

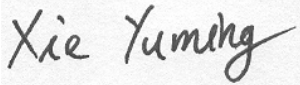
# FCC MEASUREMENT AND TEST REPORT

For

## ZTE Corporation

ZTE Plaza, Hi-tech Park, Nanshan District, Shenzhen,  
Guangdong, China 518057

FCC ID: Q78-BS8922T2600L

<b>This Report Concerns:</b> <input checked="" type="checkbox"/> Original Report	<b>Equipment Type:</b> LTE Remote Radio Unit
<p>Test Engineer: Jennie.He </p> <p>Report No: RF20170207002RP</p> <p>Test Date: Mar 7 –Apr 18, 2017</p> <p>Reviewed By: Xie Yuming </p> <p>Prepared By: ZTE Corporation.</p> <p>ZTE Plaza, Hi-tech Park, Nanshan District, Shenzhen, Guangdong, China 518057, P.R.China Tel: +86-755-26770000 Fax: +86-755-26771999</p>	

Note: The test report is specially limited to the above company and this particular sample only. It may not be duplicated without prior written consent of ZTE Corporation. This report must not be used by the client to claim product certification 、 approval 、 or endorsement by any agency of the US Government.

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# 1 GENERAL INFORMATION

## Product Description for Equipment Under Test (EUT)

The ZTE Corporation's product, model number: ZXSDR BS8922 T2600 or the "EUT" as referred to in this report is a LTE Remote Radio Unit.

### Technical specification:

Total Weight: 8kg

Volume: 7L

Dimensions (H\*W\*D): 310 mm x 290 mm x 120 mm

Input voltage: -48VDC (-58VDC to -38VDC)

Frequency range: 2496 MHz~2602 MHz

Carrier and bandwidth: 2carriers, 40MHz

Max RF output power: 37dBm one port

Modulation type of emission: LTE

Appearance of EUT:

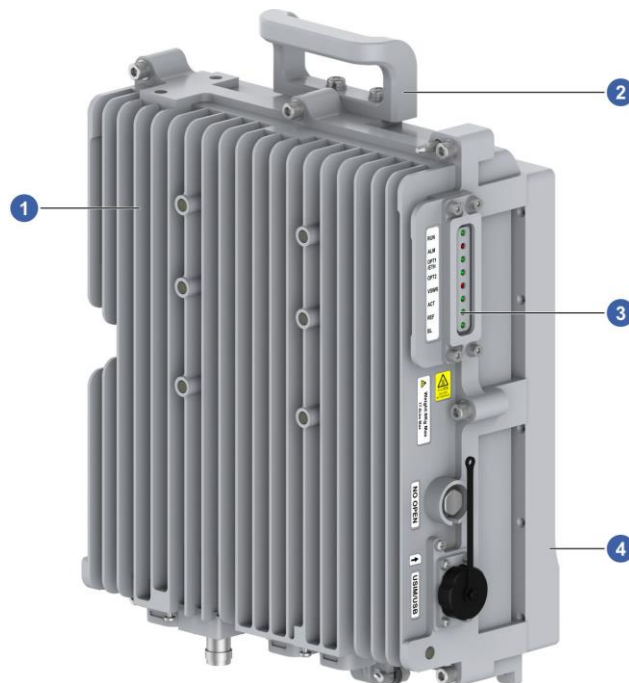


Figure 1 External View of the ZXSDR BS8922 T2600

## Objective

This Type approval report is prepared on behalf of ZTE Corporation in accordance with Part 2, Part 15, Part

27 of the Federal Communication Commission rules.

## Related Submittal(s)/GrPort(s)

No related submittal(s).

## Test Methodology

All tests and measurements indicated in this document were performed in accordance with the Code of federal Regulations Title 47 Part 2. as well as the following parts:

Part 24 Wireless Communication Services

Applicable Standards: TIA EIA 137-A, TIA EIA 97-D, TIA/EIA 603-C, Land Mobile FM or PM Communications Equipment Measurement and Performance Standards.

All radiated and conducted measurement was performed at ZTE Corporation Reliability Testing Center. The radiated testing was performed at an Portenna-to-EUT distance of 3 meters.

## Test Facility

The Test site used by ZTE Corporation to collect test data is located in the 1/F,B2 Wing, ZTE Plaza, Keji Road South, Shenzhen, Guangdong, 518057, P.R.China, Tel: +86-755-26771609,Fax: +86-755-26770347. Test site at ZRT EMC Shenzhen Laboratory has been fully described in reports submitted to the Federal Communication Commission (FCC). The details of these reports have been found to be in compliance with the requirements of Section 2.948 of the FCC Rules. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2009.

The Federal Communications Commission has the reports on file and is listed under FCC Registration No.: 373926. The test site has been approved by the FCC for public use and is listed in the FCC Public Access Link (PAL) database.

# 2 SYSTEM TEST CONFIGURATION

## Description of Test Configuration

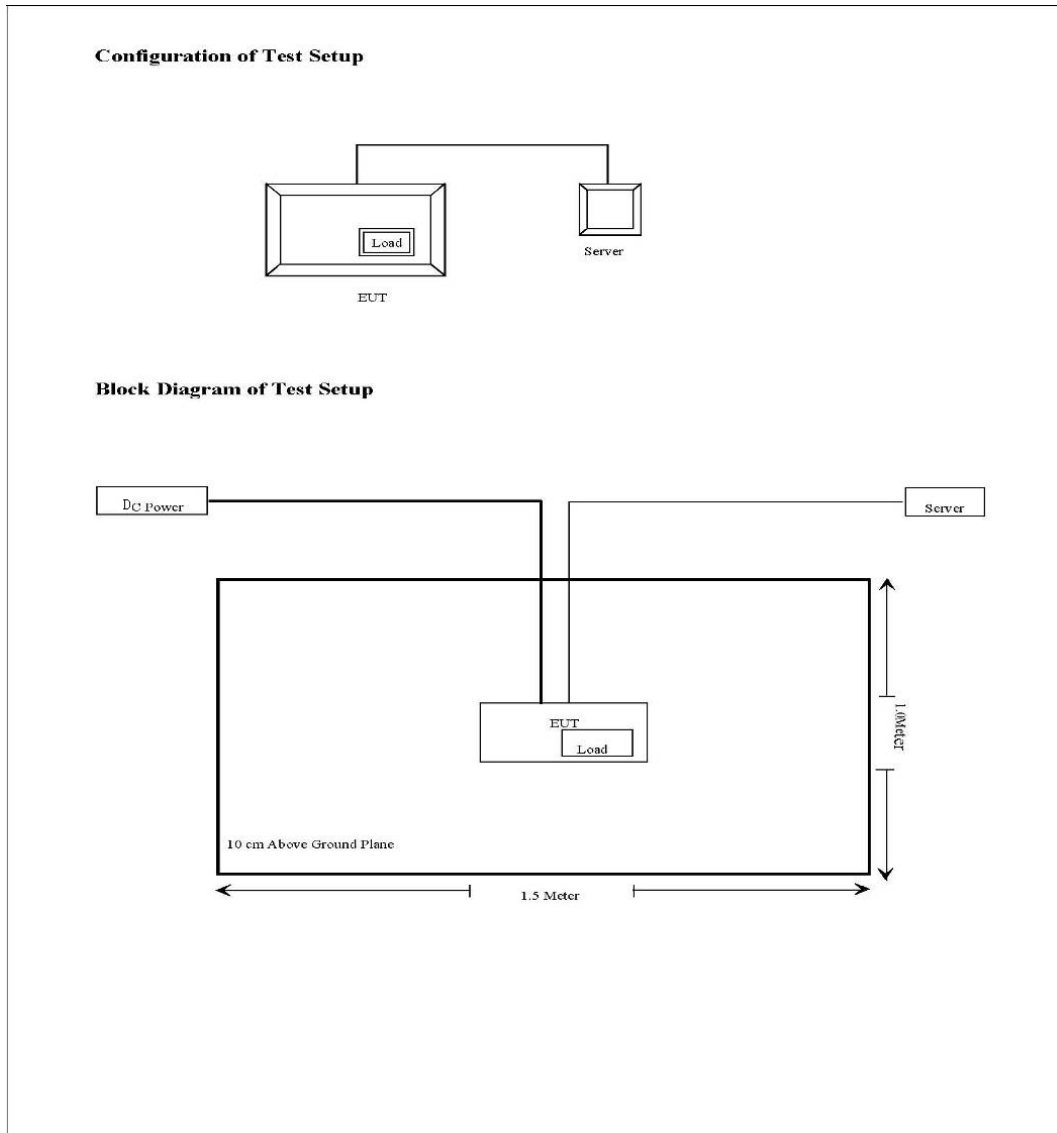
### Justification

The EUT was configured for testing according to TIA/EIA-603C.

The final qualification test was performed with EUT operating at normal mode.

### Equipment Modifications

ZTE Corporation has not done any modification on the EUT.



### 3 SUMMARY OF TEST RESULTS

FCC RULES	DESCRIPTION OF TEST	RESULT
§ 2.1046 , §27.50	RF power output	Compliant
§ 2.1047	Modulation characteristics	Compliant
§ 2.1049	Occupied Bandwidth	Compliant
§ 2.1051, §27.53	Spurious emissions at Portenna terminals	Compliant
§ 2.1051, §27.53	Spurious emissions	Compliant

§ 2.1055, §27.74	Frequency stability	Compliant
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## 4 RF POWER OUTPUT

### Applicable Standard: FCC § 2.1046 , §27.50

According to FCC §2.1046 & 27.50(h)

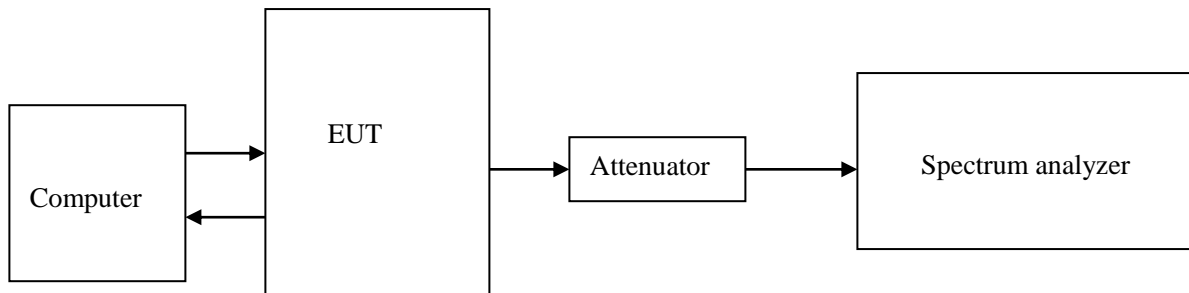
1) Main, booster and base stations. (i) The maximum EIRP of a main, booster or base station shall not exceed  $33 \text{ dBW} + 10\log(X/Y) \text{ dBW}$ , where X is the actual channel width in MHz and Y is either 6 MHz if prior to transition or the station is in the MBS following transition or 5.5 MHz if the station is in the LBS and UBS following transition, except as provided in paragraph (h)(1)(ii) of this section.

### Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Agilent	MXA Series Spectrum Analyzer	N9020A	MY51240239	2016.11.28	2017.11.28

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

### Test Procedure



The RF output of the transmitter was connected to the input of the spectrum analyzer through sufficient attenuation. External attenuation Loss is 40dB, Cable Loss is about 6.1dB, the detector is peak.

Radiated power (dBi) = Conducted power (dBm) + Portenna gain (dBi) – Signal attenuation in the connecting cable between the transmitter and Portenna (dB)

Portenna gain (dBi):17dBi

Signal attenuation in the connecting cable between the transmitter and Portenna (dB):0.6dB

## Environmental Conditions

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

**Test Result:** Pass

**Test Mode:** Transmitting LTE

**Test Data:**

### One Carrier

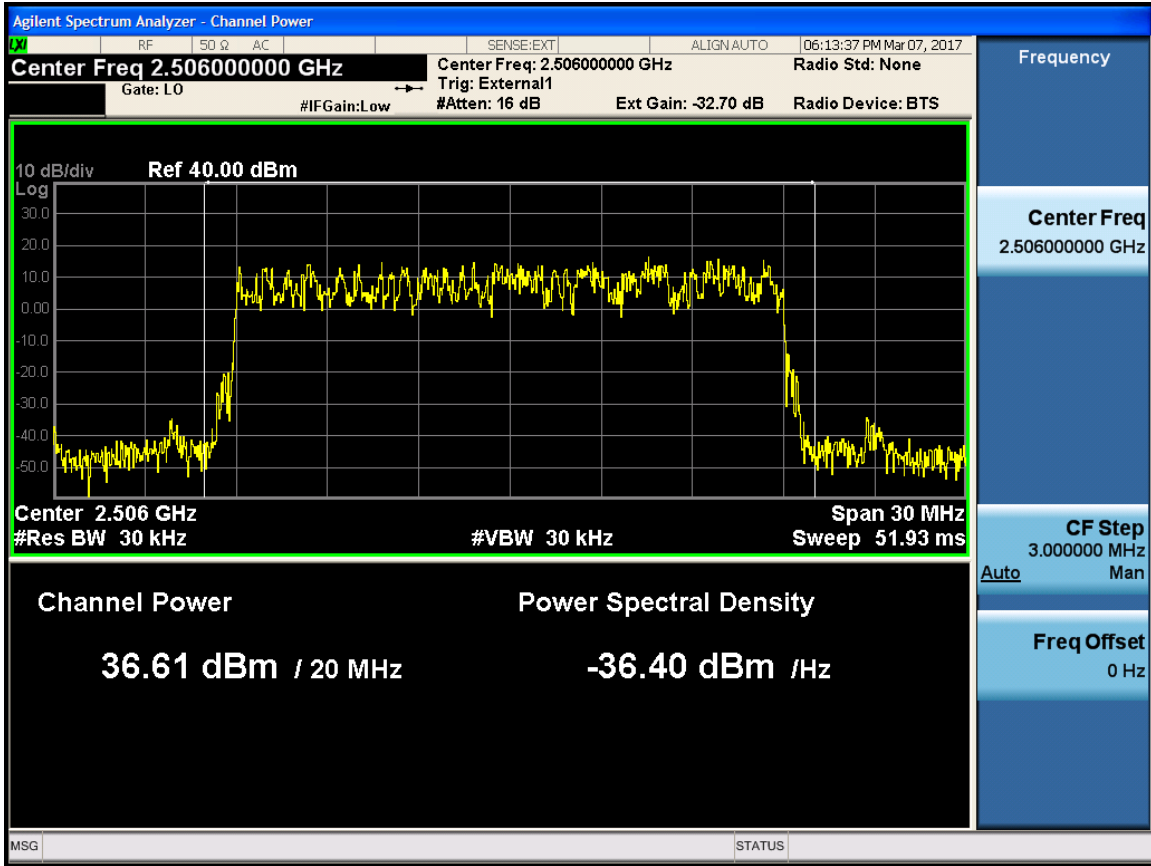
Channel Bandwidth: 20M (1 port)

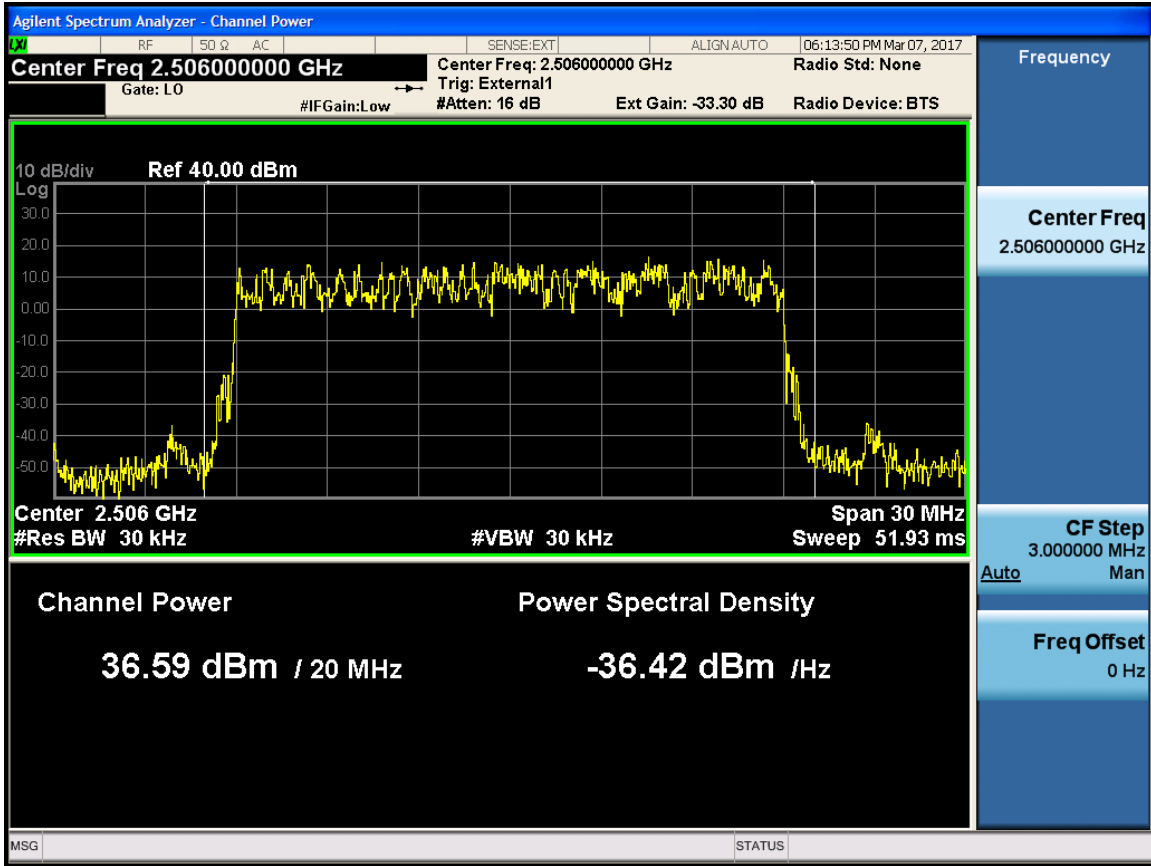
Port	Carrier Freq(MHz)	Output Power					
		QPSK		16QAM		64QAM	
		dBm	W	dBm	W	dBm	W
0	2506	36.61	4.58	36.79	4.78	37.04	5.06
1		36.59	4.56	36.76	4.74	37	5.01
0	2549	36.84	4.83	37.01	5.02	37.26	5.32
1		36.51	4.48	36.7	4.68	36.96	4.97
0	2592	36.7	4.68	36.92	4.92	36.86	4.85
1		36.34	4.31	36.59	4.56	36.84	4.83

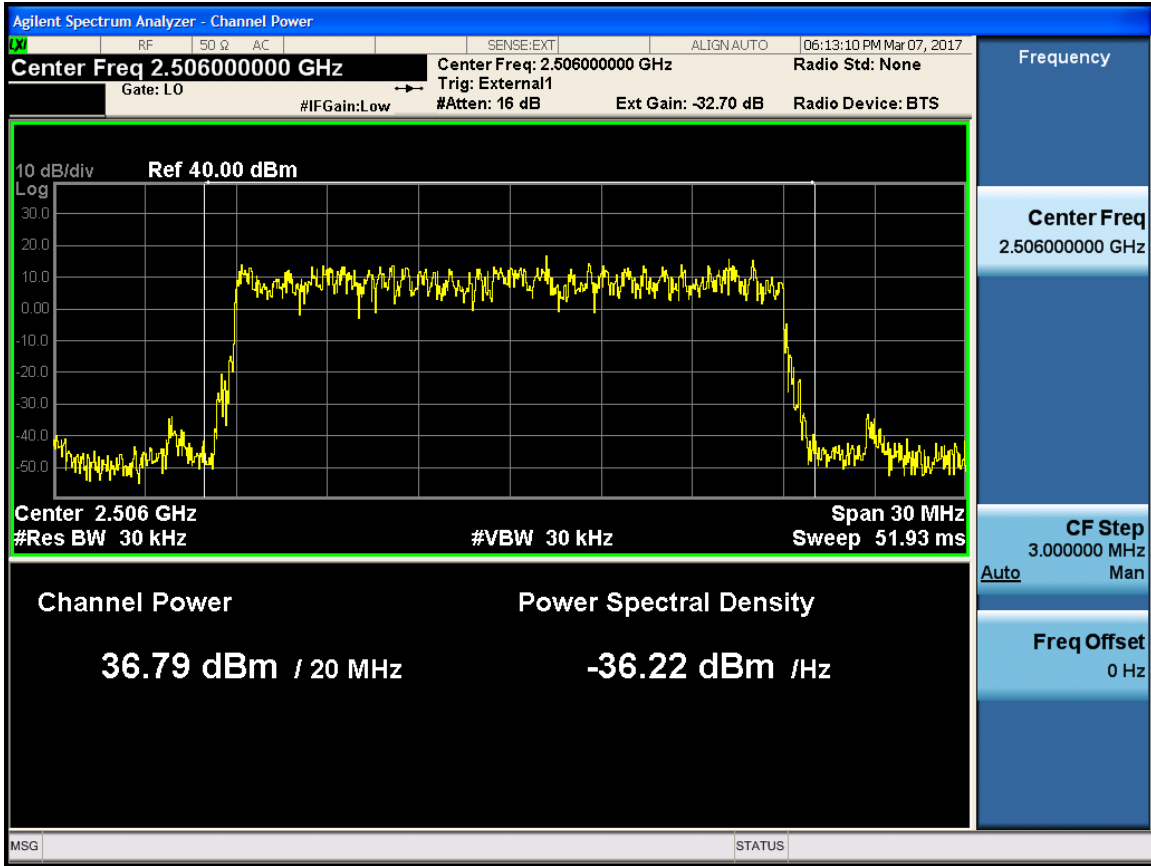
Channel Bandwidth: 20M (2ports)

