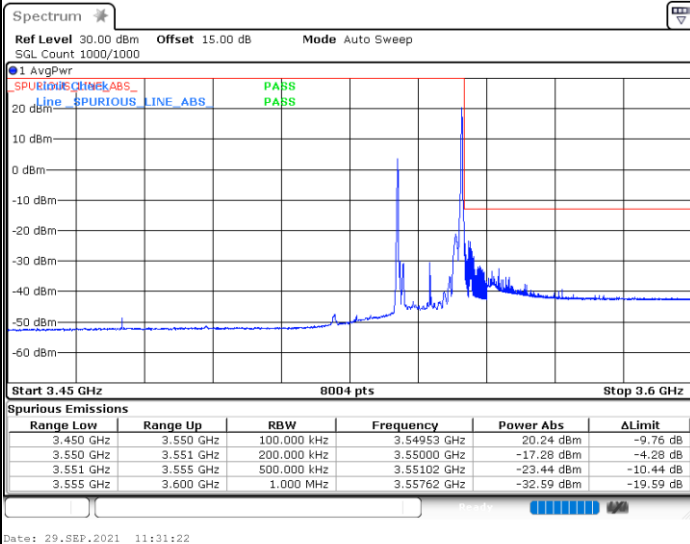




FR1 UL-MIMO n77 / 15MHz / CP-OFDM QPSK (Port 2)

Highest Band Edge / 1 RB

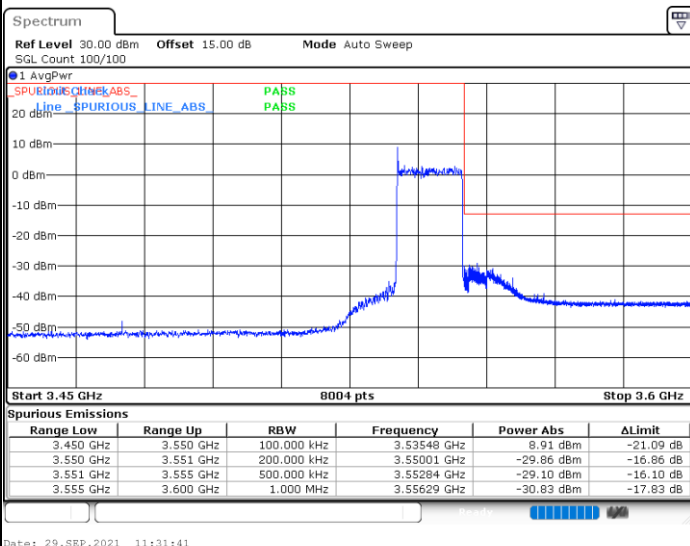
Channel Power < -13dBm Pass



Date: 29\_SEP.2021 11:31:22

Highest Band Edge / Full RB

Channel Power < -13dBm Pass

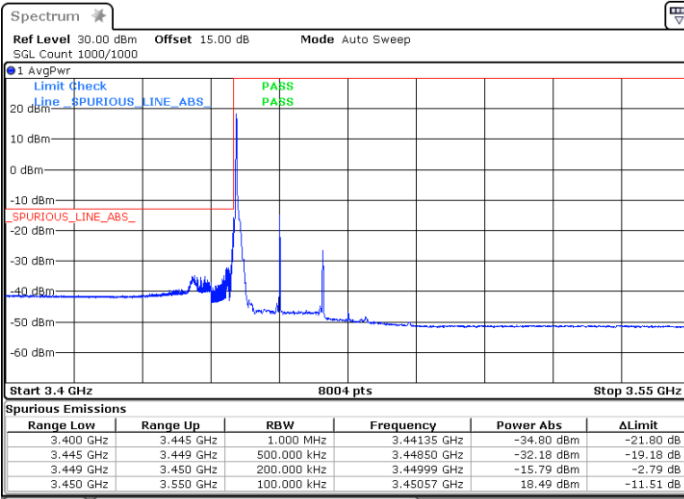


Date: 29\_SEP.2021 11:31:41



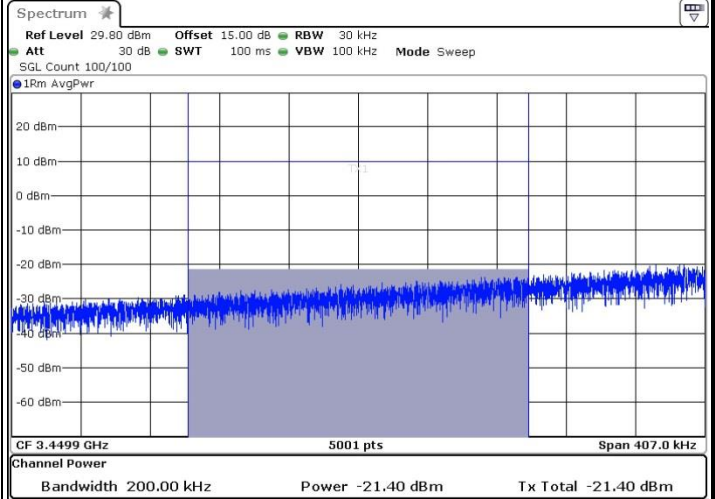
FR1 UL-MIMO n77 / 20MHz / CP-OFDM QPSK (Port 1)

Lowest Band Edge / 1 RB



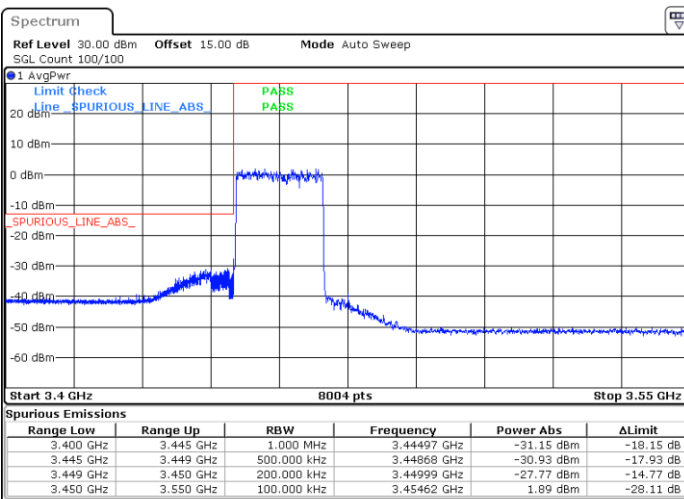
Date: 2.SEP.2021 00:41:17

Channel Power < -13dBm Pass



Date: 2.SEP.2021 00:42:23

Lowest Band Edge / Full RB



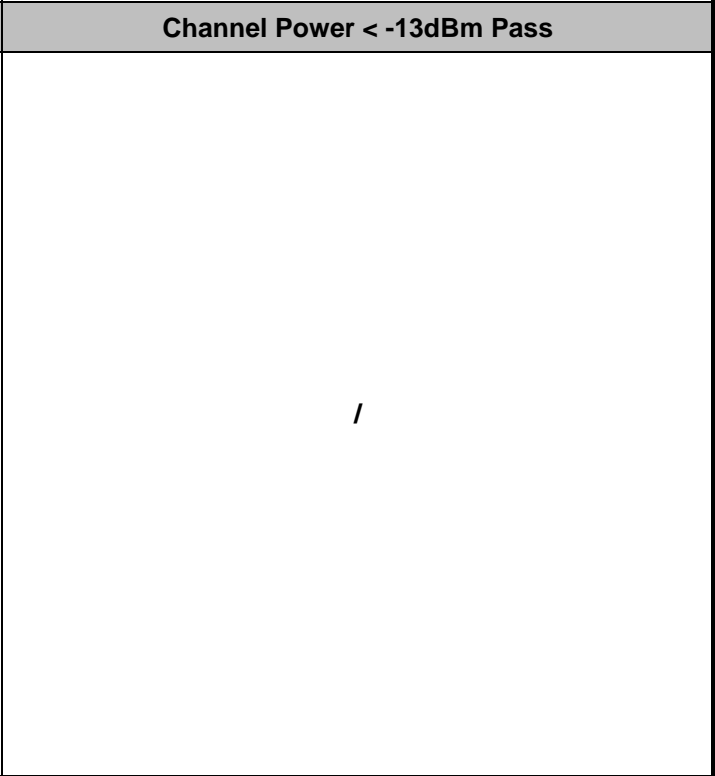
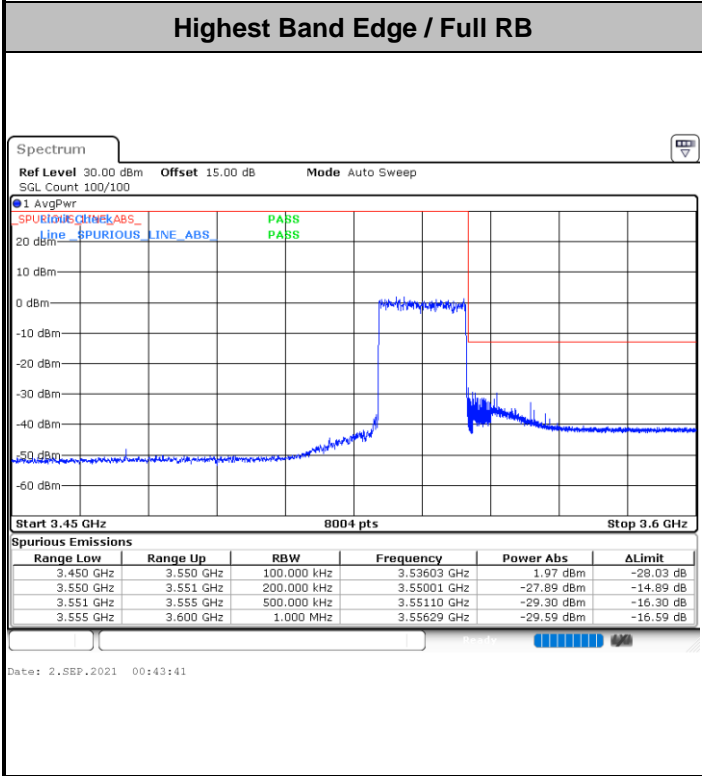
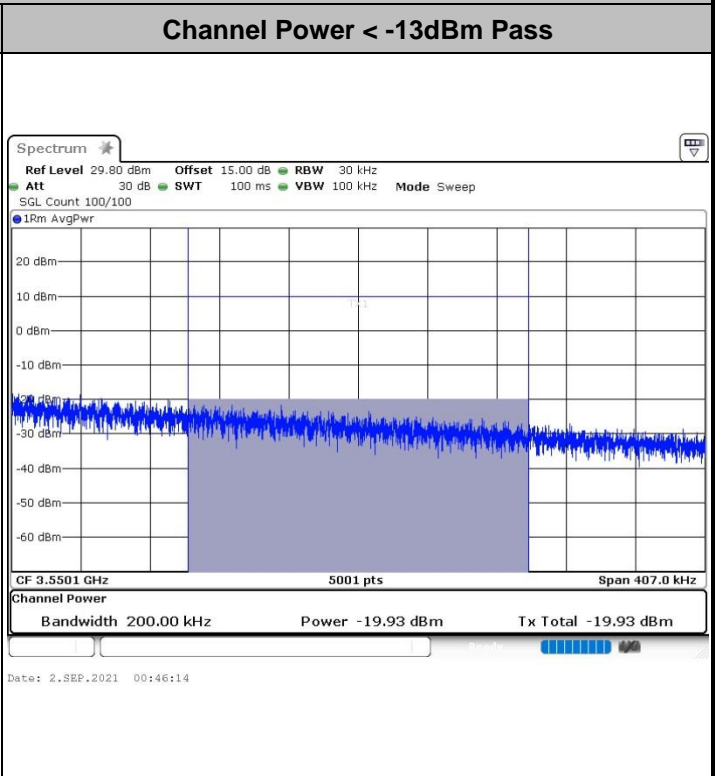
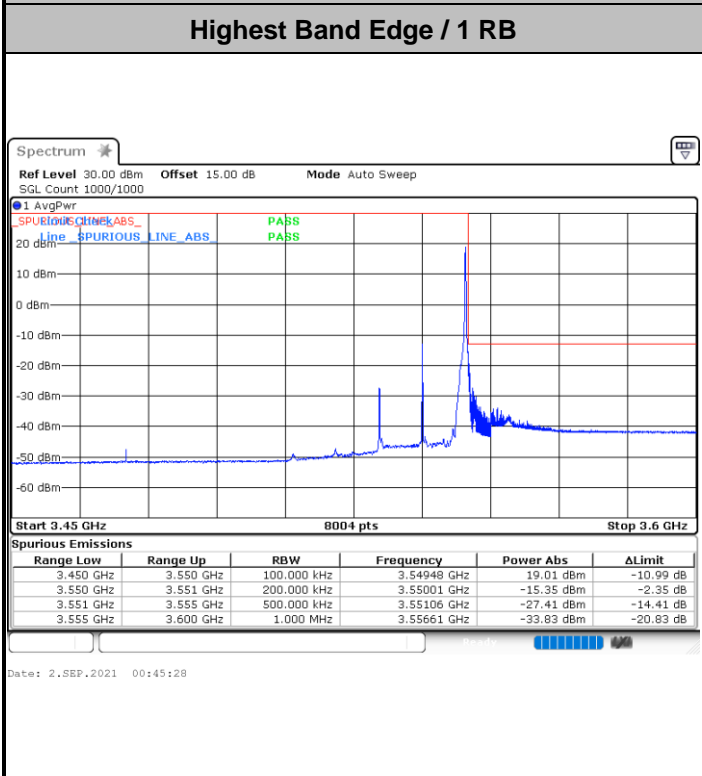
Date: 2.SEP.2021 00:43:16

Channel Power < -13dBm Pass

/



FR1 UL-MIMO n77 / 20MHz / CP-OFDM QPSK (Port 1)

