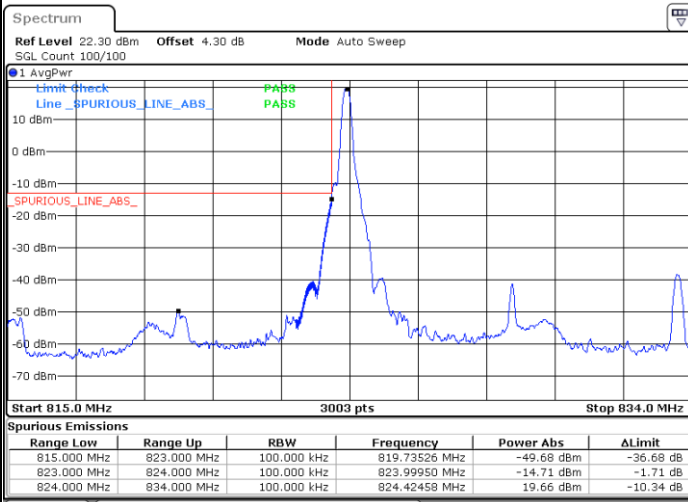




## FR1 n5 / 10MHz / DFT-s-OFDM / PI/2 BPSK

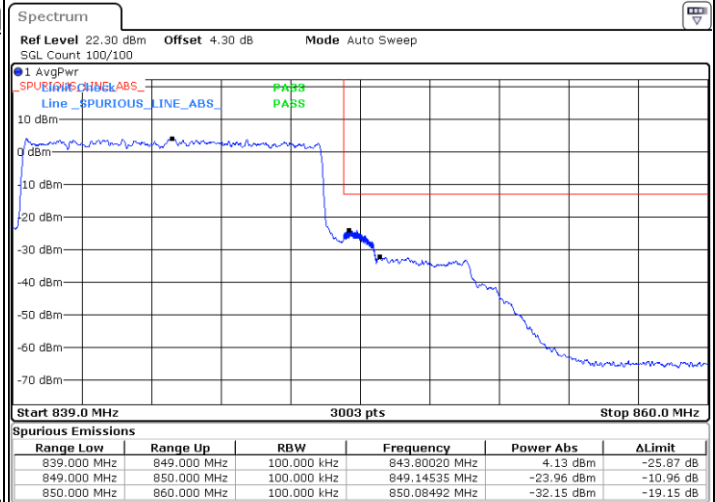
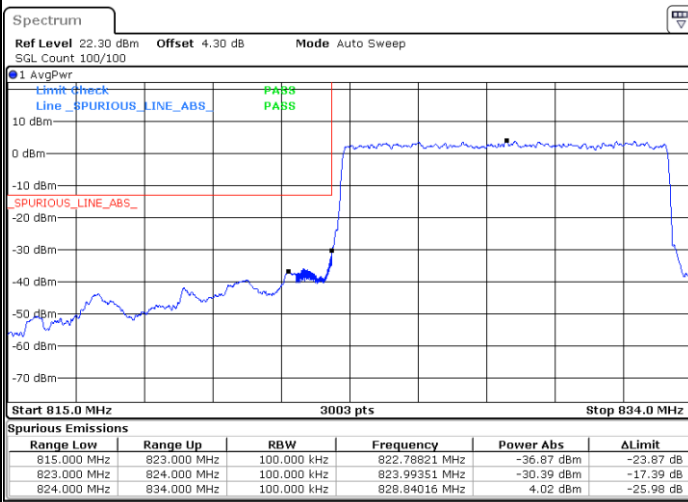
## Lowest Band Edge / 1RB0

## Highest Band Edge / 1RBmax



## Lowest Band Edge / Full RB

## Highest Band Edge / Full RB

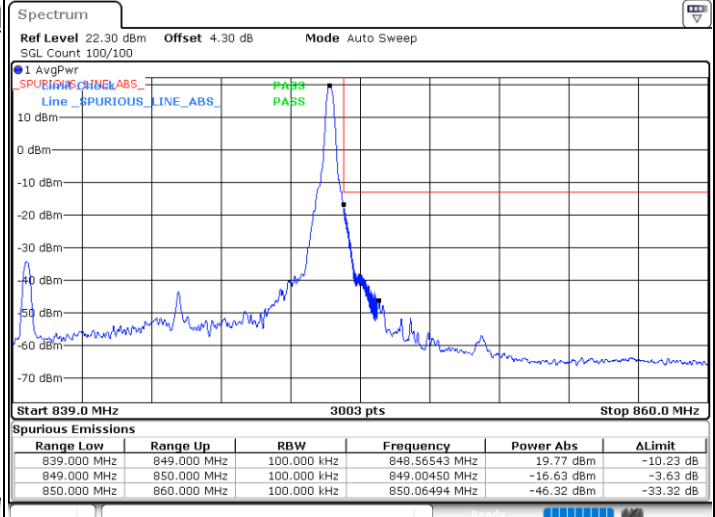
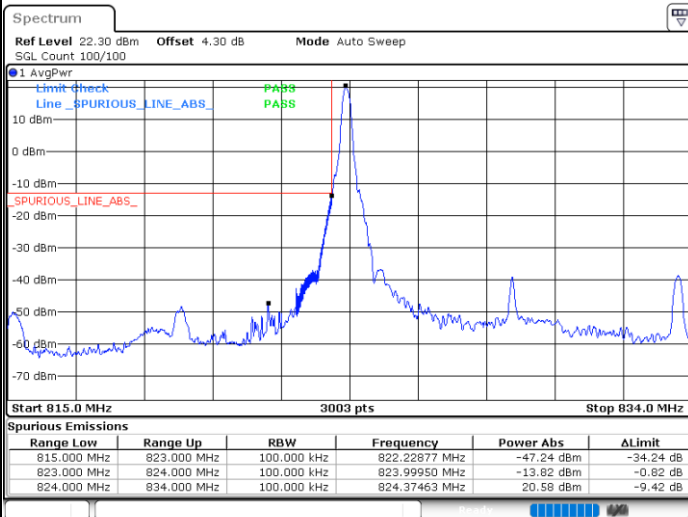




## FR1 n5 / 10MHz / DFT-s-OFDM / QPSK

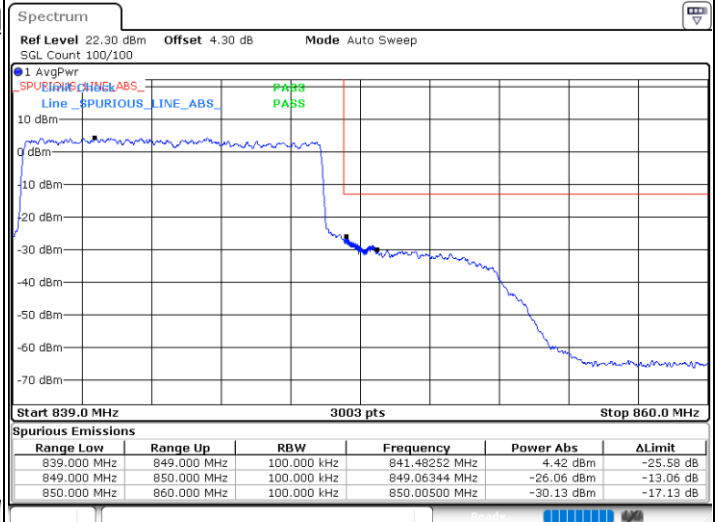
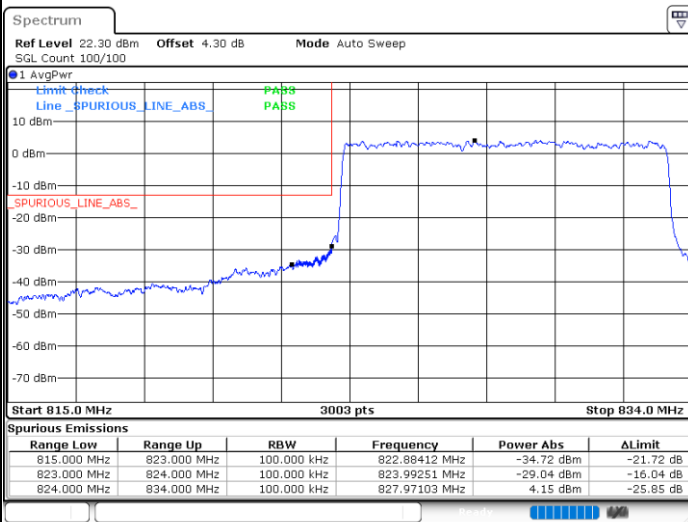
## Lowest Band Edge / 1RB0

## Highest Band Edge / 1RBmax



## Lowest Band Edge / Full RB

## Highest Band Edge / Full RB

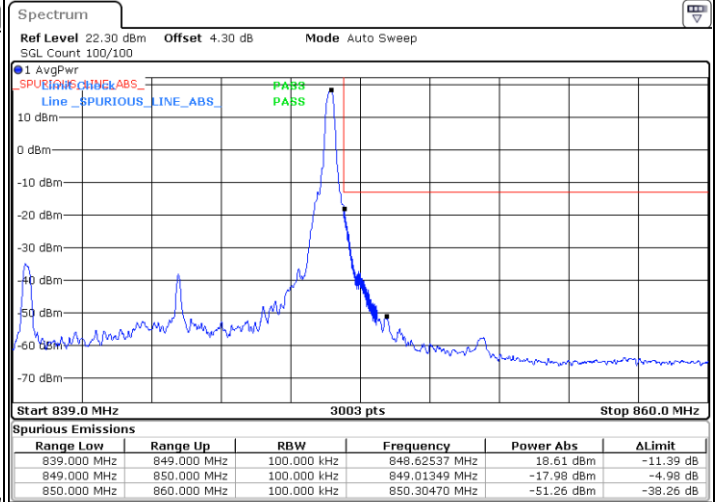
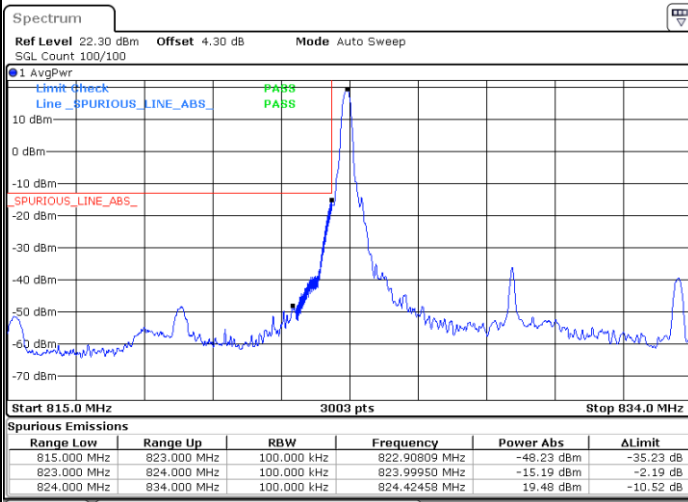




## FR1 n5 / 10MHz / DFT-s-OFDM / 16QAM

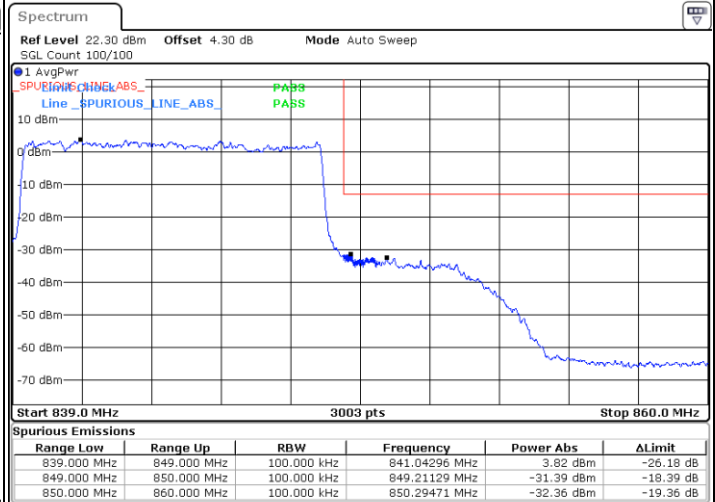
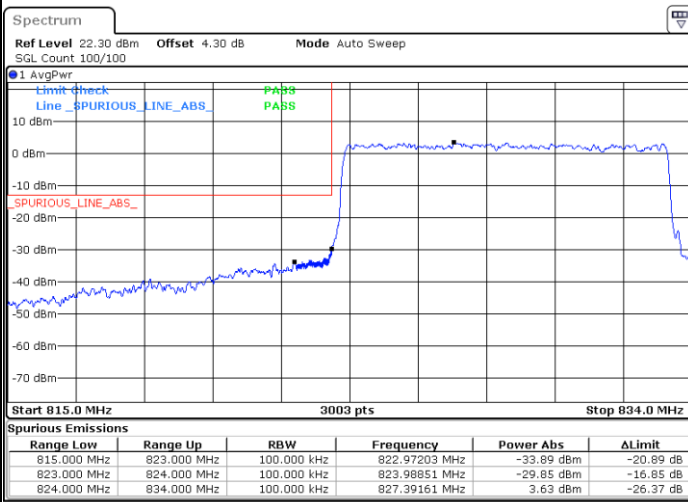
## Lowest Band Edge / 1RB0

## Highest Band Edge / 1RBmax



## Lowest Band Edge / Full RB

## Highest Band Edge / Full RB

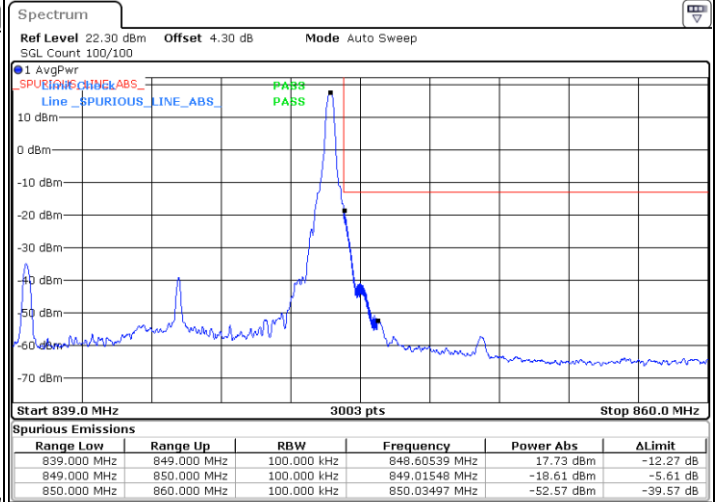
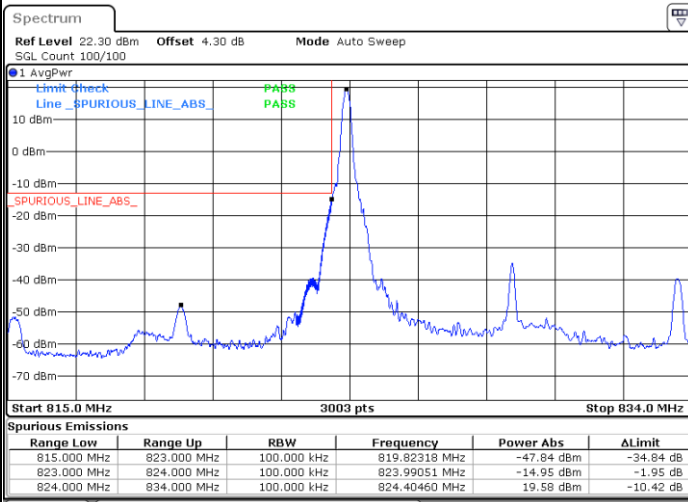




