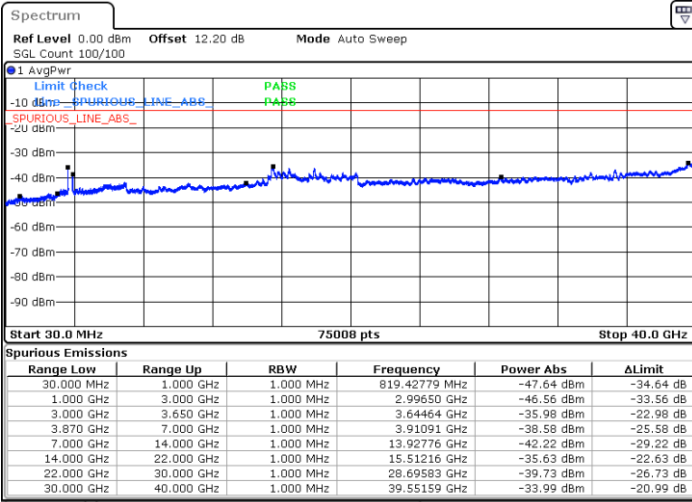




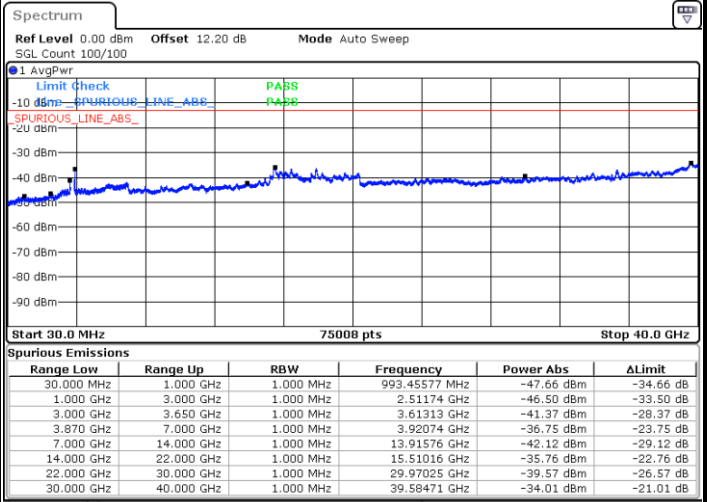
FR1 n78 / 50MHz / DFT-S OFDM / BPSK

Lowest Channel / 1RB

Middle Channel / 1RB

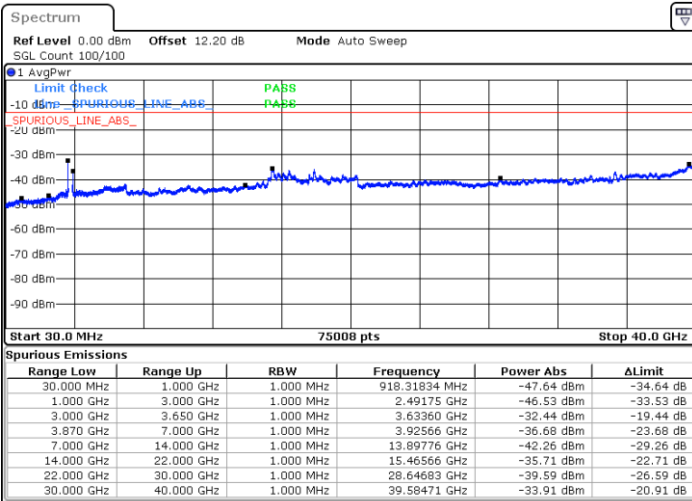


Date: 30.JAN.2021 02:48:18



Date: 30.JAN.2021 02:56:24

Highest Channel / 1RB



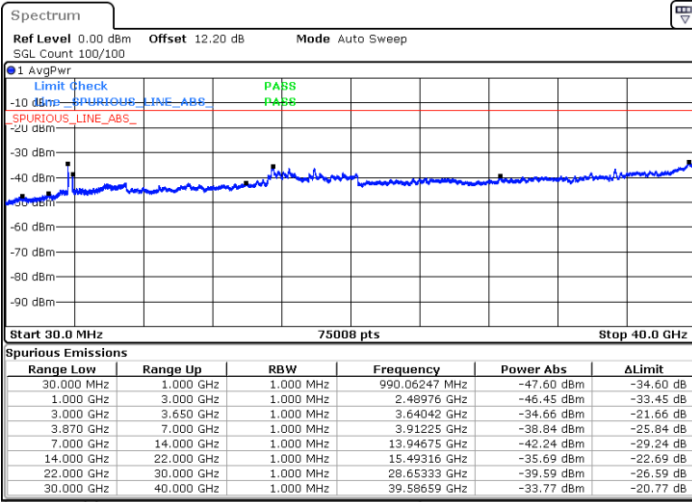
Date: 30.JAN.2021 03:00:11



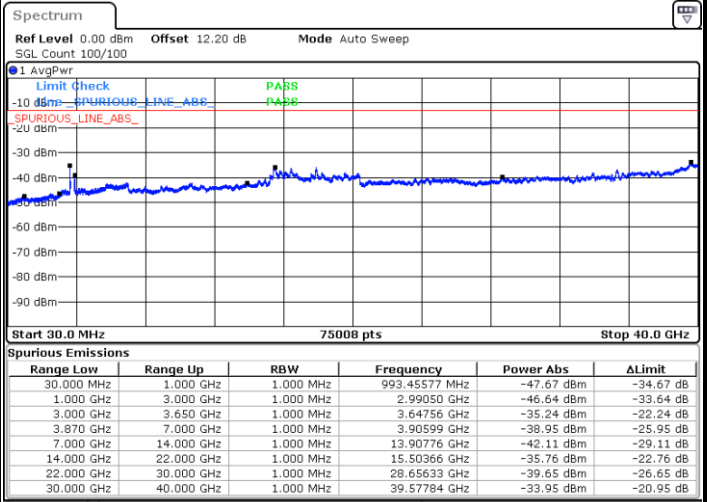
FR1 n78 / 50MHz / DFT-S OFDM / QPSK

Lowest Channel / 1RB

Middle Channel / 1RB

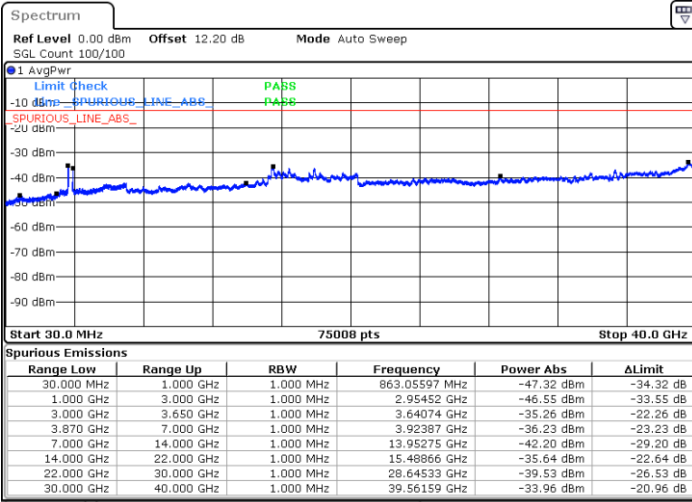


Date: 30.JAN.2021 02:49:34



Date: 30.JAN.2021 02:52:10

Highest Channel / 1RB

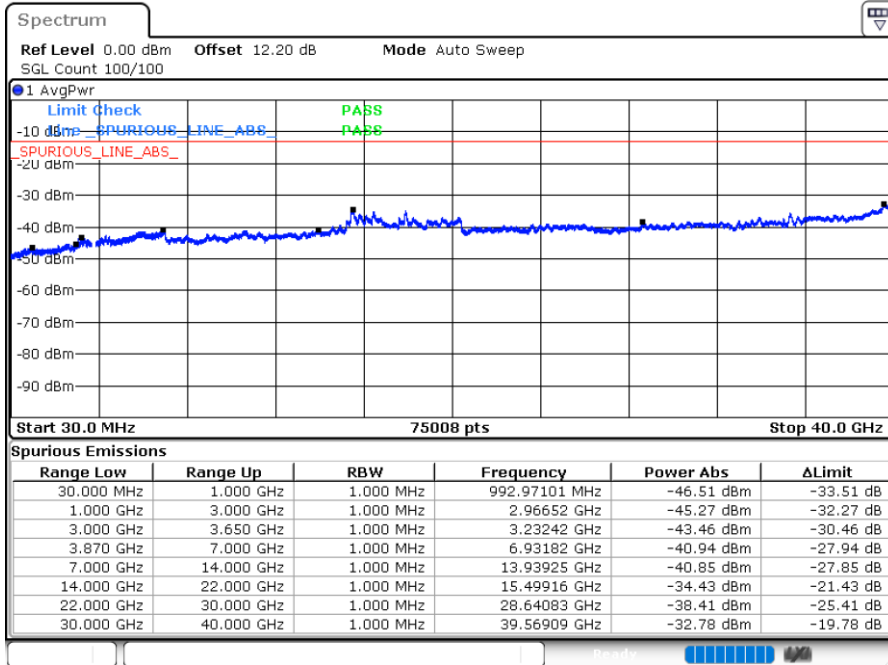


Date: 30.JAN.2021 03:01:30



FR1 n78 / 100MHz / DFT-S OFDM / BPSK

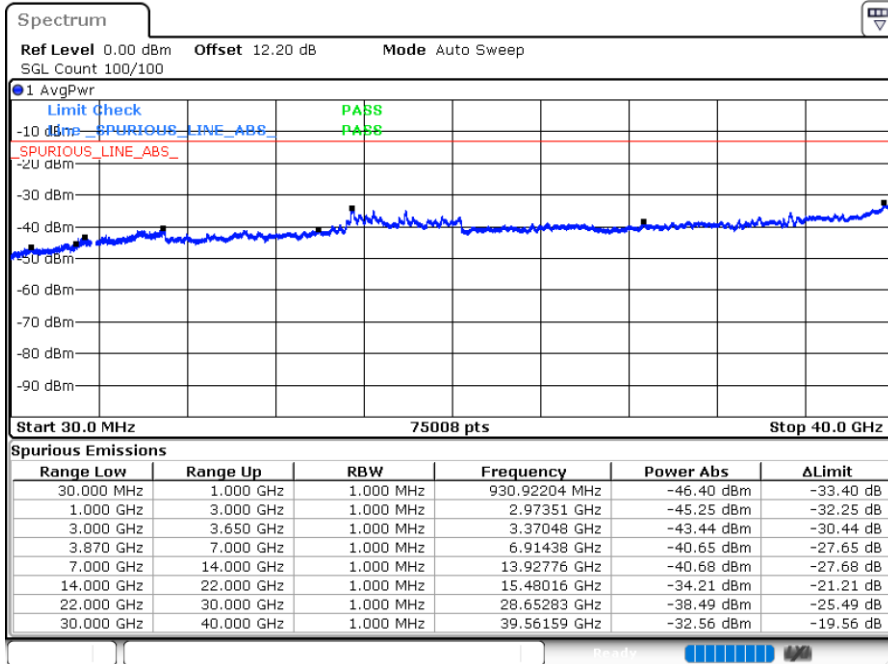
Middle Channel / 1RB



Date: 11.FEB.2021 00:25:07

FR1 n78 / 100MHz / DFT-S OFDM / QPSK

Middle Channel / 1RB



Date: 11.FEB.2021 00:26:24



Frequency Stability

| Test Conditions | | NR n78 (BPSK) / Middle Channel | Limit |
|------------------|-------------------|--------------------------------|-------------|
| Temperature (°C) | Voltage (Volt) | BW 20MHz | Within Band |
| | | Deviation (ppm) | Result |
| 50 | Normal Voltage | 0.0018 | PASS |
| 40 | Normal Voltage | 0.0022 | |
| 30 | Normal Voltage | 0.0012 | |
| 20(Ref.) | Normal Voltage | 0.0013 | |
| 10 | Normal Voltage | 0.0035 | |
| 0 | Normal Voltage | 0.0012 | |
| -10 | Normal Voltage | 0.0019 | |
| -20 | Normal Voltage | 0.0025 | |
| -30 | Normal Voltage | 0.0017 | |
| 20 | Maximum Voltage | 0.0019 | |
| 20 | Normal Voltage | 0.0013 | |
| 20 | Battery End Point | 0.0018 | |

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.



5G NR n78 UL_MIMO HPUE -SCS 15K

Peak-to-Average Ratio

| Mode | FR1 UL-MIMO n78 / 20MHz / CP-OFDM (M2) | | | | |
|------------|--|---------|--|--|-------------|
| Mod. | QPSK | QPSK | | | Limit: 13dB |
| RB Size | 1RB | Full RB | | | Result |
| Lowest CH | 6.58 | 8.46 | | | PASS |
| Middle CH | 6.58 | 8.38 | | | |
| Highest CH | 6.52 | 8.38 | | | |

| Mode | FR1 UL-MIMO n78 / 20MHz / CP-OFDM (M) | | | | |
|------------|---------------------------------------|---------|--|--|-------------|
| Mod. | QPSK | QPSK | | | Limit: 13dB |
| RB Size | 1RB | Full RB | | | Result |
| Lowest CH | 6.36 | 8.32 | | | PASS |
| Middle CH | 7.30 | 8.26 | | | |
| Highest CH | 7.30 | 8.09 | | | |



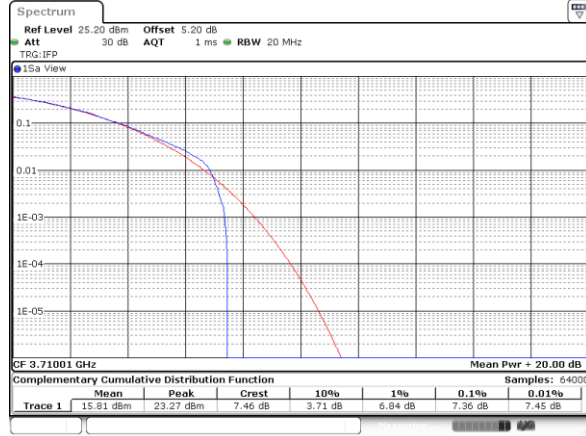
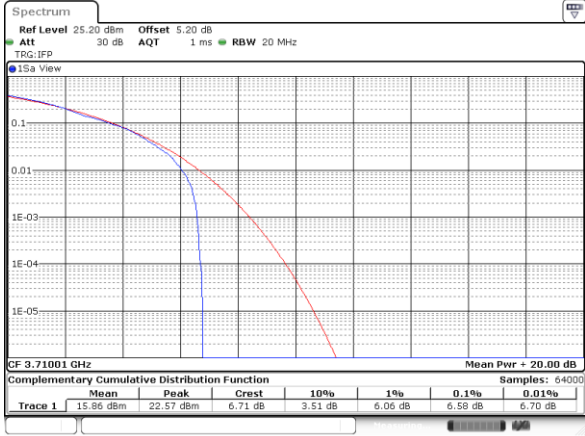
FR1 UL-MIMO n78 / 20MHz / CP-OFDM

QPSK(M2)

QPSK(M)

