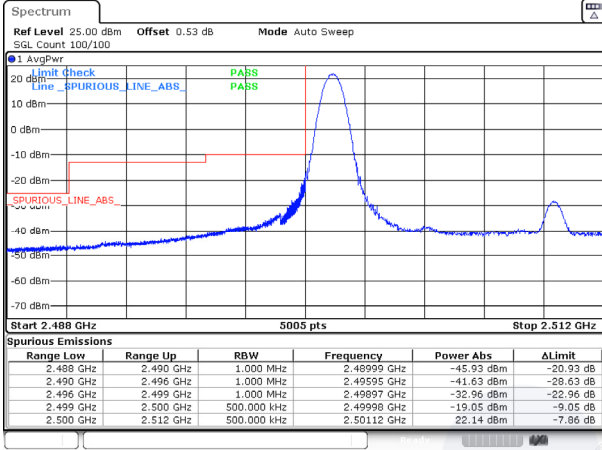
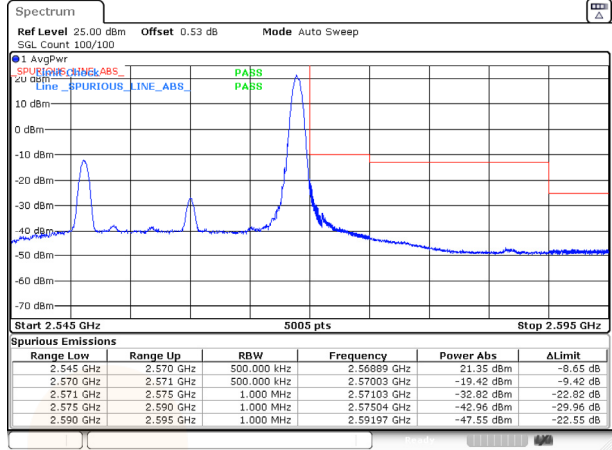


**20M BW QPSK**

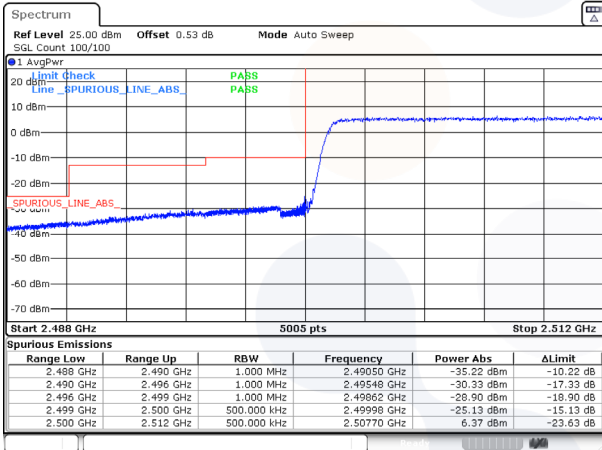
**Low channel 1RB**



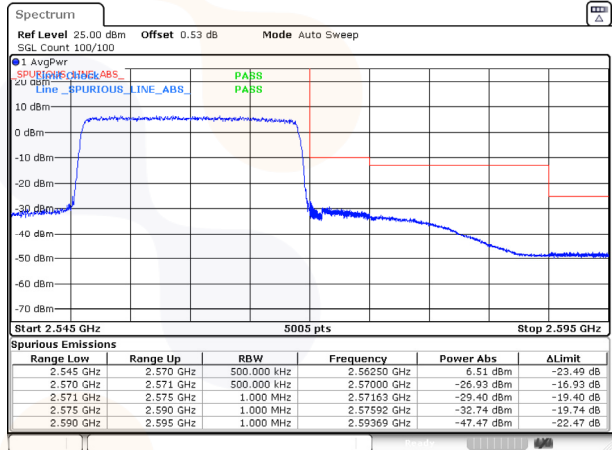
**High channel 1RB**



**Low channel FRB**

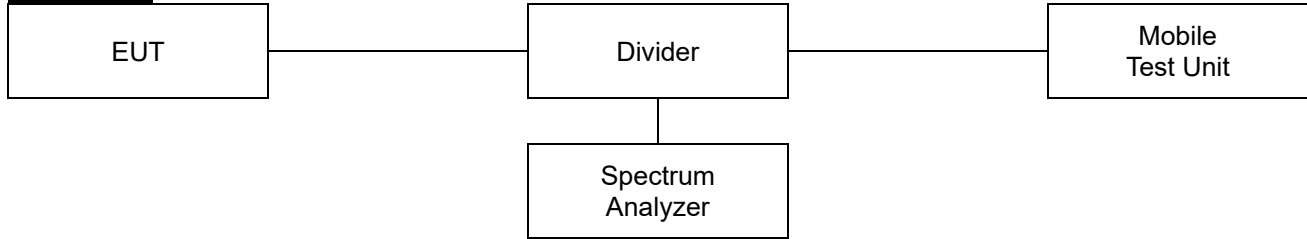


**High channel FRB**



## 7.4. Spurious Emissions at Antenna Terminal

### Test setup



### Limit

#### According to §27.53(m)(4),

The attenuation factor shall be not less than  $40 + 10\log(P)$  dB on all frequencies between the channel edge and 5 megahertz from the channel edge,  $43 + 10\log(P)$  dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and  $55 + 10\log(P)$  dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less than  $43 + 10\log(P)$  dB on all frequencies between 2490.5 MHz and 2496 MHz and  $55 + 10\log(P)$  dB at or below 2490.5 MHz.

