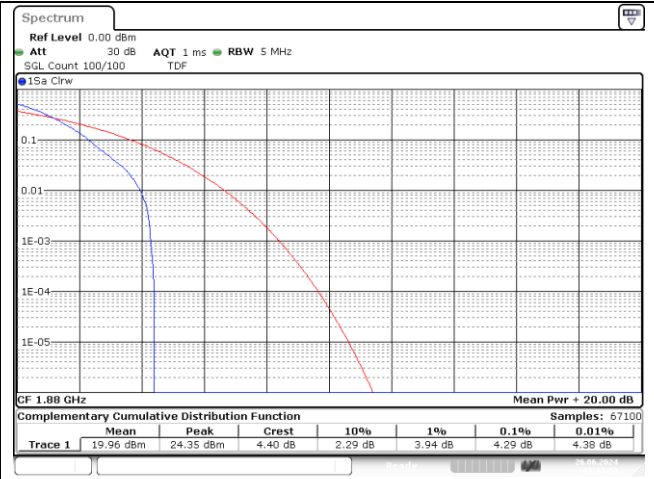
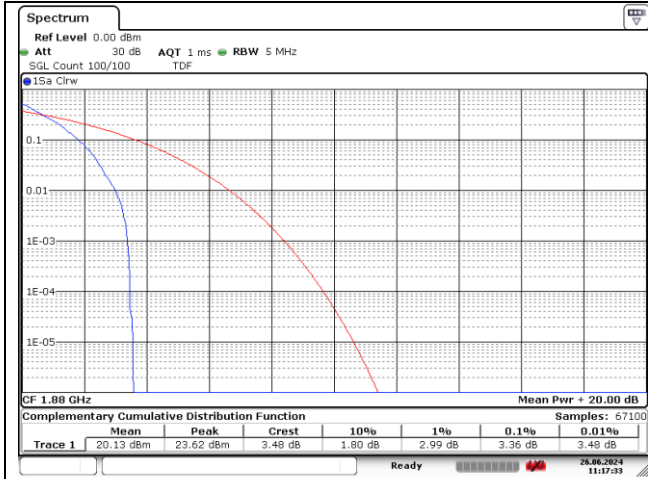
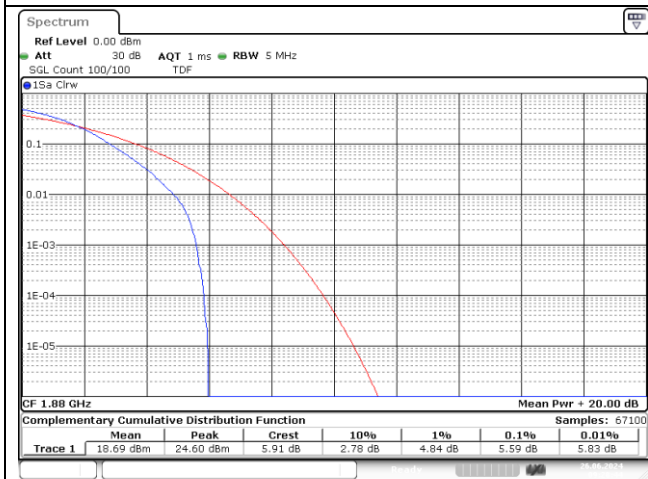


**SIM 2**

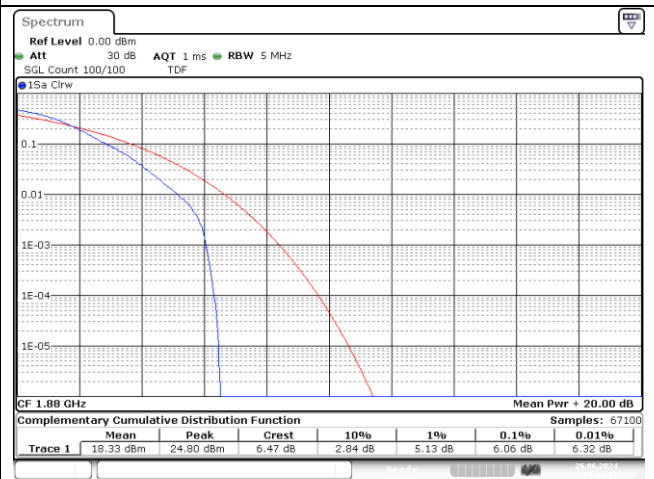
**NR band 2**



**5 MHz Middle Channel - DFT-S-OFDM BPSK**



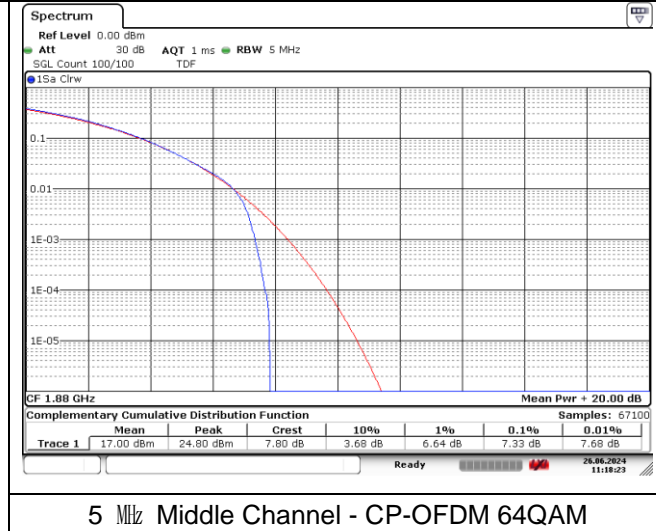
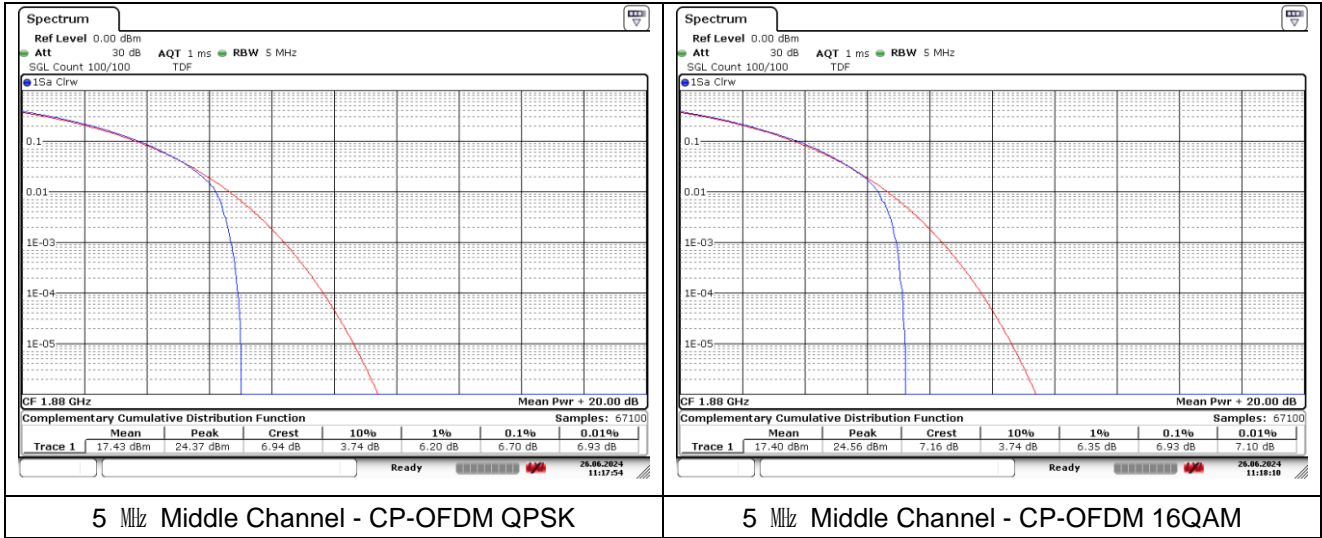
**5 MHz Middle Channel - DFT-S-OFDM QPSK**



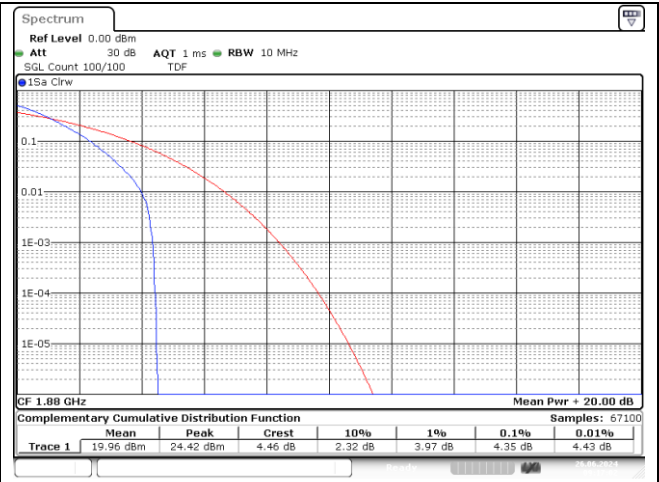
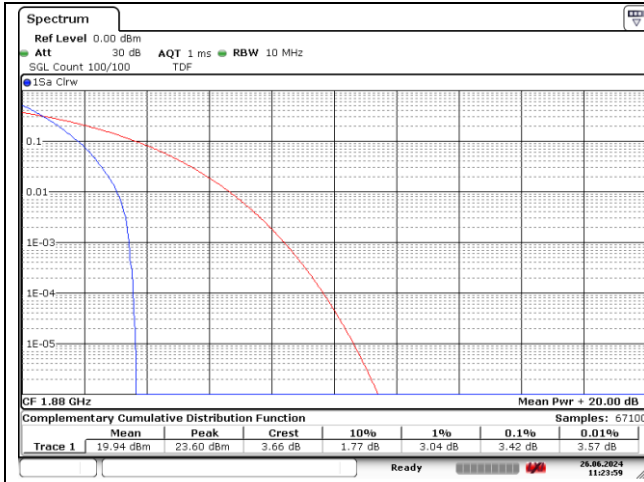
**5 MHz Middle Channel - DFT-S-OFDM 16QAM**

