

7. Band Edge

7.1. Limit

FCC

- §22.917(a), 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.

- §24.238(a), 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.

- §27.53(g), 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.

- §27.53(h)(1), for operations in the 1 695-1 710 MHz, 1 710-1 755 MHz, 1 755-1 780 MHz, 1 915-1 920 MHz, 1 995-2 000 MHz, 2 000-2 020 MHz, 2 110-2 155 MHz, 2 155-2 180 MHz, and 2 180-2 200 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.

IC

- RSS-130 Issue 2

4.7.1, the unwanted emissions in any 100 kHz bandwidth on any frequency outside the low frequency edge and the high frequency edge of each frequency block range(s), shall be attenuated below the transmitter power, P (dB W), by at least $43 + 10 \log_{10} p$ (watts), dB. However, in the 100 kHz band immediately outside the equipment's operating frequency block range, a resolution bandwidth of 30 kHz may be employed.

- RSS-132 Issue 3

5.5, Mobile and base station equipment shall comply with the limits in (i) and (ii) below.

(i) In the first 1.0 MHz band immediately outside and adjacent to each of the sub-bands specified in Section 5.1, the power of emissions per any 1 % of the occupied bandwidth shall be attenuated (in dB) below the transmitter output power P (dB W) by at least $43 + 10 \log_{10} p$ (watts).

(ii) After the first 1.0 MHz immediately outside and adjacent to each of the sub-bands, the power of emissions in any 100 kHz bandwidth shall be attenuated (in dB) below the transmitter output power P (dB W) by at least $43 + 10 \log_{10} p$ (watts). If the measurement is performed using 1 % of the occupied bandwidth, power integration over 100 kHz is required.

- RSS-133 Issue 6

6.5, Equipment shall comply with the limits in (i) and (ii) below.

(i) In the 1.0 MHz bands immediately outside and adjacent to the equipment's operating frequency block, the emission power per any 1 % of the emission bandwidth shall be attenuated (in dB) below the transmitter output power P (dB W) by at least $43 + 10 \log_{10} p$ (watts).

(ii) After the first 1.0 MHz, the emission power in any 1 MHz bandwidth shall be attenuated (in dB) below the transmitter output power P (dB W) by at least $43 + 10 \log_{10} p$ (watts). If the measurement is performed using 1 % of the emission bandwidth, power integration over 1.0 MHz is required.

- RSS-139 Issue 3

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6.6, (i) In the first 1.0 MHz bands immediately outside and adjacent to the equipment's smallest operating frequency block, which can contain the equipment's occupied bandwidth, the emission power per any 1 % of the emission bandwidth shall be attenuated below the transmitter output power P (in dB W) by at least $43 + 10 \log_{10} p$ (watts) dB.

(ii) After the first 1.0 MHz outside the equipment's smallest operating frequency block, which can contain the equipment's occupied bandwidth, the emission power in any 1 MHz bandwidth shall be attenuated below the transmitter output power P (in dB W) by at least $43 + 10 \log_{10} p$ (watts) dB.

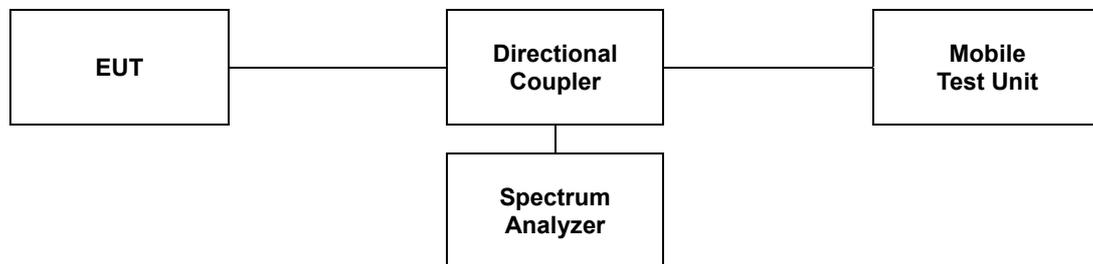
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7.2. Test Procedure

The test follows section 5.7 of ANSI C63.26-2015.

