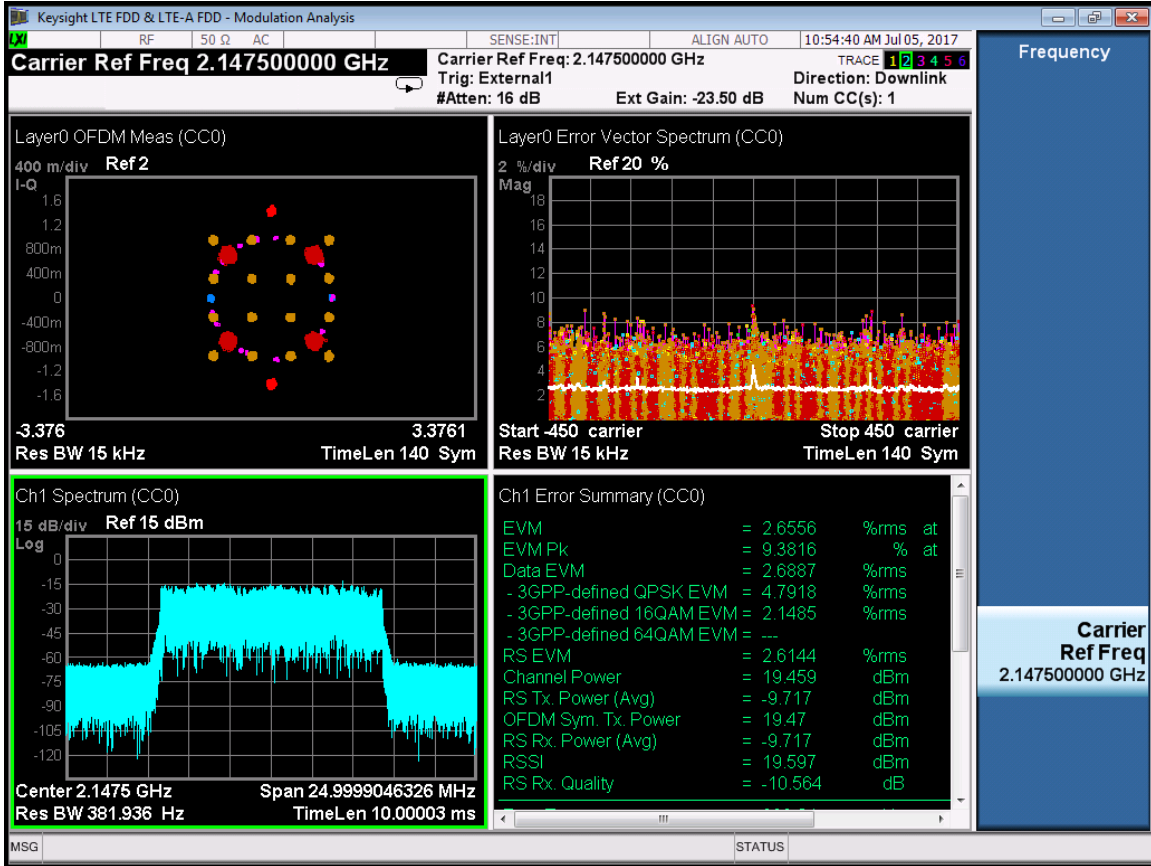


LTE-Port 1-2147.5MHz-E-TM3.3

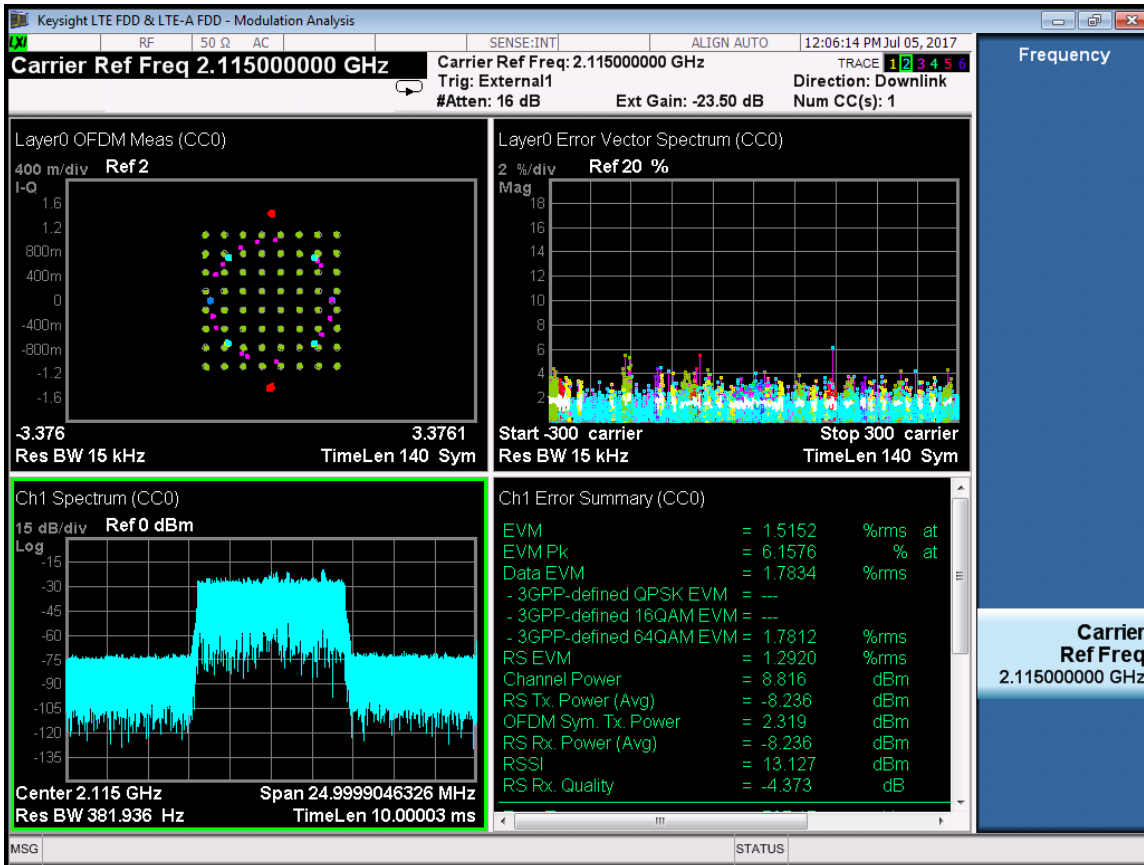


RF Bandwidth :IBW 10MHz(LTE 10MHz)

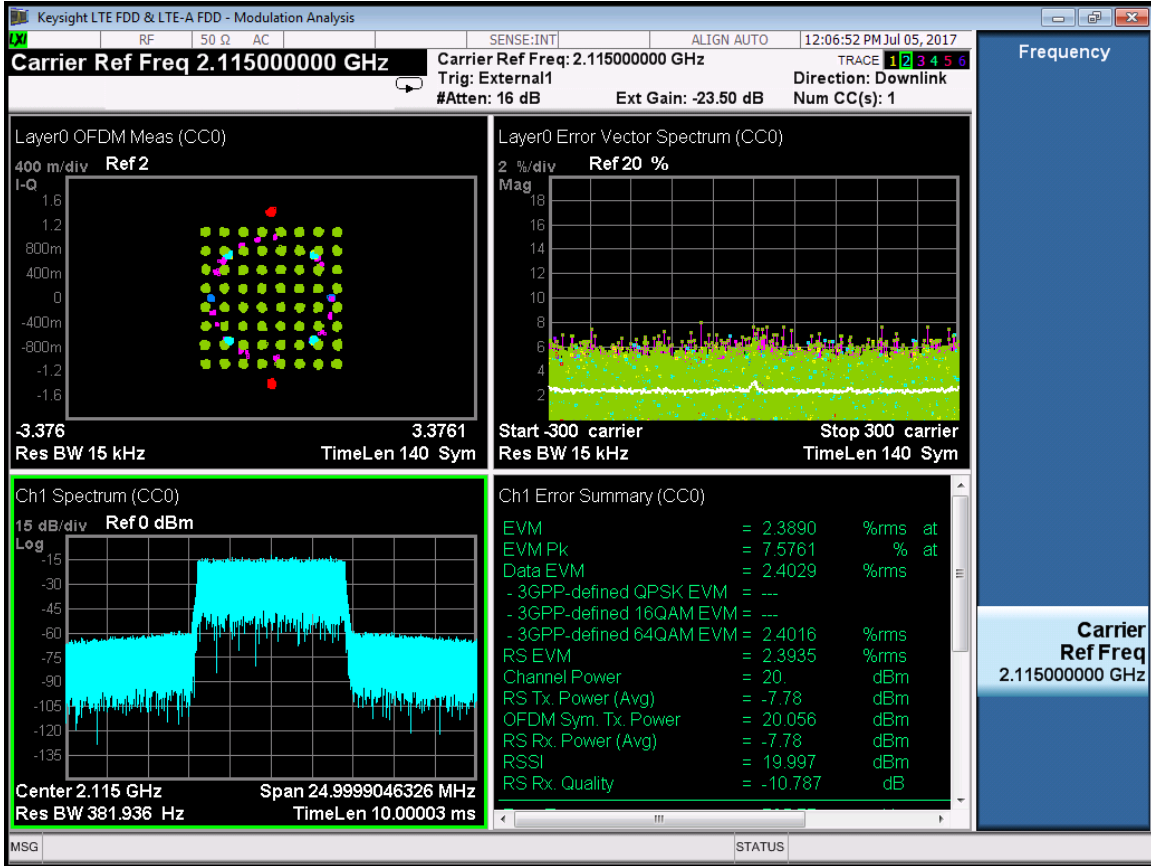
Port	RF Center Freq. (MHz)	Test mode	EVM%
0	2115	E-TM2	1.7812
		E-TM3.1	2.4016
		E-TM 3.2	3.1512
		E-TM 3.3	4.3333
	2132.5	E-TM2	1.6383
		E-TM3.1	2.3902
		E-TM 3.2	3.1639
		E-TM 3.3	4.3244
	2150	E-TM2	1.6285
E-TM3.1		2.3848	
E-TM 3.2		3.1587	
E-TM 3.3		4.3305	
1	2115	E-TM2	1.8387
		E-TM3.1	2.3948
		E-TM 3.2	3.1347
		E-TM 3.3	4.3360

2132.5	E-TM2	1.7723
	E-TM3.1	2.3891
	E-TM 3.2	3.1406
	E-TM 3.3	4.3189
2150	E-TM2	1.8810
	E-TM3.1	2.3790
	E-TM 3.2	3.1744
	E-TM 3.3	4.3186

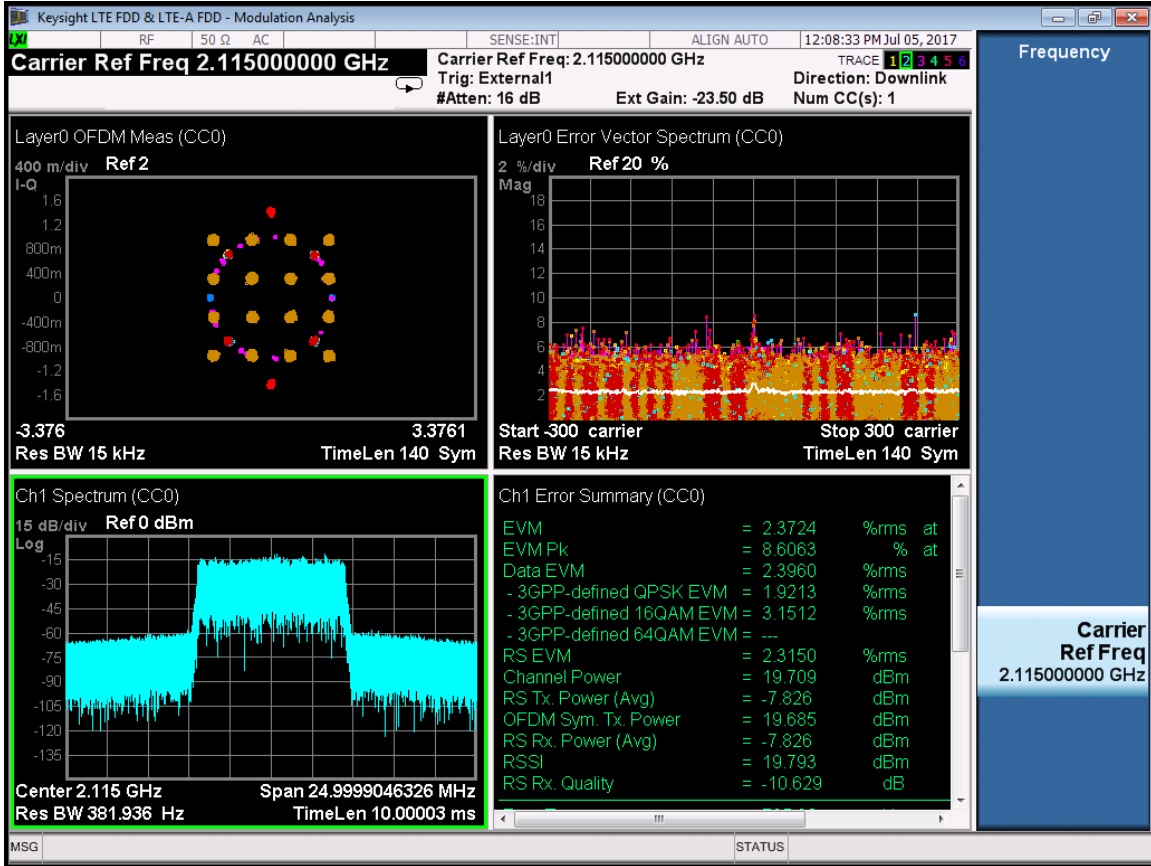
RF 2115MHz:
 LTE-Port
 0-2115MHz-E-TM2



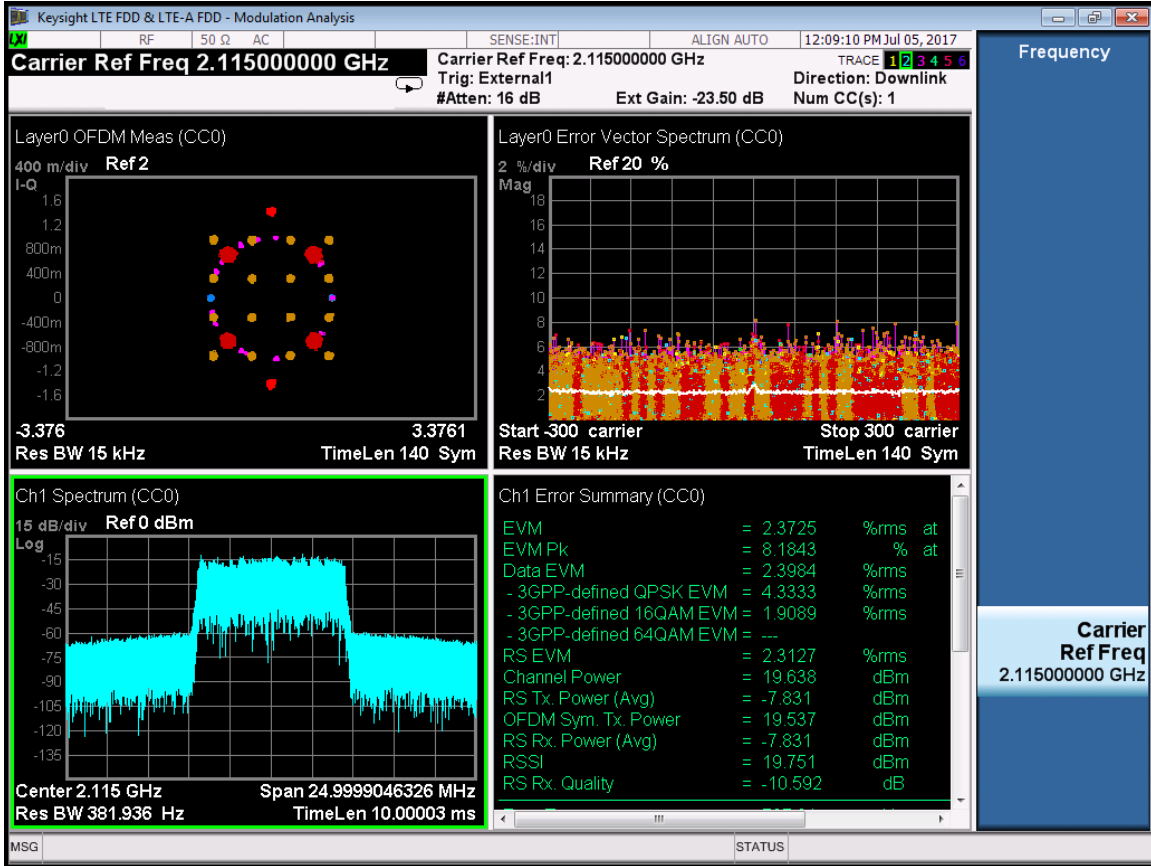
LTE-Port 0-2115MHz-E-TM3.1



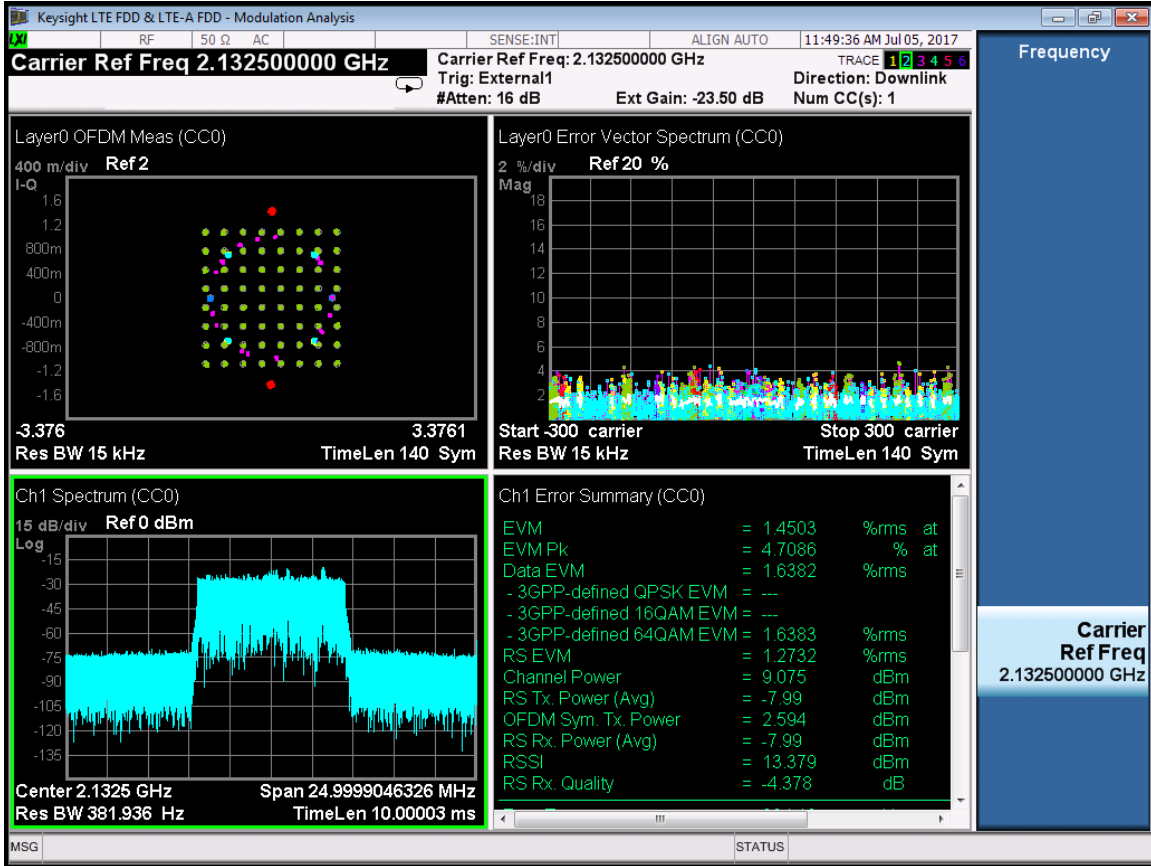
LTE-Port 0-2115MHz-E-TM3.2



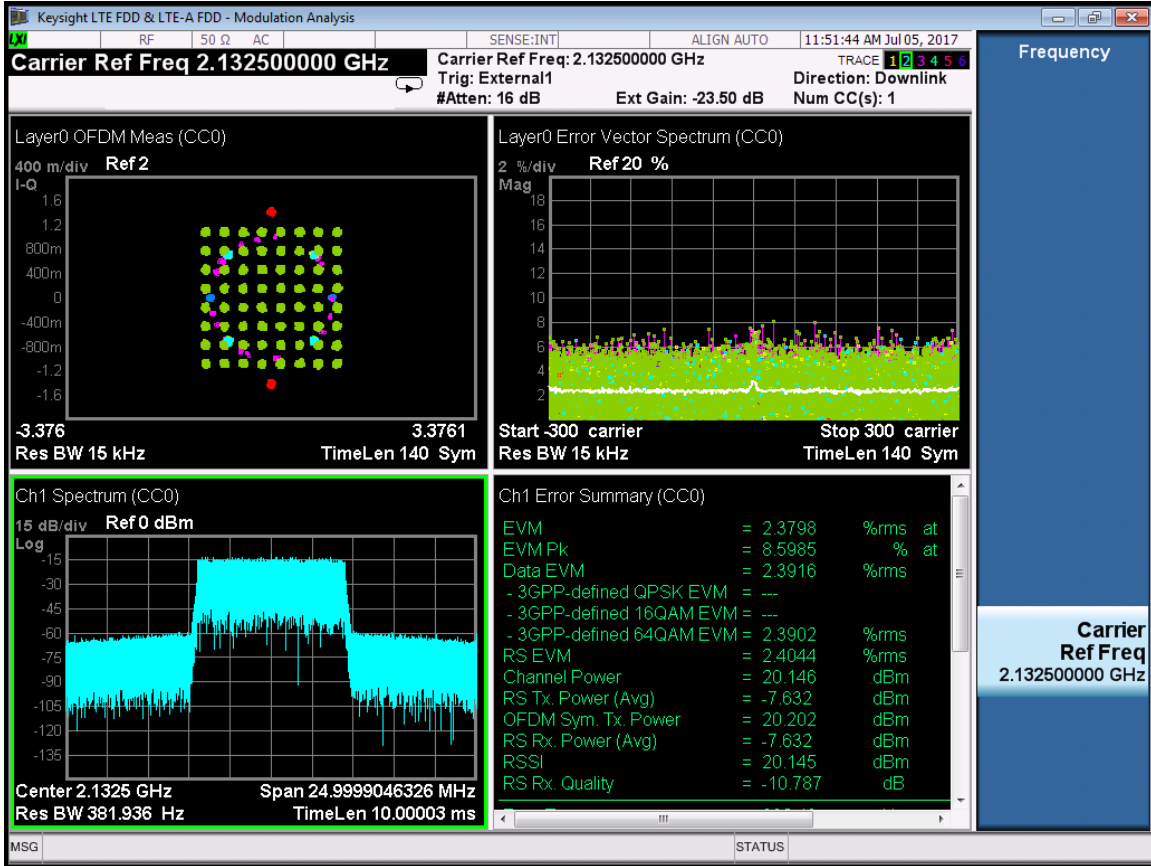
LTE-Port 0-2115MHz-E-TM3.3



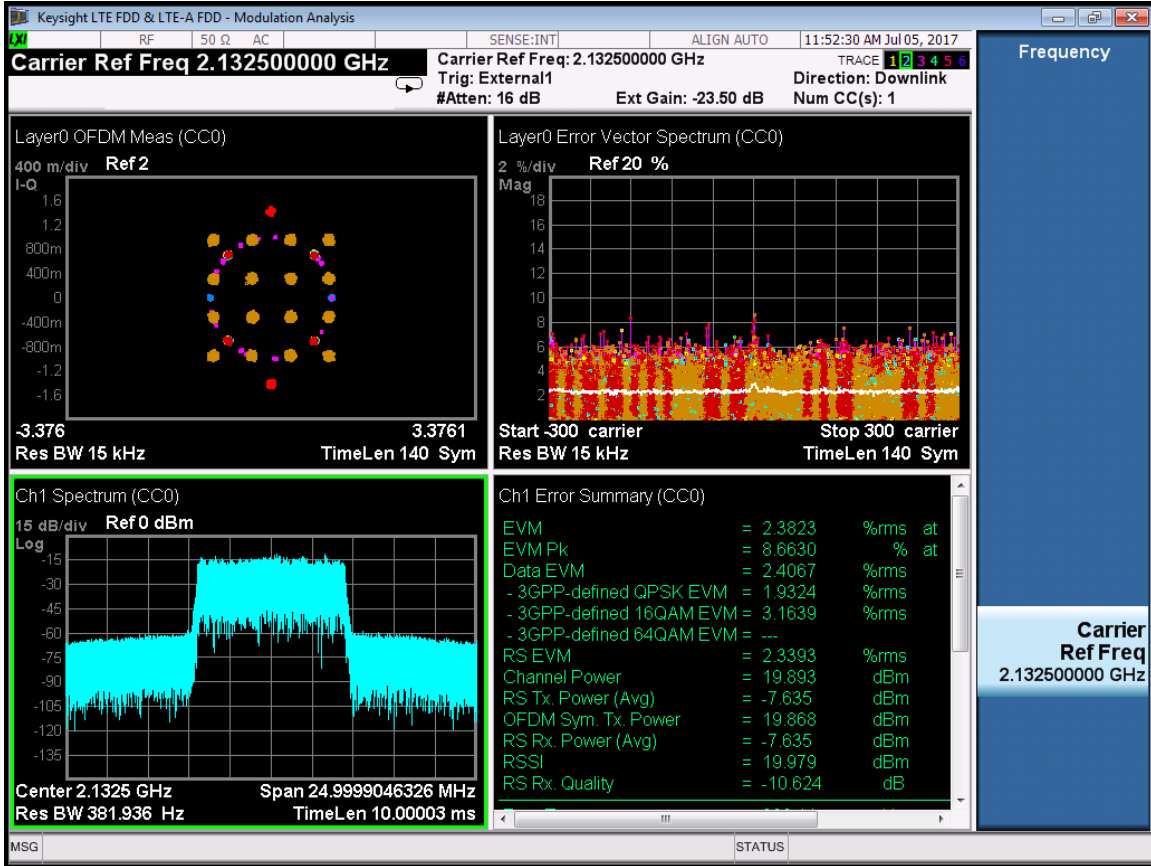
RF 2132.5MHz:
 LTE-Port 0-2132.5MHz-E-TM2



