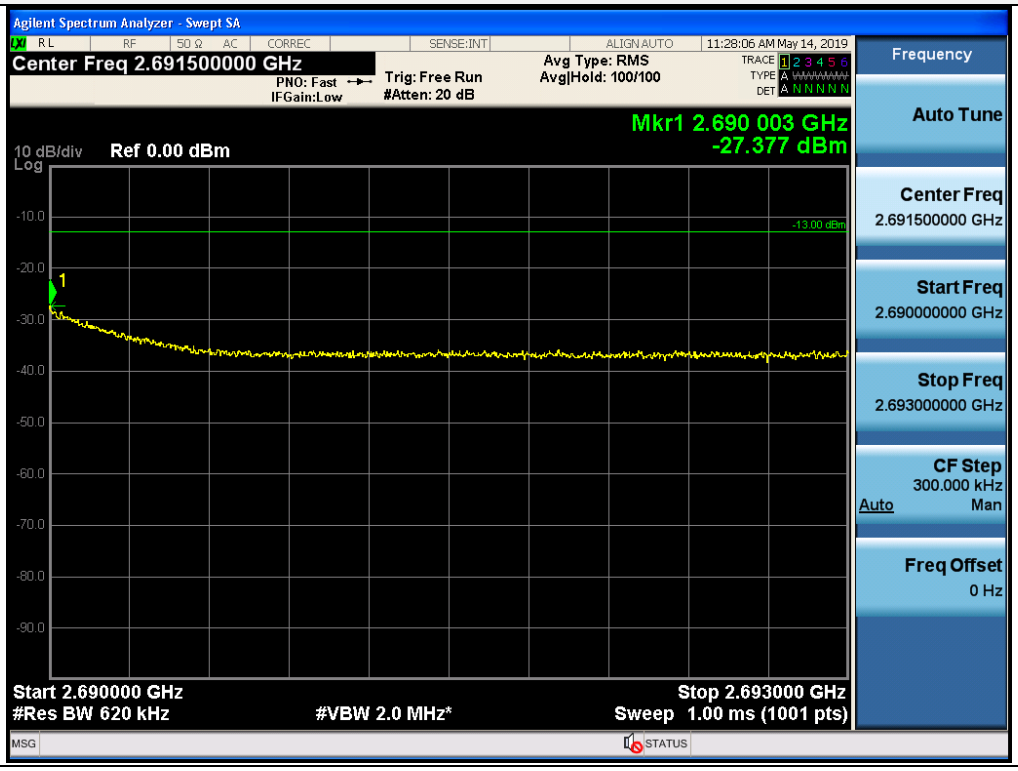
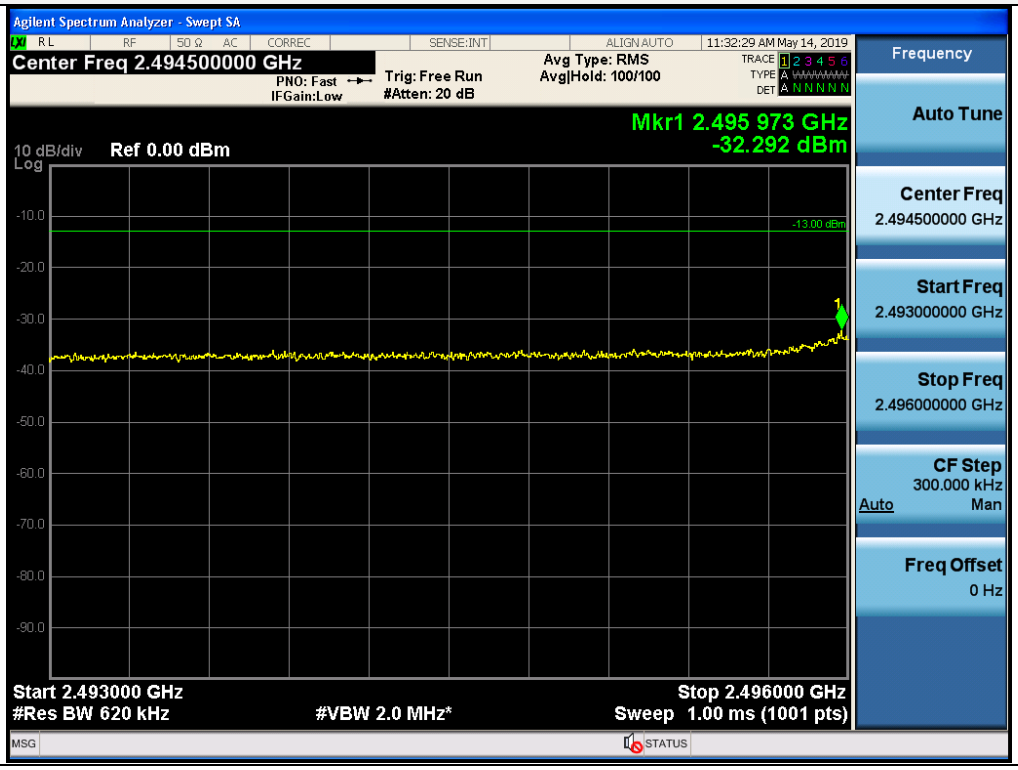
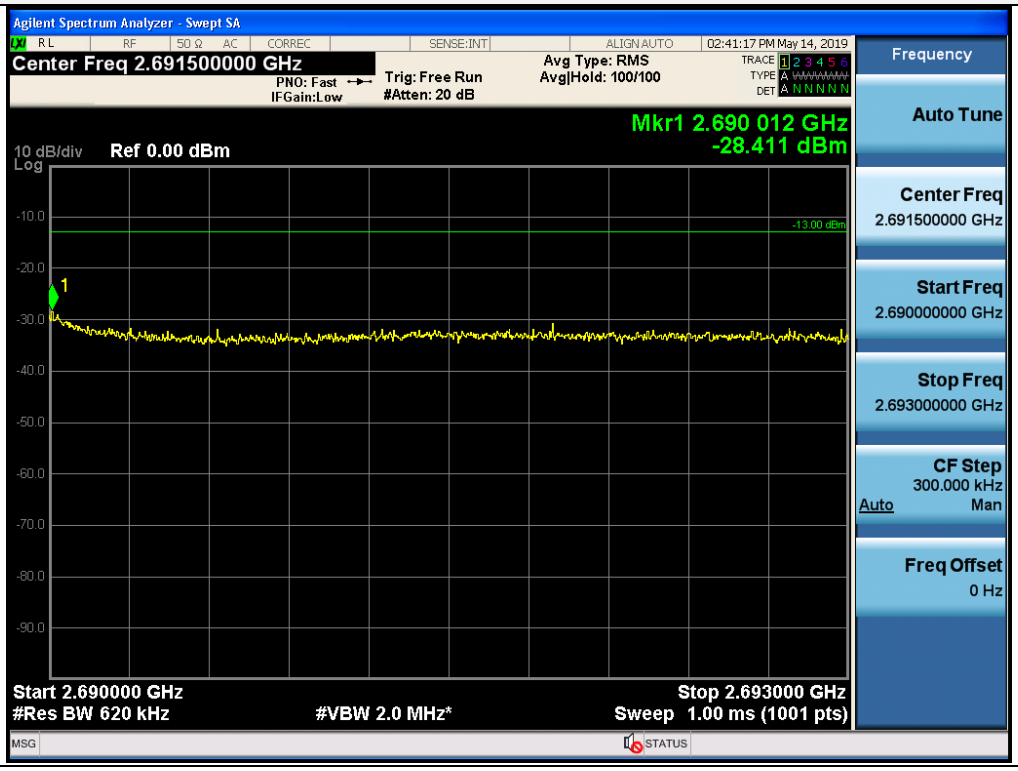
Out-of-band (single test signal) / 5G NR 60 MHz, 1 Carrier / Downlink / NR 60 MHz / Upper



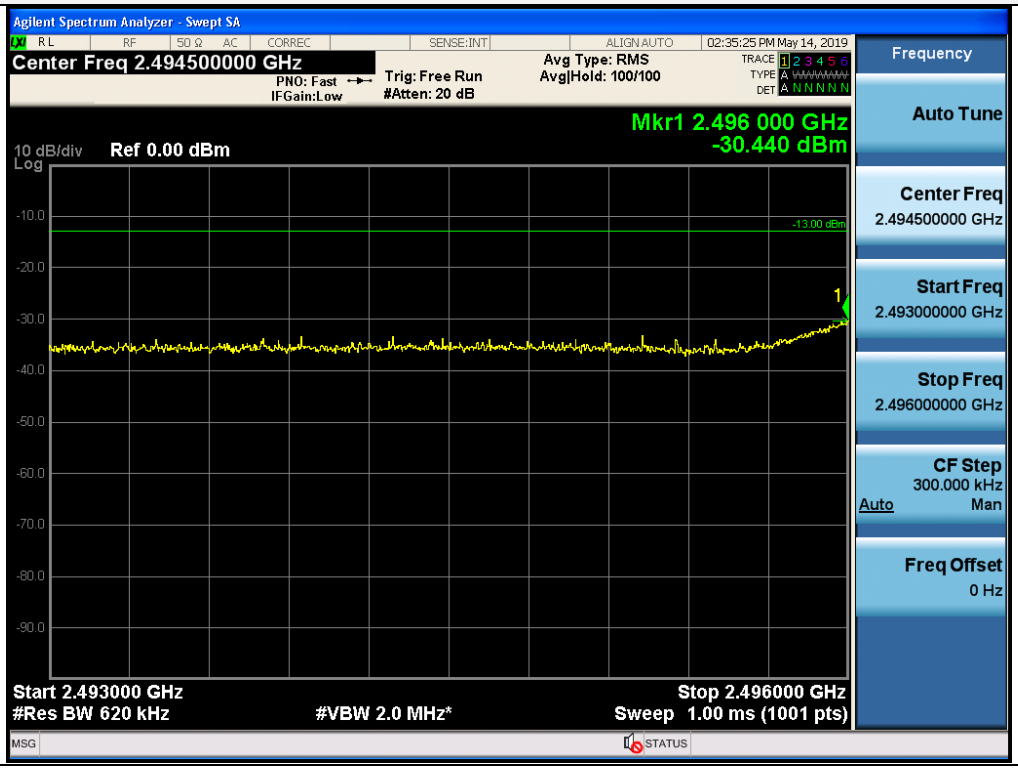
Out-of-band (single test signal) / 5G NR 60 MHz, 1 Carrier / Downlink / NR 60 MHz / Lower



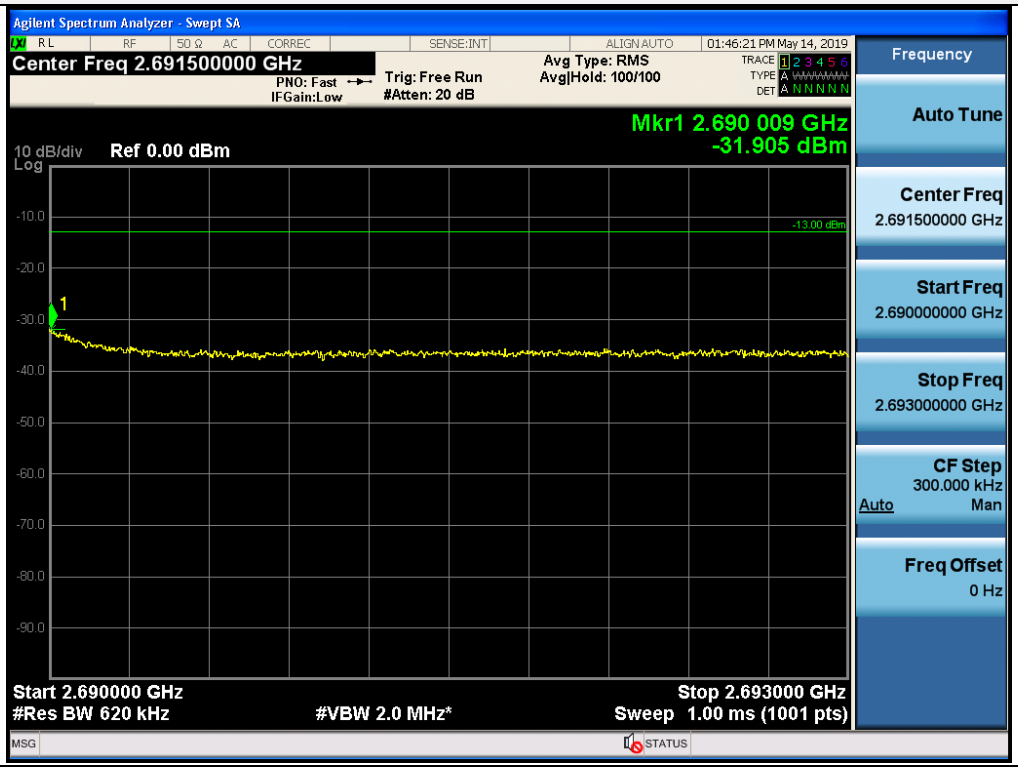
+3 dB above Out-of-band (single test signal) / 4G LTE 20 MHz, 3 Carrier / Uplink / LTE 20 MHz (3C) / Upper



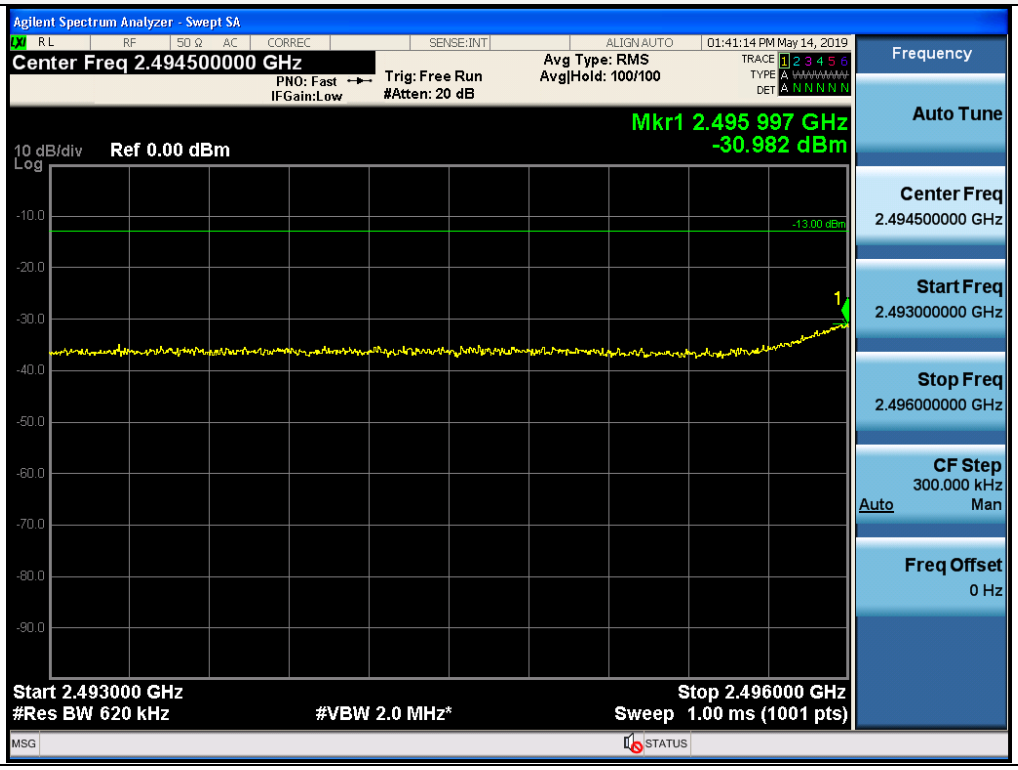
+3 dB above Out-of-band (single test signal) / 4G LTE 20 MHz, 3 Carrier / Uplink / LTE 20 MHz (3C) / Lower



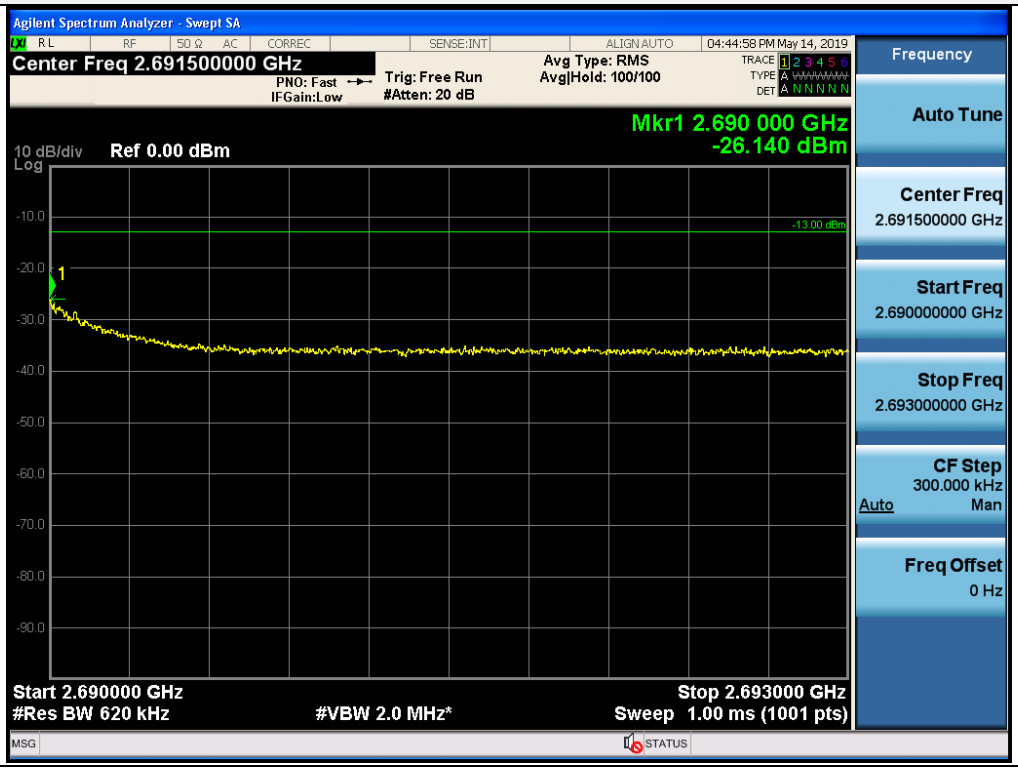
+3 dB above Out-of-band (single test signal) / 4G LTE 20 MHz, 3 Carrier / Downlink / LTE 20 MHz (3C) / Upper



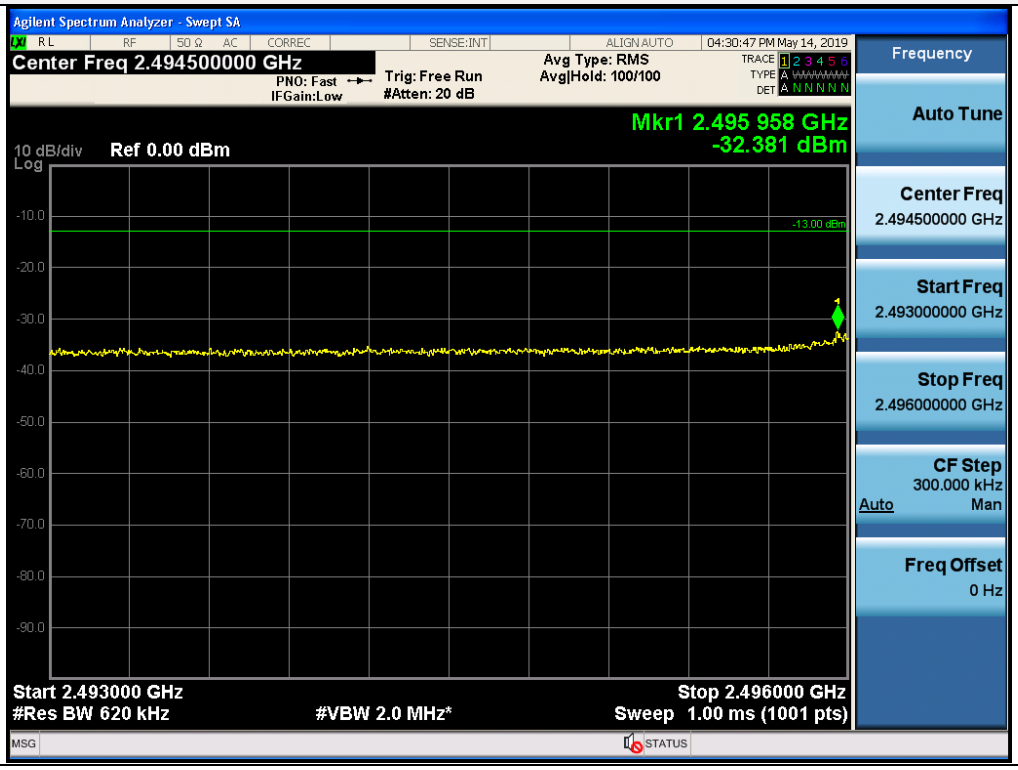
+3 dB above Out-of-band (single test signal) / 4G LTE 20 MHz, 3 Carrier / Downlink / LTE 20 MHz (3C) / Lower



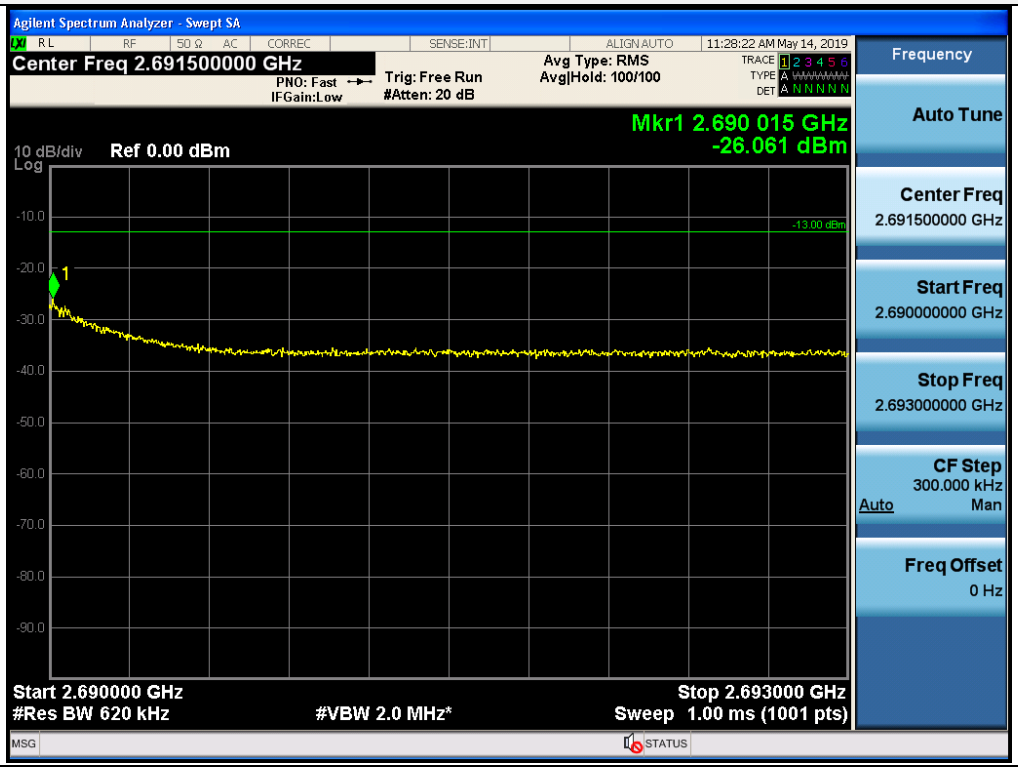
+3 dB above Out-of-band (single test signal) / 5G NR 60 MHz, 1 Carrier / Uplink / NR 60 MHz / Upper



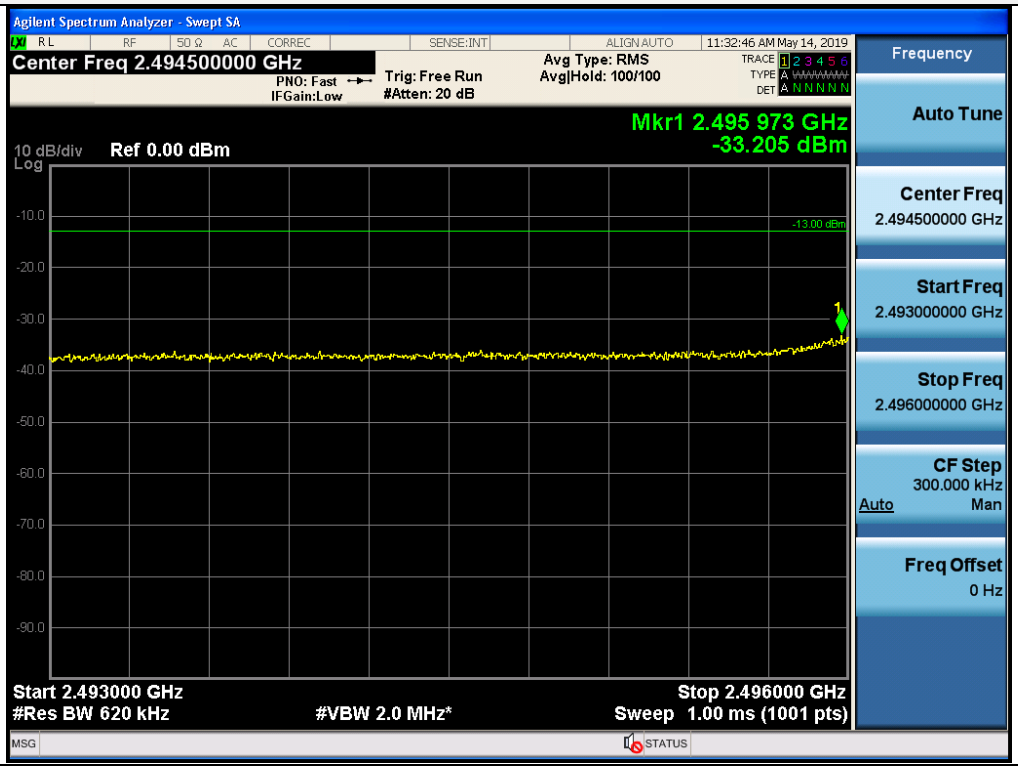
+3 dB above Out-of-band (single test signal) / 5G NR 60 MHz, 1 Carrier / Uplink / NR 60 MHz / Lower



+3 dB above Out-of-band (single test signal) / 5G NR 60 MHz, 1 Carrier / Downlink / NR 60 MHz / Upper

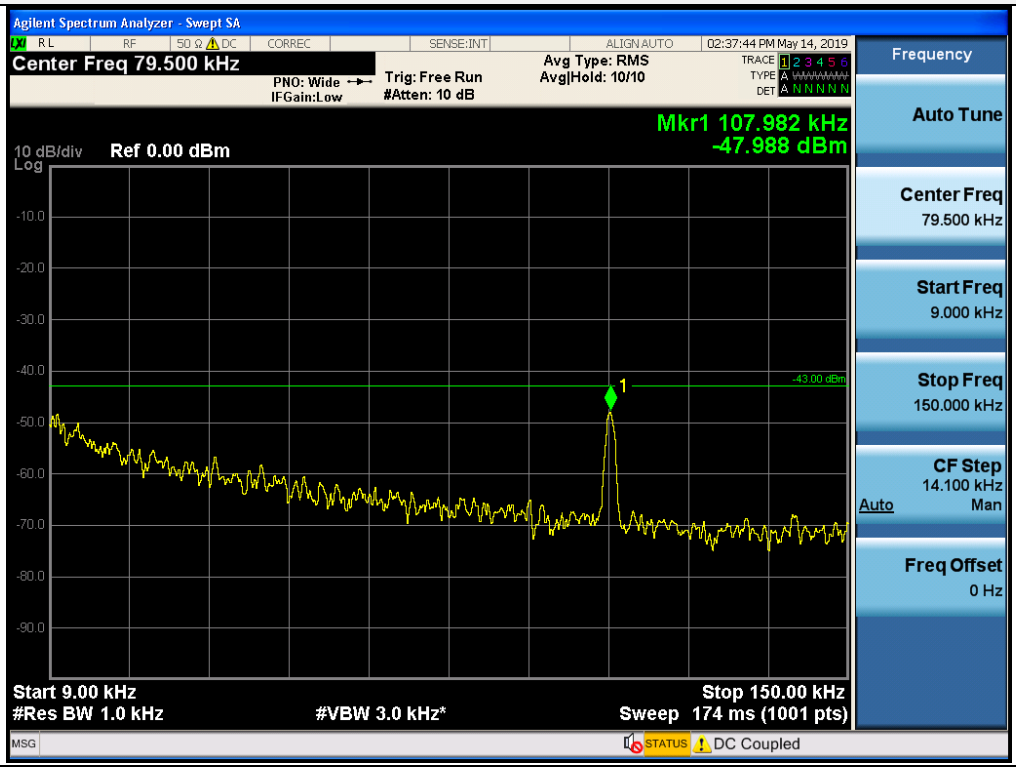


+3 dB above Out-of-band (single test signal) / 5G NR 60 MHz, 1 Carrier / Downlink / NR 60 MHz / Lower

