

4.7 Conducted Spurious Emissions

4.7.1 Limits of Conducted Spurious Emissions Measurement

For n71:

According to FCC 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.

For LTE Band 2:

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. The emission limit equal to -13dBm .

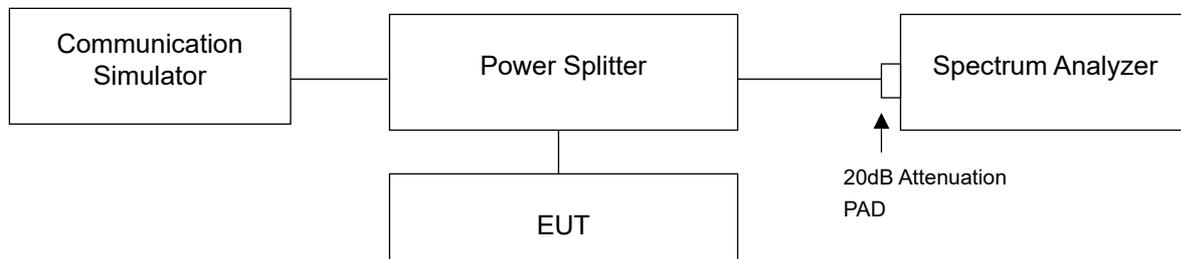
For LTE Band 7:

In the FCC 27.53(m)(4), On any frequency outside a licensee's frequency block, The power of any emission shall be attenuated below the transmitter power (P) by at least $55 + 10 \log(P)$ dB. The emission limit equal to -25dBm .

For LTE Band 66:

In the FCC 27.53(h), On any frequency outside a licensee's frequency block, The power of any emission shall be attenuated below the transmitter power (P) by at least $43 + 10 \log(P)$ dB. The emission limit equal to -13dBm .

4.7.2 Test Setup



4.7.3 Test Procedure

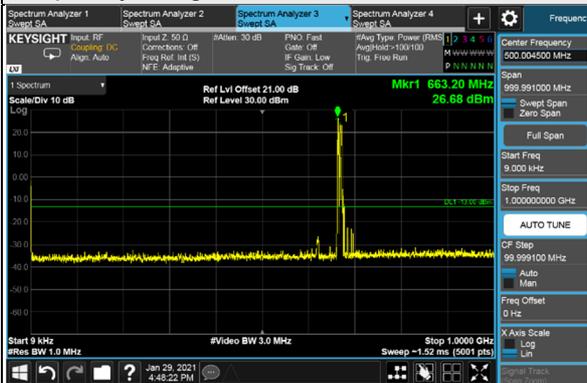
- The EUT makes a phone call to the communication simulator. All measurements were done at low, middle and high operational frequency range.
- Measuring frequency range is from 9kHz to 10GHz / 18GHz / 20GHz / 26GHz. 20dB attenuation pad is connected with spectrum. RBW=1MHz and VBW=3MHz is used for conducted emission measurement.

4.7.4 Test Results

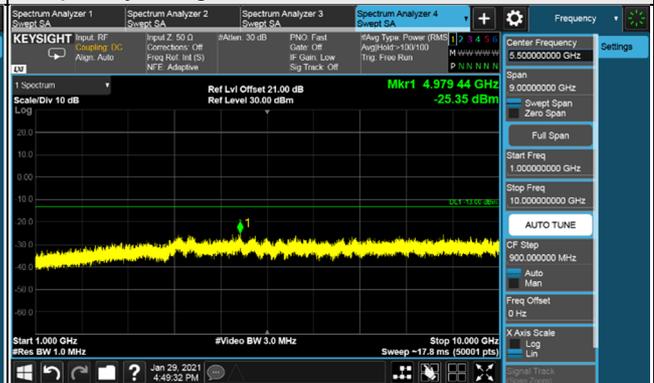
n71, Channel Band width: 5MHz

Channel 133100 (665.5MHz)

Frequency Range : 9kHz ~ 1GHz

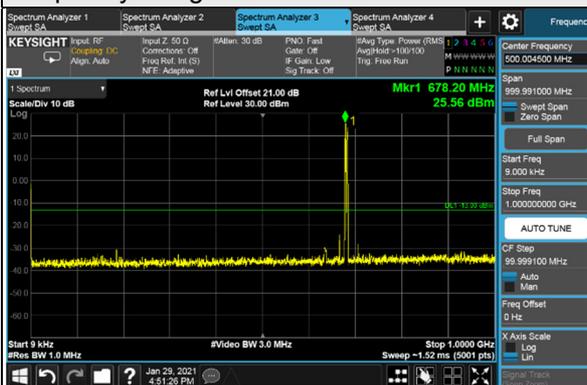


Frequency Range : 1GHz ~ 10GHz

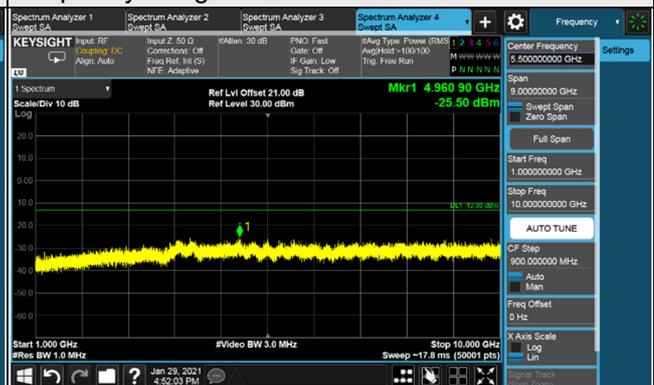


Channel 136100 (680.5MHz)

Frequency Range : 9kHz ~ 1GHz

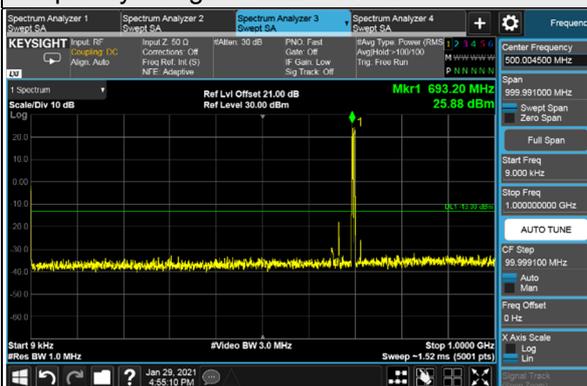


Frequency Range : 1GHz ~ 10GHz

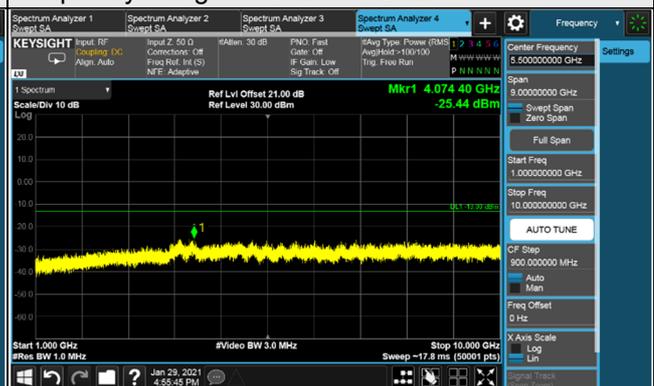


Channel 139100 (695.5MHz)

Frequency Range : 9kHz ~ 1GHz



Frequency Range : 1GHz ~ 10GHz

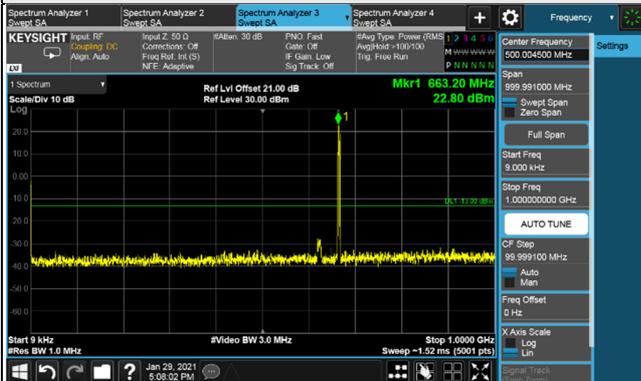


*The 9kHz signal over the limit is from Spectrum.

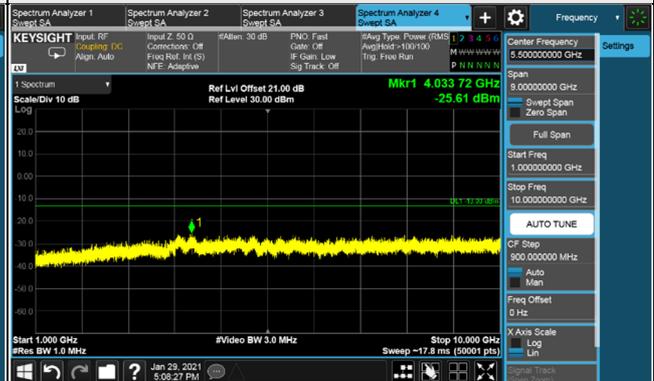
n71, Channel Band width: 10MHz

Channel 133600 (668.0MHz)

Frequency Range : 9kHz ~ 1GHz

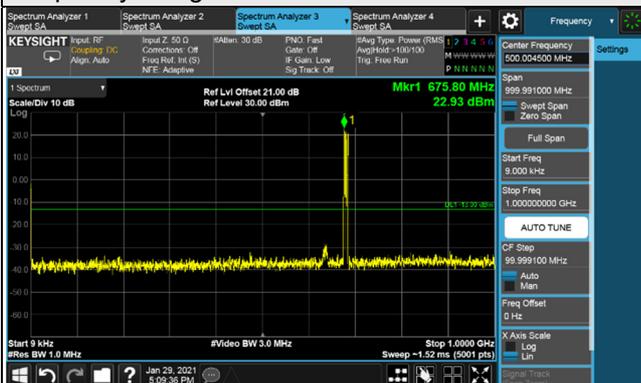


Frequency Range : 1GHz ~ 10GHz

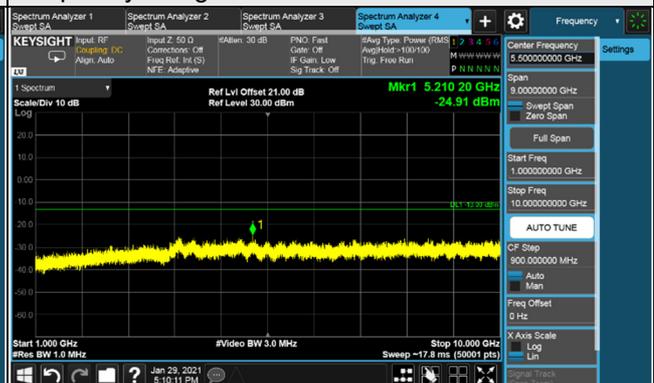


Channel 136100 (680.5MHz)

Frequency Range : 9kHz ~ 1GHz

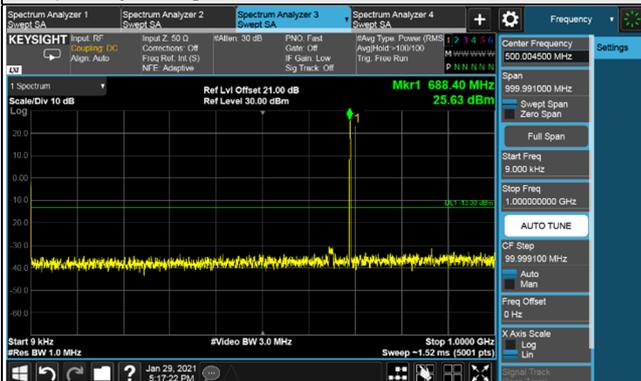


Frequency Range : 1GHz ~ 10GHz

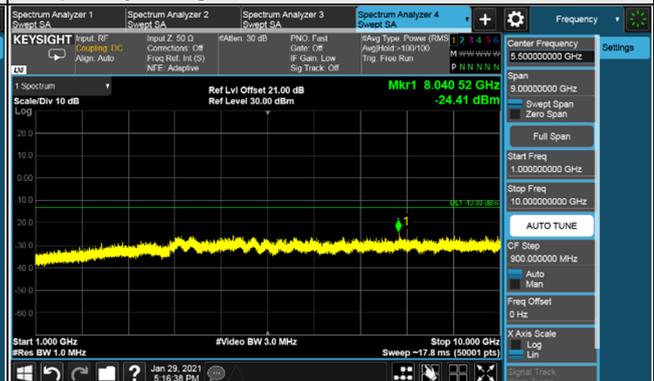


Channel 138600 (693.0MHz)

Frequency Range : 9kHz ~ 1GHz



Frequency Range : 1GHz ~ 10GHz

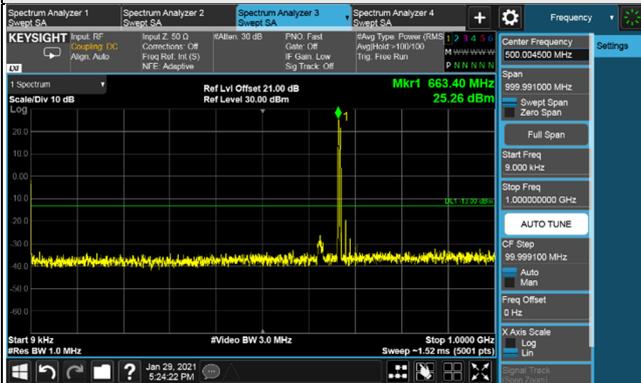


*The 9kHz signal over the limit is from Spectrum.

