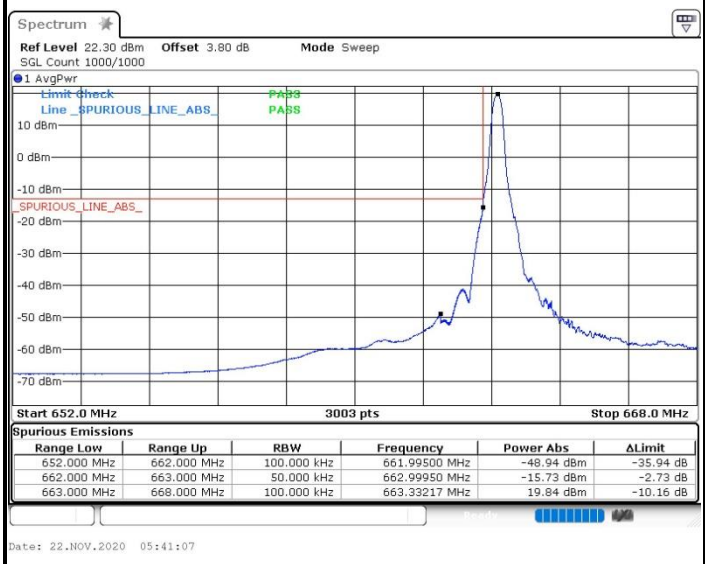
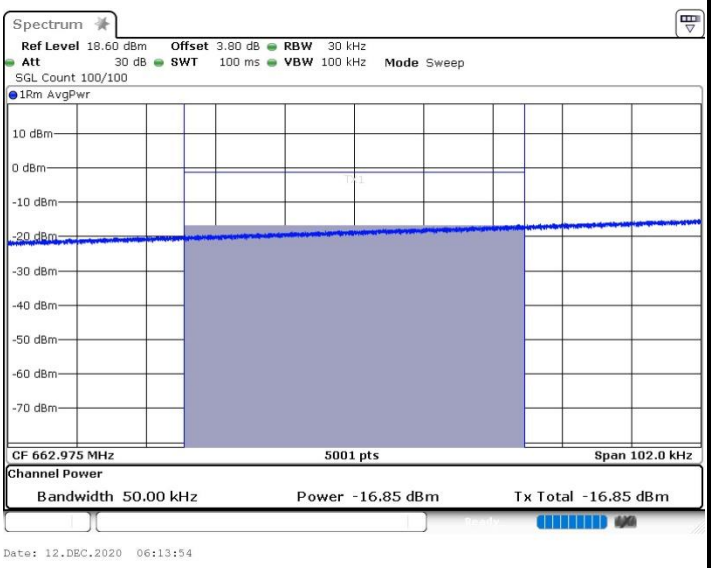
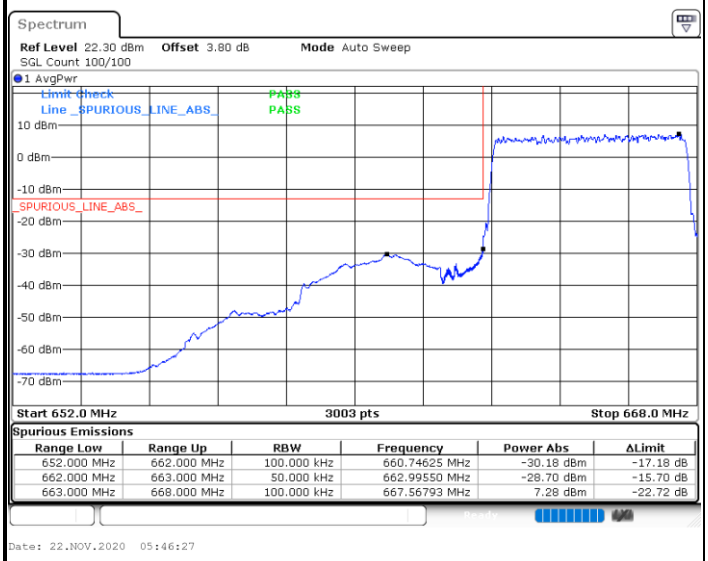
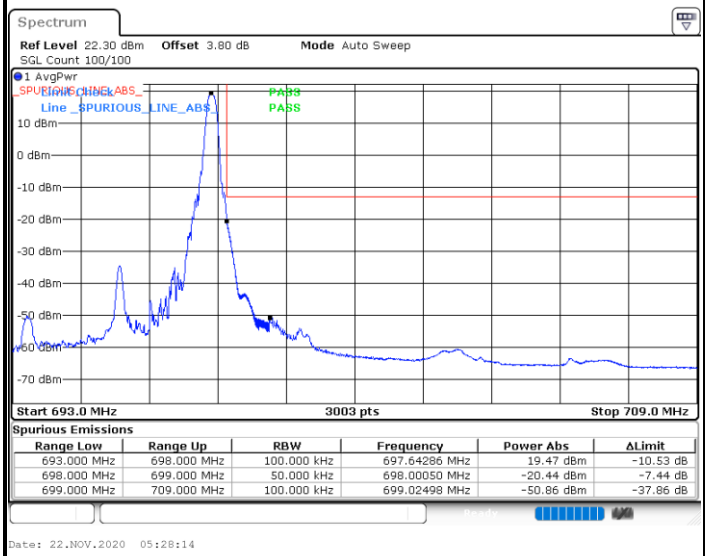
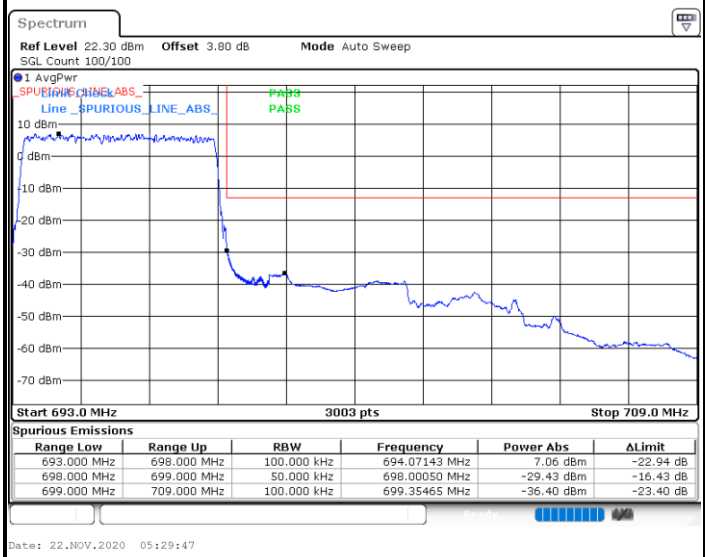
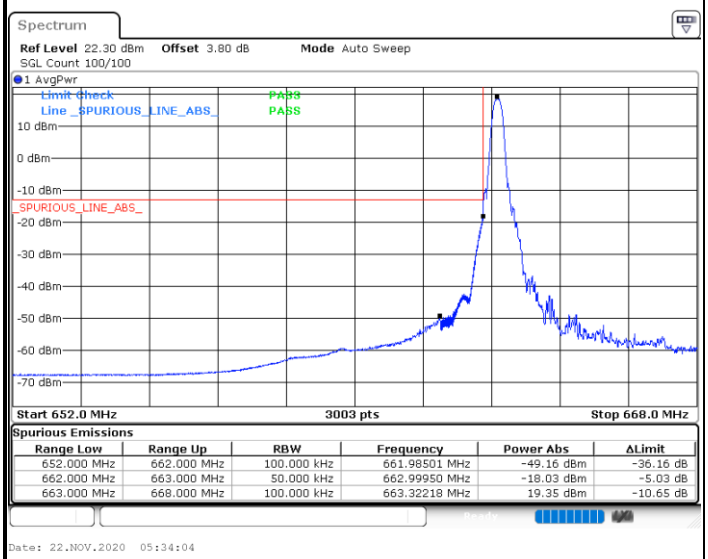
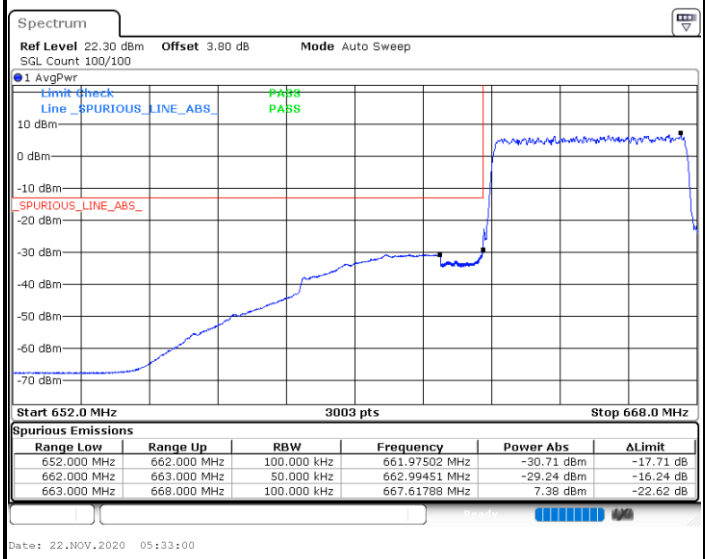
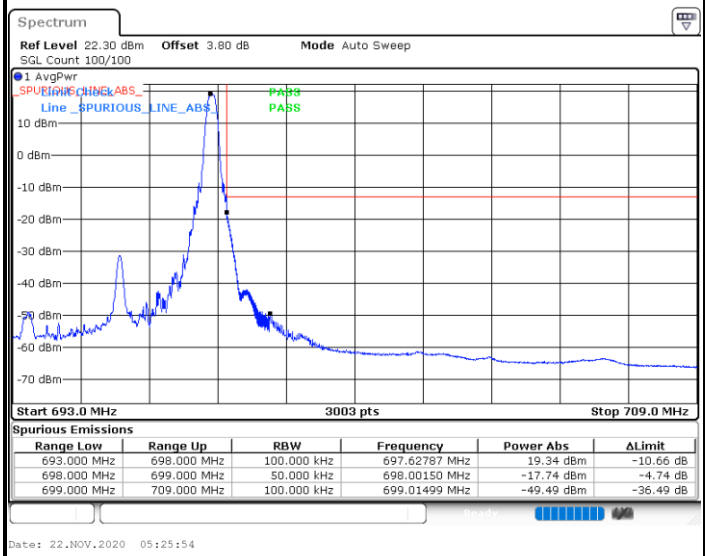
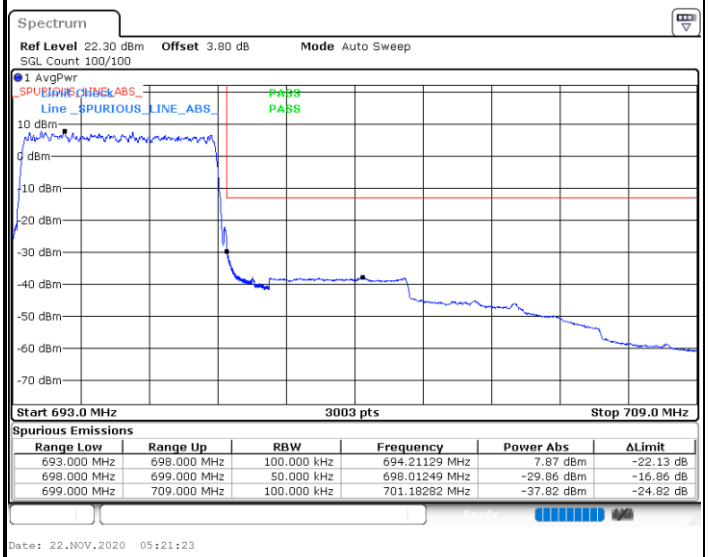
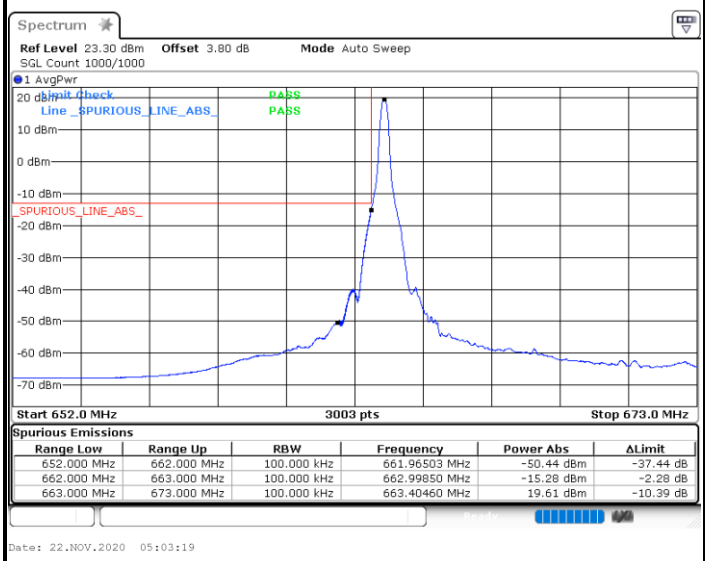
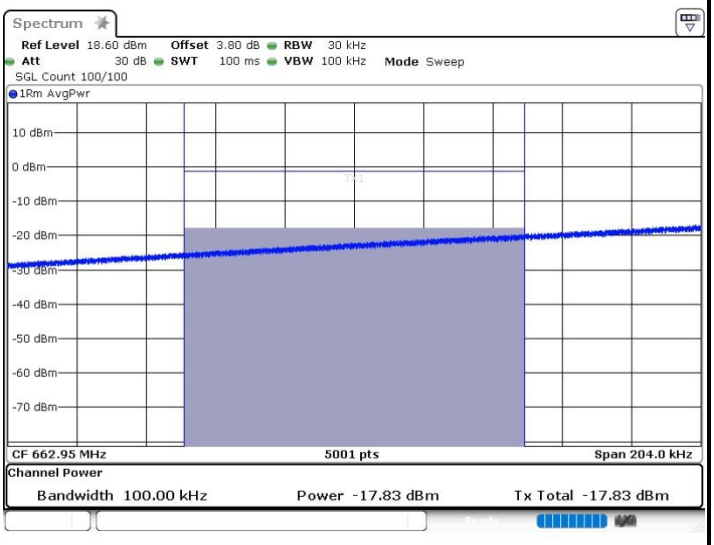
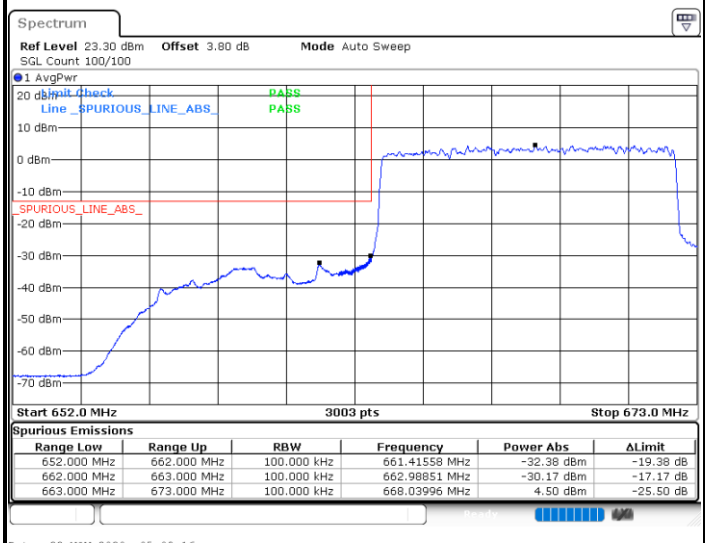
# Conducted Band Edge

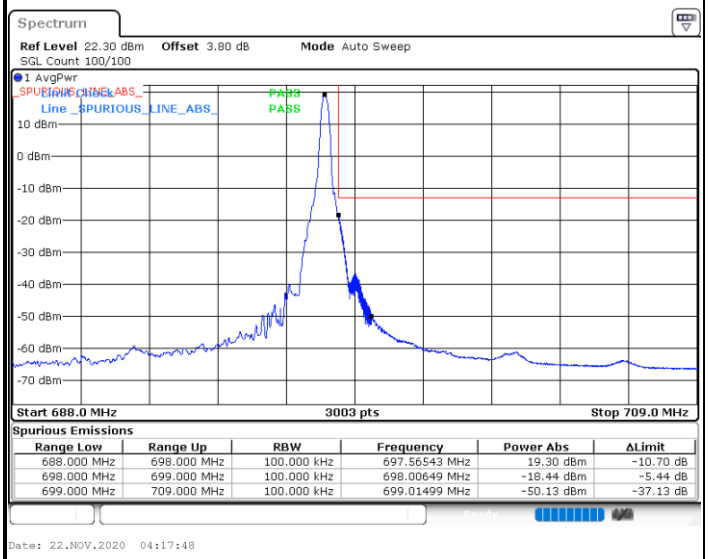
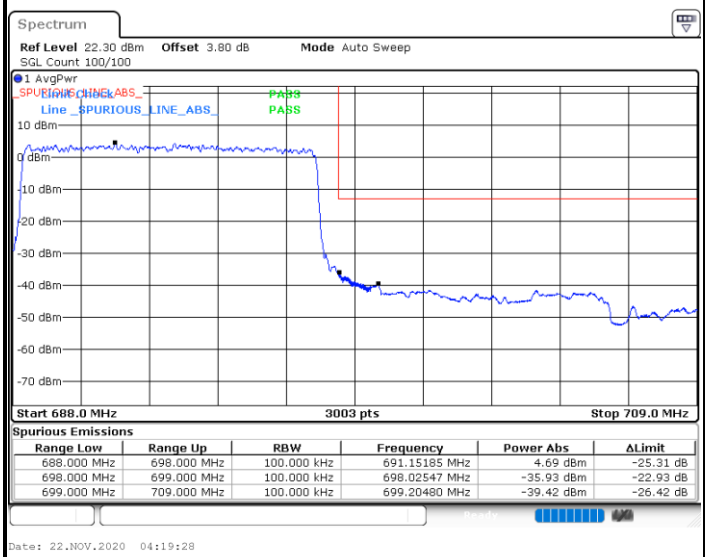
| FR1 n71 / 5MHz / DFT-S OFDM BPSK | |
|---|---|
| **Lowest Band Edge / 1 RB** | **Channel Power < -13dBm Pass** |
|  |  |
| **Lowest Band Edge / Full RB** | **Channel Power < -13dBm Pass** |
|  | / |