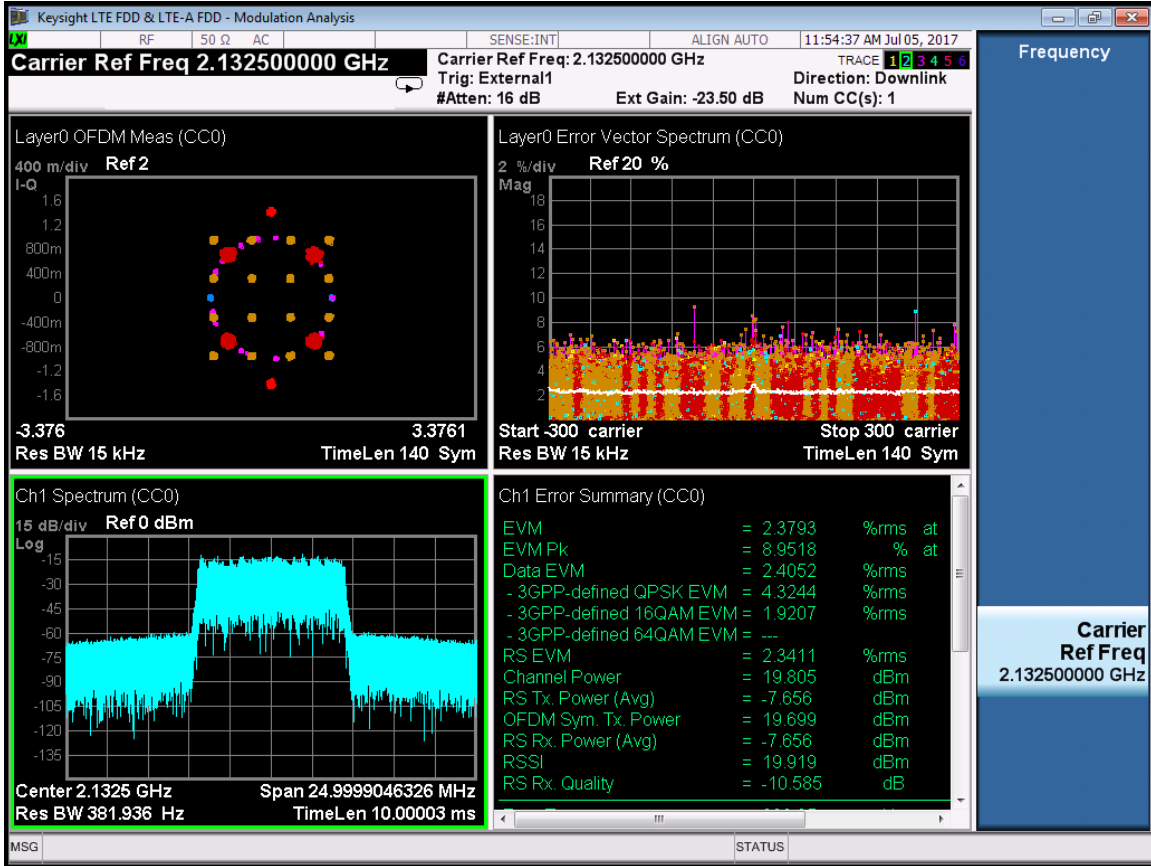
LTE-Port 0-2132.5MHz-E-TM3.1



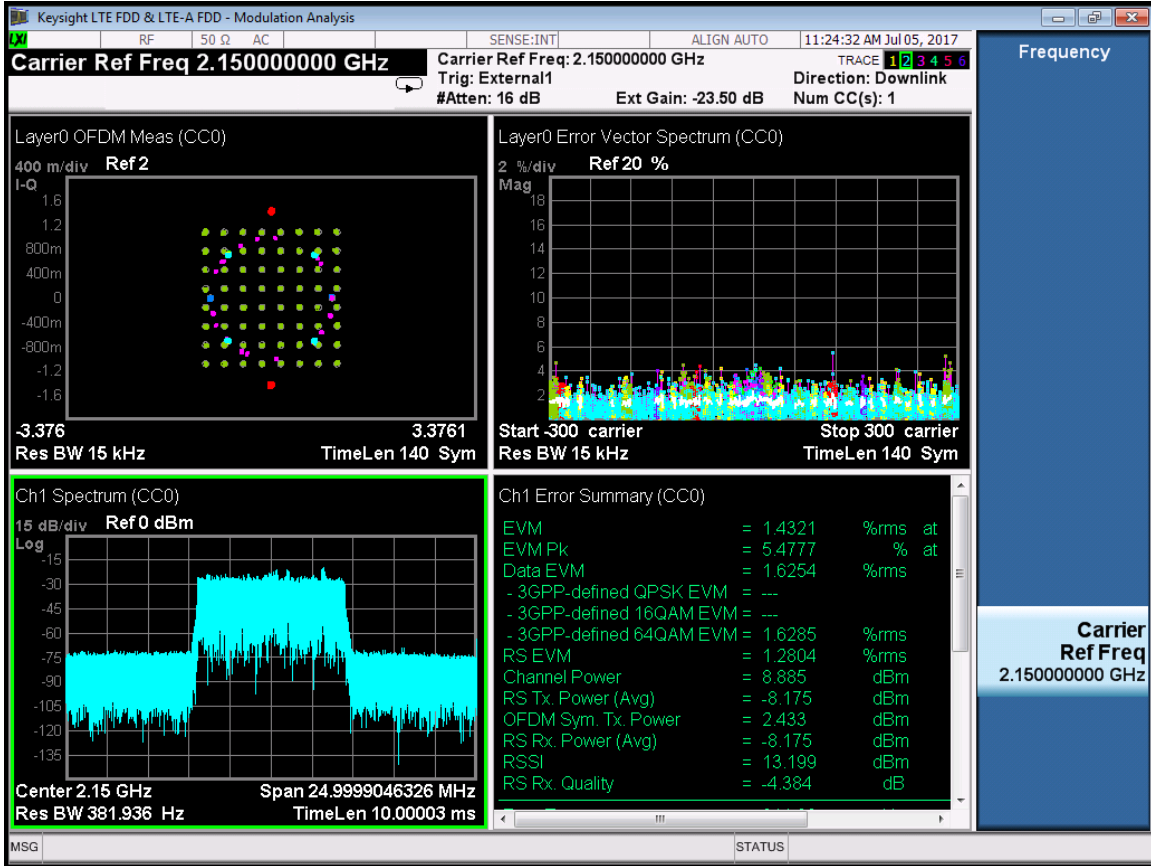
LTE-Port 0-2132.5MHz-E-TM3.2



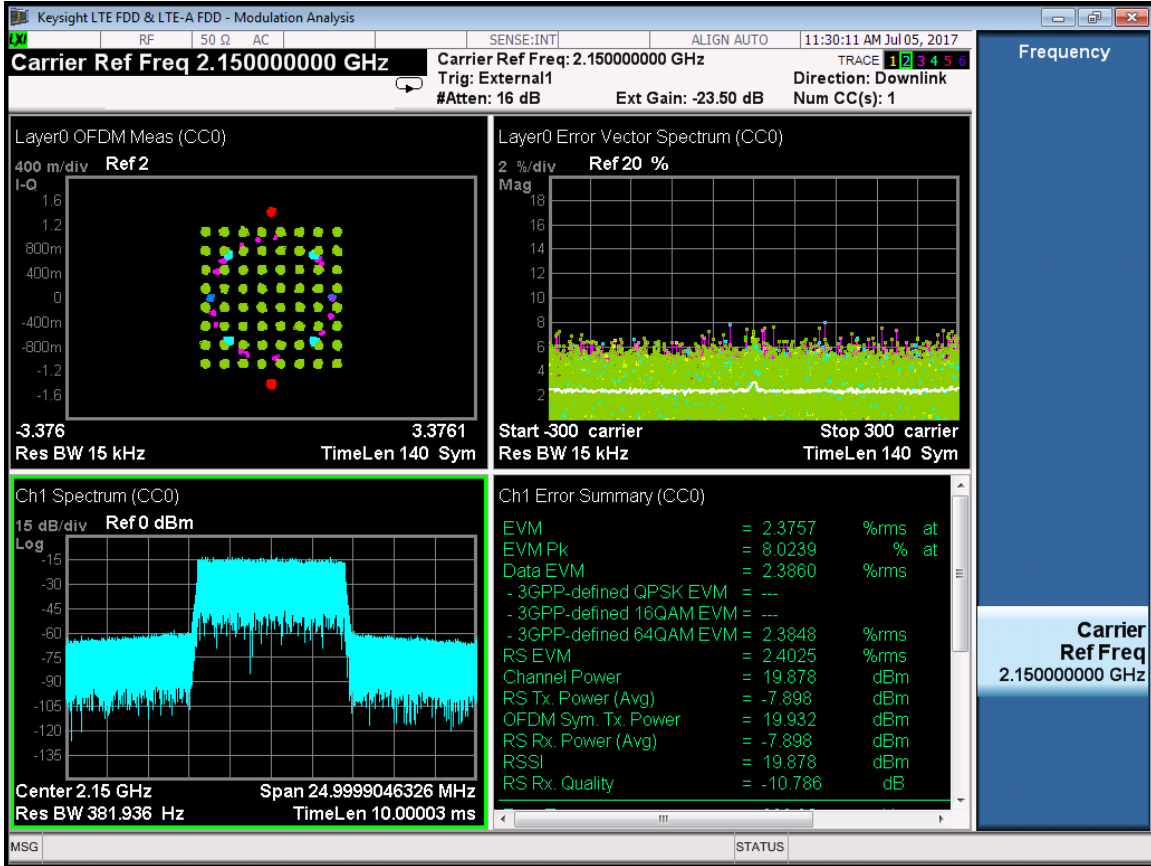
LTE-Port 0-2132.5MHz-E-TM3.3



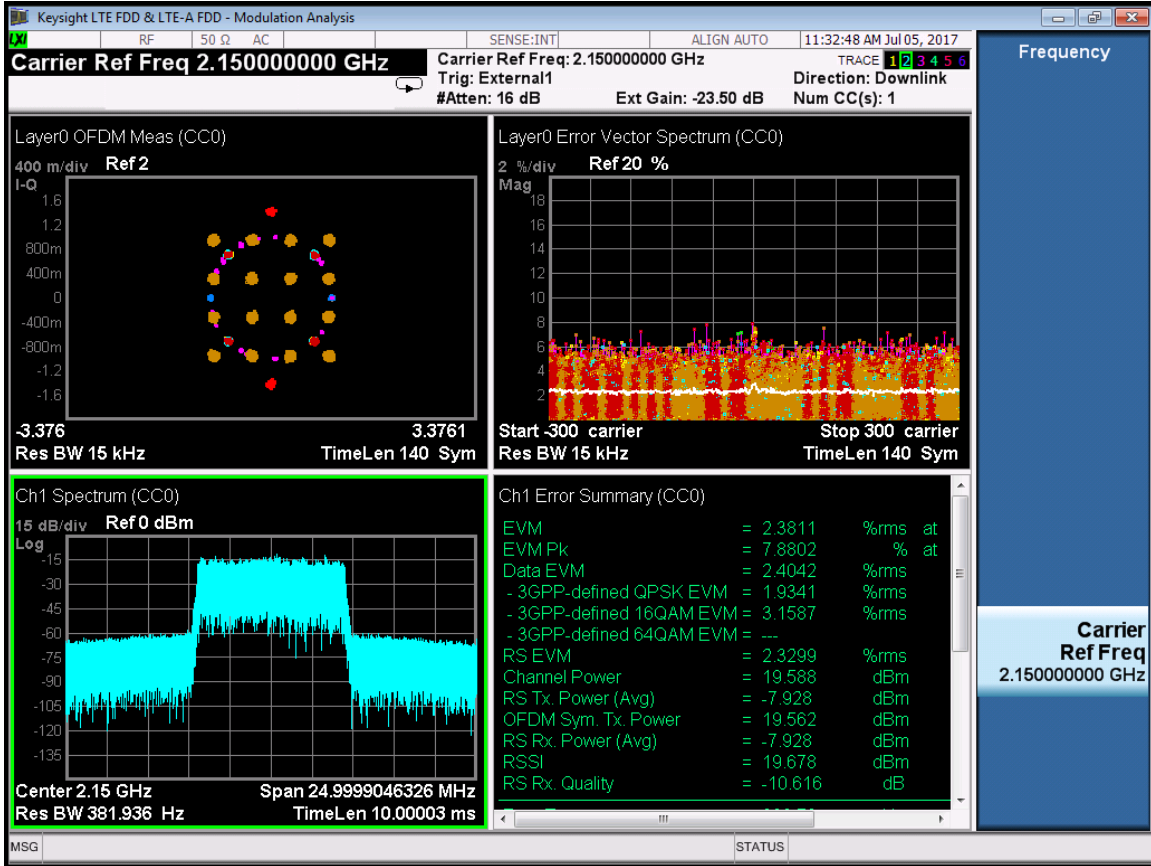
RF 2150MHz:
 LTE-Port 0-2150MHz-E-TM2



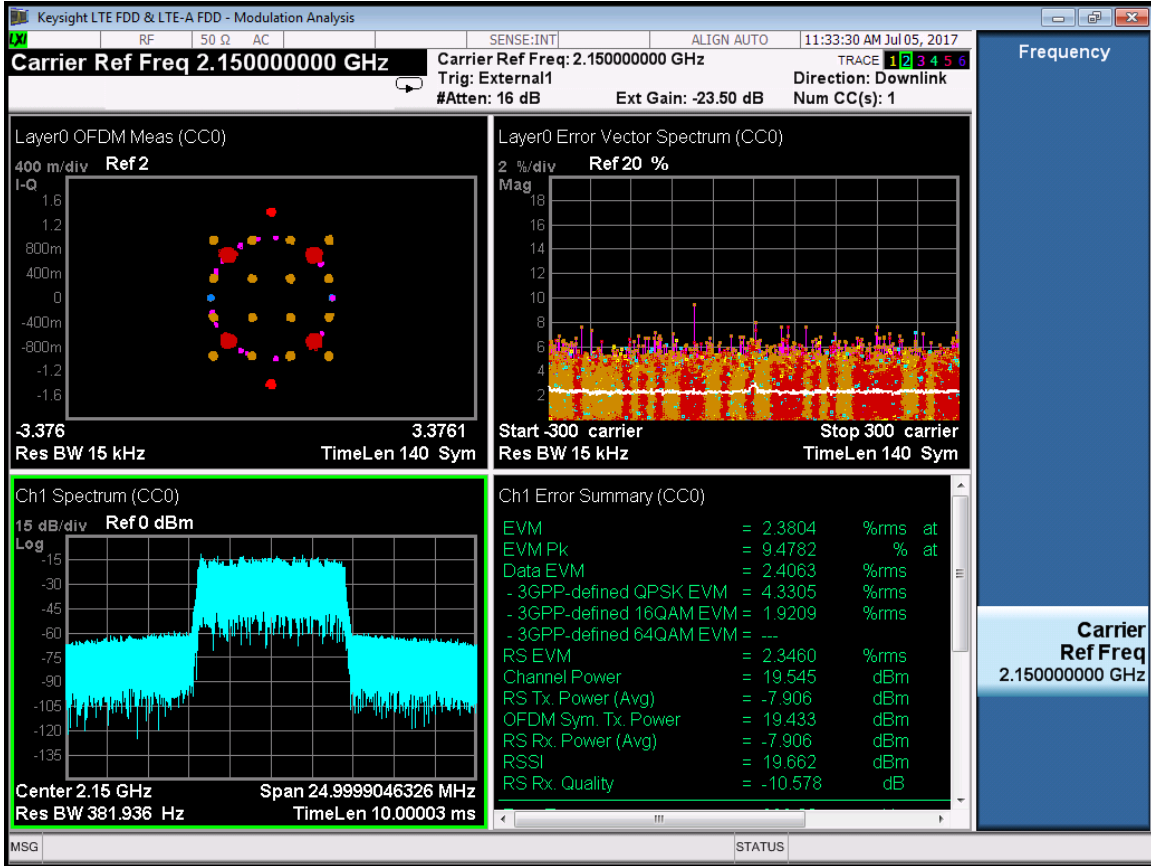
LTE-Port 0-2150MHz-E-TM3.1



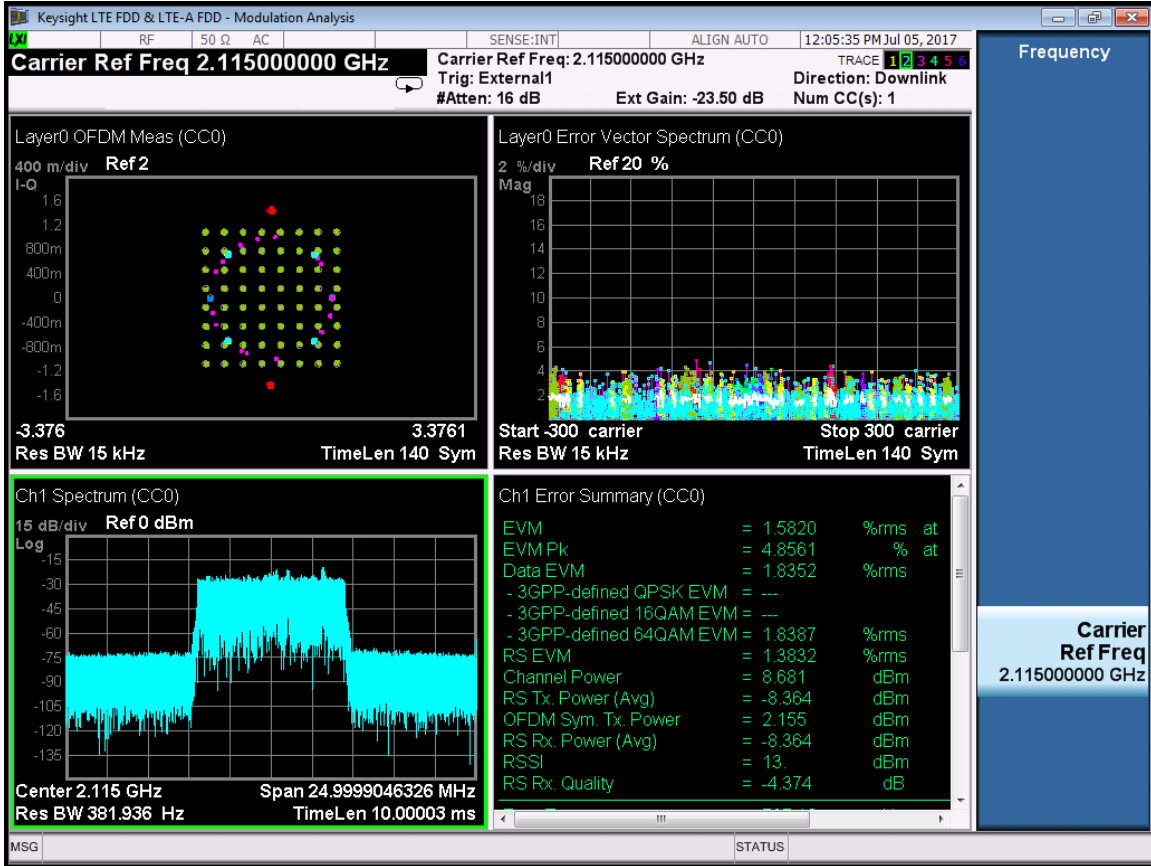
LTE-Port 0-2150MHz-E-TM3.2



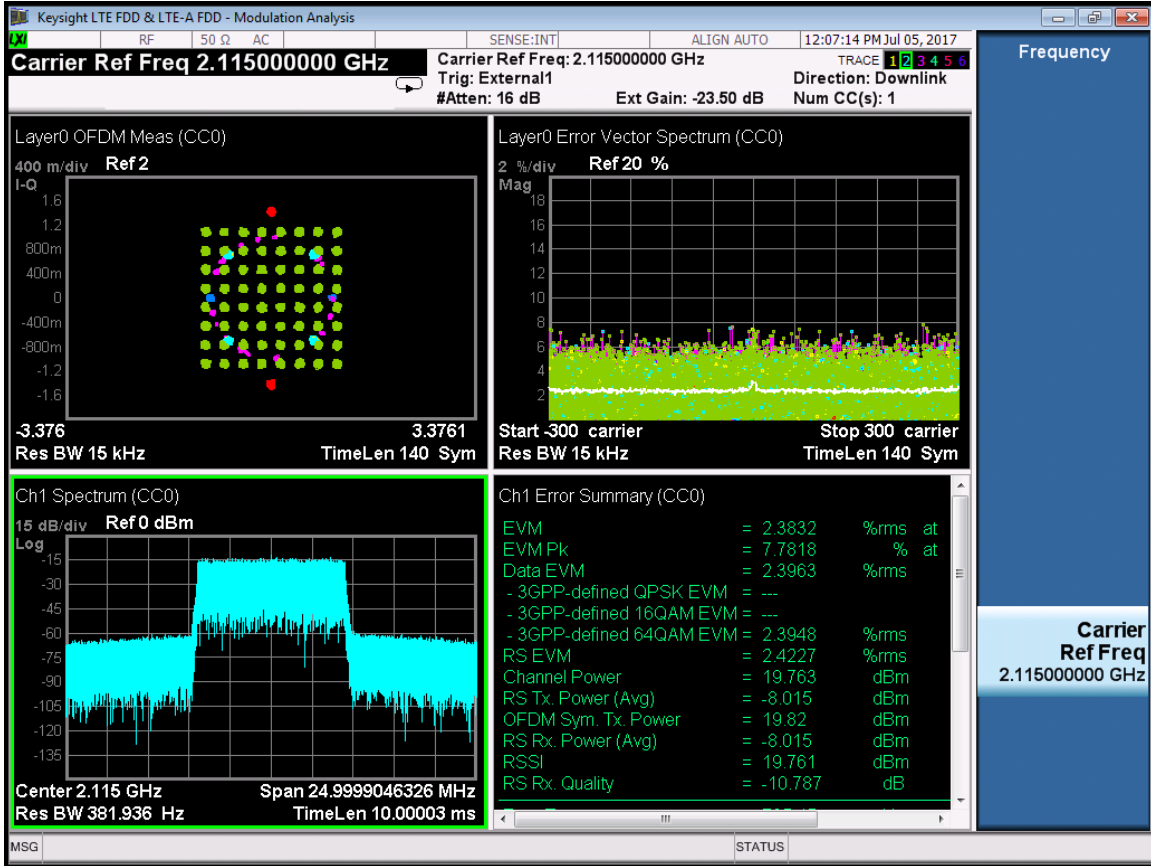
LTE-Port 0-2150MHz-E-TM3.3



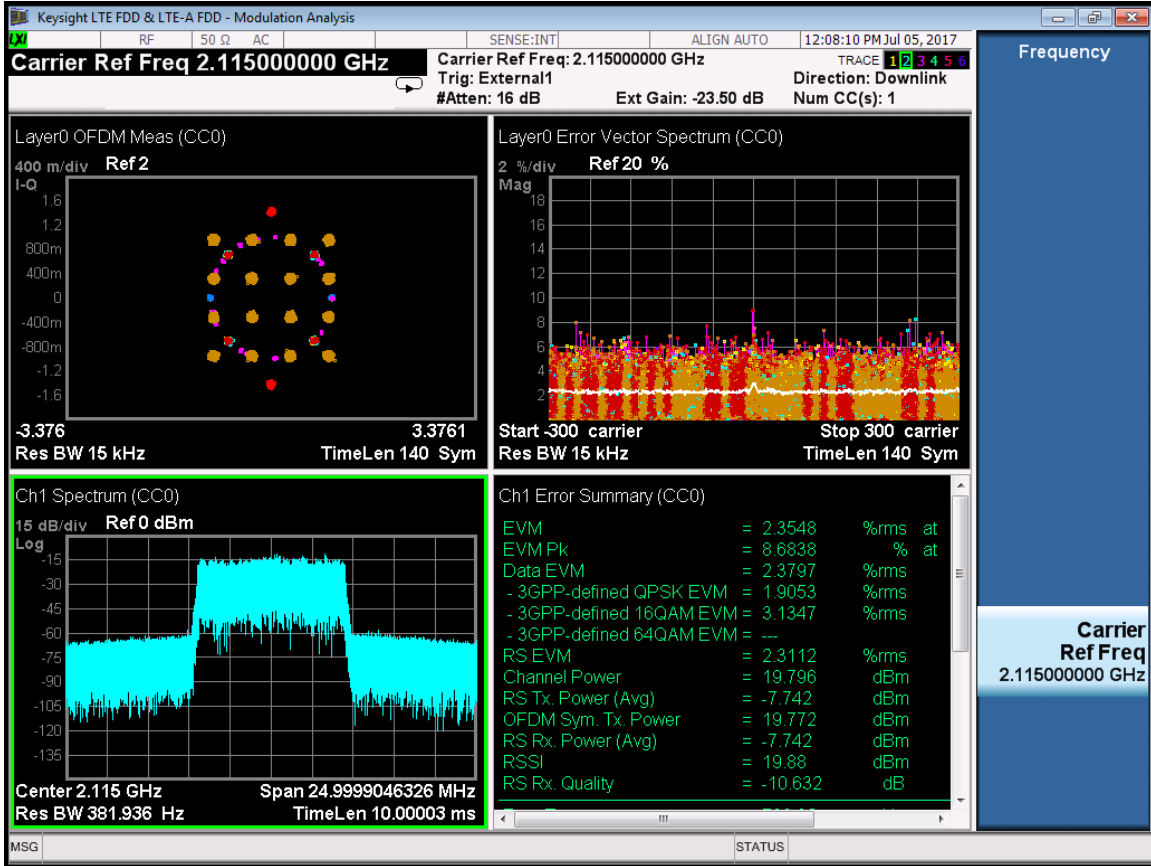
RF 2115MHz:
LTE-Port 1-2115MHz-E-TM2



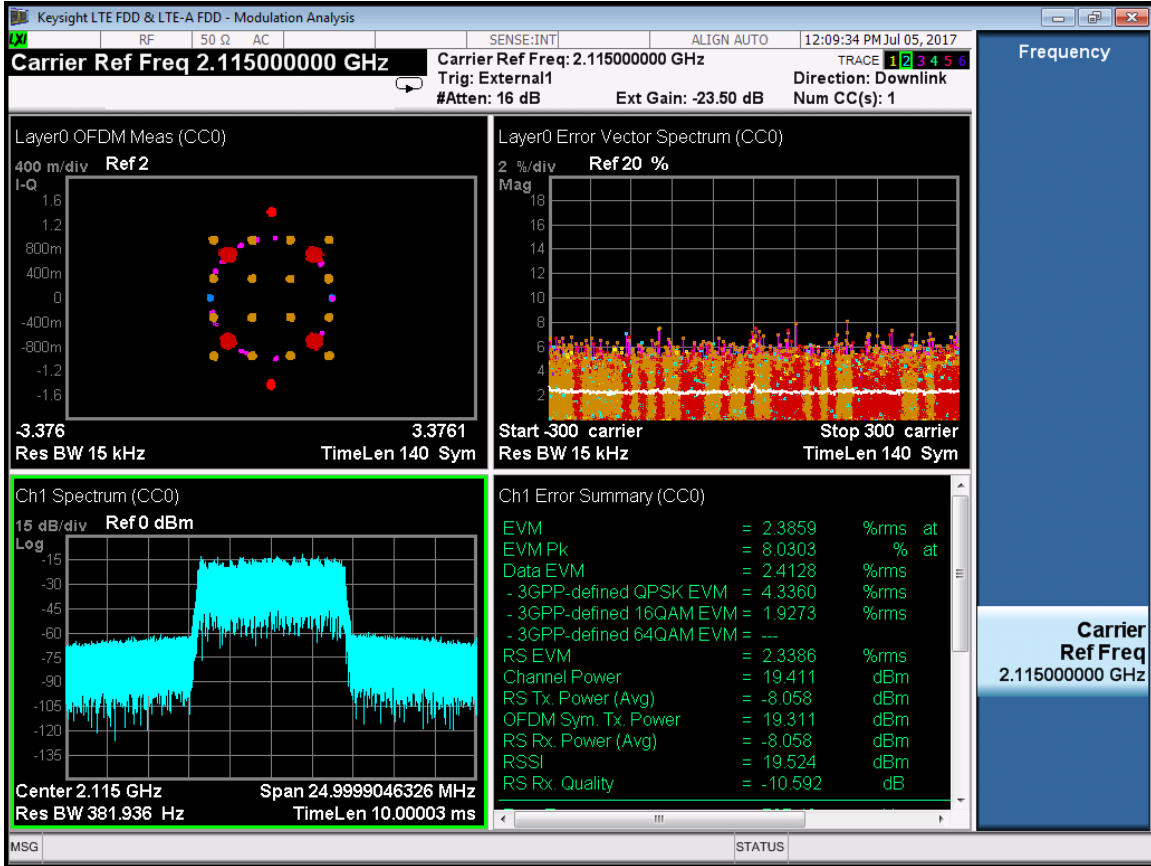
LTE-Port 1-2115MHz-E-TM3.1



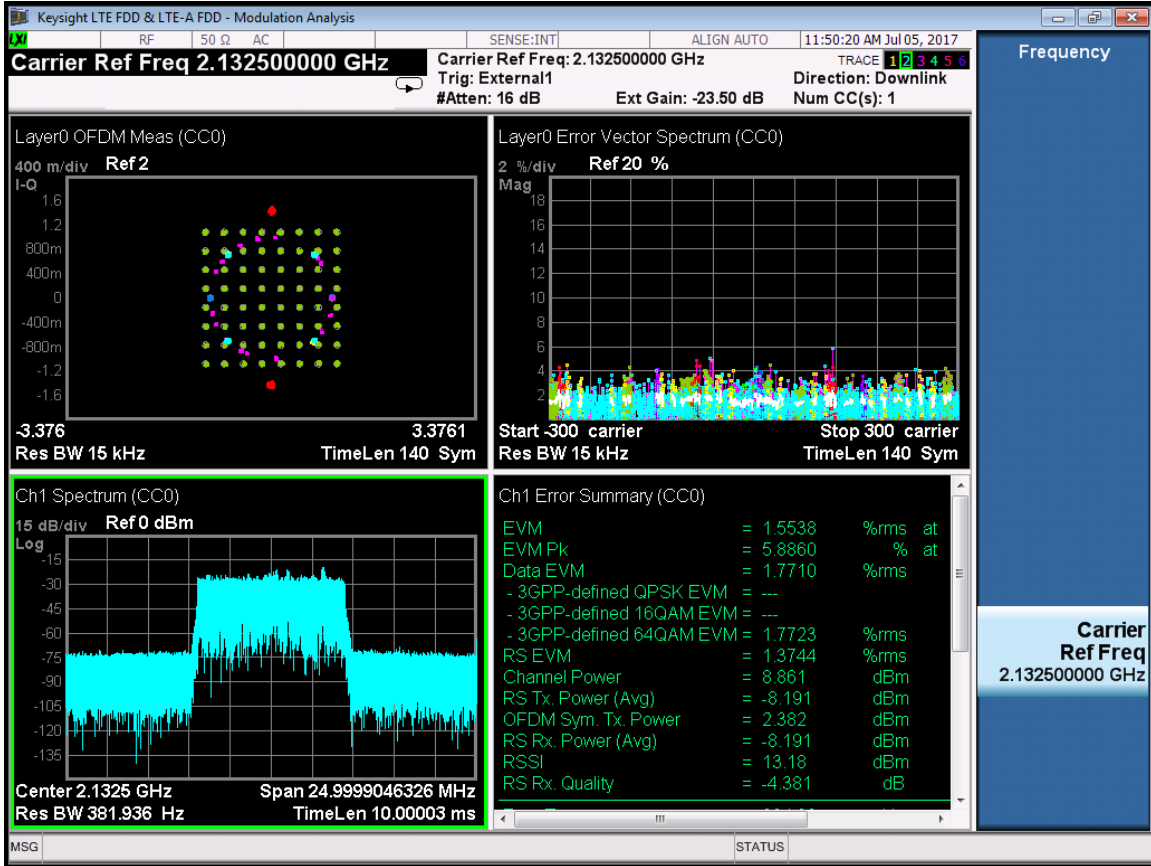
LTE-Port 1-2115MHz-E-TM3.2



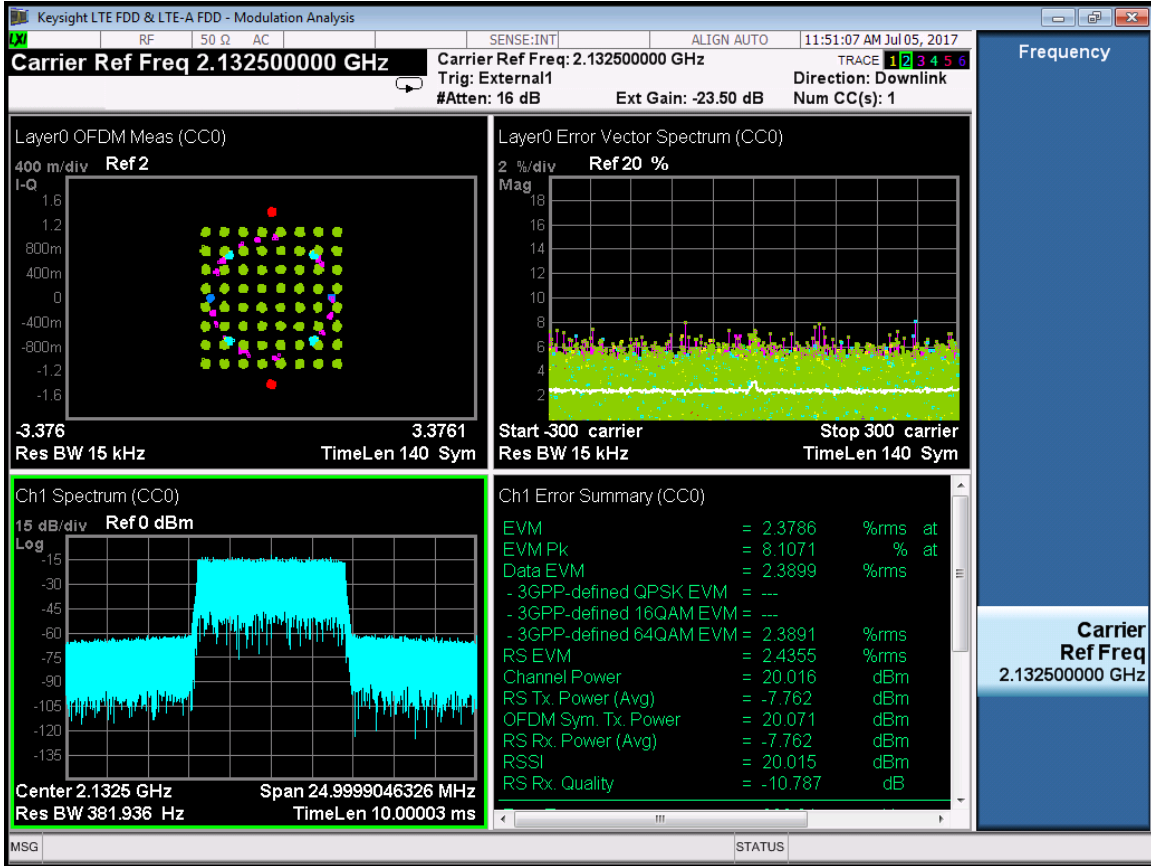
LTE-Port 1-2115MHz-E-TM3.3



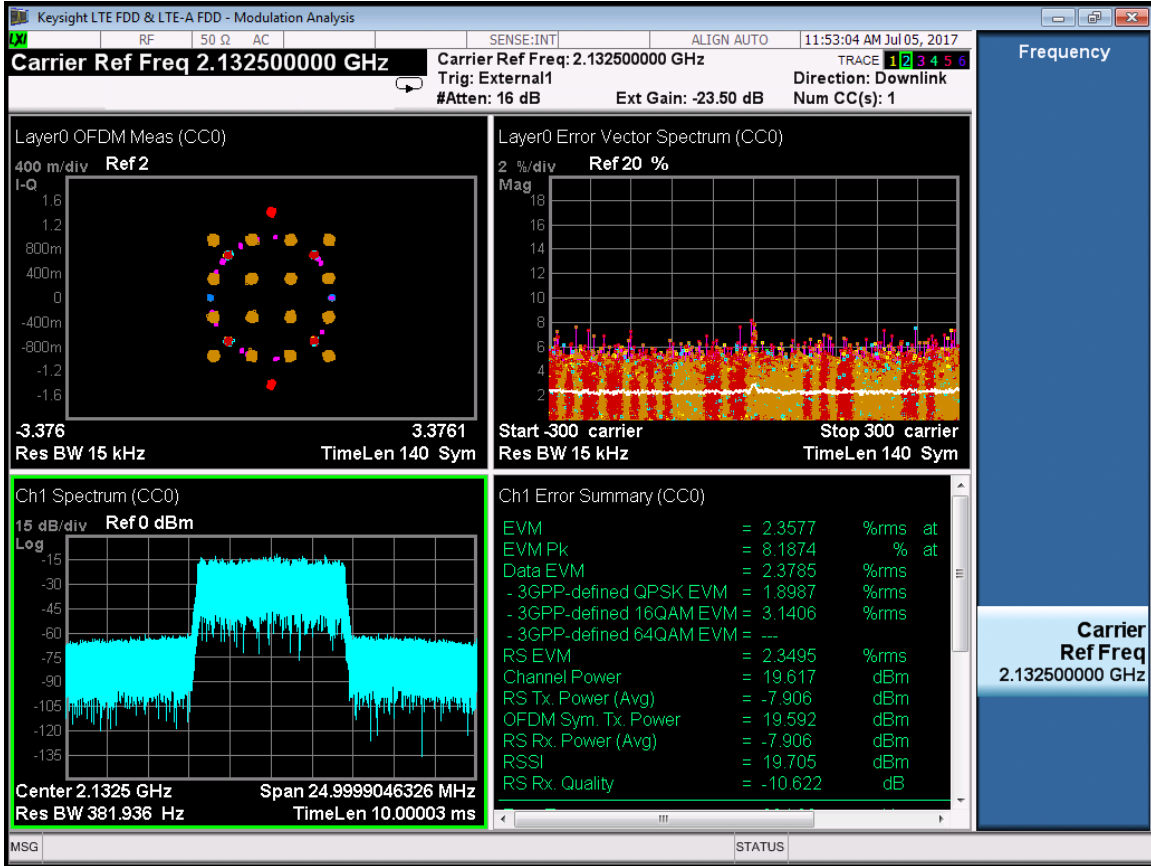
RF 2132.5MHz:
 LTE-Port 1-2132.5MHz-E-TM2