**5 MHz Middle Channel - DFT-S-OFDM 64QAM**

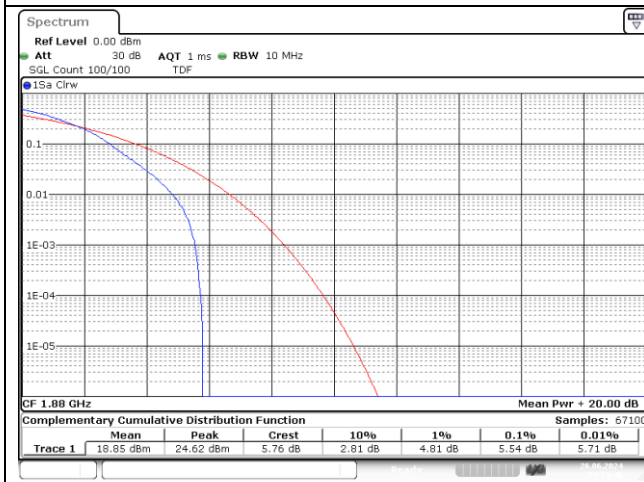
**NR band 2**



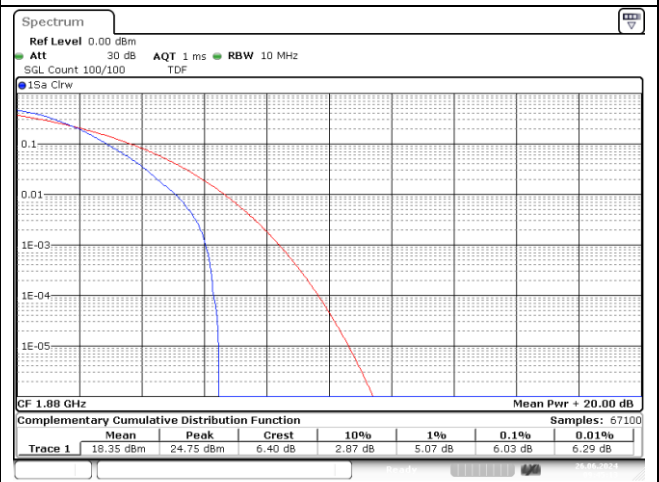
**NR band 2**



**10 MHz Middle Channel - DFT-S-OFDM BPSK**



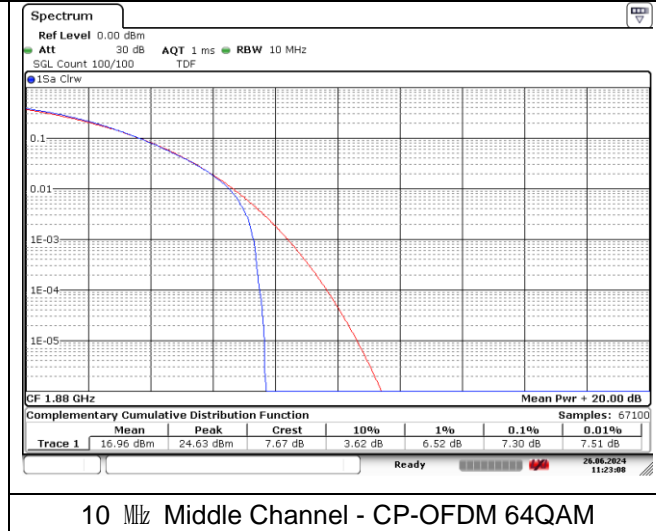
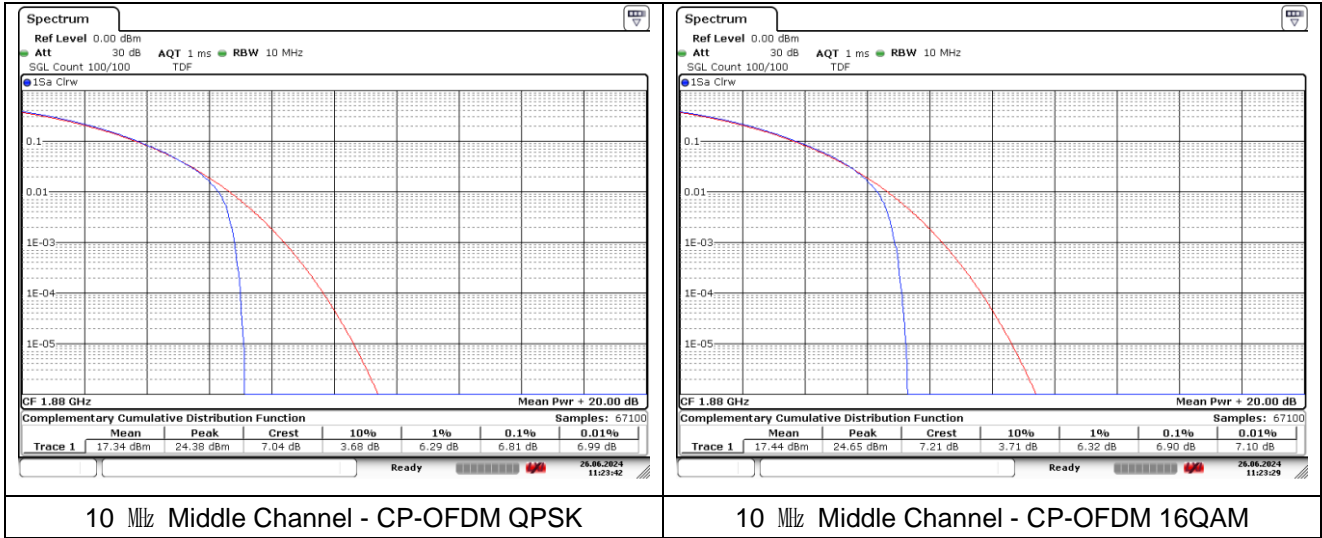
**10 MHz Middle Channel - DFT-S-OFDM QPSK**



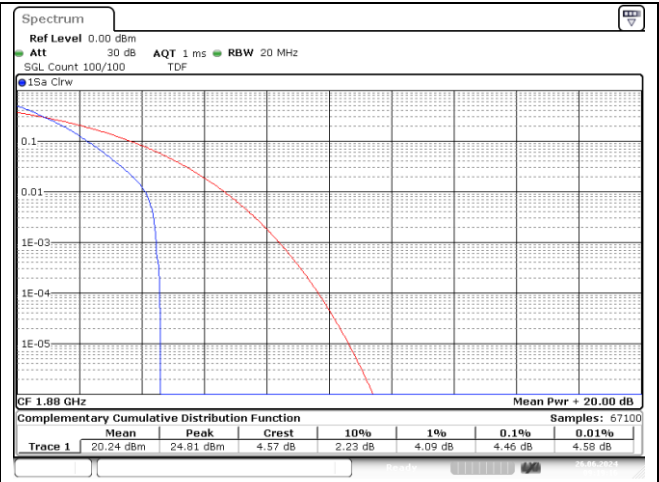
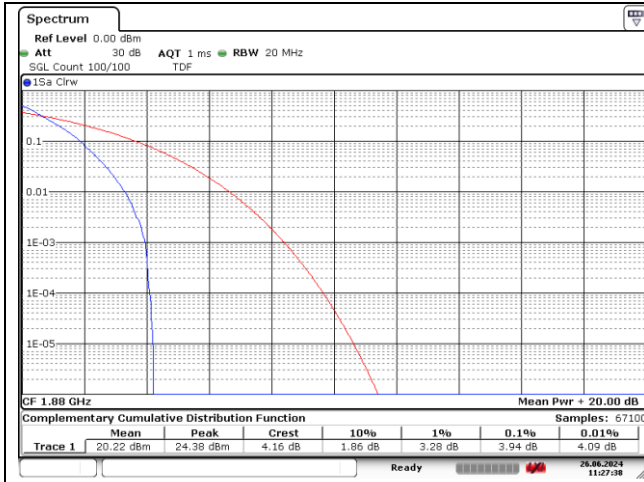
**10 MHz Middle Channel - DFT-S-OFDM 16QAM**

**10 MHz Middle Channel - DFT-S-OFDM 64QAM**

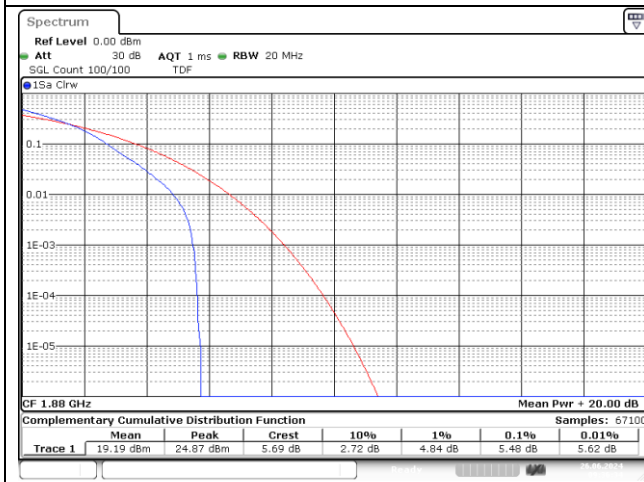
**NR band 2**



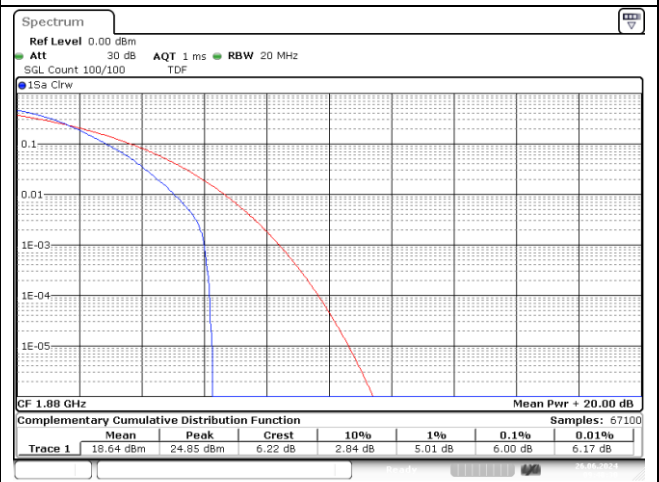
**NR band 2**



**15 MHz Middle Channel - DFT-S-OFDM BPSK**



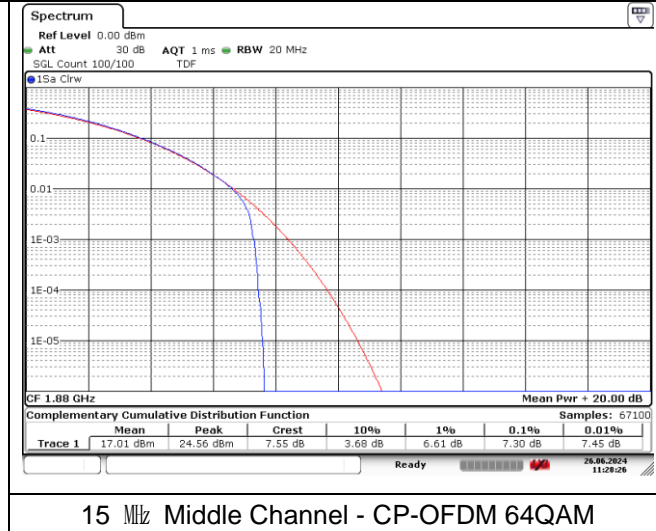
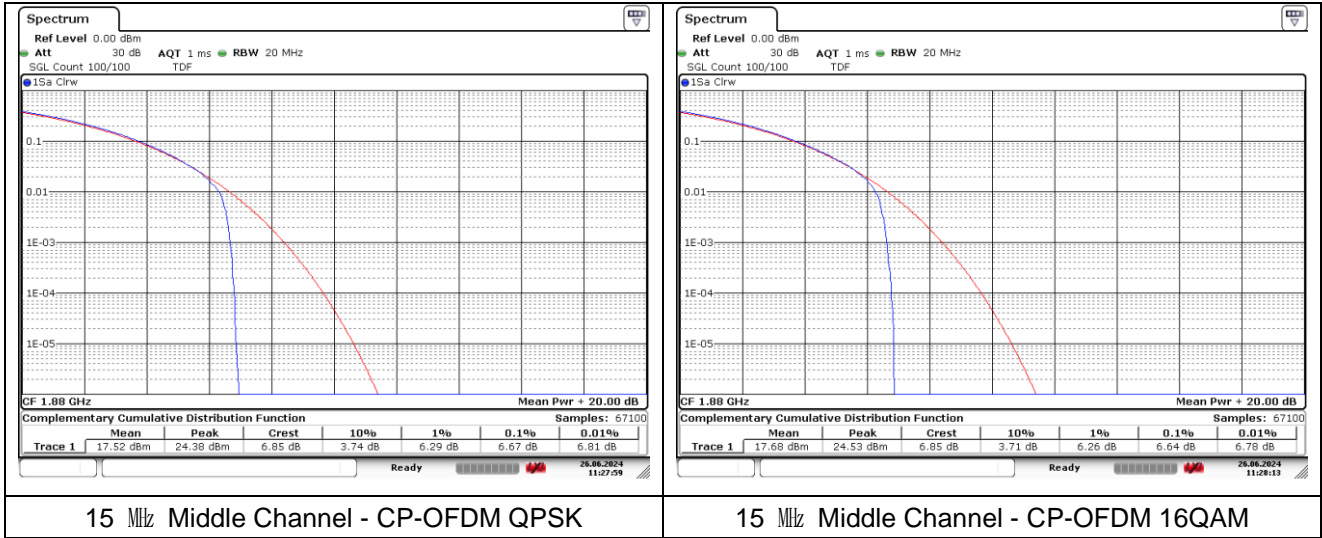
**15 MHz Middle Channel - DFT-S-OFDM QPSK**



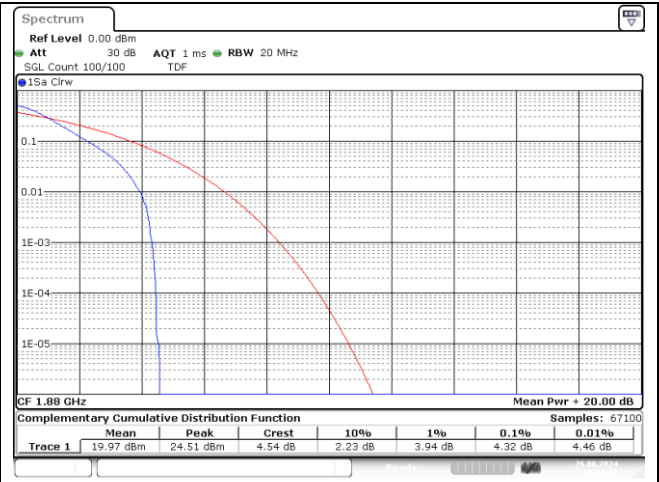
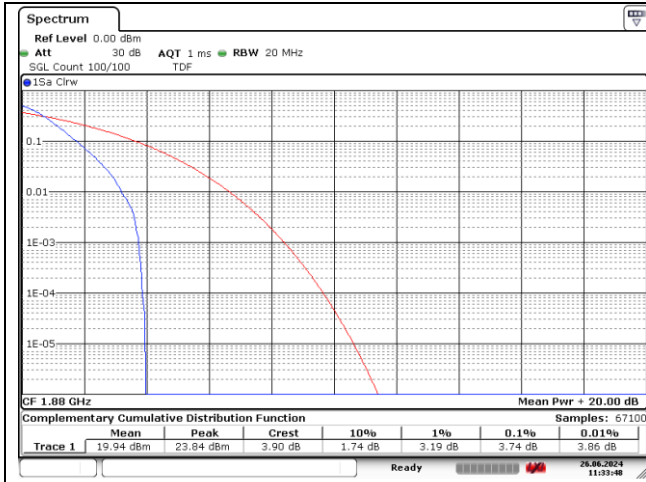
**15 MHz Middle Channel - DFT-S-OFDM 16QAM**

