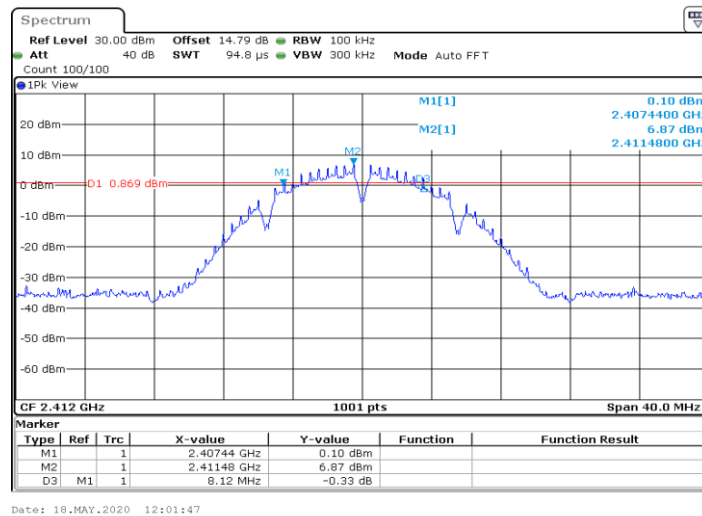


**AppendixA: DTS Bandwidth****Test Result**

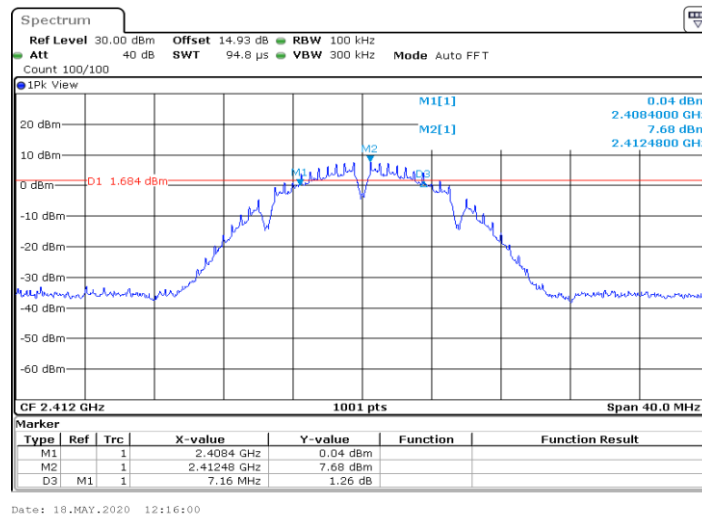
| TestMode  | Antenna | Channel | DTS BW [MHz] | Limit[MHz] | Verdict |
|-----------|---------|---------|--------------|------------|---------|
| 11bMIMO   | Ant1    | 2412    | 8.120        | 0.5        | PASS    |
|           | Ant2    | 2412    | 7.160        | 0.5        | PASS    |
|           | Ant1    | 2442    | 7.160        | 0.5        | PASS    |
|           | Ant2    | 2442    | 7.640        | 0.5        | PASS    |
|           | Ant1    | 2472    | 8.120        | 0.5        | PASS    |
|           | Ant2    | 2472    | 7.160        | 0.5        | PASS    |
| 11gMIMO   | Ant1    | 2412    | 16.400       | 0.5        | PASS    |
|           | Ant2    | 2412    | 16.400       | 0.5        | PASS    |
|           | Ant1    | 2442    | 16.400       | 0.5        | PASS    |
|           | Ant2    | 2442    | 16.400       | 0.5        | PASS    |
|           | Ant1    | 2472    | 16.440       | 0.5        | PASS    |
|           | Ant2    | 2472    | 16.440       | 0.5        | PASS    |
| 11N20MIMO | Ant1    | 2412    | 16.400       | 0.5        | PASS    |
|           | Ant2    | 2412    | 16.400       | 0.5        | PASS    |
|           | Ant1    | 2442    | 16.400       | 0.5        | PASS    |
|           | Ant2    | 2442    | 16.400       | 0.5        | PASS    |
|           | Ant1    | 2472    | 16.440       | 0.5        | PASS    |
|           | Ant2    | 2472    | 16.440       | 0.5        | PASS    |
| 11N40MIMO | Ant1    | 2422    | 35.280       | 0.5        | PASS    |
|           | Ant2    | 2422    | 35.280       | 0.5        | PASS    |
|           | Ant1    | 2442    | 35.280       | 0.5        | PASS    |
|           | Ant2    | 2442    | 35.440       | 0.5        | PASS    |
|           | Ant1    | 2462    | 35.280       | 0.5        | PASS    |
|           | Ant2    | 2462    | 35.280       | 0.5        | PASS    |