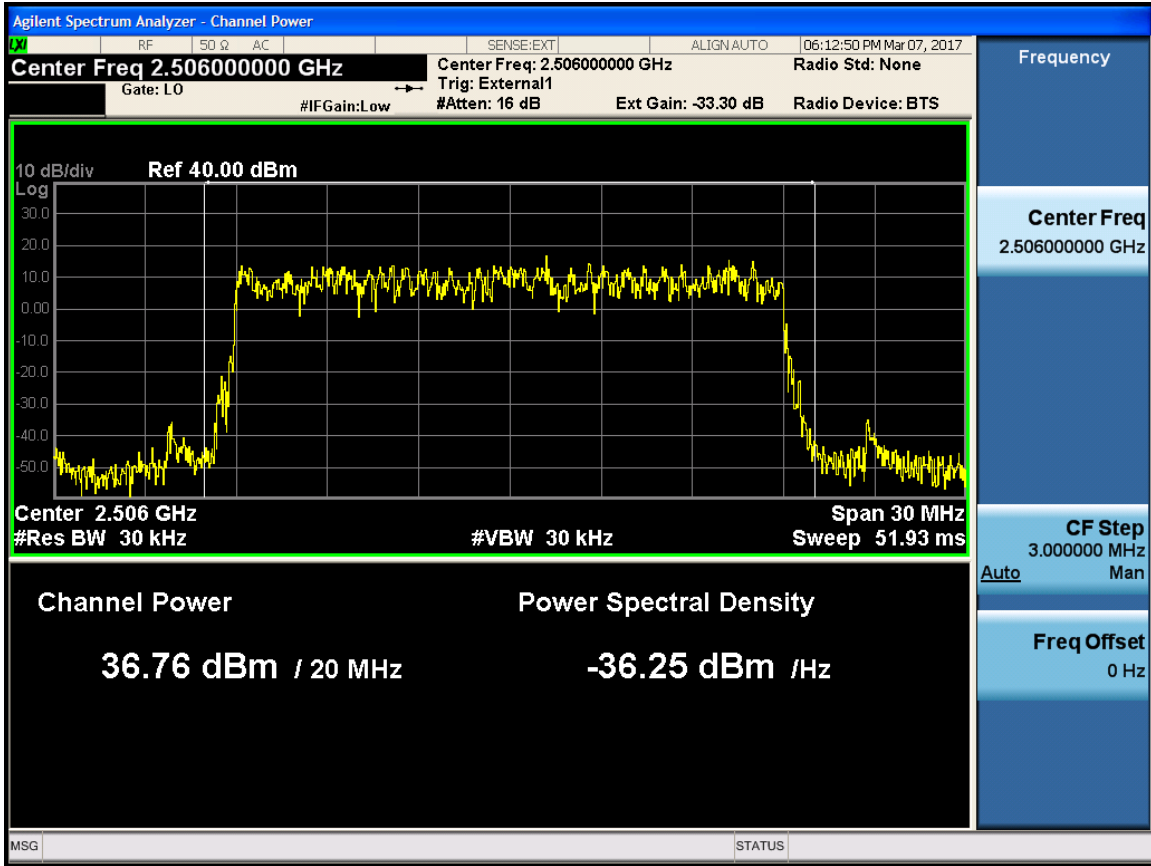
Carrier Freq(MHz)	Output Power									limit(dBw)
	QPSK			16QAM			64QAM			
	dBm	EIRP(dBm)	EIRP(dBw)	dBm	EIRP(dBm)	EIRP(dBw)	dBm	EIRP(dBm)	EIRP(dBw)	
2506	39.61	51.61	21.61	39.79	51.79	21.79	40.03	52.03	22.03	<41.2
2549	39.69	51.69	21.69	39.87	51.87	21.87	40.12	52.12	22.12	<41.2
2592	39.53	51.53	21.53	39.77	51.77	21.77	39.68	51.86	21.86	<41.2