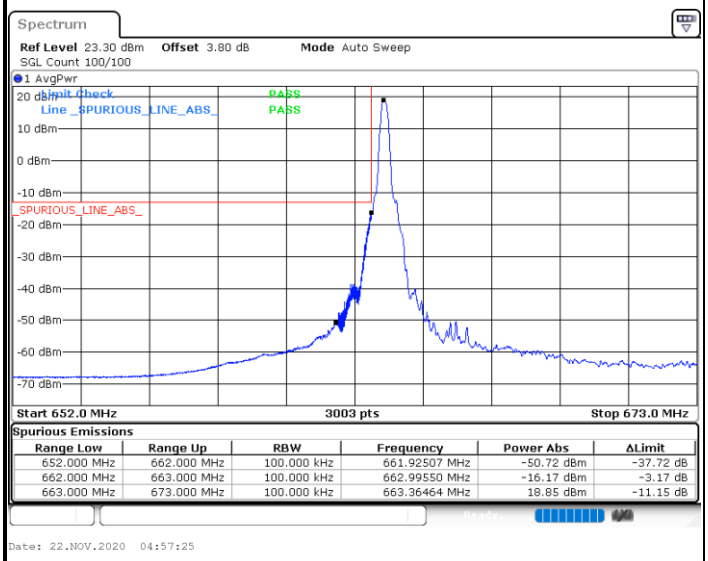
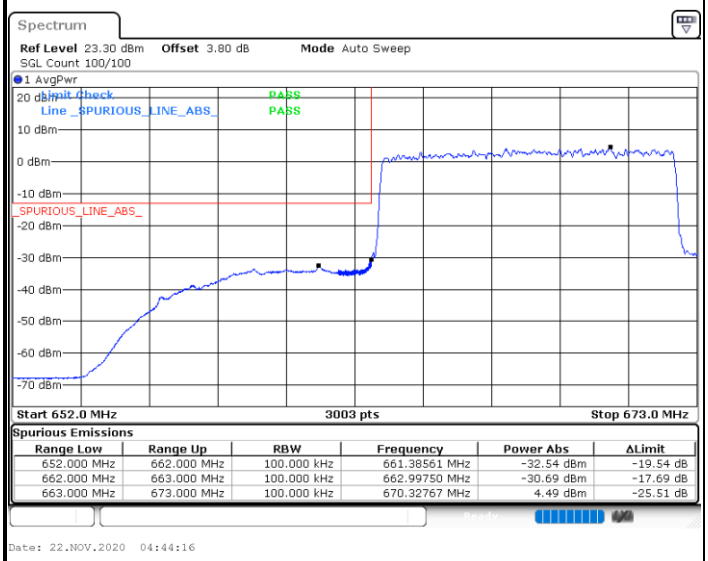
| FR1 n71 / 5MHz / DFT-S OFDM BPSK | |
|---|---|
| **Highest Band Edge / 1 RB** | **Channel Power < -13dBm Pass** |
|  | / |
| **Highest Band Edge / Full RB** | **Channel Power < -13dBm Pass** |
|  | / |

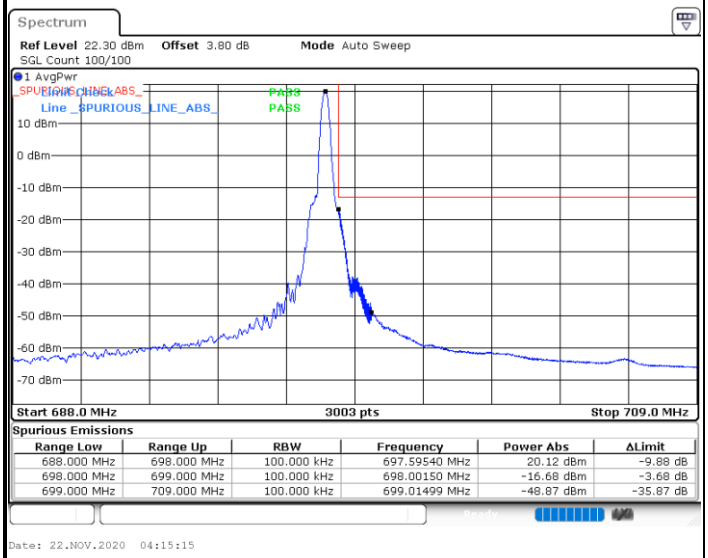
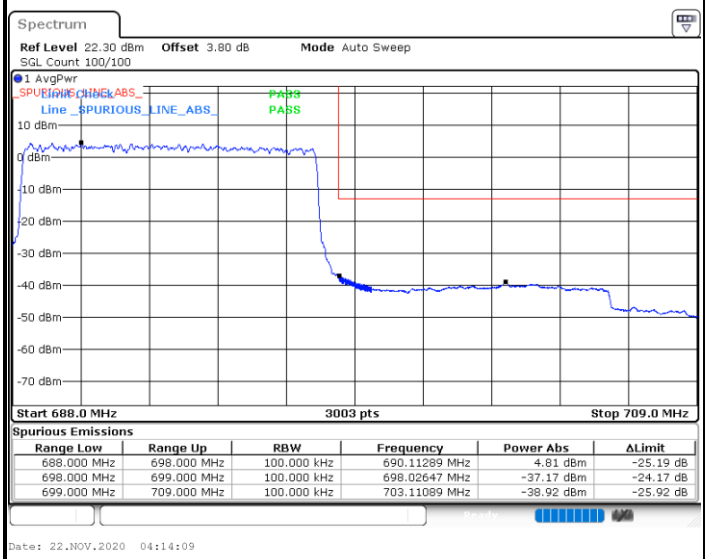
| FR1 n71 / 5MHz / DFT-S OFDM QPSK | |
|---|---|
| **Lowest Band Edge / 1 RB** | **Channel Power < -13dBm Pass** |
|  | / |
| **Lowest Band Edge / Full RB** | **Channel Power < -13dBm Pass** |
|  | / |

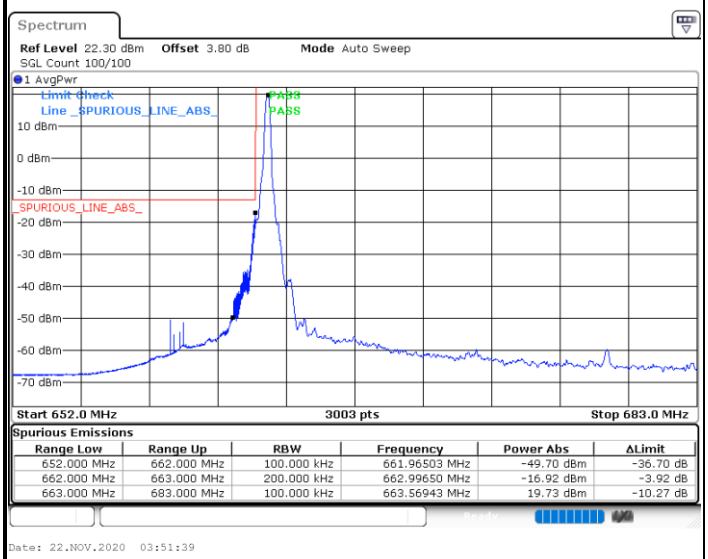
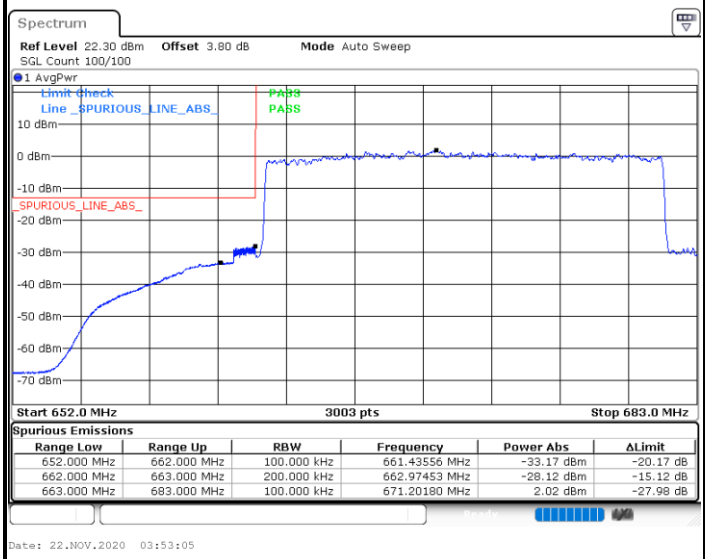
| FR1 n71 / 5MHz / DFT-S OFDM QPSK | |
|---|---|
| **Highest Band Edge / 1 RB** | **Channel Power < -13dBm Pass** |
|  | / |
| **Highest Band Edge / Full RB** | **Channel Power < -13dBm Pass** |
|  | / |

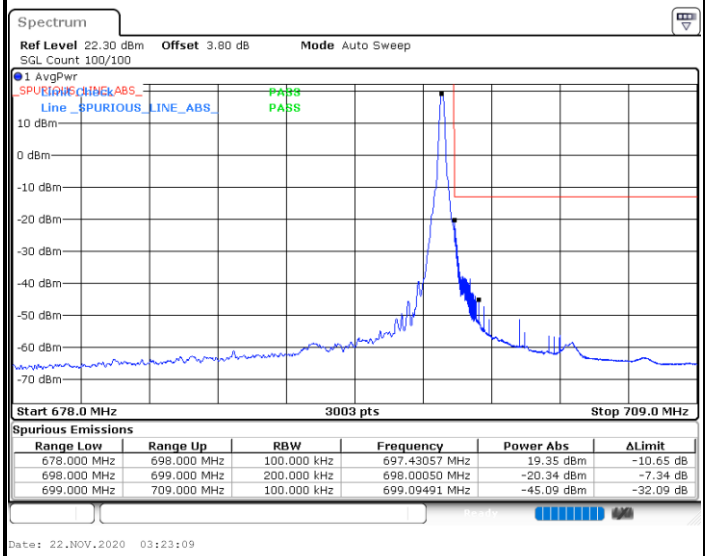
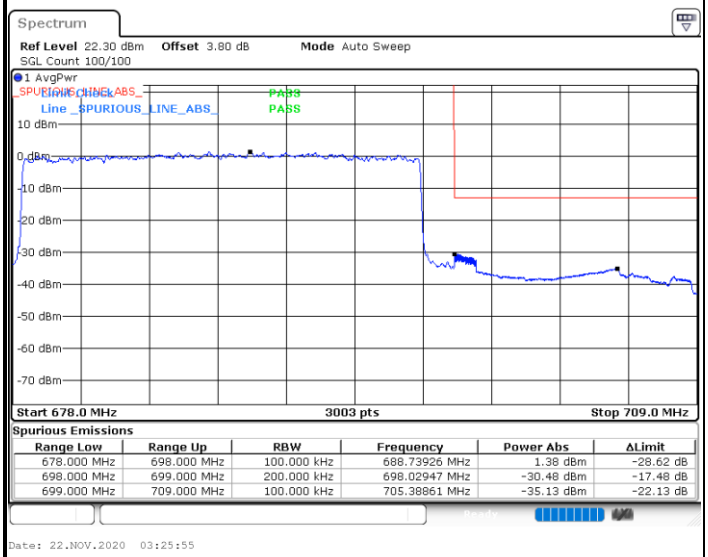
| FR1 n71 / 10MHz / DFT-S OFDM BPSK | |
|---|---|
| **Lowest Band Edge / 1 RB** | **Channel Power < -13dBm Pass** |
|  |  |
| **Lowest Band Edge / Full RB** | **Channel Power < -13dBm Pass** |
|  | / |

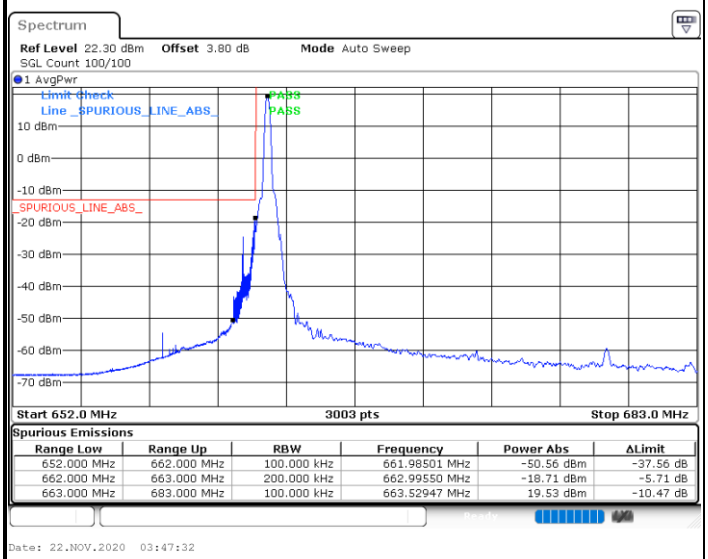
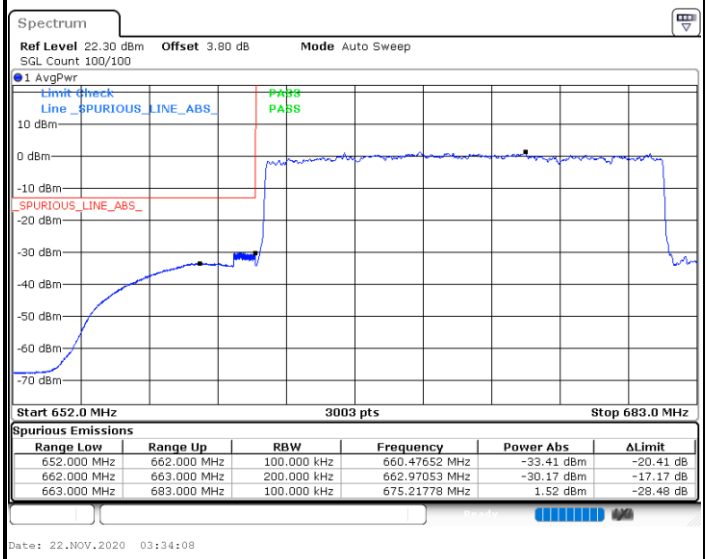
| FR1 n71 / 10MHz / DFT-S OFDM BPSK | |
|---|---|
| **Highest Band Edge / 1 RB** | **Channel Power < -13dBm Pass** |
|  | / |
| **Highest Band Edge / Full RB** | **Channel Power < -13dBm Pass** |
|  | / |

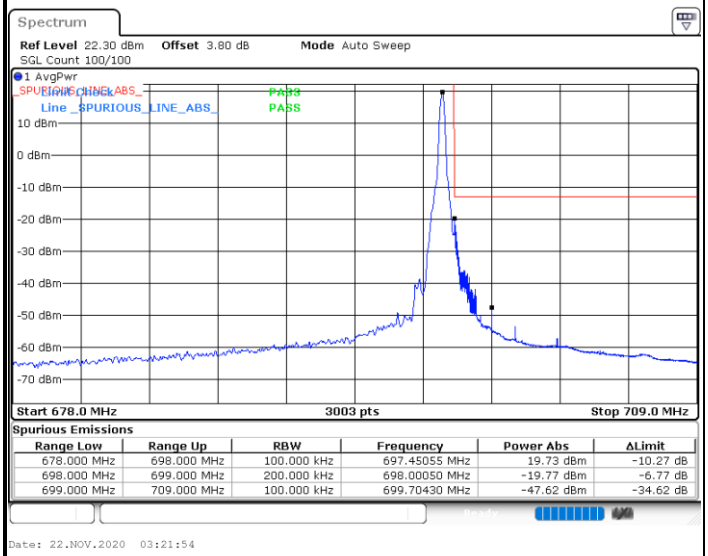
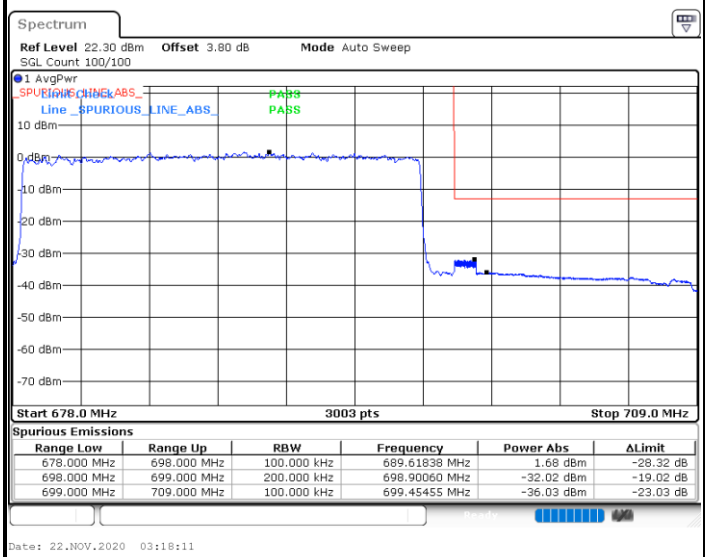
| FR1 n71 / 10MHz / DFT-S OFDM QPSK | |
|---|---|
| **Lowest Band Edge / 1 RB** | **Channel Power < -13dBm Pass** |
|  | / |
| **Lowest Band Edge / Full RB** | **Channel Power < -13dBm Pass** |
|  | / |

| FR1 n71 / 10MHz / DFT-S OFDM QPSK | |
|---|---|
| **Highest Band Edge / 1 RB** | **Channel Power < -13dBm Pass** |
|  | / |
| **Highest Band Edge / Full RB** | **Channel Power < -13dBm Pass** |
|  | / |

| FR1 n71 / 20MHz / DFT-S OFDM BPSK | |
|---|---|
| **Lowest Band Edge / 1 RB** | **Channel Power < -13dBm Pass** |
|  | **/** |
| **Lowest Band Edge / Full RB** | **Channel Power < -13dBm Pass** |
|  | **/** |

| FR1 n71 / 20MHz / DFT-S OFDM BPSK | |
|---|---|
| **Highest Band Edge / 1 RB** | **Channel Power < -13dBm Pass** |
|  | / |
| **Highest Band Edge / Full RB** | **Channel Power < -13dBm Pass** |
|  | / |