### Test procedure

971168 D01 v03r01 - Section 6  
ANSI 63.26-2015 – Section 5.7

### Test settings

- 1) Start frequency was set to 30 MHz and stop frequency was set to at least 10<sup>th</sup> the fundamental frequency.
- 2) Detector = RMS
- 3) Sweep time = auto couple.
- 4) Trace mode = trace average
- 5) Allow trace to fully stabilize.
- 6) Please see test notes below RBW and VBW settings.

### Notes:

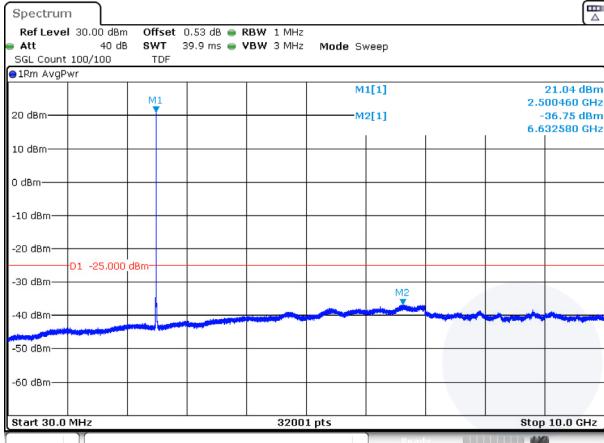
1. Per 27.53(m)(6), compliance with these provisions is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater for frequencies less than 1 GHz and 1 MHz or greater for frequencies greater than 1 GHz.  
The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.
2. All modes of operation were investigated and the worst-case configuration results are reported.

