



# Appendix B

## E-UTRA Band 13



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# 1 Effective (Isotropic) Radiated Power

## 1.1 Test Result

| Band   | Bandwidth | Modulation | Channel | RB Config. | Result (dBm) | ERP (dBm) | Limit (dBm) | Verdict |
|--------|-----------|------------|---------|------------|--------------|-----------|-------------|---------|
| Band13 | 5MHz      | QPSK       | 23205   | 1RB#0      | 23.85        | 20.86     | 34.77       | PASS    |
| Band13 | 5MHz      | QPSK       | 23205   | 1RB#12     | 23.81        | 20.82     | 34.77       | PASS    |
| Band13 | 5MHz      | QPSK       | 23205   | 1RB#24     | 23.77        | 20.78     | 34.77       | PASS    |
| Band13 | 5MHz      | QPSK       | 23205   | 12RB#0     | 22.78        | 19.79     | 34.77       | PASS    |
| Band13 | 5MHz      | QPSK       | 23205   | 12RB#6     | 22.89        | 19.9      | 34.77       | PASS    |
| Band13 | 5MHz      | QPSK       | 23205   | 12RB#13    | 22.83        | 19.84     | 34.77       | PASS    |
| Band13 | 5MHz      | QPSK       | 23205   | 25RB#0     | 22.88        | 19.89     | 34.77       | PASS    |
| Band13 | 5MHz      | QPSK       | 23230   | 1RB#0      | 23.88        | 20.89     | 34.77       | PASS    |
| Band13 | 5MHz      | QPSK       | 23230   | 1RB#12     | 23.79        | 20.8      | 34.77       | PASS    |
| Band13 | 5MHz      | QPSK       | 23230   | 1RB#24     | 23.85        | 20.86     | 34.77       | PASS    |
| Band13 | 5MHz      | QPSK       | 23230   | 12RB#0     | 22.84        | 19.85     | 34.77       | PASS    |
| Band13 | 5MHz      | QPSK       | 23230   | 12RB#6     | 22.86        | 19.87     | 34.77       | PASS    |
| Band13 | 5MHz      | QPSK       | 23230   | 12RB#13    | 22.80        | 19.81     | 34.77       | PASS    |
| Band13 | 5MHz      | QPSK       | 23230   | 25RB#0     | 22.79        | 19.8      | 34.77       | PASS    |
| Band13 | 5MHz      | QPSK       | 23255   | 1RB#0      | 23.91        | 20.92     | 34.77       | PASS    |
| Band13 | 5MHz      | QPSK       | 23255   | 1RB#12     | 23.92        | 20.93     | 34.77       | PASS    |
| Band13 | 5MHz      | QPSK       | 23255   | 1RB#24     | 23.90        | 20.91     | 34.77       | PASS    |
| Band13 | 5MHz      | QPSK       | 23255   | 12RB#0     | 22.97        | 19.98     | 34.77       | PASS    |
| Band13 | 5MHz      | QPSK       | 23255   | 12RB#6     | 22.94        | 19.95     | 34.77       | PASS    |
| Band13 | 5MHz      | QPSK       | 23255   | 12RB#13    | 22.99        | 20        | 34.77       | PASS    |
| Band13 | 5MHz      | QPSK       | 23255   | 25RB#0     | 22.88        | 19.89     | 34.77       | PASS    |
| Band13 | 5MHz      | 16QAM      | 23205   | 1RB#0      | 23.09        | 20.1      | 34.77       | PASS    |
| Band13 | 5MHz      | 16QAM      | 23205   | 1RB#12     | 23.05        | 20.06     | 34.77       | PASS    |
| Band13 | 5MHz      | 16QAM      | 23205   | 1RB#24     | 22.97        | 19.98     | 34.77       | PASS    |
| Band13 | 5MHz      | 16QAM      | 23205   | 12RB#0     | 21.82        | 18.83     | 34.77       | PASS    |
| Band13 | 5MHz      | 16QAM      | 23205   | 12RB#6     | 21.92        | 18.93     | 34.77       | PASS    |
| Band13 | 5MHz      | 16QAM      | 23205   | 12RB#13    | 21.86        | 18.87     | 34.77       | PASS    |
| Band13 | 5MHz      | 16QAM      | 23205   | 25RB#0     | 21.87        | 18.88     | 34.77       | PASS    |
| Band13 | 5MHz      | 16QAM      | 23230   | 1RB#0      | 23.01        | 20.02     | 34.77       | PASS    |
| Band13 | 5MHz      | 16QAM      | 23230   | 1RB#12     | 22.96        | 19.97     | 34.77       | PASS    |
| Band13 | 5MHz      | 16QAM      | 23230   | 1RB#24     | 23.04        | 20.05     | 34.77       | PASS    |



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|        |       |       |       |         |       |       |       |      |
|--------|-------|-------|-------|---------|-------|-------|-------|------|
| Band13 | 5MHz  | 16QAM | 23230 | 12RB#0  | 21.90 | 18.91 | 34.77 | PASS |
| Band13 | 5MHz  | 16QAM | 23230 | 12RB#6  | 21.89 | 18.9  | 34.77 | PASS |
| Band13 | 5MHz  | 16QAM | 23230 | 12RB#13 | 21.85 | 18.86 | 34.77 | PASS |
| Band13 | 5MHz  | 16QAM | 23230 | 25RB#0  | 21.84 | 18.85 | 34.77 | PASS |
| Band13 | 5MHz  | 16QAM | 23255 | 1RB#0   | 23.23 | 20.24 | 34.77 | PASS |
| Band13 | 5MHz  | 16QAM | 23255 | 1RB#12  | 23.16 | 20.17 | 34.77 | PASS |
| Band13 | 5MHz  | 16QAM | 23255 | 1RB#24  | 23.11 | 20.12 | 34.77 | PASS |
| Band13 | 5MHz  | 16QAM | 23255 | 12RB#0  | 21.94 | 18.95 | 34.77 | PASS |
| Band13 | 5MHz  | 16QAM | 23255 | 12RB#6  | 22.00 | 19.01 | 34.77 | PASS |
| Band13 | 5MHz  | 16QAM | 23255 | 12RB#13 | 22.00 | 19.01 | 34.77 | PASS |
| Band13 | 5MHz  | 16QAM | 23255 | 25RB#0  | 21.88 | 18.89 | 34.77 | PASS |
| Band13 | 5MHz  | 64QAM | 23205 | 1RB#0   | 22.02 | 19.03 | 34.77 | PASS |
| Band13 | 5MHz  | 64QAM | 23205 | 1RB#12  | 21.98 | 18.99 | 34.77 | PASS |
| Band13 | 5MHz  | 64QAM | 23205 | 1RB#24  | 21.97 | 18.98 | 34.77 | PASS |
| Band13 | 5MHz  | 64QAM | 23205 | 12RB#0  | 20.82 | 17.83 | 34.77 | PASS |
| Band13 | 5MHz  | 64QAM | 23205 | 12RB#6  | 20.94 | 17.95 | 34.77 | PASS |
| Band13 | 5MHz  | 64QAM | 23205 | 12RB#13 | 20.84 | 17.85 | 34.77 | PASS |
| Band13 | 5MHz  | 64QAM | 23205 | 25RB#0  | 20.90 | 17.91 | 34.77 | PASS |
| Band13 | 5MHz  | 64QAM | 23230 | 1RB#0   | 21.97 | 18.98 | 34.77 | PASS |
| Band13 | 5MHz  | 64QAM | 23230 | 1RB#12  | 21.94 | 18.95 | 34.77 | PASS |
| Band13 | 5MHz  | 64QAM | 23230 | 1RB#24  | 22.01 | 19.02 | 34.77 | PASS |
| Band13 | 5MHz  | 64QAM | 23230 | 12RB#0  | 20.89 | 17.9  | 34.77 | PASS |
| Band13 | 5MHz  | 64QAM | 23230 | 12RB#6  | 20.90 | 17.91 | 34.77 | PASS |
| Band13 | 5MHz  | 64QAM | 23230 | 12RB#13 | 20.83 | 17.84 | 34.77 | PASS |
| Band13 | 5MHz  | 64QAM | 23230 | 25RB#0  | 20.86 | 17.87 | 34.77 | PASS |
| Band13 | 5MHz  | 64QAM | 23255 | 1RB#0   | 22.03 | 19.04 | 34.77 | PASS |
| Band13 | 5MHz  | 64QAM | 23255 | 1RB#12  | 22.09 | 19.1  | 34.77 | PASS |
| Band13 | 5MHz  | 64QAM | 23255 | 1RB#24  | 22.06 | 19.07 | 34.77 | PASS |
| Band13 | 5MHz  | 64QAM | 23255 | 12RB#0  | 20.97 | 17.98 | 34.77 | PASS |
| Band13 | 5MHz  | 64QAM | 23255 | 12RB#6  | 20.98 | 17.99 | 34.77 | PASS |
| Band13 | 5MHz  | 64QAM | 23255 | 12RB#13 | 21.00 | 18.01 | 34.77 | PASS |
| Band13 | 5MHz  | 64QAM | 23255 | 25RB#0  | 20.94 | 17.95 | 34.77 | PASS |
| Band13 | 10MHz | QPSK  | 23230 | 1RB#0   | 23.77 | 20.78 | 34.77 | PASS |
| Band13 | 10MHz | QPSK  | 23230 | 1RB#24  | 23.81 | 20.82 | 34.77 | PASS |
| Band13 | 10MHz | QPSK  | 23230 | 1RB#49  | 23.76 | 20.77 | 34.77 | PASS |
| Band13 | 10MHz | QPSK  | 23230 | 25RB#0  | 22.87 | 19.88 | 34.77 | PASS |
| Band13 | 10MHz | QPSK  | 23230 | 25RB#12 | 22.85 | 19.86 | 34.77 | PASS |
| Band13 | 10MHz | QPSK  | 23230 | 25RB#25 | 22.77 | 19.78 | 34.77 | PASS |



|        |       |       |       |         |       |       |       |      |
|--------|-------|-------|-------|---------|-------|-------|-------|------|
| Band13 | 10MHz | QPSK  | 23230 | 50RB#0  | 22.83 | 19.84 | 34.77 | PASS |
| Band13 | 10MHz | 16QAM | 23230 | 1RB#0   | 22.95 | 19.96 | 34.77 | PASS |
| Band13 | 10MHz | 16QAM | 23230 | 1RB#24  | 23.09 | 20.1  | 34.77 | PASS |
| Band13 | 10MHz | 16QAM | 23230 | 1RB#49  | 23.00 | 20.01 | 34.77 | PASS |
| Band13 | 10MHz | 16QAM | 23230 | 25RB#0  | 21.91 | 18.92 | 34.77 | PASS |
| Band13 | 10MHz | 16QAM | 23230 | 25RB#12 | 21.89 | 18.9  | 34.77 | PASS |
| Band13 | 10MHz | 16QAM | 23230 | 25RB#25 | 21.79 | 18.8  | 34.77 | PASS |
| Band13 | 10MHz | 16QAM | 23230 | 50RB#0  | 21.84 | 18.85 | 34.77 | PASS |
| Band13 | 10MHz | 64QAM | 23230 | 1RB#0   | 21.93 | 18.94 | 34.77 | PASS |
| Band13 | 10MHz | 64QAM | 23230 | 1RB#24  | 21.97 | 18.98 | 34.77 | PASS |
| Band13 | 10MHz | 64QAM | 23230 | 1RB#49  | 21.93 | 18.94 | 34.77 | PASS |
| Band13 | 10MHz | 64QAM | 23230 | 25RB#0  | 20.90 | 17.91 | 34.77 | PASS |
| Band13 | 10MHz | 64QAM | 23230 | 25RB#12 | 20.88 | 17.89 | 34.77 | PASS |
| Band13 | 10MHz | 64QAM | 23230 | 25RB#25 | 20.83 | 17.84 | 34.77 | PASS |
| Band13 | 10MHz | 64QAM | 23230 | 50RB#0  | 20.84 | 17.85 | 34.77 | PASS |

Remark:

a: For getting the EIRP (Efficient Isotropic Radiated Power), the following formula should be taken to calculate it,

ERP [dBm] = Conducted Power [dBm] + Gain [dBd]

EIRP [dBm] = Conducted Power [dBm] + Gain [dBi]



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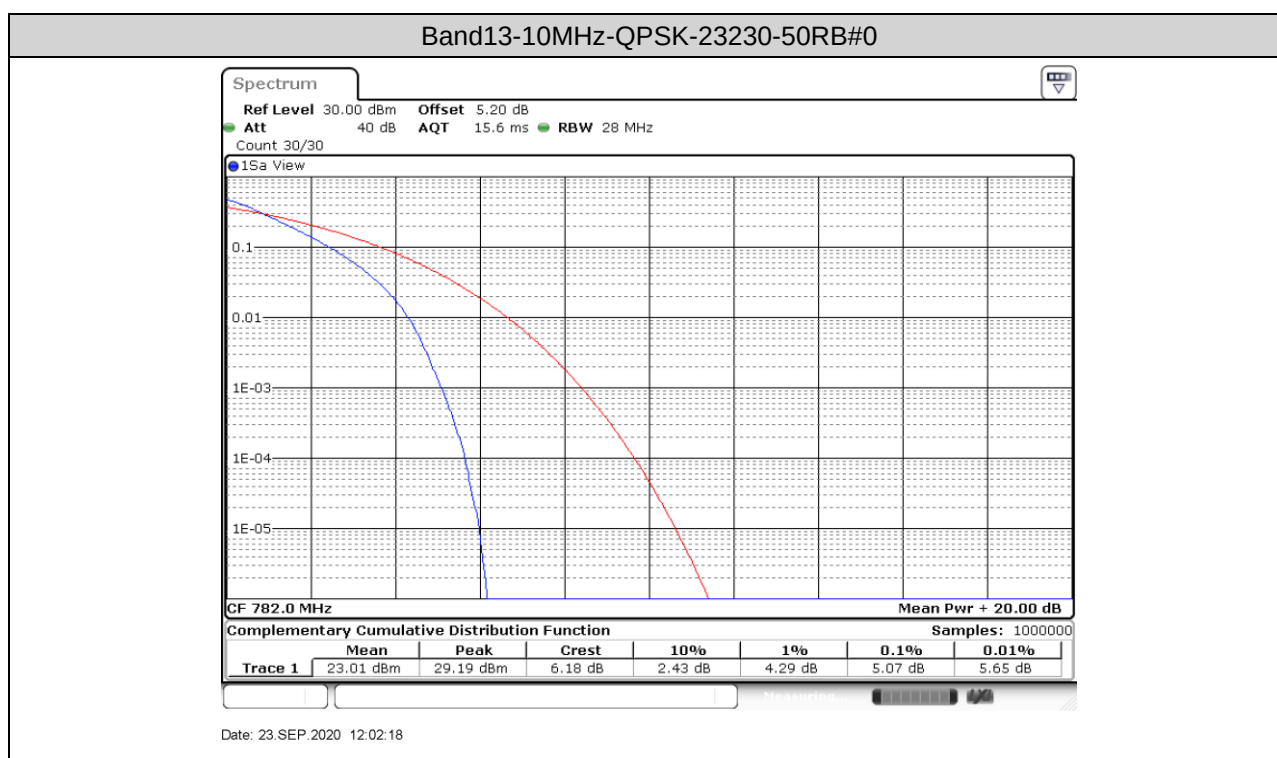