## Test Graphs

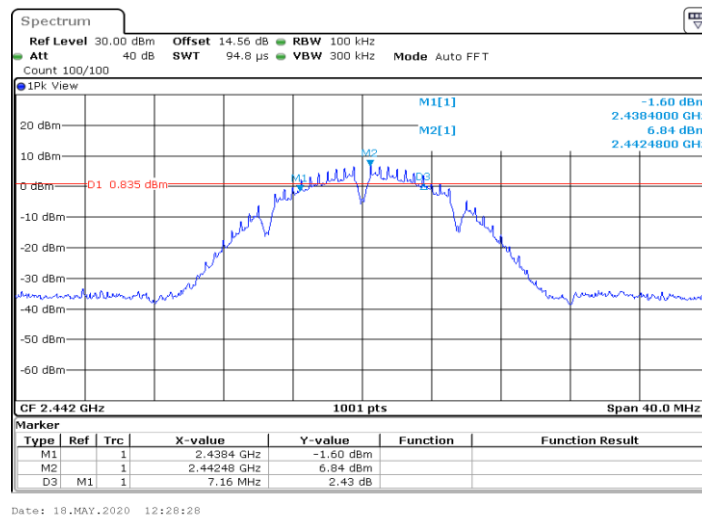
11bMIMO\_Ant1\_2412



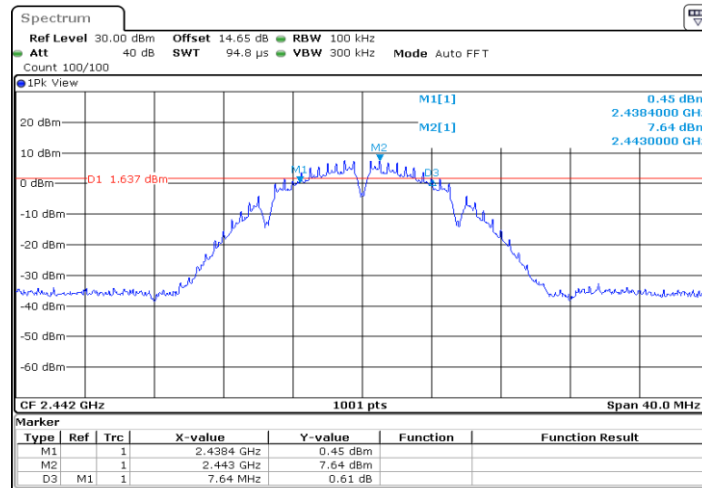
11bMIMO\_Ant2\_2412



11bMIMO\_Ant1\_2442

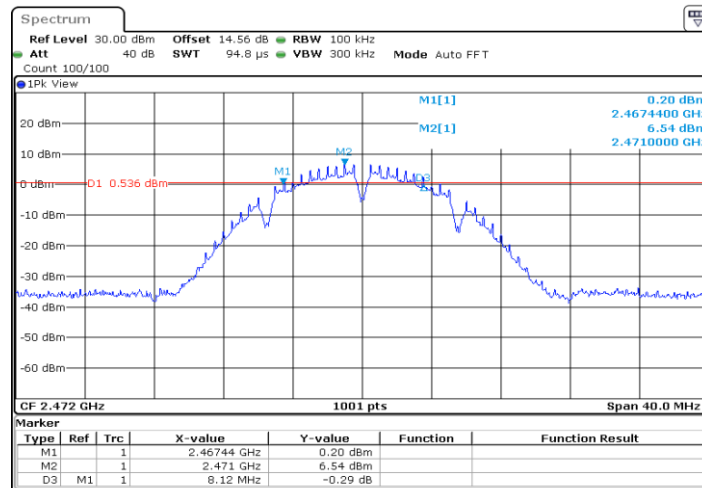


## 11bMIMO\_Ant2\_2442



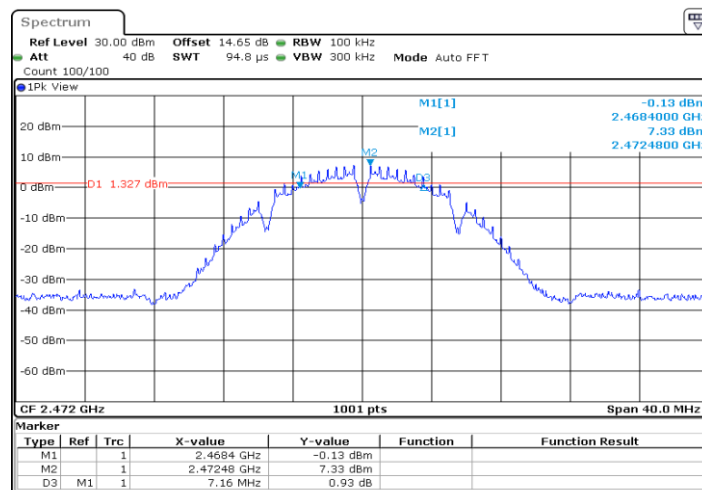
Date: 18.MAY.2020 12:29:31

## 11bMIMO\_Ant1\_2472



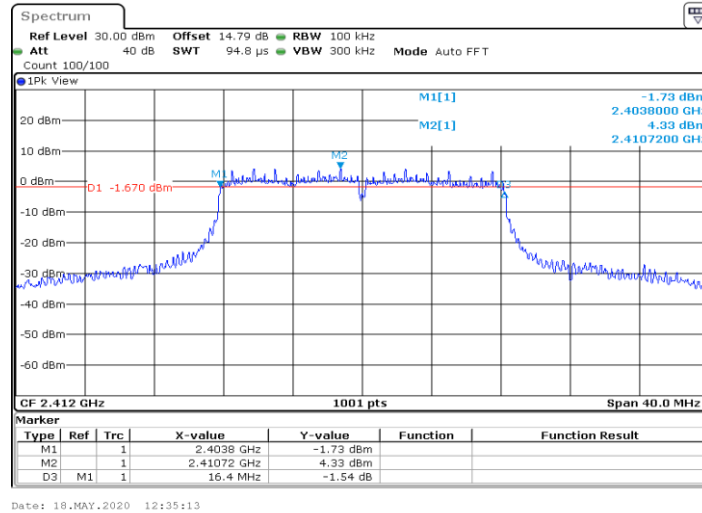
Date: 18.MAY.2020 12:31:32

## 11bMIMO\_Ant2\_2472

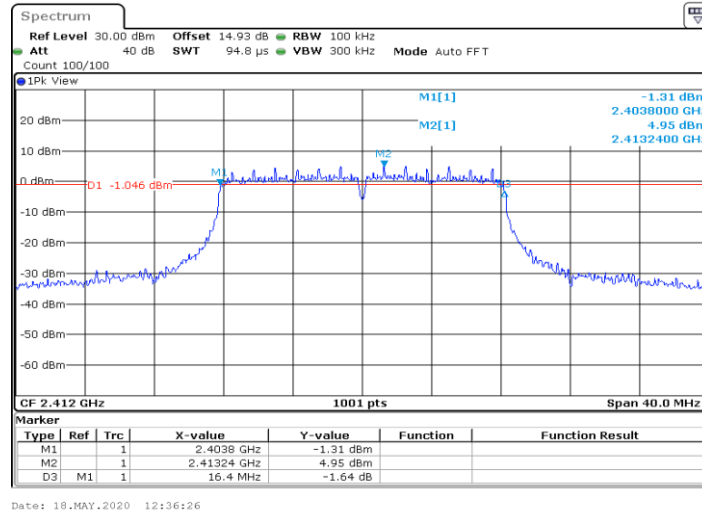


Date: 18.MAY.2020 12:33:03

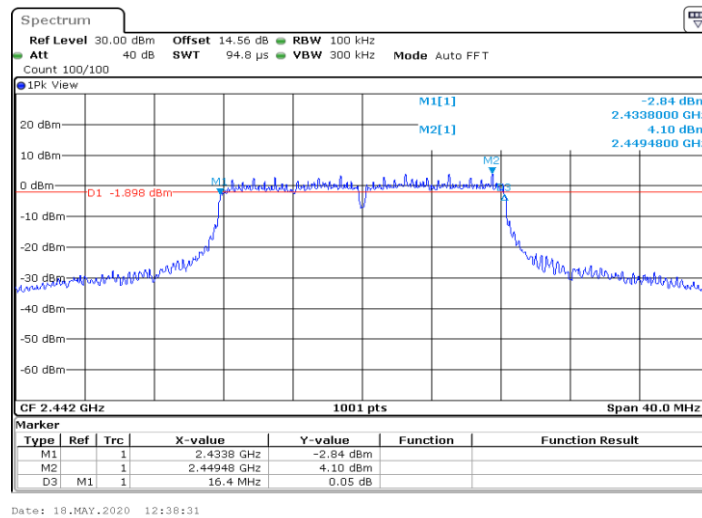
## 11gMIMO\_Ant1\_2412



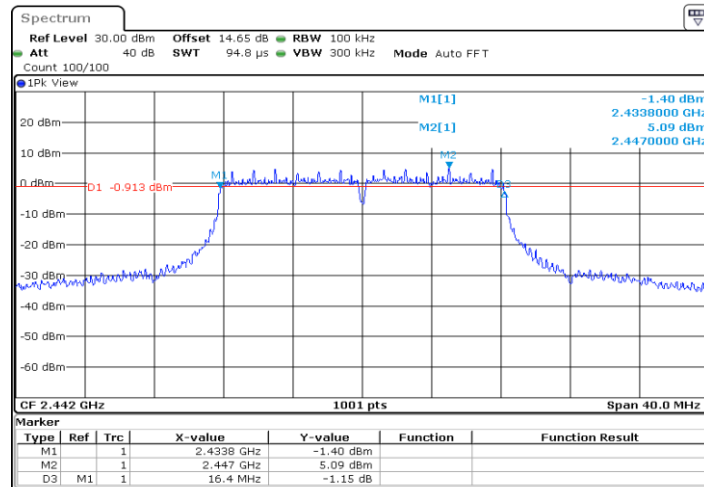
## 11gMIMO\_Ant2\_2412



## 11gMIMO\_Ant1\_2442

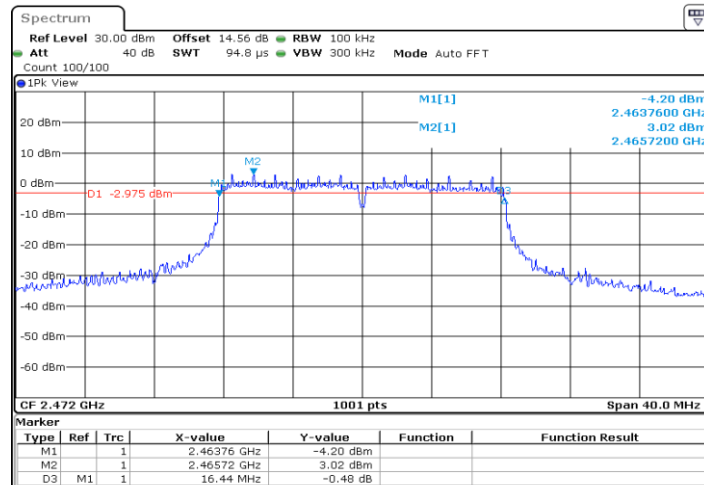


## 11gMIMO\_Ant2\_2442



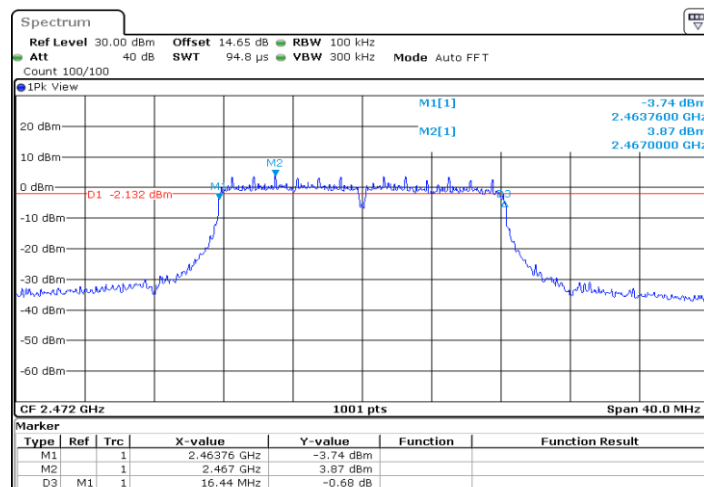
Date: 18.MAY.2020 12:39:40

## 11gMIMO\_Ant1\_2472



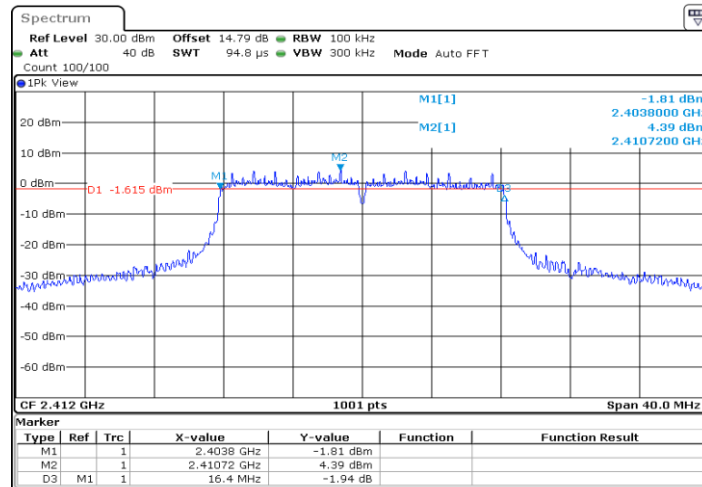
Date: 18.MAY.2020 12:41:29

## 11gMIMO\_Ant2\_2472



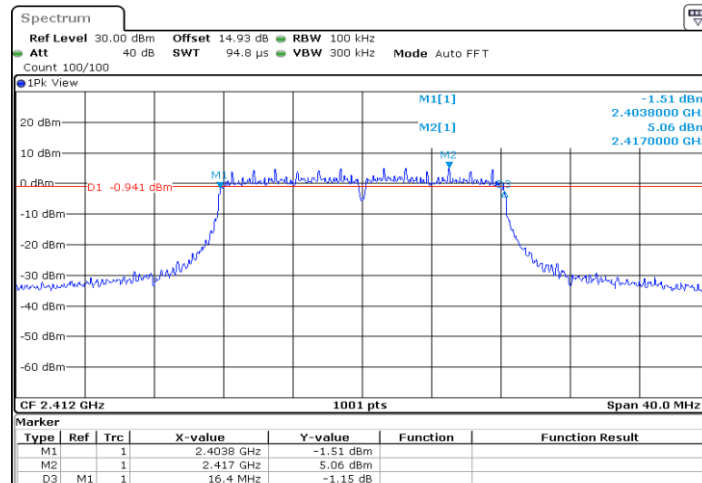
Date: 18.MAY.2020 12:42:47

## 11N20MIMO\_Ant1\_2412



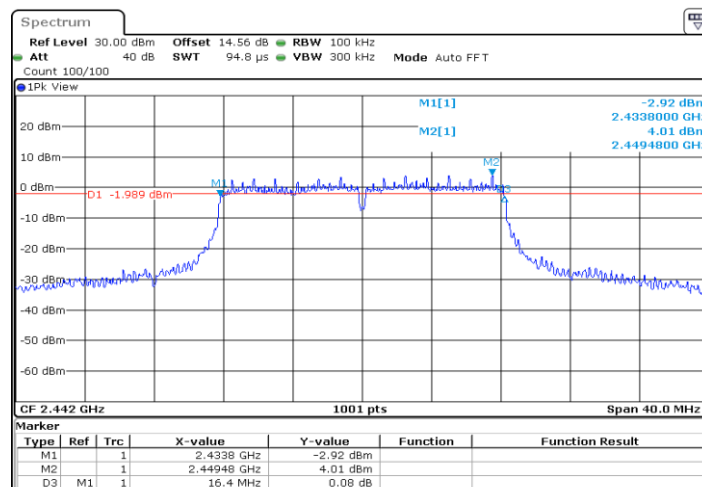
Date: 18.MAY.2020 12:44:52

## 11N20MIMO\_Ant2\_2412



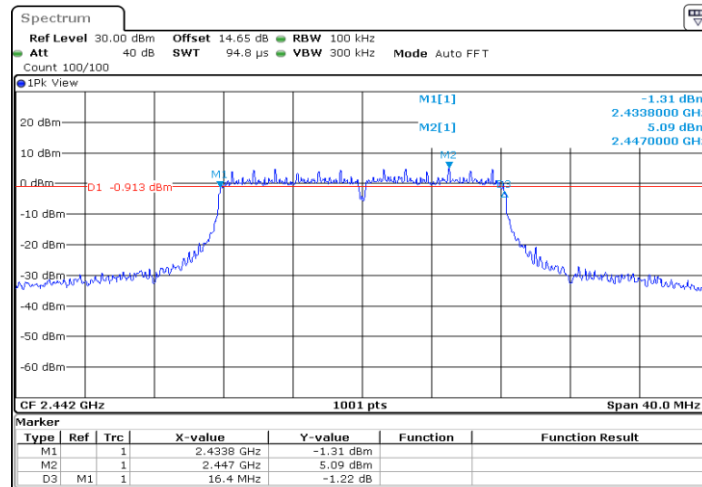
Date: 18.MAY.2020 12:46:05

## 11N20MIMO\_Ant1\_2442



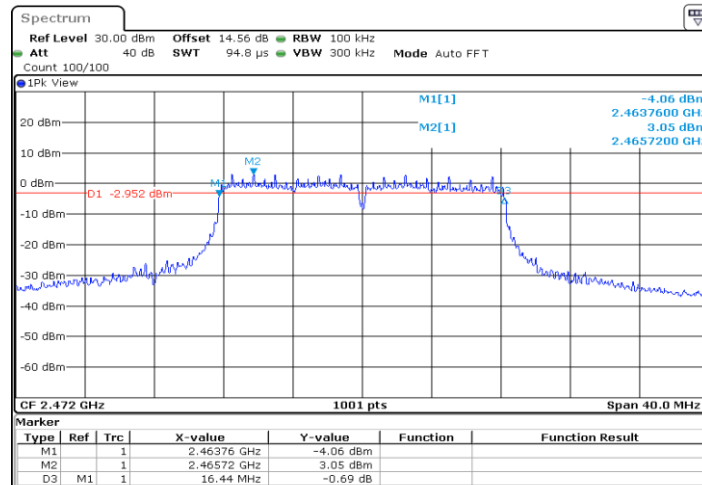
Date: 18.MAY.2020 12:48:17

## 11N20MIMO\_Ant2\_2442



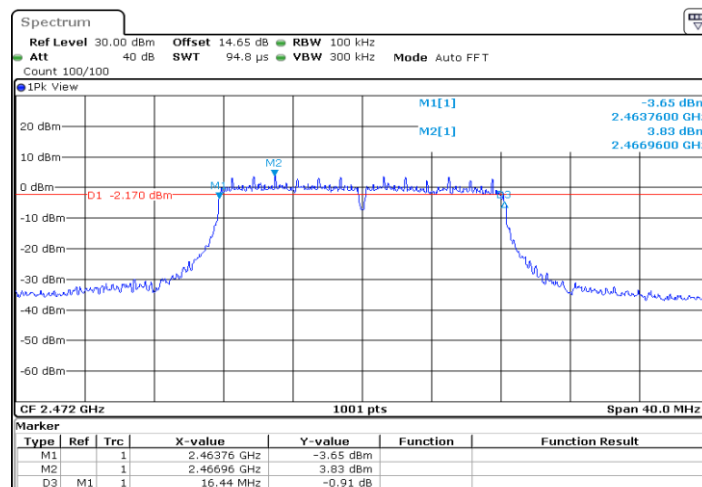
Date: 18.MAY.2020 12:49:21

## 11N20MIMO\_Ant1\_2472



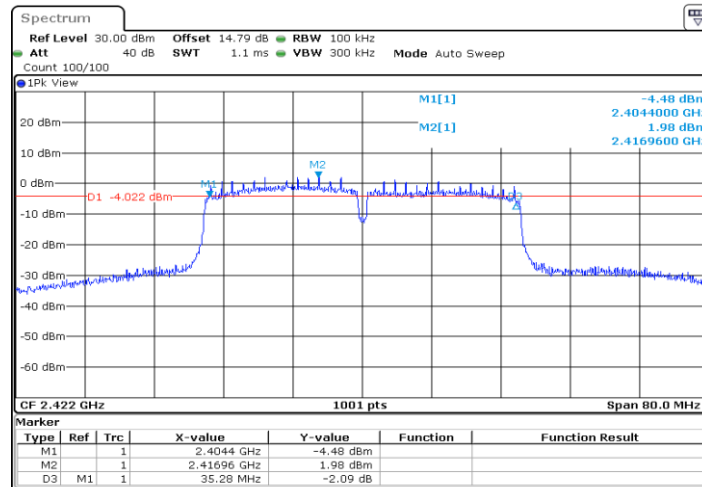
Date: 18.MAY.2020 12:51:11

## 11N20MIMO\_Ant2\_2472



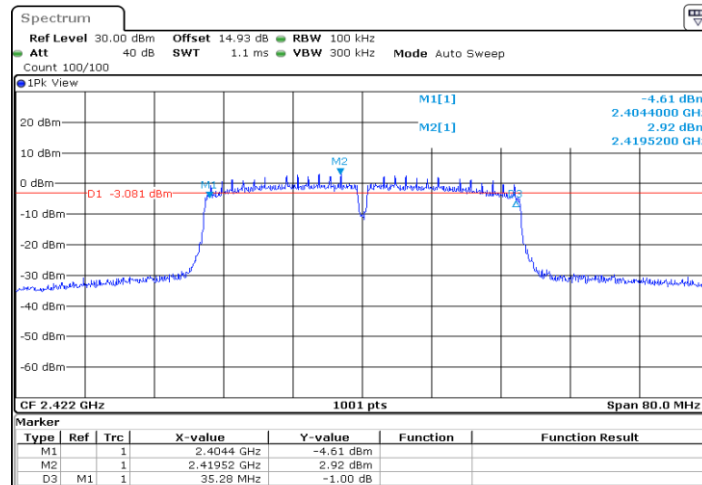
Date: 18.MAY.2020 12:52:34

## 11N40MIMO\_Ant1\_2422



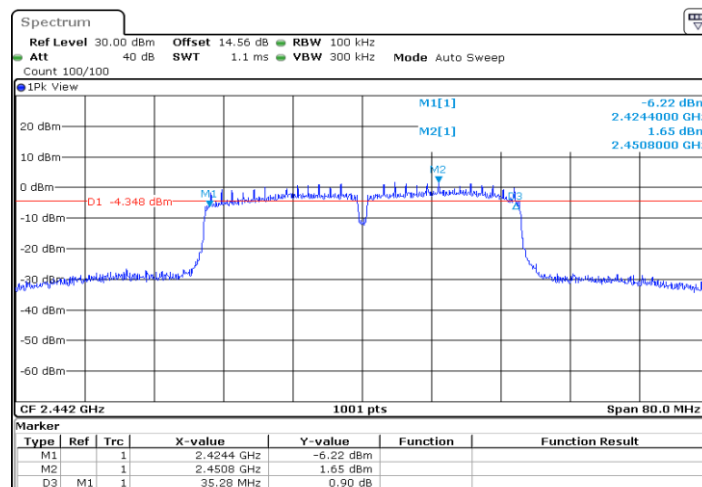
Date: 18.MAY.2020 12:55:08

## 11N40MIMO\_Ant2\_2422



Date: 18.MAY.2020 12:56:22

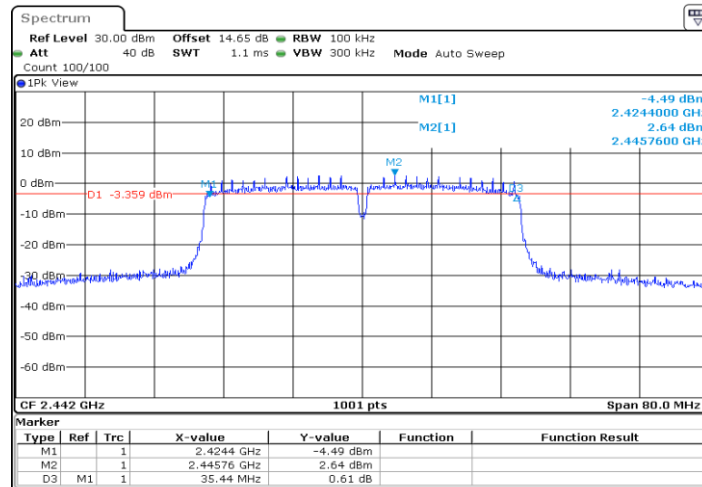
## 11N40MIMO\_Ant1\_2442



Date: 18.MAY.2020 14:03:18

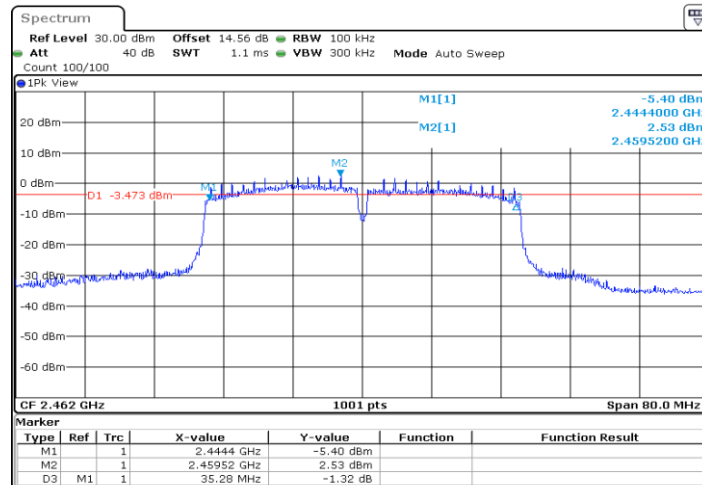


## 11N40MIMO\_Ant2\_2442



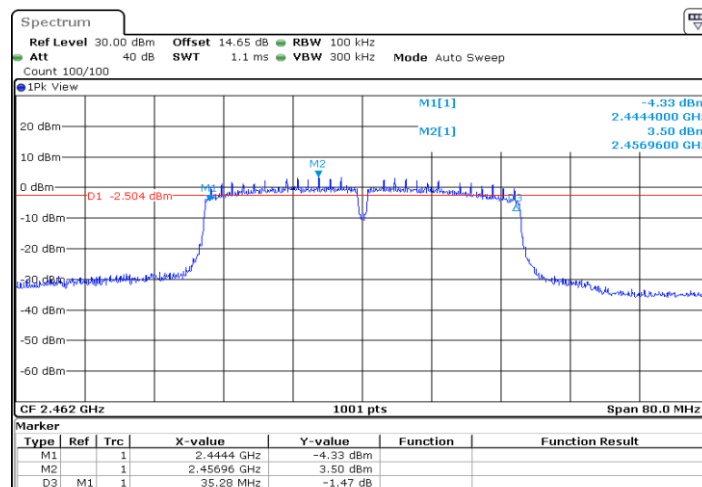
Date: 18.MAY.2020 14:04:49

## 11N40MIMO\_Ant1\_2462



Date: 18.MAY.2020 14:09:50

## 11N40MIMO\_Ant2\_2462



Date: 18.MAY.2020 14:11:08

**AppendixC: Maximum conducted Average output power**

| TestMode  | Antenna | Channel | Result [dBm] | Limit_Non BF [dBm] | Limit_BF [dBm] | Verdict |
|-----------|---------|---------|--------------|--------------------|----------------|---------|
| 11bMIMO   | Ant1    | 2412    | 15.03        | <=30               | <=29.07        | PASS    |
|           | Ant2    | 2412    | 17.47        |                    |                | PASS    |
|           | total   | 2412    | 19.4         |                    |                | PASS    |
|           | Ant1    | 2442    | 15.08        |                    |                | PASS    |
|           | Ant2    | 2442    | 18.13        |                    |                | PASS    |
|           | total   | 2442    | 19.9         |                    |                | PASS    |
|           | Ant1    | 2472    | 15.16        |                    |                | PASS    |
|           | Ant2    | 2472    | 17.44        |                    |                | PASS    |
|           | total   | 2472    | 19.5         |                    |                | PASS    |
| 11gMIMO   | Ant1    | 2412    | 15.31        |                    |                | PASS    |
|           | Ant2    | 2412    | 18.14        |                    |                | PASS    |
|           | total   | 2412    | 20.0         |                    |                | PASS    |
|           | Ant1    | 2442    | 15.30        |                    |                | PASS    |
|           | Ant2    | 2442    | 18.39        |                    |                | PASS    |
|           | total   | 2442    | 20.1         |                    |                | PASS    |
|           | Ant1    | 2472    | 14.54        |                    |                | PASS    |
|           | Ant2    | 2472    | 17.19        |                    |                | PASS    |
|           | total   | 2472    | 19.1         |                    |                | PASS    |
| 11N20MIMO | Ant1    | 2412    | 15.33        |                    |                | PASS    |
|           | Ant2    | 2412    | 18.12        |                    |                | PASS    |
|           | total   | 2412    | 20.0         |                    |                | PASS    |
|           | Ant1    | 2442    | 15.33        |                    |                | PASS    |
|           | Ant2    | 2442    | 18.41        |                    |                | PASS    |
|           | total   | 2442    | 20.1         |                    |                | PASS    |
|           | Ant1    | 2472    | 14.48        |                    |                | PASS    |
|           | Ant2    | 2472    | 17.23        |                    |                | PASS    |
|           | total   | 2472    | 19.1         |                    |                | PASS    |
| 11N40MIMO | Ant1    | 2422    | 15.56        |                    |                | PASS    |
|           | Ant2    | 2422    | 18.37        |                    |                | PASS    |
|           | total   | 2422    | 20.2         |                    |                | PASS    |
|           | Ant1    | 2442    | 15.58        |                    |                | PASS    |
|           | Ant2    | 2442    | 18.74        |                    |                | PASS    |
|           | total   | 2442    | 20.5         |                    |                | PASS    |
