

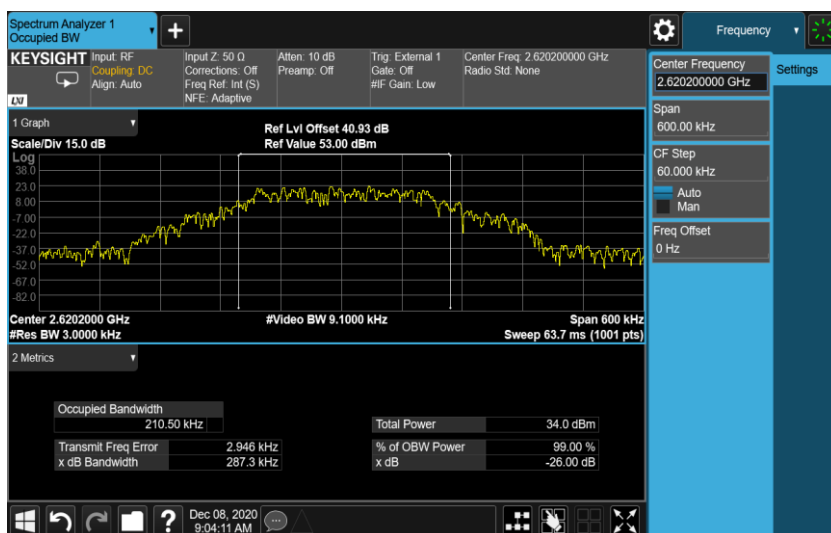
Configuration NB-IoT-Standalone-1C -26dBc Occupied Bandwidth

Modulation/ Bandwidth	Occupied Bandwidth (KHz)		
	Channel position B	Channel position M	Channel position T
QPSK/ 250KHz	287.3	287.4	287.4

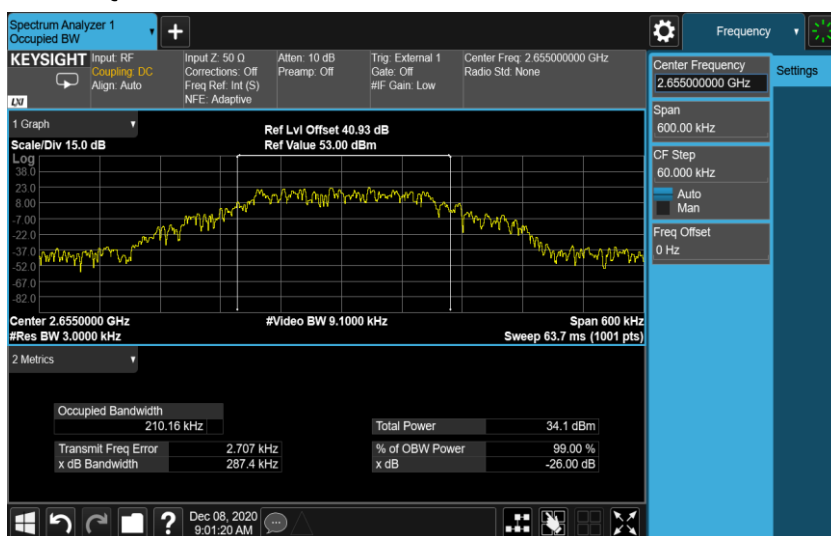
99% Occupied Bandwidth

Modulation/ Bandwidth	Occupied Bandwidth (KHz)		
	Channel position B	Channel position M	Channel position T
QPSK/ 250KHz	210.50	210.16	210.11

Port D, QPSK/250KHz Channel Position B



Port D, QPSK/250KHz Channel Position M



Port D, QPSK/250KHz Channel Position T



Configuration NR-MIMO-1C -26dBc Occupied Bandwidth

Modulation/ Bandwidth	Occupied Bandwidth (MHz)		
	Channel position B	Channel position M	Channel position T
QPSK/ 5.0MHz	4.689	4.683	4.684
QPSK/ 10.0MHz	9.587	9.590	9.589
QPSK/ 15.0MHz	14.54	14.55	14.55
QPSK/ 20.0MHz	19.57	19.59	19.59

-26dBc Occupied Bandwidth

Bandwidth	Occupied Bandwidth (MHz)		
	Modulation 16QAM/ Channel position M	Modulation 64QAM/ Channel position M	Modulation 256QAM/ Channel position M
5.0MHz	4.731	4.732	4.648
10.0MHz	9.528	9.562	9.577
15.0MHz	14.48	14.55	14.65
20.0MHz	19.45	19.40	19.47

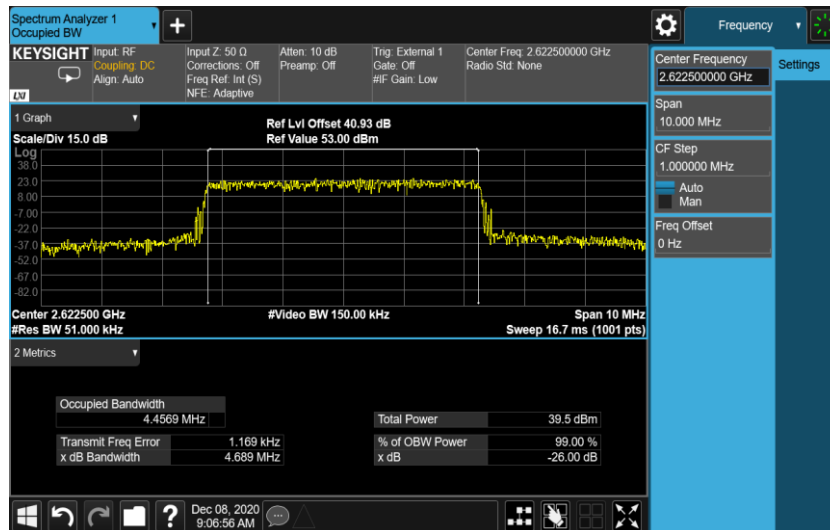
99% Occupied Bandwidth

Modulation/ Bandwidth	Occupied Bandwidth (MHz)		
	Channel position B	Channel position M	Channel position T
QPSK/ 5.0MHz	4.4569	4.4605	4.4608
QPSK/ 10.0MHz	9.2876	9.2882	9.2838
QPSK/ 15.0MHz	14.037	14.047	14.036
QPSK/ 20.0MHz	18.742	18.772	18.745

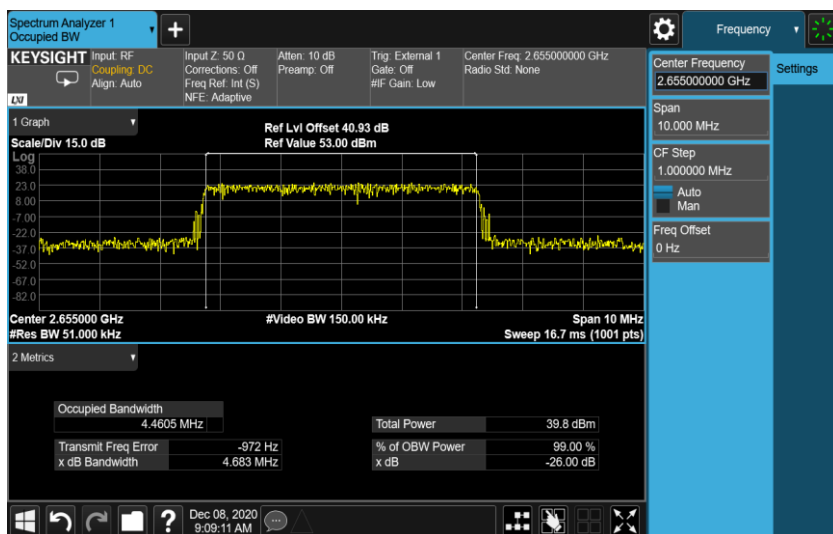
99% Occupied Bandwidth

Bandwidth	Occupied Bandwidth (MHz)		
	Modulation 16QAM/ Channel position M	Modulation 64QAM/ Channel position M	Modulation 256QAM/ Channel position M
5.0MHz	4.4193	4.4658	4.4399
10.0MHz	9.1944	9.1877	9.1987
15.0MHz	13.955	14.060	13.792
20.0MHz	19.005	19.013	18.613