- a. Span was set large enough so as to capture all out of band emissions near the band edge.
- b. RBW $\geq 1\%$ of OBW
- c. VBW $\geq 3 \times$ RBW.
- d. Detector = RMS.
- e. Trace mode = Average.
- f. Sweep time = Auto.
- g. The trace was allowed to stabilize.
- h. All path loss of frequency range was investigated and compensated to spectrum analyzer as TDF function.



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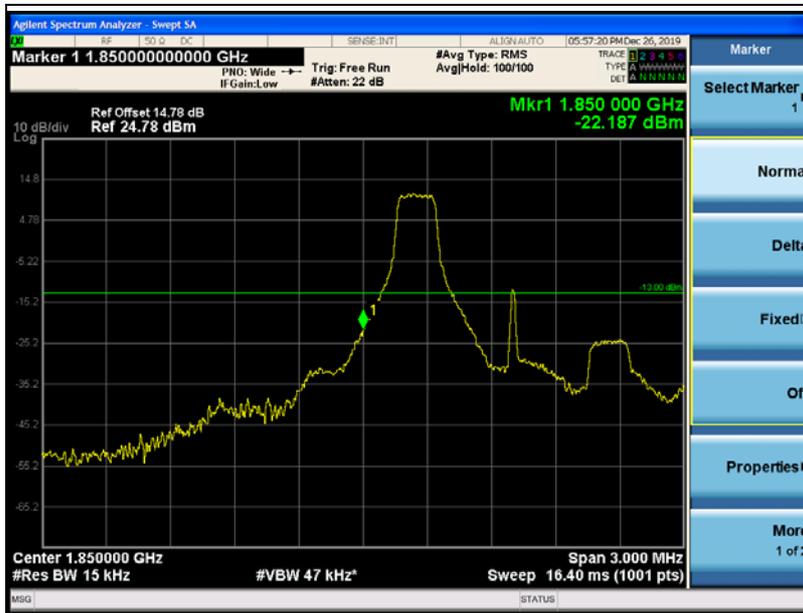
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7.3. Test Results

Ambient temperature : (23 ± 1) °C
 Relative humidity : 47 % R.H.

LTE band 2 (1.4 MHz - QPSK_RB 6, RB 1)