|           | Ant1    | 2462    | 15.73        |                    |                | PASS    |
|           | Ant2    | 2462    | 18.91        |                    |                | PASS    |
|           | total   | 2462    | 20.6         |                    |                | PASS    |

1. Directional gain = array gain+Ant gain= $10 \cdot \lg(N_{ant}/N_{ss}) + 3.92\text{dBi} = 6.93\text{dBi} > 6\text{dBi}$ ,

So  $Limit_{BF} = 30 - (6.93 - 6) = 29.07\text{dBm}$

2. Non-Beam Forming mode shares the same power with the Beam Forming mode.

## AppendixD: Maximum power spectral density

### Test Result

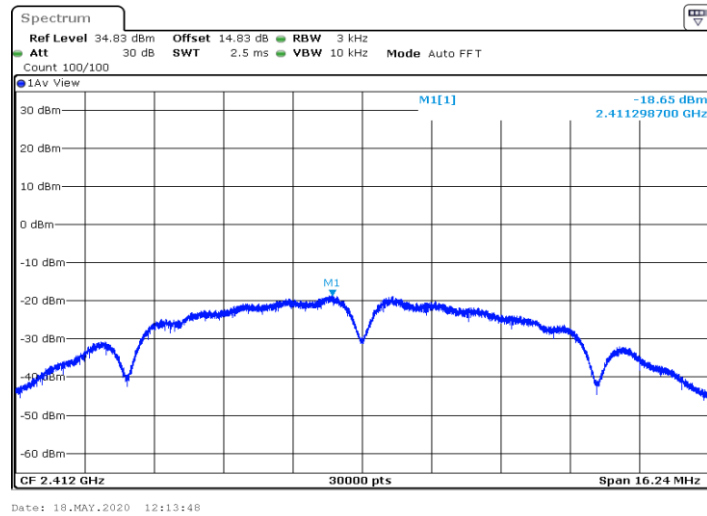
| TestMode  | Antenna | Channel | Result<br>[dBm/3kHz] | Limit_Non BF<br>[dBm/3kHz] | Limit_BF<br>[dBm/3kHz] | Verdict |
|-----------|---------|---------|----------------------|----------------------------|------------------------|---------|
| 11bMIMO   | Ant1    | 2412    | -18.65               | <=8                        | <=7.07                 | PASS    |
|           | Ant2    | 2412    | -17.78               |                            |                        | PASS    |
|           | total   | 2412    | -15.18               |                            |                        | PASS    |
|           | Ant1    | 2442    | -18.85               |                            |                        | PASS    |
|           | Ant2    | 2442    | -17.58               |                            |                        | PASS    |
|           | total   | 2442    | -15.16               |                            |                        | PASS    |
|           | Ant1    | 2472    | -18.82               |                            |                        | PASS    |
|           | Ant2    | 2472    | -18.49               |                            |                        | PASS    |
|           | total   | 2472    | -15.64               |                            |                        | PASS    |
| 11gMIMO   | Ant1    | 2412    | -19.44               |                            |                        | PASS    |
|           | Ant2    | 2412    | -19.38               |                            |                        | PASS    |
|           | total   | 2412    | -16.40               |                            |                        | PASS    |
|           | Ant1    | 2442    | -20.37               |                            |                        | PASS    |
|           | Ant2    | 2442    | -19.39               |                            |                        | PASS    |
|           | total   | 2442    | -16.84               |                            |                        | PASS    |
|           | Ant1    | 2472    | -20.94               |                            |                        | PASS    |
|           | Ant2    | 2472    | -20.51               |                            |                        | PASS    |
|           | total   | 2472    | -17.71               |                            |                        | PASS    |
| 11N20MIMO | Ant1    | 2412    | -19.49               |                            |                        | PASS    |
|           | Ant2    | 2412    | -19.39               |                            |                        | PASS    |
|           | total   | 2412    | -16.43               |                            |                        | PASS    |
|           | Ant1    | 2442    | -20.44               |                            |                        | PASS    |
|           | Ant2    | 2442    | -19.4                |                            |                        | PASS    |
|           | total   | 2442    | -16.88               |                            |                        | PASS    |
|           | Ant1    | 2472    | -20.96               |                            |                        | PASS    |
|           | Ant2    | 2472    | -20.49               |                            |                        | PASS    |
|           | total   | 2472    | -17.71               |                            |                        | PASS    |
| 11N40MIMO | Ant1    | 2422    | -22.38               |                            |                        | PASS    |
|           | Ant2    | 2422    | -21.97               |                            |                        | PASS    |
|           | total   | 2422    | -19.16               |                            |                        | PASS    |
|           | Ant1    | 2442    | -23.17               |                            |                        | PASS    |
|           | Ant2    | 2442    | -22.43               |                            |                        | PASS    |
|           | total   | 2442    | -19.77               |                            |                        | PASS    |
|           | Ant1    | 2462    | -22.00               |                            |                        | PASS    |
|           | Ant2    | 2462    | -21.53               |                            |                        | PASS    |
|           | total   | 2462    | -18.75               |                            |                        | PASS    |

1. Directional gain = array gain+Ant gain= $10*\log(Nant/Nss)+3.92dBi=6.93dBi>6dBi$ ,  
So  $Limit_{BF}=8-(6.93-6)dBm/MHz=7.07dBm/MHz$

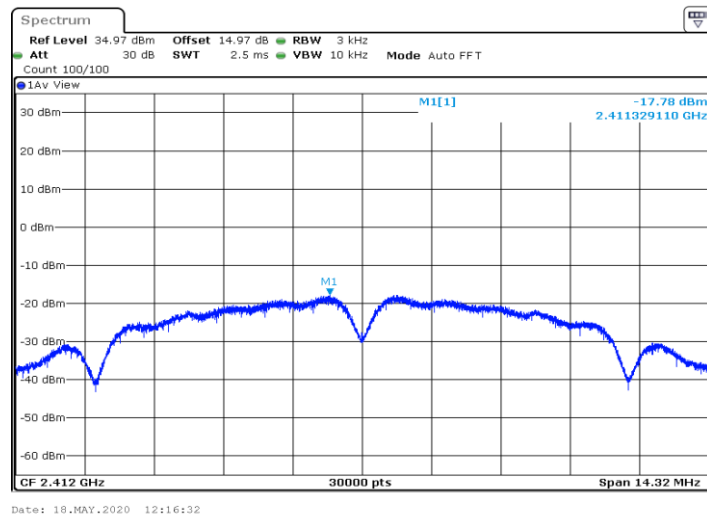
\*2. Non-Beam Forming mode shares the same power with the Beam Forming mode.