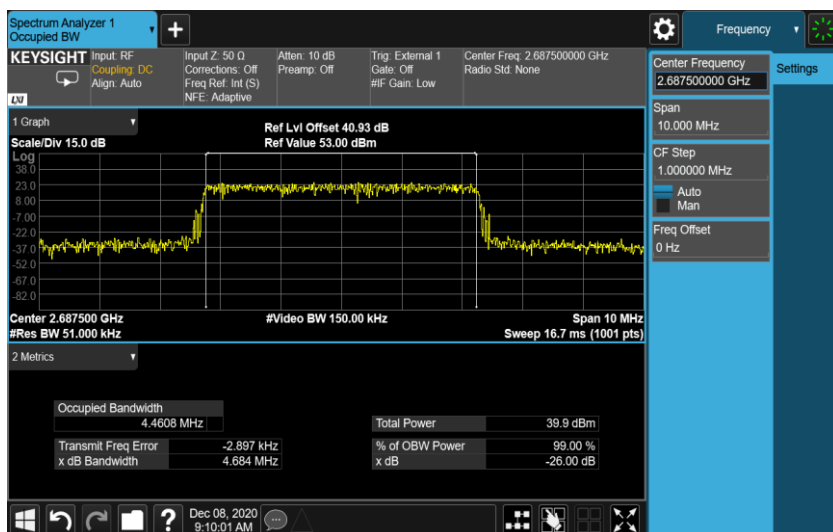
Port D, QPSK/5.0MHz Channel Position B



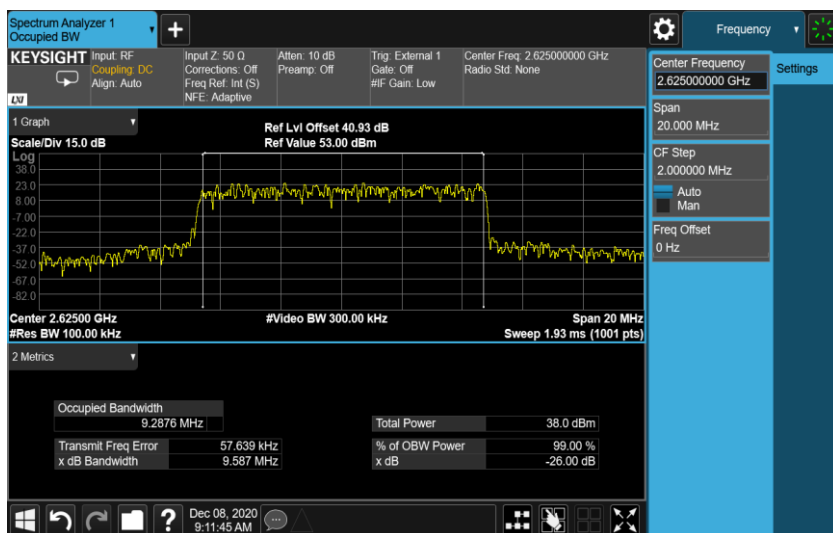
Port D, QPSK/5.0MHz Channel Position M



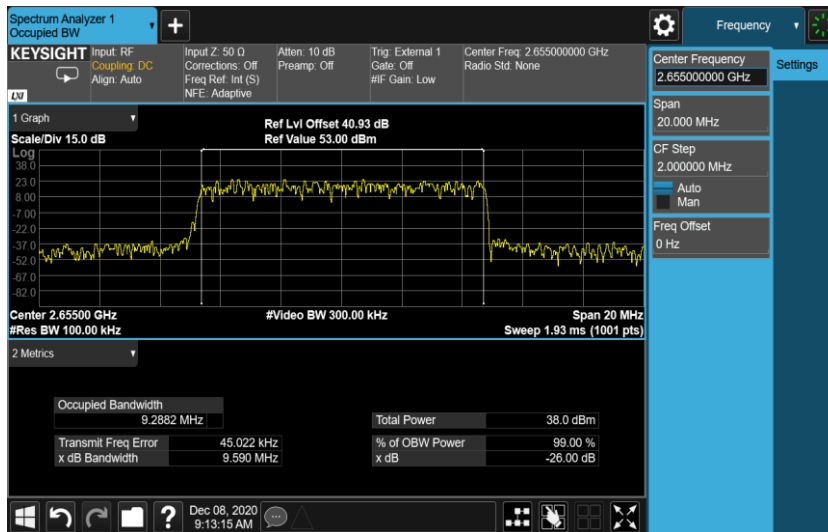
Port D, QPSK/5.0MHz Channel Position T



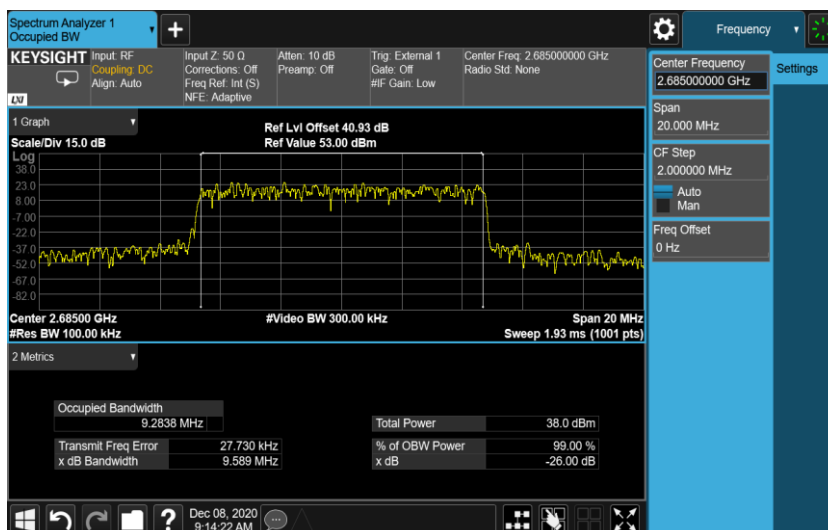
Port D, QPSK/10.0MHz Channel Position B



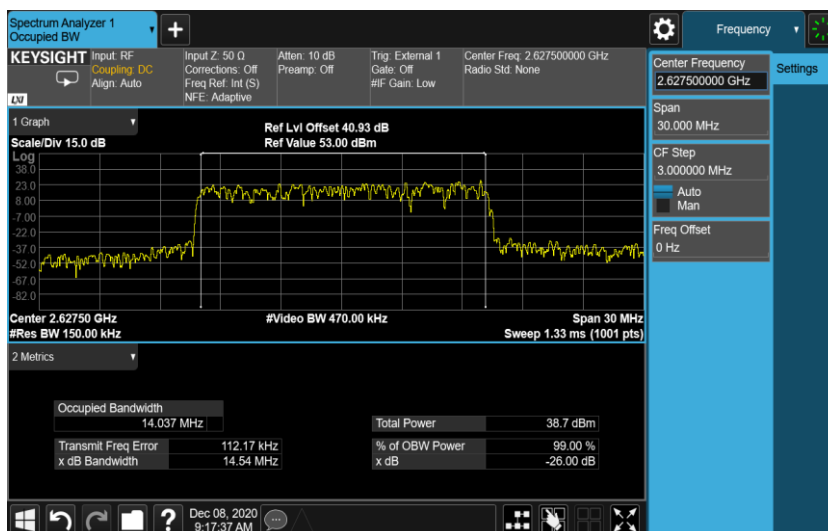
Port D, QPSK/10.0MHz Channel Position M



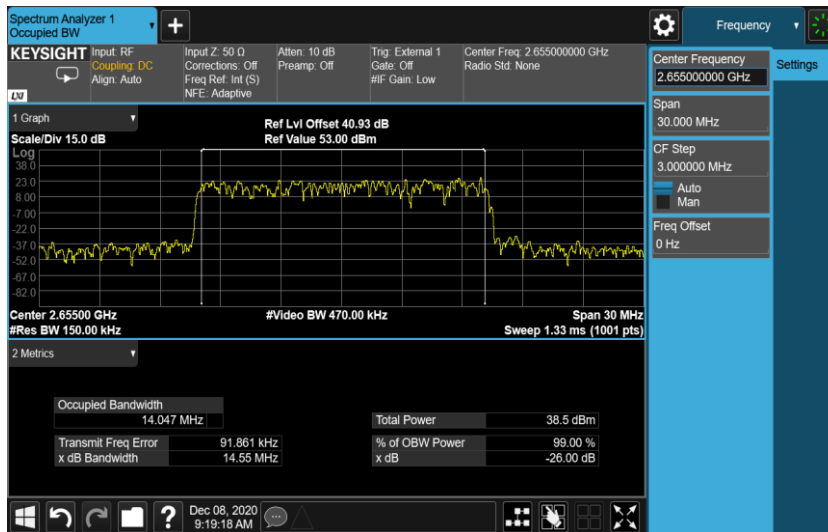
Port D, QPSK/10.0MHz Channel Position T