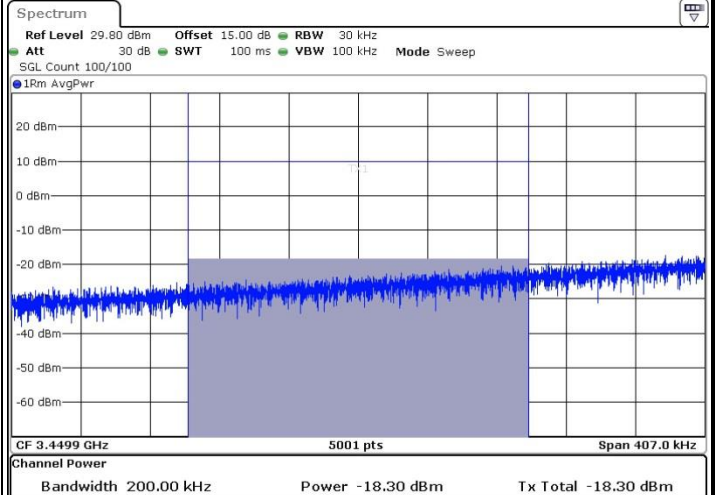
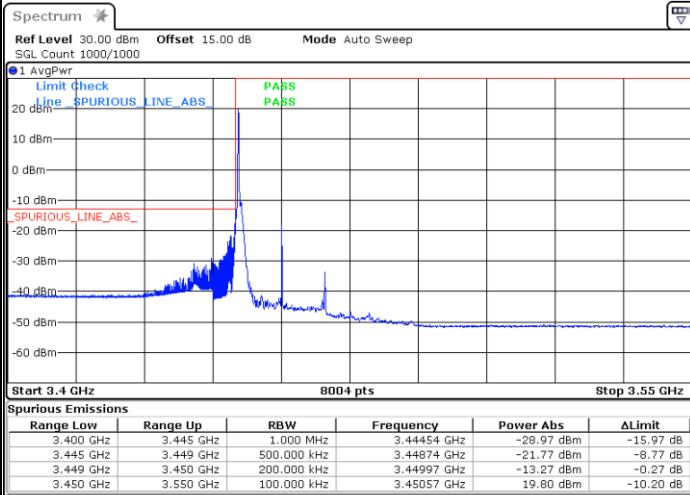




FR1 UL-MIMO n77 / 20MHz / CP-OFDM QPSK (Port 2)

Lowest Band Edge / 1 RB

Channel Power < -13dBm Pass

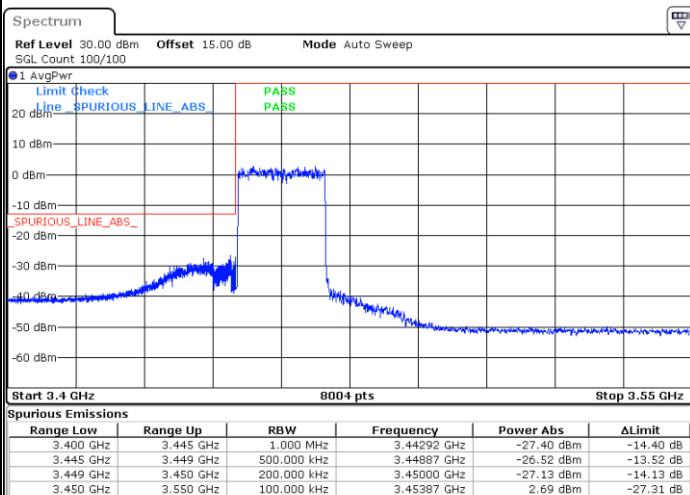


Date: 1.SEP.2021 22:57:48

Date: 1.SEP.2021 23:00:18

Lowest Band Edge / Full RB

Channel Power < -13dBm Pass



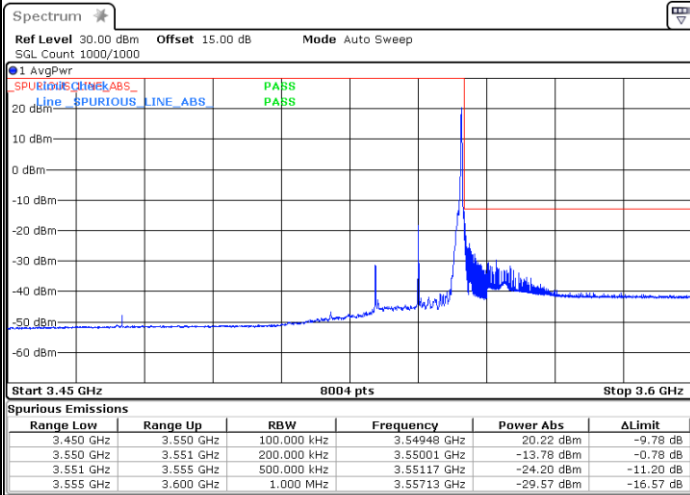
Date: 1.SEP.2021 22:57:06



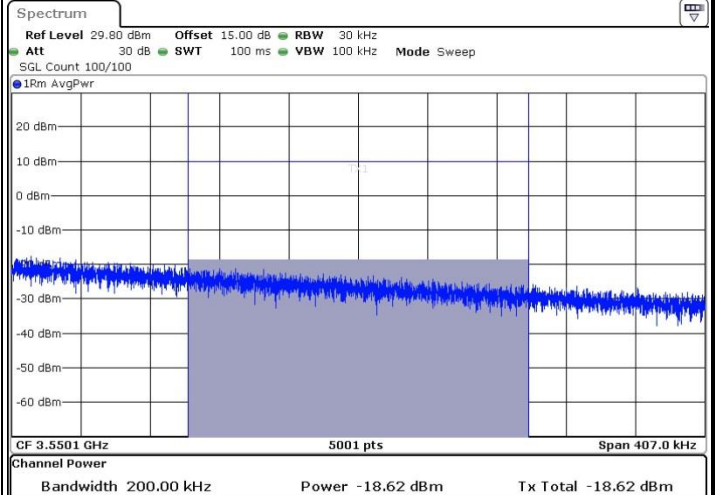
FR1 UL-MIMO n77 / 20MHz / CP-OFDM QPSK (Port 2)

Highest Band Edge / 1 RB

Channel Power < -13dBm Pass



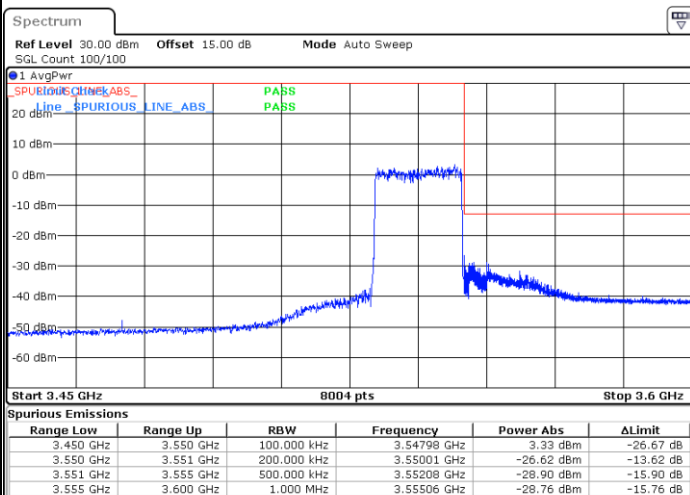
Date: 1.SEP.2021 22:53:16



Date: 1.SEP.2021 22:55:32

Highest Band Edge / Full RB

Channel Power < -13dBm Pass



Date: 1.SEP.2021 22:56:03

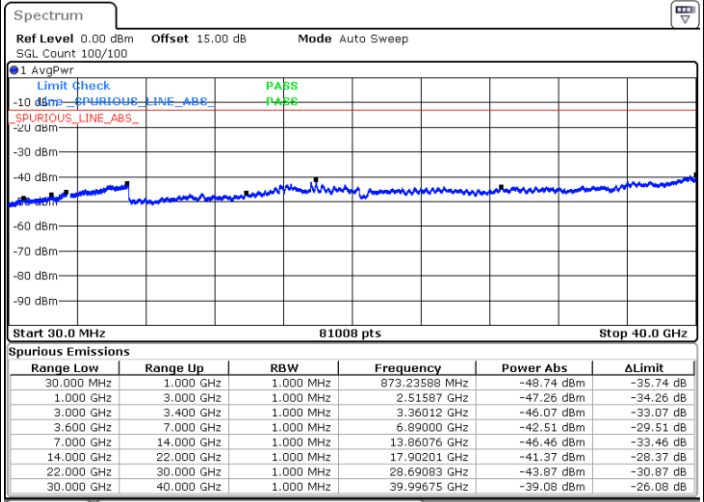
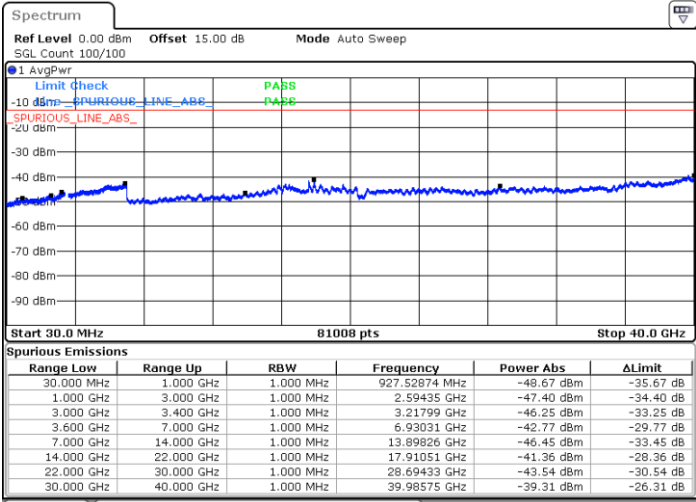


# Conducted Spurious Emission

## FR1 UL-MIMO n77 / 10MHz / CP-OFDM QPSK (Port 1)

### Lowest Channel / 1RB

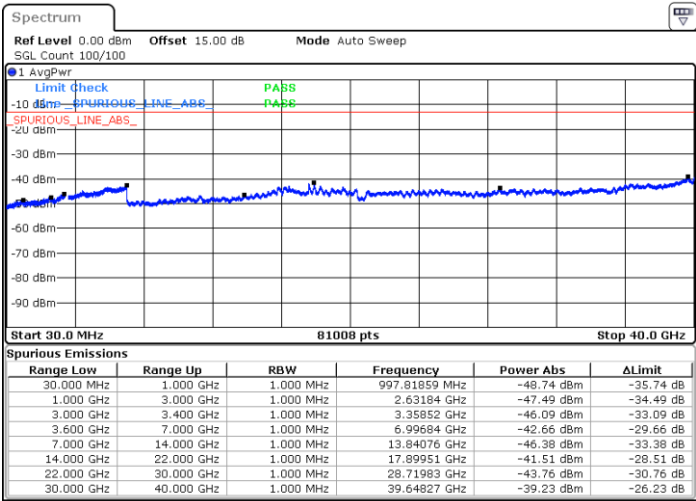
### Middle Channel / 1RB



Date: 27.SEP.2021 16:53:31

Date: 27.SEP.2021 17:06:46

### Highest Channel / 1RB



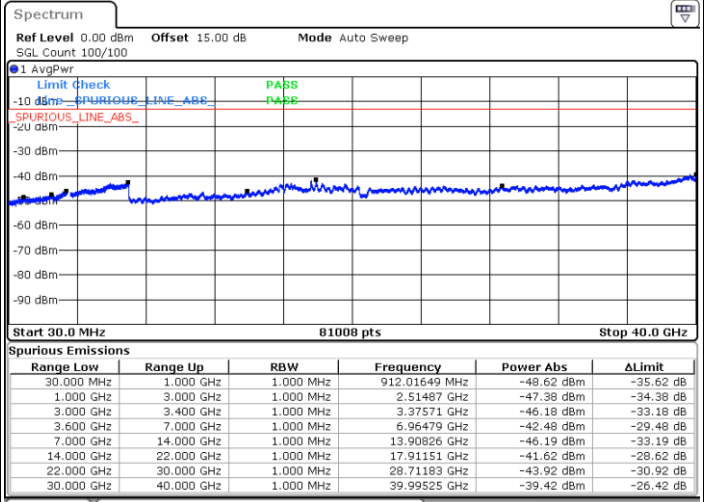
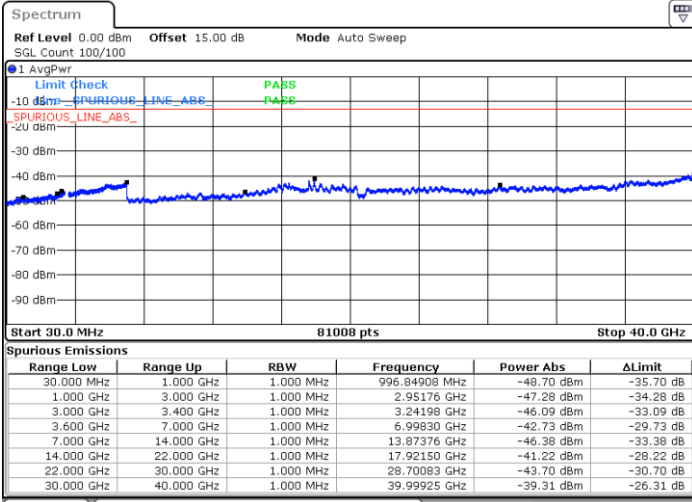
Date: 27.SEP.2021 17:10:22



FR1 UL-MIMO n77 / 10MHz / CP-OFDM QPSK (Port 2)