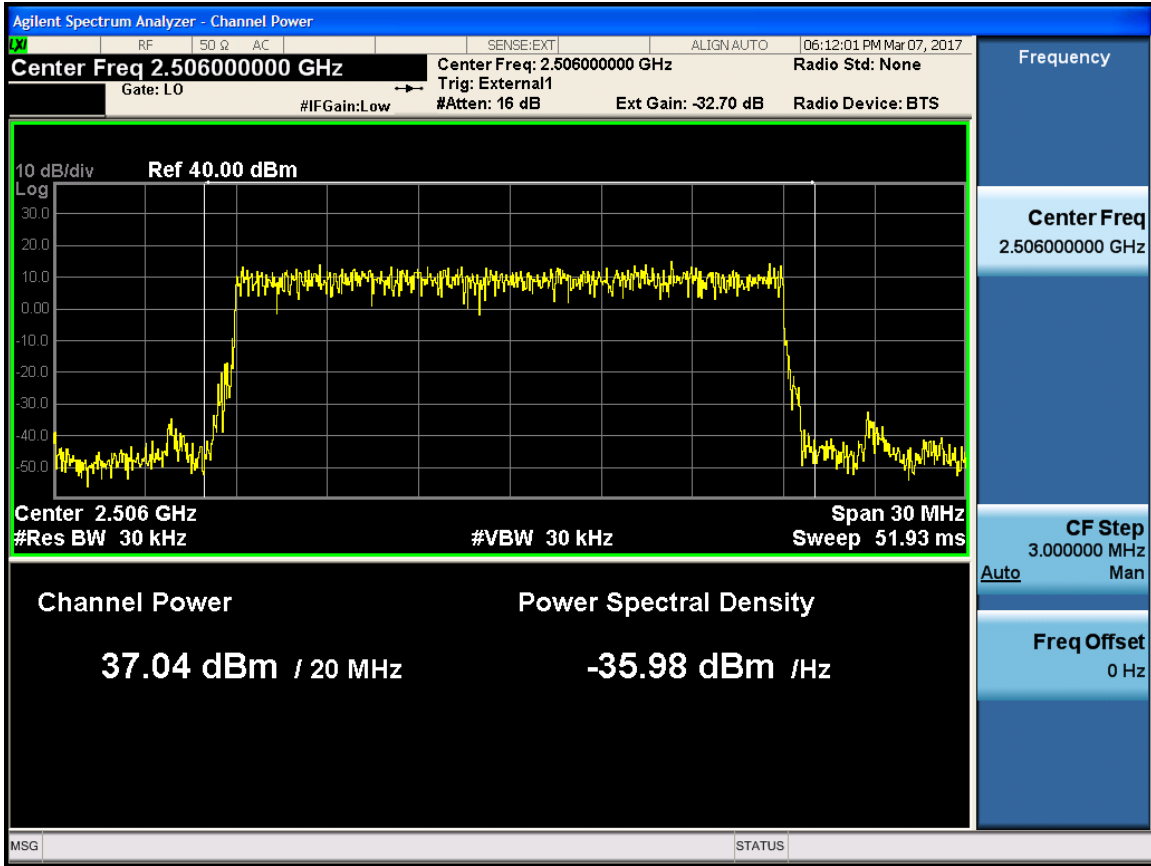


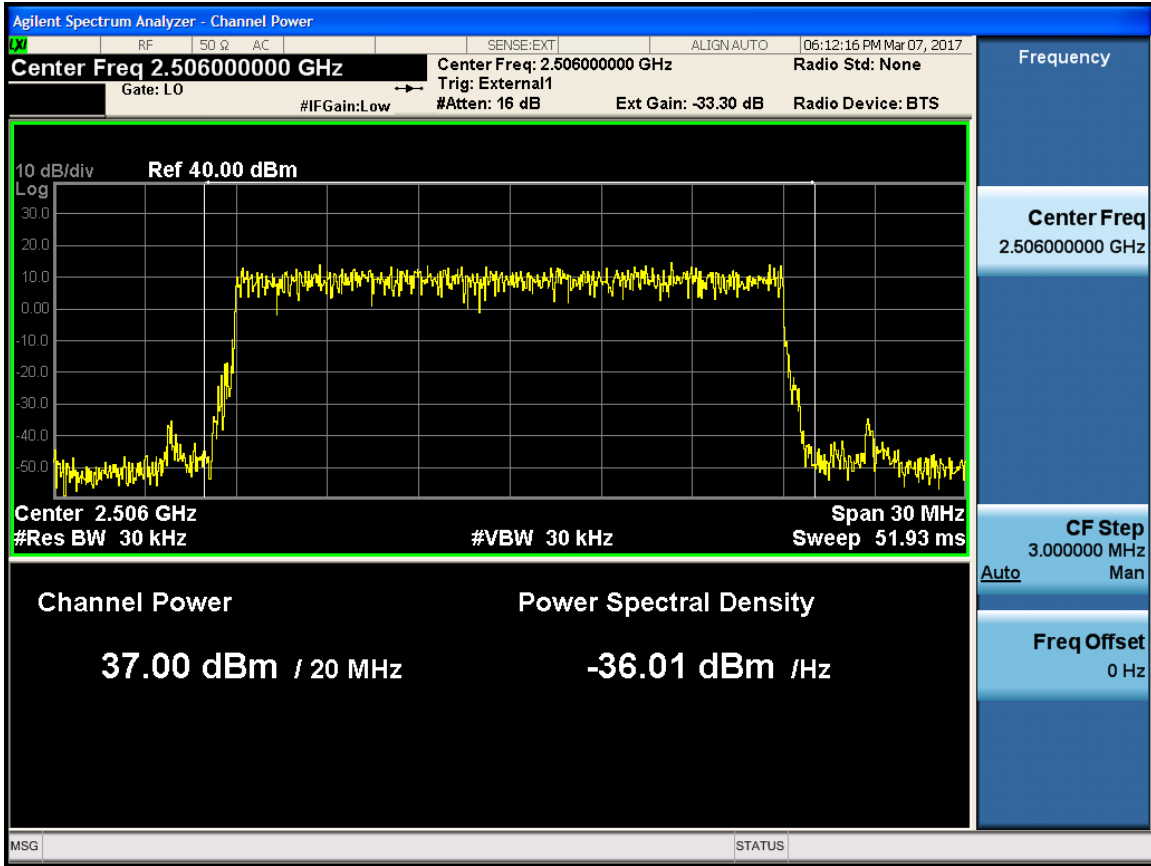


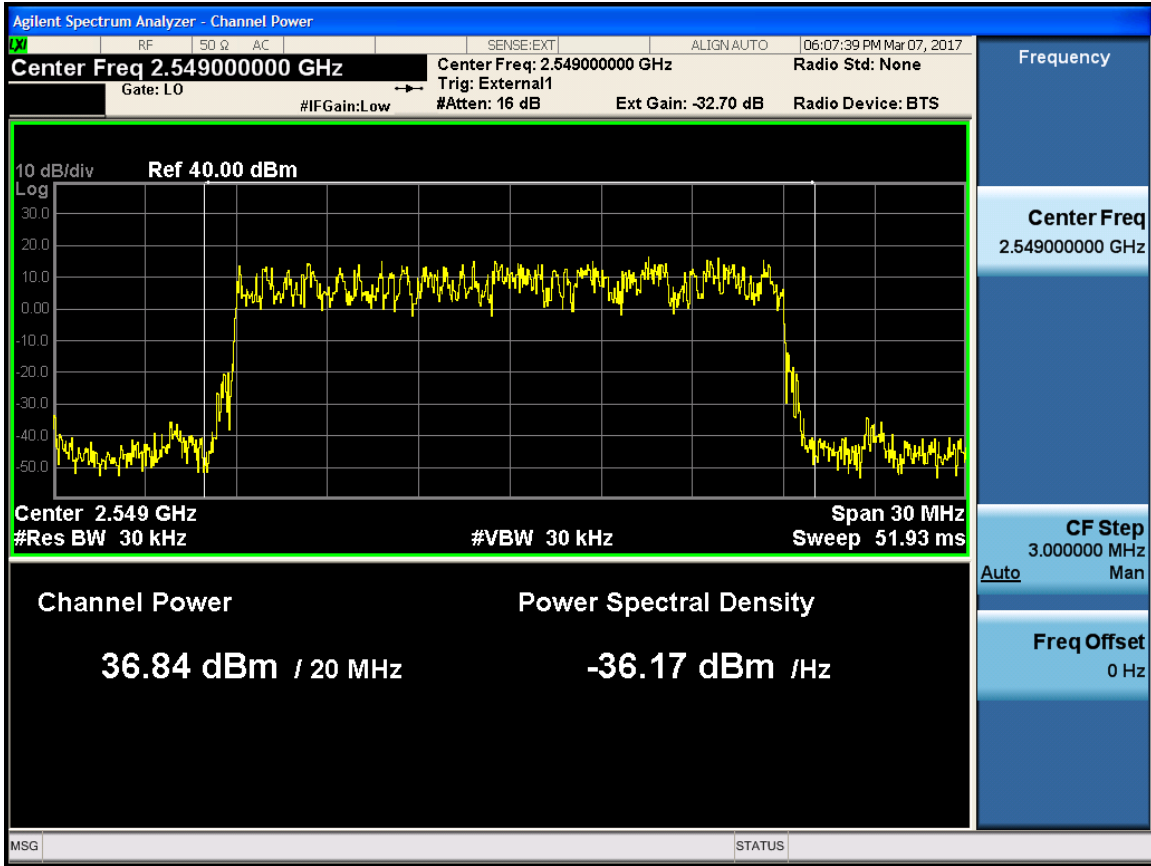


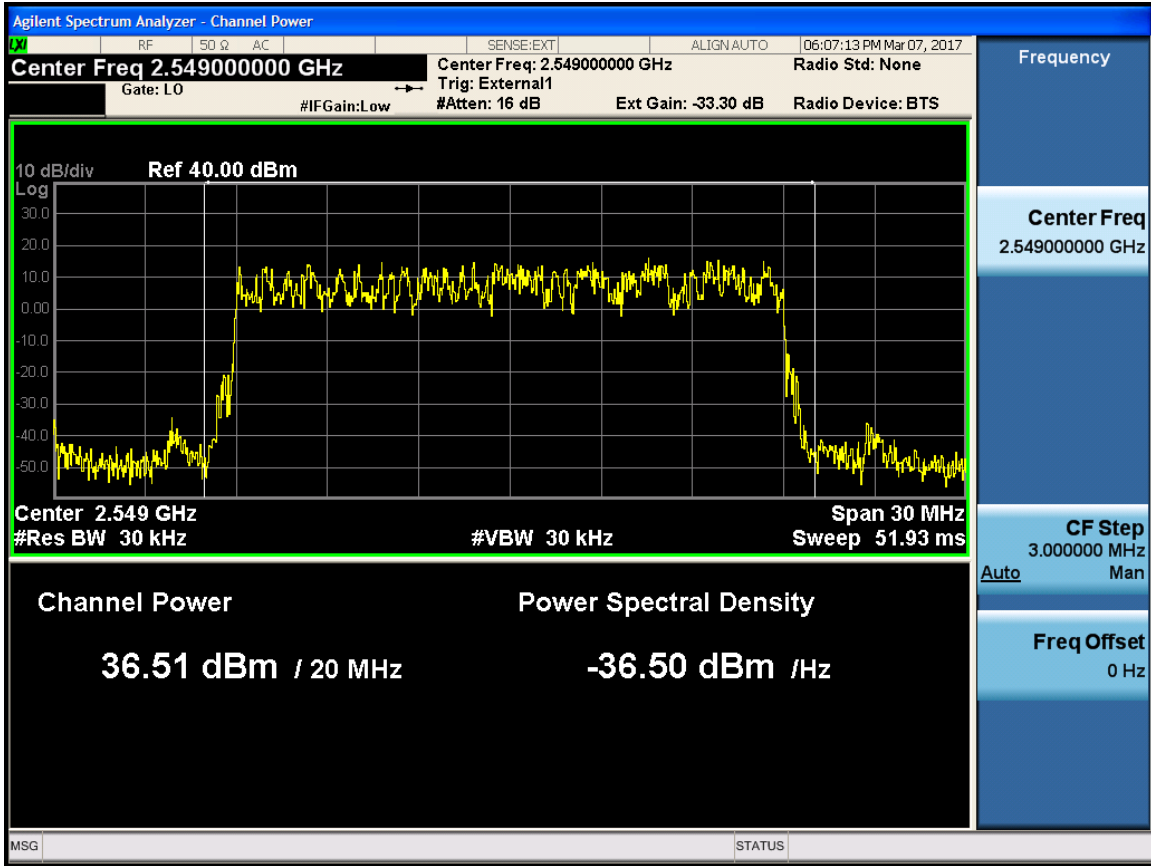




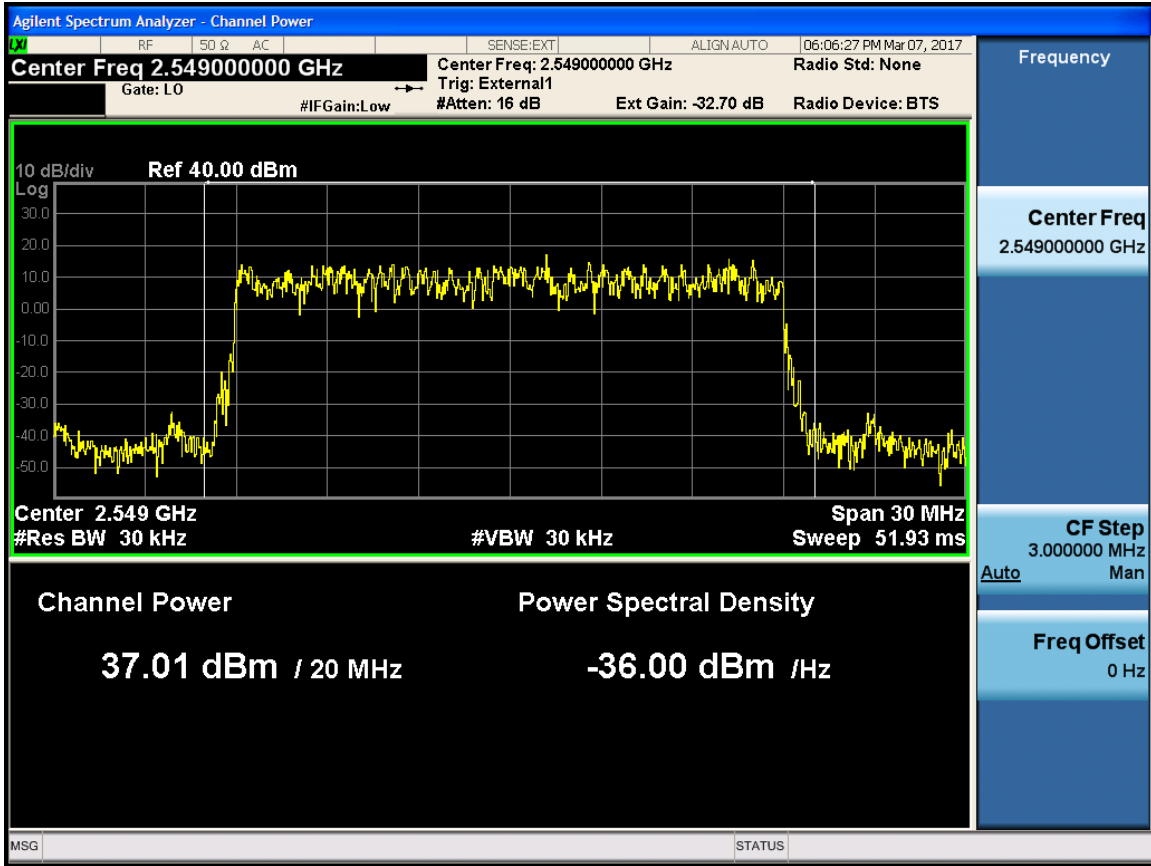


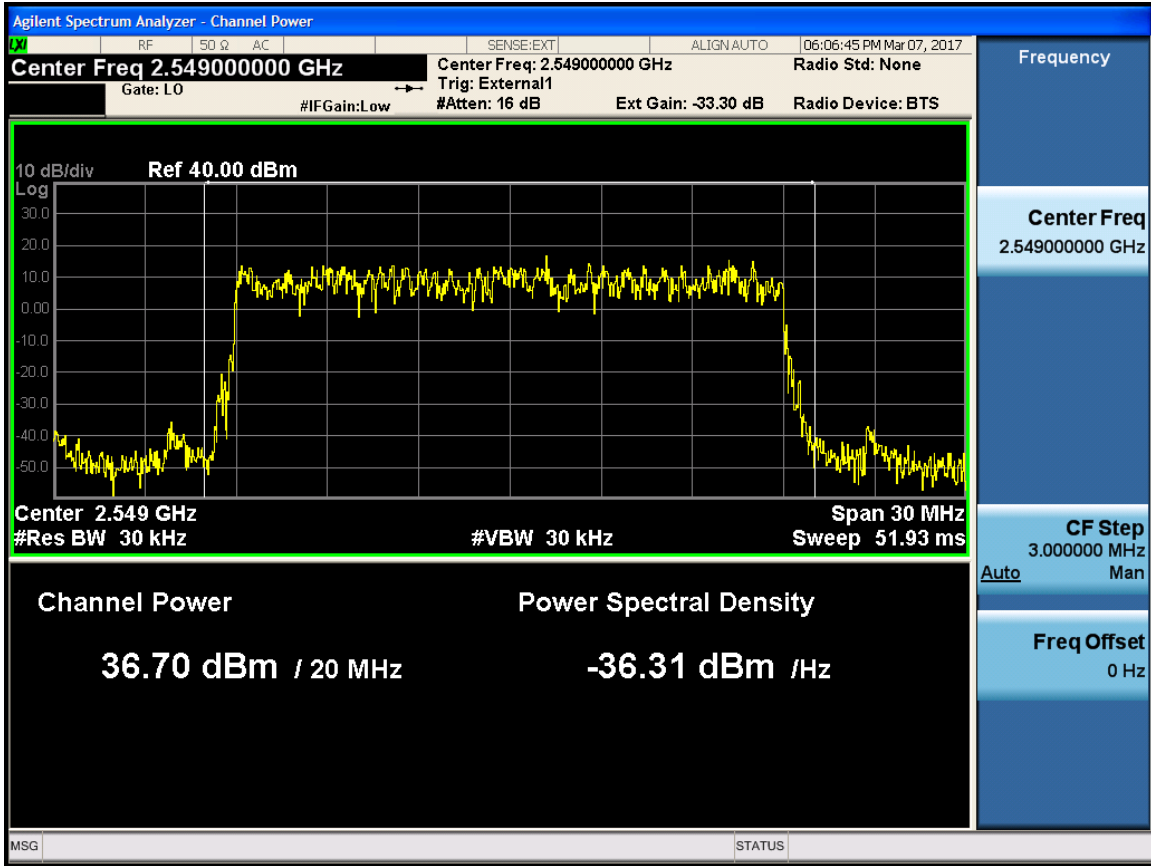


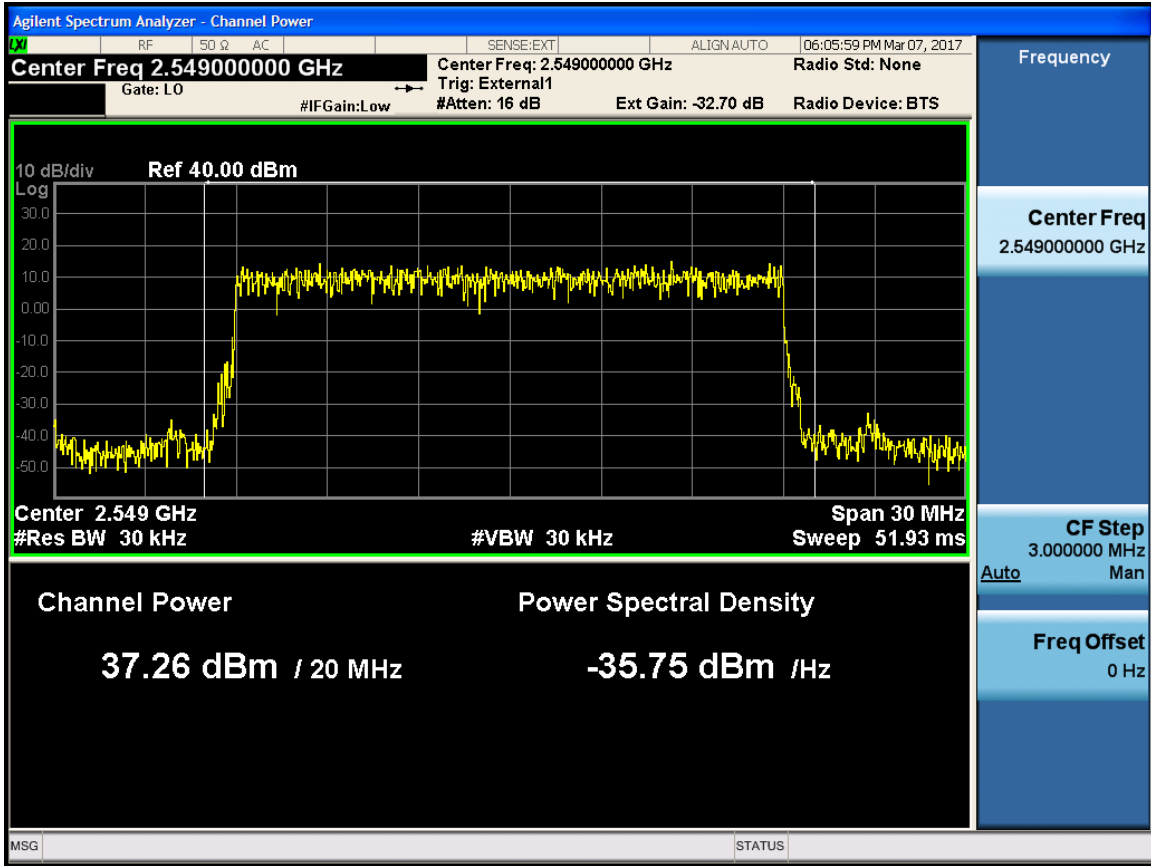


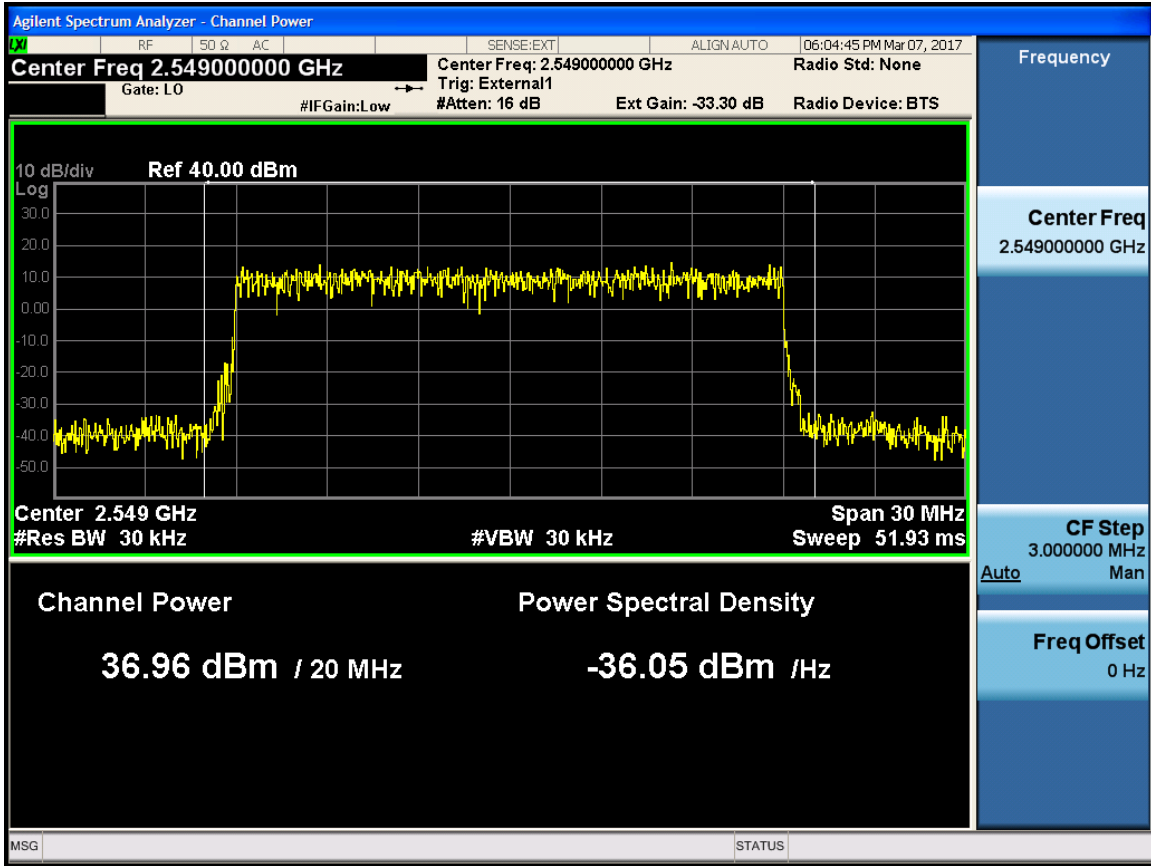


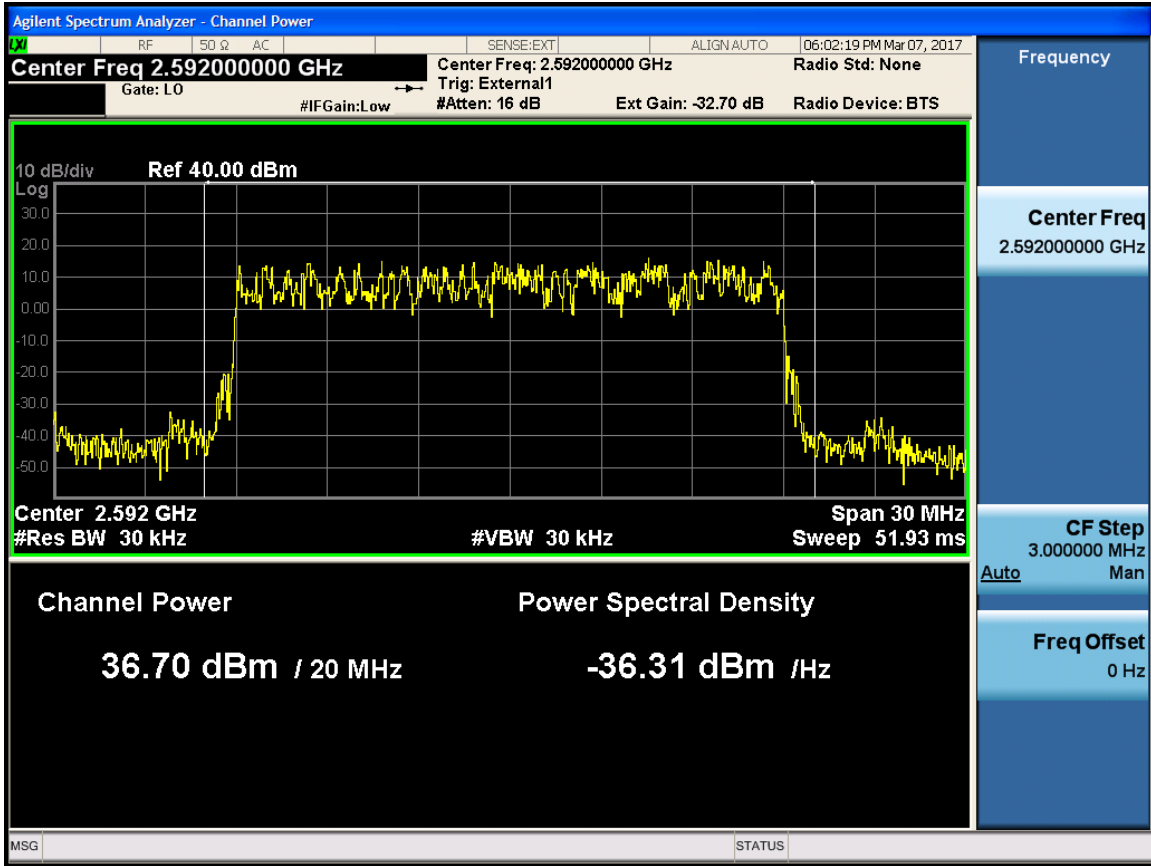


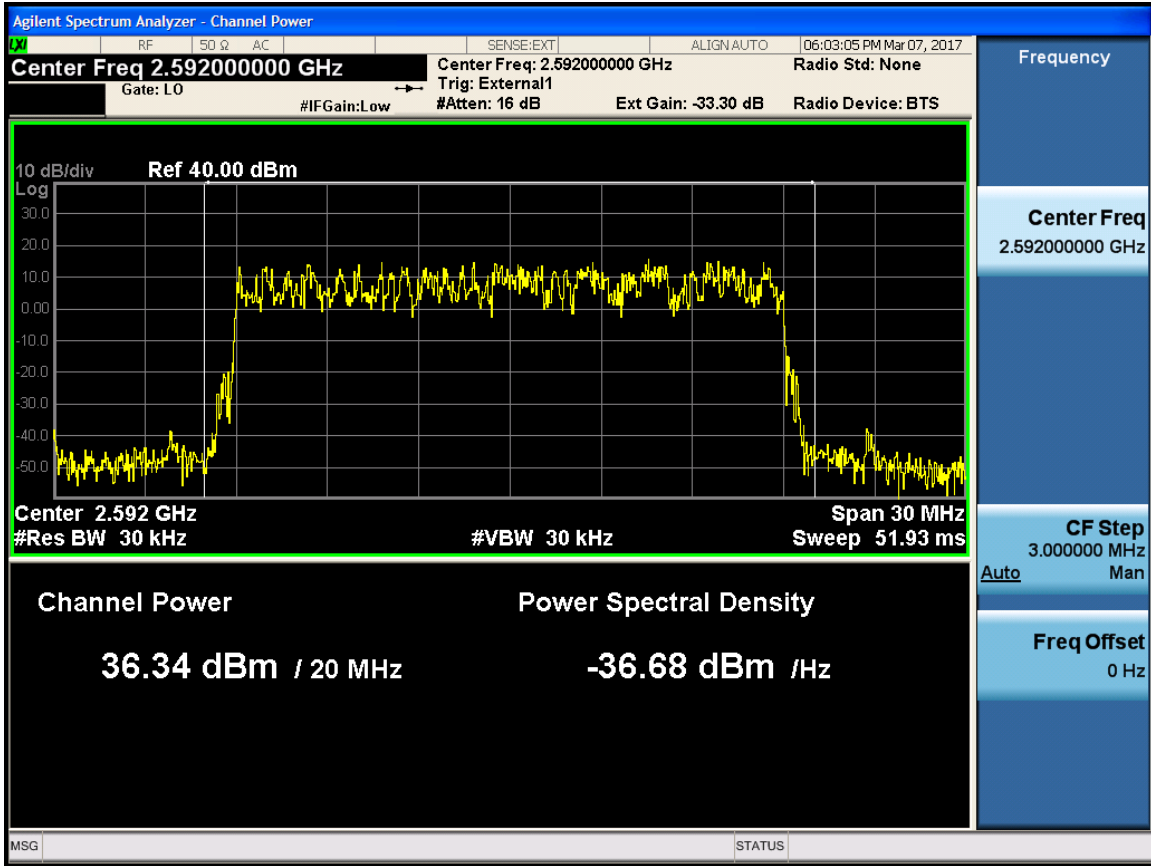


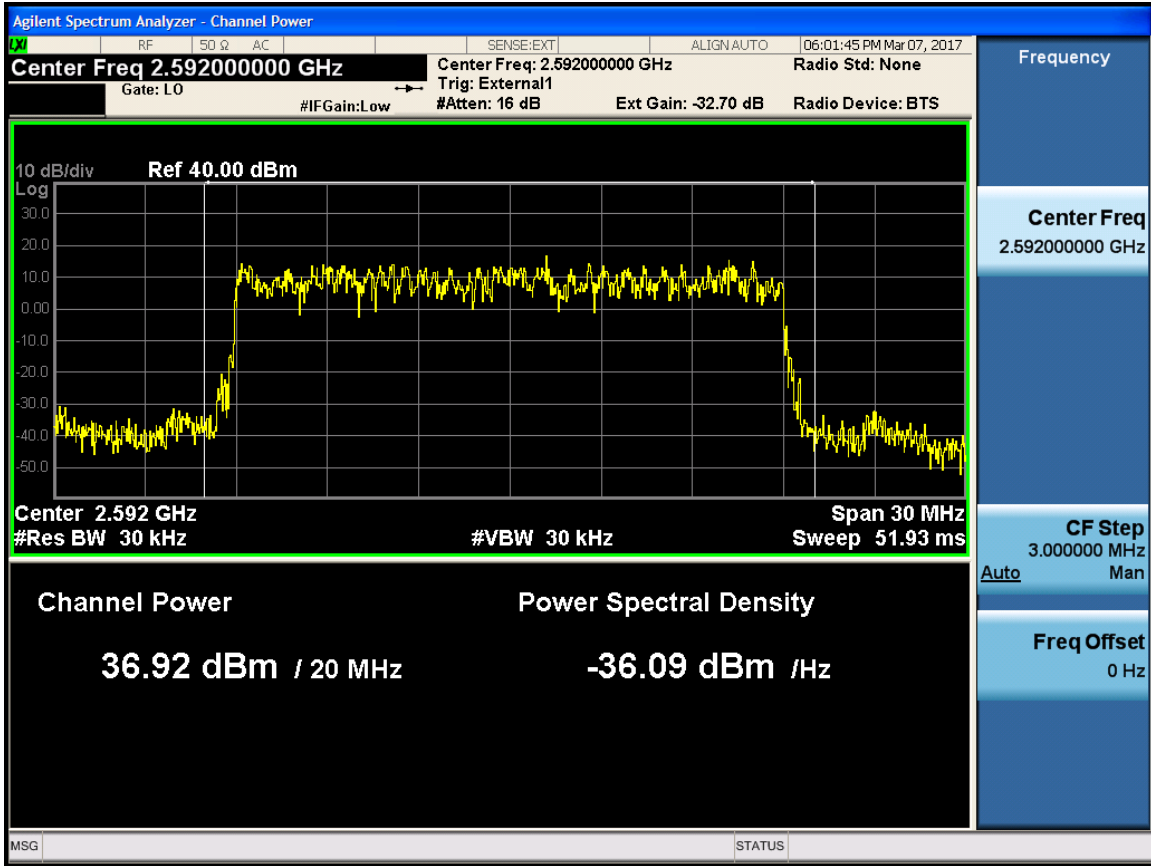


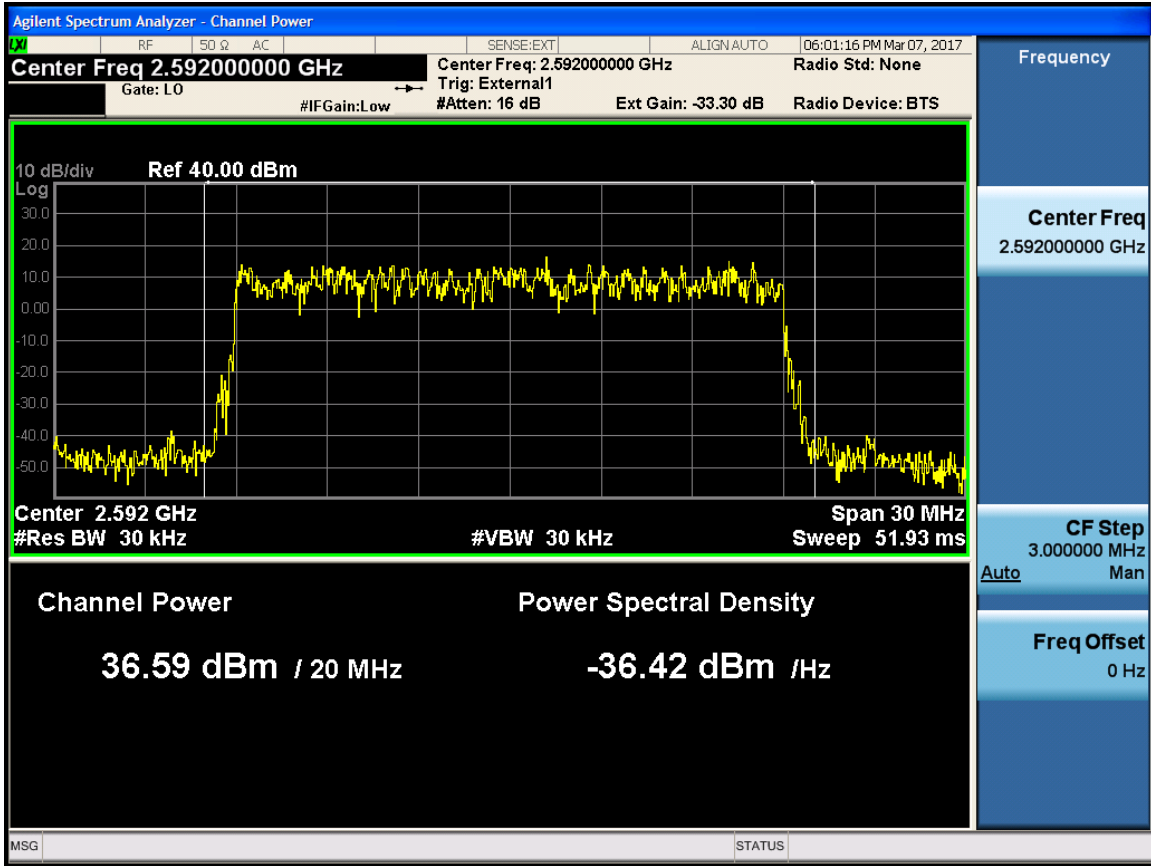




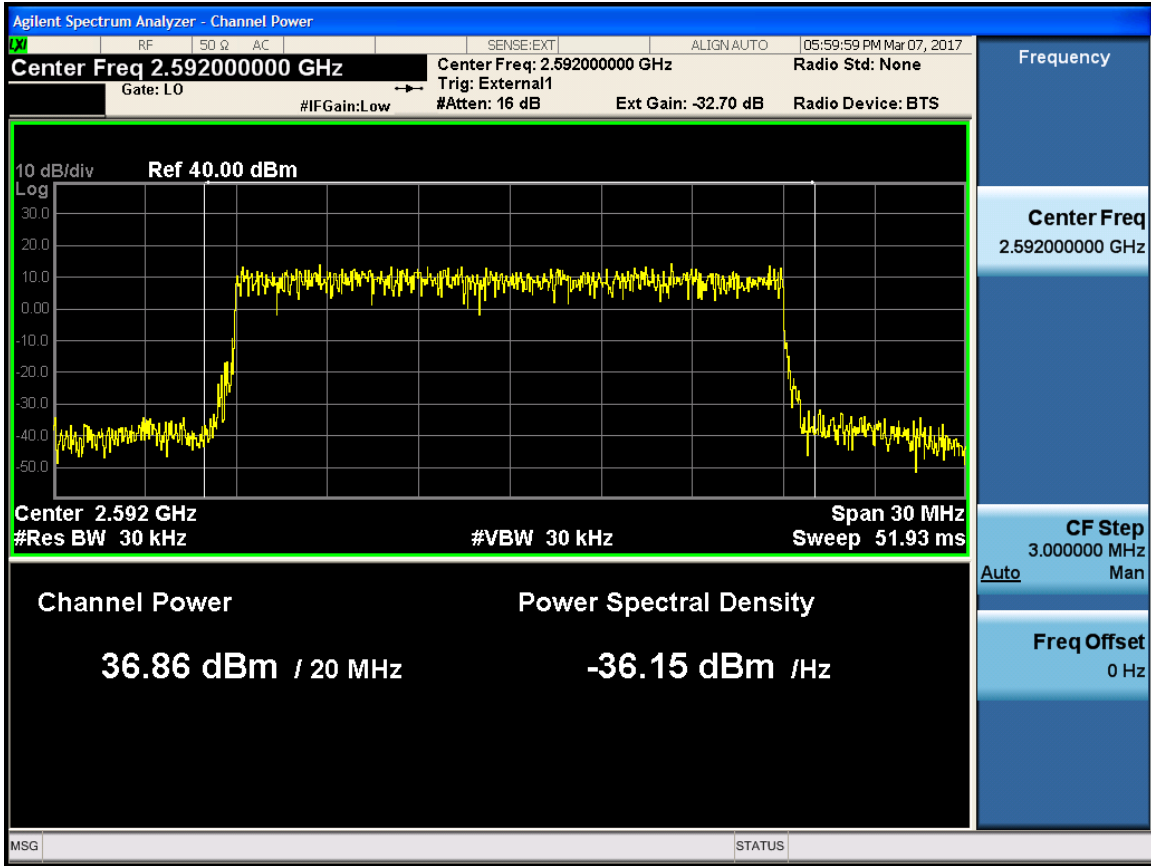


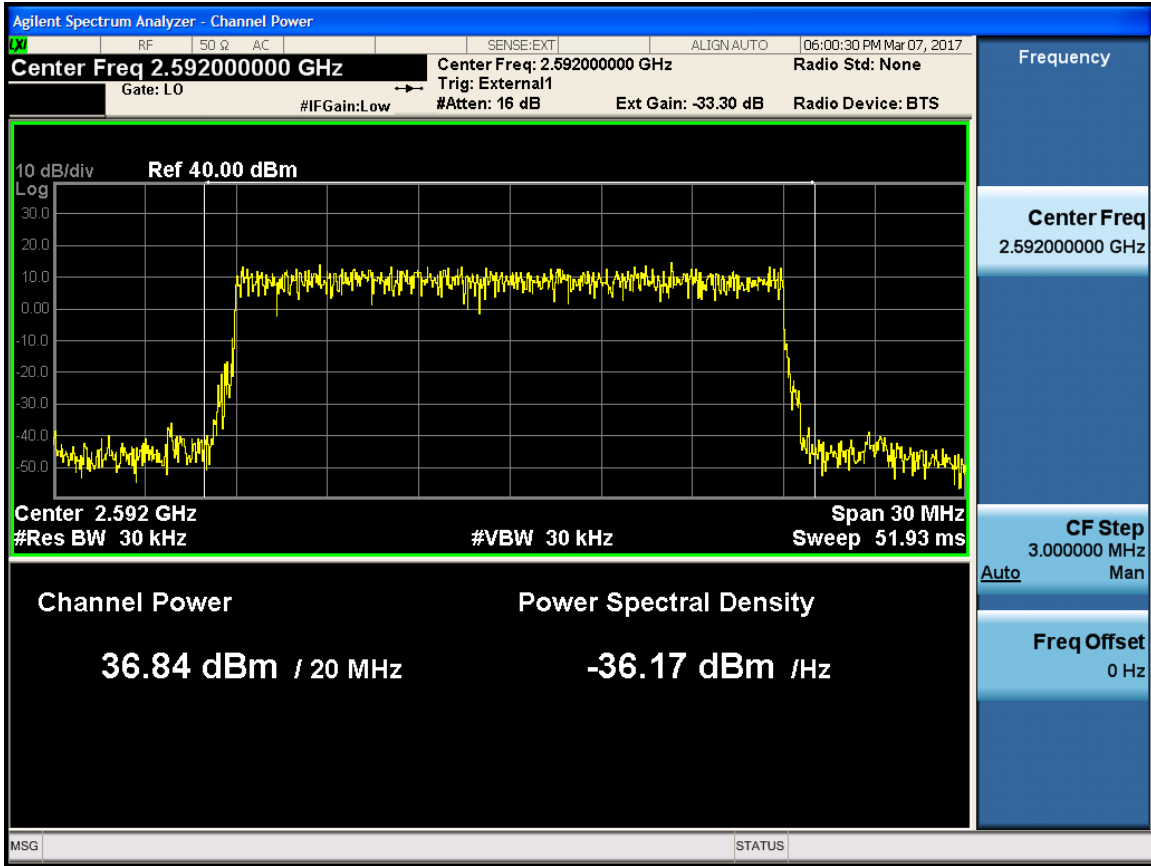












## Two Carrier

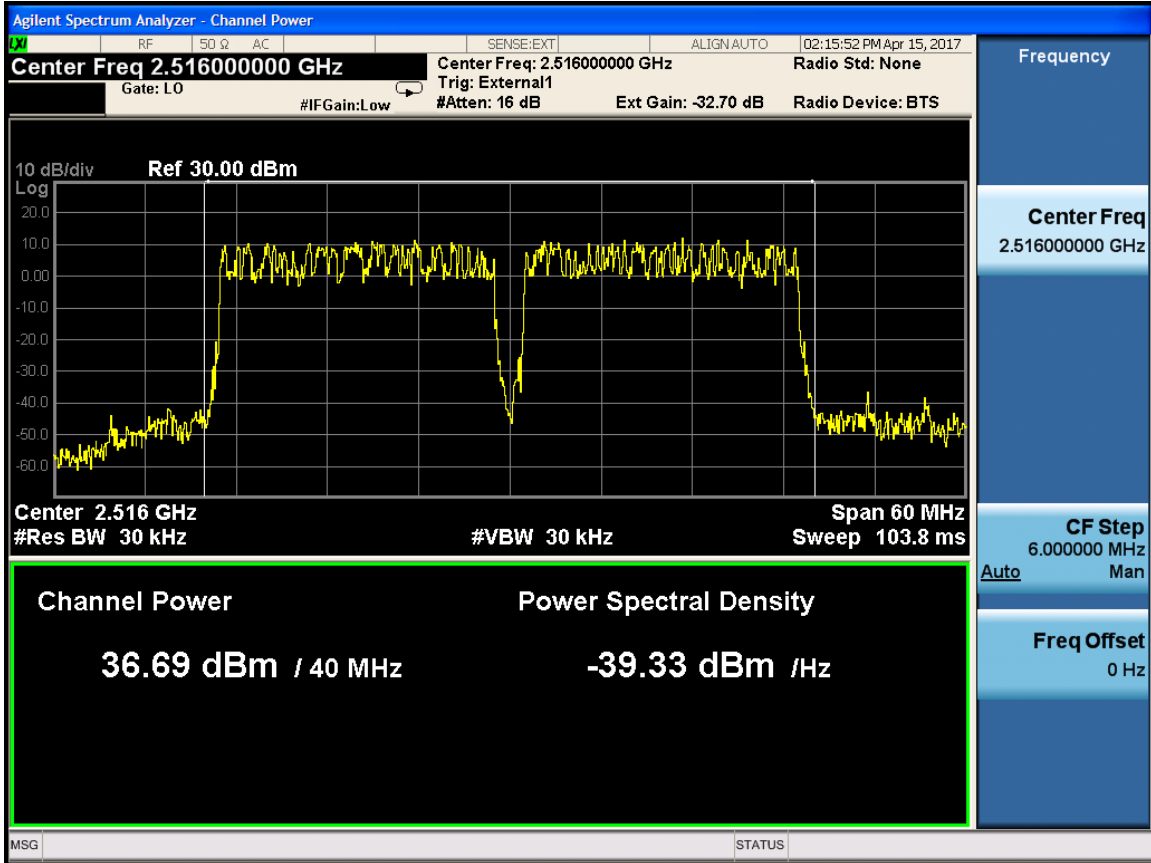
Channel Bandwidth: 20M+20M (1 port)