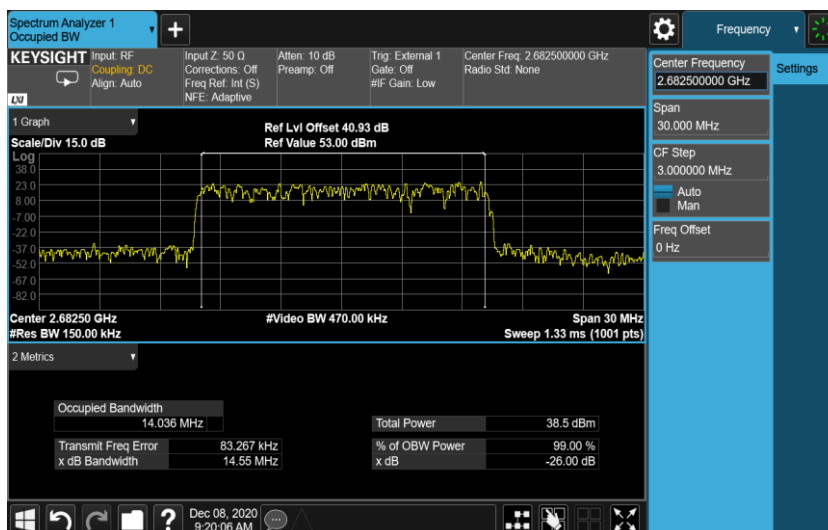
Port D, QPSK/15.0MHz Channel Position B



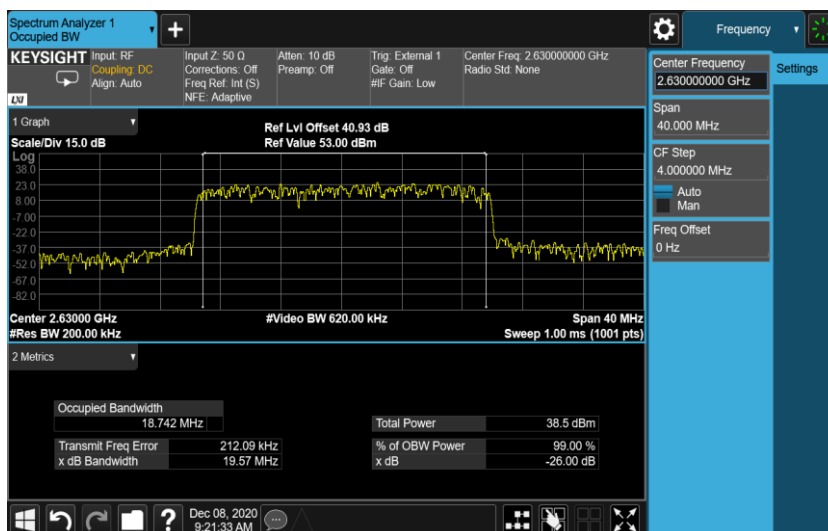
Port D, QPSK/15.0MHz Channel Position M



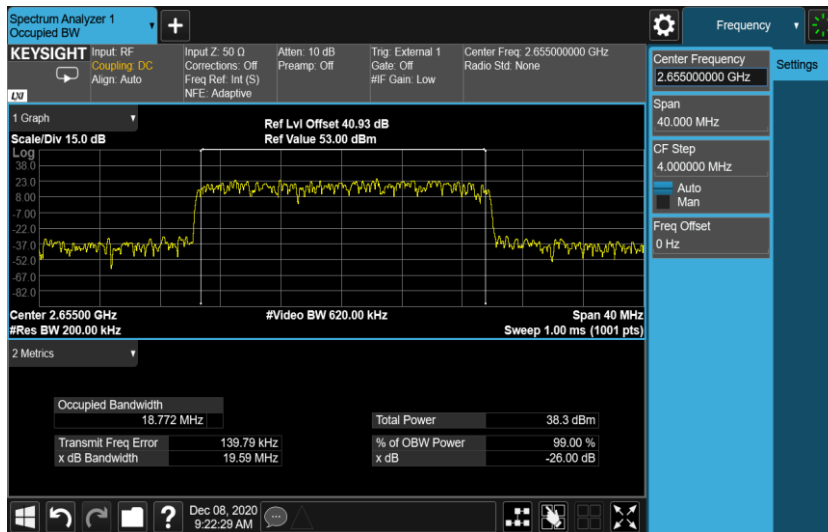
Port D, QPSK/15.0MHz Channel Position T



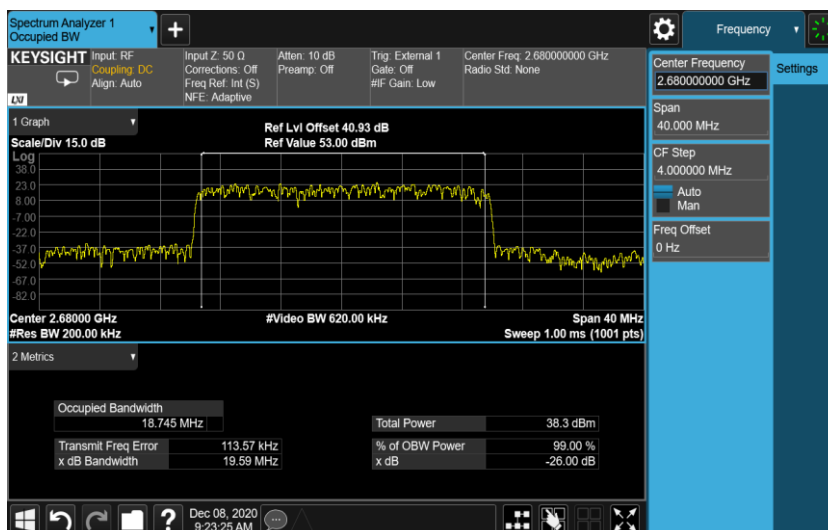
Port D, QPSK/20.0MHz Channel Position B



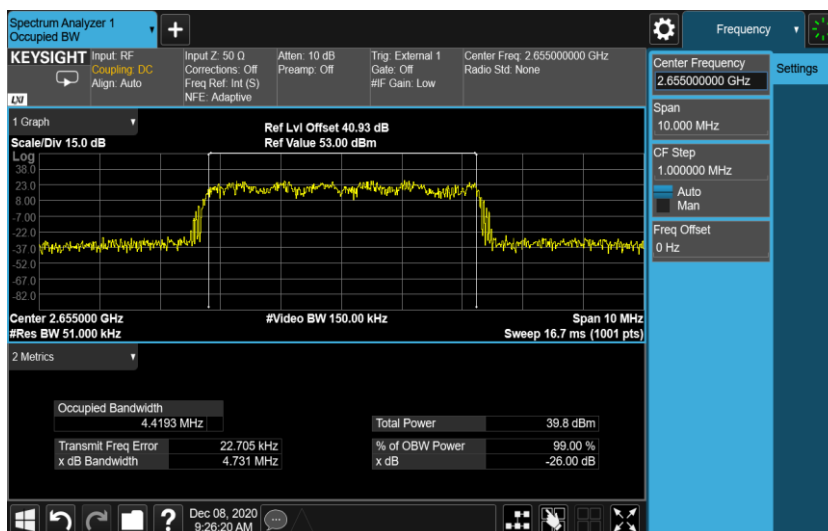
Port D, QPSK/20.0MHz Channel Position M



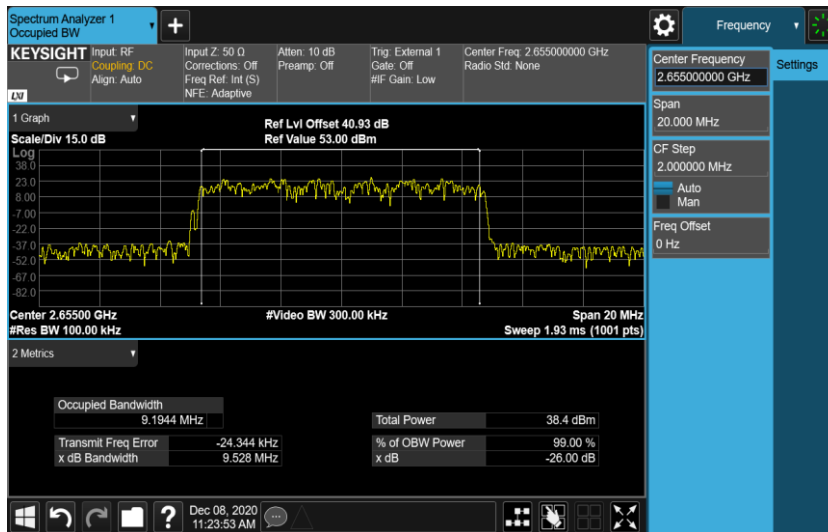
Port D, QPSK/20.0MHz Channel Position T



