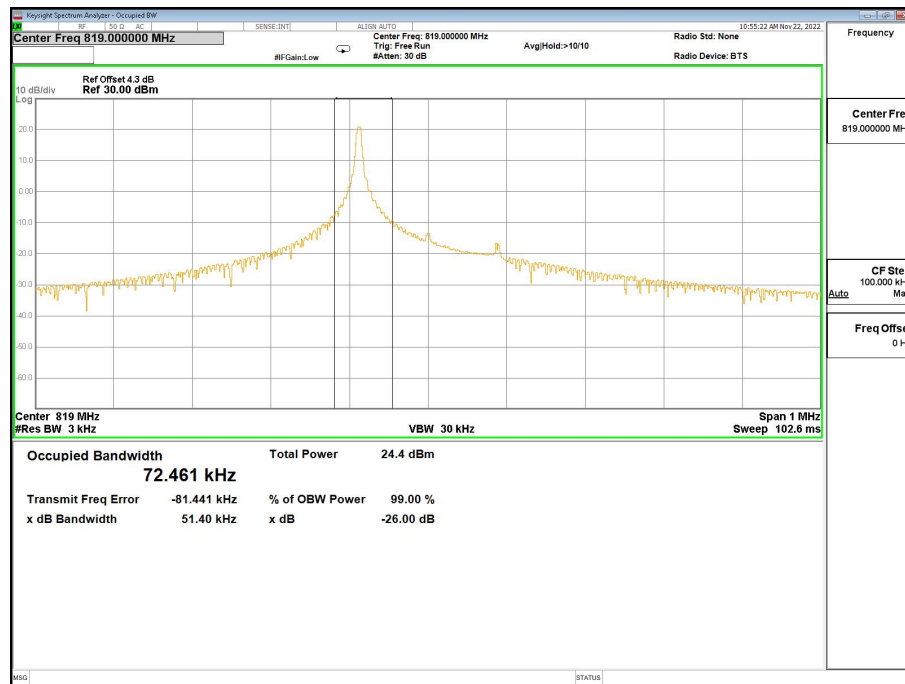


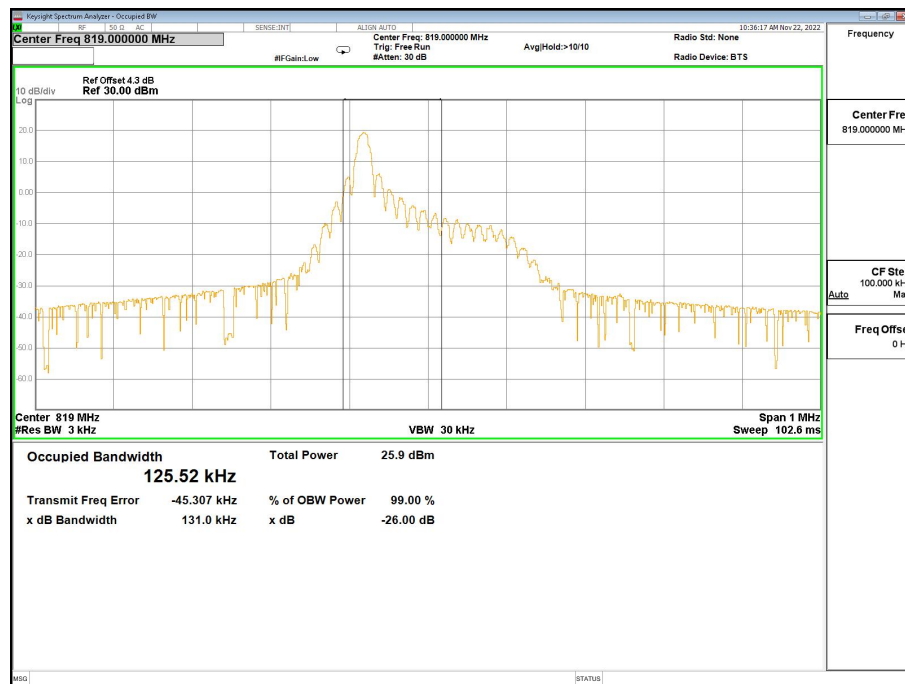
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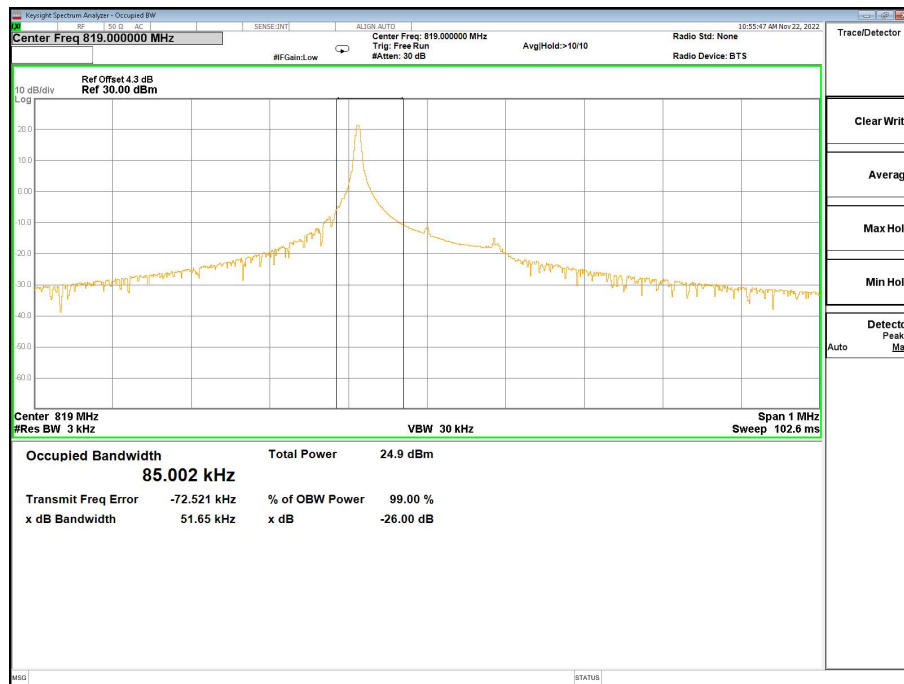
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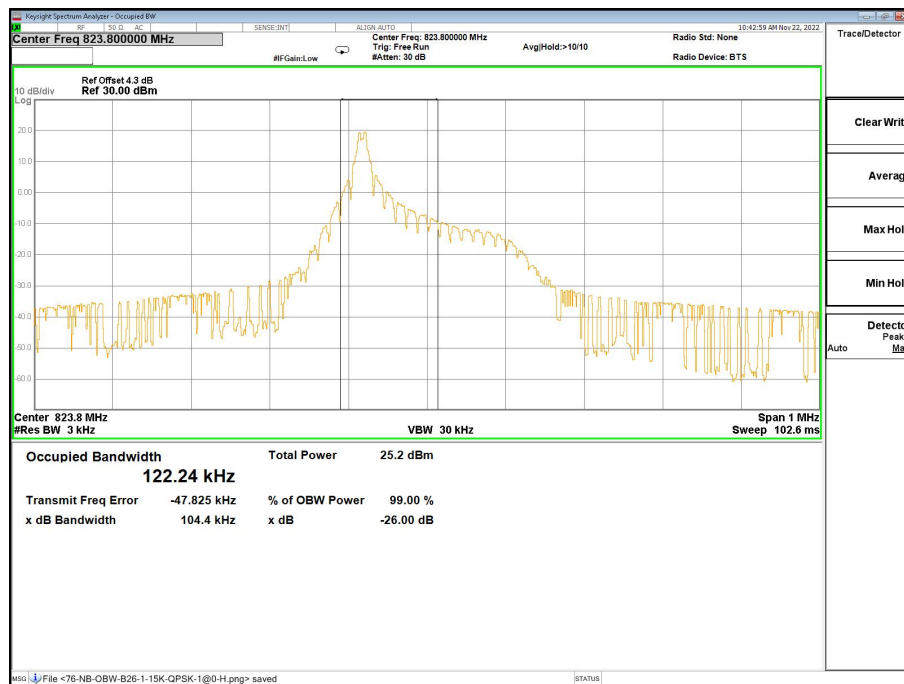
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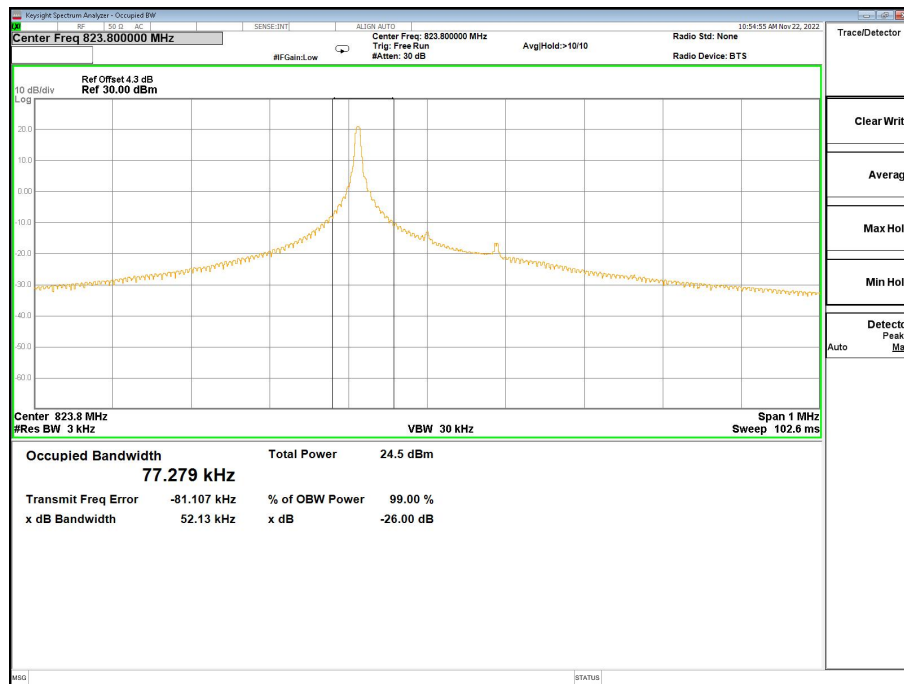
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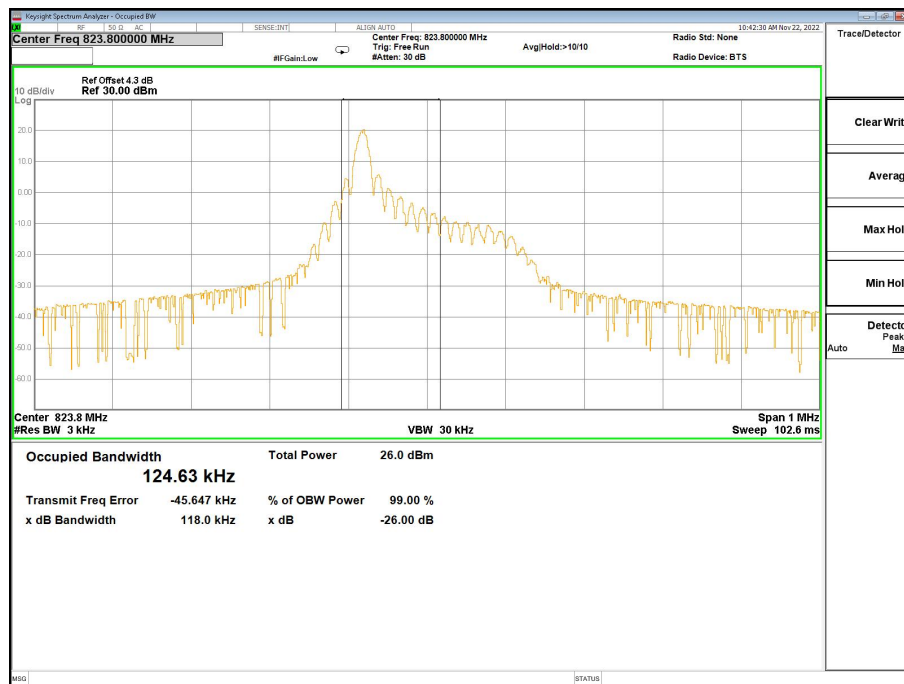
Band26-26dB/99% OBW-26740 Channel-QPSK-1@0-3.75K