## FR1 n5 / 10MHz / DFT-s-OFDM / 64QAM

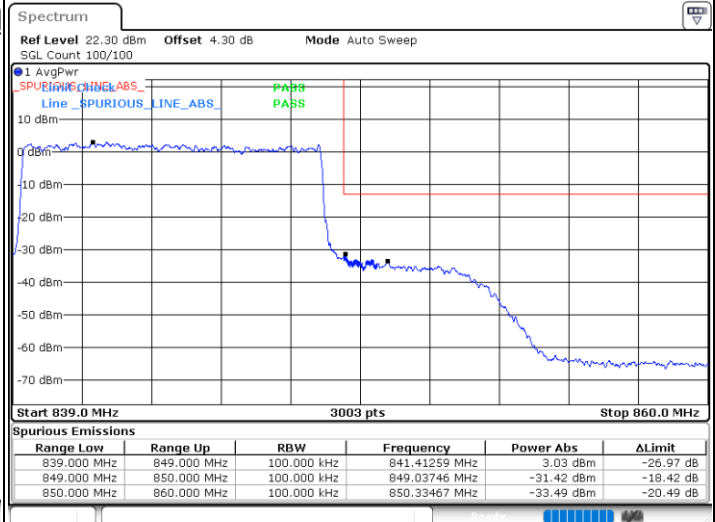
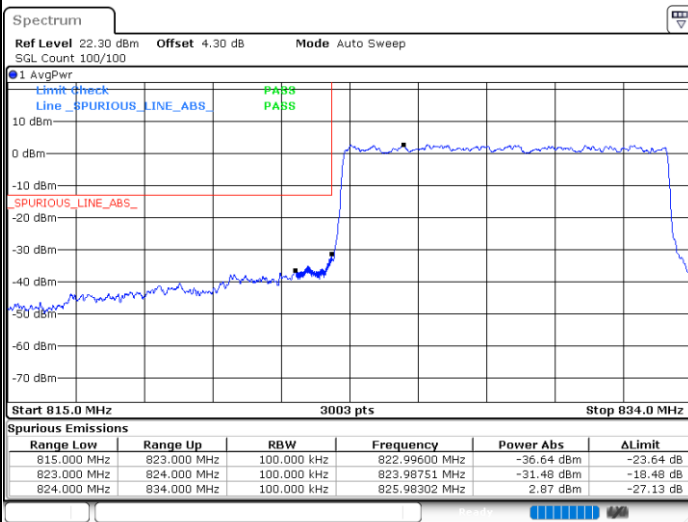
## Lowest Band Edge / 1RB0

## Highest Band Edge / 1RBmax



## Lowest Band Edge / Full RB

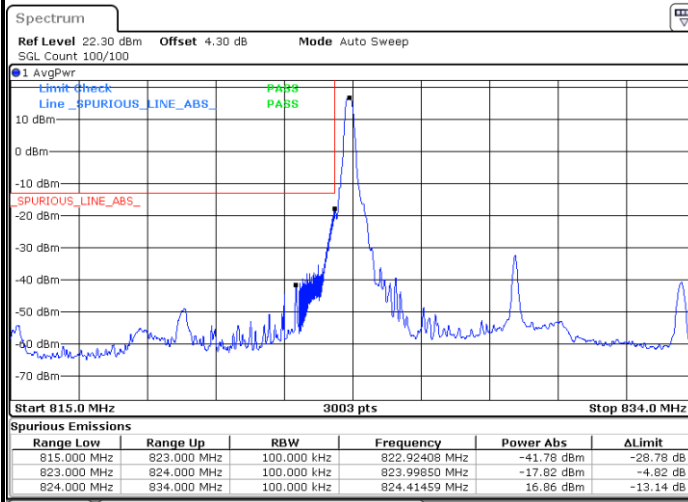
## Highest Band Edge / Full RB



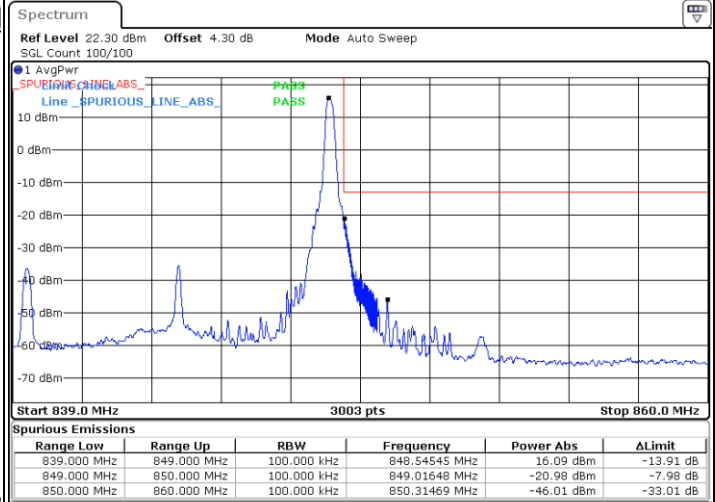


## FR1 n5 / 10MHz / DFT-s-OFDM / 256QAM

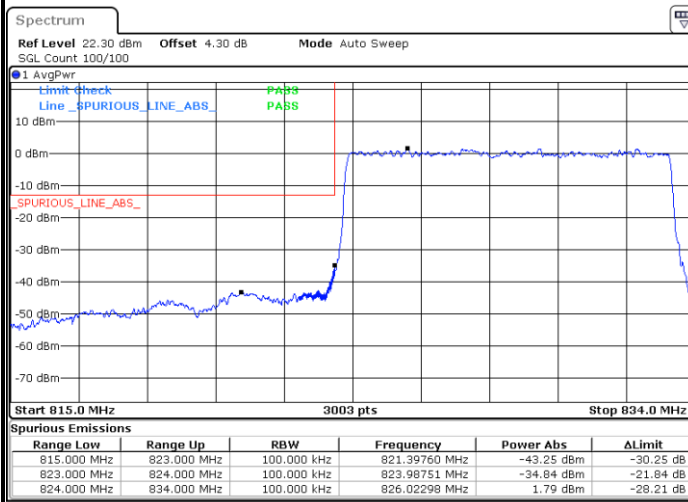
## Lowest Band Edge / 1RB0



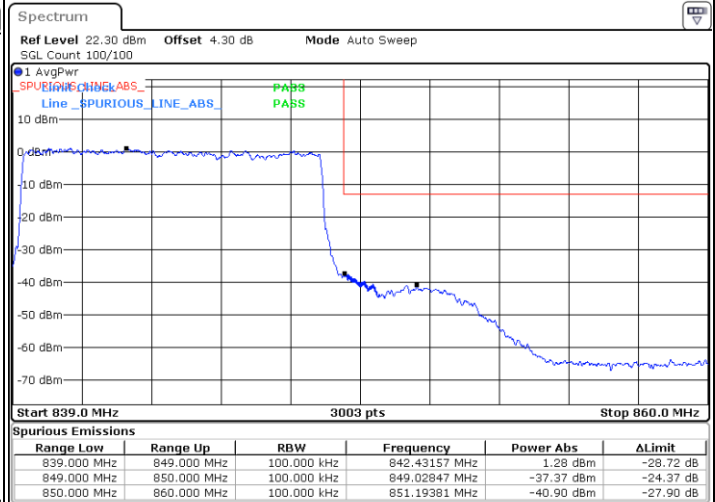
## Highest Band Edge / 1RBmax



## Lowest Band Edge / Full RB



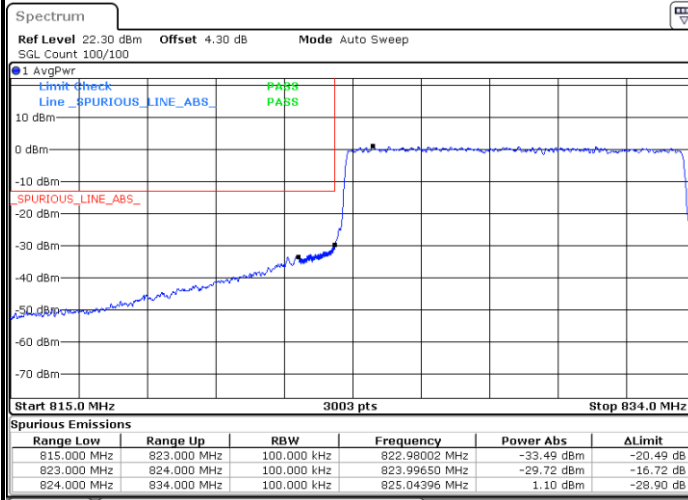
## Highest Band Edge / Full RB





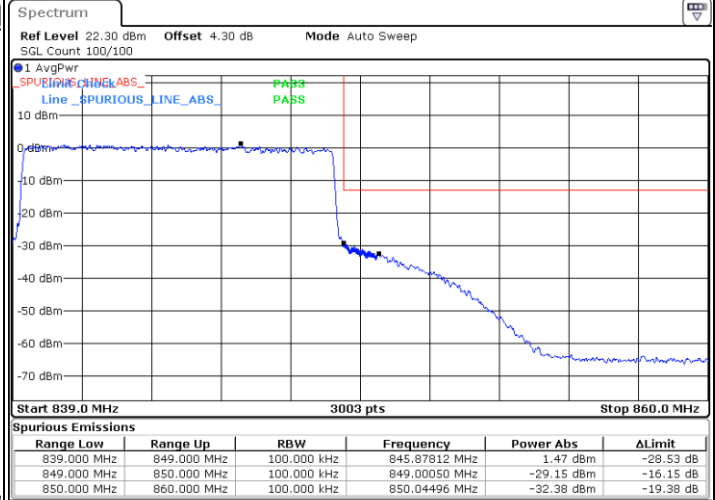
## FR1 n5 / 10MHz / CP OFDM / QPSK / Full RB

## Lowest Band Edge



Date: 23.JAN.2021 10:19:25

## Highest Band Edge



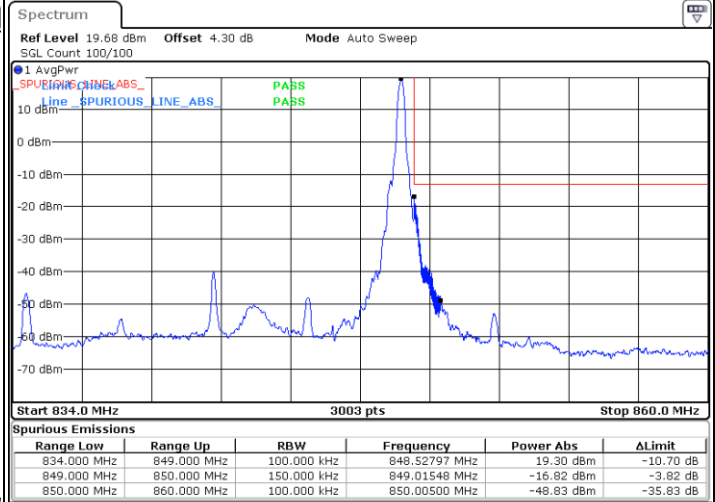
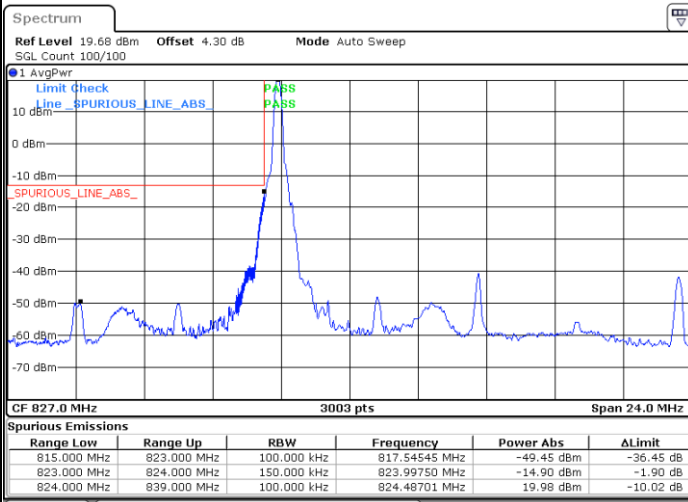
Date: 23.JAN.2021 10:28:51