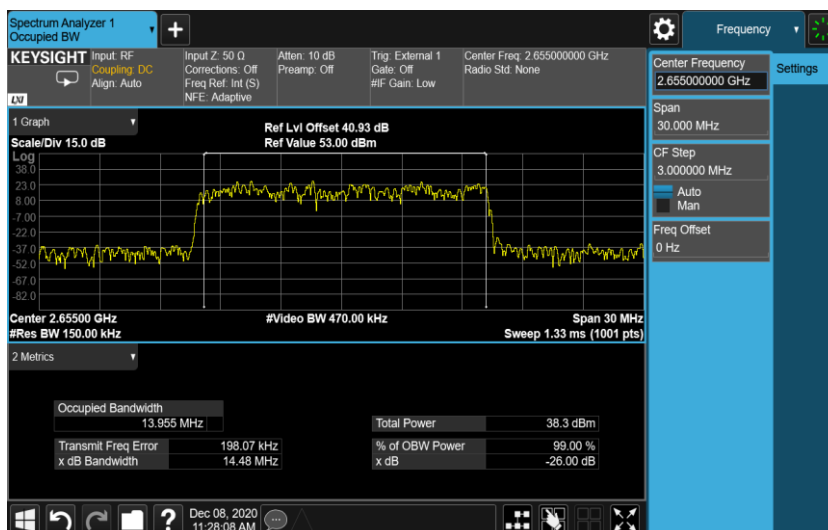
Port D, 16QAM/5.0MHz Channel Position M



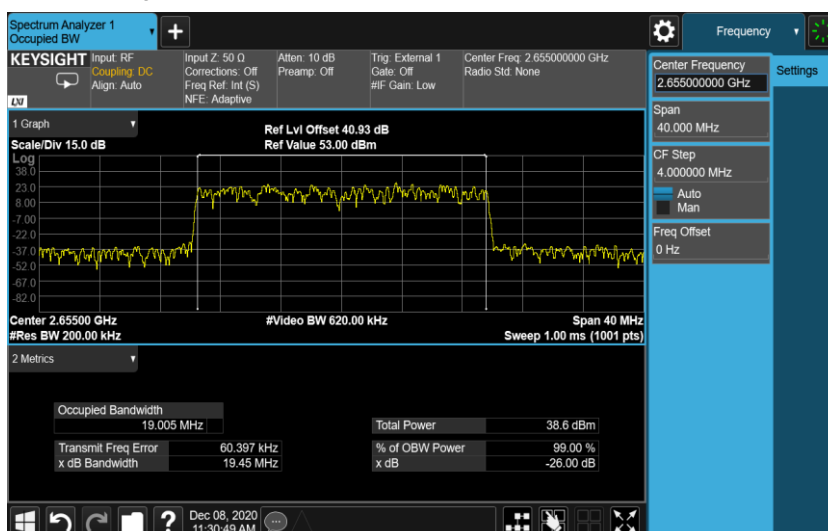
Port D, 16QAM/10.0MHz Channel Position M



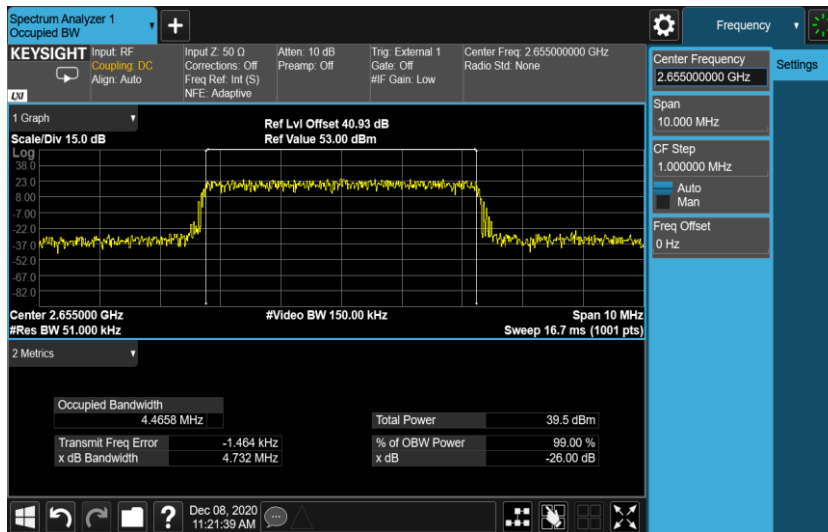
Port D, 16QAM/15.0MHz Channel Position M



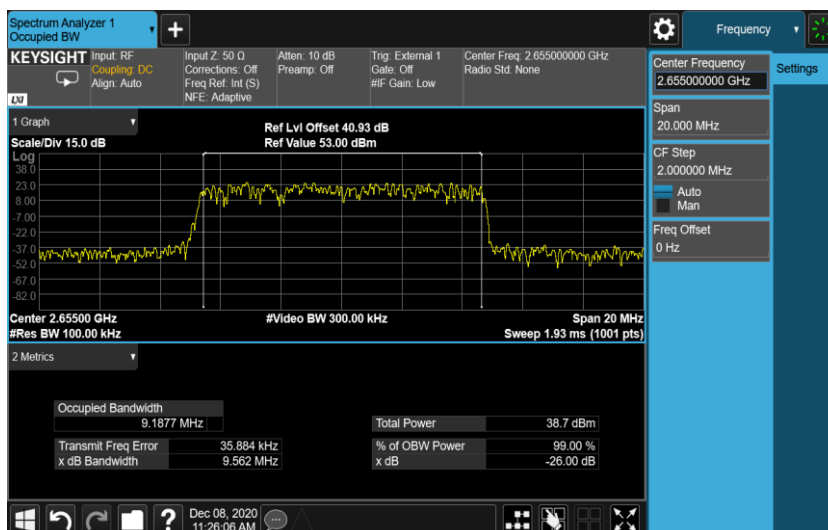
Port D, 16QAM/20.0MHz Channel Position M



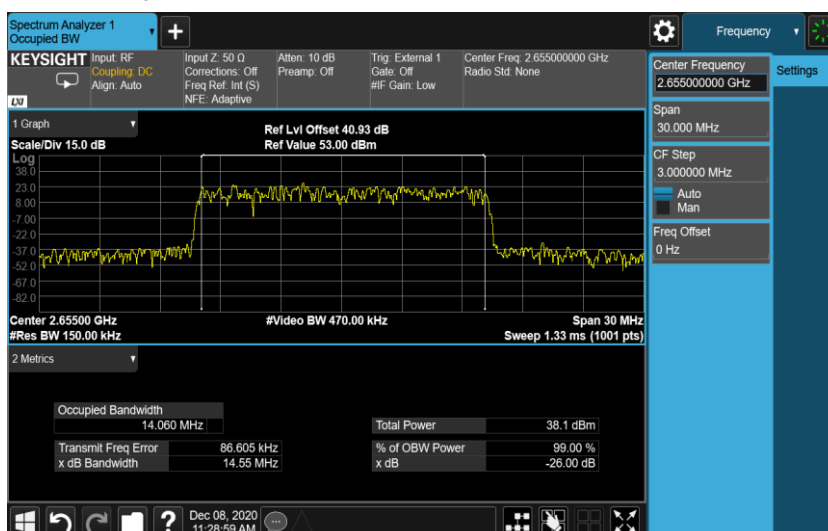
Port D, 64QAM/5.0MHz Channel Position M



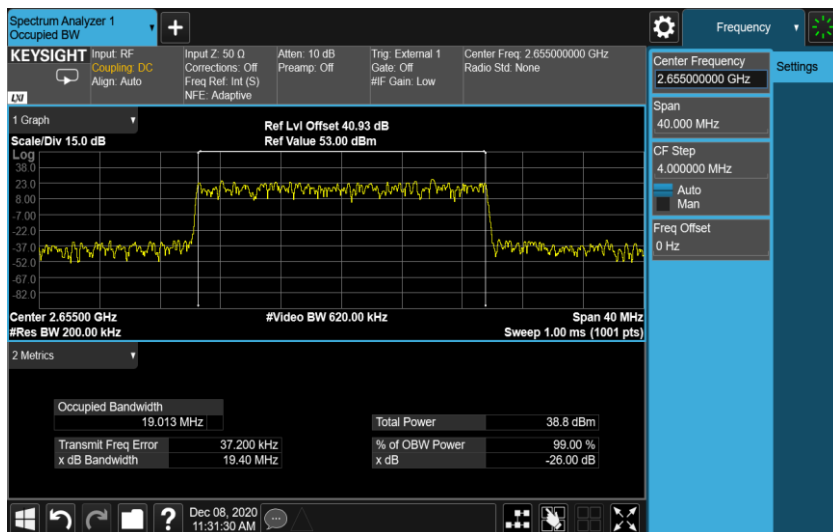
Port D, 64QAM/10.0MHz Channel Position M