Band26-26dB/99% OBW-26788 Channel-BPSK-1@0-15K



Band26-26dB/99% OBW-26788 Channel-BPSK-1@0-3.75K



Band26-26dB/99% OBW-26788 Channel-QPSK-1@0-15K

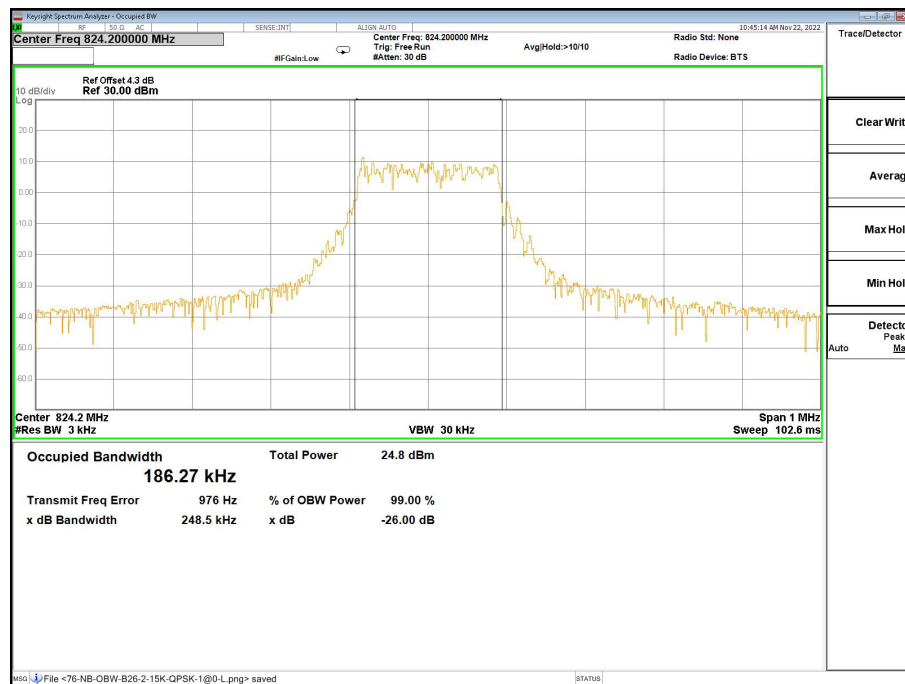
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Band26-26dB/99% OBW-26788 Channel-QPSK-1@0-3.75K