## FR1 n5 / 15MHz / DFT-s-OFDM / PI/2 BPSK

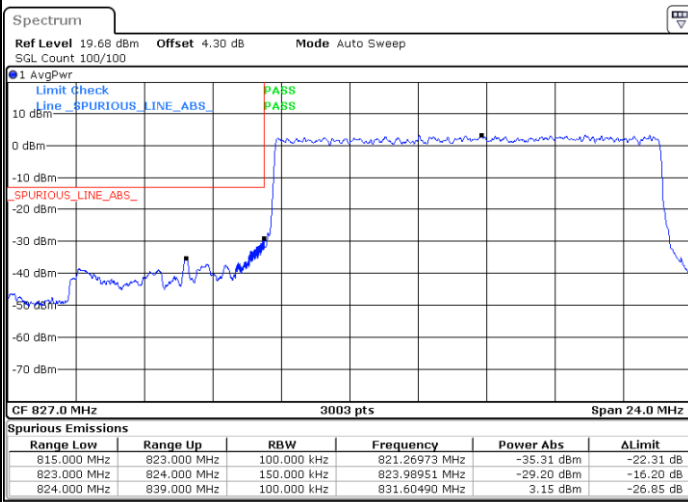
## Lowest Band Edge / 1RB0

## Highest Band Edge / 1RBmax



## Lowest Band Edge / Full RB

## Highest Band Edge / Full RB

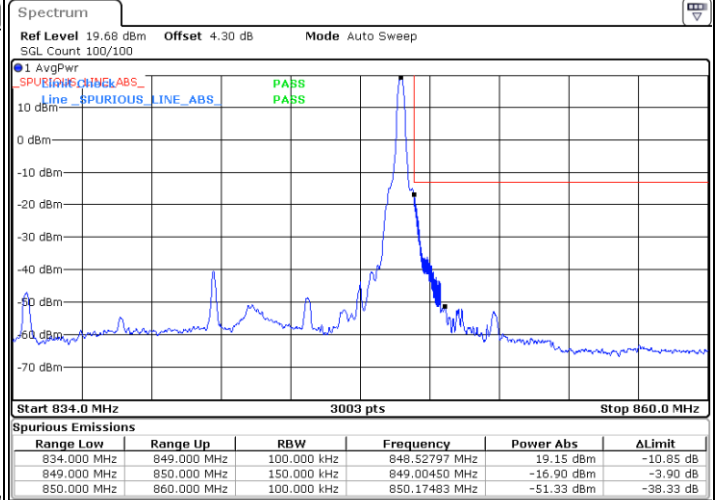
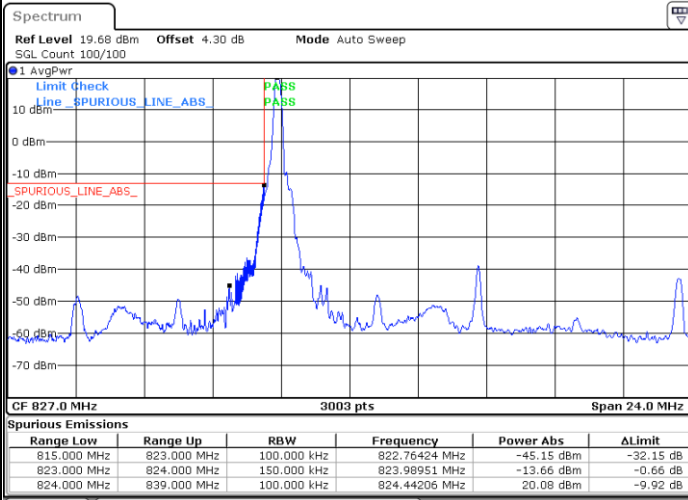




## FR1 n5 / 15MHz / DFT-s-OFDM / QPSK

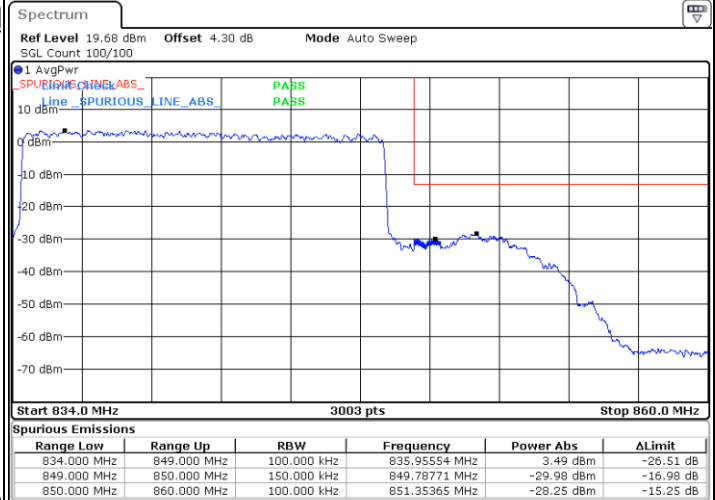
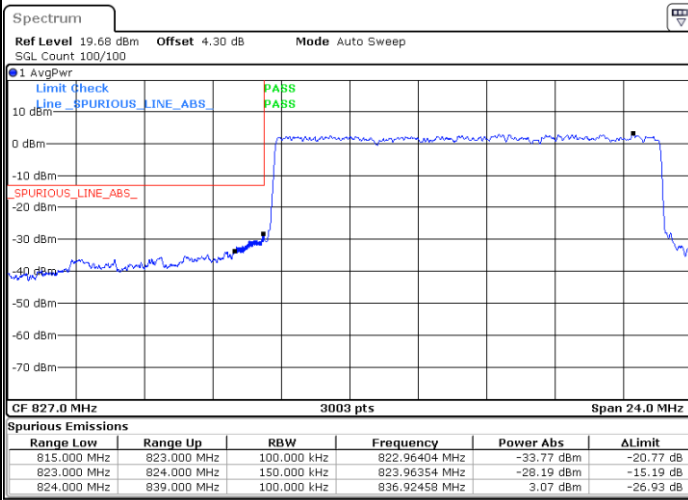
## Lowest Band Edge / 1RB0

## Highest Band Edge / 1RBmax



## Lowest Band Edge / Full RB

## Highest Band Edge / Full RB

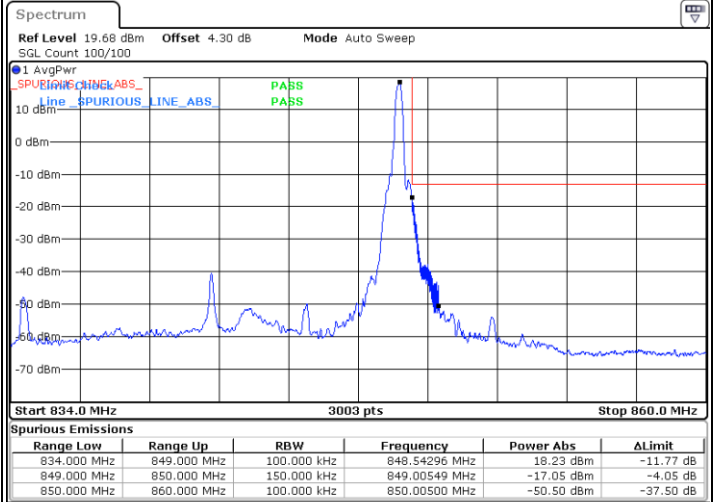
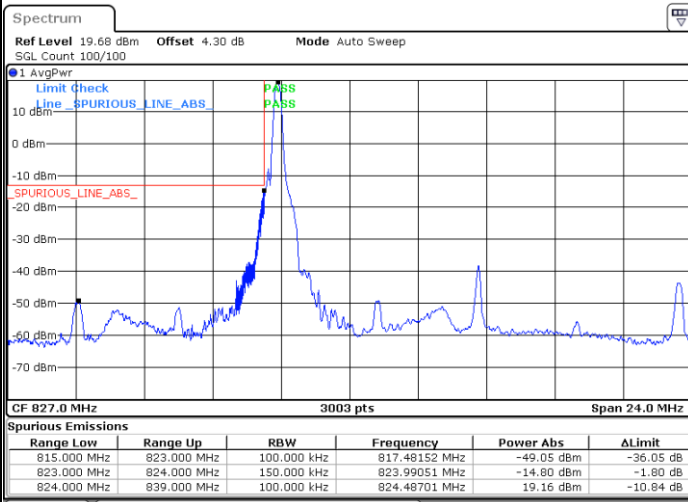




## FR1 n5 / 15MHz / DFT-s-OFDM / 16QAM

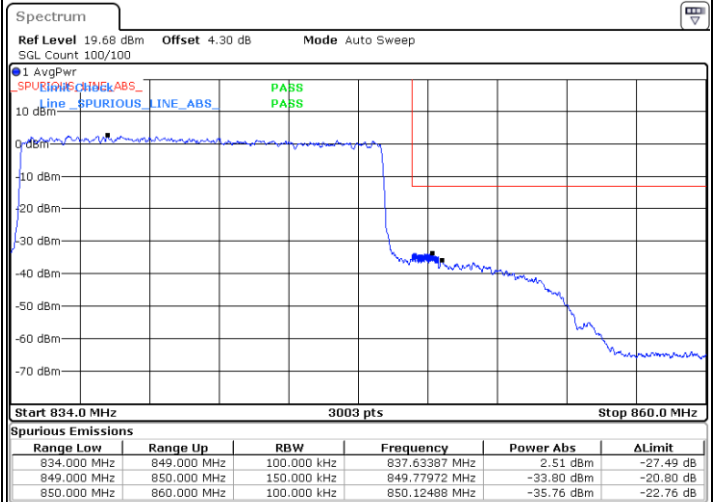
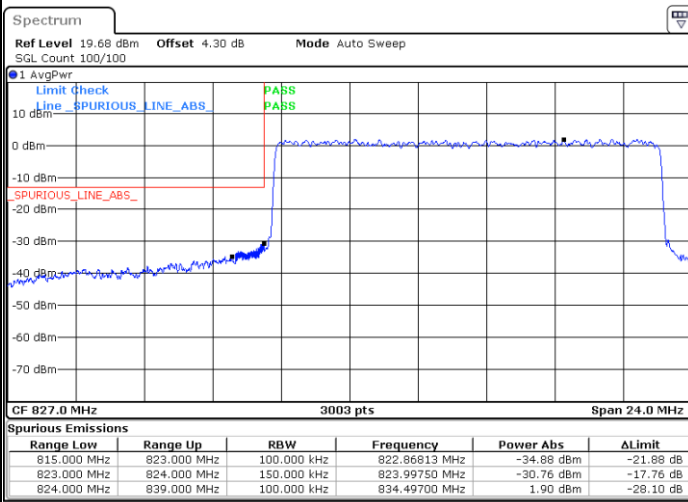
## Lowest Band Edge / 1RB0

## Highest Band Edge / 1RBmax



## Lowest Band Edge / Full RB

## Highest Band Edge / Full RB

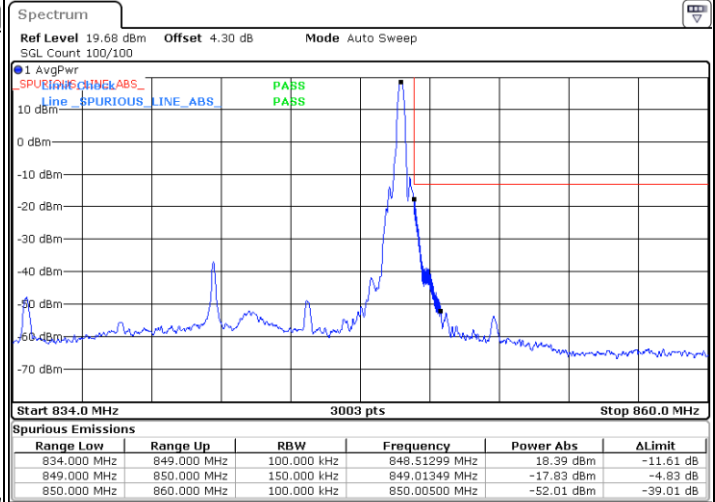
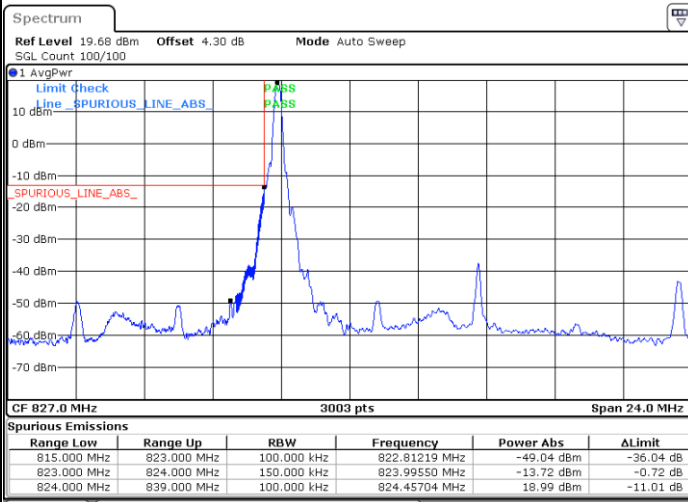




## FR1 n5 / 15MHz / DFT-s-OFDM / 64QAM

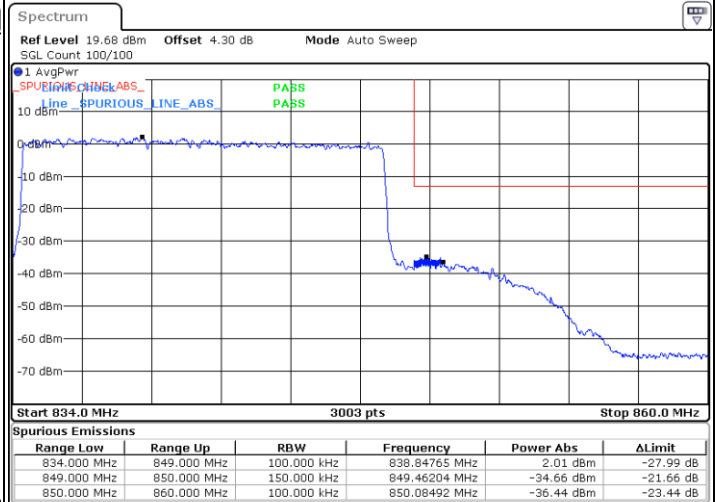
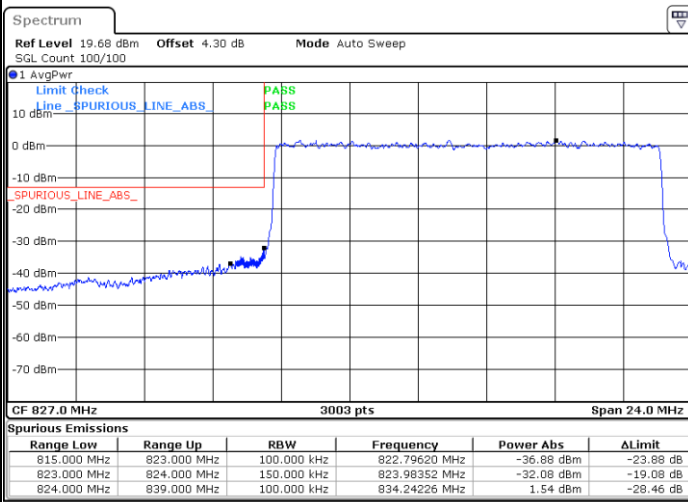
## Lowest Band Edge / 1RB0