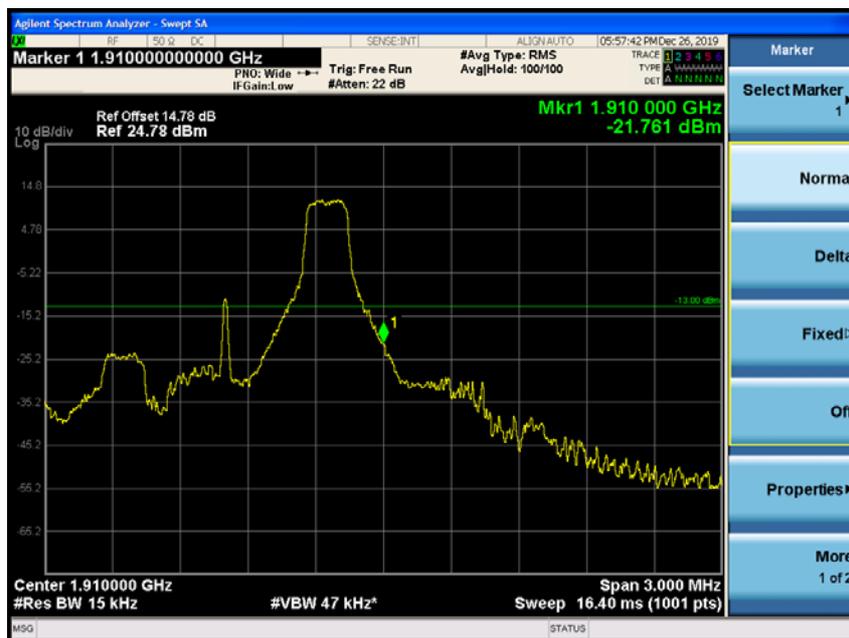
Low Channel



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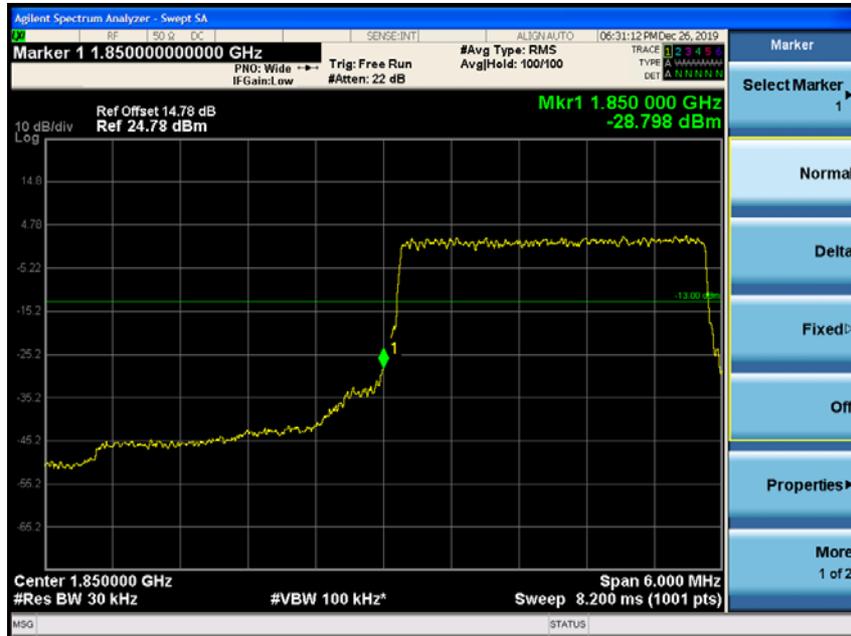
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LTE band 2 (3 MHz - QPSK_RB 15, RB 1)

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LTE band 2 (3 MHz - QPSK_RB 15, RB 1)

High Channel

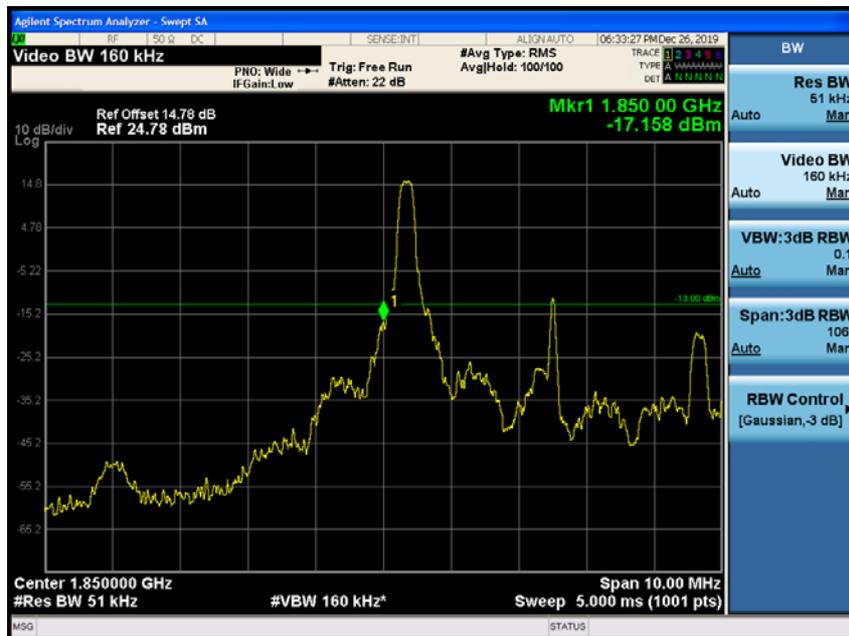
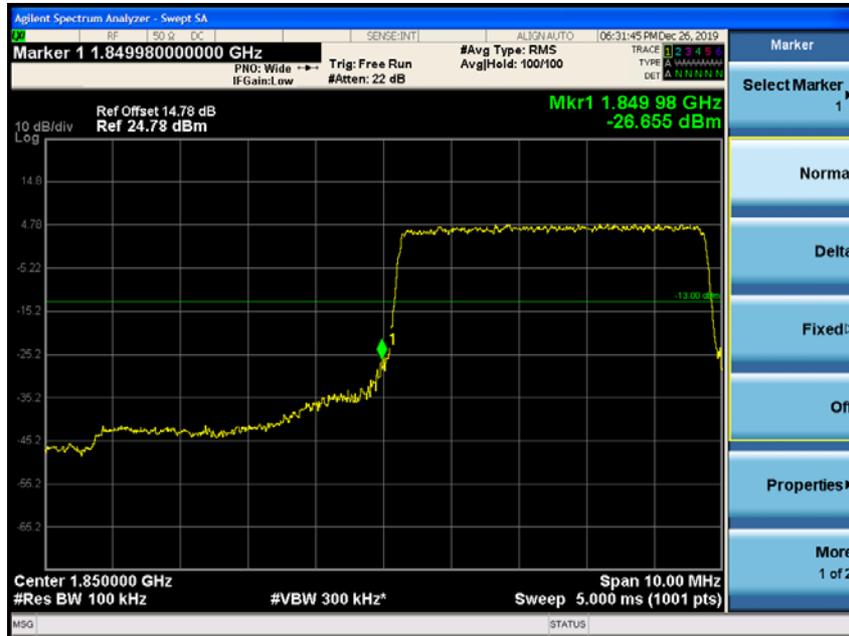