Lowest Channel / 1RB

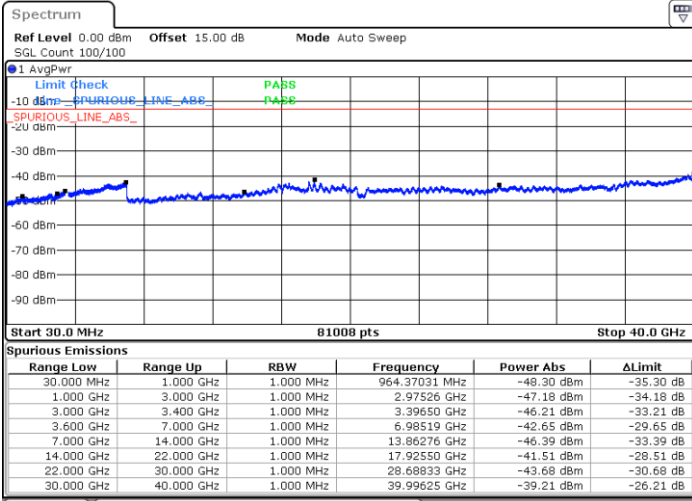
Middle Channel / 1RB



Date: 27.SEP.2021 16:58:48

Date: 27.SEP.2021 17:01:19

Highest Channel / 1RB



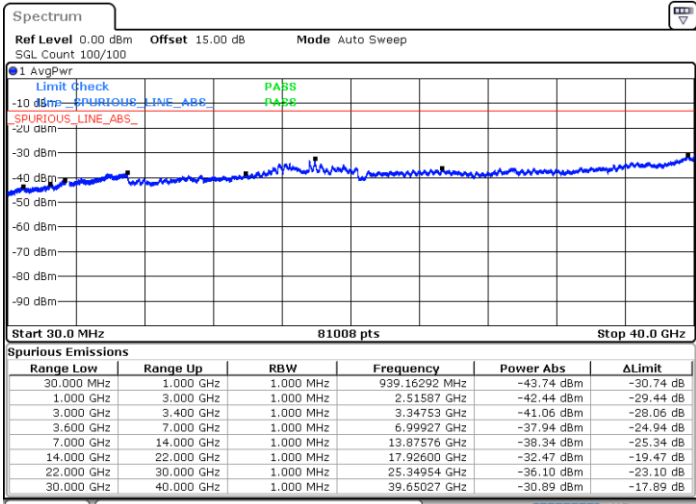
Date: 27.SEP.2021 17:09:16



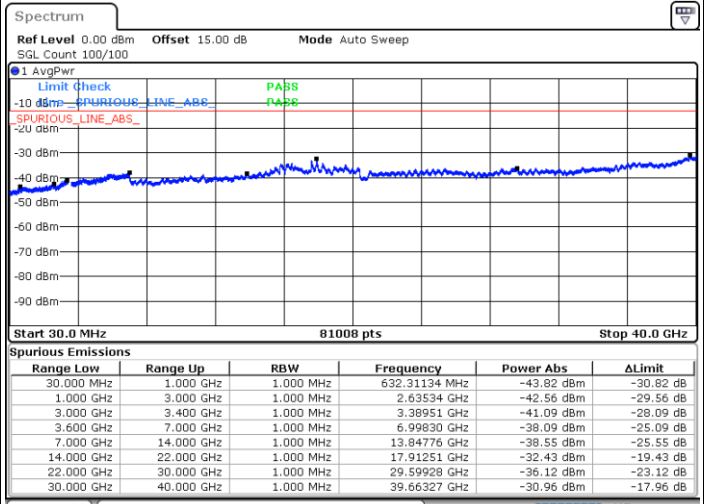
FR1 UL-MIMO n77 / 15MHz / CP-OFDM QPSK (Port 1)

Lowest Channel / 1RB

Middle Channel / 1RB

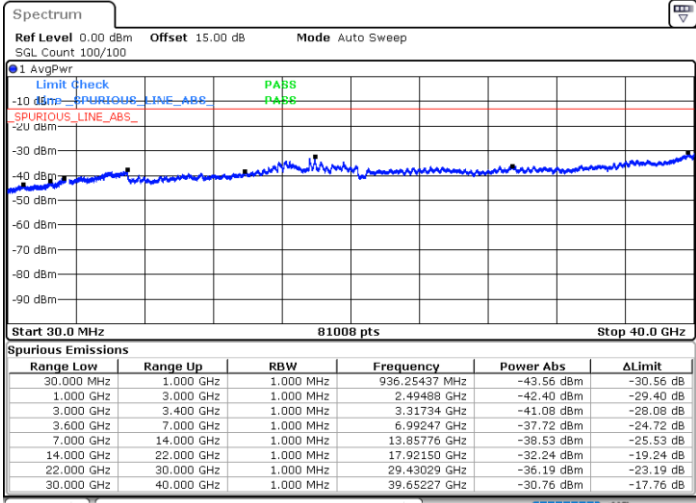


Date: 29.SEP.2021 11:44:13



Date: 29.SEP.2021 11:42:38

Highest Channel / 1RB



Date: 29.SEP.2021 11:34:23

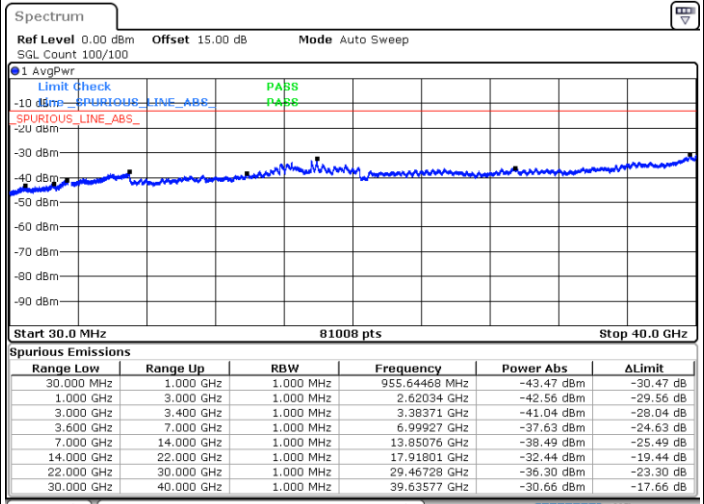
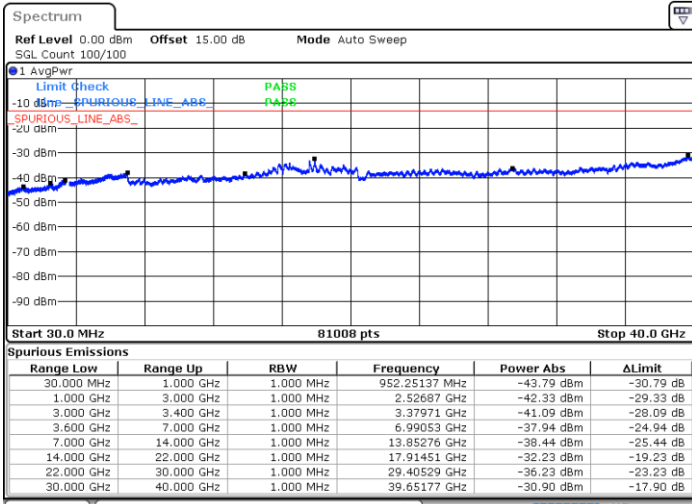




FR1 UL-MIMO n77 / 15MHz / CP-OFDM QPSK (Port 2)

Lowest Channel / 1RB

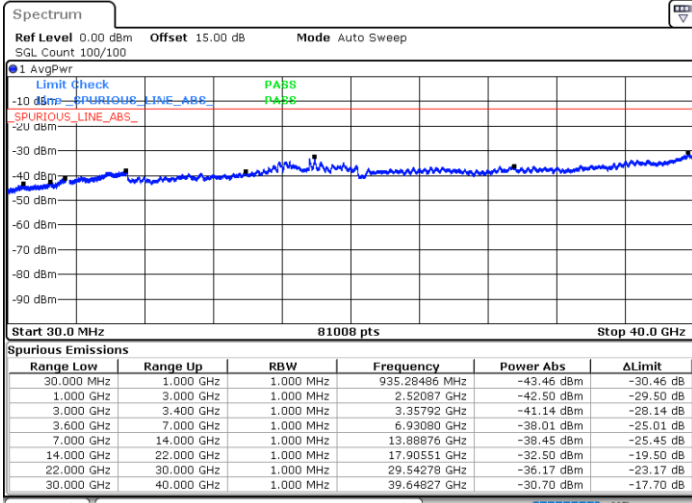
Middle Channel / 1RB



Date: 29.SEP.2021 11:45:48

Date: 29.SEP.2021 11:41:30

Highest Channel / 1RB



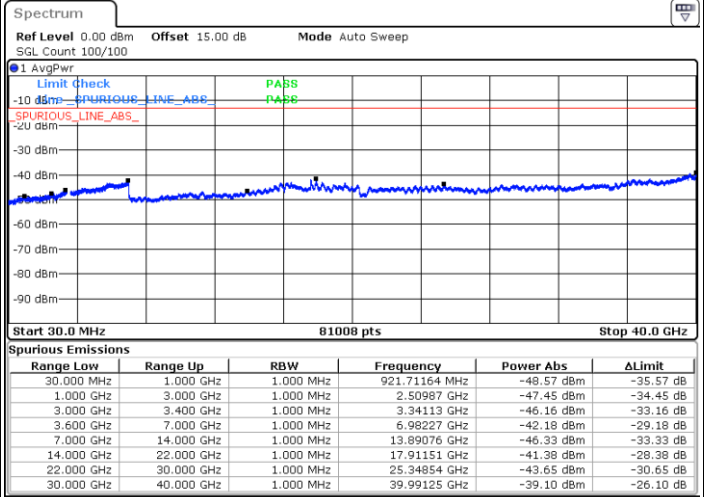
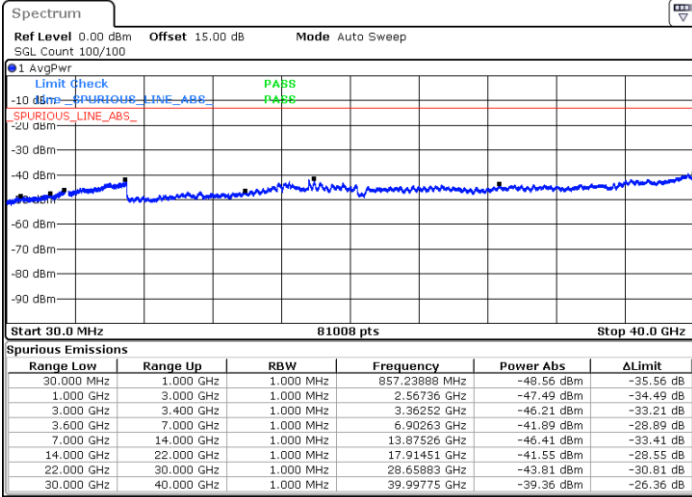
Date: 29.SEP.2021 11:39:53



FR1 UL-MIMO n77 / 20MHz / CP-OFDM QPSK (Port 1)

Lowest Channel / 1RB

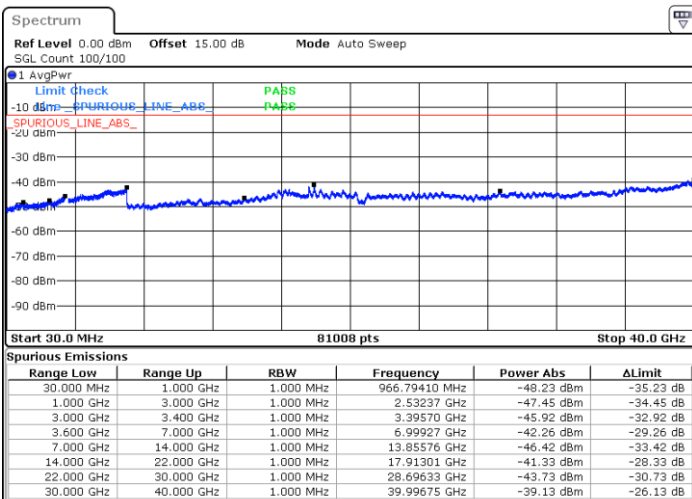
Middle Channel / 1RB



Date: 27.SEP.2021 16:46:21

Date: 27.SEP.2021 16:47:57

Highest Channel / 1RB



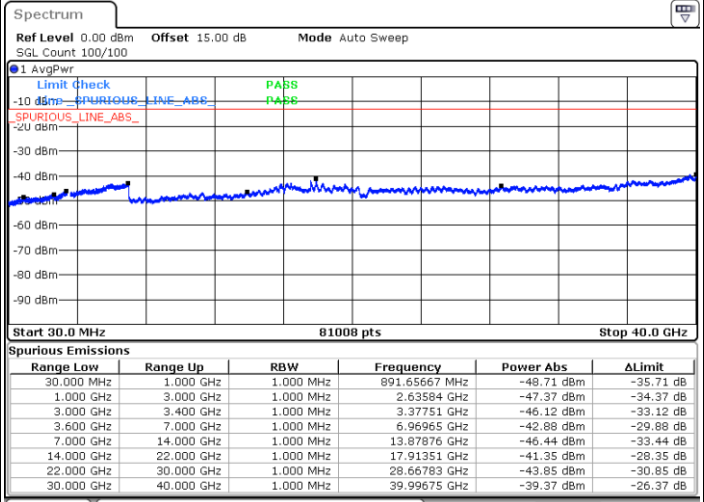
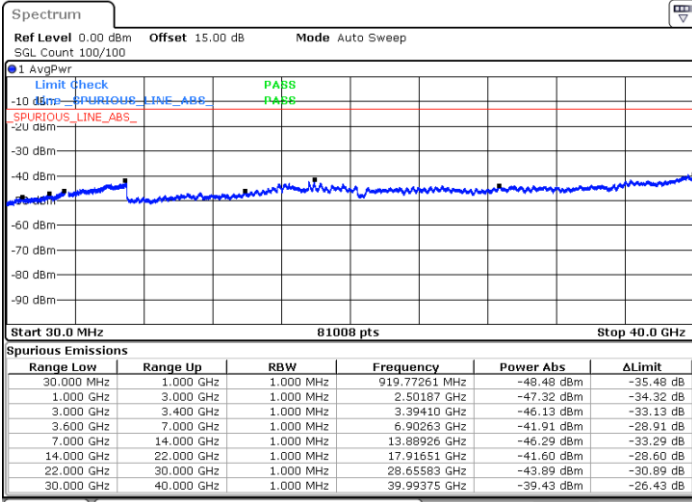
Date: 27.SEP.2021 16:52:19



FR1 UL-MIMO n77 / 20MHz / CP-OFDM QPSK (Port 2)