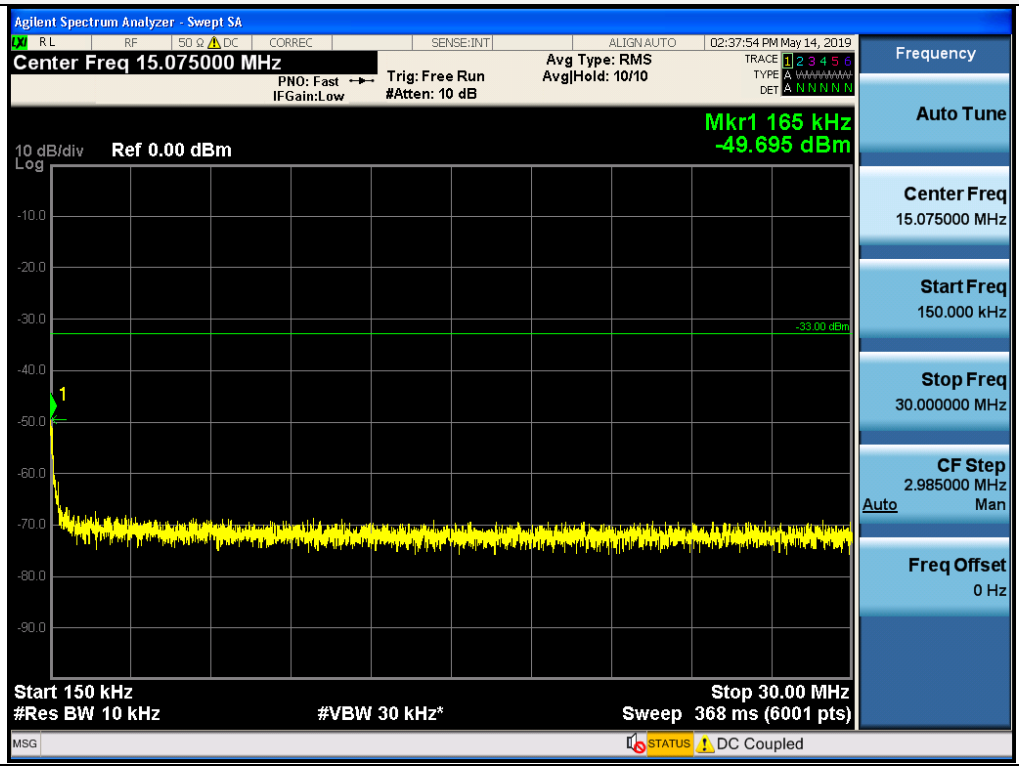


Plot data of Spurious Emissions

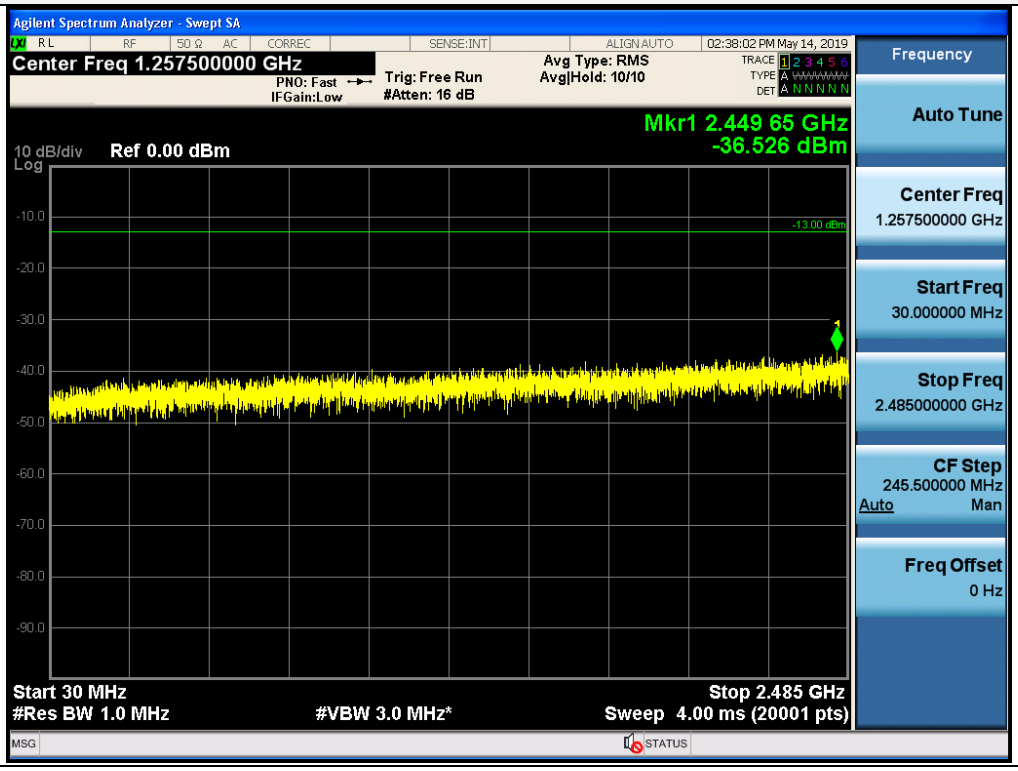
Spurious / 4G LTE 20 MHz, 3 Carrier / Uplink / LTE 20 MHz (3C) / Low / 9 kHz ~ 150 kHz



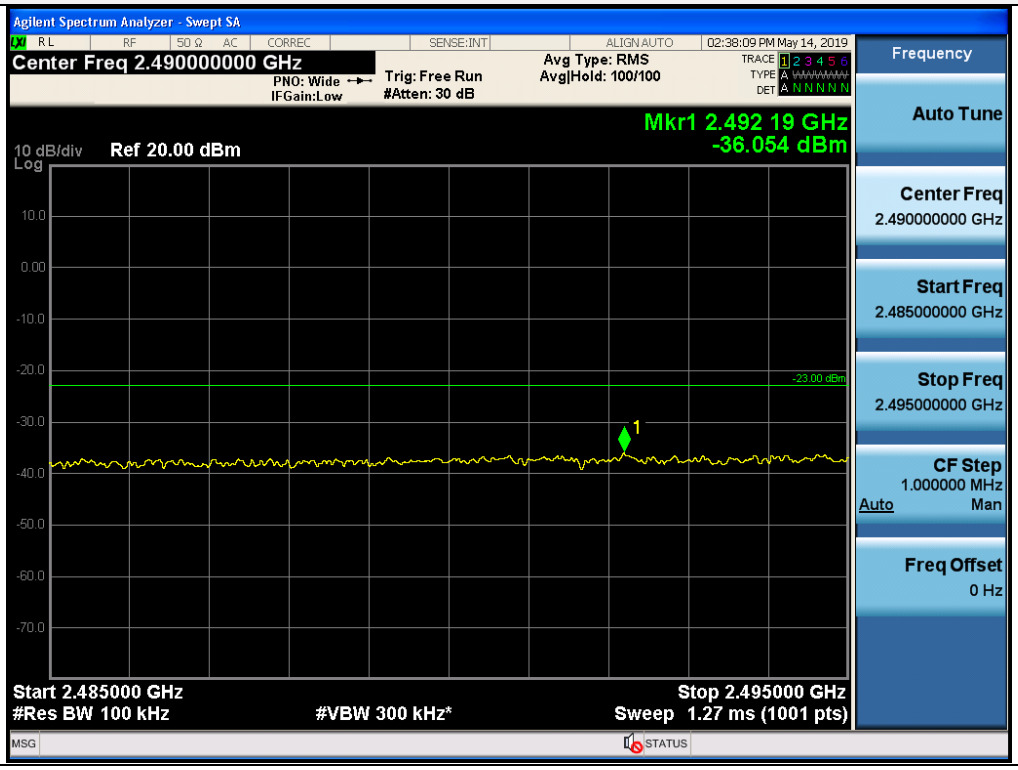
Spurious / 4G LTE 20 MHz, 3 Carrier / Uplink / LTE 20 MHz (3C) / Low / 150 kHz ~ 30 MHz



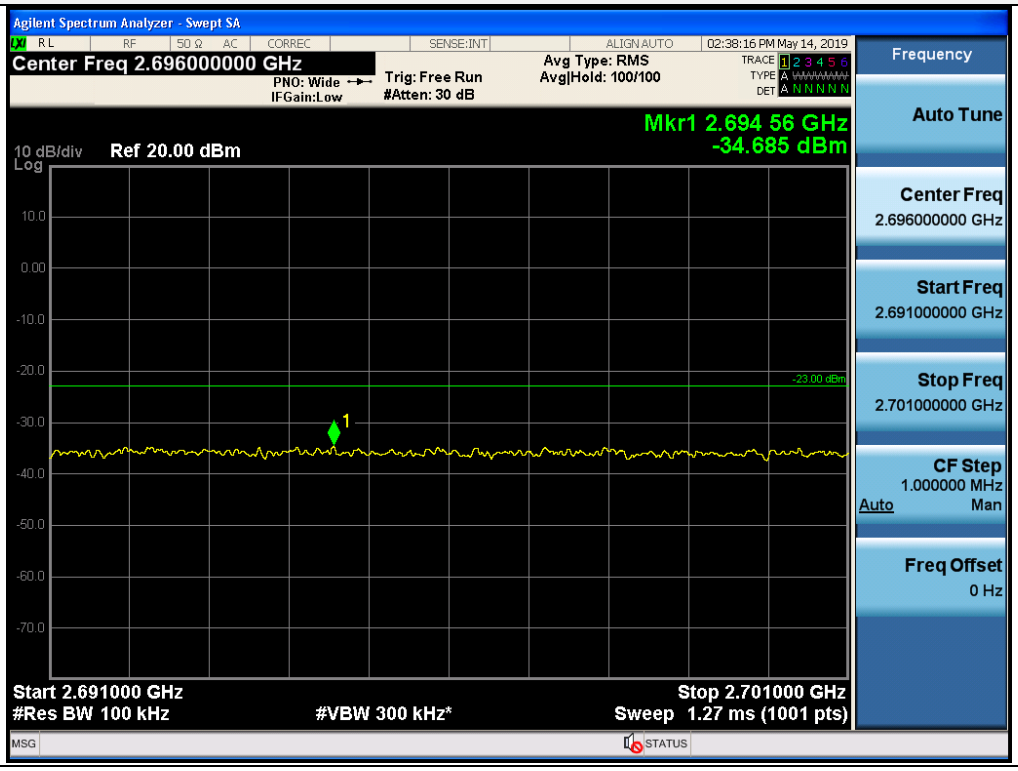
Spurious / 4G LTE 20 MHz, 3 Carrier / Uplink / LTE 20 MHz (3C) / Low / 30 MHz ~ Low Edge - 11 MHz



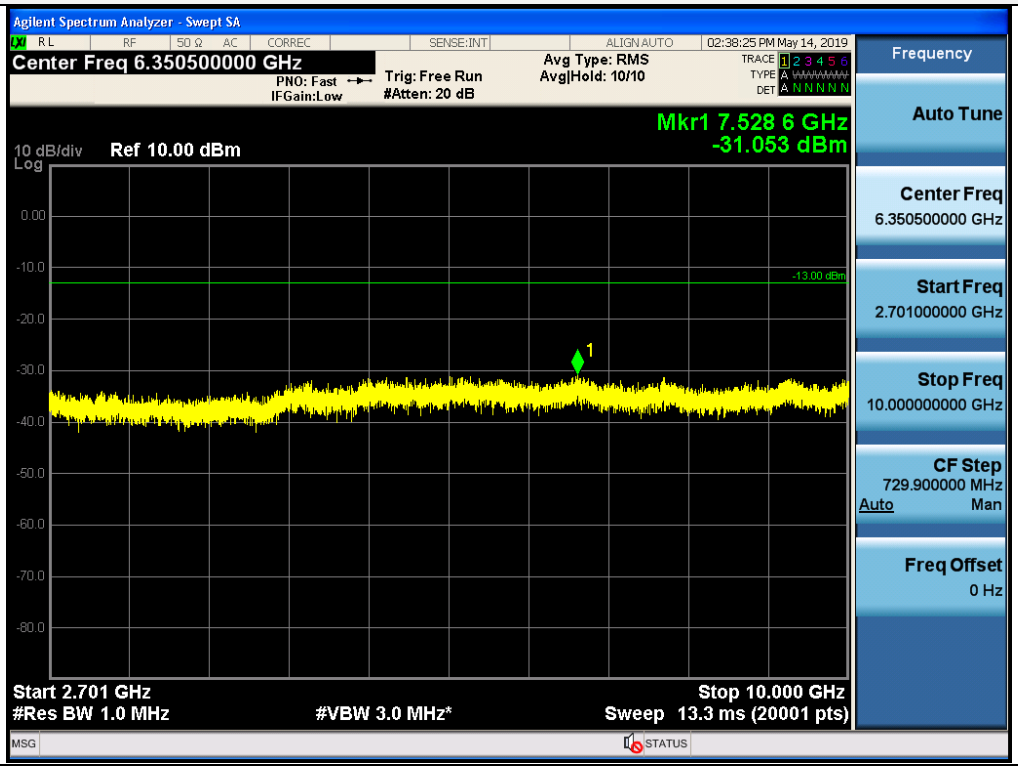
Spurious / 4G LTE 20 MHz, 3 Carrier / Uplink / LTE 20 MHz (3C) / Low / Low Edge - 11 MHz ~ Low Edge - 1 MHz



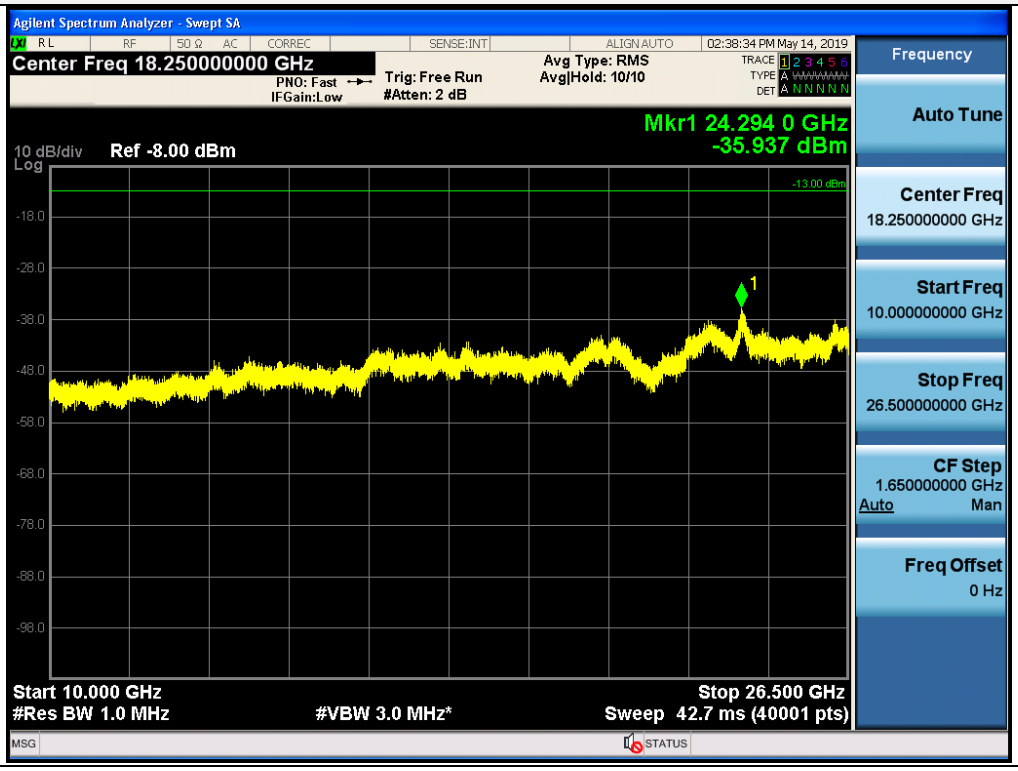
Spurious / 4G LTE 20 MHz, 3 Carrier / Uplink / LTE 20 MHz (3C) / Low / High Edge + 1 MHz ~ High Edge + 11 MHz



Spurious / 4G LTE 20 MHz, 3 Carrier / Uplink / LTE 20 MHz (3C) / Low / High Edge + 11 MHz ~ 10 GHz

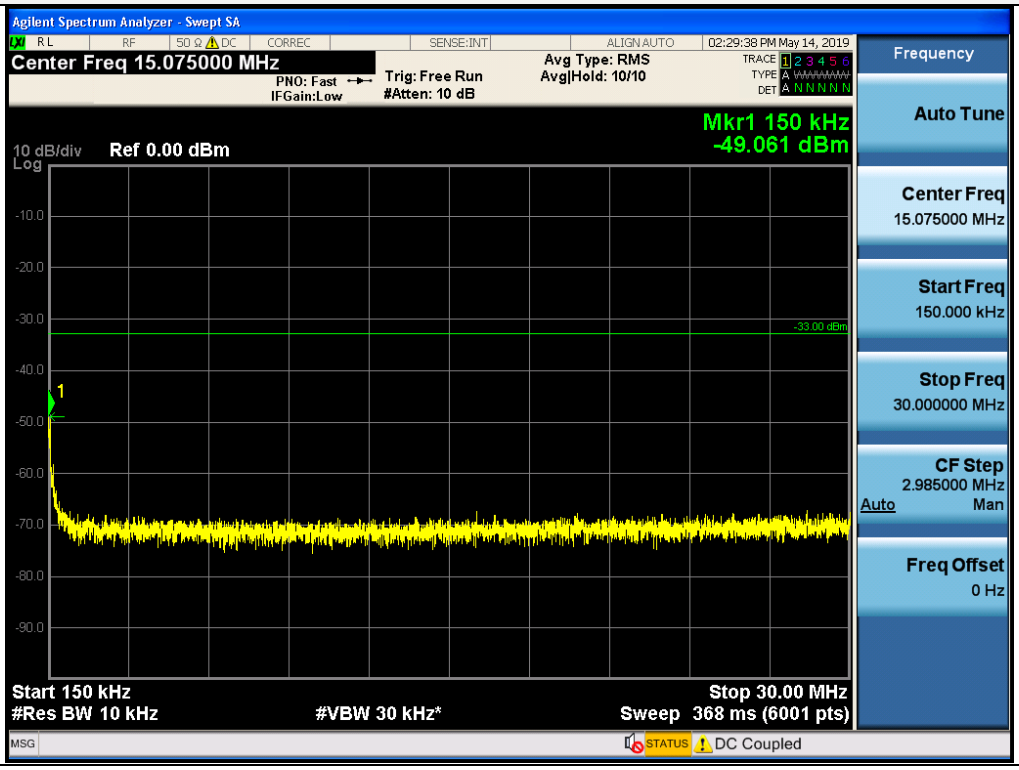


Spurious / 4G LTE 20 MHz, 3 Carrier / Uplink / LTE 20 MHz (3C) / Low / 10 GHz ~ 26.5 GHz

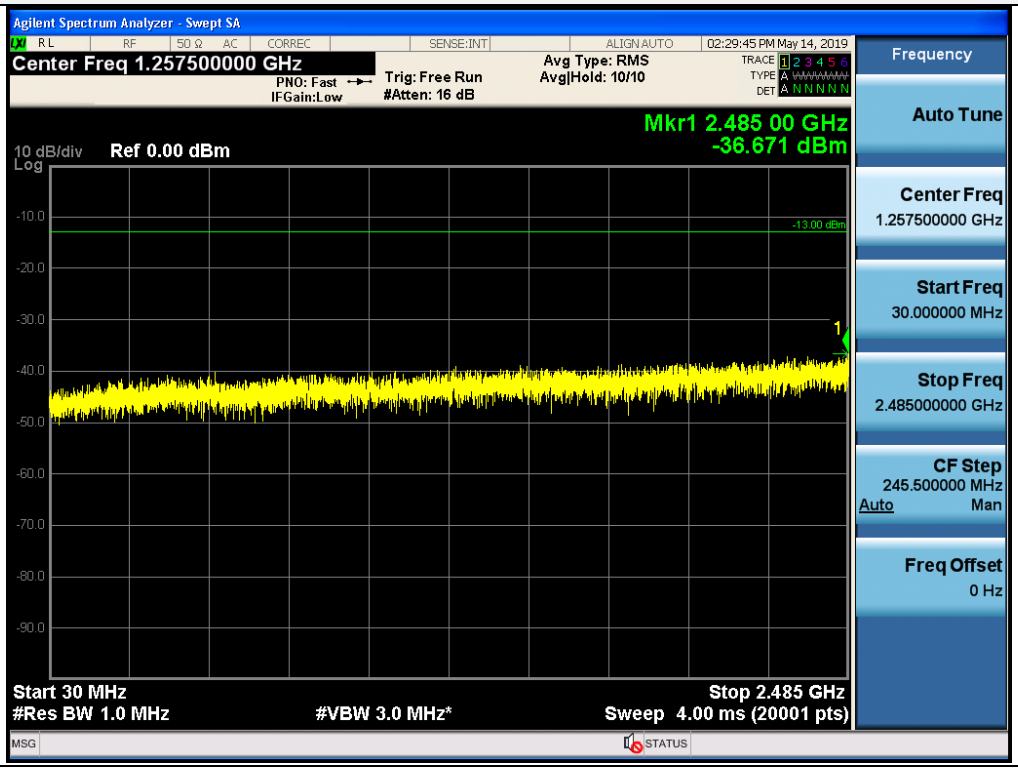


Spurious / 4G LTE 20 MHz, 3 Carrier / Uplink / LTE 20 MHz (3C) / Middle / 9 kHz ~ 150 kHz

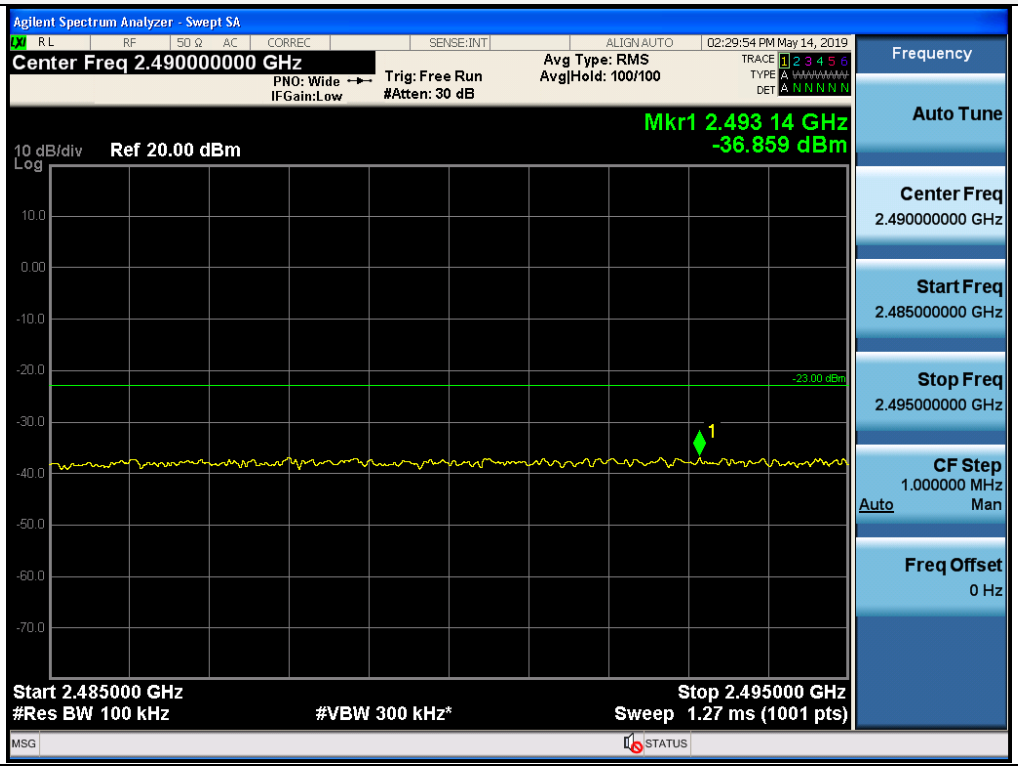
Spurious / 4G LTE 20 MHz, 3 Carrier / Uplink / LTE 20 MHz (3C) / Middle / 150 kHz ~ 30 MHz



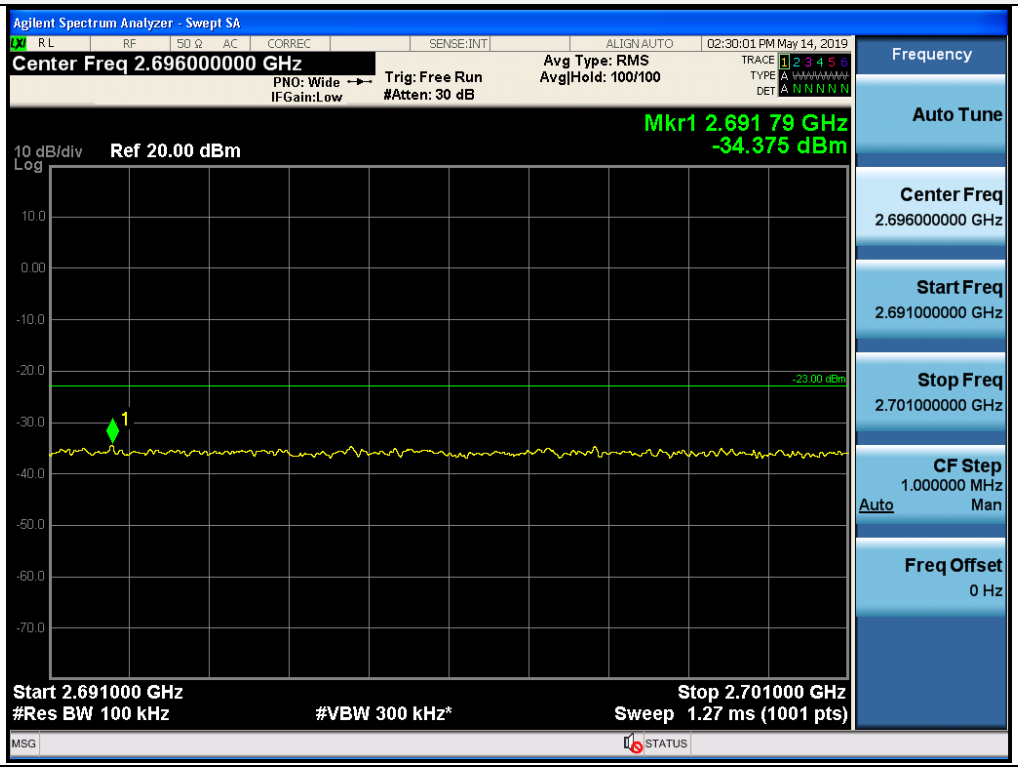
Spurious / 4G LTE 20 MHz, 3 Carrier / Uplink / LTE 20 MHz (3C) / Middle / 30 MHz ~ Low Edge - 11 MHz



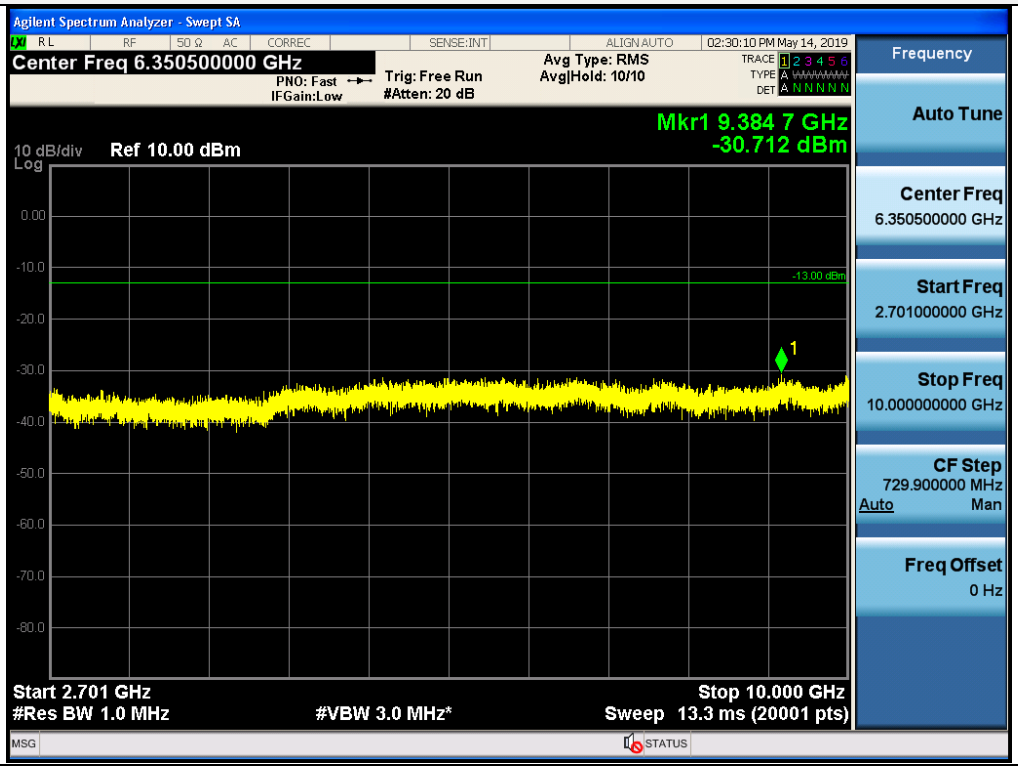
Spurious / 4G LTE 20 MHz, 3 Carrier / Uplink / LTE 20 MHz (3C) / Middle / Low Edge - 11 MHz ~ Low Edge - 1 MHz