Lowest Channel / 1RB

Lowest Channel / 1RB

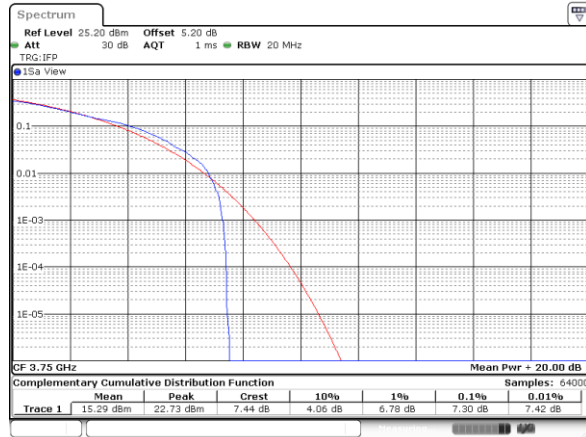
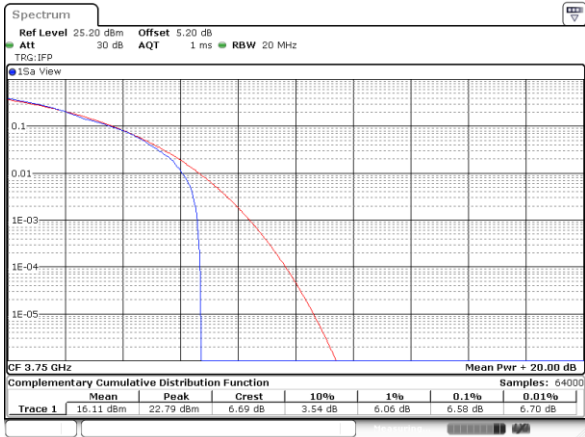


Date: 4.FEB.2021 21:09:37

Date: 3.FEB.2021 06:37:49

Middle Channel / 1 RB

Middle Channel / 1 RB

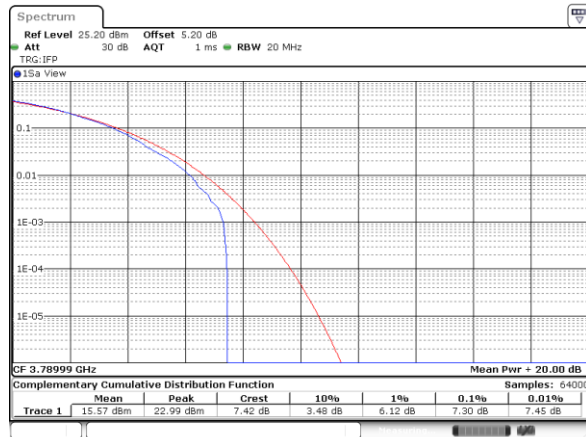
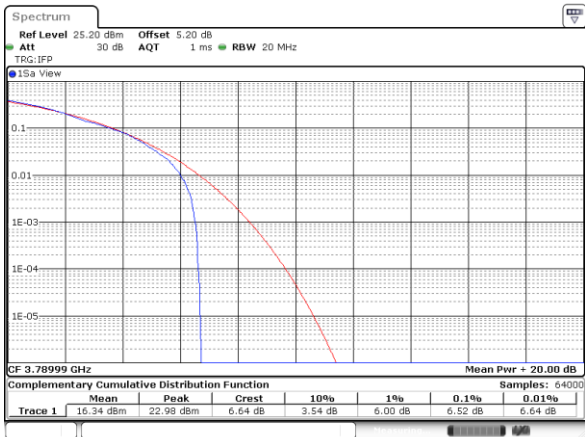


Date: 4.FEB.2021 21:08:17

Date: 3.FEB.2021 06:15:35

Highest Channel / 1 RB

Highest Channel / 1 RB



Date: 4.FEB.2021 21:49:05

Date: 3.FEB.2021 06:41:55



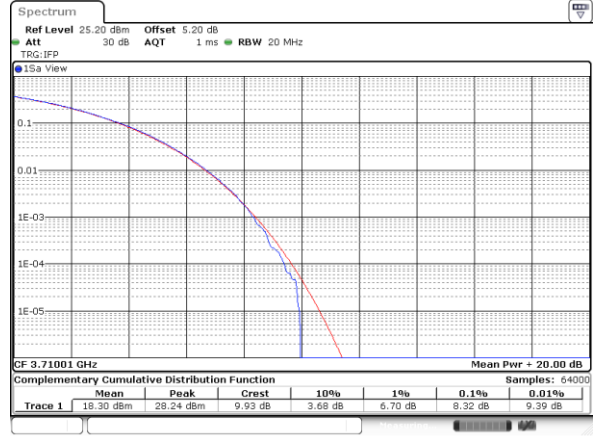
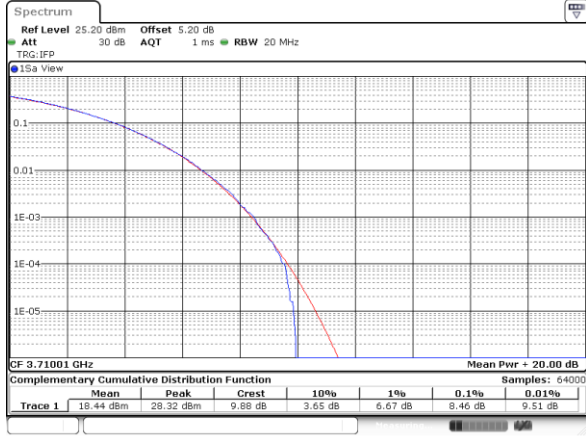
FR1 UL-MIMO n78 / 20MHz / CP-OFDM

QPSK(M2)

QPSK(M)

Lowest Channel / Full RB

Lowest Channel / Full RB

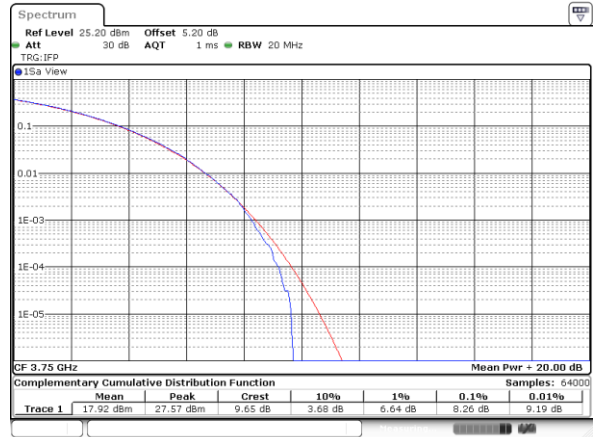
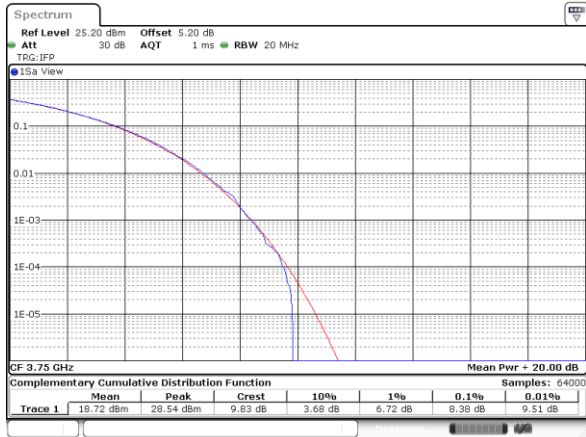


Date: 4.FEB.2021 21:13:38

Date: 3.FEB.2021 06:37:03

Middle Channel / Full RB

Middle Channel / Full RB

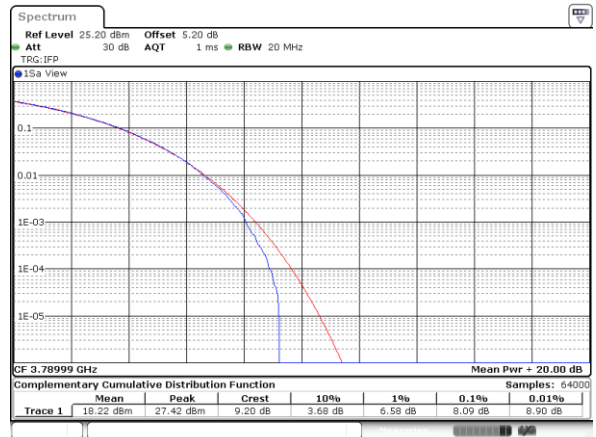
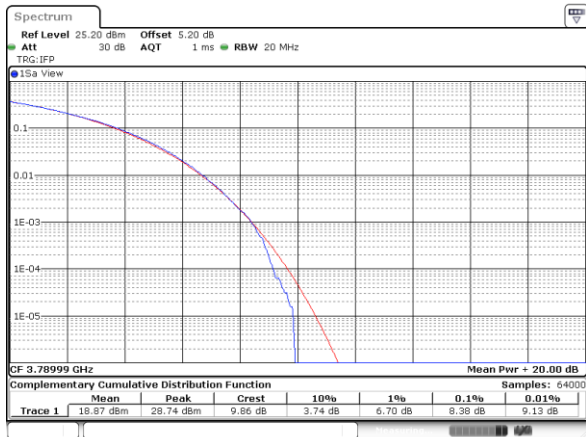


Date: 4.FEB.2021 21:05:21

Date: 3.FEB.2021 06:13:32

Highest Channel / Full RB

Highest Channel / Full RB



Date: 4.FEB.2021 21:48:40

Date: 3.FEB.2021 06:42:50



26dB Bandwidth

| Mode | FR1 UL-MIMO n78 : 26dB BW(MHz) / CP-OFDM | | | | | | | |
|-----------|--|-------|-------|--------|-------|-------|-------|--------|
| | M2 | | | | M | | | |
| BW | 10MHz | 10MHz | 10MHz | 10MHz | 10MHz | 10MHz | 10MHz | 10MHz |
| Mod. | QPSK | 16QAM | 64QAM | 256QAM | QPSK | 16QAM | 64QAM | 256QAM |
| Middle CH | 9.69 | 9.65 | 9.77 | 9.69 | 9.71 | 9.67 | 9.75 | 9.75 |

| Mode | FR1 UL-MIMO n78 : 26dB BW(MHz) / CP-OFDM | | | | | | | |
|-----------|--|-------|-------|--------|-------|-------|-------|--------|
| | M2 | | | | M | | | |
| BW | 15MHz | 15MHz | 15MHz | 15MHz | 15MHz | 15MHz | 15MHz | 15MHz |
| Mod. | QPSK | 16QAM | 64QAM | 256QAM | QPSK | 16QAM | 64QAM | 256QAM |
| Middle CH | 14.83 | 14.86 | 14.83 | 14.83 | 14.92 | 14.83 | 14.80 | 14.86 |

| Mode | FR1 UL-MIMO n78 : 26dB BW(MHz) / CP-OFDM | | | | | | | |
|-----------|--|-------|-------|--------|-------|-------|-------|--------|
| | M2 | | | | M | | | |
| BW | 20MHz | 20MHz | 20MHz | 20MHz | 20MHz | 20MHz | 20MHz | 20MHz |
| Mod. | QPSK | 16QAM | 64QAM | 256QAM | QPSK | 16QAM | 64QAM | 256QAM |
| Middle CH | 19.66 | 19.7 | 19.74 | 19.94 | 19.74 | 19.7 | 19.94 | 19.7 |



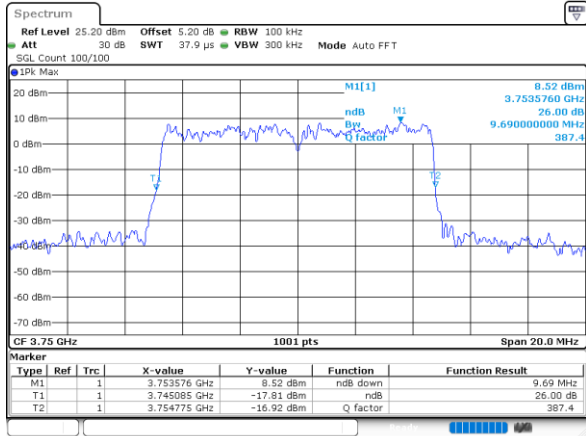
FR1 UL-MIMO n78 / 10MHz / CP-OFDM (M2)

QPSK

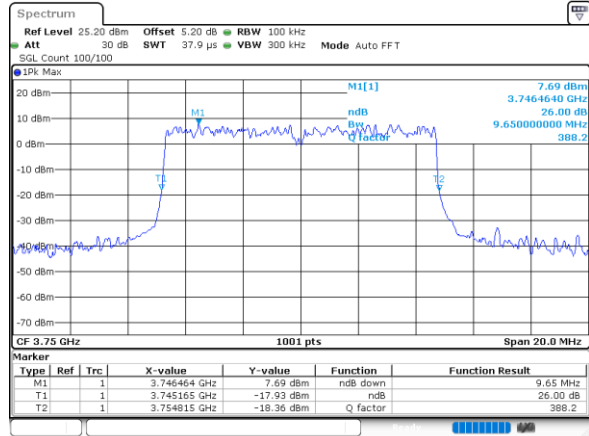
16QAM

Middle Channel

Middle Channel



Date: 4.FEB.2021 22:58:20



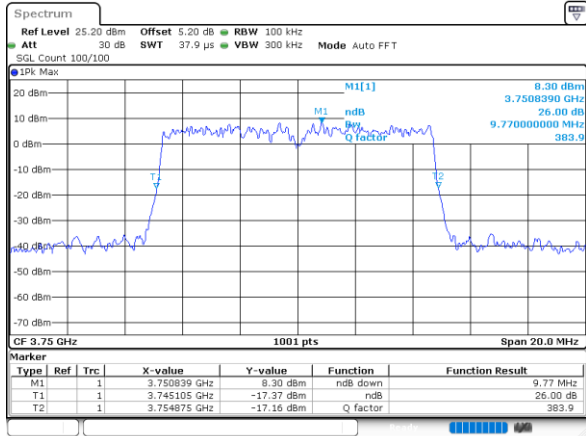
Date: 4.FEB.2021 22:58:37

64QAM

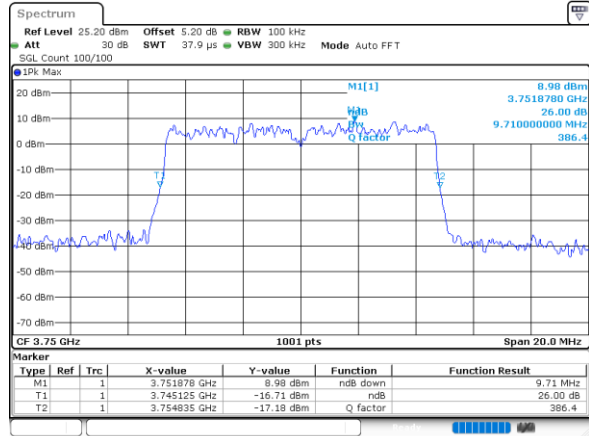
256QAM

Middle Channel

Middle Channel



Date: 5.FEB.2021 08:23:24



Date: 5.FEB.2021 08:23:53



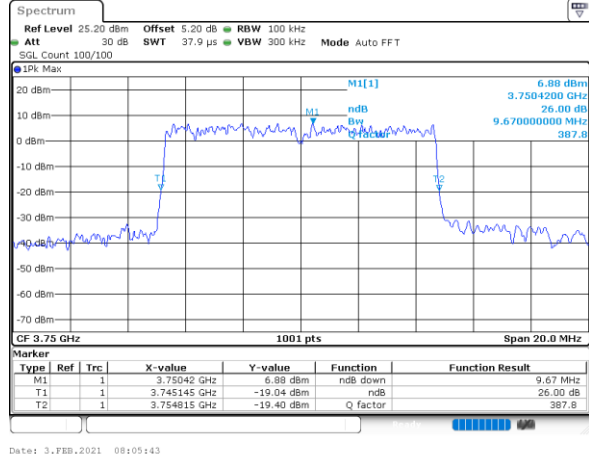
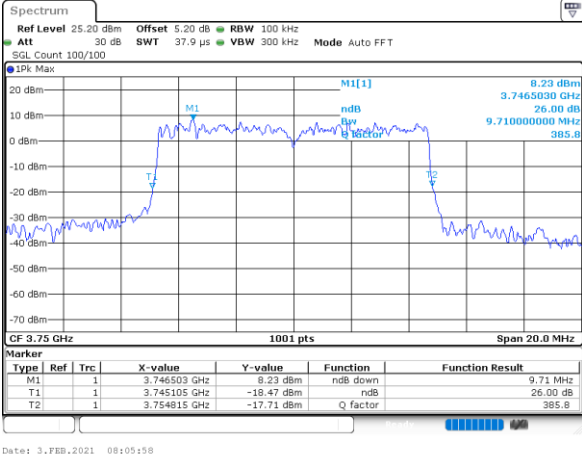
FR1 UL-MIMO n78 / 10MHz / CP-OFDM (M)