Lowest Channel / 1RB

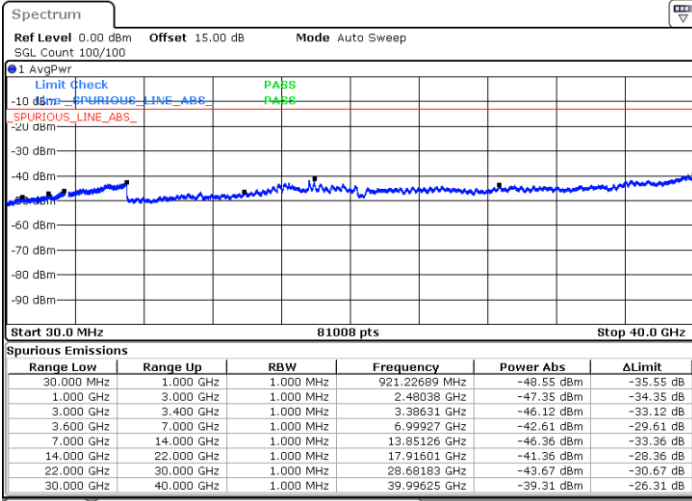
Middle Channel / 1RB



Date: 27.SEP.2021 16:45:14

Date: 27.SEP.2021 16:50:54

Highest Channel / 1RB



Date: 27.SEP.2021 16:49:48

## Frequency Stability

| Test Conditions  |                   | NR UL-MIMO n77 (QPSK) / Middle Channel | Limit       |
|------------------|-------------------|--|-------------|
| Temperature (°C) | Voltage (Volt)    | BW 20MHz                               | Within Band |
|                  |                   | Deviation (ppm)                        | Result      |
| 50               | Normal Voltage    | 0.0029                                 | PASS        |
| 40               | Normal Voltage    | 0.0047                                 |             |
| 30               | Normal Voltage    | 0.0043                                 |             |
| 20(Ref.)         | Normal Voltage    | 0.0000                                 |             |
| 10               | Normal Voltage    | 0.0099                                 |             |
| 0                | Normal Voltage    | 0.0054                                 |             |
| -10              | Normal Voltage    | 0.0091                                 |             |
| -20              | Normal Voltage    | 0.0015                                 |             |
| -30              | Normal Voltage    | 0.0041                                 |             |
| 20               | Maximum Voltage   | 0.0088                                 |             |
| 20               | Normal Voltage    | 0.0000                                 |             |
| 20               | Battery End Point | 0.0059                                 |             |

**Note:**

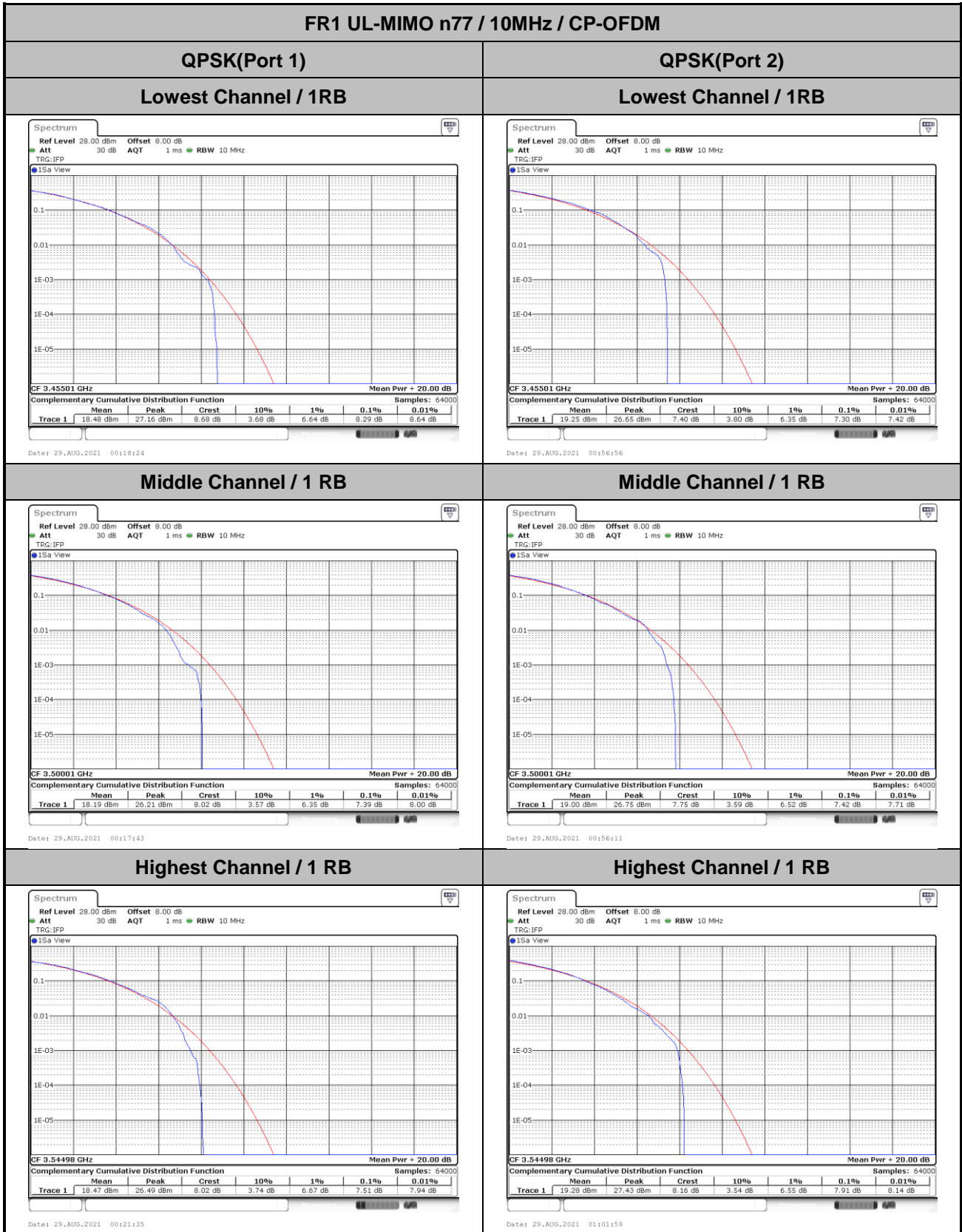
1. Normal Voltage =3.3 V. ; Battery End Point (BEP) =3.14 V. ; Maximum Voltage =4.4 V.
2. Note: The frequency fundamental emissions stay within the authorized frequency block.

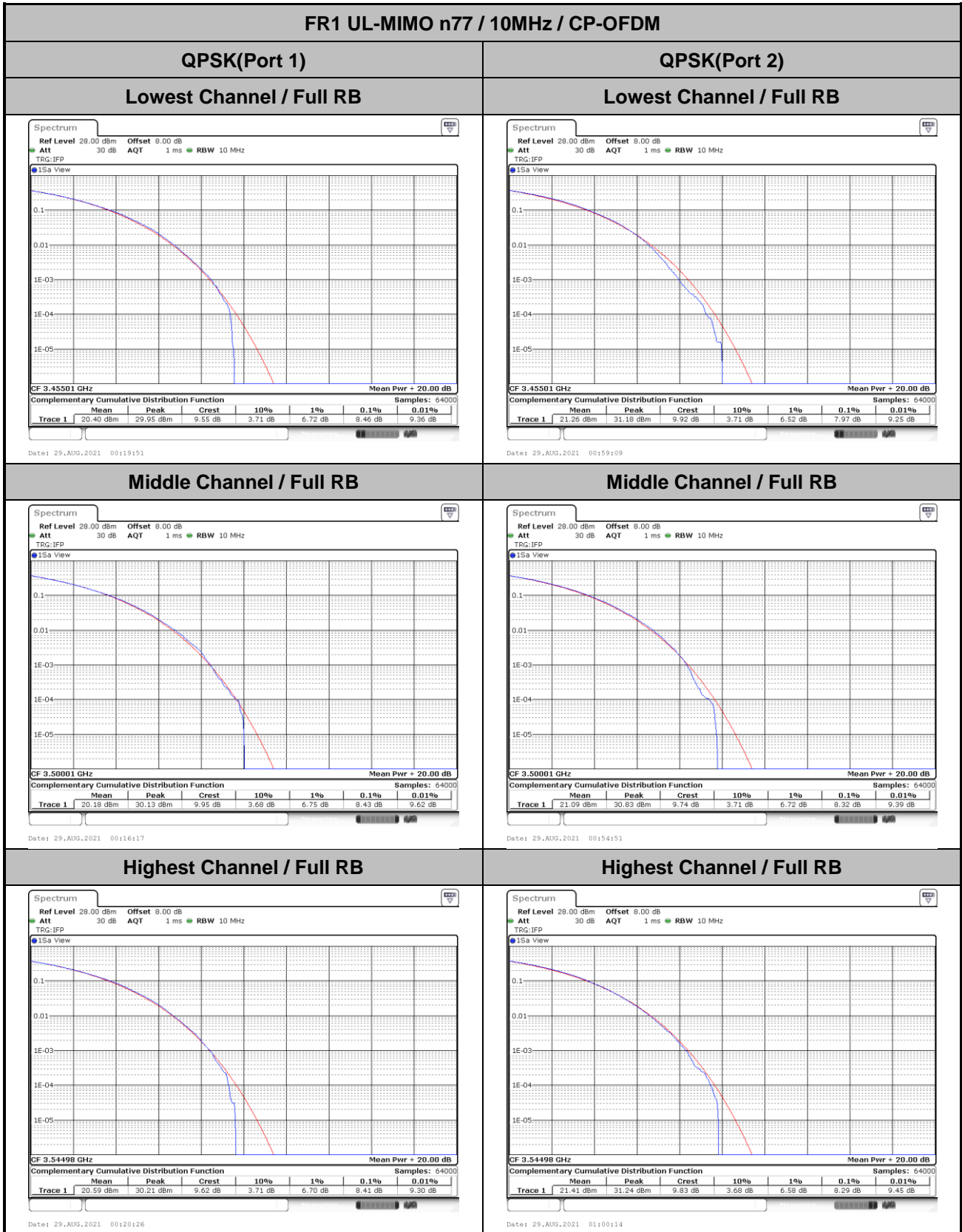
## FR1 n77 UL-MIMO(30kHz)

### Peak-to-Average Ratio

| Mode       | FR1 UL-MIMO n77 / 10MHz / CP-OFDM (Port 1) |         |  |  |             |
|------------|--|---------|--|--|-------------|
| Mod.       | QPSK                                       | QPSK    |  |  | Limit: 13dB |
| RB Size    | 1RB  | Full RB |  |  | Result      |
| Lowest CH  | 8.29                                       | 8.46    |  |  | PASS        |
| Middle CH  | 7.39                                       | 8.43    |  |  |             |
| Highest CH | 7.51                                       | 8.41    |  |  |             |

| Mode       | FR1 UL-MIMO n77 / 10MHz / CP-OFDM (Port 2) |         |  |  |             |
|------------|--|---------|--|--|-------------|
| Mod.       | QPSK                                       | QPSK    |  |  | Limit: 13dB |
| RB Size    | 1RB  | Full RB |  |  | Result      |
| Lowest CH  | 7.30                                       | 7.97    |  |  | PASS        |
| Middle CH  | 7.42                                       | 8.32    |  |  |             |
| Highest CH | 7.91                                       | 8.29    |  |  |             |







**26dB Bandwidth**

| Mode      | FR1 UL-MIMO n77 : 26dB BW(MHz) / CP-OFDM |       |       |        |        |       |       |        |
|-----------|--|-------|-------|--------|--------|-------|-------|--------|
|           | Port 1                                   |       |       |        | Port 2 |       |       |        |
| BW        | 10MHz                                    | 10MHz | 10MHz | 10MHz  | 10MHz  | 10MHz | 10MHz | 10MHz  |
| Mod.      | QPSK                                     | 16QAM | 64QAM | 256QAM | QPSK   | 16QAM | 64QAM | 256QAM |
| Middle CH | 9.21                                     | 9.05  | 9.03  | 9.07   | 9.09   | 9.27  | 9.25  | 9.11   |

| Mode      | FR1 UL-MIMO n77 : 26dB BW(MHz) / CP-OFDM |       |       |        |        |       |       |        |
|-----------|--|-------|-------|--------|--------|-------|-------|--------|
|           | Port 1                                   |       |       |        | Port 2 |       |       |        |
| BW        | 15MHz                                    | 15MHz | 15MHz | 15MHz  | 15MHz  | 15MHz | 15MHz | 15MHz  |
| Mod.      | QPSK                                     | 16QAM | 64QAM | 256QAM | QPSK   | 16QAM | 64QAM | 256QAM |
| Middle CH | 14.33                                    | 14.27 | 14.24 | 14.33  | 14.36  | 14.33 | 14.30 | 14.30  |

| Mode      | FR1 UL-MIMO n77 : 26dB BW(MHz) / CP-OFDM |       |       |        |        |       |       |        |
|-----------|--|-------|-------|--------|--------|-------|-------|--------|
|           | Port 1                                   |       |       |        | Port 2 |       |       |        |
| BW        | 20MHz                                    | 20MHz | 20MHz | 20MHz  | 20MHz  | 20MHz | 20MHz | 20MHz  |
| Mod.      | QPSK                                     | 16QAM | 64QAM | 256QAM | QPSK   | 16QAM | 64QAM | 256QAM |
| Middle CH | 18.98                                    | 19.34 | 19.50 | 19.46  | 19.06  | 19.26 | 19.46 | 19.02  |

| Mode      | FR1 UL-MIMO n77 : 26dB BW(MHz) / CP-OFDM |       |       |        |        |       |       |        |
|-----------|--|-------|-------|--------|--------|-------|-------|--------|
|           | Port 1                                   |       |       |        | Port 2 |       |       |        |
| BW        | 40MHz                                    | 40MHz | 40MHz | 40MHz  | 40MHz  | 40MHz | 40MHz | 40MHz  |
| Mod.      | QPSK                                     | 16QAM | 64QAM | 256QAM | QPSK   | 16QAM | 64QAM | 256QAM |
| Middle CH | 40.28                                    | 40.10 | 41.12 | 40.28  | 40.20  | 40.36 | 40.28 | 40.12  |