## Highest Band Edge / 1RBmax



## Lowest Band Edge / Full RB

## Highest Band Edge / Full RB

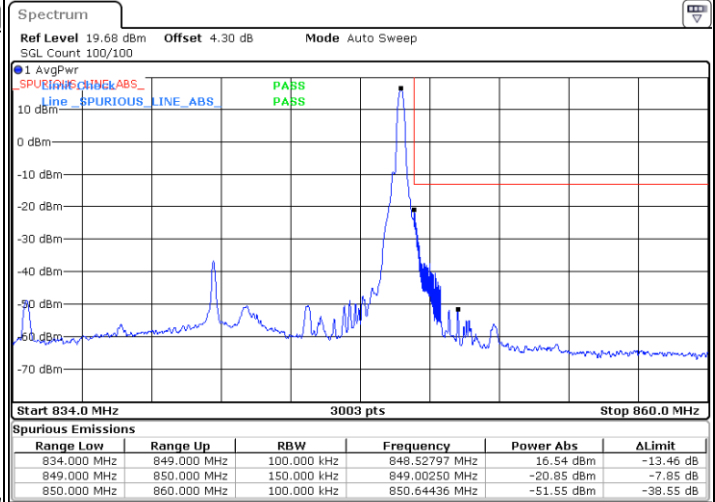
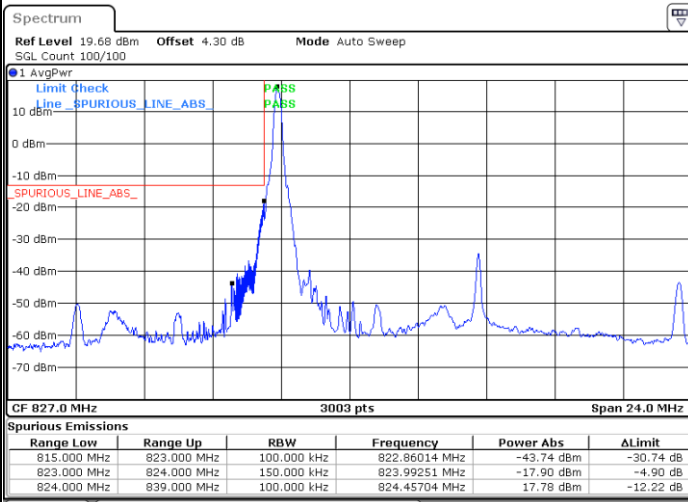




## FR1 n5 / 15MHz / DFT-s-OFDM / 256QAM

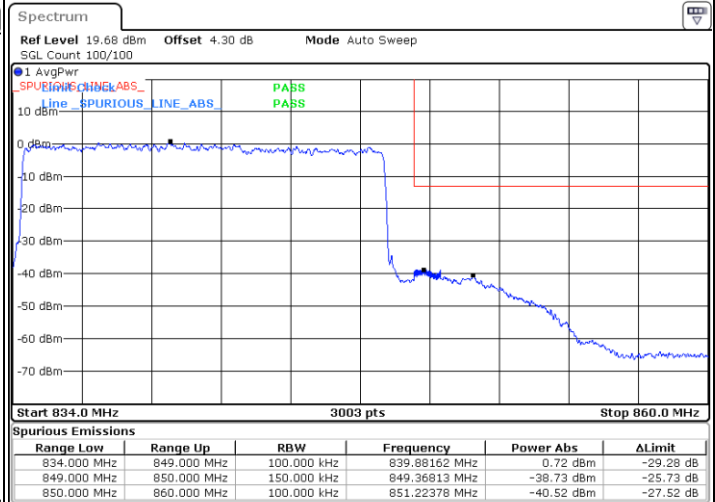
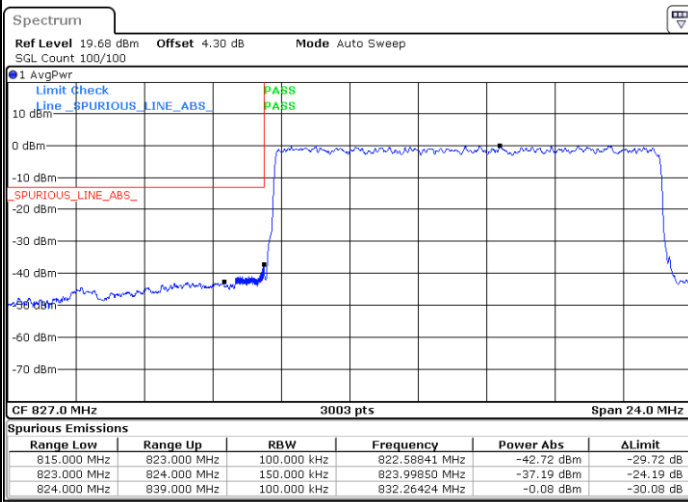
## Lowest Band Edge / 1RB0

## Highest Band Edge / 1RBmax



## Lowest Band Edge / Full RB

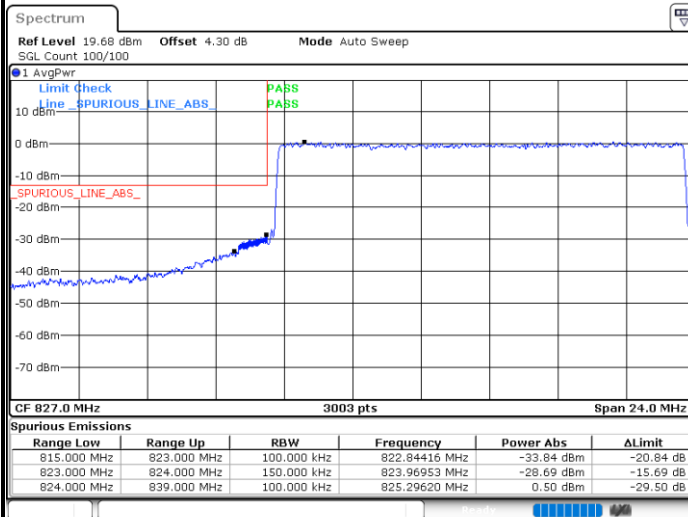
## Highest Band Edge / Full RB



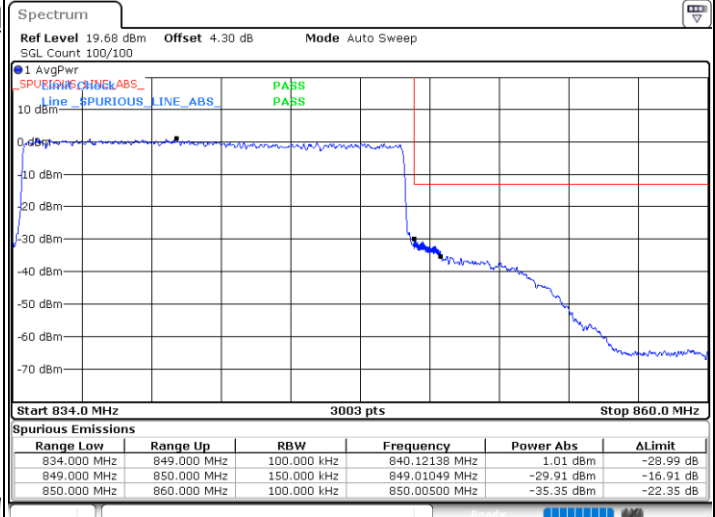


## FR1 n5 / 15MHz / CP OFDM / QPSK / Full RB

## Lowest Band Edge



## Highest Band Edge

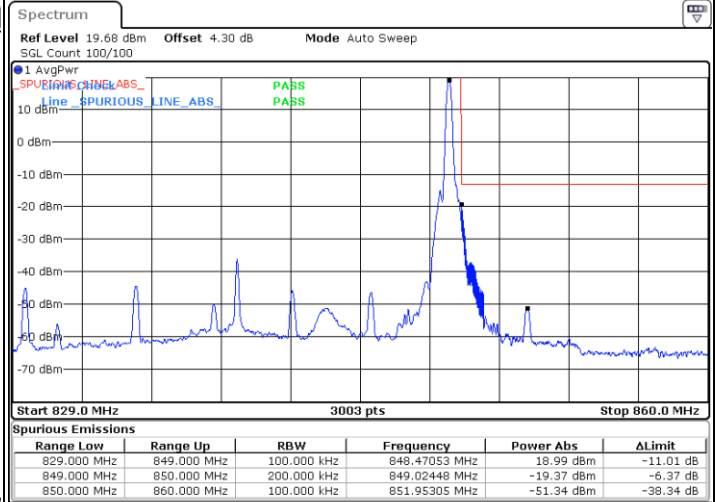
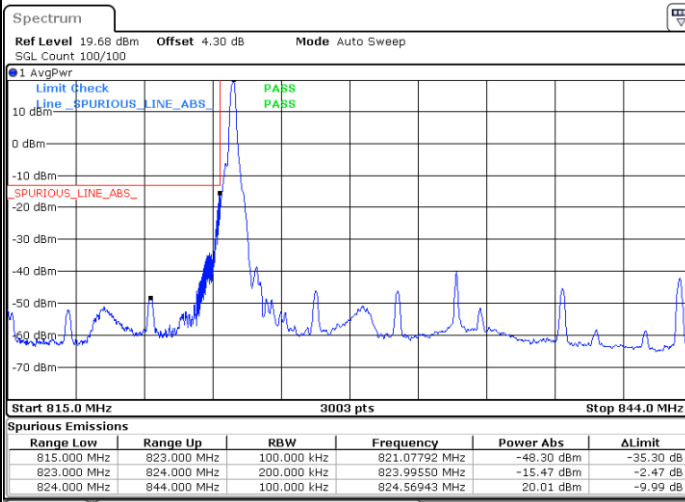




## FR1 n5 / 20MHz / DFT-s-OFDM / PI/2 BPSK

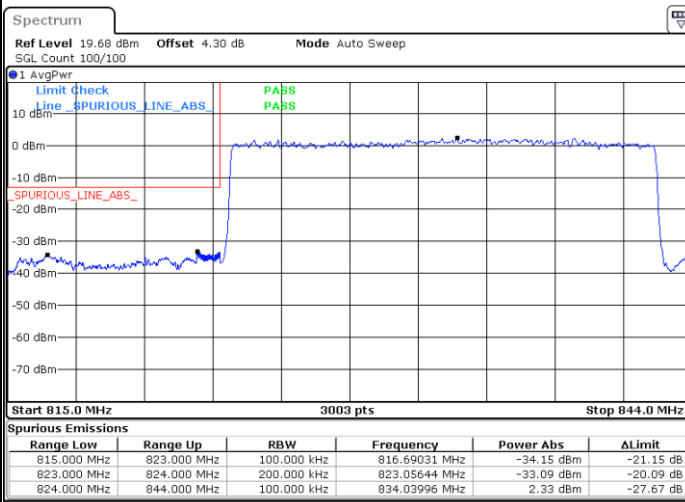
## Lowest Band Edge / 1RB0

## Highest Band Edge / 1RBmax



## Lowest Band Edge / Full RB

## Highest Band Edge / Full RB

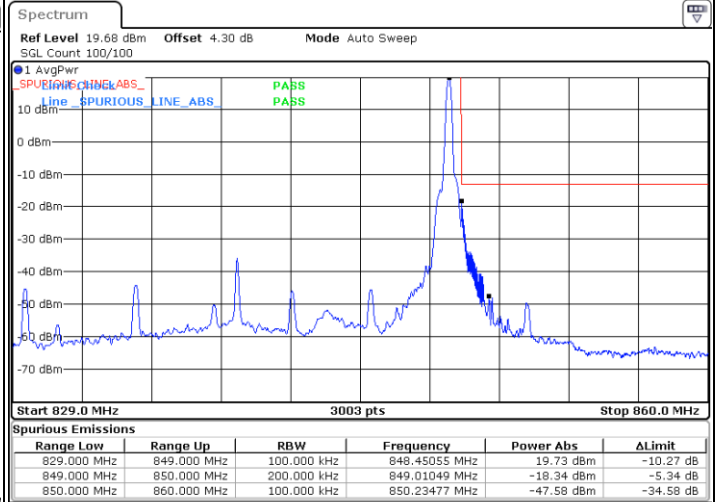
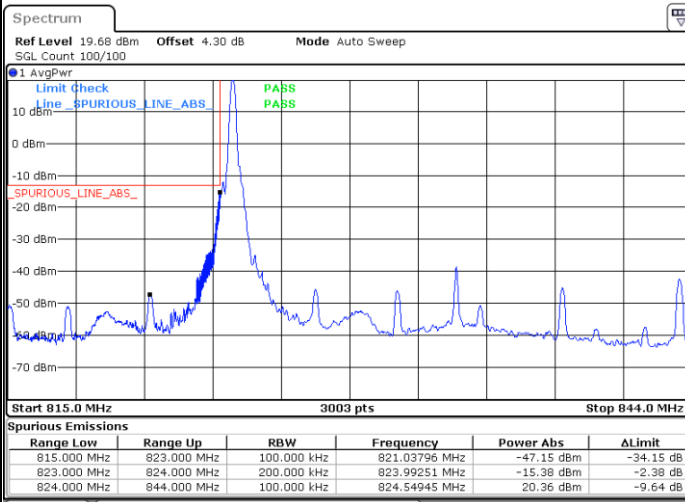