QPSK

16QAM

Middle Channel

Middle Channel

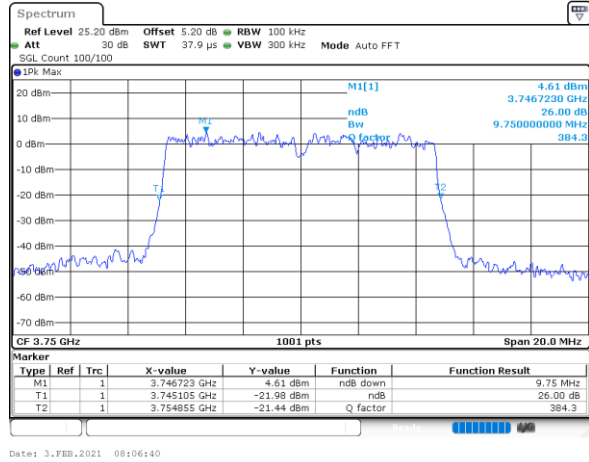
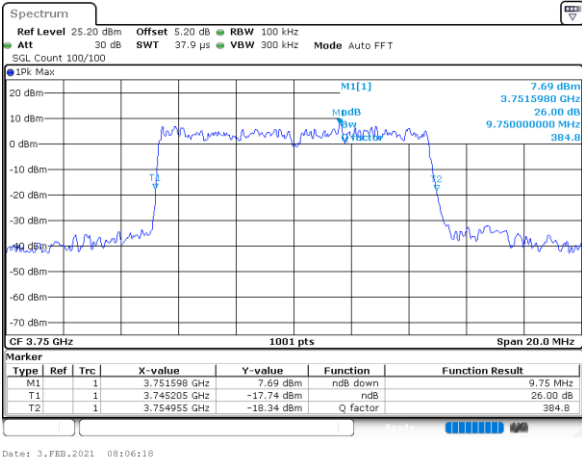


64QAM

256QAM

Middle Channel

Middle Channel





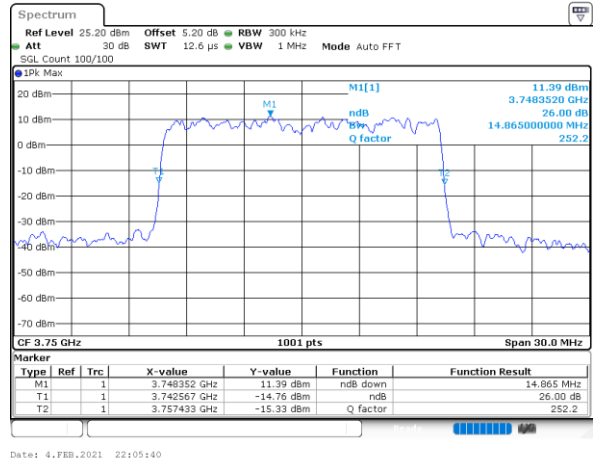
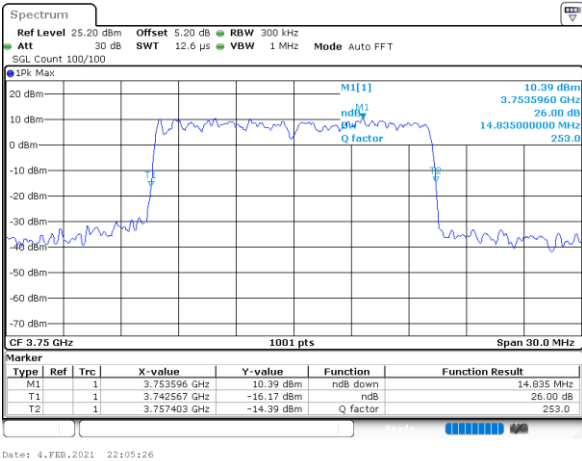
FR1 UL-MIMO n78 / 15MHz / CP-OFDM (M2)

QPSK

16QAM

Middle Channel

Middle Channel

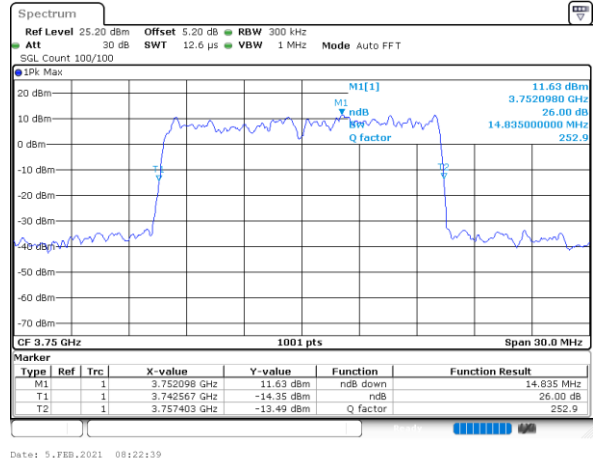
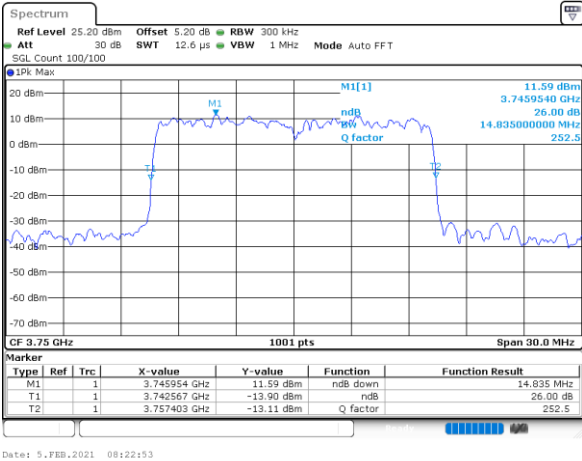


64QAM

256QAM

Middle Channel

Middle Channel





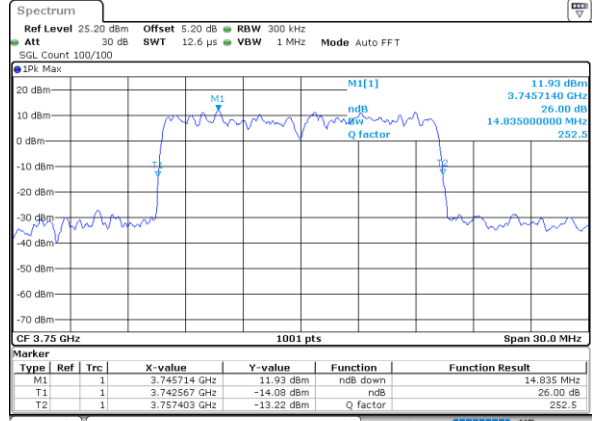
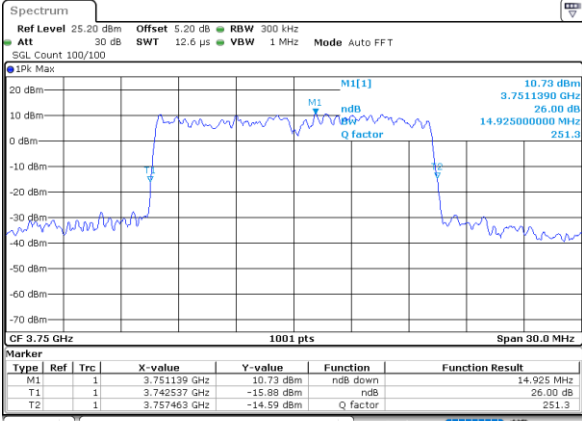
FR1 UL-MIMO n78 / 15MHz / CP-OFDM (M)

QPSK

16QAM

Middle Channel

Middle Channel



Date: 3.FEB.2021 07:50:17

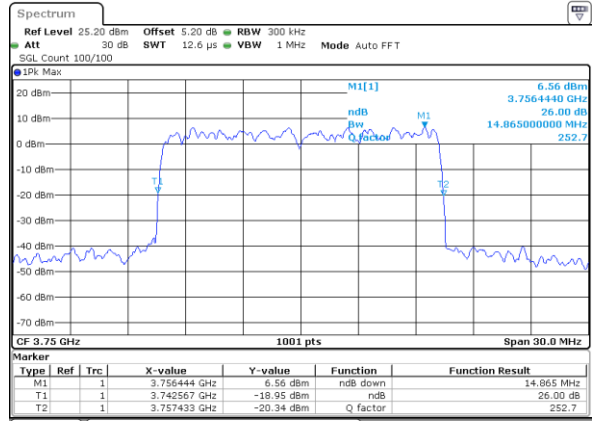
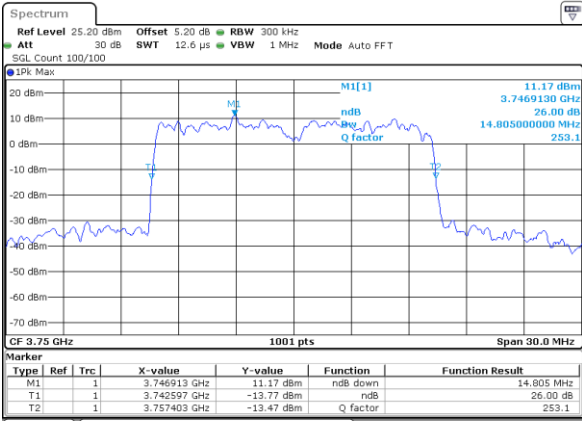
Date: 3.FEB.2021 07:50:28

64QAM

256QAM

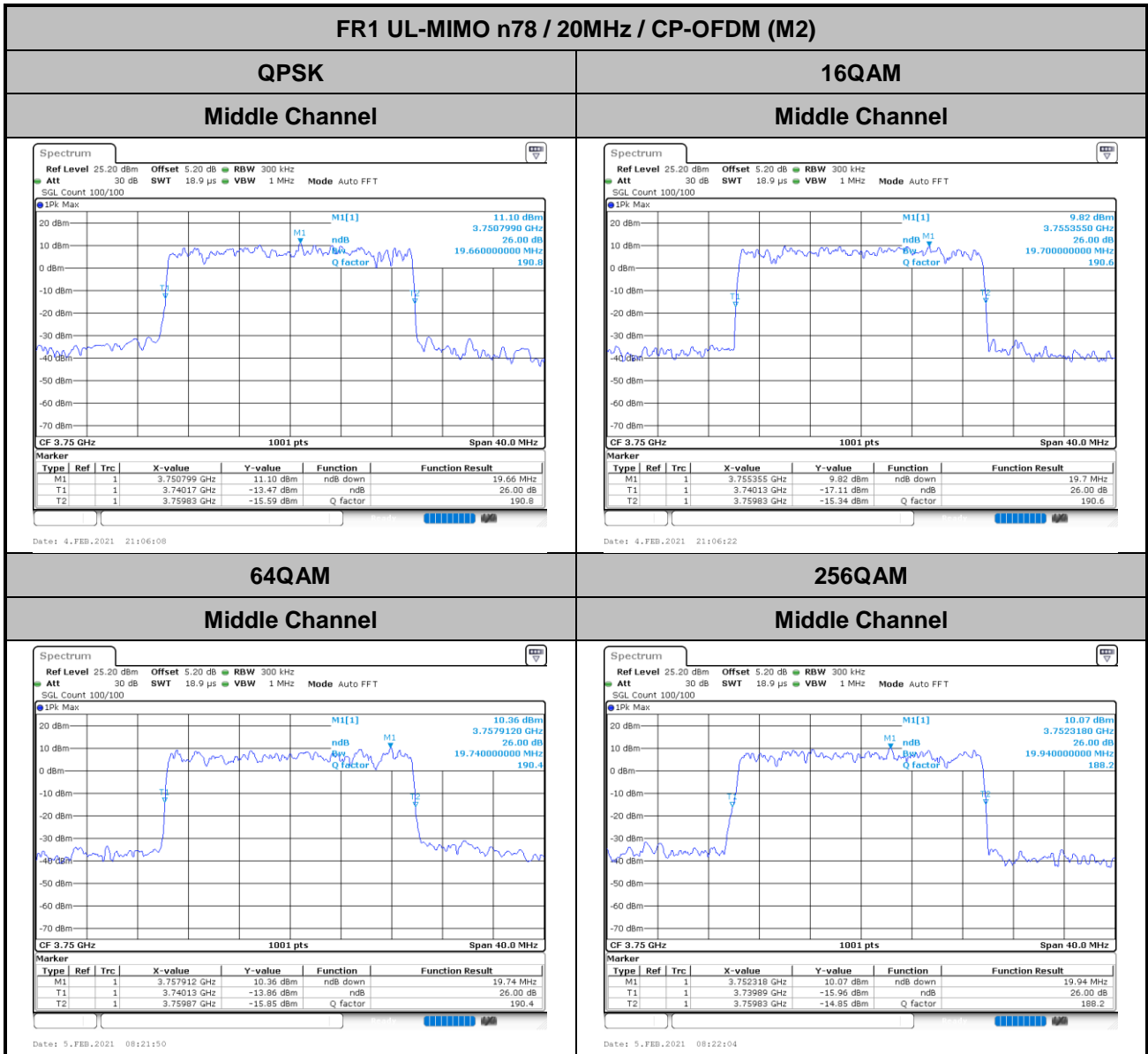
Middle Channel

Middle Channel



Date: 3.FEB.2021 07:51:08

Date: 3.FEB.2021 07:51:22





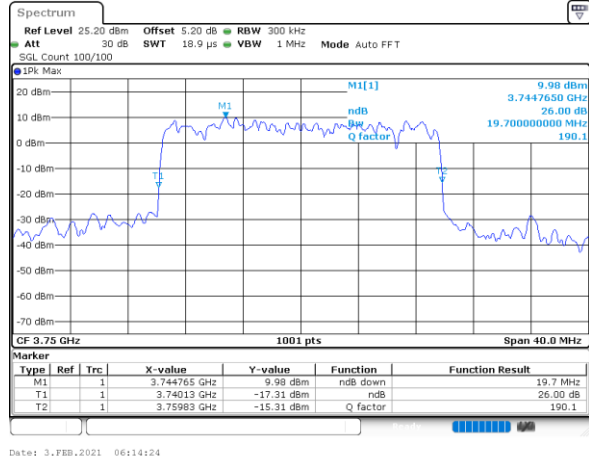
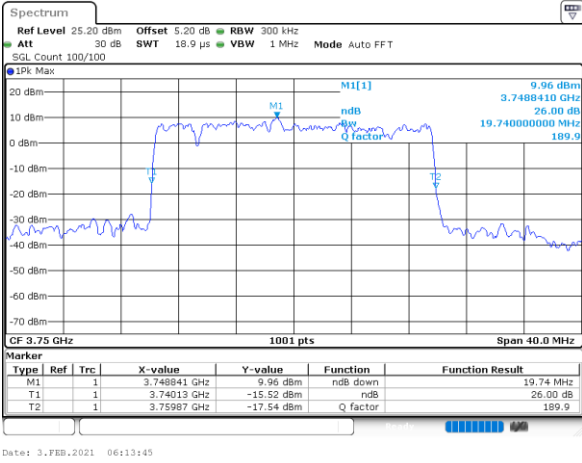
FR1 UL-MIMO n78 / 20MHz / CP-OFDM (M)