## 2 Peak-to-Average Ratio (CCDF)

### 2.1 Test Result

| Band   | Bandwidth | Modulation | Channel | RB Configuration | Result(dB) | Limit(dB) | Verdict |
|--------|-----------|------------|---------|------------------|------------|-----------|---------|
| Band13 | 10MHz     | QPSK       | 23230   | 50RB#0           | 5.07       | 13        | PASS    |
| Band13 | 10MHz     | 16QAM      | 23230   | 50RB#0           | 5.88       | 13        | PASS    |
| Band13 | 10MHz     | 64QAM      | 23230   | 50RB#0           | 6.41       | 13        | PASS    |

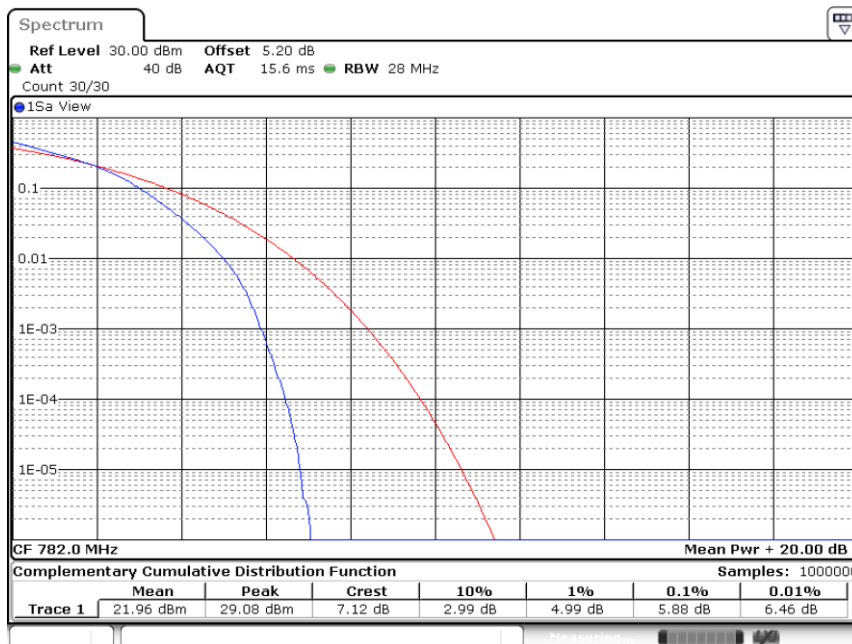
### 2.2 Test Plots



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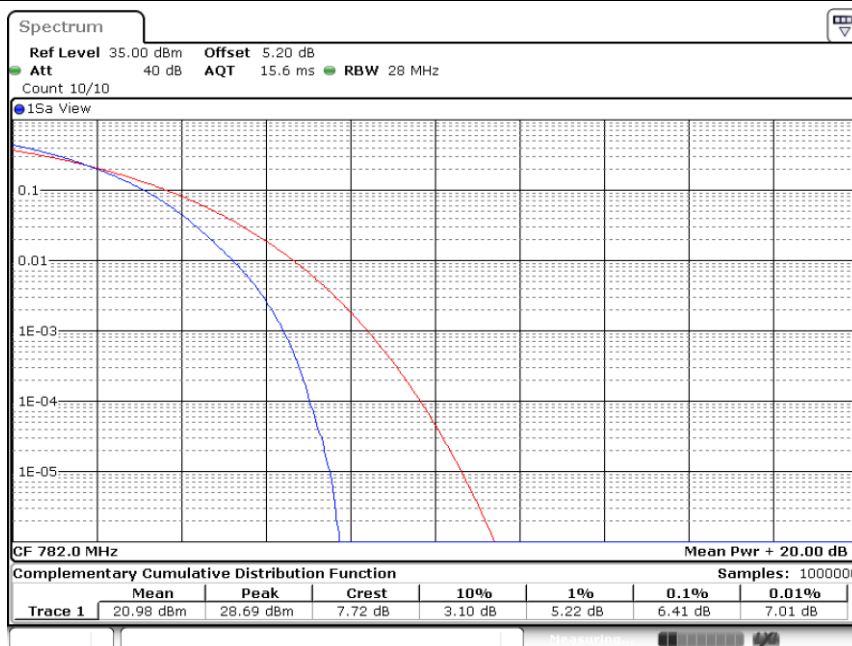
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### Band13-10MHz-16QAM-23230-50RB#0



Date: 23.SEP.2020 12:02:33

### Band13-10MHz-64QAM-23230-50RB#0



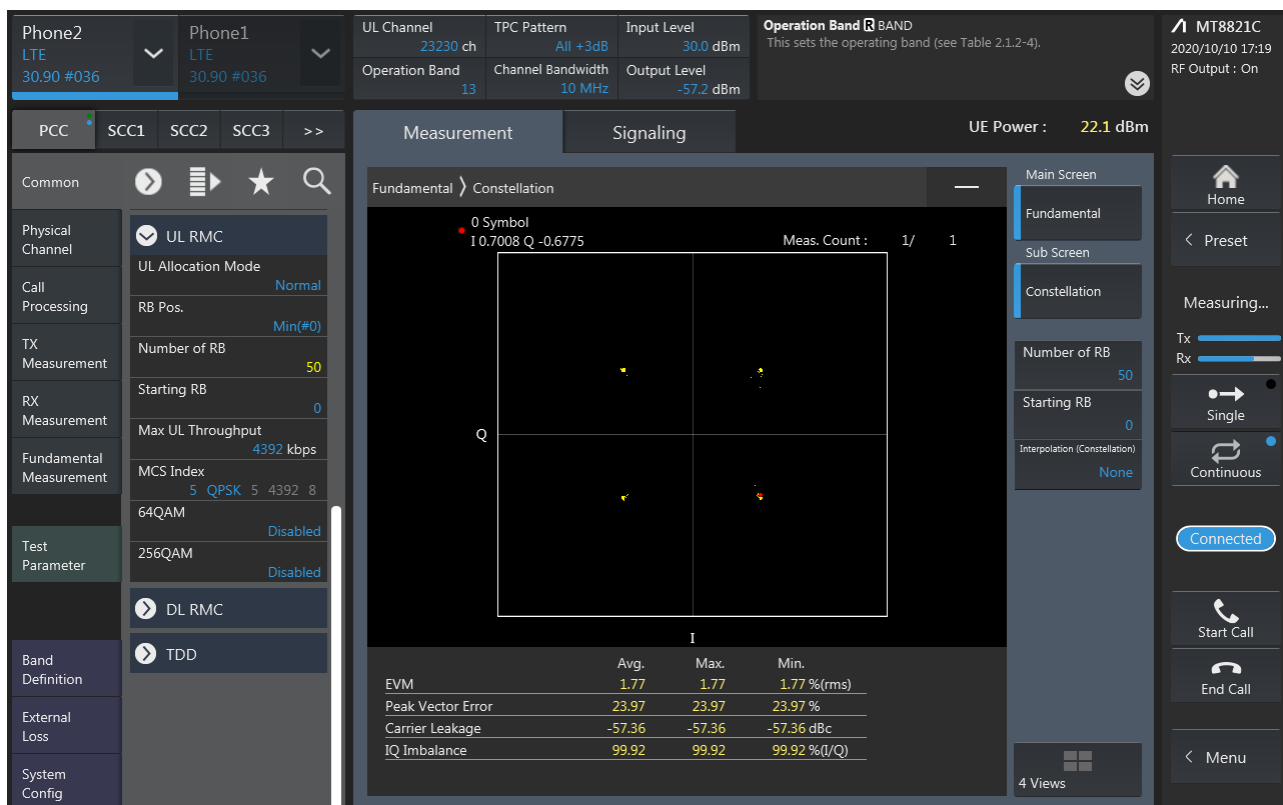
Date: 23.SEP.2020 12:39:38



### 3 Modulation Characteristics

#### 3.1 Test Mode = LTE /TM1 10MHz

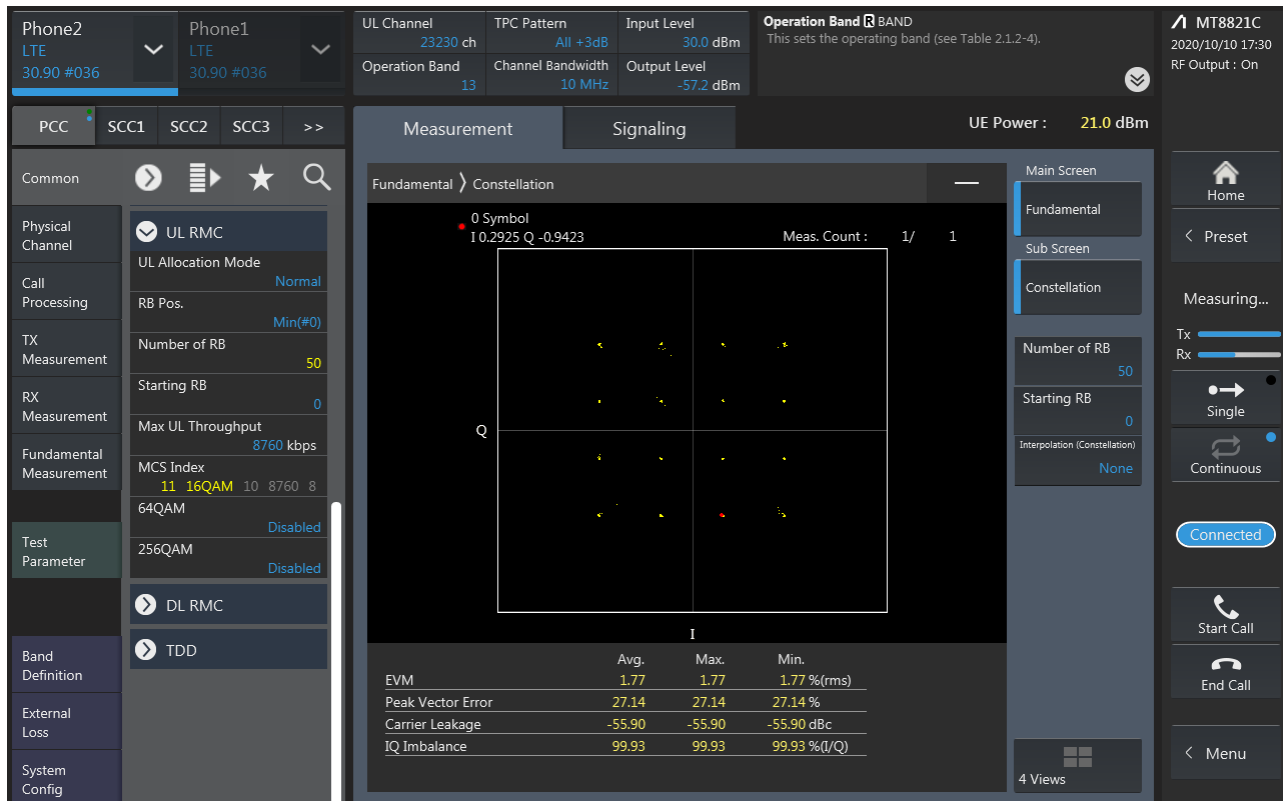
##### 3.1.1 Test Channel = MCH





## 3.2 Test Mode = LTE /TM2 10MHz

### 3.2.1 Test Channel = MCH



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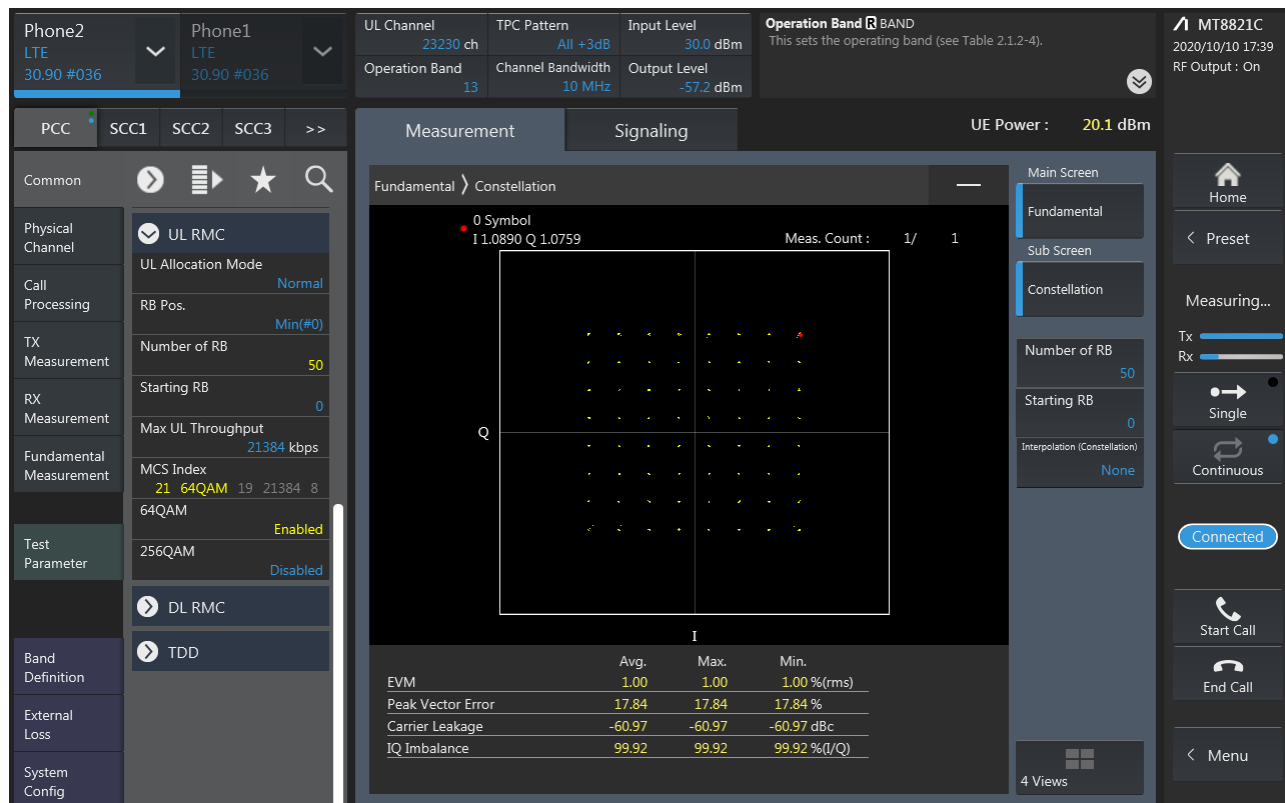
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### 3.3 Test Mode = LTE /TM3 10MHz