| Mode      | FR1 UL-MIMO n77 : 26dB BW(MHz) / CP-OFDM |       |       |        |        |       |       |        |
|-----------|--|-------|-------|--------|--------|-------|-------|--------|
|           | Port 1                                   |       |       |        | Port 2 |       |       |        |
| BW        | 50MHz                                    | 50MHz | 50MHz | 50MHz  | 50MHz  | 50MHz | 50MHz | 50MHz  |
| Mod.      | QPSK                                     | 16QAM | 64QAM | 256QAM | QPSK   | 16QAM | 64QAM | 256QAM |
| Middle CH | 49.75                                    | 49.75 | 49.75 | 49.75  | 49.75  | 49.65 | 49.85 | 49.75  |

| Mode | FR1 UL-MIMO n77 : 26dB BW(MHz) / CP-OFDM |       |       |       |        |       |       |       |
|------|--|-------|-------|-------|--------|-------|-------|-------|
|      | Port 1                                   |       |       |       | Port 2 |       |       |       |
| BW   | 60MHz                                    | 60MHz | 60MHz | 60MHz | 60MHz  | 60MHz | 60MHz | 60MHz |





| Mod.      | QPSK | 16QAM | 64QAM | 256QAM | QPSK  | 16QAM | 64QAM | 256QAM |
|-----------|------|-------|-------|--------|-------|-------|-------|--------|
| Middle CH | 60.3 | 60.78 | 60.3  | 60.3   | 60.30 | 60.42 | 60.18 | 60.42  |

| Mode      | FR1 UL-MIMO n77 : 26dB BW(MHz) / CP-OFDM |       |       |        |        |       |       |        |
|-----------|--|-------|-------|--------|--------|-------|-------|--------|
|           | Port 1                                   |       |       |        | Port 2 |       |       |        |
| BW        | 80MHz                                    | 80MHz | 80MHz | 80MHz  | 80MHz  | 80MHz | 80MHz | 80MHz  |
| Mod.      | QPSK                                     | 16QAM | 64QAM | 256QAM | QPSK   | 16QAM | 64QAM | 256QAM |
| Middle CH | 79.92                                    | 79.92 | 79.92 | 80.08  | 79.92  | 79.92 | 79.92 | 80.08  |

| Mode      | FR1 UL-MIMO n77 : 26dB BW(MHz) / CP-OFDM |        |        |        |        |        |        |        |
|-----------|--|--------|--------|--------|--------|--------|--------|--------|
|           | Port 1                                   |        |        |        | Port 2 |        |        |        |
| BW        | 100MHz                                   | 100MHz | 100MHz | 100MHz | 100MHz | 100MHz | 100MHz | 100MHz |
| Mod.      | QPSK                                     | 16QAM  | 64QAM  | 256QAM | QPSK   | 16QAM  | 64QAM  | 256QAM |
| Middle CH | 100.70                                   | 100.30 | 100.30 | 100.30 | 100.30 | 100.30 | 100.30 | 100.30 |



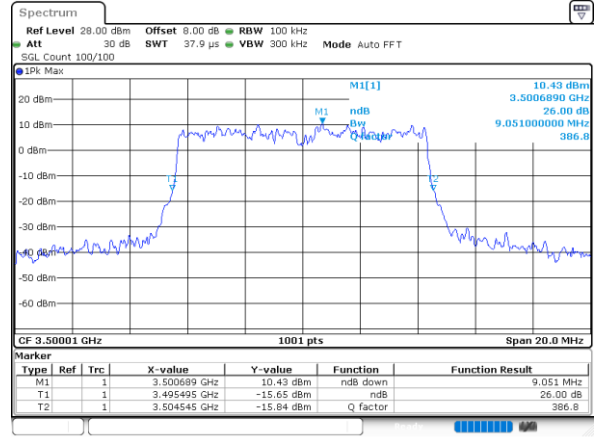
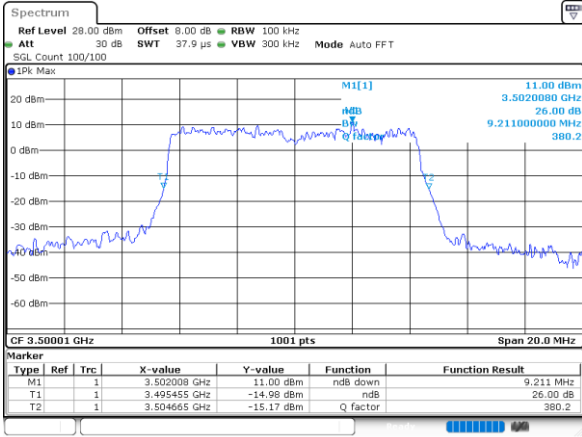
FR1 UL-MIMO n77 / 10MHz / CP-OFDM (Port 1)

QPSK

16QAM

Middle Channel

Middle Channel



Date: 29\_AUG.2021 00:06:26

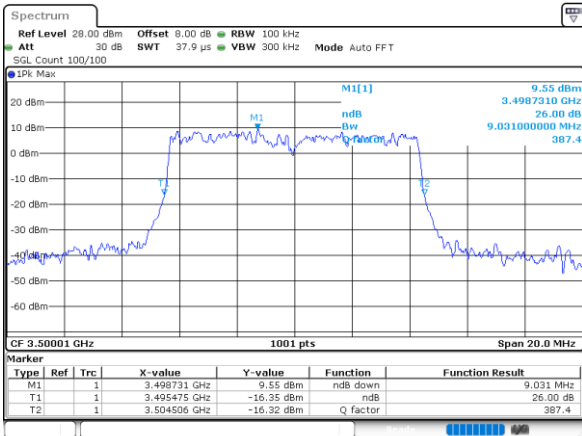
Date: 29\_AUG.2021 00:06:42

64QAM

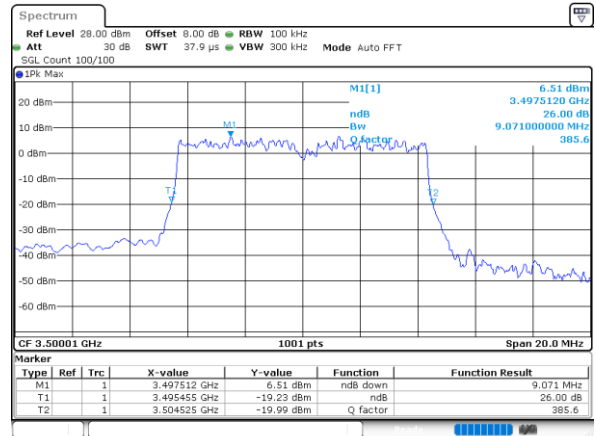
256QAM

Middle Channel

Middle Channel



Date: 29\_AUG.2021 00:07:09



Date: 29\_AUG.2021 00:07:22



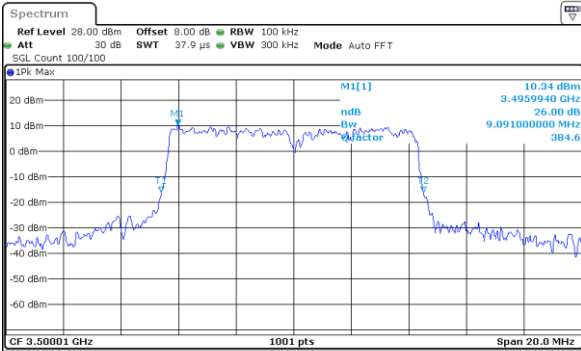
FR1 UL-MIMO n77 / 10MHz / CP-OFDM (Port 2)

QPSK

16QAM

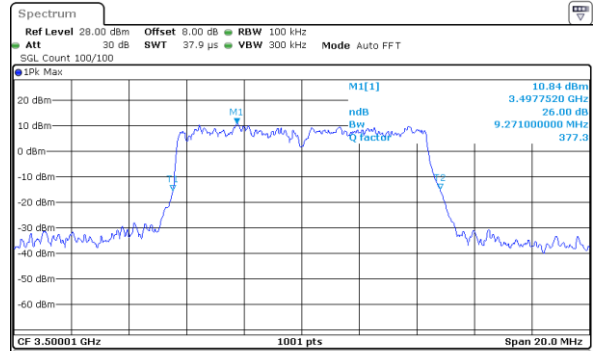
Middle Channel

Middle Channel



| Type | Ref | Trc | X-value      | Y-value    | Function | Function Result |
|------|-----|-----|--------------|------------|----------|-----------------|
| M1   | 1   |     | 3.495994 GHz | 10.34 dBm  | ndB down | 9.091 MHz       |
| T1   | 1   |     | 3.495415 GHz | -16.00 dBm | ndB      | 26.00 dB        |
| T2   | 1   |     | 3.504506 GHz | -16.10 dBm | Q factor | 384.6           |

Date: 29\_AUG.2021 01:03:29



| Type | Ref | Trc | X-value      | Y-value    | Function | Function Result |
|------|-----|-----|--------------|------------|----------|-----------------|
| M1   | 1   |     | 3.497752 GHz | 10.84 dBm  | ndB down | 9.271 MHz       |
| T1   | 1   |     | 3.495534 GHz | -15.34 dBm | ndB      | 26.00 dB        |
| T2   | 1   |     | 3.504805 GHz | -14.94 dBm | Q factor | 377.3           |

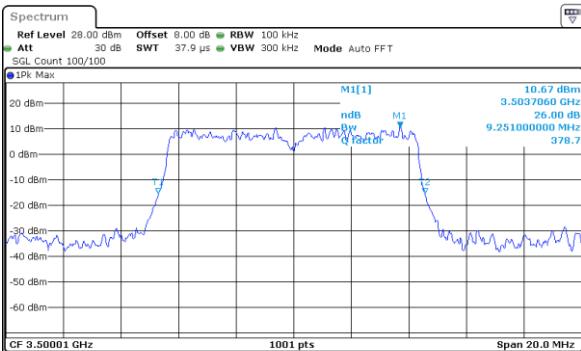
Date: 29\_AUG.2021 01:03:48

64QAM

256QAM

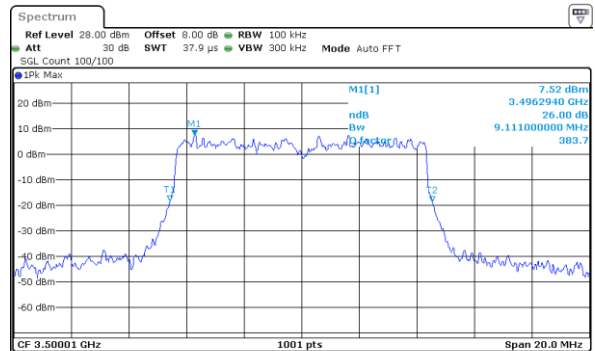
Middle Channel

Middle Channel



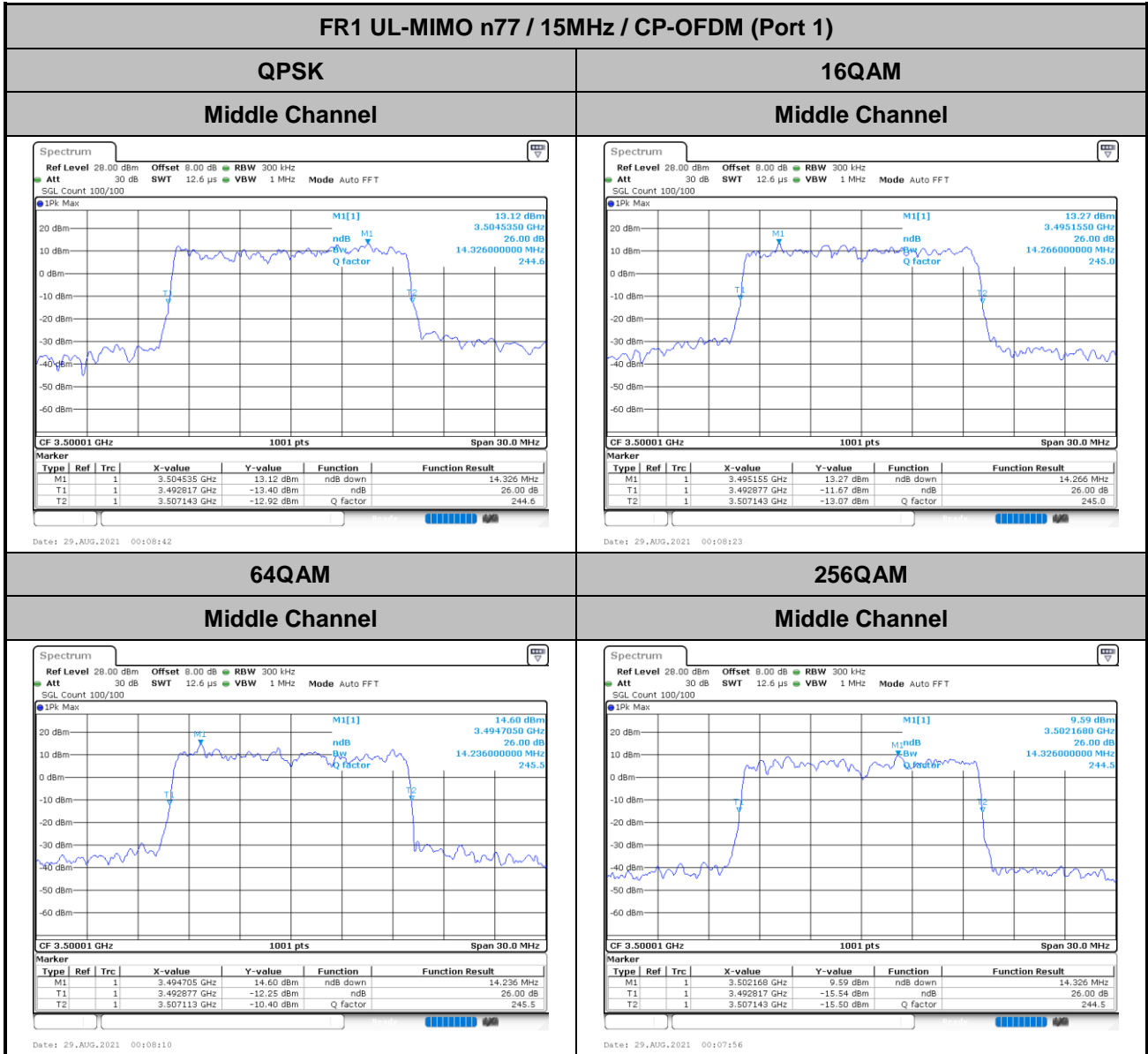
| Type | Ref | Trc | X-value      | Y-value    | Function | Function Result |
|------|-----|-----|--------------|------------|----------|-----------------|
| M1   | 1   |     | 3.503706 GHz | 10.67 dBm  | ndB down | 9.251 MHz       |
| T1   | 1   |     | 3.495315 GHz | -10.67 dBm | ndB      | 26.00 dB        |
| T2   | 1   |     | 3.504565 GHz | -15.29 dBm | Q factor | 378.7           |