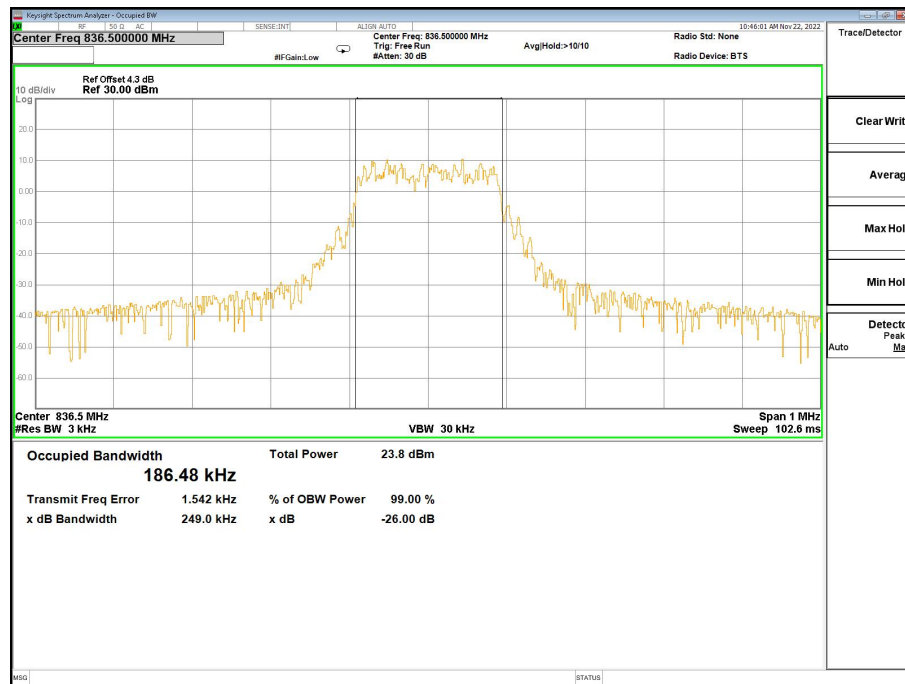


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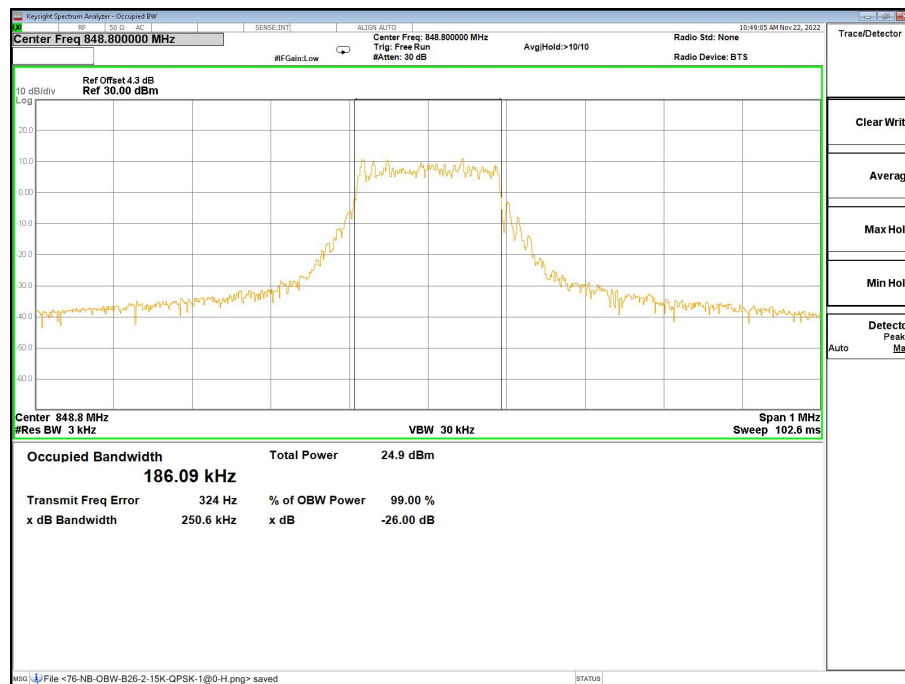
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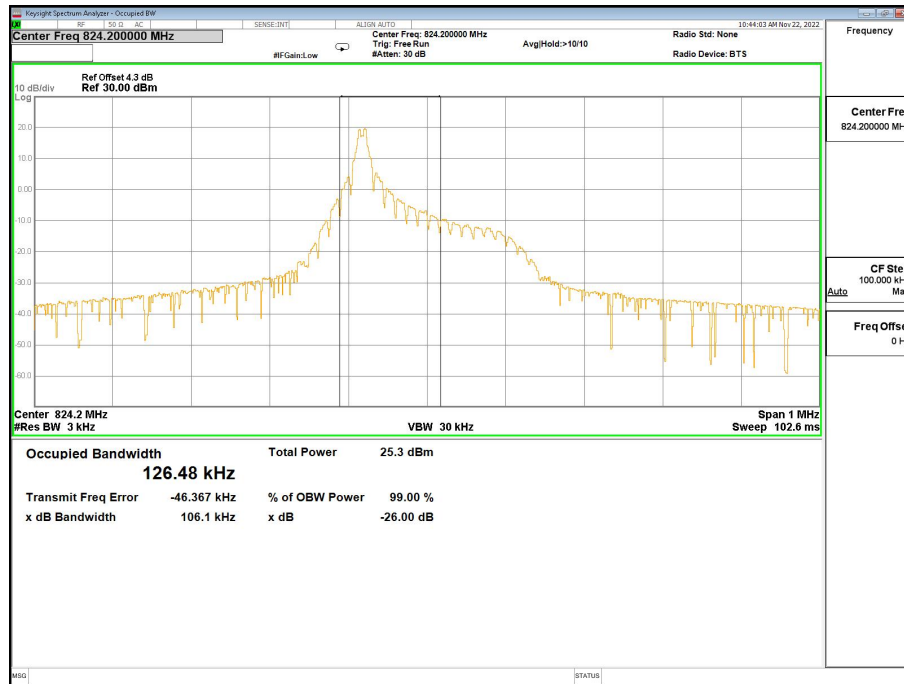
Band26-26dB/99% OBW-26915 Channel-QPSK-12@0-15K



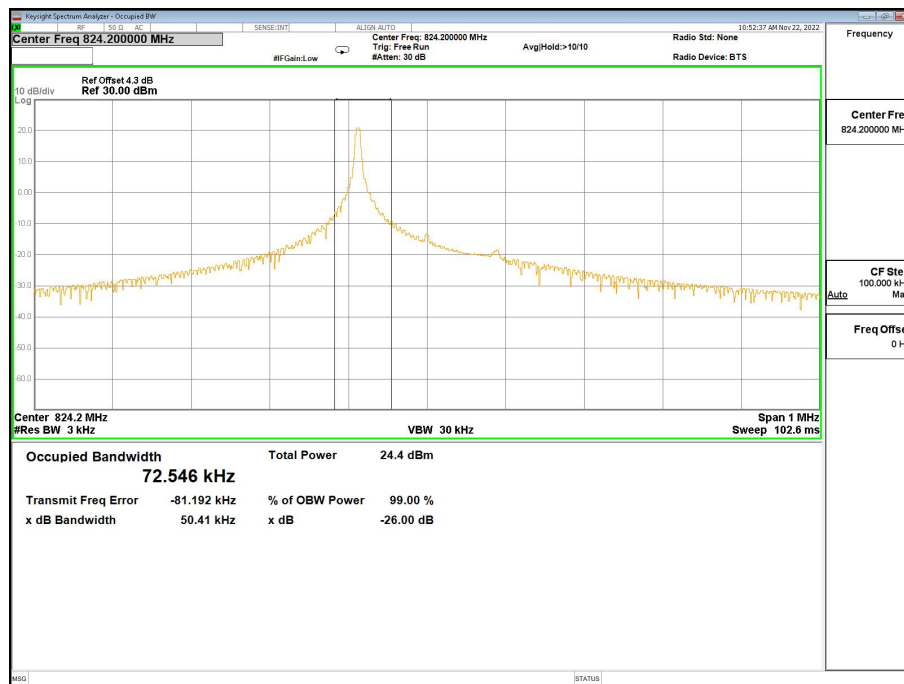
Band26-26dB/99% OBW-27038 Channel-QPSK-12@0-15K

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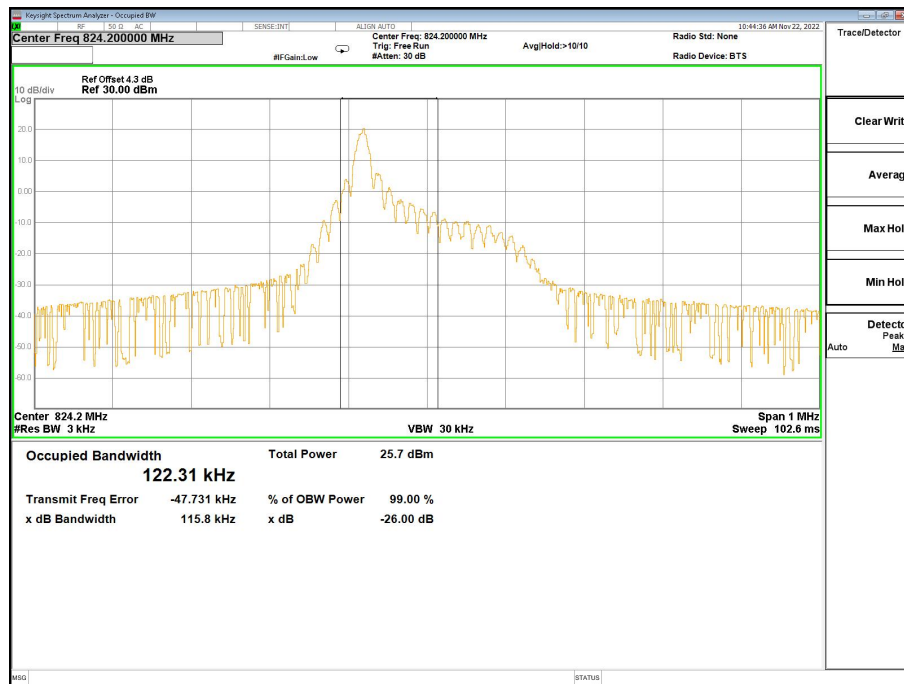
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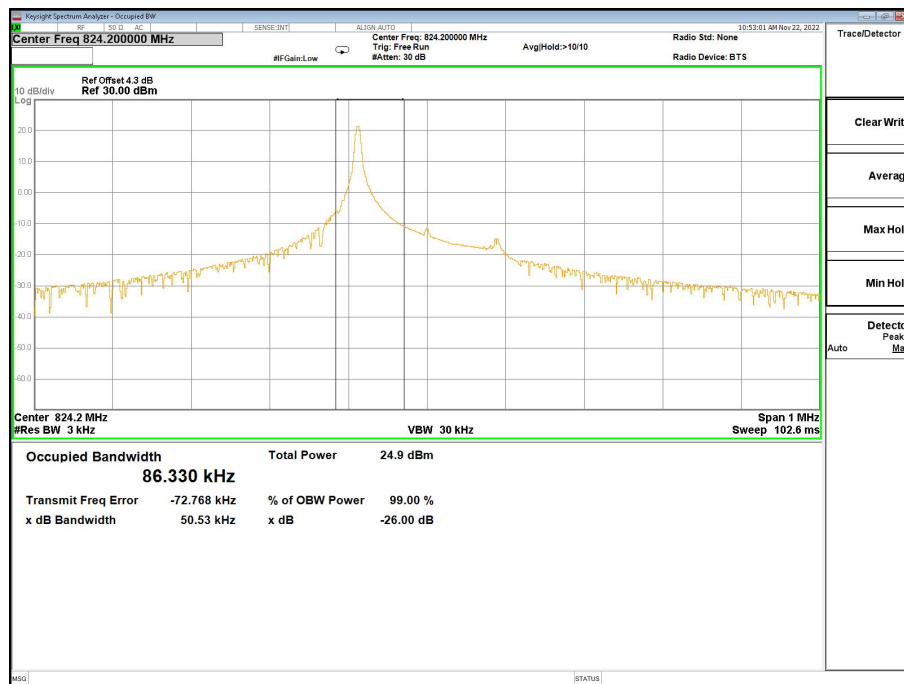
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Band26-26dB/99% OBW-26792 Channel-BPSK-1@0-3.75K