QPSK

16QAM

Middle Channel

Middle Channel



Date: 3.FEB.2021 06:13:45

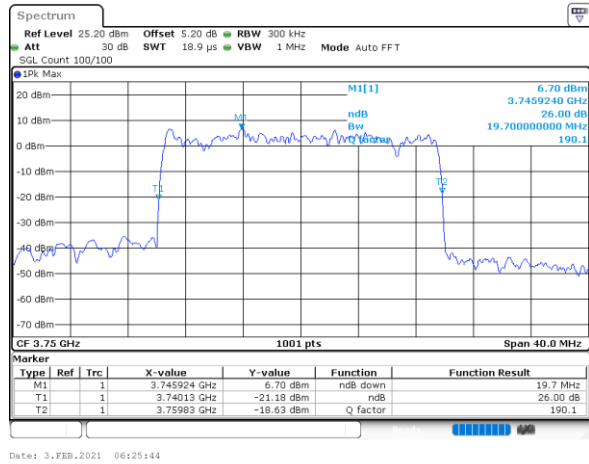
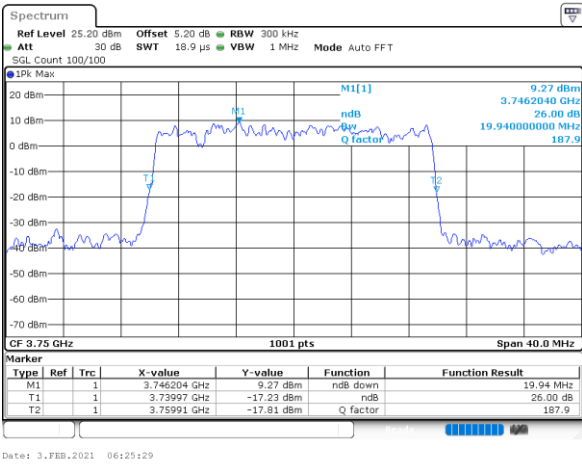
Date: 3.FEB.2021 06:14:24

64QAM

256QAM

Middle Channel

Middle Channel



Date: 3.FEB.2021 06:25:29

Date: 3.FEB.2021 06:25:44

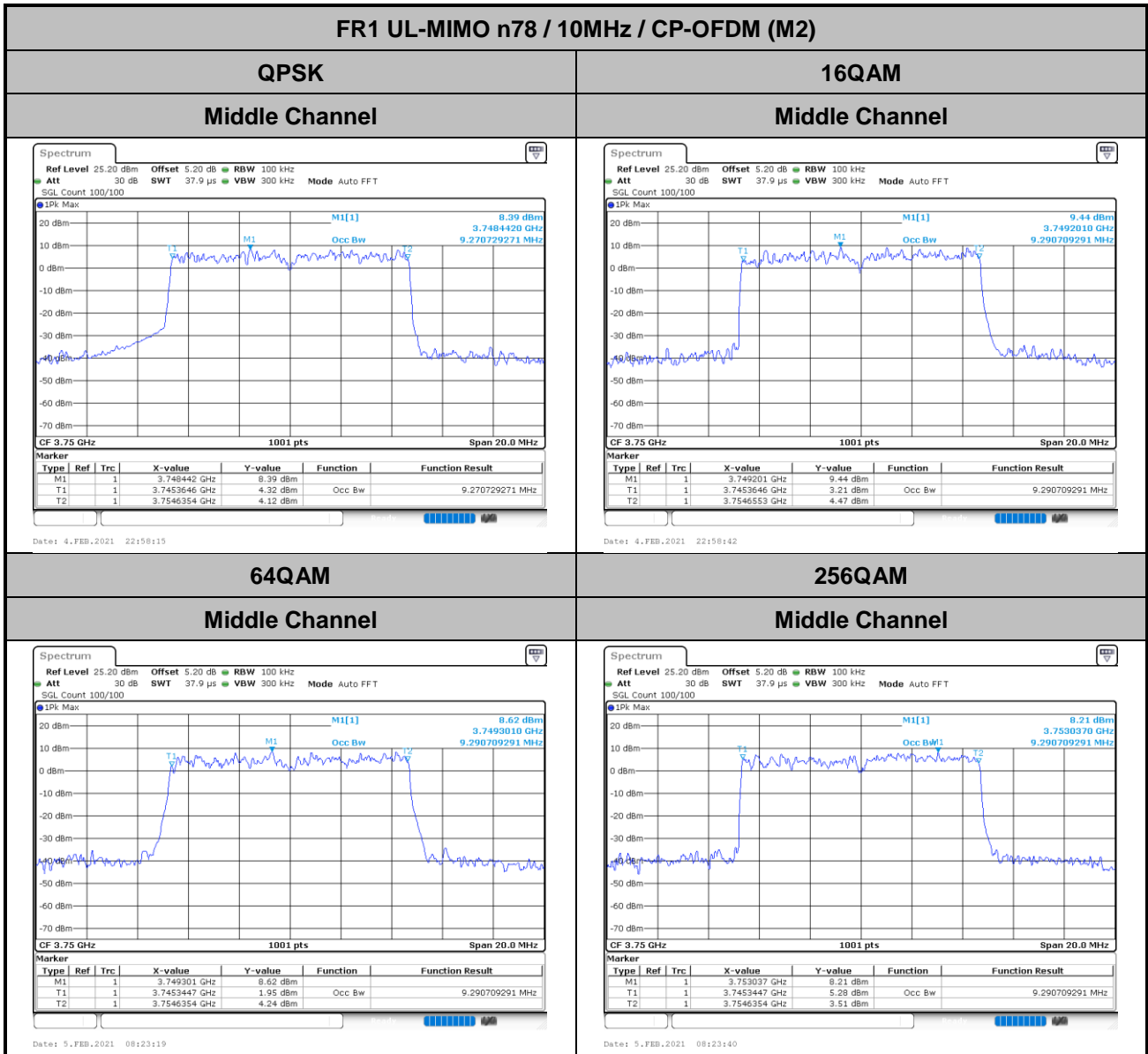


Occupied Bandwidth

| Mode | FR1 UL-MIMO n78 : OBW(MHz) / CP-OFDM | | | | | | | |
|-----------|--------------------------------------|-------|-------|--------|-------|-------|-------|--------|
| | M2 | | | | M | | | |
| BW | 10MHz | 10MHz | 10MHz | 10MHz | 10MHz | 10MHz | 10MHz | 10MHz |
| Mod. | QPSK | 16QAM | 64QAM | 256QAM | QPSK | 16QAM | 64QAM | 256QAM |
| Middle CH | 9.27 | 9.29 | 9.29 | 9.29 | 9.27 | 9.29 | 9.29 | 9.31 |

| Mode | FR1 UL-MIMO n78 : OBW(MHz) / CP-OFDM | | | | | | | |
|-----------|--------------------------------------|-------|-------|--------|-------|-------|-------|--------|
| | M2 | | | | M | | | |
| BW | 15MHz | 15MHz | 15MHz | 15MHz | 15MHz | 15MHz | 15MHz | 15MHz |
| Mod. | QPSK | 16QAM | 64QAM | 256QAM | QPSK | 16QAM | 64QAM | 256QAM |
| Middle CH | 14.15 | 14.18 | 14.15 | 14.15 | 14.18 | 14.12 | 14.15 | 14.12 |

| Mode | FR1 UL-MIMO n78 : OBW(MHz) / CP-OFDM | | | | | | | |
|-----------|--------------------------------------|-------|-------|--------|-------|-------|-------|--------|
| | M2 | | | | M | | | |
| BW | 20MHz | 20MHz | 20MHz | 20MHz | 20MHz | 20MHz | 20MHz | 20MHz |
| Mod. | QPSK | 16QAM | 64QAM | 256QAM | QPSK | 16QAM | 64QAM | 256QAM |
| Middle CH | 18.78 | 18.98 | 18.98 | 18.94 | 18.94 | 18.98 | 18.98 | 18.90 |





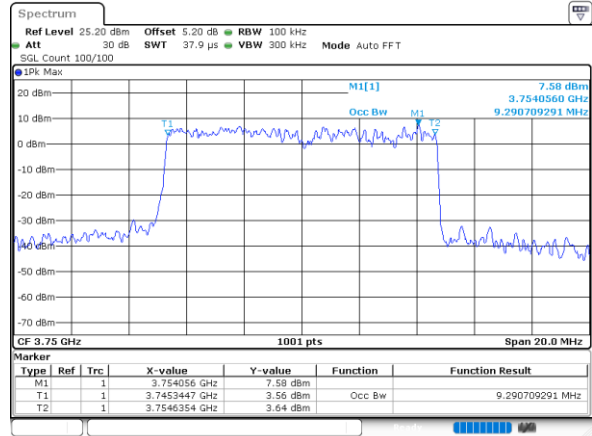
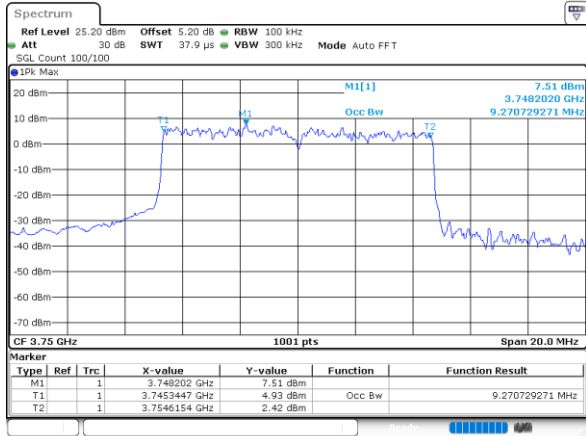
FR1 UL-MIMO n78 / 10MHz / CP-OFDM (M)

QPSK

16QAM

Middle Channel

Middle Channel



Date: 3.FEB.2021 08:05:54

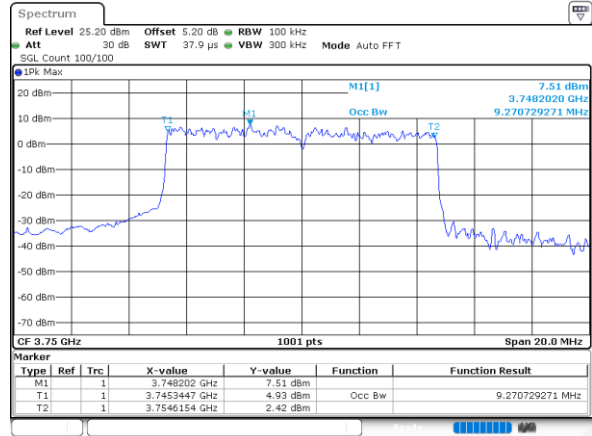
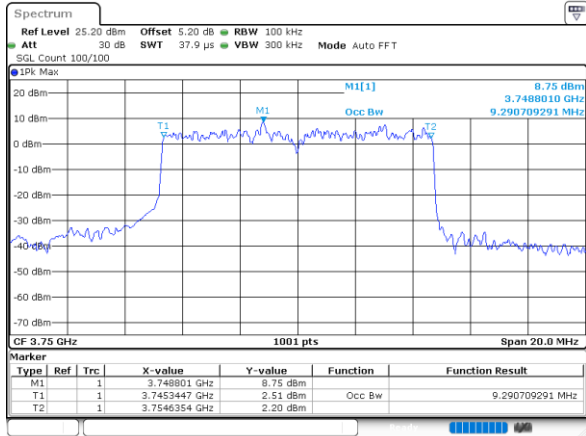
Date: 3.FEB.2021 08:05:38

64QAM

256QAM

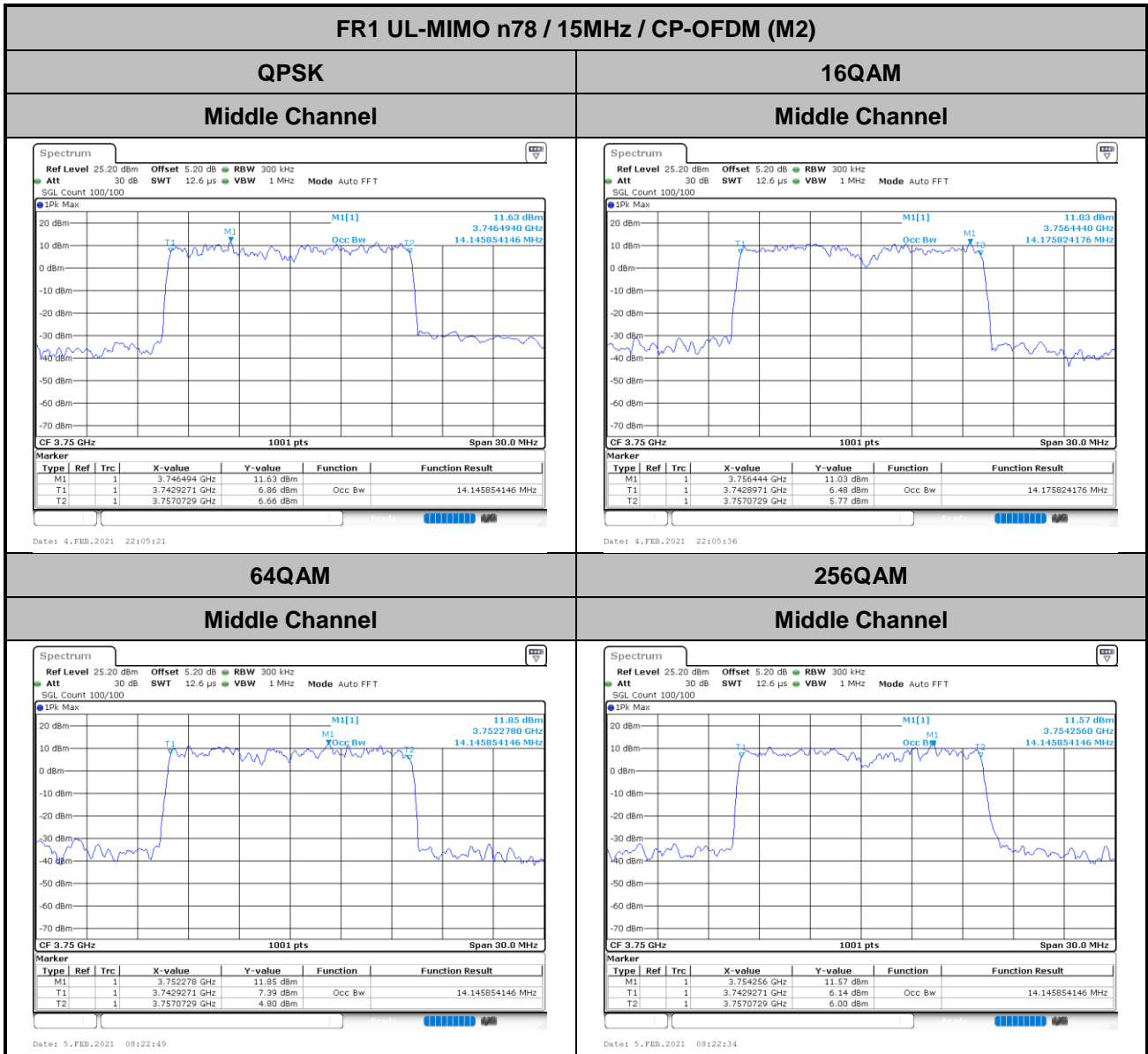
Middle Channel

Middle Channel



Date: 3.FEB.2021 08:06:09

Date: 3.FEB.2021 08:05:54





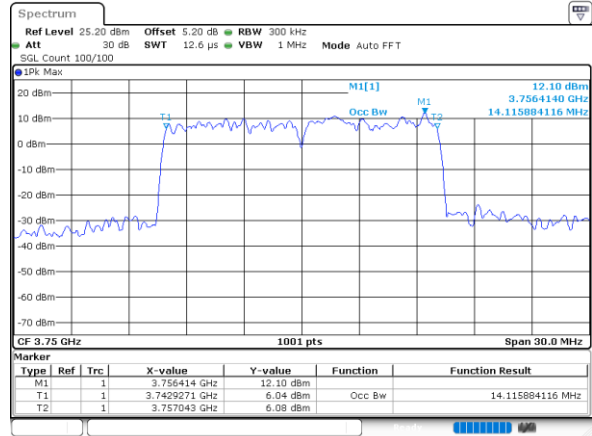
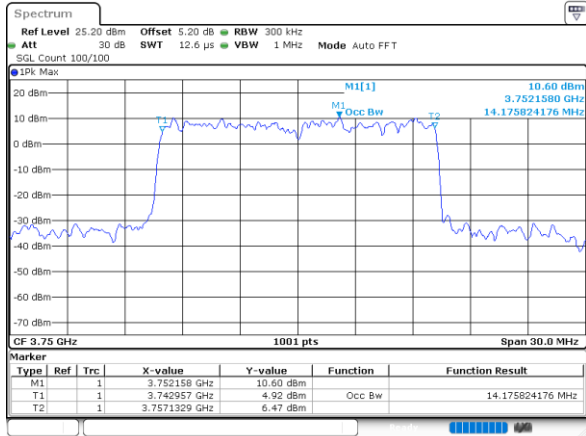
FR1 UL-MIMO n78 / 15MHz / CP-OFDM (M)