**15 MHz Middle Channel - DFT-S-OFDM 64QAM**

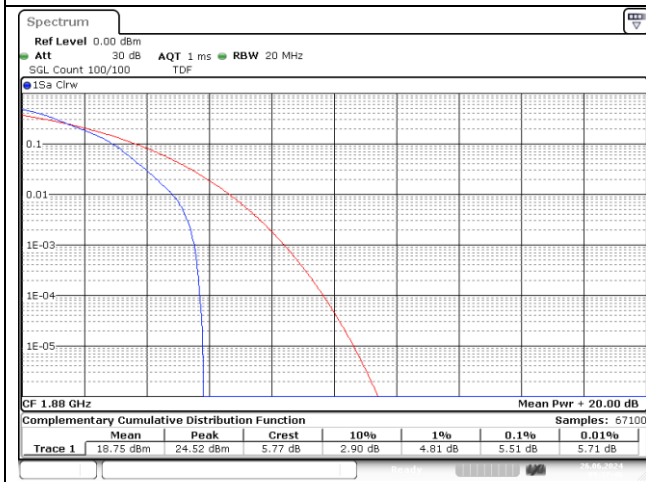
**NR band 2**



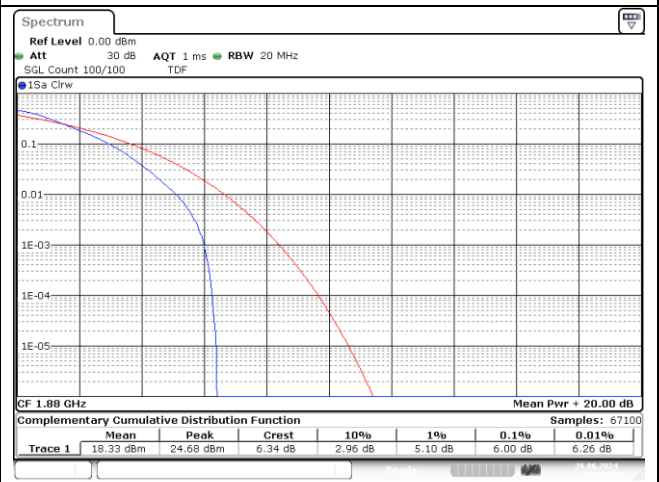
**NR band 2**



**20 MHz Middle Channel - DFT-S-OFDM BPSK**



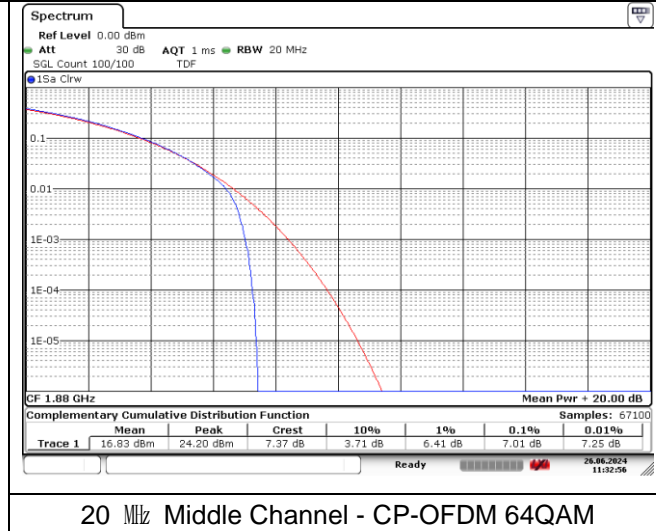
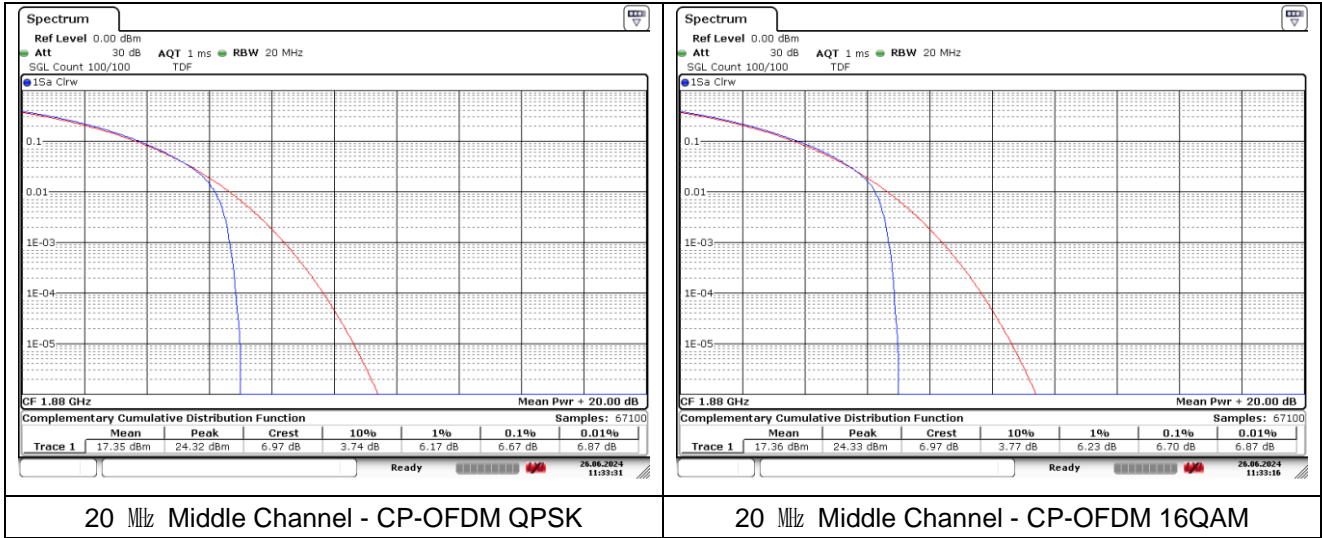
**20 MHz Middle Channel - DFT-S-OFDM QPSK**



**20 MHz Middle Channel - DFT-S-OFDM 16QAM**

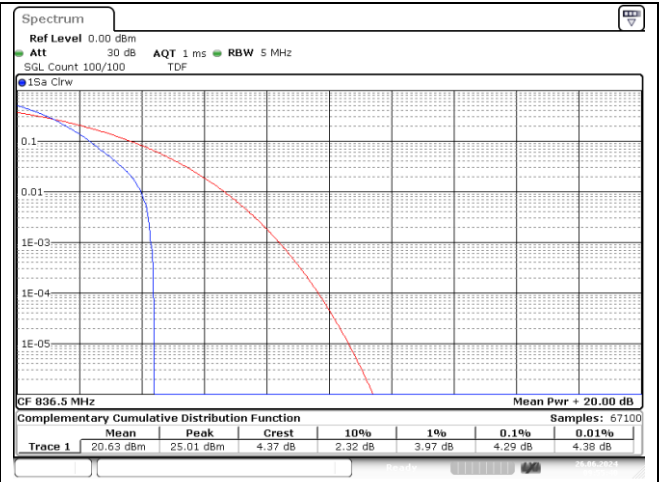
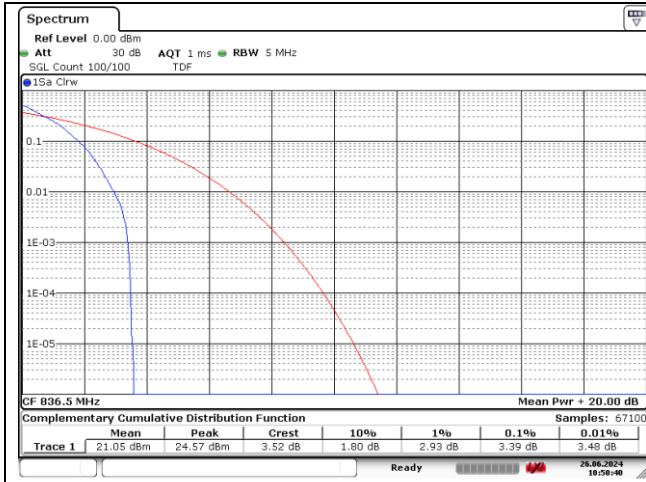
**20 MHz Middle Channel - DFT-S-OFDM 64QAM**

**NR band 2**

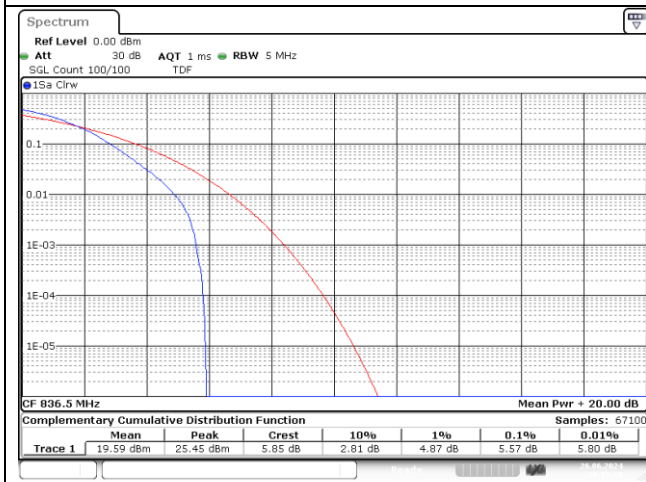




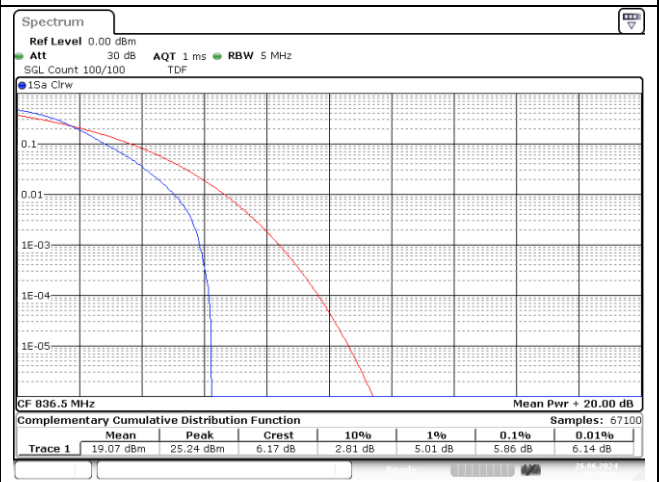
**NR band 5**



**5 MHz Middle Channel - DFT-S-OFDM BPSK**



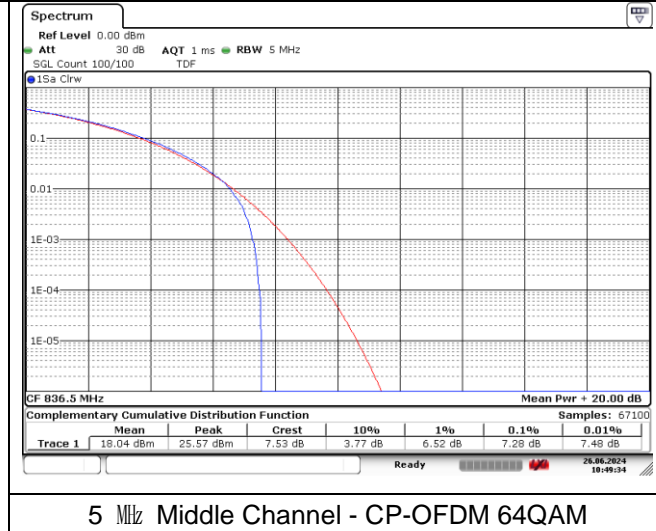
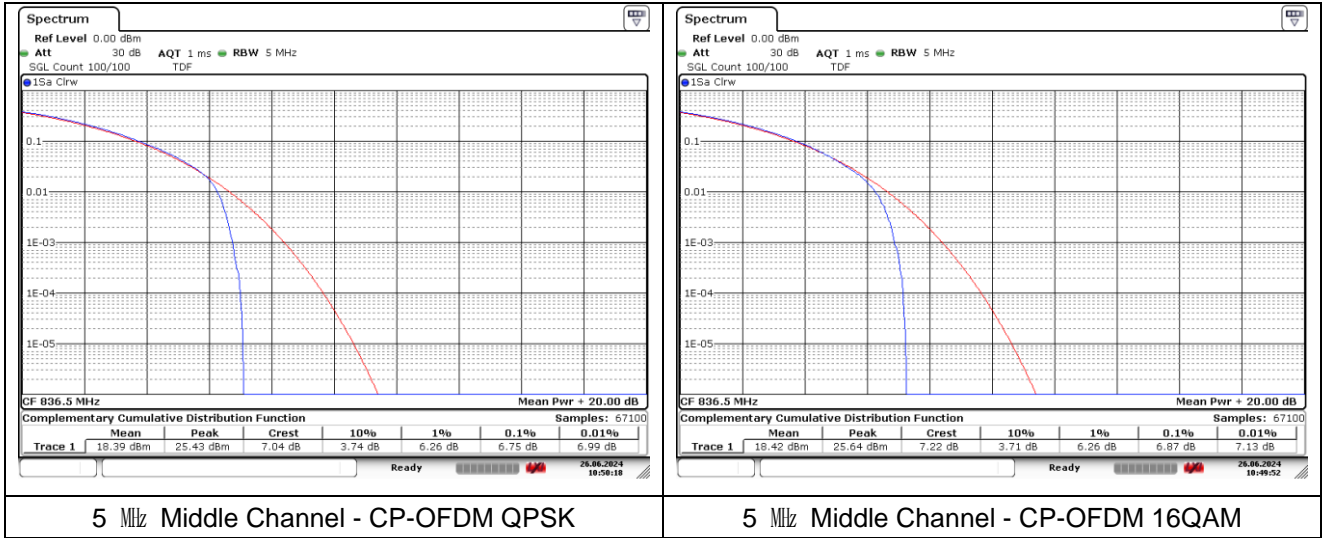
**5 MHz Middle Channel - DFT-S-OFDM QPSK**