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LTE band 2 (5 MHz - QPSK_RB 25, RB 1)

Low Channel



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LTE band 2 (5 MHz - QPSK_RB 25, RB 1)

High Channel

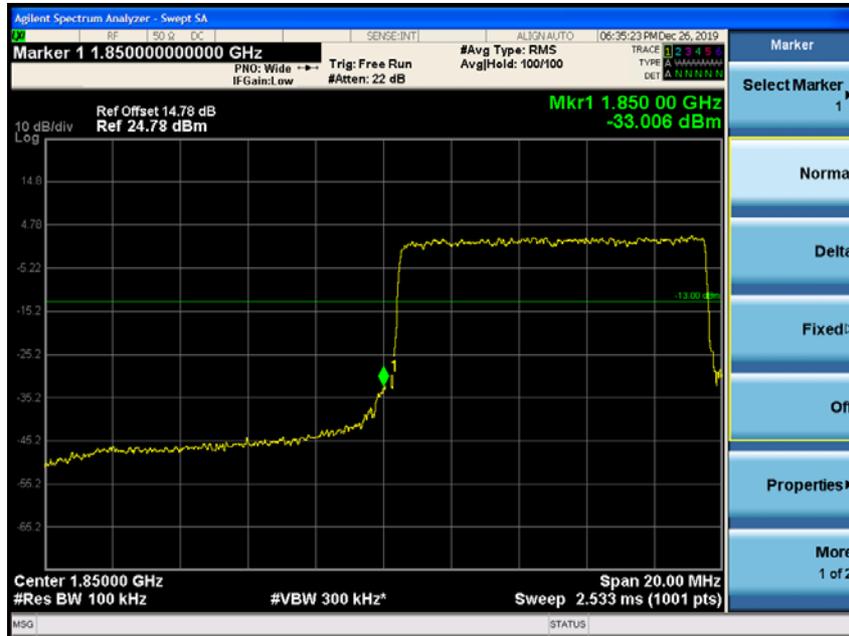


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LTE band 2 (10 MHz - QPSK_RB 50, RB 1)

Low Channel



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LTE band 2 (15 MHz - QPSK_RB 75, RB 1)

Low Channel



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LTE band 2 (15 MHz - QPSK_RB 75, RB 1)

High Channel



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LTE band 2 (20 MHz - QPSK_RB 100, RB 1)

Low Channel



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LTE band 2 (20 MHz - QPSK_RB 100, RB 1)