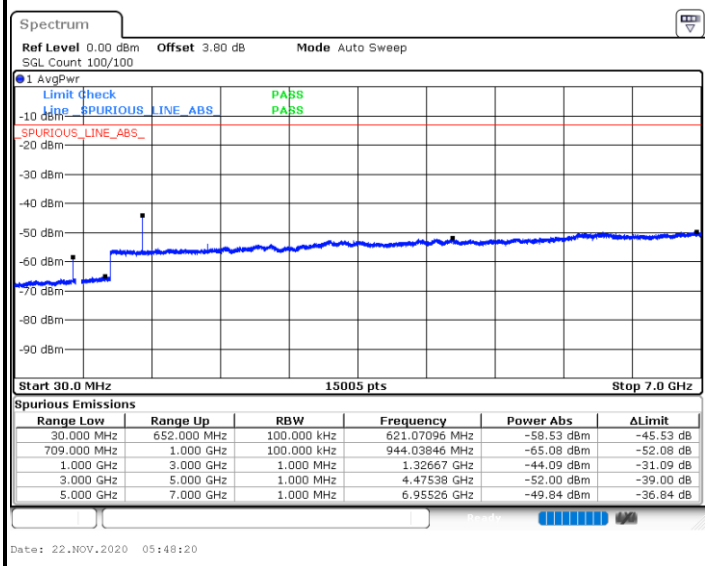
| FR1 n71 / 20MHz / DFT-S OFDM QPSK | |
|---|---|
| **Lowest Band Edge / 1 RB** | **Channel Power < -13dBm Pass** |
|  | / |
| **Lowest Band Edge / Full RB** | **Channel Power < -13dBm Pass** |
|  | / |

| FR1 n71 / 20MHz / DFT-S OFDM QPSK | |
|---|---|
| **Highest Band Edge / 1 RB** | **Channel Power < -13dBm Pass** |
|  | / |
| **Highest Band Edge / Full RB** | **Channel Power < -13dBm Pass** |
|  | / |

# Conducted Spurious Emission

## FR1 n71 / 5MHz / DFT-S OFDM / BPSK

### Lowest Channel / 1RB

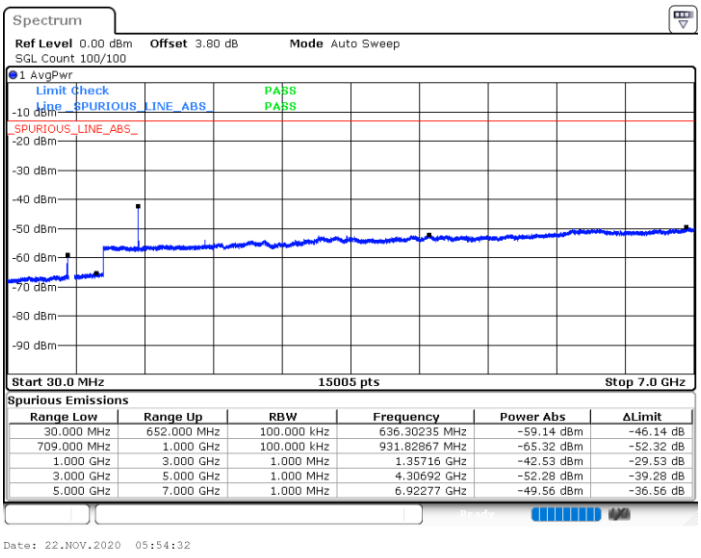



Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 30.000 MHz | 652.000 MHz | 100.000 kHz | 621.07096 MHz | -58.53 dBm | -45.53 dB |
| 709.000 MHz | 1.000 GHz | 100.000 kHz | 944.03846 MHz | -65.08 dBm | -52.08 dB |
| 1.000 GHz | 3.000 GHz | 1.000 MHz | 1.32667 GHz | -44.09 dBm | -31.09 dB |
| 3.000 GHz | 5.000 GHz | 1.000 MHz | 4.47538 GHz | -52.00 dBm | -39.00 dB |
| 5.000 GHz | 7.000 GHz | 1.000 MHz | 6.95526 GHz | -49.84 dBm | -36.84 dB |

Date: 22.NOV.2020 05:48:20

### Middle Channel / 1RB

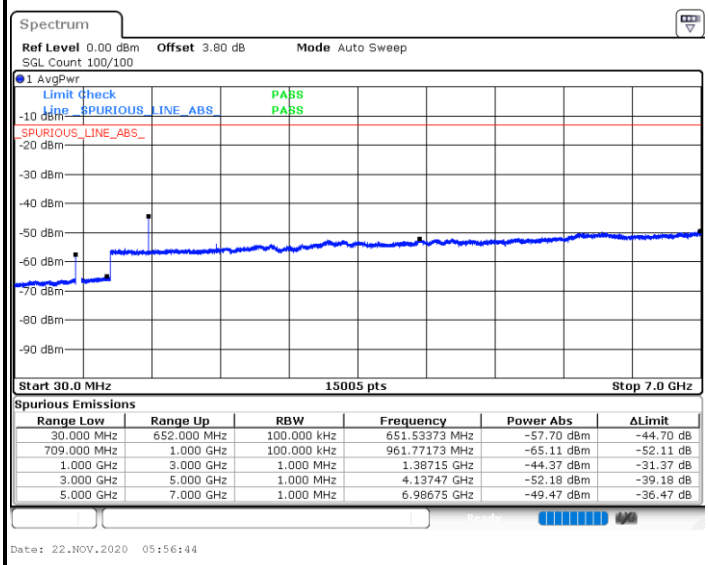



Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 30.000 MHz | 652.000 MHz | 100.000 kHz | 636.30235 MHz | -59.14 dBm | -46.14 dB |
| 709.000 MHz | 1.000 GHz | 100.000 kHz | 931.82867 MHz | -65.32 dBm | -52.32 dB |
| 1.000 GHz | 3.000 GHz | 1.000 MHz | 1.35716 GHz | -42.53 dBm | -29.53 dB |
| 3.000 GHz | 5.000 GHz | 1.000 MHz | 4.30692 GHz | -52.28 dBm | -39.28 dB |
| 5.000 GHz | 7.000 GHz | 1.000 MHz | 6.92277 GHz | -49.56 dBm | -36.56 dB |

Date: 22.NOV.2020 05:54:32

### Highest Channel / 1RB



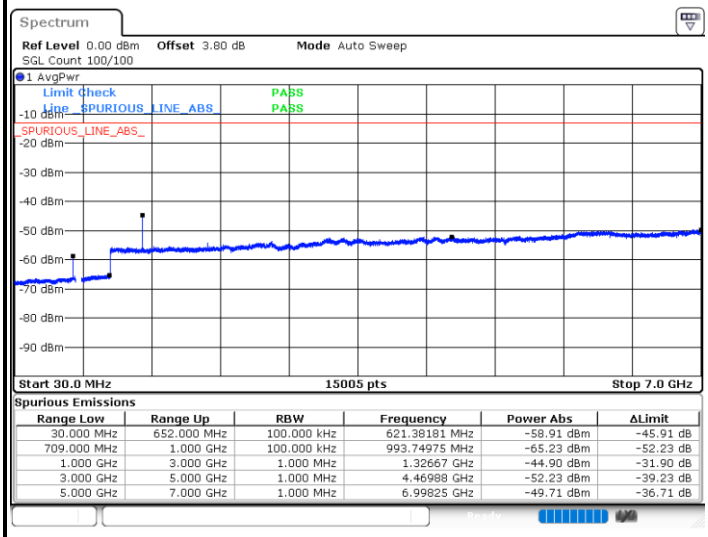

Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 30.000 MHz | 652.000 MHz | 100.000 kHz | 651.53373 MHz | -57.70 dBm | -44.70 dB |
| 709.000 MHz | 1.000 GHz | 100.000 kHz | 961.77173 MHz | -65.11 dBm | -52.11 dB |
| 1.000 GHz | 3.000 GHz | 1.000 MHz | 1.38715 GHz | -44.37 dBm | -31.37 dB |
| 3.000 GHz | 5.000 GHz | 1.000 MHz | 4.13747 GHz | -52.18 dBm | -39.18 dB |
| 5.000 GHz | 7.000 GHz | 1.000 MHz | 6.98675 GHz | -49.47 dBm | -36.47 dB |

Date: 22.NOV.2020 05:56:44

## FR1 n71 / 5MHz / DFT-S OFDM / QPSK

### Lowest Channel / 1RB

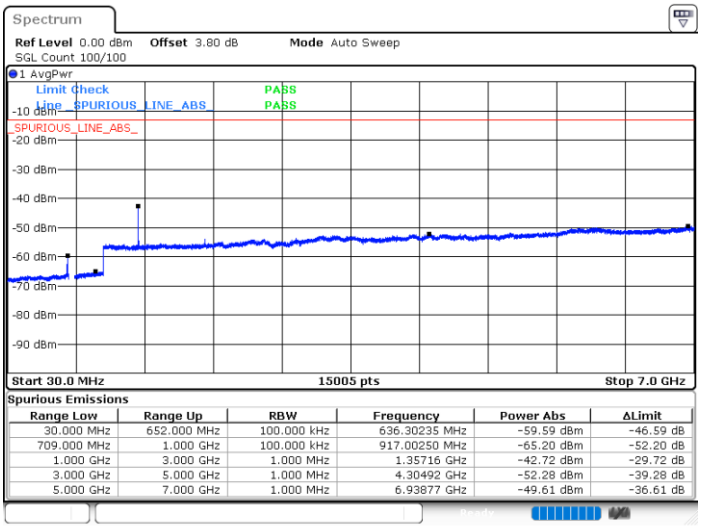



Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 30.000 MHz | 652.000 MHz | 100.000 kHz | 621.38181 MHz | -58.91 dBm | -45.91 dB |
| 709.000 MHz | 1.000 GHz | 100.000 kHz | 993.74975 MHz | -65.23 dBm | -52.23 dB |
| 1.000 GHz | 3.000 GHz | 1.000 MHz | 1.32667 GHz | -44.90 dBm | -31.90 dB |
| 3.000 GHz | 5.000 GHz | 1.000 MHz | 4.46988 GHz | -52.23 dBm | -39.23 dB |
| 5.000 GHz | 7.000 GHz | 1.000 MHz | 6.99825 GHz | -49.71 dBm | -36.71 dB |

Date: 22.NOV.2020 05:52:04

### Middle Channel / 1RB

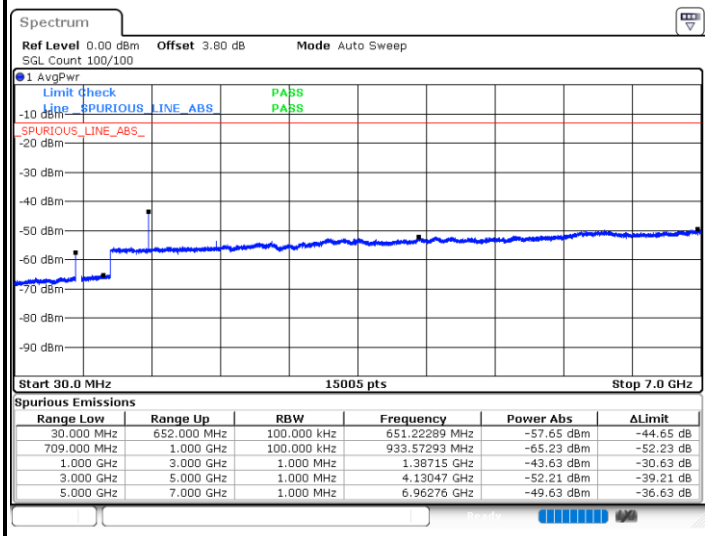



Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 30.000 MHz | 652.000 MHz | 100.000 kHz | 636.30235 MHz | -59.59 dBm | -46.59 dB |
| 709.000 MHz | 1.000 GHz | 100.000 kHz | 917.00250 MHz | -65.20 dBm | -52.20 dB |
| 1.000 GHz | 3.000 GHz | 1.000 MHz | 1.35716 GHz | -42.72 dBm | -29.72 dB |
| 3.000 GHz | 5.000 GHz | 1.000 MHz | 4.30492 GHz | -52.28 dBm | -39.28 dB |
| 5.000 GHz | 7.000 GHz | 1.000 MHz | 6.93877 GHz | -49.61 dBm | -36.61 dB |

Date: 22.NOV.2020 05:53:40

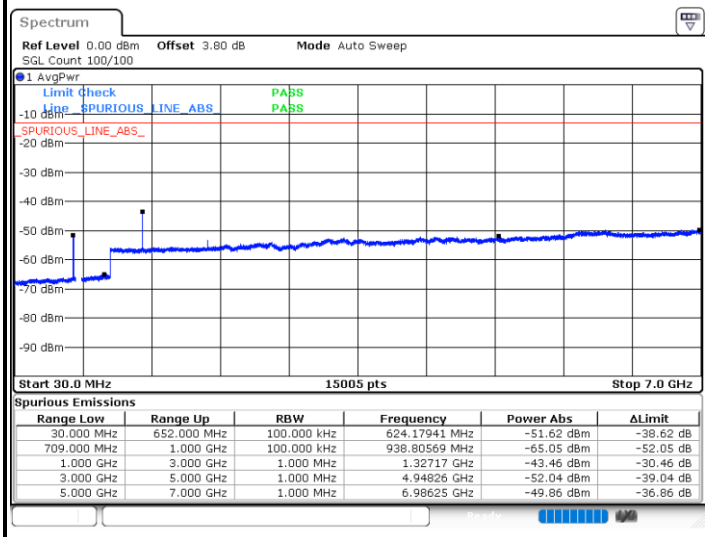
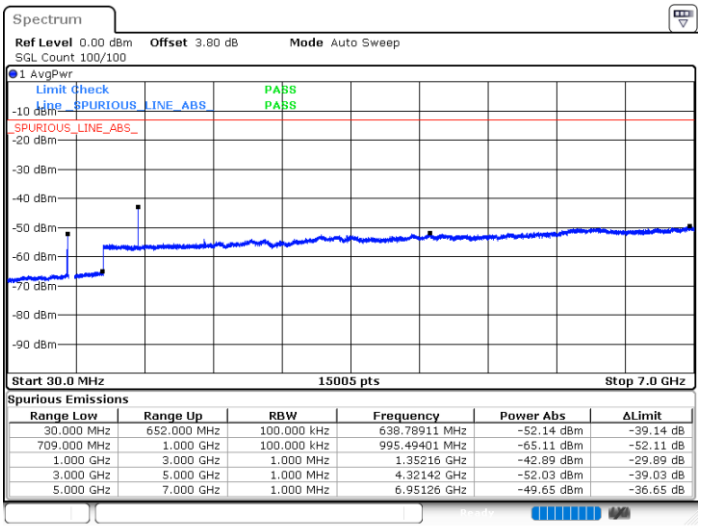
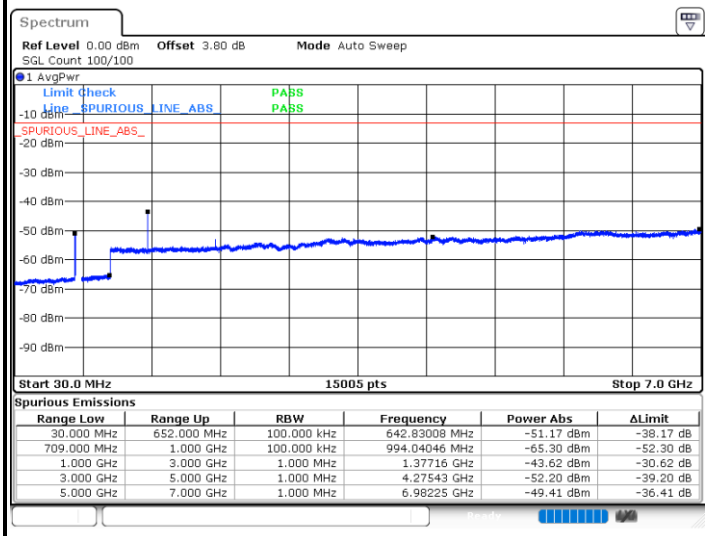
### Highest Channel / 1RB