#### 3.3.1 Test Channel = MCH



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## 4 26dB Bandwidth and Occupied Bandwidth

### 4.1 Test Result

| Band   | Bandwidth<br>h | Modulation | Channel | RB<br>Configuration | Occupied<br>Bandwidth<br>(MHz) | 26dB Bandwidth<br>(MHz) | Verdict |
|--------|----------------|------------|---------|---------------------|--------------------------------|-------------------------|---------|
| Band13 | 5MHz           | QPSK       | 23205   | 25RB#0              | 4.466                          | 4.880                   | PASS    |
| Band13 | 5MHz           | QPSK       | 23230   | 25RB#0              | 4.476                          | 4.890                   | PASS    |
| Band13 | 5MHz           | QPSK       | 23255   | 25RB#0              | 4.476                          | 4.900                   | PASS    |
| Band13 | 5MHz           | 16QAM      | 23205   | 25RB#0              | 4.486                          | 4.910                   | PASS    |
| Band13 | 5MHz           | 16QAM      | 23230   | 25RB#0              | 4.476                          | 4.900                   | PASS    |
| Band13 | 5MHz           | 16QAM      | 23255   | 25RB#0              | 4.486                          | 4.910                   | PASS    |
| Band13 | 5MHz           | 64QAM      | 23205   | 25RB#0              | 4.466                          | 4.860                   | PASS    |
| Band13 | 5MHz           | 64QAM      | 23230   | 25RB#0              | 4.476                          | 4.880                   | PASS    |
| Band13 | 5MHz           | 64QAM      | 23255   | 25RB#0              | 4.476                          | 4.890                   | PASS    |
| Band13 | 10MHz          | QPSK       | 23230   | 50RB#0              | 8.911                          | 9.640                   | PASS    |
| Band13 | 10MHz          | 16QAM      | 23230   | 50RB#0              | 8.911                          | 9.660                   | PASS    |
| Band13 | 10MHz          | 64QAM      | 23230   | 50RB#0              | 8.911                          | 9.640                   | PASS    |

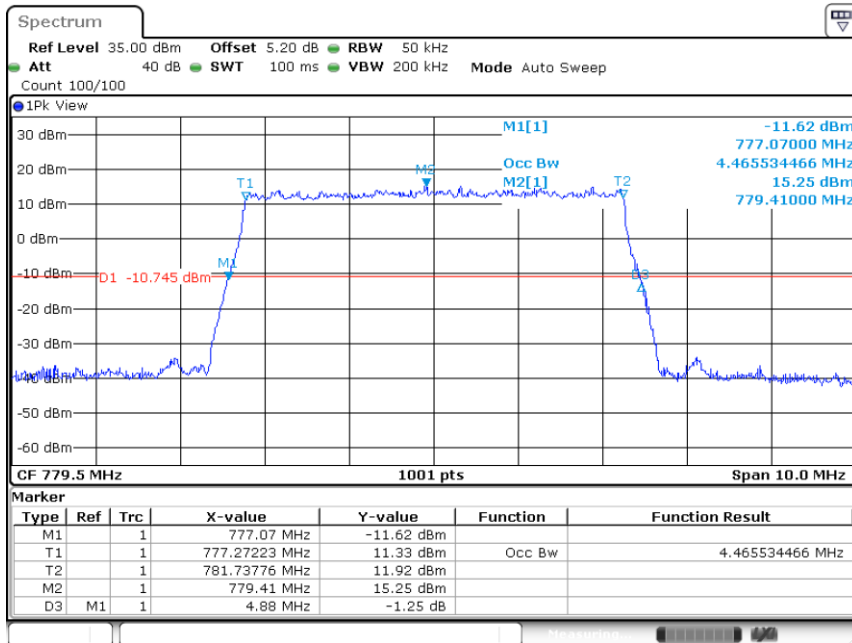


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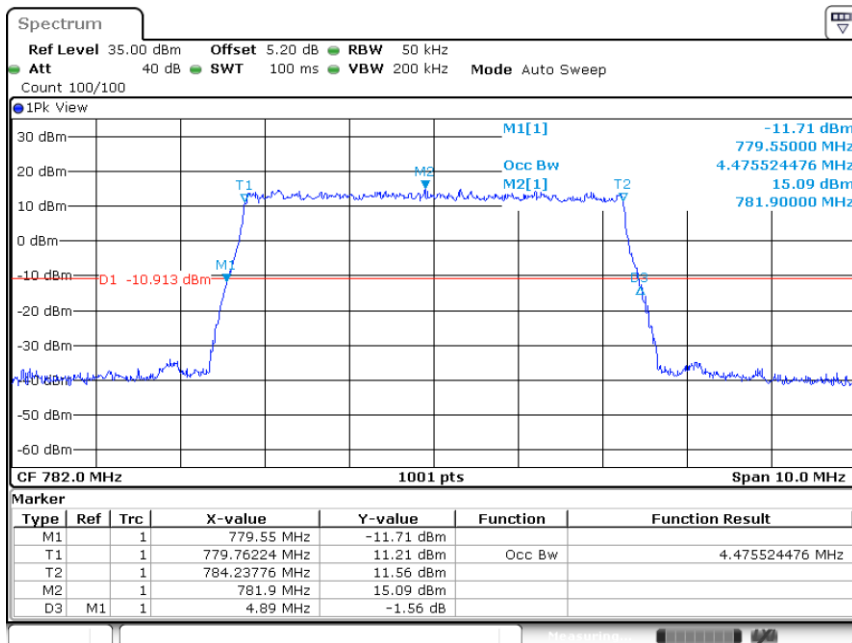
## 4.2 Test Plots

Band13-5MHz-QPSK-23205-25RB#0-4.466



Date: 23.SEP.2020 11:54:28

Band13-5MHz-QPSK-23230-25RB#0-4.476



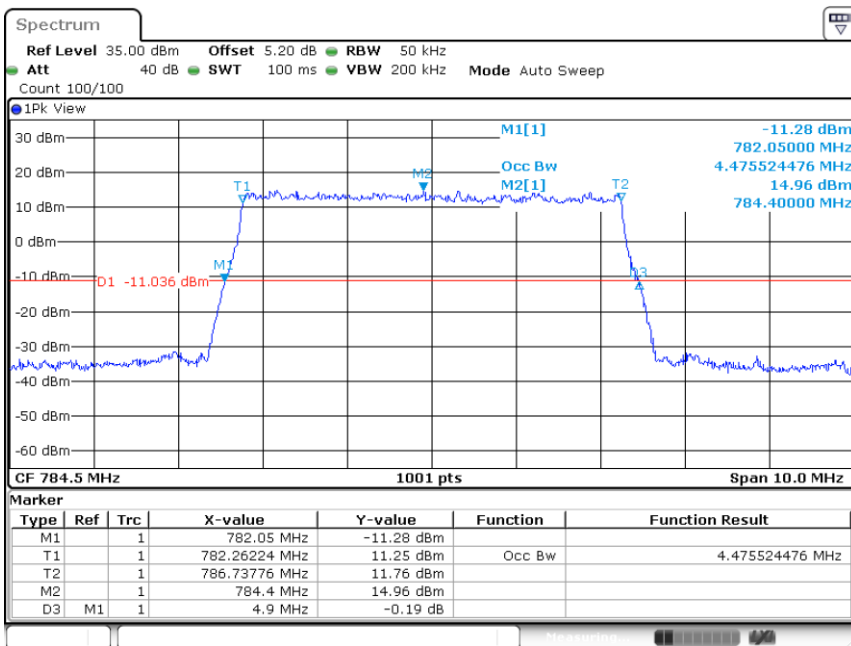
Date: 23.SEP.2020 11:55:14



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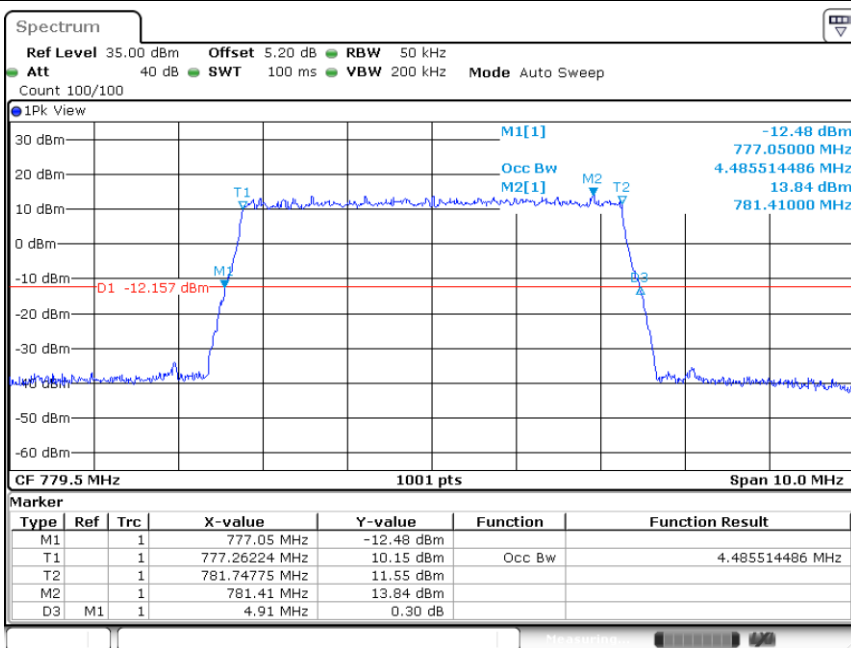
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## Band13-5MHz-QPSK-23255-25RB#0-4.476



Date: 23.SEP.2020 11:55:59

## Band13-5MHz-16QAM-23205-25RB#0-4.486



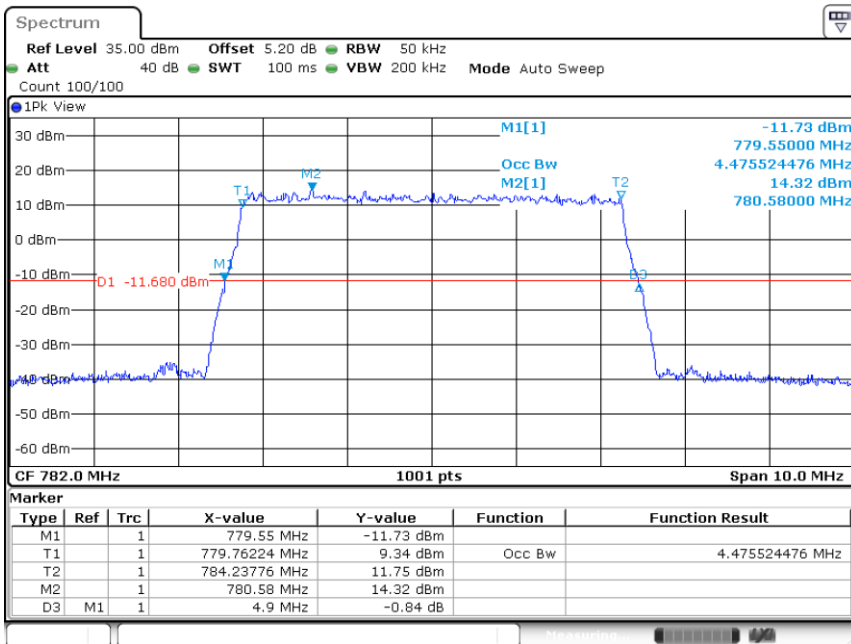
Date: 23.SEP.2020 11:54:51



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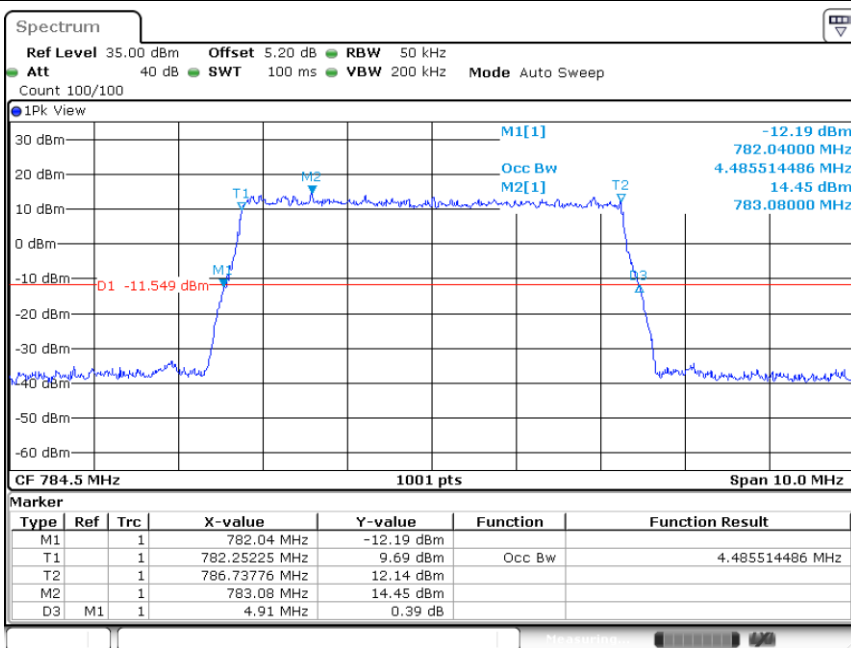
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## Band13-5MHz-16QAM-23230-25RB#0-4.476



Date: 23.SEP.2020 11:55:36

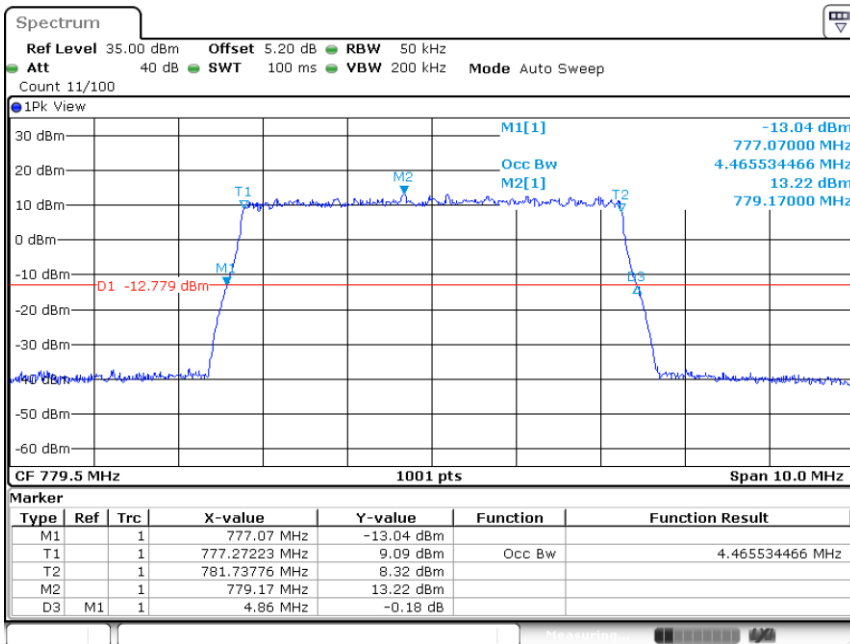
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Date: 23.SEP.2020 11:56:22