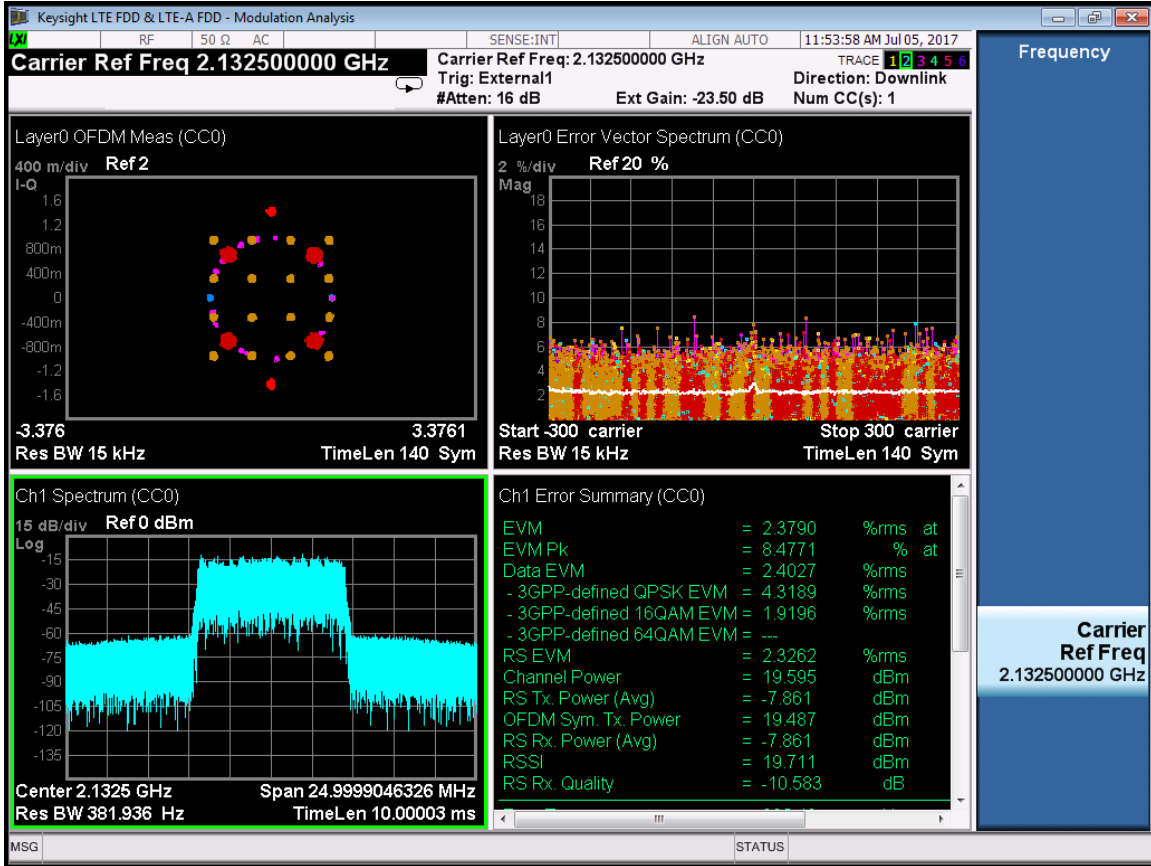
LTE-Port 1-2132.5MHz-E-TM3.1



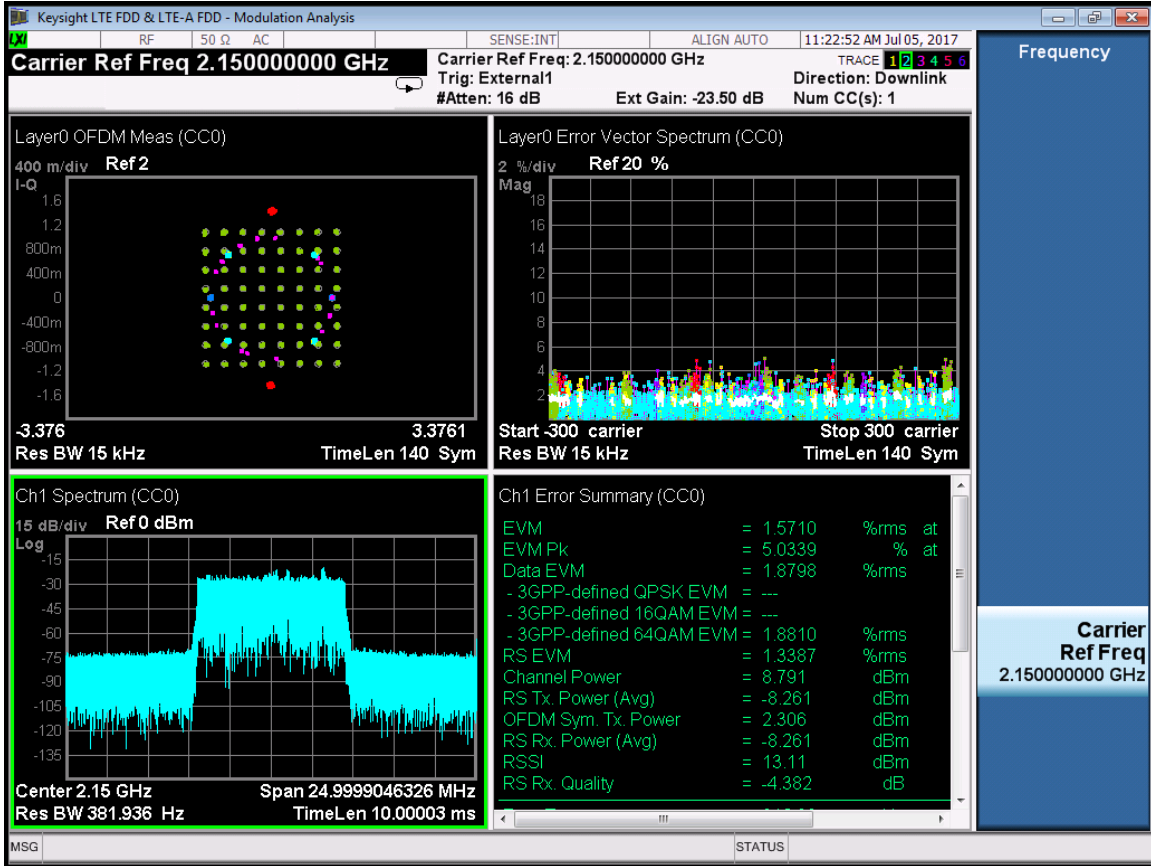
LTE-Port 1-2132.5MHz-E-TM3.2



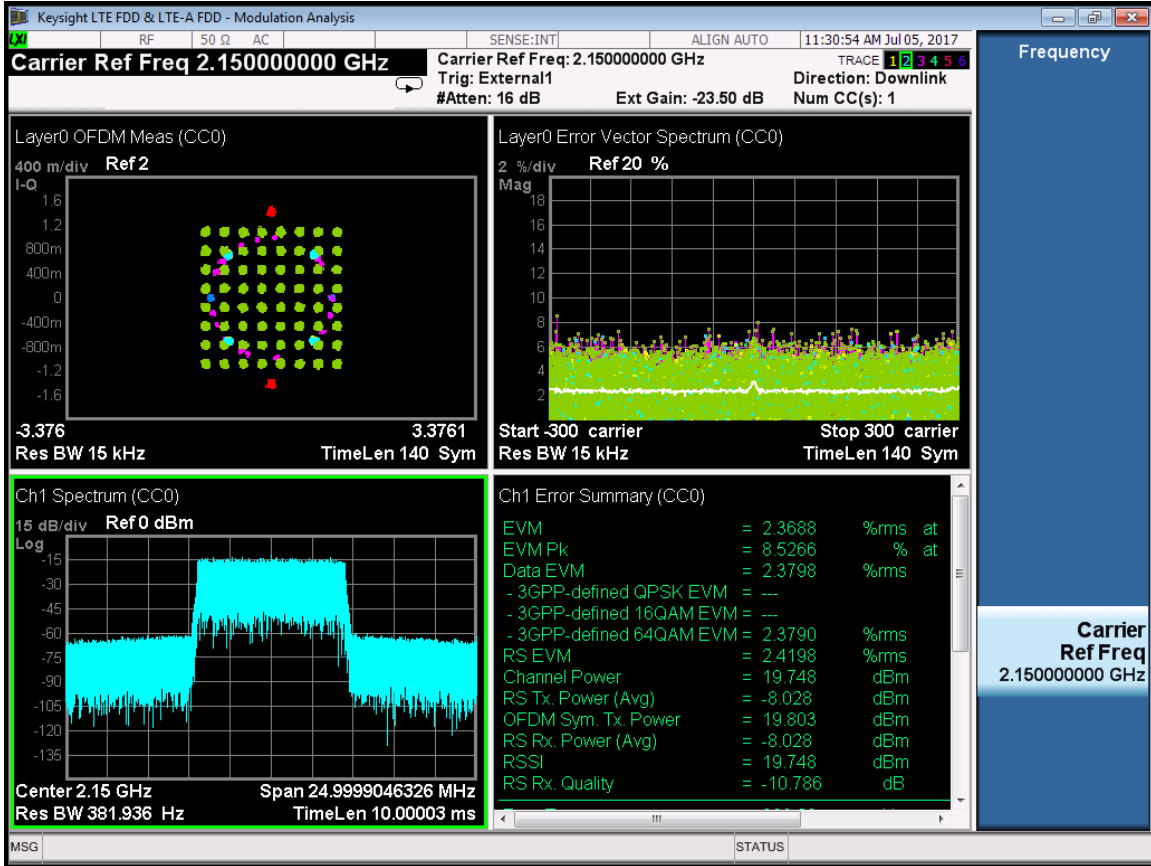
LTE-Port 1-2132.5MHz-E-TM3.3



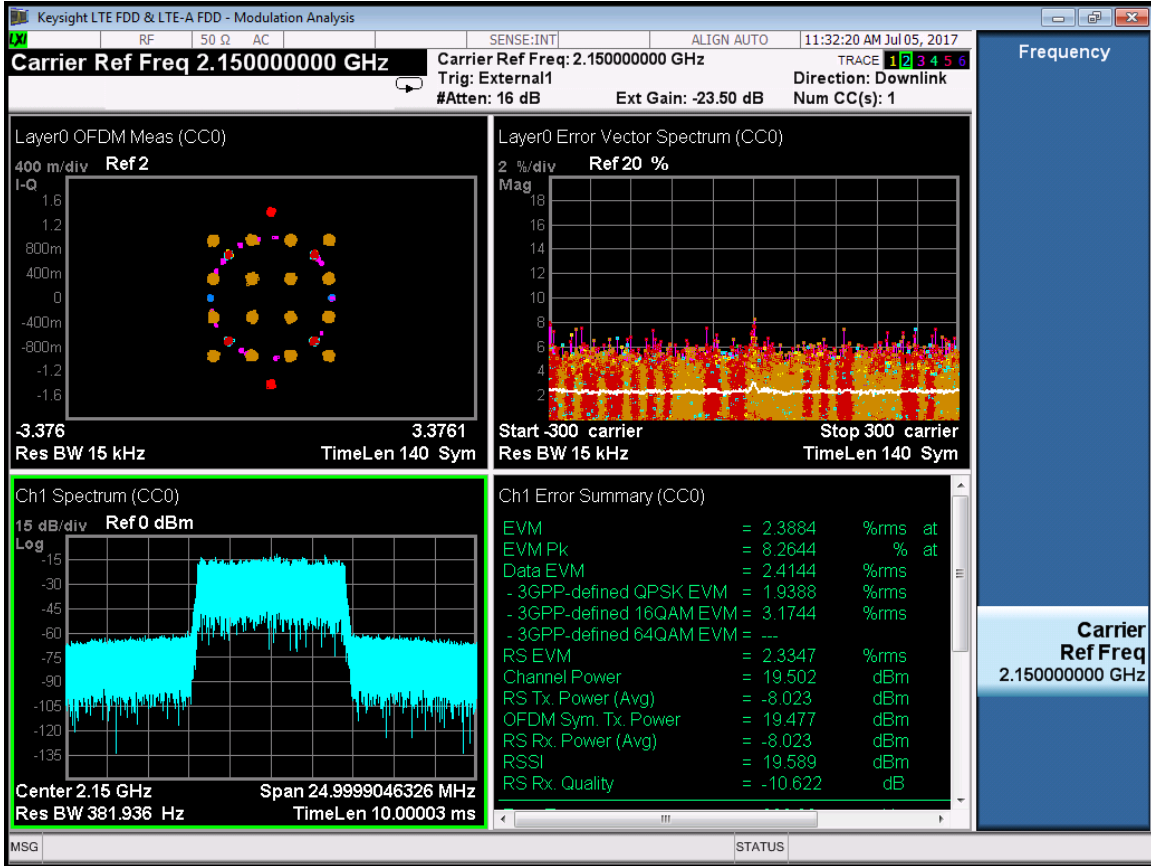
RF 2150MHz:
 LTE-Port 1-2150MHz-E-TM2



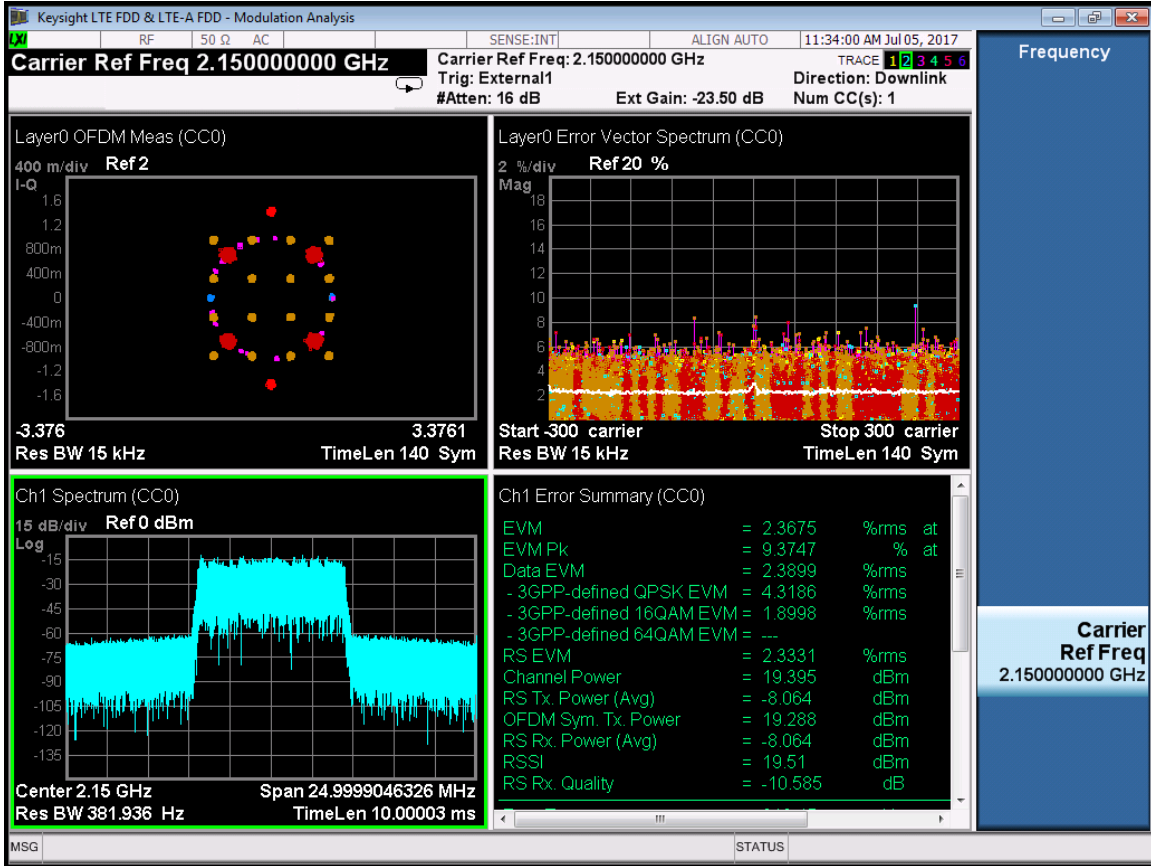
LTE-Port 1-2150MHz-E-TM3.1



LTE-Port 1-2150MHz-E-TM3.2



LTE-Port 1-2150MHz-E-TM3.3

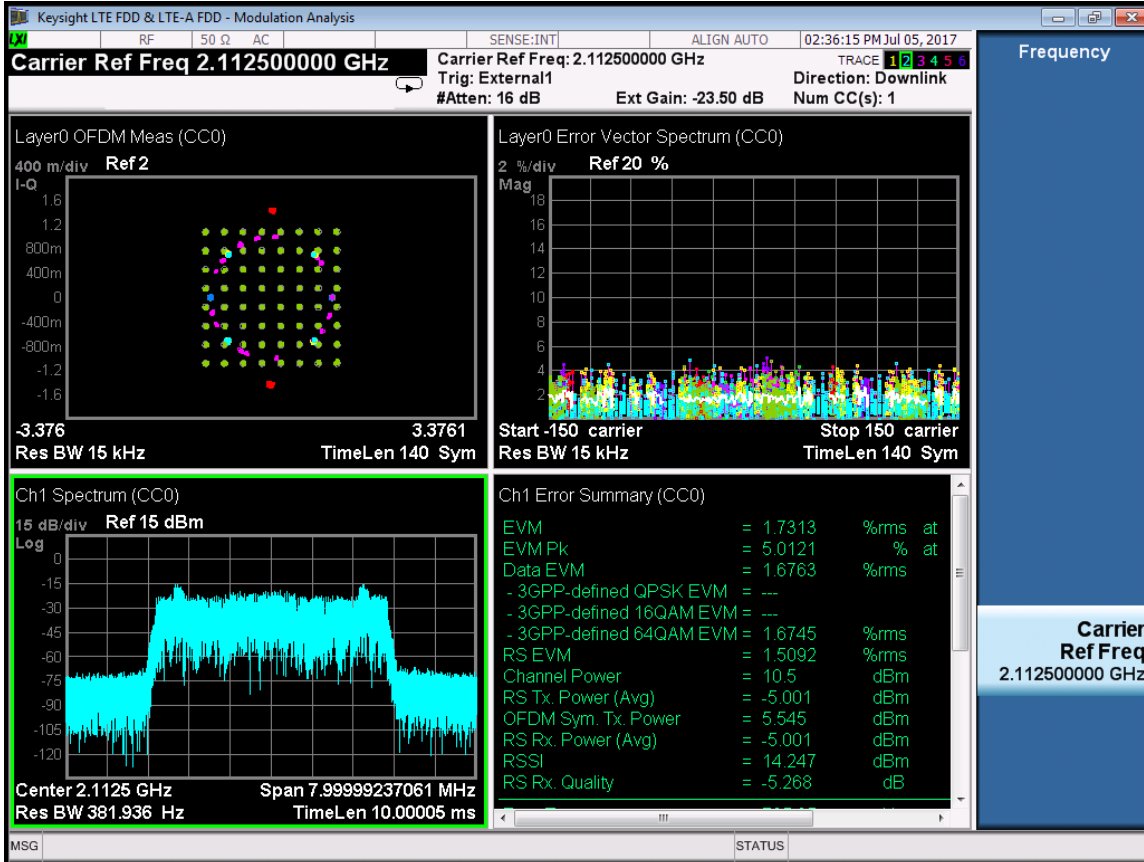


RF Bandwidth :IBW 5MHz(LTE 5MHz)

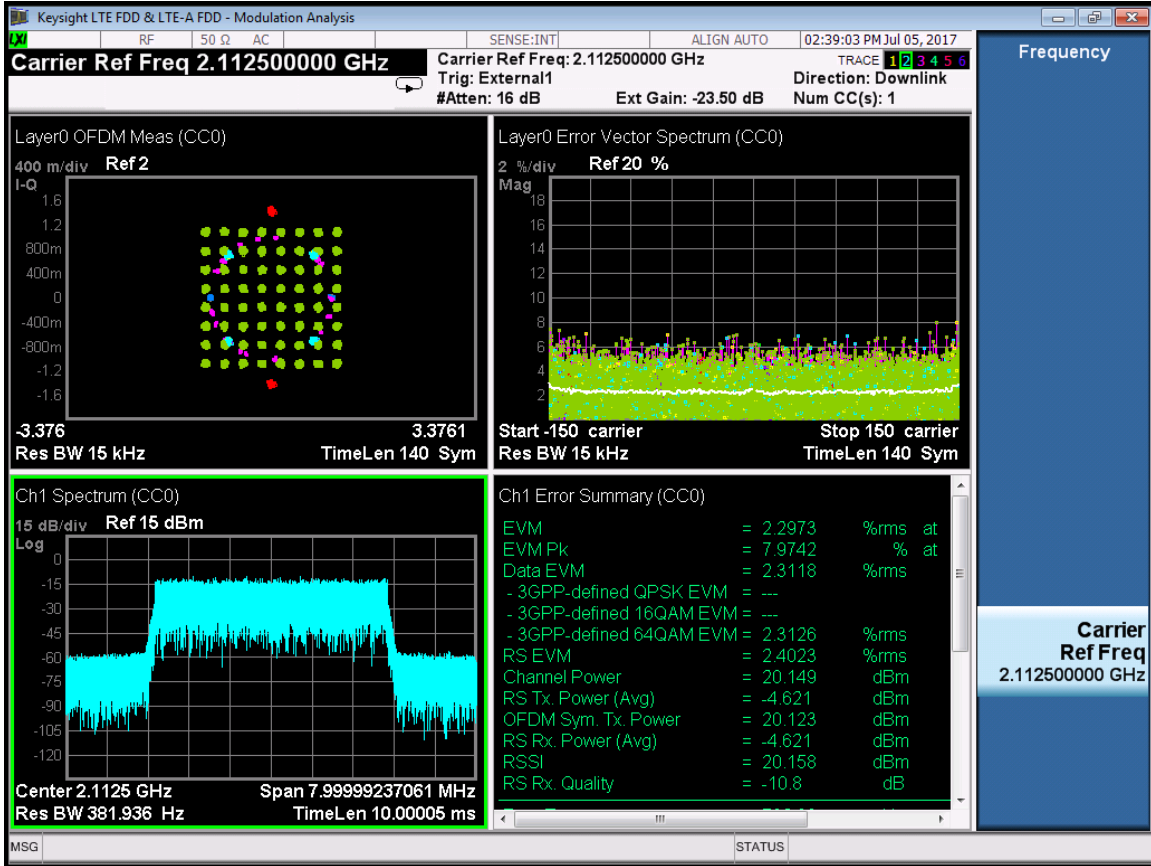
Port	RF Center Freq. (MHz)	Test mode	EVM%
0	2112.5	E-TM2	1.6745
		E-TM3.1	2.3126
		E-TM 3.2	3.0657
		E-TM 3.3	4.4505
	2132.5	E-TM2	1.5061
		E-TM3.1	2.2929