**Test results**

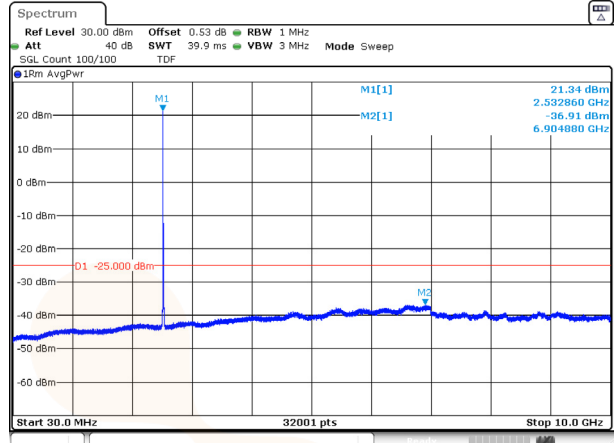
**Test mode: LTE B7**

**5M BW QPSK**

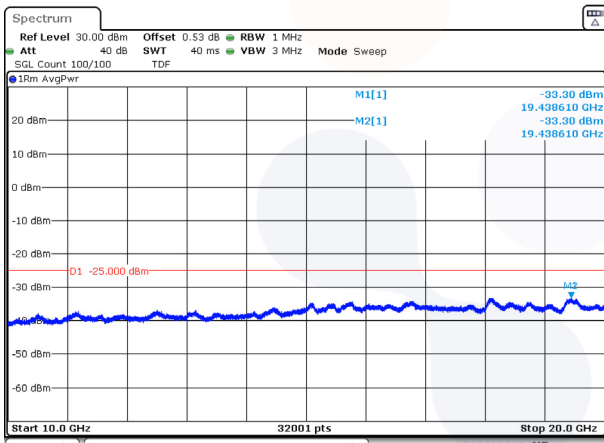
**Low channel (30 MHz ~ 10 GHz)**



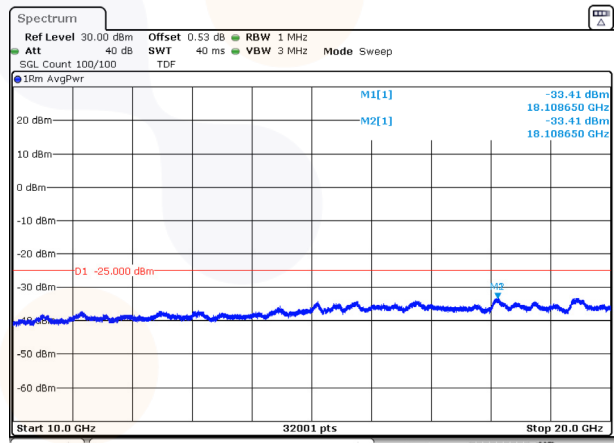
**Middle channel (30 MHz ~ 10 GHz)**



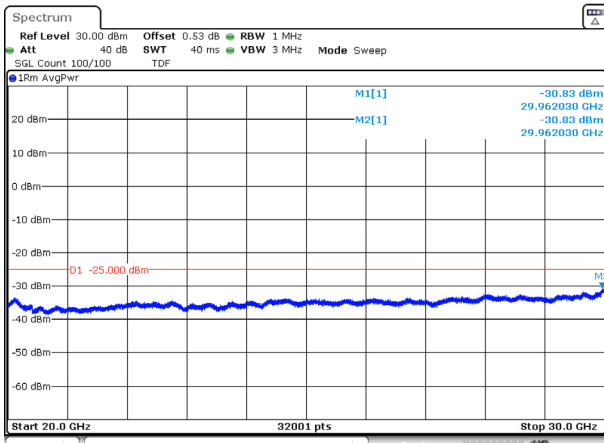
**Low channel (10 GHz ~ 20 GHz)**



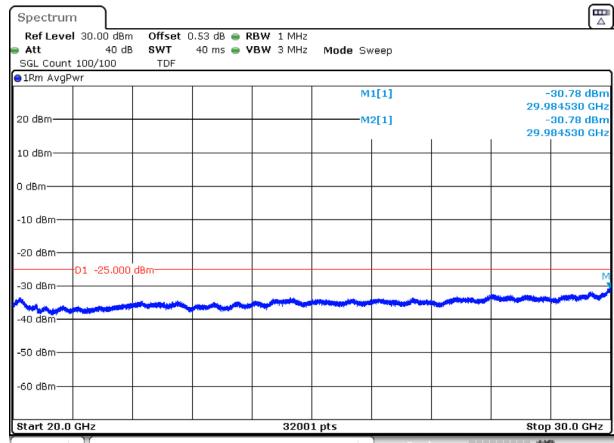
**Middle channel (10 GHz ~ 20 GHz)**



**Low channel (20 GHz ~ 30 GHz)**

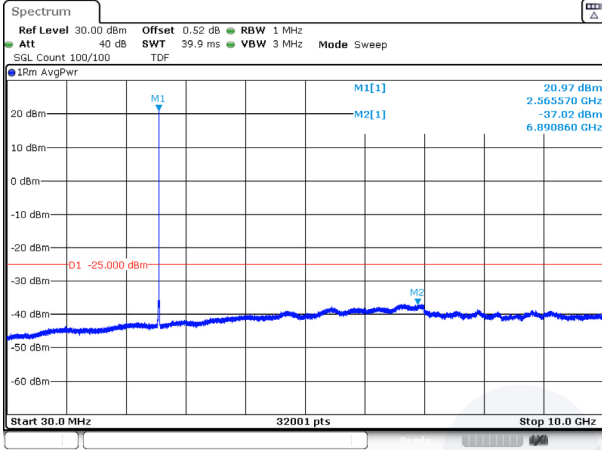