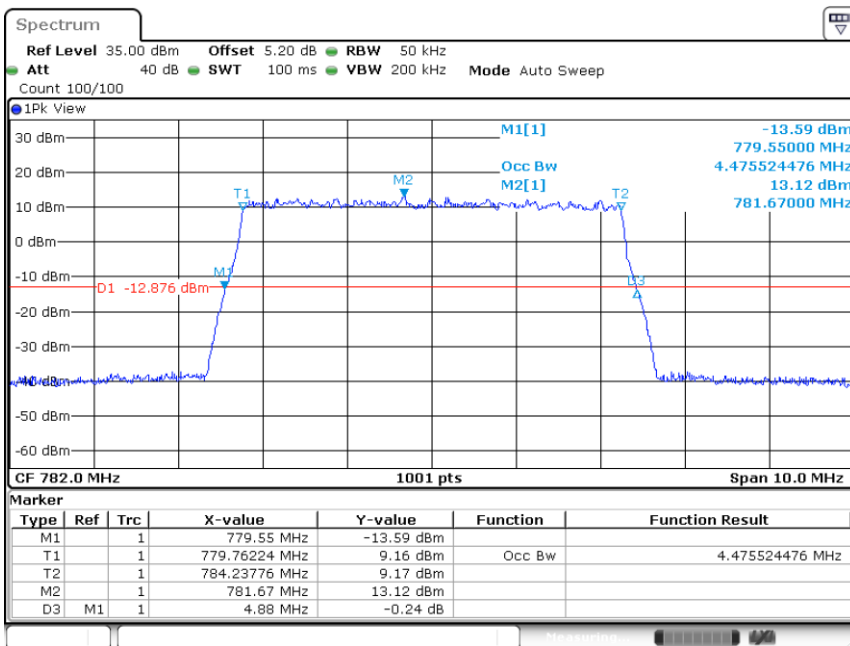


## Band13-5MHz-64QAM-23205-25RB#0-4.466



Date: 23.SEP.2020 12:34:20

## Band13-5MHz-64QAM-23230-25RB#0-4.476



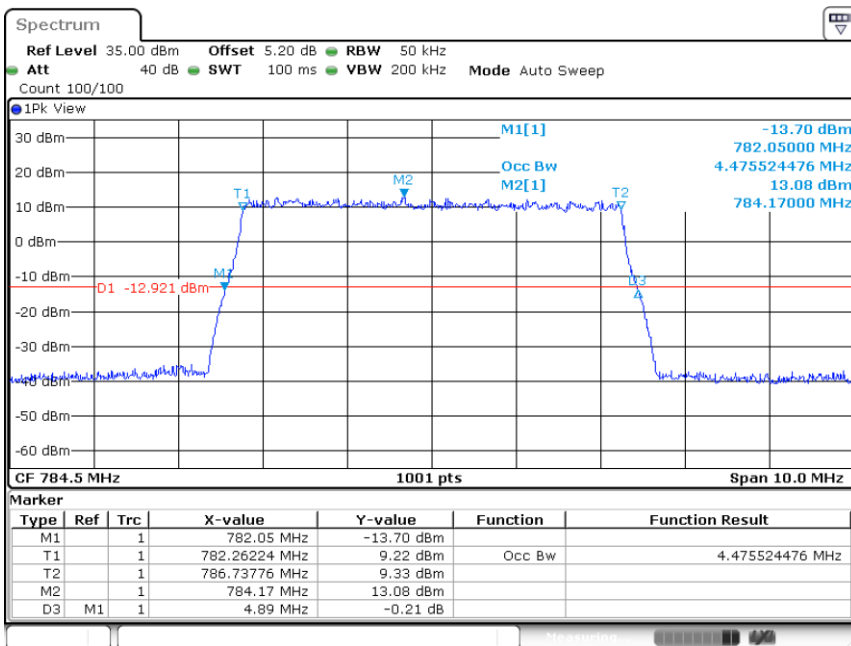
Date: 23.SEP.2020 12:34:43



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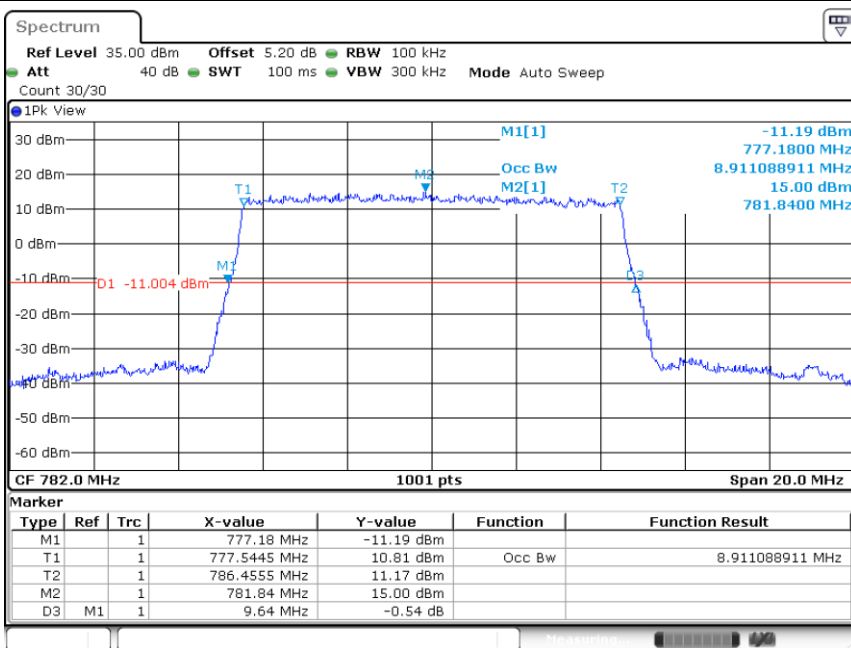
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## Band13-5MHz-64QAM-23255-25RB#0-4.476



Date: 23.SEP.2020 12:35:07

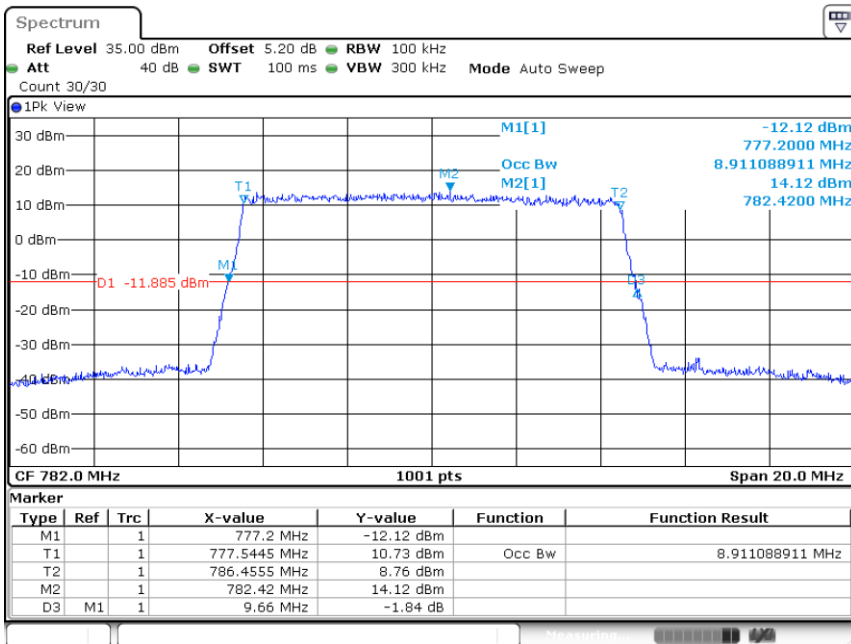
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Date: 23.SEP.2020 11:56:44

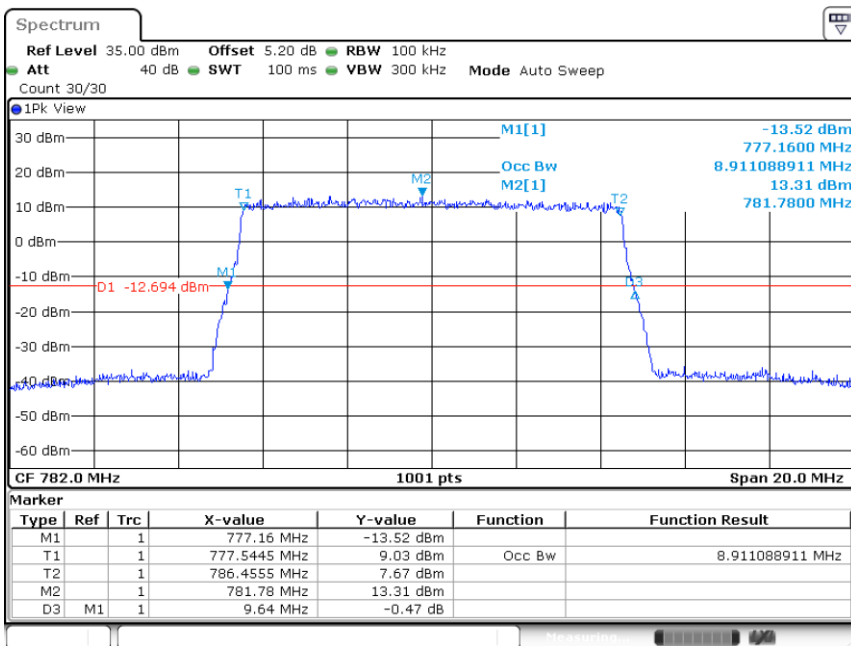


## Band13-10MHz-16QAM-23230-50RB#0-8.911



Date: 23.SEP.2020 11:56:59

## Band13-10MHz-64QAM-23230-50RB#0-8.911



Date: 23.SEP.2020 12:35:29

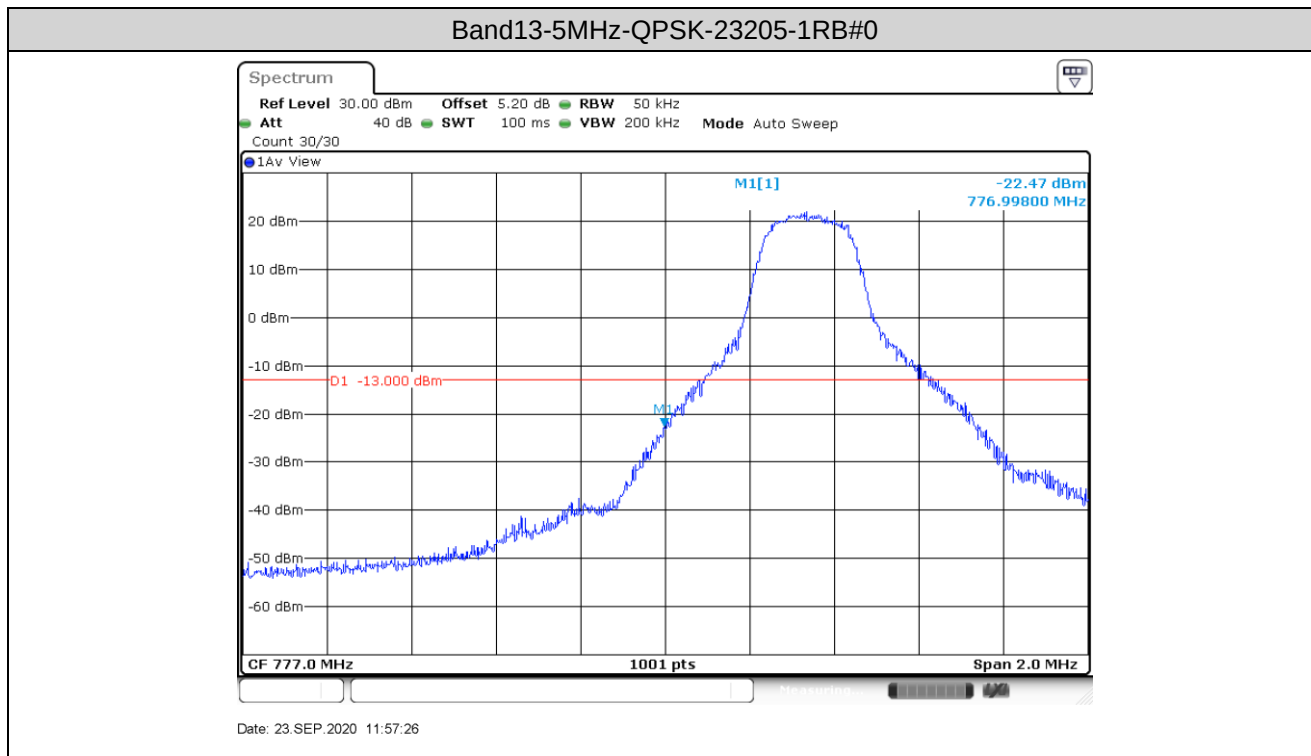


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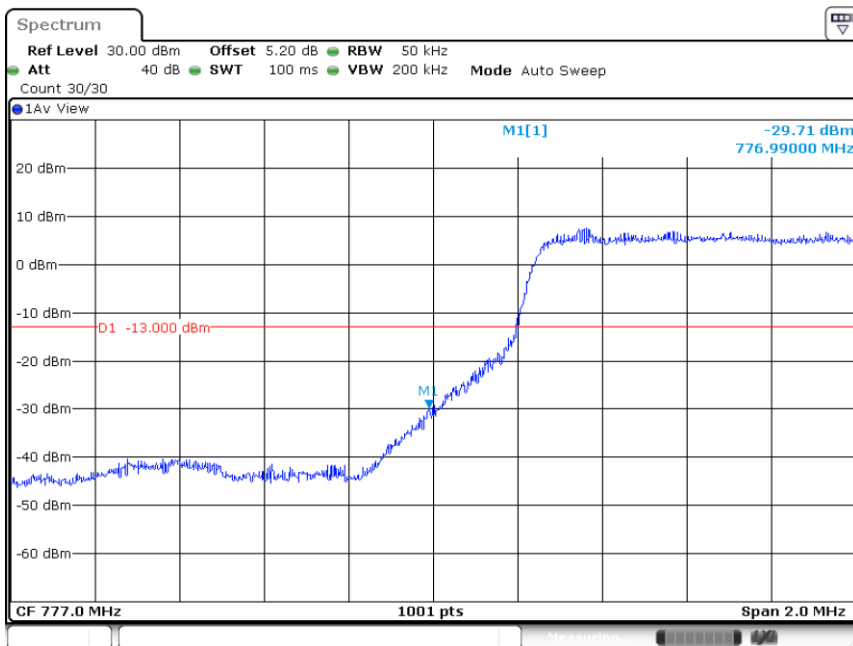
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## 5 Band Edge Compliance