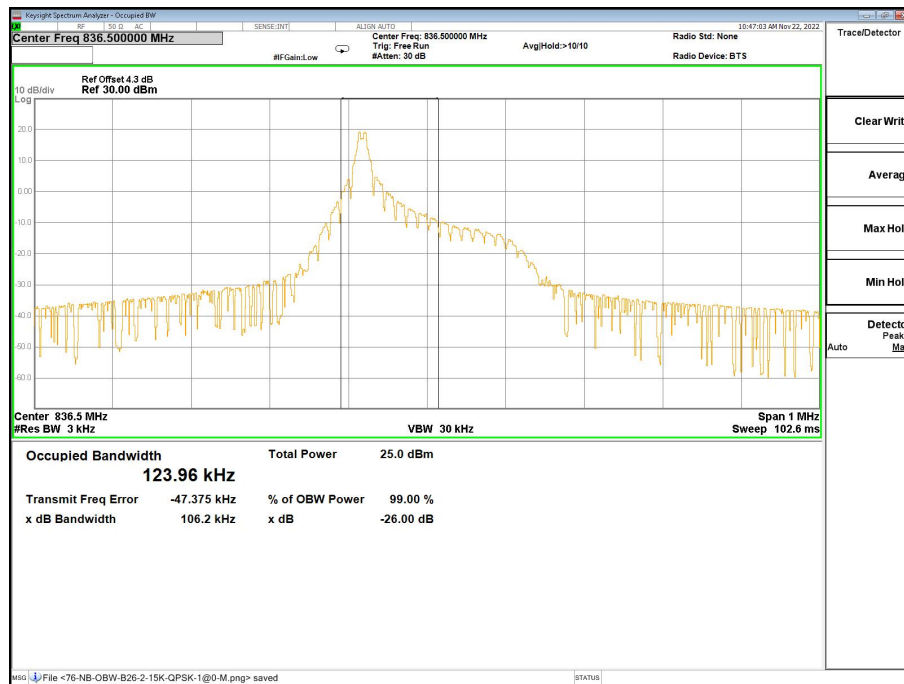
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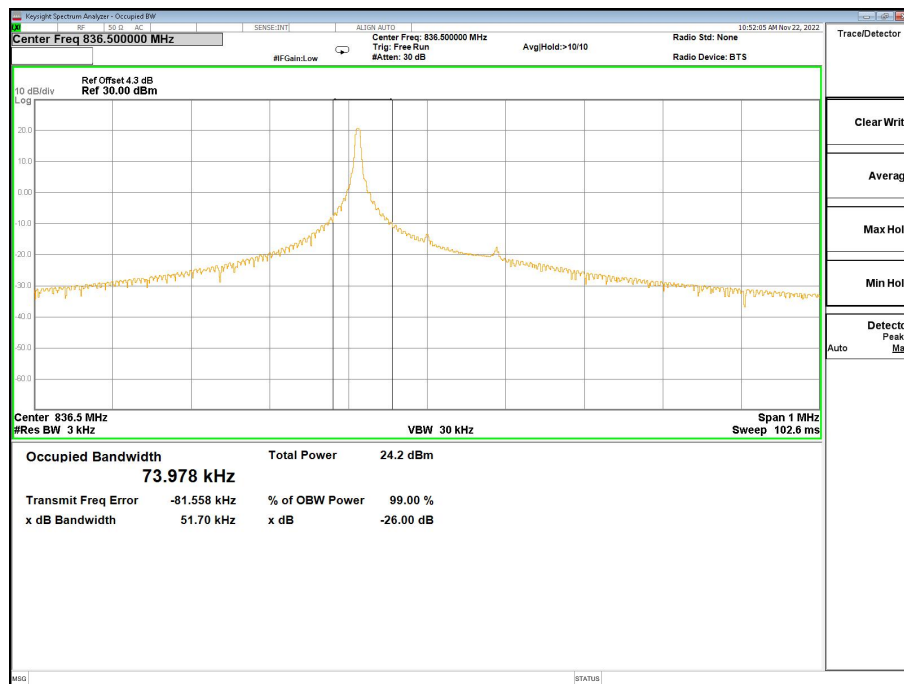
Band26-26dB/99% OBW-26792 Channel-QPSK-1@0-3.75K



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Band26-26dB/99% OBW-26915 Channel-BPSK-1@0-15K

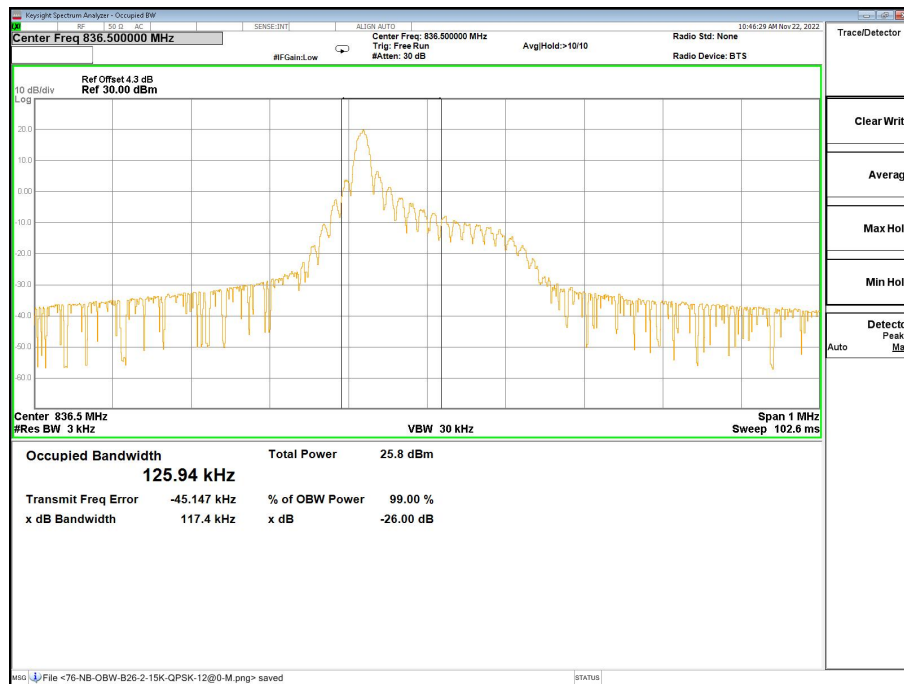


Band26-26dB/99% OBW-26915 Channel-BPSK-1@0-3.75K

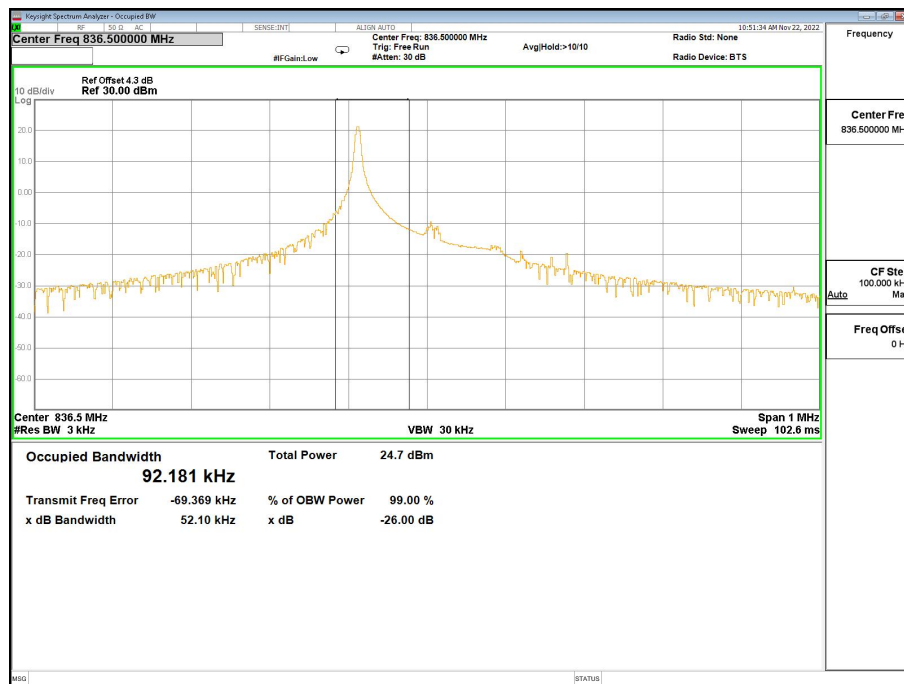
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Band26-26dB/99% OBW-26915 Channel-QPSK-1@0-15K