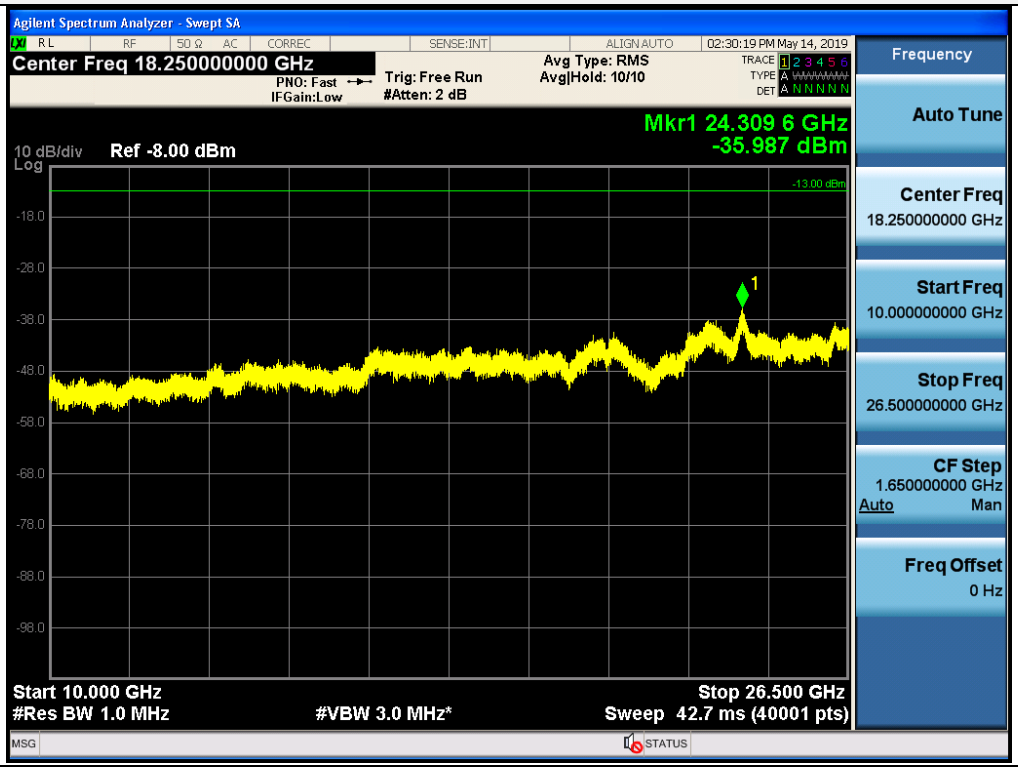
Spurious / 4G LTE 20 MHz, 3 Carrier / Uplink / LTE 20 MHz (3C) / Middle / High Edge + 1 MHz ~ High Edge + 11 MHz



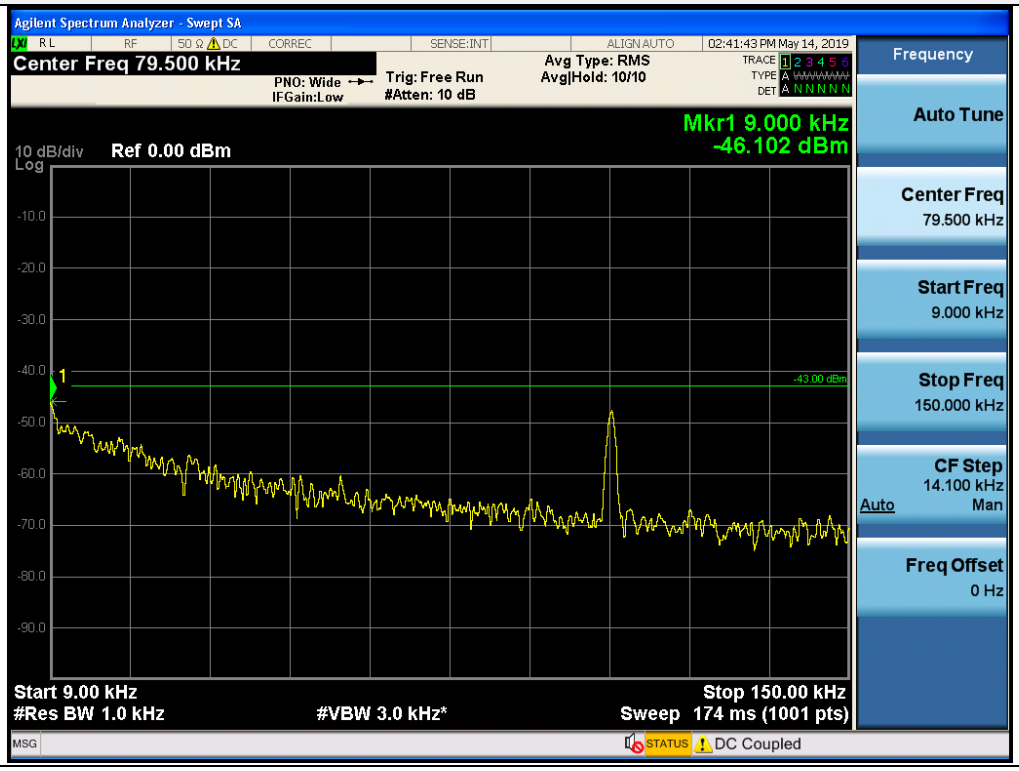
Spurious / 4G LTE 20 MHz, 3 Carrier / Uplink / LTE 20 MHz (3C) / Middle / High Edge + 11 MHz ~ 10 GHz



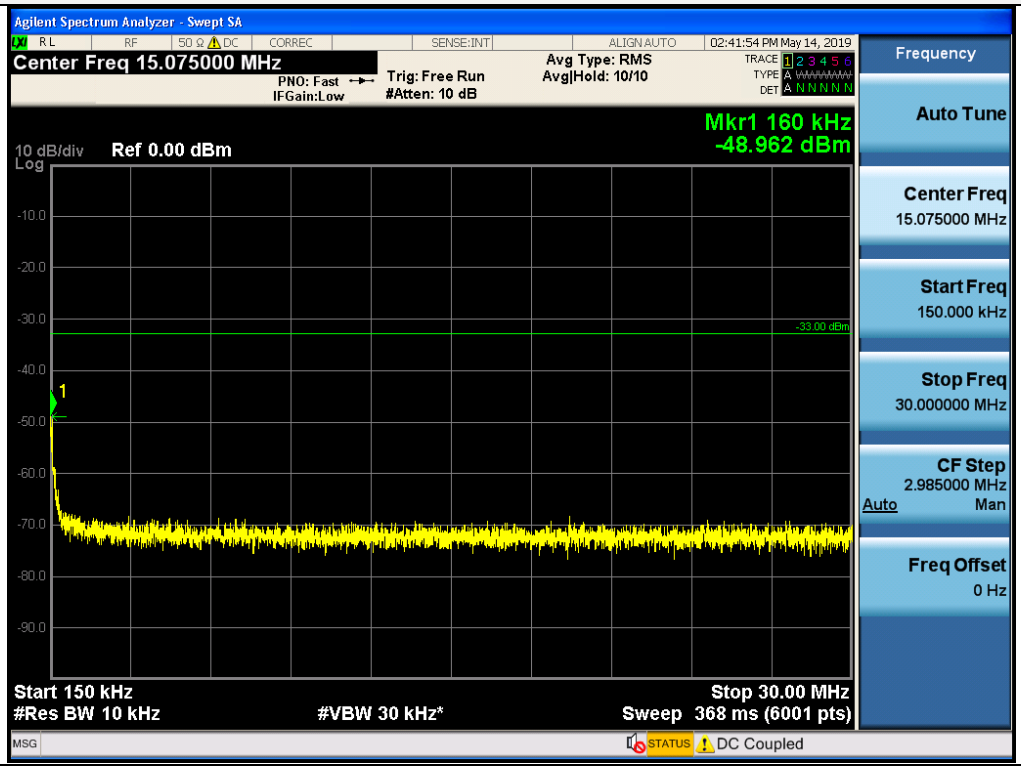
Spurious / 4G LTE 20 MHz, 3 Carrier / Uplink / LTE 20 MHz (3C) / Middle / 10 GHz ~ 26.5 GHz



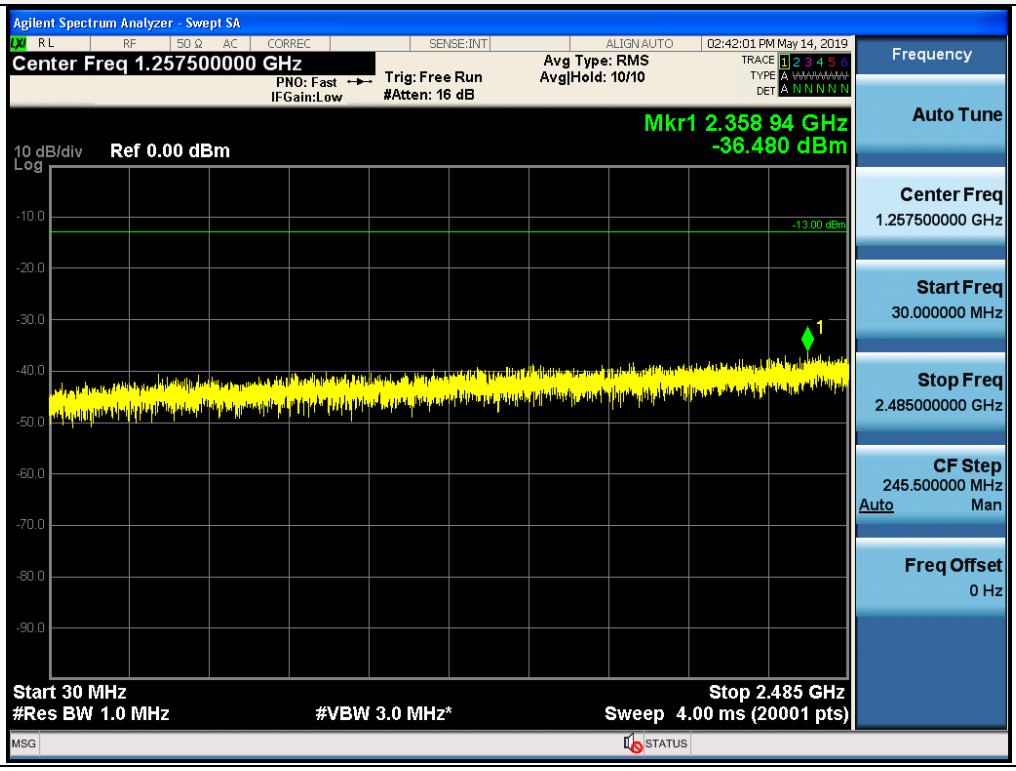
Spurious / 4G LTE 20 MHz, 3 Carrier / Uplink / LTE 20 MHz (3C) / High / 9 kHz ~ 150 kHz



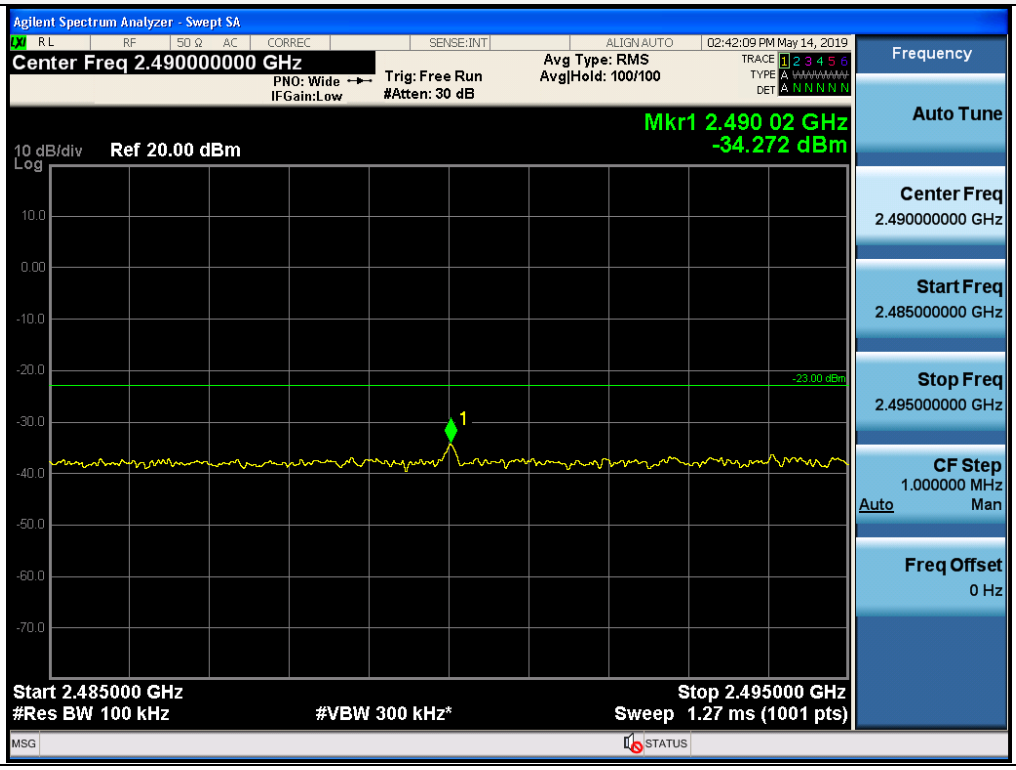
Spurious / 4G LTE 20 MHz, 3 Carrier / Uplink / LTE 20 MHz (3C) / High / 150 kHz ~ 30 MHz



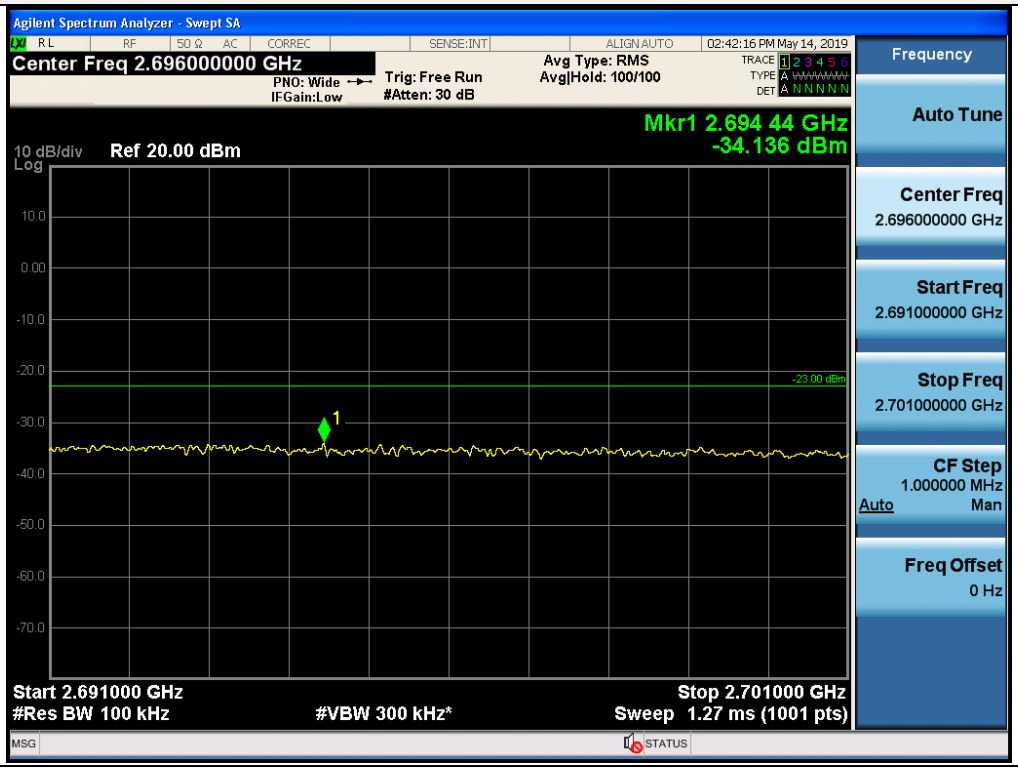
Spurious / 4G LTE 20 MHz, 3 Carrier / Uplink / LTE 20 MHz (3C) / High / 30 MHz ~ Low Edge - 11 MHz



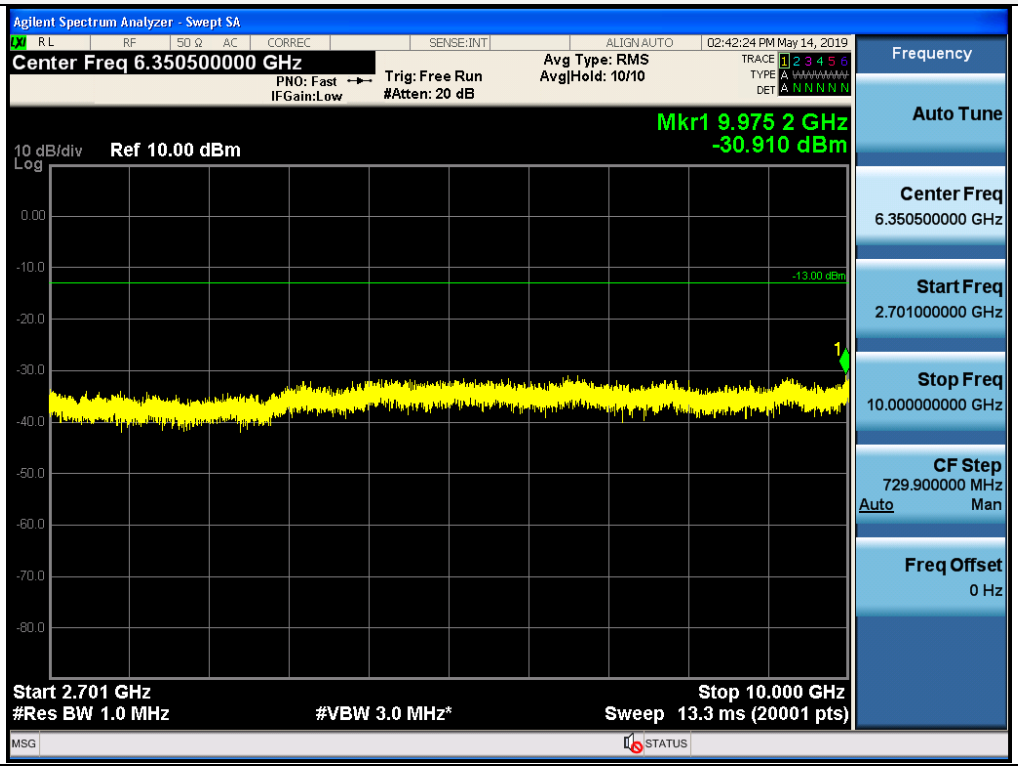
Spurious / 4G LTE 20 MHz, 3 Carrier / Uplink / LTE 20 MHz (3C) / High / Low Edge - 11 MHz ~ Low Edge - 1 MHz

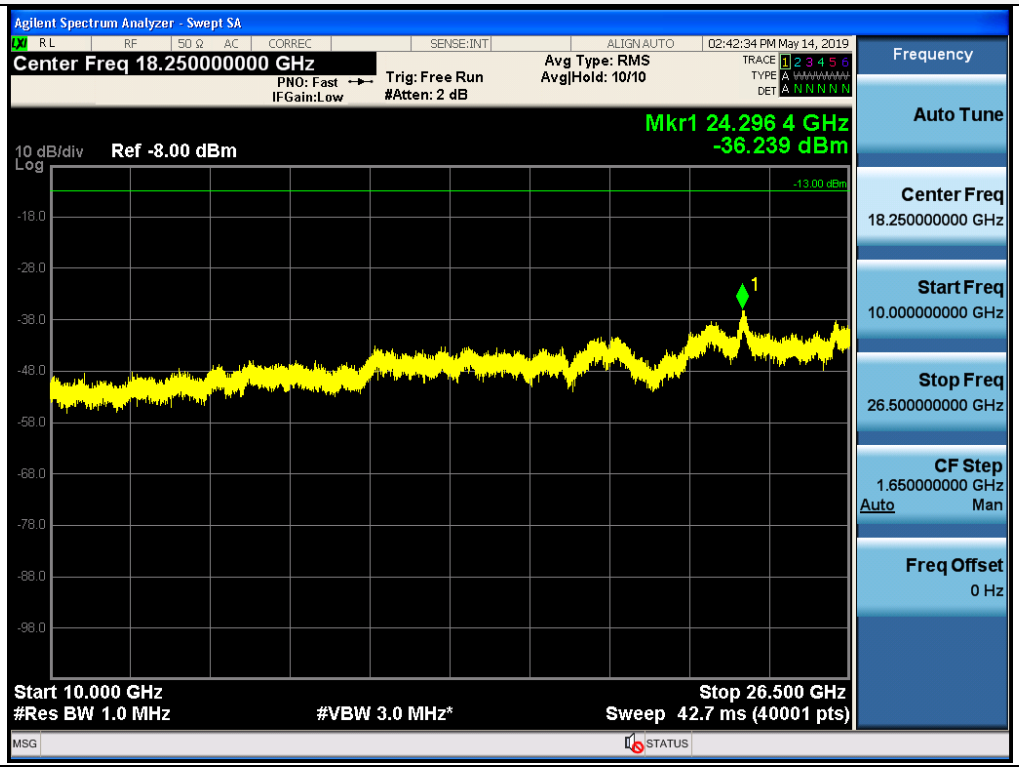


Spurious / 4G LTE 20 MHz, 3 Carrier / Uplink / LTE 20 MHz (3C) / High / High Edge + 1 MHz ~ High Edge + 11 MHz

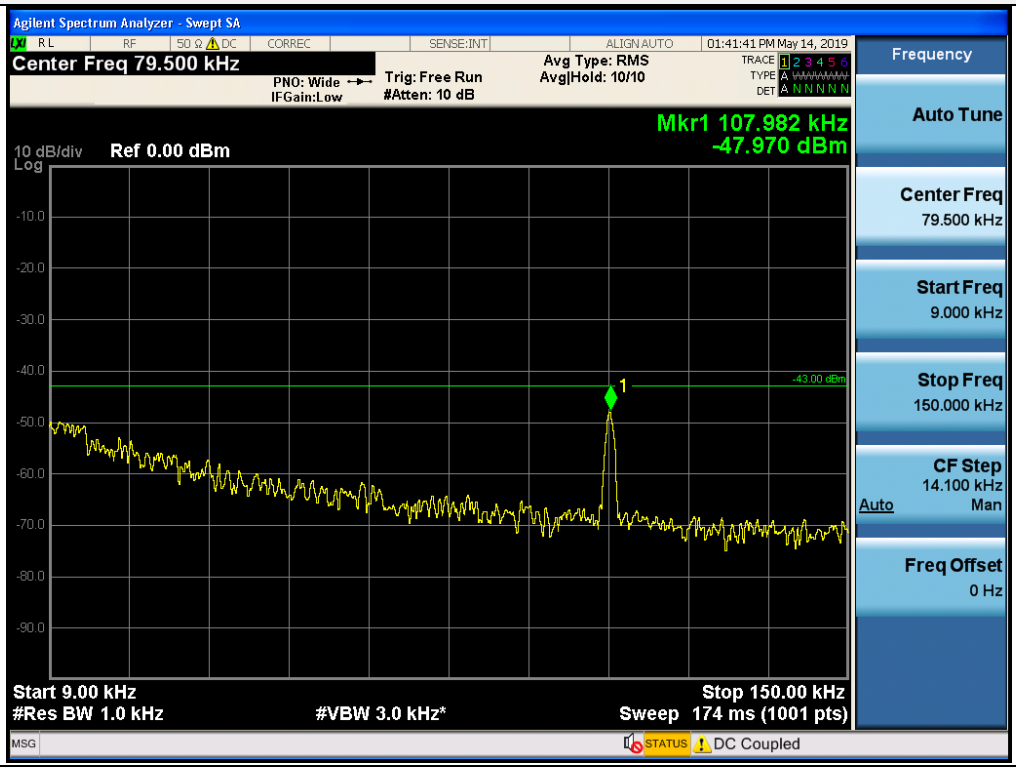


Spurious / 4G LTE 20 MHz, 3 Carrier / Uplink / LTE 20 MHz (3C) / High / High Edge + 11 MHz ~ 10 GHz

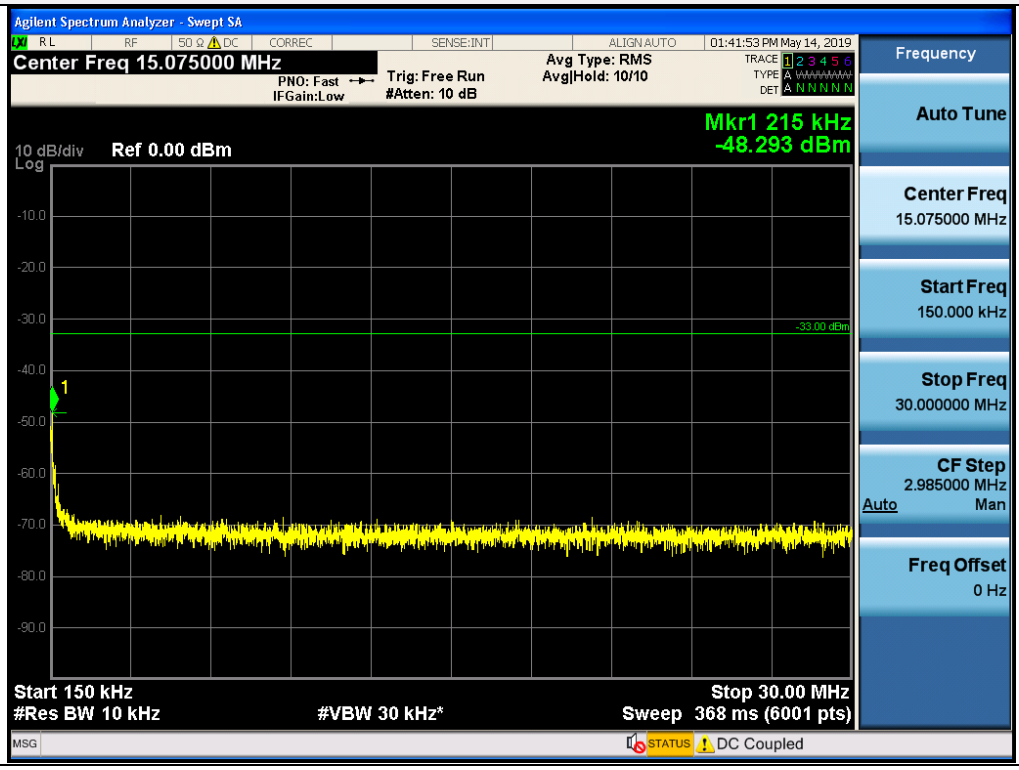


Spurious / 4G LTE 20 MHz, 3 Carrier / Uplink / LTE 20 MHz (3C) / High / 10 GHz ~ 26.5 GHz


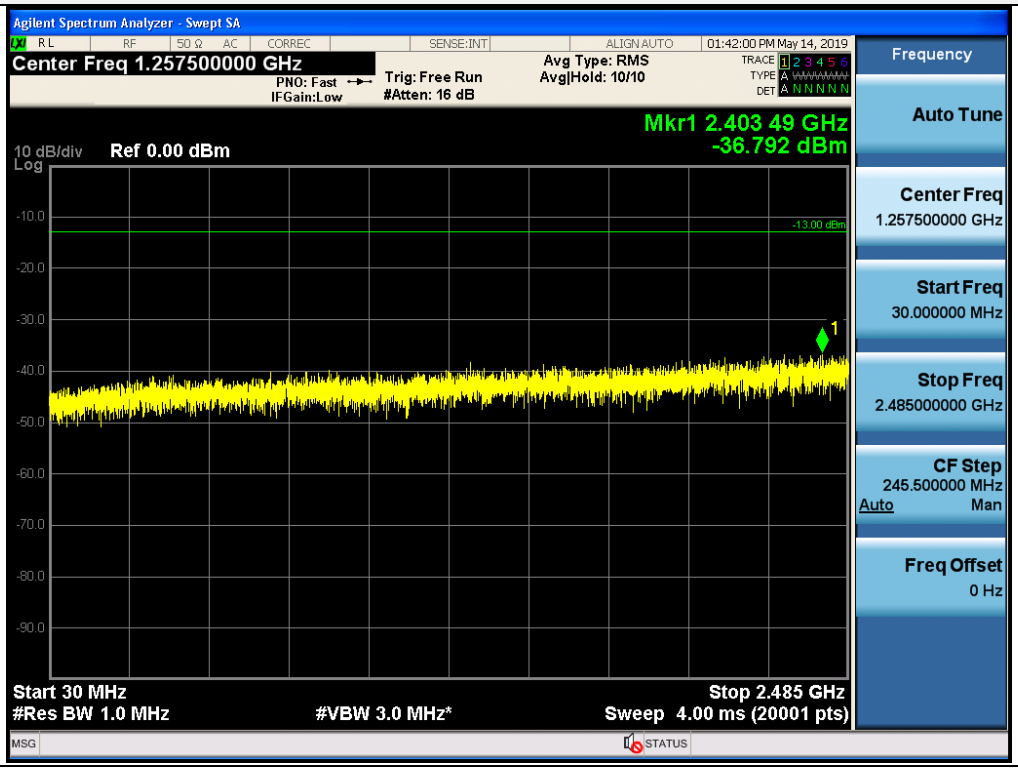
Spurious / 4G LTE 20 MHz, 3 Carrier / Downlink / LTE 20 MHz (3C) / Low / 9 kHz ~ 150 kHz



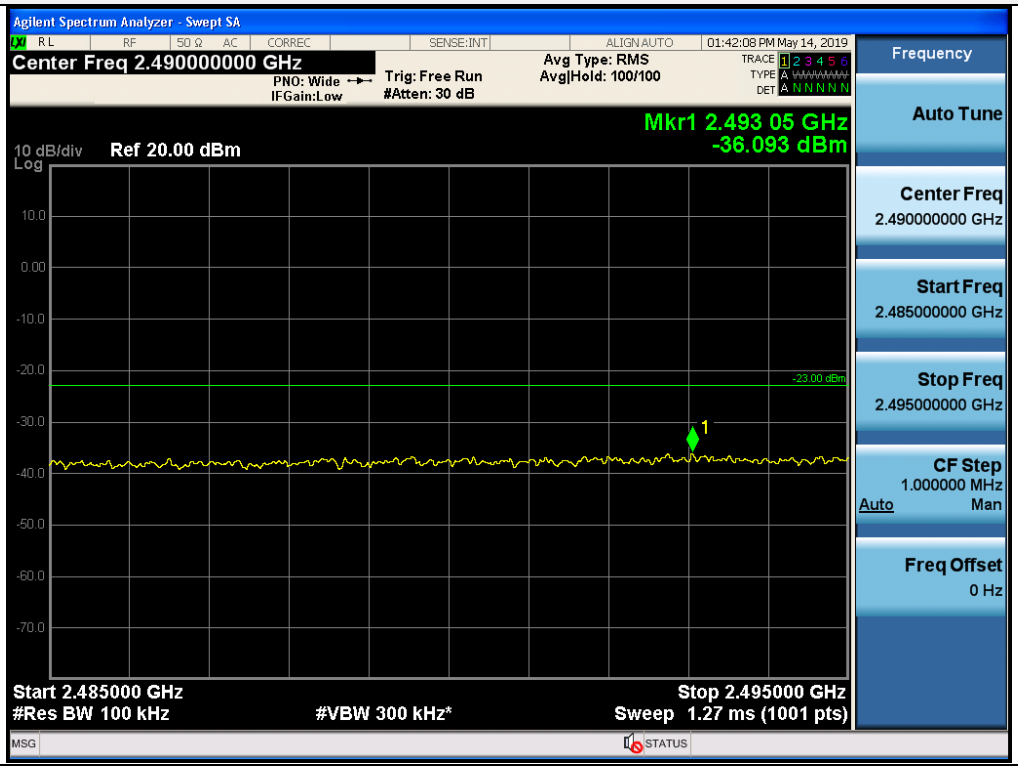
Spurious / 4G LTE 20 MHz, 3 Carrier / Downlink / LTE 20 MHz (3C) / Low / 150 kHz ~ 30 MHz