**Middle channel (20 GHz ~ 30 GHz)**

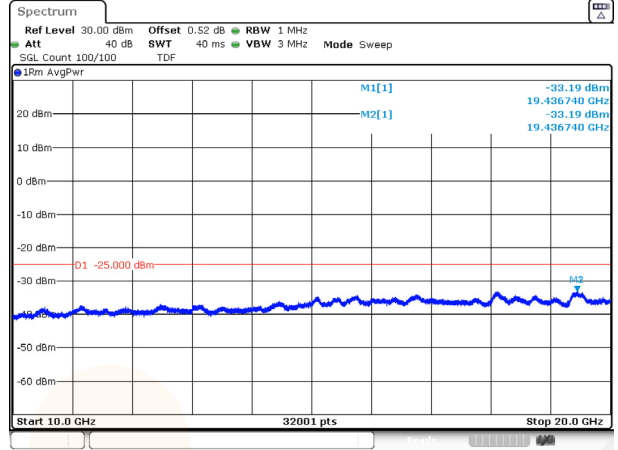


**5M BW QPSK**

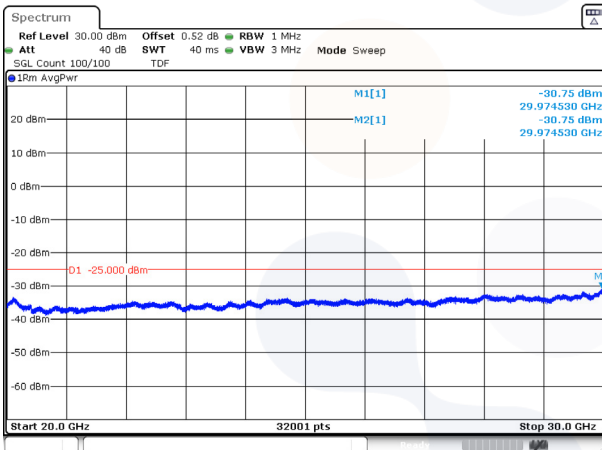
**High channel (30 MHz ~ 10 GHz)**



**High channel (10 GHz ~ 20 GHz)**



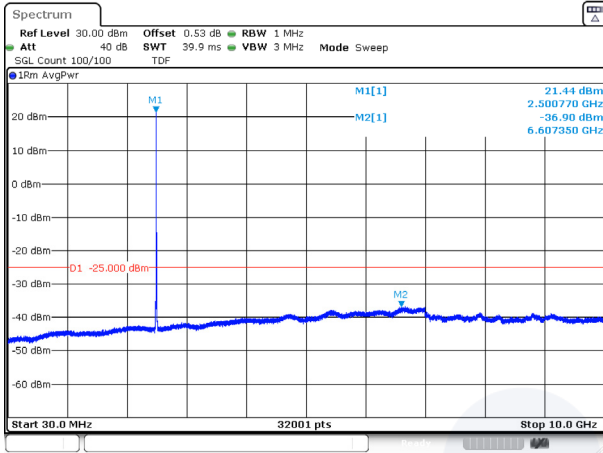
**High channel (20 GHz ~ 30 GHz)**



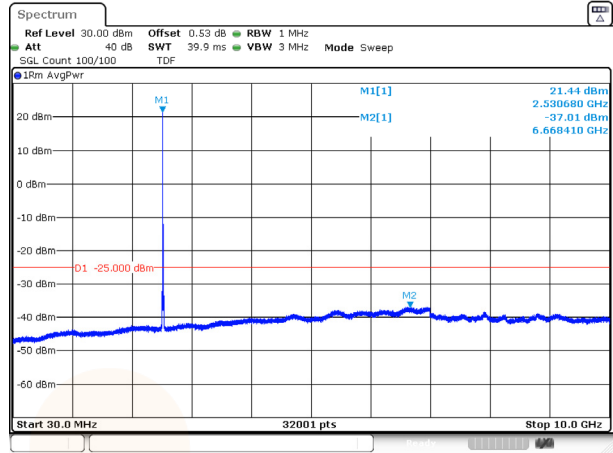
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**10M BW QPSK**