## Test Graphs

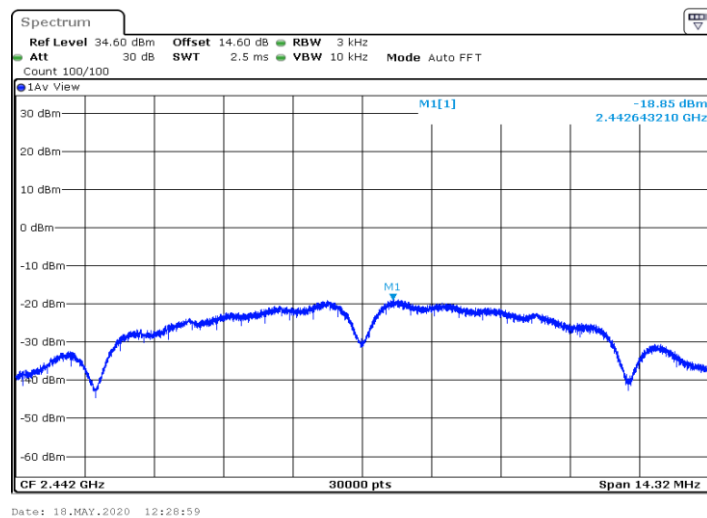
11bMIMO\_Ant1\_2412



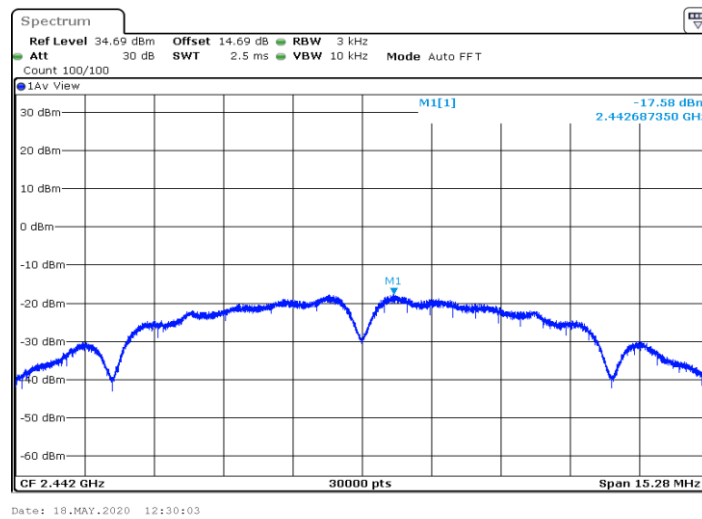
11bMIMO\_Ant2\_2412



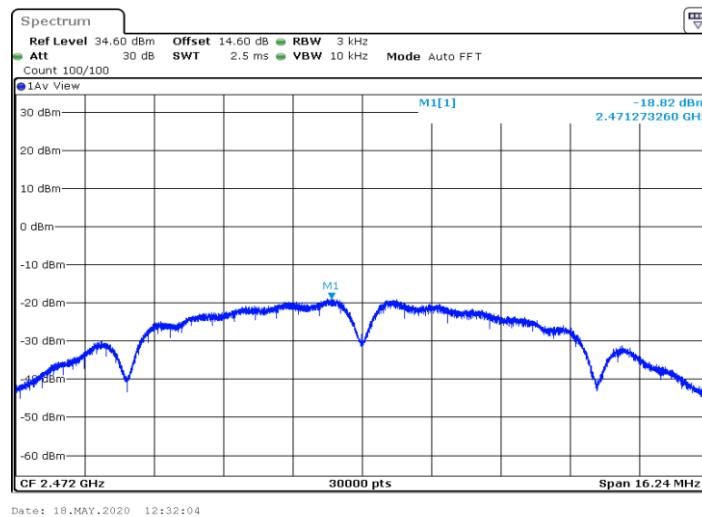
11bMIMO\_Ant1\_2442



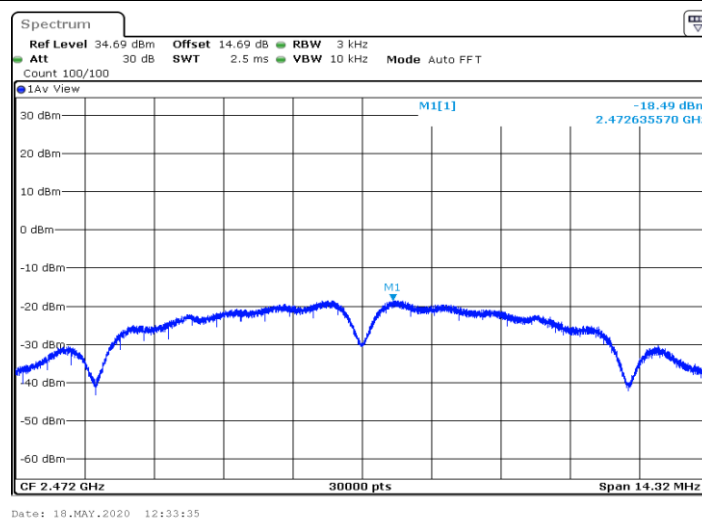
## 11bMIMO\_Ant2\_2442



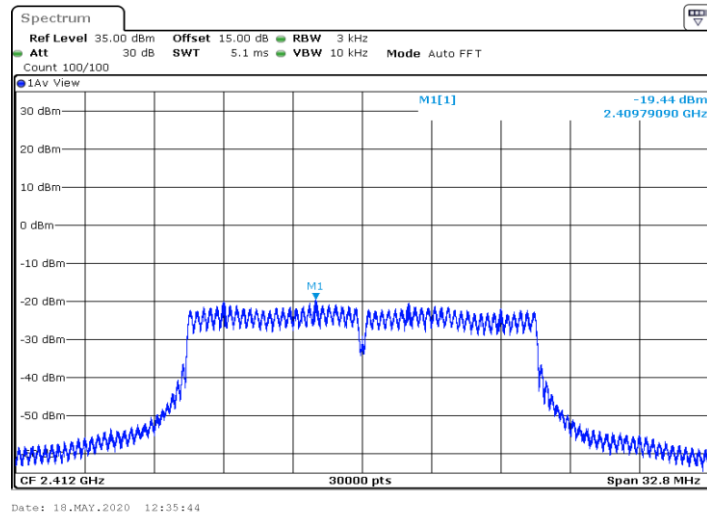
## 11bMIMO\_Ant1\_2472



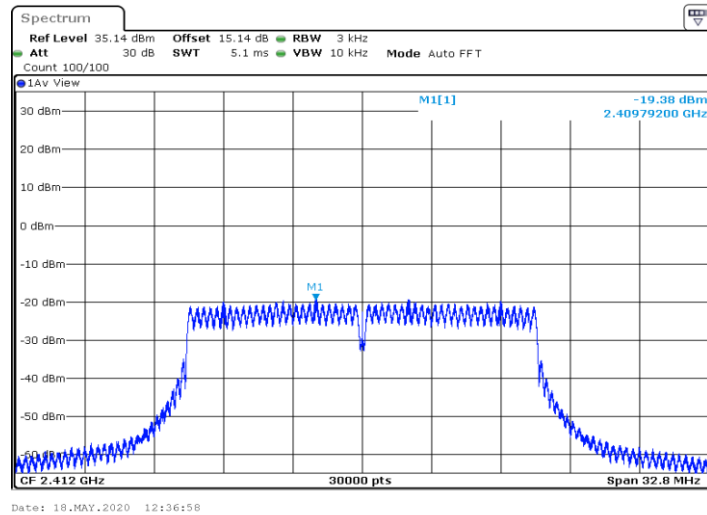
## 11bMIMO\_Ant2\_2472



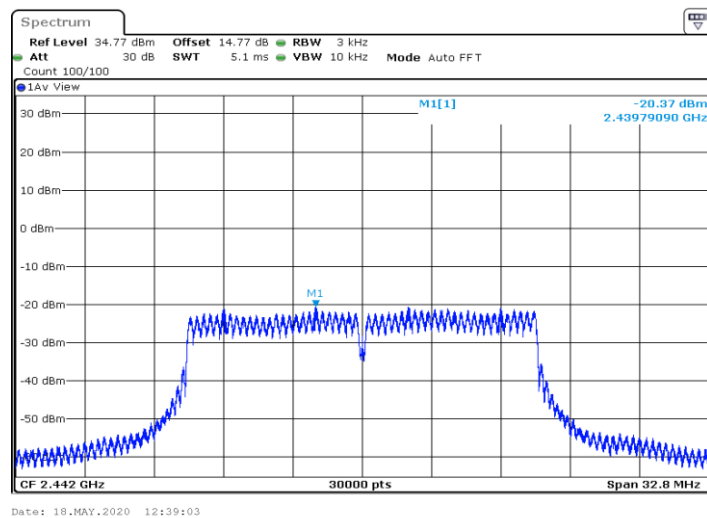
## 11gMIMO\_Ant1\_2412



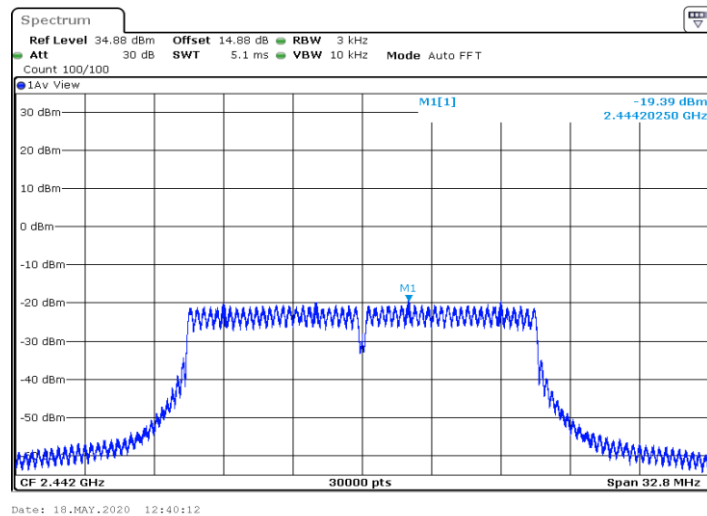
## 11gMIMO\_Ant2\_2412



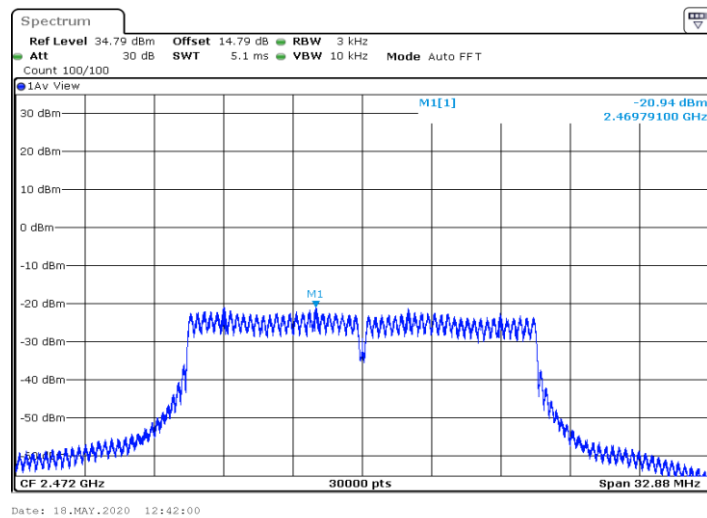
## 11gMIMO\_Ant1\_2442



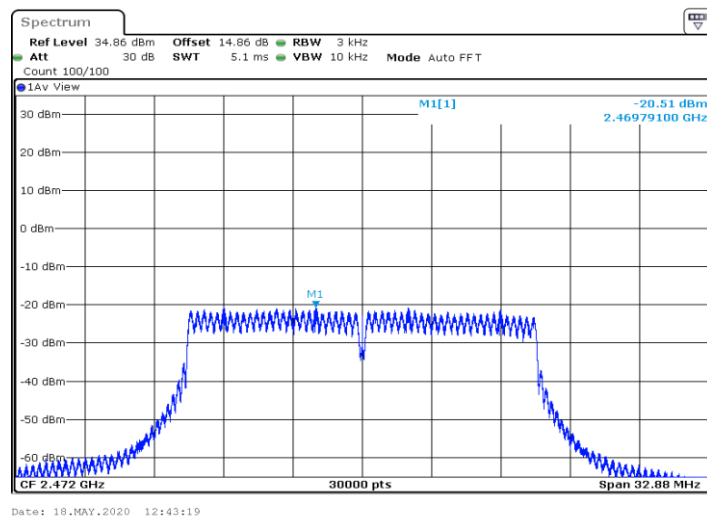
## 11gMIMO\_Ant2\_2442



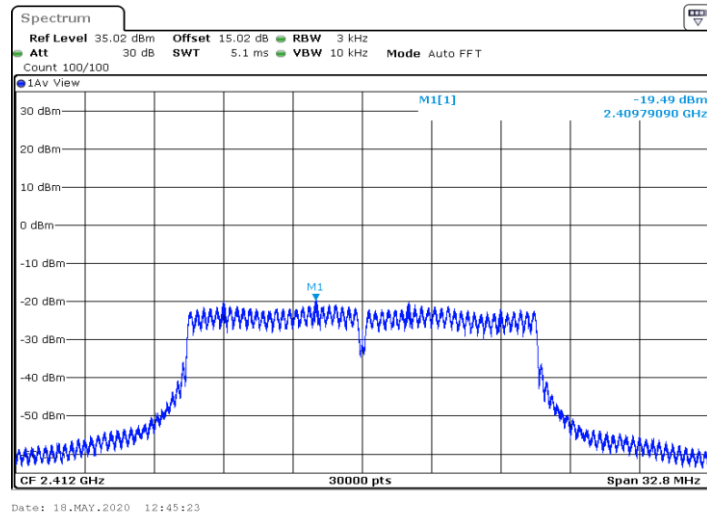
## 11gMIMO\_Ant1\_2472



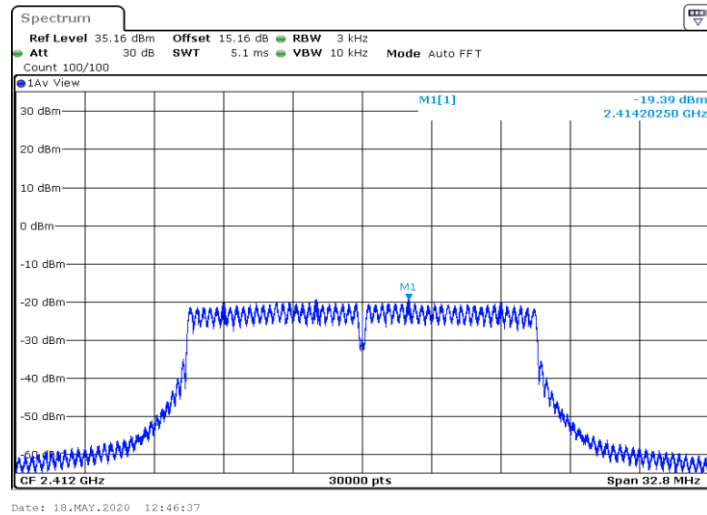
## 11gMIMO\_Ant2\_2472



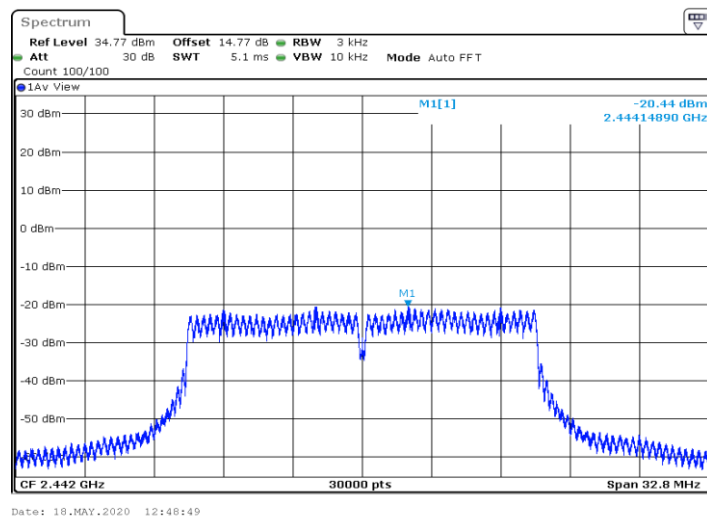
## 11N20MIMO\_Ant1\_2412



## 11N20MIMO\_Ant2\_2412

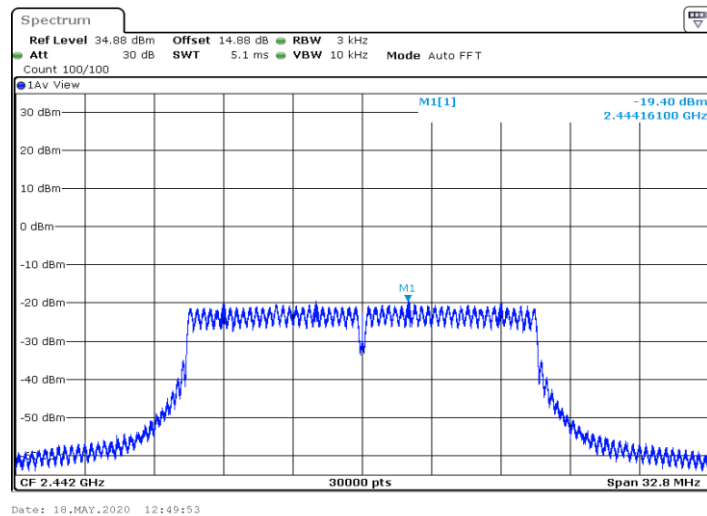


## 11N20MIMO\_Ant1\_2442

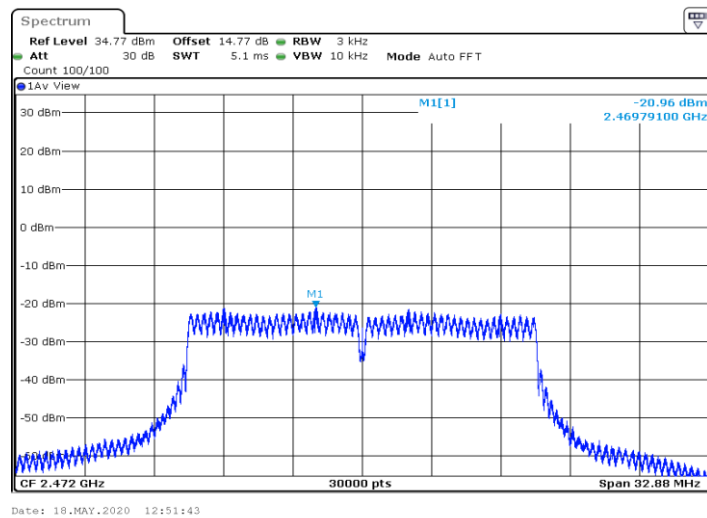




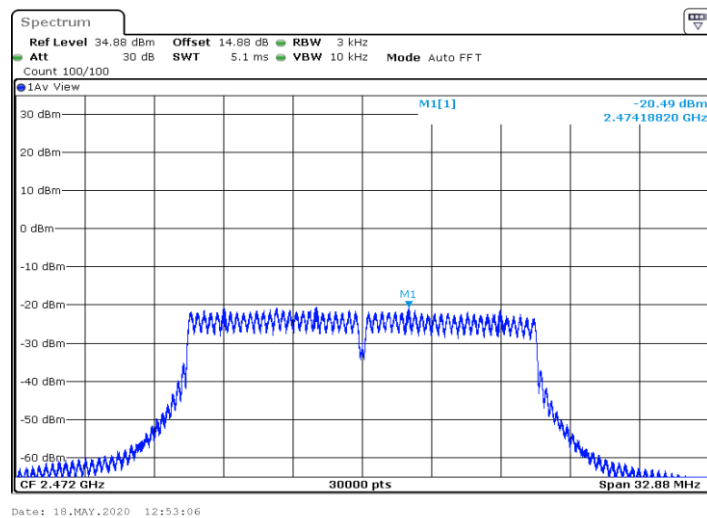
## 11N20MIMO\_Ant2\_2442



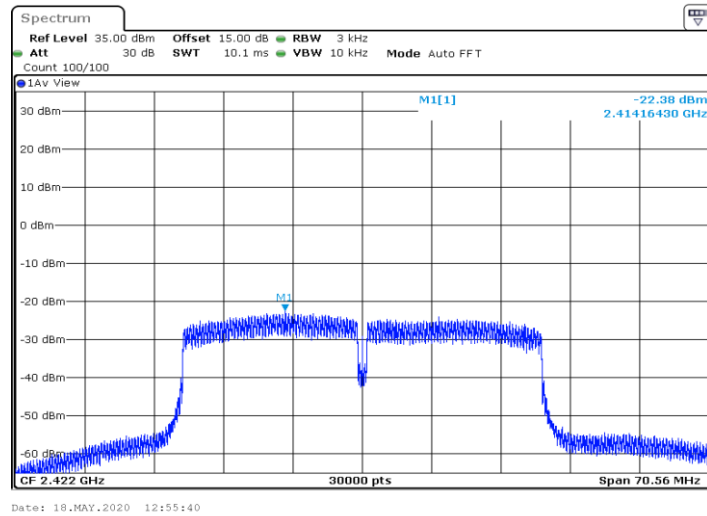
## 11N20MIMO\_Ant1\_2472



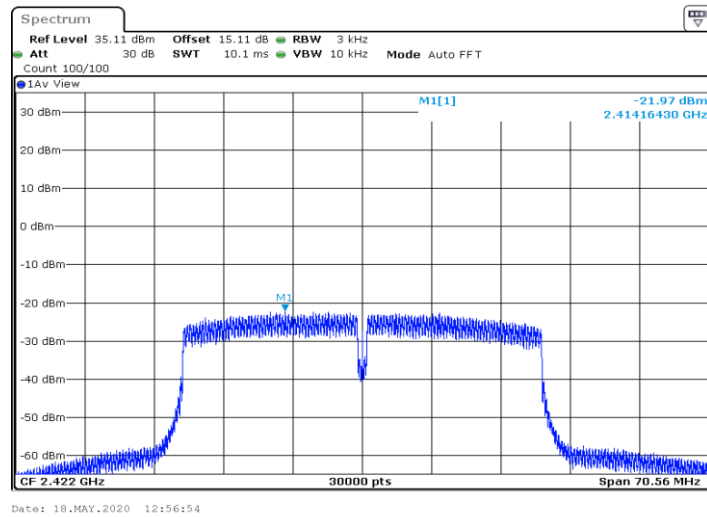
## 11N20MIMO\_Ant2\_2472



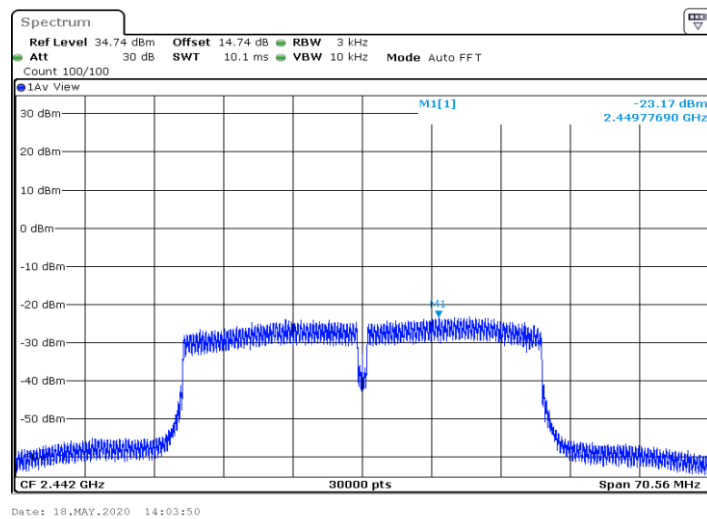
## 11N40MIMO\_Ant1\_2422



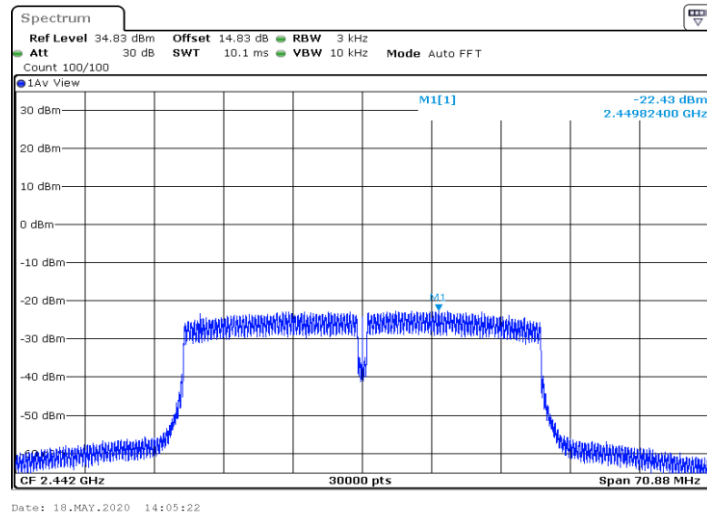
## 11N40MIMO\_Ant2\_2422



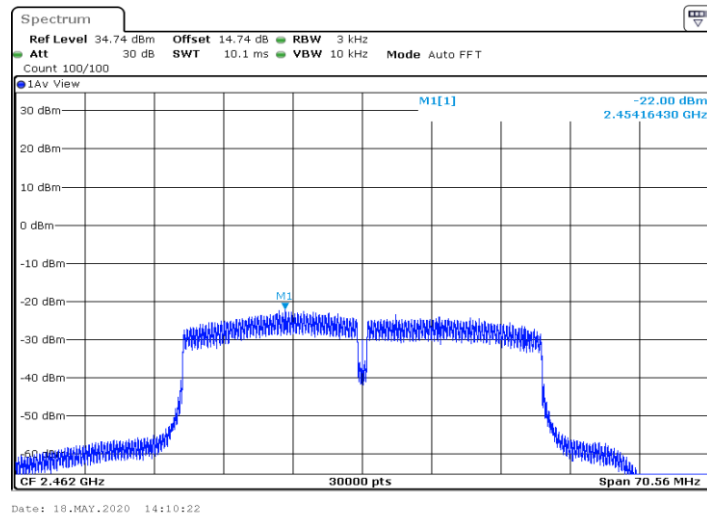
## 11N40MIMO\_Ant1\_2442



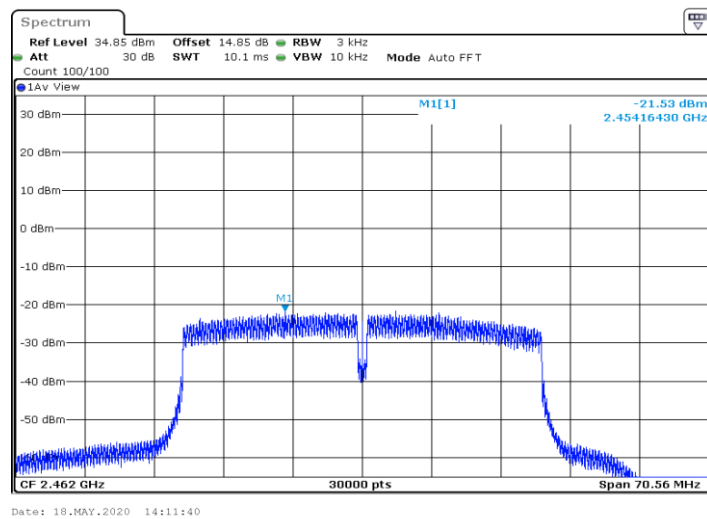
## 11N40MIMO\_Ant2\_2442



## 11N40MIMO\_Ant1\_2462



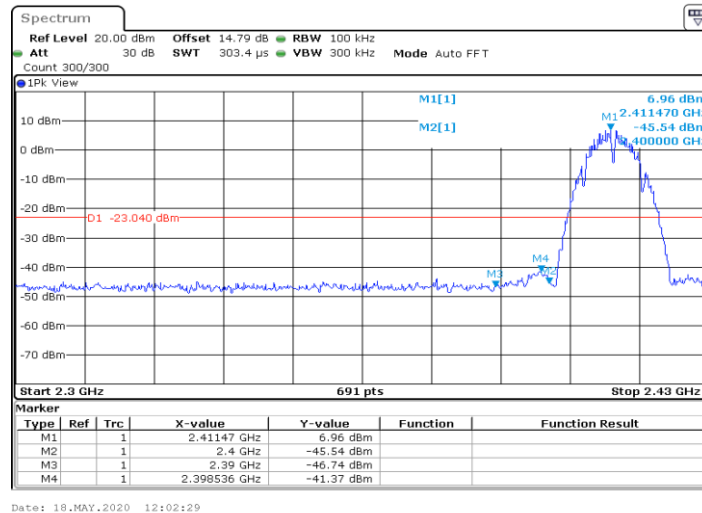
## 11N40MIMO\_Ant2\_2462



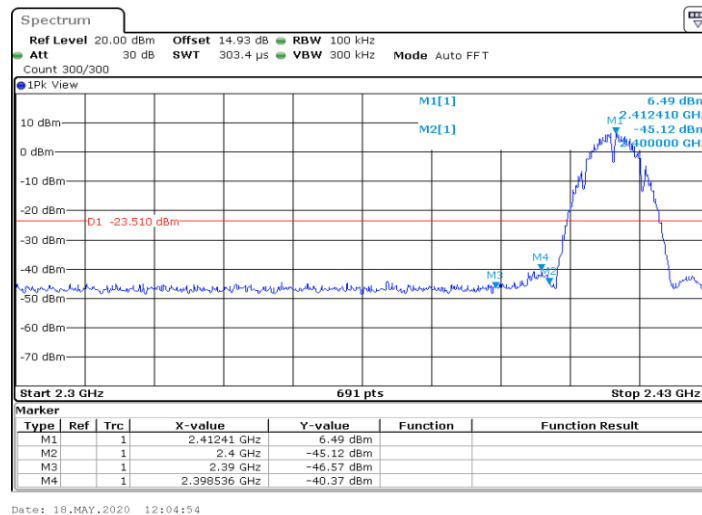
## AppendixE:Band edge measurements

### Test Graphs

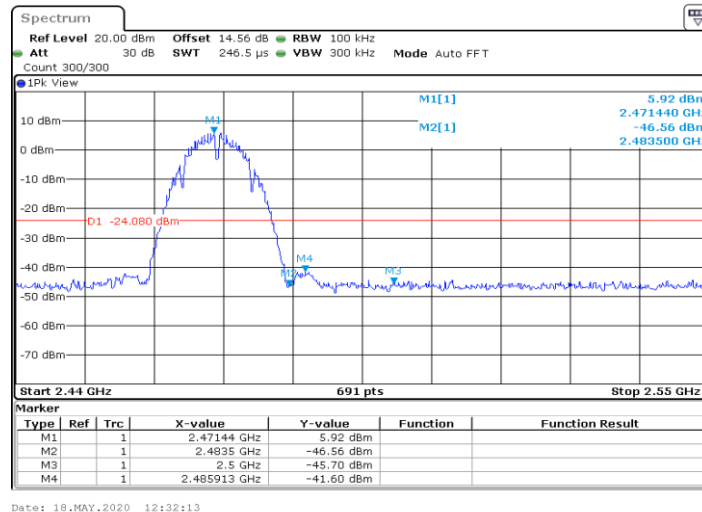
11bMIMO\_Ant1\_Low\_2412



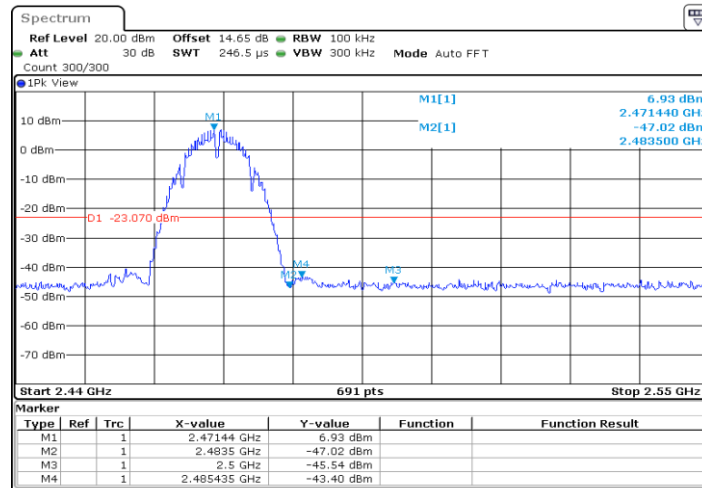
11bMIMO\_Ant2\_Low\_2412



11bMIMO\_Ant1\_High\_2472

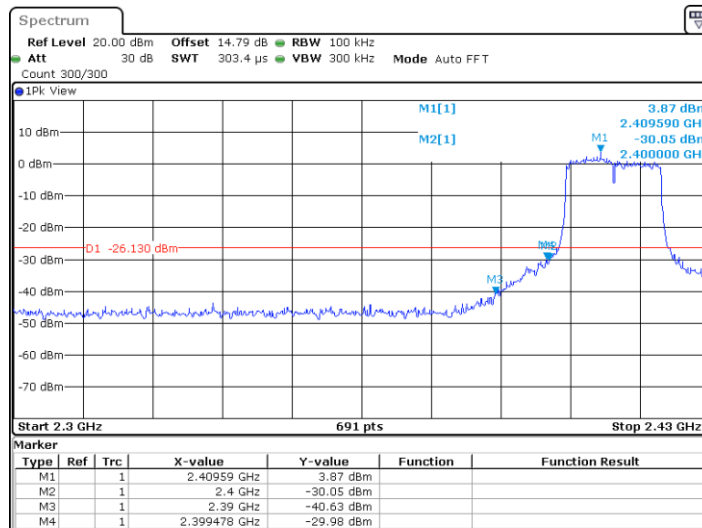


## 11bMIMO\_Ant2\_High\_2472



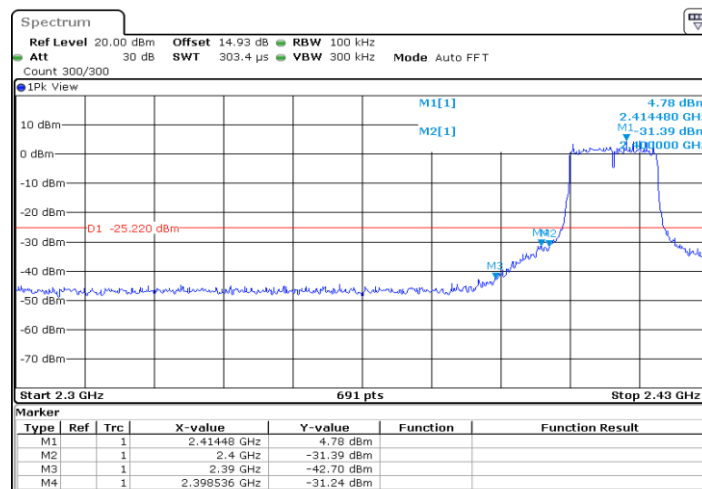
Date: 18.MAY.2020 12:33:44

## 11gMIMO\_Ant1\_Low\_2412



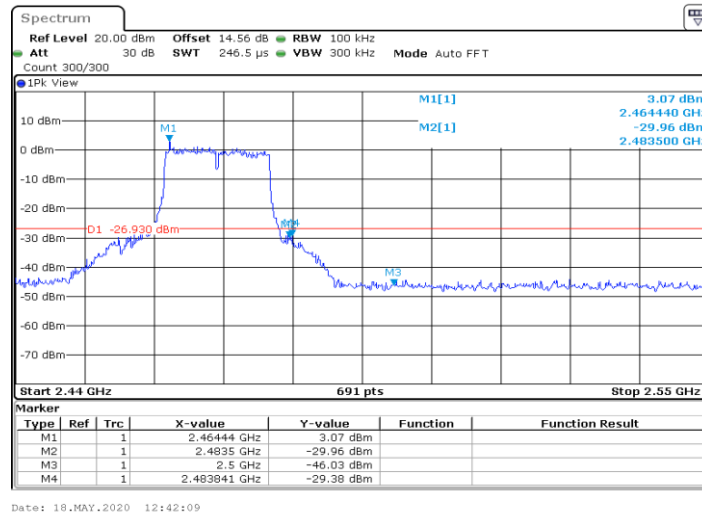