		E-TM 3.2	2.9960
		E-TM 3.3	4.3948
	2152.5	E-TM2	1.5126
		E-TM3.1	2.3009
		E-TM 3.2	3.0208
		E-TM 3.3	4.4844
1	2112.5	E-TM2	1.9626
		E-TM3.1	2.3010
		E-TM 3.2	3.0407
		E-TM 3.3	4.4266
	2132.5	E-TM2	1.7763

2152.5	E-TM3.1	2.2884
	E-TM 3.2	2.9992
	E-TM 3.3	4.4442
	E-TM2	1.9593
	E-TM3.1	2.3166
	E-TM 3.2	3.0563
	E-TM 3.3	4.4423

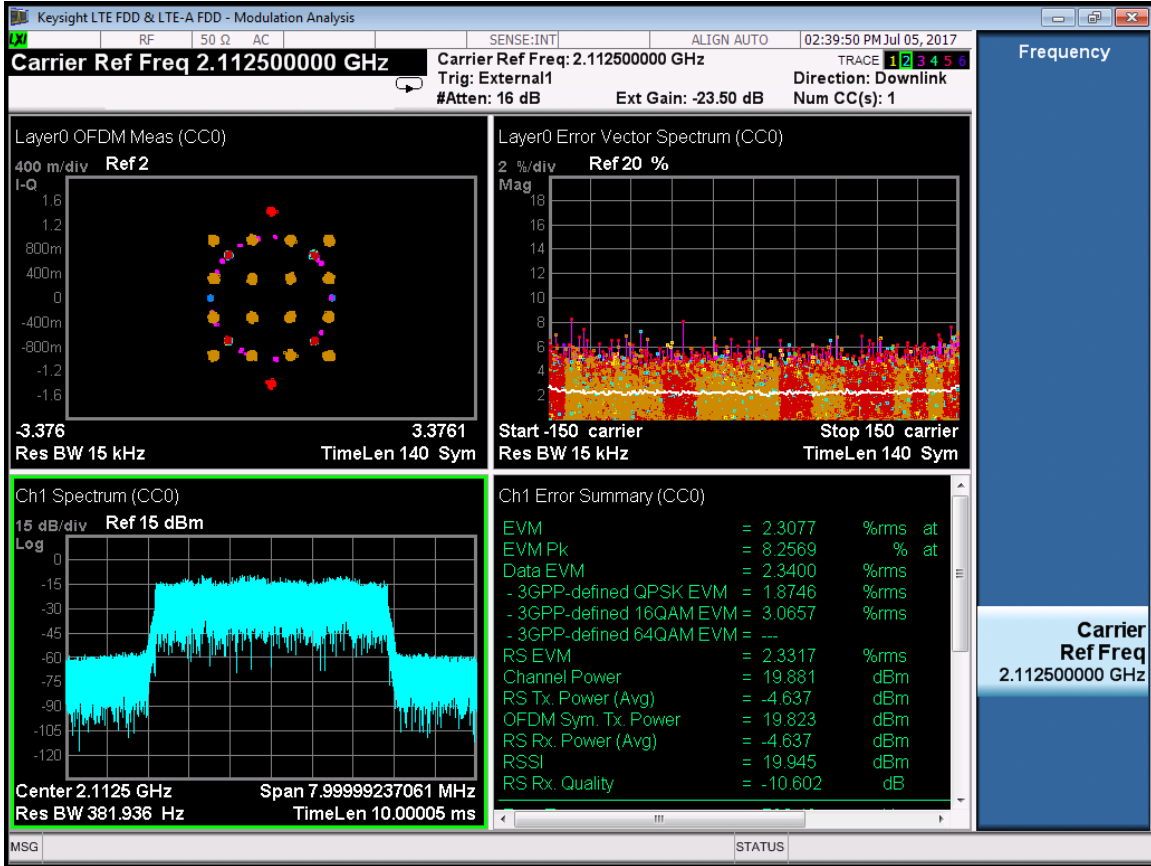
RF 2112.5MHz:
LTE-Port 0-2112.5MHz-E-TM2



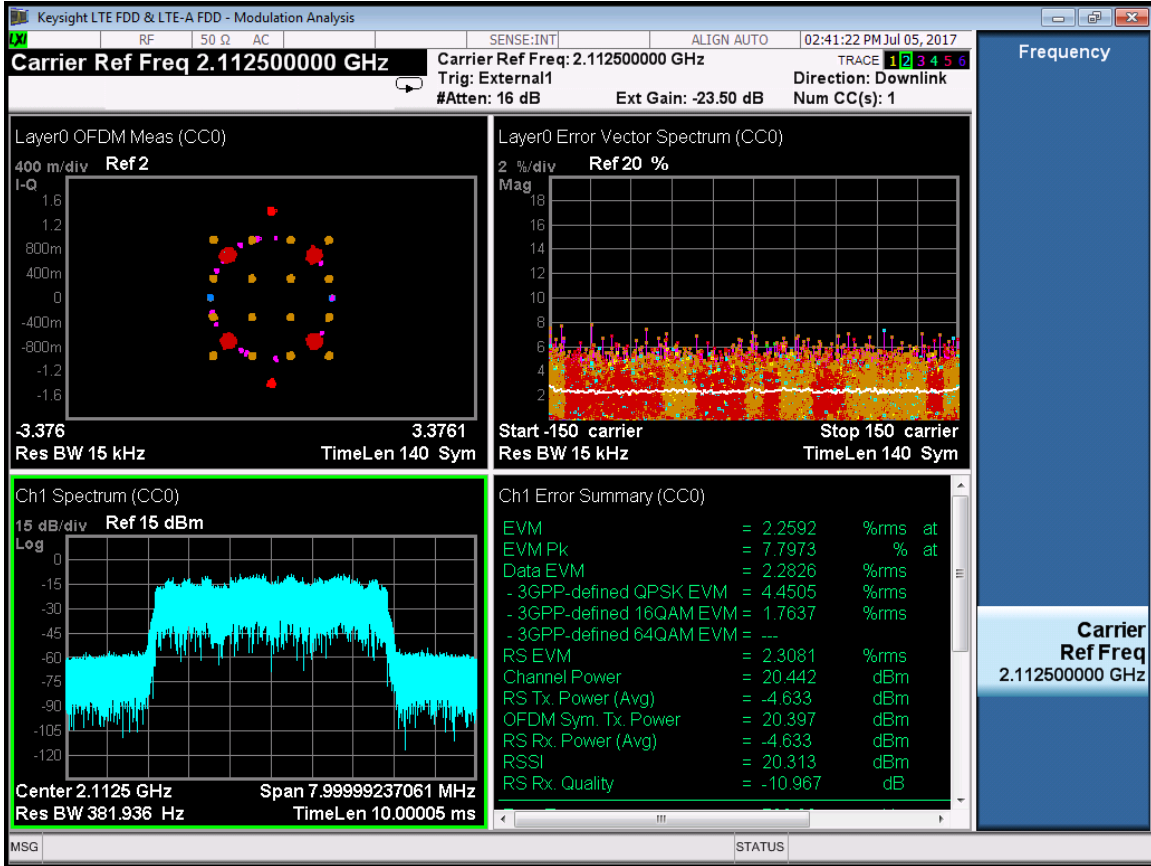
LTE-Port 0-2112.5MHz-E-TM3.1



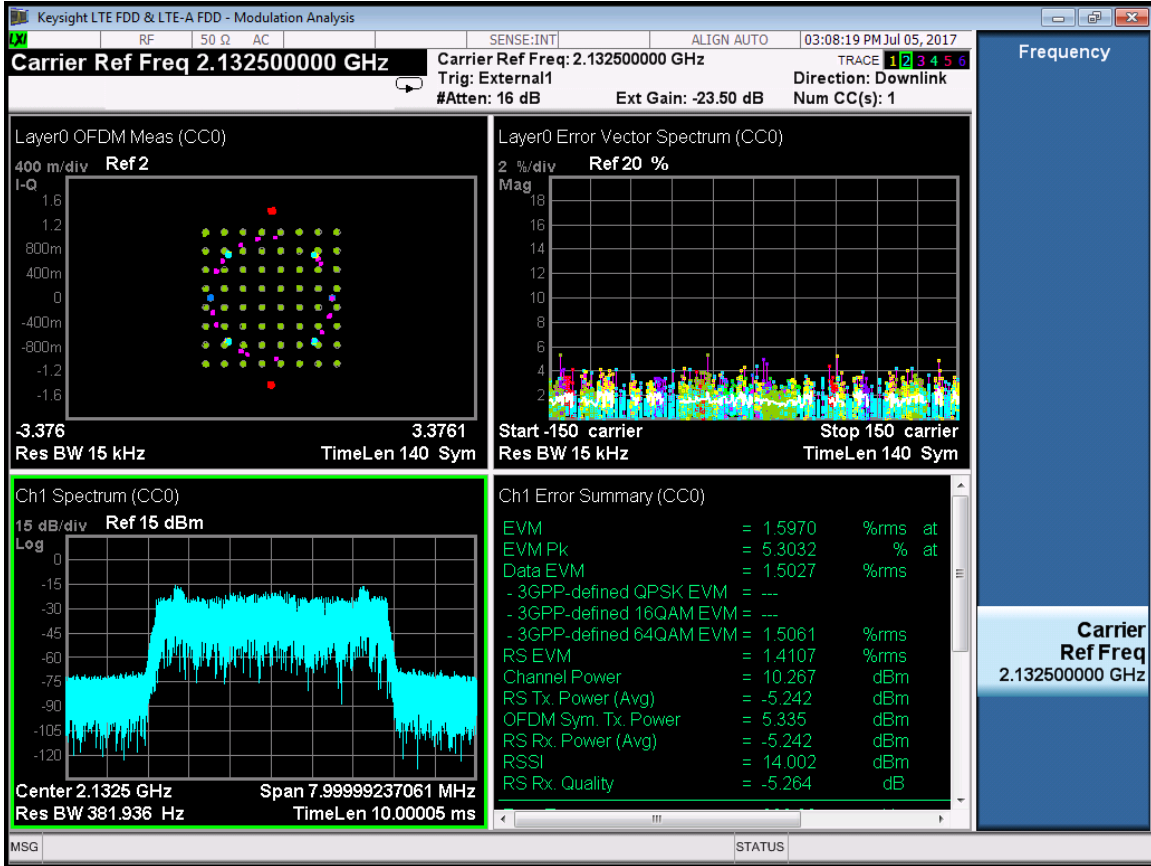
LTE-Port 0-2112.5MHz-E-TM3.2



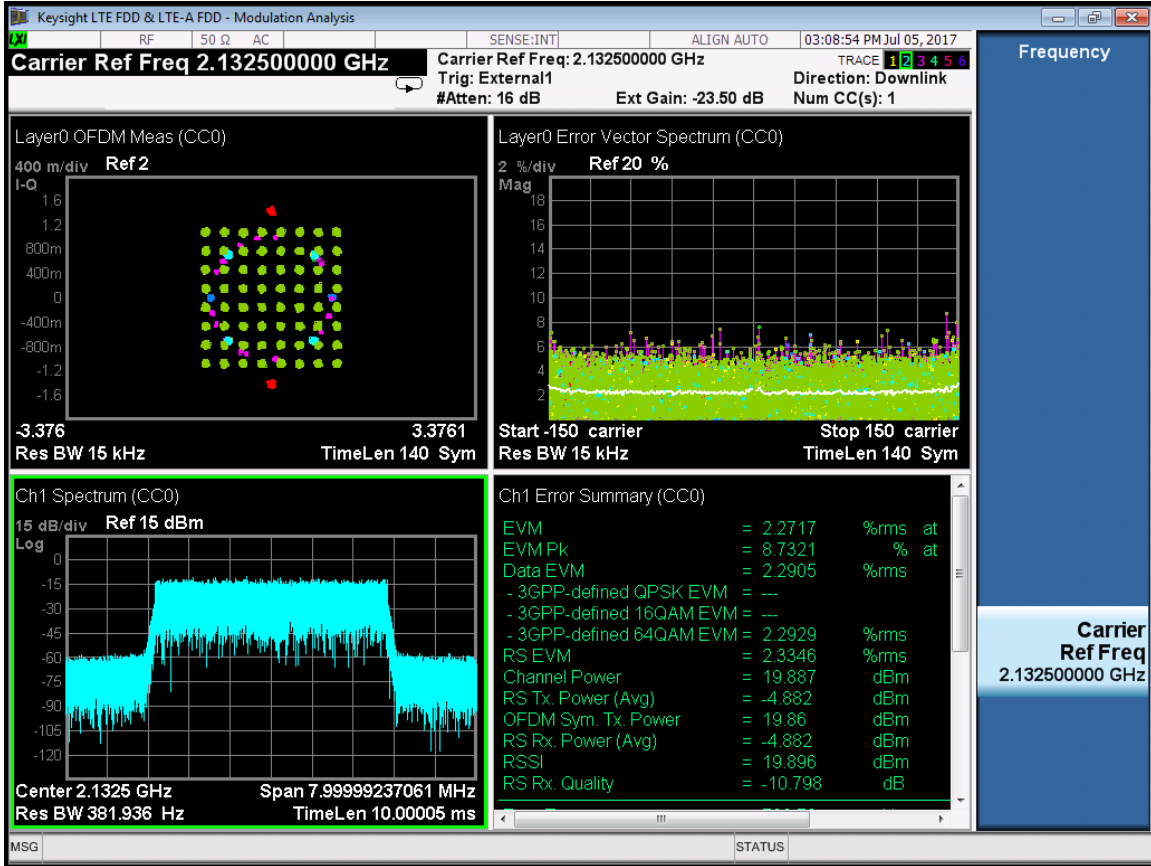
LTE-Port 0-2112.5MHz-E-TM3.3



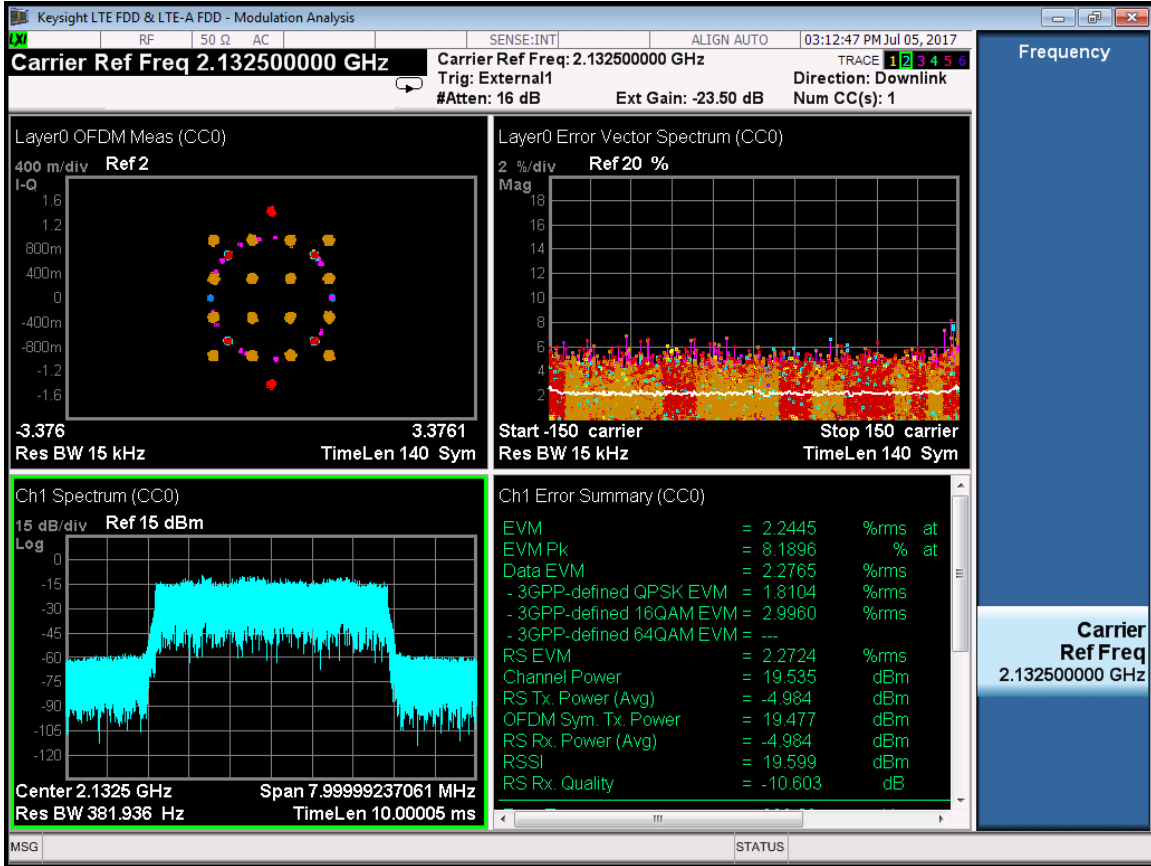
RF 2132.5MHz:
 LTE-Port 0-2132.5MHz-E-TM2