Date: 29\_AUG.2021 01:04:03



| Type | Ref | Trc | X-value      | Y-value    | Function | Function Result |
|------|-----|-----|--------------|------------|----------|-----------------|
| M1   | 1   |     | 3.496294 GHz | 7.52 dBm   | ndB down | 9.111 MHz       |
| T1   | 1   |     | 3.495435 GHz | -18.34 dBm | ndB      | 26.00 dB        |
| T2   | 1   |     | 3.504545 GHz | -18.65 dBm | Q factor | 383.7           |

Date: 29\_AUG.2021 01:04:15



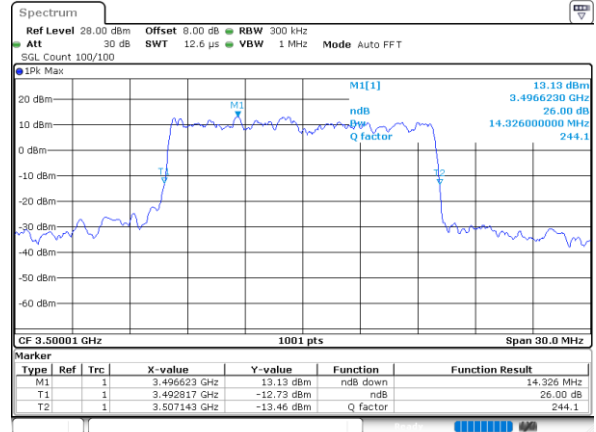
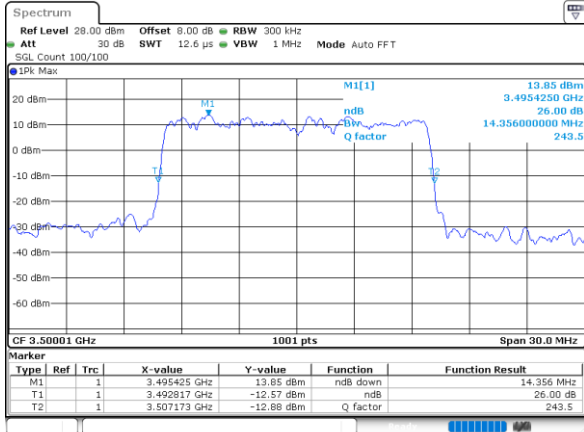
FR1 UL-MIMO n77 / 15MHz / CP-OFDM (Port 2)

QPSK

16QAM

Middle Channel

Middle Channel



Date: 29\_AUG.2021 01:05:25

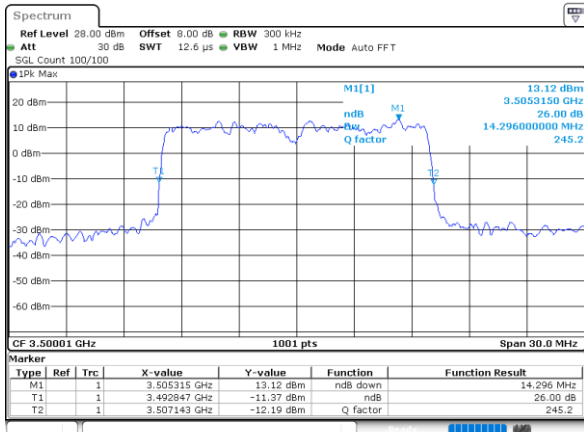
Date: 29\_AUG.2021 01:05:11

64QAM

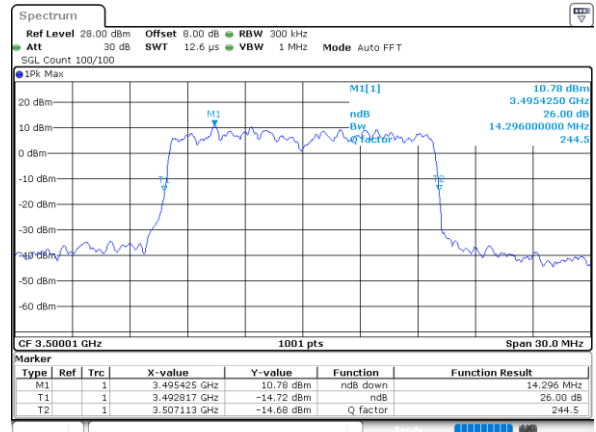
256QAM

Middle Channel

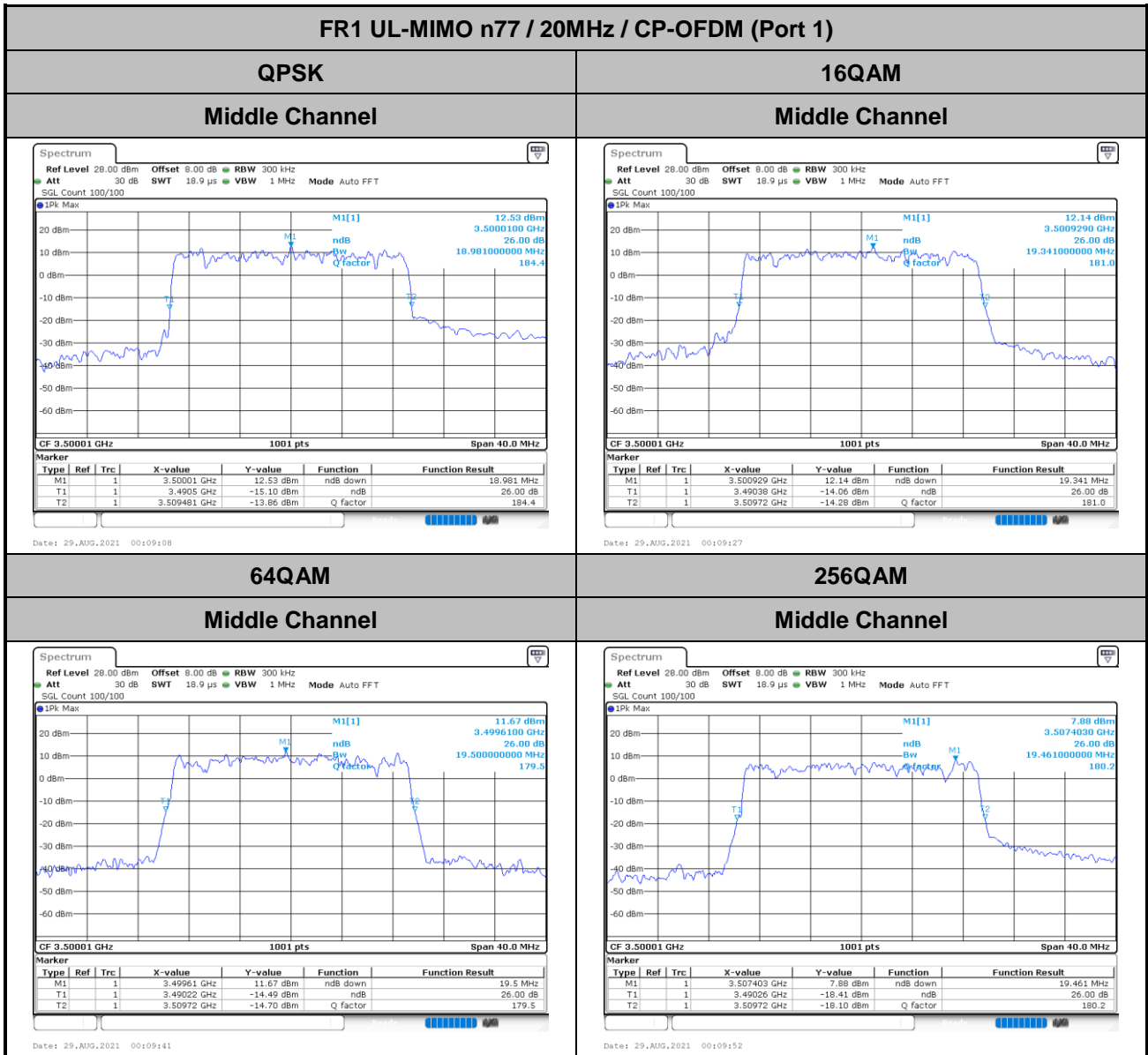
Middle Channel



Date: 29\_AUG.2021 01:04:53



Date: 29\_AUG.2021 01:04:39





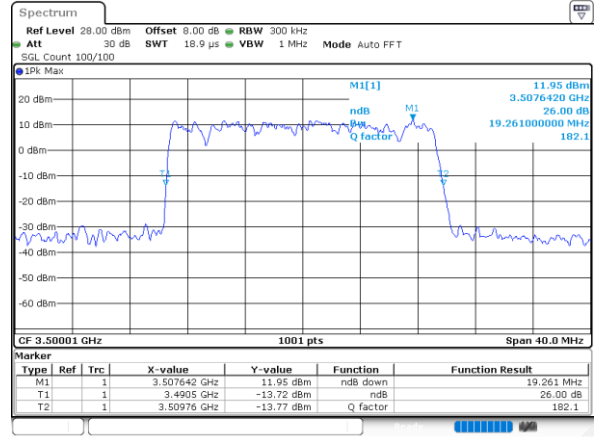
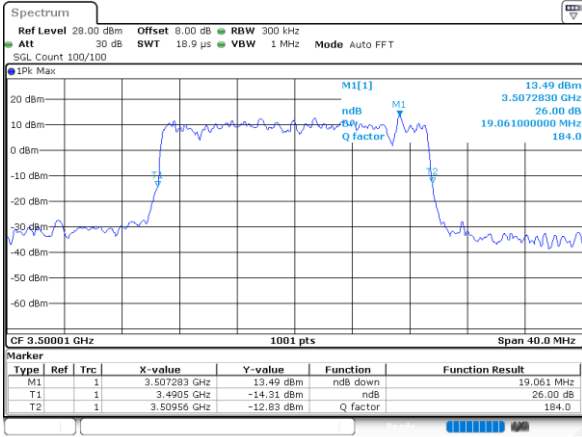
FR1 UL-MIMO n77 / 20MHz / CP-OFDM (Port 2)