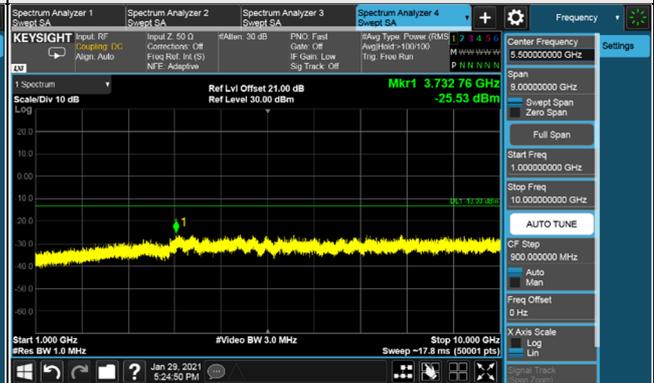
n71, Channel Band width: 15MHz

Channel 134100 (670.5MHz)

Frequency Range : 9kHz ~ 1GHz

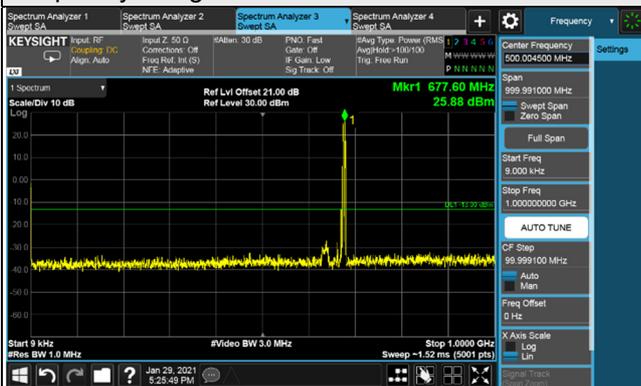


Frequency Range : 1GHz ~ 10GHz

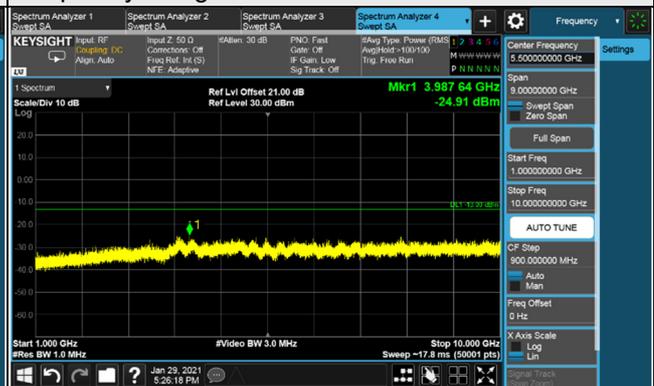


Channel 136100 (680.5MHz)

Frequency Range : 9kHz ~ 1GHz

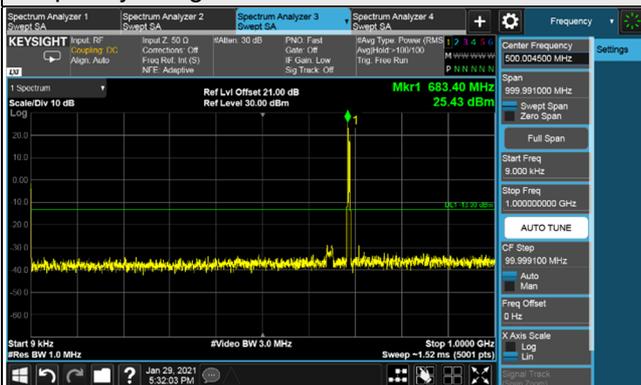


Frequency Range : 1GHz ~ 10GHz

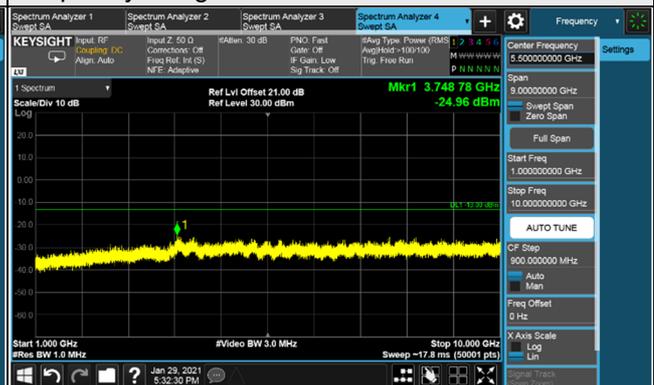


Channel 138100 (690.5MHz)

Frequency Range : 9kHz ~ 1GHz



Frequency Range : 1GHz ~ 10GHz

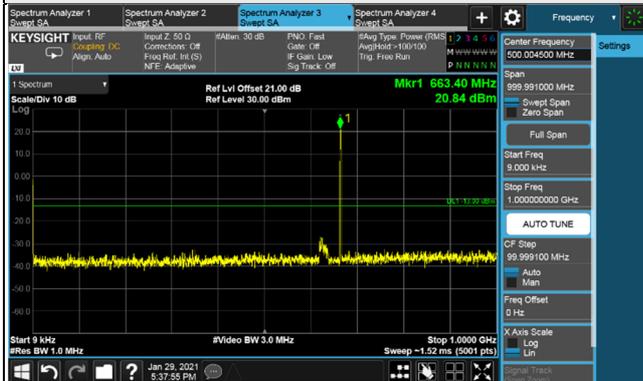


*The 9kHz signal over the limit is from Spectrum.

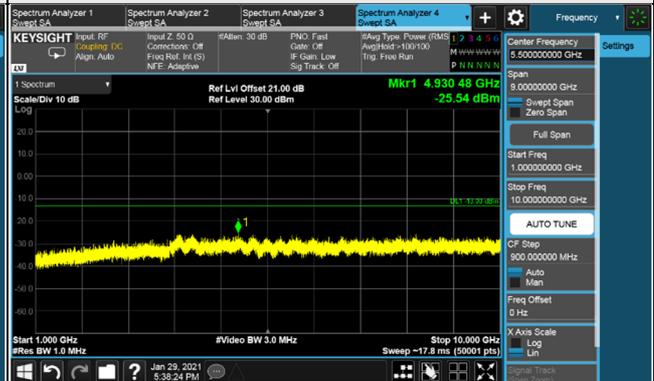
n71, Channel Band width: 20MHz

Channel 134600 (673.0MHz)

Frequency Range : 9kHz ~ 1GHz

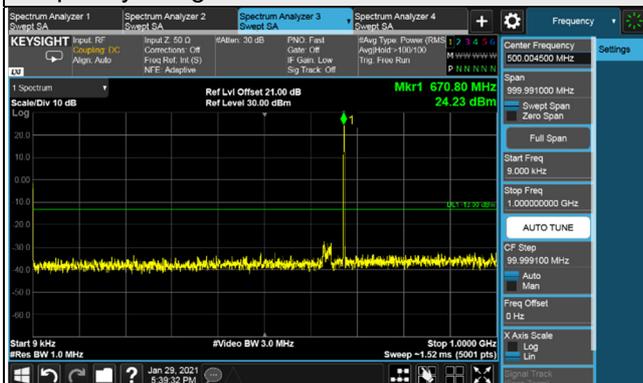


Frequency Range : 1GHz ~ 10GHz

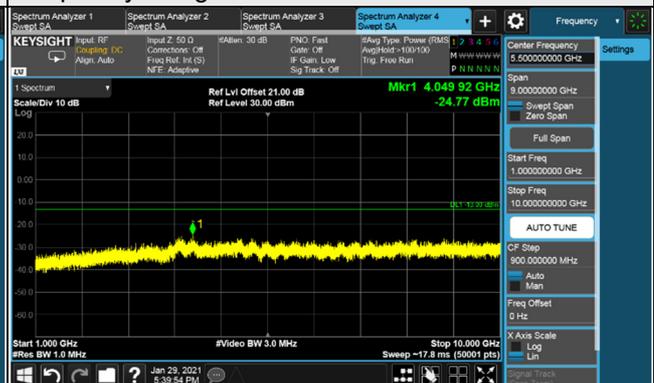


Channel 136100 (680.5MHz)

Frequency Range : 9kHz ~ 1GHz

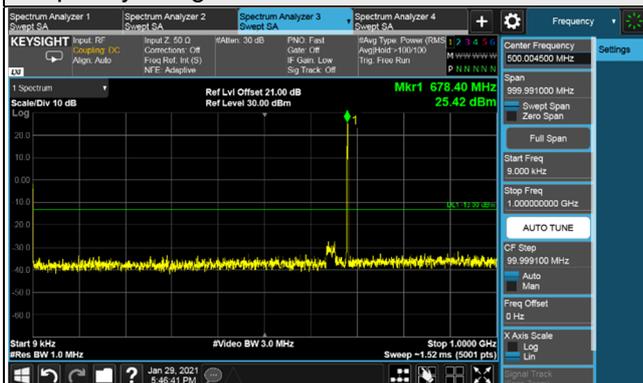


Frequency Range : 1GHz ~ 10GHz

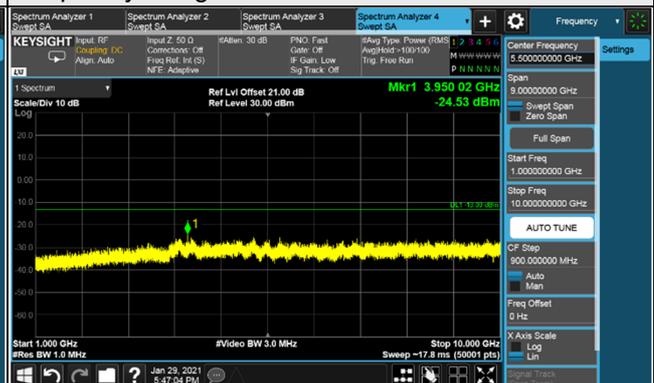


Channel 137600 (688.0MHz)

Frequency Range : 9kHz ~ 1GHz



Frequency Range : 1GHz ~ 10GHz

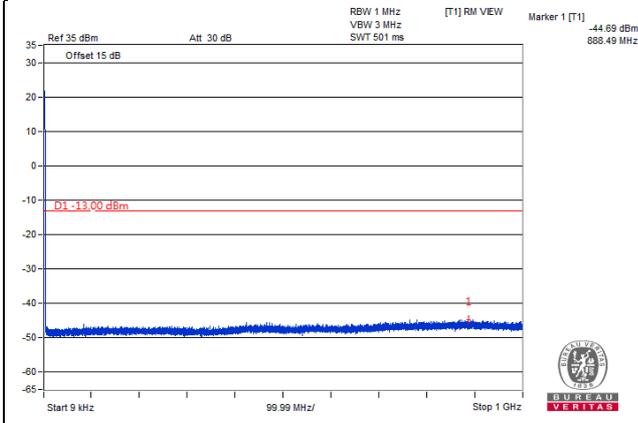


*The 9kHz signal over the limit is from Spectrum.