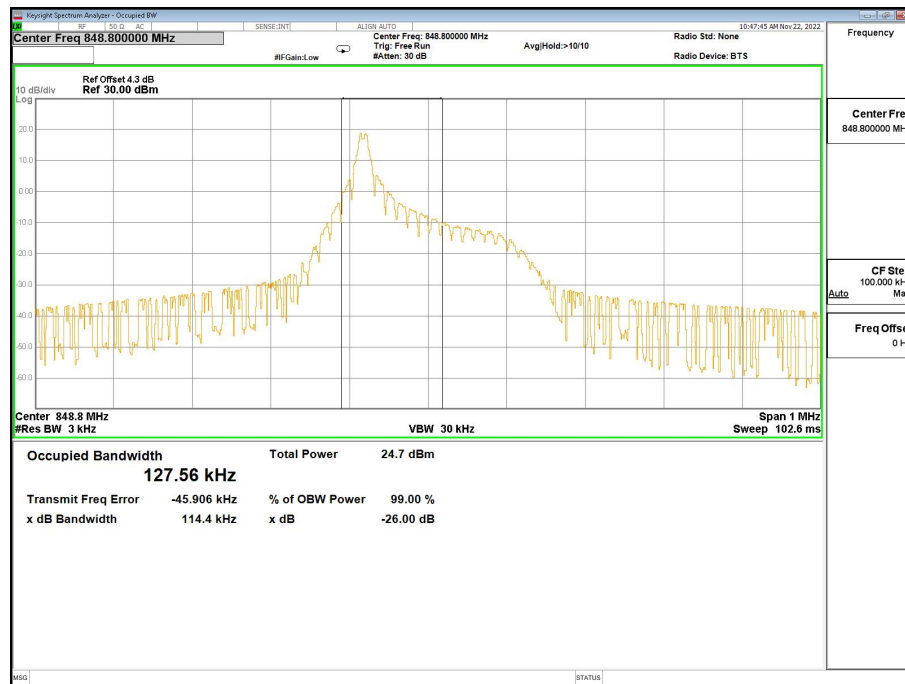


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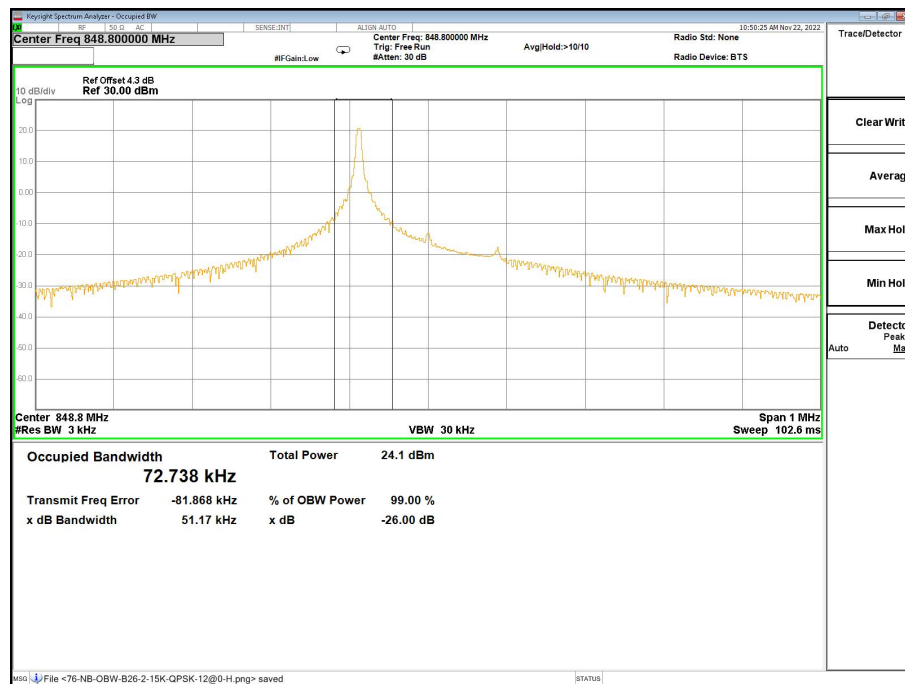
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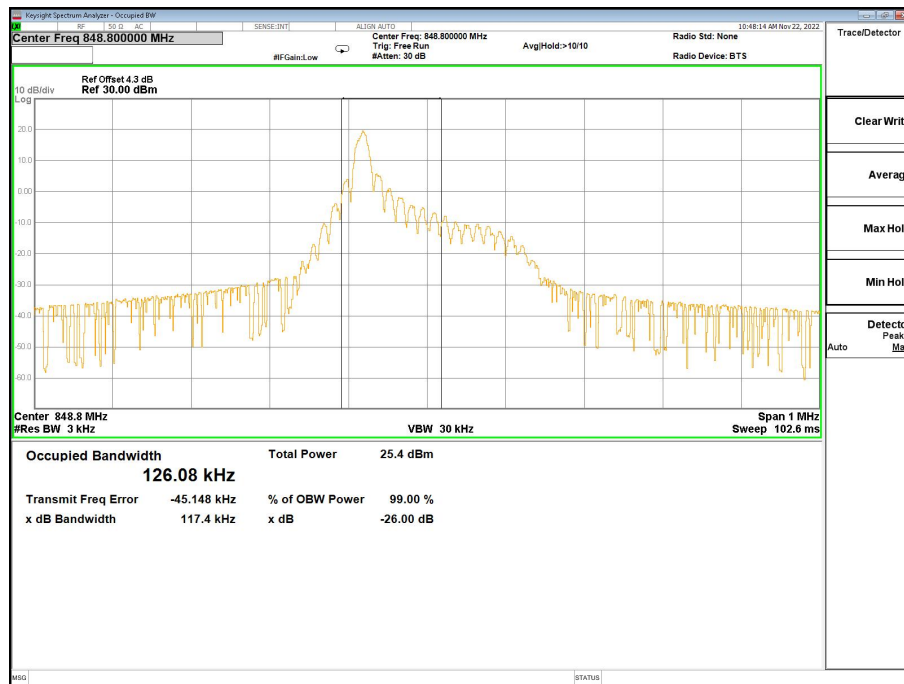
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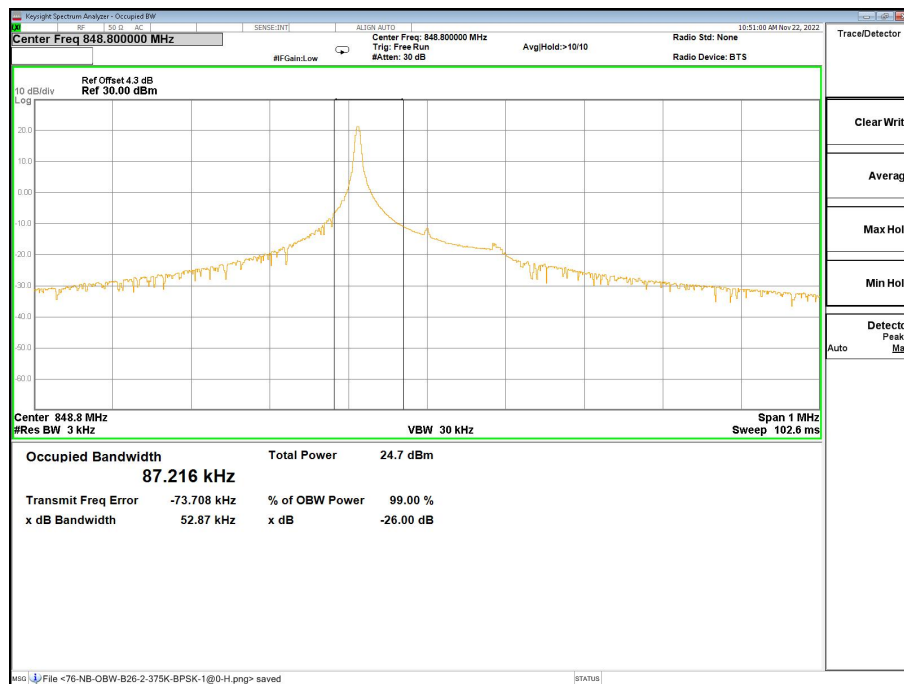
Band26-26dB/99% OBW-27038 Channel-BPSK-1@0-3.75K

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Band26-26dB/99% OBW-27038 Channel-QPSK-1@0-15K



Band26-26dB/99% OBW-27038 Channel-QPSK-1@0-3.75K

#### 6.4.1. Conducted spurious emissions

<b>Specifications:</b>	FCC Part 2.1051,24.238,2.1053,22.917, 27.53,90.691
<b>DUT Serial Number:</b>	866884049909625
<b>Test conditions:</b>	Ambient Temperature:15°C-35°C Relative Humidity:30%-60% Air pressure: 86-106kPa
<b>Test Results:</b>	Pass

##### Limit Level Construction:

**According to Part 22.917 (a)**, i.e., Out of Band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $43 + 10 \log(P)$  dB.

**According to Part 24.238 (a)**, i.e., Out of Band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $43 + 10 \log(P)$  dB, so the limit level is:  $P(\text{dBm}) - (43 + 10 \log(P)) \text{ dB} = -13 \text{ dBm}$ .