QPSK

16QAM

Middle Channel

Middle Channel



Date: 3.FEB.2021 07:50:42

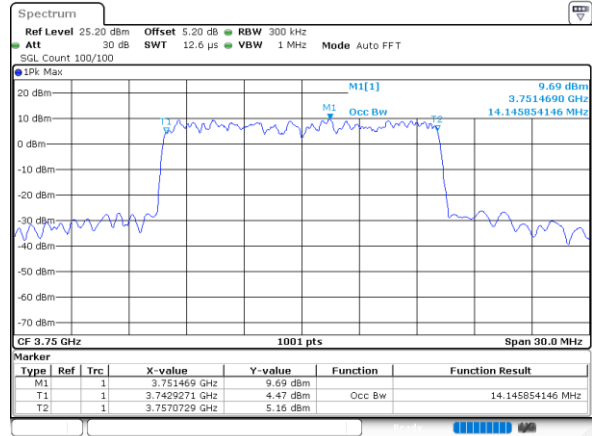
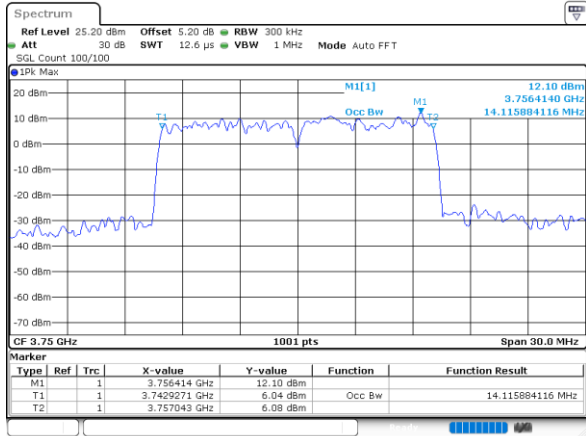
Date: 3.FEB.2021 07:50:24

64QAM

256QAM

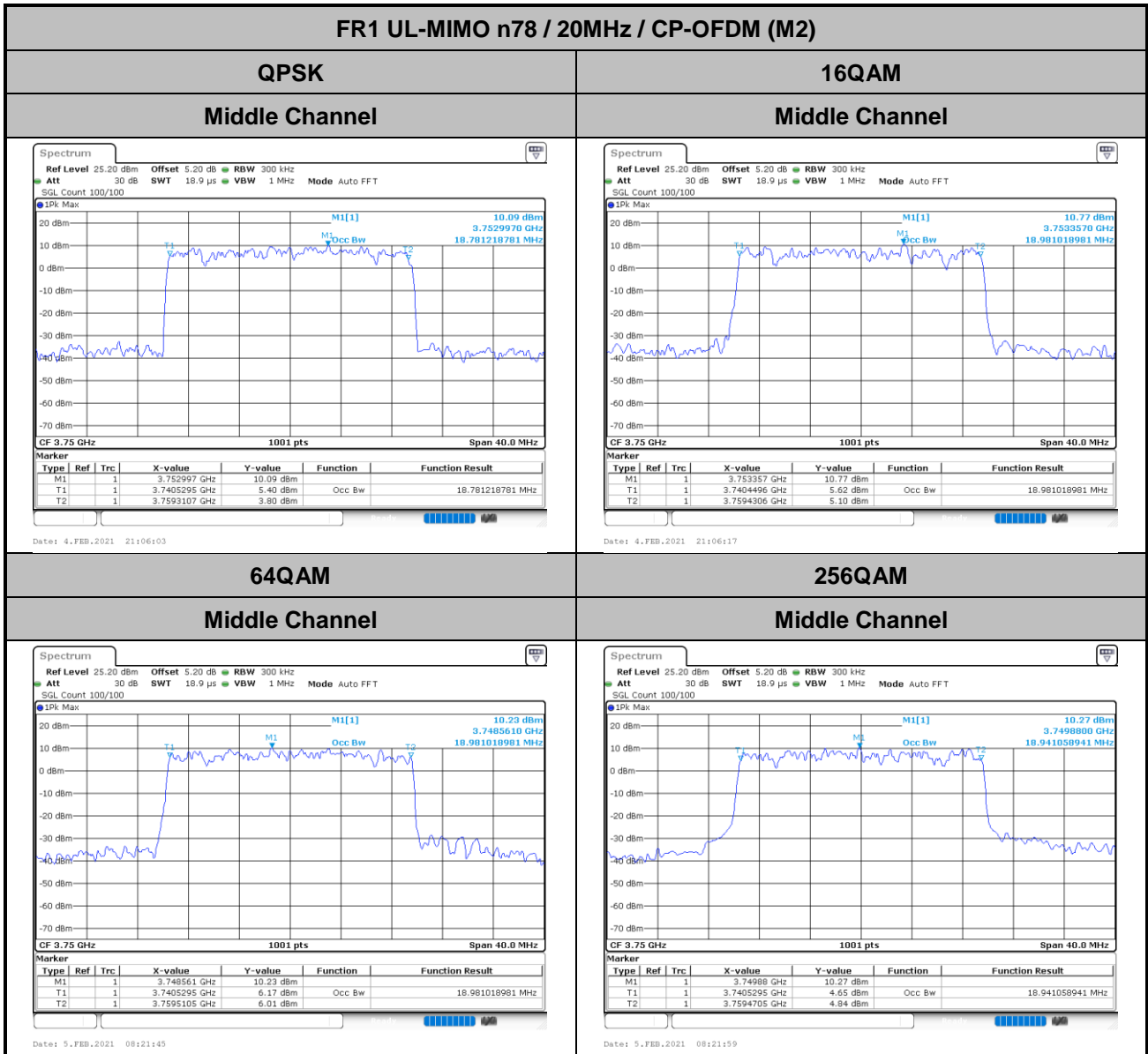
Middle Channel

Middle Channel



Date: 3.FEB.2021 07:50:24

Date: 3.FEB.2021 07:51:02





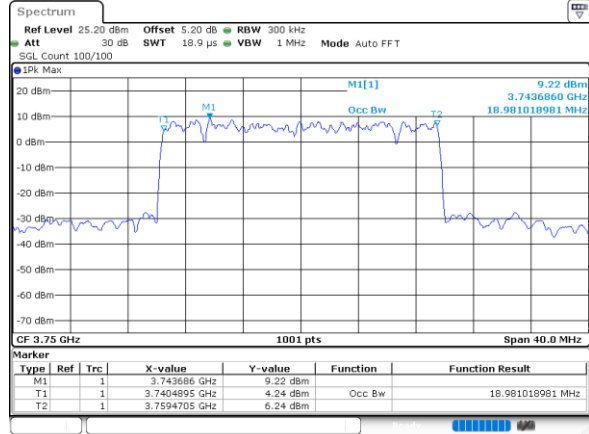
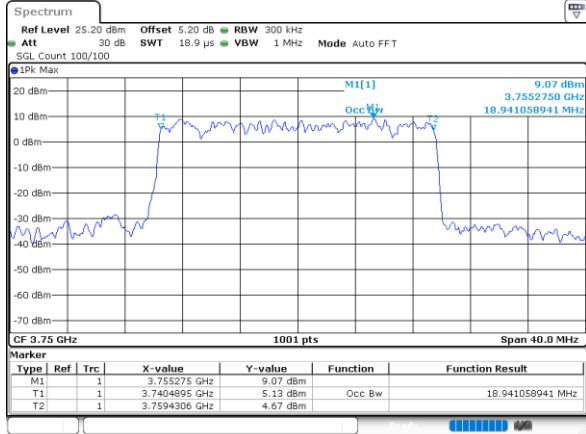
FR1 UL-MIMO n78 / 20MHz / CP-OFDM (M)

QPSK

16QAM

Middle Channel

Middle Channel



Date: 3.FEB.2021 06:13:41

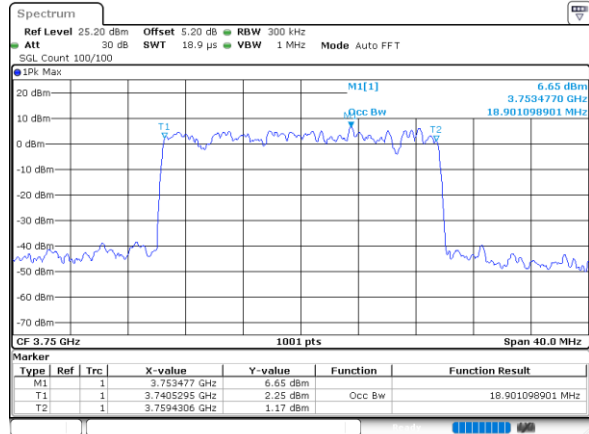
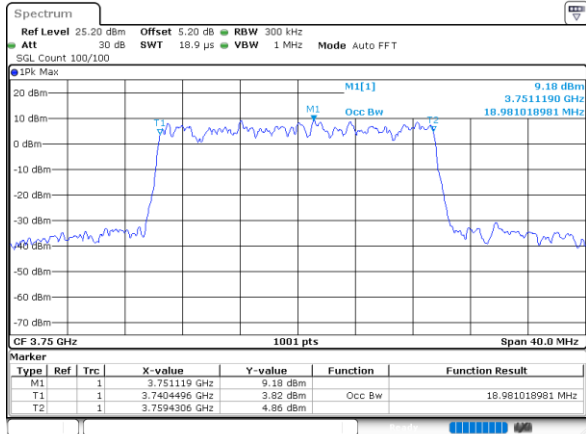
Date: 3.FEB.2021 06:14:16

64QAM

256QAM

Middle Channel

Middle Channel

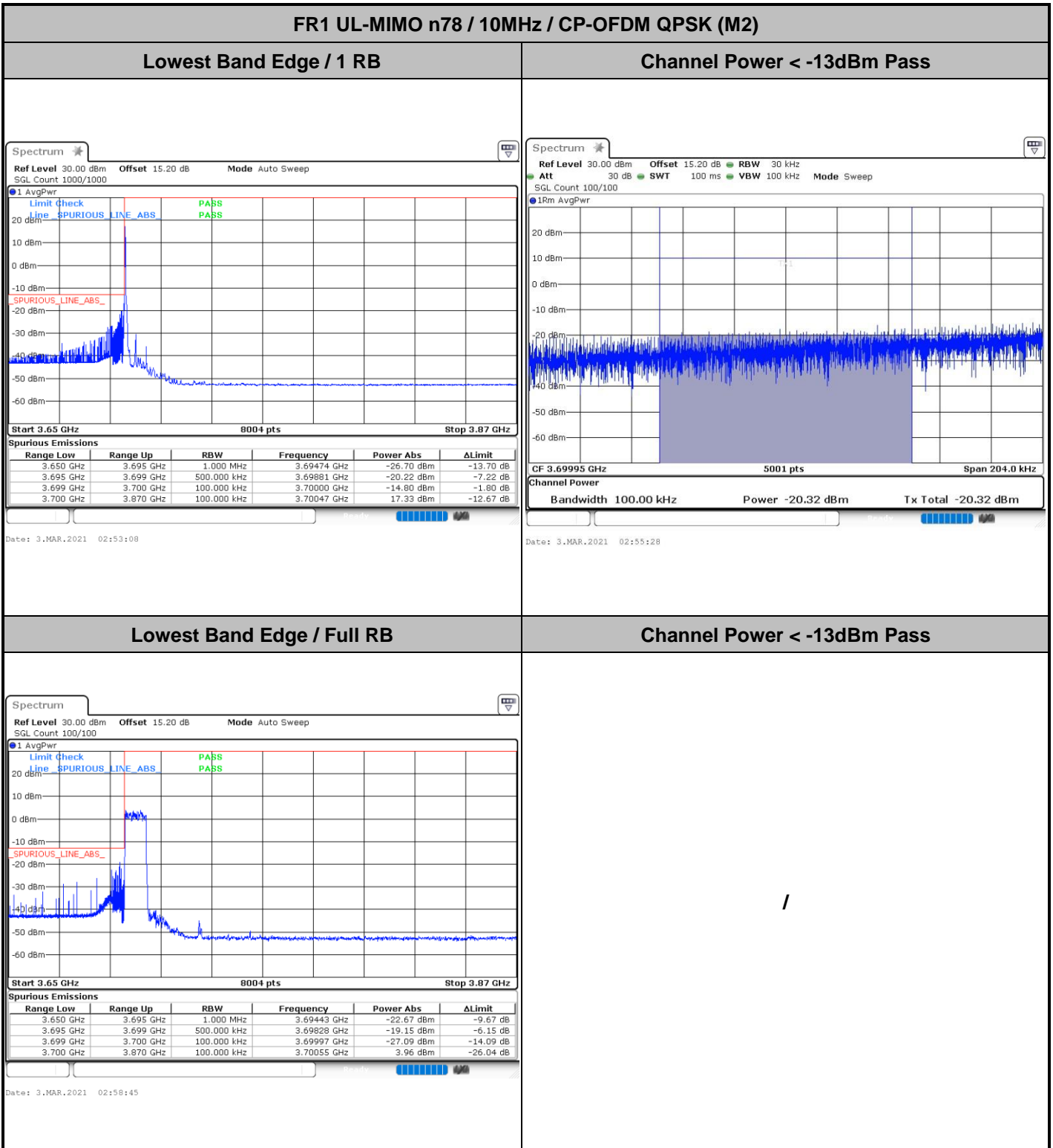


Date: 3.FEB.2021 06:25:24

Date: 3.FEB.2021 06:25:39



Conducted Band Edge

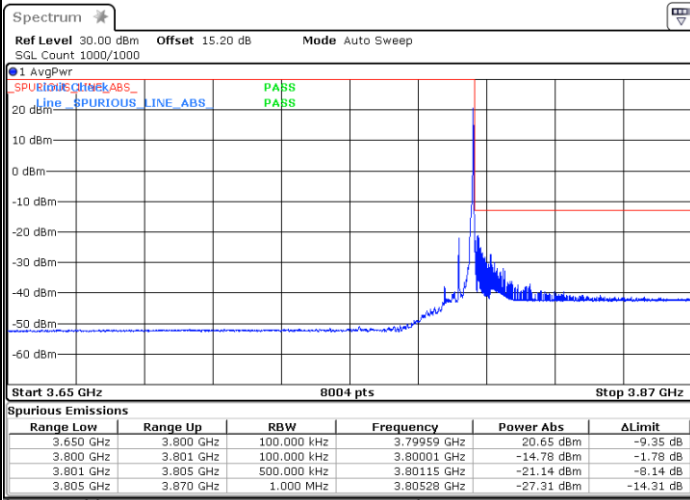




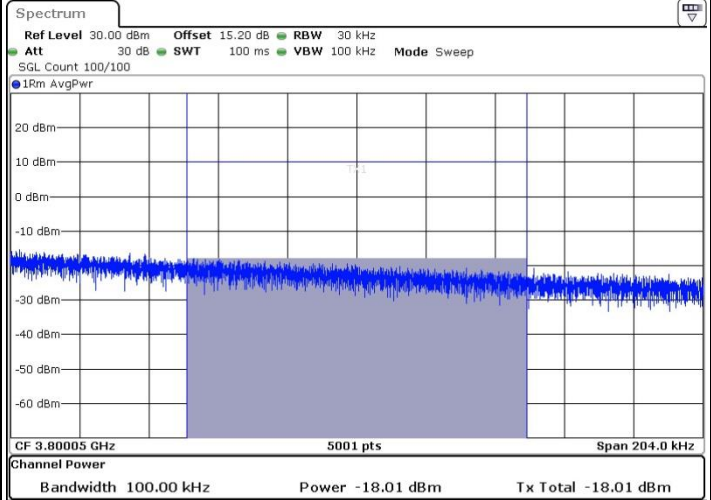
FR1 UL-MIMO n78 / 10MHz / CP-OFDM QPSK (M2)