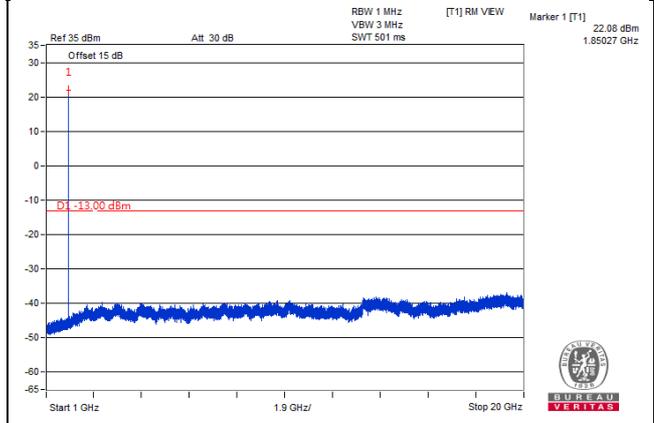
LTE Band 2, Channel Bandwidth 1.4MHz

Channel 18607 (1850.70MHz)

Frequency Range : 9kHz ~ 1GHz

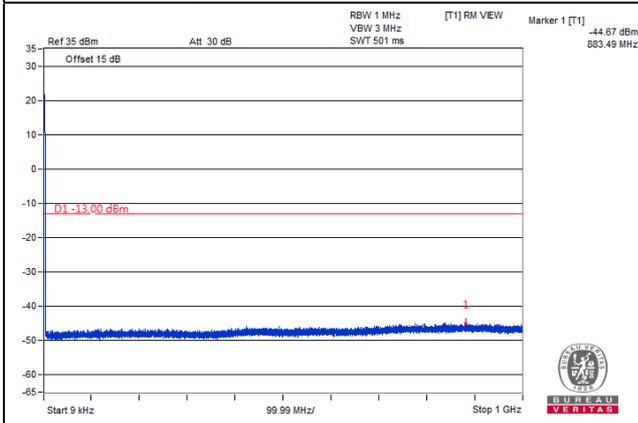


Frequency Range : 1GHz ~ 20GHz

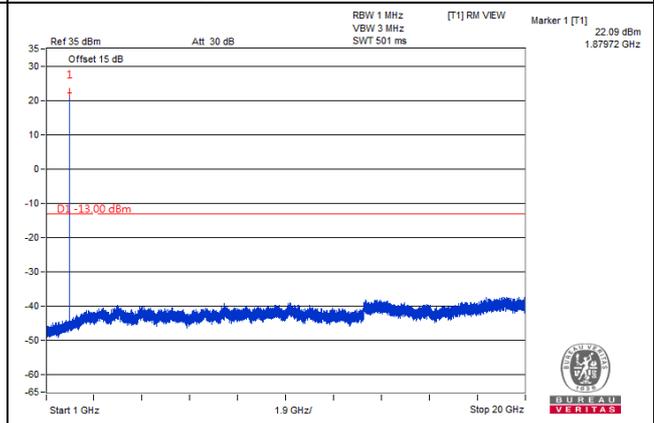


Channel 18900 (1880.0MHz)

Frequency Range : 9kHz ~ 1GHz

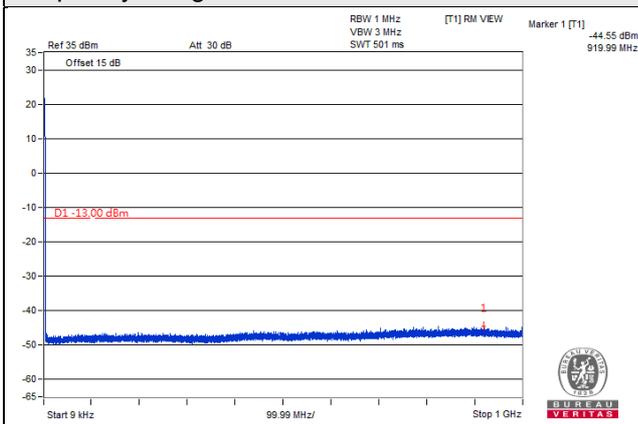


Frequency Range : 1GHz ~ 20GHz

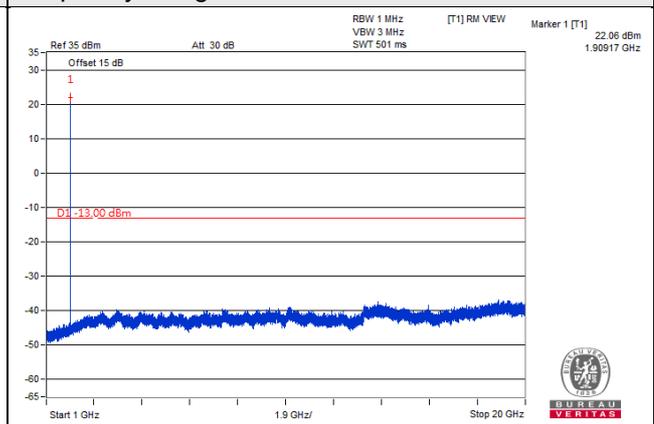


Channel 19193 (1909.30MHz)

Frequency Range : 9kHz ~ 1GHz



Frequency Range : 1GHz ~ 20GHz

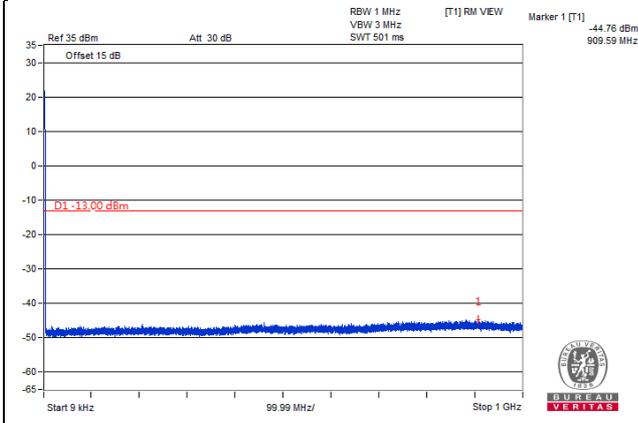


*The 9kHz signal over the limit is from Spectrum.

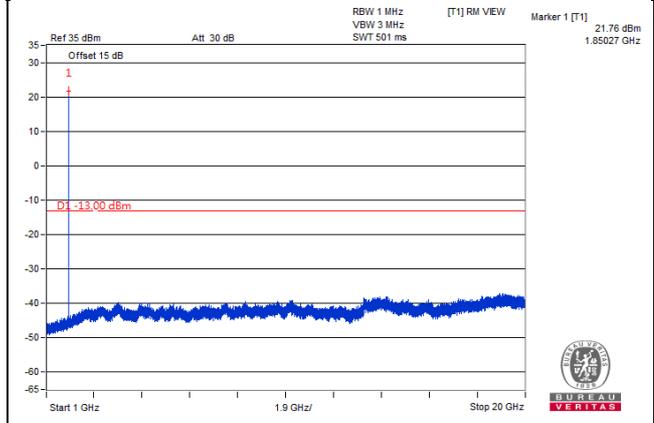
LTE Band 2, Channel Bandwidth 3MHz

Channel 18615 (1851.50MHz)

Frequency Range : 9kHz ~ 1GHz

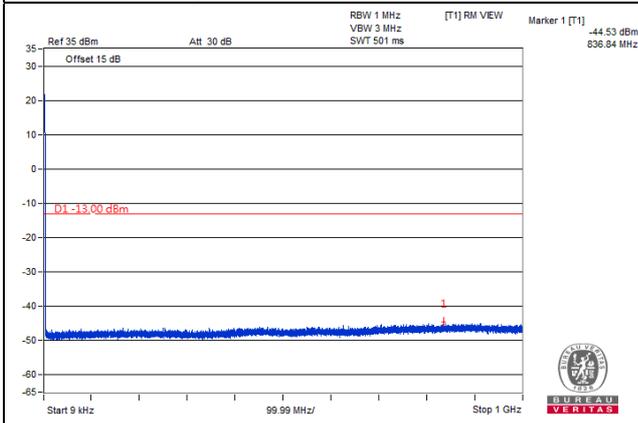


Frequency Range : 1GHz ~ 20GHz

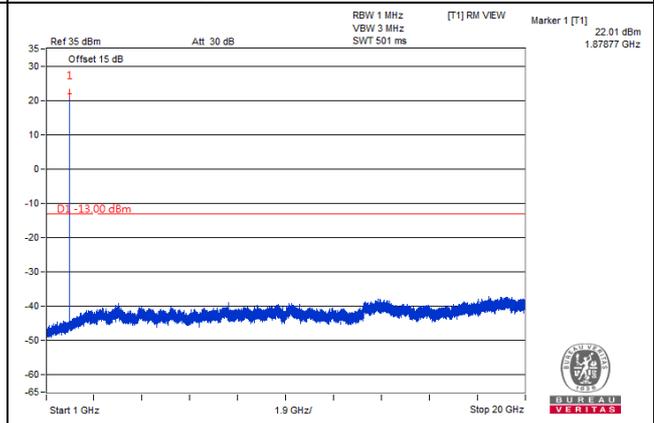


Channel 18900 (1880.0MHz)

Frequency Range : 9kHz ~ 1GHz

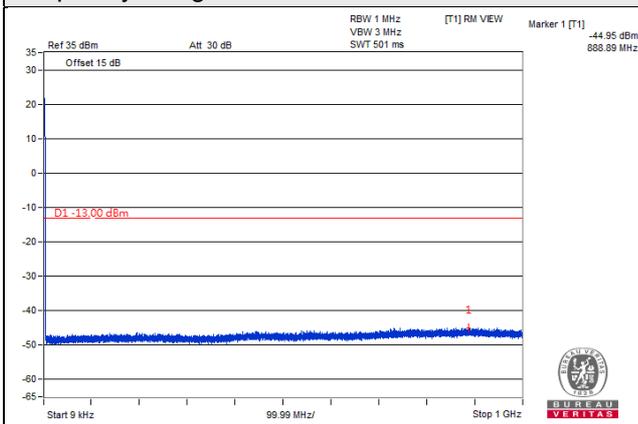


Frequency Range : 1GHz ~ 20GHz

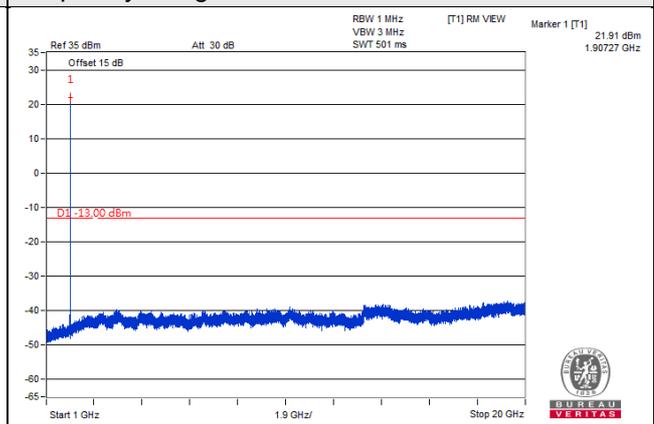


Channel 19185 (1908.50MHz)

Frequency Range : 9kHz ~ 1GHz



Frequency Range : 1GHz ~ 20GHz

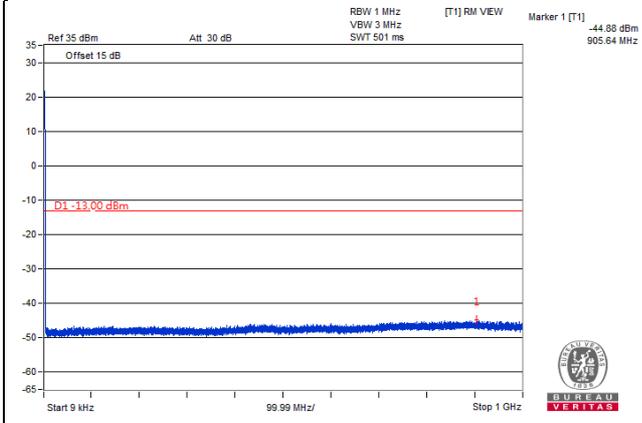


*The 9kHz signal over the limit is from Spectrum.

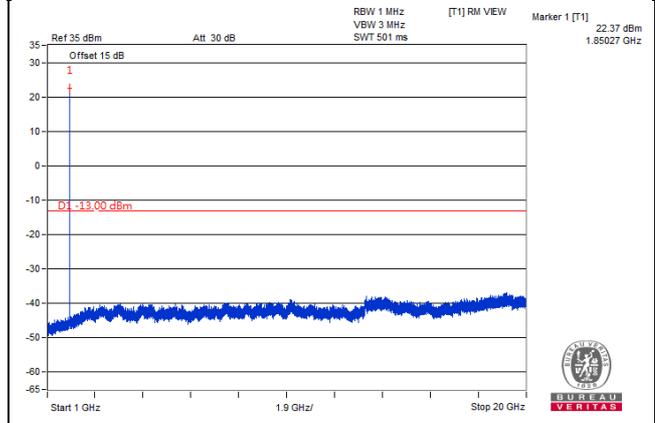
LTE Band 2, Channel Bandwidth 5MHz

Channel 18625 (1852.50MHz)