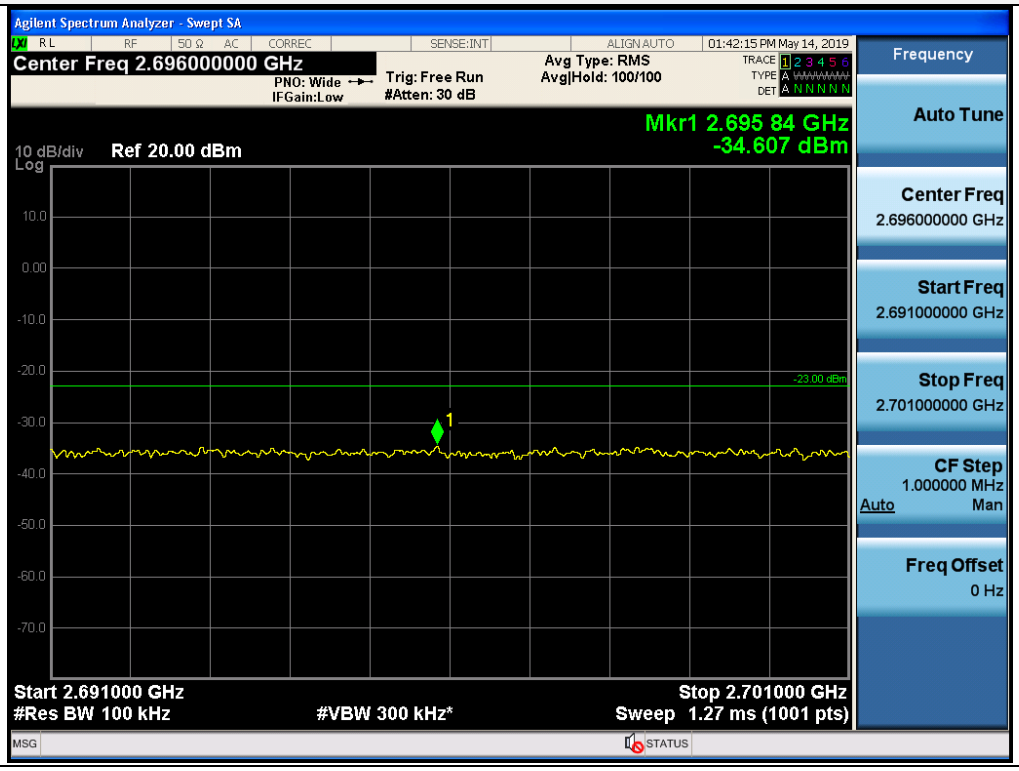
Spurious / 4G LTE 20 MHz, 3 Carrier / Downlink / LTE 20 MHz (3C) / Low / 30 MHz ~ Low Edge - 11 MHz



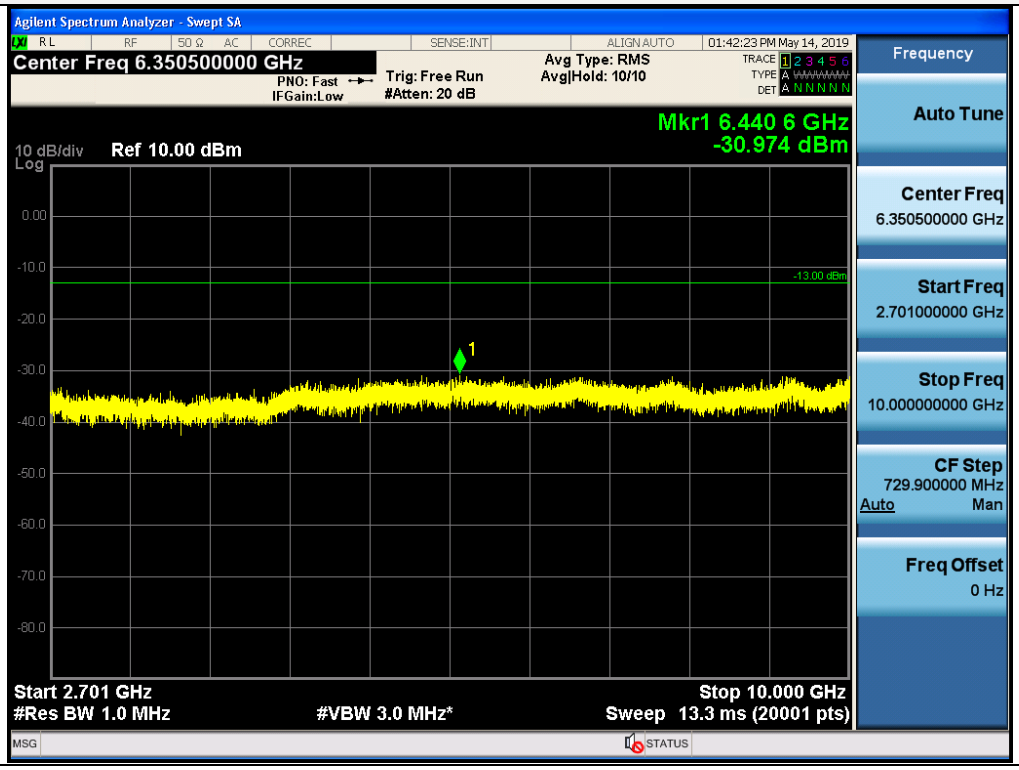
Spurious / 4G LTE 20 MHz, 3 Carrier / Downlink / LTE 20 MHz (3C) / Low / Low Edge - 11 MHz ~ Low Edge - 1 MHz



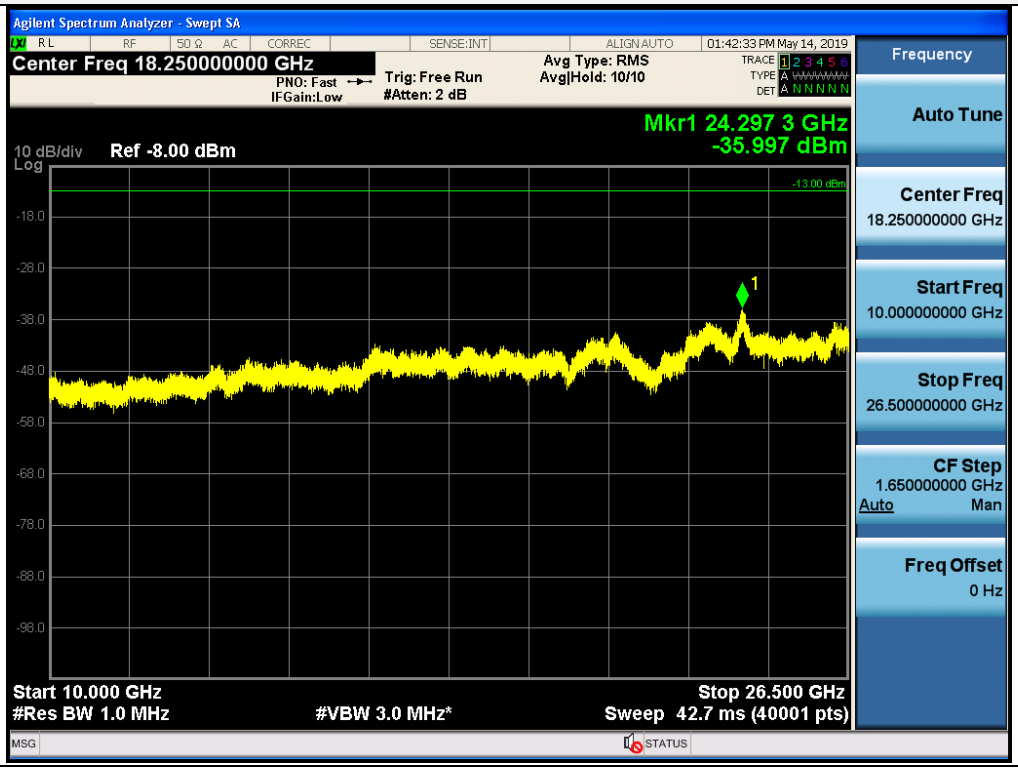
Spurious / 4G LTE 20 MHz, 3 Carrier / Downlink / LTE 20 MHz (3C) / Low / High Edge + 1 MHz ~ High Edge + 11 MHz



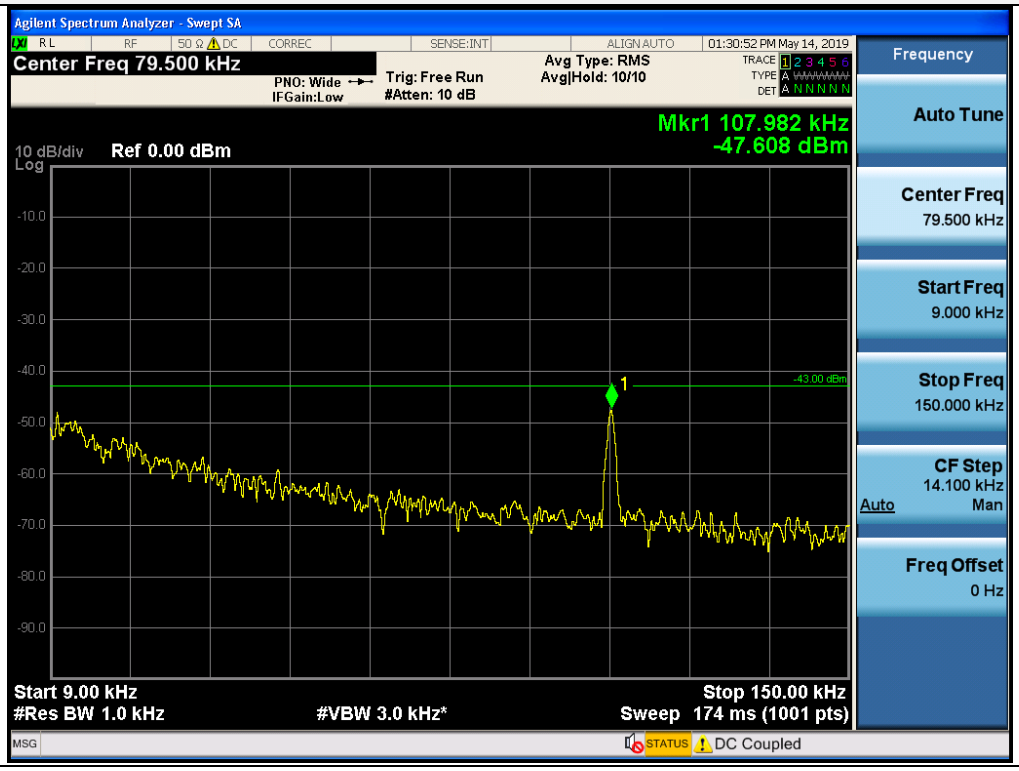
Spurious / 4G LTE 20 MHz, 3 Carrier / Downlink / LTE 20 MHz (3C) / Low / High Edge + 11 MHz ~ 10 GHz



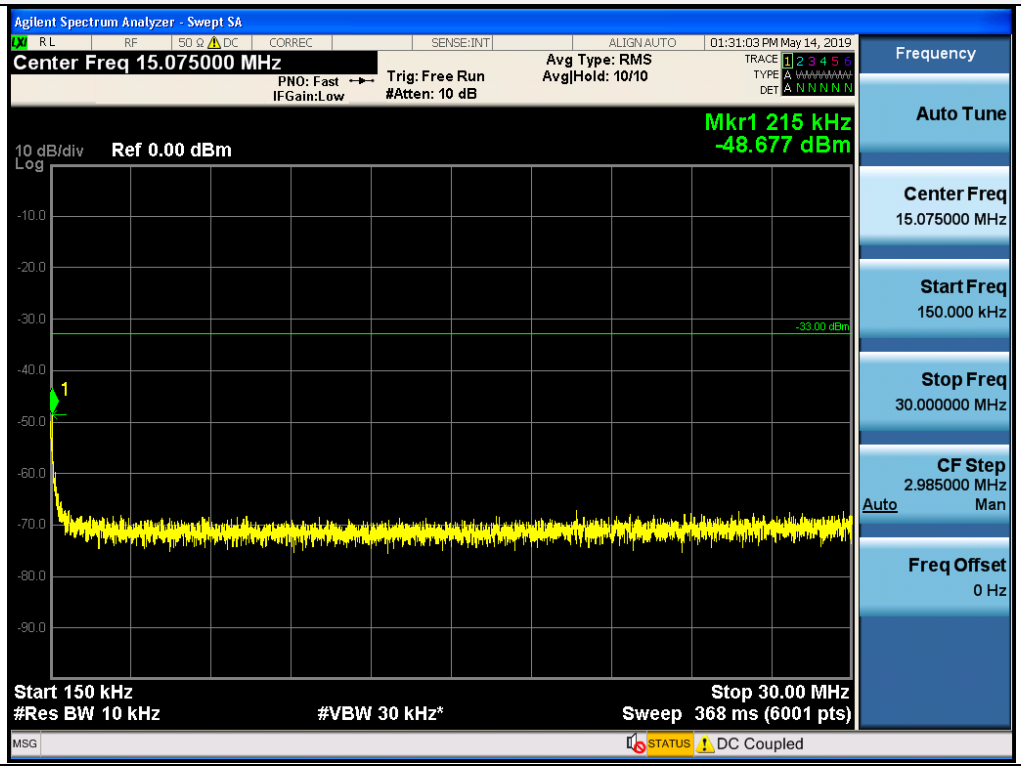
Spurious / 4G LTE 20 MHz, 3 Carrier / Downlink / LTE 20 MHz (3C) / Low / 10 GHz ~ 26.5 GHz



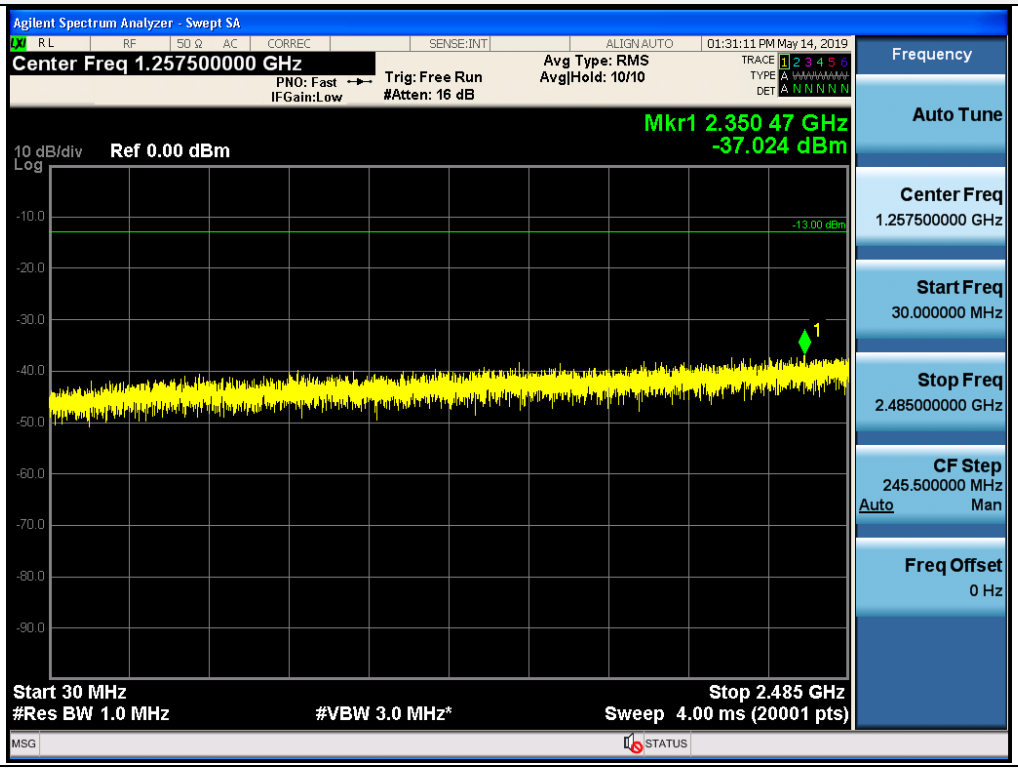
Spurious / 4G LTE 20 MHz, 3 Carrier / Downlink / LTE 20 MHz (3C) / Middle / 9 kHz ~ 150 kHz



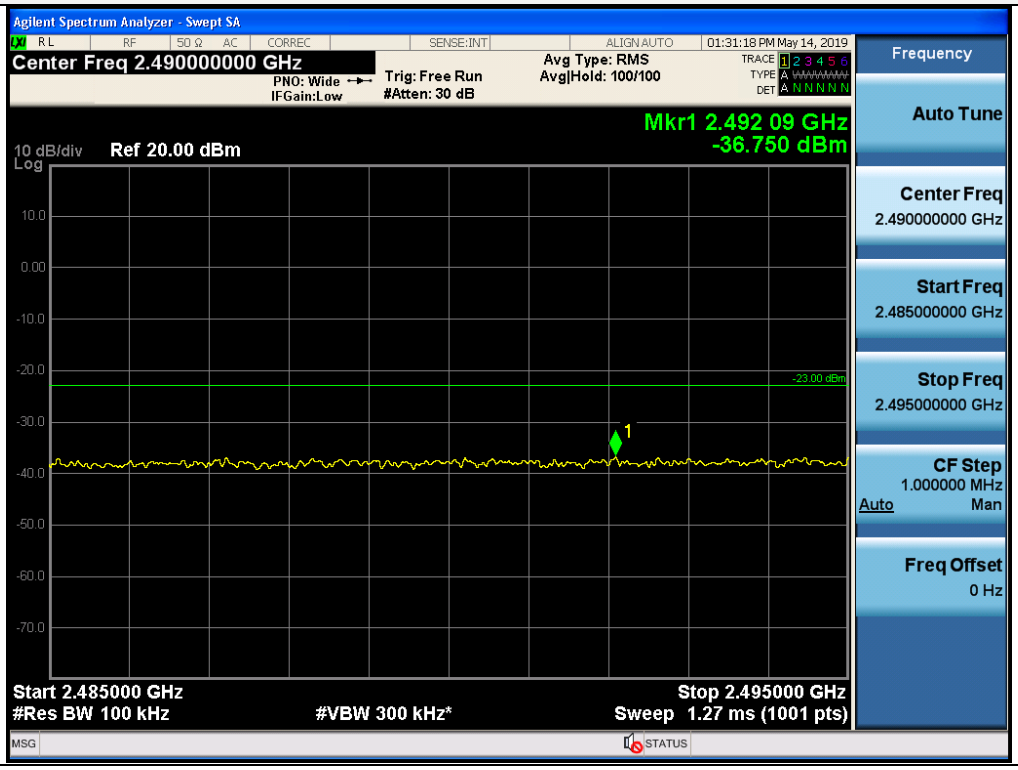
Spurious / 4G LTE 20 MHz, 3 Carrier / Downlink / LTE 20 MHz (3C) / Middle / 150 kHz ~ 30 MHz



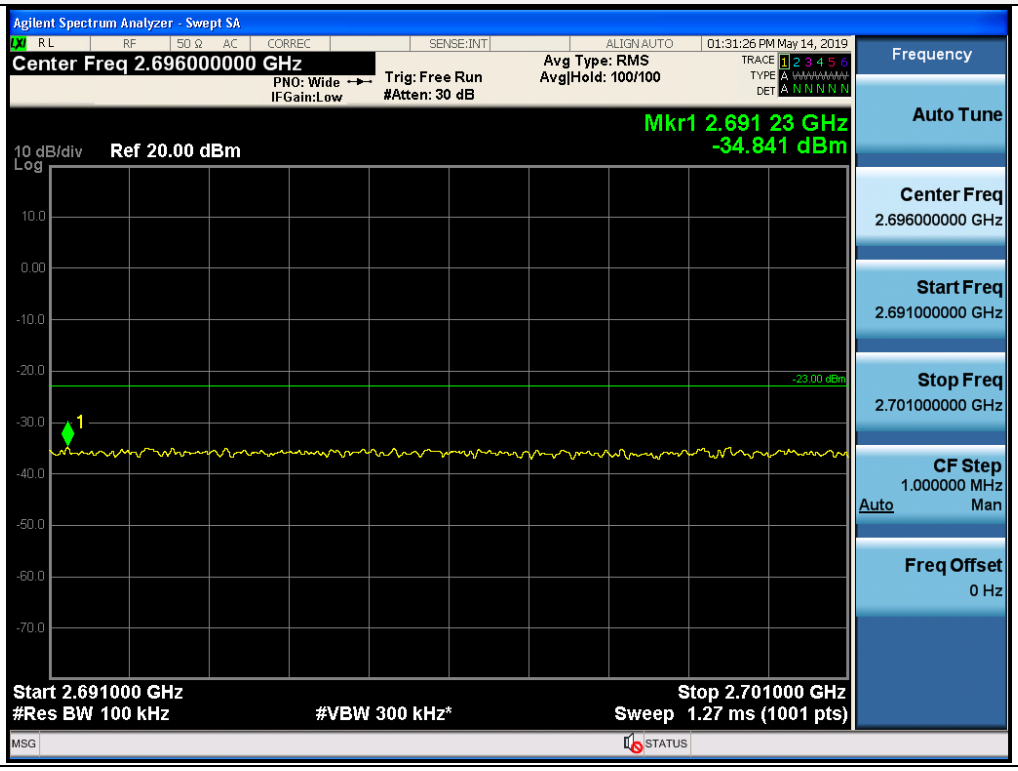
Spurious / 4G LTE 20 MHz, 3 Carrier / Downlink / LTE 20 MHz (3C) / Middle / 30 MHz ~ Low Edge - 11 MHz



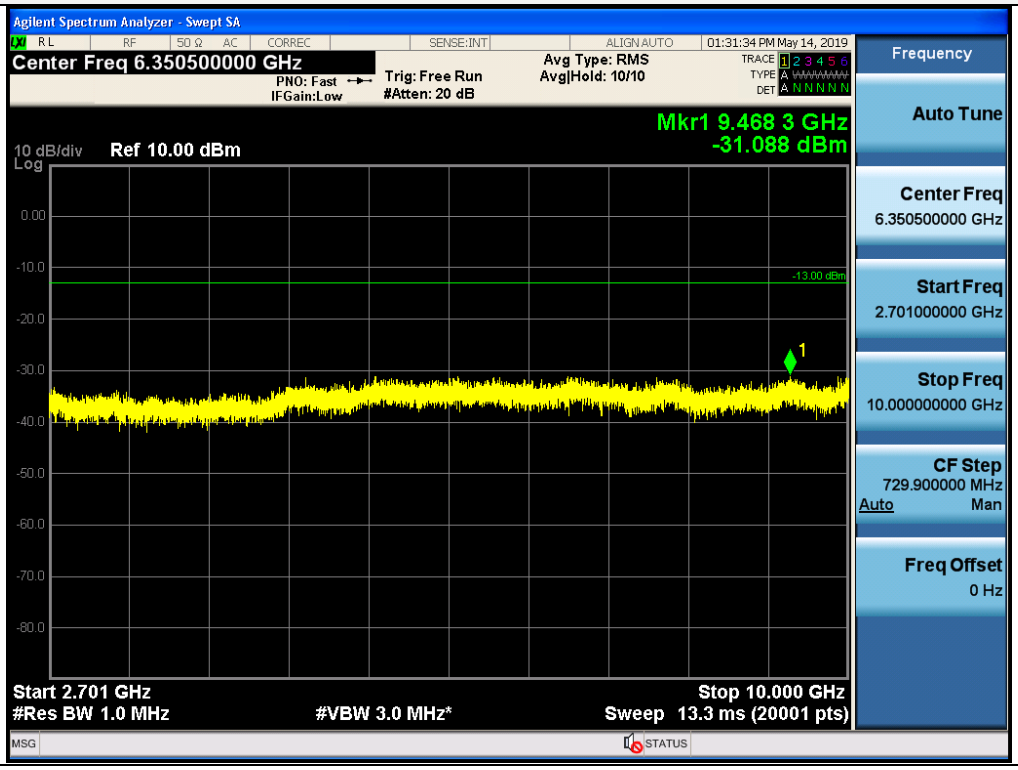
Spurious / 4G LTE 20 MHz, 3 Carrier / Downlink / LTE 20 MHz (3C) / Middle / Low Edge - 11 MHz ~ Low Edge - 1 MHz



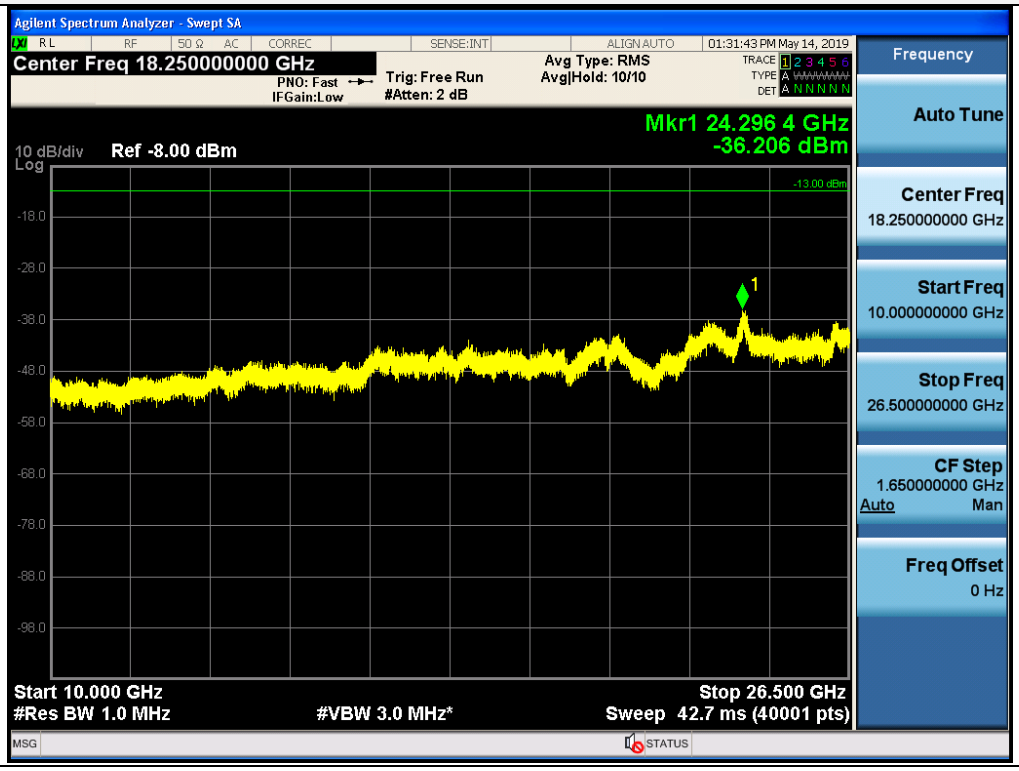
Spurious / 4G LTE 20 MHz, 3 Carrier / Downlink / LTE 20 MHz (3C) / Middle / High Edge + 1 MHz ~ High Edge + 11 MHz



Spurious / 4G LTE 20 MHz, 3 Carrier / Downlink / LTE 20 MHz (3C) / Middle / High Edge + 11 MHz ~ 10 GHz

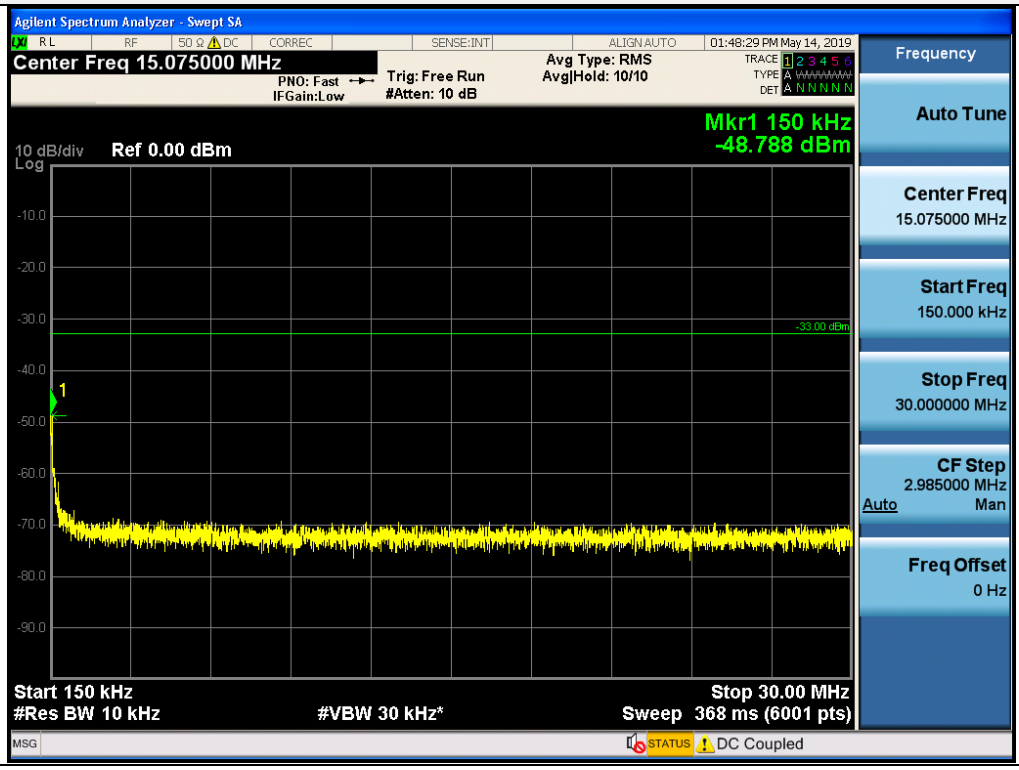


Spurious / 4G LTE 20 MHz, 3 Carrier / Downlink / LTE 20 MHz (3C) / Middle / 10 GHz ~ 26.5 GHz