##### According to Part 27.53(c):

On any frequency outside the 776–788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least  $43 + 10 \log(P)$  dB;

##### According to Part 27.53(f):

For operations in the 746–758 MHz, 775–788 MHz, and 805–806 MHz bands, emissions in the band 1559–1610 MHz shall be limited to -70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.

##### According to Part 27.53(h):

Except as otherwise specified below, for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 2155-2180 MHz, and 2180-2200 Bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least  $43 + 10 \log_{10}(P)$  dB.

##### According to Part 27.53(g):

For operations in the 600 MHz Band and the 698-746 MHz Band, the power of any emission outside a licensee's frequency Band(s) of operation shall be attenuated below the transmitter power (P) within the licensed Band(s) of operation, measured in watts, by at least  $43 + 10 \log(P)$  dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution Bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz Bands immediately outside and adjacent to a licensee's frequency block, a resolution Bandwidth of at least 30 kHz may be employed.

##### According to Part 90.691:

(a) Out-of-band emission requirement shall apply only to the “outer” channels included in an EA license

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and to spectrum adjacent to interior channels used by incumbent licensees. The emission limits are as follows:

(1) For any frequency removed from the EA licensee's frequency block by up to and including 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least  $116 \log_{10}(f/6.1)$  decibels or  $50 + 10 \log_{10}(P)$  decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 12.5 kHz.

(2) For any frequency removed from the EA licensee's frequency block greater than 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least  $43 + 10 \log_{10}(P)$  decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 37.5 kHz.

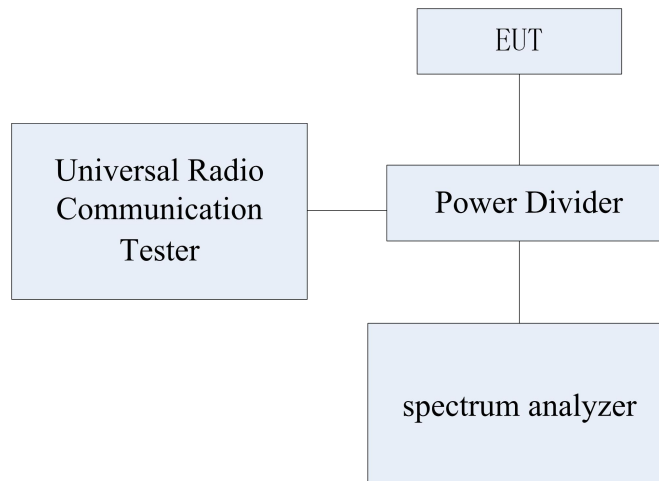
(b) When an emission outside of the authorized bandwidth causes harmful interference, the Commission may, at its discretion, require greater attenuation than specified in this section.

#### Measurement Uncertainty:

Item	Uncertainty	
Expanded Uncertainty	$9\text{kHz} < f \leq 4\text{GHz}$	0.71 dB (k=2)
	$4\text{GHz} \leq f < 12.75\text{GHz}$	0.74 dB (k=2)
	$12.75\text{GHz} \leq f < 26\text{GHz}$	2.70 dB (k=2)

#### Test Setup:

During the test, the EUT was controlled via the Wireless Communications Test Set to ensure max power transmission and proper modulation and measured by spectrum analyzer.



#### Test Method:

The RF output of the transmitter was connected to a spectrum analyzer through a calibrated coaxial cable. Sufficient scans were taken to show the out-of-Band emissions, if any, up to 10th harmonic. The EUT was

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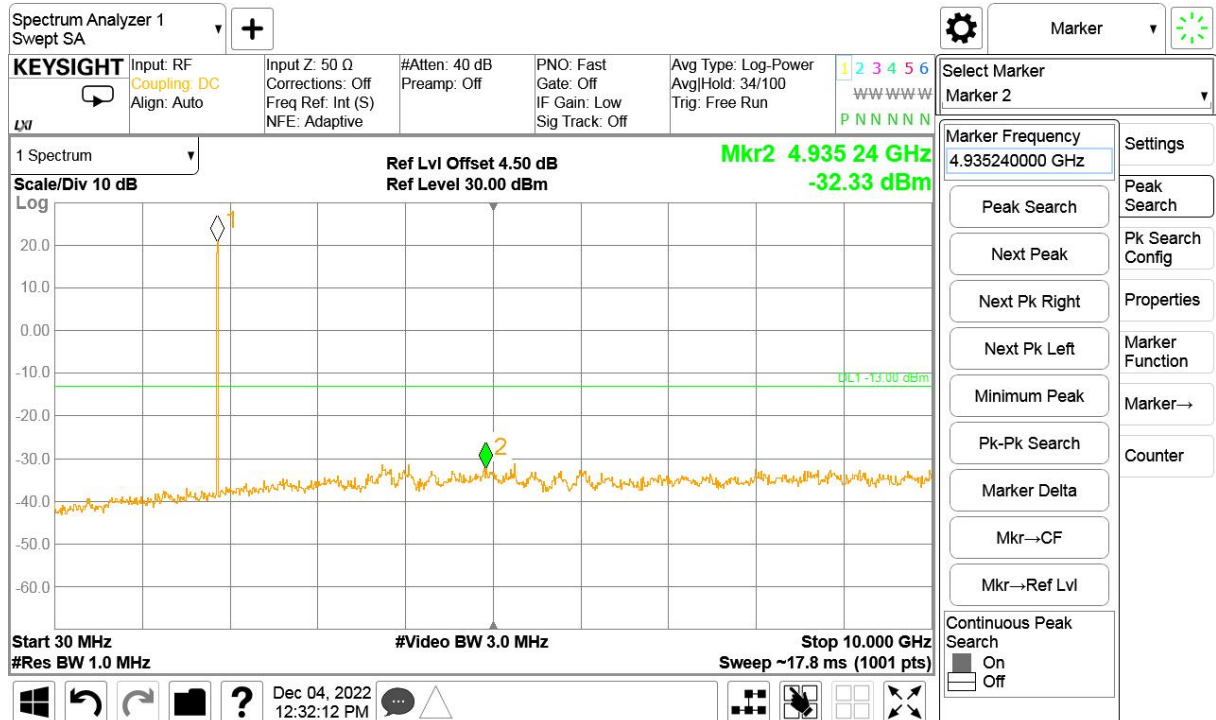
scanned for spurious emissions from 30MHz to 20GHz with sufficient Bandwidth and video resolution.  
The spectrum analyzer was set to Maximum hold mode to ensure that the worst-case emissions were captured.

**Note: --**

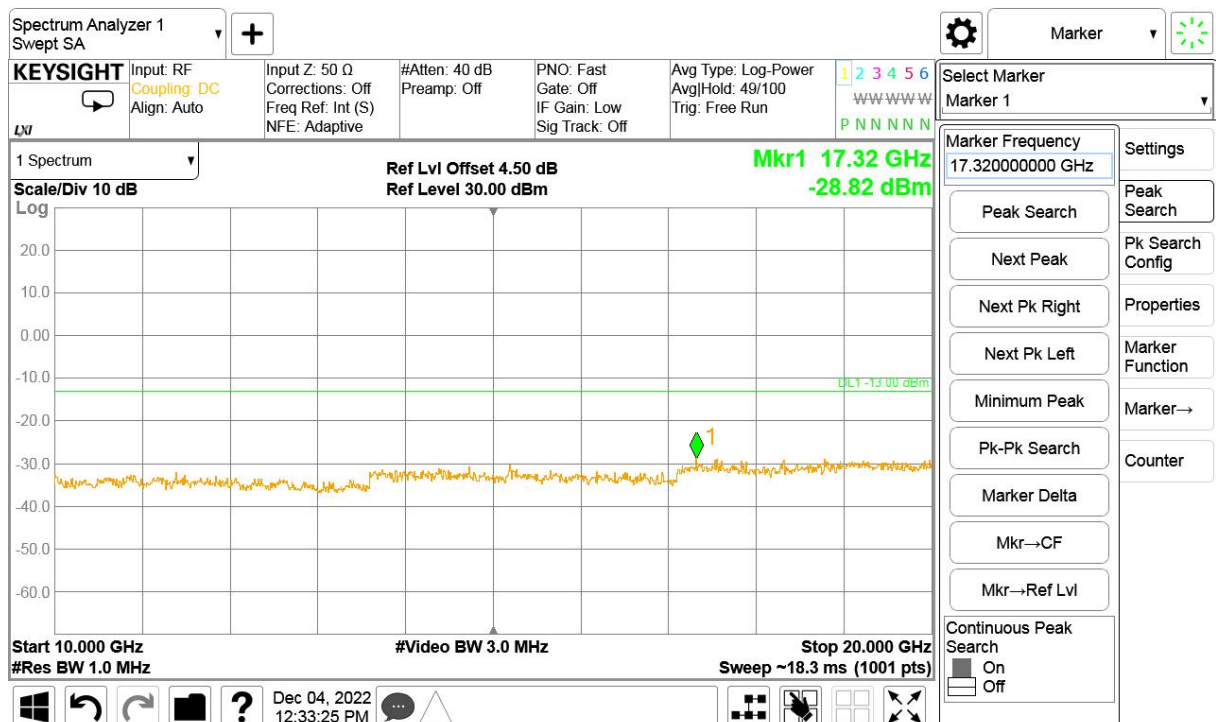
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### 6.5.1 NB-IoT B2 Conducted Spurious Emission Results