Date: 13.JUN.2020 00:23:34

## 11gMIMO\_Ant2\_Low\_2412

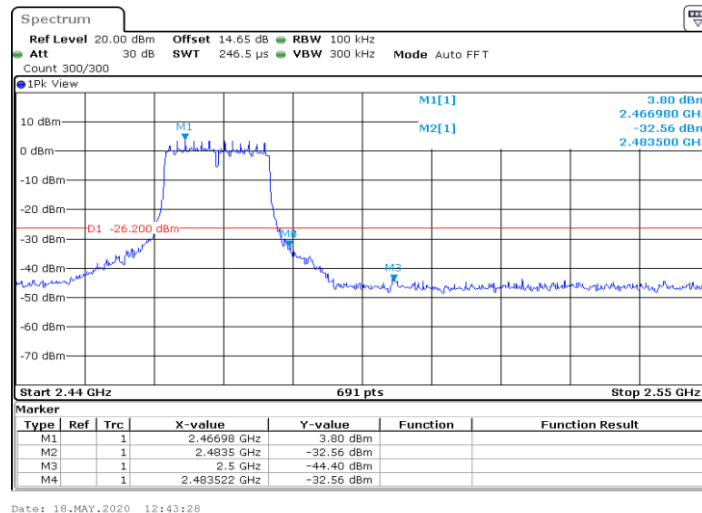


Date: 18.MAY.2020 12:37:07

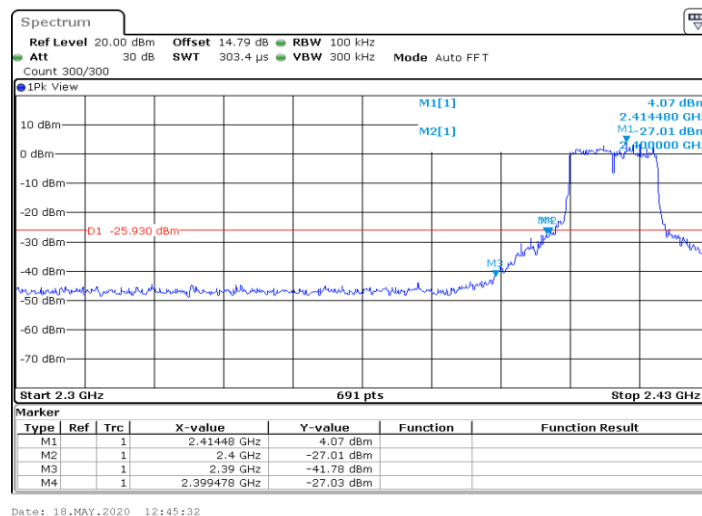
## 11gMIMO\_Ant1\_High\_2472



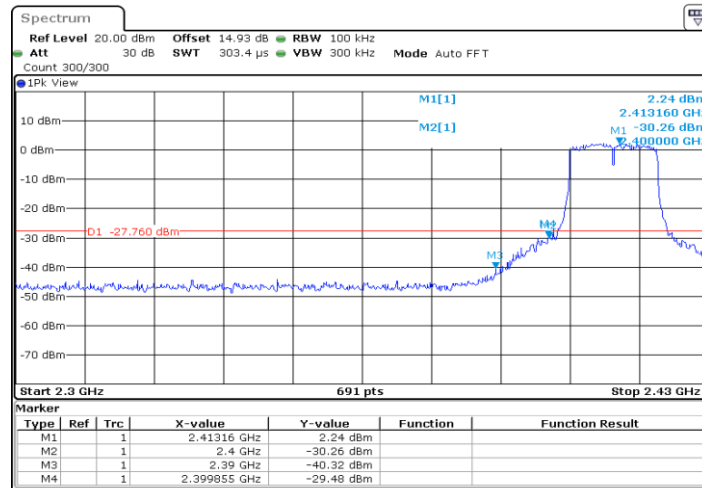
## 11gMIMO\_Ant2\_High\_2472



## 11N20MIMO\_Ant1\_Low\_2412

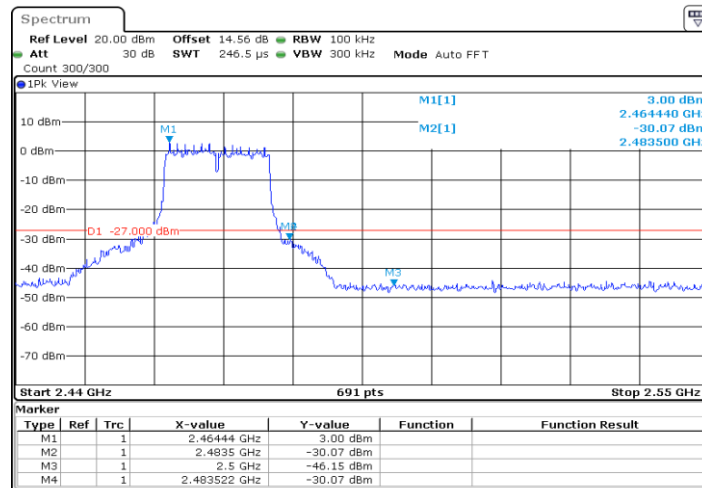


## 11N20MIMO\_Ant2\_Low\_2412



Date: 18.MAY.2020 12:46:46

## 11N20MIMO\_Ant1\_High\_2472



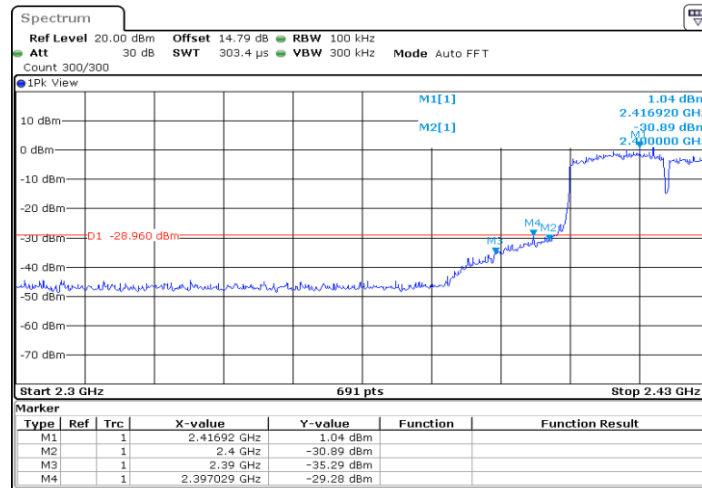
Date: 18.MAY.2020 12:51:52

## 11N20MIMO\_Ant2\_High\_2472



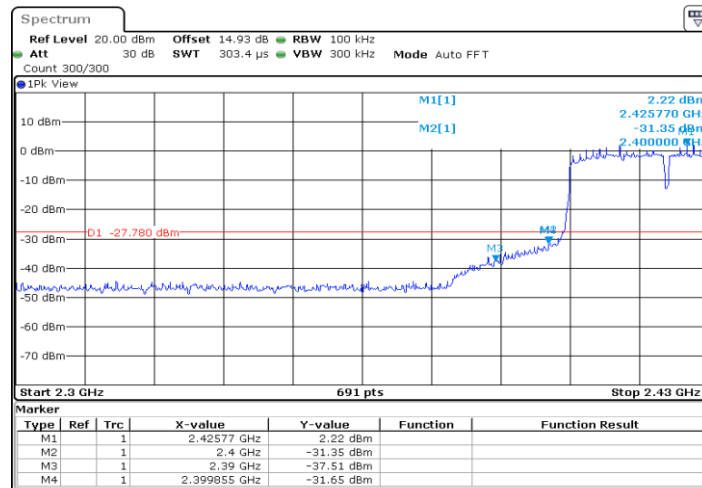
Date: 18.MAY.2020 12:53:15

## 11N40MIMO\_Ant1\_Low\_2422



Date: 18.MAY.2020 12:55:49

## 11N40MIMO\_Ant2\_Low\_2422



Date: 18.MAY.2020 12:57:03

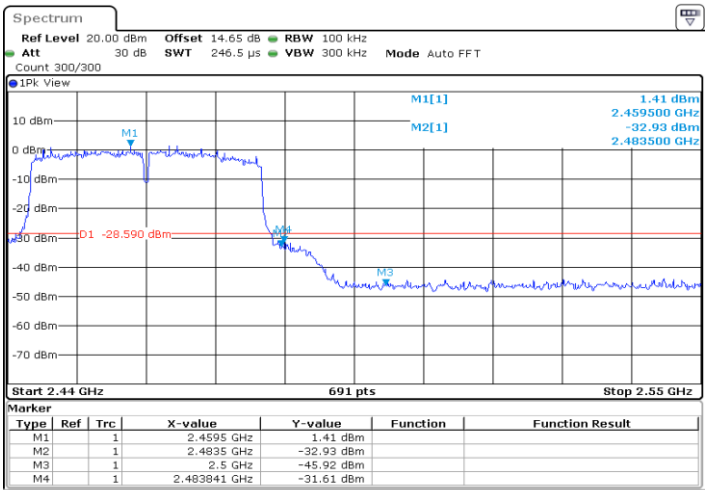
## 11N40MIMO\_Ant1\_High\_2462



Date: 18.MAY.2020 14:10:31



11N40MIMO\_Ant2\_High\_2462



Date: 18.MAY.2020 14:11:50

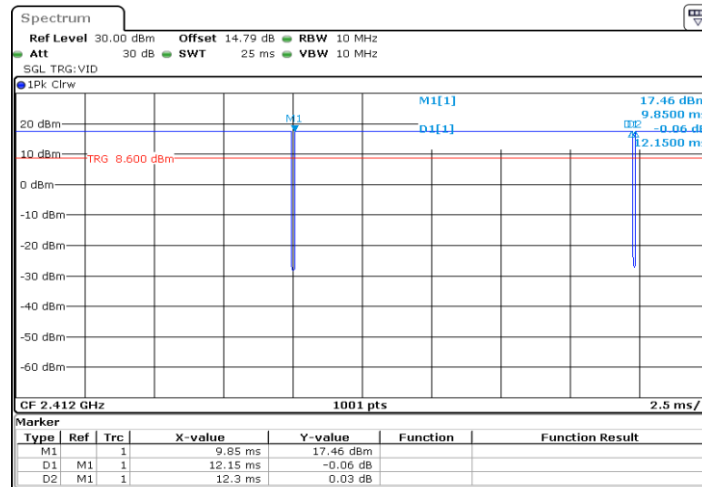
## AppendixG: DutyCycle

### Test Result

| TestMode  | Antenna | Channel | TransmissionDuration<br>[ms] | Transmission<br>Period<br>[ms] | Duty Cycle<br>[%] |
|-----------|---------|---------|------------------------------|--------------------------------|-------------------|
| 11bMIMO   | Ant1    | 2412    | 12.15                        | 12.30                          | 98.78             |
|           | Ant2    | 2412    | 12.18                        | 12.30                          | 99.02             |
|           | Ant1    | 2442    | 12.18                        | 12.30                          | 98.98             |
|           | Ant2    | 2442    | 12.18                        | 12.30                          | 99.02             |
|           | Ant1    | 2472    | 12.18                        | 12.30                          | 99.02             |
|           | Ant2    | 2472    | 12.18                        | 12.30                          | 99.02             |
| 11gMIMO   | Ant1    | 2412    | 2.00                         | 2.11                           | 94.79             |