### 5.1 Test Plots

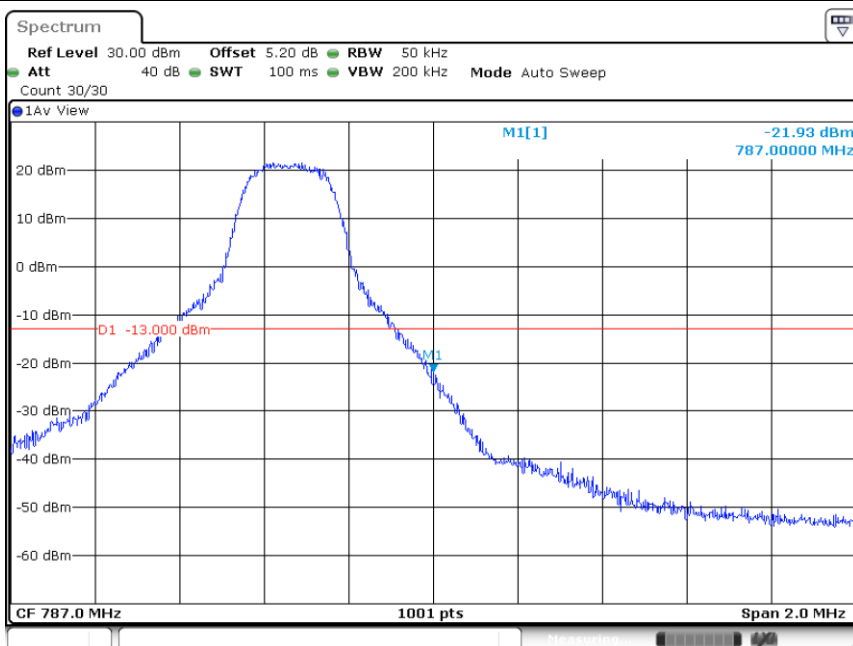


**Band13-5MHz-QPSK-23205-25RB#0**



Date: 23.SEP.2020 11:57:59

**Band13-5MHz-QPSK-23255-1RB#24**



Date: 23.SEP.2020 11:58:40

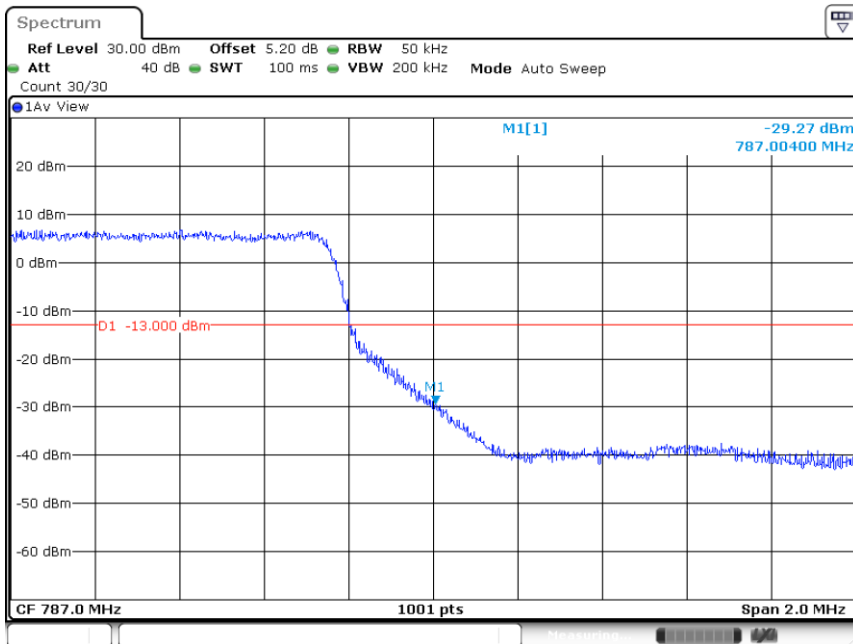


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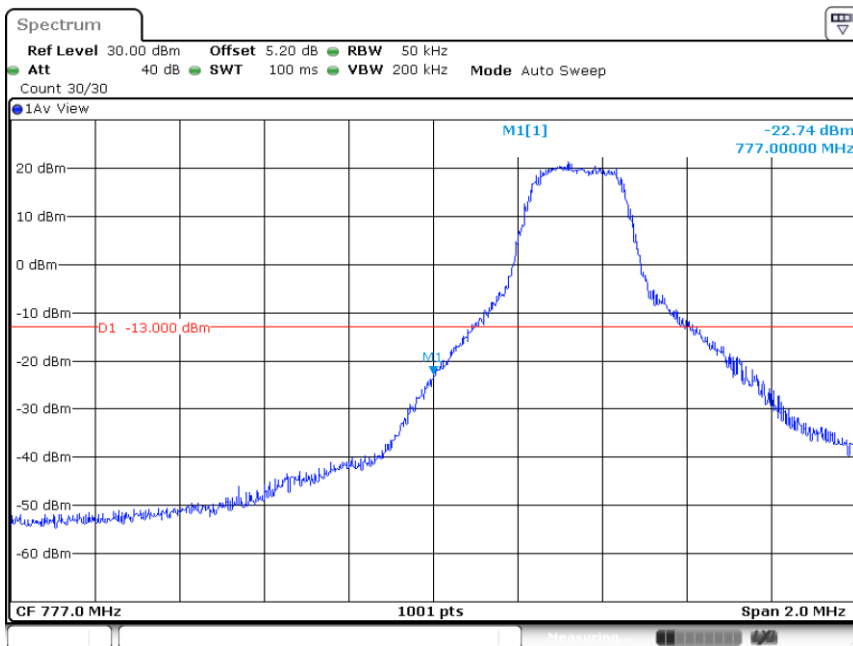
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Band13-5MHz-QPSK-23255-25RB#0



Date: 23.SEP.2020 11:59:13

Band13-5MHz-16QAM-23205-1RB#0



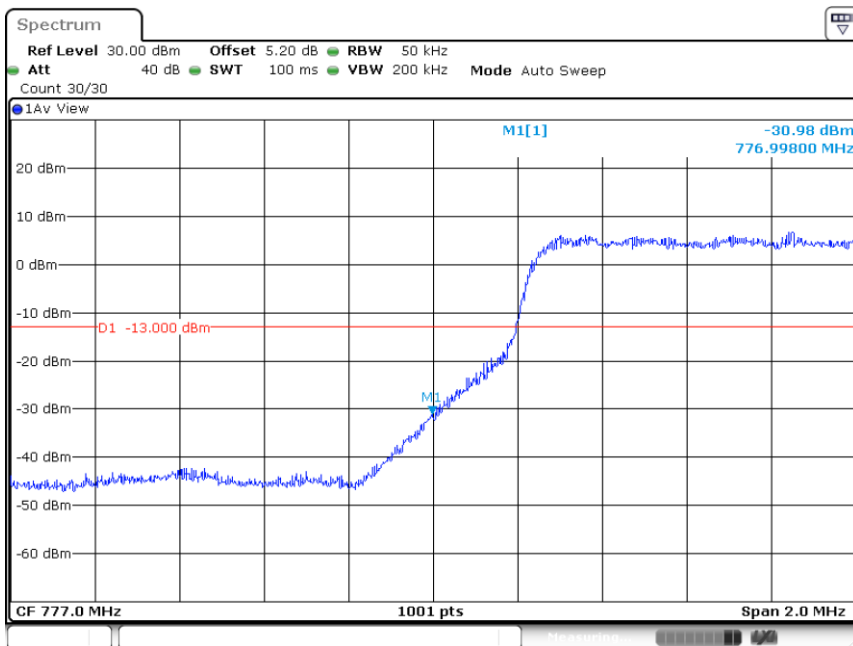
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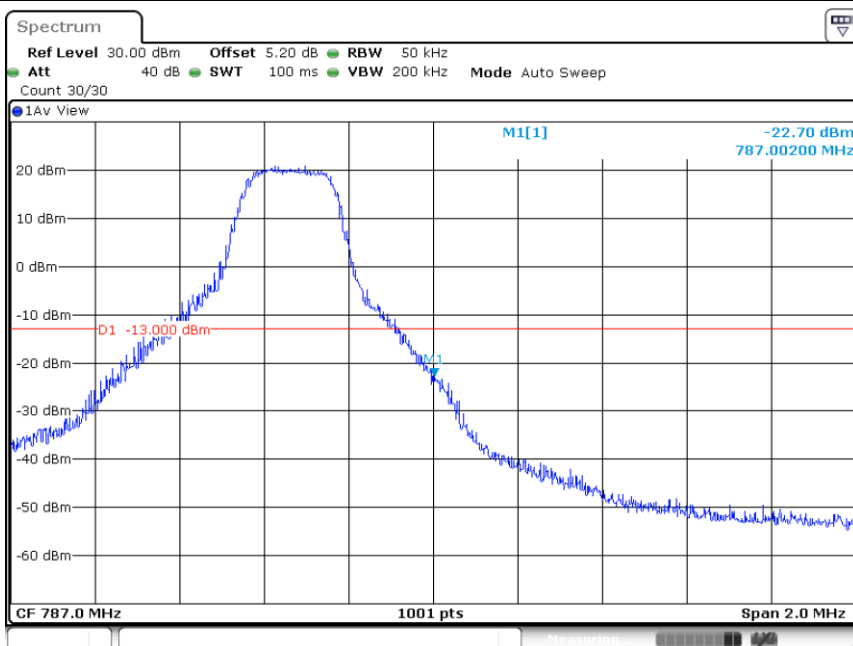
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Band13-5MHz-16QAM-23205-25RB#0



Date: 23.SEP.2020 11:58:16

Band13-5MHz-16QAM-23255-1RB#24



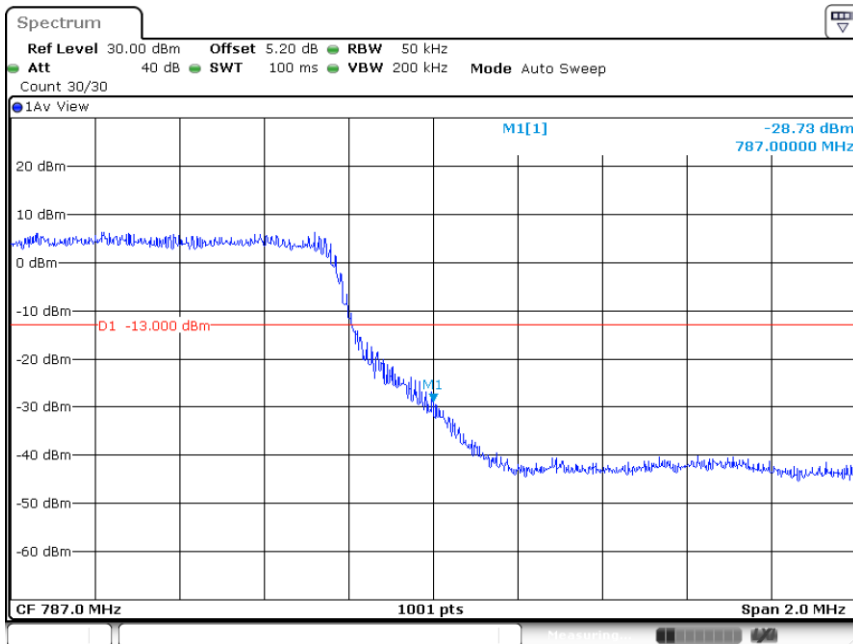
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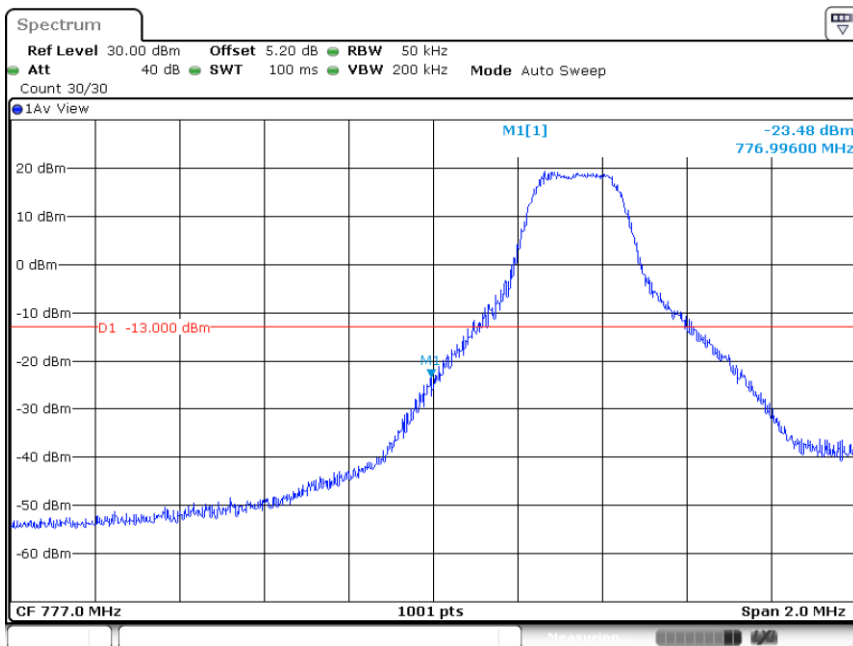
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**Band13-5MHz-16QAM-23255-25RB#0**