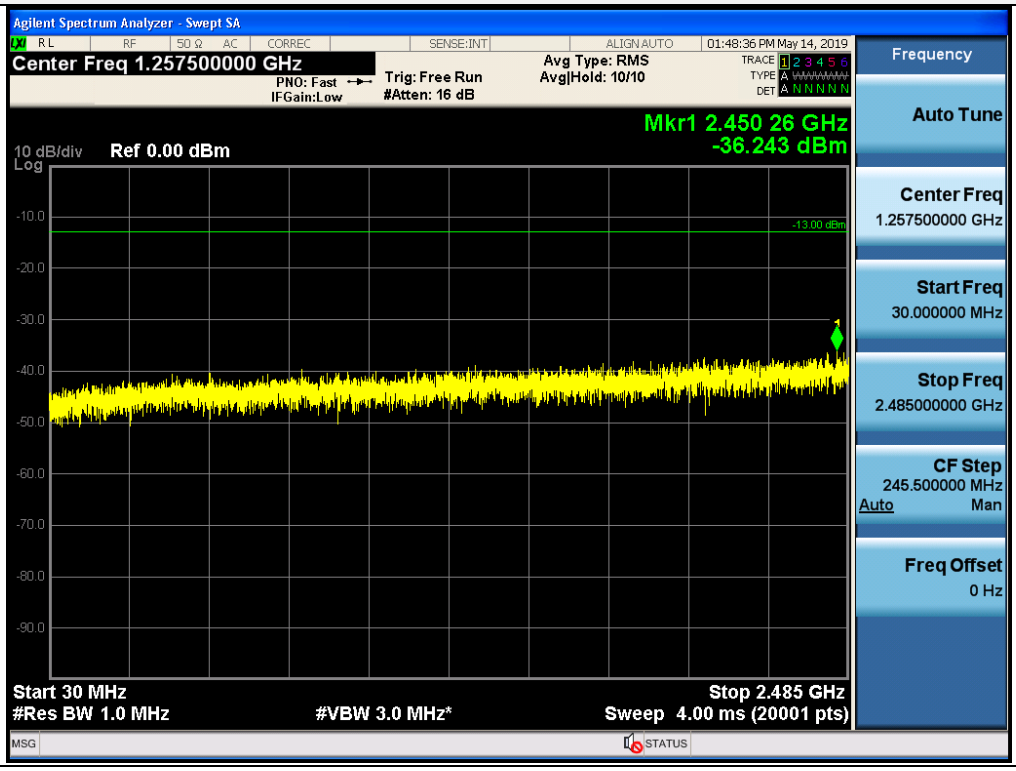


Spurious / 4G LTE 20 MHz, 3 Carrier / Downlink / LTE 20 MHz (3C) / High / 9 kHz ~ 150 kHz

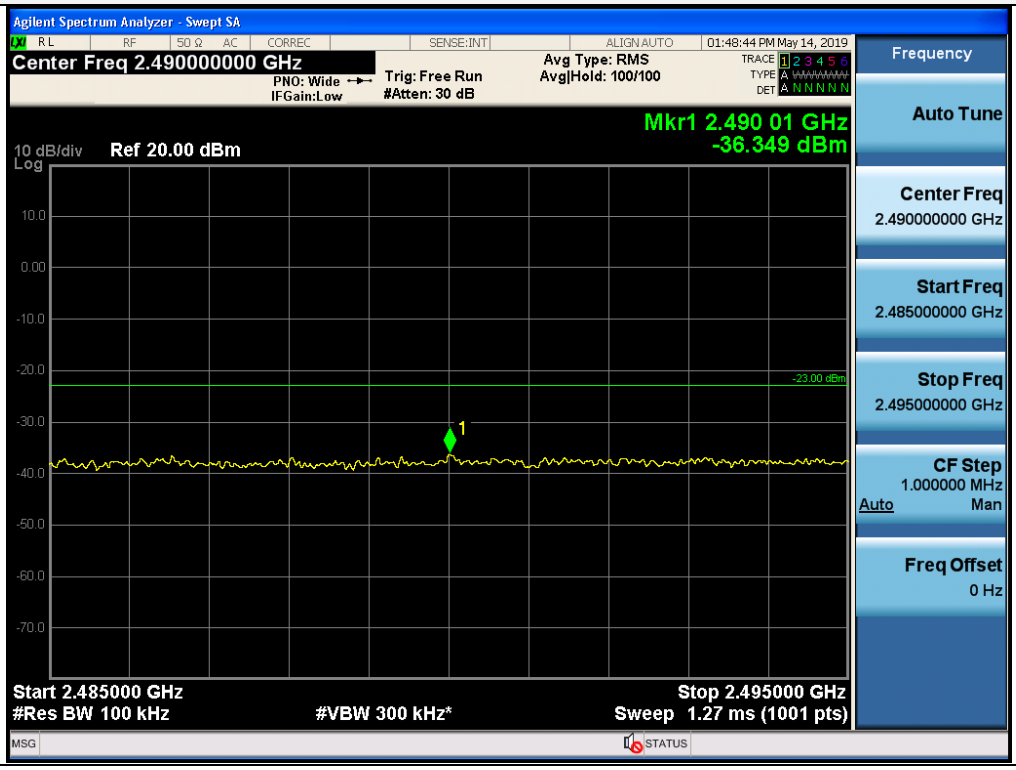
Spurious / 4G LTE 20 MHz, 3 Carrier / Downlink / LTE 20 MHz (3C) / High / 150 kHz ~ 30 MHz



Spurious / 4G LTE 20 MHz, 3 Carrier / Downlink / LTE 20 MHz (3C) / High / 30 MHz ~ Low Edge - 11 MHz

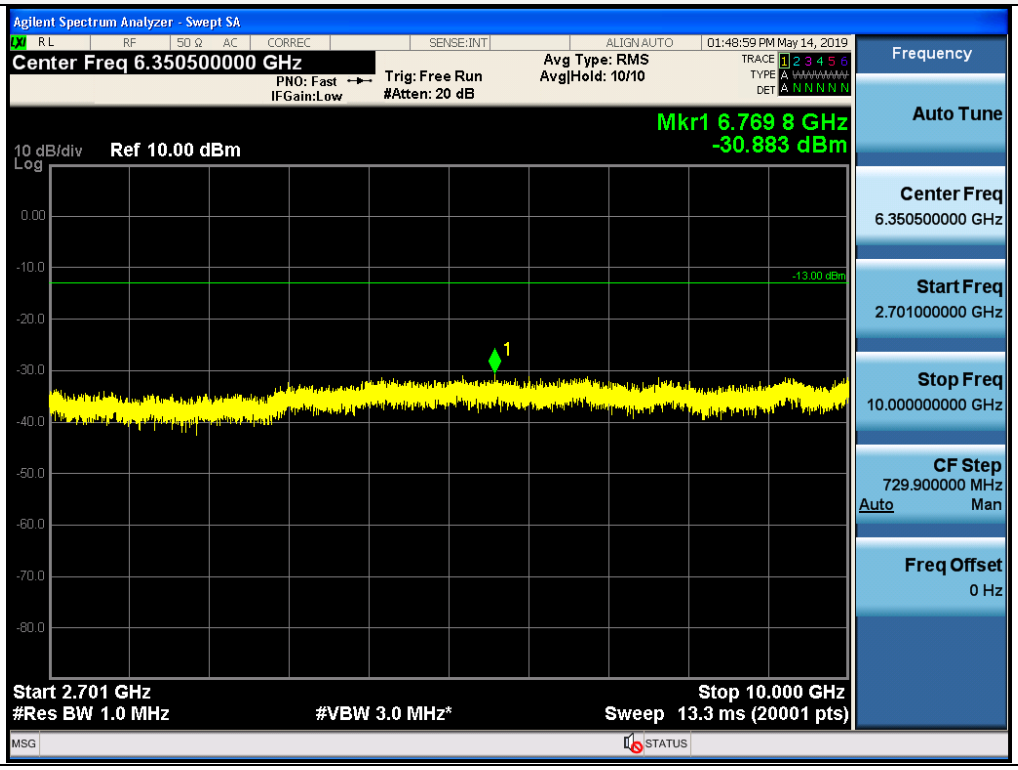


Spurious / 4G LTE 20 MHz, 3 Carrier / Downlink / LTE 20 MHz (3C) / High / Low Edge - 11 MHz ~ Low Edge - 1 MHz

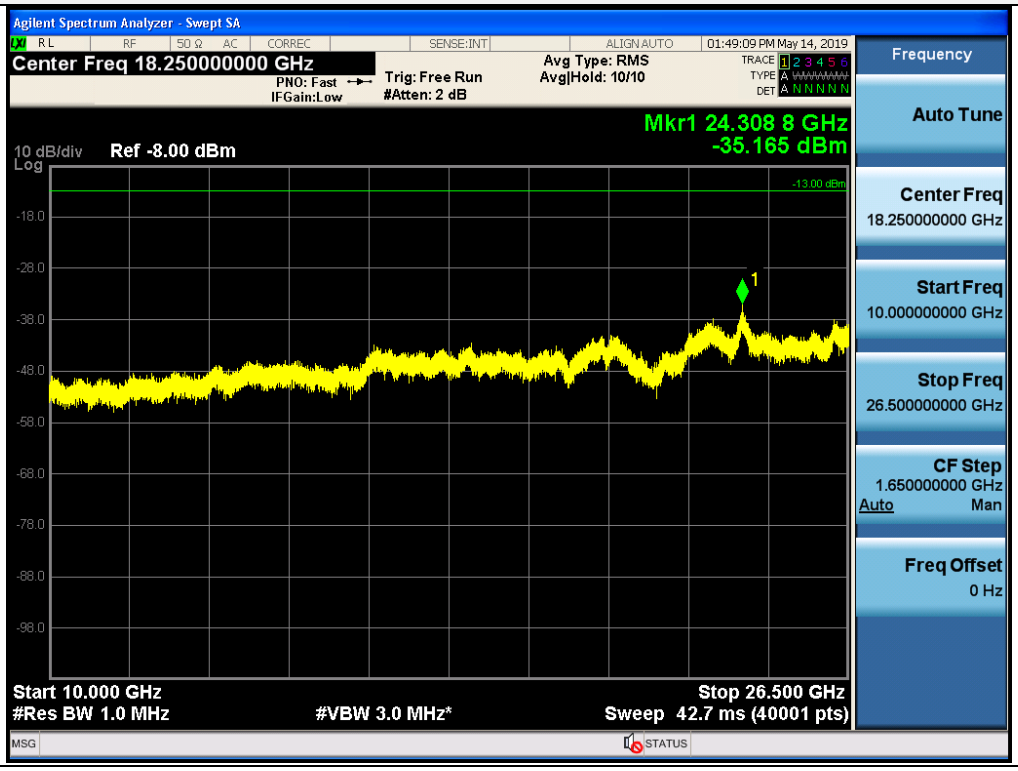


Spurious / 4G LTE 20 MHz, 3 Carrier / Downlink / LTE 20 MHz (3C) / High / High Edge + 1 MHz ~ High Edge + 11 MHz

Spurious / 4G LTE 20 MHz, 3 Carrier / Downlink / LTE 20 MHz (3C) / High / High Edge + 11 MHz ~ 10 GHz

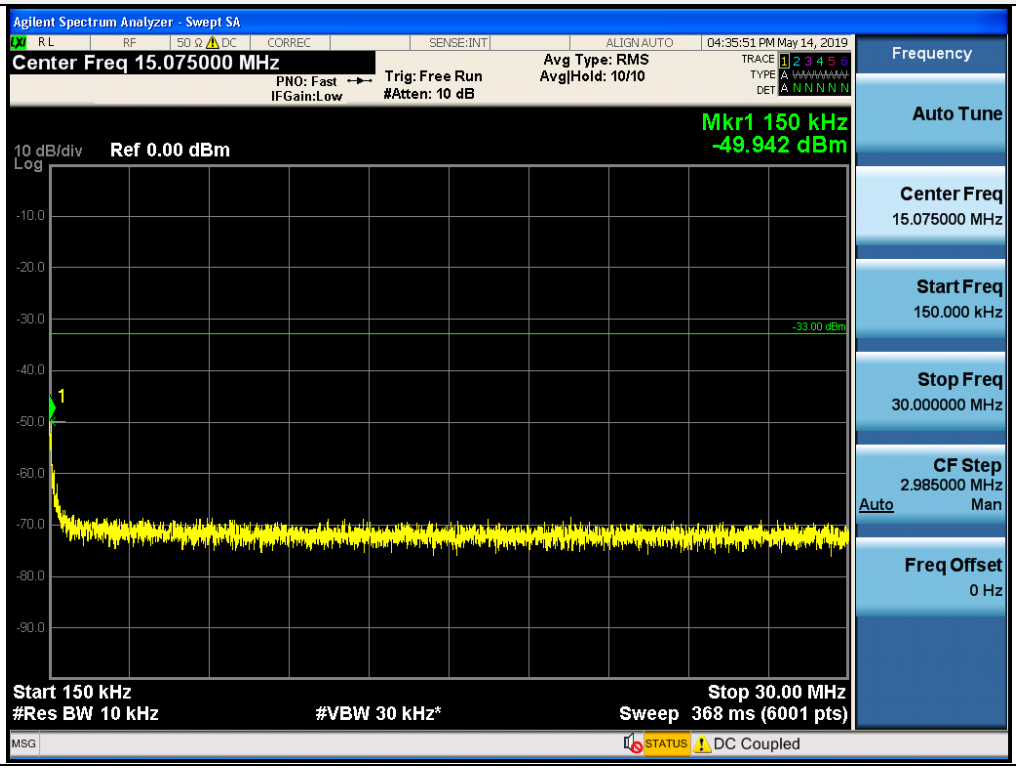


Spurious / 4G LTE 20 MHz, 3 Carrier / Downlink / LTE 20 MHz (3C) / High / 10 GHz ~ 26.5 GHz

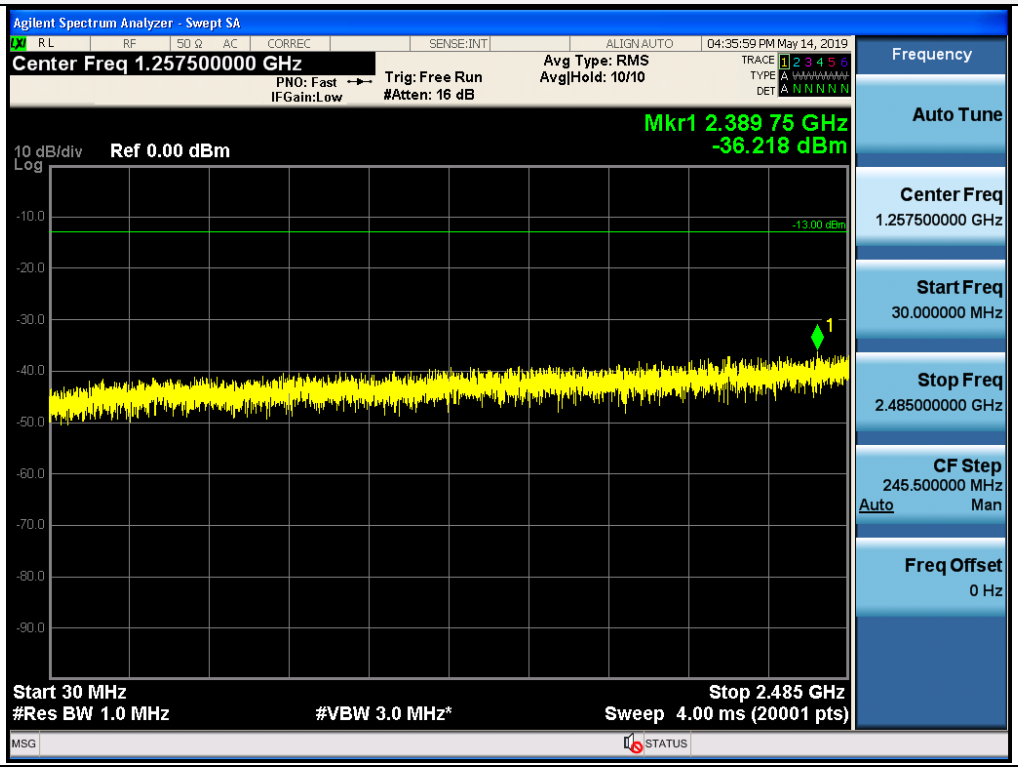


Spurious / 5G NR 60 MHz, 1 Carrier / Uplink / NR 60 MHz / Low / 9 kHz ~ 150 kHz

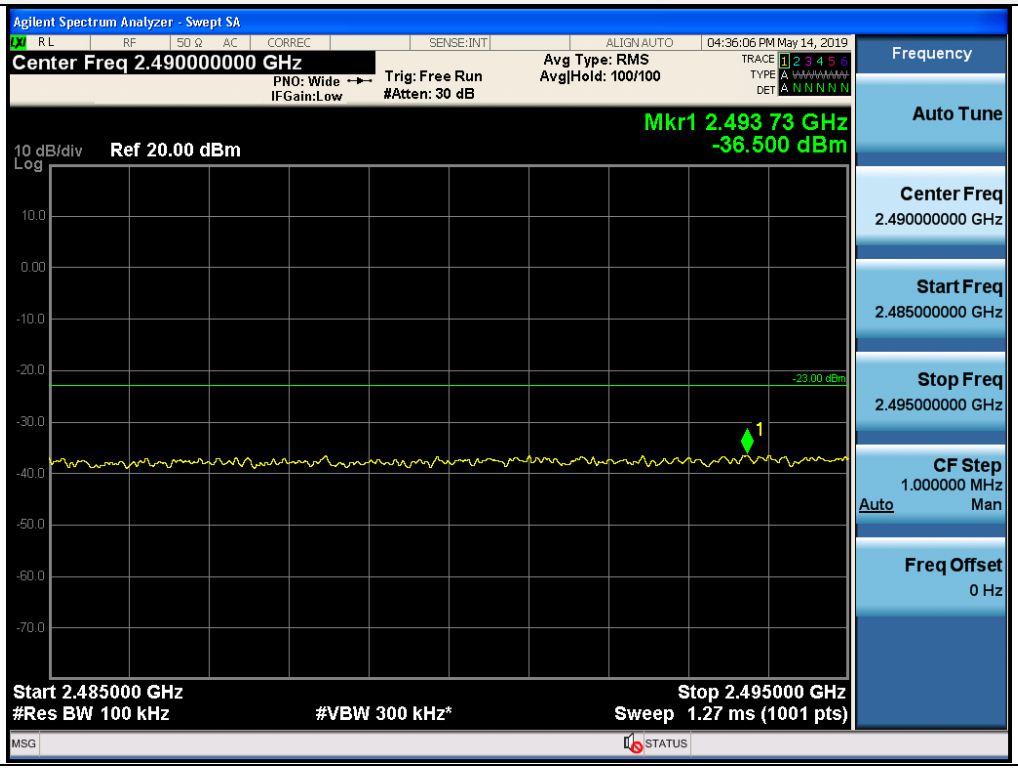
Spurious / 5G NR 60 MHz, 1 Carrier / Uplink / NR 60 MHz / Low / 150 kHz ~ 30 MHz



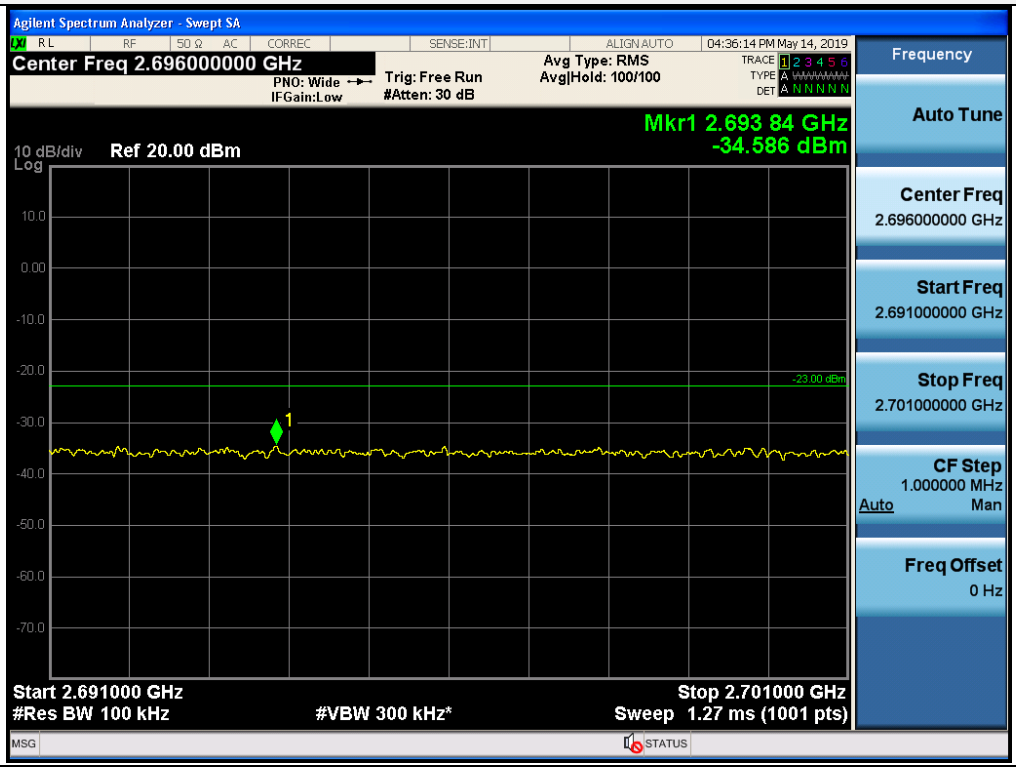
Spurious / 5G NR 60 MHz, 1 Carrier / Uplink / NR 60 MHz / Low / 30 MHz ~ Low Edge - 11 MHz



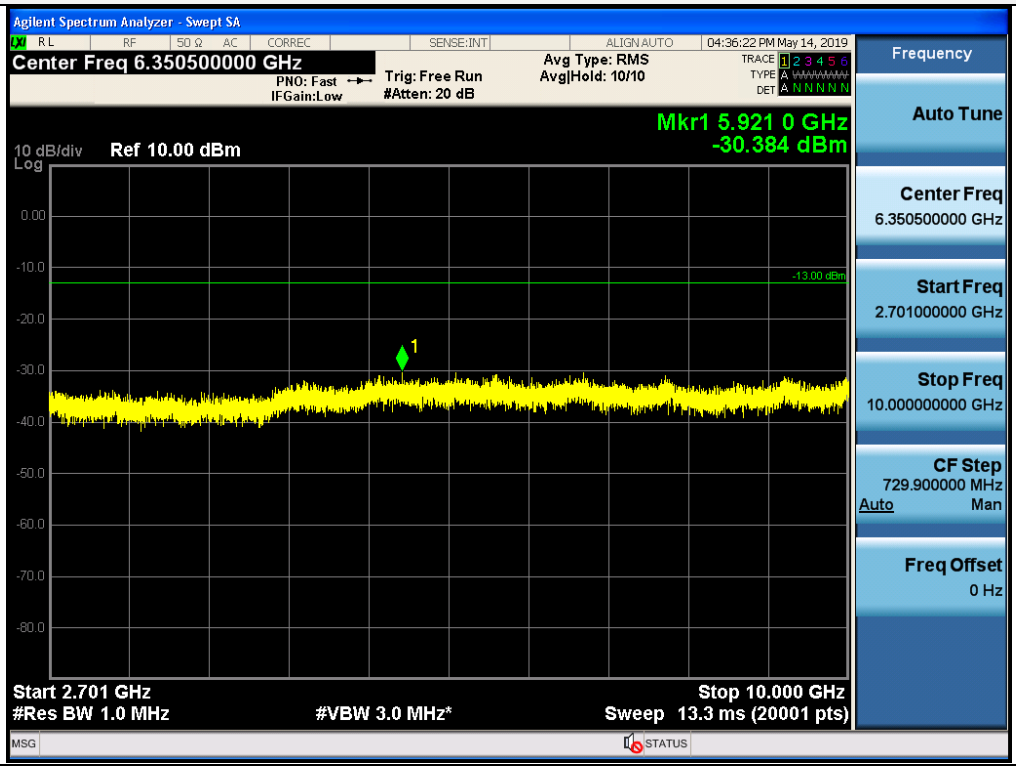
Spurious / 5G NR 60 MHz, 1 Carrier / Uplink / NR 60 MHz / Low / Low Edge - 11 MHz ~ Low Edge - 1 MHz



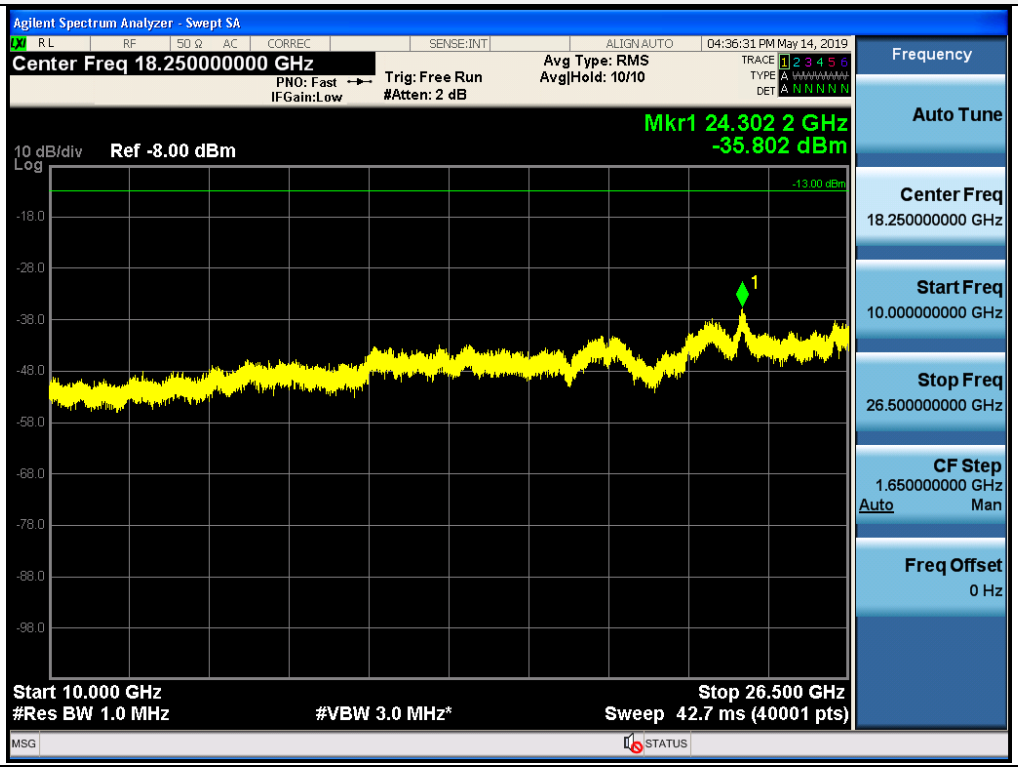
Spurious / 5G NR 60 MHz, 1 Carrier / Uplink / NR 60 MHz / Low / High Edge + 1 MHz ~ High Edge + 11 MHz



Spurious / 5G NR 60 MHz, 1 Carrier / Uplink / NR 60 MHz / Low / High Edge + 11 MHz ~ 10 GHz

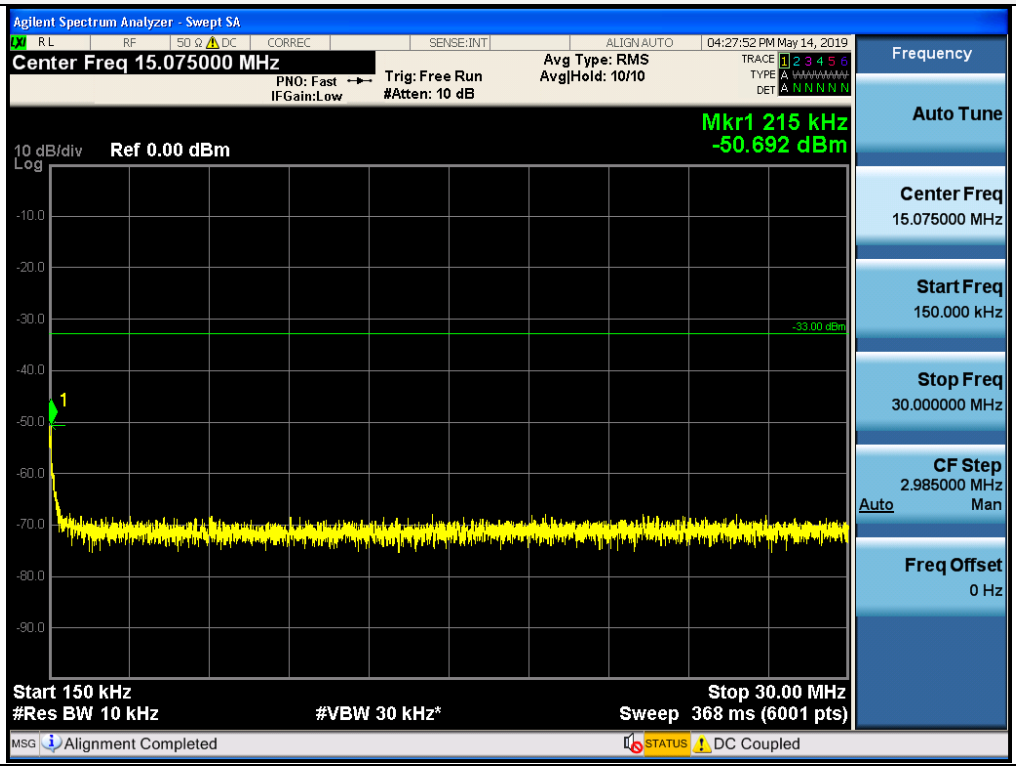


Spurious / 5G NR 60 MHz, 1 Carrier / Uplink / NR 60 MHz / Low / 10 GHz ~ 26.5 GHz