## FR1 n5 / 20MHz / DFT-s-OFDM / QPSK

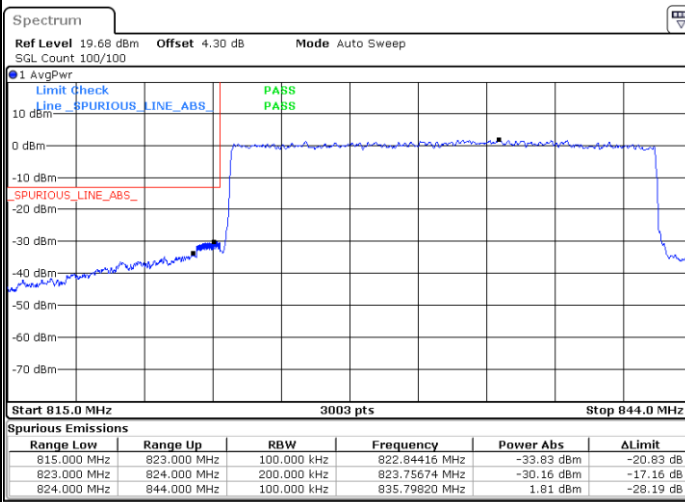
## Lowest Band Edge / 1RB0

## Highest Band Edge / 1RBmax



## Lowest Band Edge / Full RB

## Highest Band Edge / Full RB

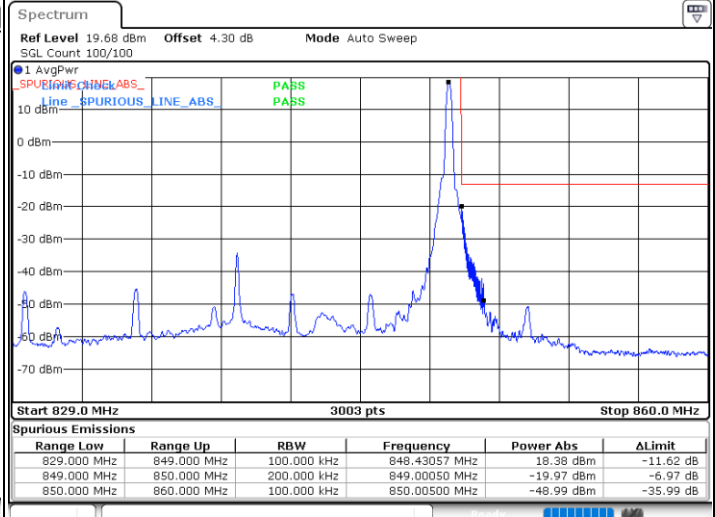
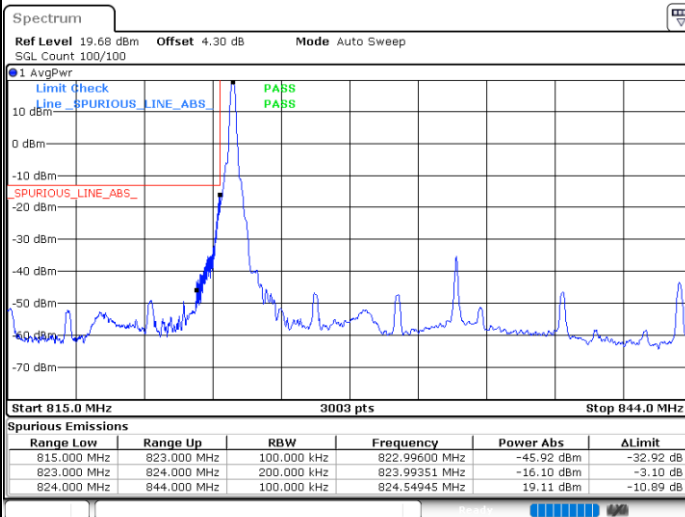




## FR1 n5 / 20MHz / DFT-s-OFDM / 16QAM

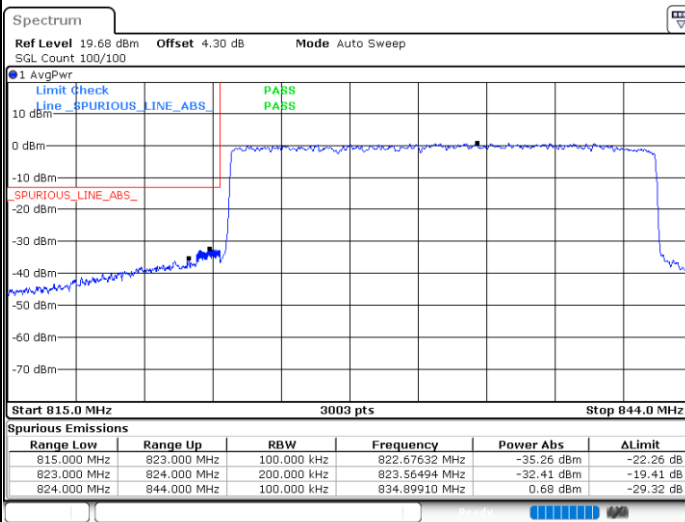
## Lowest Band Edge / 1RB0

## Highest Band Edge / 1RBmax



## Lowest Band Edge / Full RB

## Highest Band Edge / Full RB

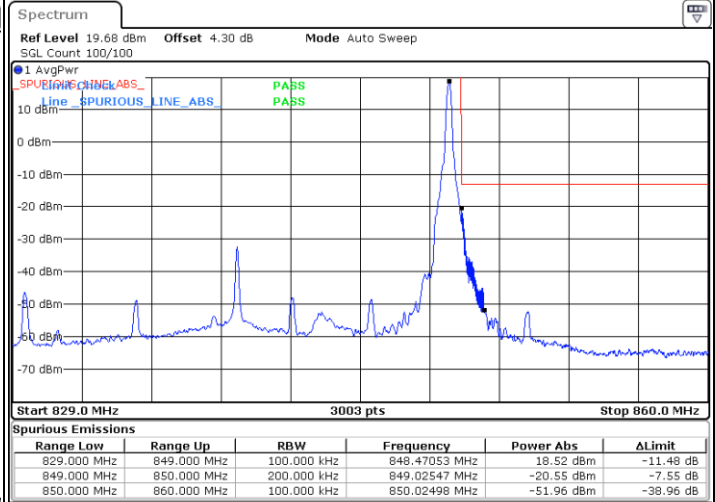
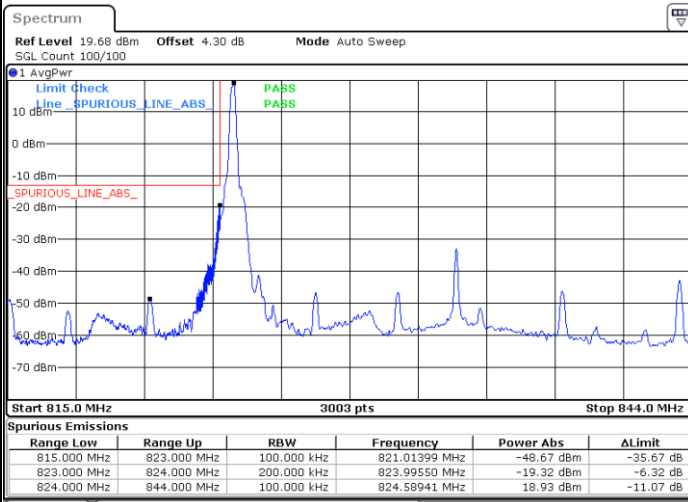




## FR1 n5 / 20MHz / DFT-s-OFDM / 64QAM

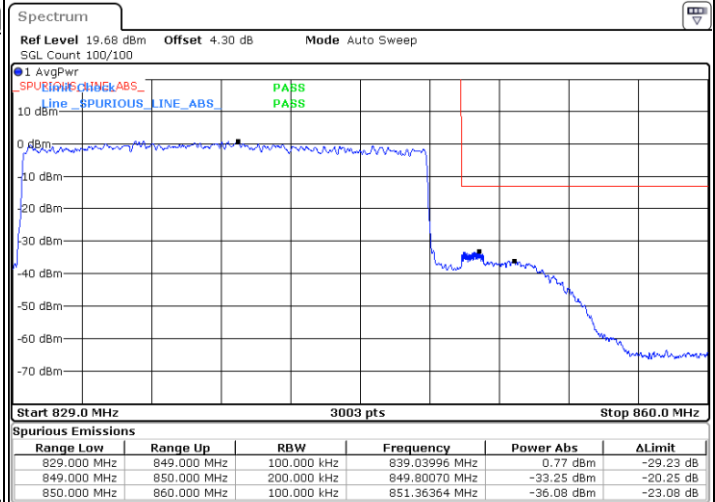
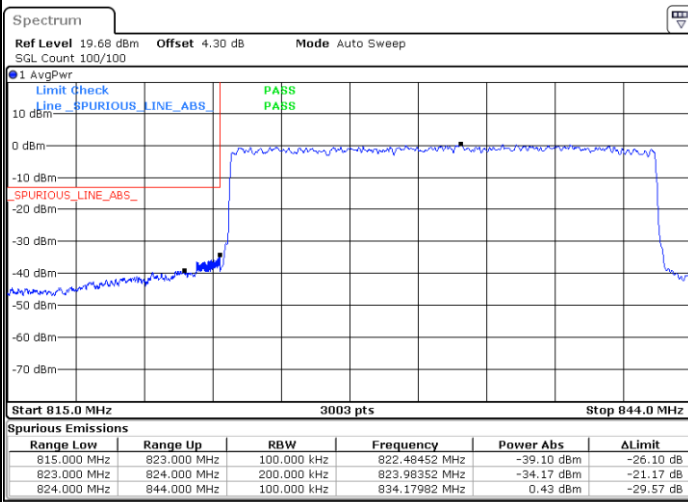
## Lowest Band Edge / 1RB0

## Highest Band Edge / 1RBmax



## Lowest Band Edge / Full RB

## Highest Band Edge / Full RB

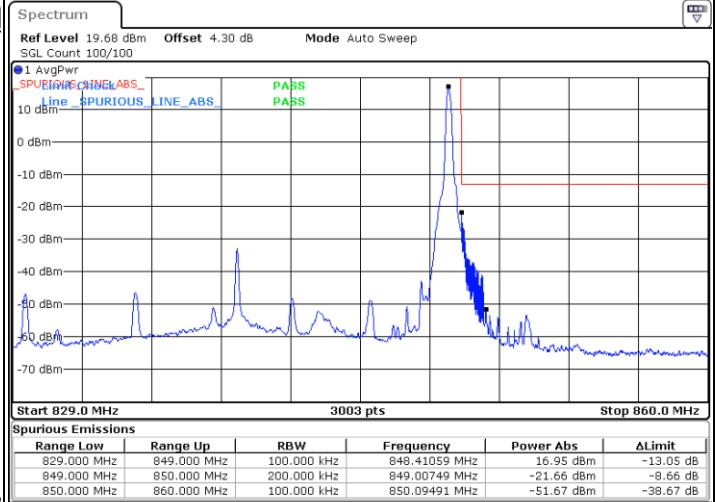
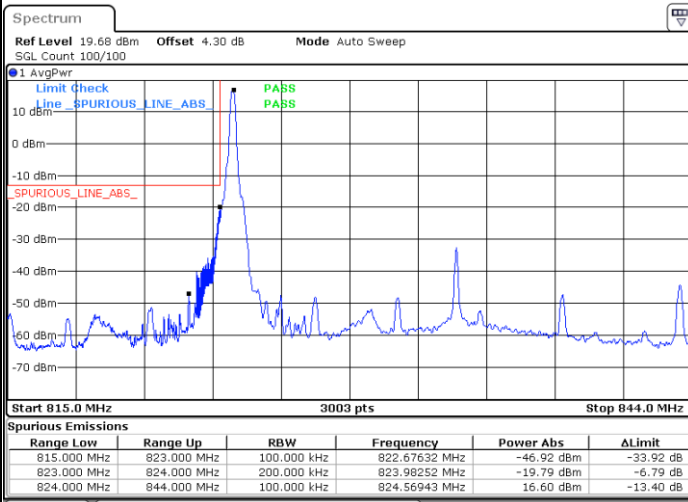




## FR1 n5 / 20MHz / DFT-s-OFDM / 256QAM

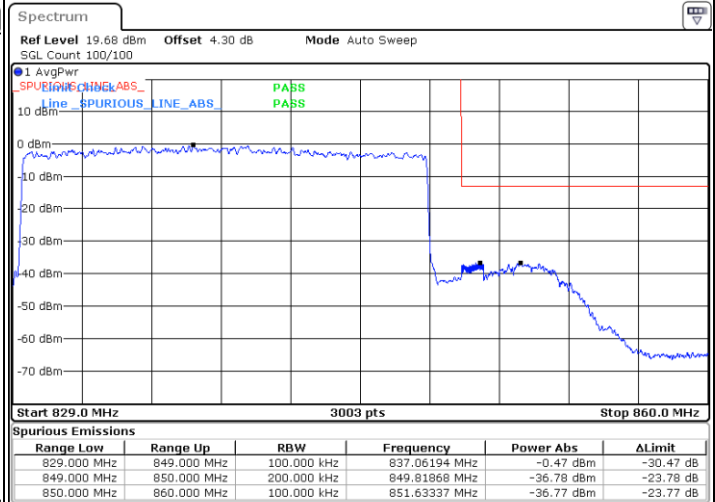
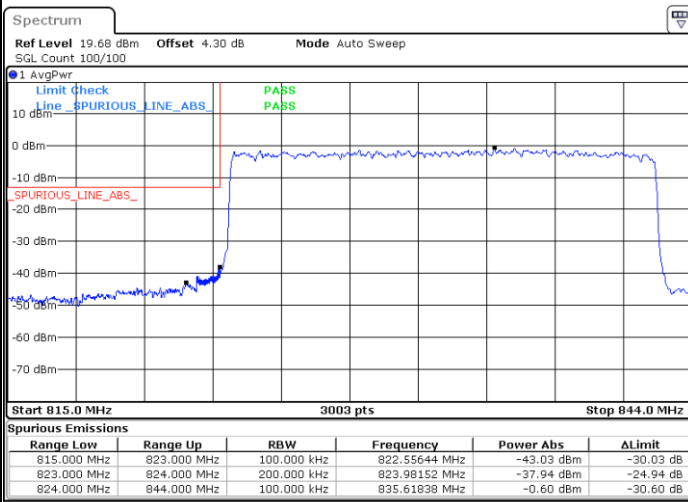
## Lowest Band Edge / 1RB0