Frequency Range : 9kHz ~ 1GHz

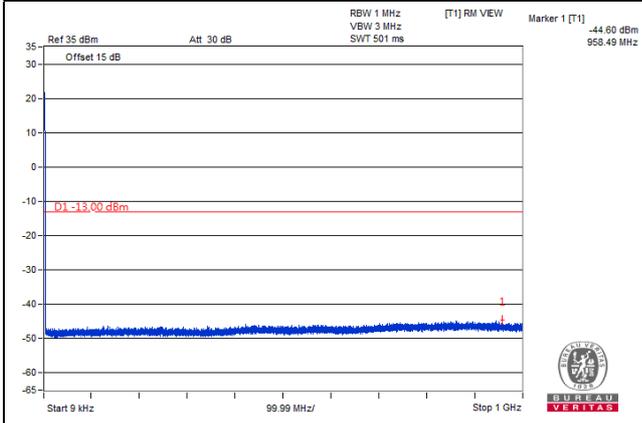


Frequency Range : 1GHz ~ 20GHz

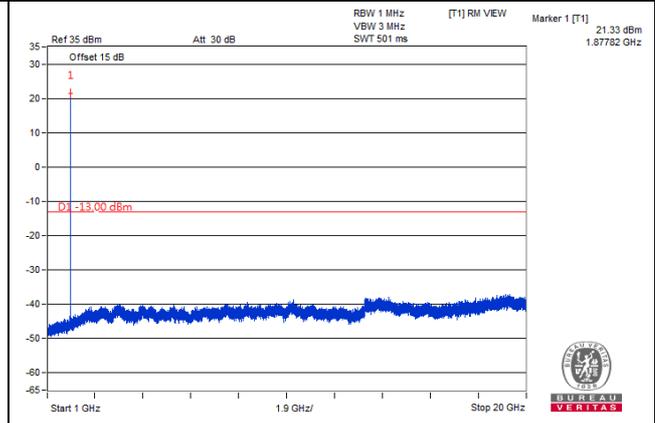


Channel 18900 (1880.0MHz)

Frequency Range : 9kHz ~ 1GHz

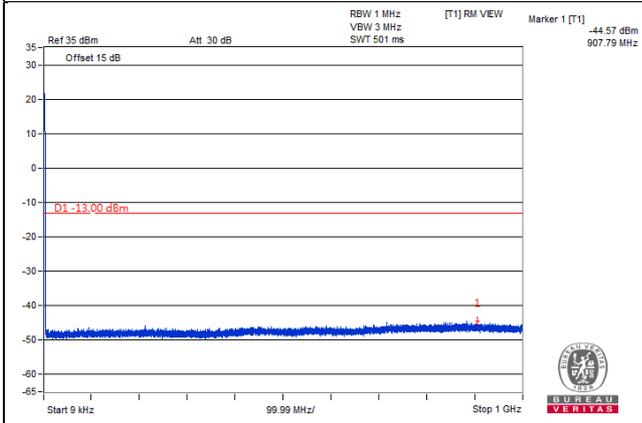


Frequency Range : 1GHz ~ 20GHz

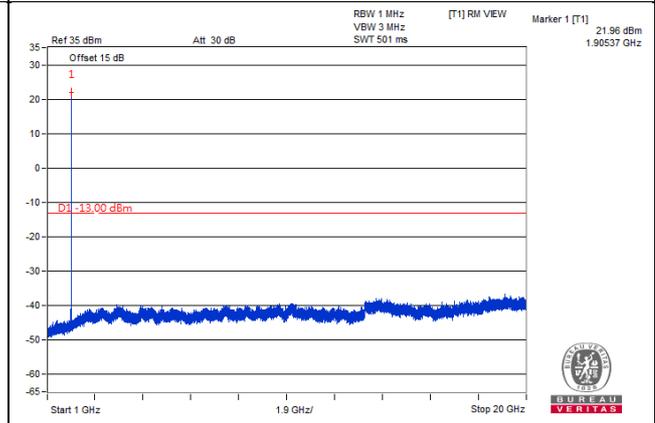


Channel 19175 (1907.50MHz)

Frequency Range : 9kHz ~ 1GHz



Frequency Range : 1GHz ~ 20GHz

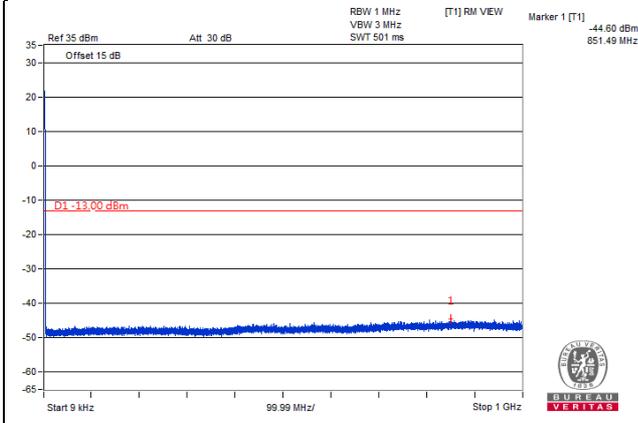


*The 9kHz signal over the limit is from Spectrum.

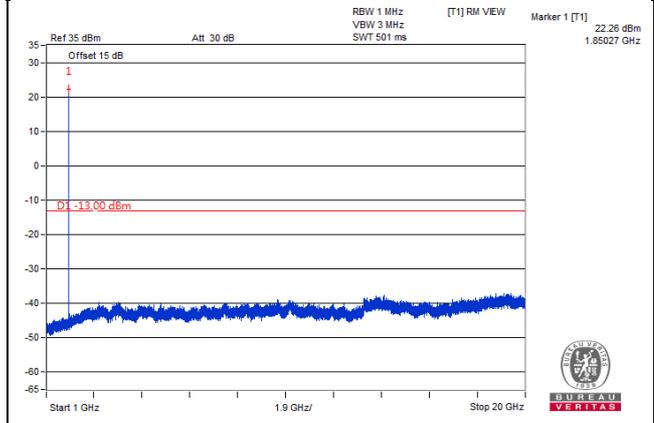
LTE Band 2, Channel Bandwidth 10MHz

Channel 18650 (1855.00MHz)

Frequency Range : 9kHz ~ 1GHz

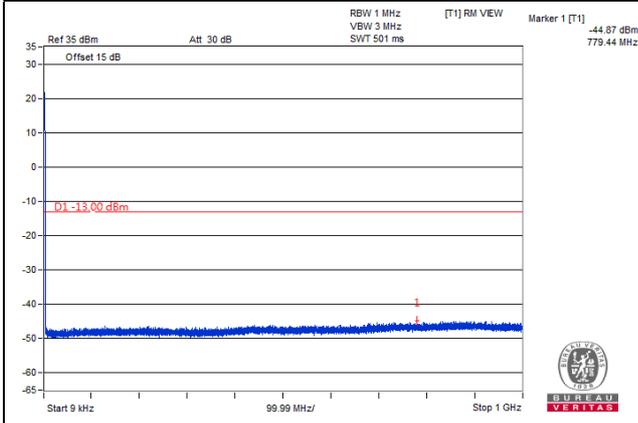


Frequency Range : 1GHz ~ 20GHz

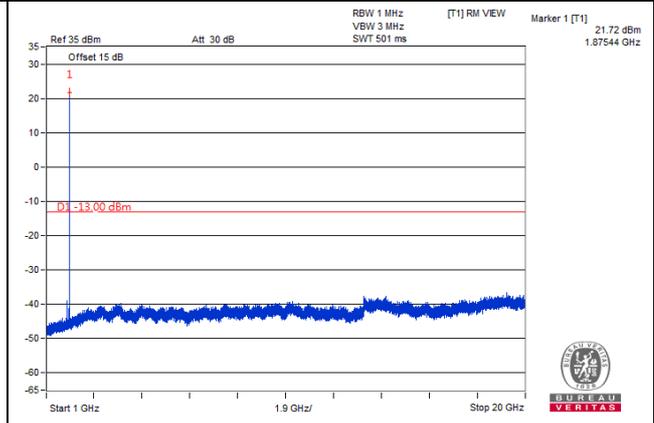


Channel 18900 (1880.00MHz)

Frequency Range : 9kHz ~ 1GHz

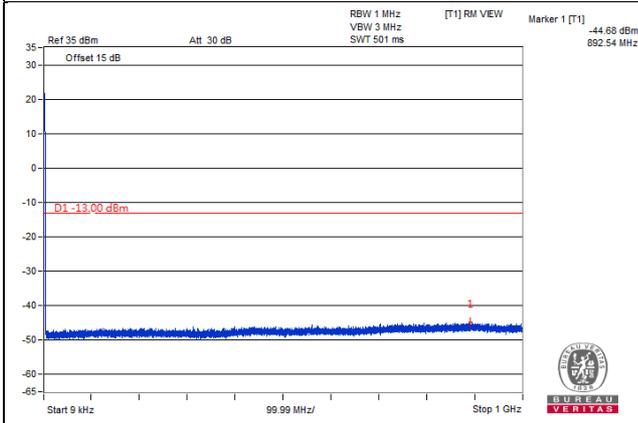


Frequency Range : 1GHz ~ 20GHz

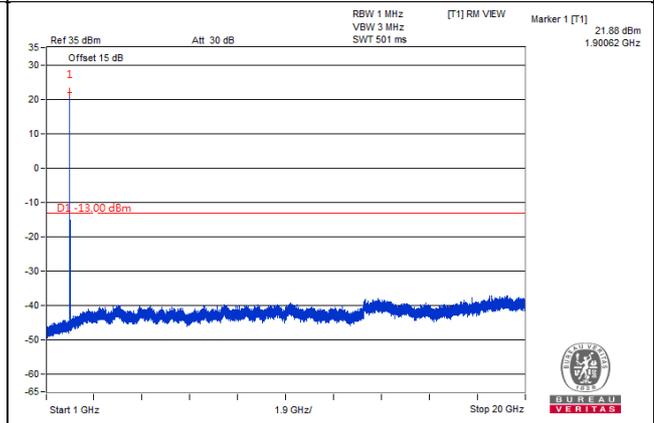


Channel 19150 (1905.00MHz)

Frequency Range : 9kHz ~ 1GHz



Frequency Range : 1GHz ~ 20GHz

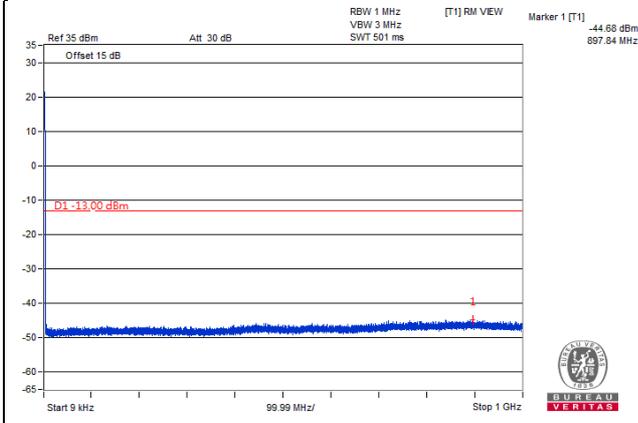


*The 9kHz signal over the limit is from Spectrum.

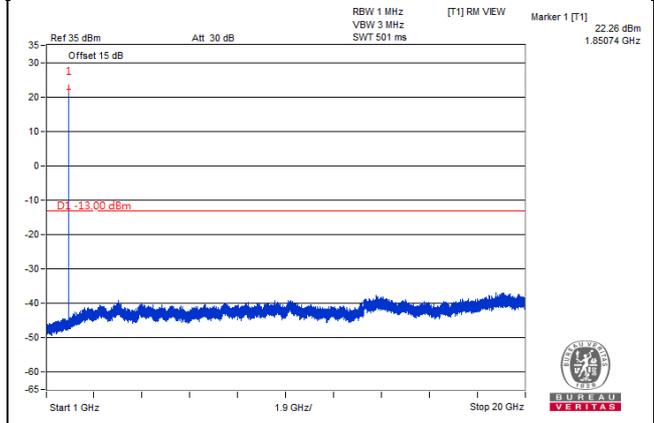
LTE Band 2, Channel Bandwidth 15MHz

Channel 18675 (1857.50MHz)

Frequency Range : 9kHz ~ 1GHz

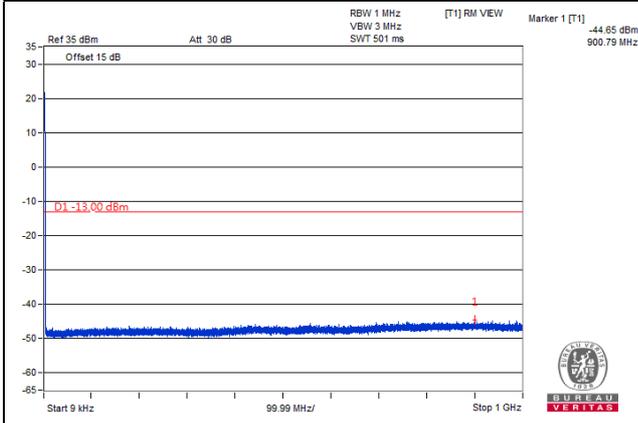


Frequency Range : 1GHz ~ 20GHz

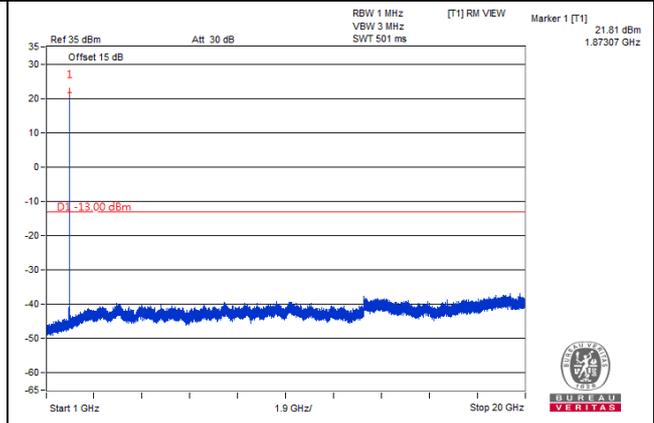


Channel 18900 (1880.0MHz)