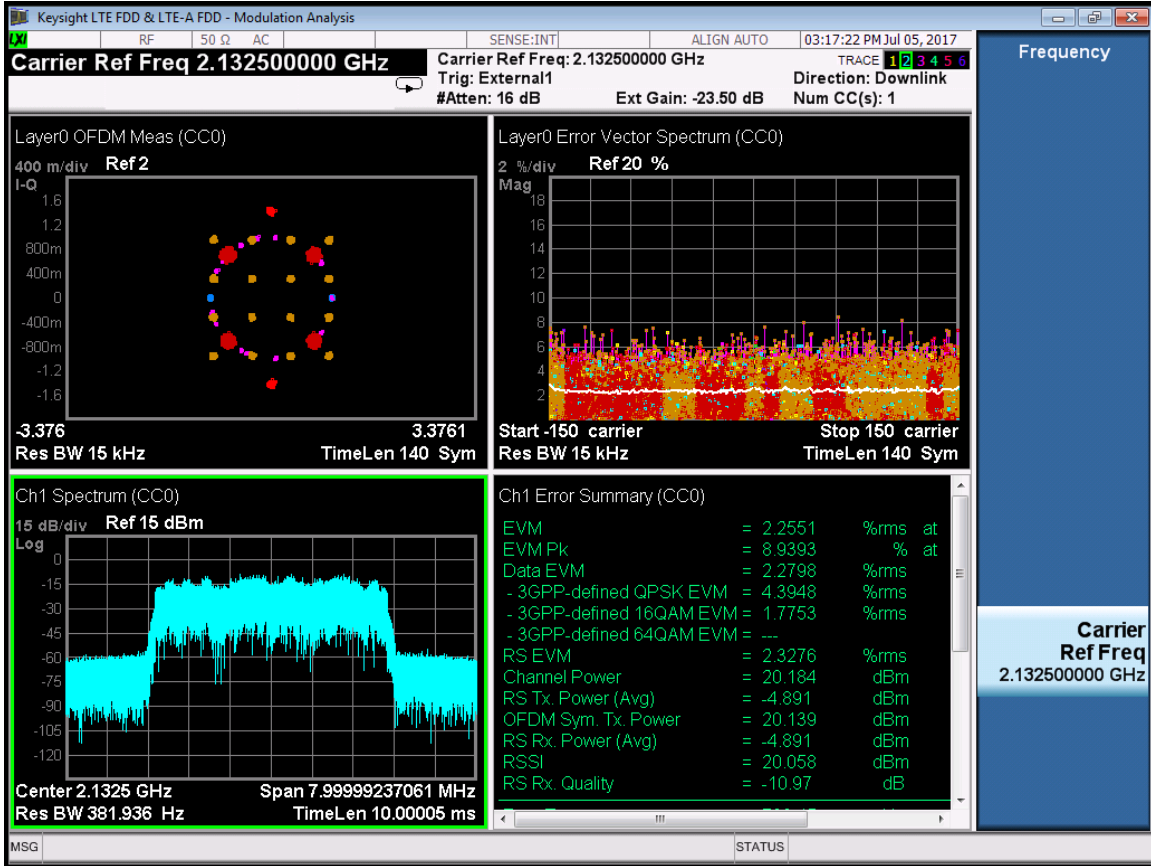
LTE-Port 0-2132.5MHz-E-TM3.1



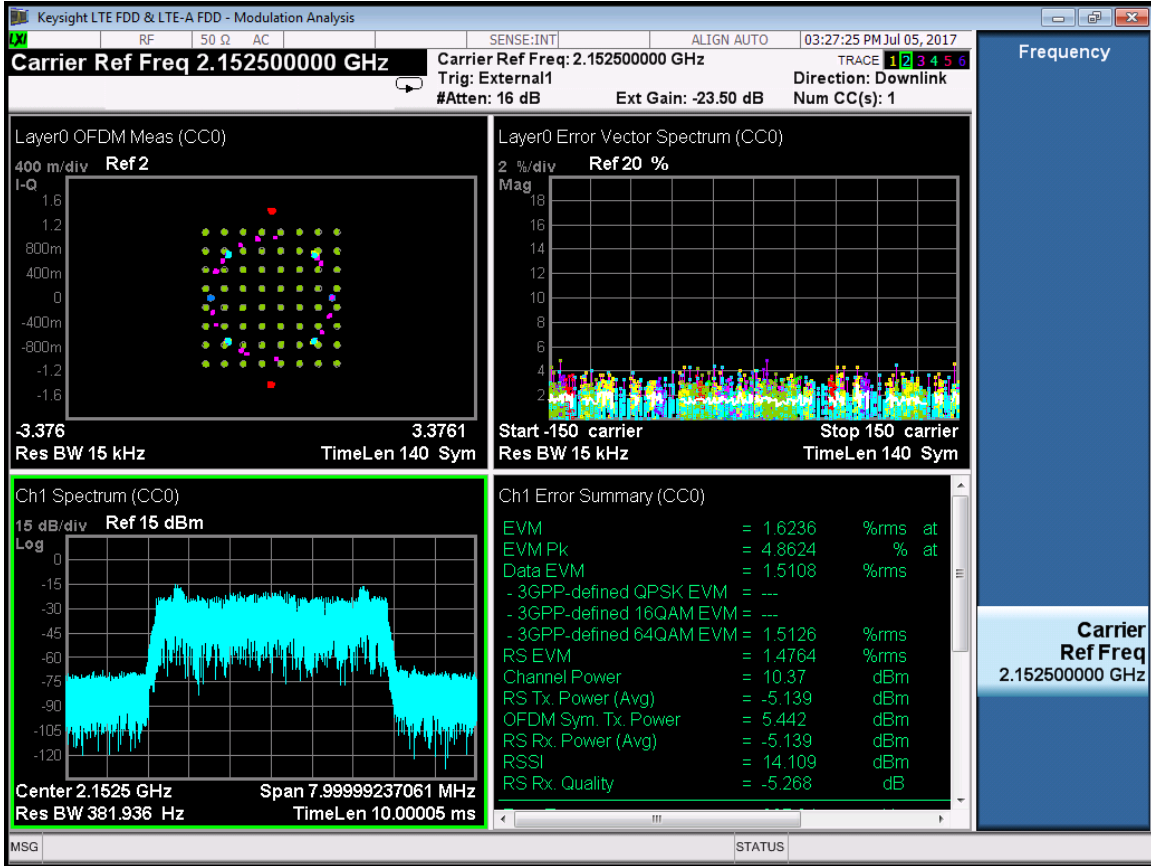
LTE-Port 0-2132.5MHz-E-TM3.2



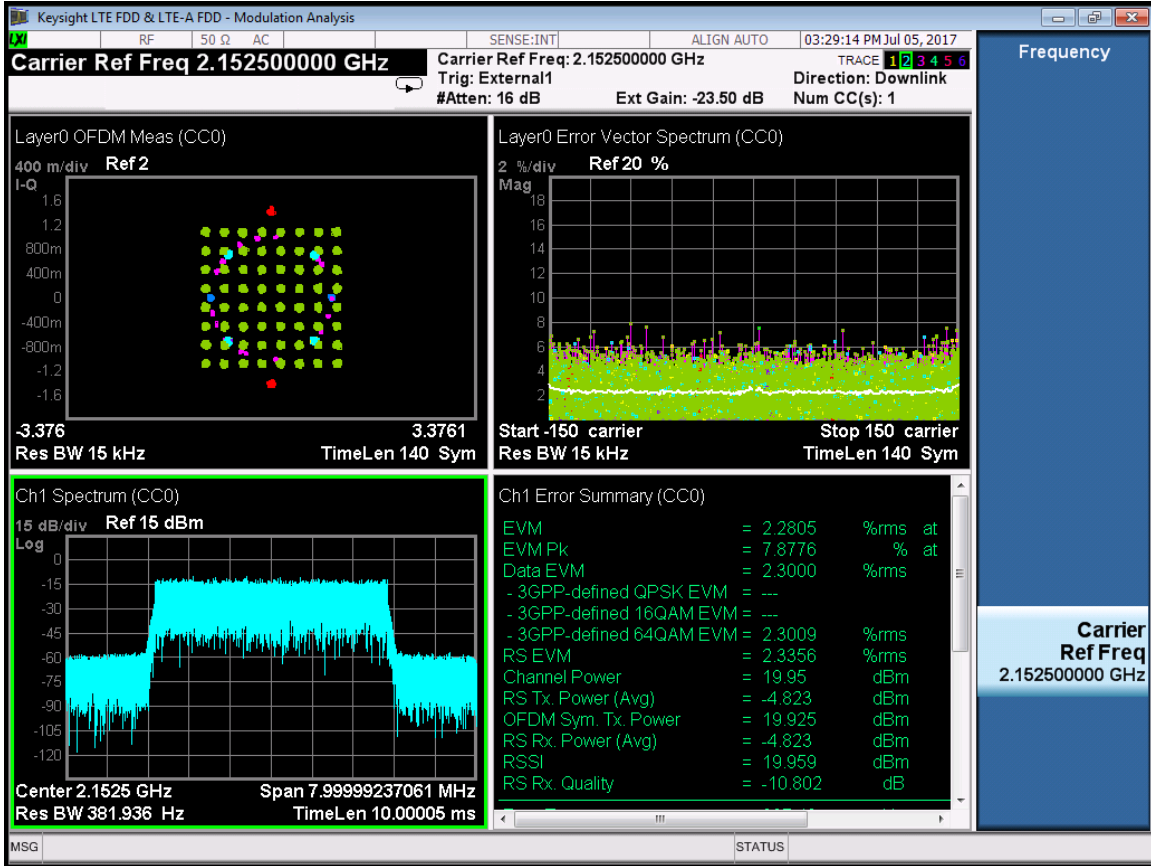
LTE-Port 0-2132.5MHz-E-TM3.3



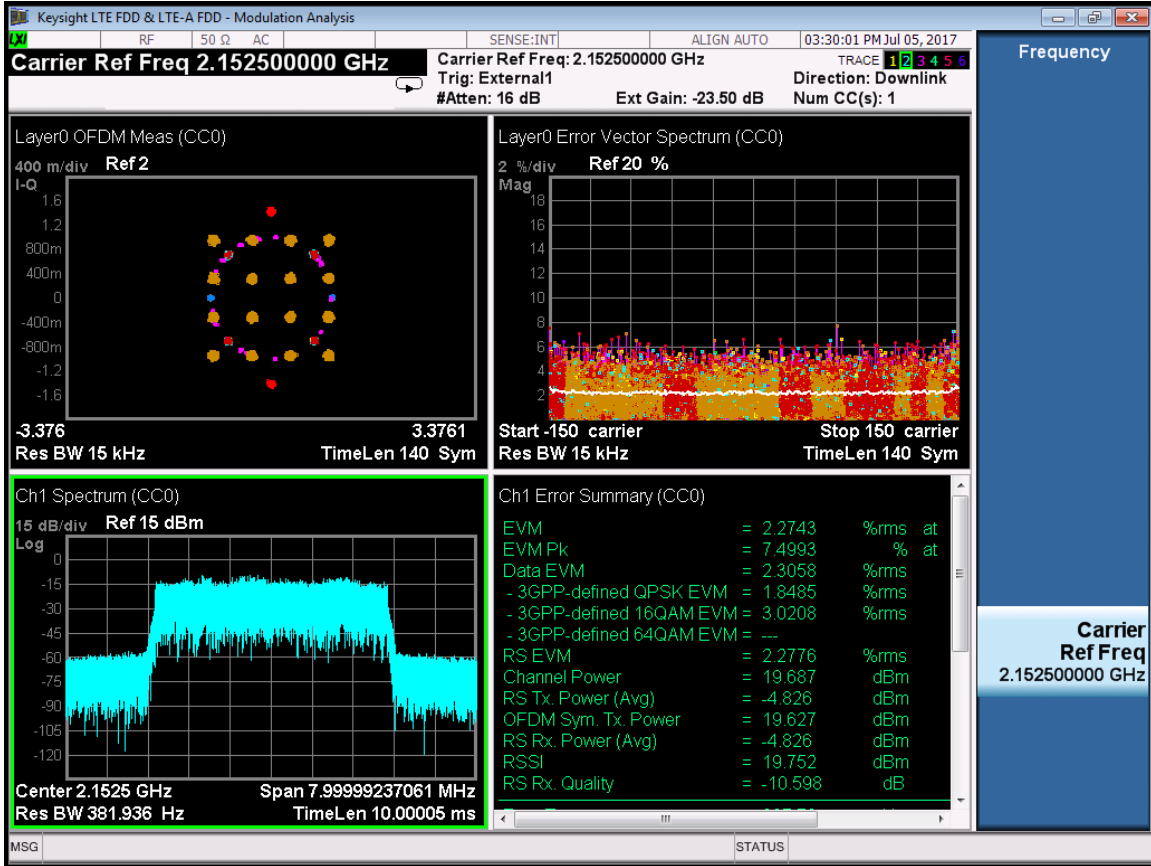
RF 2152.5MHz:
 LTE-Port 0-2152.5MHz-E-TM2



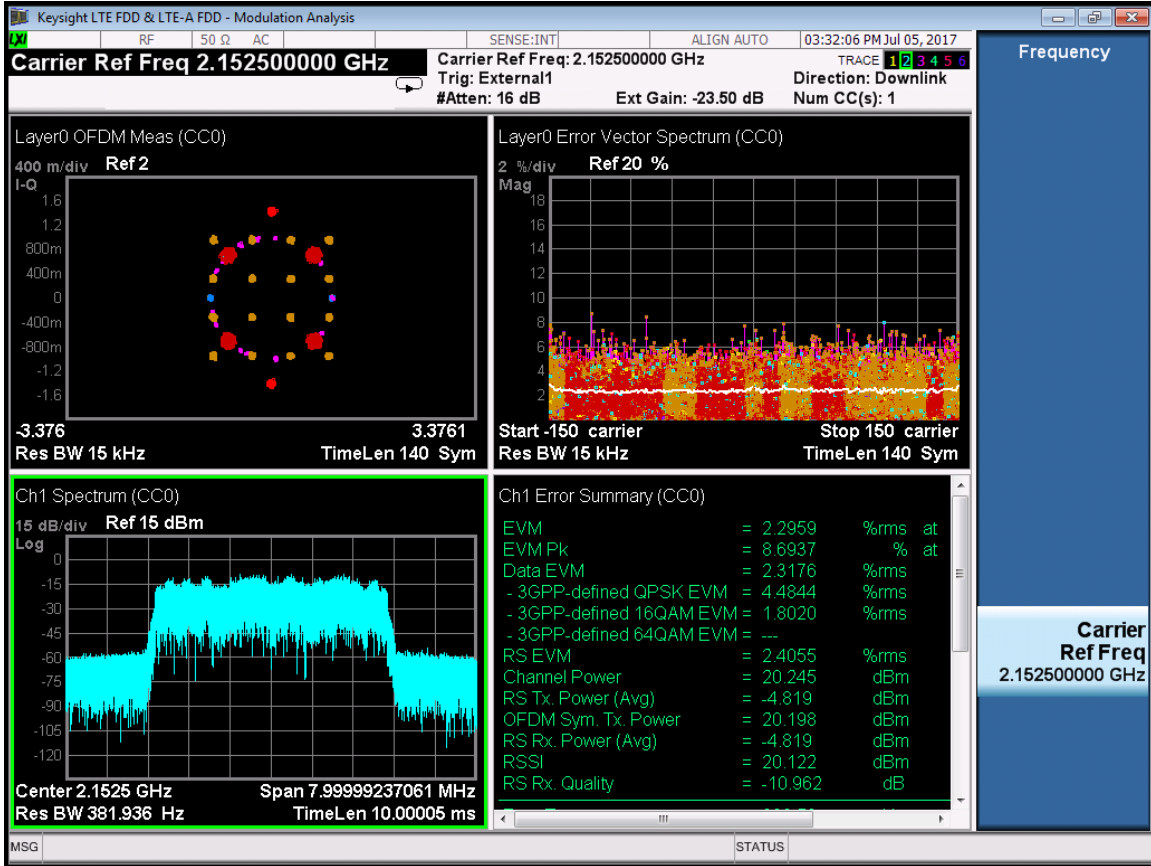
LTE-Port 0-2152.5MHz-E-TM3.1



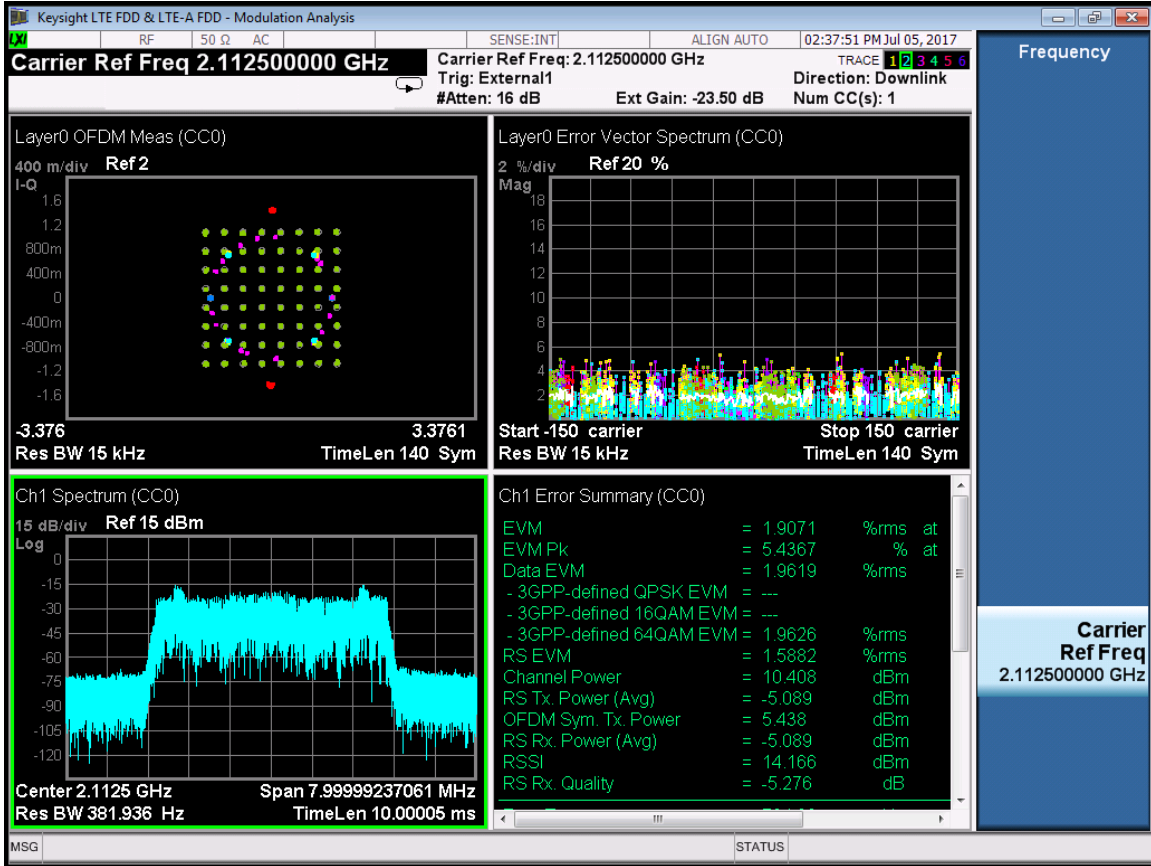
LTE-Port 0-2152.5MHz-E-TM3.2



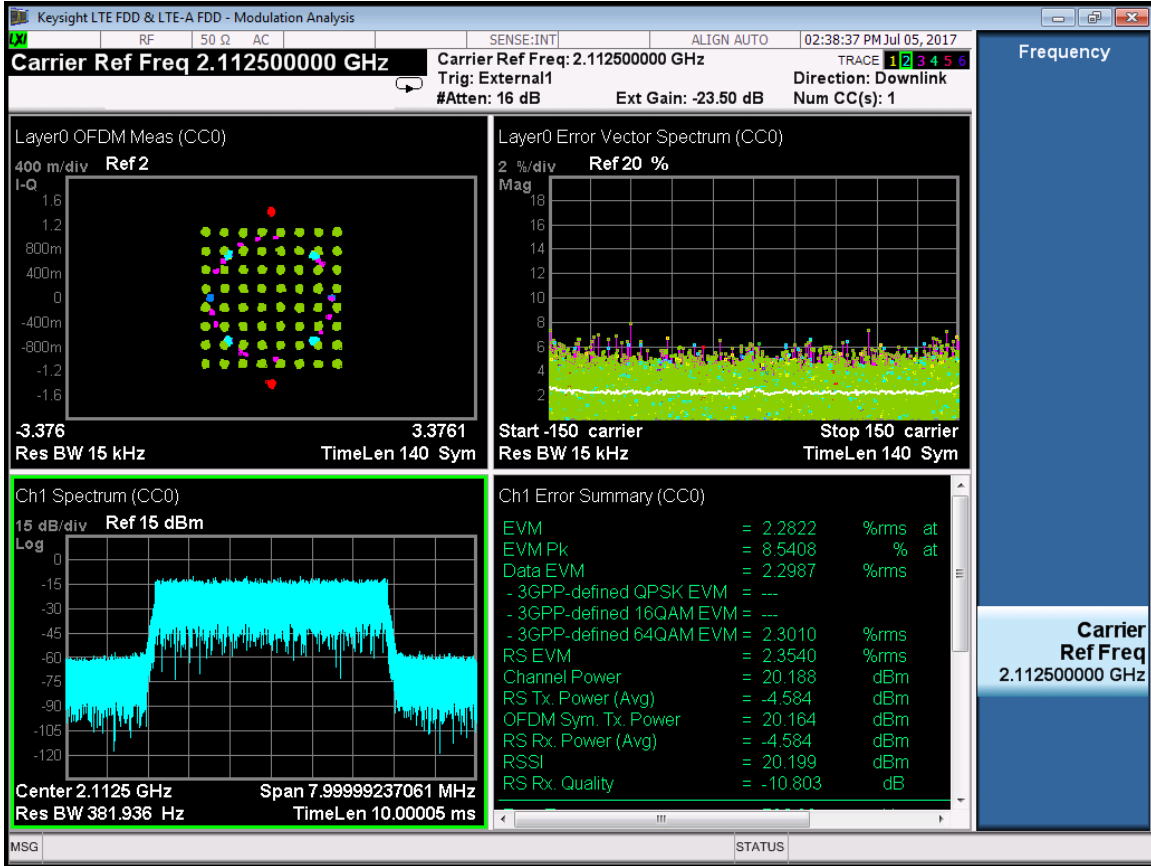
LTE-Port 0-2152.5MHz-E-TM3.3



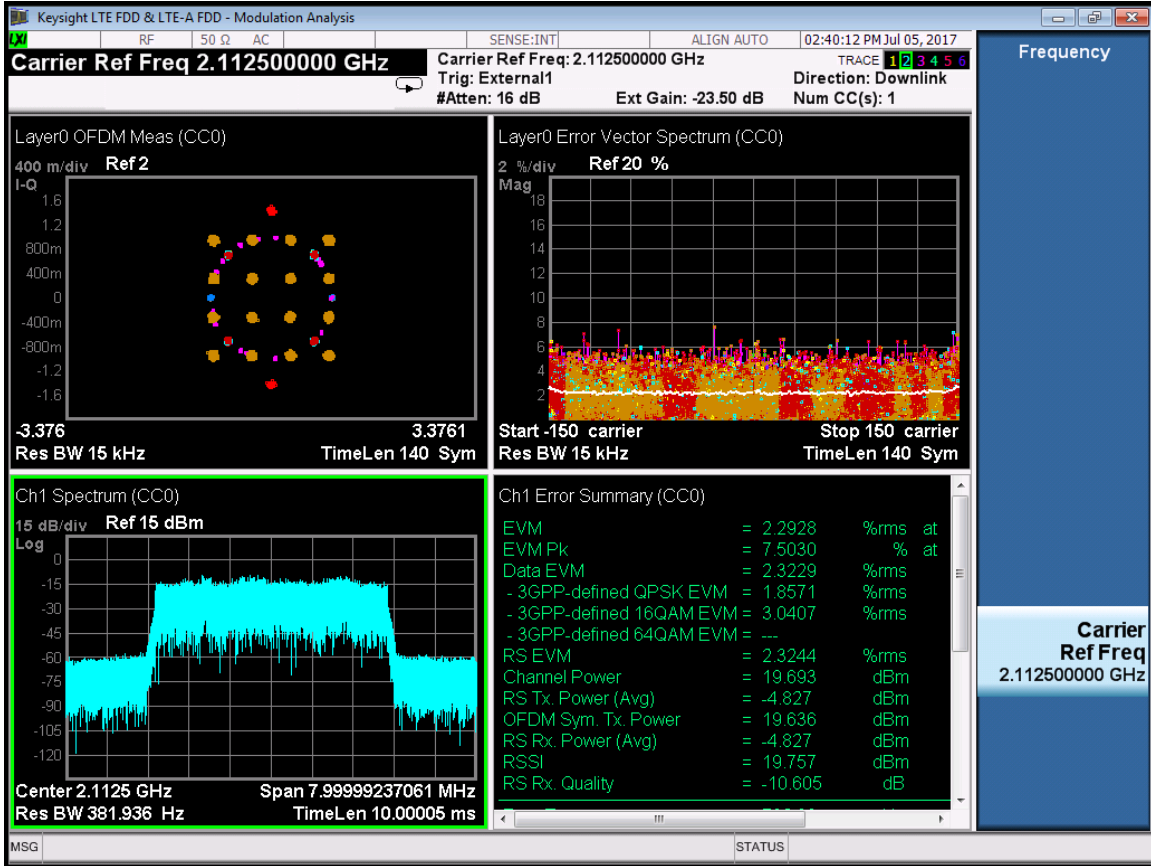
RF 2112.5MHz:
 LTE-Port 1-2112.5MHz-E-TM2