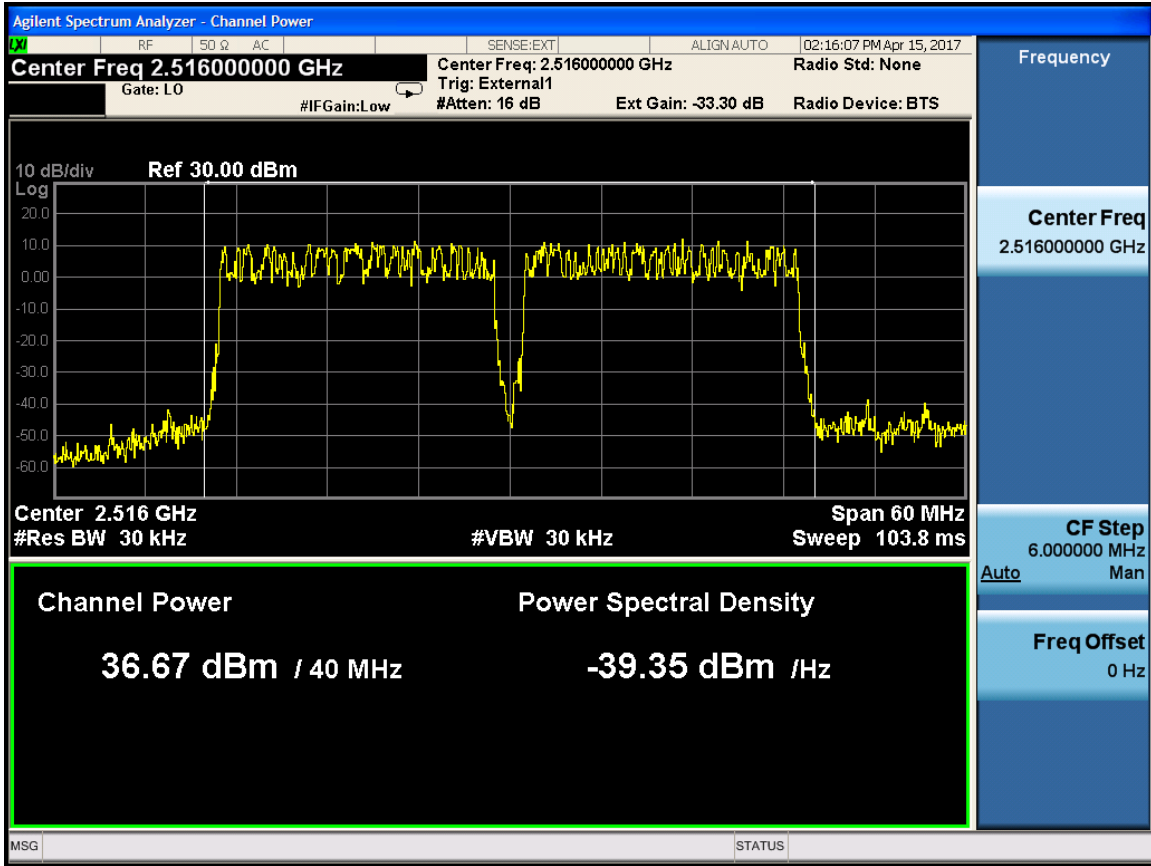
Port	Carrier Freq. c1+c2(MHz)	Output Power					
		QPSK		16QAM		64QAM	
		dBm	W	dBm	W	dBm	W
0	2506+2526	36.69	4.67	36.87	4.86	36.96	4.97
1		36.67	4.65	36.9	4.9	36.93	4.9
0	2539+2559	36.62	4.59	36.81	4.8	36.85	4.84
1		36.7	4.68	36.88	4.88	36.93	4.93
0	2572+2592	36.43	4.4	36.61	4.58	36.66	4.63
1		36.53	4.5	36.71	4.69	36.75	4.73

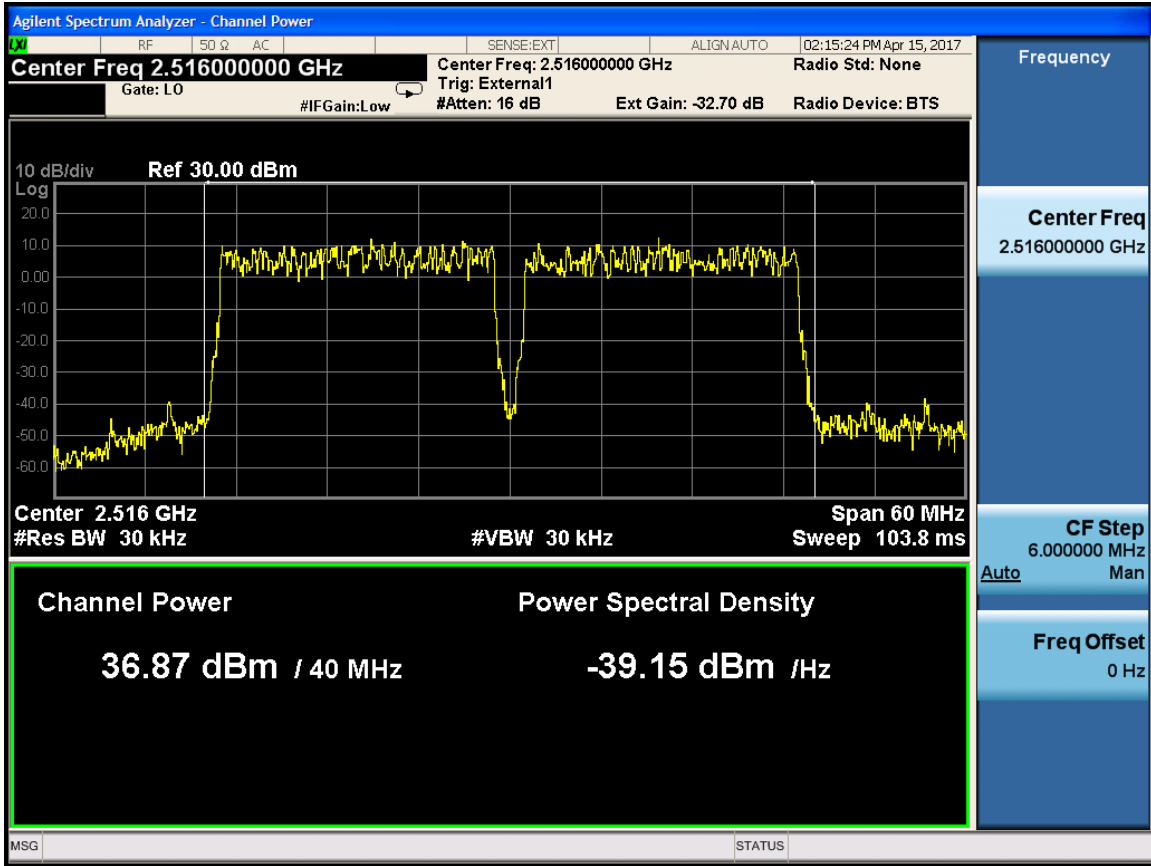
Channel Bandwidth: 20M+20M (2ports)

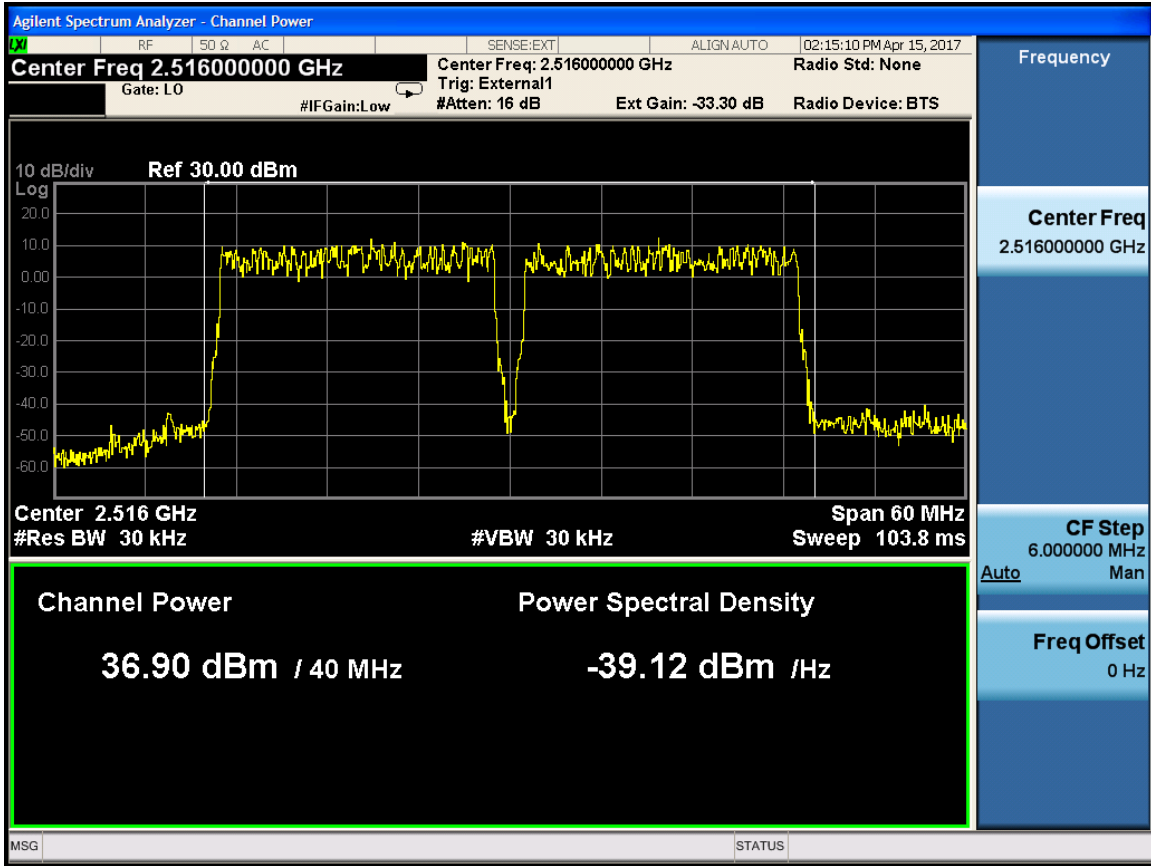
Carrier Freq. c1+c2(MHz)	Output Power									limit(d Bw
	QPSK			16QAM			64QAM			
	dBm	EIRP( dBm)	EIRP( dBw)	dBm	EIRP( dBm)	EIRP( dBw)	dBm	EIRP( dBm)	EIRP( dBw)	
2506+2526	39.69	51.69	21.69	39.9	51.9	21.9	39.94	51.94	21.94	<41.2
2539+2559	39.67	51.67	21.67	39.86	51.86	21.86	39.9	51.9	21.9	<41.2

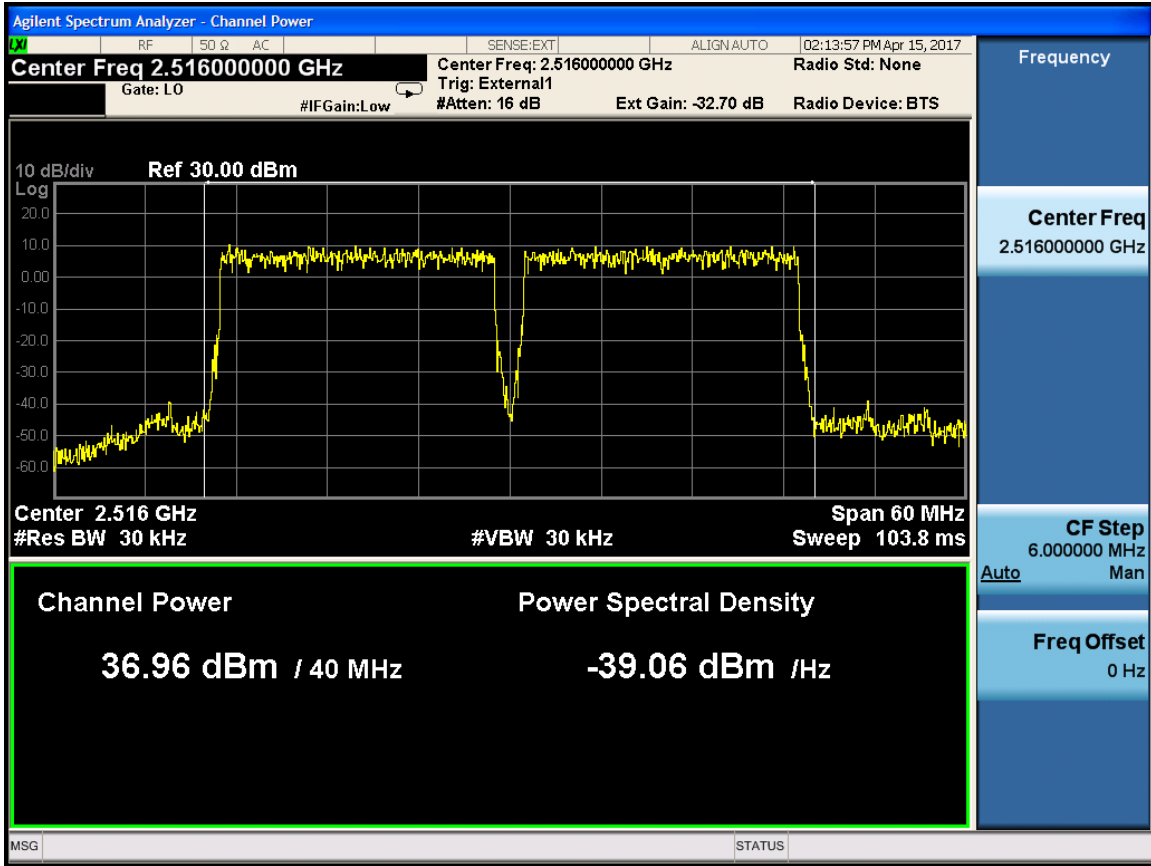
2572+2592	39.49	51.49	21.49	39.67	51.67	21.67	39.72	51.72	21.72	<41.2
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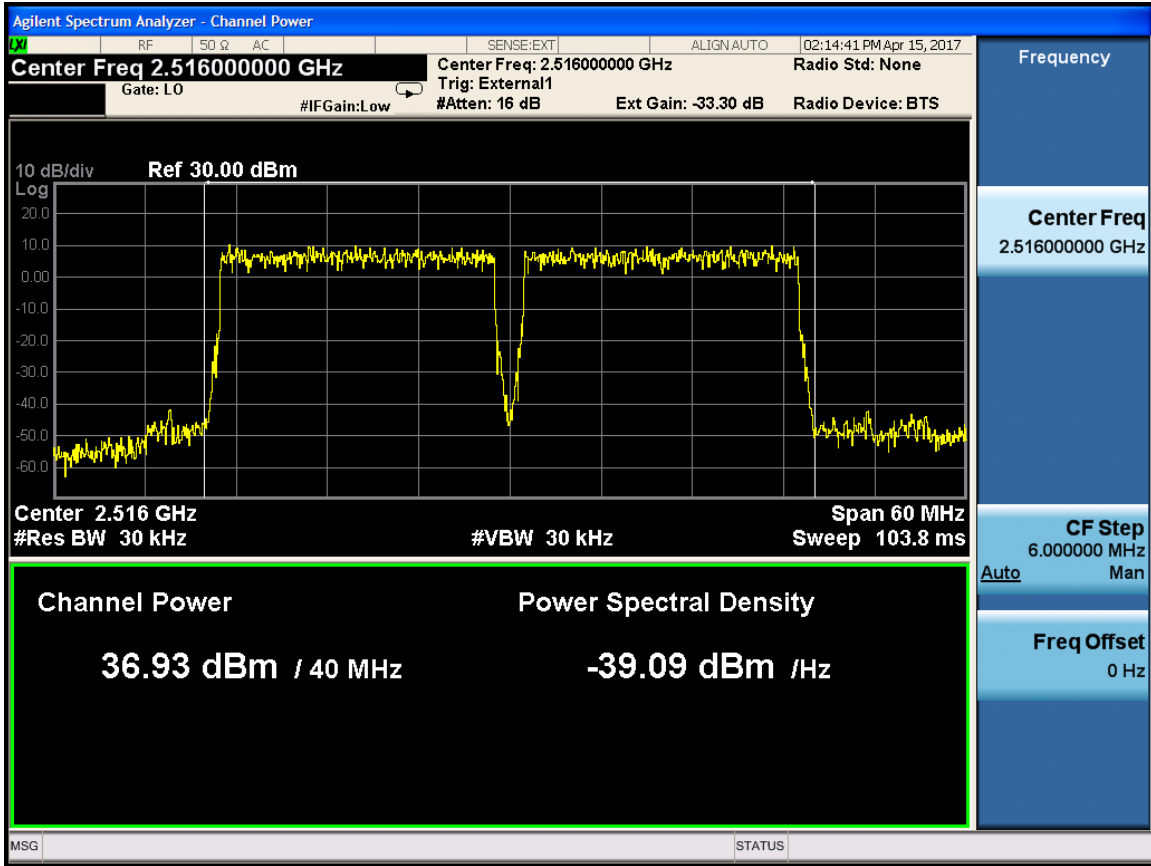