Frequency Range : 9kHz ~ 1GHz

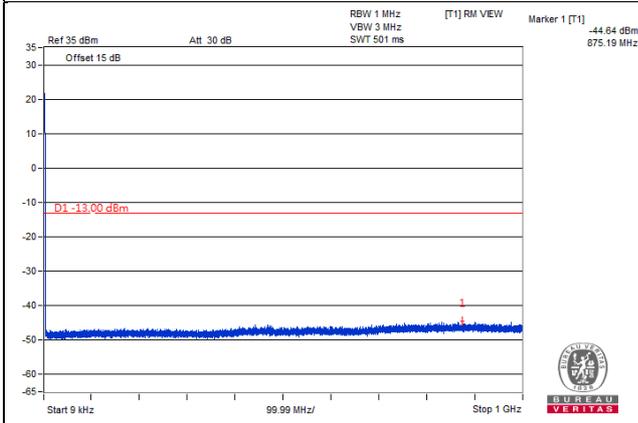


Frequency Range : 1GHz ~ 20GHz

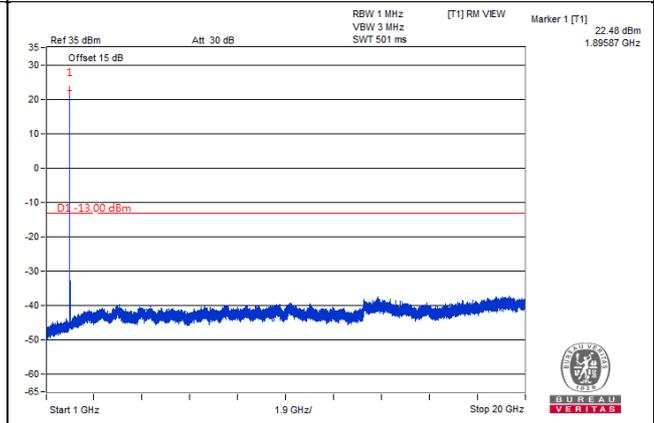


Channel 19125 (1902.50MHz)

Frequency Range : 9kHz ~ 1GHz



Frequency Range : 1GHz ~ 20GHz

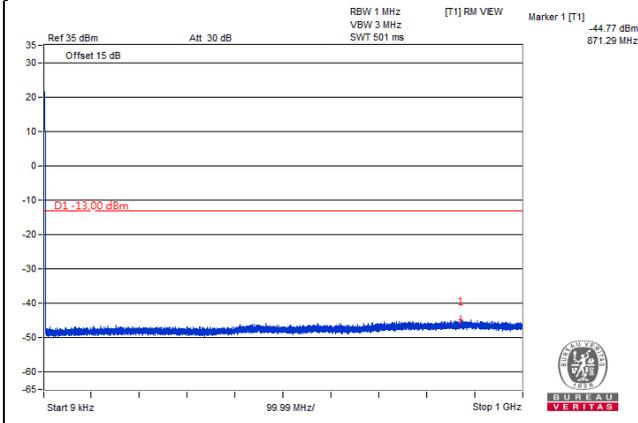


*The 9kHz signal over the limit is from Spectrum.

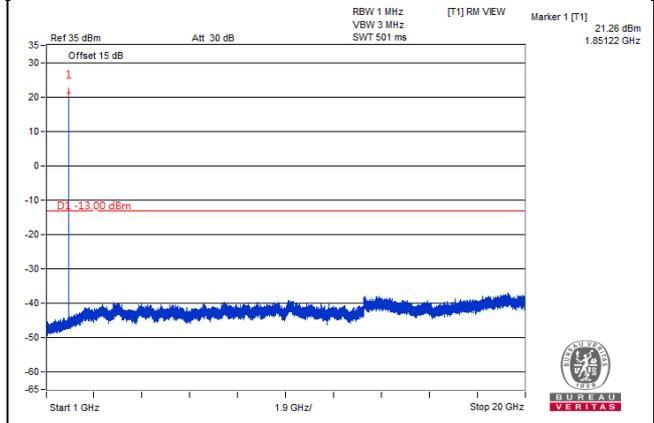
LTE Band 2, Channel Bandwidth 20MHz

Channel 18700 (1860.00MHz)

Frequency Range : 9kHz ~ 1GHz

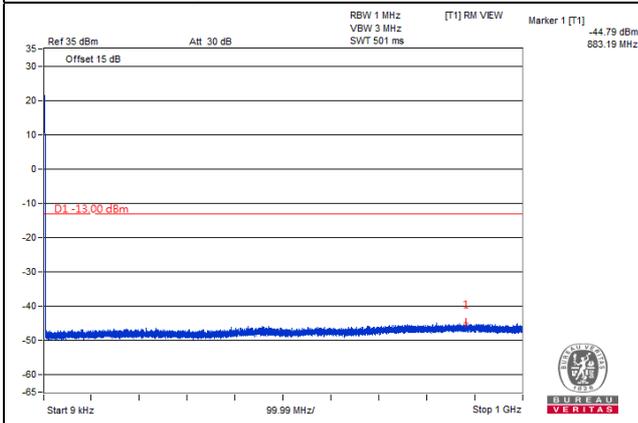


Frequency Range : 1GHz ~ 20GHz

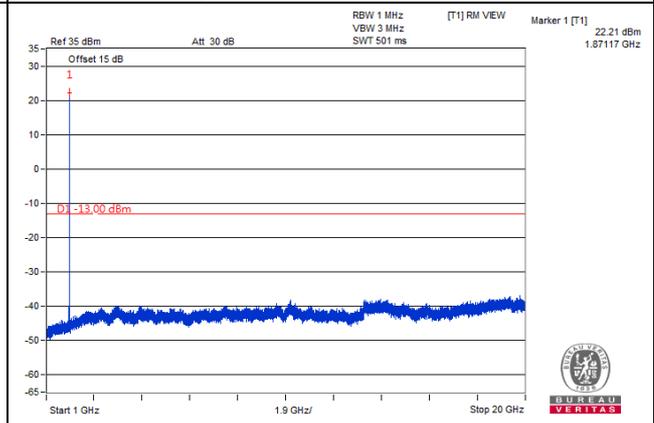


Channel 18900 (1880.00MHz)

Frequency Range : 9kHz ~ 1GHz

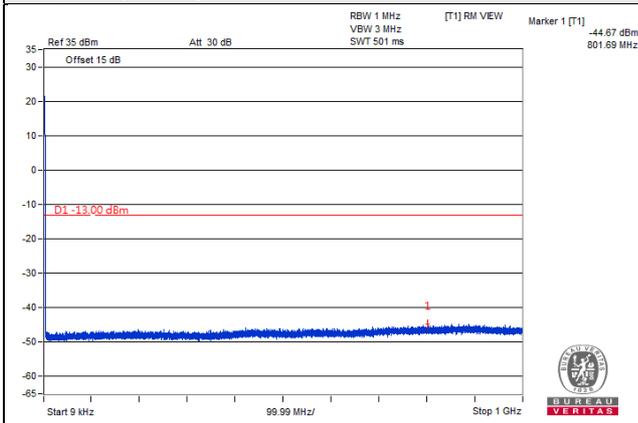


Frequency Range : 1GHz ~ 20GHz

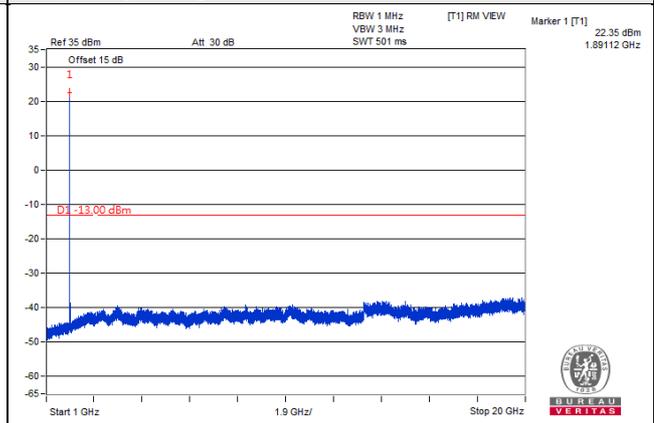


Channel 19100 (1900.00MHz)

Frequency Range : 9kHz ~ 1GHz



Frequency Range : 1GHz ~ 20GHz

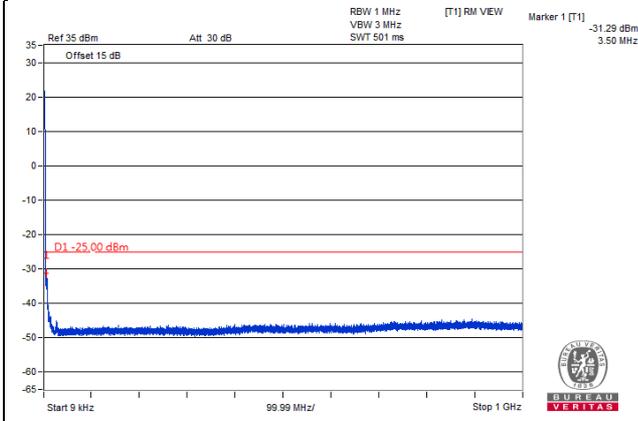


*The 9kHz signal over the limit is from Spectrum.

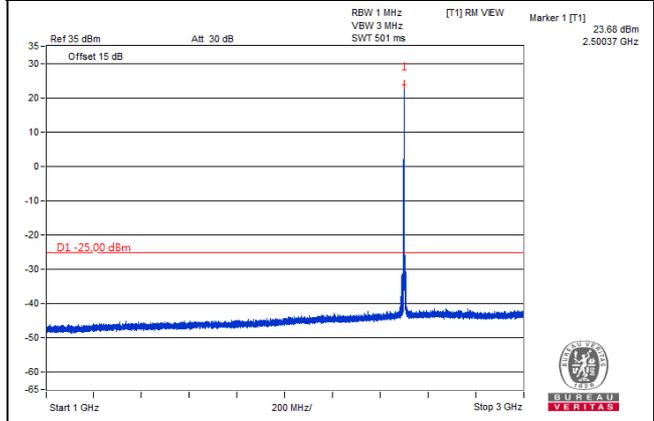
LTE Band 7, Channel Band width: 5MHz

Channel 20775 (2502.5MHz)

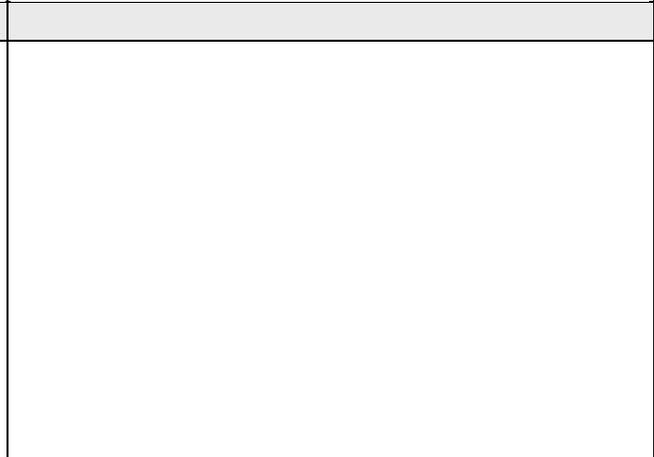
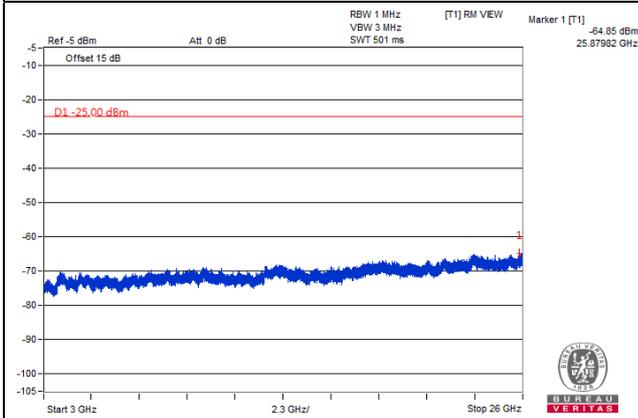
Frequency Range : 9kHz ~ 1GHz



Frequency Range : 1GHz ~ 3GHz



Frequency Range : 3GHz ~ 26GHz

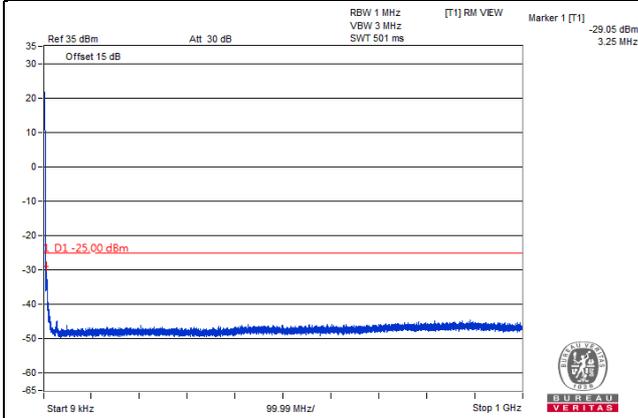


*The 9kHz signal over the limit is from Spectrum.