Highest Band Edge / 1 RB

Channel Power < -13dBm Pass



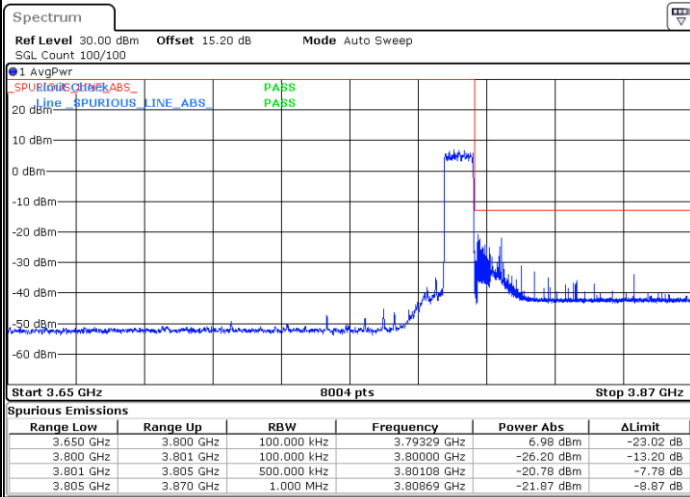
Date: 11.FEB.2021 01:53:19



Date: 11.FEB.2021 01:57:28

Highest Band Edge / Full RB

Channel Power < -13dBm Pass



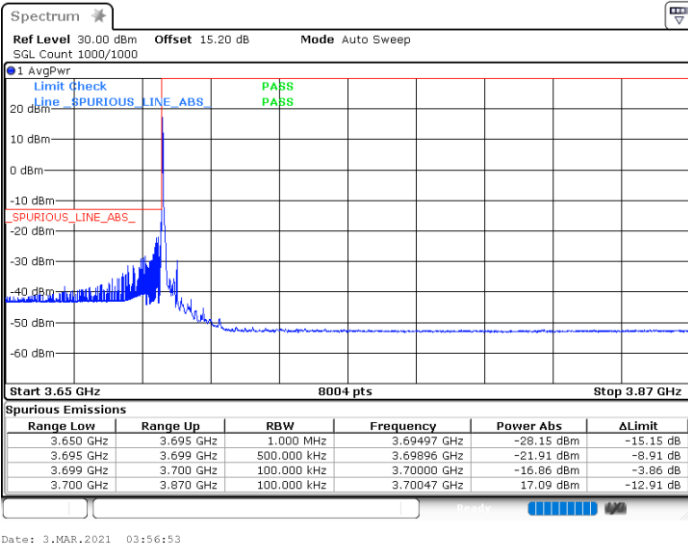
Date: 11.FEB.2021 01:51:00



FR1 UL-MIMO n78 / 10MHz / CP-OFDM QPSK (M)

Lowest Band Edge / 1 RB

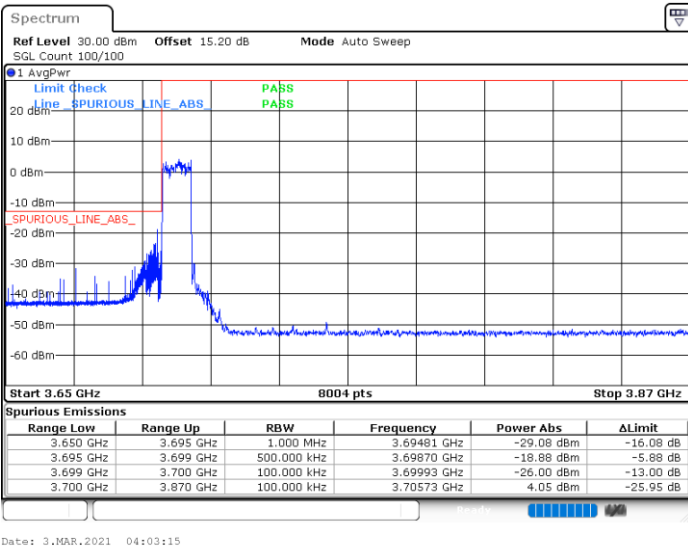
Channel Power < -13dBm Pass



/

Lowest Band Edge / Full RB

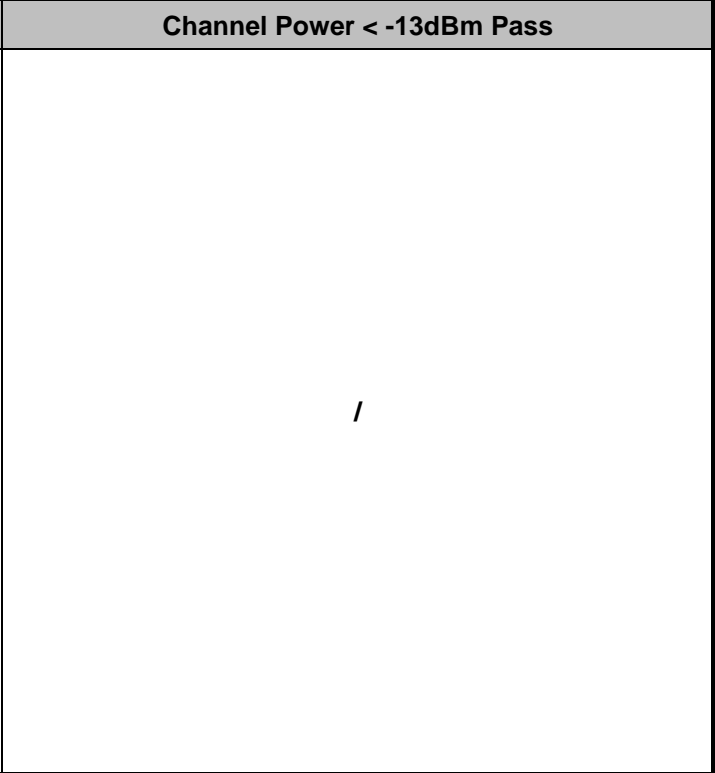
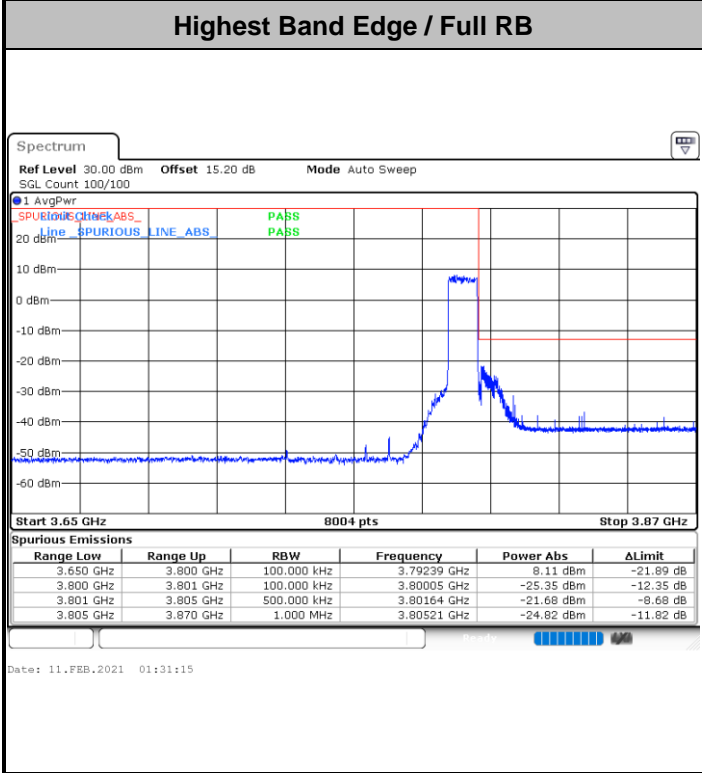
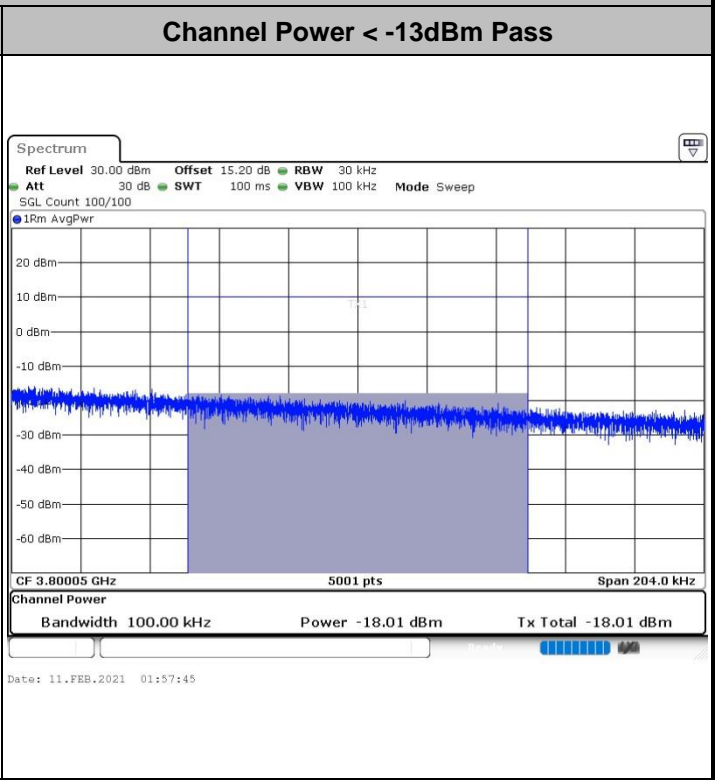
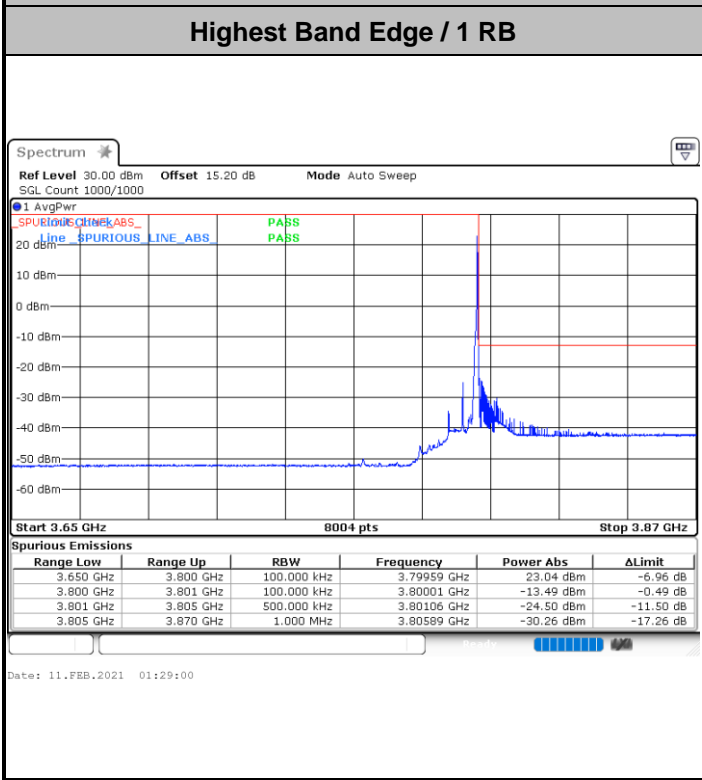
Channel Power < -13dBm Pass



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FR1 UL-MIMO n78 / 10MHz / CP-OFDM QPSK (M)

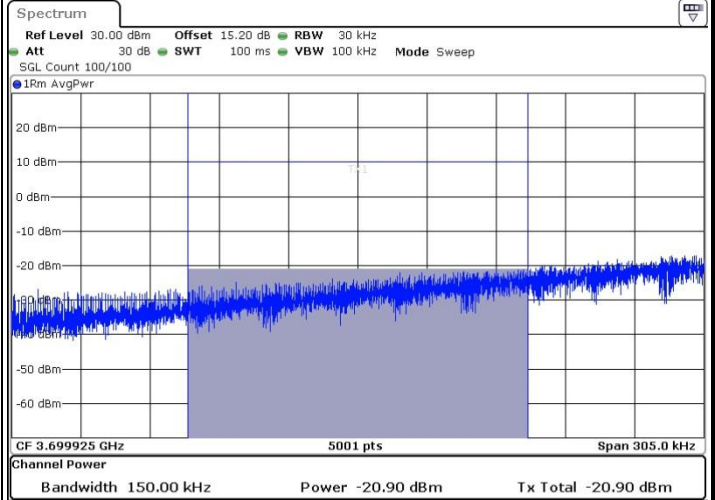
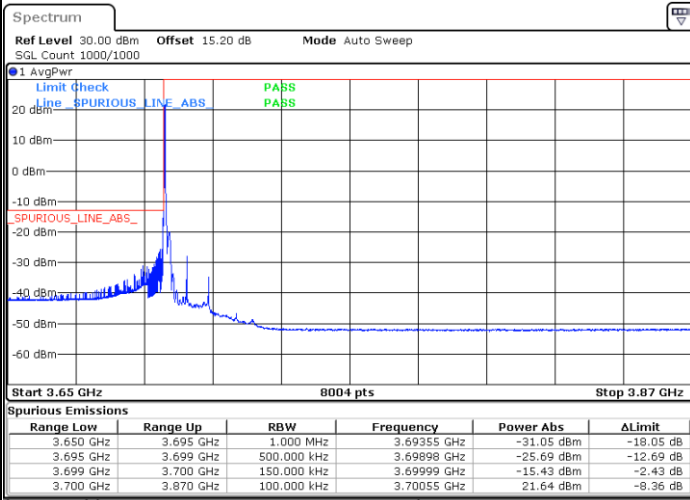




FR1 UL-MIMO n78 / 15MHz / CP-OFDM QPSK (M2)

Lowest Band Edge / 1 RB

Channel Power < -13dBm Pass

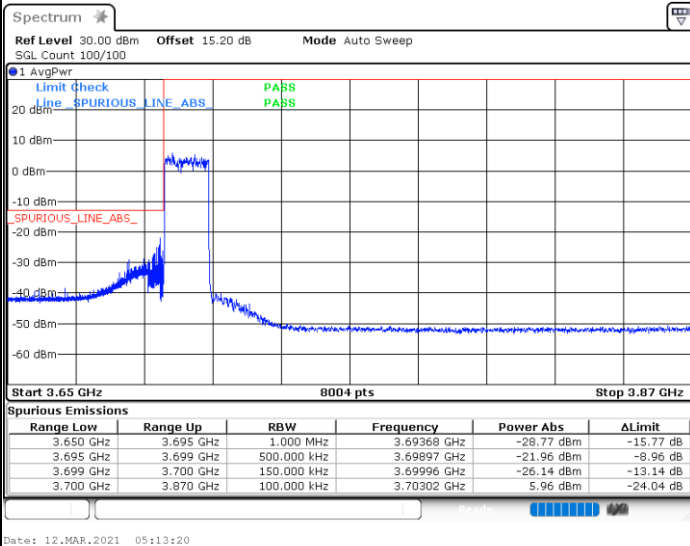


Date: 12.MAR.2021 05:16:02

Date: 12.MAR.2021 05:22:54

Lowest Band Edge / Full RB

Channel Power < -13dBm Pass



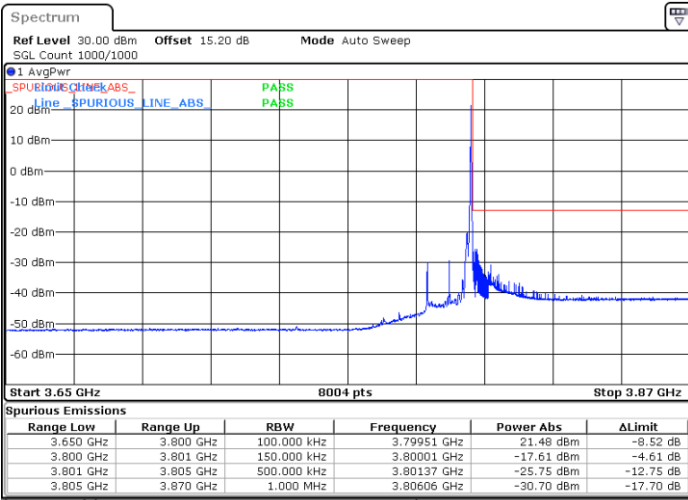
Date: 12.MAR.2021 05:13:20



FR1 UL-MIMO n78 /15MHz / CP-OFDM QPSK (M2)