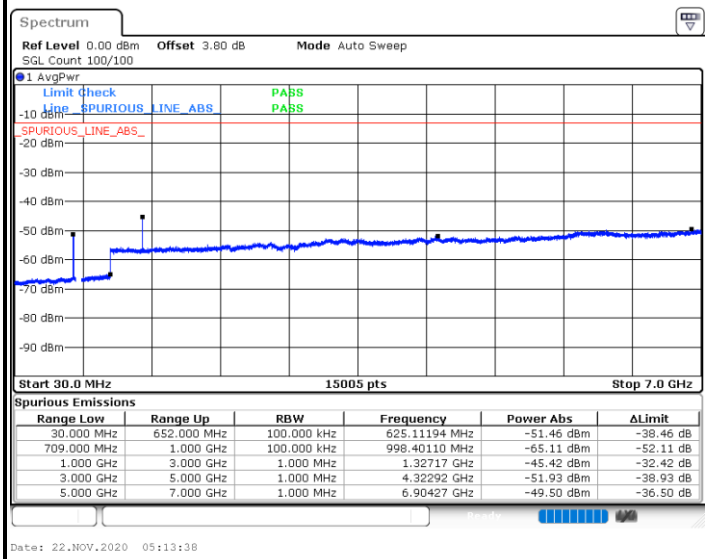
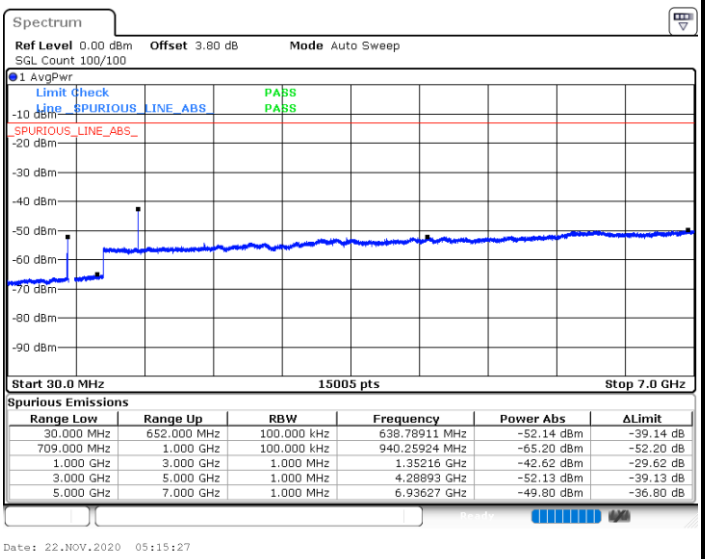
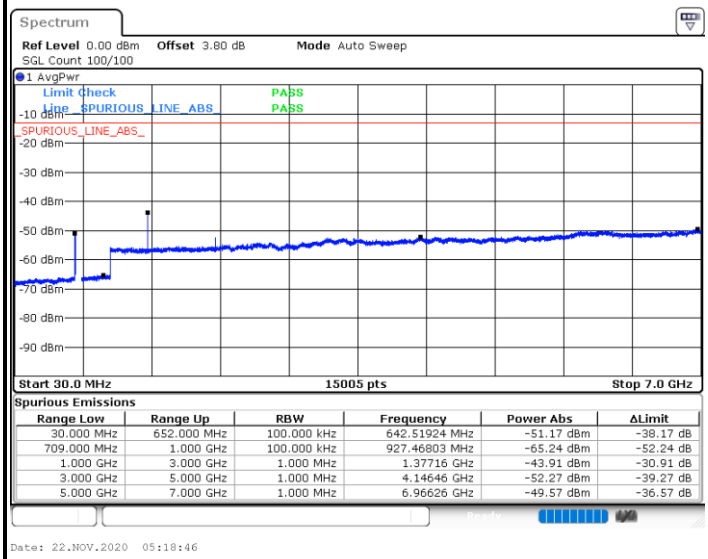


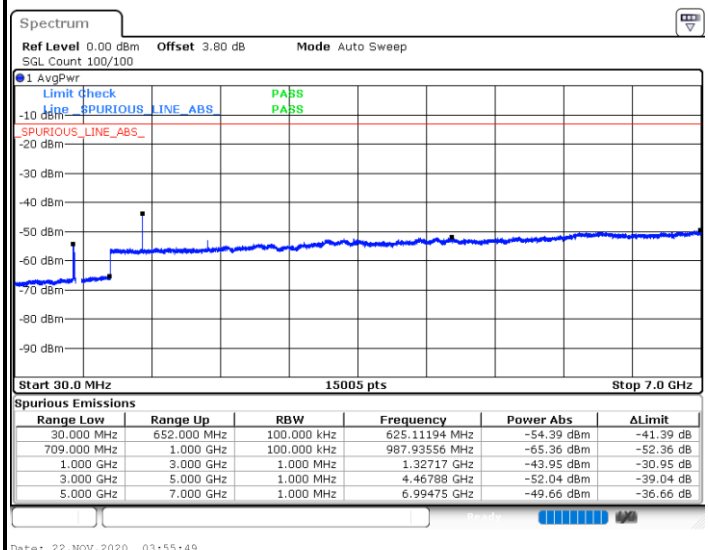
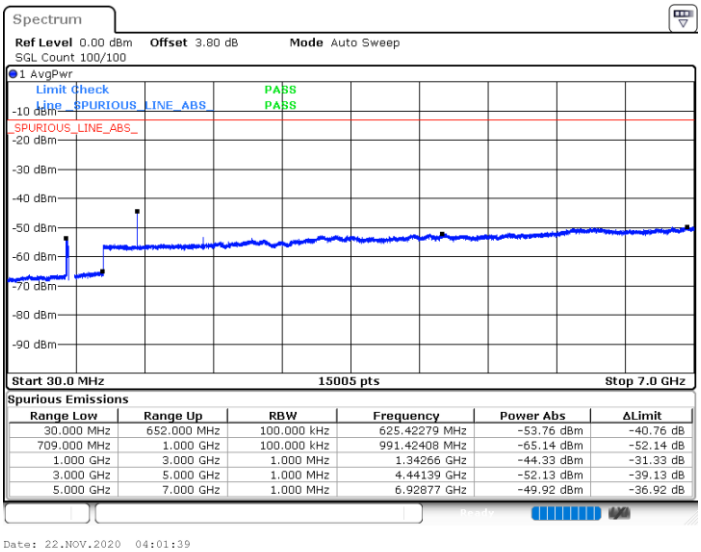
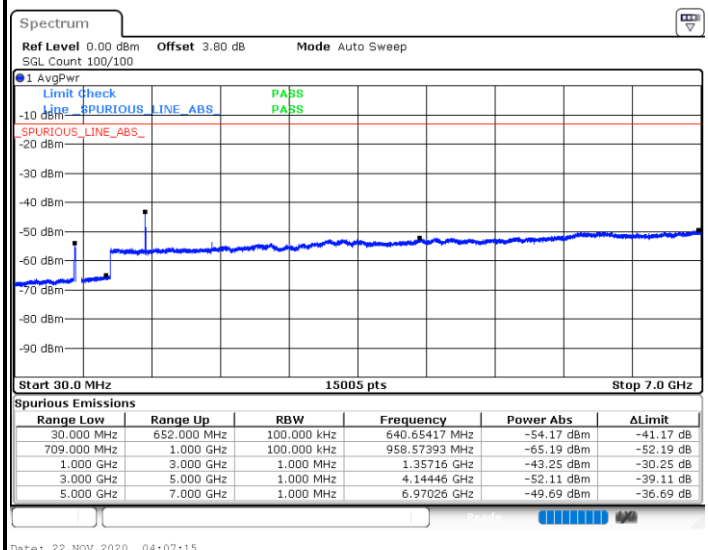

Spurious Emissions

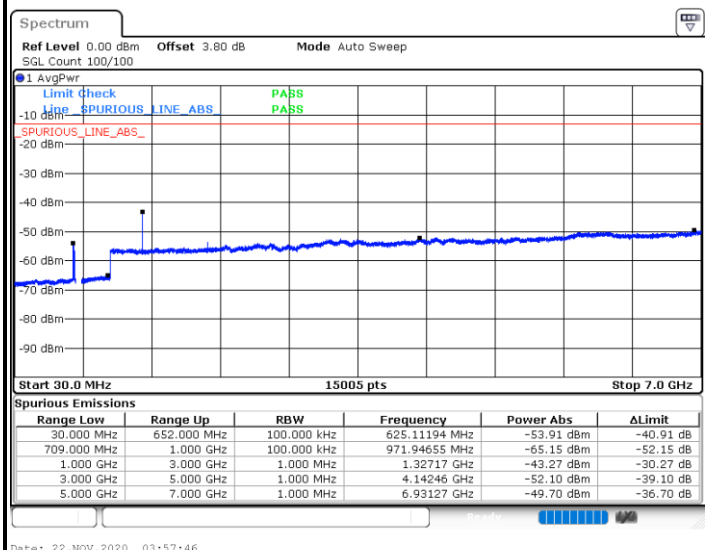
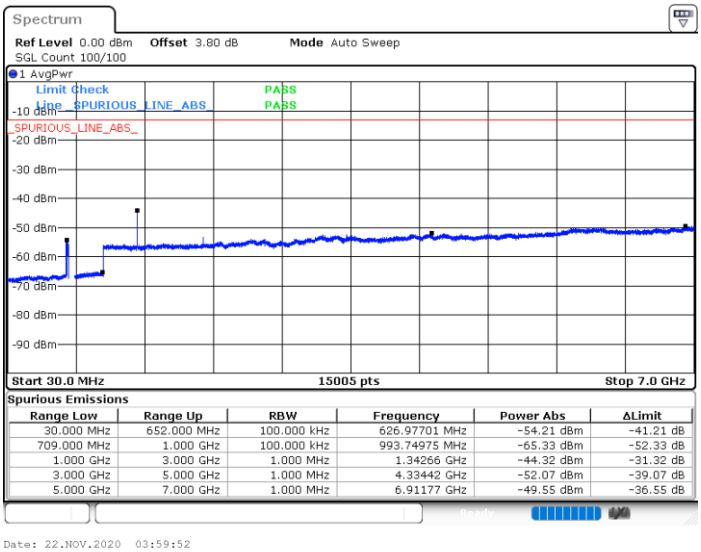
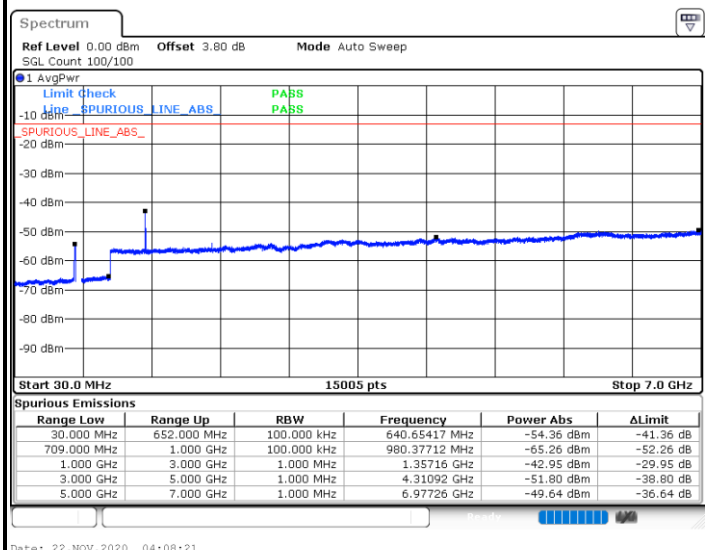
| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 30.000 MHz | 652.000 MHz | 100.000 kHz | 651.22289 MHz | -57.65 dBm | -44.65 dB |
| 709.000 MHz | 1.000 GHz | 100.000 kHz | 933.57293 MHz | -65.23 dBm | -52.23 dB |
| 1.000 GHz | 3.000 GHz | 1.000 MHz | 1.38715 GHz | -43.63 dBm | -30.63 dB |
| 3.000 GHz | 5.000 GHz | 1.000 MHz | 4.13047 GHz | -52.21 dBm | -39.21 dB |
| 5.000 GHz | 7.000 GHz | 1.000 MHz | 6.96276 GHz | -49.63 dBm | -36.63 dB |

Date: 22.NOV.2020 05:58:22

| FR1 n71 / 10MHz / DFT-S OFDM / BPSK | |
|---|---|
| **Lowest Channel / 1RB** | **Middle Channel / 1RB** |
|  |  |
| **Highest Channel / 1RB** | |
|  | |

| FR1 n71 / 10MHz / DFT-S OFDM / QPSK | |
|---|---|
| **Lowest Channel / 1RB** | **Middle Channel / 1RB** |
|  |  |
| **Highest Channel / 1RB** | |
|  | |

| FR1 n71 / 20MHz / DFT-S OFDM / BPSK | |
|---|---|
| **Lowest Channel / 1RB** | **Middle Channel / 1RB** |
|  |  |
| **Highest Channel / 1RB** | |
|  | |

| FR1 n71 / 20MHz / DFT-S OFDM / QPSK | |
|---|---|
| **Lowest Channel / 1RB** | **Middle Channel / 1RB** |
|  |  |
| **Highest Channel / 1RB** | |
|  | |

# Frequency Stability

| Test Conditions | | NR n71 (BPSK) / Middle Channel | Limit |
|---|---|---|---|
| Temperature (°C) | Voltage (Volt) | BW 20MHz | Within Band |
| | | Deviation (ppm) | Result |
| 50 | Normal Voltage | 0.0021 | PASS |
| 40 | Normal Voltage | 0.0017 | |
| 30 | Normal Voltage | 0.0013 | |
| 20(Ref.) | Normal Voltage | 0.0015 | |
| 10 | Normal Voltage | 0.0021 | |
| 0 | Normal Voltage | 0.0017 | |
| -10 | Normal Voltage | 0.0021 | |
| -20 | Normal Voltage | 0.0011 | |
| -30 | Normal Voltage | 0.0017 | |
| 20 | Maximum Voltage | 0.0012 | |
| 20 | Normal Voltage | 0.0016 | |
| 20 | Battery End Point | 0.0014 | |

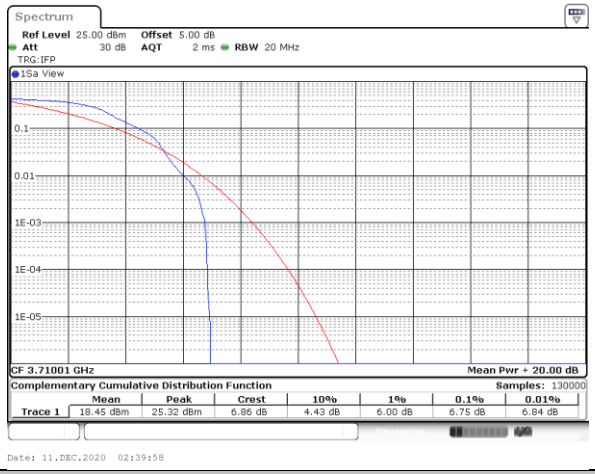
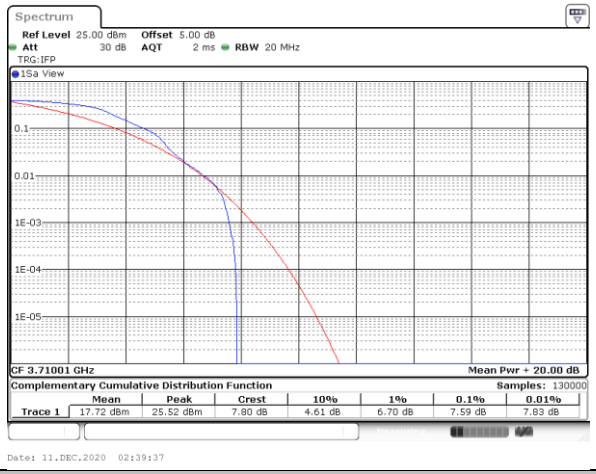
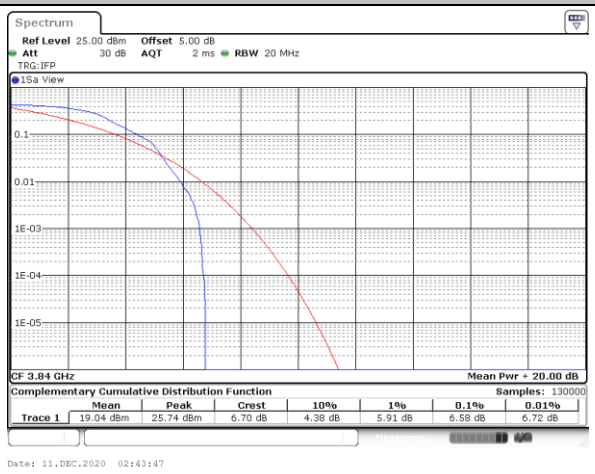
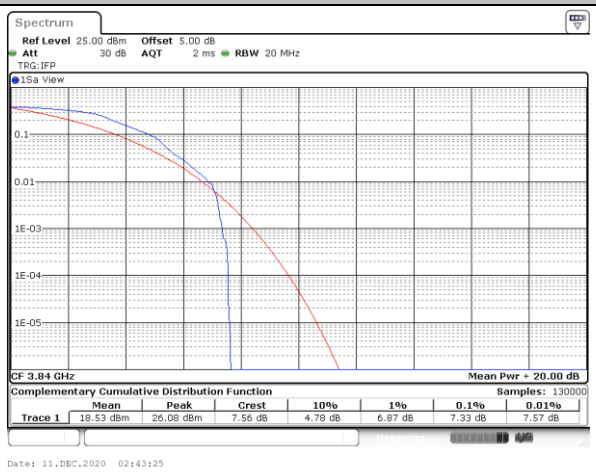
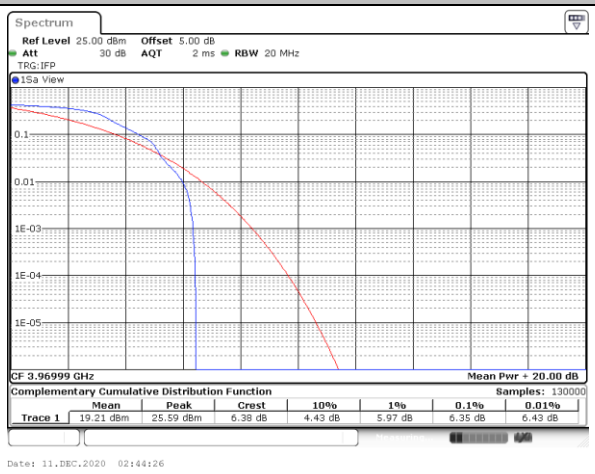
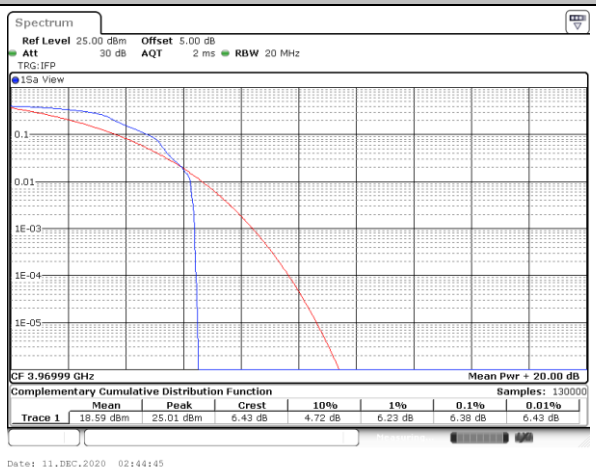
**Note:**