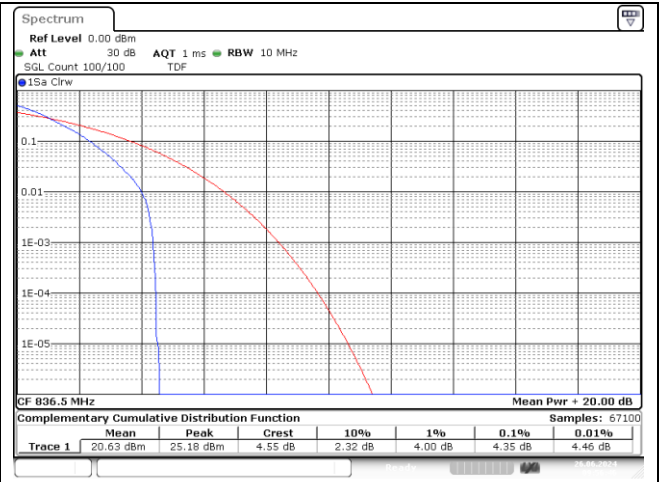
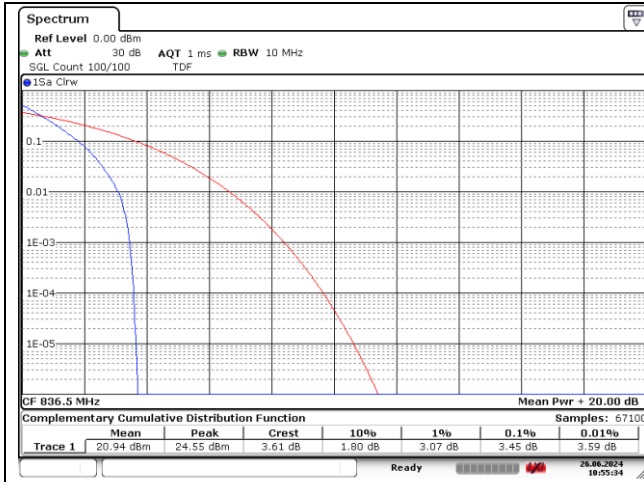
**5 MHz Middle Channel - DFT-S-OFDM 16QAM**

**5 MHz Middle Channel - DFT-S-OFDM 64QAM**

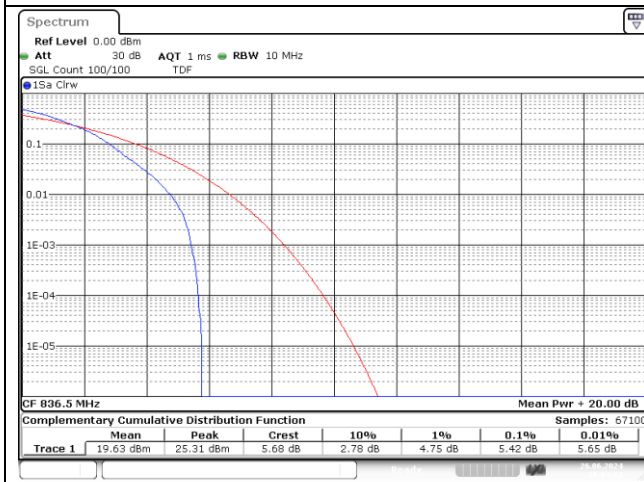
**NR band 5**



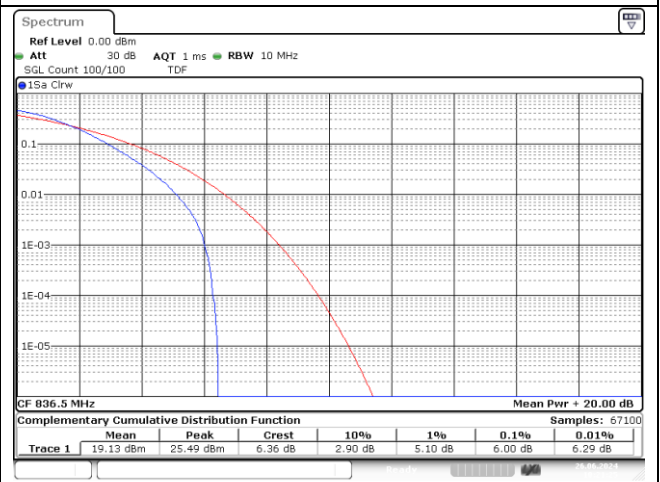
**NR band 5**



**10 MHz Middle Channel - DFT-S-OFDM BPSK**



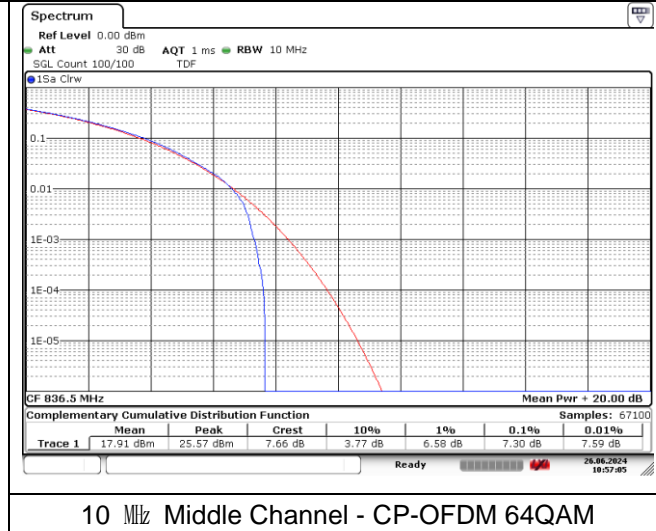
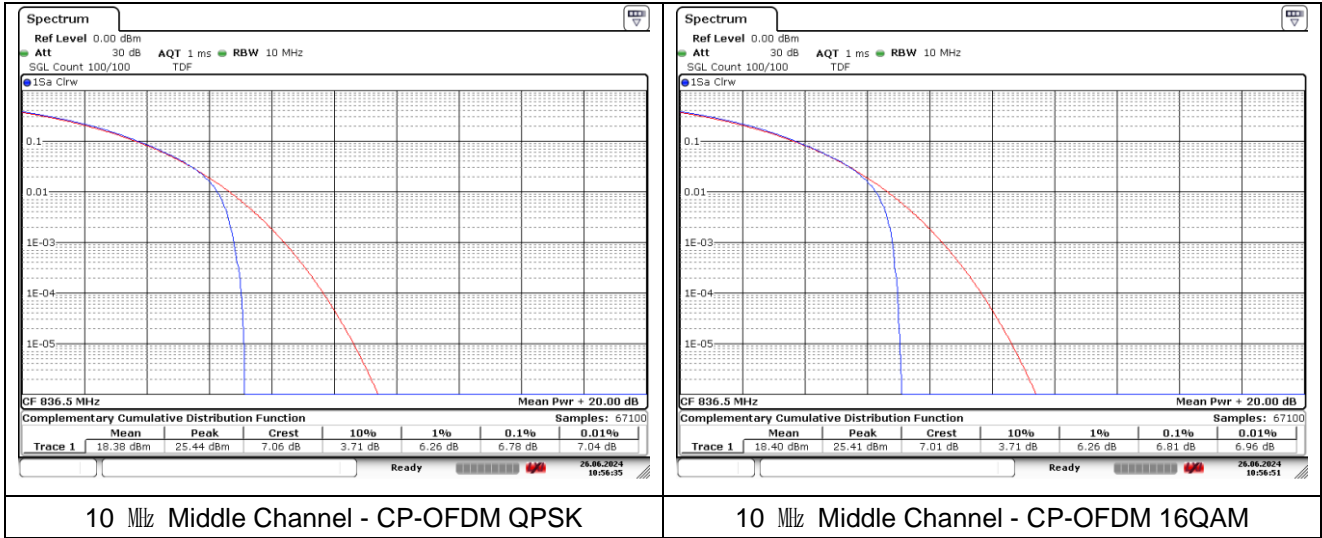
**10 MHz Middle Channel - DFT-S-OFDM QPSK**



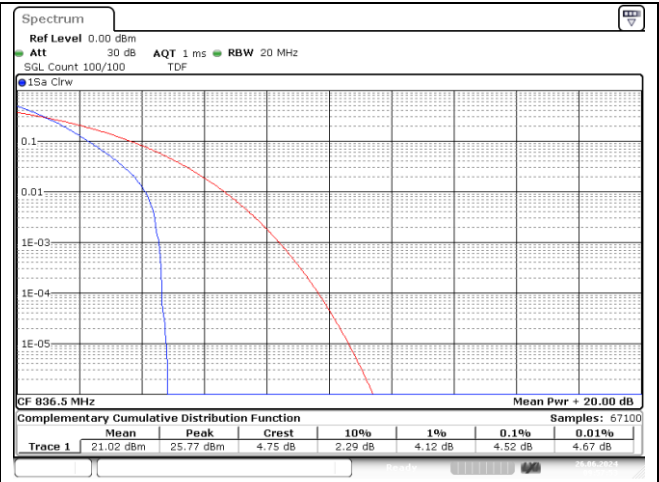
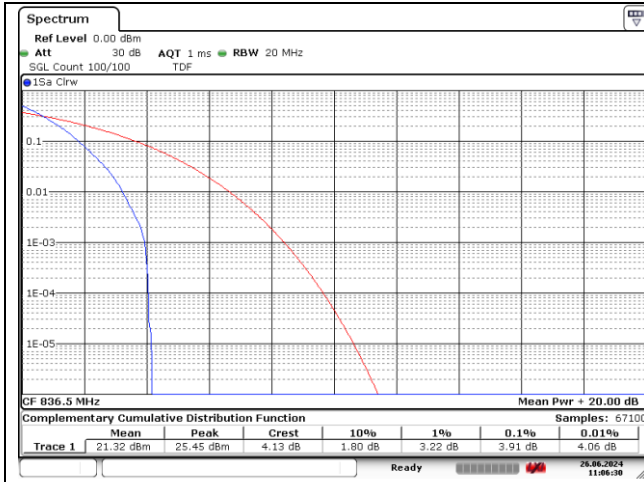
**10 MHz Middle Channel - DFT-S-OFDM 16QAM**