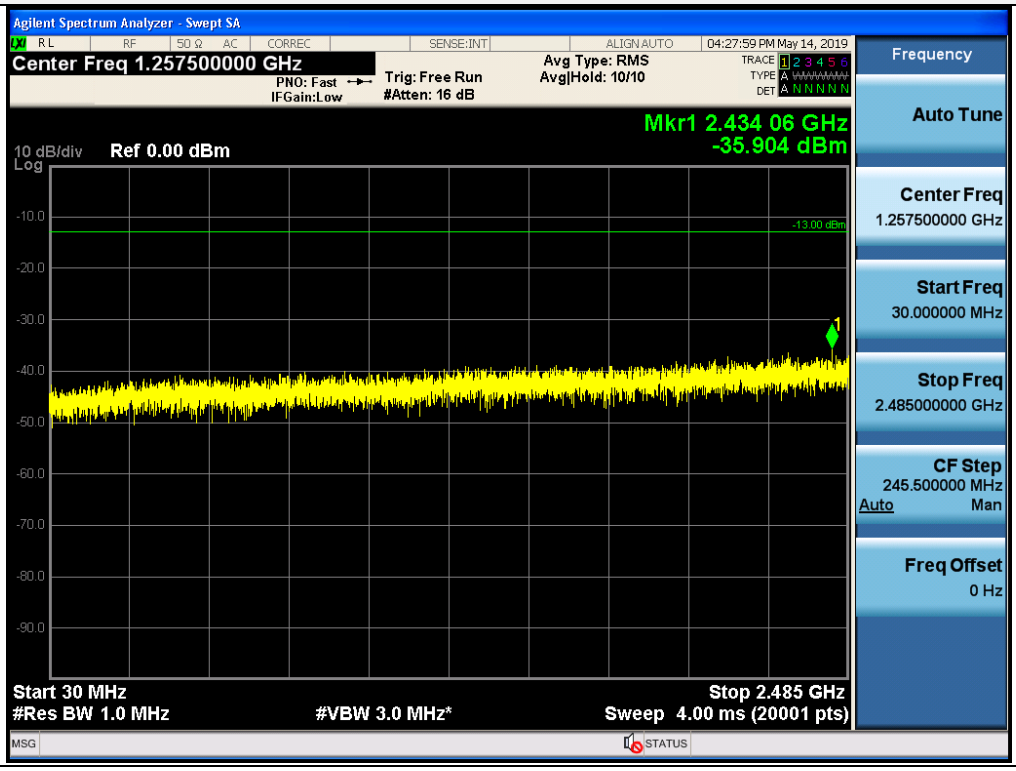


Spurious / 5G NR 60 MHz, 1 Carrier / Uplink / NR 60 MHz / Middle / 9 kHz ~ 150 kHz

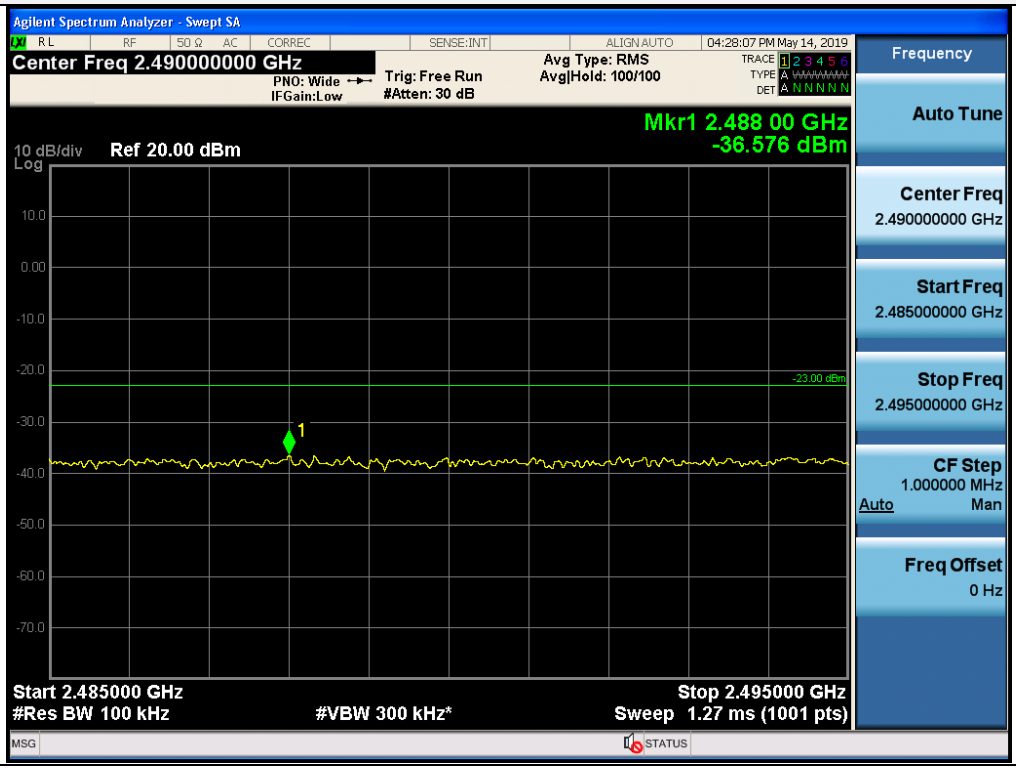
Spurious / 5G NR 60 MHz, 1 Carrier / Uplink / NR 60 MHz / Middle / 150 kHz ~ 30 MHz



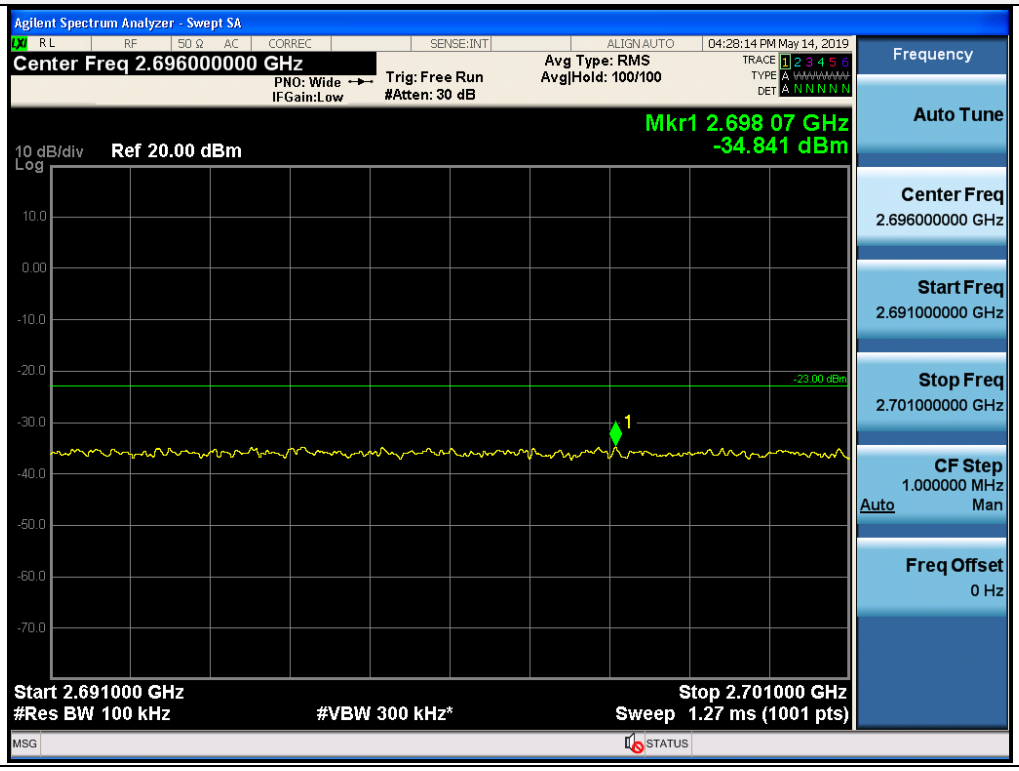
Spurious / 5G NR 60 MHz, 1 Carrier / Uplink / NR 60 MHz / Middle / 30 MHz ~ Low Edge - 11 MHz



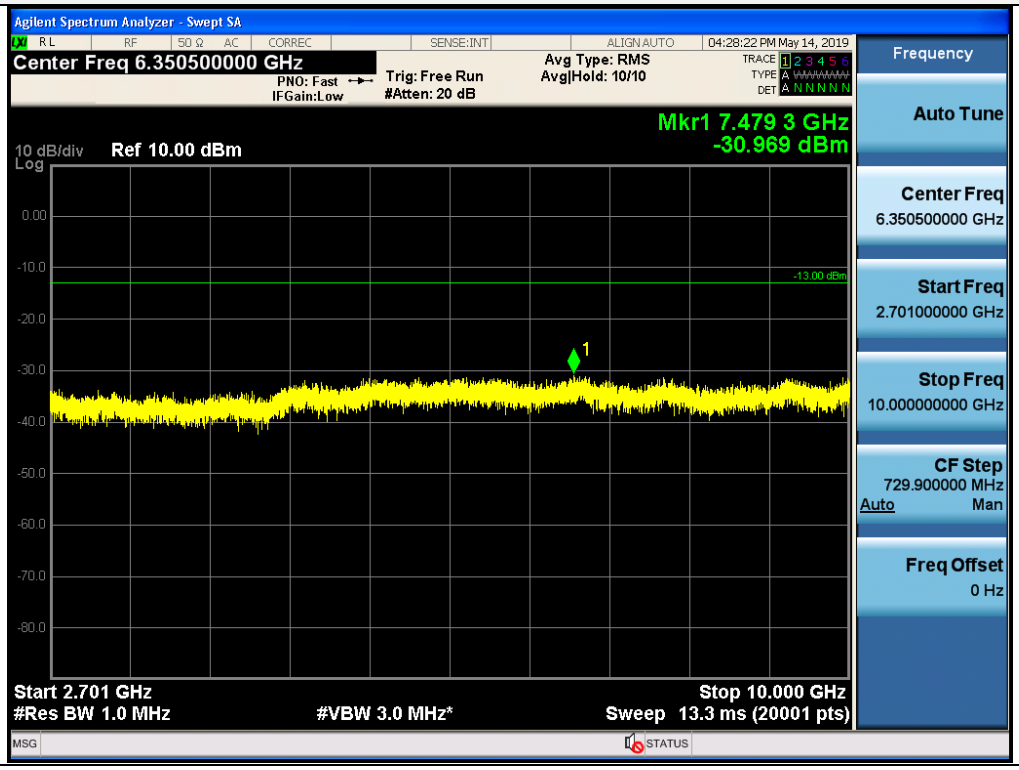
Spurious / 5G NR 60 MHz, 1 Carrier / Uplink / NR 60 MHz / Middle / Low Edge - 11 MHz ~ Low Edge - 1 MHz



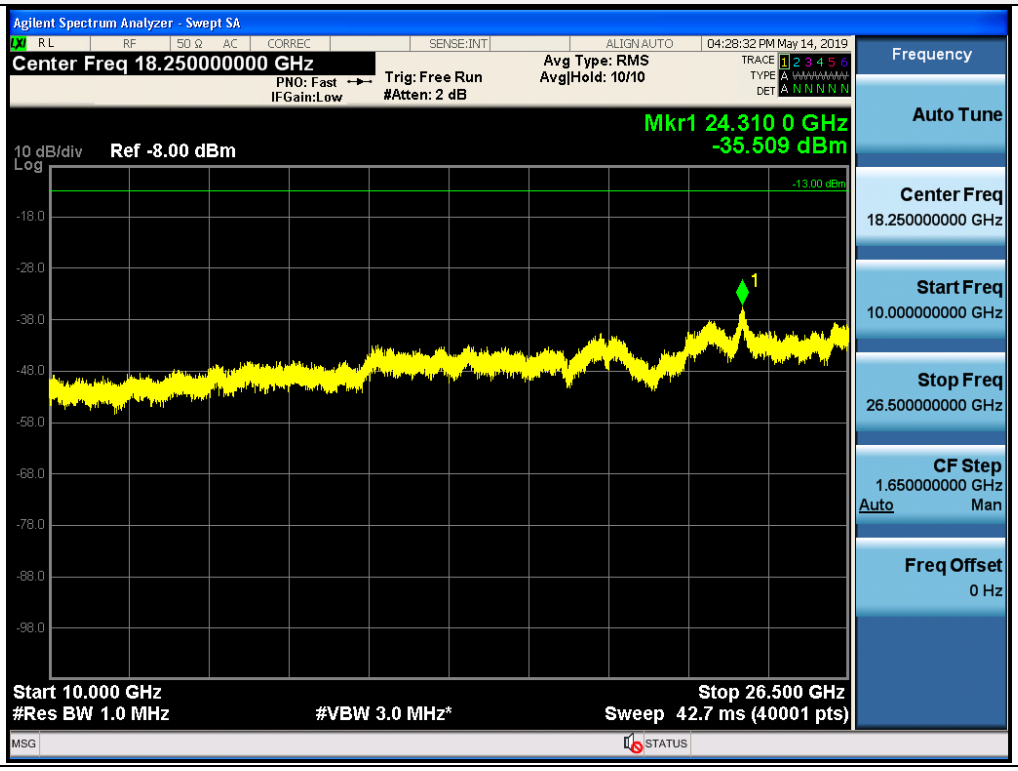
Spurious / 5G NR 60 MHz, 1 Carrier / Uplink / NR 60 MHz / Middle / High Edge + 1 MHz ~ High Edge + 11 MHz



Spurious / 5G NR 60 MHz, 1 Carrier / Uplink / NR 60 MHz / Middle / High Edge + 11 MHz ~ 10 GHz

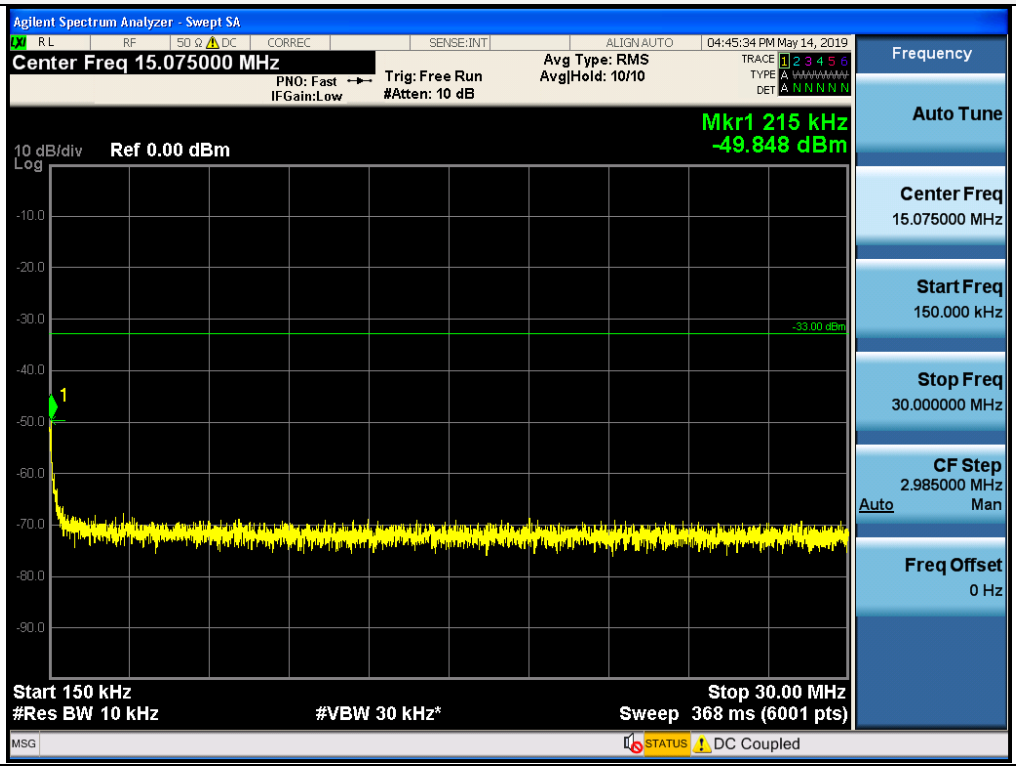


Spurious / 5G NR 60 MHz, 1 Carrier / Uplink / NR 60 MHz / Middle / 10 GHz ~ 26.5 GHz

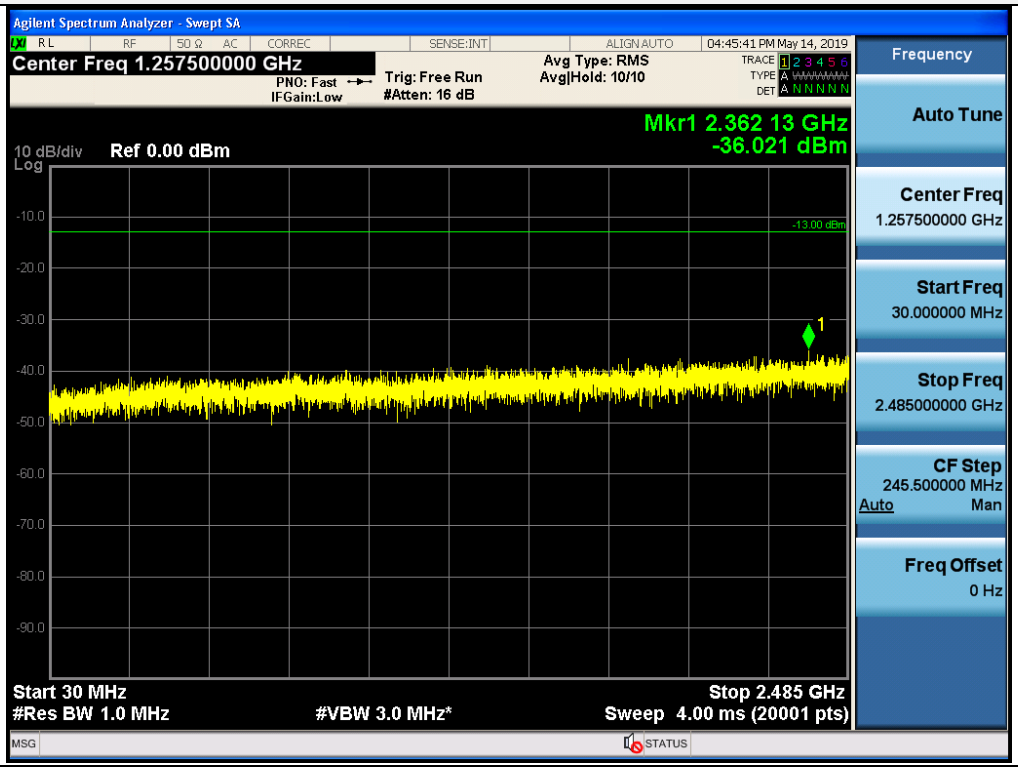


Spurious / 5G NR 60 MHz, 1 Carrier / Uplink / NR 60 MHz / High / 9 kHz ~ 150 kHz

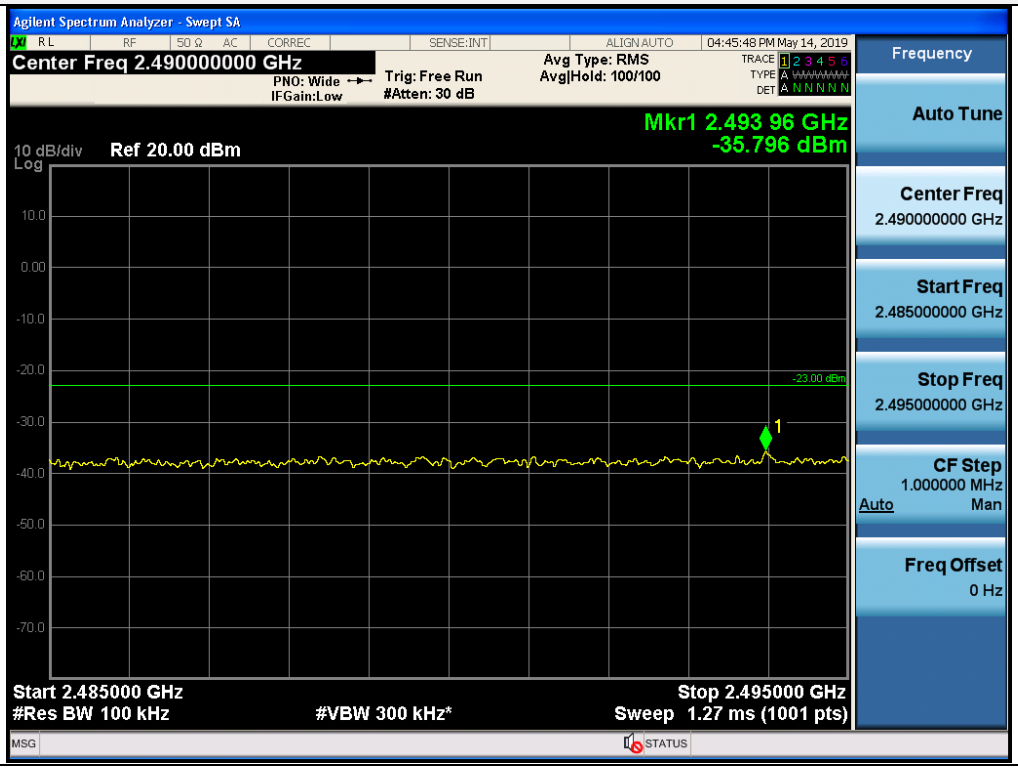
Spurious / 5G NR 60 MHz, 1 Carrier / Uplink / NR 60 MHz / High / 150 kHz ~ 30 MHz



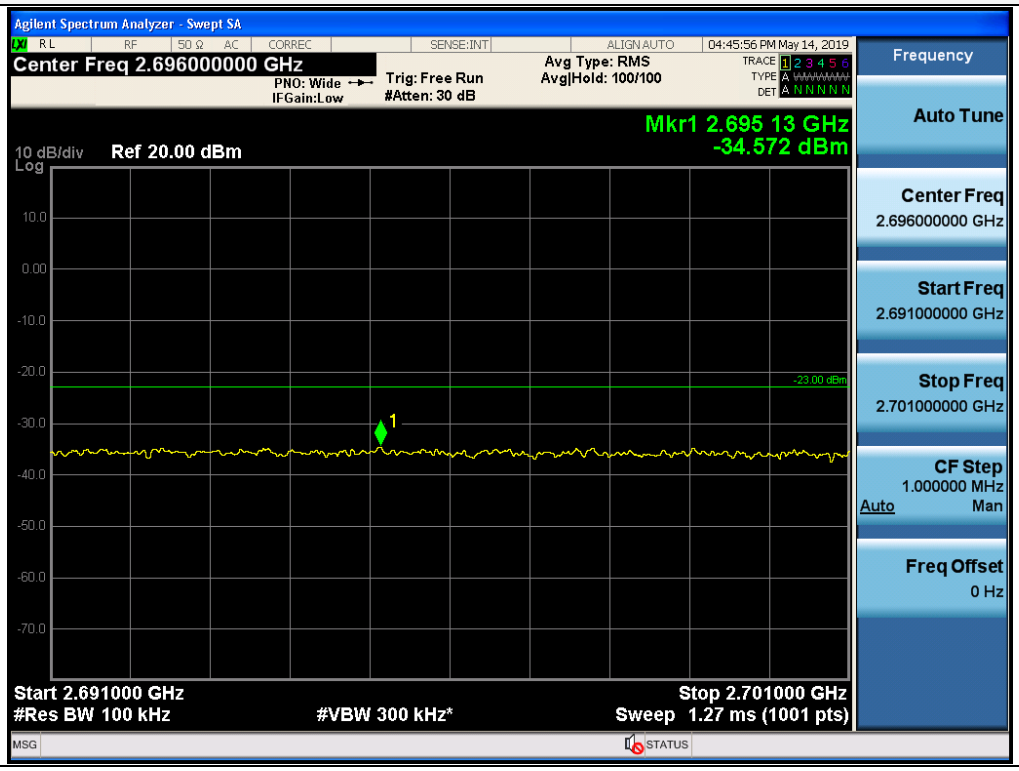
Spurious / 5G NR 60 MHz, 1 Carrier / Uplink / NR 60 MHz / High / 30 MHz ~ Low Edge - 11 MHz



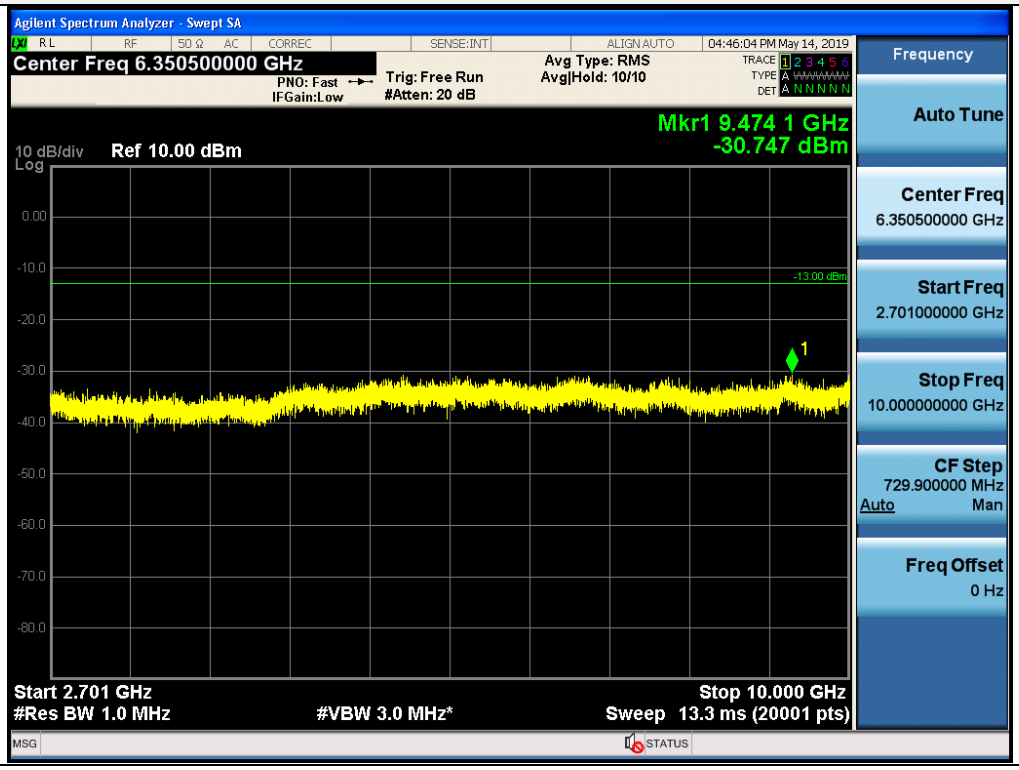
Spurious / 5G NR 60 MHz, 1 Carrier / Uplink / NR 60 MHz / High / Low Edge - 11 MHz ~ Low Edge - 1 MHz



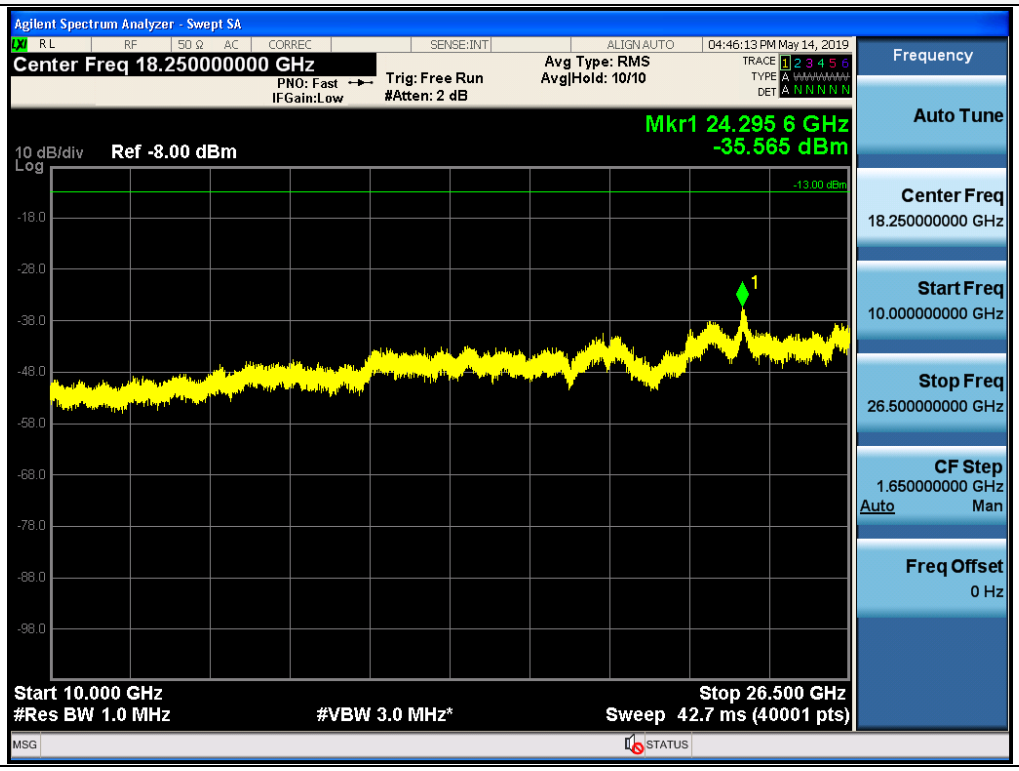
Spurious / 5G NR 60 MHz, 1 Carrier / Uplink / NR 60 MHz / High / High Edge + 1 MHz ~ High Edge + 11 MHz