High Channel

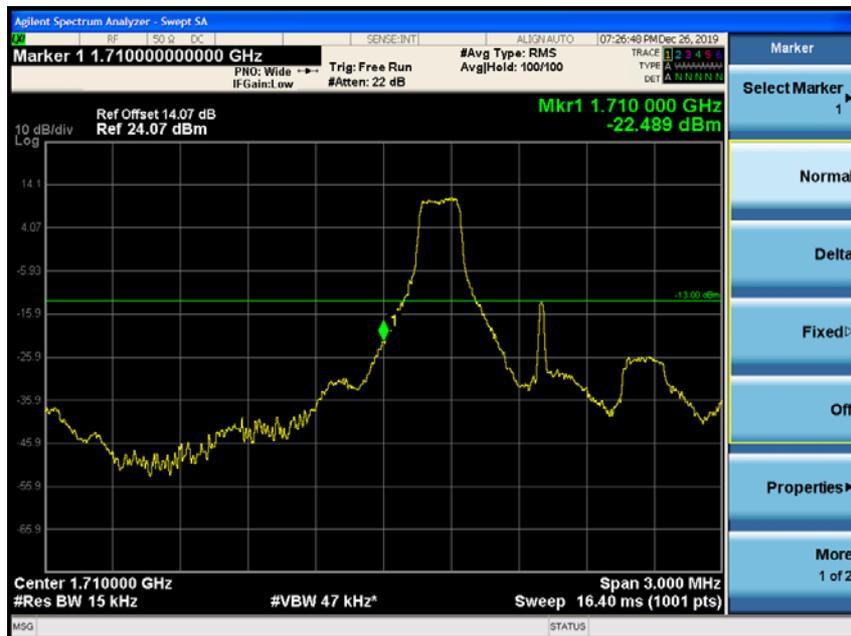


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LTE band 4 (1.4 MHz - QPSK_RB 6, RB 1)

Low Channel



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LTE band 4 (1.4 MHz - QPSK_RB 6, RB 1)

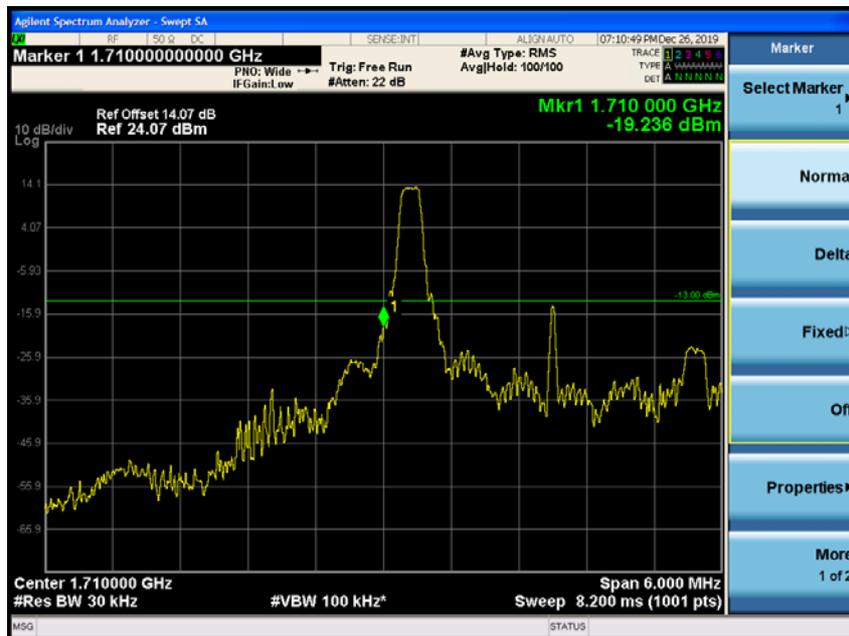
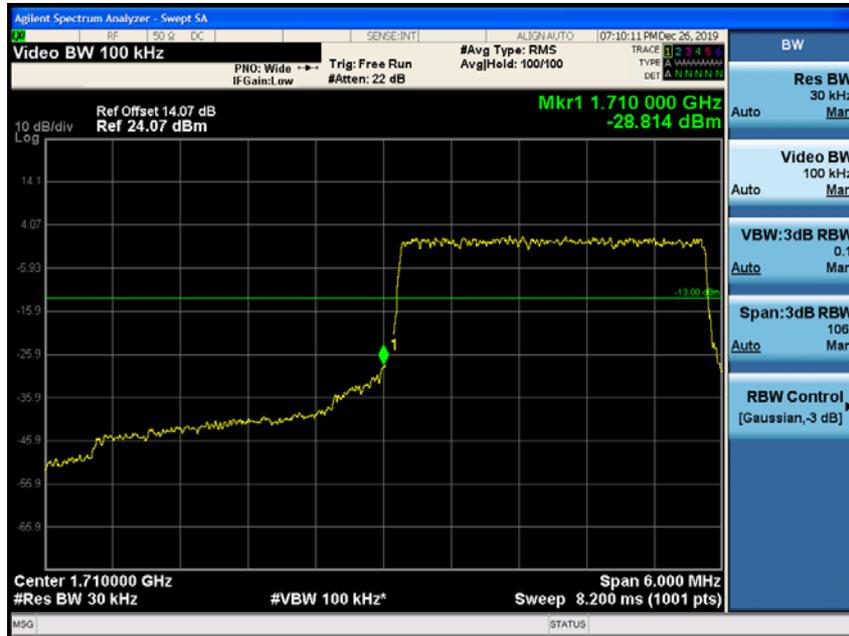
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LTE band 4 (3 MHz - QPSK_RB 15, RB 1)