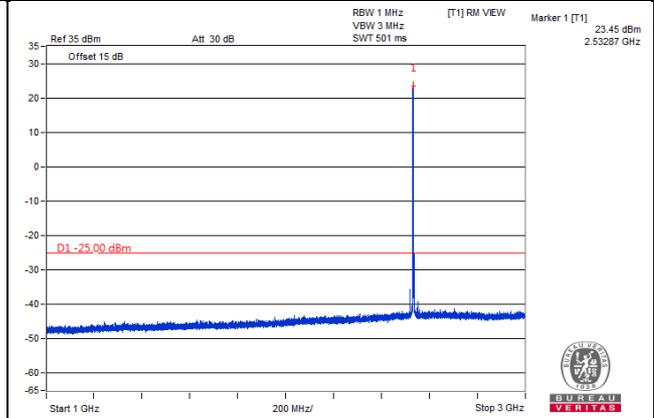
LTE Band 7, Channel Band width: 5MHz

Channel 21100 (2535.0MHz)

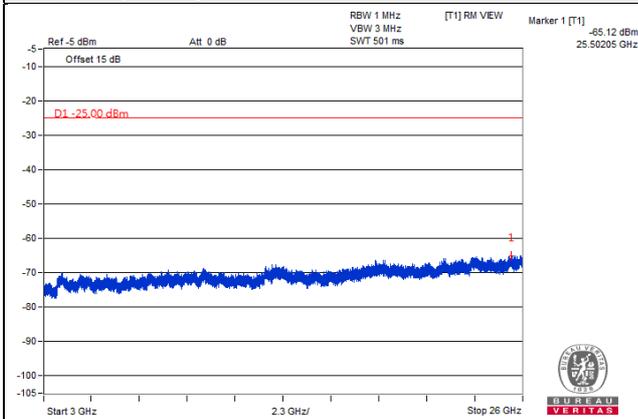
Frequency Range : 9kHz ~ 1GHz



Frequency Range : 1GHz ~ 3GHz



Frequency Range : 3GHz ~ 26GHz

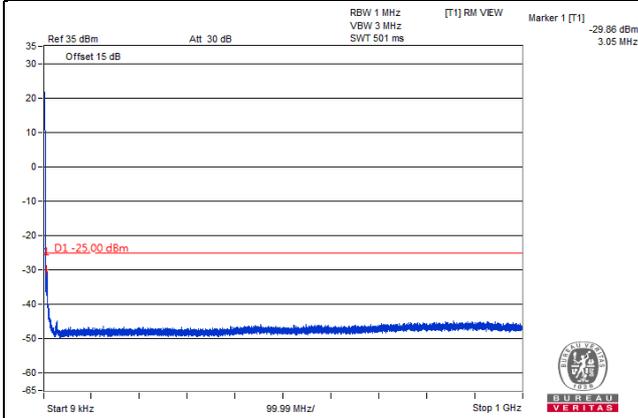


*The 9kHz signal over the limit is from Spectrum.

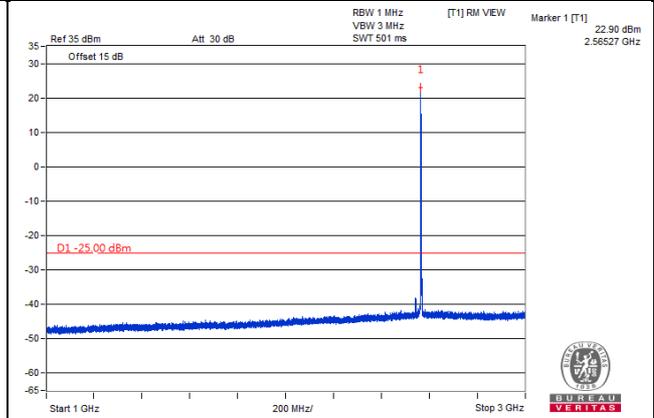
LTE Band 7, Channel Band width: 5MHz

Channel 21425 (2567.5MHz)

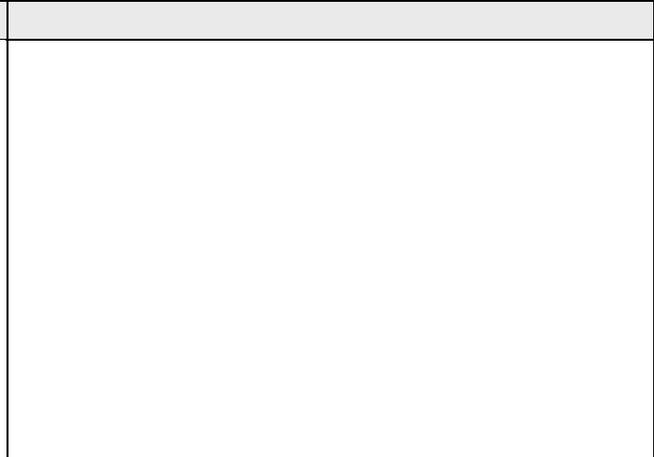
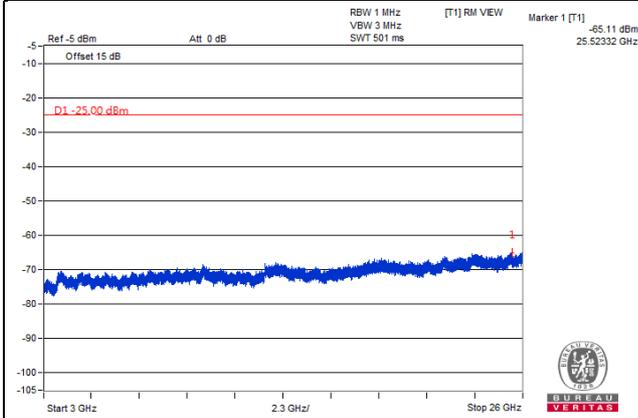
Frequency Range : 9kHz ~ 1GHz



Frequency Range : 1GHz ~ 3GHz



Frequency Range : 3GHz ~ 26GHz

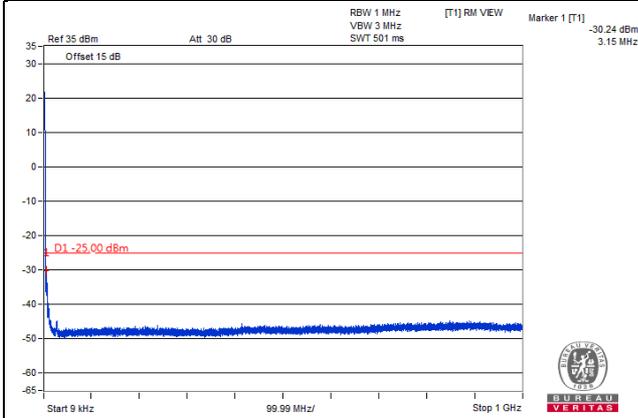


*The 9kHz signal over the limit is from Spectrum.

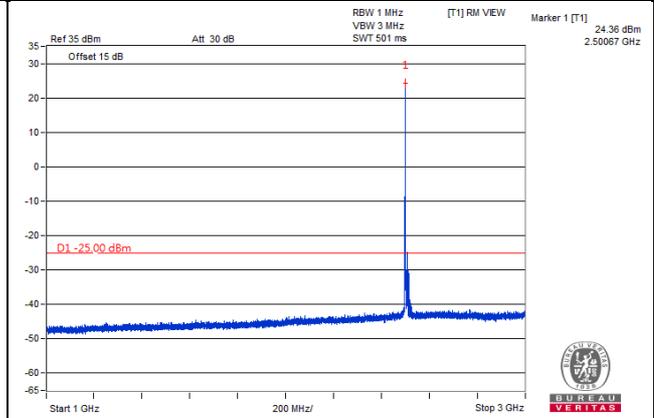
LTE Band 7, Channel Band width: 10MHz

Channel 20800 (2505.0MHz)

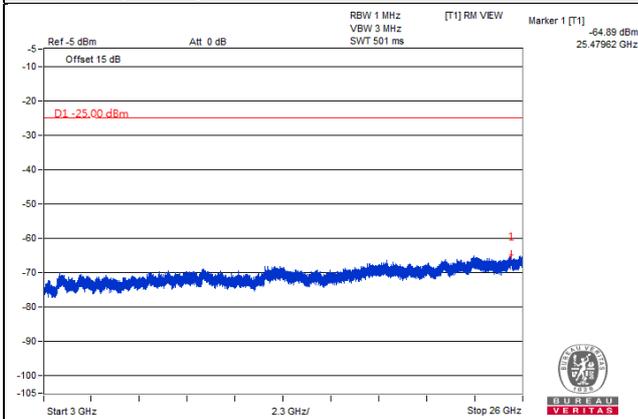
Frequency Range : 9kHz ~ 1GHz



Frequency Range : 1GHz ~ 3GHz



Frequency Range : 3GHz ~ 26GHz

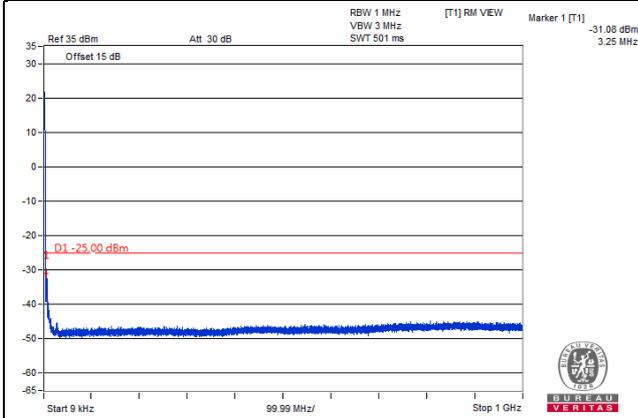


*The 9kHz signal over the limit is from Spectrum.

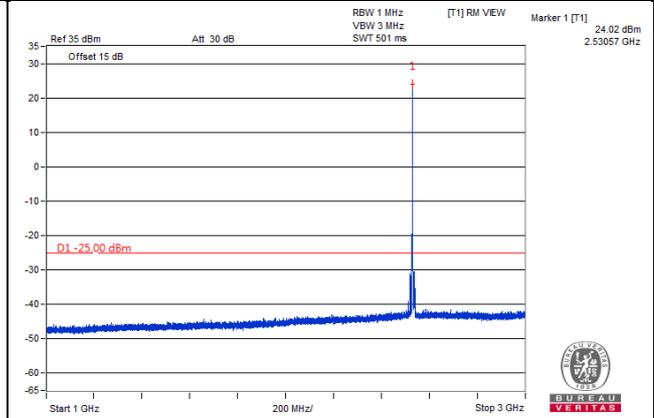
LTE Band 7, Channel Band width: 10MHz

Channel 21100 (2535.0MHz)

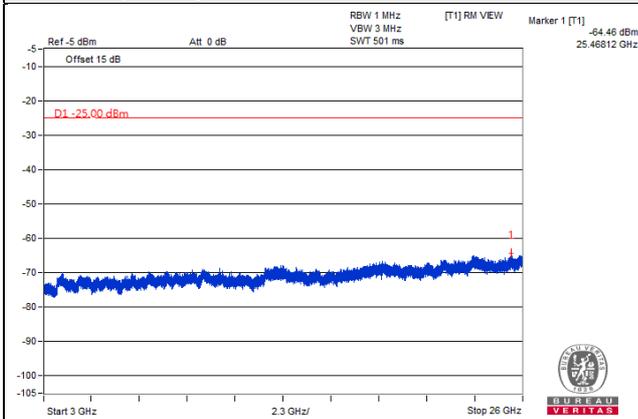
Frequency Range : 9kHz ~ 1GHz



Frequency Range : 1GHz ~ 3GHz



Frequency Range : 3GHz ~ 26GHz

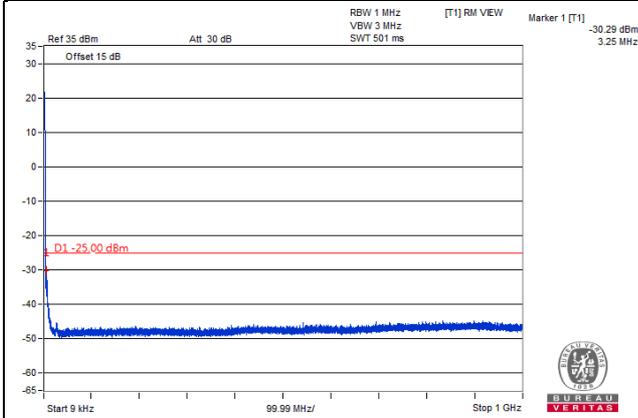


*The 9kHz signal over the limit is from Spectrum.