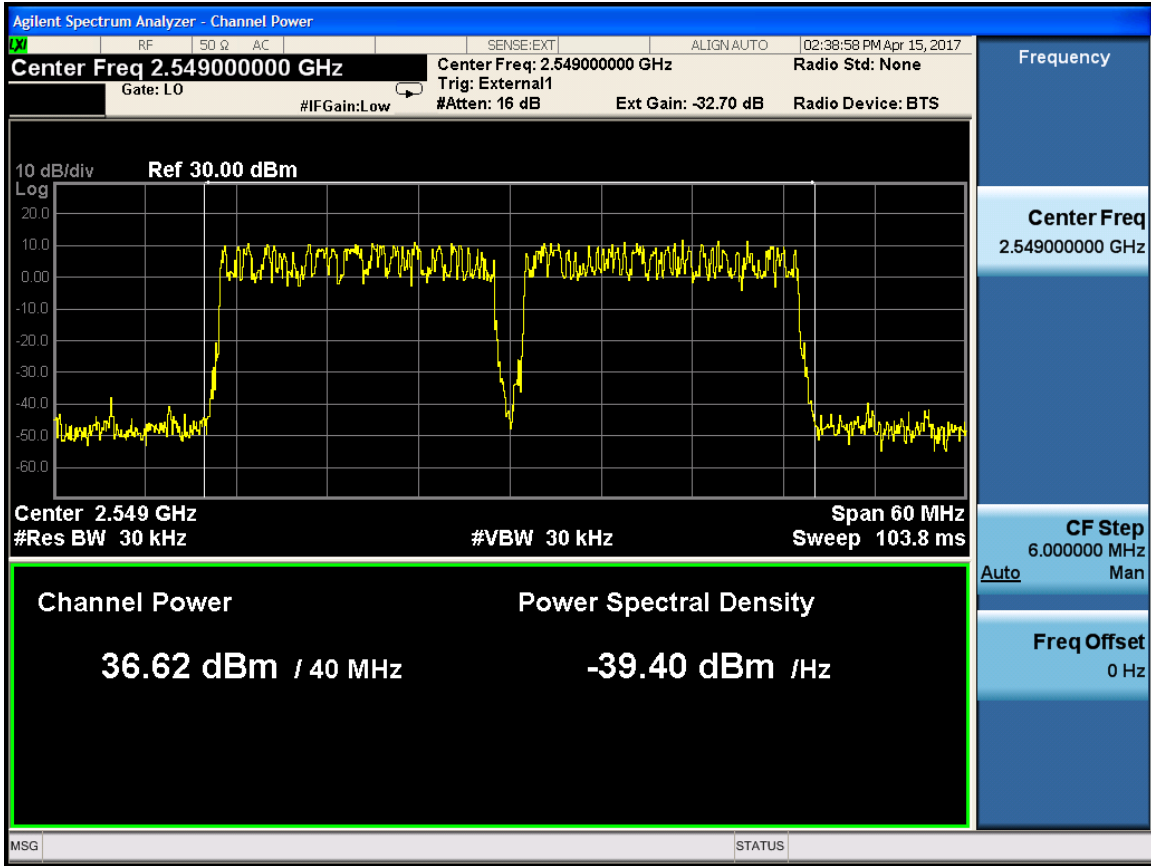


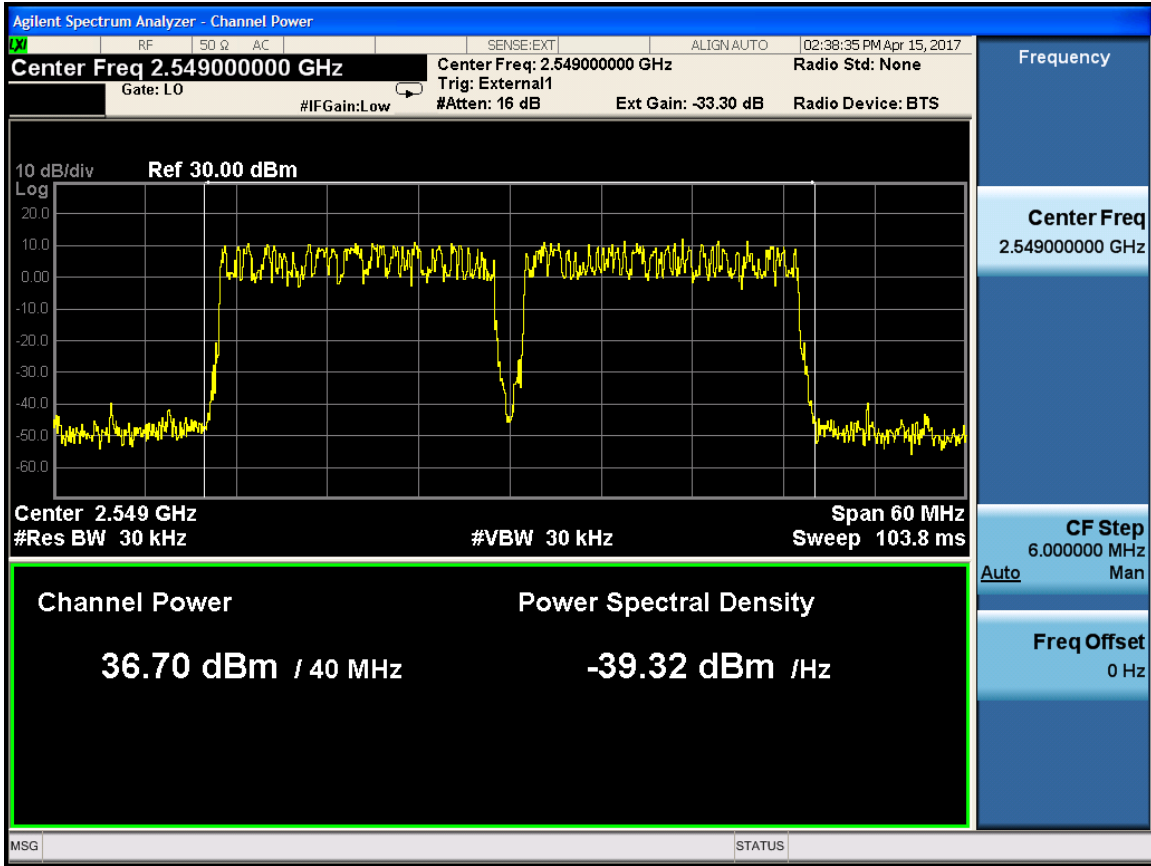


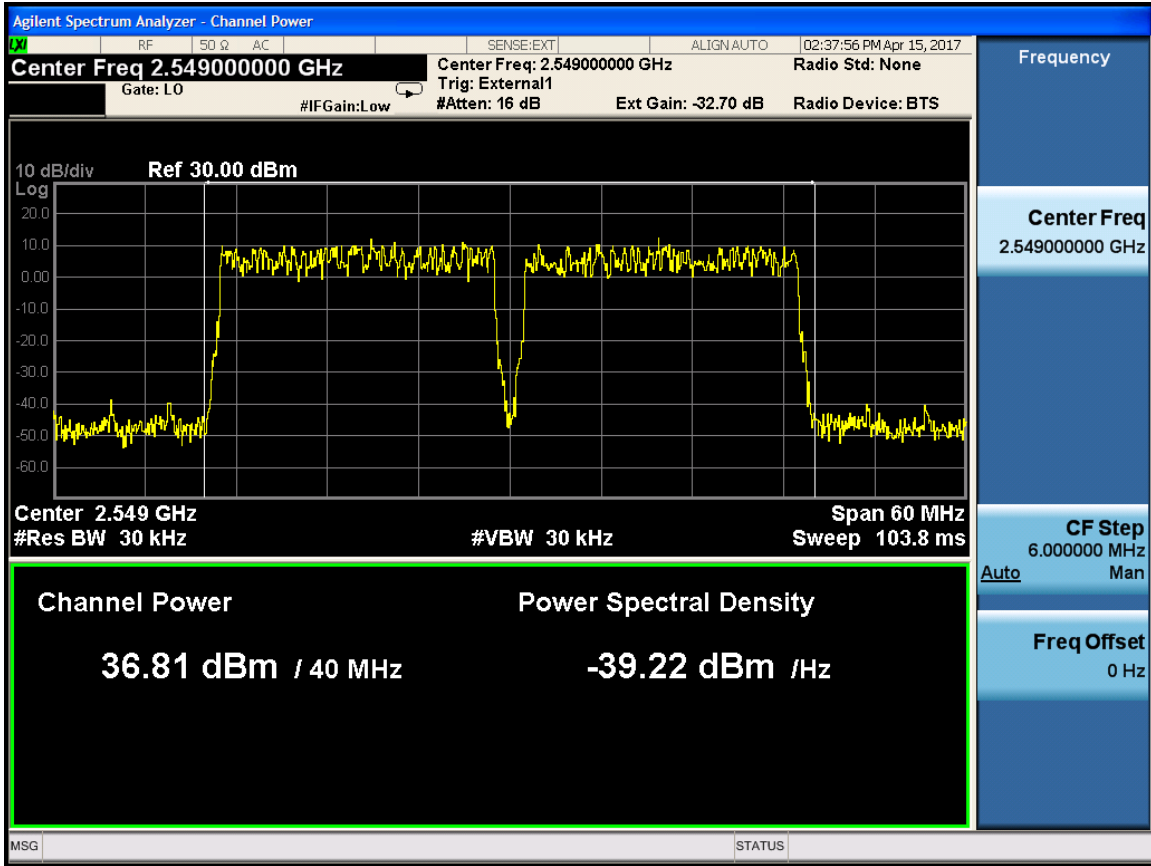


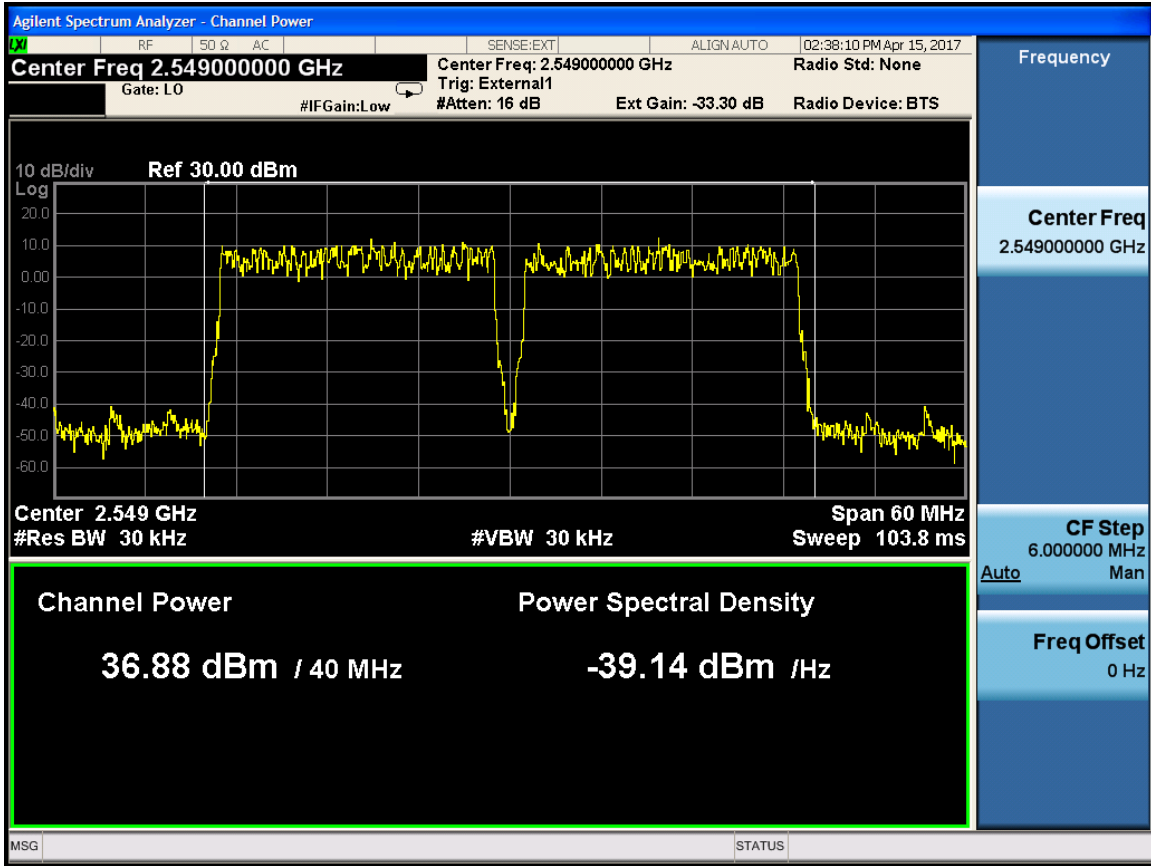


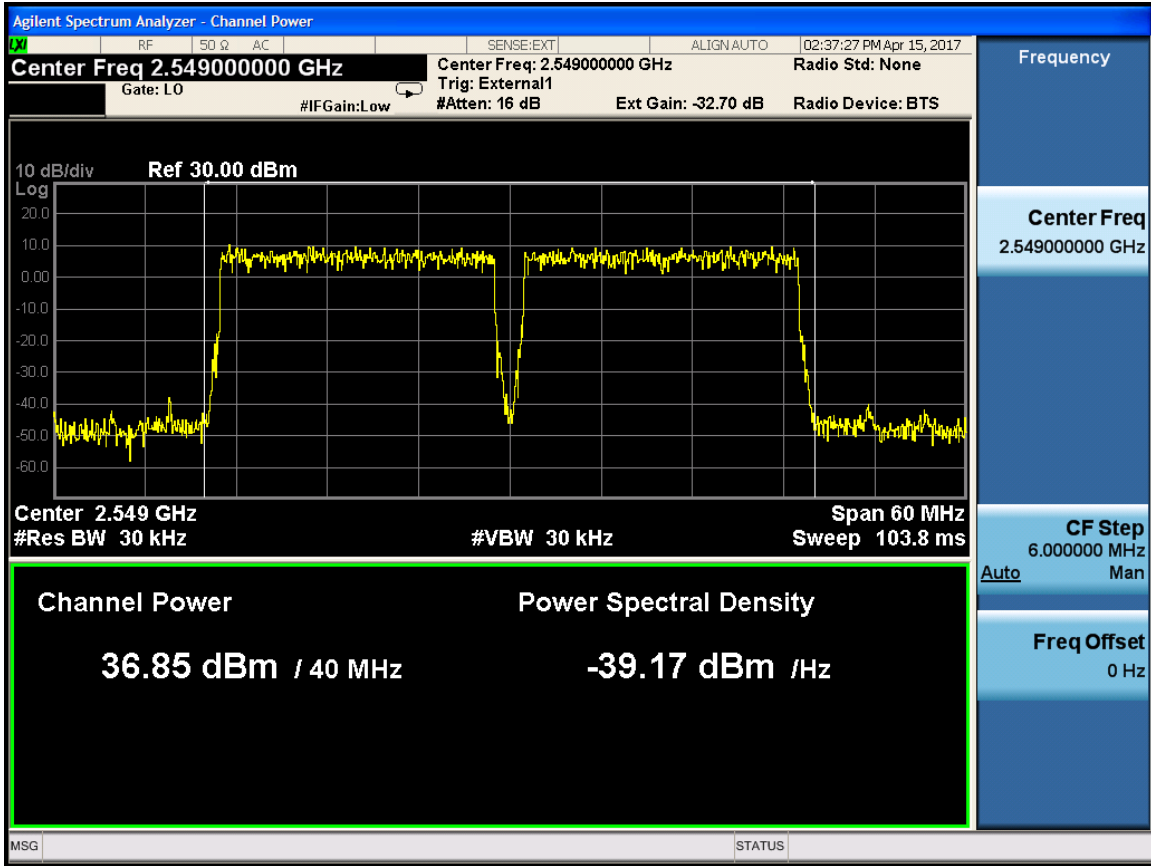


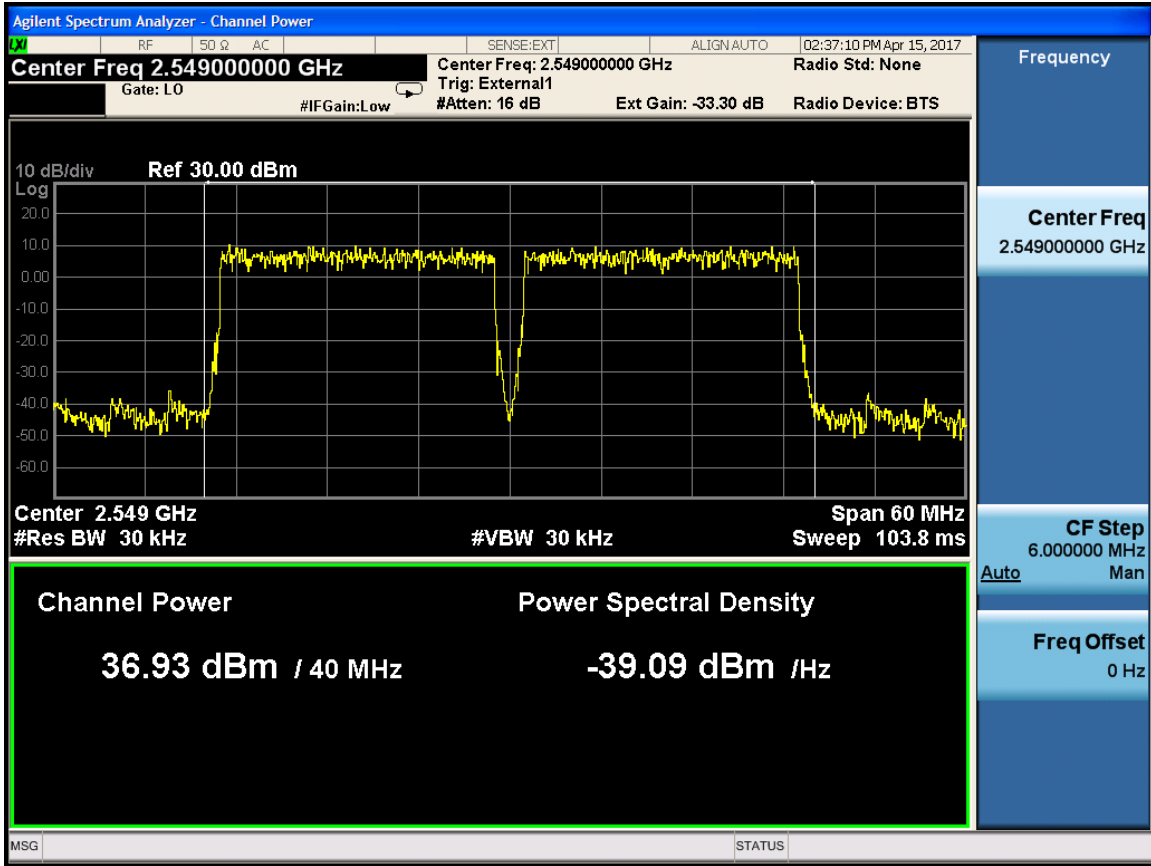


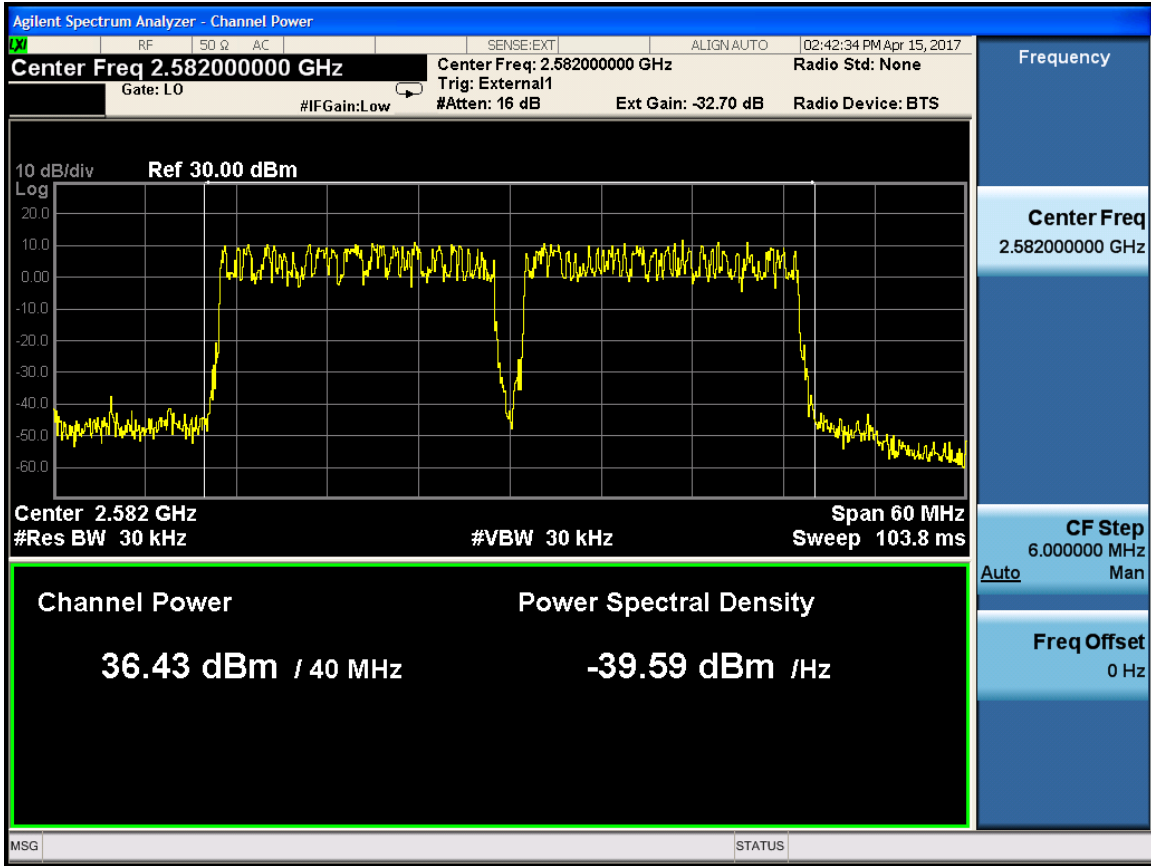


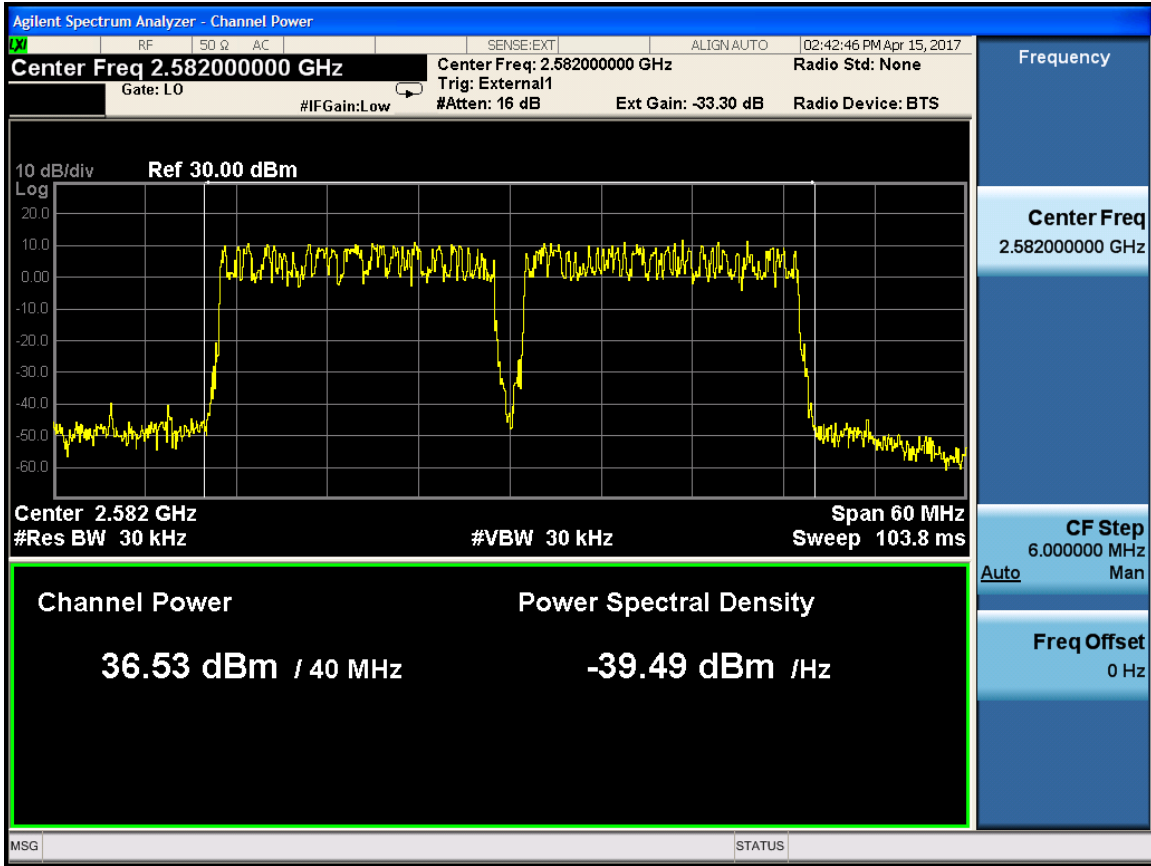




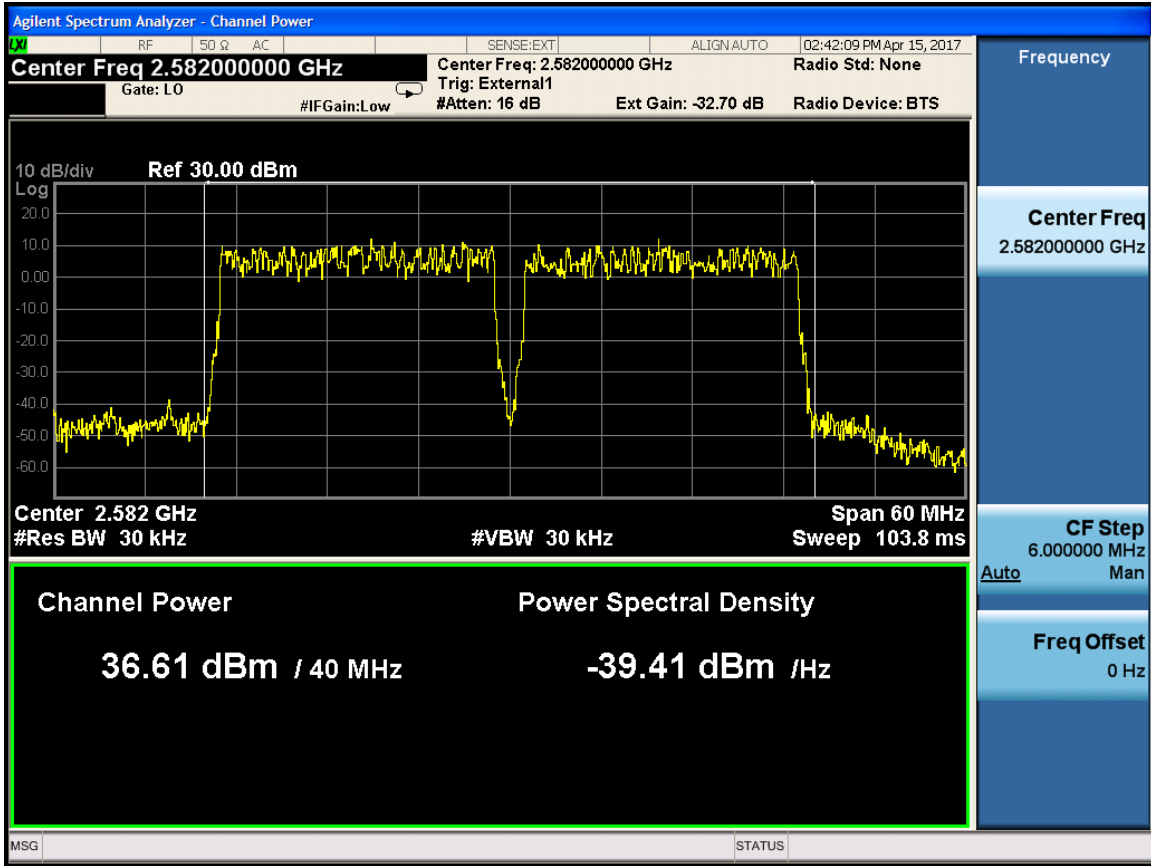


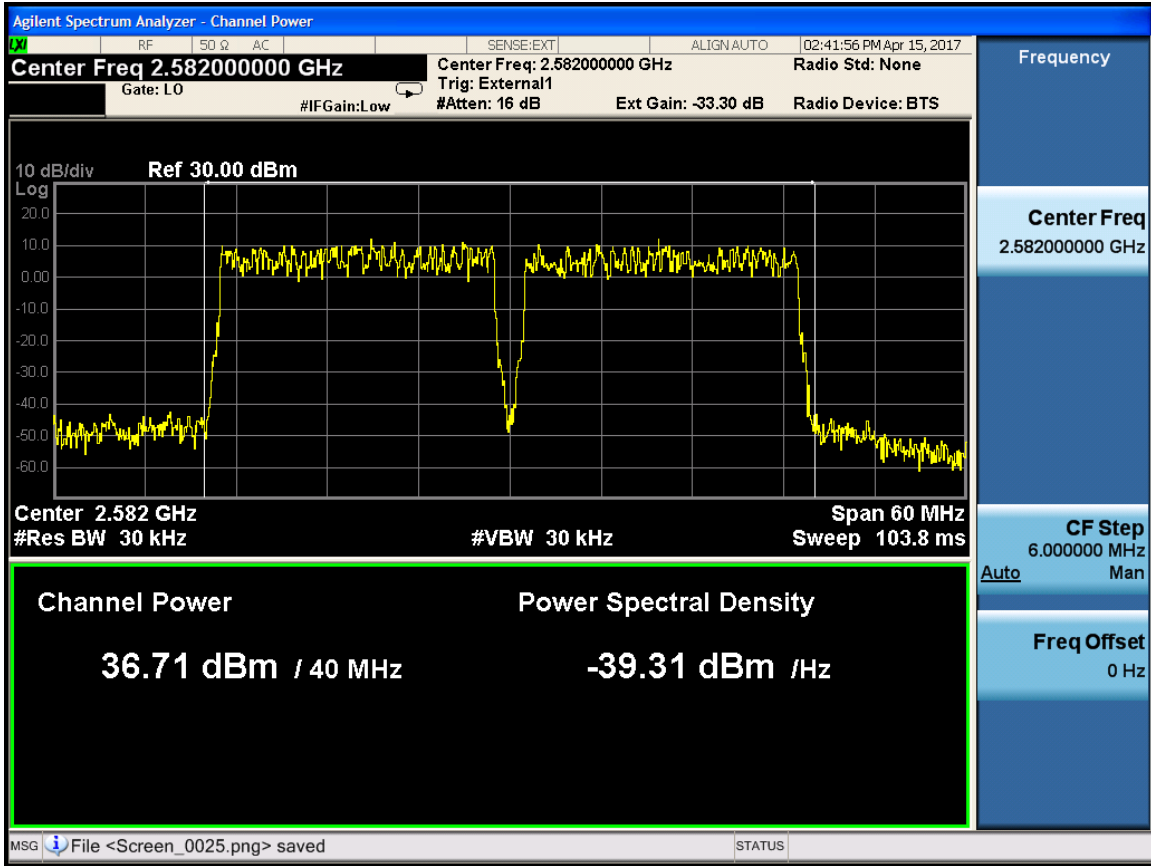


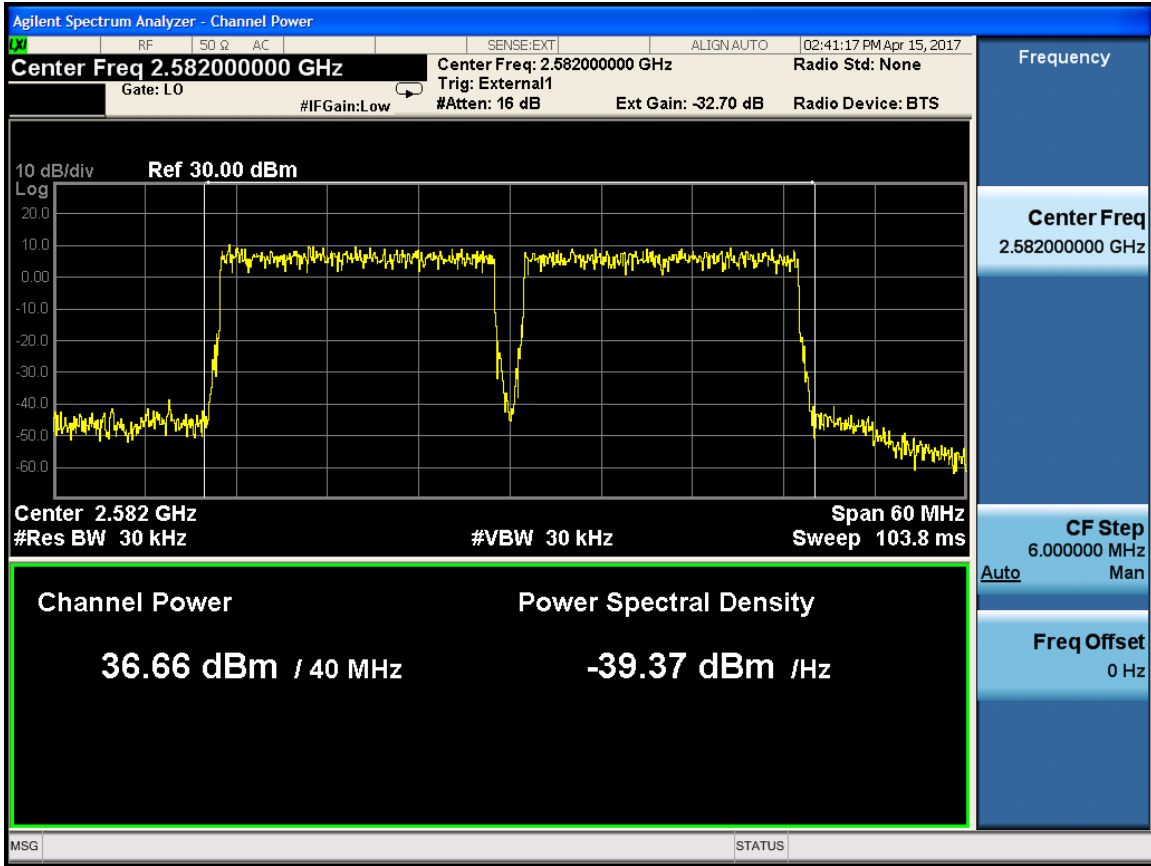


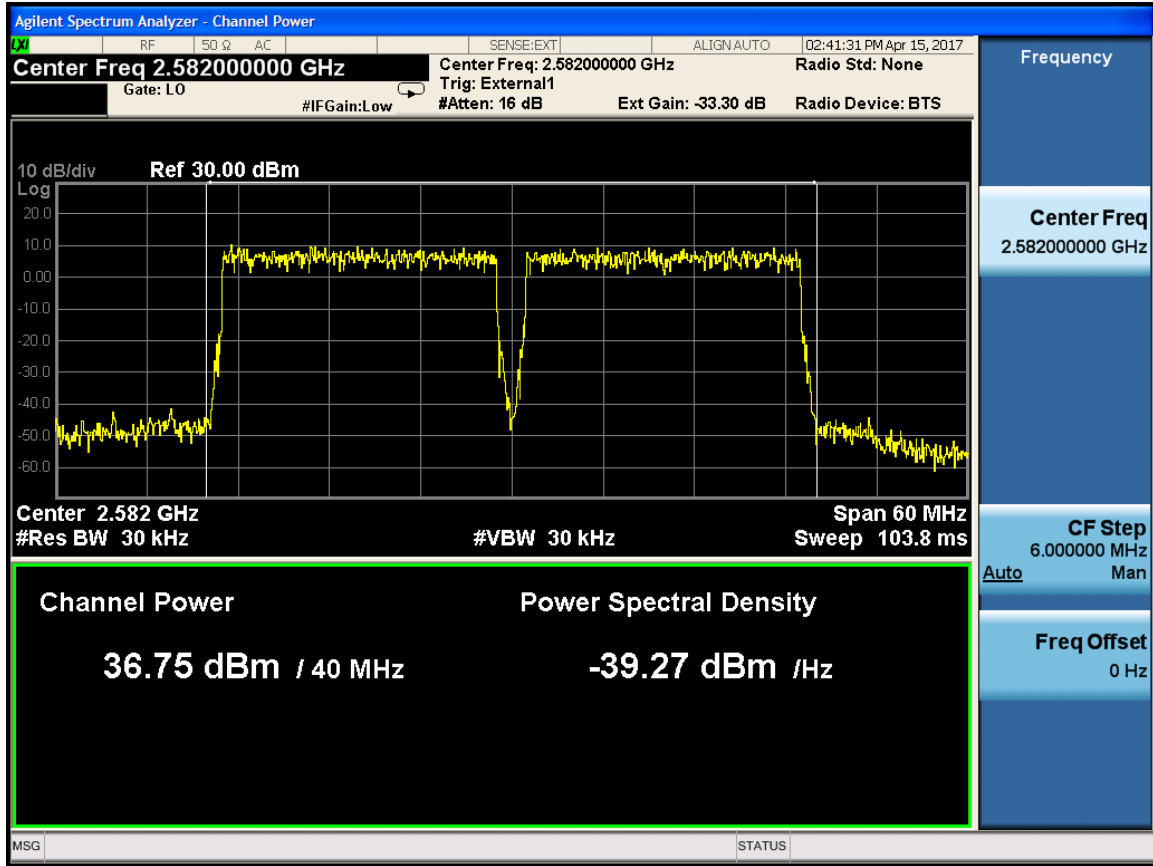












## 5 MODULATION CHARACTERISTICS

**Applicable Standard:** FCC § 2.1047, §27.50

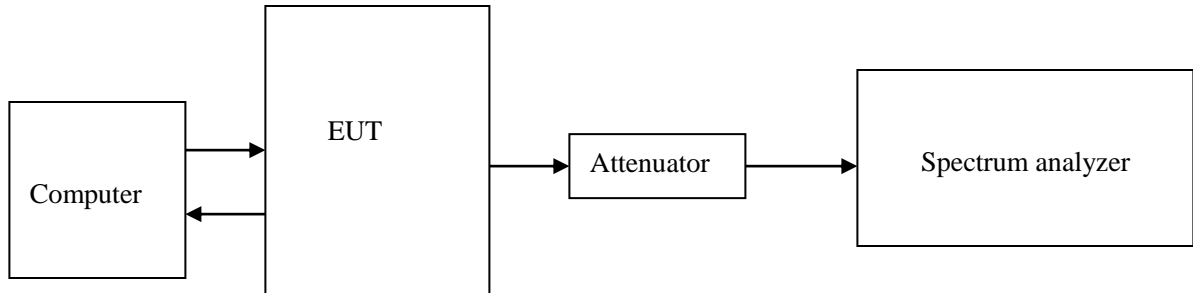
### Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date

Agilent	MXA Series Spectrum Analyzer	N9020A	MY51240239	2016.11.28	2017.11.28
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**\*statement of traceability:** ZTE Corporation Reliability Testing Center attests that all calibration has been performed per the NVLAP requirements, traceable to NIST.