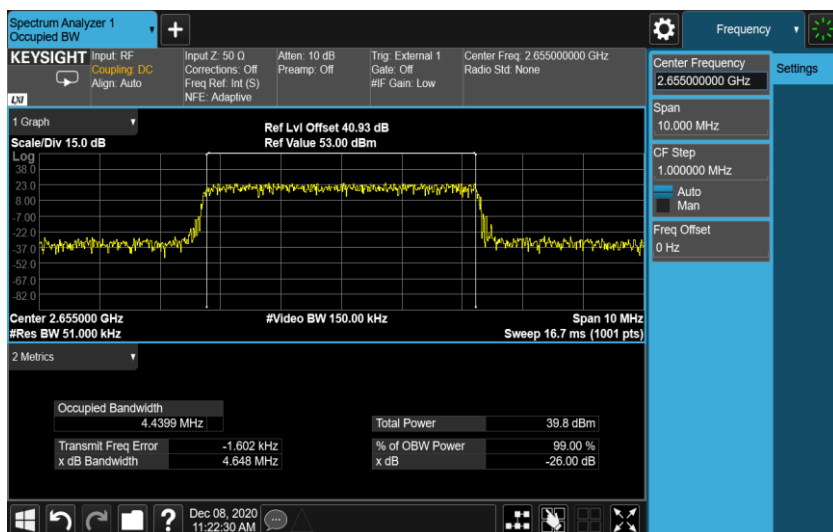
Port D, 64QAM/15.0MHz Channel Position M



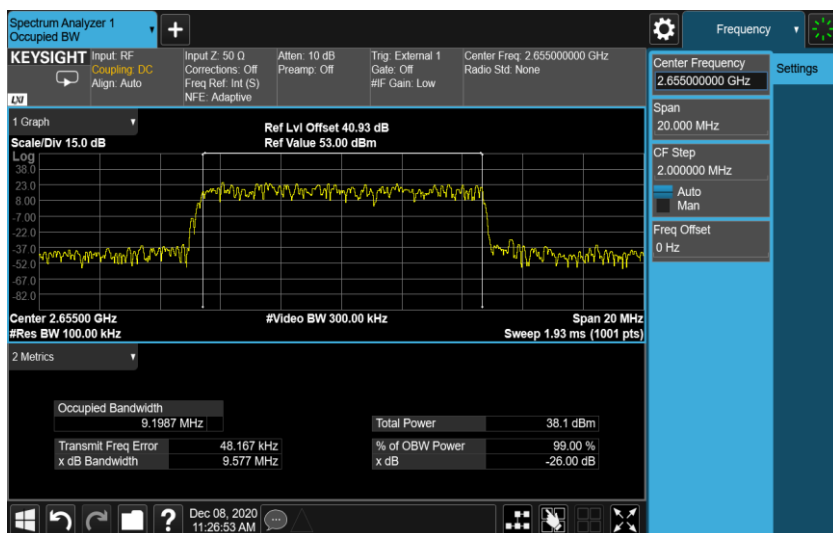
Port D, 64QAM/20.0MHz Channel Position M



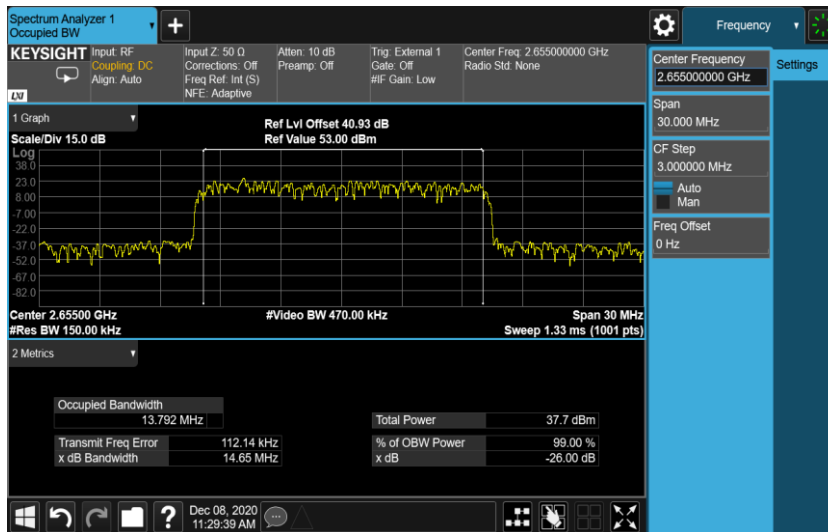
Port D, 256QAM/5.0MHz Channel Position M



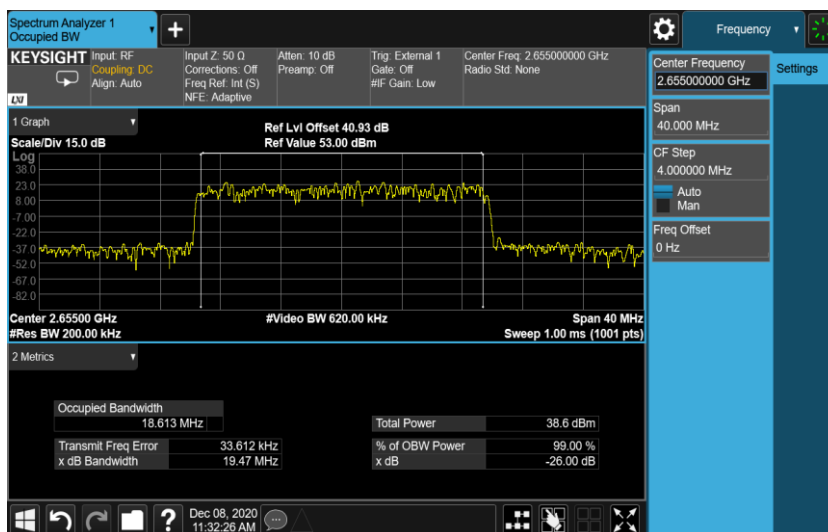
Port D, 256QAM/10.0MHz Channel Position M



Port D, 256QAM/15.0MHz Channel Position M



Port D, 256QAM/20.0MHz Channel Position M



A.3 Spurious Emissions at Band Edge

A.3.1 Reference

FCC CFR 47 Part 2, Clause 2.1051

FCC CFR 47 Part 27, Clause 27.53(m)

RSS-199, Clause 4.5

A.3.2 Method of measurement

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.

For MIMO mode configurations, the limit was adjusted with a correction of -6.02dB [10Log4] by using the Measure and Add 10Log(N) dB technique according to FCC KDB 662911 D01 Multiple Transmitter Output accounting for simultaneous transmission from antenna ports. Then the limit was adjusted to -19.02dBm.

According to FCC rules, in the 1 MHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed and a RBW of 1MHz for measurements of emissions > 1MHz away from the band edges.

The limit was adjusted with -13.01dB [10Log(50/1000)] to compensate for the reduce measurement bandwidth 50KHz for emission more than 1MHz away from the band edges. For MIMO mode, the limit of -32.03dBm was used for emission more than 1MHz away from the band edges. Spectrum analyzer detector was set as RMS.