Date: 23.SEP.2020 11:59:29

**Band13-5MHz-64QAM-23205-1RB#0**



Date: 23.SEP.2020 12:35:56

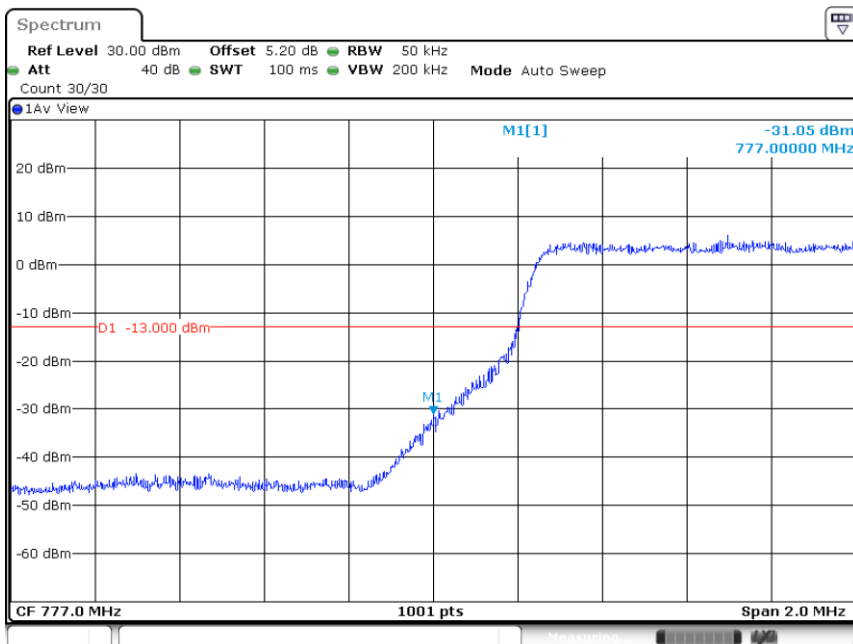


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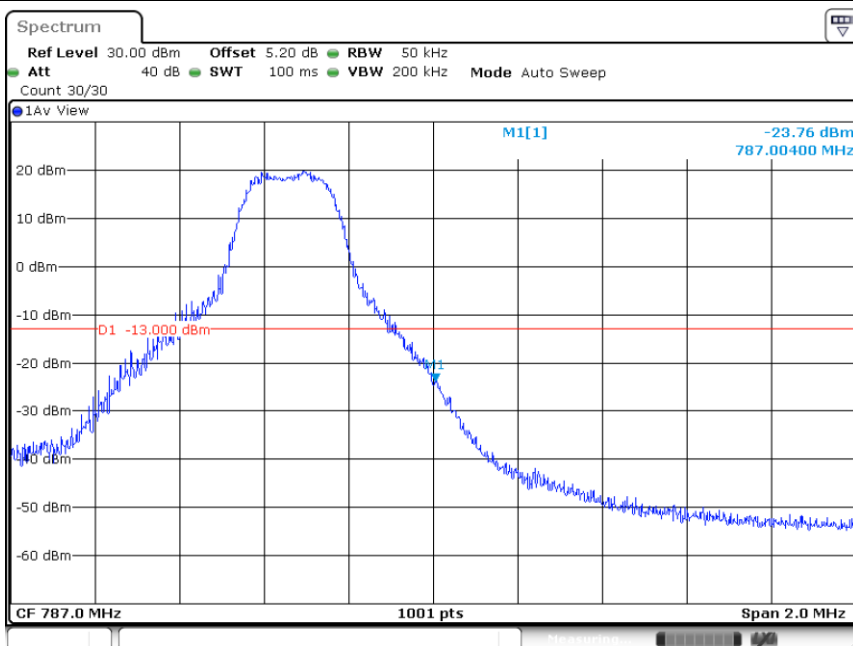
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## Band13-5MHz-64QAM-23205-25RB#0



Date: 23.SEP.2020 12:36:13

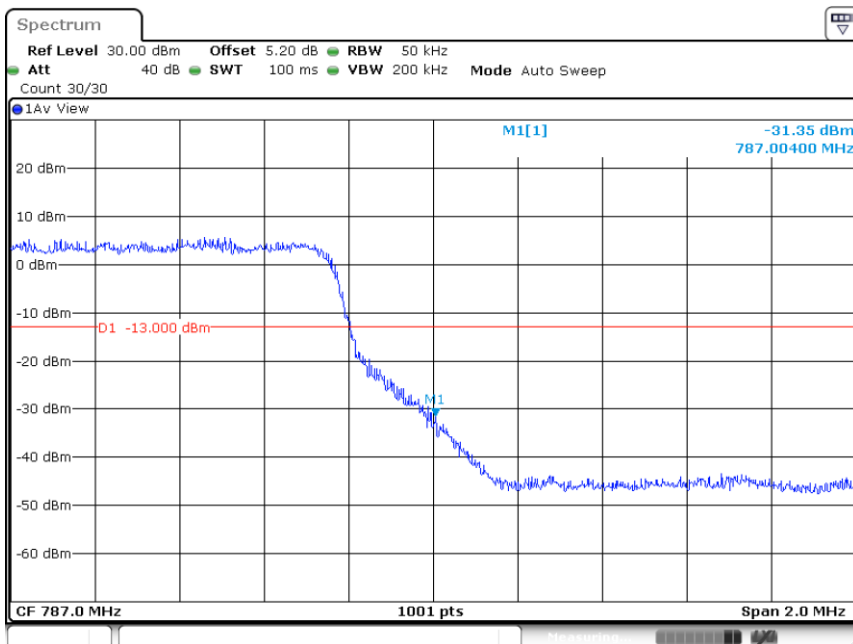
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Date: 23.SEP.2020 12:36:38

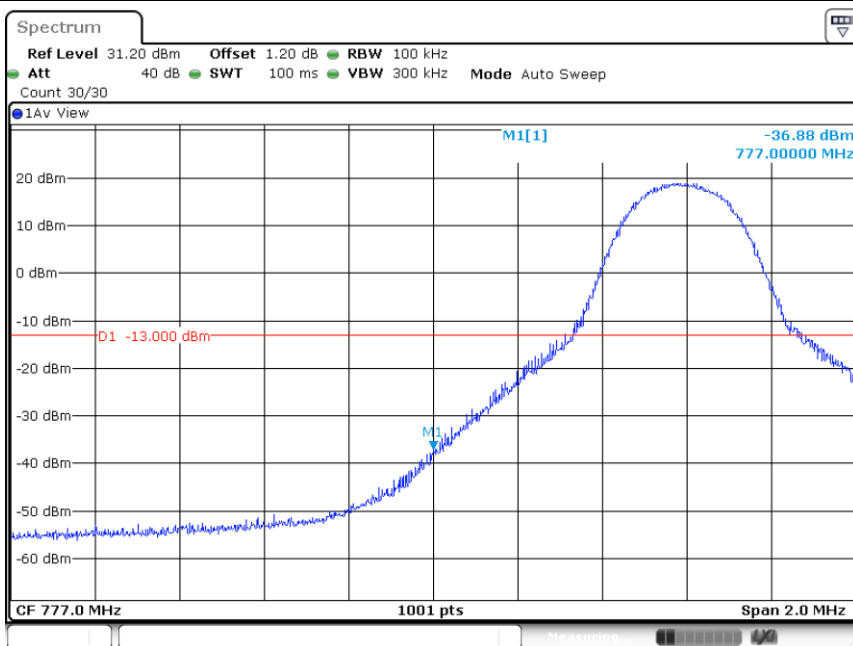


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Date: 23.SEP.2020 12:36:55

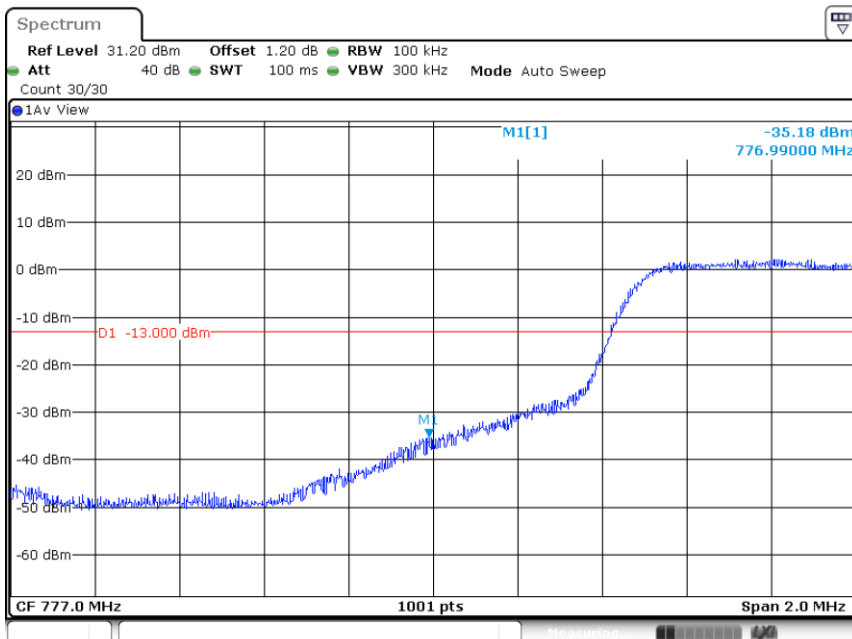
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Date: 12.OCT.2020 09:17:00

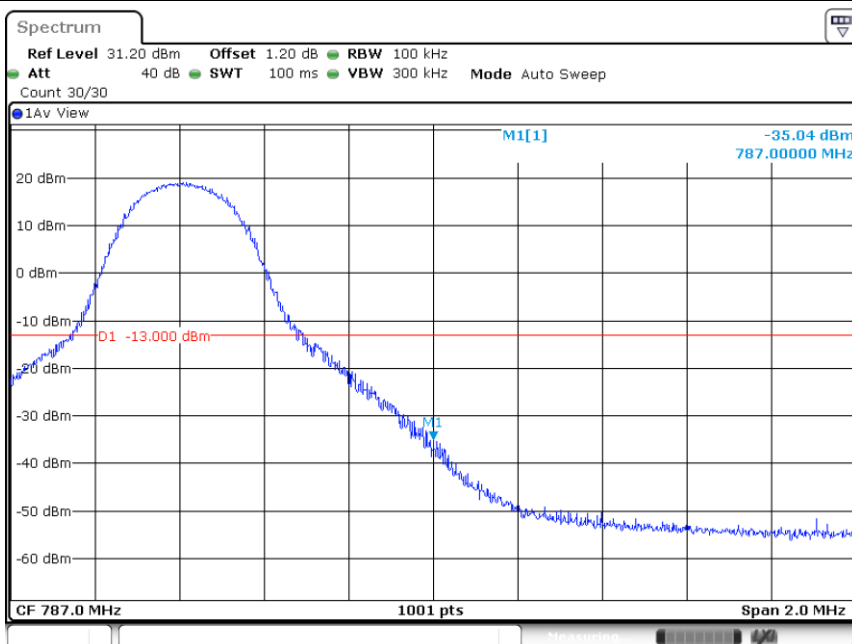


**Band13-10MHz-QPSK-23230\_Left-50RB#0**



Date: 12.OCT.2020 09:17:31

**Band13-10MHz-QPSK-23230\_Right-1RB#49**

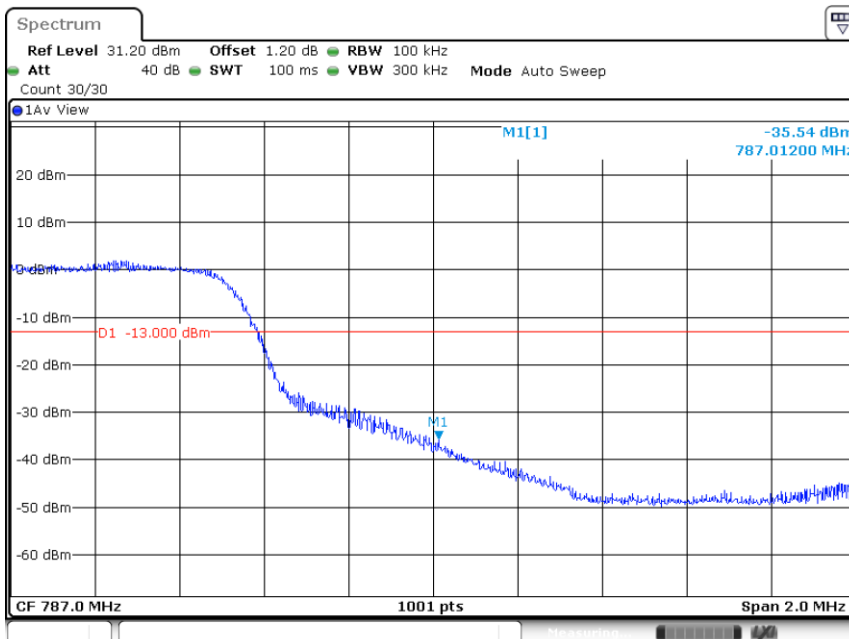


Date: 12.OCT.2020 09:18:06



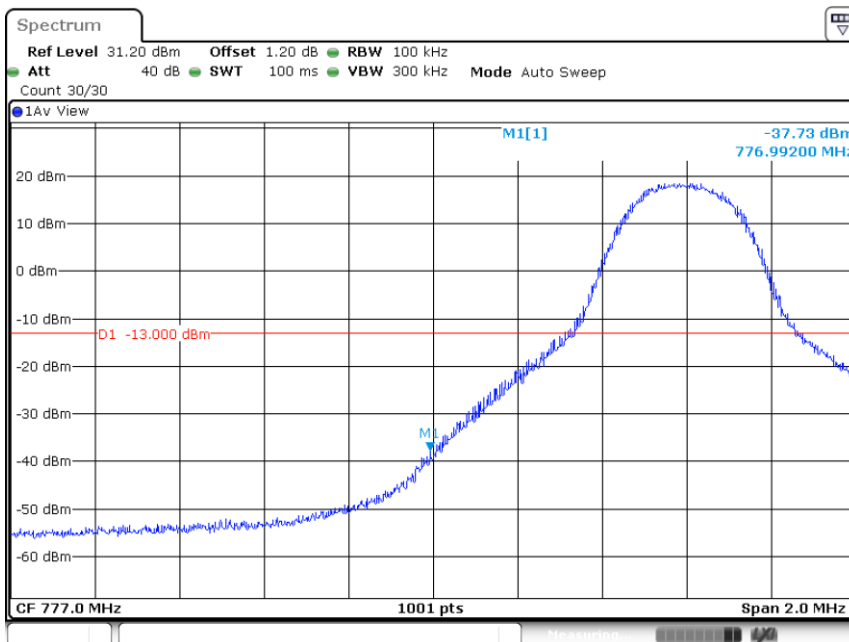
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**Band13-10MHz-QPSK-23230\_Right-50RB#0**