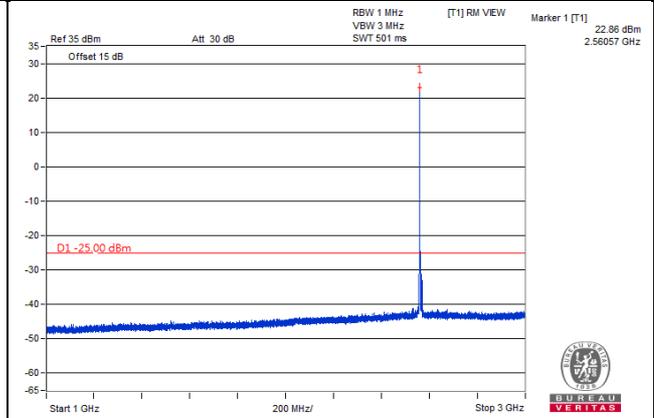
LTE Band 7, Channel Band width: 10MHz

Channel 21400 (2565.0MHz)

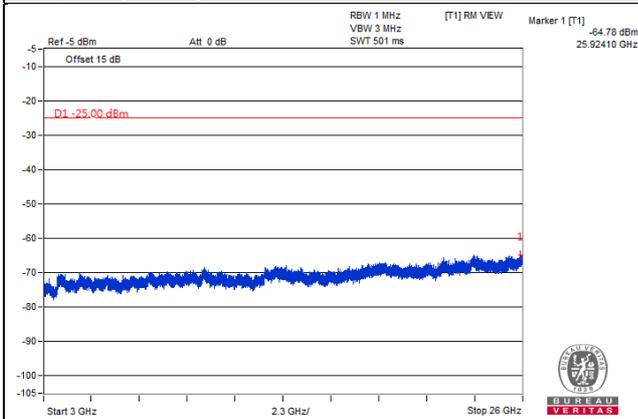
Frequency Range : 9kHz ~ 1GHz



Frequency Range : 1GHz ~ 3GHz



Frequency Range : 3GHz ~ 26GHz

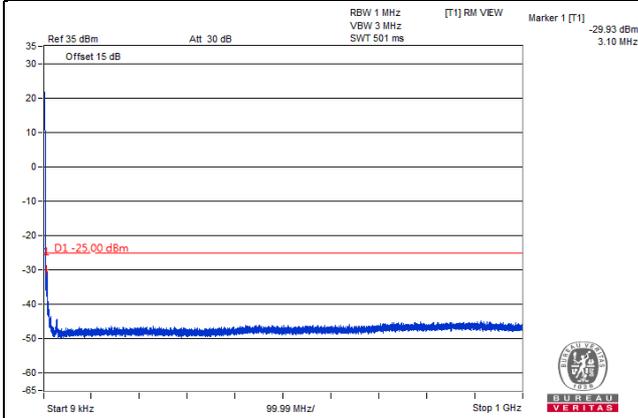


*The 9kHz signal over the limit is from Spectrum.

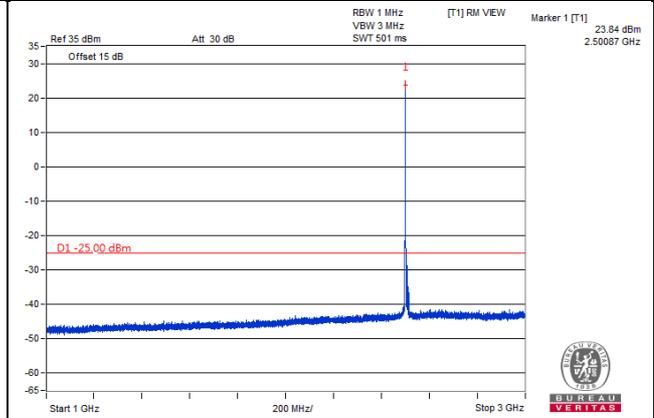
LTE Band 7, Channel Band width: 15MHz

Channel 20825 (2507.5MHz)

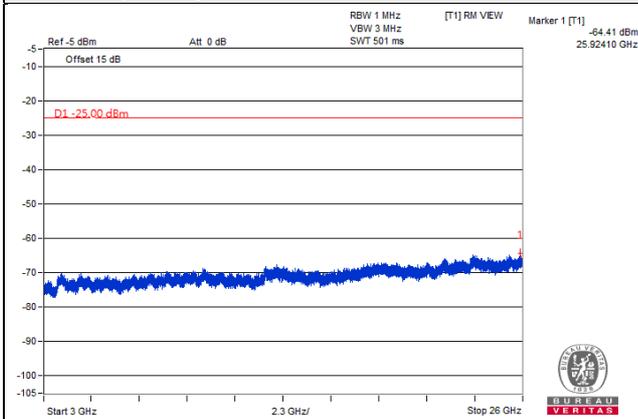
Frequency Range : 9kHz ~ 1GHz



Frequency Range : 1GHz ~ 3GHz



Frequency Range : 3GHz ~ 26GHz

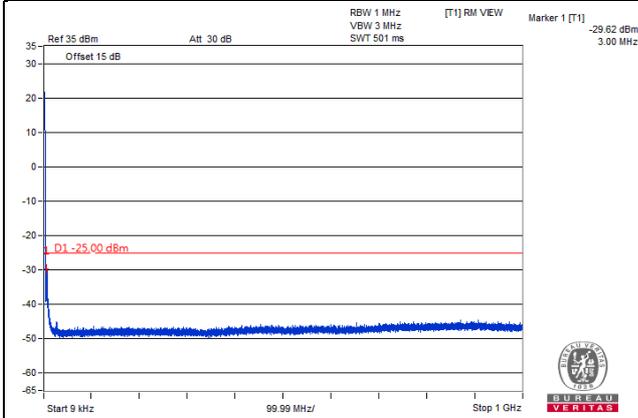


*The 9kHz signal over the limit is from Spectrum.

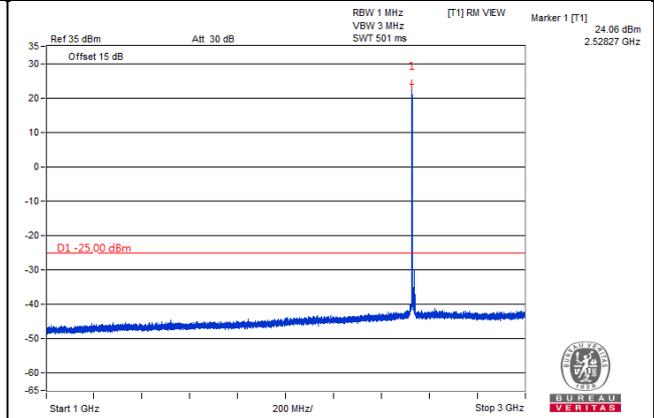
LTE Band 7, Channel Band width: 15MHz

Channel 21100 (2535.0MHz)

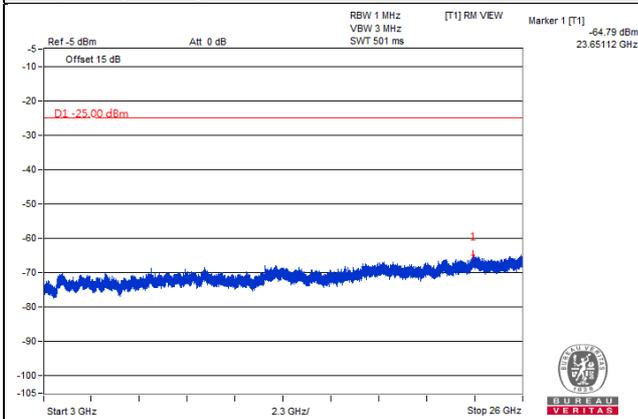
Frequency Range : 9kHz ~ 1GHz



Frequency Range : 1GHz ~ 3GHz



Frequency Range : 3GHz ~ 26GHz

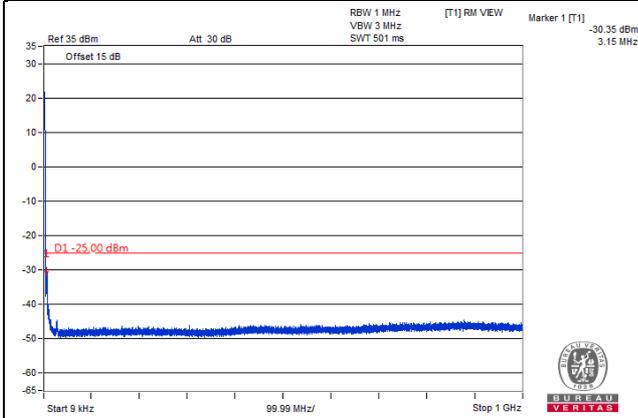


*The 9kHz signal over the limit is from Spectrum.

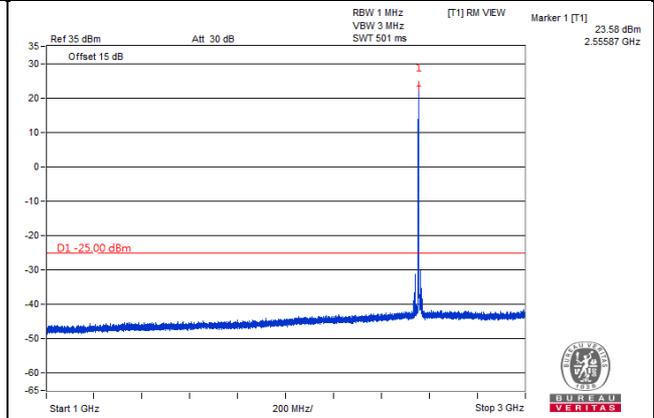
LTE Band 7, Channel Band width: 15MHz

Channel 21375 (2562.5MHz)

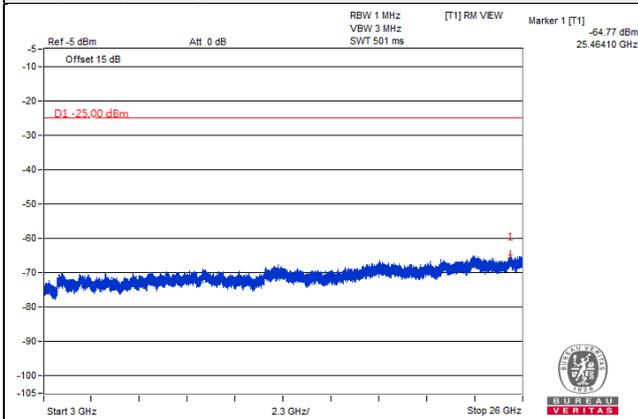
Frequency Range : 9kHz ~ 1GHz



Frequency Range : 1GHz ~ 3GHz



Frequency Range : 3GHz ~ 26GHz

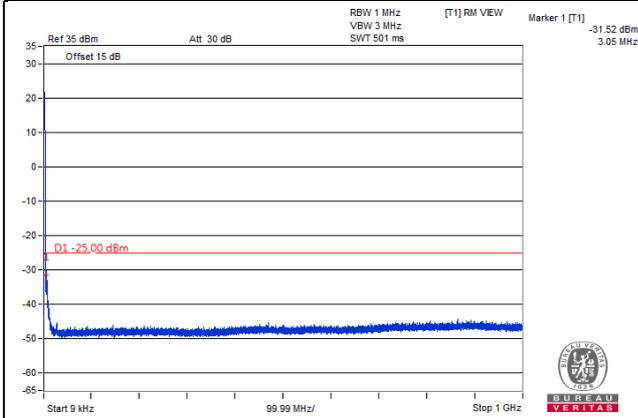


*The 9kHz signal over the limit is from Spectrum.