Spurious / 5G NR 60 MHz, 1 Carrier / Uplink / NR 60 MHz / High / High Edge + 11 MHz ~ 10 GHz

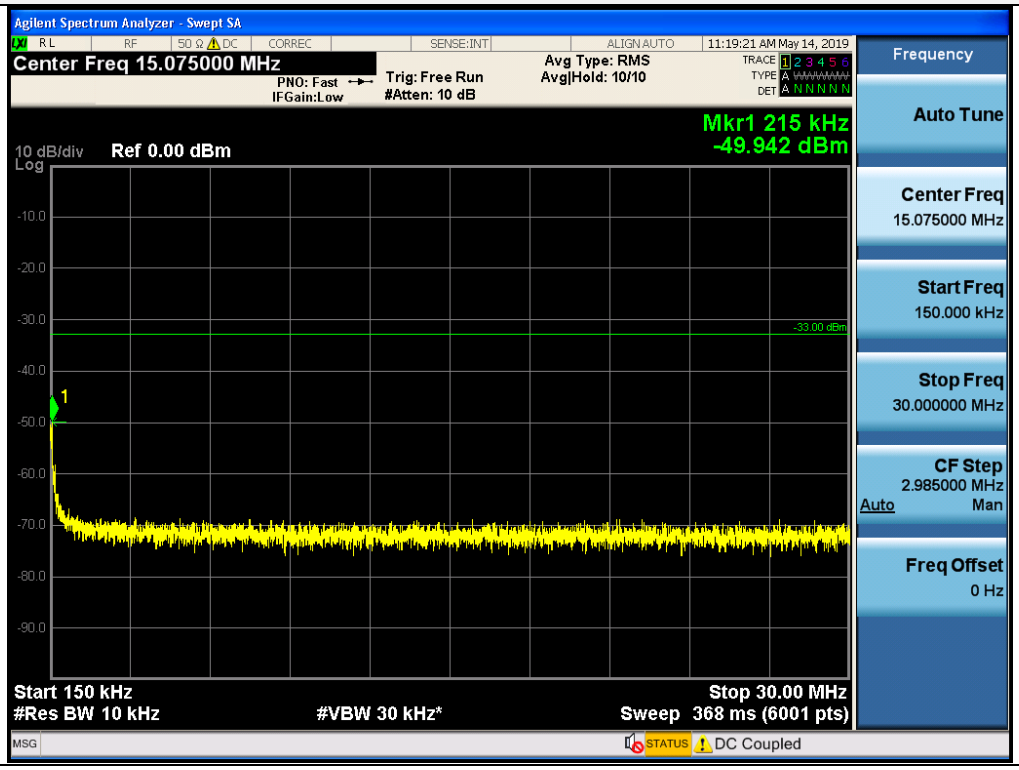


Spurious / 5G NR 60 MHz, 1 Carrier / Uplink / NR 60 MHz / High / 10 GHz ~ 26.5 GHz

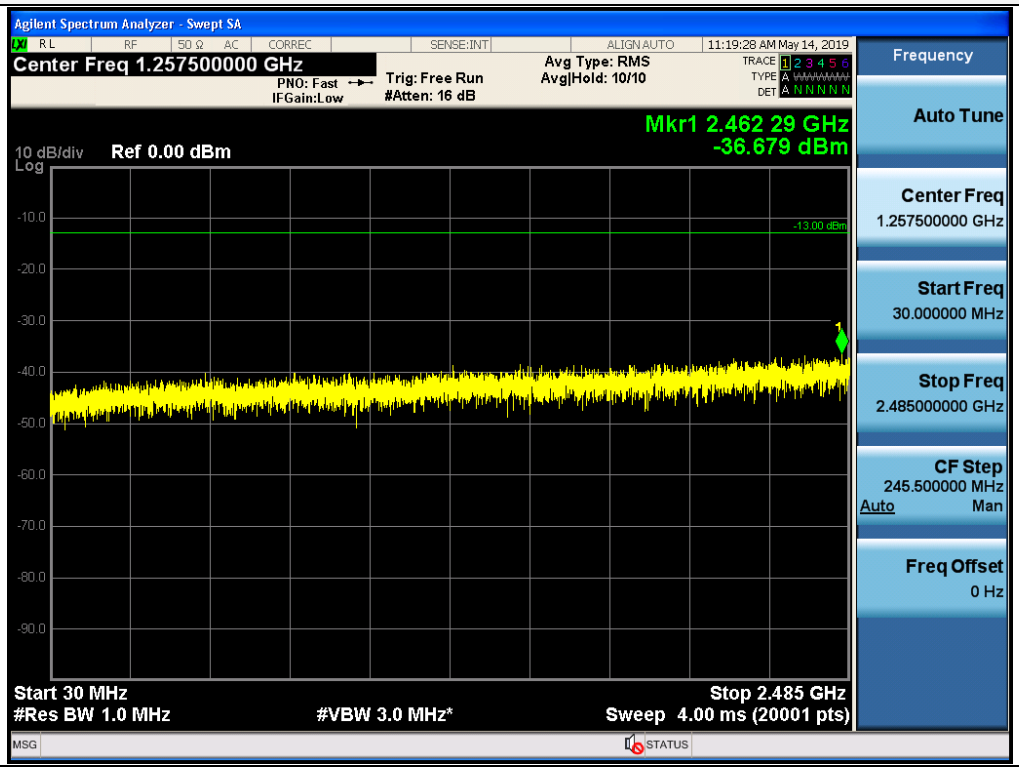


Spurious / 5G NR 60 MHz, 1 Carrier / Downlink / NR 60 MHz / Low / 9 kHz ~ 150 kHz

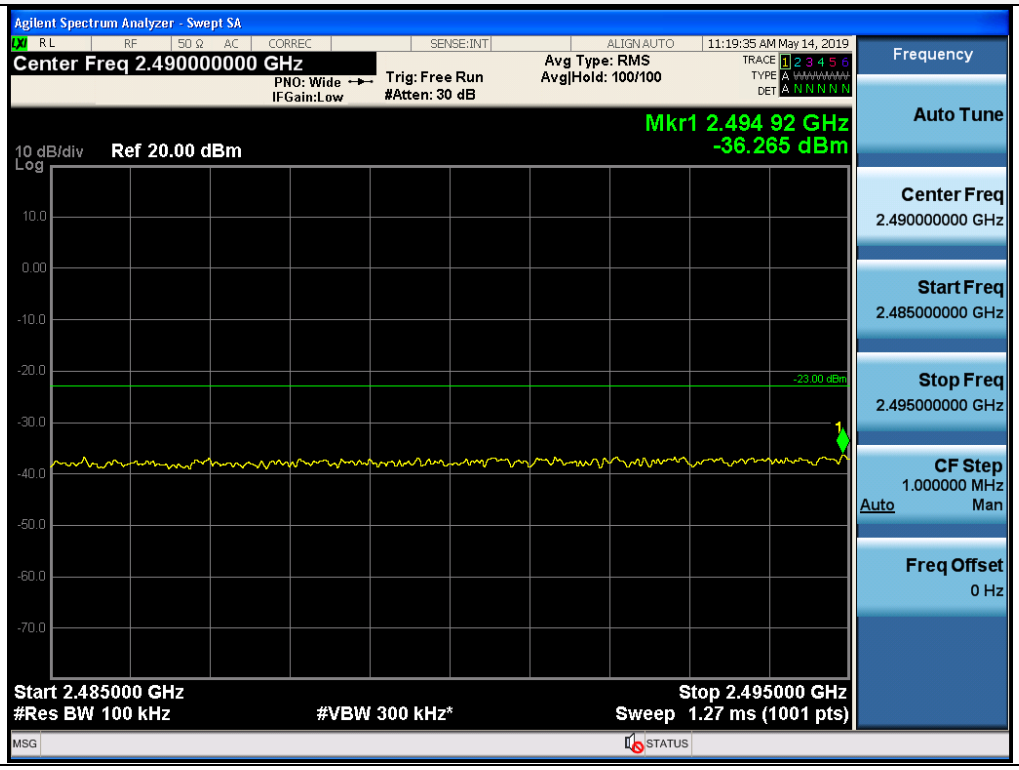
Spurious / 5G NR 60 MHz, 1 Carrier / Downlink / NR 60 MHz / Low / 150 kHz ~ 30 MHz



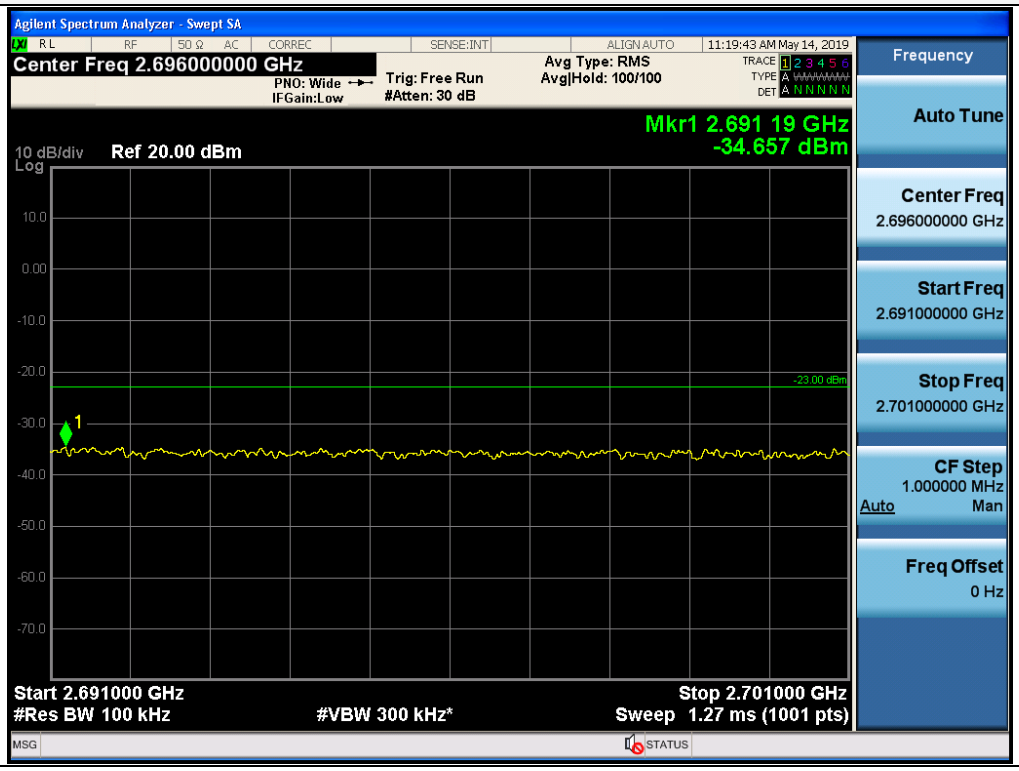
Spurious / 5G NR 60 MHz, 1 Carrier / Downlink / NR 60 MHz / Low / 30 MHz ~ Low Edge - 11 MHz



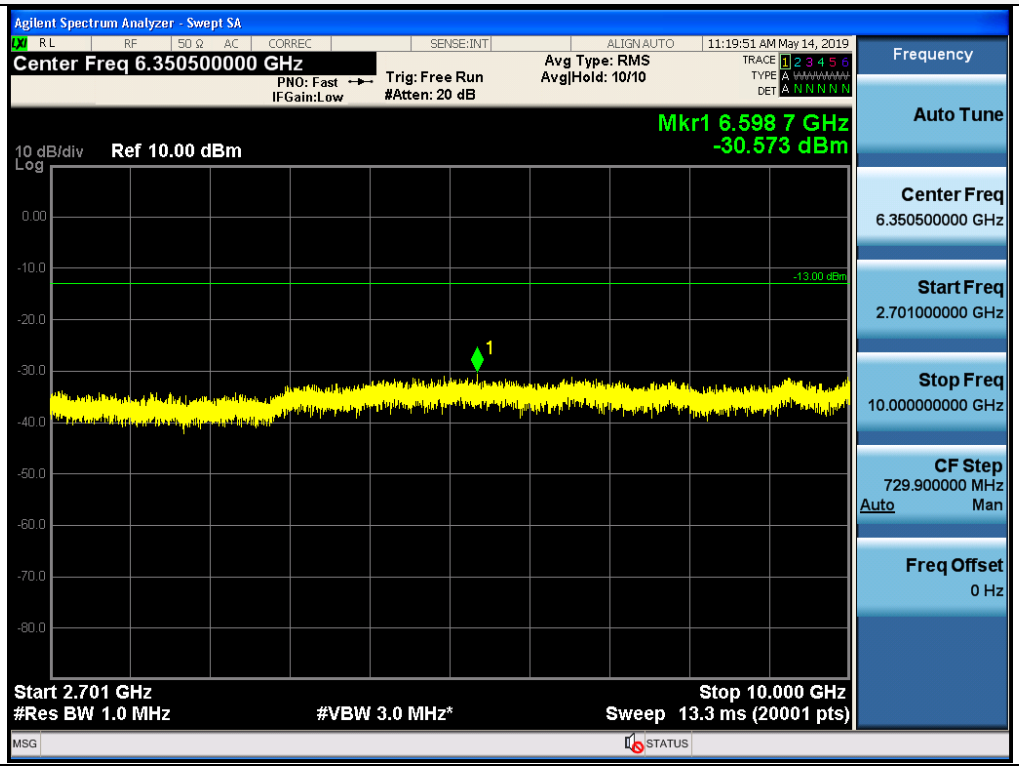
Spurious / 5G NR 60 MHz, 1 Carrier / Downlink / NR 60 MHz / Low / Low Edge - 11 MHz ~ Low Edge - 1 MHz



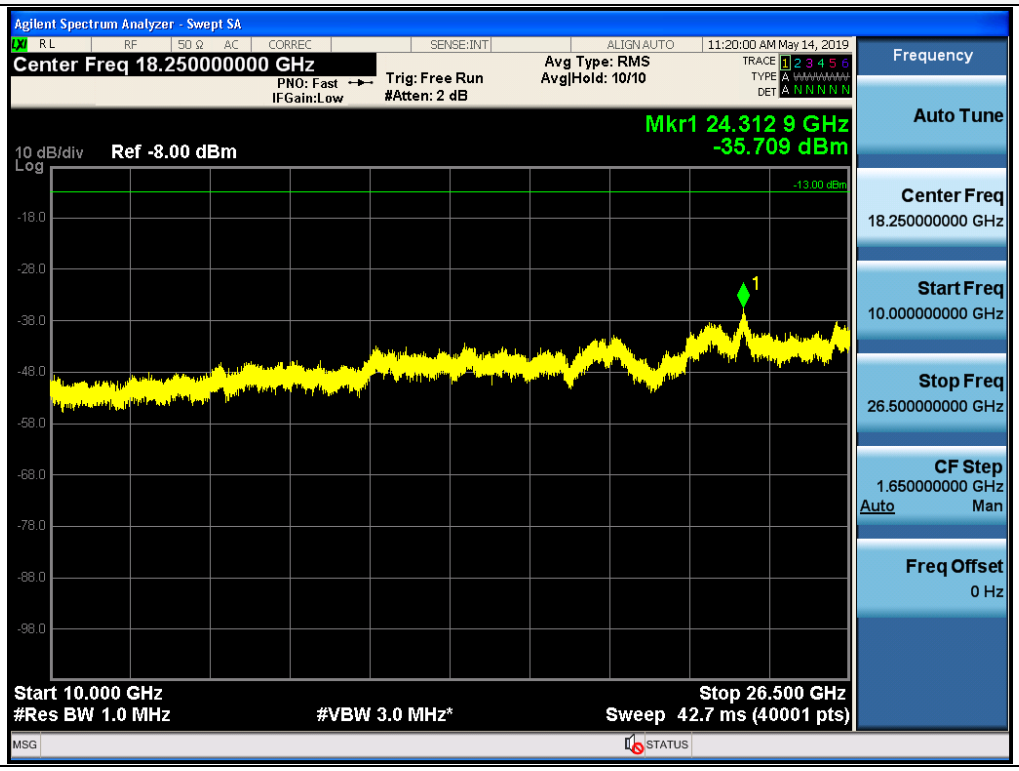
Spurious / 5G NR 60 MHz, 1 Carrier / Downlink / NR 60 MHz / Low / High Edge + 1 MHz ~ High Edge + 11 MHz



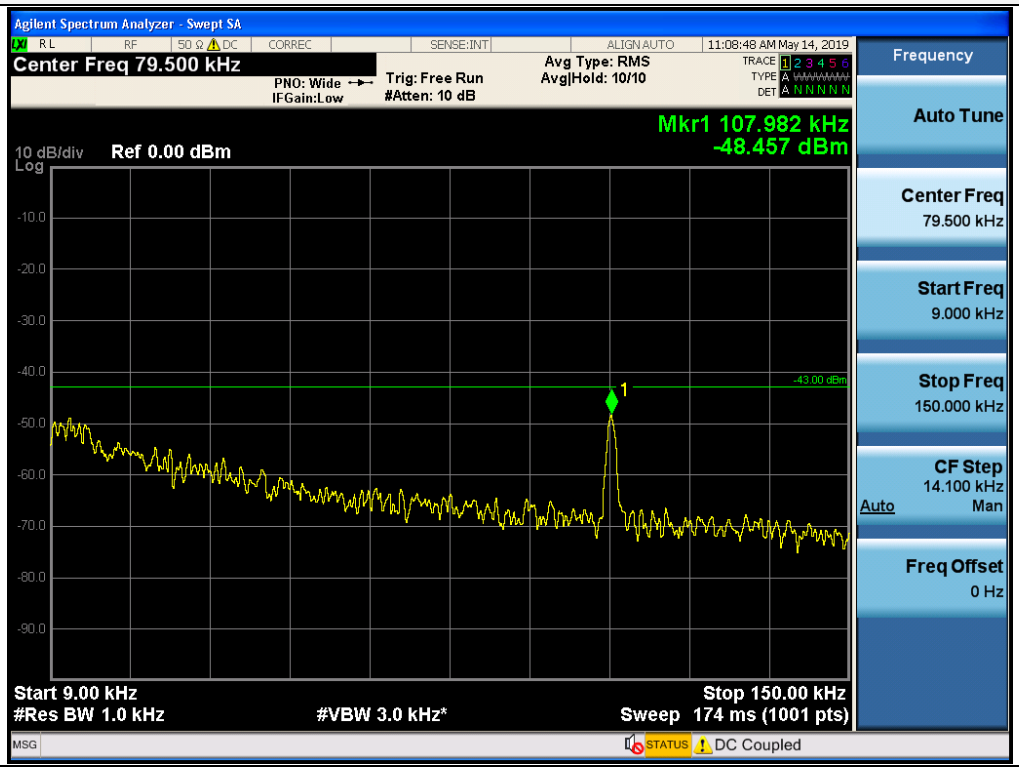
Spurious / 5G NR 60 MHz, 1 Carrier / Downlink / NR 60 MHz / Low / High Edge + 11 MHz ~ 10 GHz



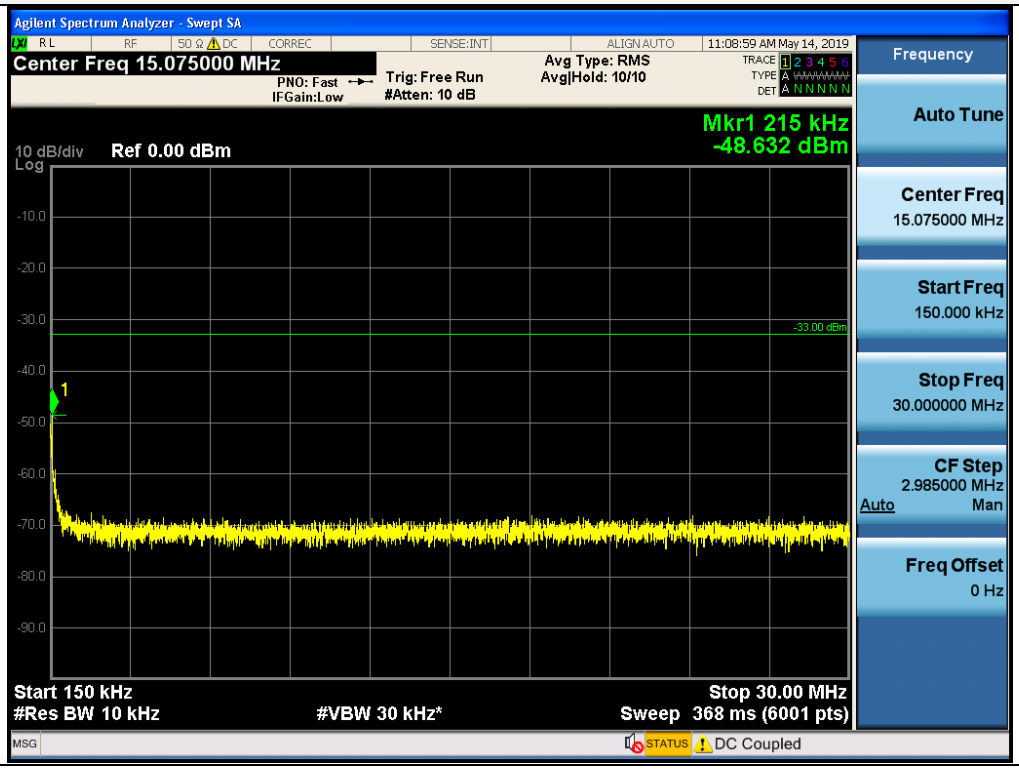
Spurious / 5G NR 60 MHz, 1 Carrier / Downlink / NR 60 MHz / Low / 10 GHz ~ 26.5 GHz



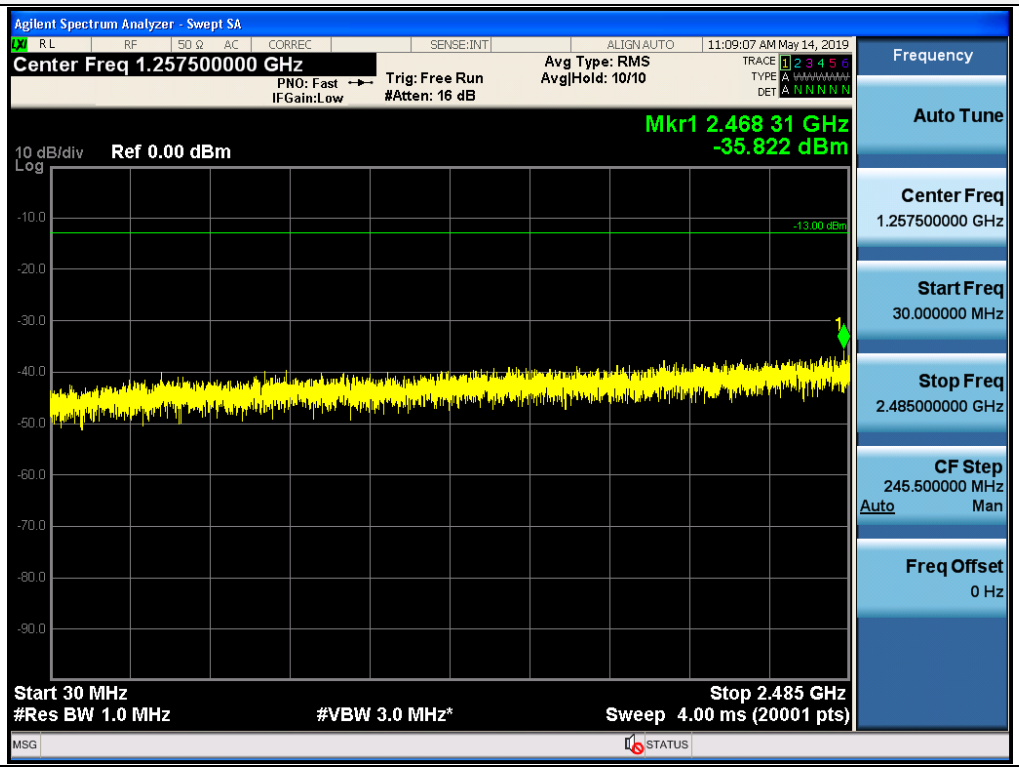
Spurious / 5G NR 60 MHz, 1 Carrier / Downlink / NR 60 MHz / Middle / 9 kHz ~ 150 kHz



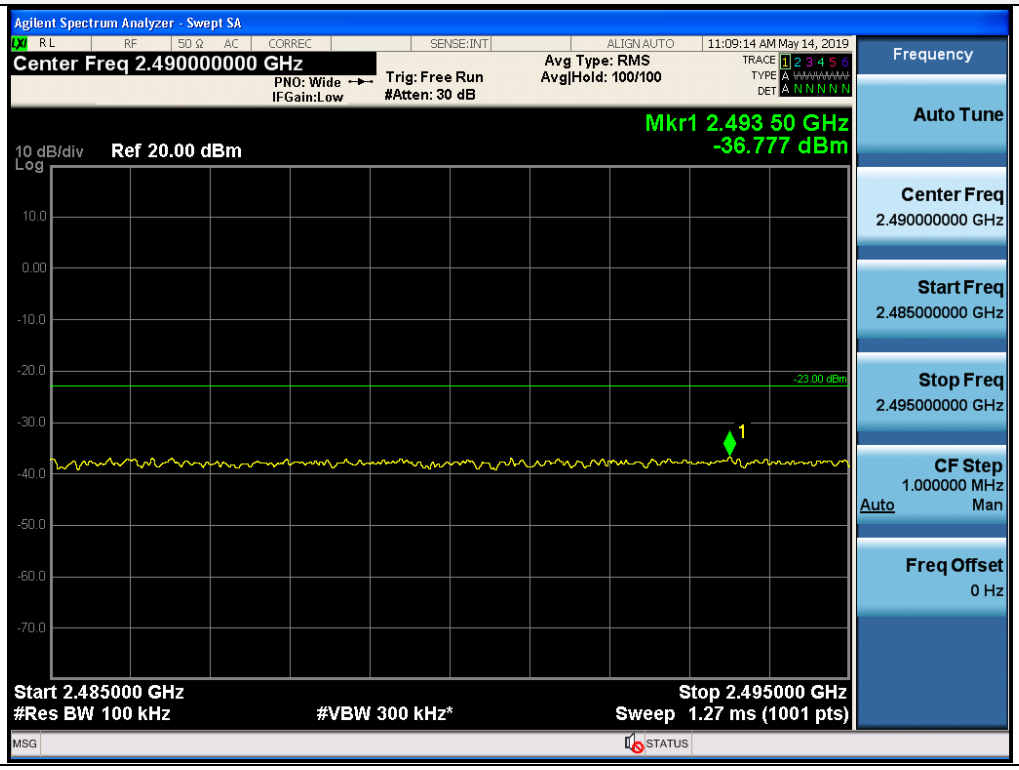
Spurious / 5G NR 60 MHz, 1 Carrier / Downlink / NR 60 MHz / Middle / 150 kHz ~ 30 MHz



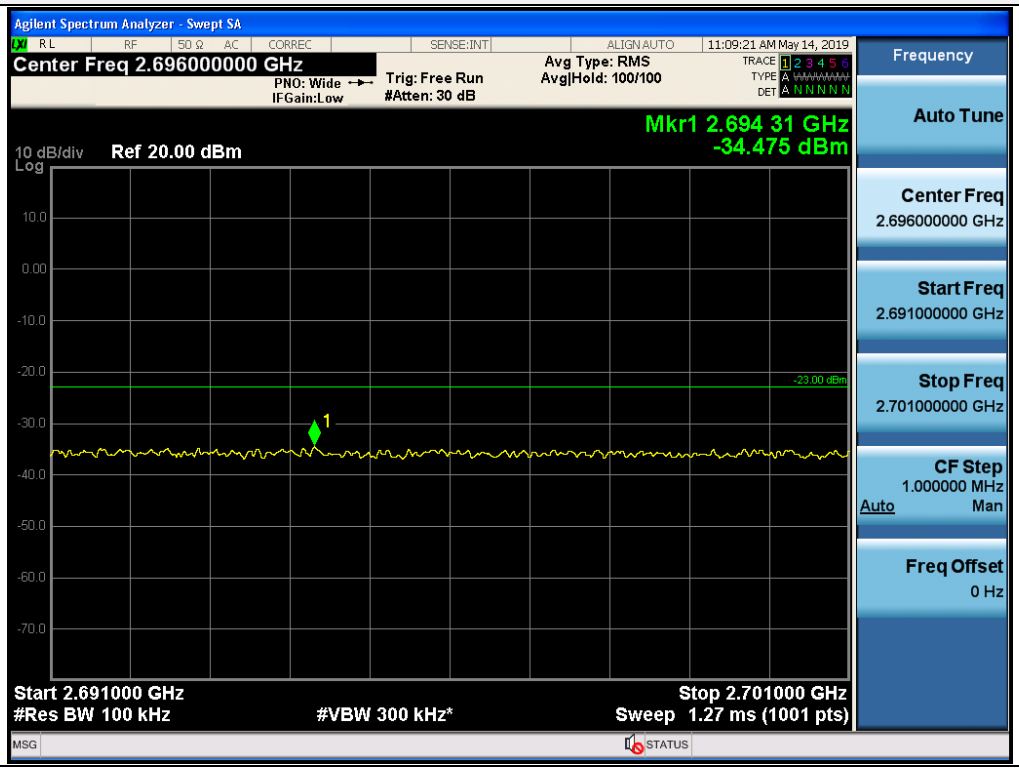
Spurious / 5G NR 60 MHz, 1 Carrier / Downlink / NR 60 MHz / Middle / 30 MHz ~ Low Edge - 11 MHz



