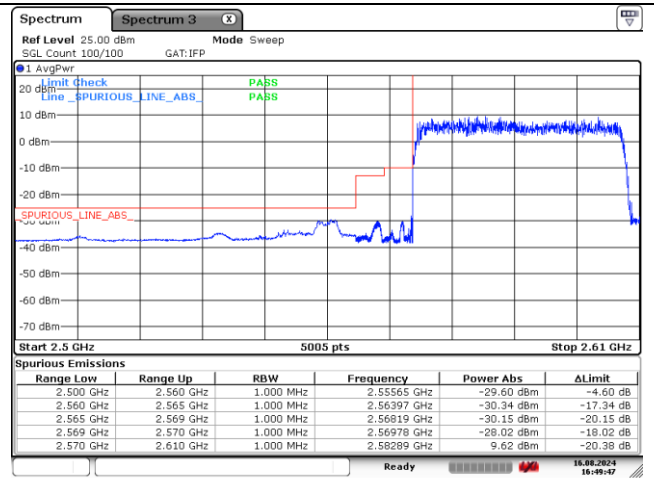
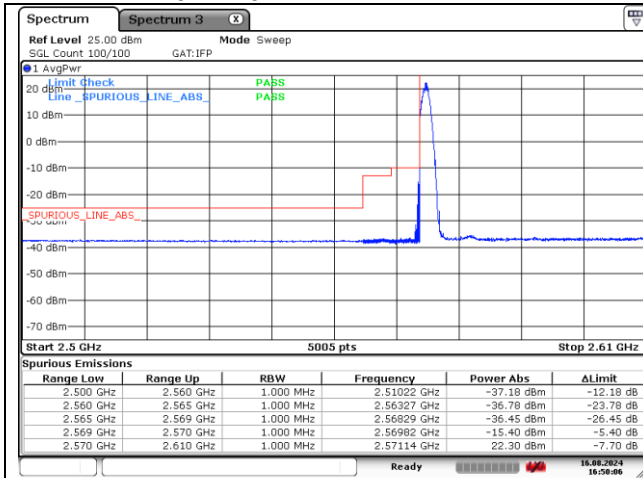
CP-OFDM 16QAM - High Channel - 1 RB



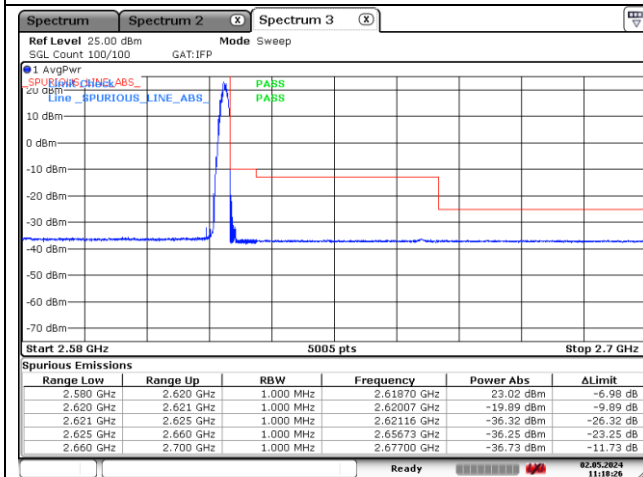
CP-OFDM 16QAM - High Channel - Full RB



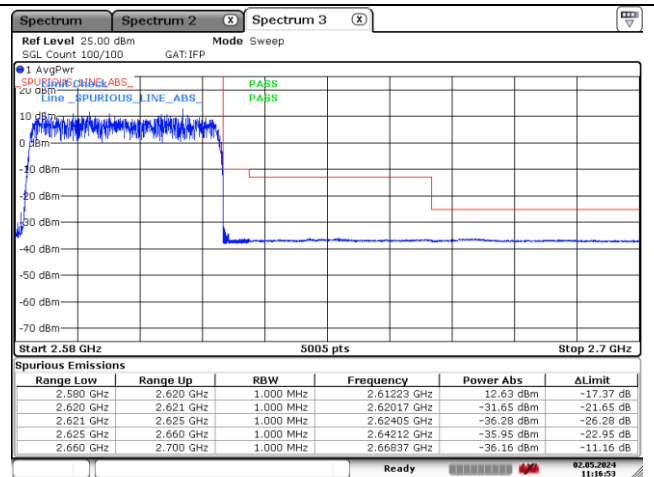
NR band 38 (40 MHz)