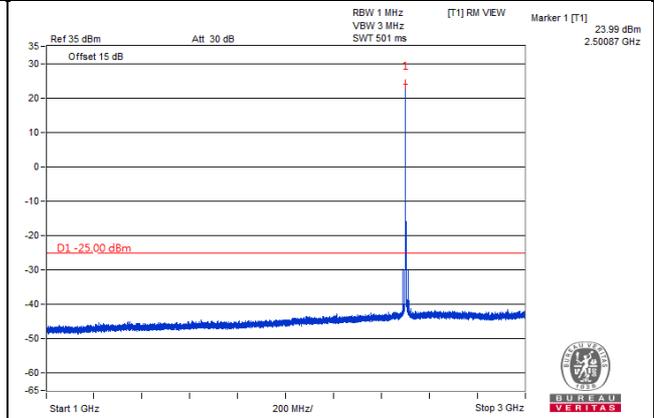
LTE Band 7, Channel Band width: 20MHz

Channel 20850 (2510.0MHz)

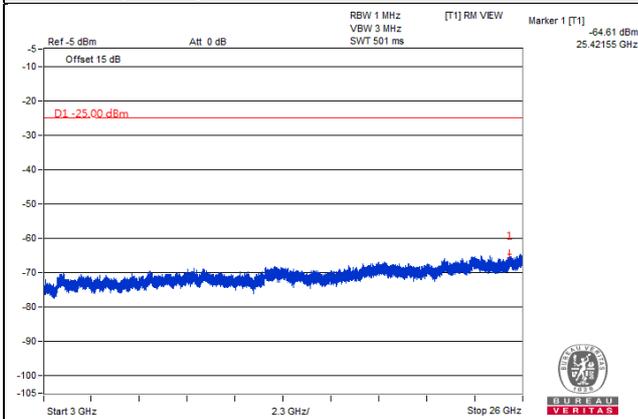
Frequency Range : 9kHz ~ 1GHz



Frequency Range : 1GHz ~ 3GHz



Frequency Range : 3GHz ~ 26GHz

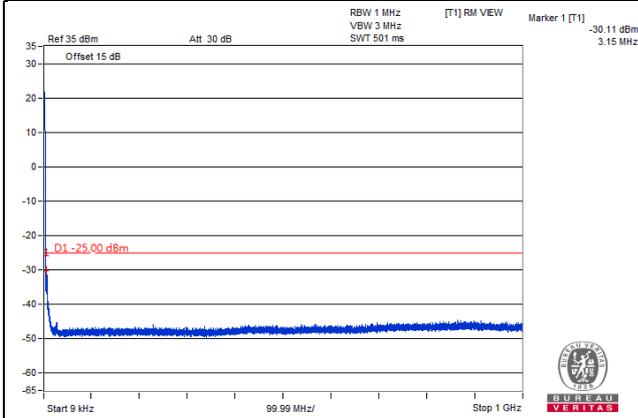


*The 9kHz signal over the limit is from Spectrum.

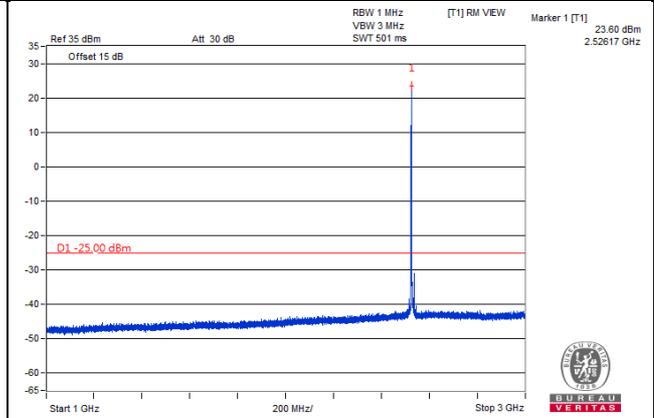
LTE Band 7, Channel Band width: 20MHz

Channel 21100 (2535.0MHz)

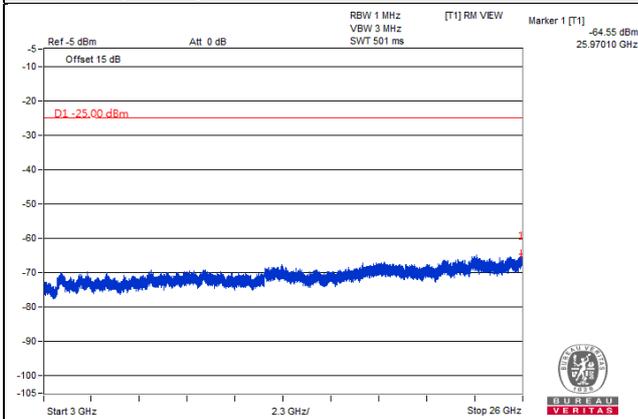
Frequency Range : 9kHz ~ 1GHz



Frequency Range : 1GHz ~ 3GHz



Frequency Range : 3GHz ~ 26GHz

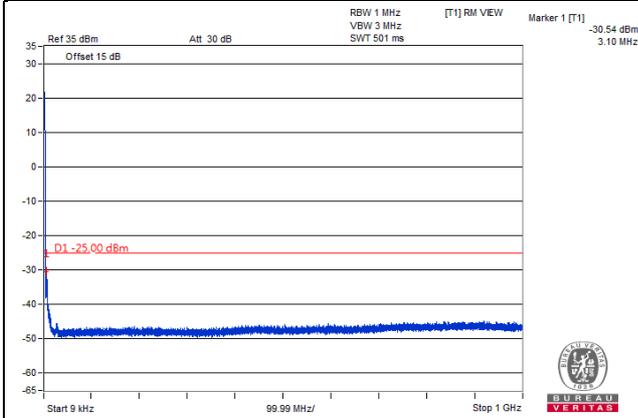


*The 9kHz signal over the limit is from Spectrum.

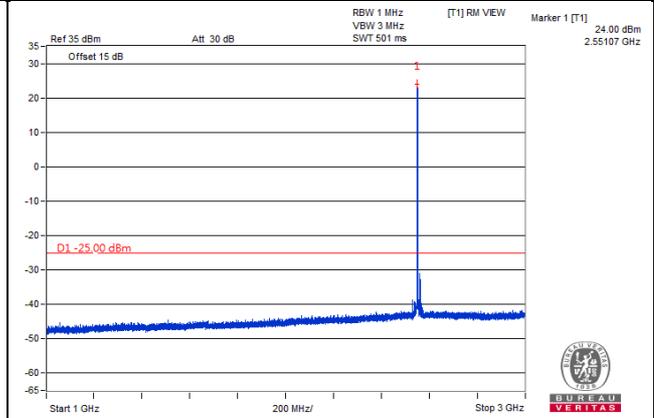
LTE Band 7, Channel Band width: 20MHz

Channel 21350 (2560.0MHz)

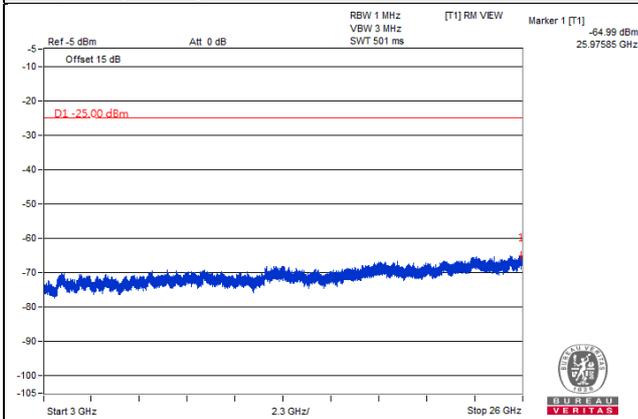
Frequency Range : 9kHz ~ 1GHz



Frequency Range : 1GHz ~ 3GHz



Frequency Range : 3GHz ~ 26GHz

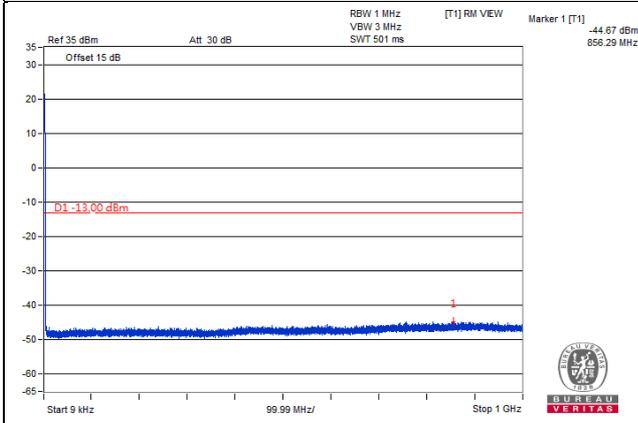


*The 9kHz signal over the limit is from Spectrum.

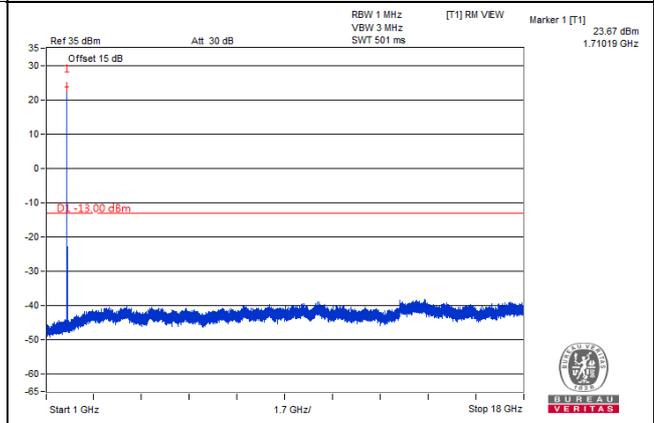
LTE Band 66, Channel Bandwidth 1.4MHz

Channel 131979 (1710.7MHz)

Frequency Range : 9kHz ~ 1GHz

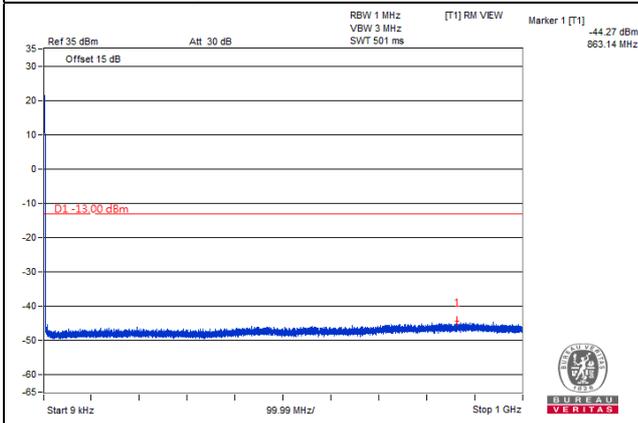


Frequency Range : 1GHz ~ 18GHz

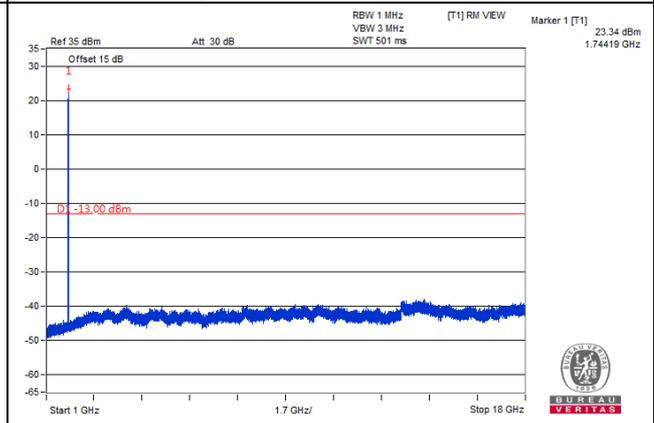


Channel 132322 (1745.0MHz)

Frequency Range : 9kHz ~ 1GHz

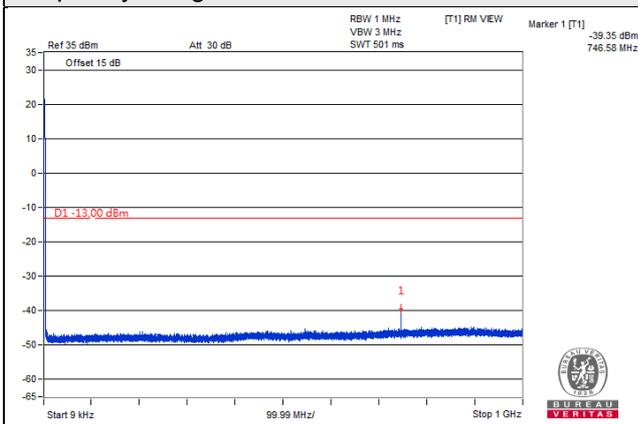


Frequency Range : 1GHz ~ 18GHz

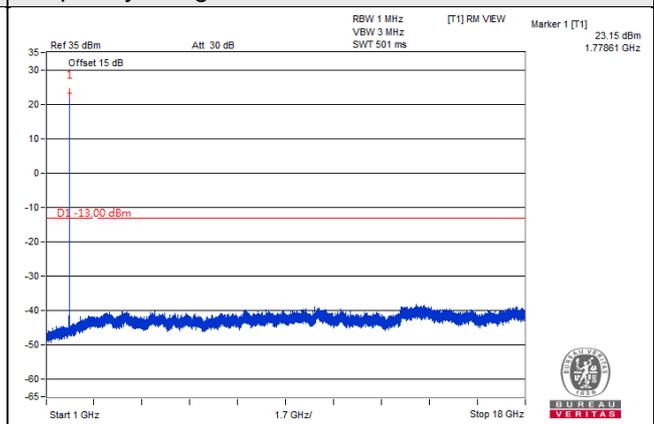


Channel 132665 (1779.3MHz)

Frequency Range : 9kHz ~ 1GHz



Frequency Range : 1GHz ~ 18GHz



*The 9kHz signal over the limit is from Spectrum.