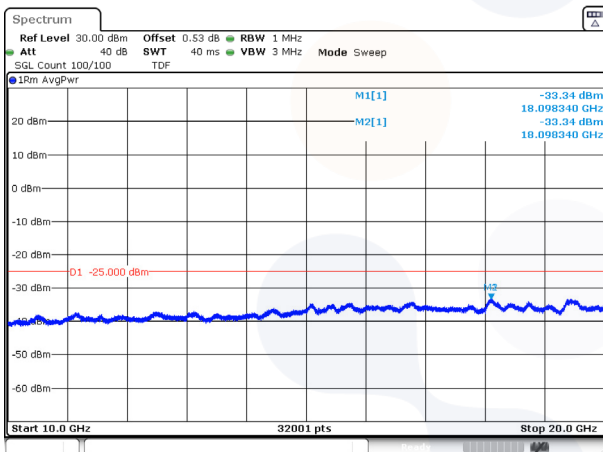
**Low channel (30 MHz ~ 10 GHz)**



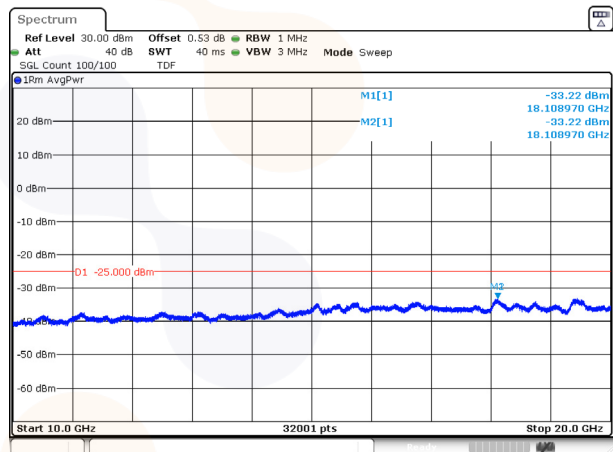
**Middle channel (30 MHz ~ 10 GHz)**



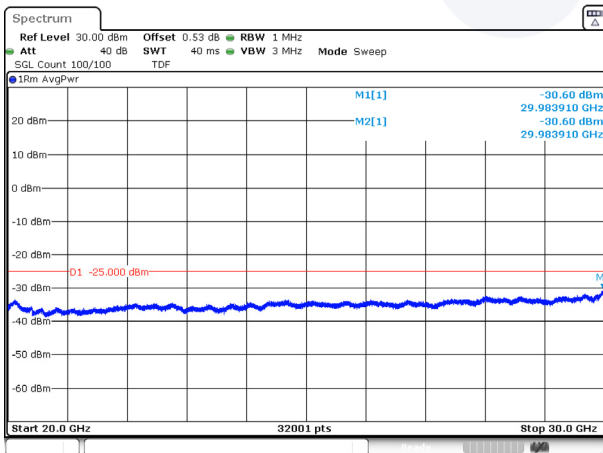
**Low channel (10 GHz ~ 20 GHz)**



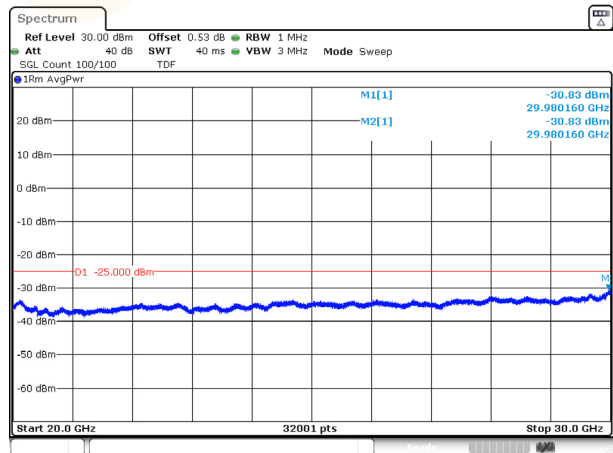
**Middle channel (10 GHz ~ 20 GHz)**



**Low channel (20 GHz ~ 30 GHz)**

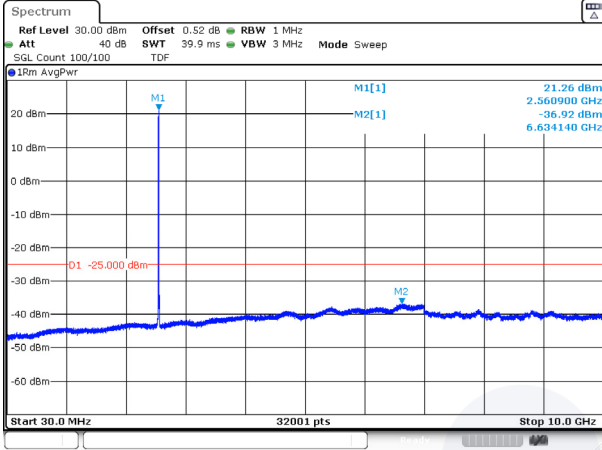


**Middle channel (20 GHz ~ 30 GHz)**

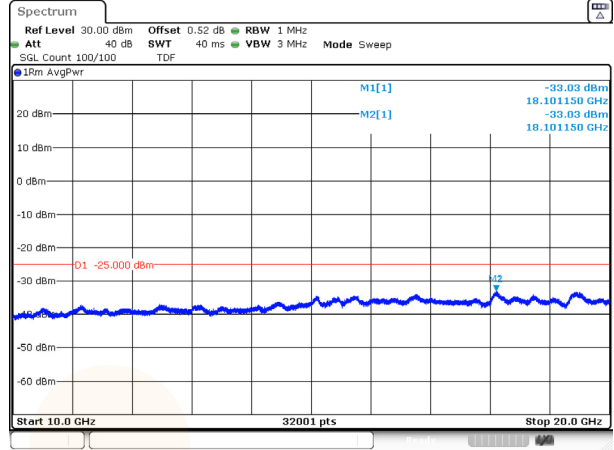


**10M BW QPSK**

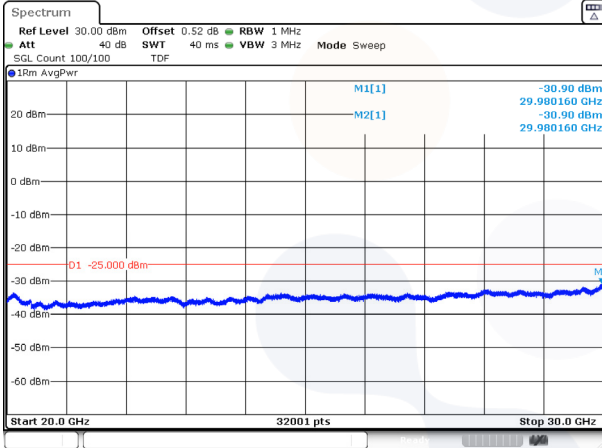
**High channel (30 MHz ~ 10 GHz)**



**High channel (10 GHz ~ 20 GHz)**



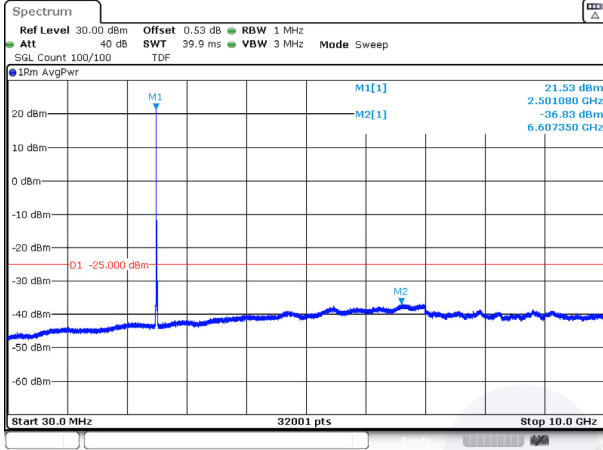
**High channel (20 GHz ~ 30 GHz)**



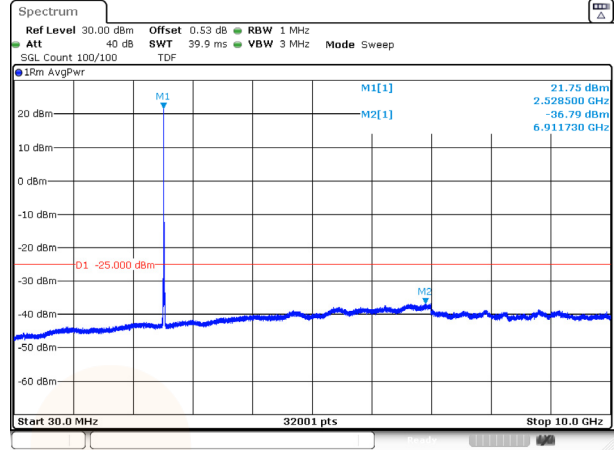
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**15M BW QPSK**