|           | Ant2    | 2412    | 2.01                         | 2.12                           | 94.81             |
|           | Ant1    | 2442    | 2.01                         | 2.12                           | 94.81             |
|           | Ant2    | 2442    | 2.01                         | 2.11                           | 95.26             |
|           | Ant1    | 2472    | 2.01                         | 2.12                           | 94.81             |
|           | Ant2    | 2472    | 2.01                         | 2.11                           | 95.26             |
| 11N20MIMO | Ant1    | 2412    | 4.94                         | 5.04                           | 98.02             |
|           | Ant2    | 2412    | 4.95                         | 5.05                           | 98.02             |
|           | Ant1    | 2442    | 4.95                         | 5.05                           | 98.02             |
|           | Ant2    | 2442    | 4.94                         | 5.05                           | 97.82             |
|           | Ant1    | 2472    | 4.95                         | 5.05                           | 98.02             |
|           | Ant2    | 2472    | 4.95                         | 5.05                           | 98.02             |
| 11N40MIMO | Ant1    | 2422    | 2.39                         | 2.49                           | 95.98             |
|           | Ant2    | 2422    | 2.39                         | 2.50                           | 95.60             |
|           | Ant1    | 2442    | 2.39                         | 2.49                           | 95.98             |
|           | Ant2    | 2442    | 2.39                         | 2.50                           | 95.60             |
|           | Ant1    | 2462    | 2.39                         | 2.49                           | 95.98             |
|           | Ant2    | 2462    | 2.39                         | 2.50                           | 95.60             |