### Test Procedure



The RF output of the transmitter was connected to the input of the spectrum analyzer through sufficient attenuation. External attenuation Loss is 36.8dB. Configure RRU output different modulation signals and test EVM by spectrum analyzer.

### Environmental Conditions

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

**Test Result:** Pass

**Test Mode:** Transmitting LTE

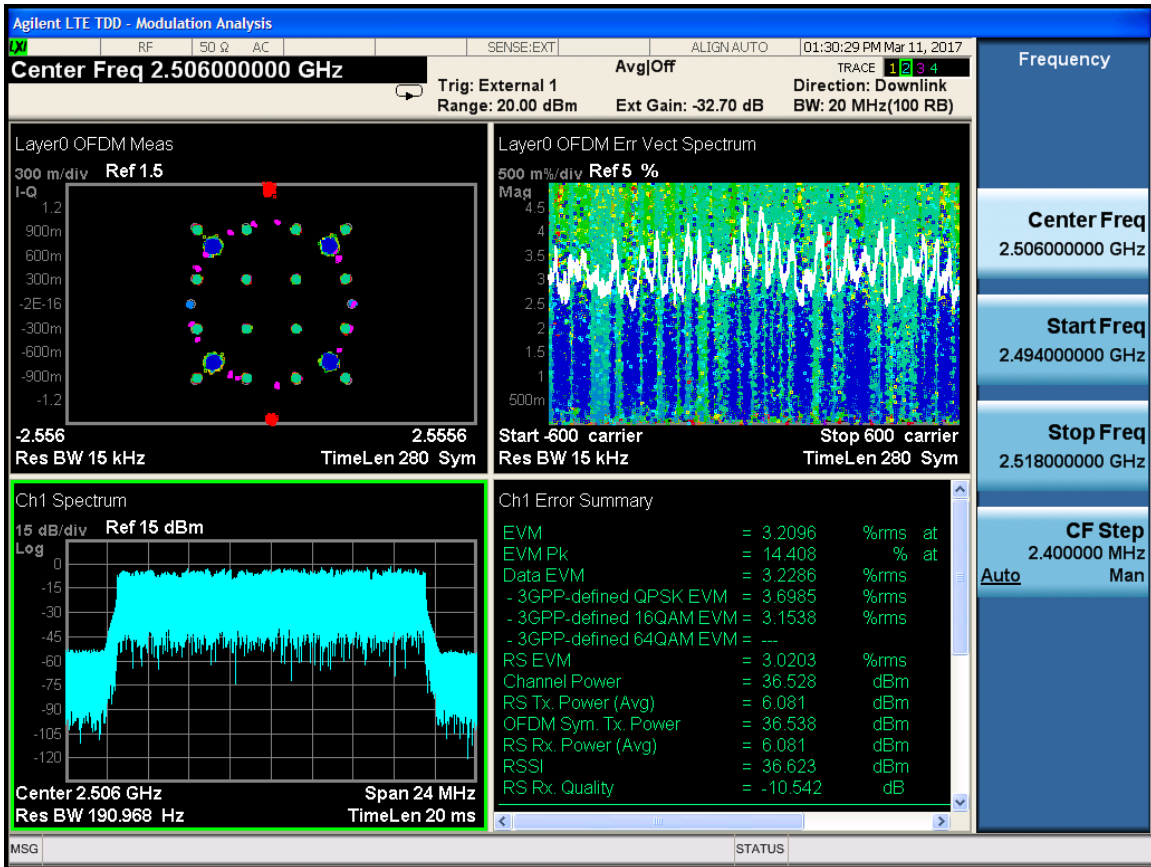
**Test Data:**

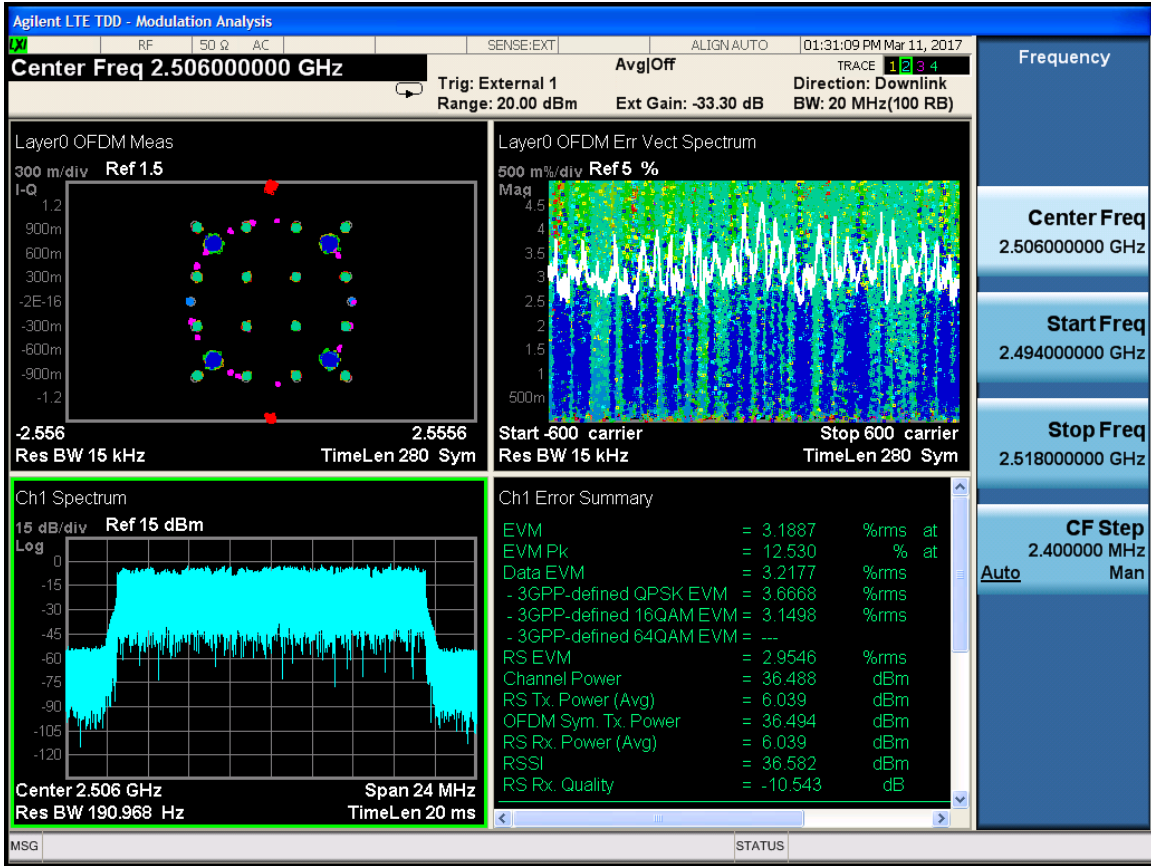
**One Carrier**

Channel Bandwidth: 20MM

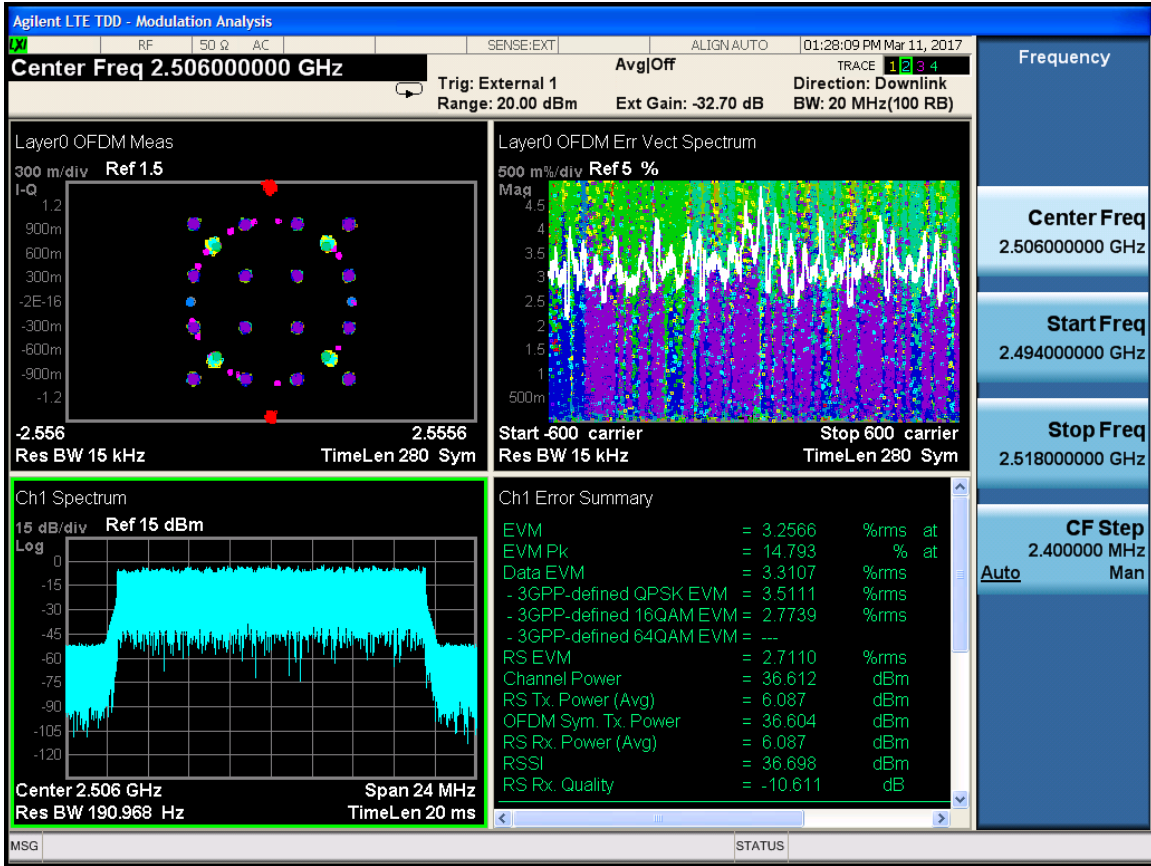
Port	Carrier Freq(MHz)	Occupied Bandwidth(MHz)
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		QPSK	16QAM	64QAM
0	2506	3.7	2.77	1.97
1		3.67	2.76	1.94
0	2549	3.49	2.6	1.77
1		3.49	2.59	1.71
0	2592	3.66	2.66	1.83
1		3.56	2.64	1.84