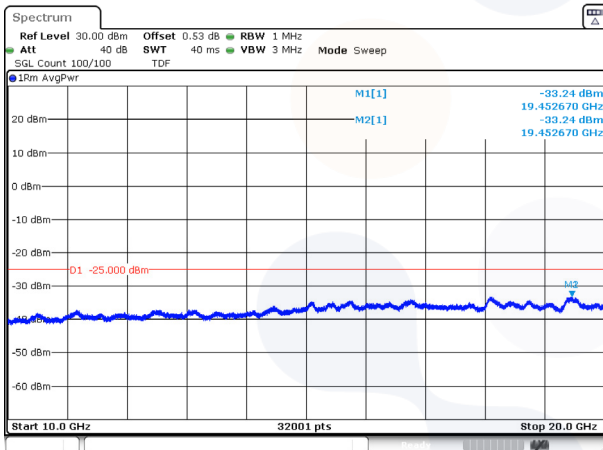
**Low channel (30 MHz ~ 10 GHz)**



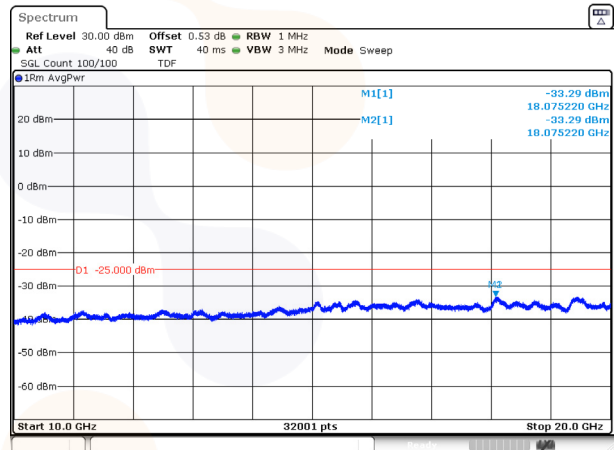
**Middle channel (30 MHz ~ 10 GHz)**



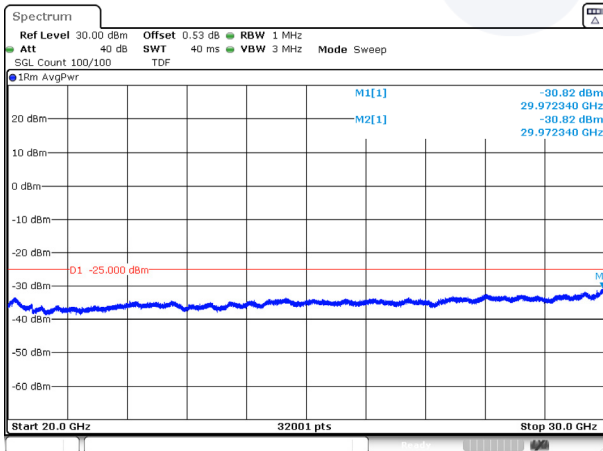
**Low channel (10 GHz ~ 20 GHz)**



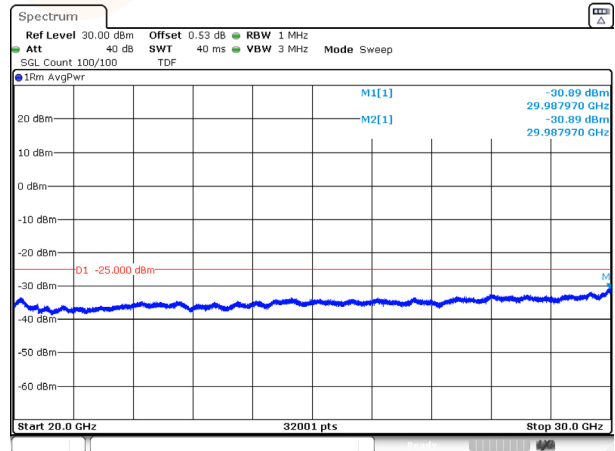
**Middle channel (10 GHz ~ 20 GHz)**



**Low channel (20 GHz ~ 30 GHz)**

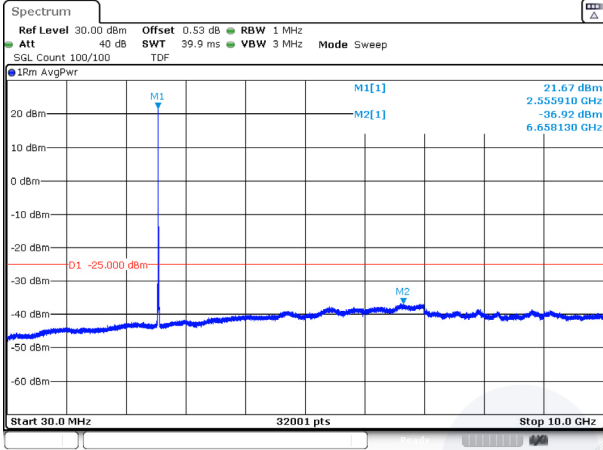


**Middle channel (20 GHz ~ 30 GHz)**

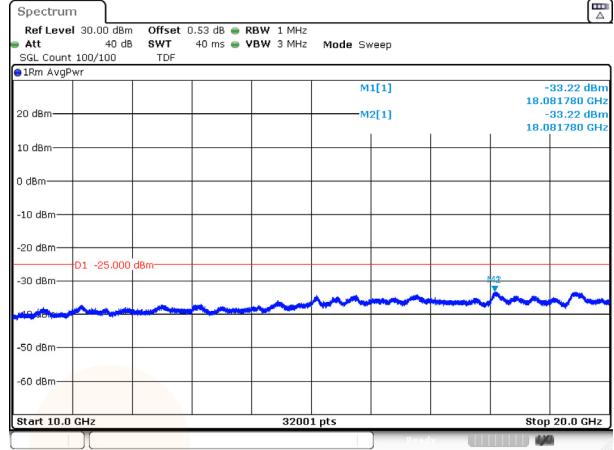


**15M BW QPSK**

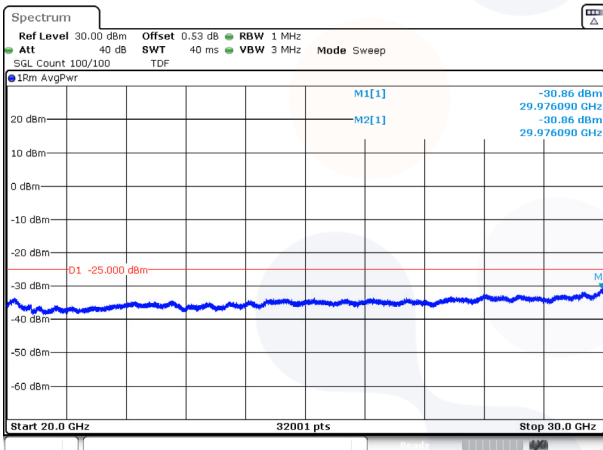
**High channel (30 MHz ~ 10 GHz)**



**High channel (10 GHz ~ 20 GHz)**



**High channel (20 GHz ~ 30 GHz)**

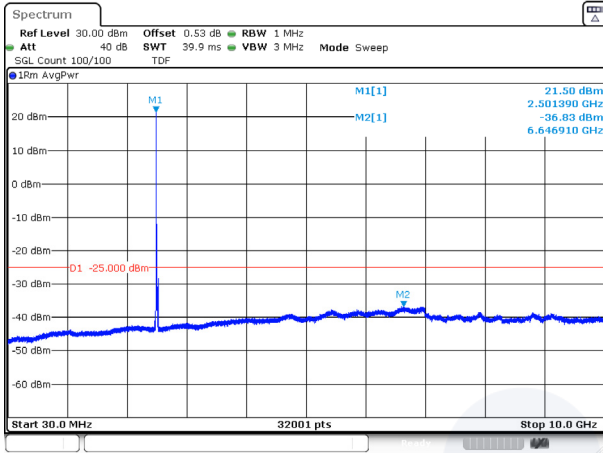


Blank

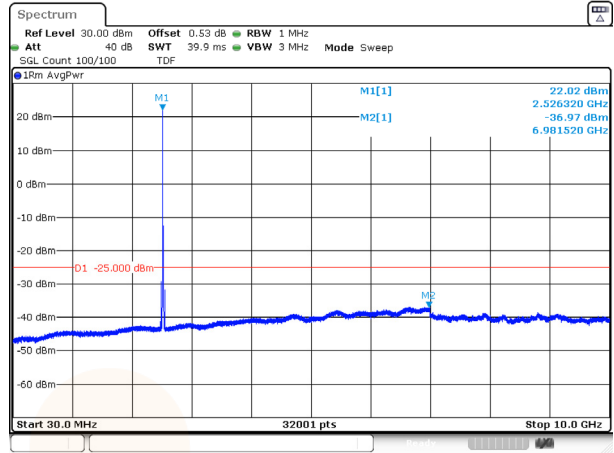


**20M BW QPSK**

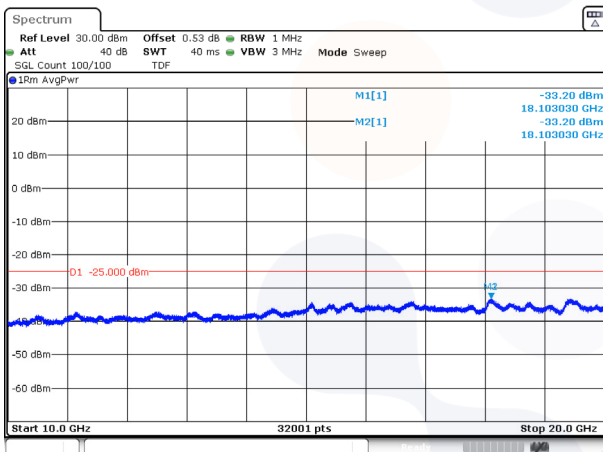
**Low channel (30 MHz ~ 10 GHz)**



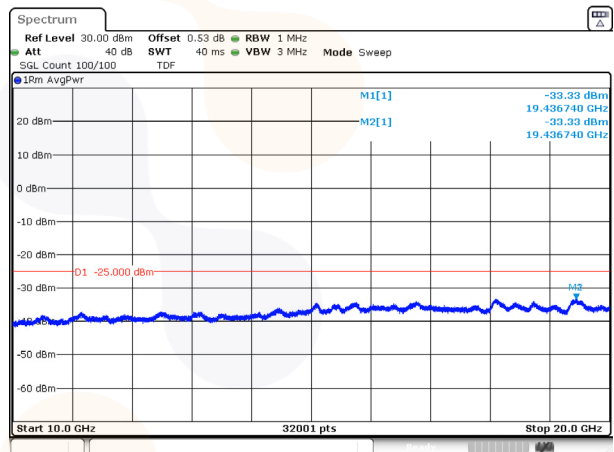
**Middle channel (30 MHz ~ 10 GHz)**



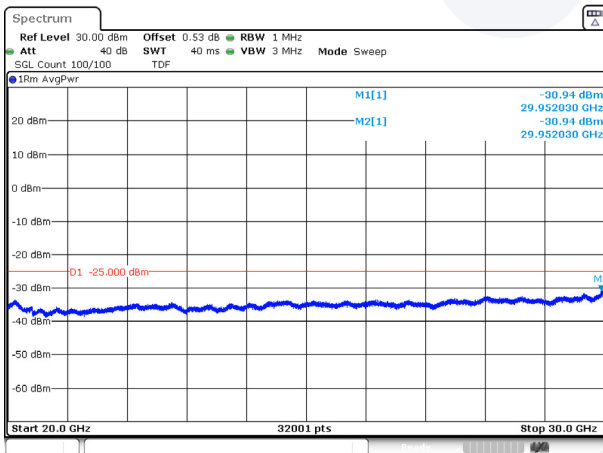
**Low channel (10 GHz ~ 20 GHz)**



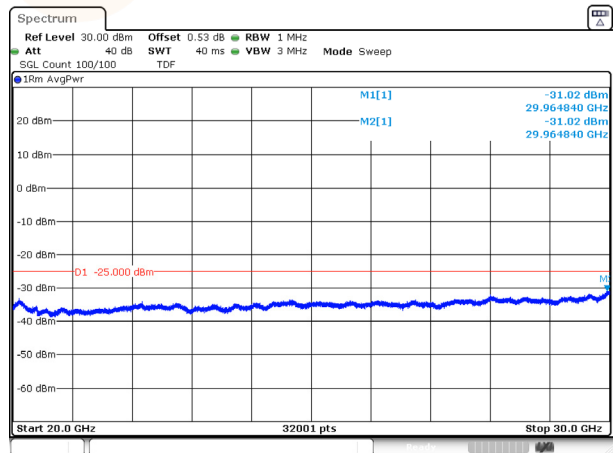
**Middle channel (10 GHz ~ 20 GHz)**



**Low channel (20 GHz ~ 30 GHz)**

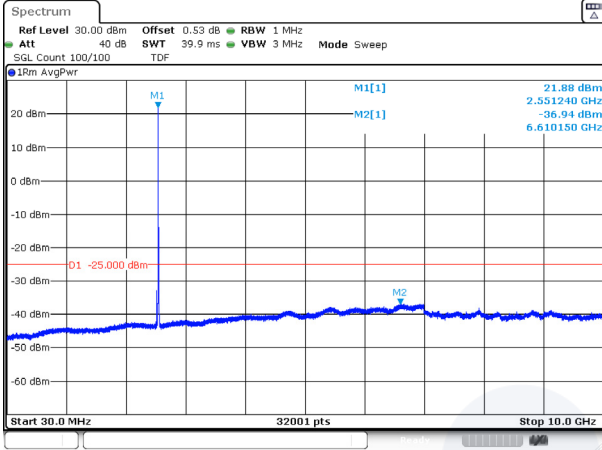