**10 MHz Middle Channel - DFT-S-OFDM 64QAM**

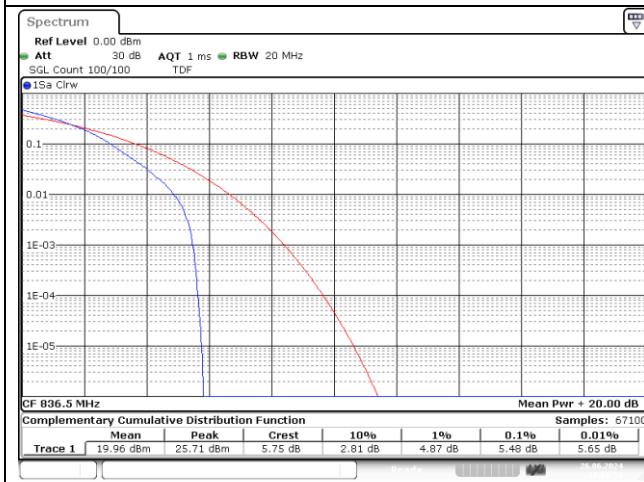
**NR band 5**



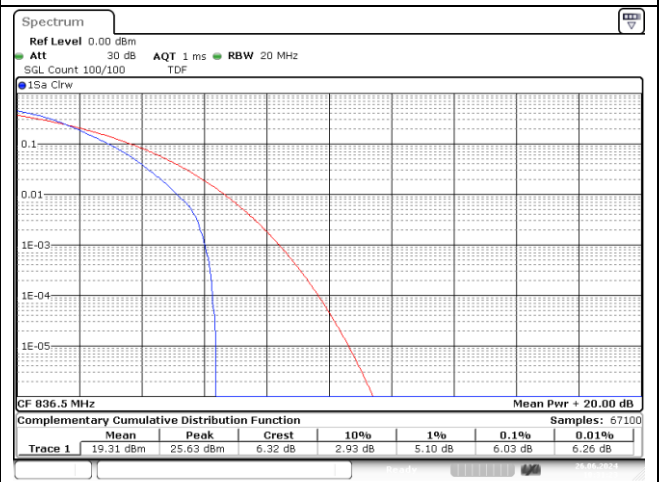
**NR band 5**



**15 MHz Middle Channel - DFT-S-OFDM BPSK**



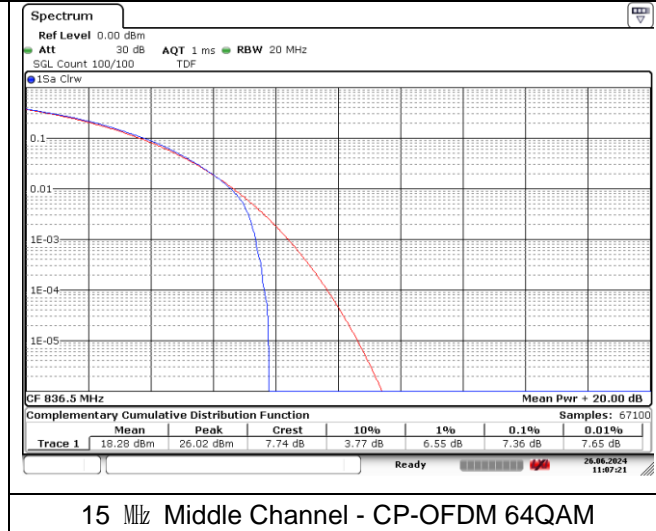
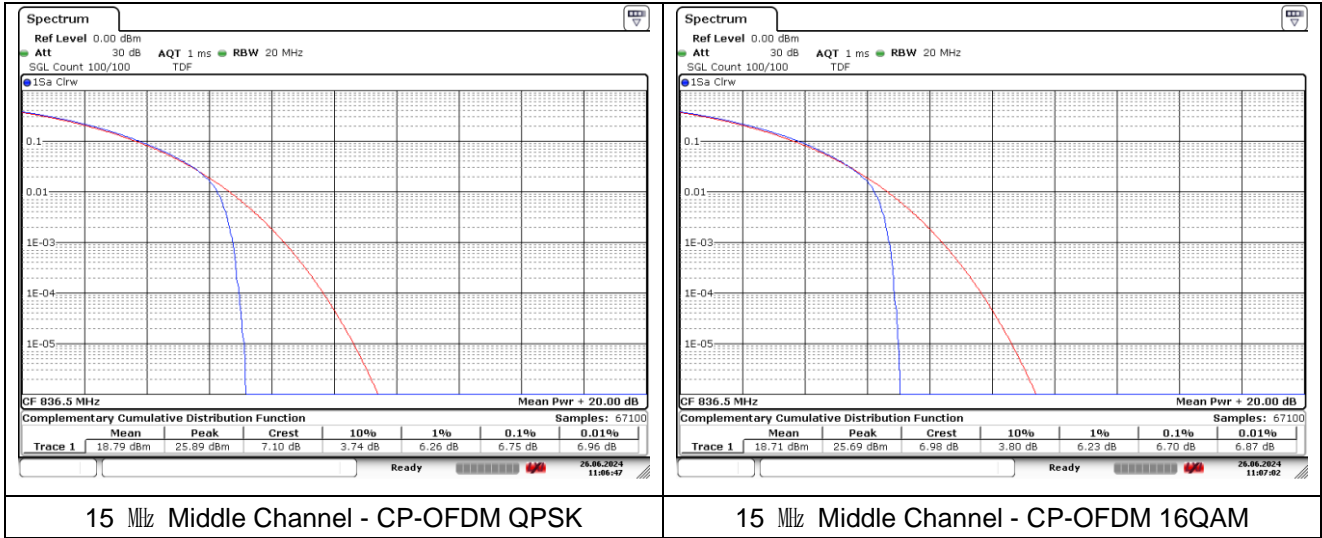
**15 MHz Middle Channel - DFT-S-OFDM QPSK**



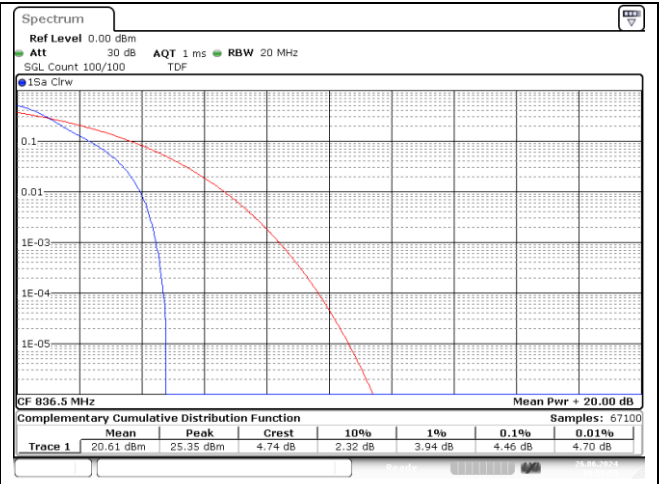
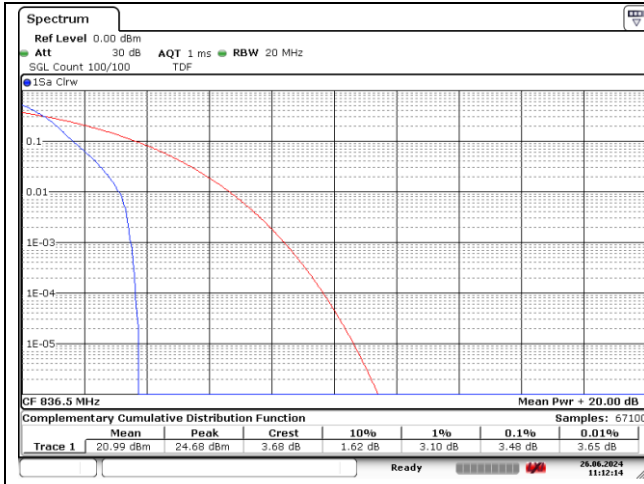
**15 MHz Middle Channel - DFT-S-OFDM 16QAM**

**15 MHz Middle Channel - DFT-S-OFDM 64QAM**

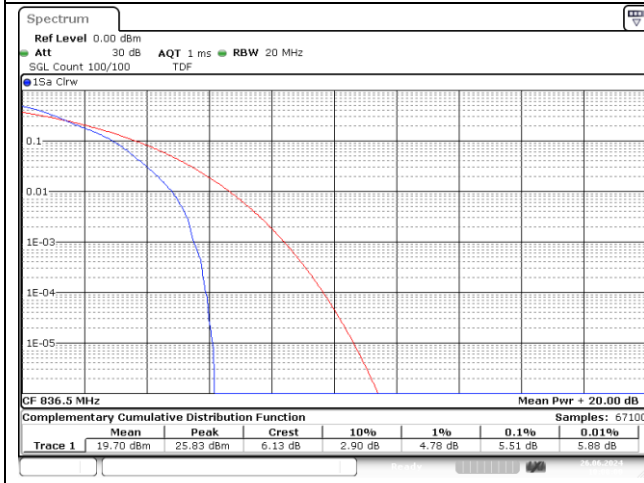
**NR band 5**



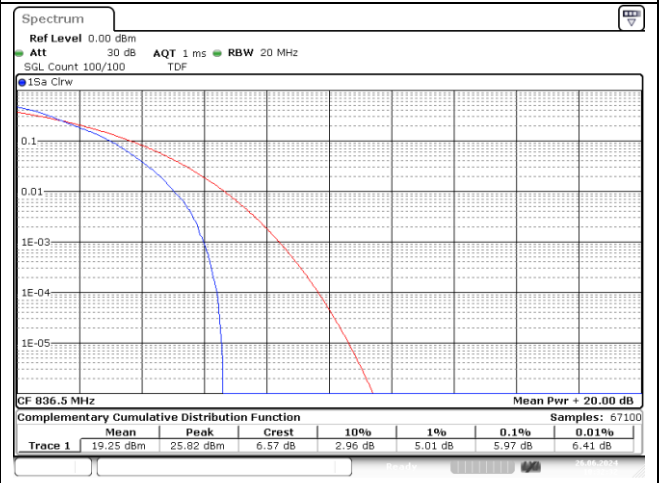
**NR band 5**



**20 MHz Middle Channel - DFT-S-OFDM BPSK**



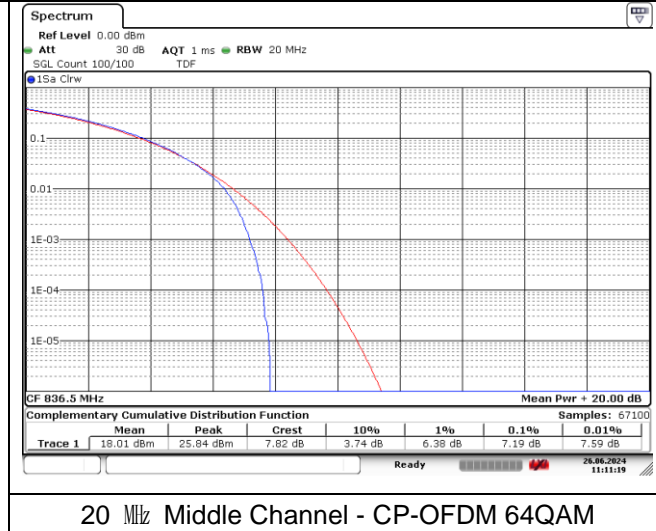
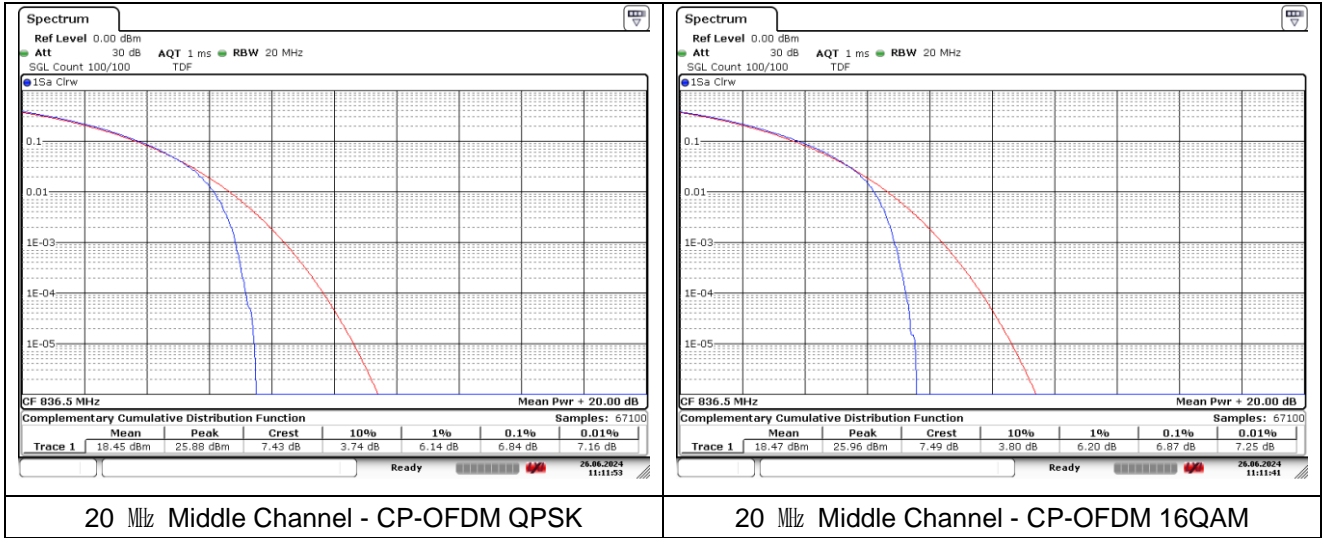
**20 MHz Middle Channel - DFT-S-OFDM QPSK**



**20 MHz Middle Channel - DFT-S-OFDM 16QAM**

**20 MHz Middle Channel - DFT-S-OFDM 64QAM**

**NR band 5**





## 6. Spurious Emissions at Antenna Terminal

### 6.1. Limit

#### FCC

- §22.917(a), the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $43 + 10\log(P)$  dB.

- §24.238(a), the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $43 + 10 \log(P)$  dB.

#### IC

- RSS-132 Issue 4

5.5, Equipment shall meet the unwanted emission limits specified below.

(i) In the first 1.0 MHz band immediately outside and adjacent to each of the sub-bands specified in Section 5.1, the power of emissions per any 1 % of the occupied bandwidth shall be attenuated below the transmitter output power P (dB W) by at least  $43 + 10 \log(p)$  dB.

(ii) After the first 1.0 MHz immediately outside and adjacent to each of the sub-bands, the power of emissions in any 100 kHz bandwidth shall be attenuated below the transmitter output power P (dB W) by at least  $43 + 10 \log(p)$  dB. If the measurement is performed using 1 % of the occupied bandwidth, power integration over 100 kHz is required.

- RSS-133 Issue 6

6.5, Equipment shall comply with the limits in (i) and (ii) below.