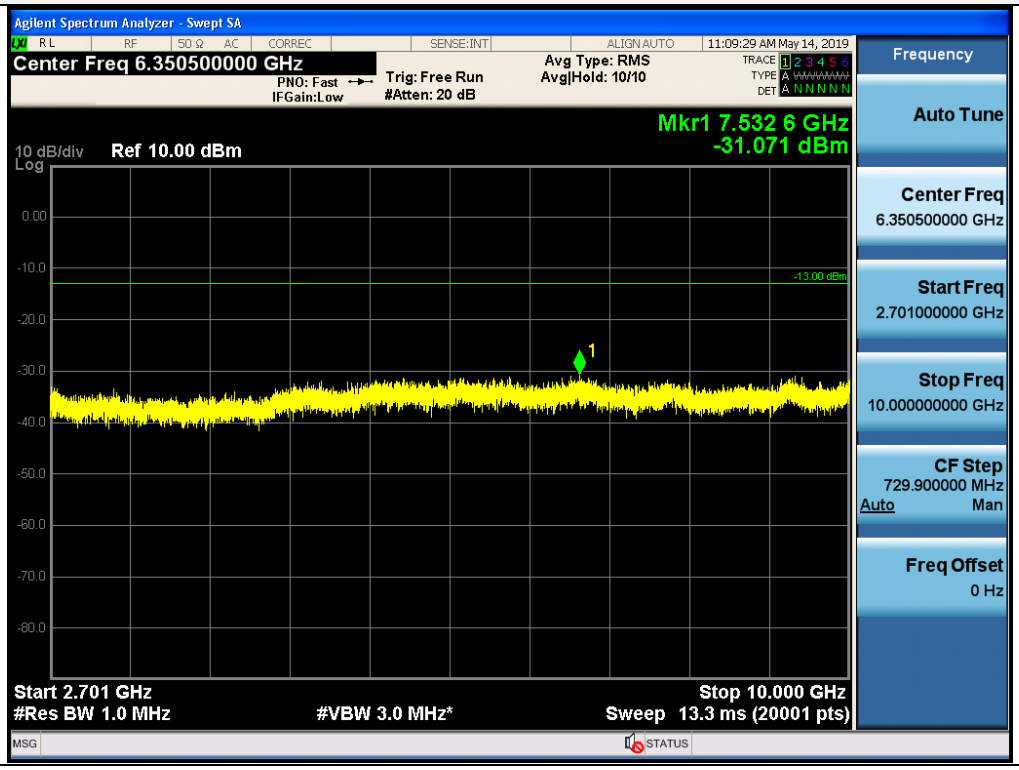
Spurious / 5G NR 60 MHz, 1 Carrier / Downlink / NR 60 MHz / Middle / Low Edge - 11 MHz ~ Low Edge - 1 MHz



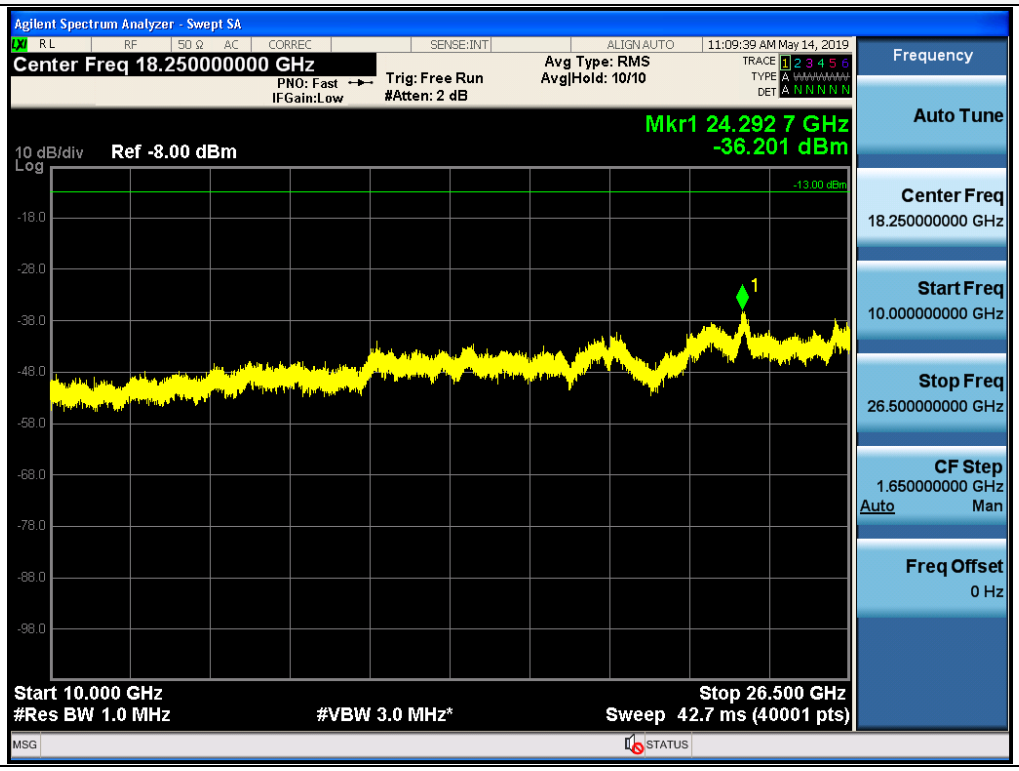
Spurious / 5G NR 60 MHz, 1 Carrier / Downlink / NR 60 MHz / Middle / High Edge + 1 MHz ~ High Edge + 11 MHz



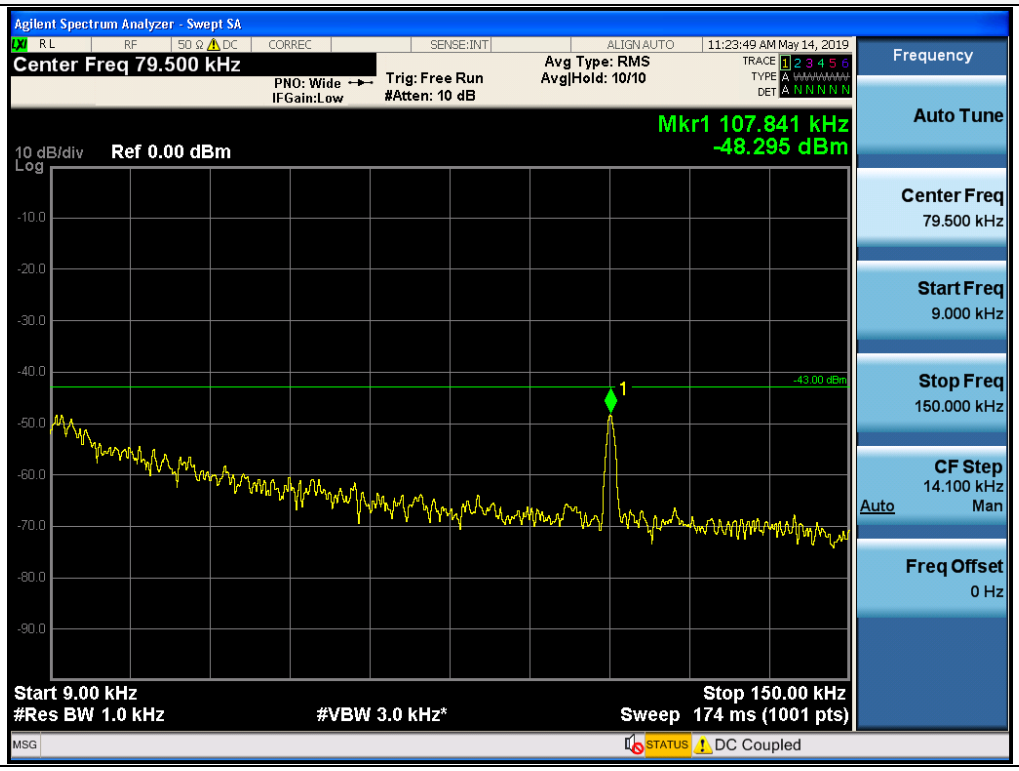
Spurious / 5G NR 60 MHz, 1 Carrier / Downlink / NR 60 MHz / Middle / High Edge + 11 MHz ~ 10 GHz



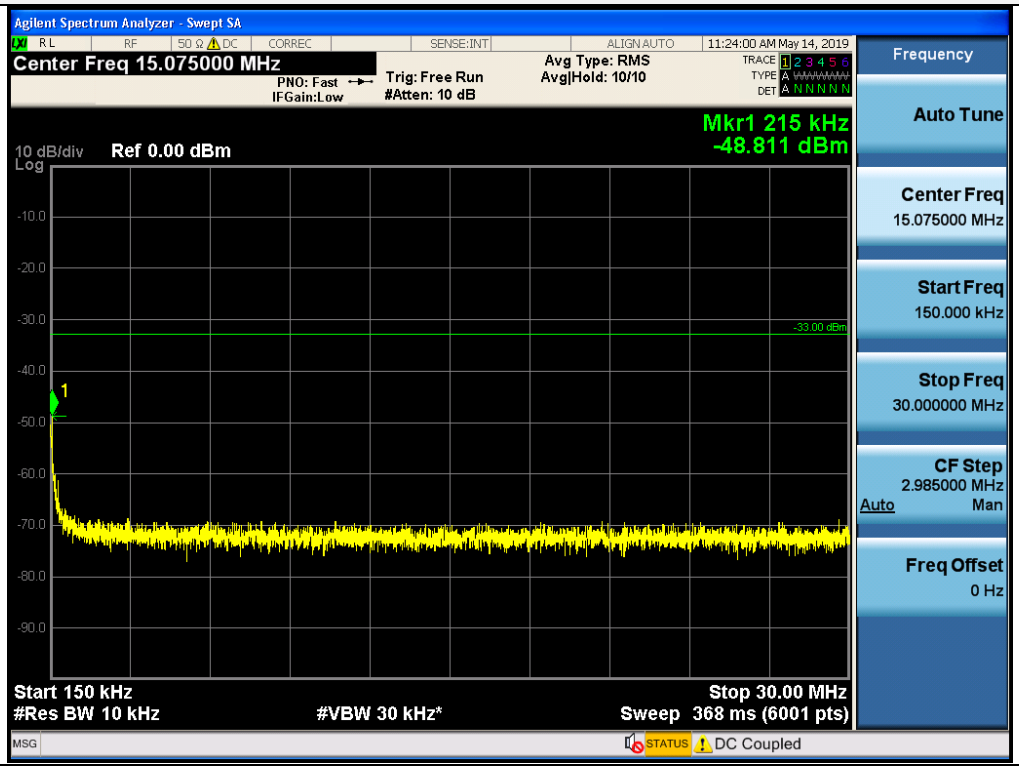
Spurious / 5G NR 60 MHz, 1 Carrier / Downlink / NR 60 MHz / Middle / 10 GHz ~ 26.5 GHz



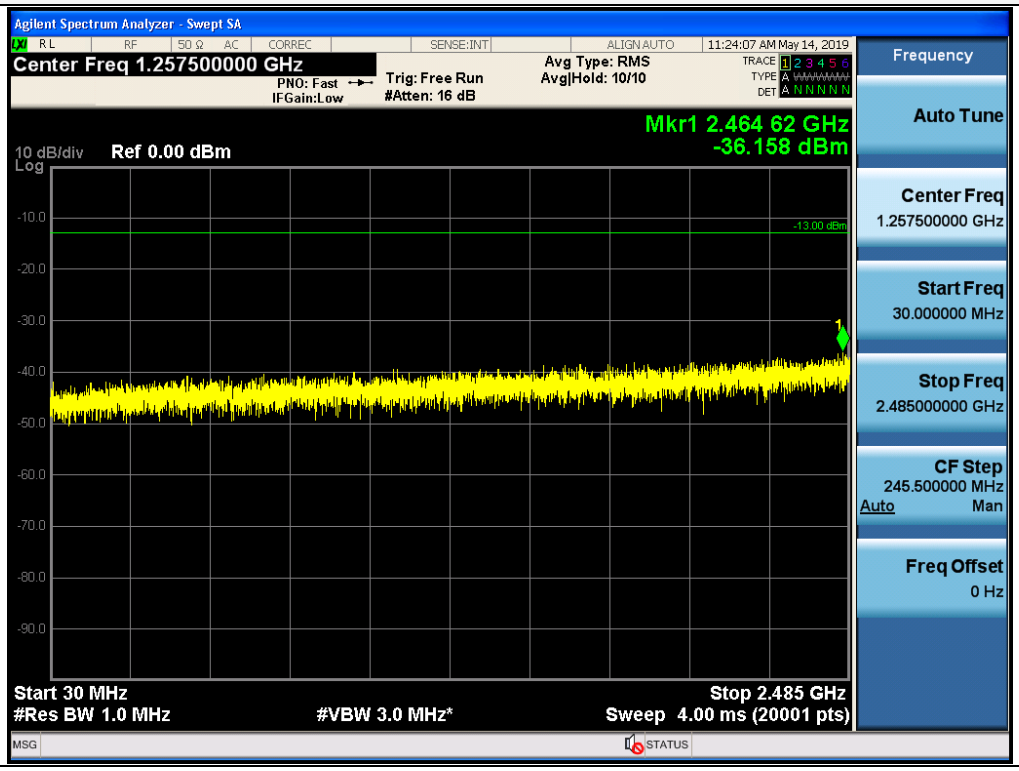
Spurious / 5G NR 60 MHz, 1 Carrier / Downlink / NR 60 MHz / High / 9 kHz ~ 150 kHz



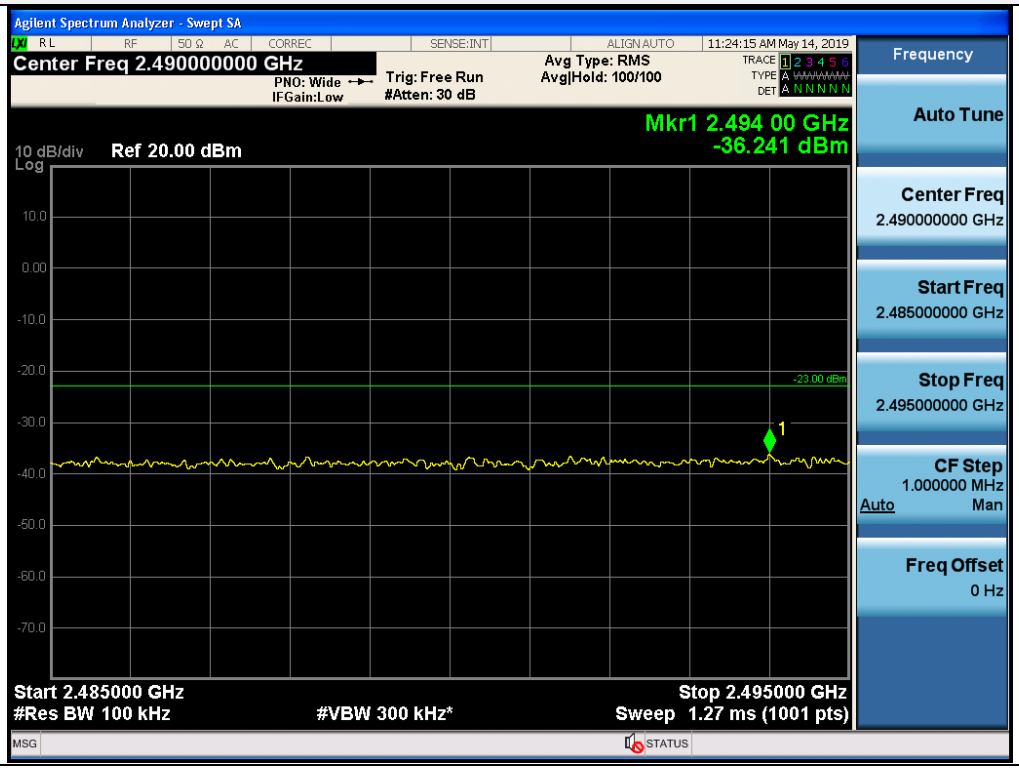
Spurious / 5G NR 60 MHz, 1 Carrier / Downlink / NR 60 MHz / High / 150 kHz ~ 30 MHz



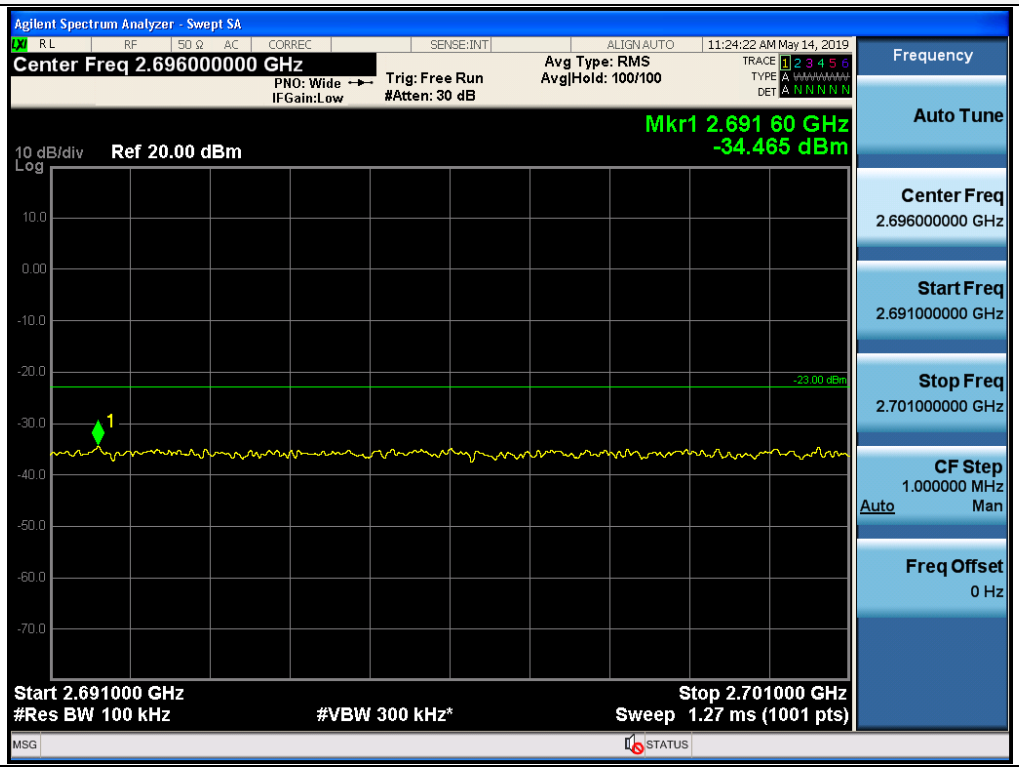
Spurious / 5G NR 60 MHz, 1 Carrier / Downlink / NR 60 MHz / High / 30 MHz ~ Low Edge - 11 MHz



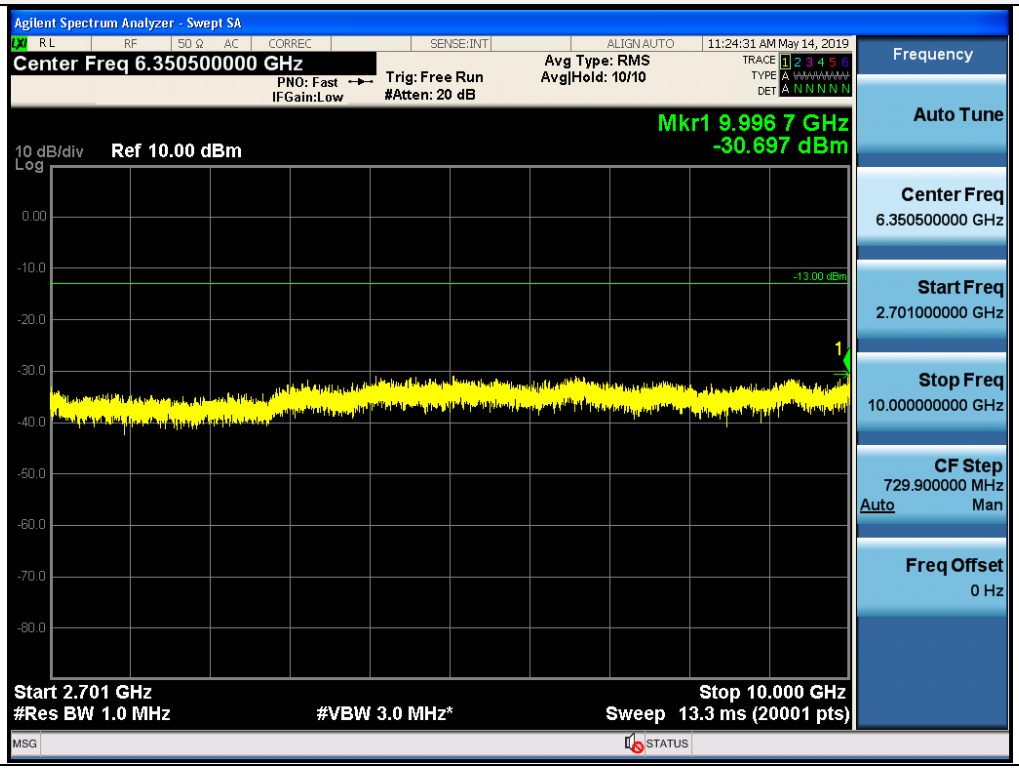
Spurious / 5G NR 60 MHz, 1 Carrier / Downlink / NR 60 MHz / High / Low Edge - 11 MHz ~ Low Edge - 1 MHz



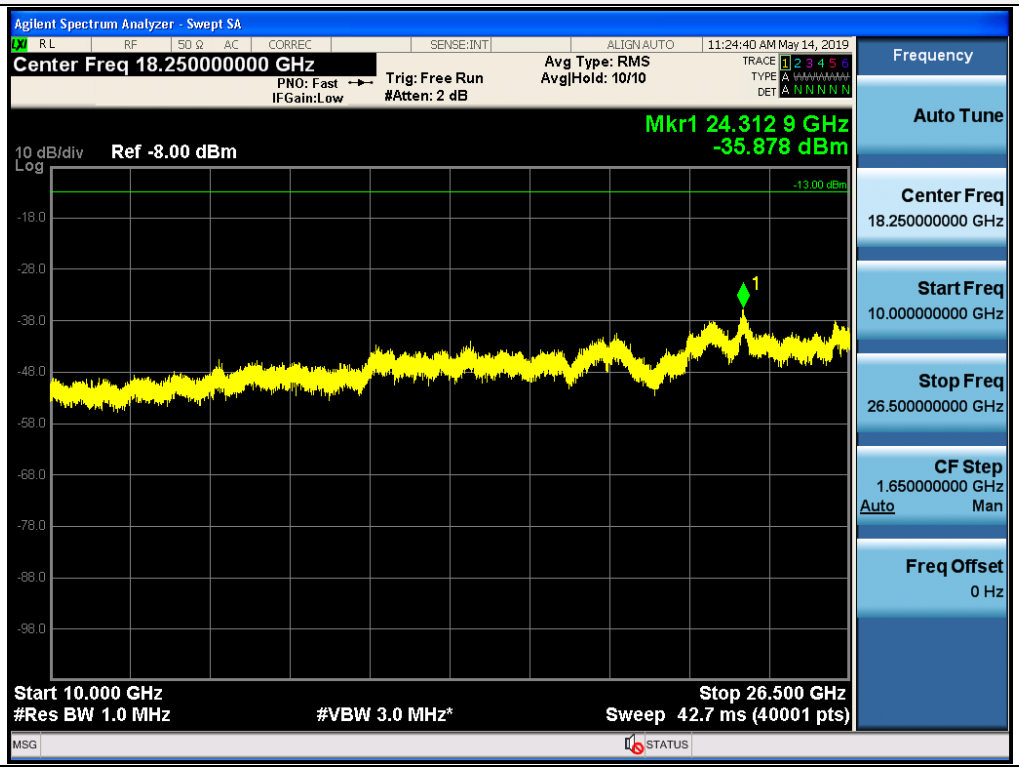
Spurious / 5G NR 60 MHz, 1 Carrier / Downlink / NR 60 MHz / High / High Edge + 1 MHz ~ High Edge + 11 MHz



Spurious / 5G NR 60 MHz, 1 Carrier / Downlink / NR 60 MHz / High / High Edge + 11 MHz ~ 10 GHz



Spurious / 5G NR 60 MHz, 1 Carrier / Downlink / NR 60 MHz / High / 10 GHz ~ 26.5 GHz



5.6. RADIATED SPURIOUS EMISSIONS

Test Requirements:

§ 2.1053 Measurements required: Field strength of spurious radiation.

(a) Measurements shall be made to detect spurious emissions that may be radiated directly from the cabinet, control circuits, power leads, or intermediate circuit elements under normal conditions of installation and operation. Curves or equivalent data shall be supplied showing the magnitude of each harmonic and other spurious emission. For this test, single sideband, independent sideband, and controlled carrier transmitters shall be modulated under the conditions specified in paragraph (c) of § 2.1049, as appropriate. For equipment operating on frequencies below 890 MHz, an open field test is normally required, with the measuring instrument antenna located in the far-field at all test frequencies. In the event it is either impractical or impossible to make open field measurements (e.g. a broadcast transmitter installed in a building) measurements will be accepted of the equipment as installed. Such measurements must be accompanied by a description of the site where the measurements were made showing the location of any possible source of reflections which might distort the field strength measurements. Information submitted shall include the relative radiated power of each spurious emission with reference to the rated power output of the transmitter, assuming all emissions are radiated from halfwave dipole antennas.

(b) The measurements specified in paragraph (a) of this section shall be made for the following equipment:

(1) Those in which the spurious emissions are required to be 60 dB or more below the mean power of the transmitter.

(2) All equipment operating on frequencies higher than 25 MHz.

(3) All equipment where the antenna is an integral part of, and attached directly to the transmitter.

(4) Other types of equipment as required, when deemed necessary by the Commission.

Test Procedures:

Because KDB 935210 D05 procedure does not provide this requirement, measurements were in accordance with the test methods section 5.5 of ANSI C63.26-2015

a) Place the EUT in the center of the turntable. The EUT shall be configured to transmit into the standard non-radiating load (for measuring radiated spurious emissions), connected with cables of minimal length unless specified otherwise. If the EUT uses an adjustable antenna, the antenna shall be positioned to the length that produces the worst case emission at the fundamental operating frequency.

b) Each emission under consideration shall be evaluated:

1) Raise and lower the measurement antenna in accordance 5.5.2, as necessary to enable detection of the maximum emission amplitude relative to measurement antenna height.

2) Rotate the EUT through 360° to determine the maximum emission level relative to the axial position.

3) Return the turntable to the azimuth where the highest emission amplitude level was observed.

4) Vary the measurement antenna height again through 1 m to 4 m again to find the height associated with the maximum emission amplitude.

5) Record the measured emission amplitude level and frequency using the appropriate RBW.

c) Repeat step b) for each emission frequency with the measurement antenna oriented in both the horizontal and vertical polarizations to determine the orientation that gives the maximum emissions amplitude.

Test Result:

Frequency (MHz)	Measured Level (dBuV)	Measured Power (dBm)	Ant. Factor (dB/m)	C.L (dB)	A.G. (dB)	H.P.F. (dB)	D.F. (dB)	Pol.	Result (dBm/m)
4,159.00	52.05	-43.15	29.984	8.17	41.26	0.70	1.96	V	-43.596

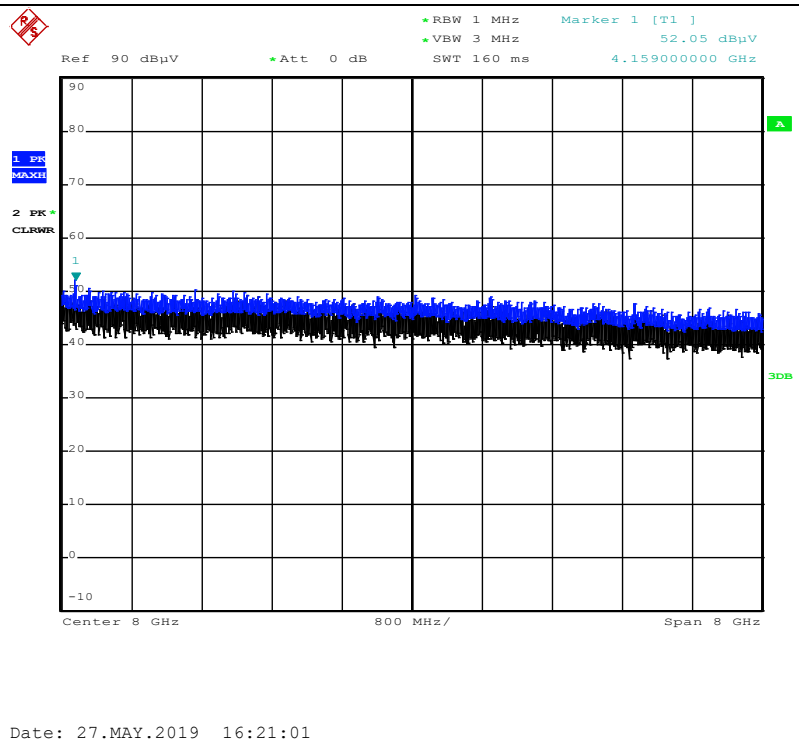
* C.L.: Cable Loss / A.G.: Ant. Gain / H.P.F.: High Pass Filter / D.F.: Distance Factor (3.75 m)

Notes:

1. We have done horizontal and vertical polarization in detecting antenna.
2. The amplitude of the spurious domain emission attenuated by more than 20 dB over the permissible value was not recorded according to ANSI C63.26, clause 5.1.1., c).

Plot data of radiated spurious emissions

Downlink



Note : Only the worst case plots for Radiated Spurious Emissions.

6. Annex A_EUT AND TEST SETUP PHOTO

Please refer to test setup photo file no. as follows;

No.	Description
1	HCT-RF-1906-FC002-P