Highest Band Edge / 1 RB

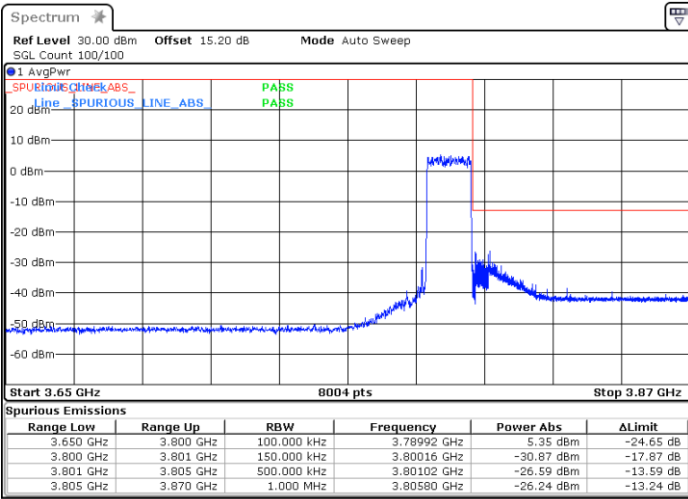
Channel Power < -13dBm Pass



Date: 12.MAR.2021 05:28:24

Highest Band Edge / Full RB

Channel Power < -13dBm Pass



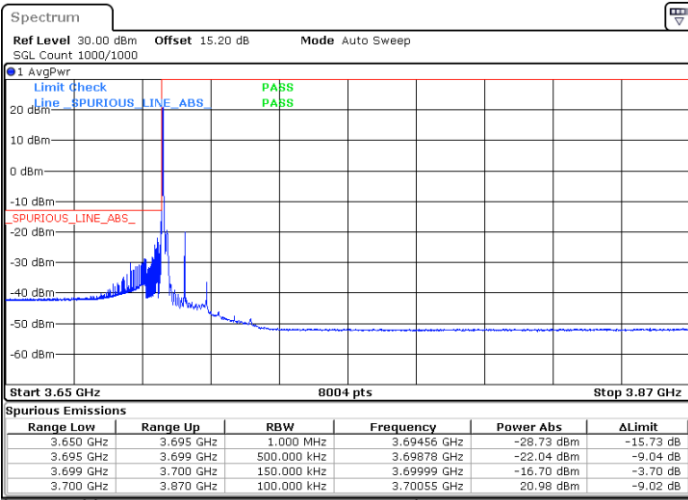
Date: 12.MAR.2021 05:26:03



FR1 UL-MIMO n78 / 15MHz / CP-OFDM QPSK (M)

Lowest Band Edge / 1 RB

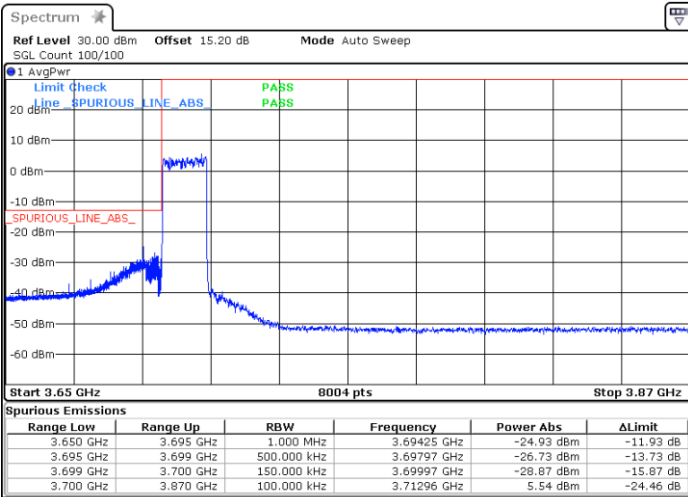
Channel Power < -13dBm Pass



Date: 12.MAR.2021 11:24:02

Lowest Band Edge / Full RB

Channel Power < -13dBm Pass



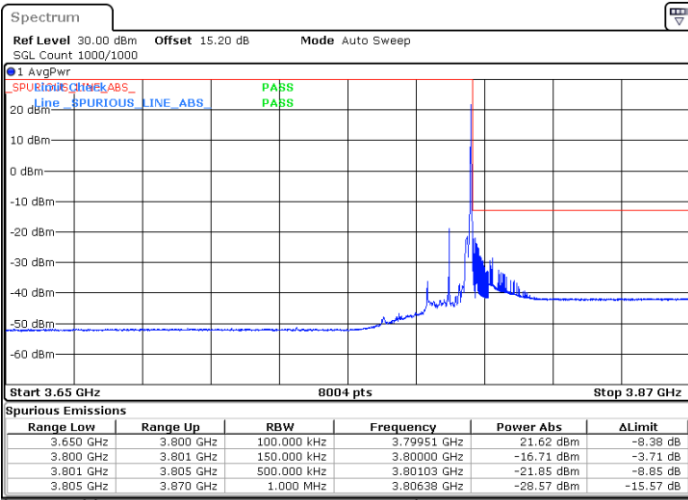
Date: 12.MAR.2021 11:24:26



FR1 UL-MIMO n78 /15MHz / CP-OFDM QPSK (M)

Highest Band Edge / 1 RB

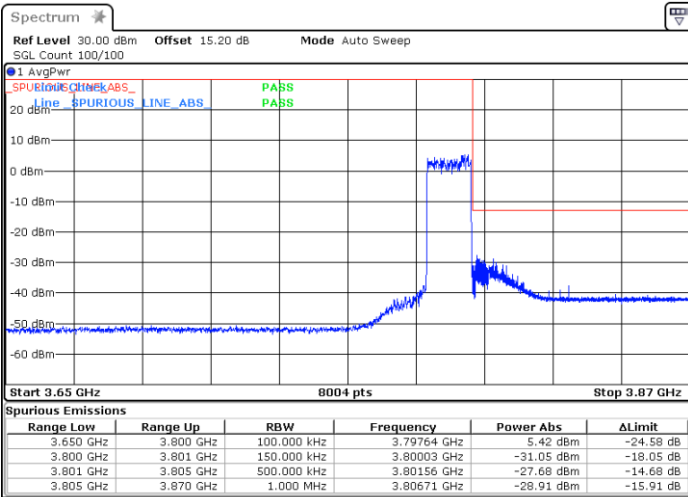
Channel Power < -13dBm Pass



Date: 12.MAR.2021 11:19:18

Highest Band Edge / Full RB

Channel Power < -13dBm Pass



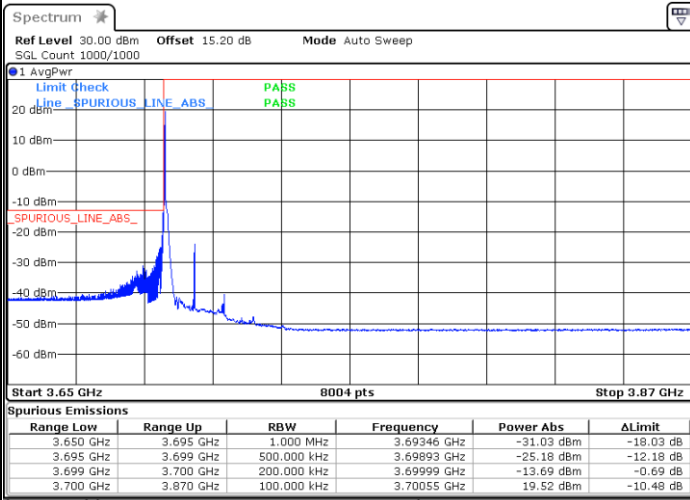
Date: 12.MAR.2021 11:18:21



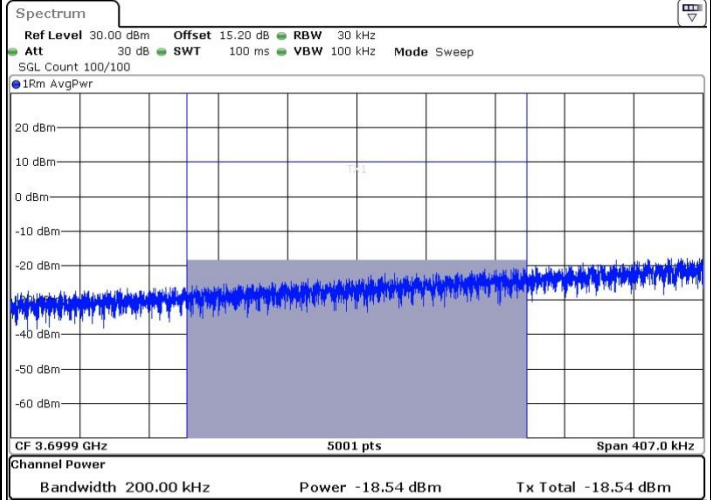
FR1 UL-MIMO n78 / 20MHz / CP-OFDM QPSK (M2)

Lowest Band Edge / 1 RB

Channel Power < -13dBm Pass



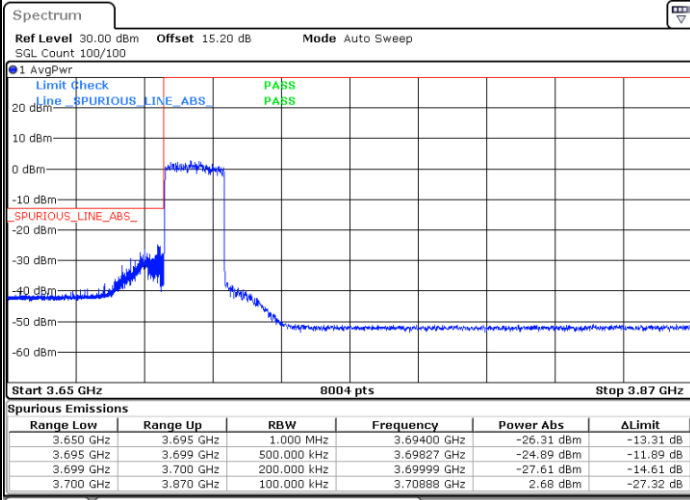
Date: 14.MAR.2021 02:21:06



Date: 14.MAR.2021 02:46:02

Lowest Band Edge / Full RB

Channel Power < -13dBm Pass



Date: 14.MAR.2021 02:30:59

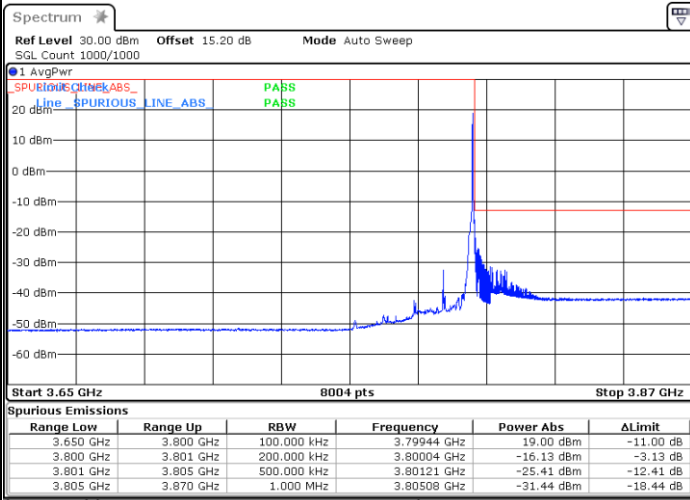
/



FR1 UL-MIMO n78 / 20MHz / CP-OFDM QPSK (M2)

Highest Band Edge / 1 RB

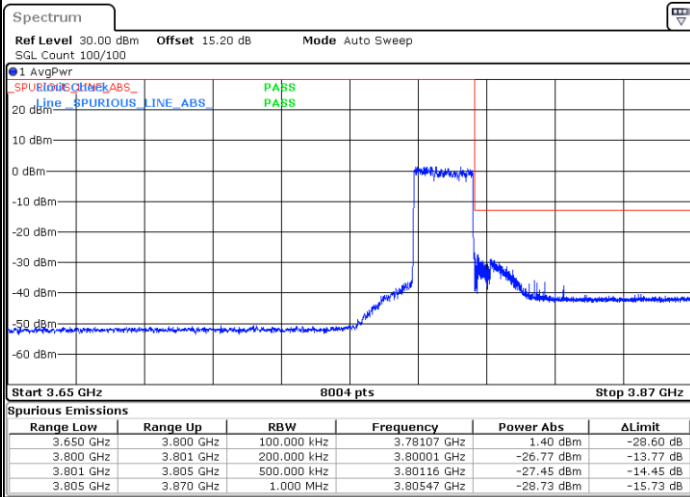
Channel Power < -13dBm Pass



Date: 14.MAR.2021 02:43:57

Highest Band Edge / Full RB

Channel Power < -13dBm Pass

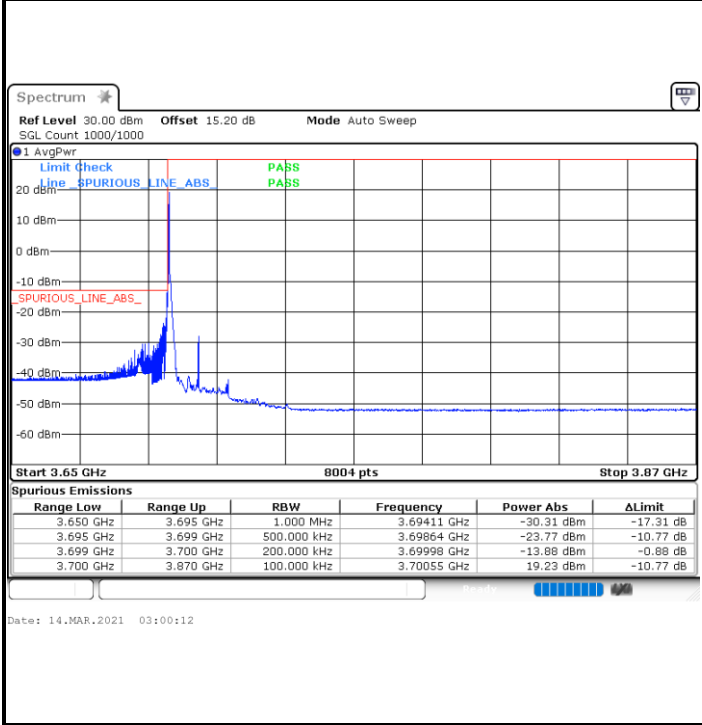


Date: 14.MAR.2021 02:33:22

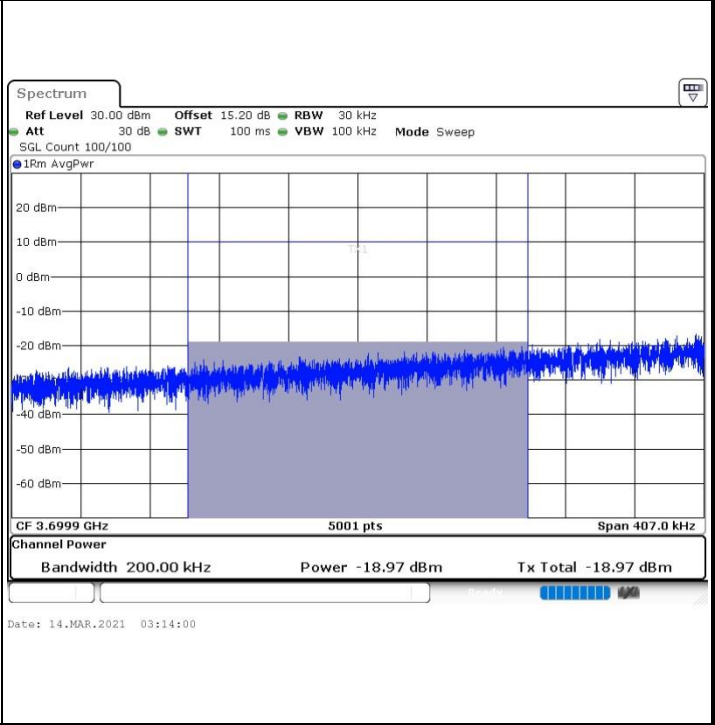


FR1 UL-MIMO n78 / 20MHz / CP-OFDM QPSK (M)