30MHz to 10GHz, Low Channel, Subcarrier (3.75kHz), QPSK, 1@0



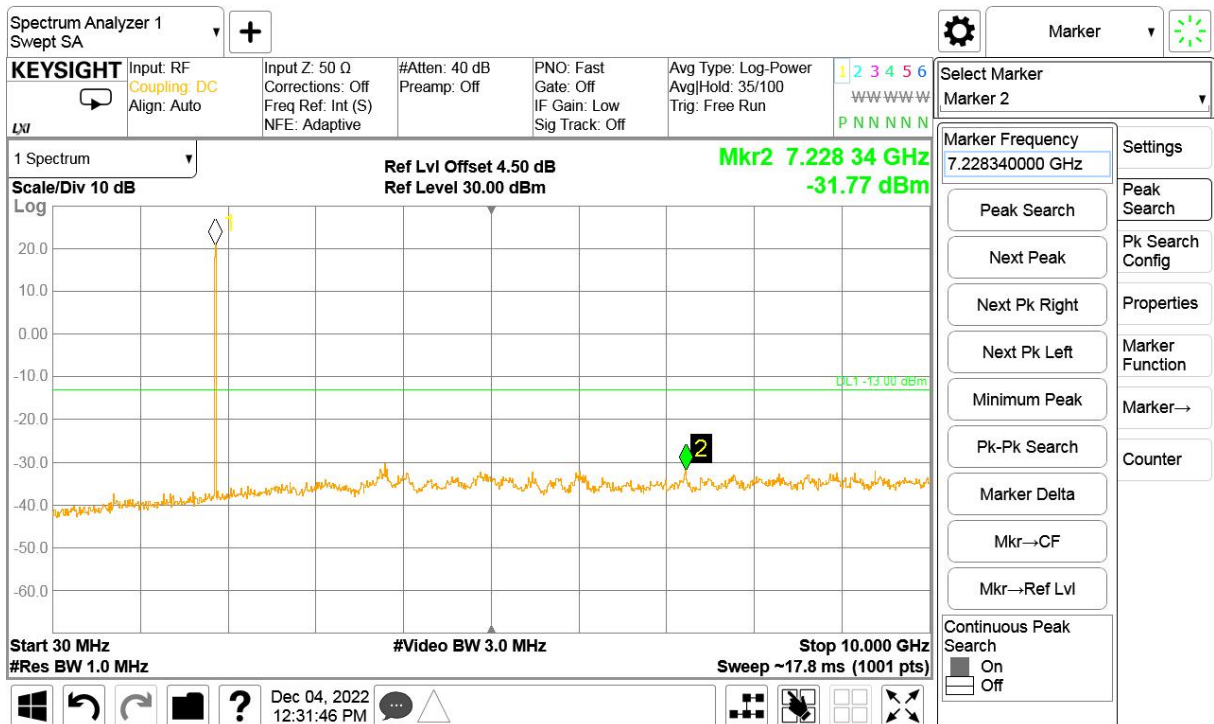
10GHz to 20GHz, Low Channel, Subcarrier (3.75kHz), QPSK, 1@0

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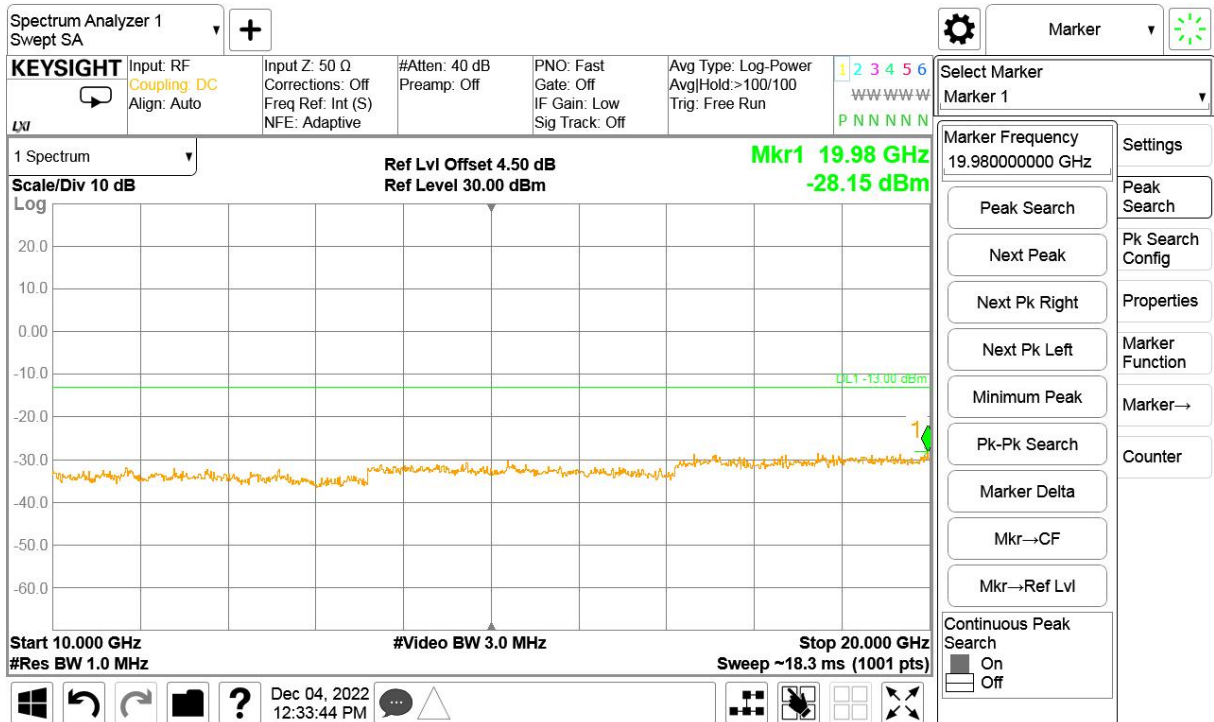
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30MHz to 10GHz, Low Channel, Subcarrier (3.75kHz), BPSK, 1@0