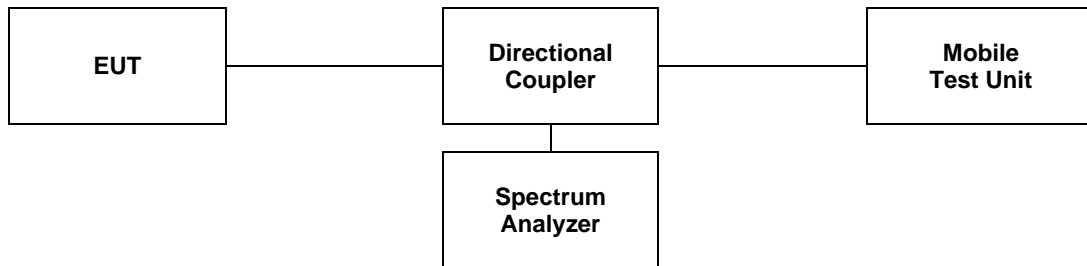
(i) In the 1.0 MHz bands immediately outside and adjacent to the equipment's operating frequency block, the emission power per any 1 % of the emission bandwidth shall be attenuated (in dB) below the transmitter output power P (dB W) by at least  $43 + 10 \log_{10} p(\text{watts})$ .

(ii) After the first 1.0 MHz, the emission power in any 1 MHz bandwidth shall be attenuated (in dB) below the transmitter output power P (dB W) by at least  $43 + 10 \log_{10} p(\text{watts})$ . If the measurement is performed using 1 % of the emission bandwidth, power integration over 1.0 MHz is required.

## 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 20 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.

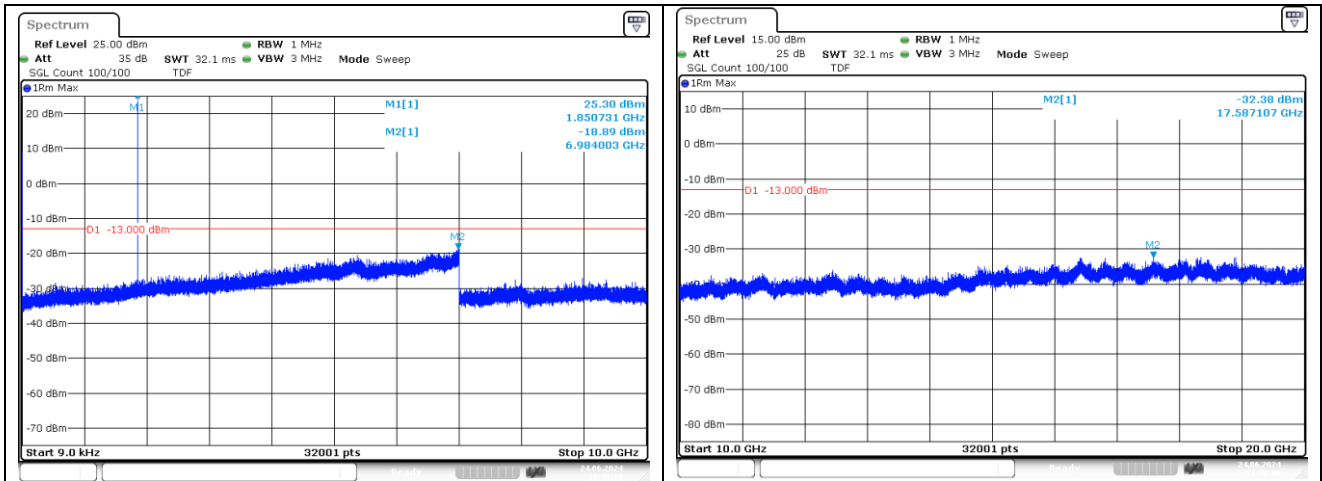
### 6.3. Test Results

Ambient temperature : (23 ± 1) °C  
 Relative humidity : 47 % R.H.

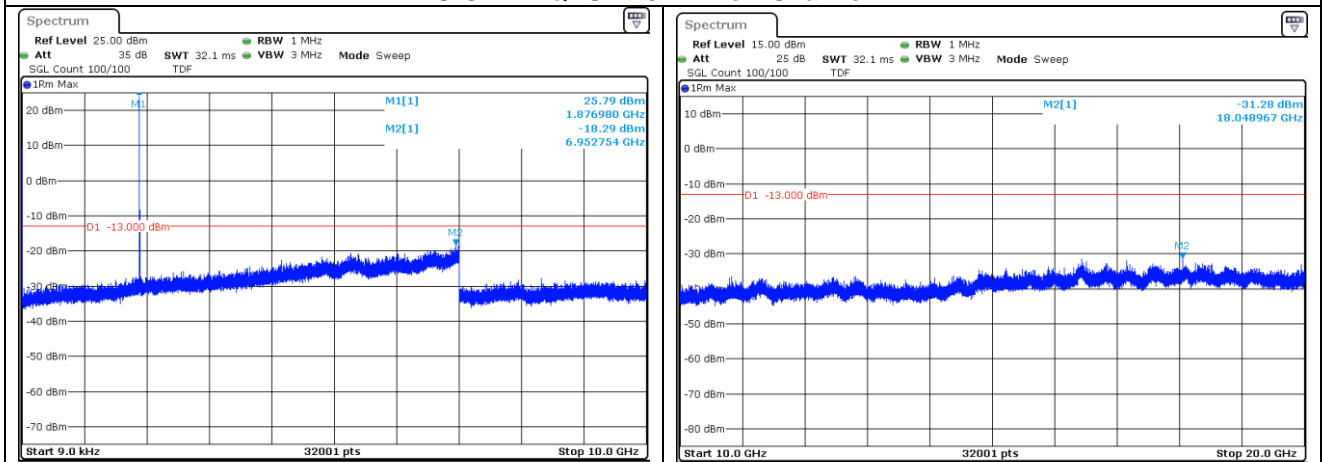
#### - Test plots

#### SIM 1

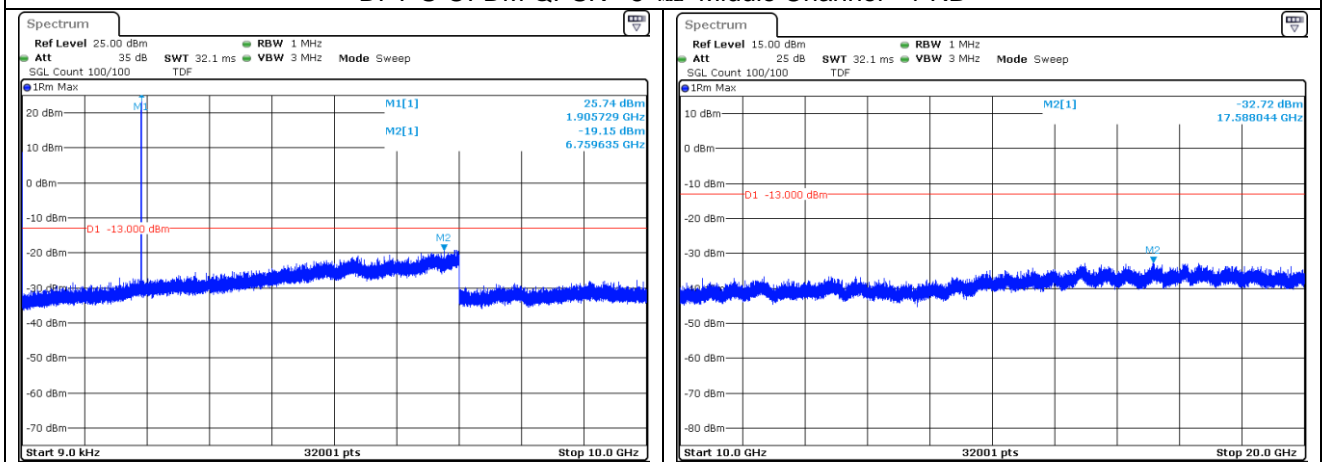
#### NR band 2



DFT-S-OFDM QPSK - 5 MHz Low Channel - 1 RB

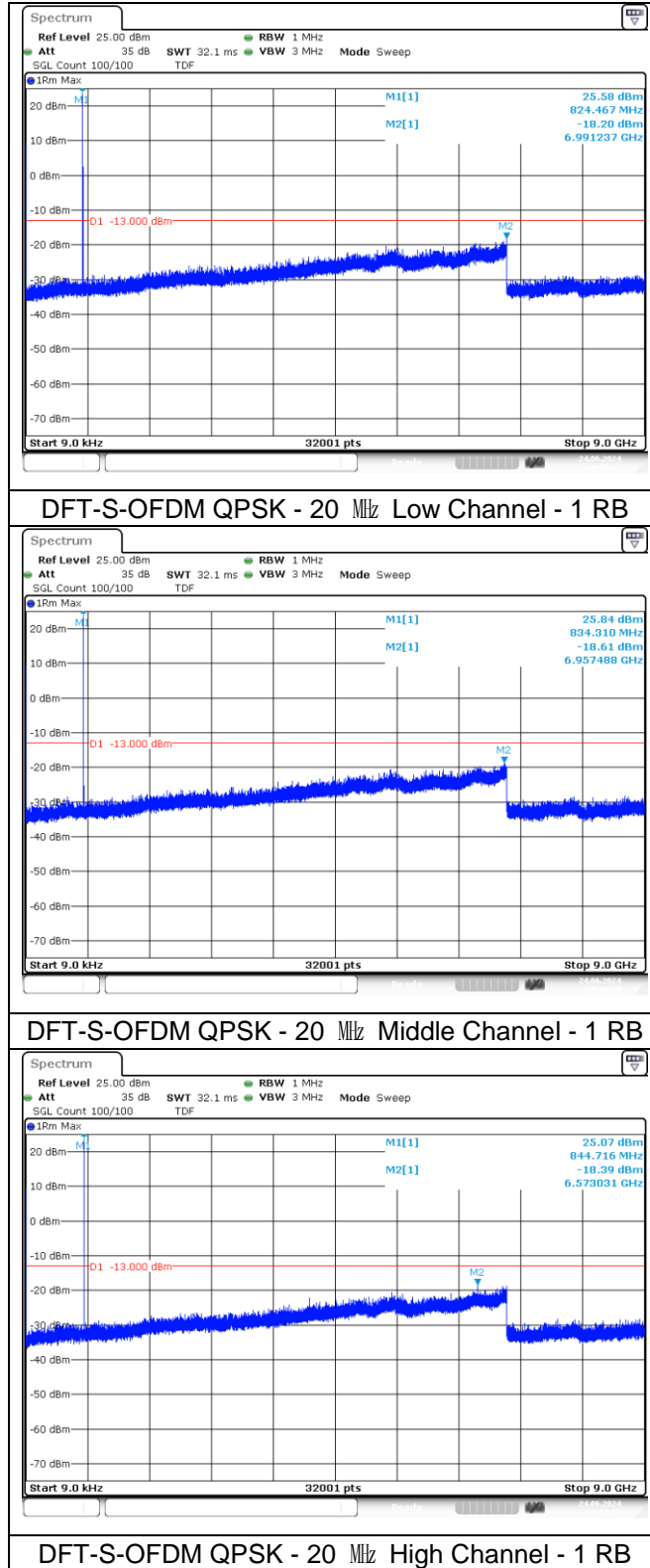


DFT-S-OFDM QPSK - 5 MHz Middle Channel - 1 RB



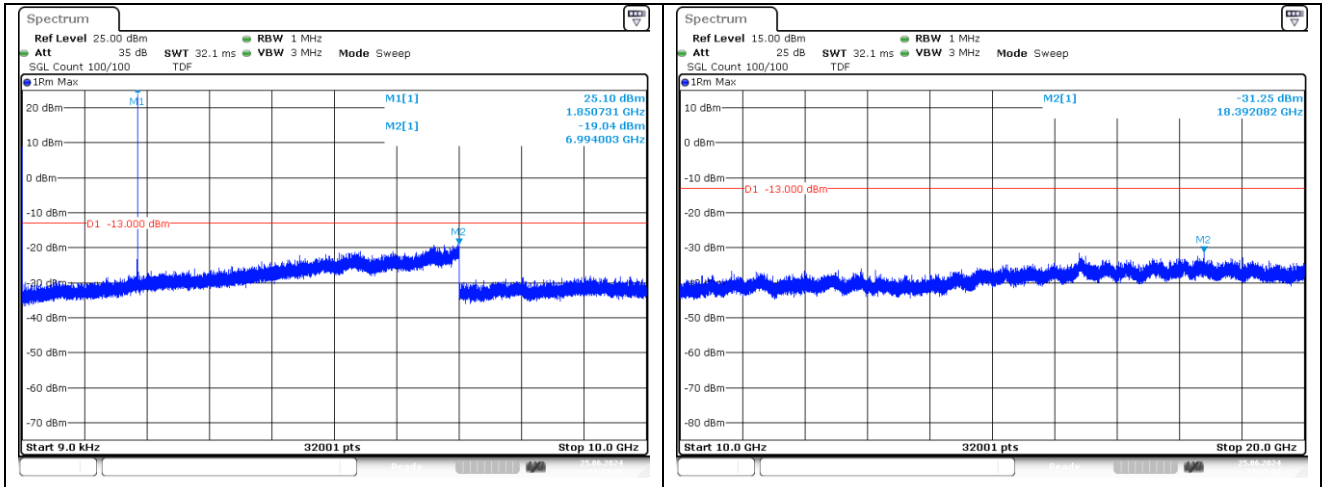
DFT-S-OFDM QPSK - 5 MHz High Channel - 1 RB