**Middle channel (20 GHz ~ 30 GHz)**

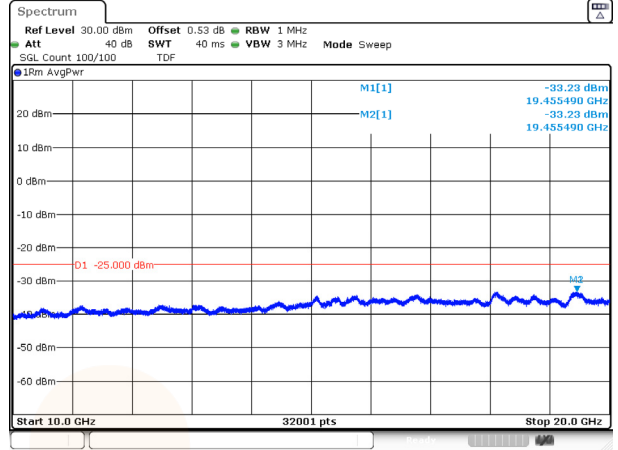


**20M BW QPSK**

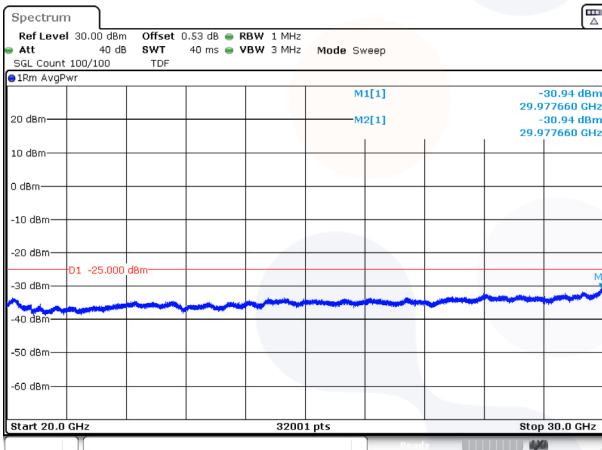
**High channel (30 MHz ~ 10 GHz)**



**High channel (10 GHz ~ 20 GHz)**



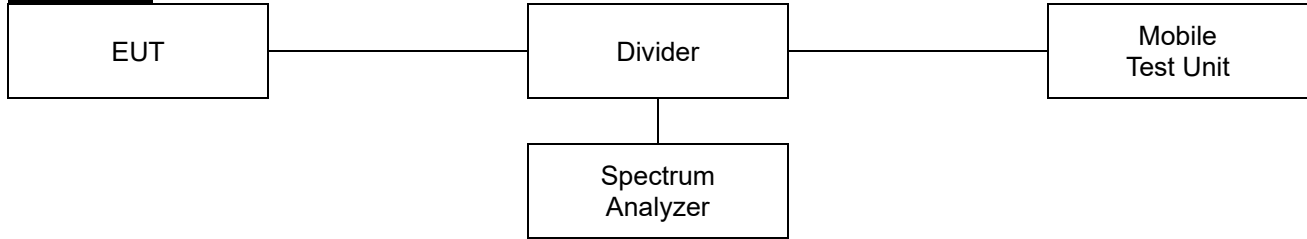
**High channel (20 GHz ~ 30 GHz)**



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## 7.5. Peak to Average Power Ratio (PAPR)

### Test setup



### Limit

#### According to §27.50(d),

The peak-to-average ratio(PAR) of the transmission must not exceed 13 dB.

### Test procedure

971168 D01 v03r01 - Section 5.7.2 or 5.7.3  
ANSI 63.26-2015 – Section 5.2.3.4 or 5.2.6

### Test settings

#### 5.2.3.4 Measurement of peak power in a broadband noise-like signal using CCDF

- 1) Set resolution/measurement bandwidth  $\geq$  OBW or specified reference bandwidth
- 2) Set the number of counts to a value that stabilizes the measured CCDF curve.
- 3) Set the measurement interval as follows:
  - a) For continuous transmissions, set to the greater of  $[10 \times (\text{number of points in sweep}) \times (\text{transmission symbol period})]$  or 1 ms .
  - b) For burst transmissions, employ an external trigger that is synchronized with the EUT burst timing sequence, or use the internal burst trigger with a trigger level that allows the burst to stabilize. Set the measurement interval to a time that is less than or equal to the burst duration.
  - c) If there are several carriers in a single antenna port, the peak power shall be determined for each individual carrier (by disabling the other carriers while measuring the required carrier) and the total peak power calculated from the sum of the individual carrier peak powers.
- 4) Record the maximum PAPR level associated with a probability of 0.1%

#### 5.2.6 Peak-to-average power ratio

Use one of the procedures presented in 5.2(ANSI C63.26-2015) to measure the total peak power and record as  $P_{PK}$ .

Use one of the applicable procedure presented 5.2(ANSI C63.26-2015) to measure the total average power and record as  $P_{AG}$ . Determine the P.A.P.R from:

$$PAPR(\text{dB}) = P_{PK}(\text{dBm or dBW}) - P_{AG}(\text{dBm or dBW})$$