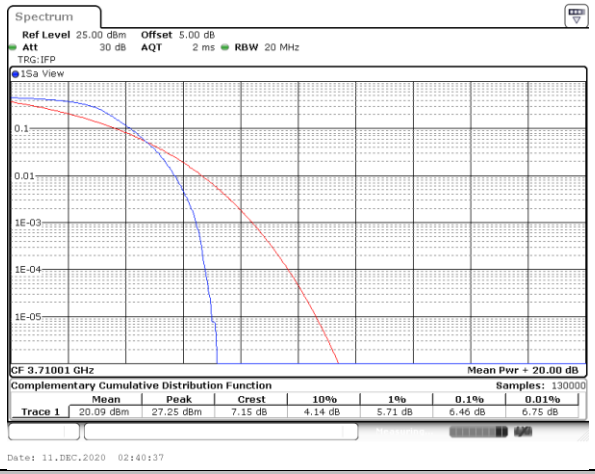
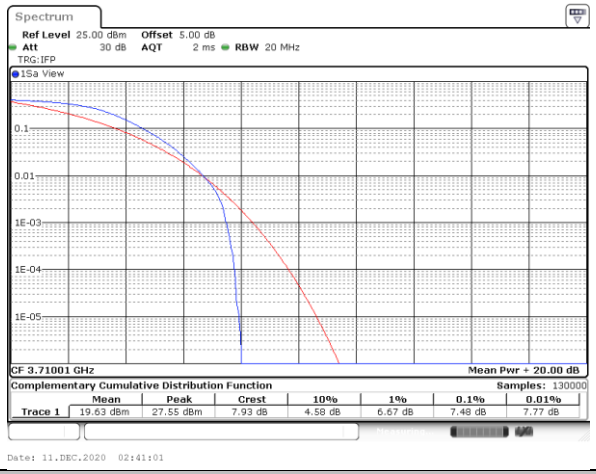
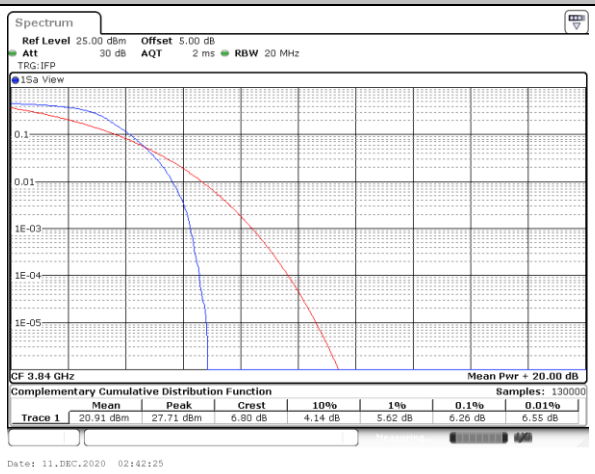
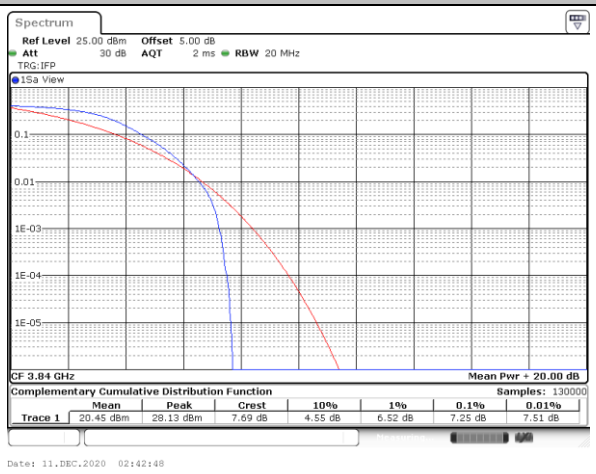
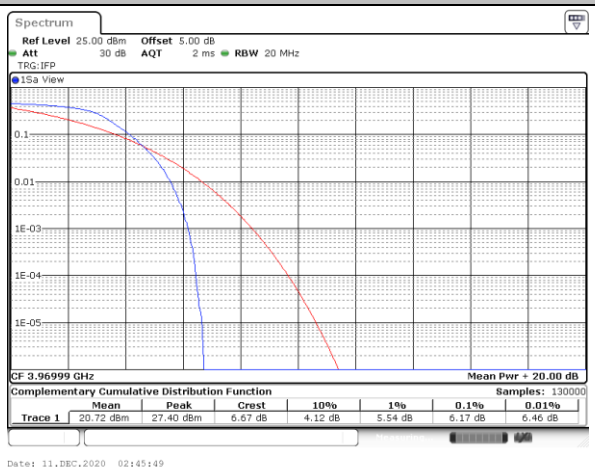
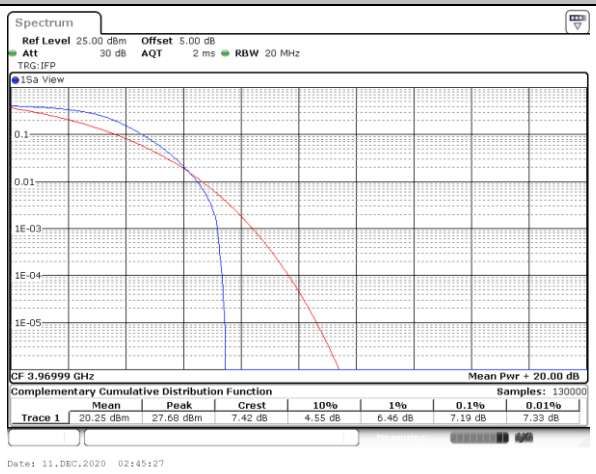
1. Normal Voltage =7.74 V.；Battery End Point (BEP) =7.2 V.；Maximum Voltage =8.9 V.
2. Note: The frequency fundamental emissions stay within the authorized frequency block.

# 5G NR n77 SA

## Peak-to-Average Ratio

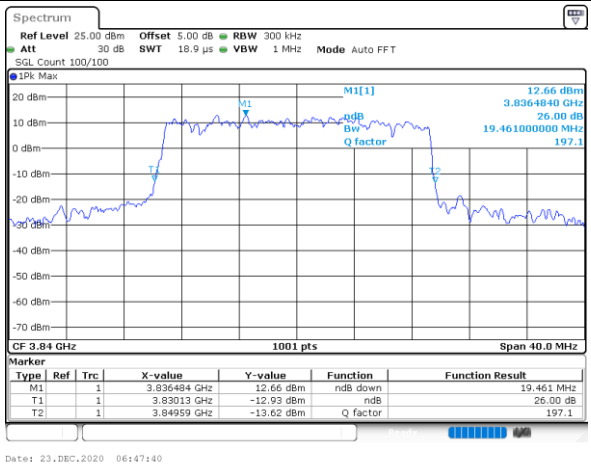
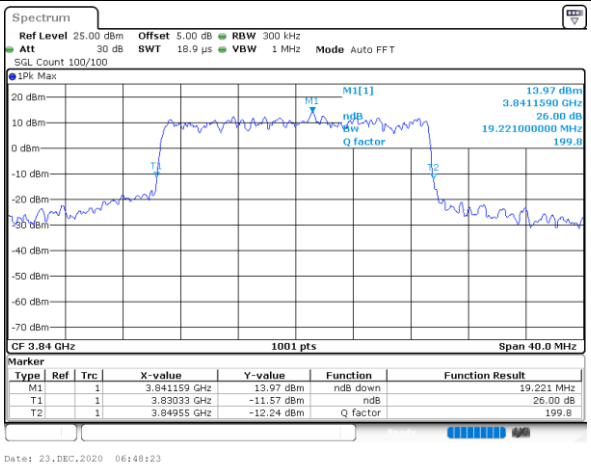
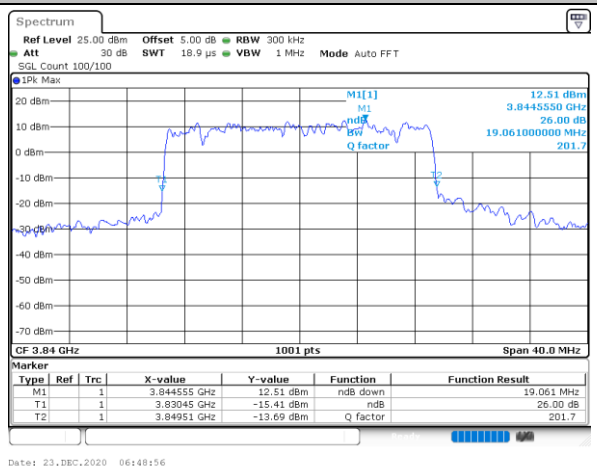
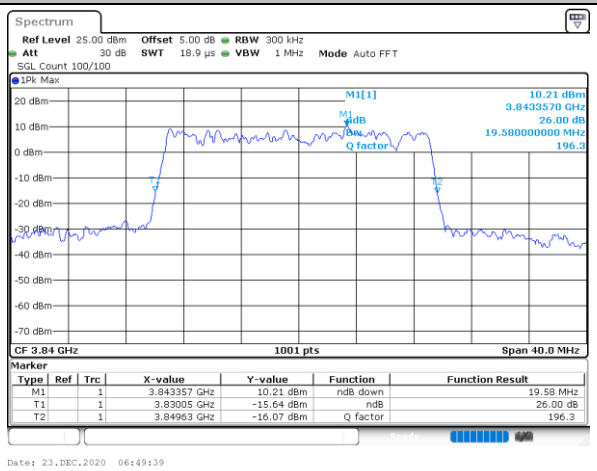
| Mode | FR1 n77 / 20MHz / DFT-S OFDM | | | | |
|---|---|---|---|---|---|
| Mod. | PI/2 BPSK | PI/2 BPSK | QPSK | QPSK | Limit: 13dB |
| RB Size | 1RB | Full RB | 1RB | Full RB | Result |
| Lowest CH | 6.75 | 6.46 | 7.59 | 7.48 | PASS |
| Middle CH | 6.58 | 6.26 | 7.33 | 7.25 | |
| Highest CH | 6.35 | 6.17 | 6.38 | 7.17 | |

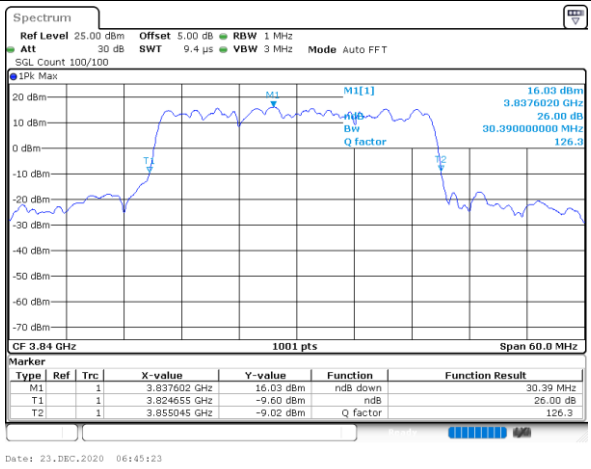
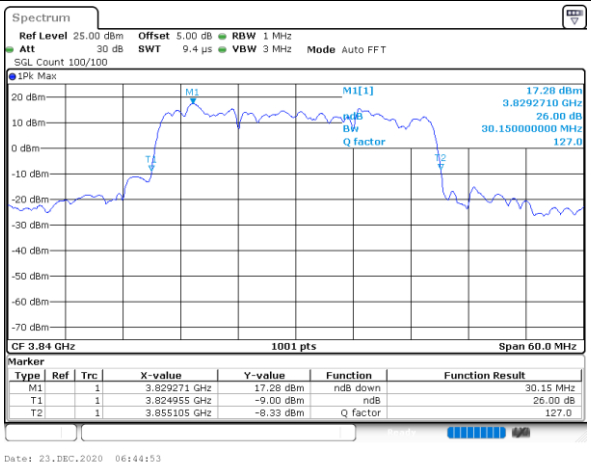
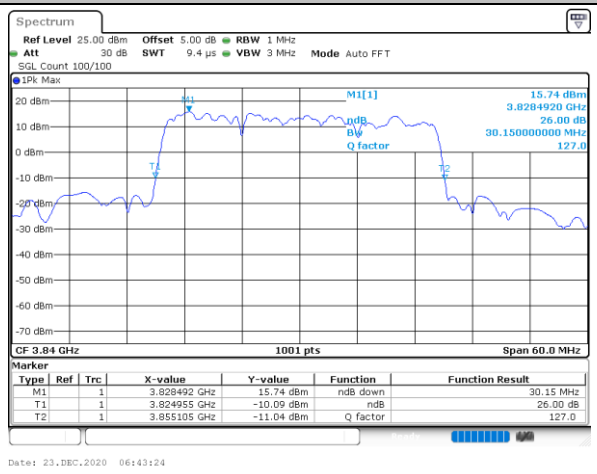
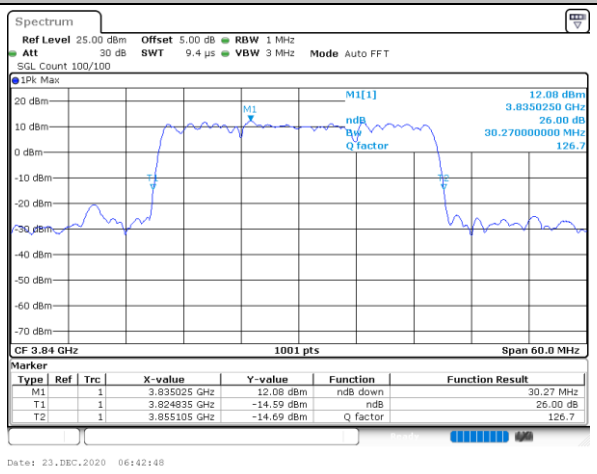
| FR1 n77 / 20MHz / DFT-S OFDM | |
|---|---|
| **PI/2 BPSK** | **QPSK** |
| **Lowest Channel / 1RB** | **Lowest Channel / 1RB** |
|  |  |
| **Middle Channel / 1 RB** | **Middle Channel / 1 RB** |
|  |  |
| **Highest Channel / 1 RB** | **Highest Channel / 1 RB** |
|  |  |