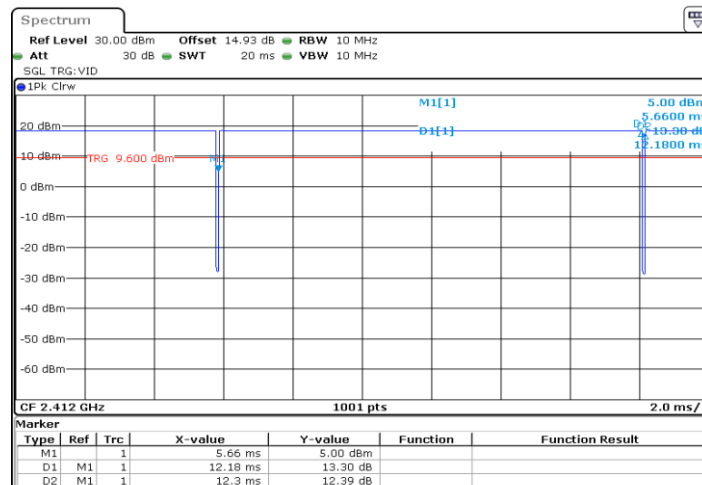
## Test Graphs

11bMIMO\_Ant1\_2412



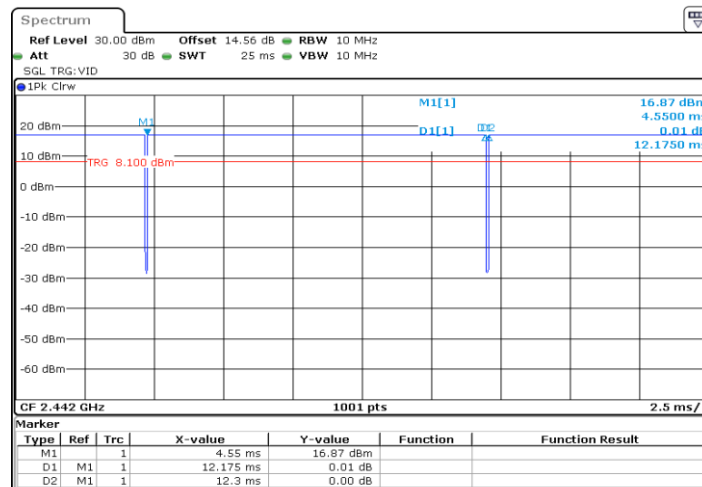
Date: 18.MAY.2020 14:32:00

11bMIMO\_Ant2\_2412



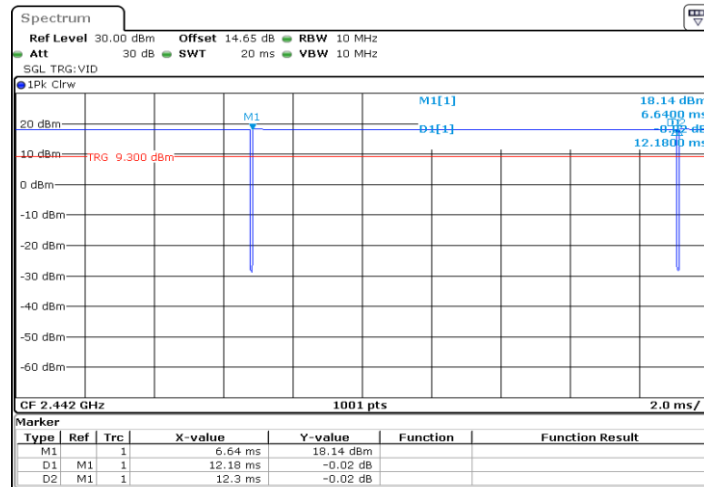
Date: 18.MAY.2020 14:32:14

11bMIMO\_Ant1\_2442



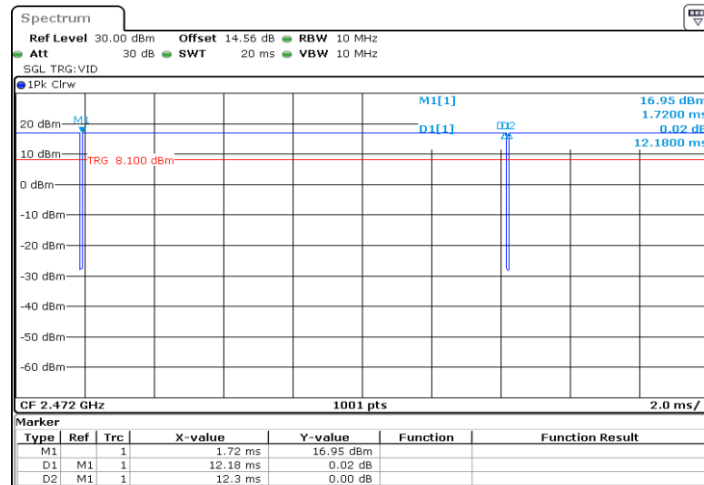
Date: 18.MAY.2020 14:30:54

## 11bMIMO\_Ant2\_2442



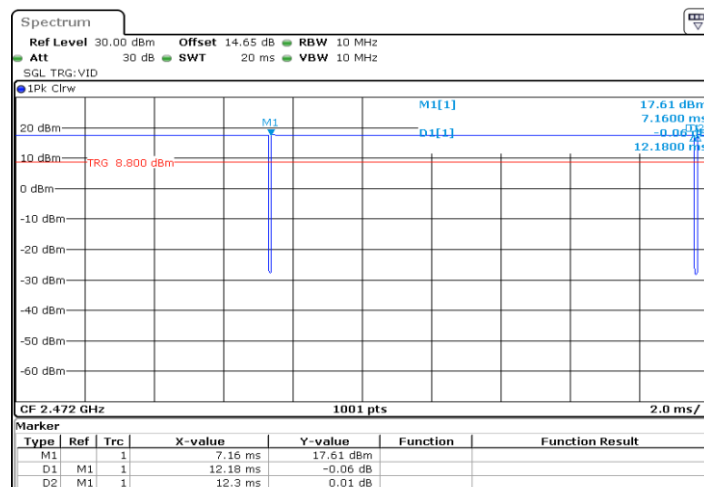
Date: 18.MAY.2020 14:31:10

## 11bMIMO\_Ant1\_2472



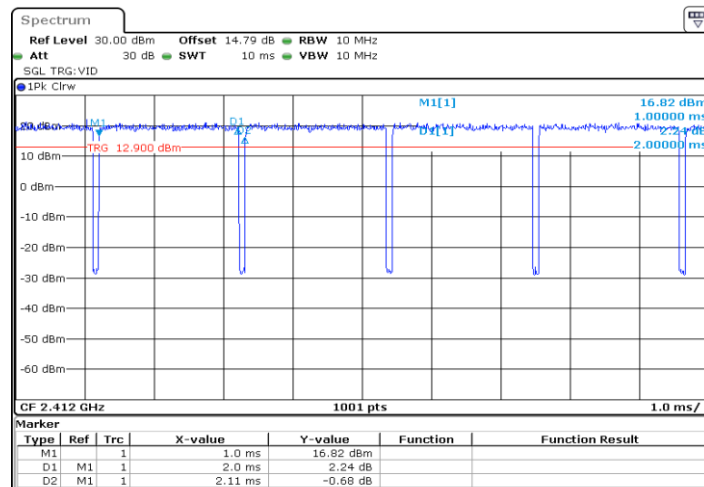
Date: 18.MAY.2020 14:29:37

## 11bMIMO\_Ant2\_2472



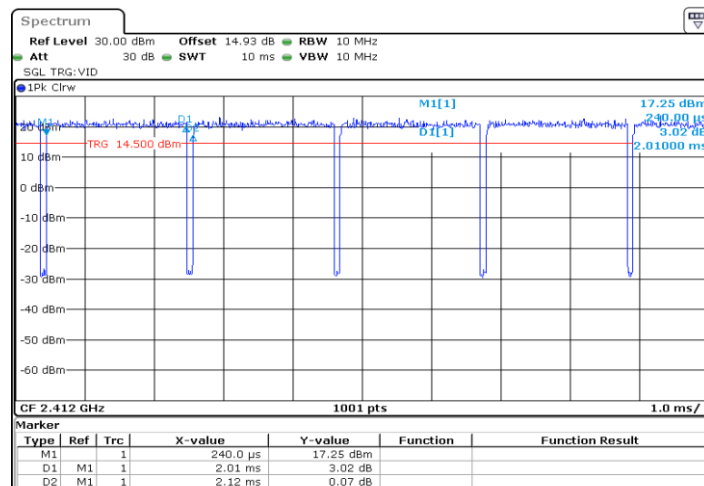
Date: 18.MAY.2020 14:29:55

## 11gMIMO\_Ant1\_2412



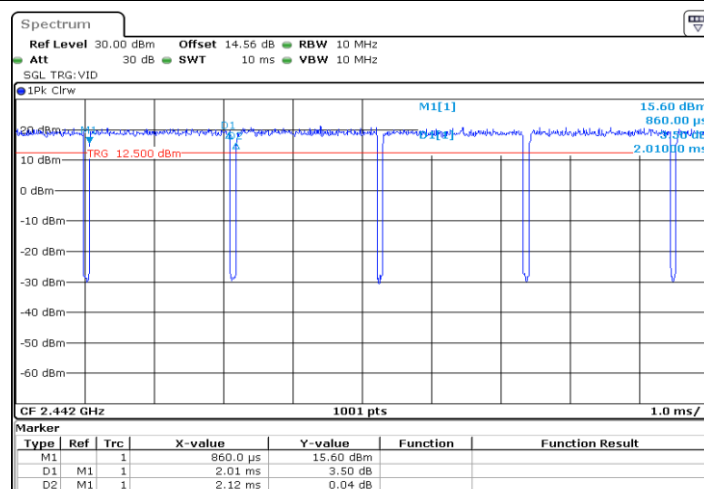
Date: 18.MAY.2020 14:26:10

## 11gMIMO\_Ant2\_2412



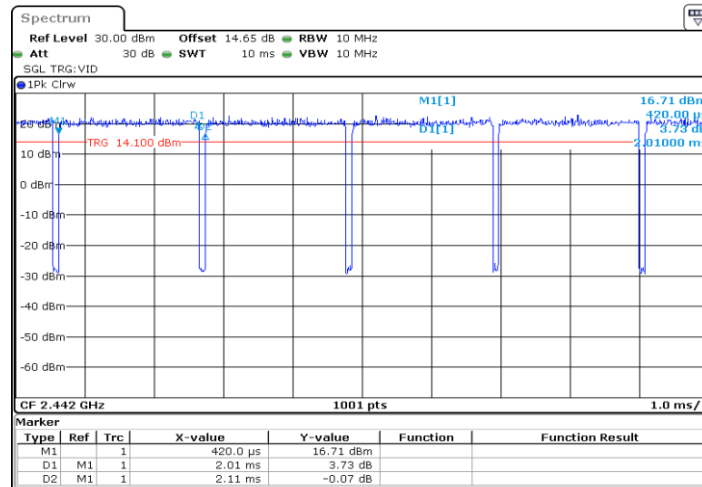
Date: 18.MAY.2020 14:26:25

## 11gMIMO\_Ant1\_2442



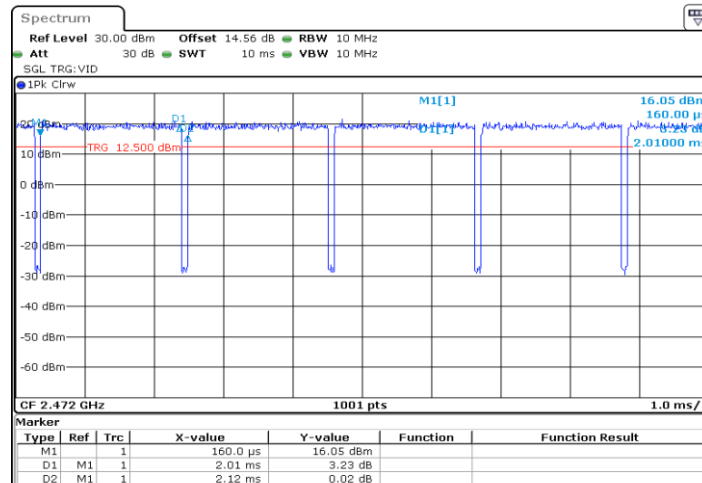
Date: 18.MAY.2020 14:24:31

## 11gMIMO\_Ant2\_2442



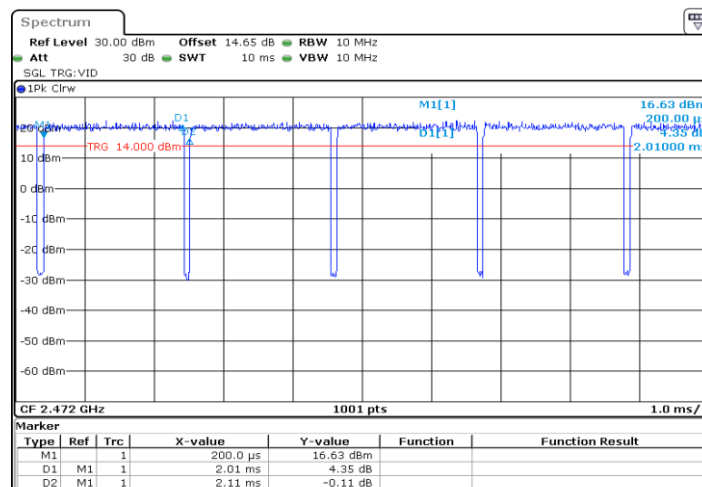
Date: 18.MAY.2020 14:24:48

## 11gMIMO\_Ant1\_2472



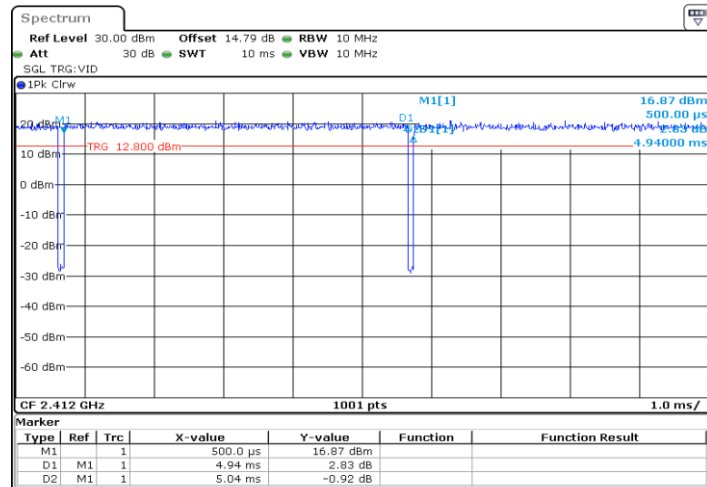
Date: 18.MAY.2020 14:23:30

## 11gMIMO\_Ant2\_2472



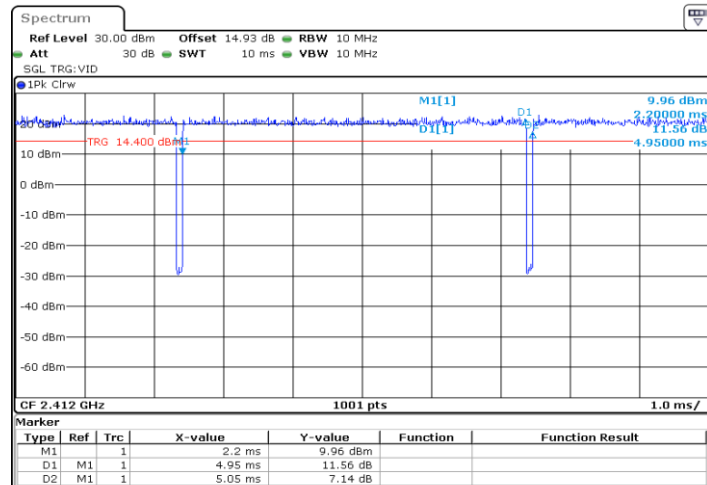