A.3.3 Measurement limit

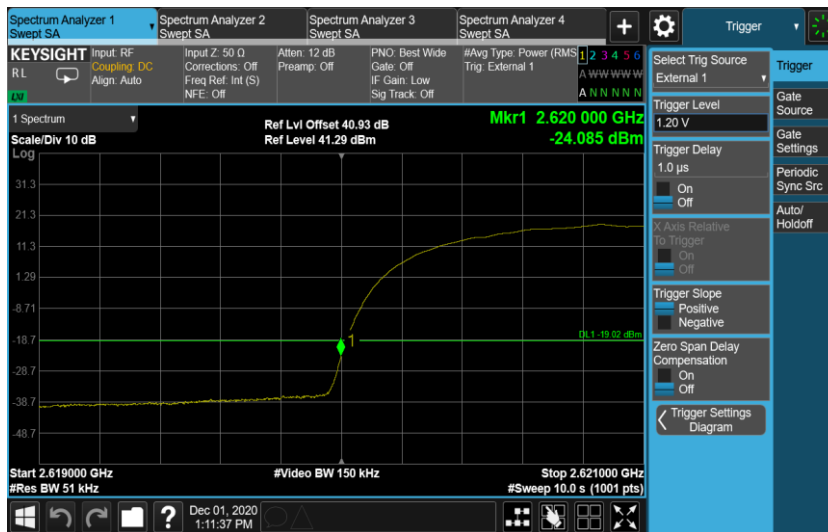
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10\log(P)$ dB.

A.3.4 Measurement result

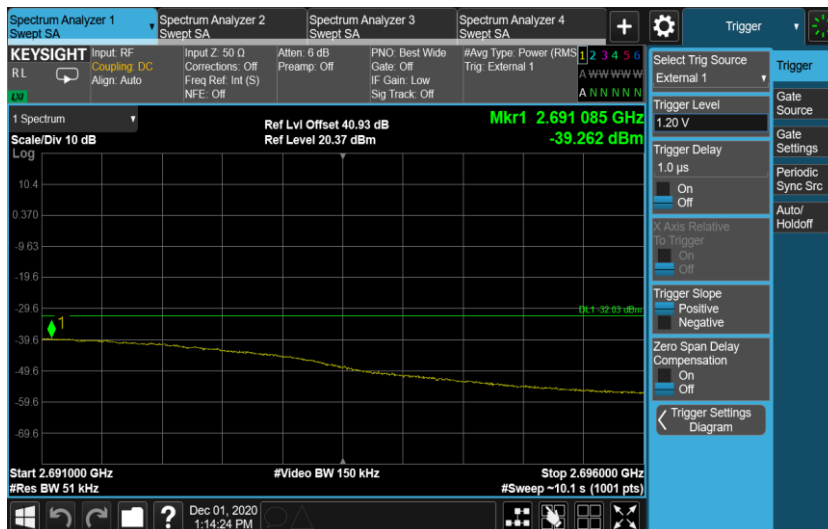
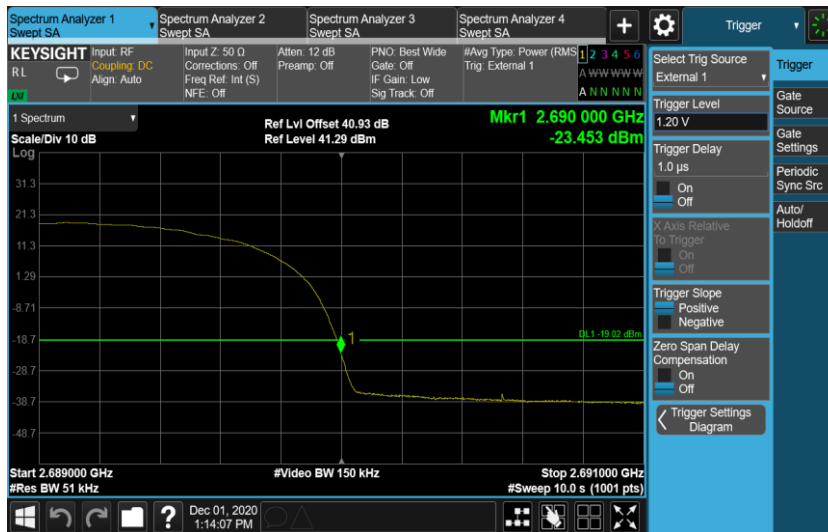
Configuration WCDMA-1C-BE, QPSK

Band Edge Frequency	Channel Bandwidth	RBW (KHz)	Limit (dBm)
Channel Position B	5.0MHz	51	-19.02
Channel Position T	5.0MHz	51	-19.02

Port D, Channel Position B, QPSK



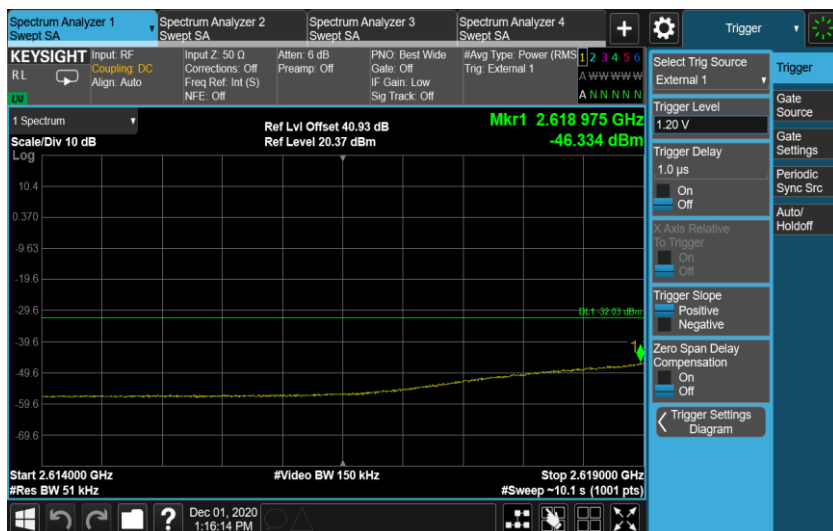
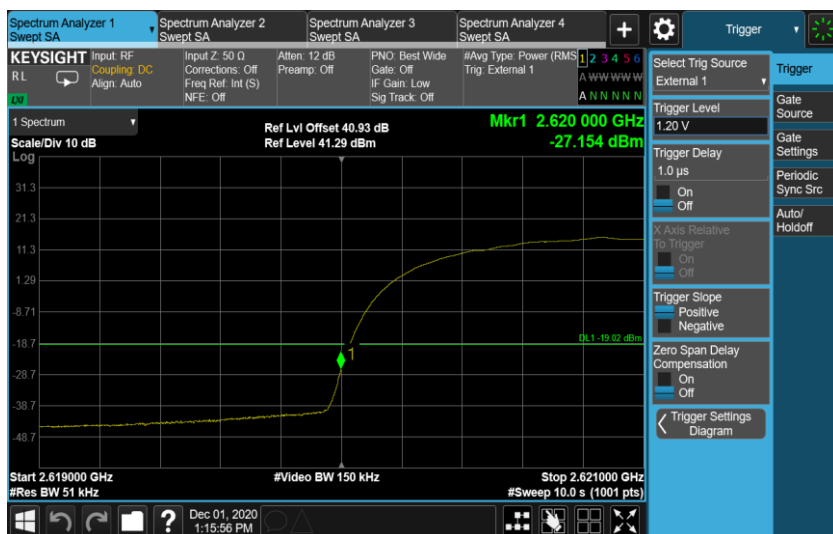
Port D, Channel Position T, QPSK