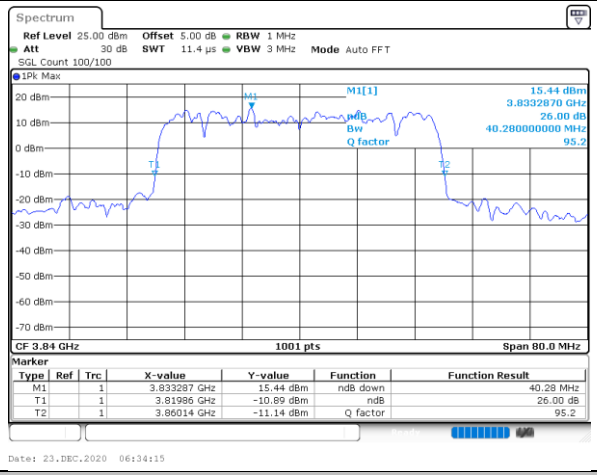
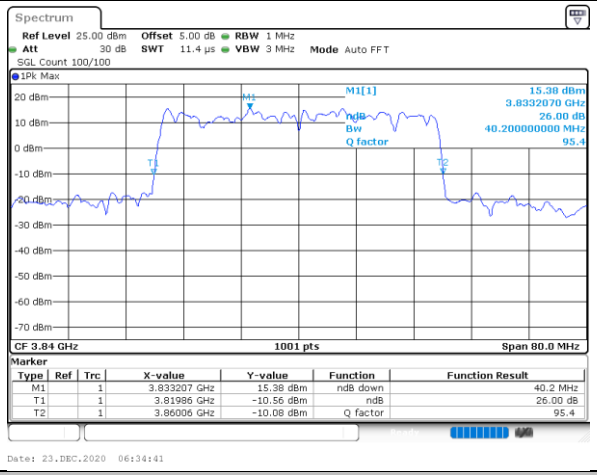
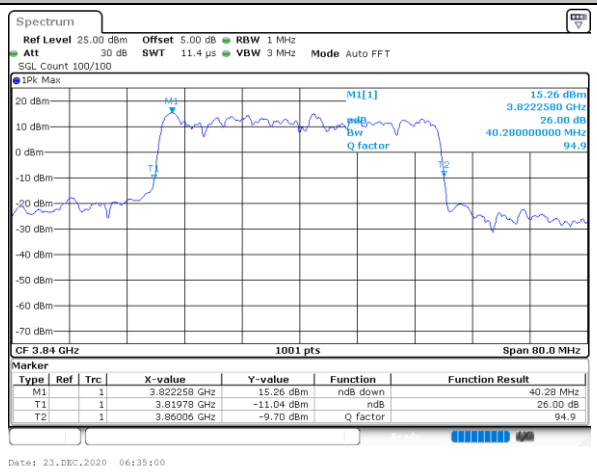
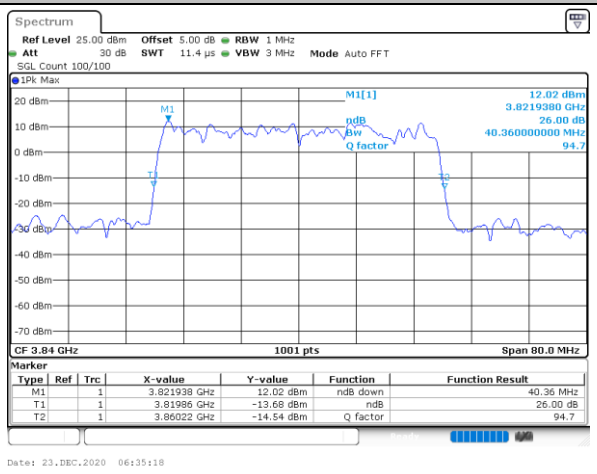
| FR1 n77 / 20MHz / DFT-S OFDM | |
|---|---|
| **PI/2 BPSK** | **QPSK** |
| **Lowest Channel / Full RB** | **Lowest Channel / Full RB** |
|  |  |
| **Middle Channel / Full RB** | **Middle Channel / Full RB** |
|  |  |
| **Highest Channel / Full RB** | **Highest Channel / Full RB** |
|  |  |

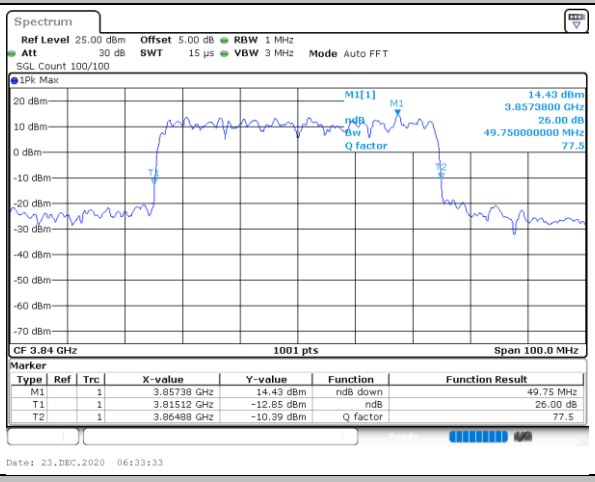
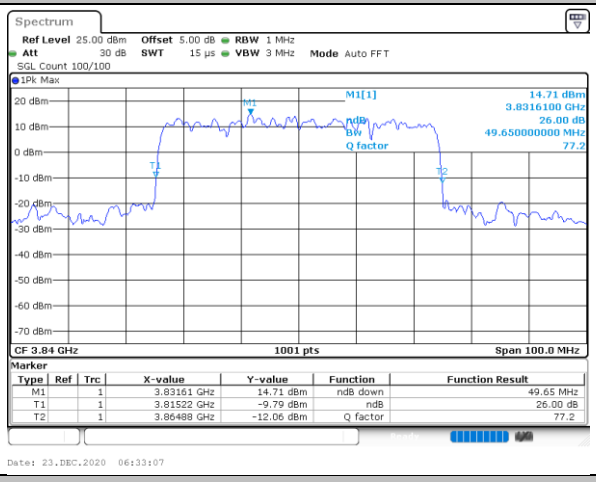
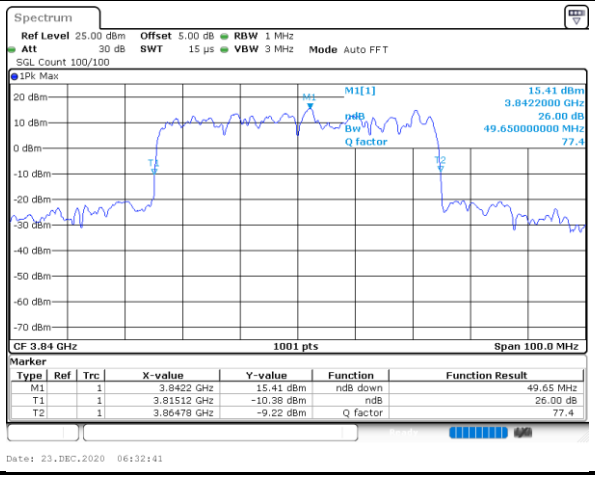
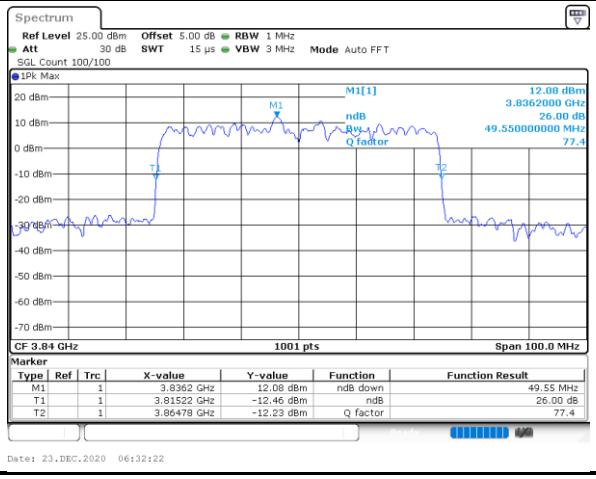
# 26dB Bandwidth

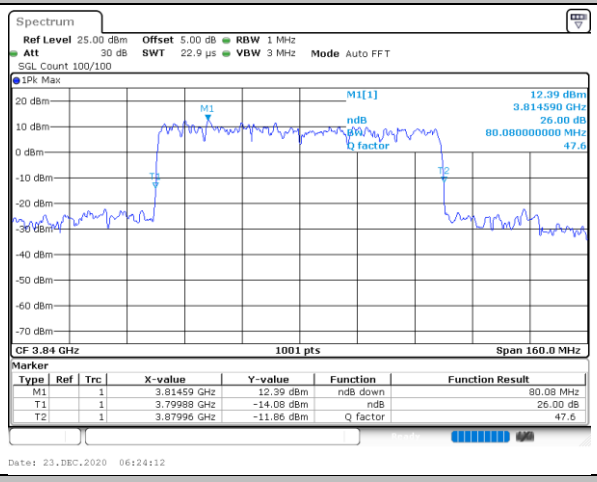
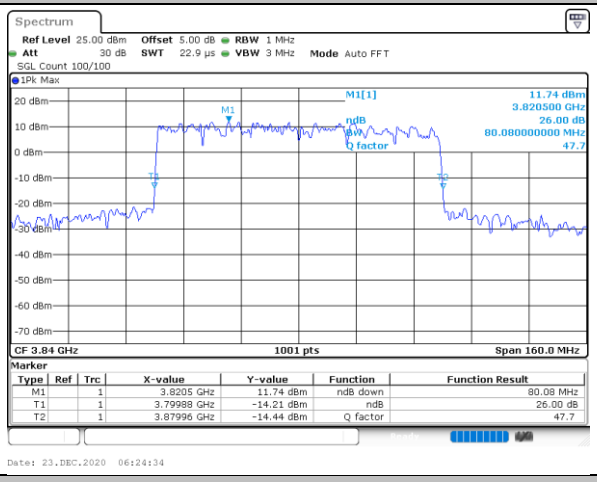
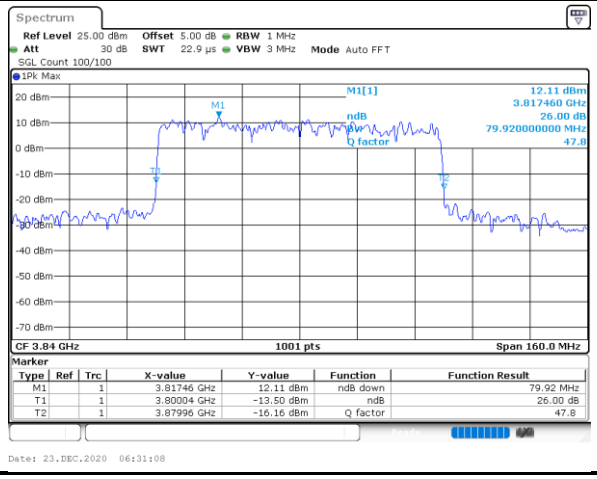
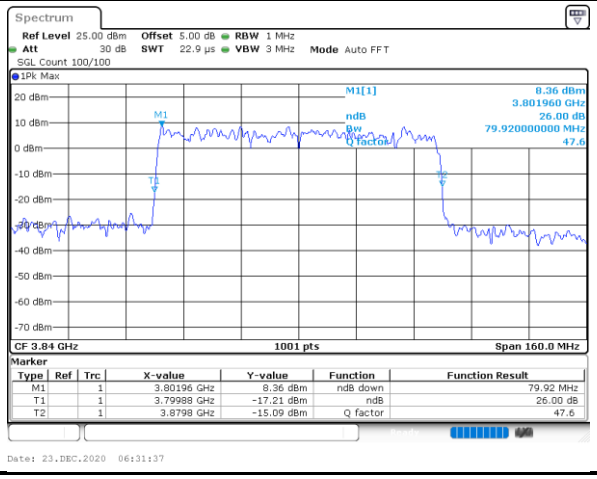
| Mode | FR1 n77 : 26dB BW(MHz) / CP-OFDM | | | |
|---|---|---|---|---|
| **BW** | **20MHz** | **20MHz** | **20MHz** | **20MHz** |
| **Mod.** | **QPSK** | **16QAM** | **64QAM** | **256QAM** |
| **Middle CH** | 19.46 | 19.22 | 19.06 | 19.58 |
| **BW** | **30MHz** | **30MHz** | **30MHz** | **30MHz** |
| **Mod.** | **QPSK** | **16QAM** | **64QAM** | **256QAM** |
| **Middle CH** | 30.39 | 30.15 | 30.15 | 30.27 |
| **BW** | **40MHz** | **40MHz** | **40MHz** | **40MHz** |
| **Mod.** | **QPSK** | **16QAM** | **64QAM** | **256QAM** |
| **Middle CH** | 40.28 | 40.2 | 40.28 | 40.36 |
| **BW** | **50MHz** | **50MHz** | **50MHz** | **50MHz** |
| **Mod.** | **QPSK** | **16QAM** | **64QAM** | **256QAM** |
| **Middle CH** | 49.75 | 49.65 | 49.65 | 49.55 |
| **BW** | **80MHz** | **80MHz** | **80MHz** | **80MHz** |
| **Mod.** | **QPSK** | **16QAM** | **64QAM** | **256QAM** |
| **Middle CH** | 80.08 | 80.08 | 79.92 | 79.92 |
| **BW** | **90MHz** | **90MHz** | **90MHz** | **90MHz** |
| **Mod.** | **QPSK** | **16QAM** | **64QAM** | **256QAM** |
| **Middle CH** | 90.27 | 90.27 | 90.27 | 90.45 |
| **BW** | **100MHz** | **100MHz** | **100MHz** | **100MHz** |
| **Mod.** | **QPSK** | **16QAM** | **64QAM** | **256QAM** |
| **Middle CH** | 100.5 | 100.3 | 100.7 | 100.1 |

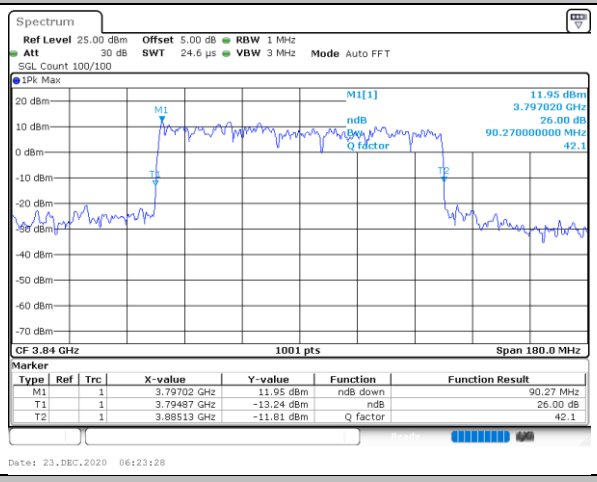
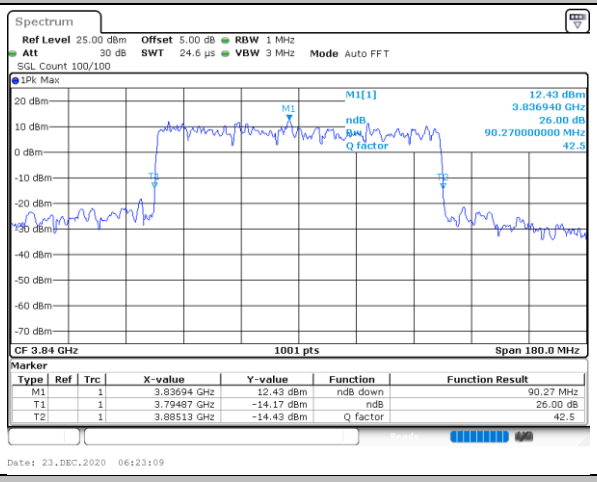
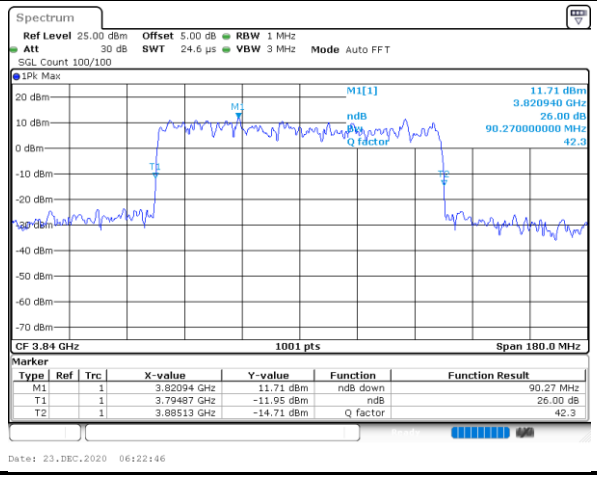
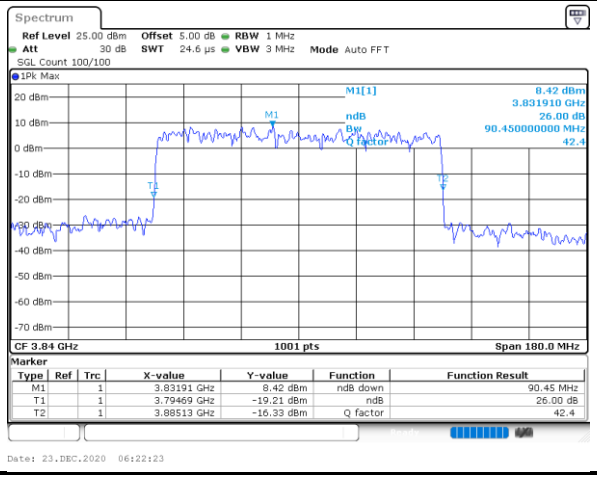
| FR1 n77 / 20MHz / CP-OFDM | |
|---|---|
| **QPSK** | **16QAM** |
| **Middle Channel** | **Middle Channel** |
|  |  |
| **64QAM** | **256QAM** |
| **Middle Channel** | **Middle Channel** |
|  |  |