Date: 12.OCT.2020 09:18:37

**Band13-10MHz-16QAM-23230\_Left-1RB#0**

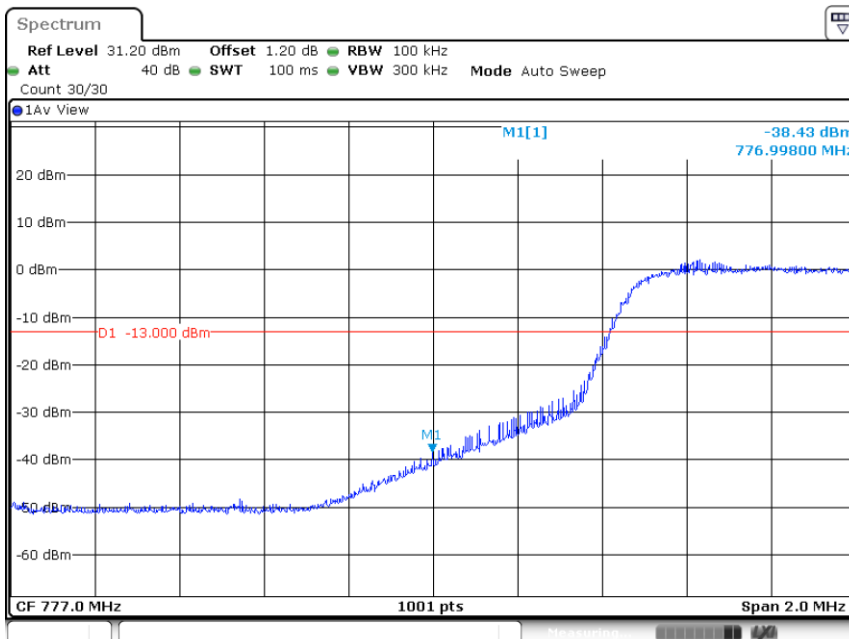


Date: 12.OCT.2020 09:17:15



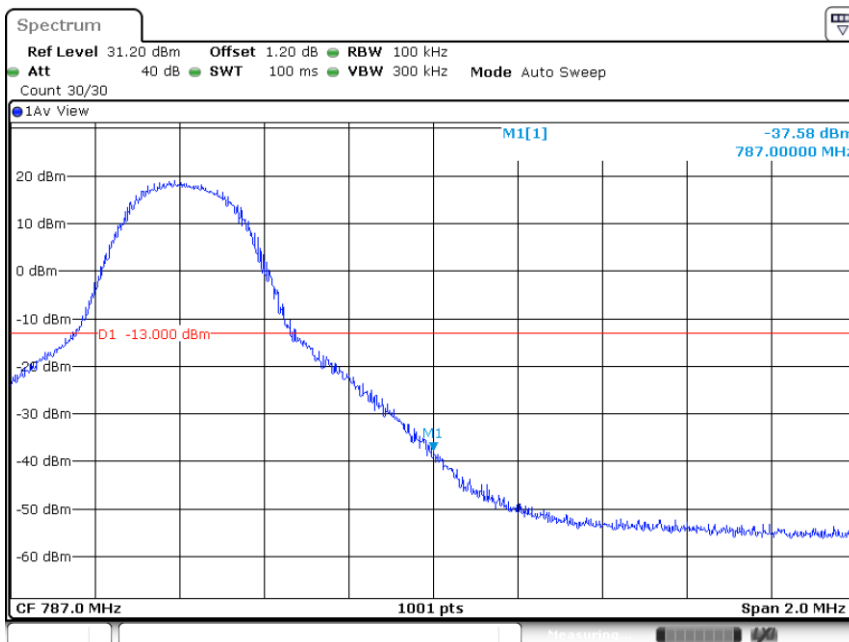
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**Band13-10MHz-16QAM-23230\_Left-50RB#0**



Date: 12.OCT.2020 09:17:46

**Band13-10MHz-16QAM-23230\_Right-1RB#49**



Date: 12.OCT.2020 09:18:21

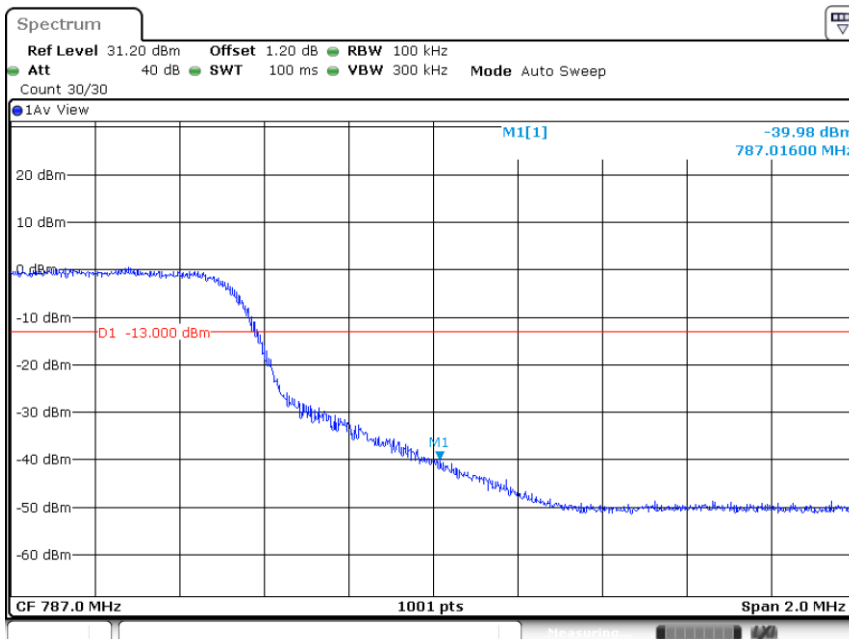


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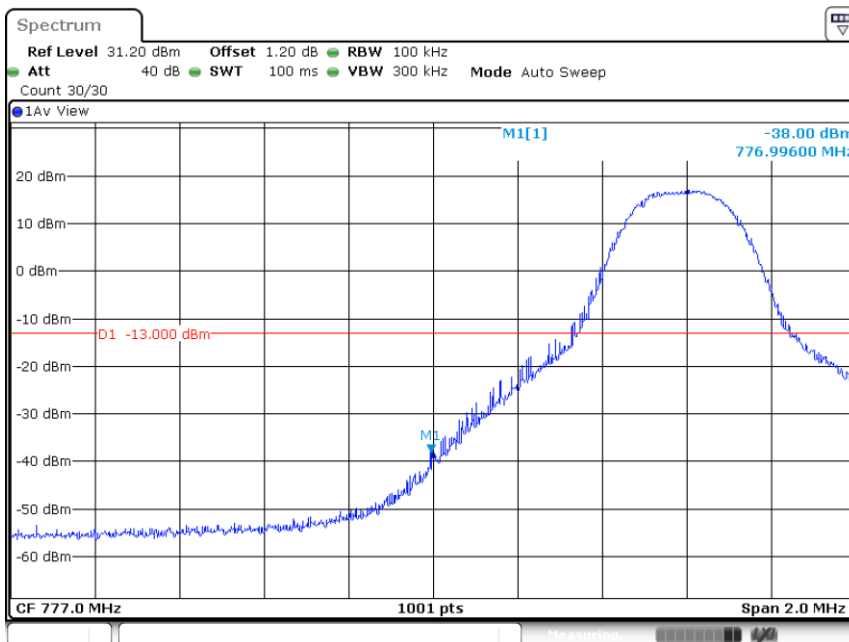
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**Band13-10MHz-16QAM-23230\_Right-50RB#0**



Date: 12.OCT.2020 09:18:52

**Band13-10MHz-64QAM-23230\_Left-1RB#0**



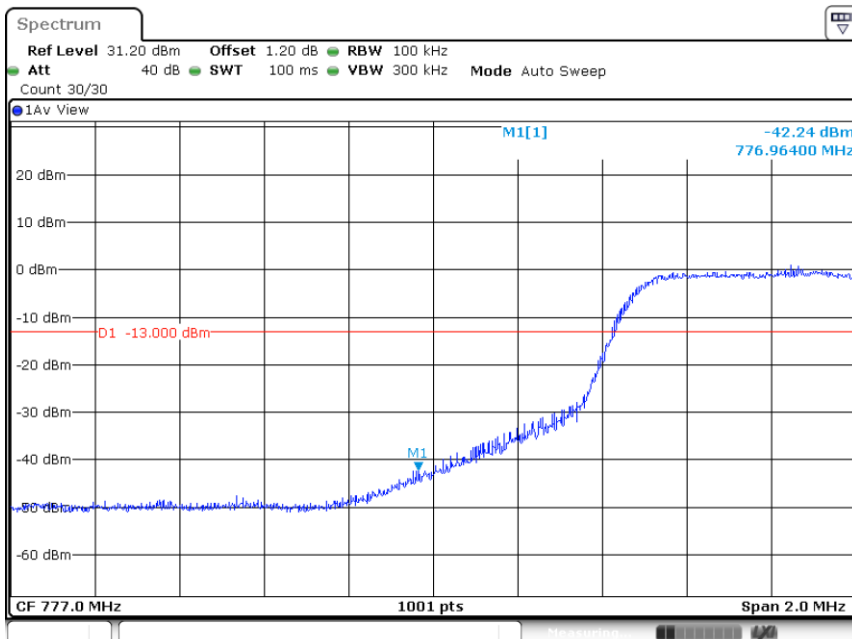
Date: 12.OCT.2020 09:19:12



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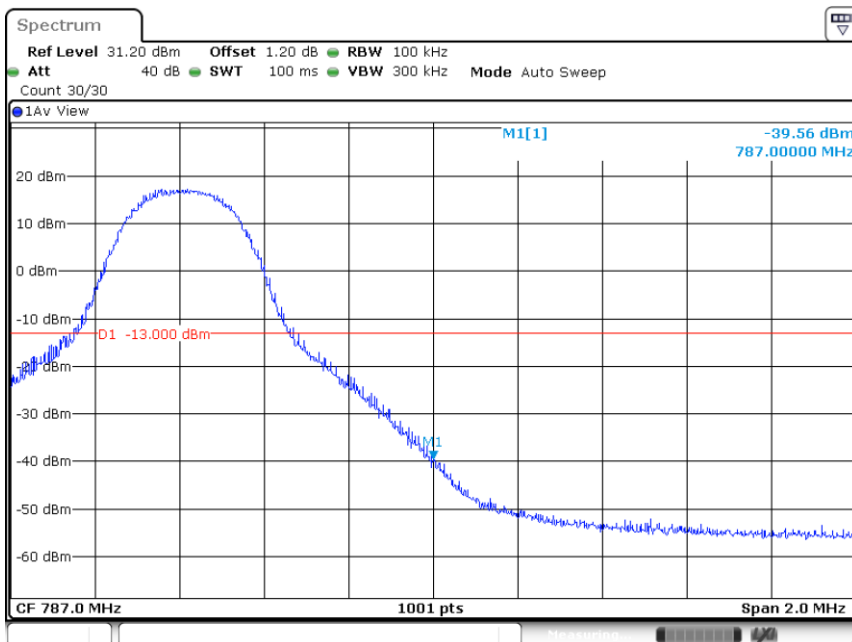
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## Band13-10MHz-64QAM-23230\_Left-50RB#0



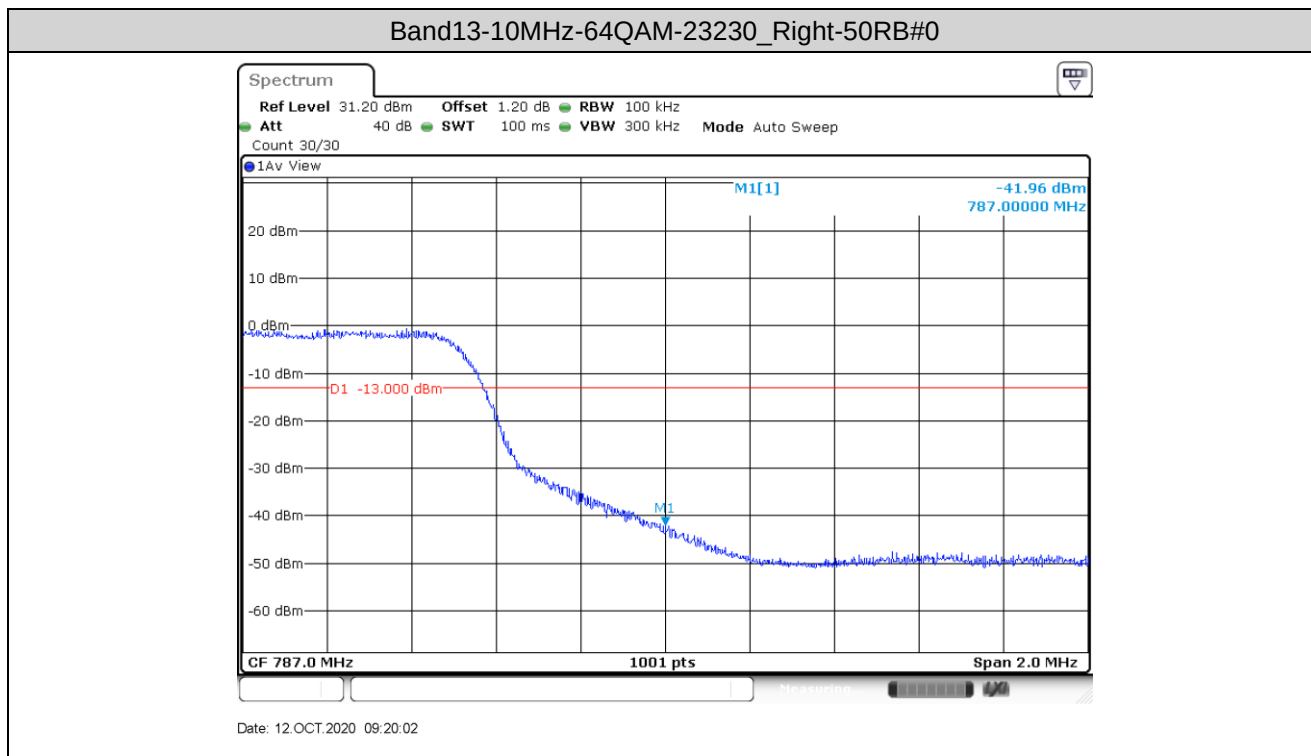
Date: 12.OCT.2020 09:19:27

## Band13-10MHz-64QAM-23230\_Right-1RB#49



Date: 12.OCT.2020 09:19:47





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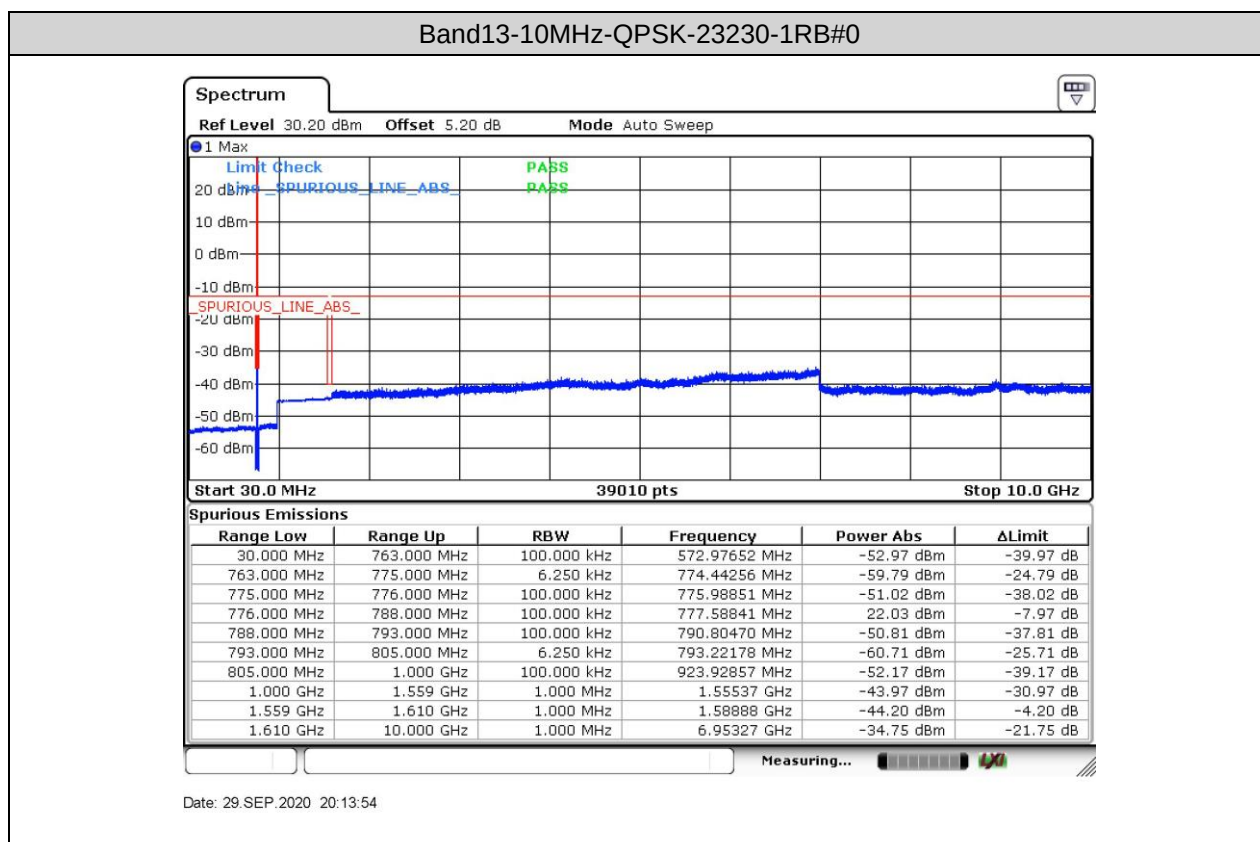
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## 6 Spurious Emission at Antenna Terminal