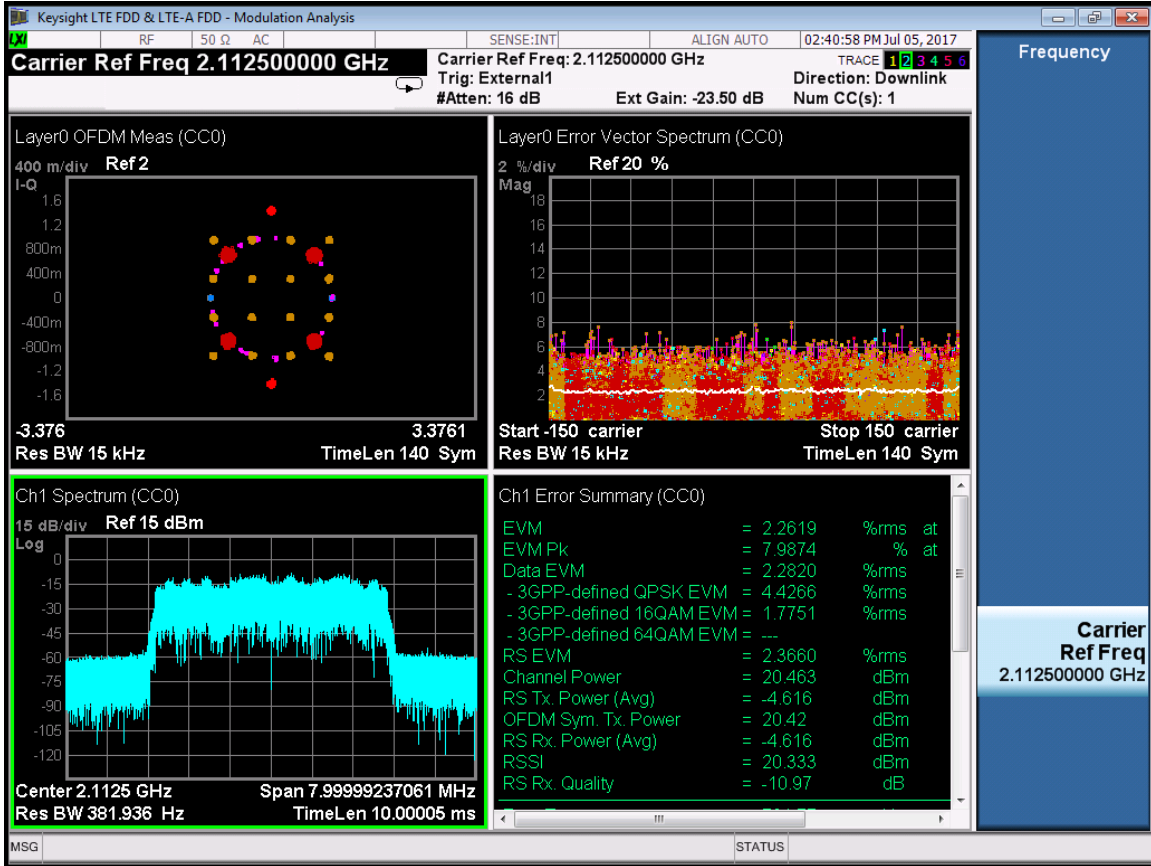
LTE-Port 1-2112.5MHz-E-TM3.1



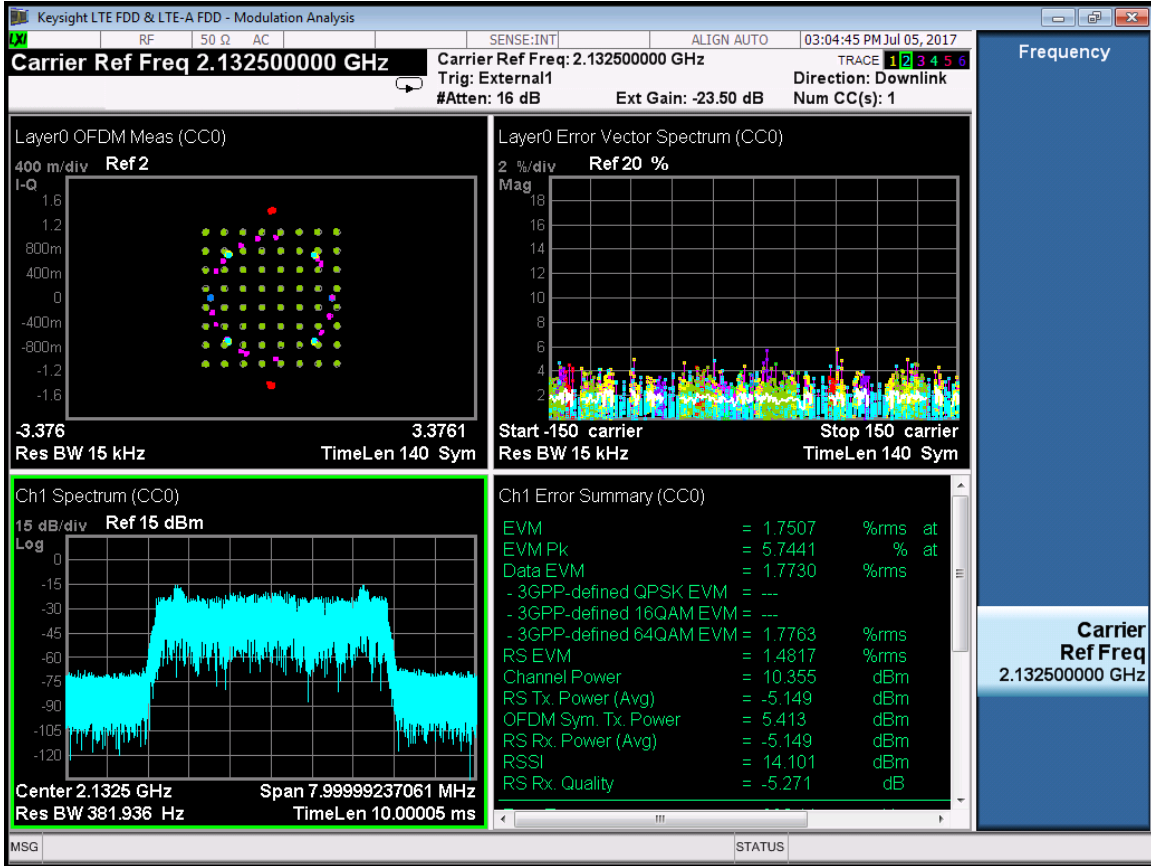
LTE-Port 1-2112.5MHz-E-TM3.2



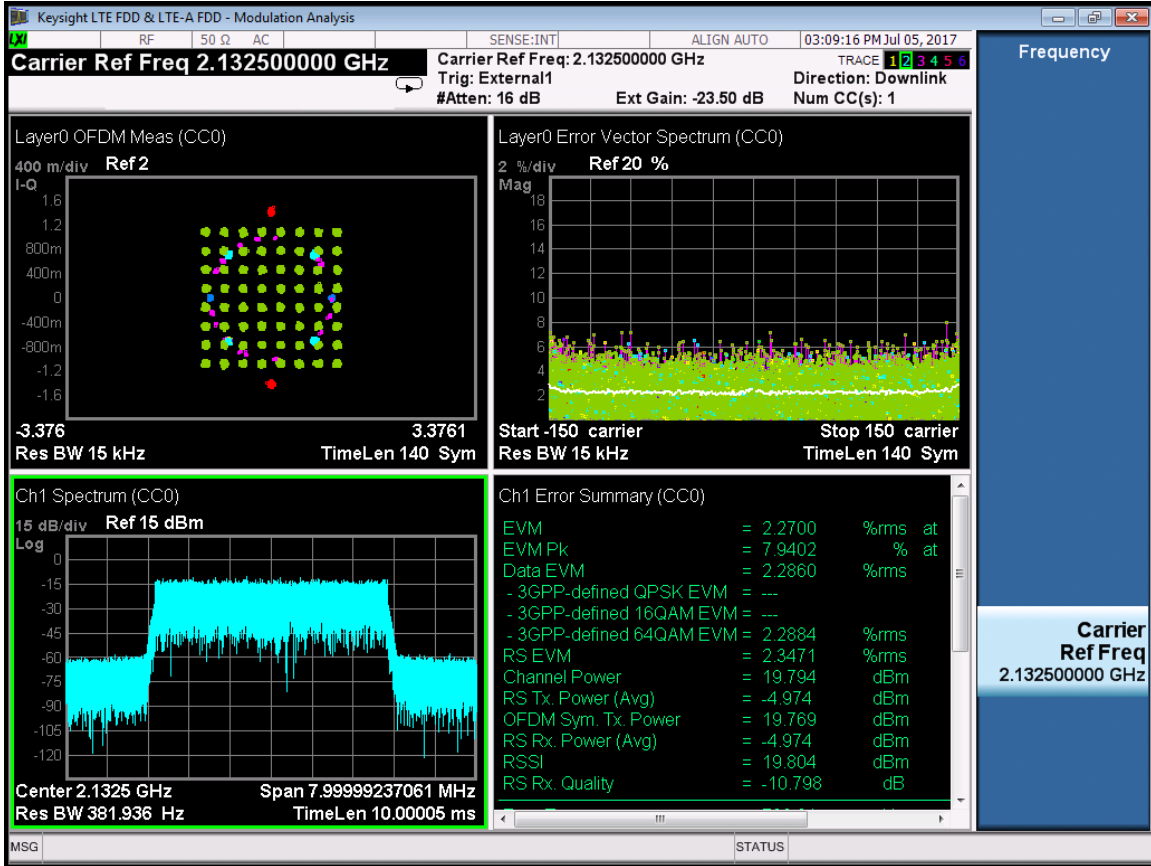
LTE-Port 1-2112.5MHz-E-TM3.3



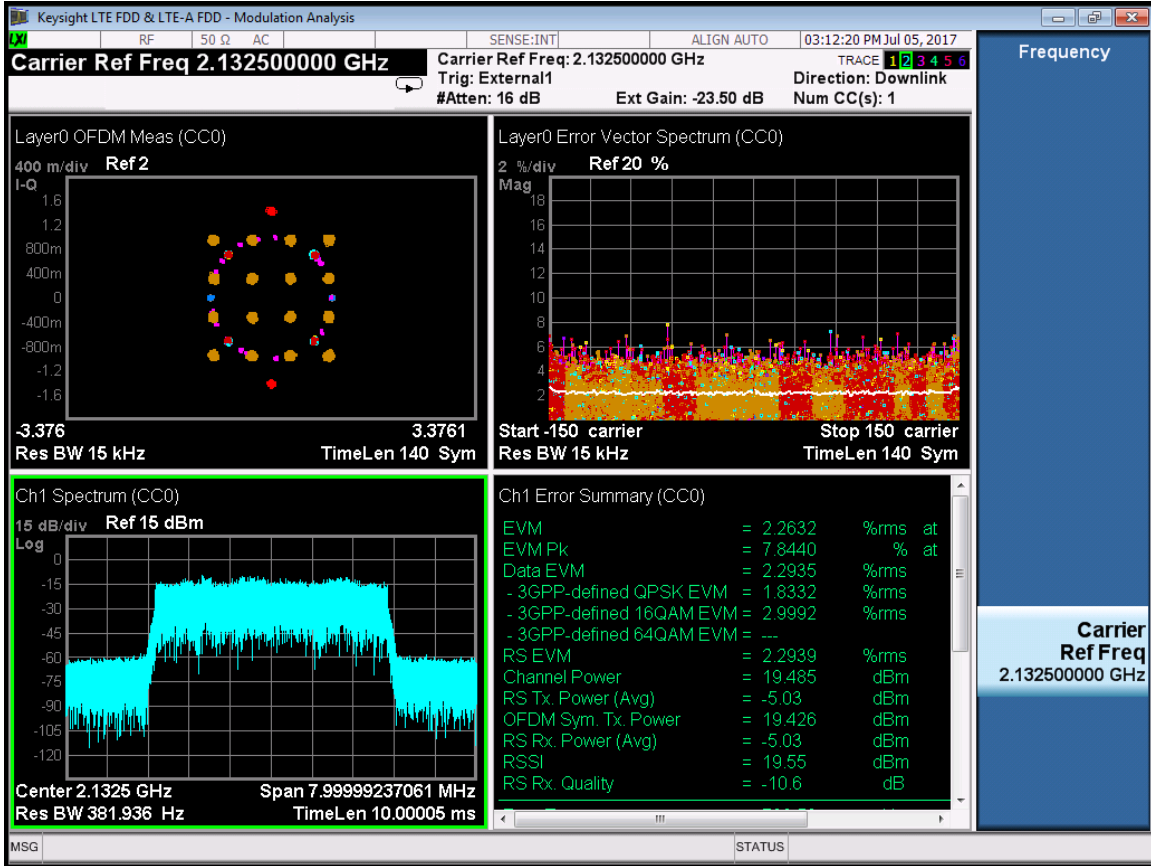
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 LTE-Port 1-2132.5MHz-E-TM2



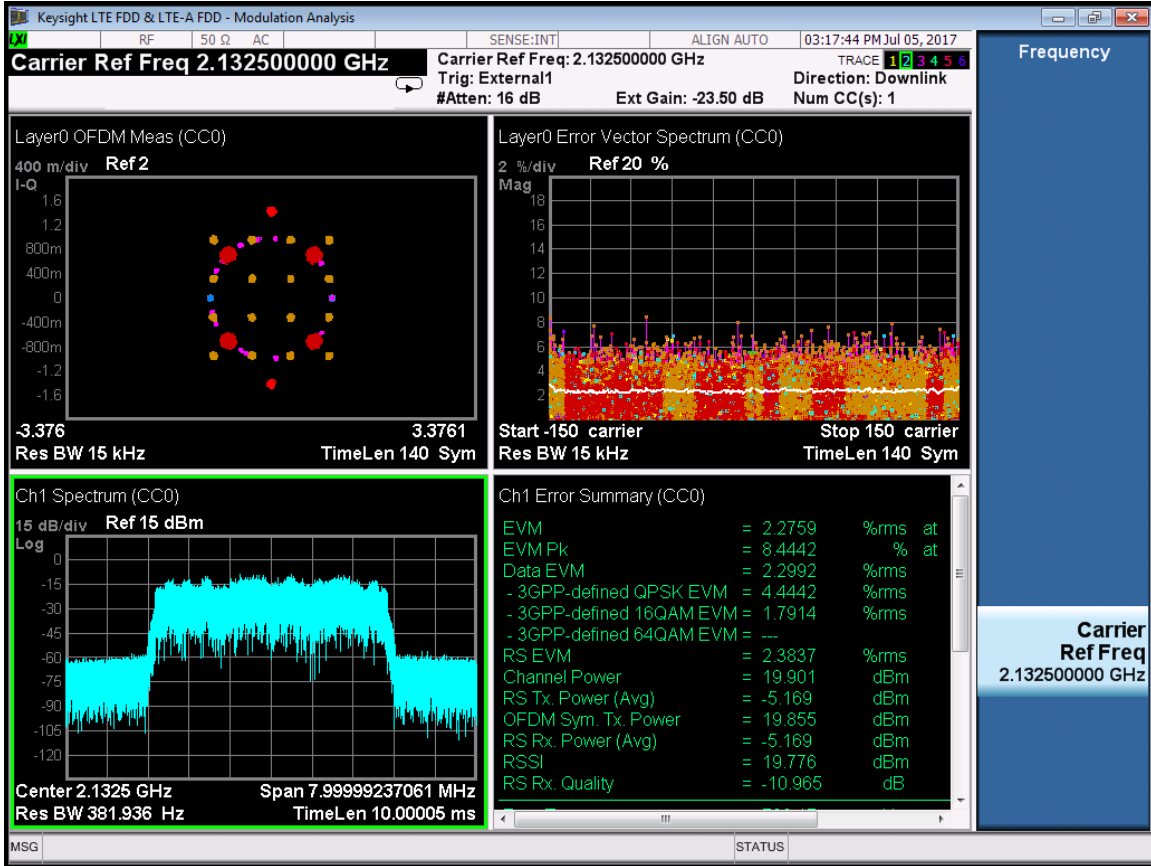
LTE-Port 1-2132.5MHz-E-TM3.1



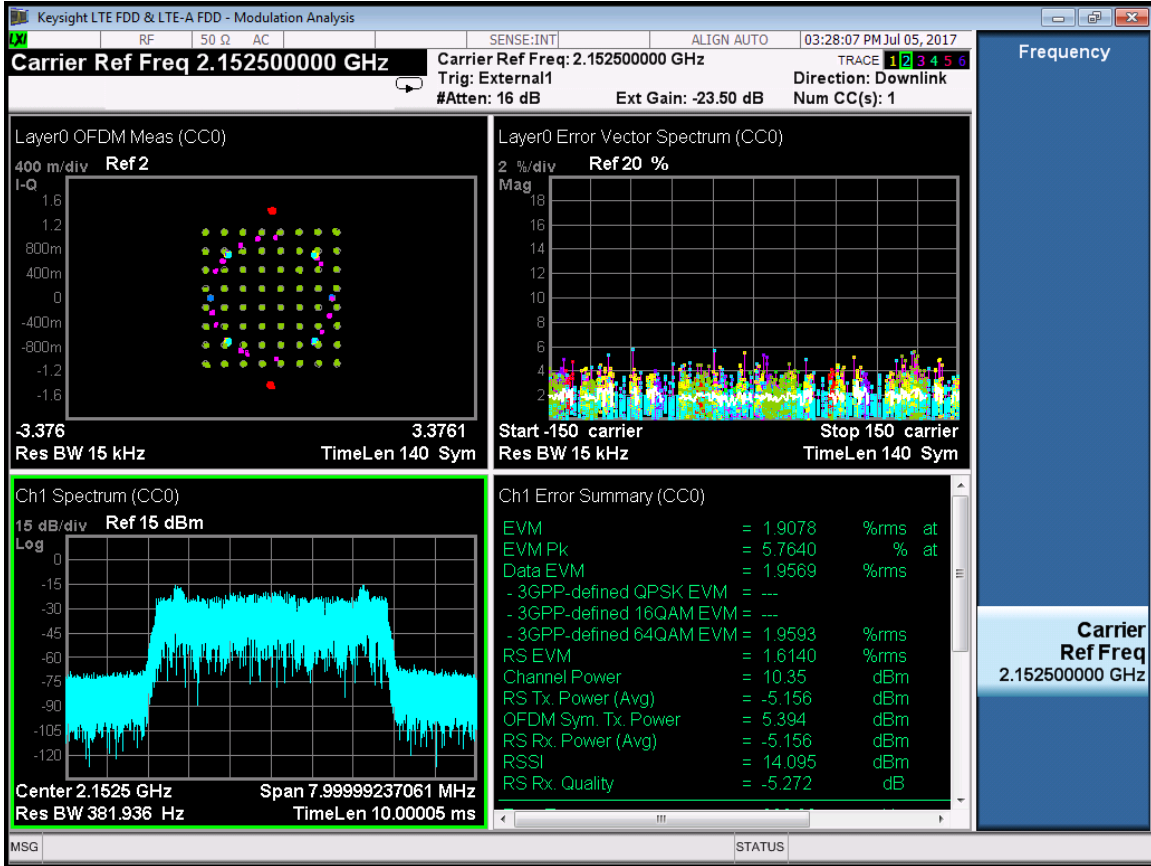
LTE-Port 1-2132.5MHz-E-TM3.2



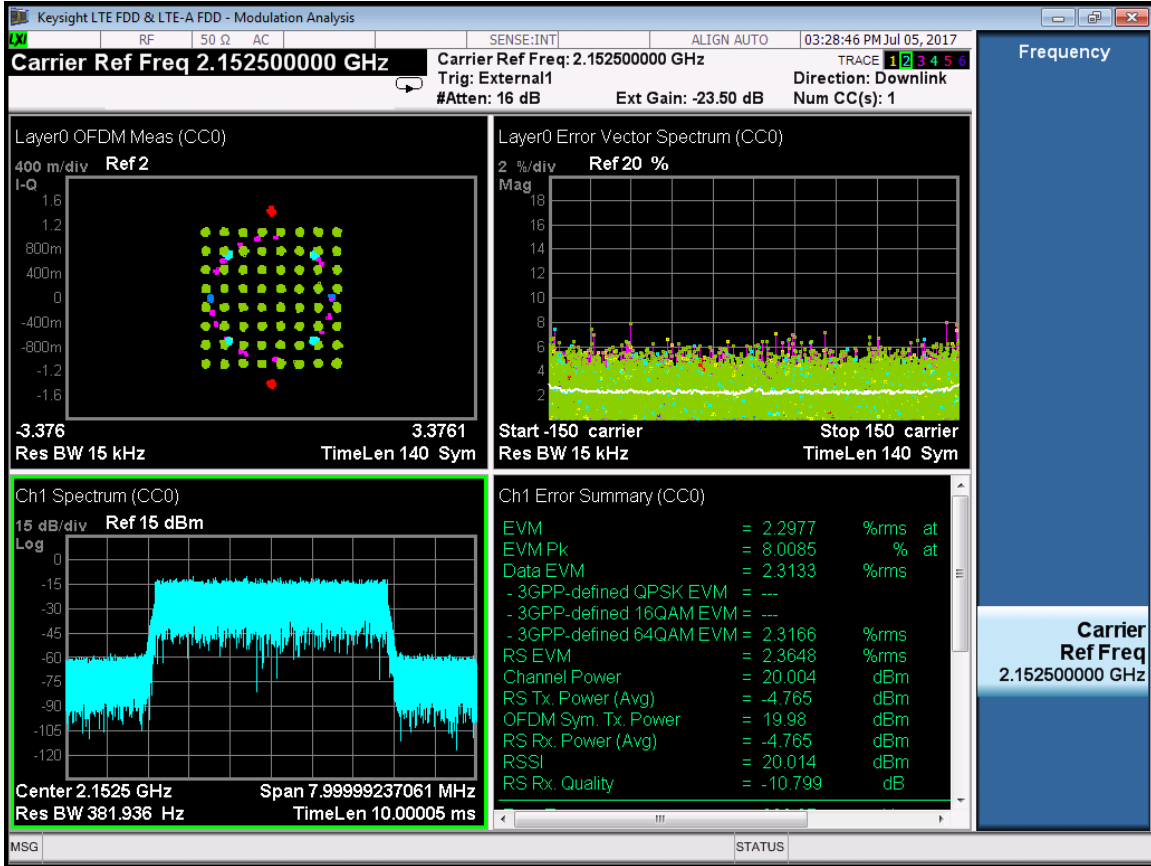
LTE-Port 1-2132.5MHz-E-TM3.3



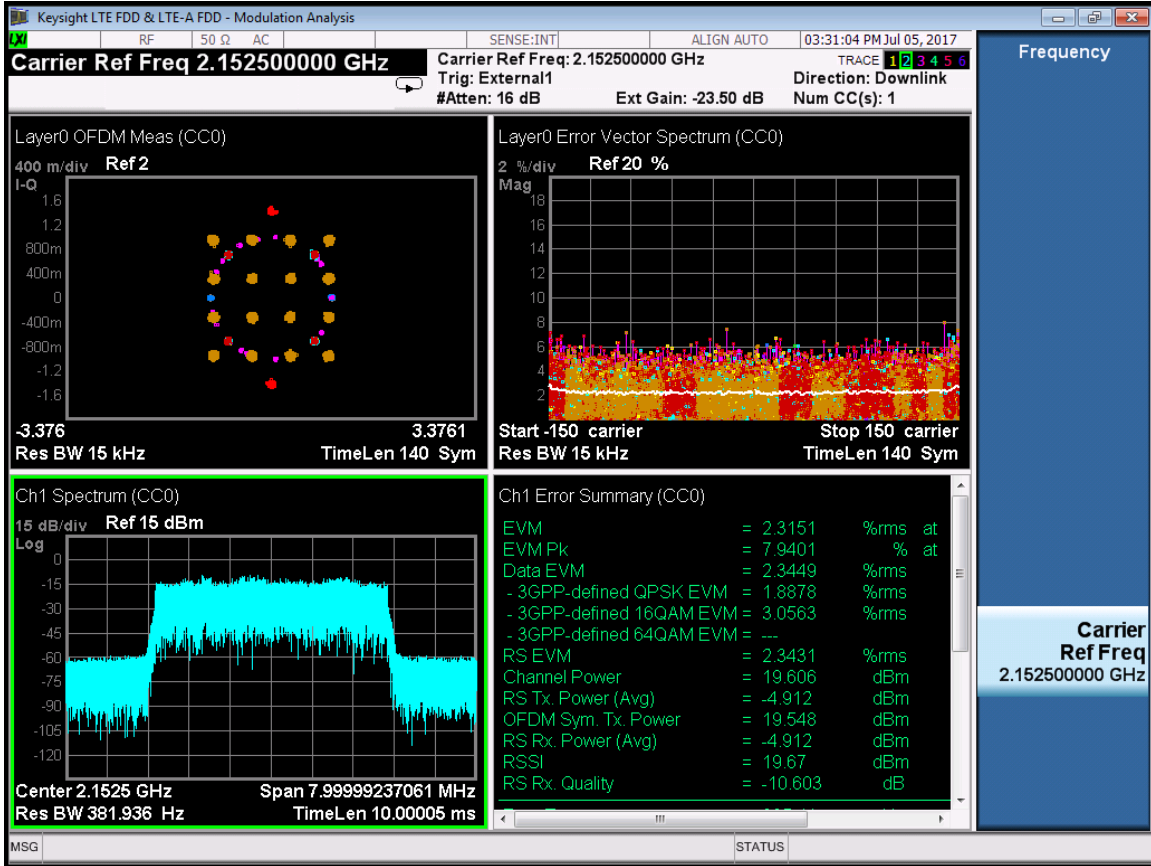
RF 2152.5MHz:
 LTE-Port 1-2152.5MHz-E-TM2