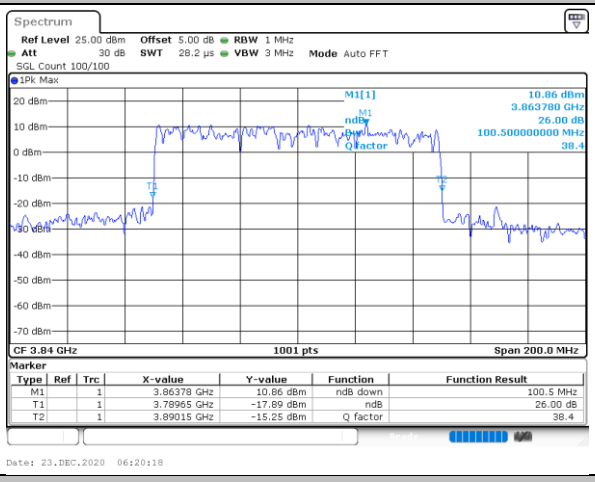
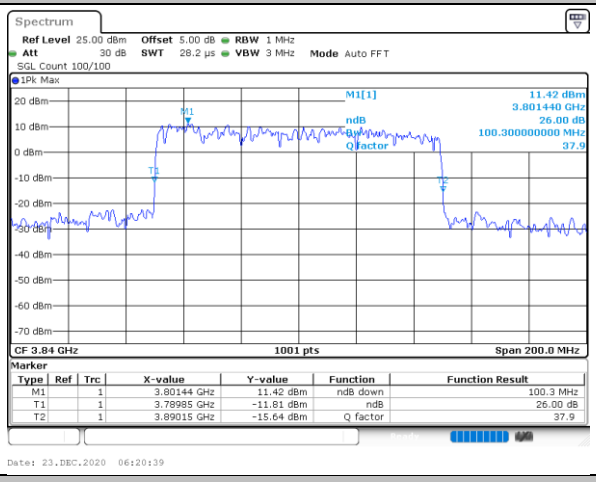
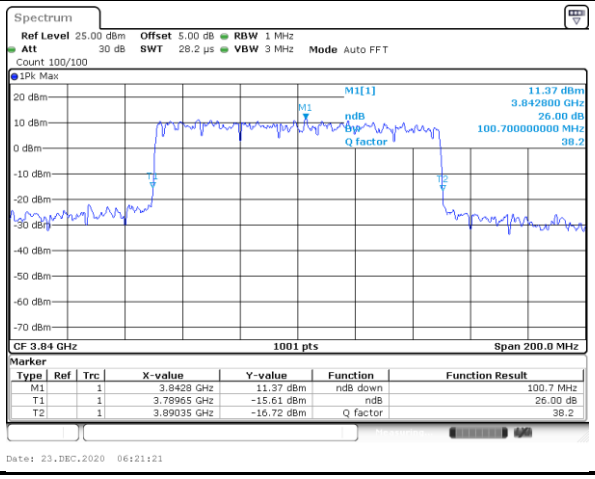
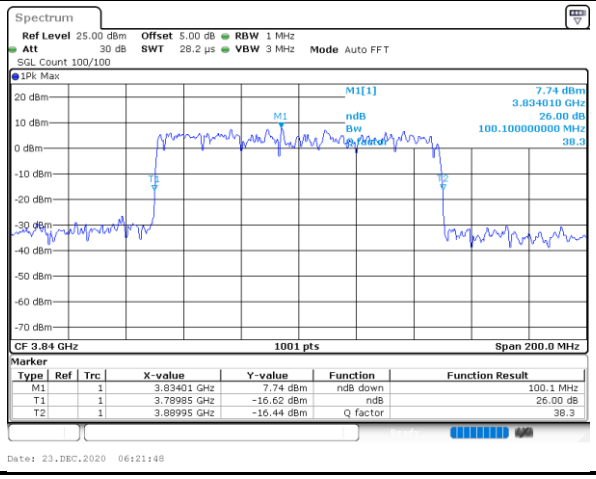
| FR1 n77 / 30MHz / CP-OFDM | |
|---|---|
| **QPSK** | **16QAM** |
| **Middle Channel** | **Middle Channel** |
|  |  |
| **64QAM** | **256QAM** |
| **Middle Channel** | **Middle Channel** |
|  |  |

| FR1 n77 / 40MHz / CP-OFDM | |
|---|---|
| **QPSK** | **16QAM** |
| **Middle Channel** | **Middle Channel** |
|  |  |
| **64QAM** | **256QAM** |
| **Middle Channel** | **Middle Channel** |
|  |  |

| FR1 n77 / 50MHz / CP-OFDM | |
|---|---|
| **QPSK** | **16QAM** |
| **Middle Channel** | **Middle Channel** |
|  |  |
| **64QAM** | **256QAM** |
| **Middle Channel** | **Middle Channel** |
|  |  |

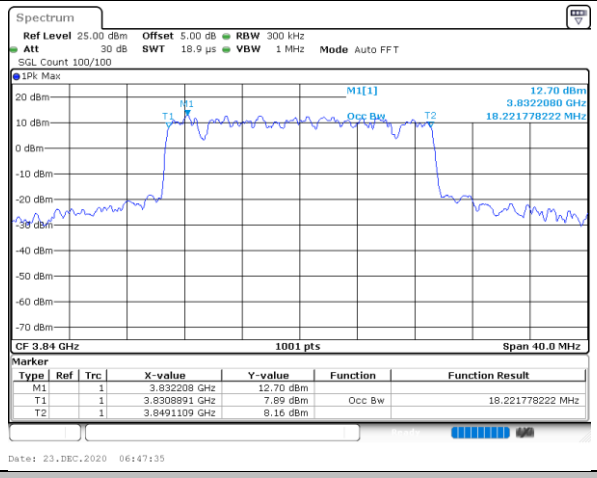
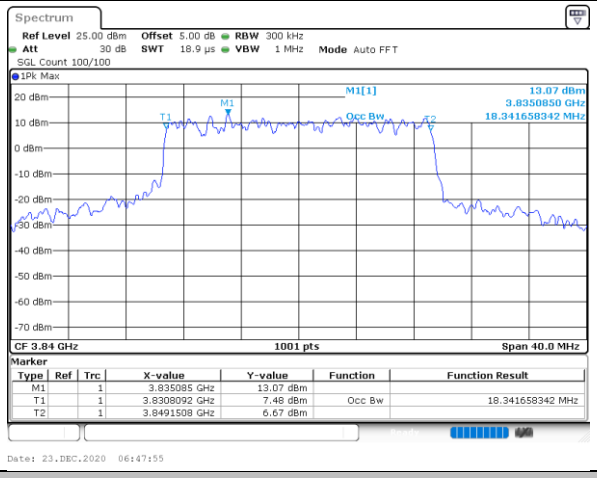
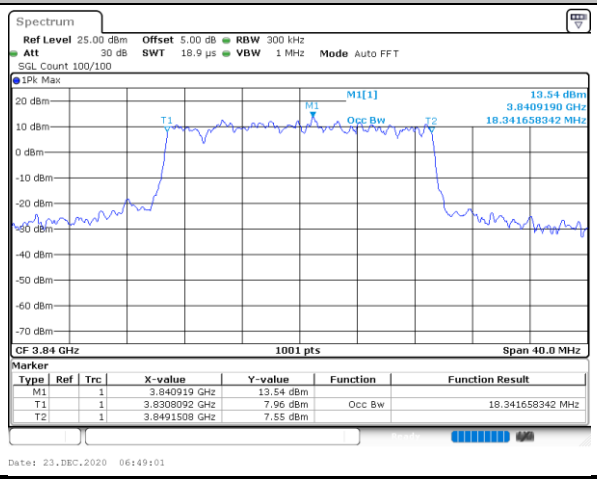
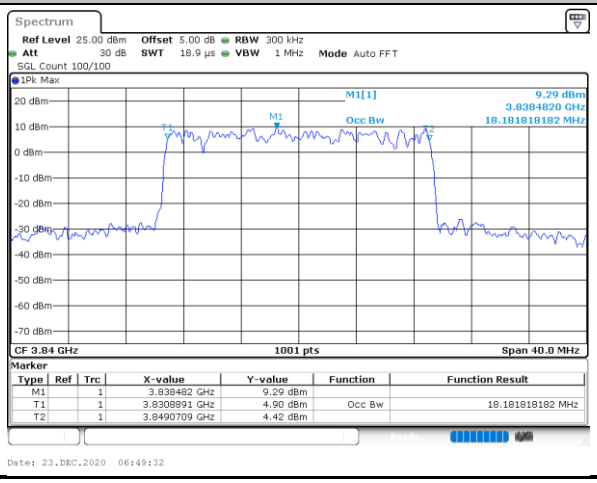
| FR1 n77 / 80MHz / CP-OFDM | |
|---|---|
| **QPSK** | **16QAM** |
| **Middle Channel** | **Middle Channel** |
|  |  |
| **64QAM** | **256QAM** |
| **Middle Channel** | **Middle Channel** |
|  |  |

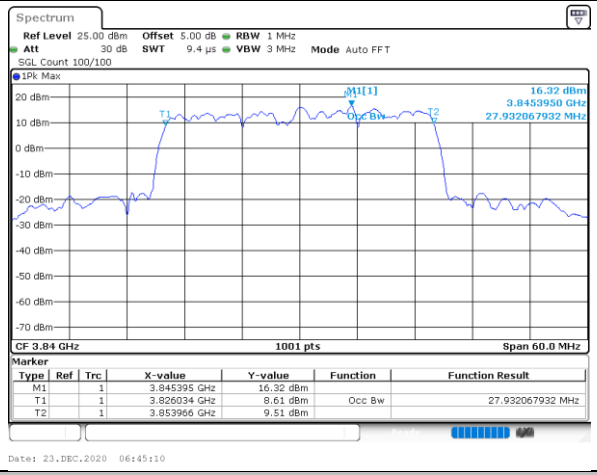
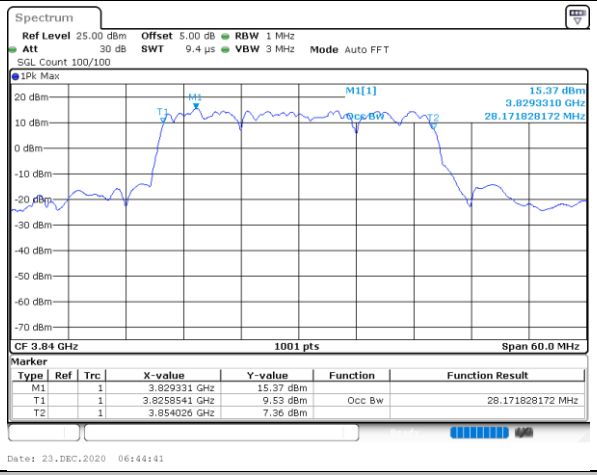
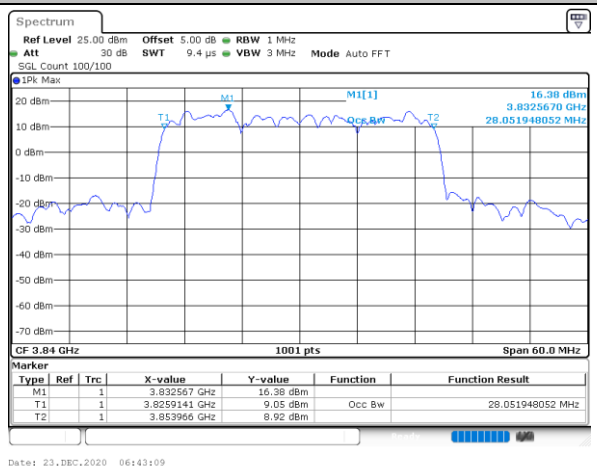
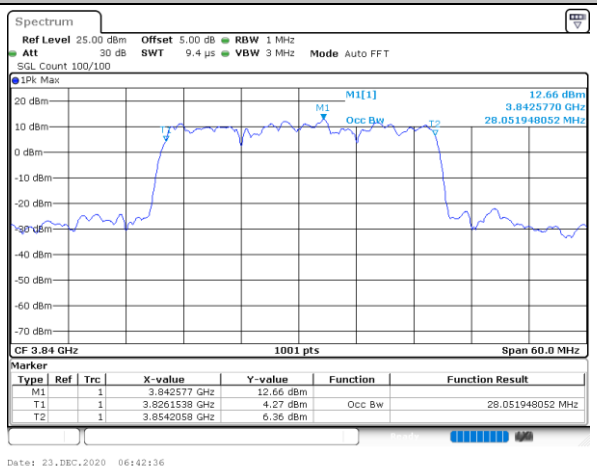
| FR1 n77 / 90MHz / CP-OFDM | |
|---|---|
| **QPSK** | **16QAM** |
| **Middle Channel** | **Middle Channel** |
|  |  |
| **64QAM** | **256QAM** |
| **Middle Channel** | **Middle Channel** |
|  |  |

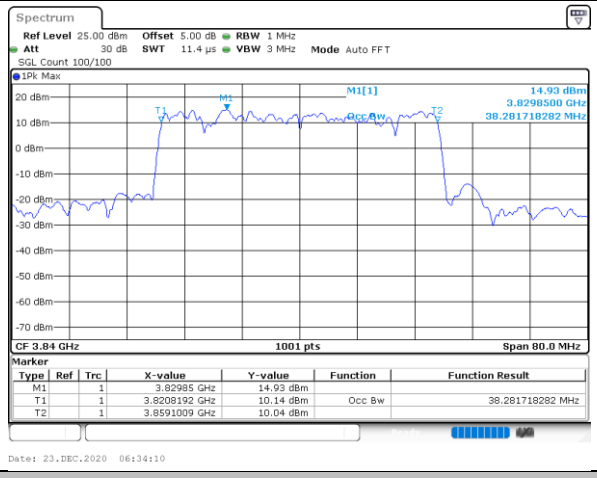
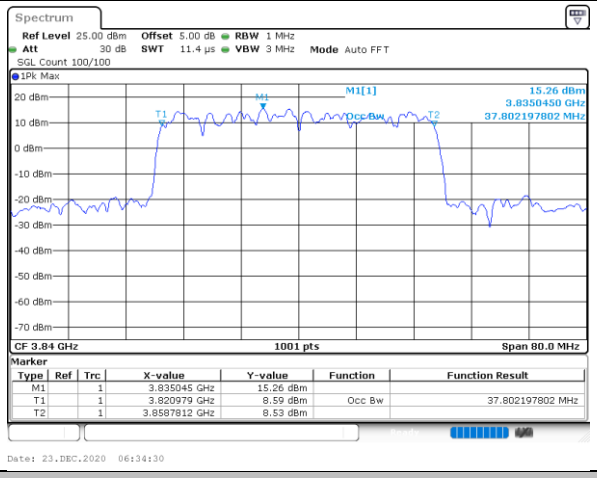
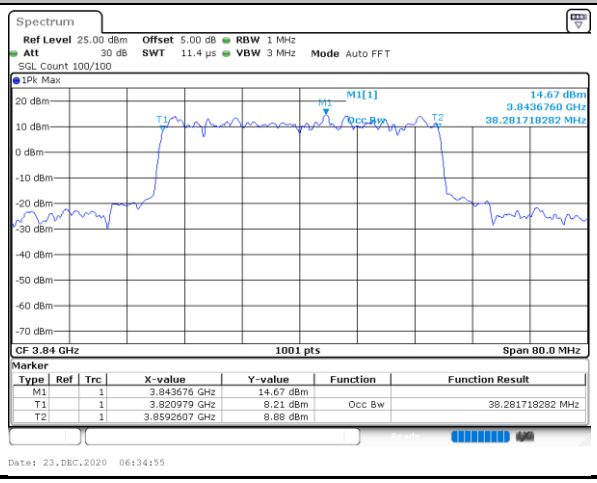
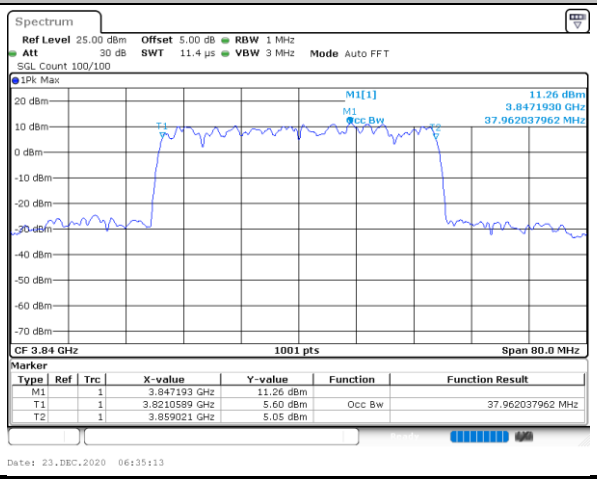
| FR1 n77 / 100MHz / CP-OFDM | |
|---|---|
| **QPSK** | **16QAM** |
| **Middle Channel** | **Middle Channel** |
|  |  |
| **64QAM** | **256QAM** |
| **Middle Channel** | **Middle Channel** |
|  |  |