## Highest Band Edge / 1RBmax



## Lowest Band Edge / Full RB

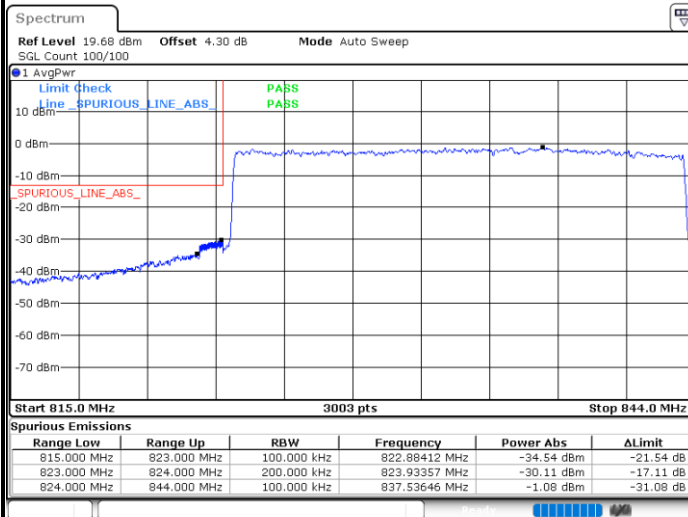
## Highest Band Edge / Full RB



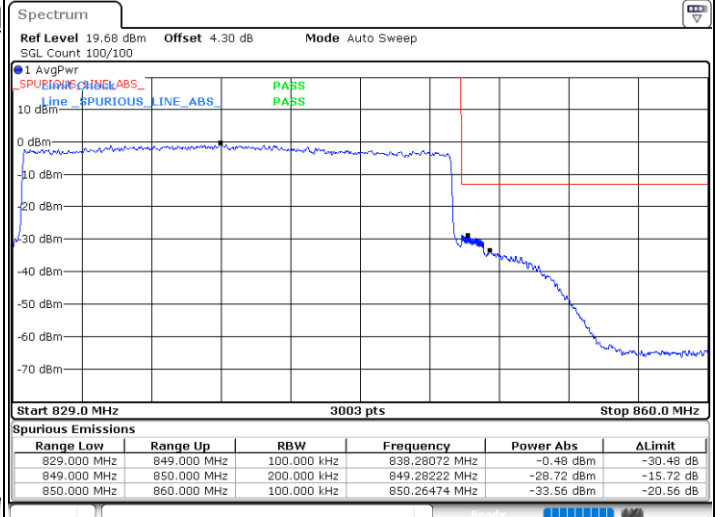


## FR1 n5 / 20MHz / CP OFDM / QPSK / Full RB

## Lowest Band Edge



## Highest Band Edge

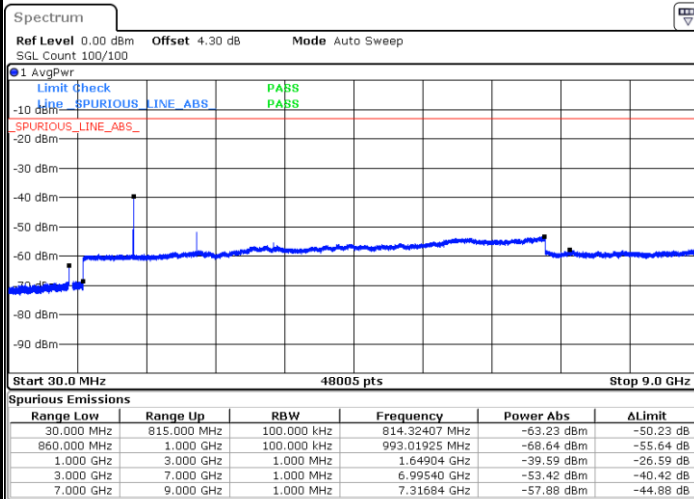




## Conducted Spurious Emission

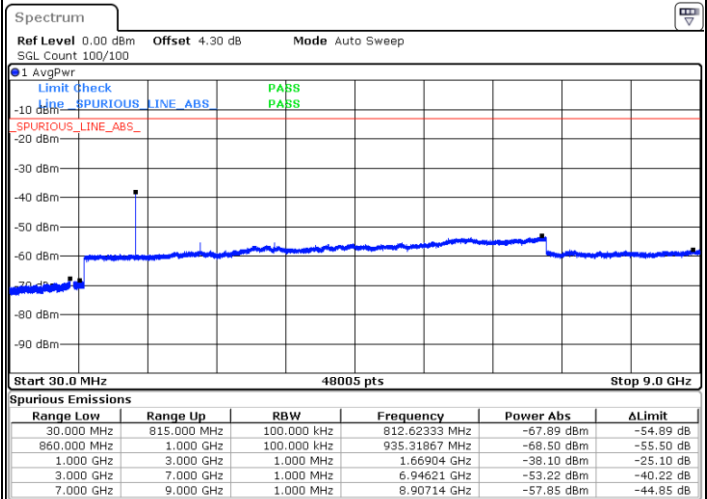
FR1 n5 / 5MHz / DFT-S OFDM / QPSK / 1RB1

### Lowest Channel



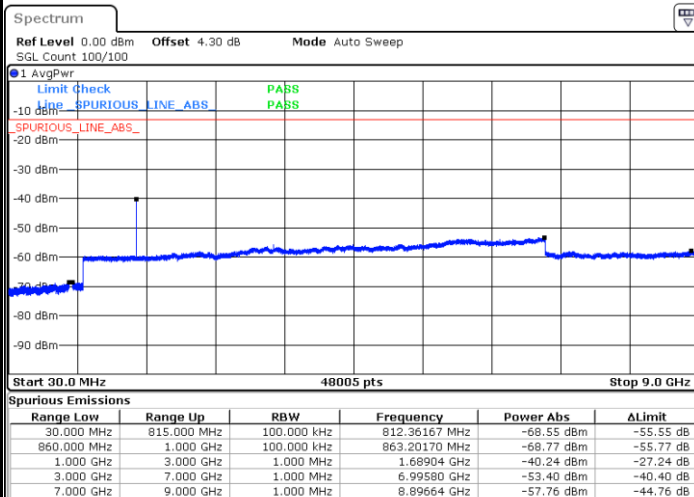
Date: 23.JAN.2021 09:57:03

### Middle Channel



Date: 23.JAN.2021 10:02:59

### Highest Channel



Date: 23.JAN.2021 10:21:57

## Frequency Stability

| Test Conditions  |                   | FR1 n5 (BPSK) / Middle Channel | Limit   |
|------------------|-------------------|--------------------------------|---------|
| Temperature (°C) | Voltage (Volt)    | BW 20MHz                       | Note 2. |
|                  |                   | Deviation (ppm)                | Result  |
| 50               | Normal Voltage    | 0.0027                         | PASS    |
| 40               | Normal Voltage    | 0.0191                         |         |
| 30               | Normal Voltage    | 0.0007                         |         |
| 20(Ref.)         | Normal Voltage    | 0.0000                         |         |
| 10               | Normal Voltage    | 0.0220                         |         |
| 0                | Normal Voltage    | 0.0004                         |         |
| -10              | Normal Voltage    | 0.0056                         |         |
| -20              | Normal Voltage    | 0.0208                         |         |
| -30              | Normal Voltage    | 0.0057                         |         |
| 20               | Maximum Voltage   | 0.0049                         |         |
| 20               | Normal Voltage    | 0.0000                         |         |
| 20               | Battery End Point | 0.0001                         |         |

**Note:**

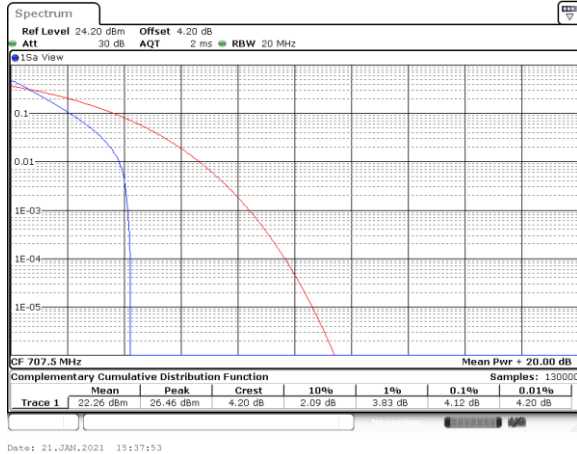
1. Normal Voltage =48 V. ; Battery End Point (BEP) =43 V. ; Maximum Voltage =53 V.
2. The frequency fundamental emissions stay within the authorized frequency block.

**FR1 n12****Peak-to-Average Ratio**

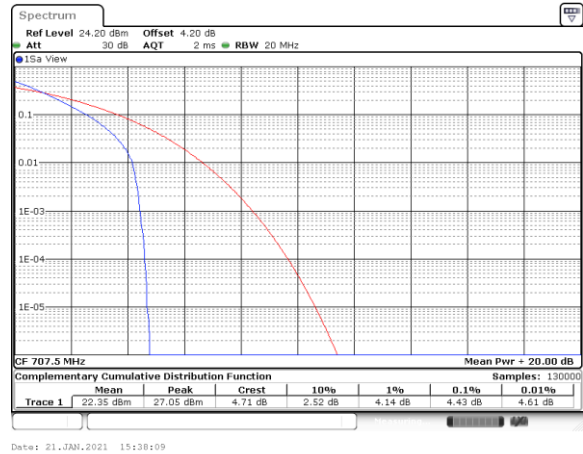
| Mode      | FR1 n12 / 15MHz / DFT-S OFDM |         |         |         |             |
|-----------|------------------------------|---------|---------|---------|-------------|
| Mod.      | PI/2 BPSK                    | QPSK    | 16QAM   | 64QAM   | Limit: 13dB |
| RB Size   | Full RB                      | Full RB | Full RB | Full RB | Result      |
| Middle CH | 4.12                         | 4.43    | 5.51    | 5.94    | <b>PASS</b> |
| Mode      | FR1 n12 / 15MHz / DFT-S OFDM |         |         |         |             |
| Mod.      | 256QAM                       |         |         |         | Limit: 13dB |
| RB Size   | Full RB                      |         |         |         | Result      |
| Middle CH | 6.32                         |         |         |         | <b>PASS</b> |

## FR1 n12 / 15MHz / DFT-S OFDM / Middle Channel / Full RB

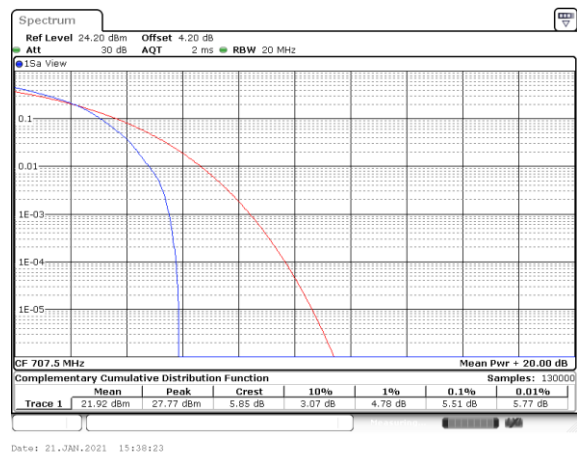
### PI/2 BPSK



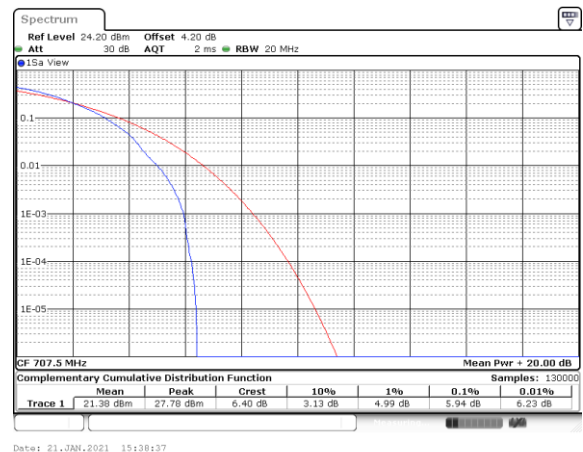
### QPSK



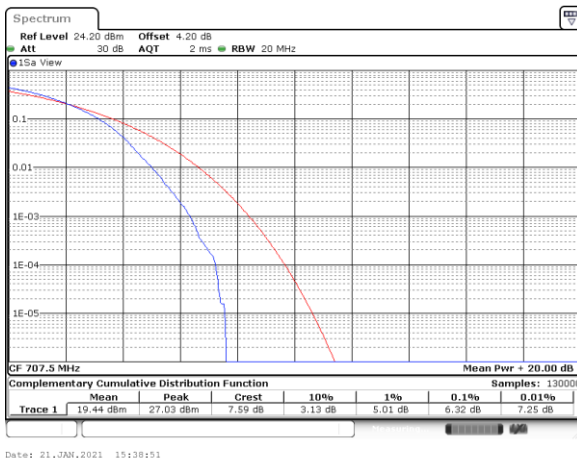
### 16QAM



### 64QAM



### 256QAM



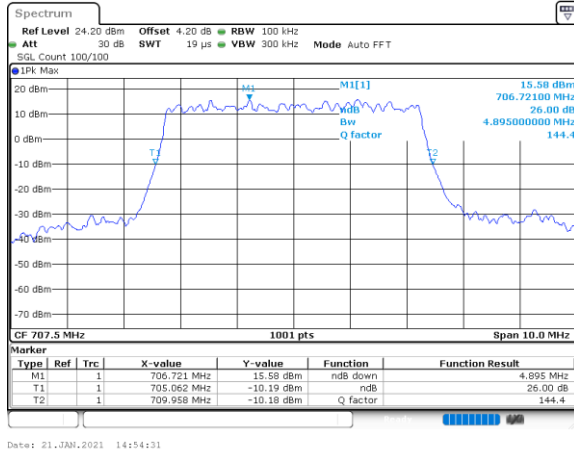
**26dB Bandwidth**

| Mode      | FR1 n12 : 26dB BW(MHz) / DFT-S OFDM |  |           |  |           |  |  |  |
|-----------|-------------------------------------|--|-----------|--|-----------|--|--|--|
| BW        | 5MHz                                |  | 10MHz     |  | 15MHz     |  |  |  |
| Mod.      | PI/2 BPSK                           |  | PI/2 BPSK |  | PI/2 BPSK |  |  |  |
| Middle CH | 4.89                                |  | 9.41      |  | 14.21     |  |  |  |

| Mode      | FR1 n12 : 26dB BW(MHz) / CP OFDM |        |       |        |       |        |  |  |
|-----------|----------------------------------|--------|-------|--------|-------|--------|--|--|
| BW        | 5MHz                             |        | 10MHz |        | 15MHz |        |  |  |
| Mod.      | QPSK                             | 16QAM  | QPSK  | 16QAM  | QPSK  | 16QAM  |  |  |
| Middle CH | 4.97                             | 4.89   | 9.85  | 9.77   | 15.11 | 14.87  |  |  |
| Mod.      | 64QAM                            | 256QAM | 64QAM | 256QAM | 64QAM | 256QAM |  |  |
| Middle CH | 4.79                             | 4.89   | 9.69  | 9.77   | 14.99 | 14.84  |  |  |

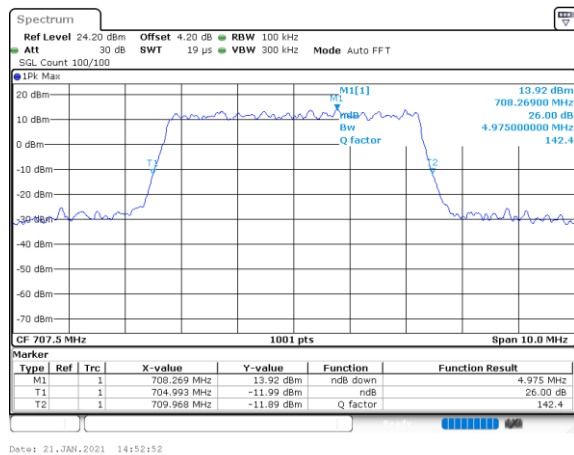
## FR1 n12 / 5MHz / DFT-S OFDM / Middle Channel / Full RB