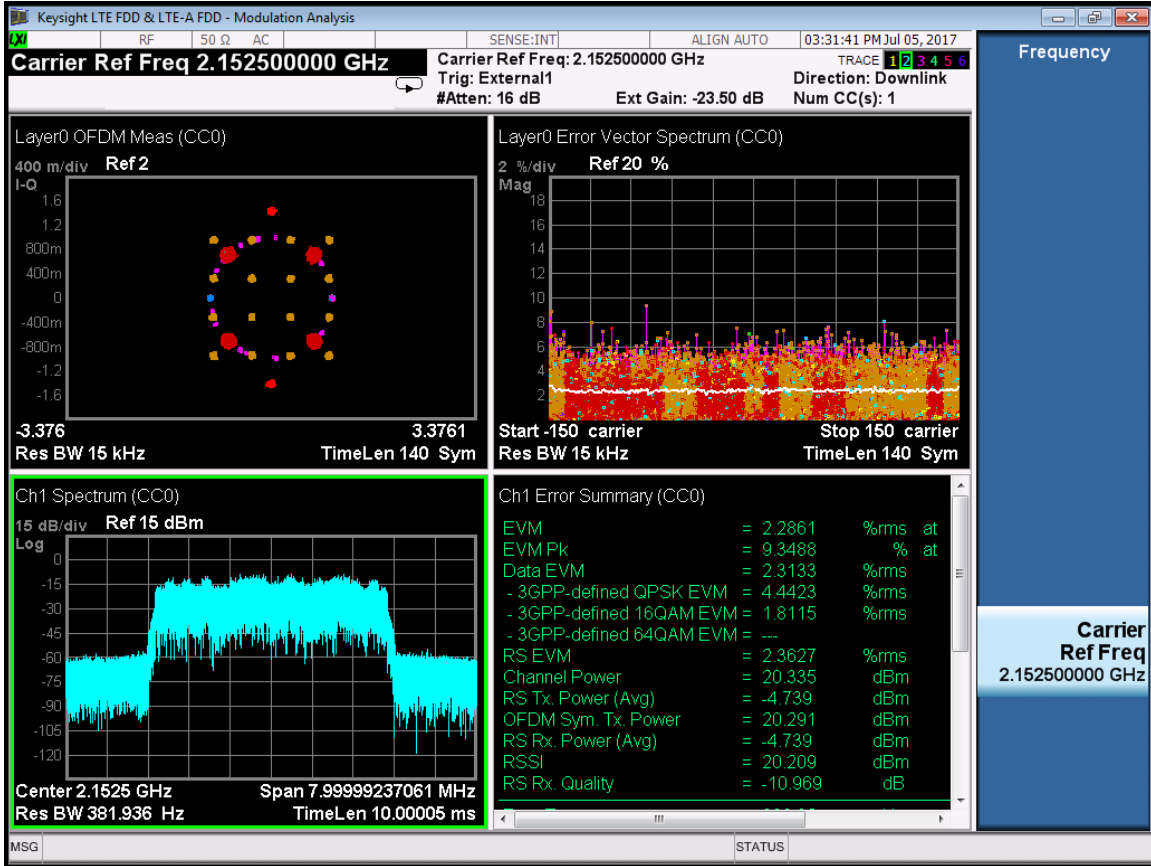
LTE-Port 1-2152.5MHz-E-TM3.1



LTE-Port 1-2152.5MHz-E-TM3.2



LTE-Port 1-2152.5MHz-E-TM3.3



8 SPURIOUS RADIATED EMISSIONS

Applicable Standard: FCC CFR 47 §2.1053

Test Equipment List and Details

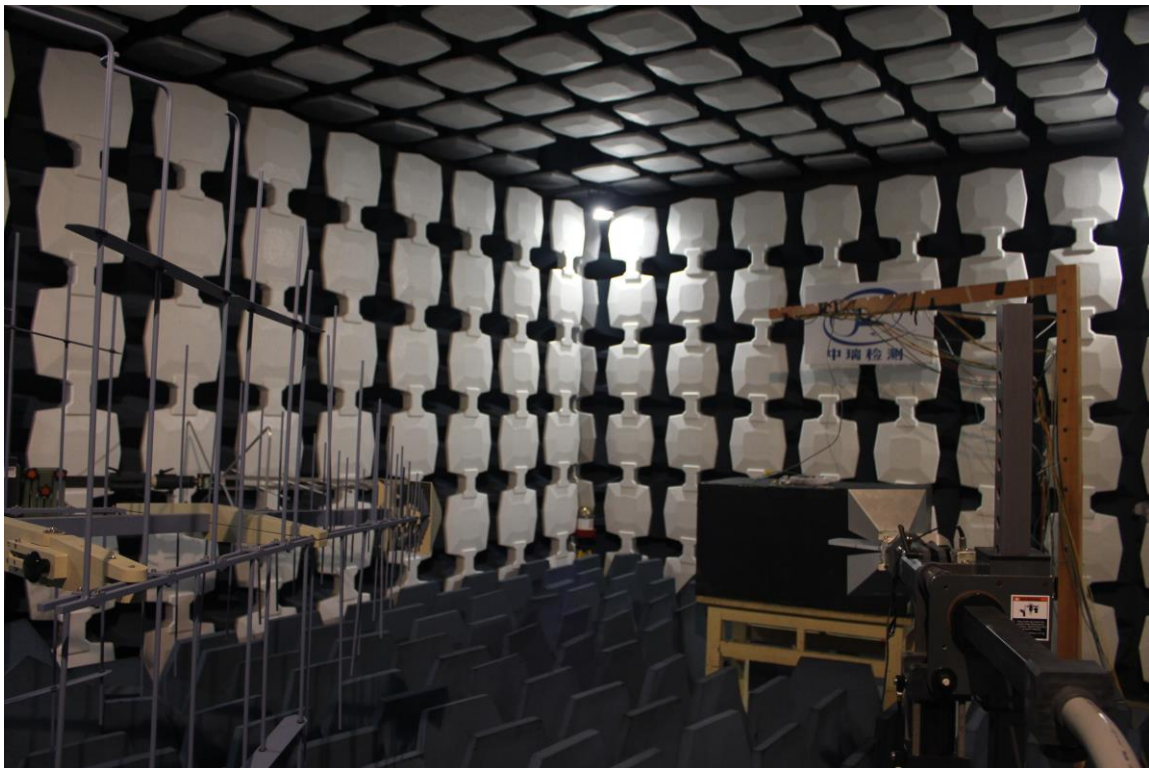
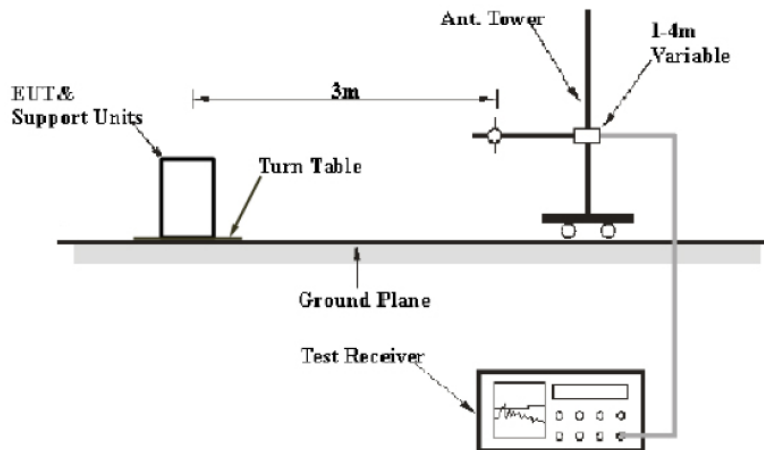
Manufacturer	Equipment	Model	Serial Number	Last Cal.	Cal. Interval
Albatross	Anechoic Chamber	3m Site	A00017354	2016-11-18	1 year
R&S	EMI Test Receiver	ESI26	100058	2016-8-1	1 year
R&S	Log periodic Antenna	SWB-VUB A9163	9163-282	2016-12-7	1 year
R&S	Double-Ridged Waveguide Horn Antenna	HF906 TX	100032	2016-6-29	1 year

Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, antenna factor calibration, antenna directivity, antenna factor variation with height, antenna phase center variation, antenna factor frequency interpolation, measurement distance variation, site imperfections, mismatch (average), and system repeatability.

Based on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of a radiated emissions measurement at the EMC lab. is 3.6dB.

EUT Setup



The radiated emission tests were performed in the 3-meter Chamber, using the setup accordance with the FCC part 2.1053. The specification used was the FCC 2.1053 limits.

Test Procedure

The transmitter was placed on a wooden turntable, and it was transmitting into a non-radiating load, which was also placed on the turntable.

The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and polarization as well as EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. The test was performed by placing the EUT on 3-orthogonal axis.

The frequency range up to teeth harmonic of the fundamental frequency was investigated.

Remove the EUT and replace it with substitution antenna. A signal generator was connected to the substitution antenna by a non-radiating cable. The absolute levels of the spurious emissions were measured by the substitution.

Spurious emissions in dB = 10 lg (TX pwr in Watts/0.001)-the absolute level

Spurious attenuation limit in dB = 43 + 10 Lg P (power out in Watts)

The resolution bandwidth of the spectrum analyzer was set at 1 percent as specified for 30MHz to 1GHz scanning, set at 1MHz for 1GHz to 20GHz scanning.

Test Results Summary: PASS

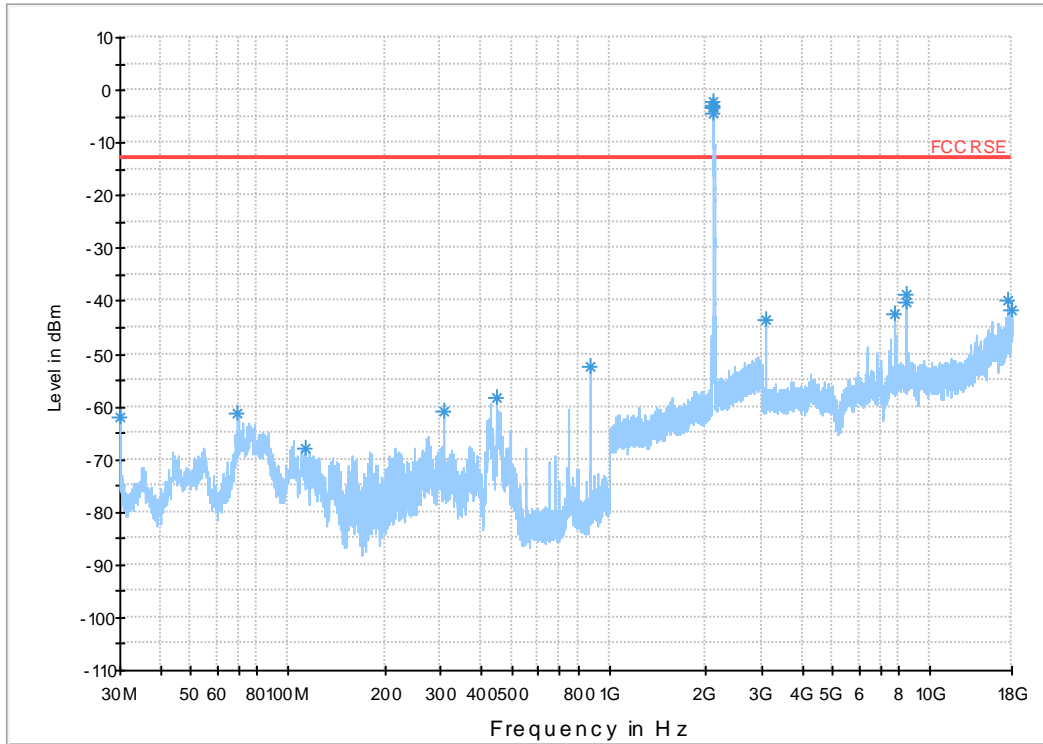
Environmental Conditions

Temperature:	26°C
Relative Humidity:	60 %
ATM Pressure:	1009 mbar

Test data

30M-18GHz (Horizontal)

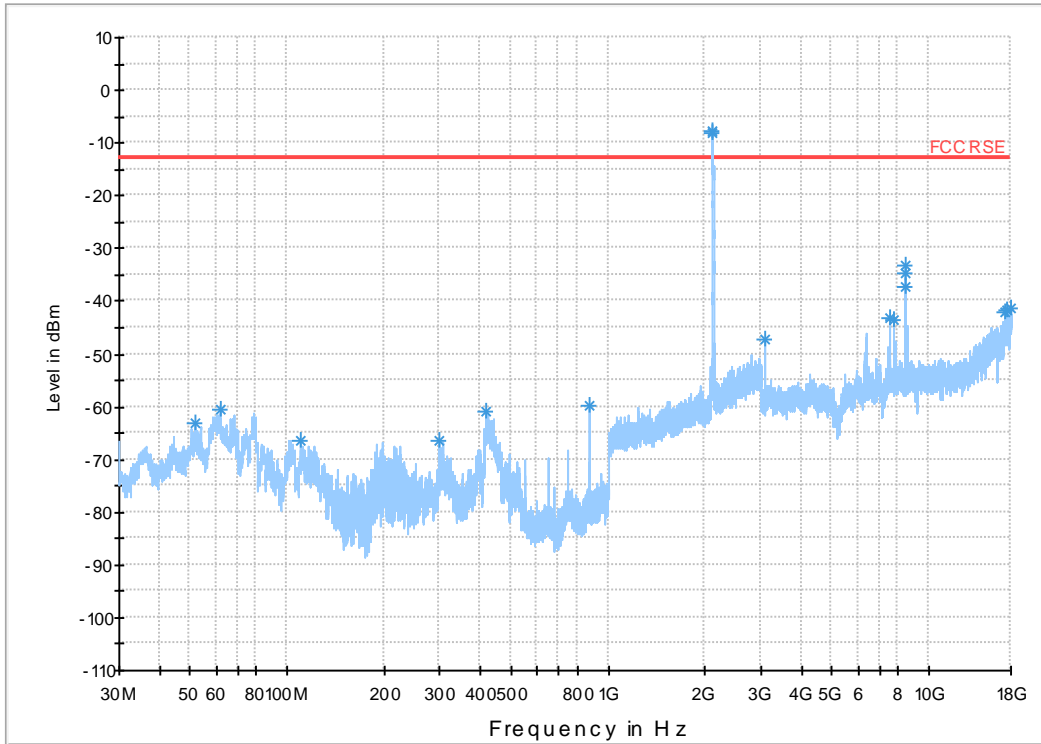
FCC RSE HP 4G 30MHz-18G -H



Frequency (MHz)	MaxPeak-MaxHold (dBm)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Limit (dBm)	Margin (dB)
30	-61.8	150	H	25	-109.7	-13	48.8
69.964	-61.3	150	H	119	-111.7	-13	48.3
113.7595	-67.8	150	H	197	-109.5	-13	54.8
307.1775	-61	150	H	66	-108.7	-13	48
450.01	-58.3	150	H	128	-104.9	-13	45.3
879.041	-52.3	150	H	111	-99.4	-13	39.3
3072	-43.5	150	H	236	-103.5	-13	30.5
7760	-42.5	150	H	244	-96.6	-13	29.5
8469	-40.2	150	H	319	-96.5	-13	27.2
8487.5	-38.7	150	H	319	-96.5	-13	25.7
17558.5	-39.7	150	H	343	-77.9	-13	26.7
17928.5	-41.8	150	H	44	-80.3	-13	28.8

30M-18GHz (Vertical)

FCC RSE HP 4G 30MHz-18G -V



Frequency (MHz)	MaxPeak-MaxHold (dBm)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Limit (dBm)	Margin (dB)
51.534	-63.2	150	V	63	-107.3	-13	50.2
61.7675	-60.5	150	V	25	-107.5	-13	47.5
110.801	-66.6	150	V	333	-108	-13	53.6
299.951	-66.6	150	V	14	-107.3	-13	53.6
418.3395	-60.9	150	V	63	-106.4	-13	47.9
879.041	-59.9	150	V	126	-99.6	-13	46.9
3071.5	-47.1	150	V	307	-103.7	-13	34.1
7530	-43	150	V	298	-96.4	-13	30
7760	-43.7	150	V	192	-96.8	-13	30.7
8461.5	-37.4	150	V	331	-96.5	-13	24.4
8469	-34.8	150	V	339	-96.5	-13	21.8
8487	-33.2	150	V	331	-96.5	-13	20.2
17243.5	-42.1	150	V	41	-81.9	-13	29.1
17571.5	-41.5	150	V	97	-79.9	-13	28.5
17917.5	-41.2	150	V	264	-79.3	-13	28.2

9 SPURIOUS EMISSIONS AT ANTENNA TERMINALS

Applicable Standard: FCC§2.1051, §27.53

The spectrum was to be investigated to the tenth harmonics of the highest fundamental frequency as specified.

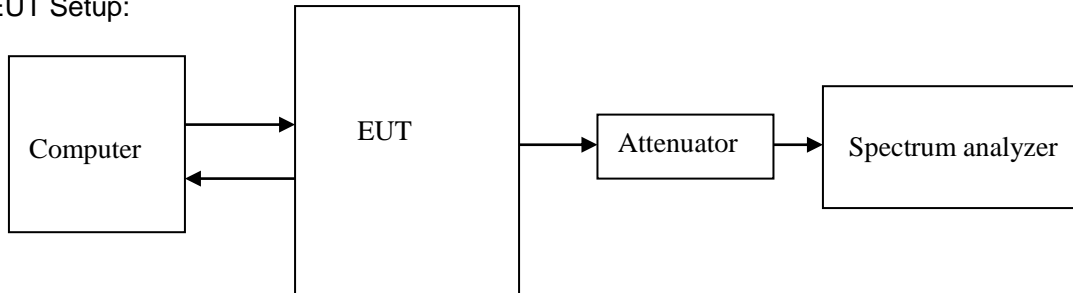
Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Agilent	MXA Series Spectrum Analyzer	N9030A	MY49431143	2016.09.12	2017.09.12
DTS	DTS 20dB Attenuator	DTS50-20-3-1	09112005	2016.09.12	2017.09.12

***statement of traceability:** ZTE Corporation Reliability Testing Center attest that all calibration have been performed per the NVLAP requirements, traceable to NIST.

Test Procedure

EUT Setup:



REMARKS: Attenuator loss (dB)=20dB, Cable Loss (dB)=3.5dB.

The RF output of the transceiver was connected to a spectrum analyzer through appropriate attenuation. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee’s frequency block, a resolution bandwidth of at least 30 kHz may be employed. Sufficient scans were taken to show any out of band emissions up to 10th harmonic.

Test Data Environmental Conditions

Temperature:	20 °C
Relative Humidity:	53 %
ATM Pressure:	1009 mbar

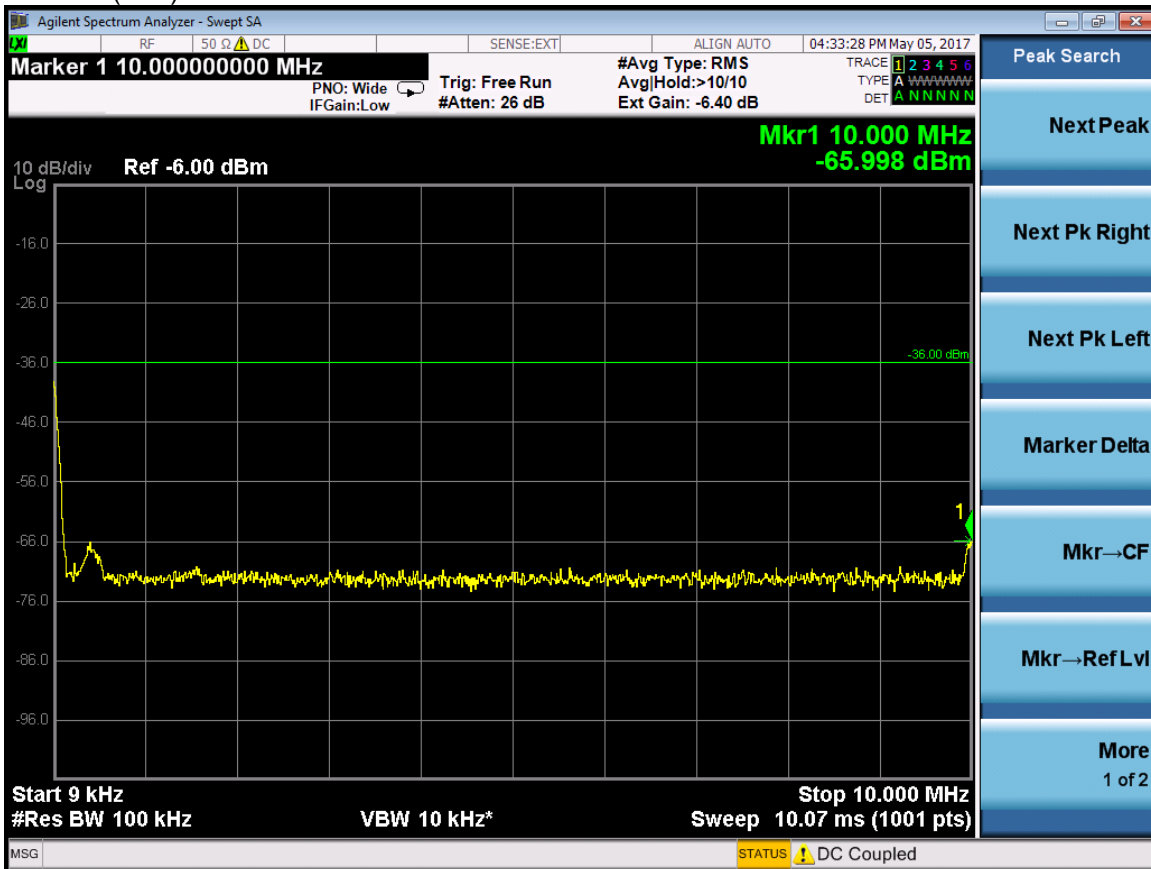
Test Result: Pass

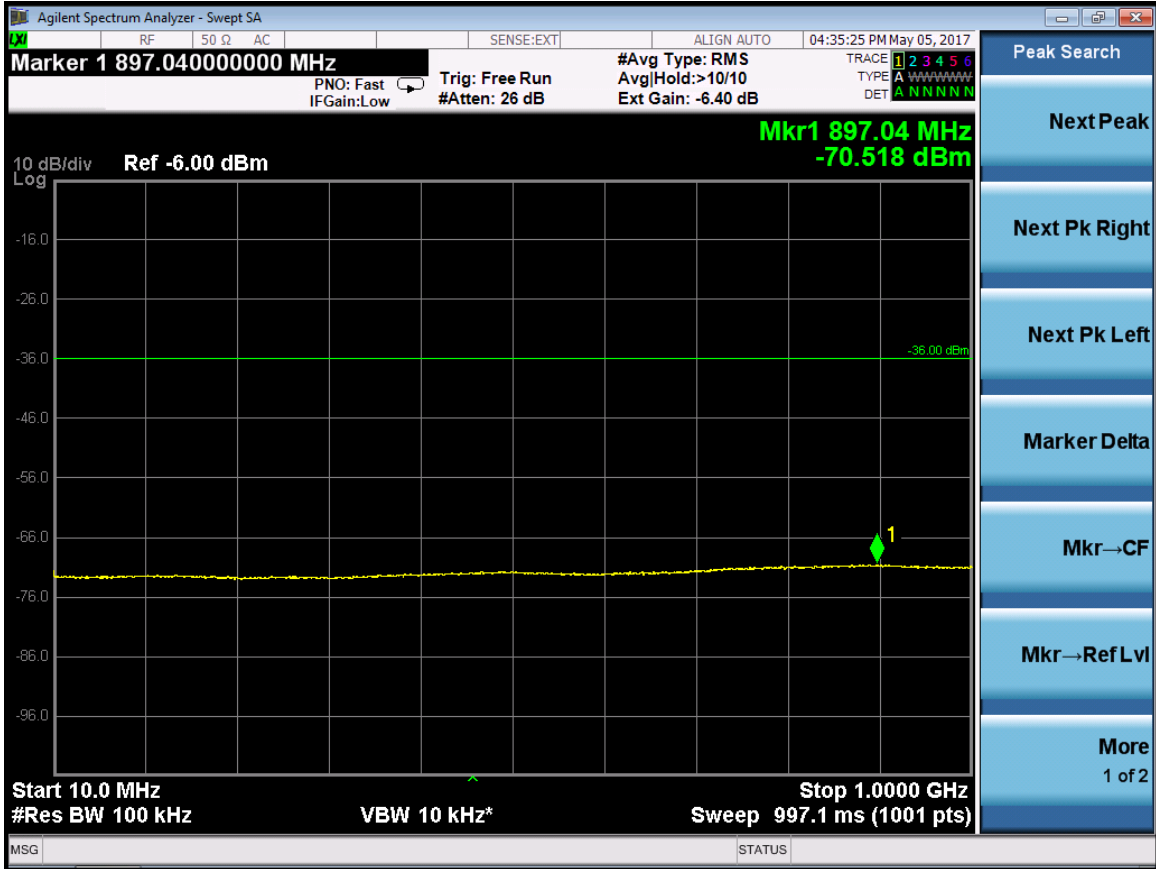
Test Mode: Transmitting LTE

Test Data:

LTE 20MHz

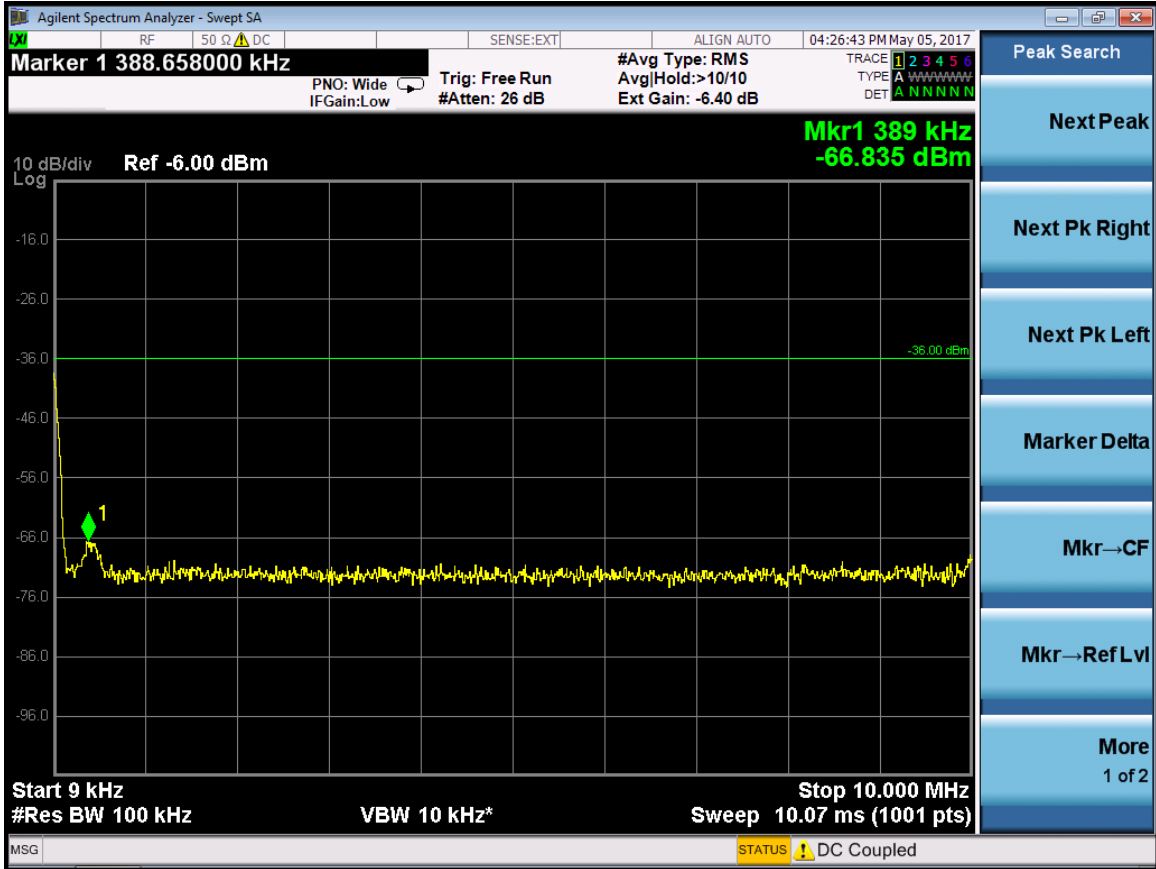
RF 20M (LTE) -Port 0 -2120MHz



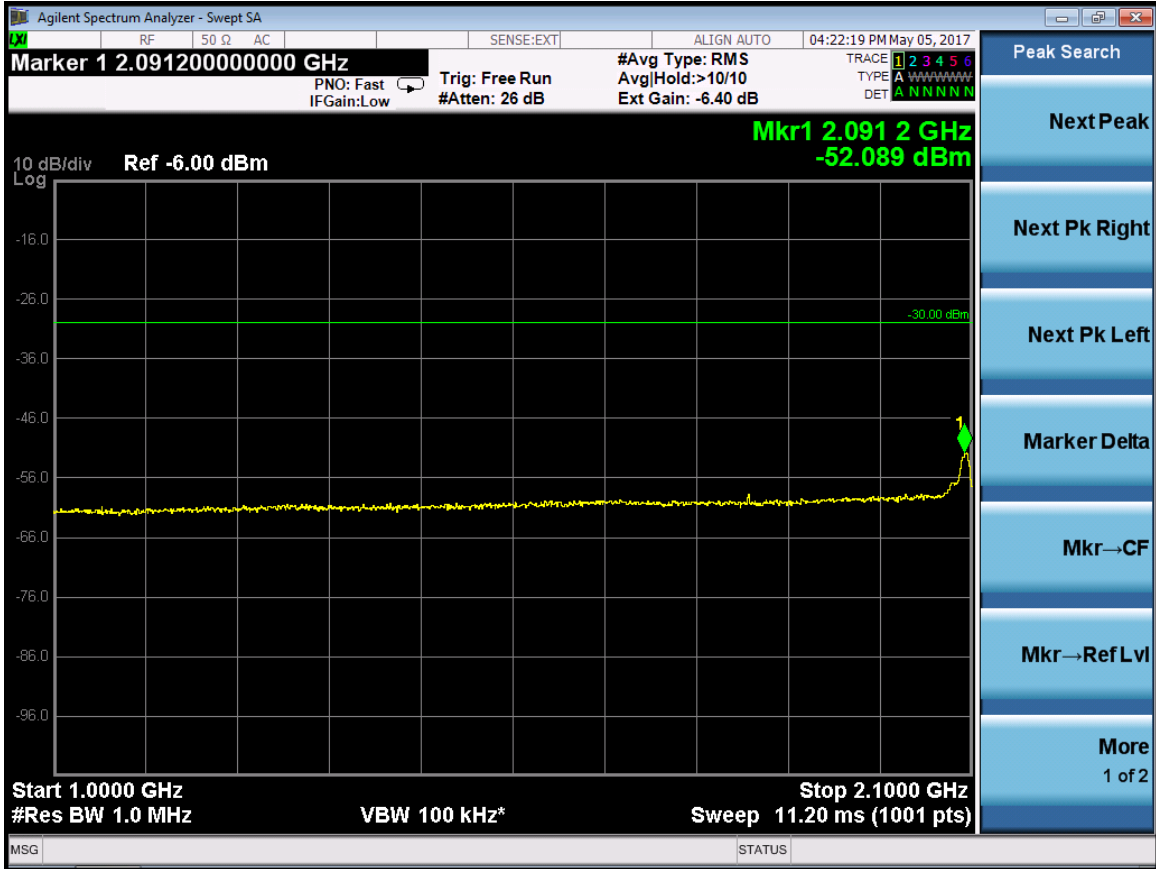




RF 20M(LTE) -Port 0-2132.5MHz

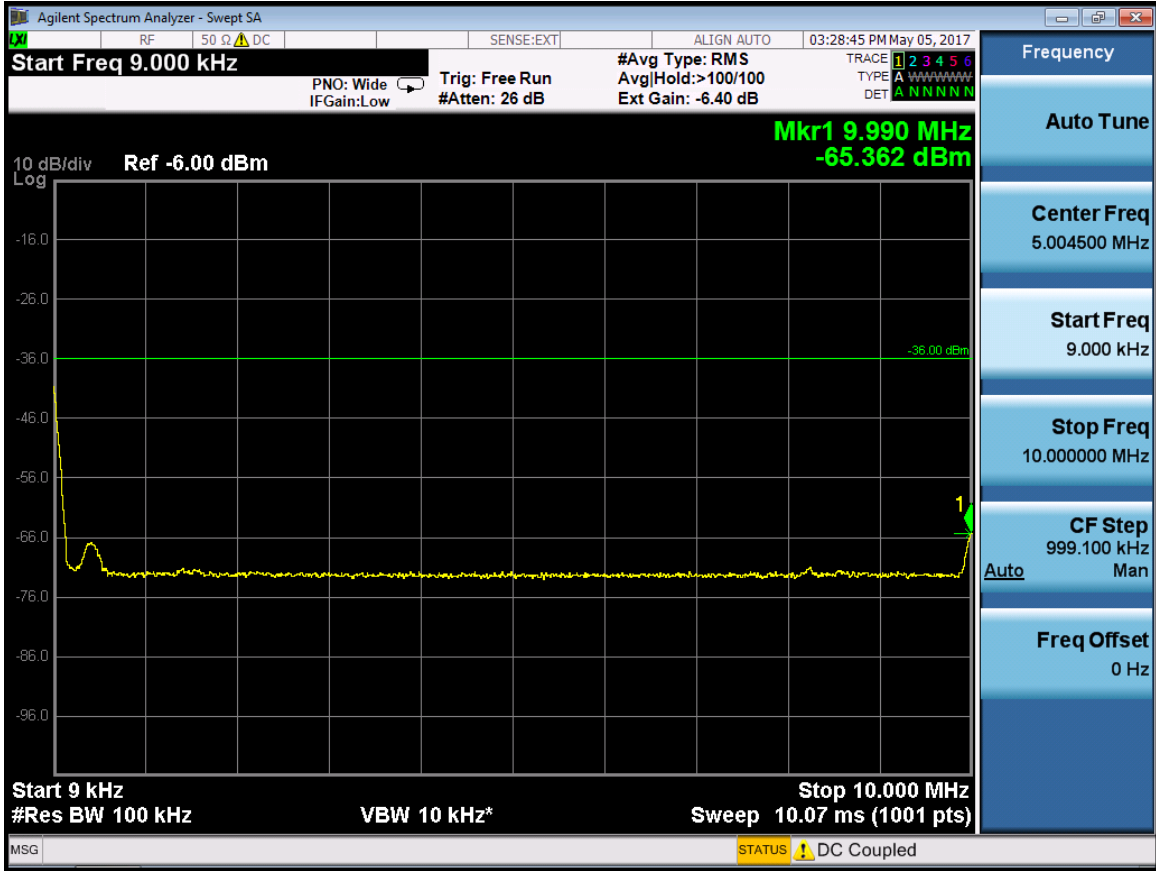






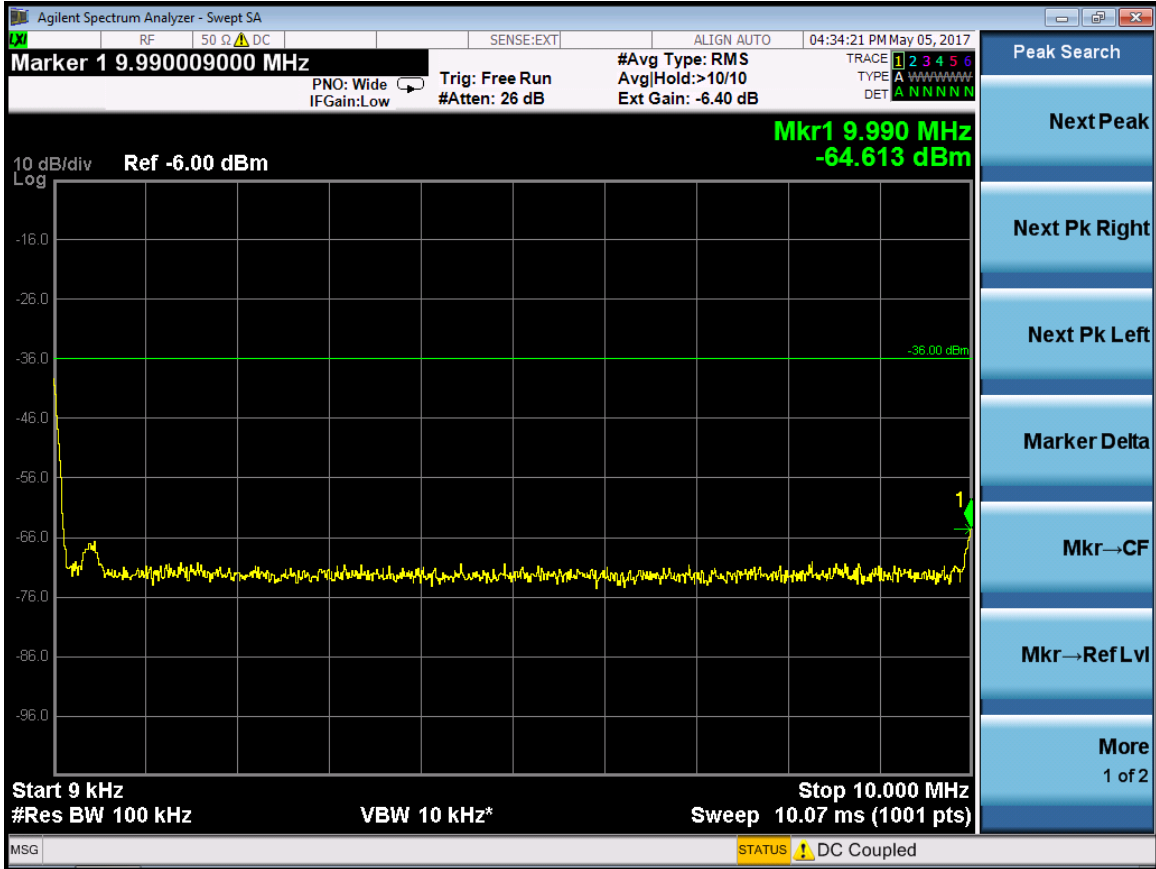


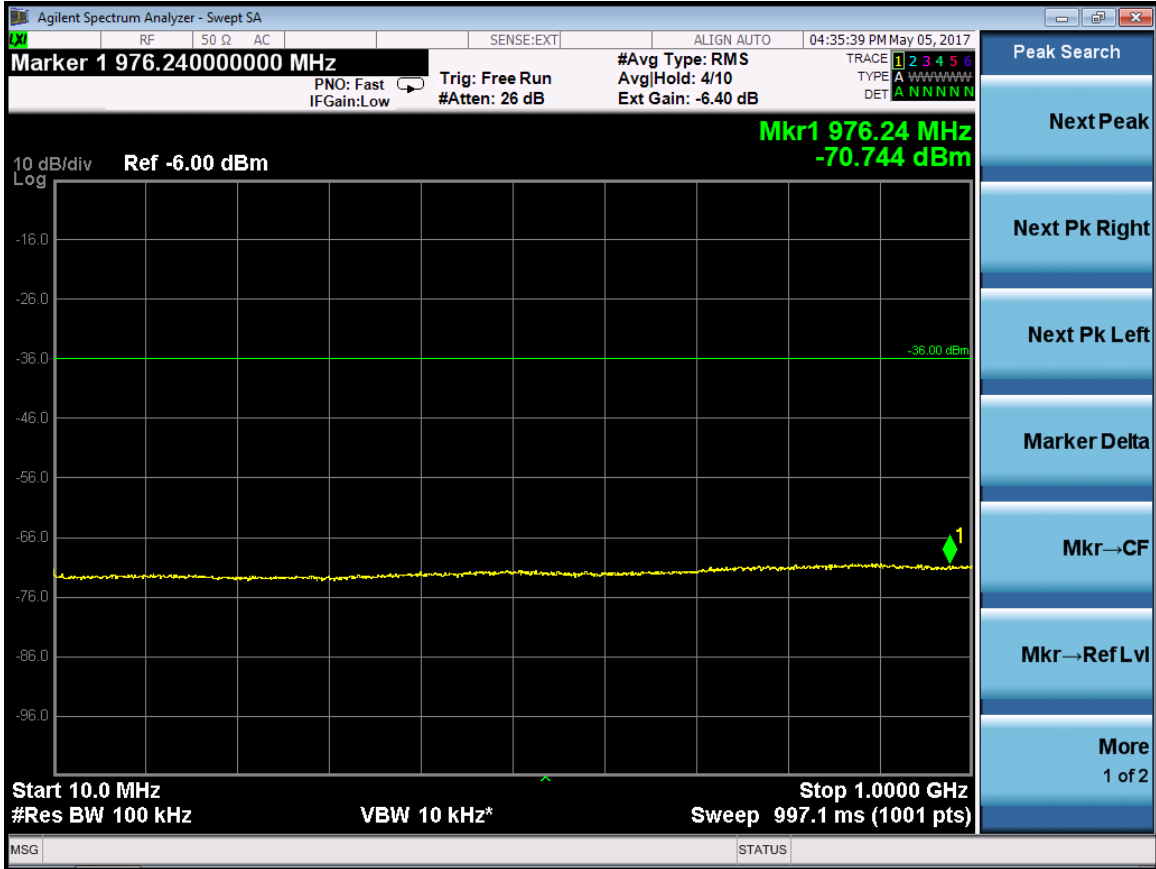
RF 20M(LTE) -Port 0-2145MHz

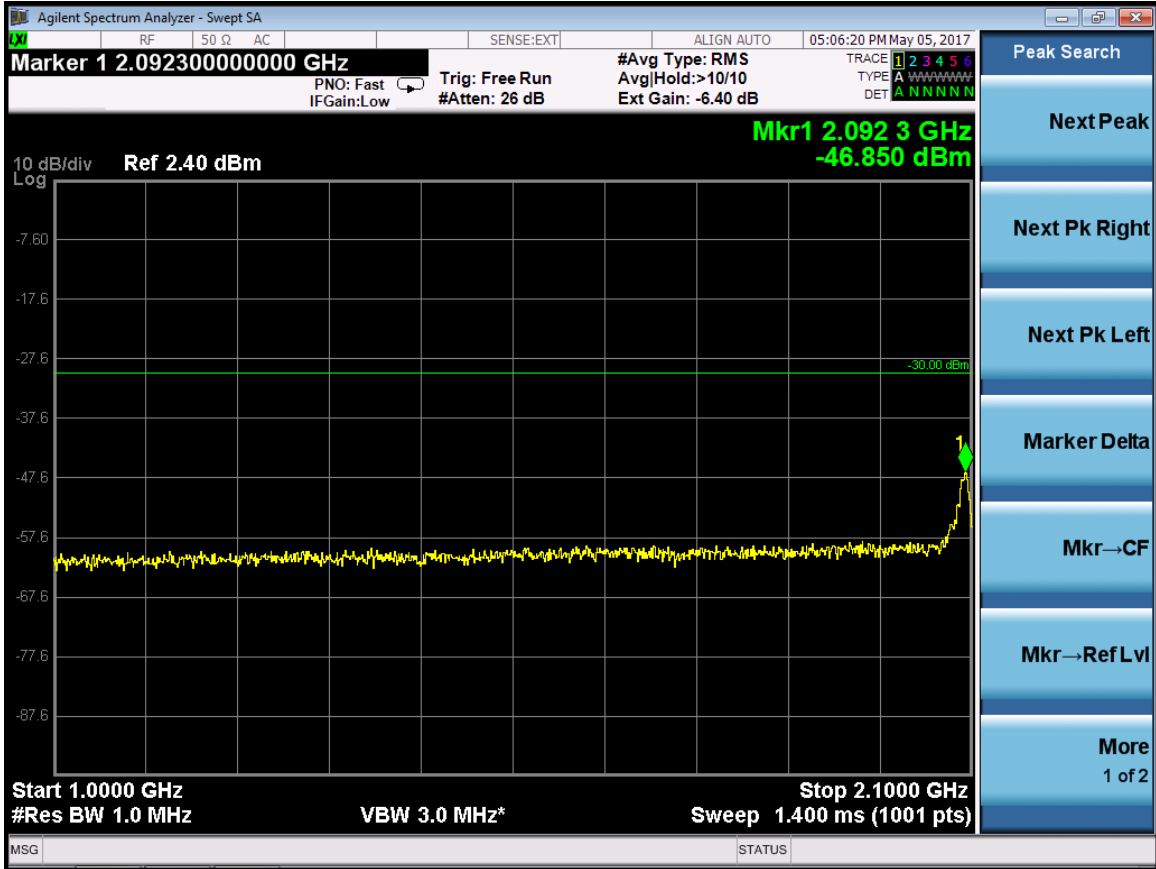


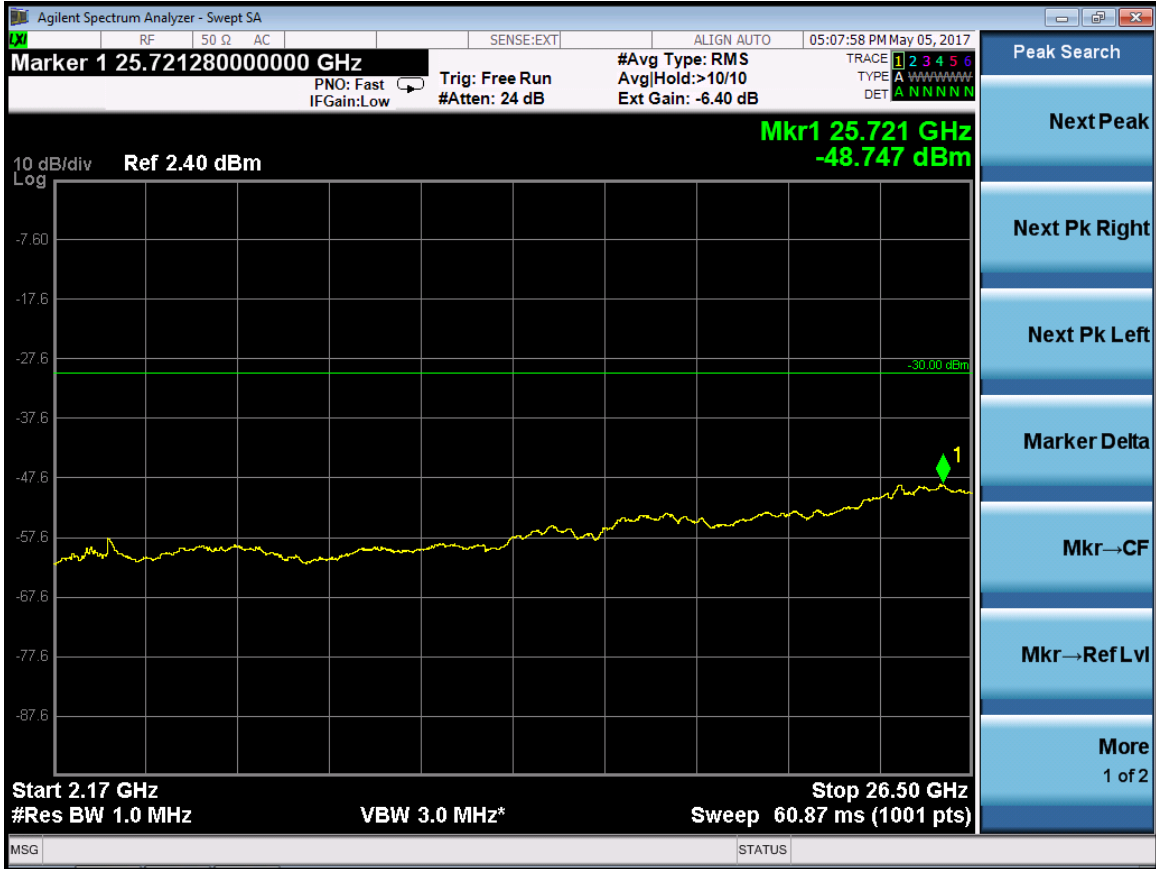








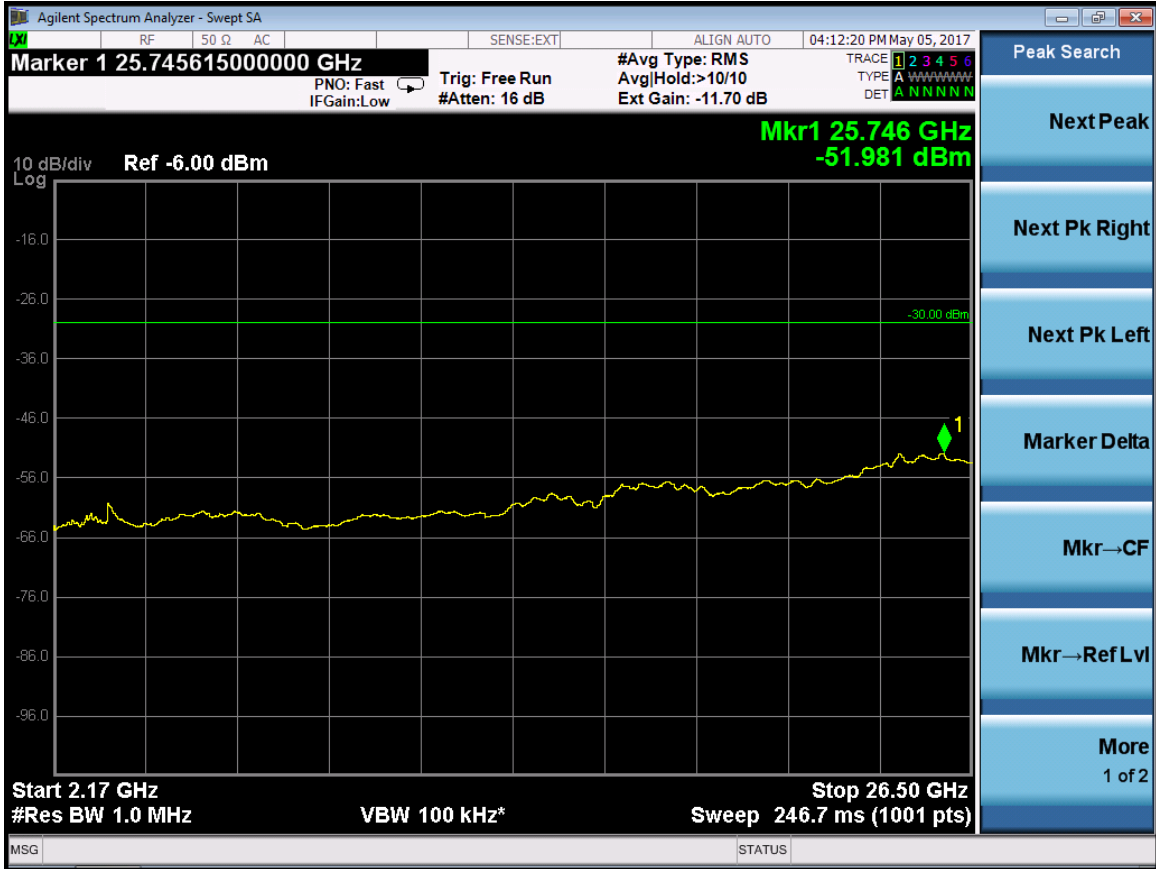




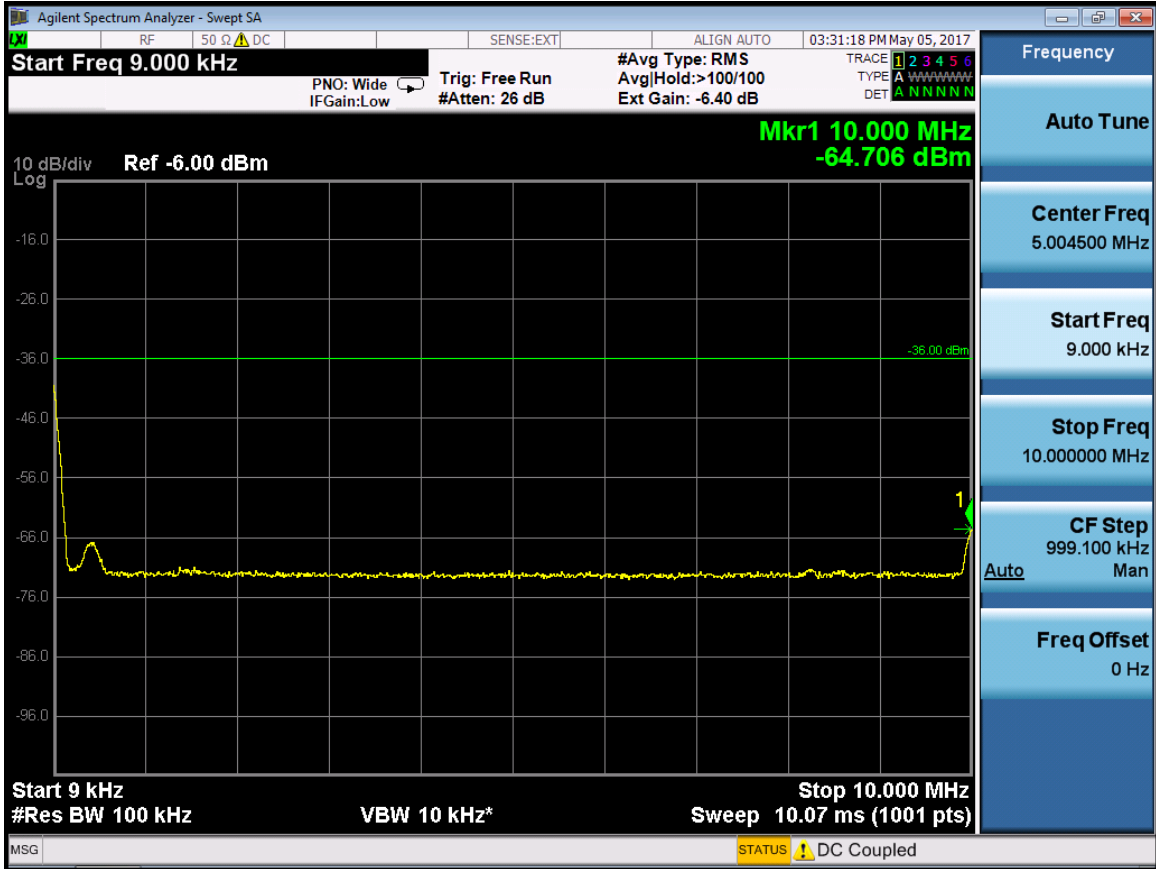
RF 20M(LTE) -Port 1-2132.5MHz







RF 20M(LTE) -Port 1-2145MHz









LTE 15MHz

RF 20M (LTE) -Port 0 -2117.5MHz