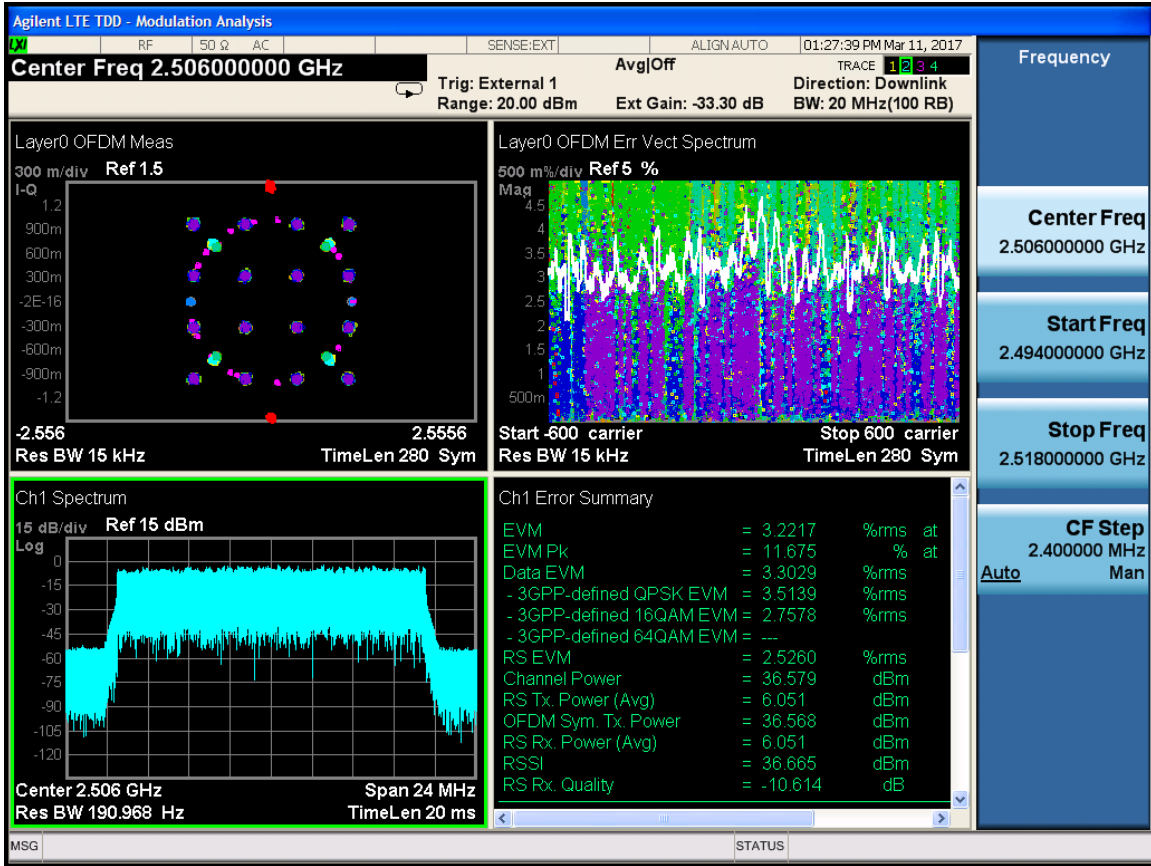


Frequency	
<b>Center Freq</b>	2.506000000 GHz
<b>Start Freq</b>	2.494000000 GHz
<b>Stop Freq</b>	2.518000000 GHz
<b>CF Step</b>	2.400000 MHz
<b>Auto</b>	<b>Man</b>

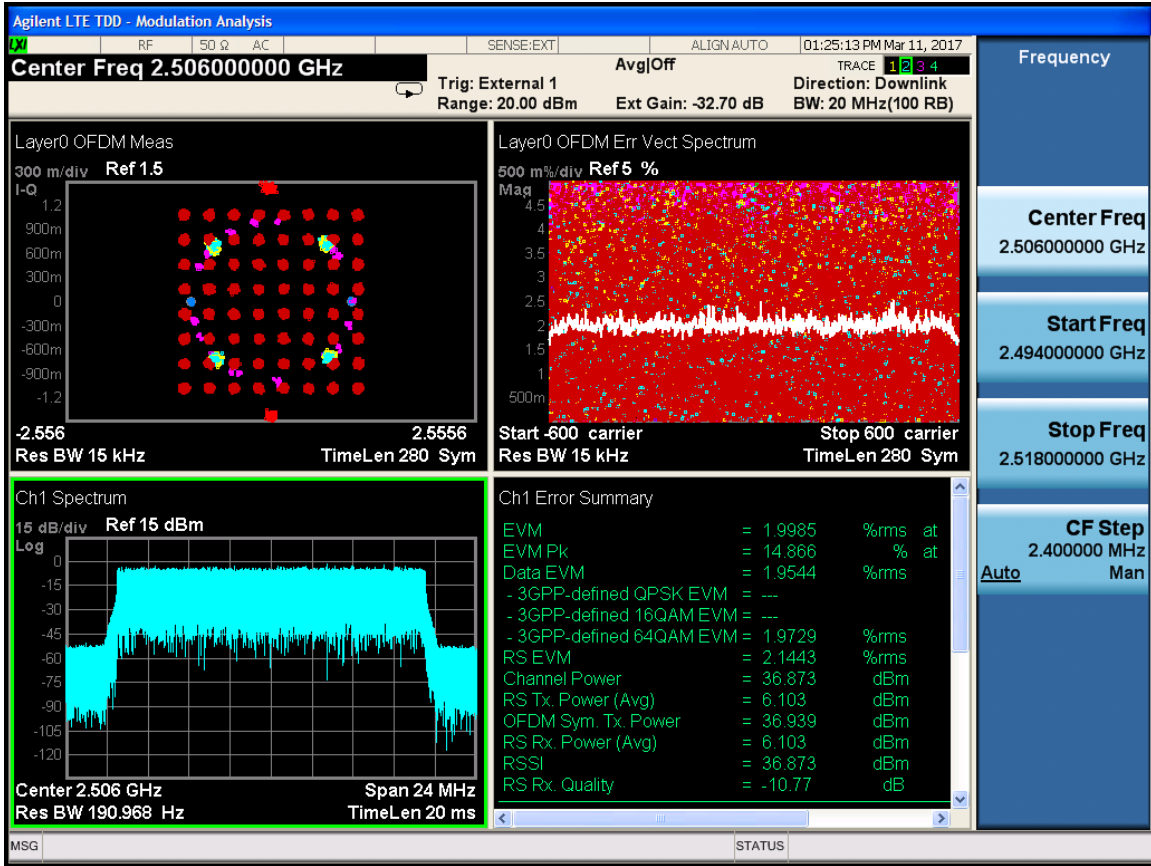


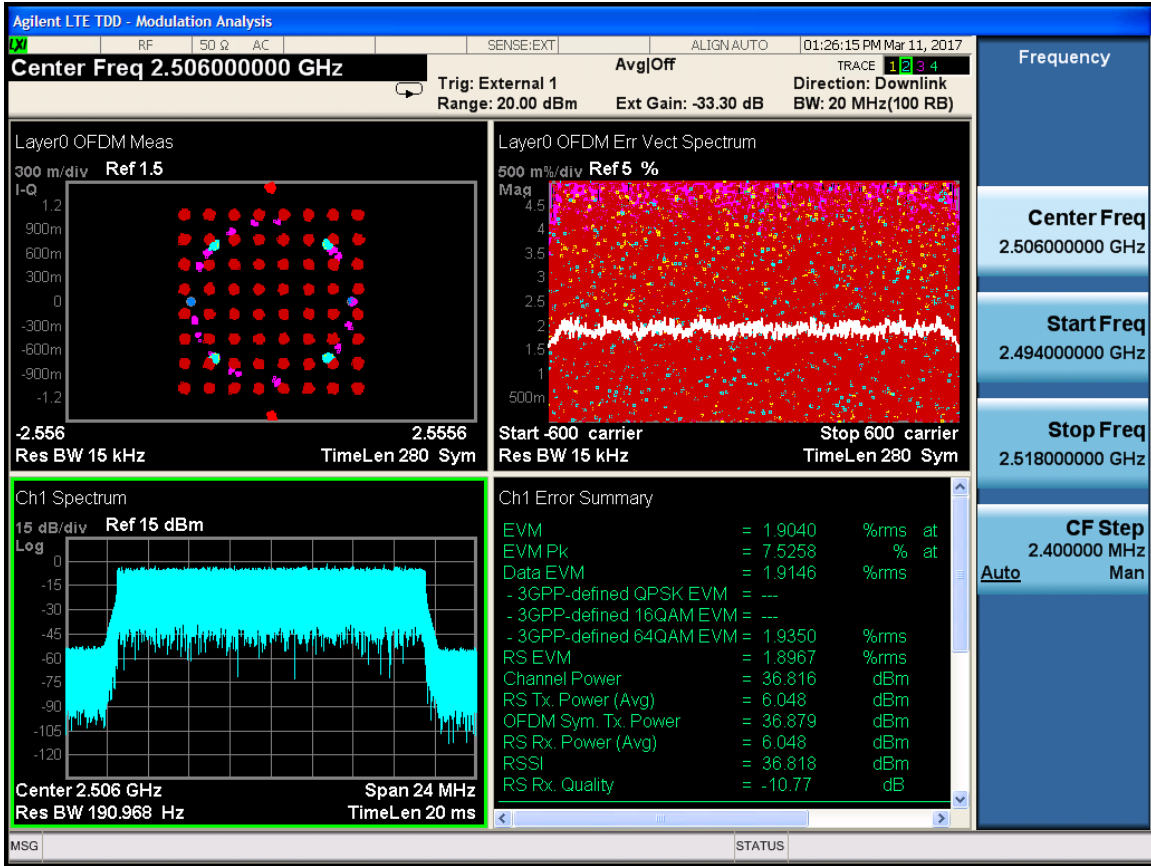
Frequency
<b>Center Freq</b> 2.50600000 GHz
<b>Start Freq</b> 2.494000000 GHz
<b>Stop Freq</b> 2.518000000 GHz
<b>CF Step</b> 2.400000 MHz
Auto Man



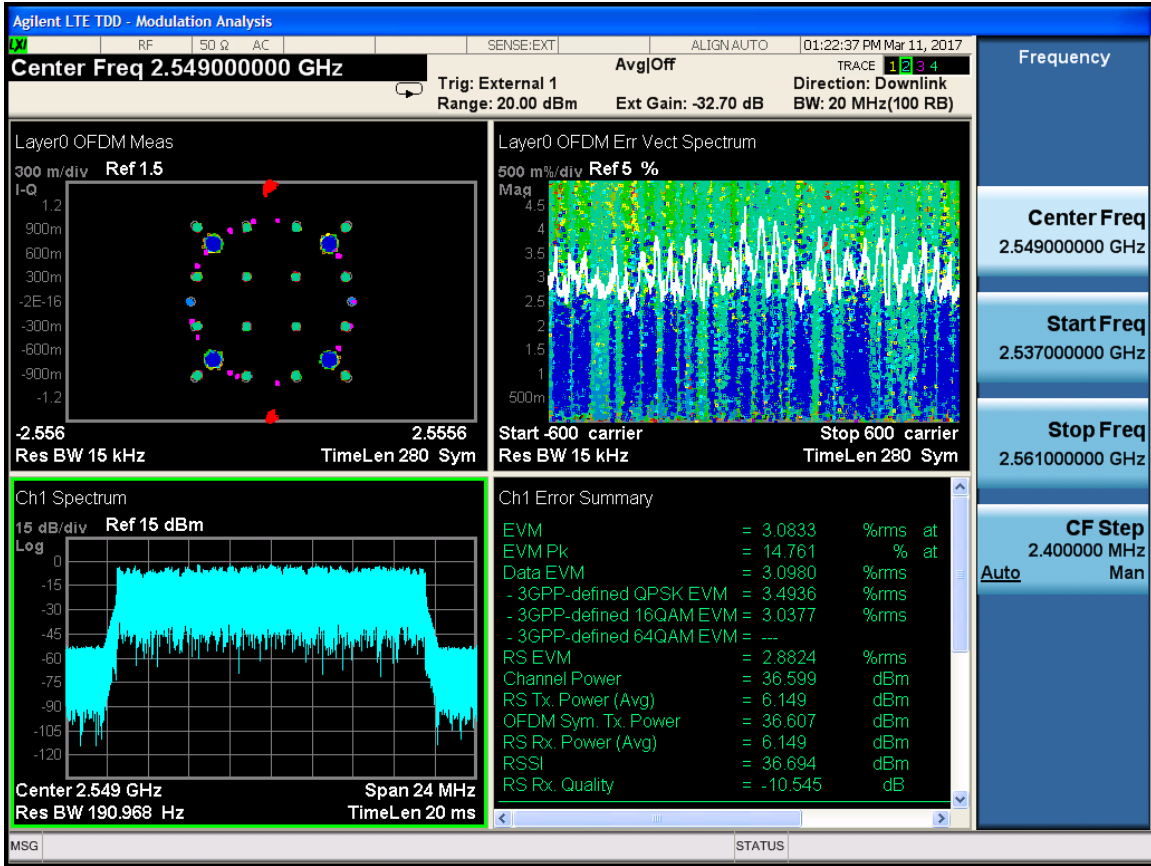


<b>Frequency</b>
<b>Center Freq</b> 2.50600000 GHz
<b>Start Freq</b> 2.494000000 GHz
<b>Stop Freq</b> 2.518000000 GHz
<b>CF Step</b> 2.400000 MHz
Auto Man

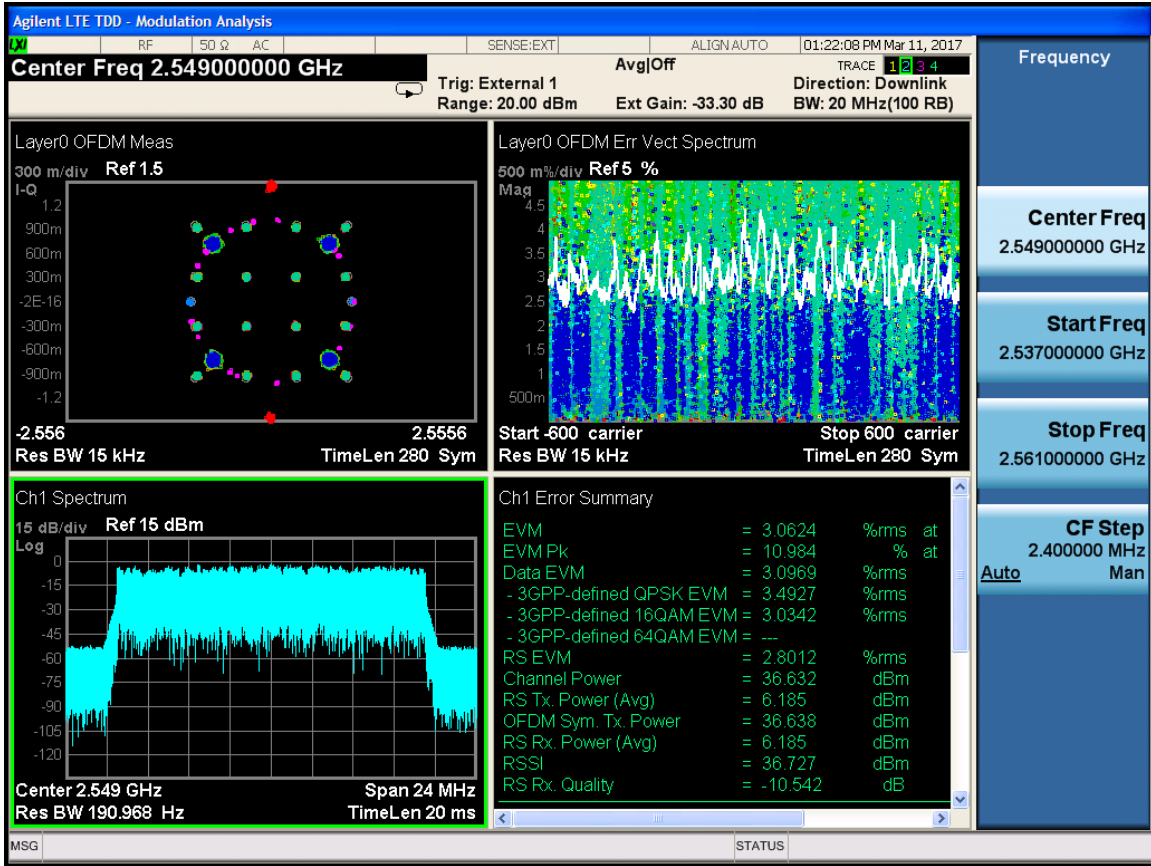




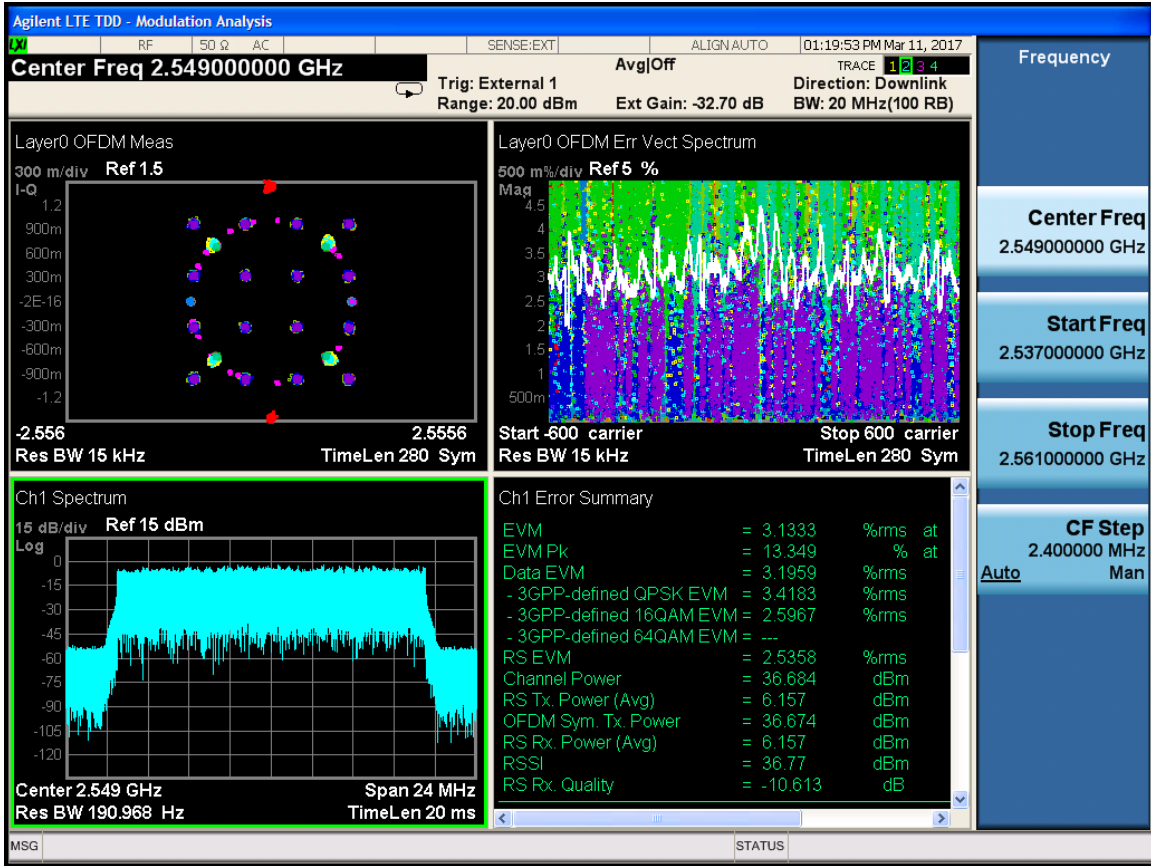
Frequency
<b>Center Freq</b> 2.50600000 GHz
<b>Start Freq</b> 2.494000000 GHz
<b>Stop Freq</b> 2.518000000 GHz
<b>CF Step</b> 2.400000 MHz
Auto Man



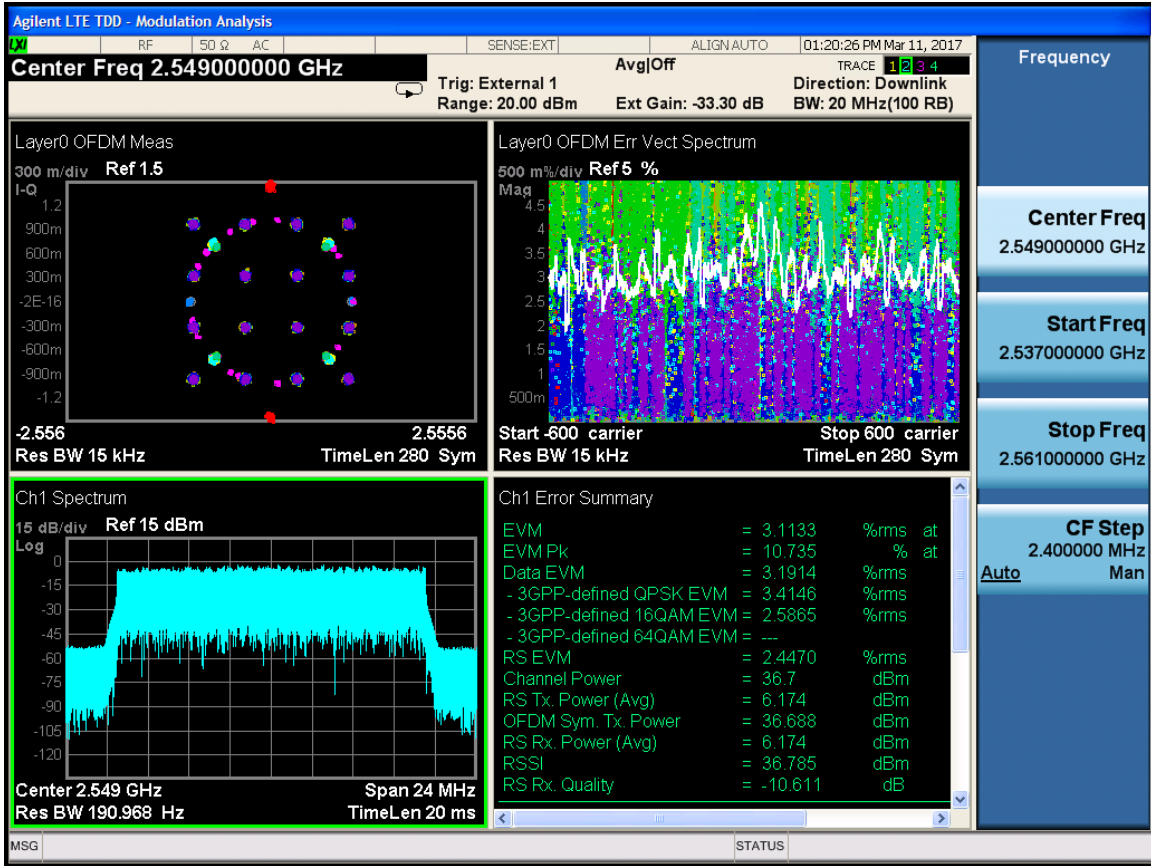
<b>Frequency</b>
<b>Center Freq</b> 2.549000000 GHz
<b>Start Freq</b> 2.537000000 GHz
<b>Stop Freq</b> 2.561000000 GHz
<b>CF Step</b> 2.400000 MHz
Auto Man