QPSK

16QAM

Middle Channel

Middle Channel



Date: 29\_AUG.2021 01:05:44

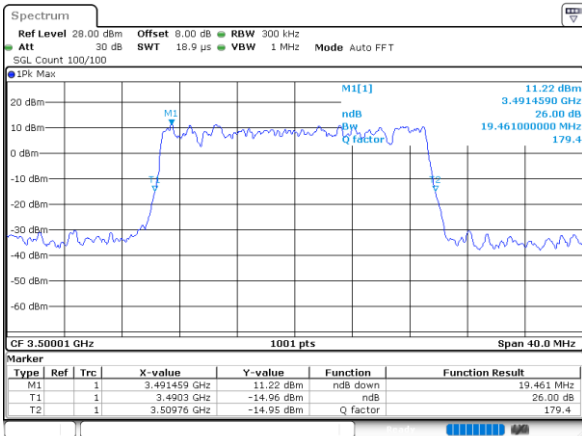
Date: 29\_AUG.2021 01:05:57

64QAM

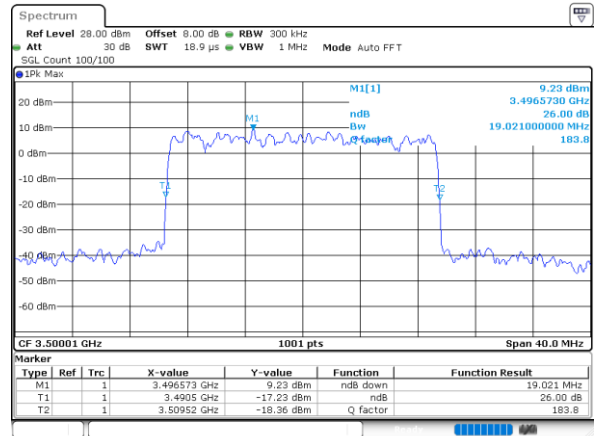
256QAM

Middle Channel

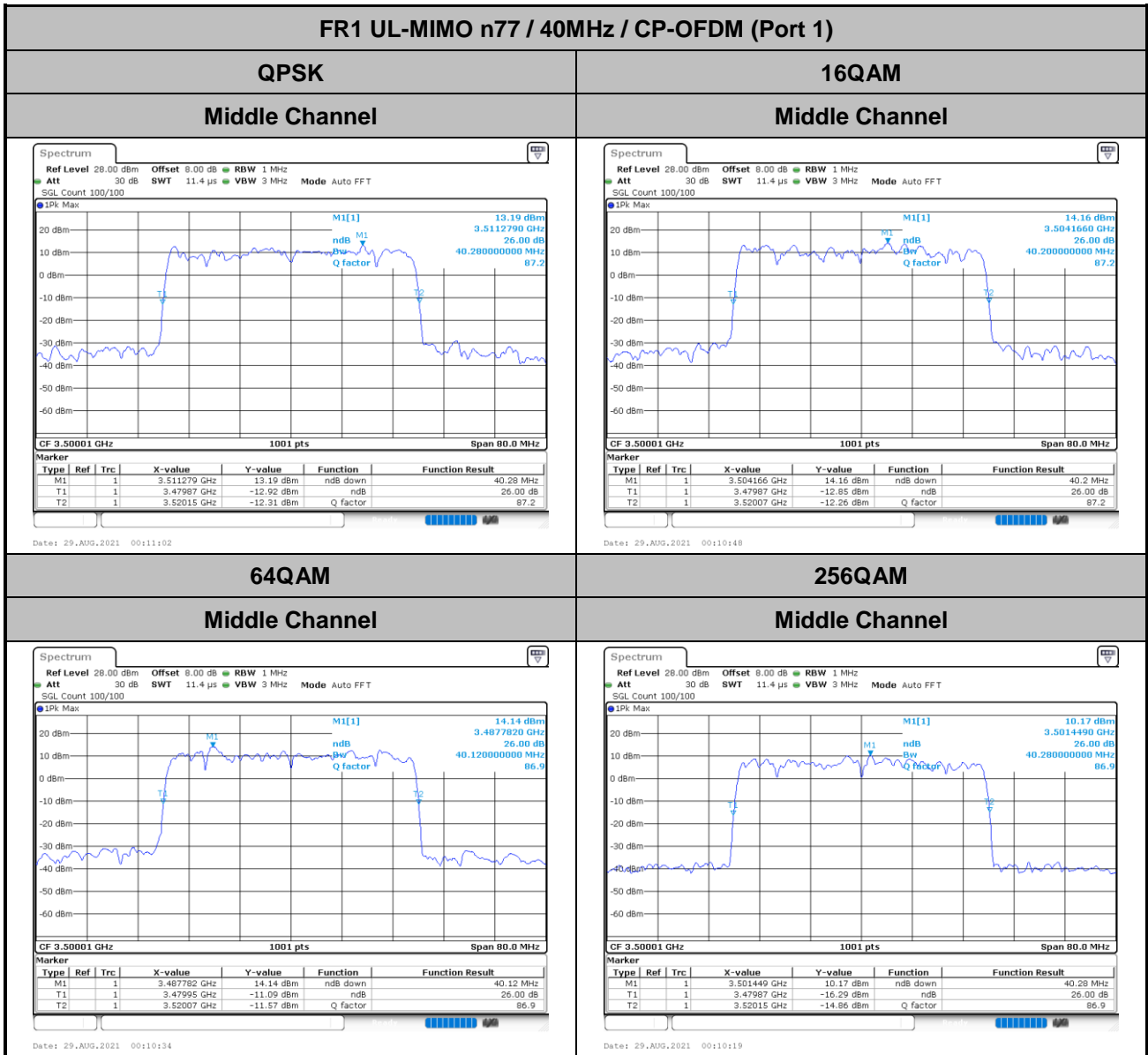
Middle Channel



Date: 29\_AUG.2021 01:06:10



Date: 29\_AUG.2021 01:06:23







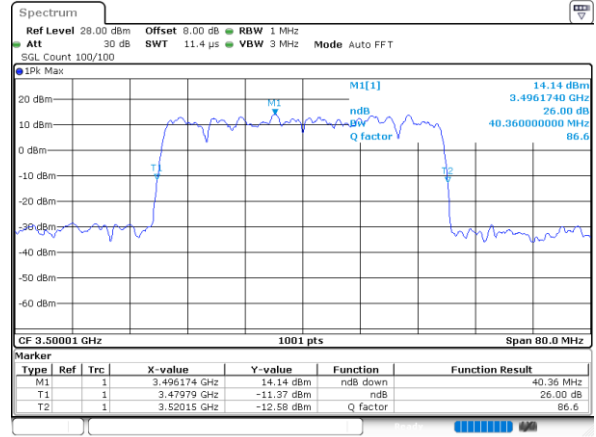
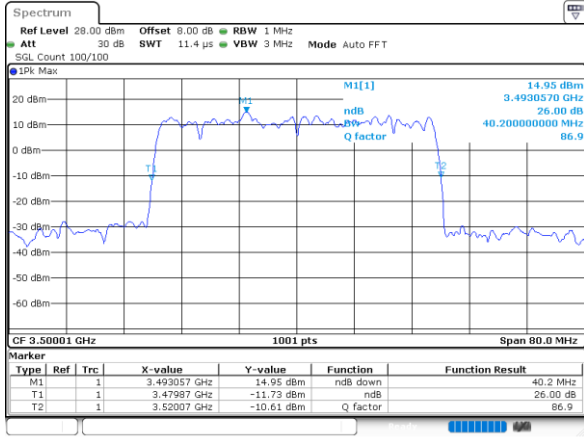
FR1 UL-MIMO n77 / 40MHz / CP-OFDM (Port 2)

QPSK

16QAM

Middle Channel

Middle Channel



Date: 29\_AUG.2021 01:08:14

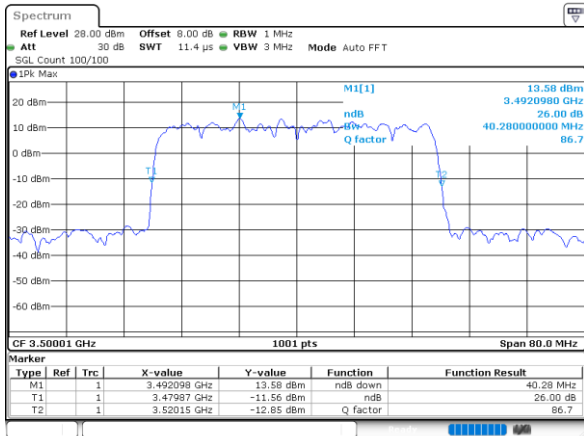
Date: 29\_AUG.2021 01:08:01

64QAM

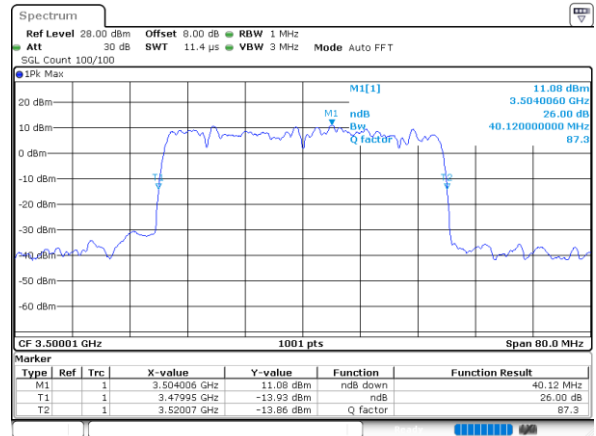
256QAM

Middle Channel

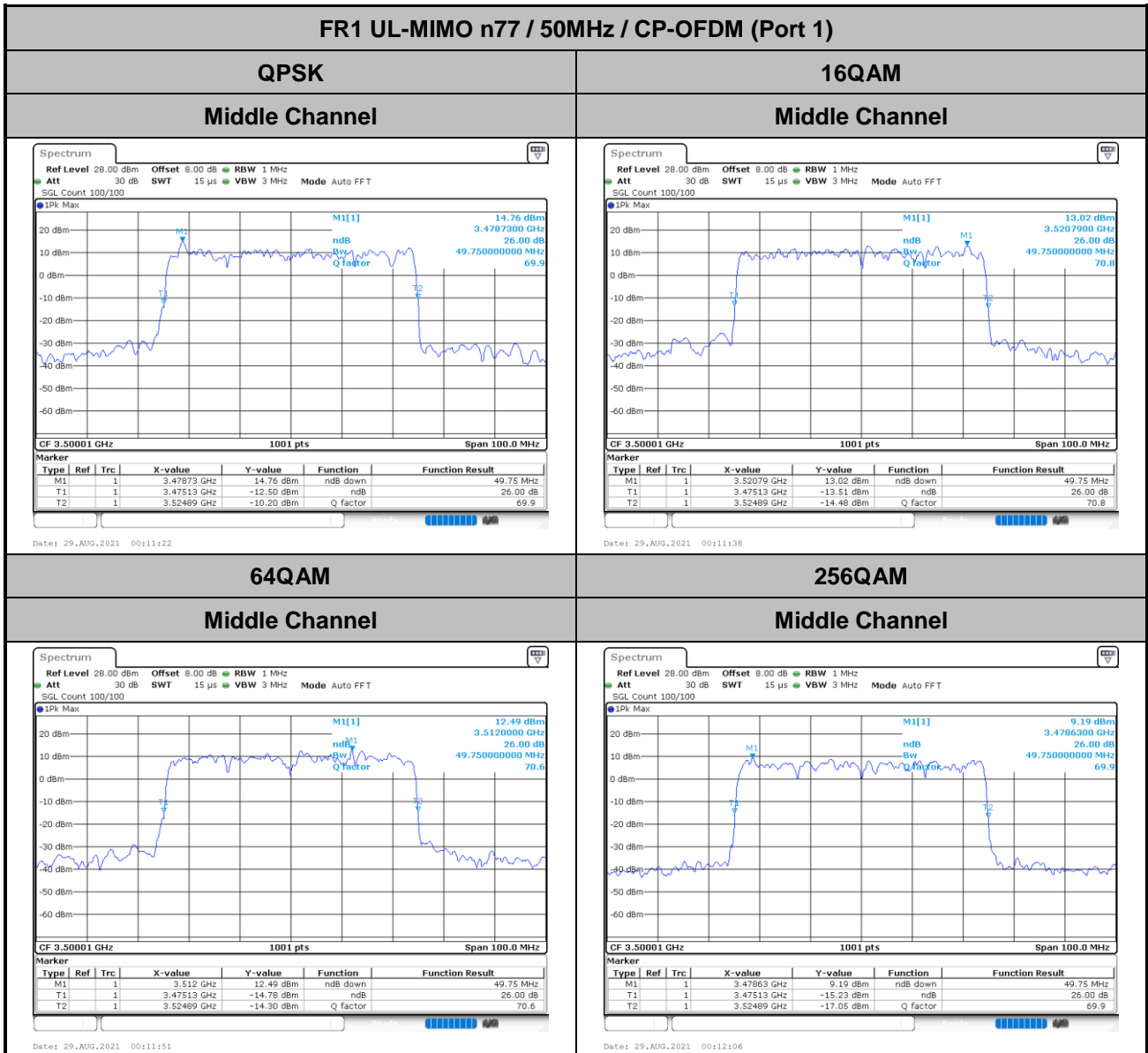
Middle Channel



Date: 29\_AUG.2021 01:07:48



Date: 29\_AUG.2021 01:07:30



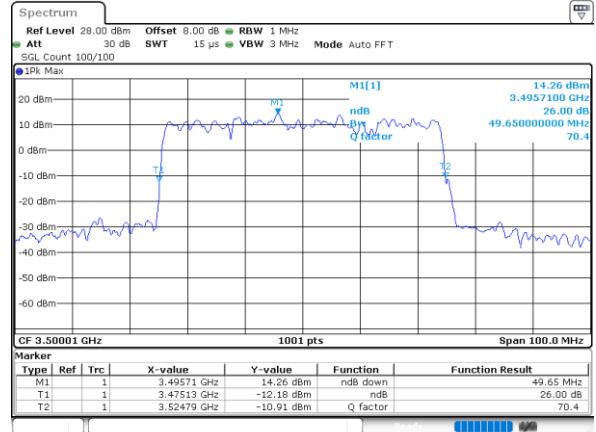
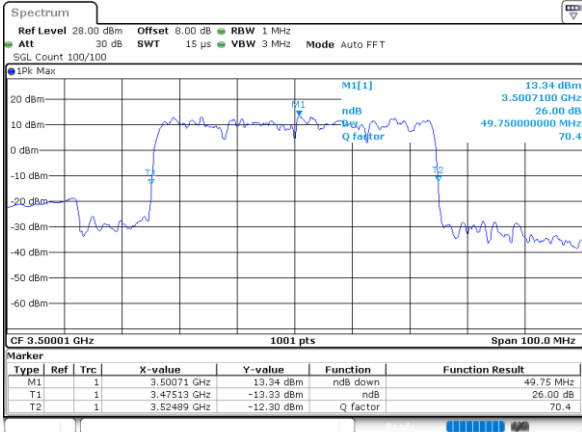
FR1 UL-MIMO n77 / 50MHz / CP-OFDM (Port 2)