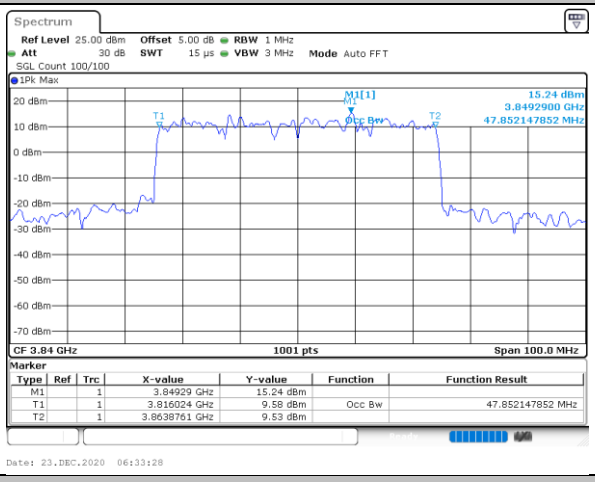
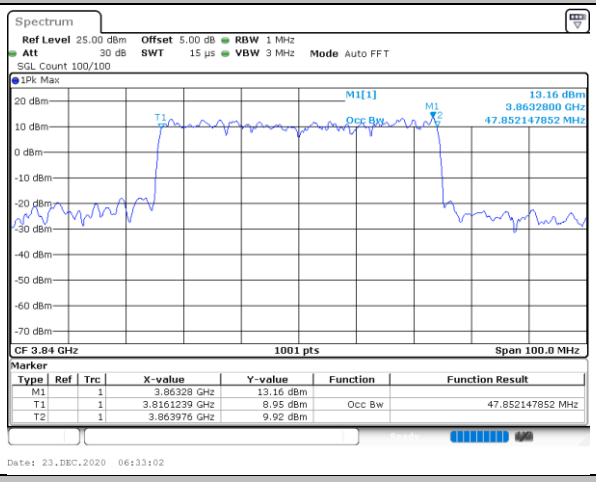
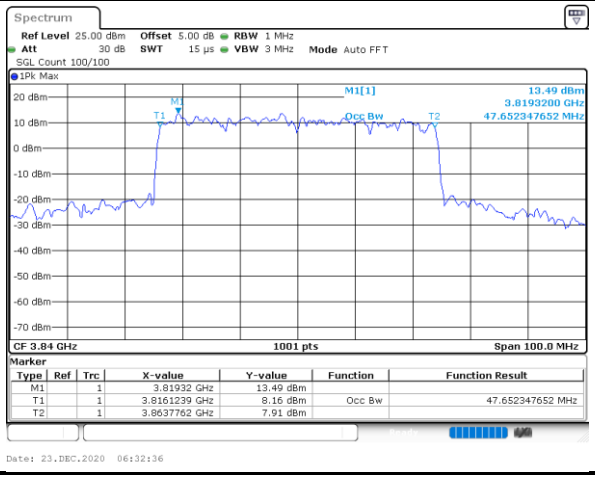
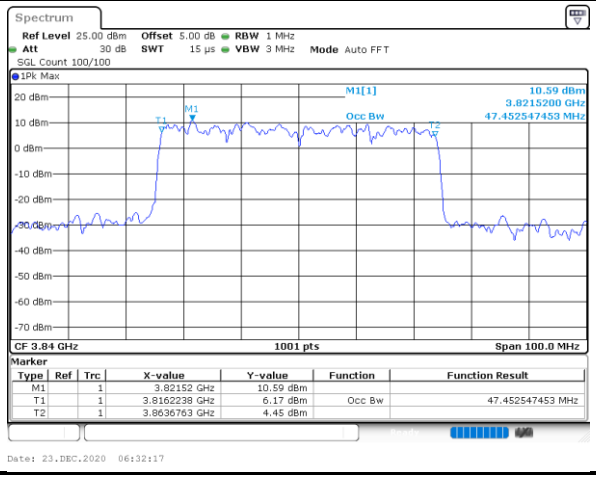
# Occupied Bandwidth

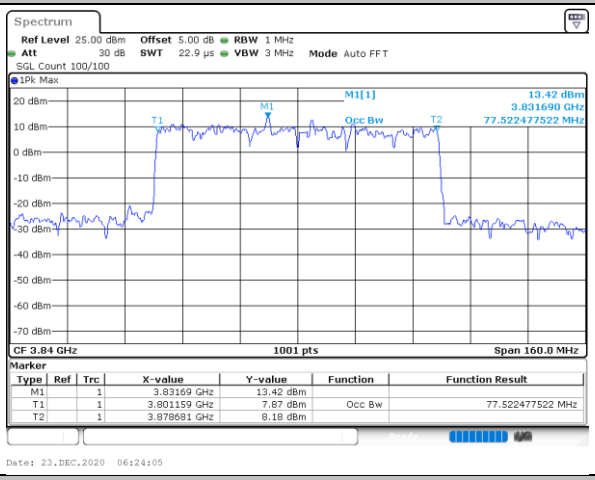
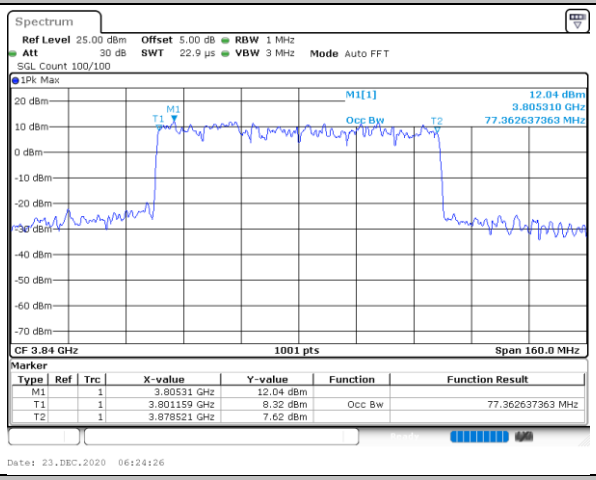
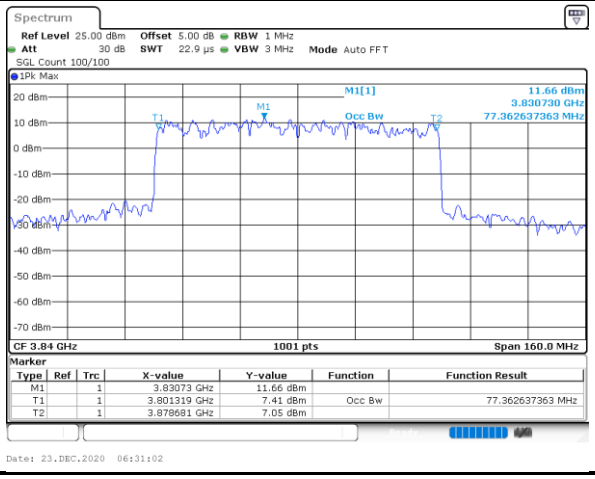
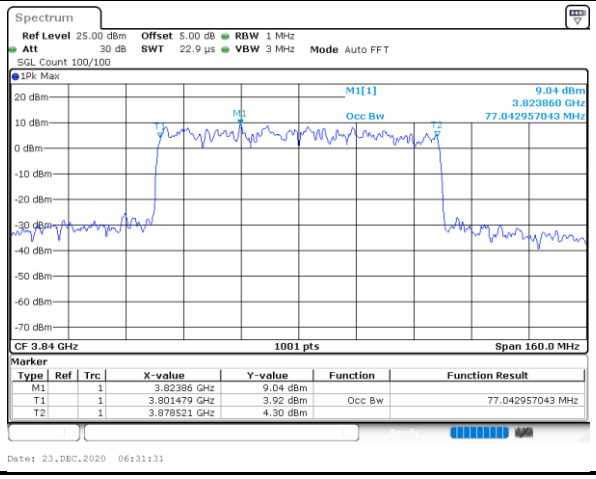
| Mode | FR1 n77 : OBW(MHz) / CP-OFDM | | | |
|---|---|---|---|---|
| **BW** | **20MHz** | **20MHz** | **20MHz** | **20MHz** |
| **Mod.** | **QPSK** | **16QAM** | **64QAM** | **256QAM** |
| **Middle CH** | 18.22 | 18.34 | 18.34 | 18.18 |
| **BW** | **30MHz** | **30MHz** | **30MHz** | **30MHz** |
| **Mod.** | **QPSK** | **16QAM** | **64QAM** | **256QAM** |
| **Middle CH** | 27.93 | 28.17 | 28.05 | 28.05 |
| **BW** | **40MHz** | **40MHz** | **40MHz** | **40MHz** |
| **Mod.** | **QPSK** | **16QAM** | **64QAM** | **256QAM** |
| **Middle CH** | 38.28 | 37.8 | 38.28 | 37.96 |
| **BW** | **50MHz** | **50MHz** | **50MHz** | **50MHz** |
| **Mod.** | **QPSK** | **16QAM** | **64QAM** | **256QAM** |
| **Middle CH** | 47.85 | 47.85 | 47.65 | 47.45 |
| **BW** | **80MHz** | **80MHz** | **80MHz** | **80MHz** |
| **Mod.** | **QPSK** | **16QAM** | **64QAM** | **256QAM** |
| **Middle CH** | 77.52 | 77.36 | 77.36 | 77.04 |
| **BW** | **90MHz** | **90MHz** | **90MHz** | **90MHz** |
| **Mod.** | **QPSK** | **16QAM** | **64QAM** | **256QAM** |
| **Middle CH** | 87.57 | 87.57 | 87.39 | 87.21 |
| **BW** | **100MHz** | **100MHz** | **100MHz** | **100MHz** |
| **Mod.** | **QPSK** | **16QAM** | **64QAM** | **256QAM** |
| **Middle CH** | 97.5 | 97.5 | 97.5 | 97.1 |

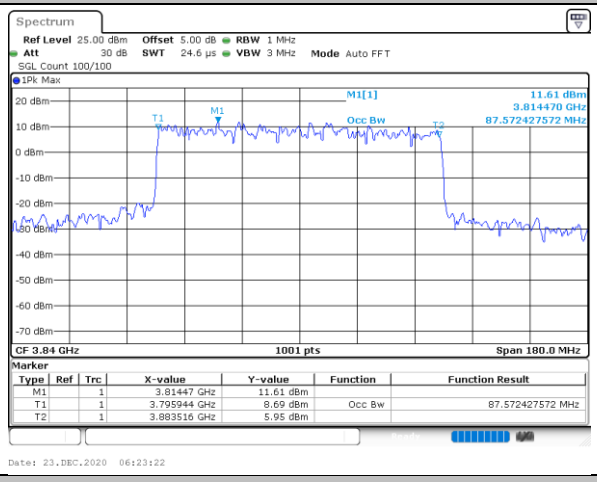
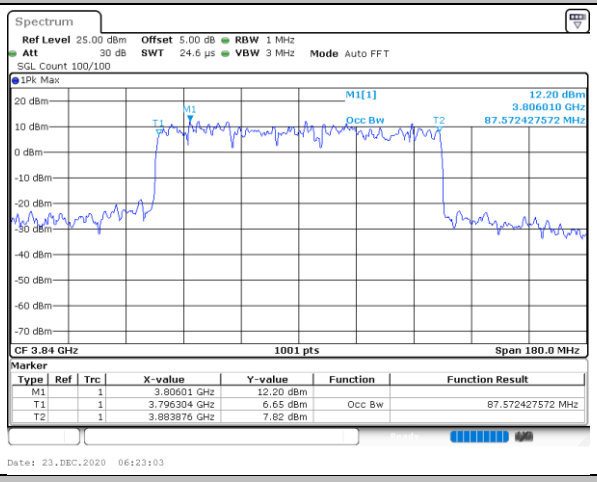
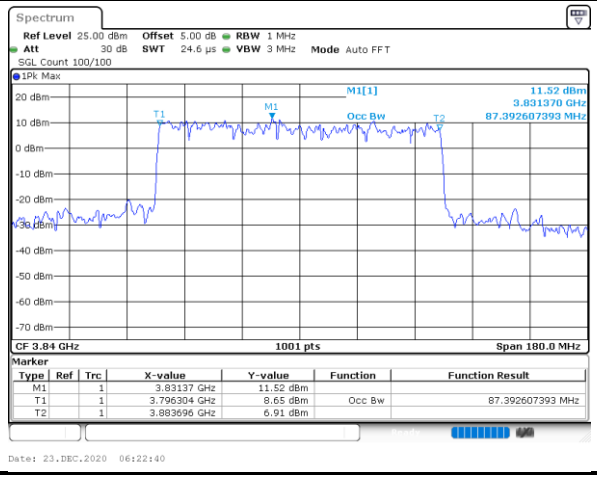
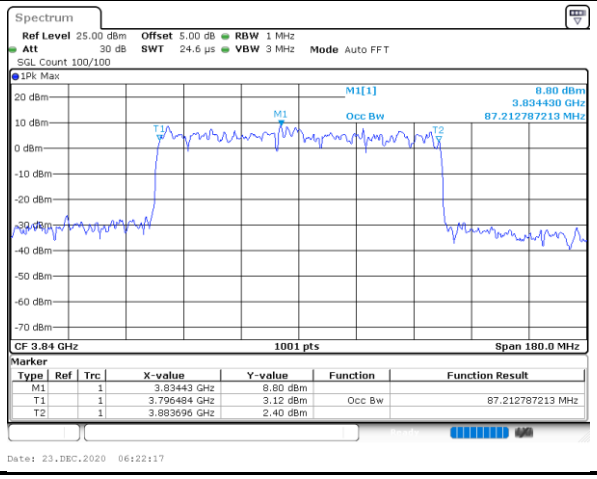
| FR1 n77 / 20MHz / CP-OFDM | |
|---|---|
| **QPSK** | **16QAM** |
| **Middle Channel** | **Middle Channel** |
|  |  |
| **64QAM** | **256QAM** |
| **Middle Channel** | **Middle Channel** |
|  |  |

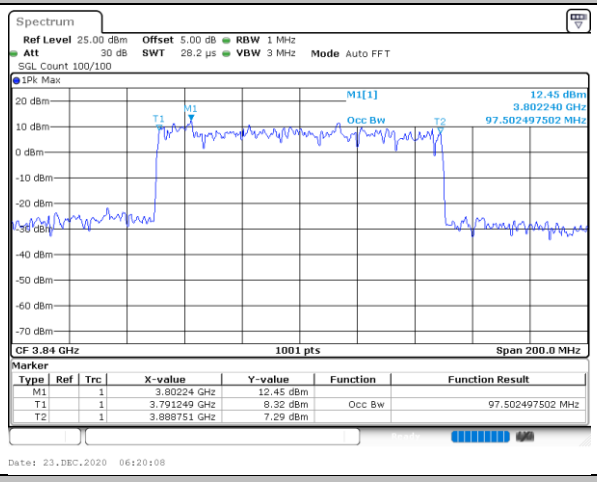
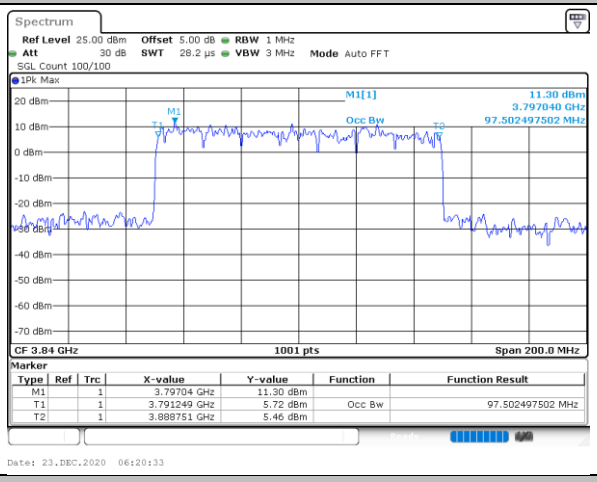
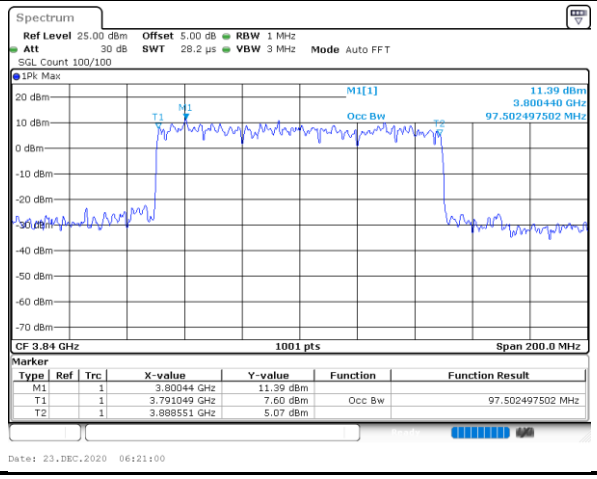
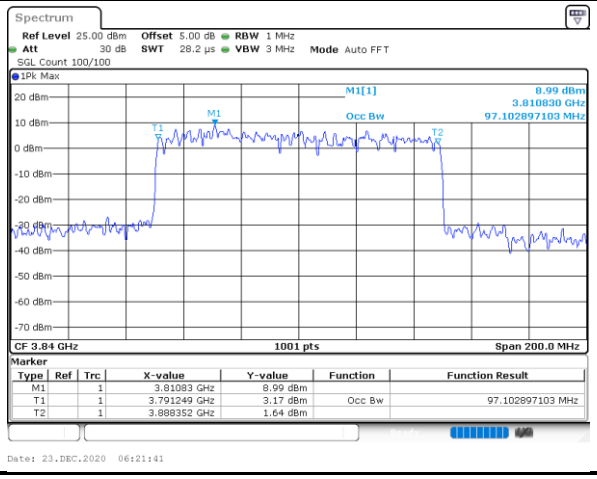
| FR1 n77 / 30MHz / CP-OFDM | |
|---|---|
| **QPSK** | **16QAM** |
| **Middle Channel** | **Middle Channel** |
|  |  |
| **64QAM** | **256QAM** |
| **Middle Channel** | **Middle Channel** |
|  |  |

| FR1 n77 / 40MHz / CP-OFDM | |
|---|---|
| **QPSK** | **16QAM** |
| **Middle Channel** | **Middle Channel** |
|  |  |
| **64QAM** | **256QAM** |
| **Middle Channel** | **Middle Channel** |
|  |  |

| FR1 n77 / 50MHz / CP-OFDM | |
|---|---|
| **QPSK** | **16QAM** |
| **Middle Channel** | **Middle Channel** |
|  |  |
| **64QAM** | **256QAM** |
| **Middle Channel** | **Middle Channel** |
|  |  |

| FR1 n77 / 80MHz / CP-OFDM | |
|---|---|
| **QPSK** | **16QAM** |
| **Middle Channel** | **Middle Channel** |
|  |  |
| **64QAM** | **256QAM** |
| **Middle Channel** | **Middle Channel** |
|  |  |

| FR1 n77 / 90MHz / CP-OFDM | |
|---|---|
| **QPSK** | **16QAM** |
| **Middle Channel** | **Middle Channel** |
|  |  |
| **64QAM** | **256QAM** |
| **Middle Channel** | **Middle Channel** |
|  |  |

| FR1 n77 / 100MHz / CP-OFDM | |
|---|---|
| **QPSK** | **16QAM** |
| **Middle Channel** | **Middle Channel** |
|  |  |
| **64QAM** | **256QAM** |
| **Middle Channel** | **Middle Channel** |
|  |  |