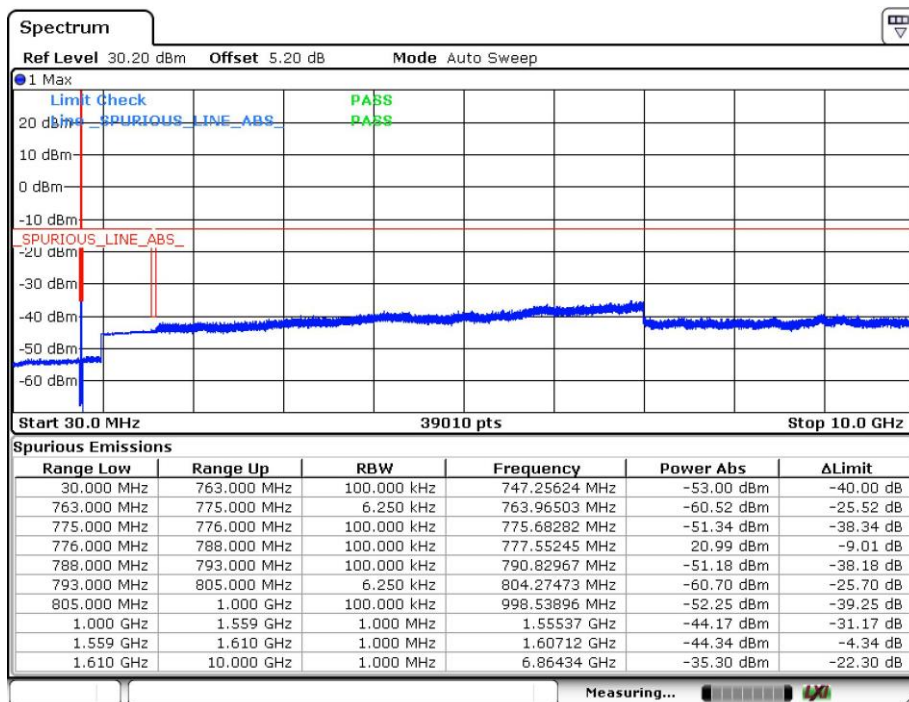
Remark1: For the averaged unwanted emissions measurements, the measurement points in each sweep is greater than twice the Span/RBW in order to ensure bin-to-bin spacing of  $< RBW/2$  so that narrowband signals are not lost between frequency bins. As to the present test item, the "Measurement Points =  $k * (\text{Span} / RBW)$ " with  $k$  between 4 and 5, which results in an acceptable level error of less than 0.5 dB.

Remark2: only the worst case data displayed in this report.

### 6.1 Test Plots

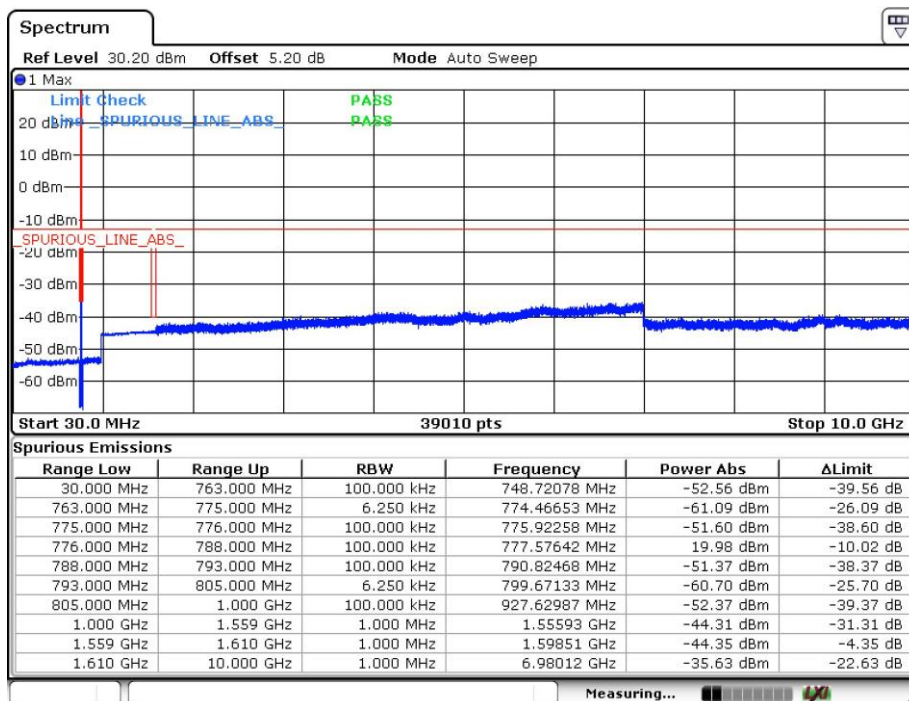


## Band13-10MHz-16QAM-23230-1RB#0



Date: 29.SEP.2020 20:12:27

## Band13-10MHz-64QAM-23230-1RB#0



Date: 29.SEP.2020 20:11:44



## 7 Field Strength of Spurious Radiation

### 7.1 Test Mode =LTE/TM1 10MHz

#### 7.1.1 Test Channel = MCH

| Frequency (MHz) | Level (dBm) | Limit Line (dBm) | Margin (dB) | Height [cm] | Angle [°] | Polarization |
|-----------------|-------------|------------------|-------------|-------------|-----------|--------------|
| 47.920000       | -73.71      | -13.00           | 60.71       | 226         | 261       | Vertical     |
| 125.013333      | -84.78      | -13.00           | 71.78       | 197         | 327       | Vertical     |
| 456.279167      | -71.47      | -13.00           | 58.47       | 160         | 153       | Vertical     |
| 1584.000000     | -65.92      | -40.00           | 25.92       | 199         | 276       | Vertical     |
| 3887.737500     | -55.77      | -13.00           | 42.77       | 203         | 58        | Vertical     |
| 4665.300000     | -60.07      | -13.00           | 47.07       | 152         | 13        | Vertical     |
| 56.180000       | -73.88      | -13.00           | 60.88       | 295         | 329       | Horizontal   |
| 184.980000      | -82.58      | -13.00           | 69.58       | 213         | 200       | Horizontal   |
| 624.212500      | -75.47      | -13.00           | 62.47       | 251         | 222       | Horizontal   |
| 1555.000000     | -64.00      | -13.00           | 51.00       | 234         | 27        | Horizontal   |
| 3887.737500     | -53.87      | -13.00           | 40.87       | 185         | 245       | Horizontal   |
| 4665.300000     | -58.15      | -13.00           | 45.15       | 284         | 151       | Horizontal   |

**Remark:**

- 1 According to 971168 D01 Power Meas License Digital Systems, The amplitudes of unwanted emissions that are attenuated more than 20 dB below the applicable limit are not required to be reported.
- 2 The disturbance below 30MHz was very low, and the above harmonics were the highest point could be found when testing, so only the worst case data displayed in this report.
- 3 all modulation and all Bandwidth had been tested, but only the worst case data displayed in this report.



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## 8 Frequency Stability

### 8.1 Frequency Vs Voltage

| Voltage |           |            |         |              |               |                  |                |                 |             |         |
|---------|-----------|------------|---------|--------------|---------------|------------------|----------------|-----------------|-------------|---------|
| Band    | Bandwidth | Modulation | Channel | RB Configure | Voltage [Vdc] | Temperature (°C) | Deviation (Hz) | Deviation (ppm) | Limit (ppm) | Verdict |
| Band13  | 10MHz     | QPSK       | 23230   | 50RB#0       | VL            | NT               | -5.70          | -0.007289       | ±2.5        | PASS    |
| Band13  | 10MHz     | QPSK       | 23230   | 50RB#0       | VN            | NT               | -6.70          | -0.008568       | ±2.5        | PASS    |
| Band13  | 10MHz     | QPSK       | 23230   | 50RB#0       | VH            | NT               | -1.70          | -0.002174       | ±2.5        | PASS    |
| Band13  | 10MHz     | 16QAM      | 23230   | 50RB#0       | VL            | NT               | -3.20          | -0.004092       | ±2.5        | PASS    |
| Band13  | 10MHz     | 16QAM      | 23230   | 50RB#0       | VN            | NT               | -5.60          | -0.007161       | ±2.5        | PASS    |
| Band13  | 10MHz     | 16QAM      | 23230   | 50RB#0       | VH            | NT               | -7.80          | -0.009974       | ±2.5        | PASS    |
| Band13  | 10MHz     | 64QAM      | 23230   | 50RB#0       | VL            | NT               | -5.40          | -0.006905       | ±2.5        | PASS    |
| Band13  | 10MHz     | 64QAM      | 23230   | 50RB#0       | VN            | NT               | -4.80          | -0.006138       | ±2.5        | PASS    |
| Band13  | 10MHz     | 64QAM      | 23230   | 50RB#0       | VH            | NT               | -4.40          | -0.005627       | ±2.5        | PASS    |

### 8.2 Frequency Vs Temperature

| Temperature |           |            |         |              |               |                  |                |                 |             |         |
|-------------|-----------|------------|---------|--------------|---------------|------------------|----------------|-----------------|-------------|---------|
| Band        | Bandwidth | Modulation | Channel | RB Configure | Voltage [Vdc] | Temperature (°C) | Deviation (Hz) | Deviation (ppm) | Limit (ppm) | Verdict |
| Band13      | 10MHz     | QPSK       | 23230   | 50RB#0       | NV            | -30              | -0.30          | -0.000384       | ±2.5        | PASS    |
| Band13      | 10MHz     | QPSK       | 23230   | 50RB#0       | NV            | -20              | -1.70          | -0.002174       | ±2.5        | PASS    |
| Band13      | 10MHz     | QPSK       | 23230   | 50RB#0       | NV            | -10              | -2.80          | -0.003581       | ±2.5        | PASS    |
| Band13      | 10MHz     | QPSK       | 23230   | 50RB#0       | NV            | 0                | -3.80          | -0.004859       | ±2.5        | PASS    |
| Band13      | 10MHz     | QPSK       | 23230   | 50RB#0       | NV            | 10               | -4.60          | -0.005882       | ±2.5        | PASS    |
| Band13      | 10MHz     | QPSK       | 23230   | 50RB#0       | NV            | 20               | -5.10          | -0.006522       | ±2.5        | PASS    |
| Band13      | 10MHz     | QPSK       | 23230   | 50RB#0       | NV            | 30               | -4.80          | -0.006138       | ±2.5        | PASS    |
| Band13      | 10MHz     | QPSK       | 23230   | 50RB#0       | NV            | 40               | -6.10          | -0.007801       | ±2.5        | PASS    |
| Band13      | 10MHz     | QPSK       | 23230   | 50RB#0       | NV            | 50               | 0.90           | 0.001151        | ±2.5        | PASS    |
| Band13      | 10MHz     | 16QAM      | 23230   | 50RB#0       | NV            | -30              | -4.40          | -0.005627       | ±2.5        | PASS    |
| Band13      | 10MHz     | 16QAM      | 23230   | 50RB#0       | NV            | -20              | -1.00          | -0.001279       | ±2.5        | PASS    |
| Band13      | 10MHz     | 16QAM      | 23230   | 50RB#0       | NV            | -10              | -2.90          | -0.003708       | ±2.5        | PASS    |
| Band13      | 10MHz     | 16QAM      | 23230   | 50RB#0       | NV            | 0                | -5.40          | -0.006905       | ±2.5        | PASS    |
| Band13      | 10MHz     | 16QAM      | 23230   | 50RB#0       | NV            | 10               | -3.60          | -0.004604       | ±2.5        | PASS    |
| Band13      | 10MHz     | 16QAM      | 23230   | 50RB#0       | NV            | 20               | -1.70          | -0.002174       | ±2.5        | PASS    |
| Band13      | 10MHz     | 16QAM      | 23230   | 50RB#0       | NV            | 30               | -0.30          | -0.000384       | ±2.5        | PASS    |



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|        |       |       |       |        |    |     |       |           |      |      |
|--------|-------|-------|-------|--------|----|-----|-------|-----------|------|------|
| Band13 | 10MHz | 16QAM | 23230 | 50RB#0 | NV | 40  | -1.50 | -0.001918 | ±2.5 | PASS |
| Band13 | 10MHz | 16QAM | 23230 | 50RB#0 | NV | 50  | -1.60 | -0.002046 | ±2.5 | PASS |
| Band13 | 10MHz | 64QAM | 23230 | 50RB#0 | NV | -30 | -3.20 | -0.004092 | ±2.5 | PASS |
| Band13 | 10MHz | 64QAM | 23230 | 50RB#0 | NV | -20 | -2.10 | -0.002685 | ±2.5 | PASS |
| Band13 | 10MHz | 64QAM | 23230 | 50RB#0 | NV | -10 | 0.30  | 0.000384  | ±2.5 | PASS |
| Band13 | 10MHz | 64QAM | 23230 | 50RB#0 | NV | 0   | 1.30  | 0.001662  | ±2.5 | PASS |
| Band13 | 10MHz | 64QAM | 23230 | 50RB#0 | NV | 10  | -6.40 | -0.008184 | ±2.5 | PASS |
| Band13 | 10MHz | 64QAM | 23230 | 50RB#0 | NV | 20  | -5.30 | -0.006777 | ±2.5 | PASS |
| Band13 | 10MHz | 64QAM | 23230 | 50RB#0 | NV | 30  | -3.40 | -0.004348 | ±2.5 | PASS |
| Band13 | 10MHz | 64QAM | 23230 | 50RB#0 | NV | 40  | -1.70 | -0.002174 | ±2.5 | PASS |
| Band13 | 10MHz | 64QAM | 23230 | 50RB#0 | NV | 50  | 0.60  | 0.000767  | ±2.5 | PASS |

The End