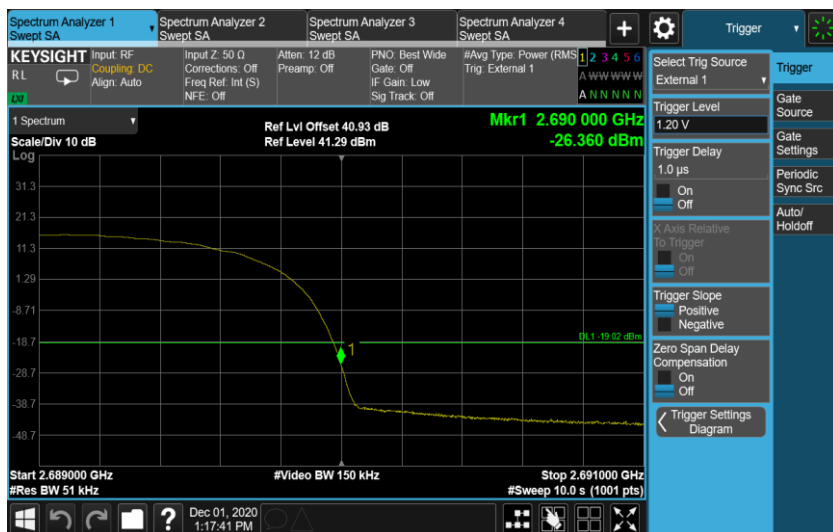
Configuration WCDMA-2C-BE, QPSK

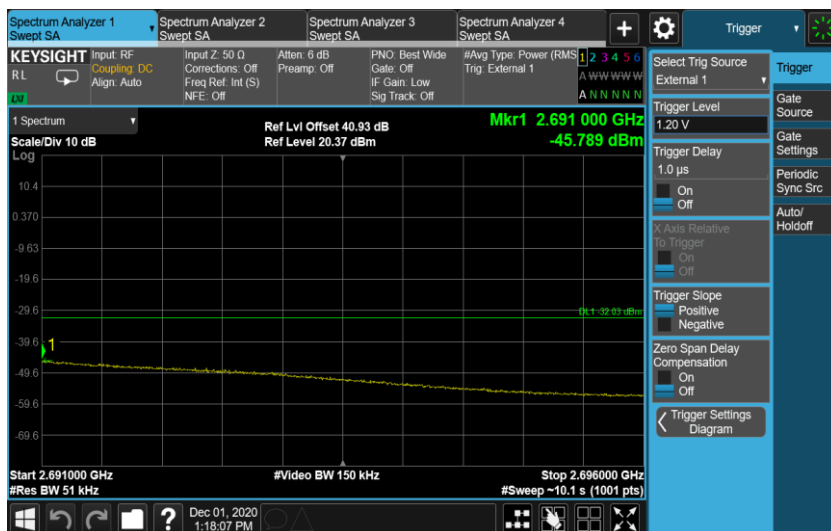
Band Edge Frequency	Channel Bandwidth	RBW (KHz)	Limit (dBm)
Channel Position B	5.0MHz	51	-19.02
Channel Position T	5.0MHz	51	-19.02

Port D, Channel Position B, QPSK



Port D, Channel Position T, QPSK

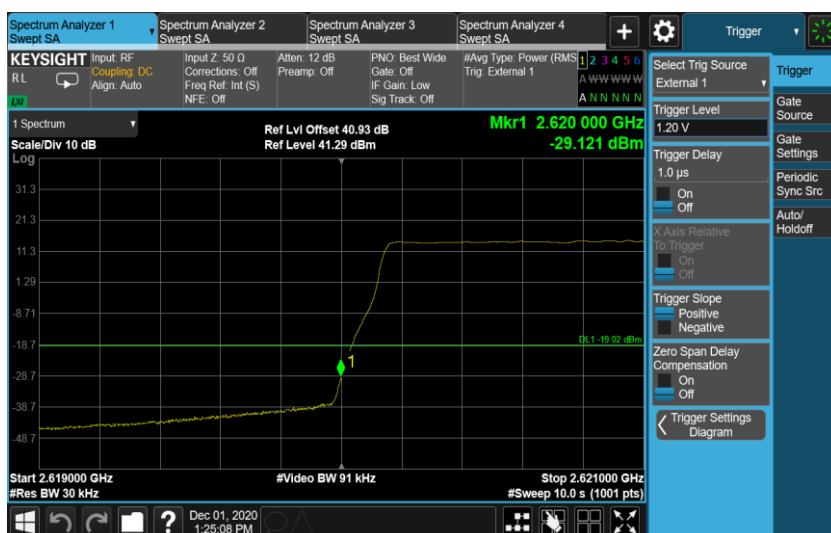


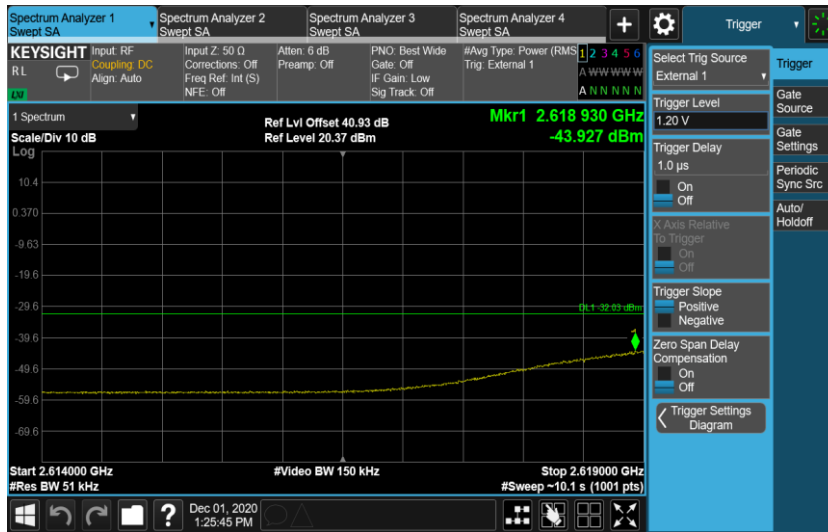


Configuration LTE-MIMO-1C, QPSK

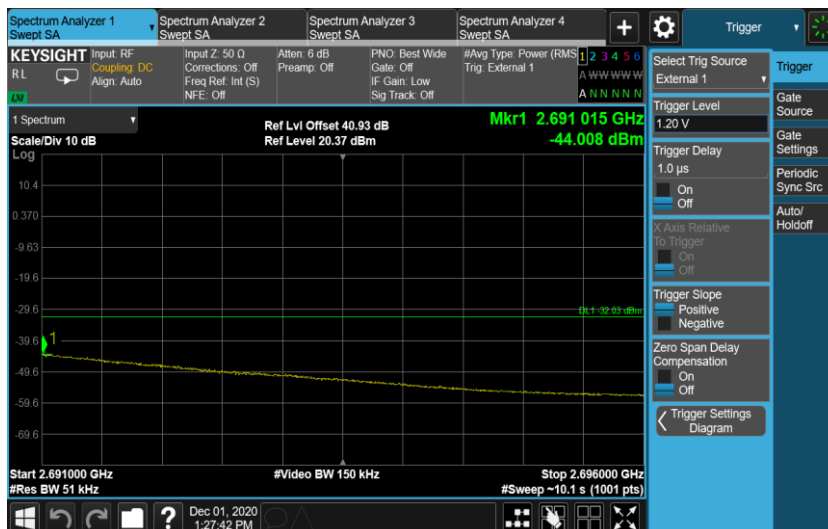
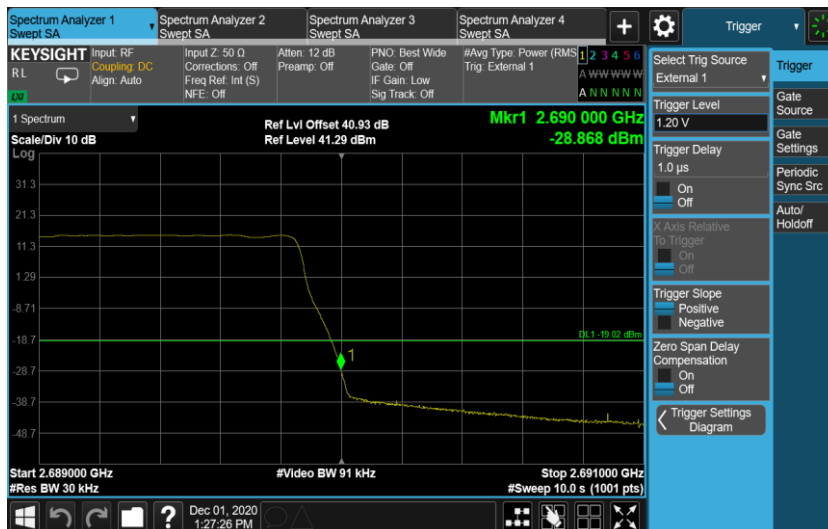
Band Edge Frequency	Channel Bandwidth	RBW(KHz)	Limit(dBm)
Channel Position B	3.0MHz	30	-19.02
	10.0 MHz	100	-19.02
Channel Position T	3.0MHz	30	-19.02
	10.0 MHz	100	-19.02