DFT-S-OFDM BPSK - Low Channel - 1 RB



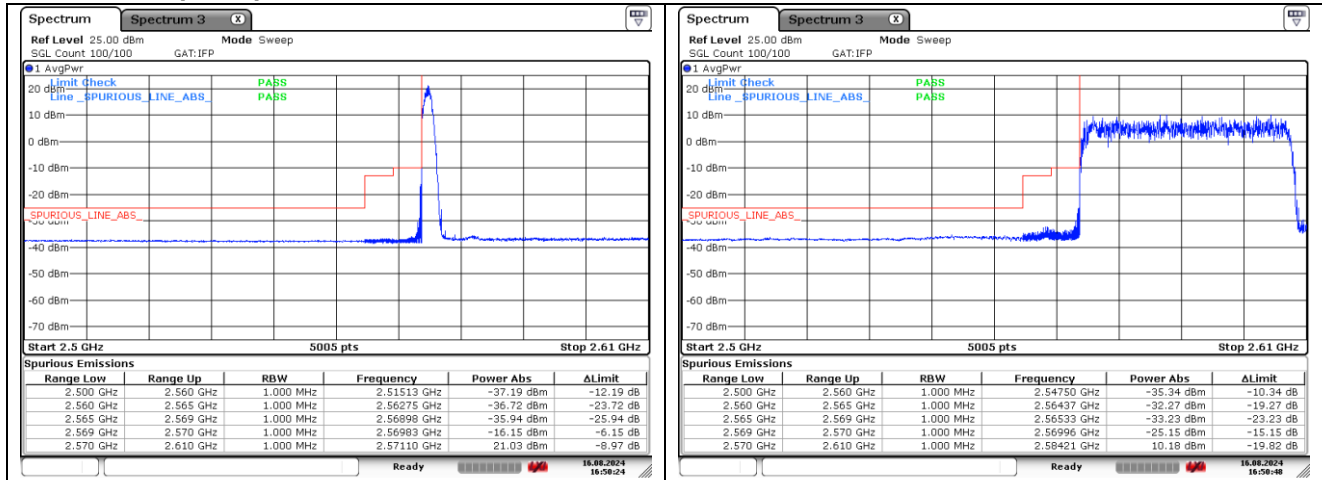
DFT-S-OFDM BPSK - Low Channel - Full RB



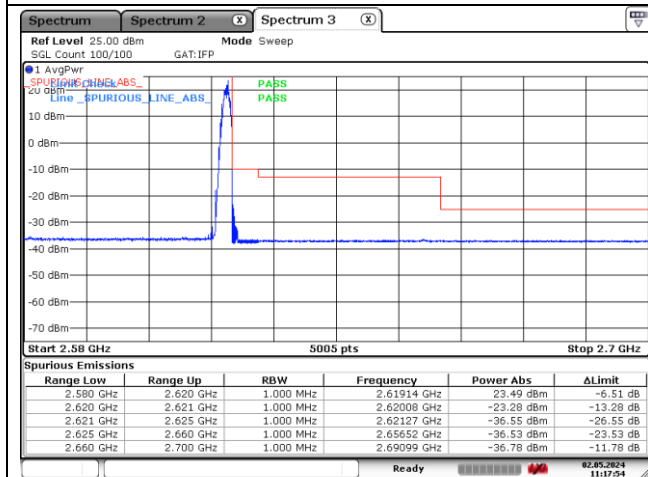
DFT-S-OFDM BPSK - High Channel - 1 RB

DFT-S-OFDM BPSK - High Channel - Full RB

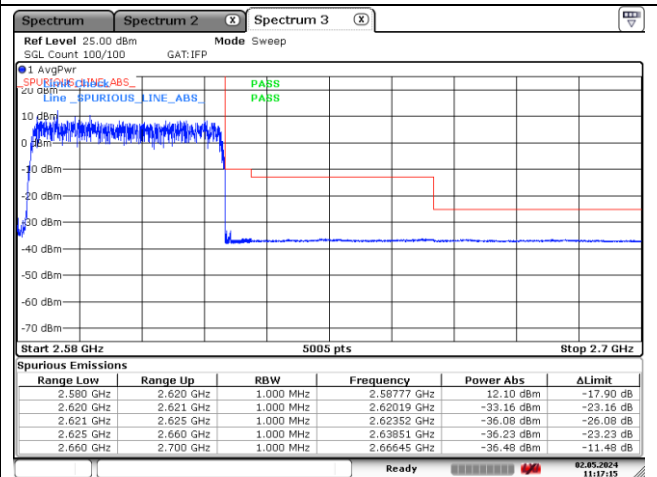
NR band 38 (40 MHz)



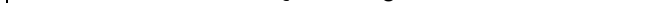
DFT-S-OFDM 16QAM - Low Channel - 1 RB



DFT-S-OFDM 16QAM - Low Channel - Full RB



DFT-S-OFDM 16QAM - High Channel - 1 RB



DFT-S-OFDM 16QAM - High Channel - Full RB