### PI/2 BPSK

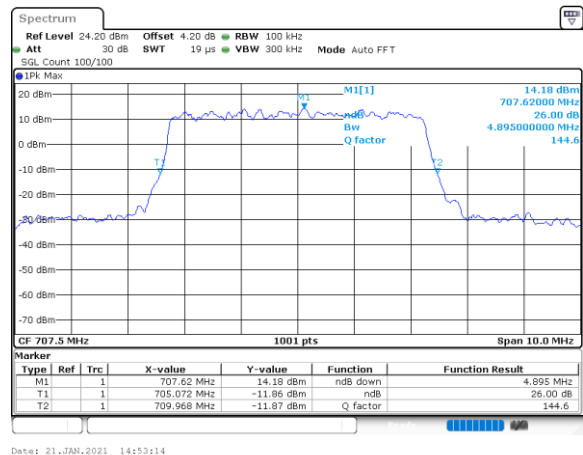


## FR1 n12 / 5MHz / CP OFDM / Middle Channel / Full RB

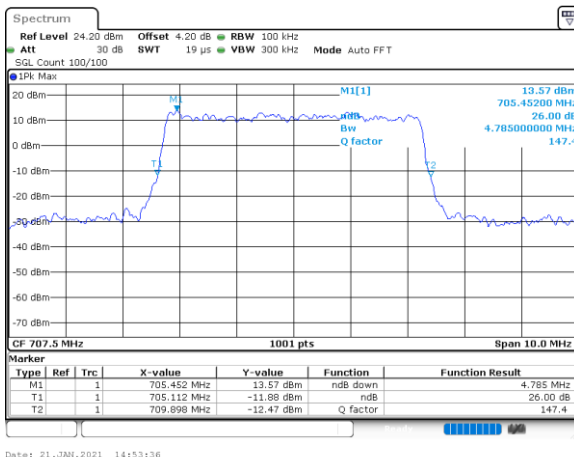
### QPSK



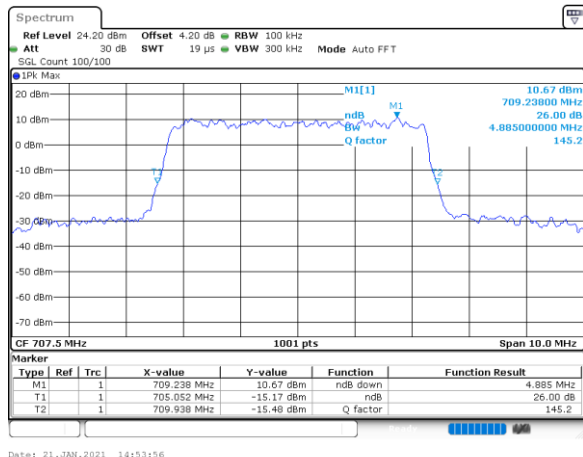
### 16QAM



### 64QAM

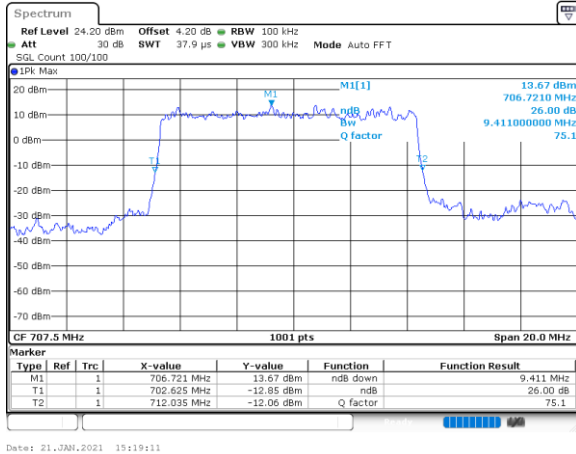


### 256QAM



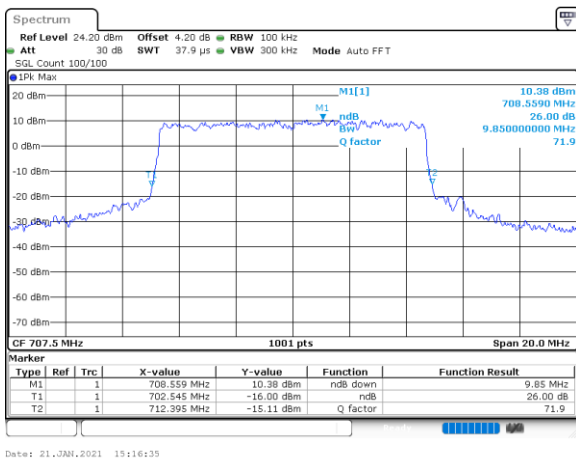
## FR1 n12 / 10MHz / DFT-S OFDM / Middle Channel / Full RB

### PI/2 BPSK

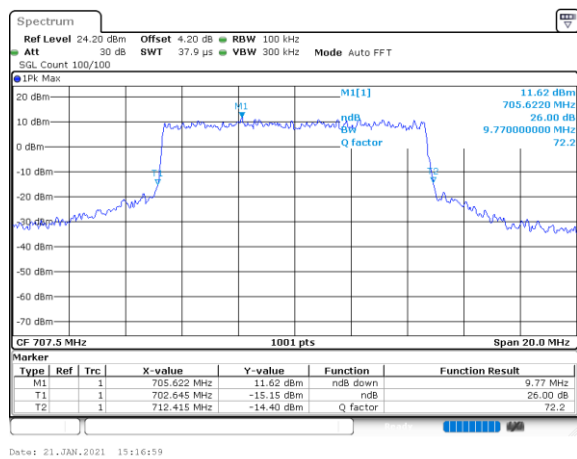


## FR1 n12 / 10MHz / CP OFDM / Middle Channel / Full RB

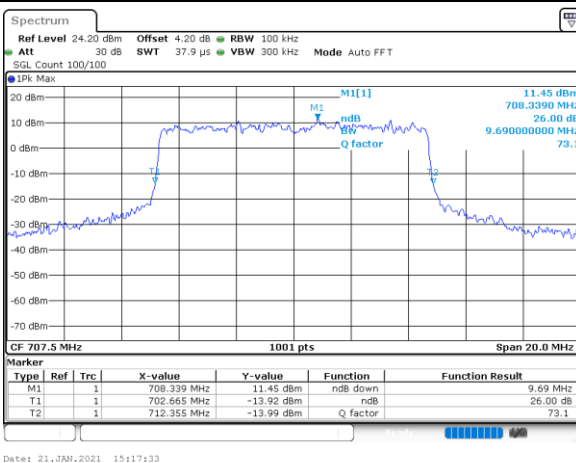
### QPSK



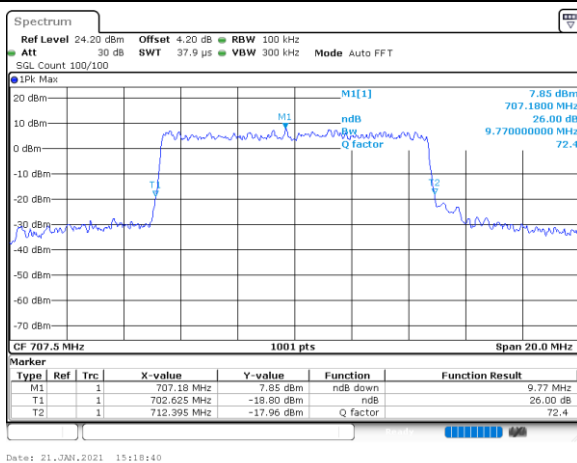
### 16QAM



### 64QAM

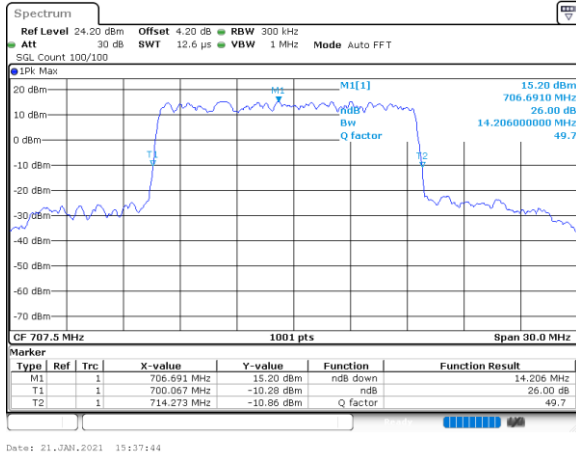


### 256QAM



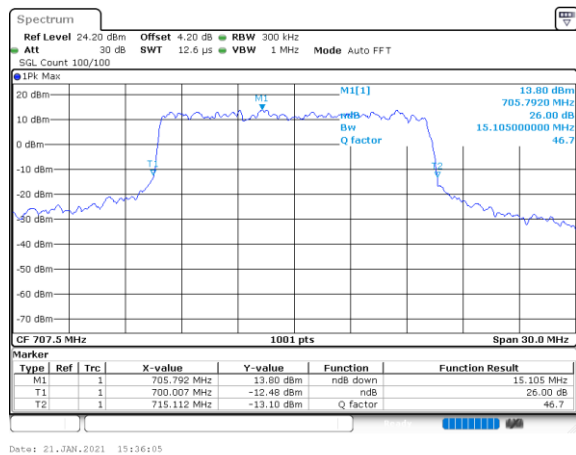
## FR1 n12 / 15MHz / DFT-S OFDM / Middle Channel / Full RB

### PI/2 BPSK

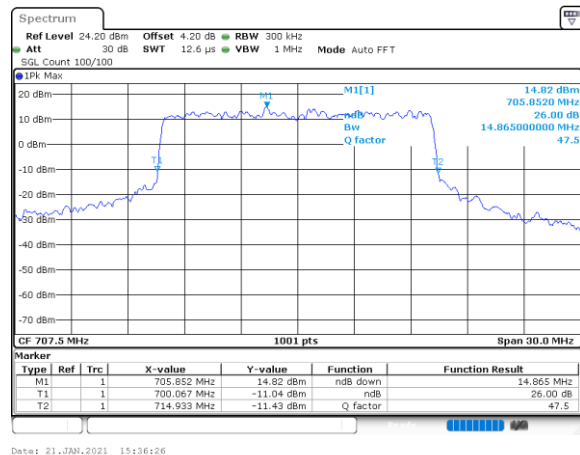


## FR1 n12 / 15MHz / CP OFDM / Middle Channel / Full RB

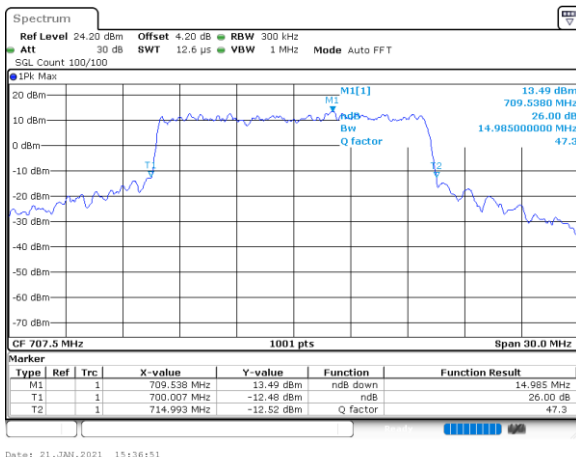
### QPSK



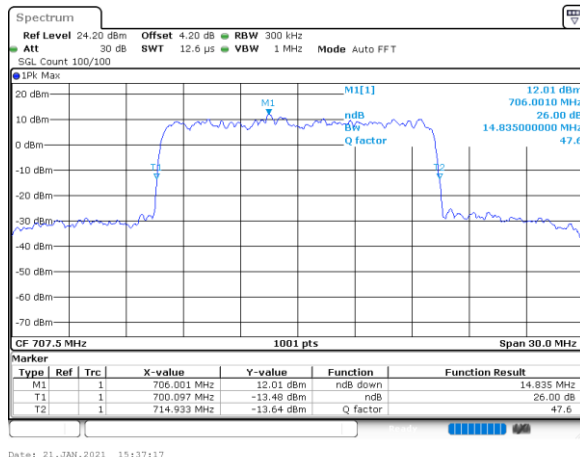
### 16QAM



### 64QAM



### 256QAM



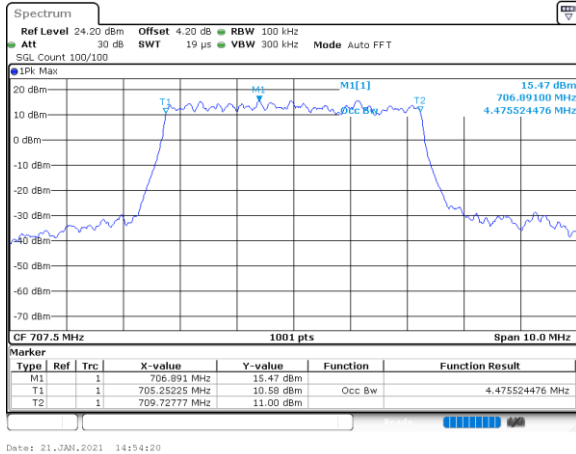
**Occupied Bandwidth**

| Mode      | FR1 n12 : 99%OBW(MHz) / DFT-S OFDM |  |           |  |           |  |  |  |
|-----------|------------------------------------|--|-----------|--|-----------|--|--|--|
| BW        | 5MHz                               |  | 10MHz     |  | 15MHz     |  |  |  |
| Mod.      | PI/2 BPSK                          |  | PI/2 BPSK |  | PI/2 BPSK |  |  |  |
| Middle CH | 4.48                               |  | 8.93      |  | 13.43     |  |  |  |

| Mode      | FR1 n12 : 99%OBW (MHz) / CP OFDM |        |       |        |       |        |  |  |
|-----------|----------------------------------|--------|-------|--------|-------|--------|--|--|
| BW        | 5MHz                             |        | 10MHz |        | 15MHz |        |  |  |
| Mod.      | QPSK                             | 16QAM  | QPSK  | 16QAM  | QPSK  | 16QAM  |  |  |
| Middle CH | 4.47                             | 4.47   | 9.29  | 9.25   | 14.12 | 14.12  |  |  |
| Mod.      | 64QAM                            | 256QAM | 64QAM | 256QAM | 64QAM | 256QAM |  |  |
| Middle CH | 4.49                             | 4.49   | 9.23  | 9.25   | 14.06 | 14.15  |  |  |