**NR band 5**

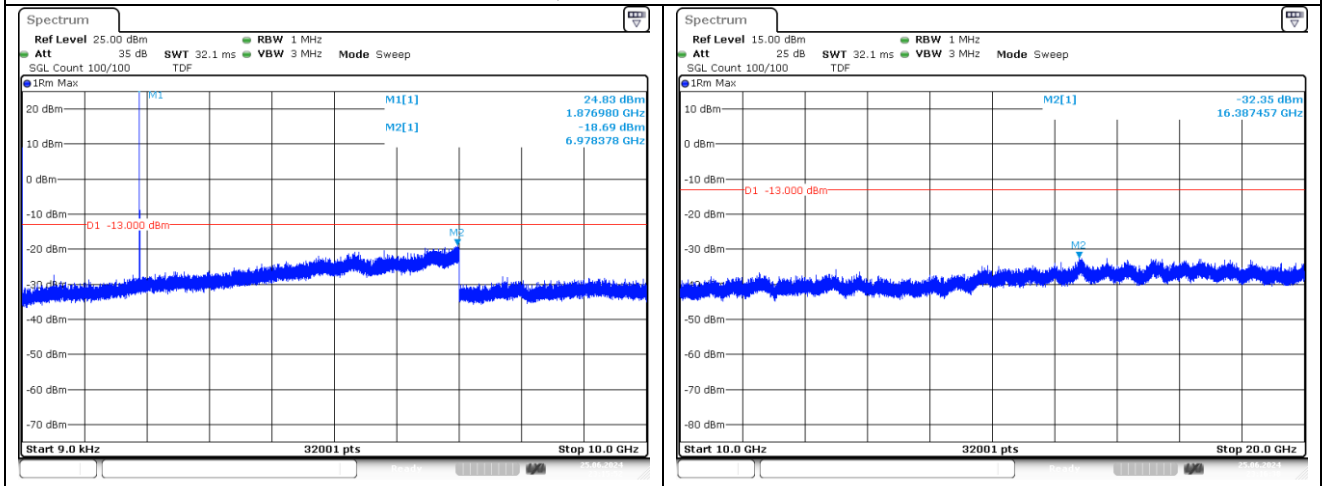


**SIM 2**

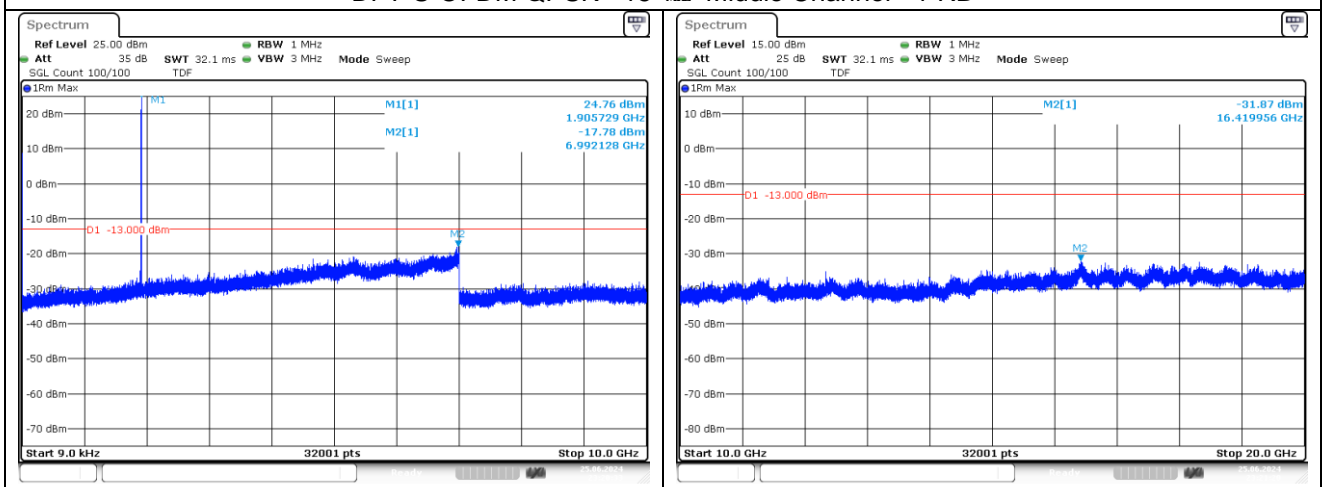
**NR band 2**



**DFT-S-OFDM QPSK - 15 MHz Low Channel - 1 RB**

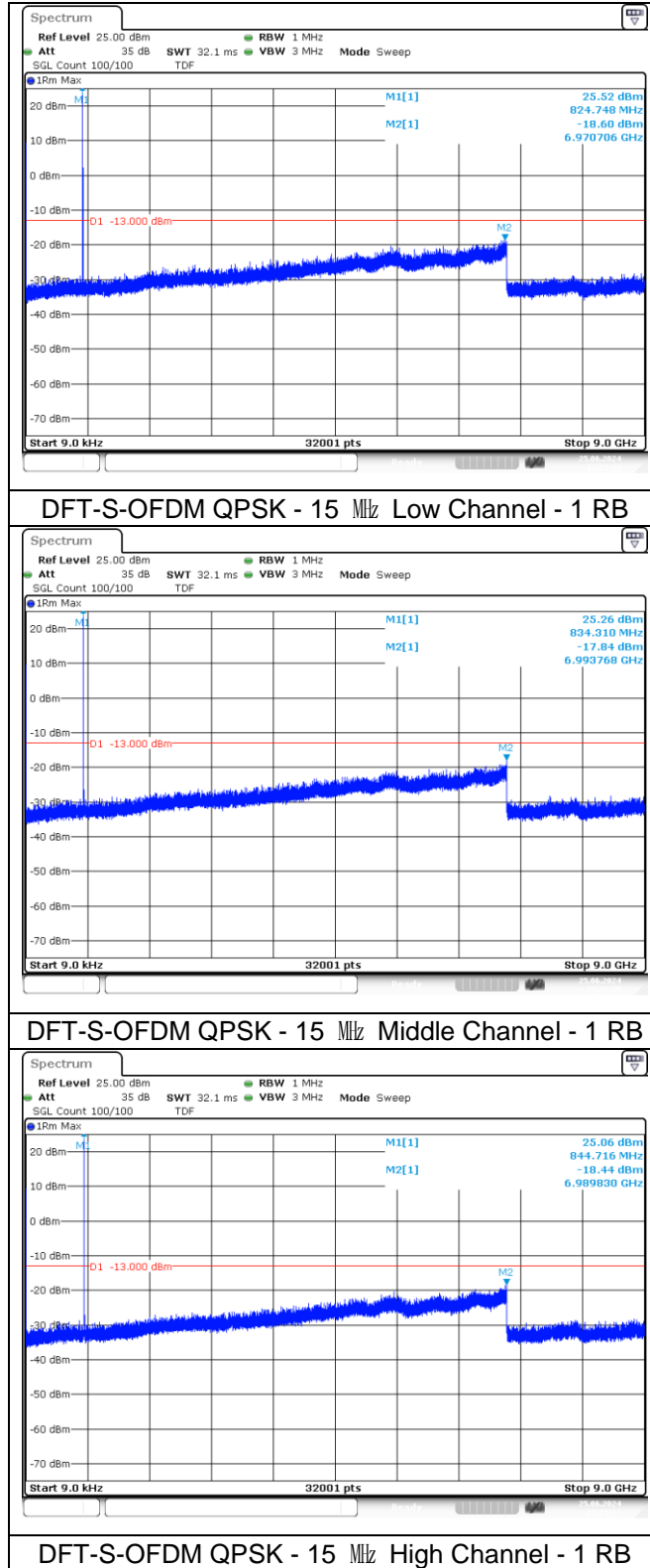


**DFT-S-OFDM QPSK - 15 MHz Middle Channel - 1 RB**



**DFT-S-OFDM QPSK - 15 MHz High Channel - 1 RB**

**NR band 5**



## 7. Band Edge and Emission Mask

### 7.1. Limit

#### FCC

- §22.917(a), the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $43 + 10\log(P)$  dB.

- §24.238(a), the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $43 + 10 \log(P)$  dB.

#### IC

- RSS-132 Issue 4

5.5, Equipment shall meet the unwanted emission limits specified below.

(i) In the first 1.0 MHz band immediately outside and adjacent to each of the sub-bands specified in Section 5.1, the power of emissions per any 1 % of the occupied bandwidth shall be attenuated below the transmitter output power P (dB W) by at least  $43 + 10 \log(p)$  dB.

(ii) After the first 1.0 MHz immediately outside and adjacent to each of the sub-bands, the power of emissions in any 100 kHz bandwidth shall be attenuated below the transmitter output power P (dB W) by at least  $43 + 10 \log(p)$  dB. If the measurement is performed using 1 % of the occupied bandwidth, power integration over 100 kHz is required.

- RSS-133 Issue 6

6.5, Equipment shall comply with the limits in (i) and (ii) below.

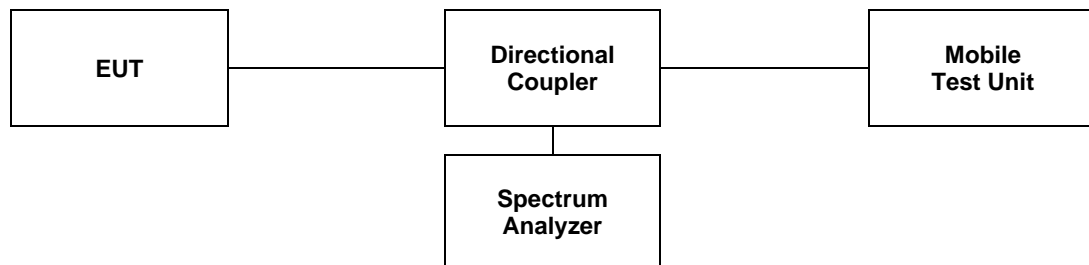
(i) In the 1.0 MHz bands immediately outside and adjacent to the equipment's operating frequency block, the emission power per any 1 % of the emission bandwidth shall be attenuated (in dB) below the transmitter output power P (dB W) by at least  $43 + 10 \log_{10} p(\text{watts})$ .

(ii) After the first 1.0 MHz, the emission power in any 1 MHz bandwidth shall be attenuated (in dB) below the transmitter output power P (dB W) by at least  $43 + 10 \log_{10} p(\text{watts})$ . If the measurement is performed using 1 % of the emission bandwidth, power integration over 1.0 MHz is required.

## 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.  $RBW \geq 1\%$  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.





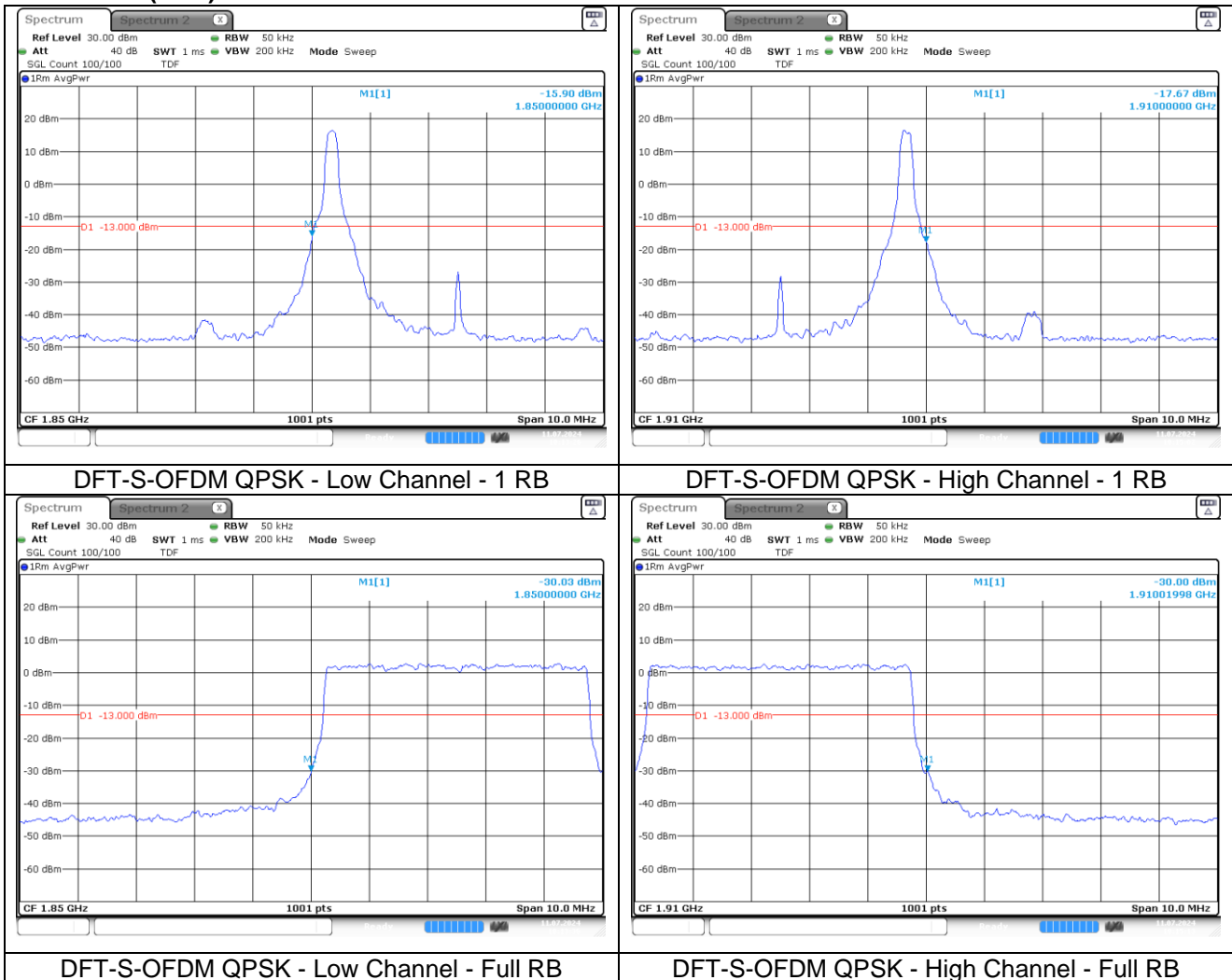
### 7.3. Test Results

Ambient temperature : (23 ± 1) °C  
 Relative humidity : 47 % R.H.