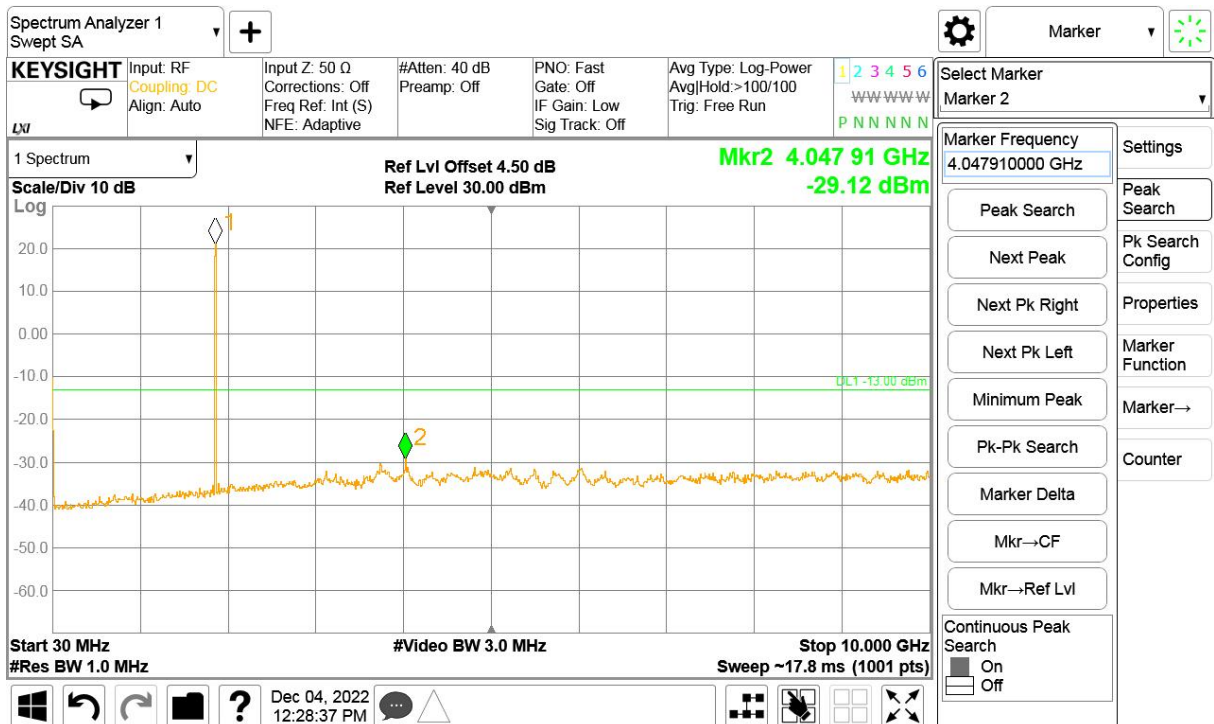


10GHz to 20GHz, Low Channel, Subcarrier (3.75kHz), BPSK, 1@0

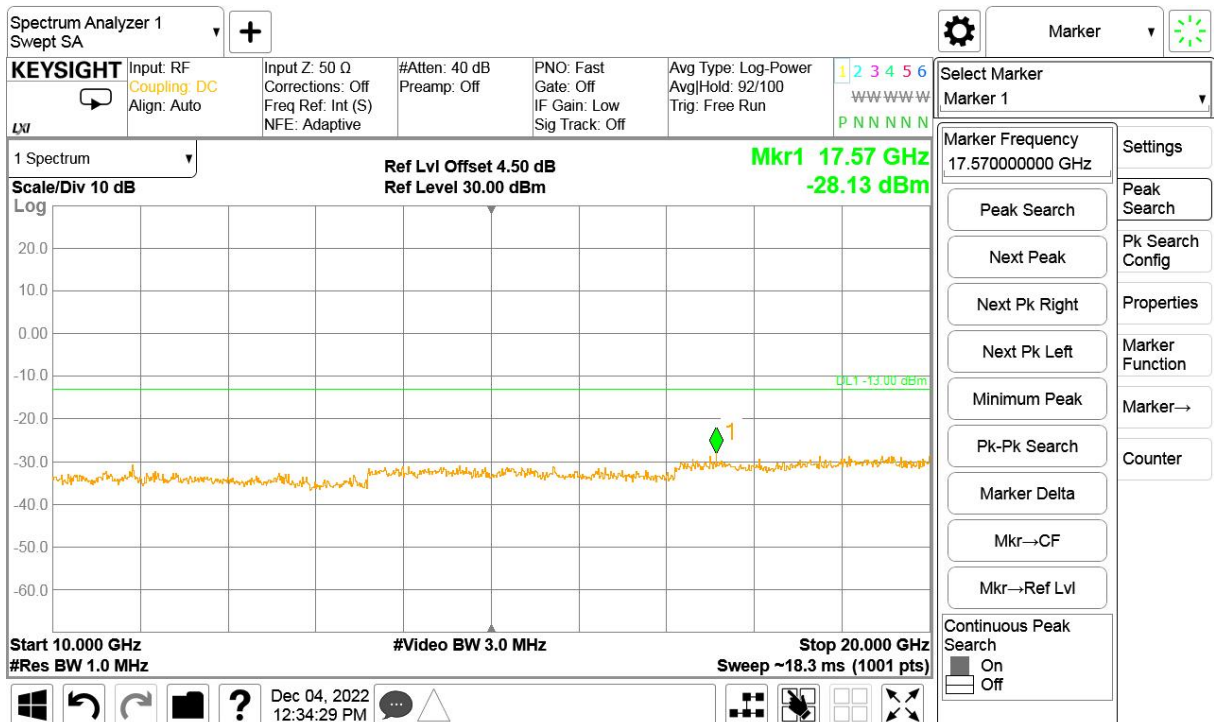
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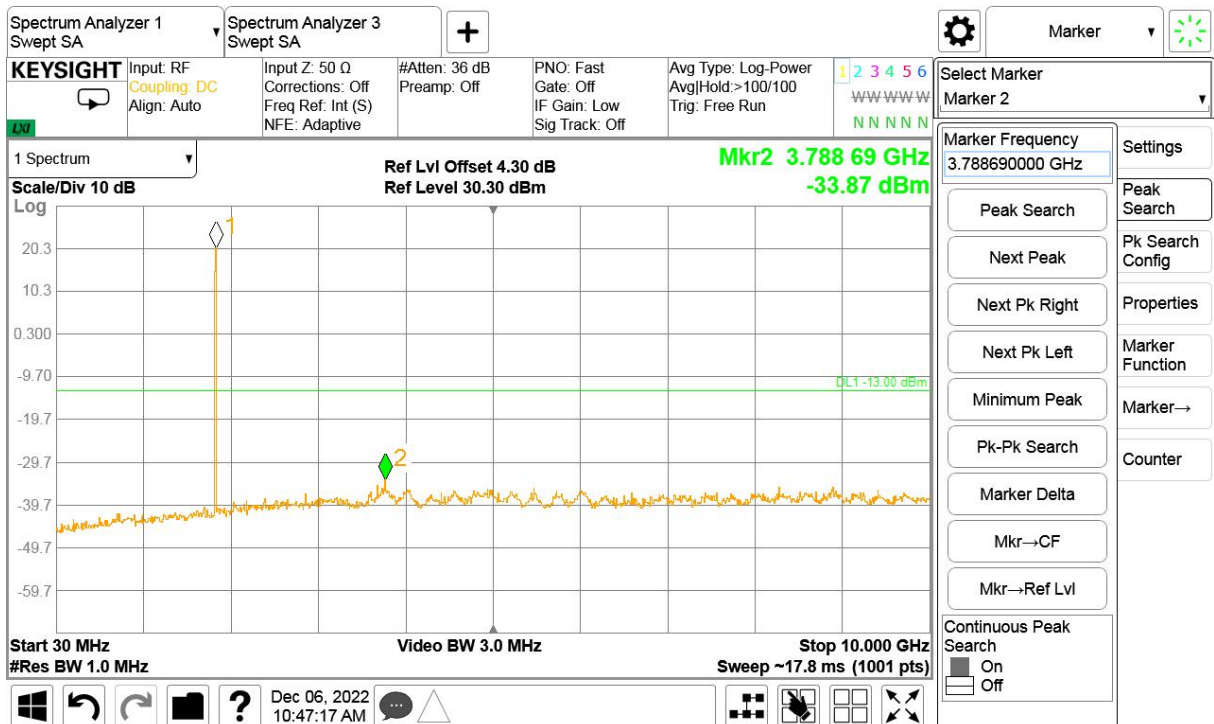
30MHz to 10GHz, Low Channel, Subcarrier (15kHz), QPSK, 1@0



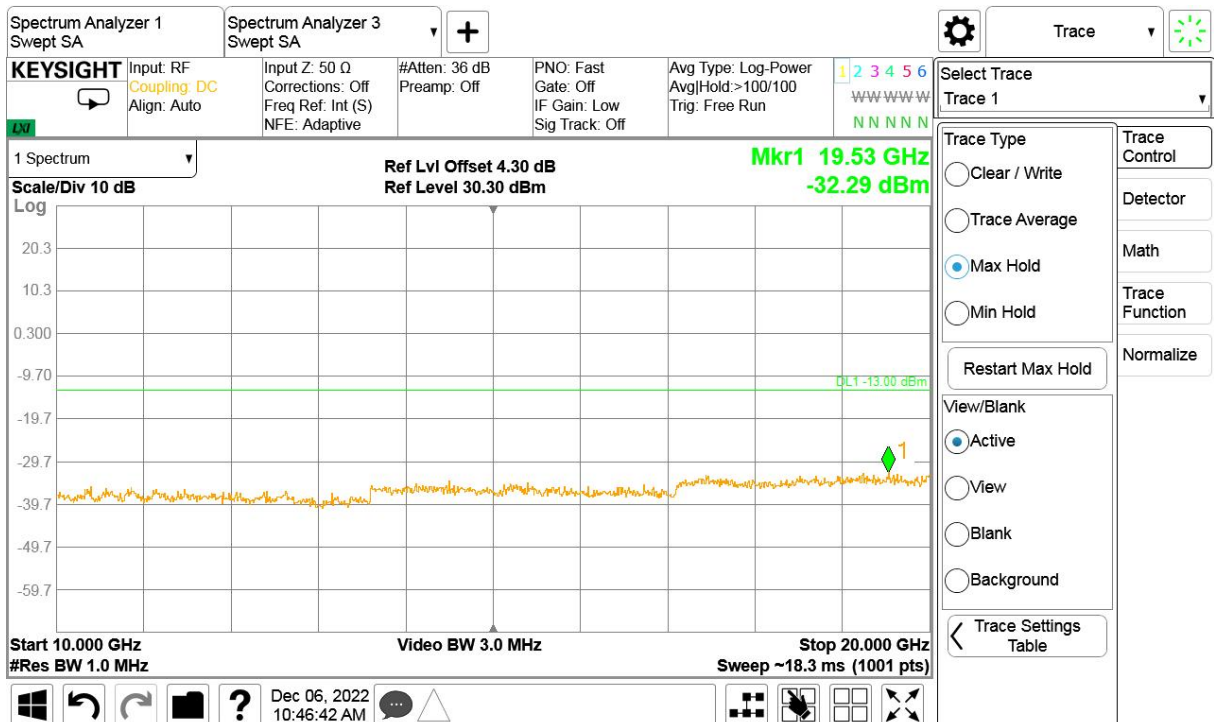
10GHz to 20GHz, Low Channel, Subcarrier (15kHz), QPSK, 1@0

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30MHz to 10GHz, Low Channel, Subcarrier (15kHz), QPSK, 12@0



10GHz to 20GHz, Low Channel, Subcarrier (15kHz), QPSK, 12@0

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