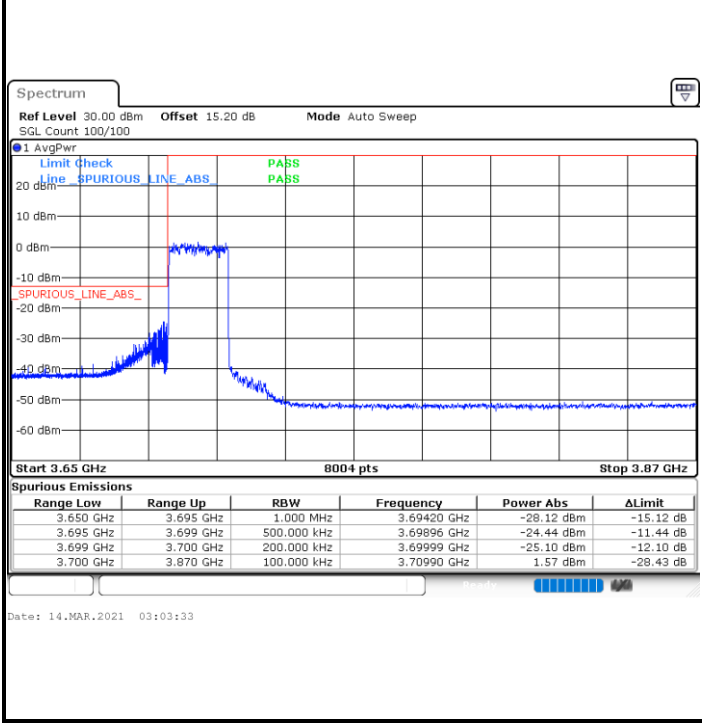
Lowest Band Edge / 1 RB



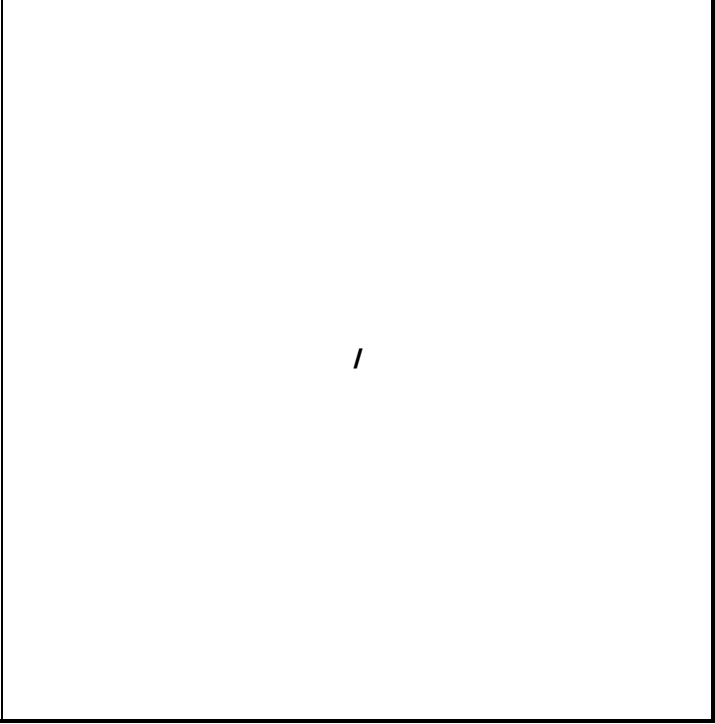
Channel Power < -13dBm Pass



Lowest Band Edge / Full RB



Channel Power < -13dBm Pass

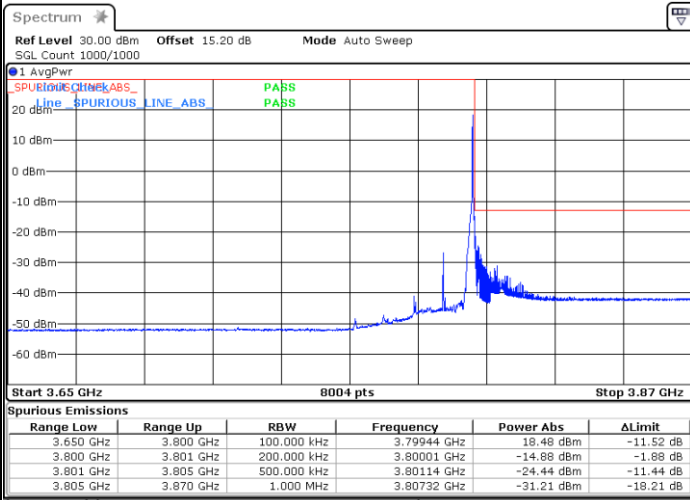




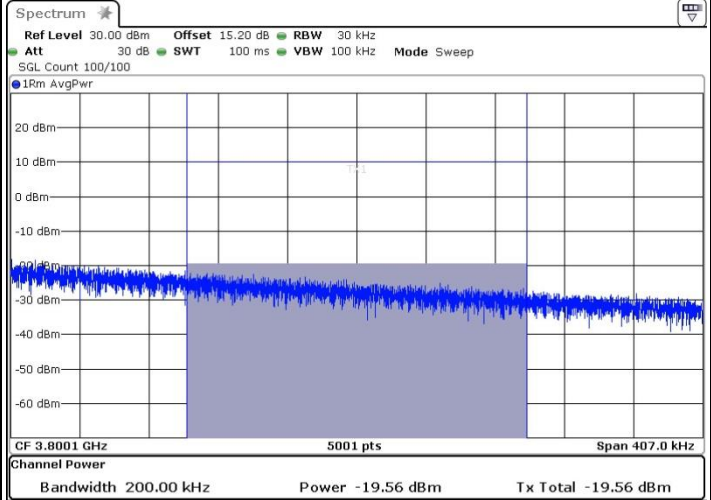
FR1 UL-MIMO n78 / 20MHz / CP-OFDM QPSK (M)

Highest Band Edge / 1 RB

Channel Power < -13dBm Pass



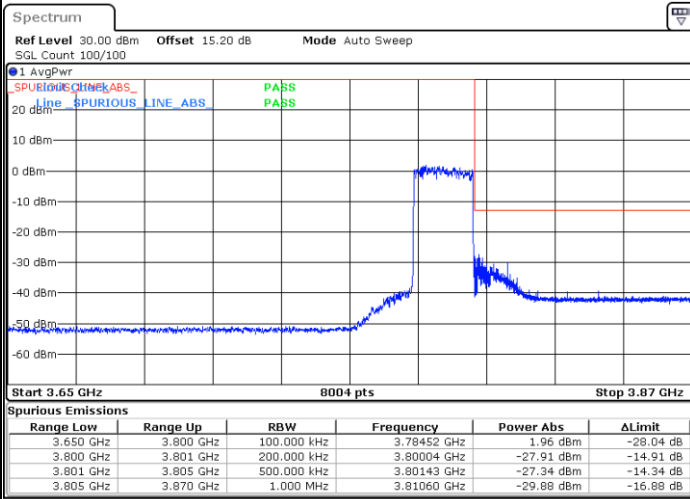
Date: 14.MAR.2021 03:09:38



Date: 14.MAR.2021 03:10:47

Highest Band Edge / Full RB

Channel Power < -13dBm Pass



Date: 14.MAR.2021 03:03:55

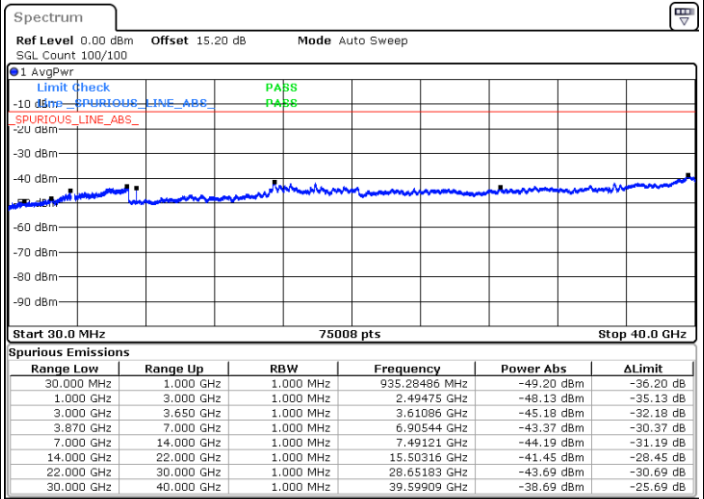
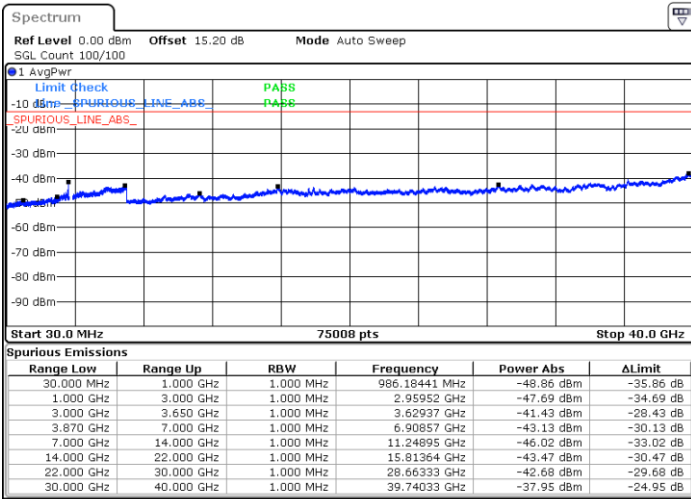


Conducted Spurious Emission

FR1 UL-MIMO n78 / 10MHz / CP-OFDM QPSK (M2)

Lowest Channel / 1RB

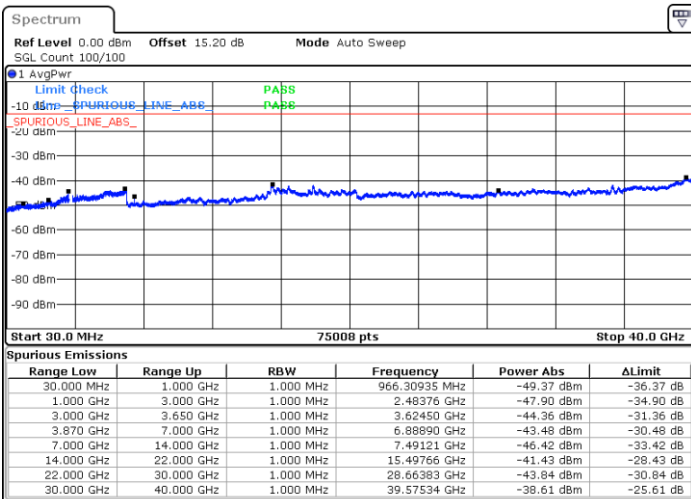
Middle Channel / 1RB



Date: 3.MAR.2021 03:04:56

Date: 4.FEB.2021 22:53:06

Highest Channel / 1RB

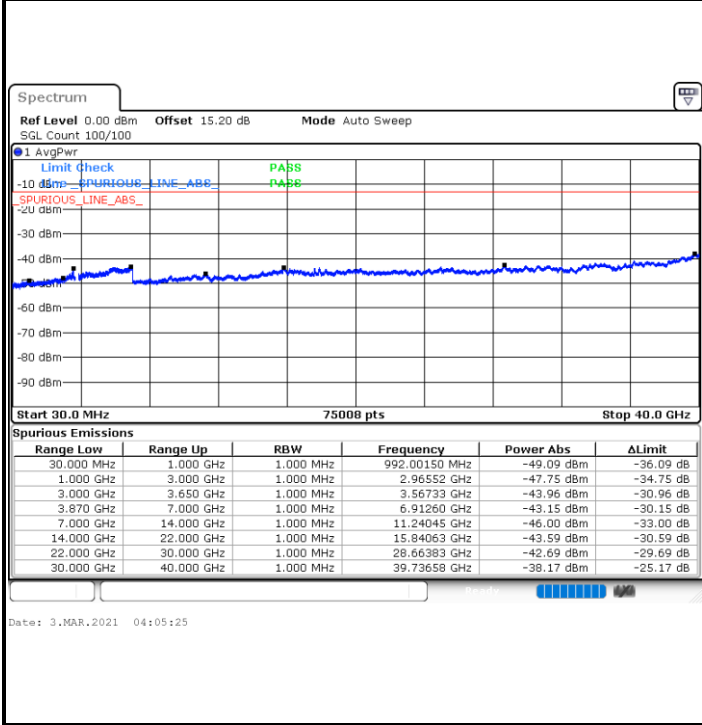


Date: 4.FEB.2021 22:57:38

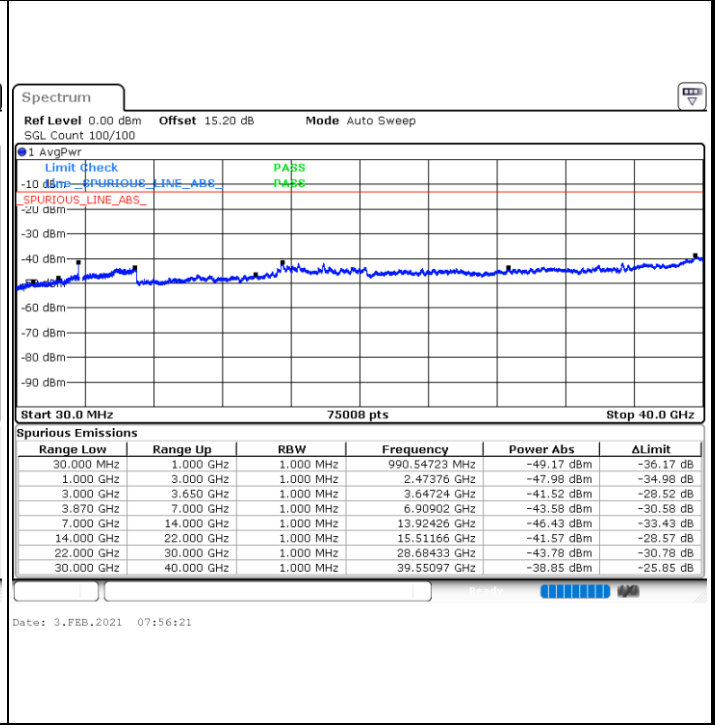


FR1 UL-MIMO n78 / 10MHz / CP-OFDM QPSK (M)

Lowest Channel / 1RB



Middle Channel / 1RB



Highest Channel / 1RB