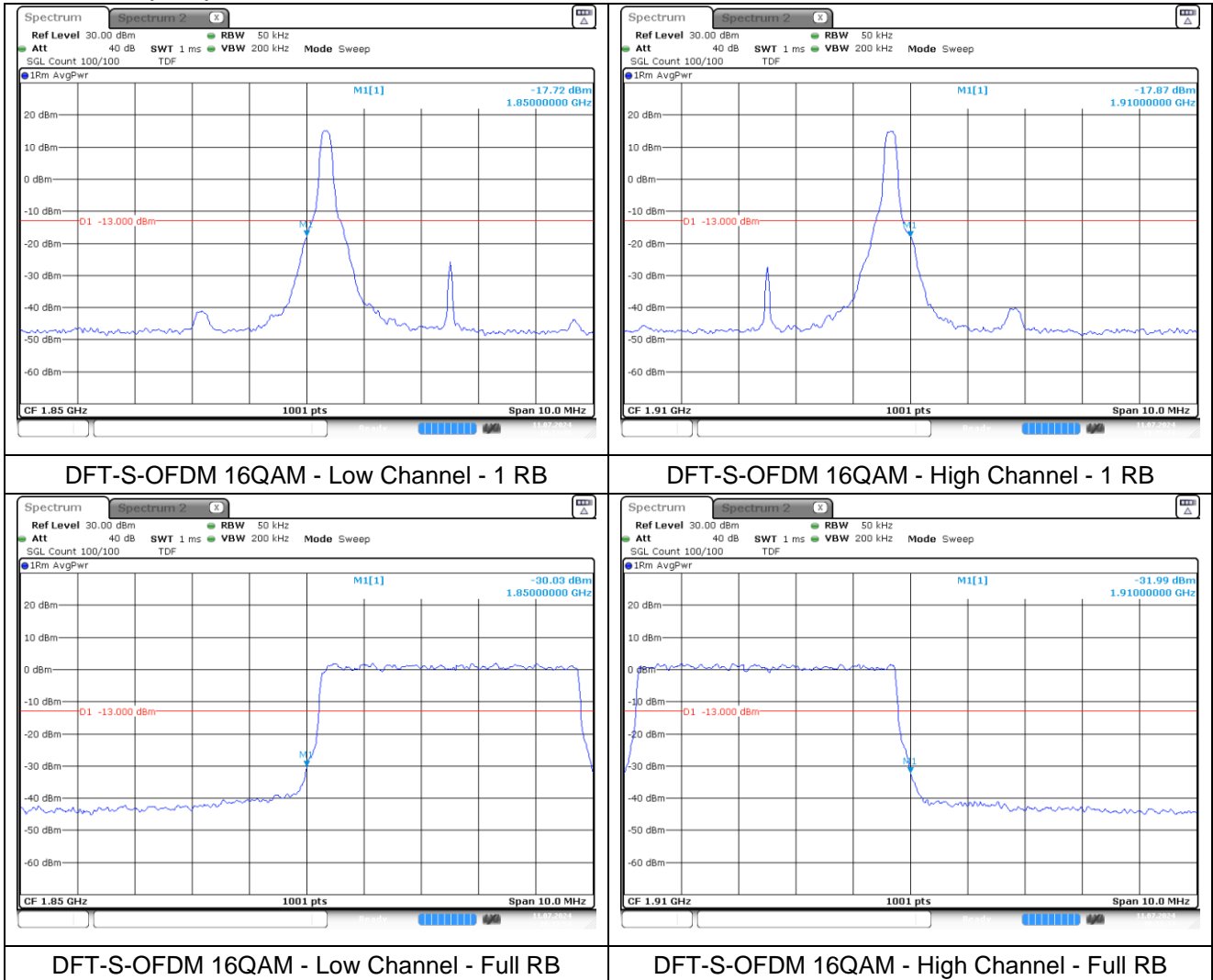
#### - Test plots

#### SIM 1

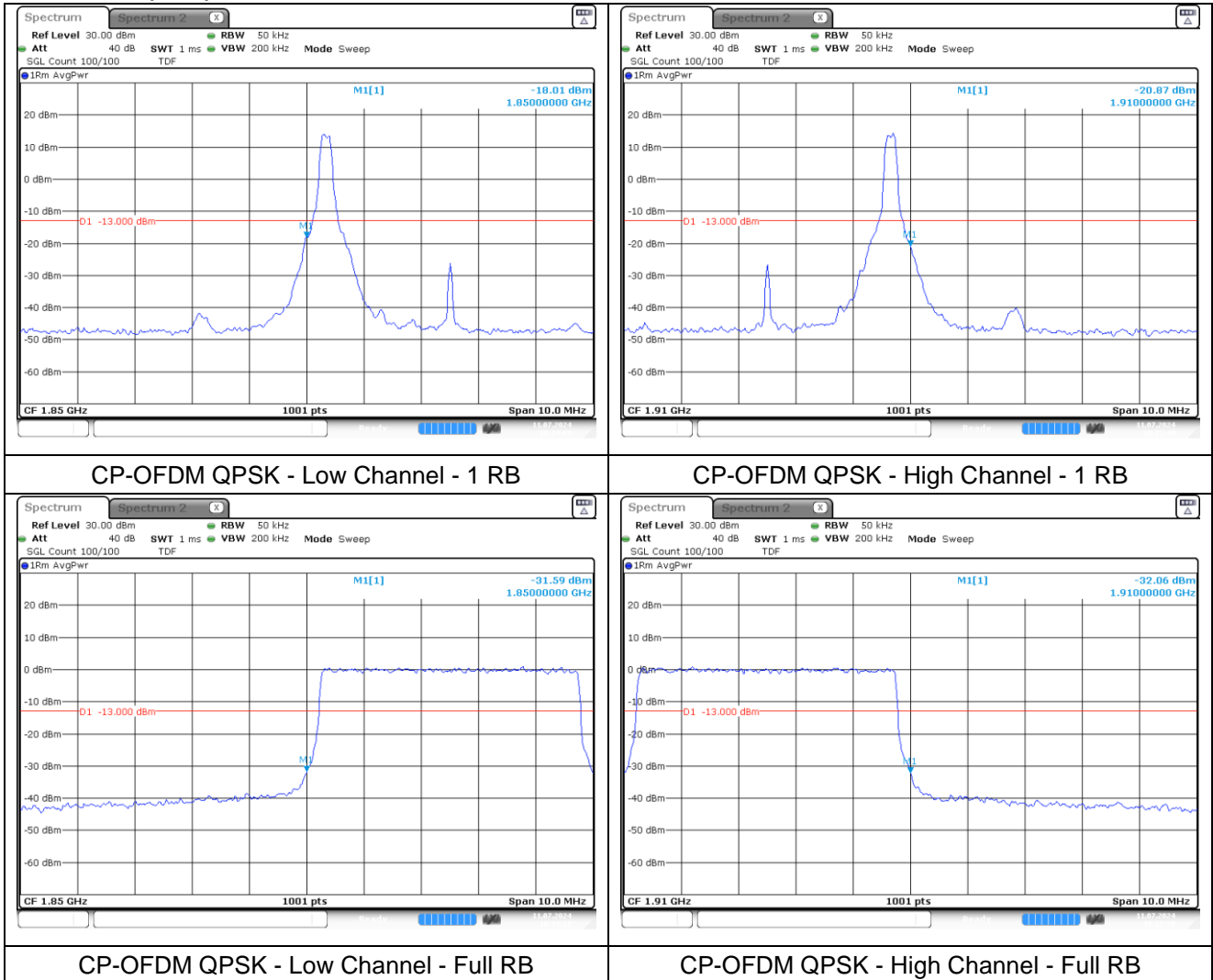
#### NR band 2 (5 MHz)



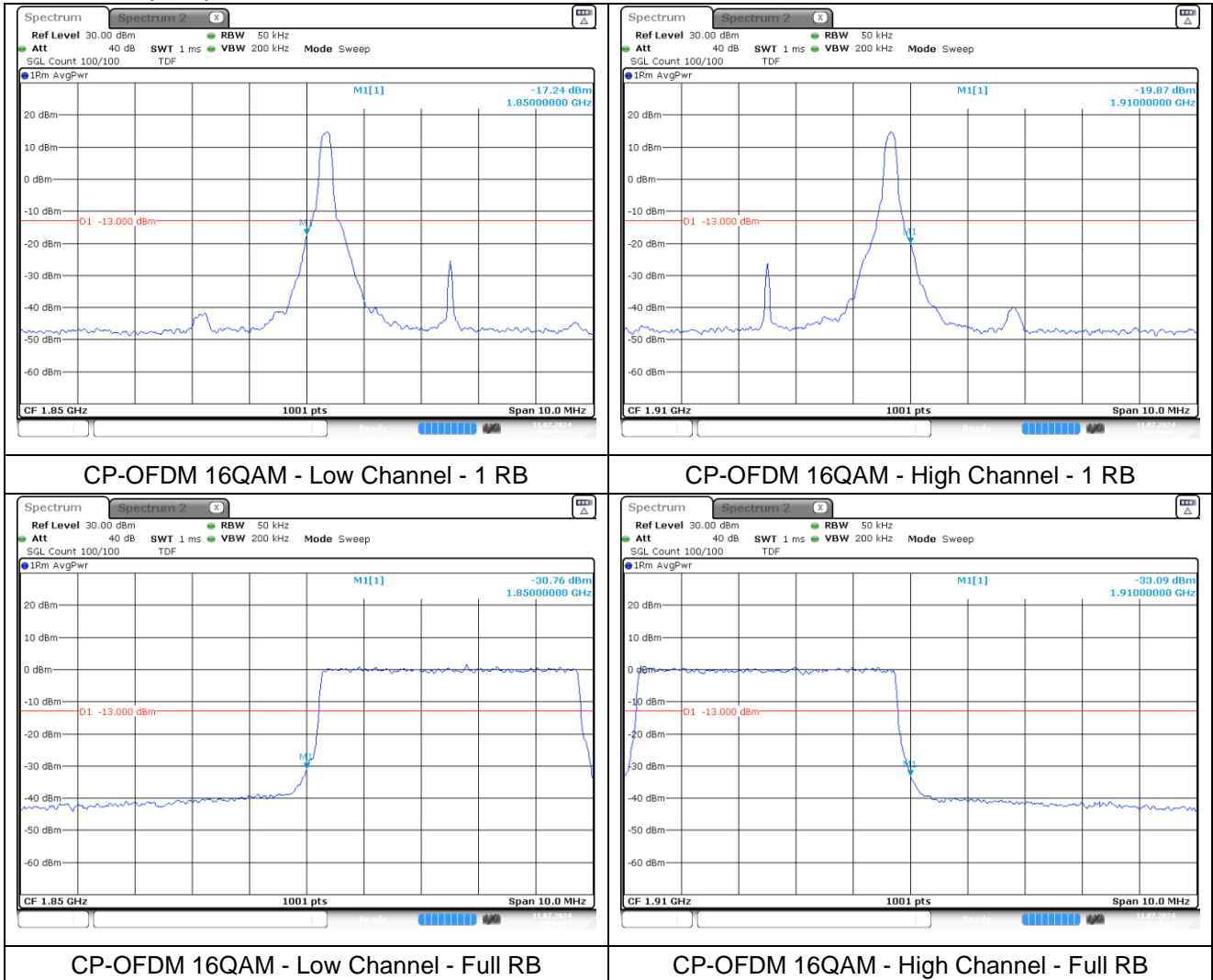
**NR band 2 (5 MHz)**



**NR band 2 (5 MHz)**



**NR band 2 (5 MHz)**



**NR band 2 (10 MHz)**