Low Channel



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LTE band 4 (5 MHz - QPSK_RB 25, RB 1)

Low Channel



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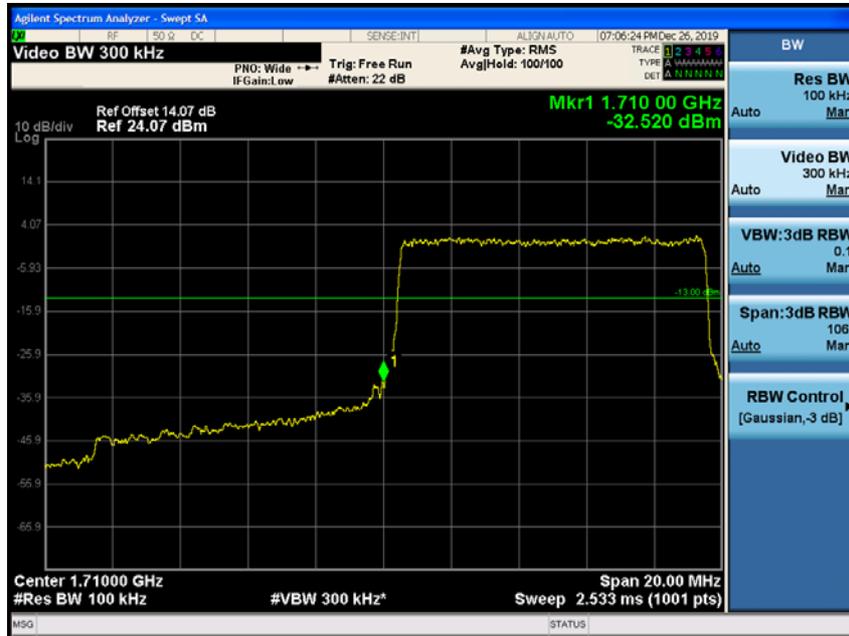
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LTE band 4 (10 MHz - QPSK_RB 50, RB 1)

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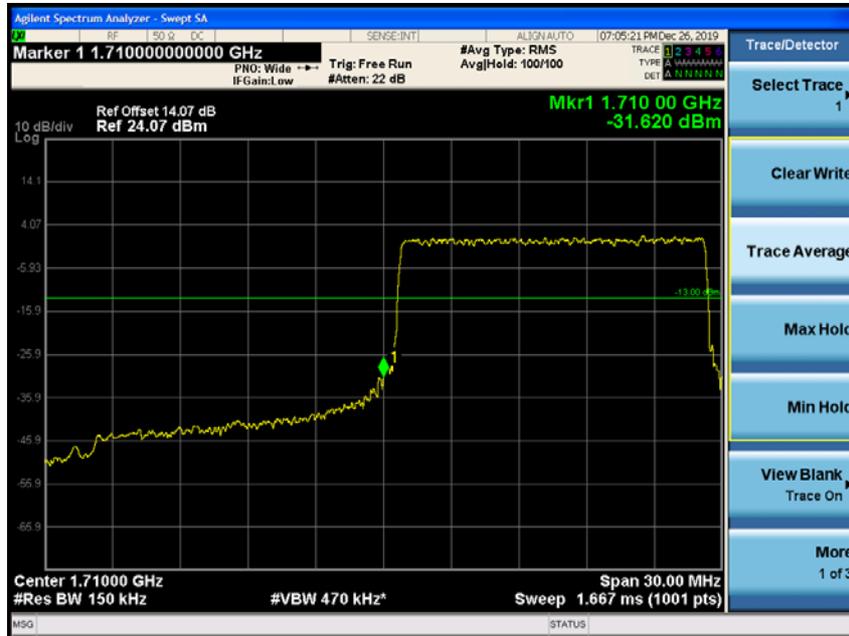
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LTE band 4 (15 MHz - QPSK_RB 75, RB 1)

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