Date: 18.MAY.2020 14:28:36

## 11N20MIMO\_Ant1\_2412



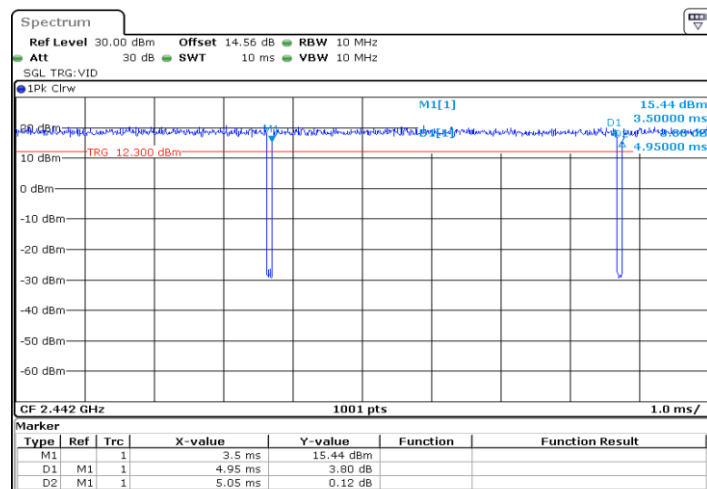
Date: 18.MAY.2020 14:22:03

## 11N20MIMO\_Ant2\_2412



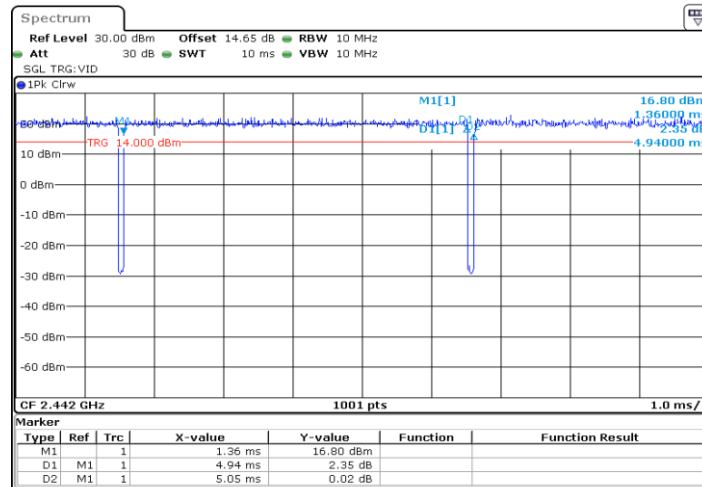
Date: 18.MAY.2020 14:22:18

## 11N20MIMO\_Ant1\_2442



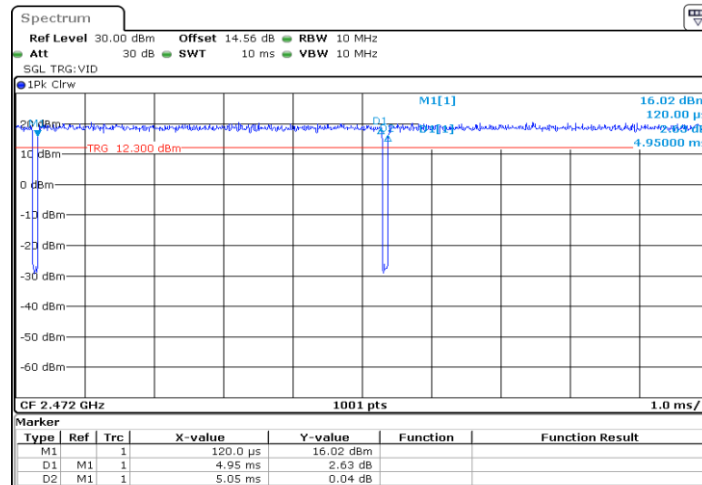
Date: 18.MAY.2020 14:20:49

## 11N20MIMO\_Ant2\_2442



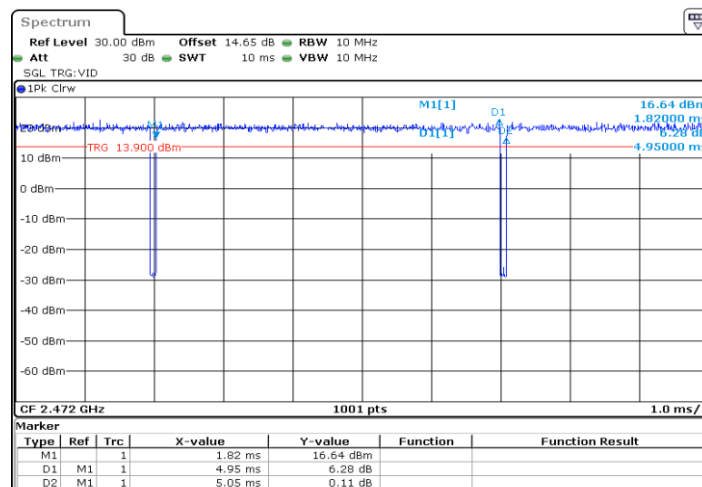
Date: 18.MAY.2020 14:21:05

## 11N20MIMO\_Ant1\_2472



Date: 18.MAY.2020 14:19:30

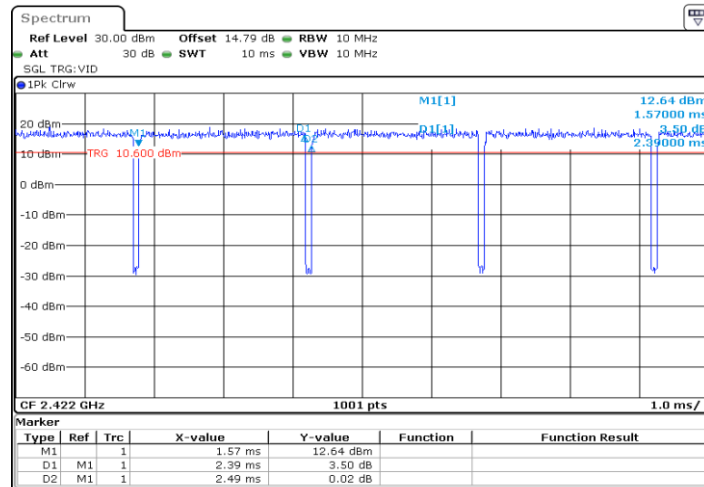
## 11N20MIMO\_Ant2\_2472



Date: 18.MAY.2020 14:19:47

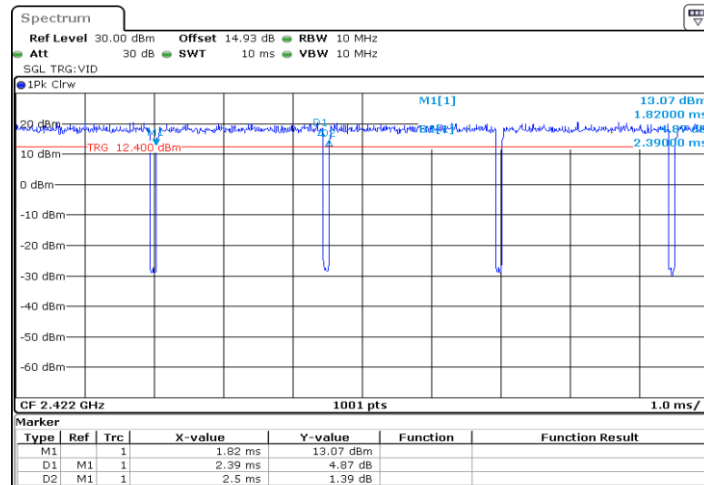


## 11N40MIMO\_Ant1\_2422



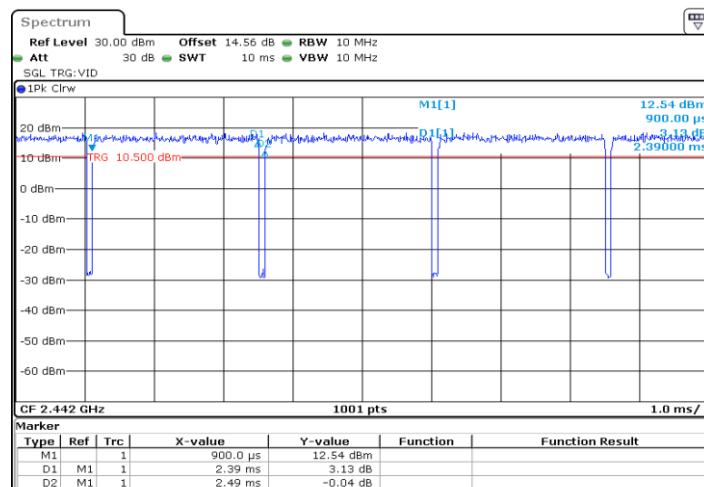
Date: 18.MAY.2020 14:17:44

## 11N40MIMO\_Ant2\_2422



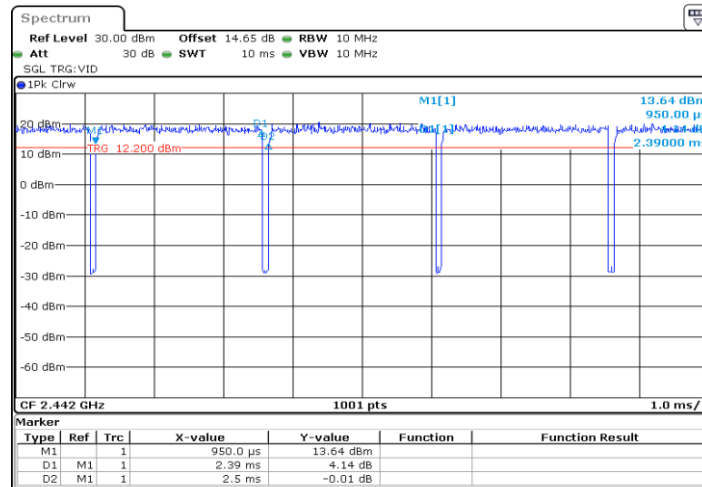
Date: 18.MAY.2020 14:18:00

## 11N40MIMO\_Ant1\_2442



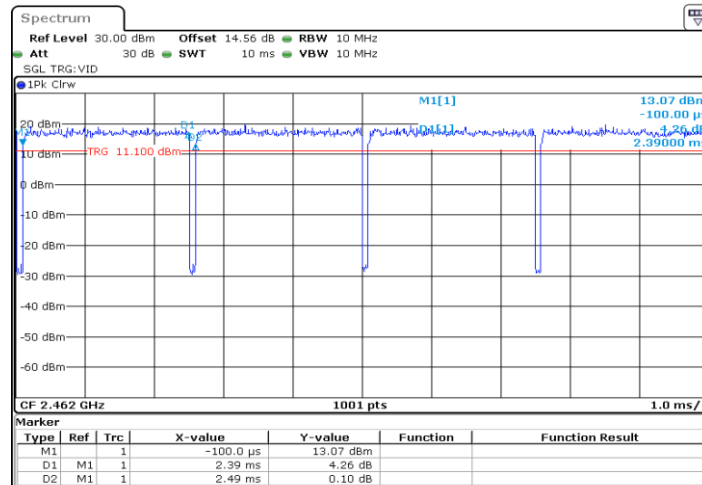
Date: 18.MAY.2020 14:16:31

## 11N40MIMO\_Ant2\_2442



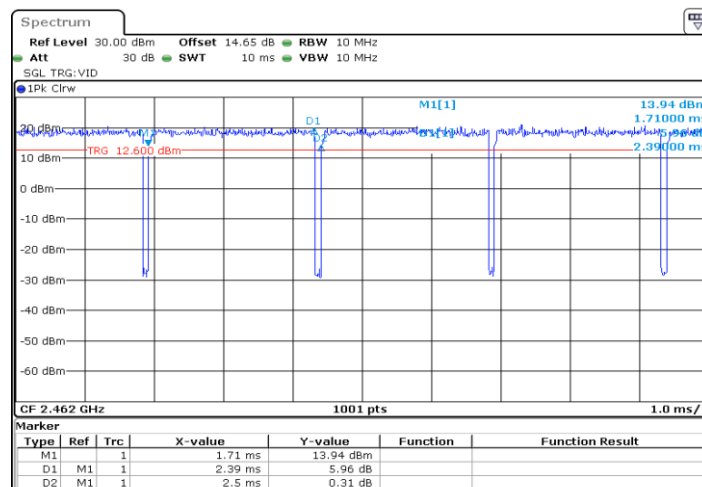
Date: 18.MAY.2020 14:16:49

## 11N40MIMO\_Ant1\_2462



Date: 18.MAY.2020 14:09:30

## 11N40MIMO\_Ant2\_2462



Date: 18.MAY.2020 14:10:48