Port D, Channel Position B, 3.0MHz

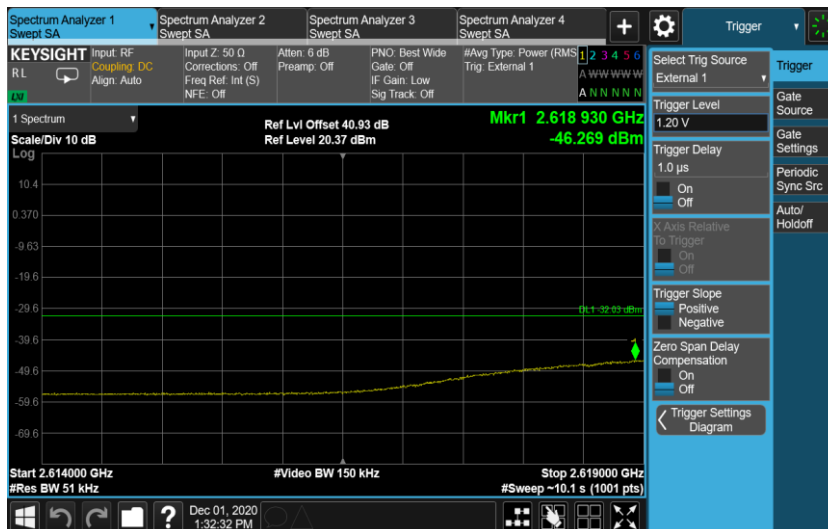
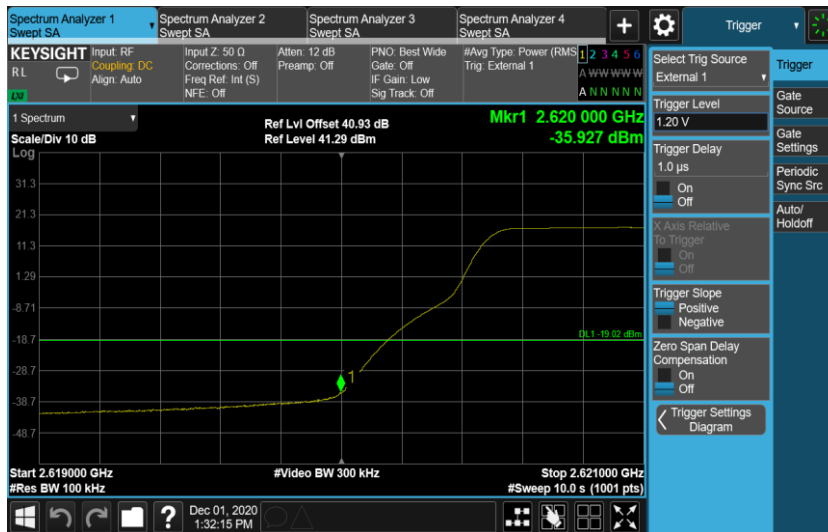




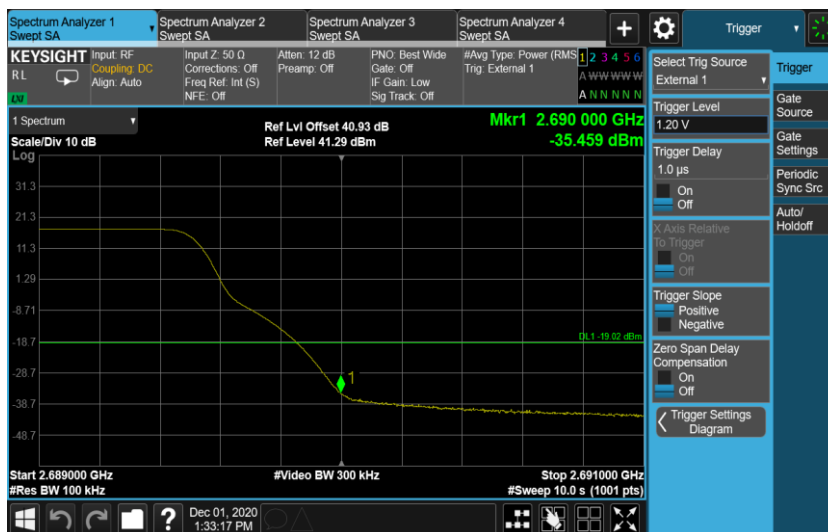
Port D, Channel Position T, 3.0MHz

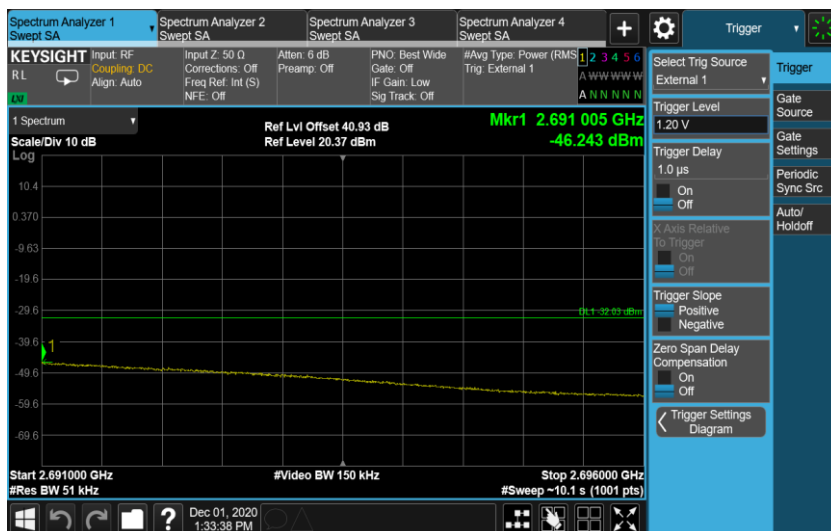


Port D, Channel Position B, 10.0MHz



Port D, Channel Position T, 10.0MHz

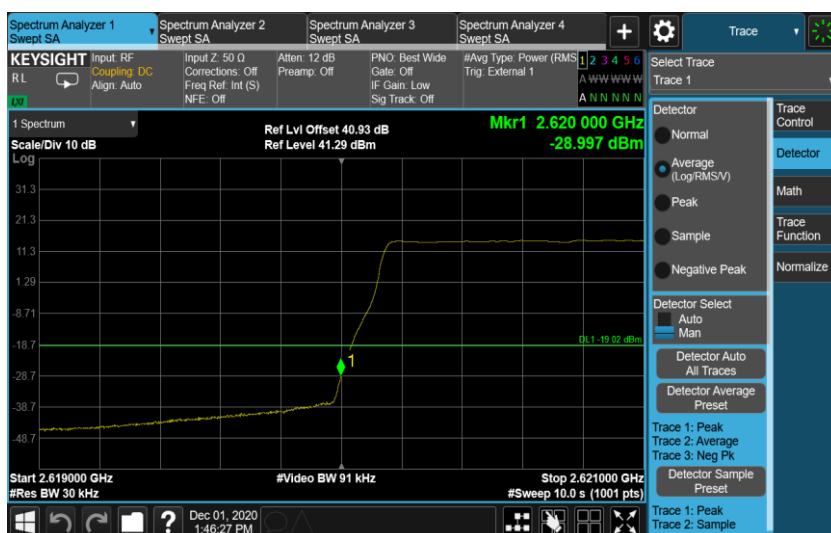


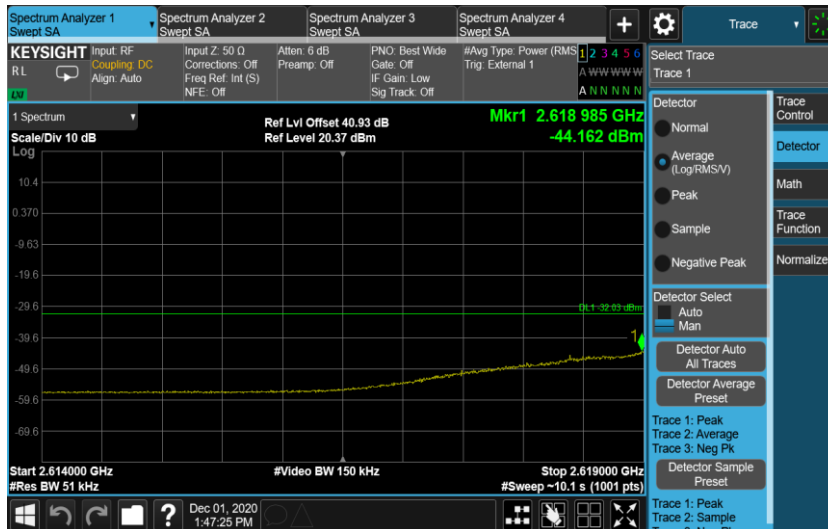


Configuration LTE-MIMO-2C, QPSK

Band Edge Frequency	Channel Bandwidth	RBW(KHz)	Limit(dBm)
Channel Position B	3.0MHz	30	-19.02
	10.0 MHz	100	-19.02
Channel Position T	3.0MHz	30	-19.02
	10.0 MHz	100	-19.02

Port D, Channel Position B, 3.0MHz





Port D, Channel Position T, 3.0MHz