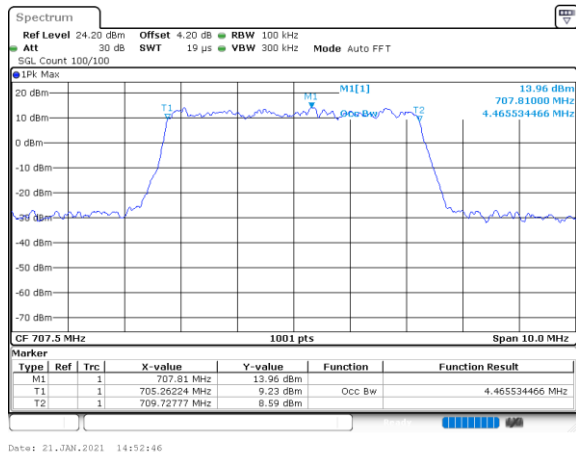
## FR1 n12 / 5MHz / DFT-S OFDM / Middle Channel / Full RB

### PI/2 BPSK

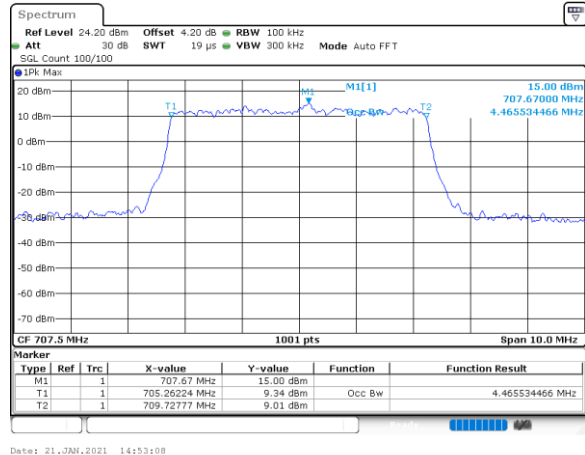


## FR1 n12 / 5MHz / CP OFDM / Middle Channel / Full RB

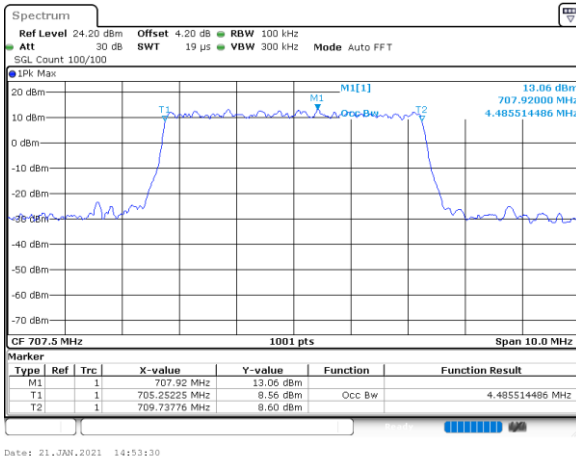
### QPSK



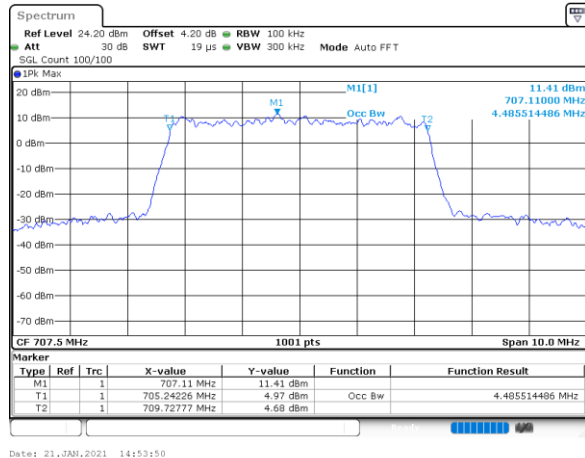
### 16QAM



### 64QAM

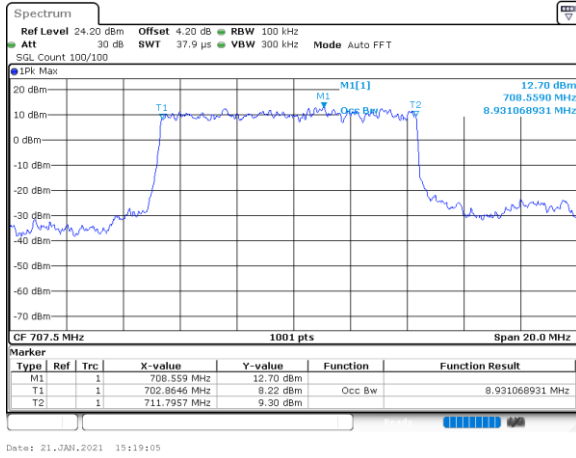


### 256QAM



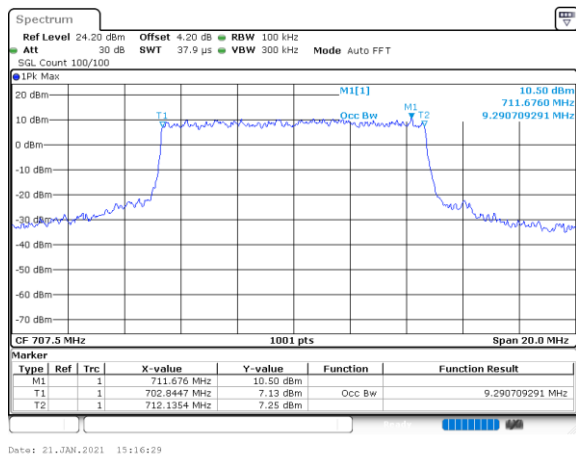
## FR1 n12 / 10MHz / DFT-S OFDM / Middle Channel / Full RB

### PI/2 BPSK

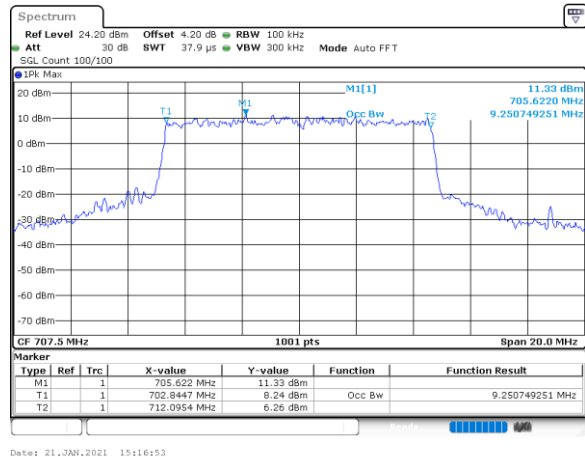


## FR1 n12 / 10MHz / CP OFDM / Middle Channel / Full RB

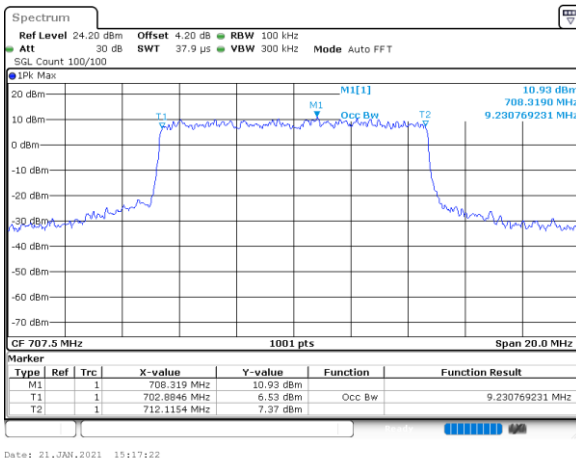
### QPSK



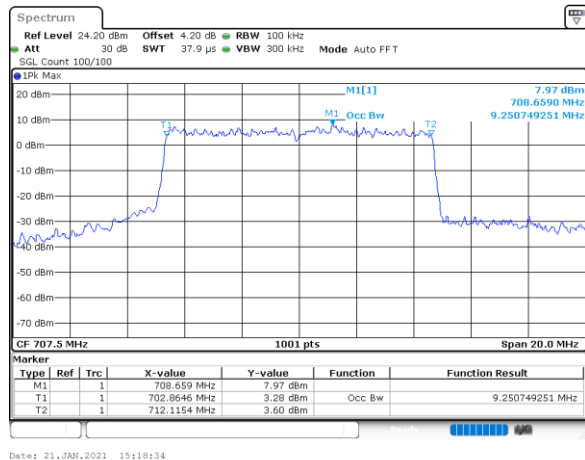
### 16QAM



### 64QAM



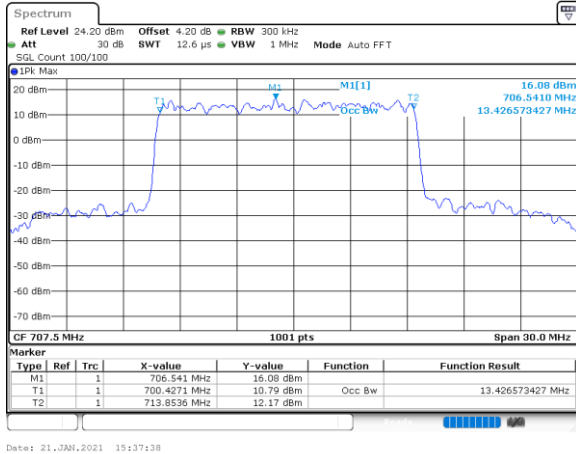
### 256QAM





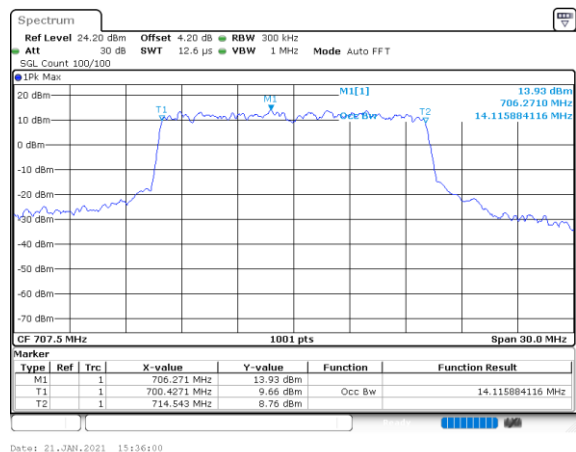
## FR1 n12 / 15MHz / DFT-S OFDM / Middle Channel / Full RB

## PI/2 BPSK

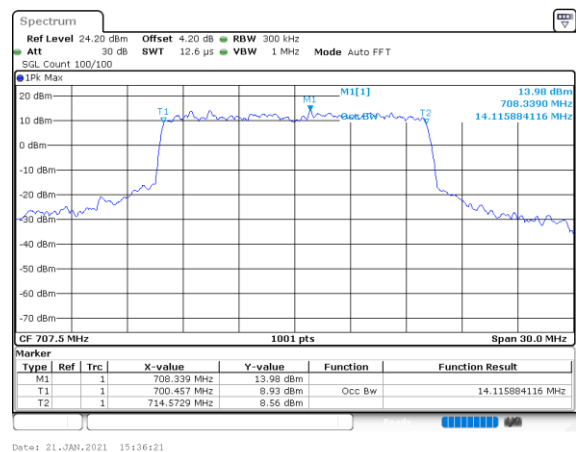


## FR1 n12 / 15MHz / CP OFDM / Middle Channel / Full RB

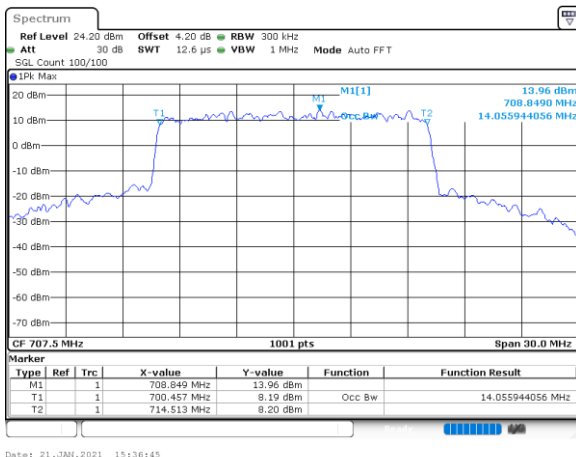
## QPSK



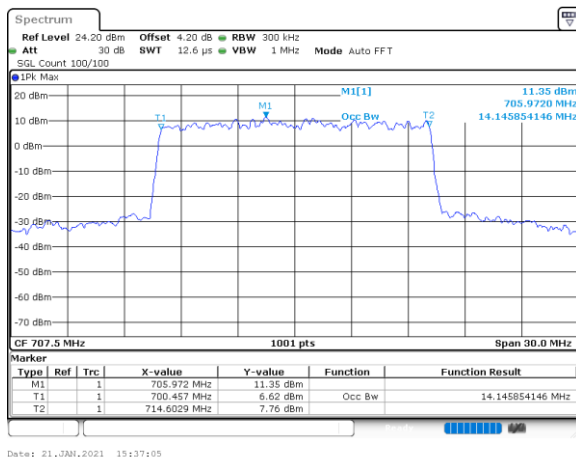
## 16QAM



## 64QAM



## 256QAM

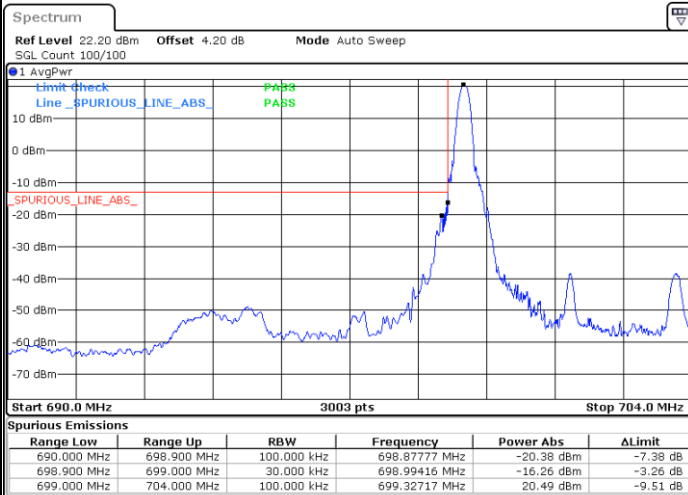


**Conducted Band Edge**

FR1 n12 / 5MHz / DFT-S OFDM / PI/2 BPSK

Lowest Band Edge / 1RB0

Highest Band Edge / 1RBmax



Lowest Band Edge / Full RB

Highest Band Edge / Full RB