QPSK

16QAM

Middle Channel

Middle Channel

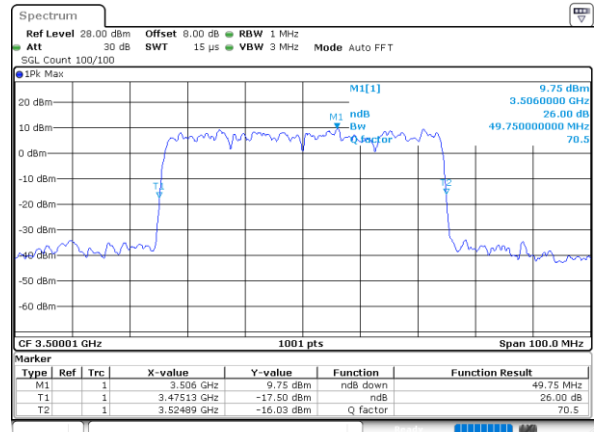


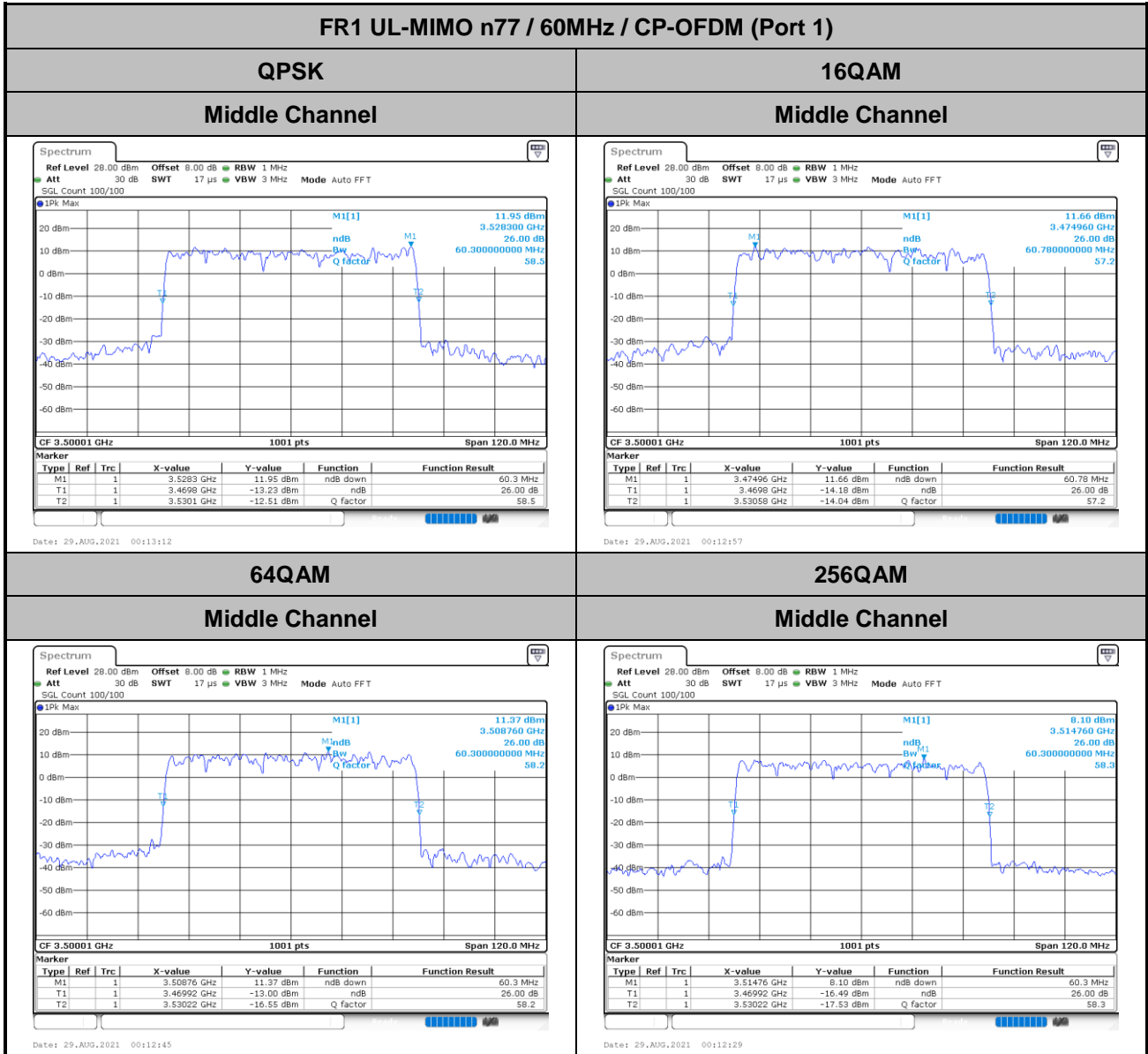
64QAM

256QAM

Middle Channel

Middle Channel







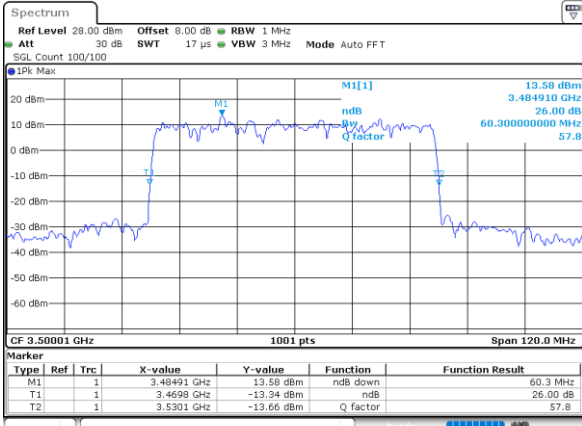
FR1 UL-MIMO n77 / 60MHz / CP-OFDM (Port 2)

QPSK

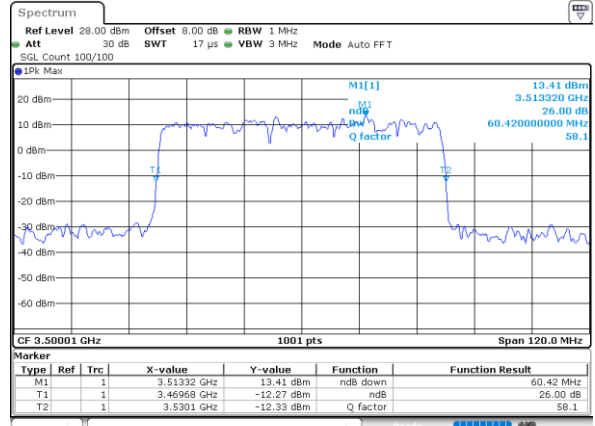
16QAM

Middle Channel

Middle Channel



Date: 29\_AUG.2021 01:26:07



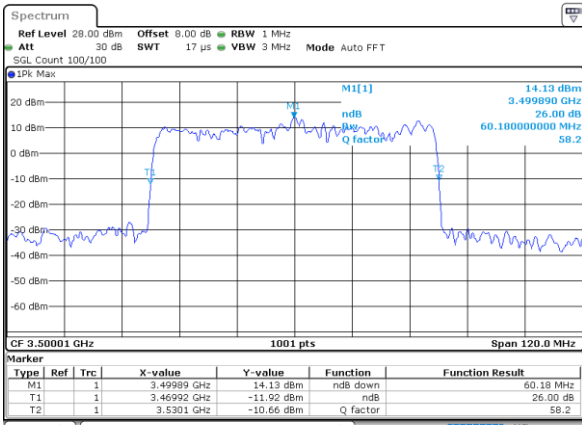
Date: 29\_AUG.2021 01:25:54

64QAM

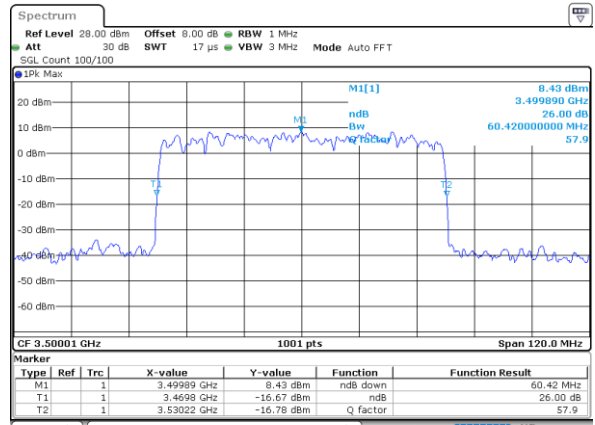
256QAM

Middle Channel

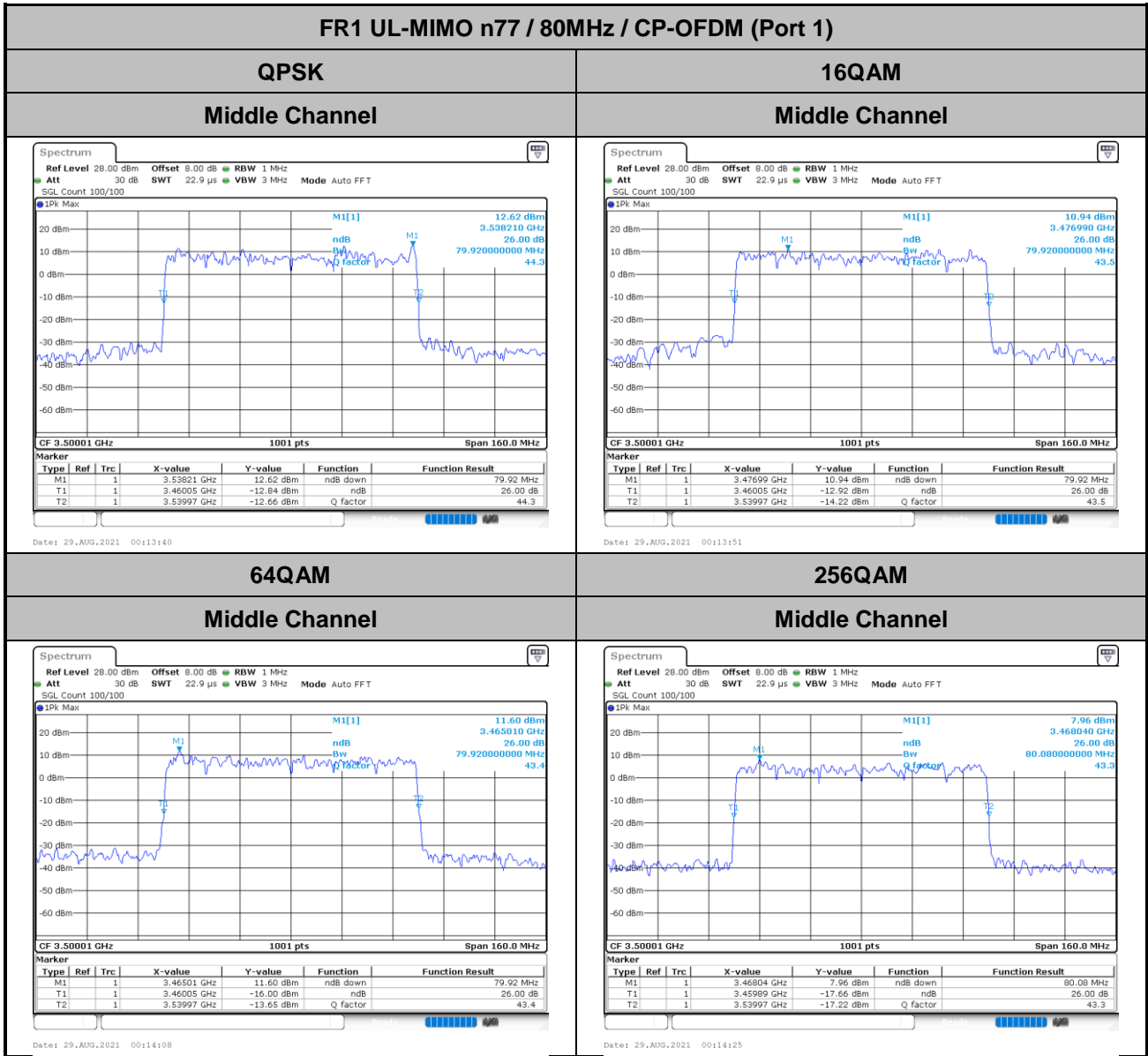
Middle Channel



Date: 29\_AUG.2021 01:25:42



Date: 29\_AUG.2021 01:25:26





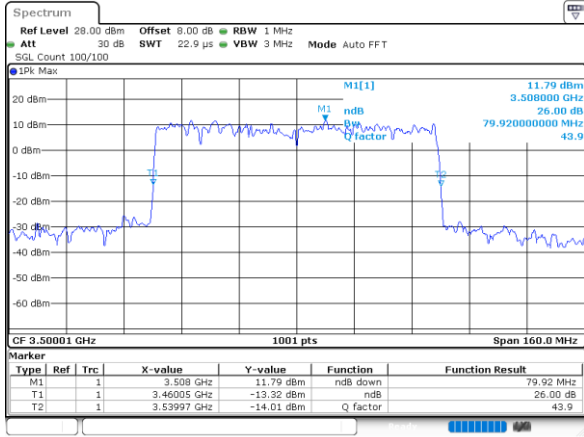
FR1 UL-MIMO n77 / 80MHz / CP-OFDM (Port 2)

QPSK

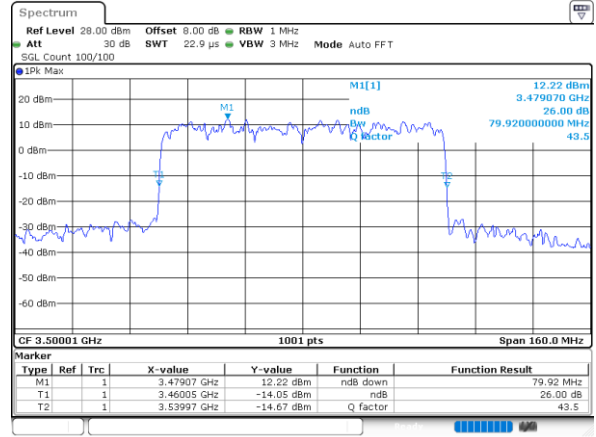
16QAM

Middle Channel

Middle Channel



Date: 29\_AUG.2021 01:26:25



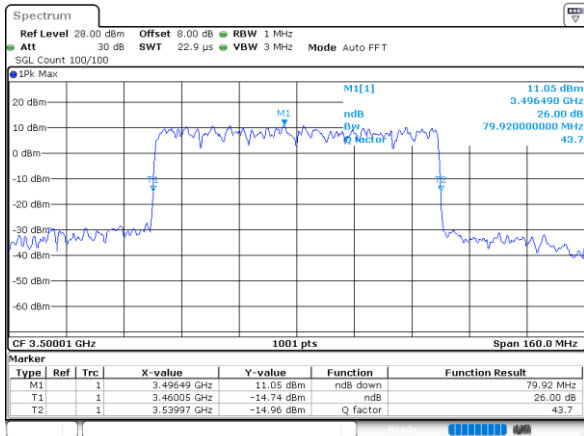
Date: 29\_AUG.2021 01:26:40

64QAM

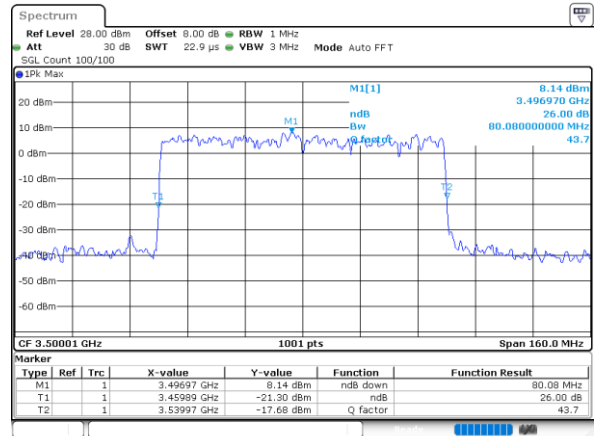
256QAM

Middle Channel

Middle Channel



Date: 29\_AUG.2021 01:26:55



Date: 29\_AUG.2021 01:27:08