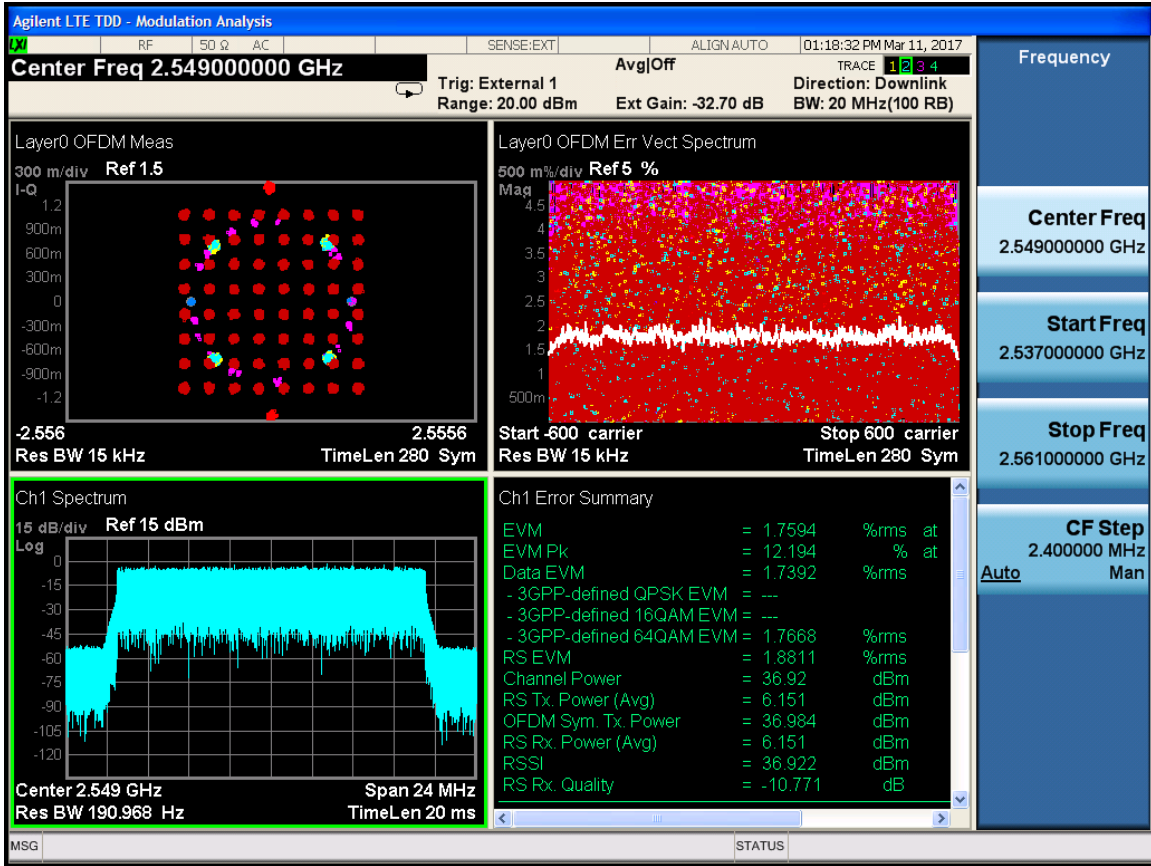


Frequency	
Center Freq	2.549000000 GHz
Start Freq	2.537000000 GHz
Stop Freq	2.561000000 GHz
CF Step	2.400000 MHz
Auto	Man

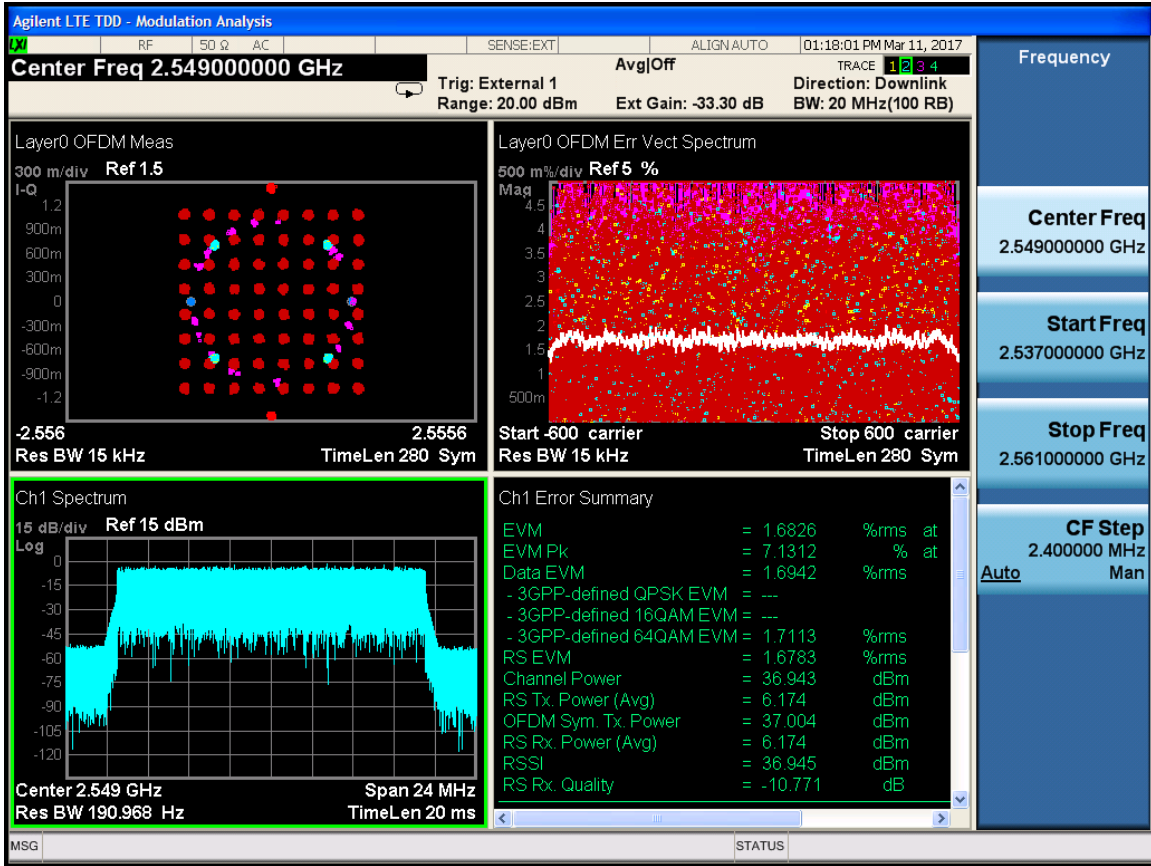


Frequency	
Center Freq	2.549000000 GHz
Start Freq	2.537000000 GHz
Stop Freq	2.561000000 GHz
CF Step	2.400000 MHz
Auto	Man

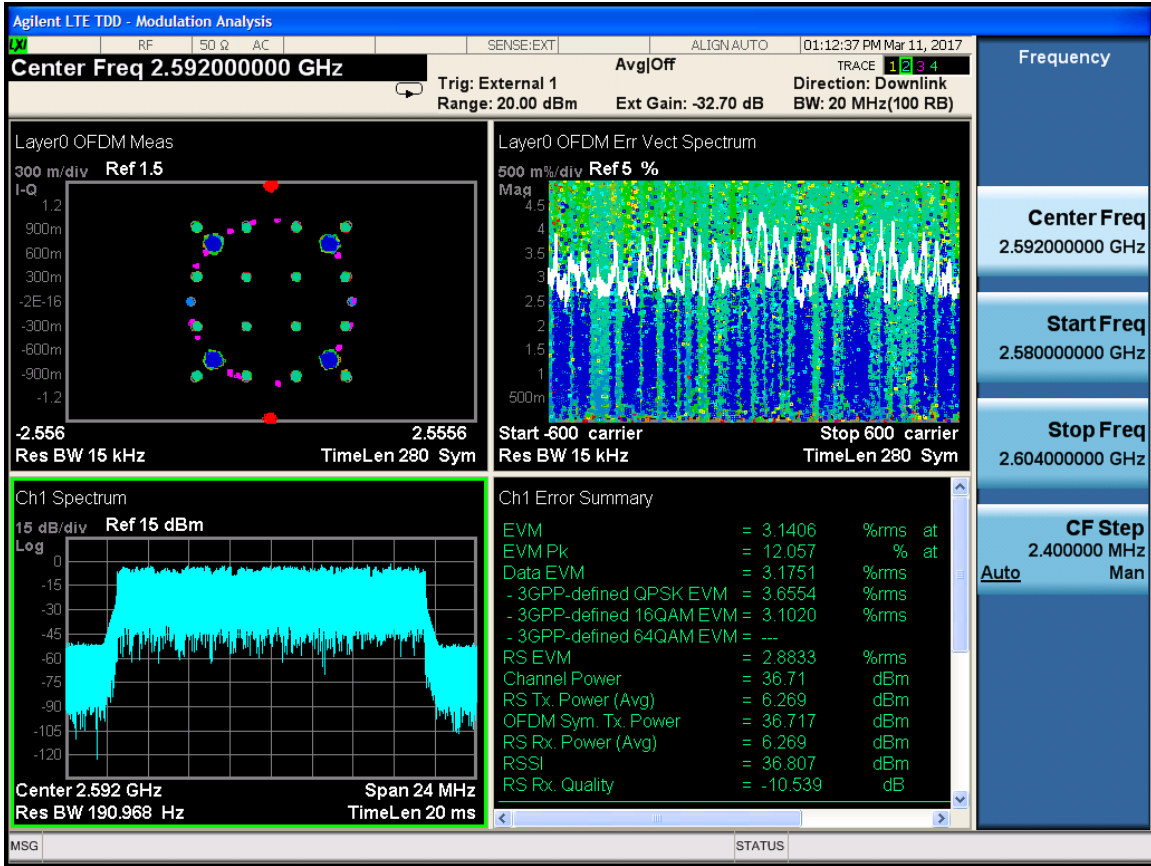




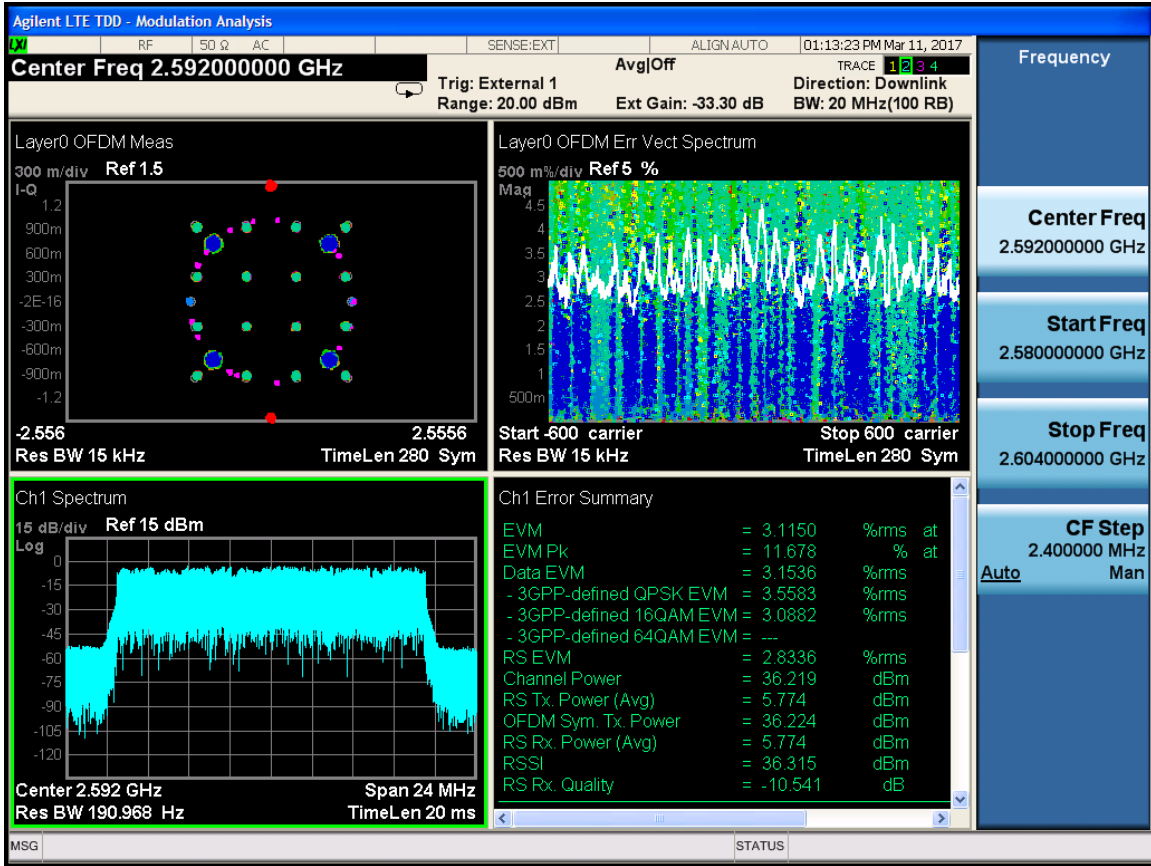




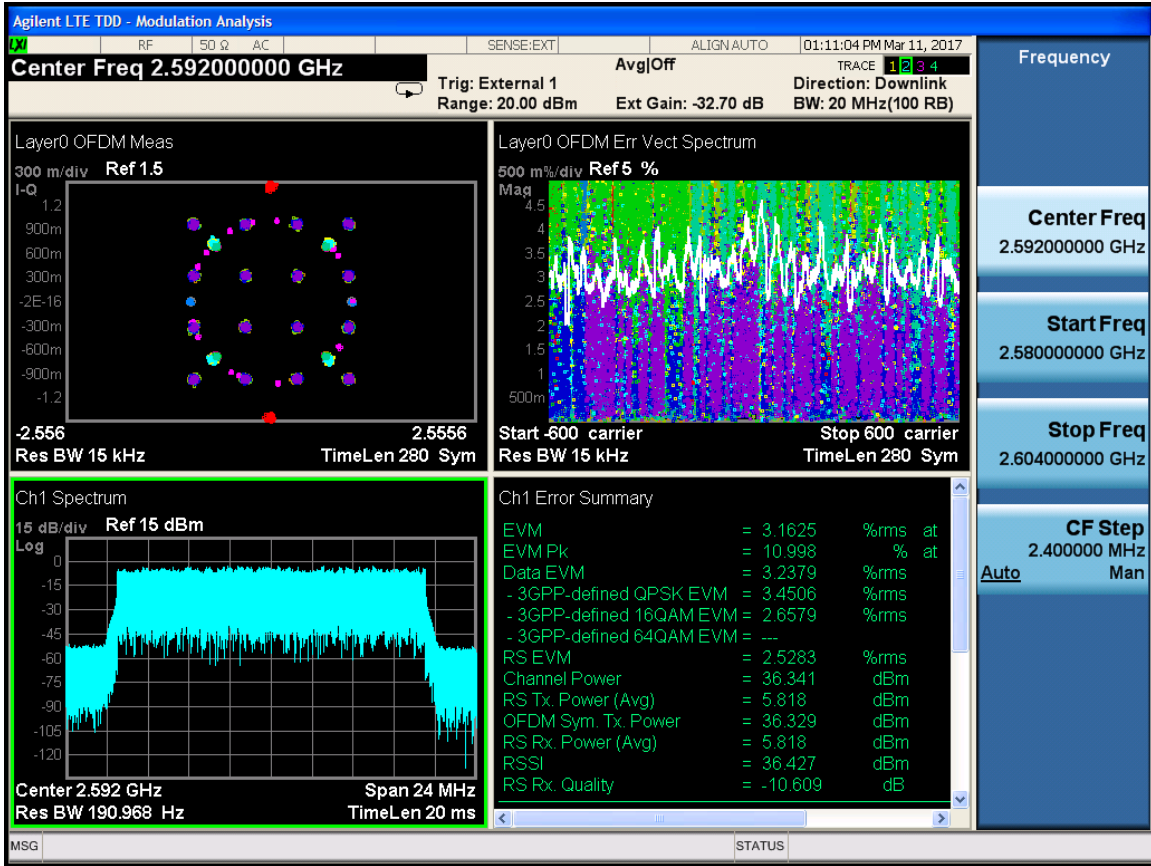
Frequency	
Center Freq	2.549000000 GHz
Start Freq	2.537000000 GHz
Stop Freq	2.561000000 GHz
CF Step	2.400000 MHz
Auto	Man



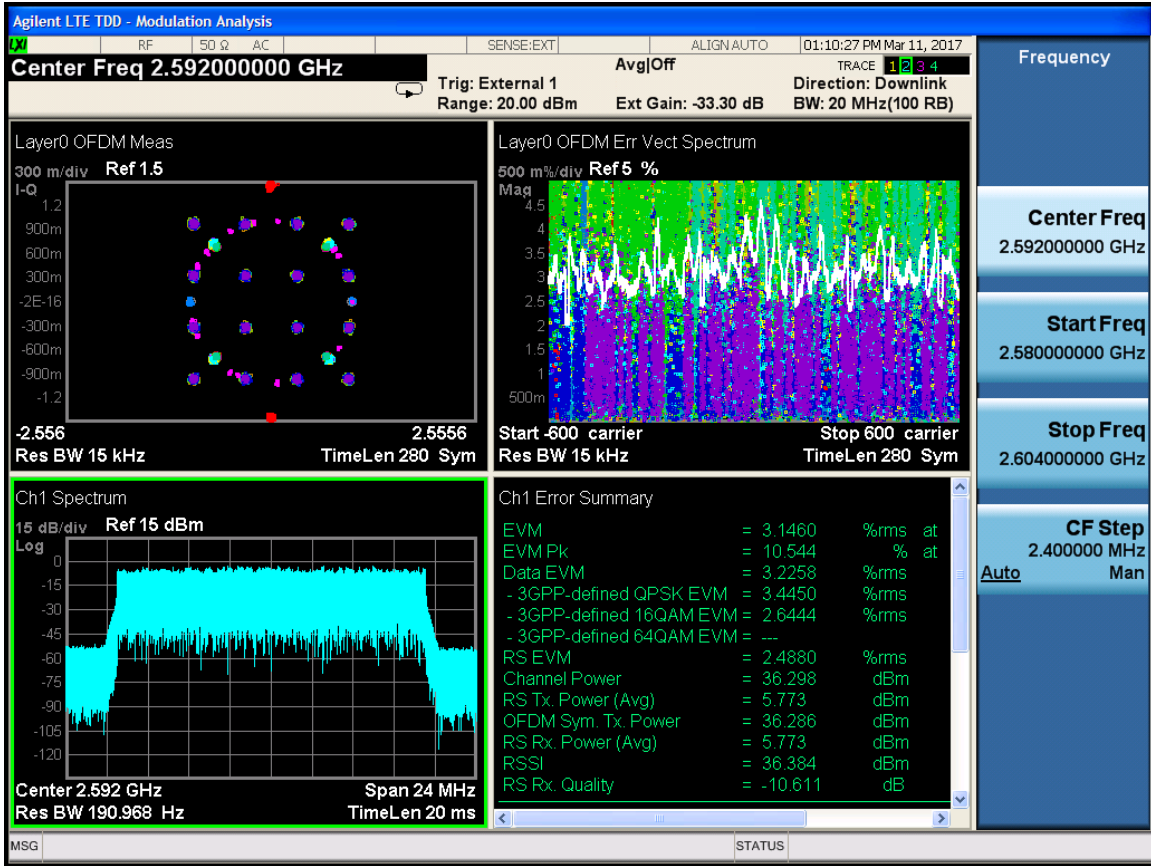
<b>Frequency</b>
<b>Center Freq</b> 2.592000000 GHz
<b>Start Freq</b> 2.580000000 GHz
<b>Stop Freq</b> 2.604000000 GHz
<b>CF Step</b> 2.400000 MHz
Auto Man

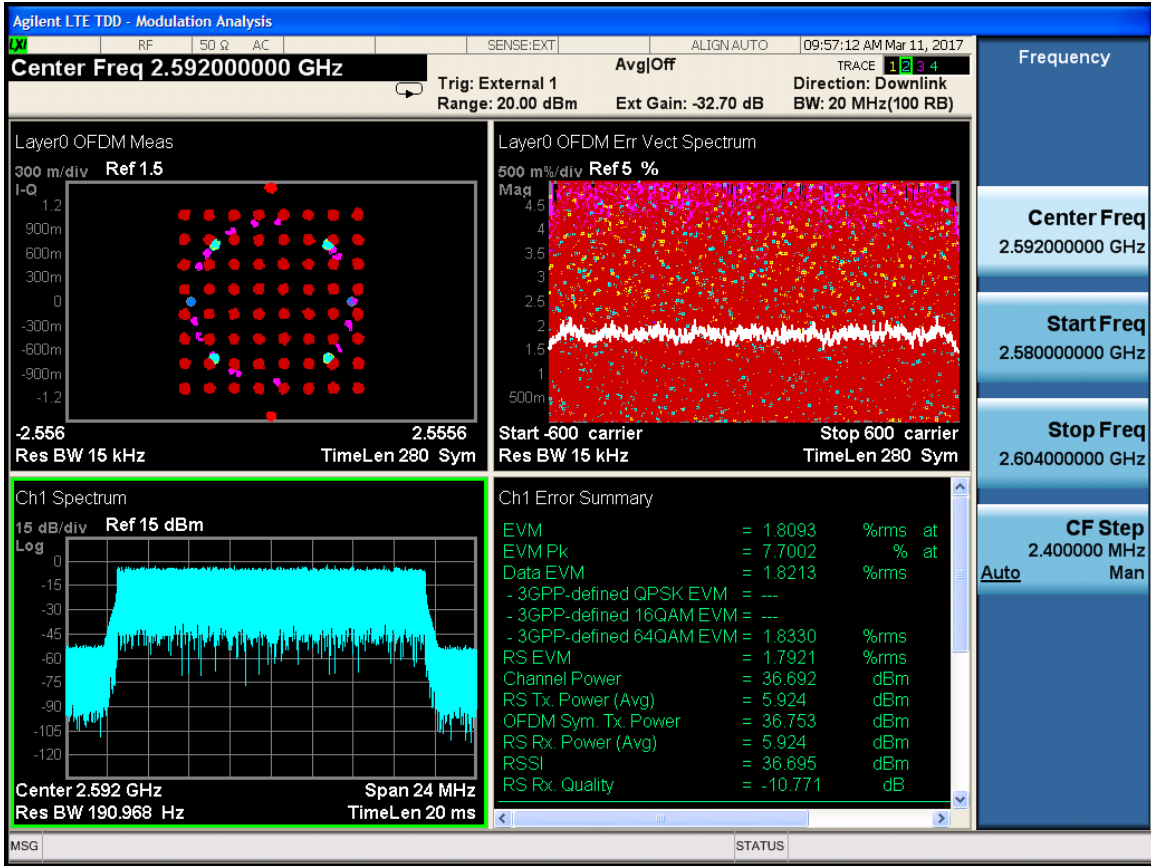


<b>Frequency</b>
<b>Center Freq</b> 2.59200000 GHz
<b>Start Freq</b> 2.58000000 GHz
<b>Stop Freq</b> 2.60400000 GHz
<b>CF Step</b> 2.400000 MHz
Auto Man

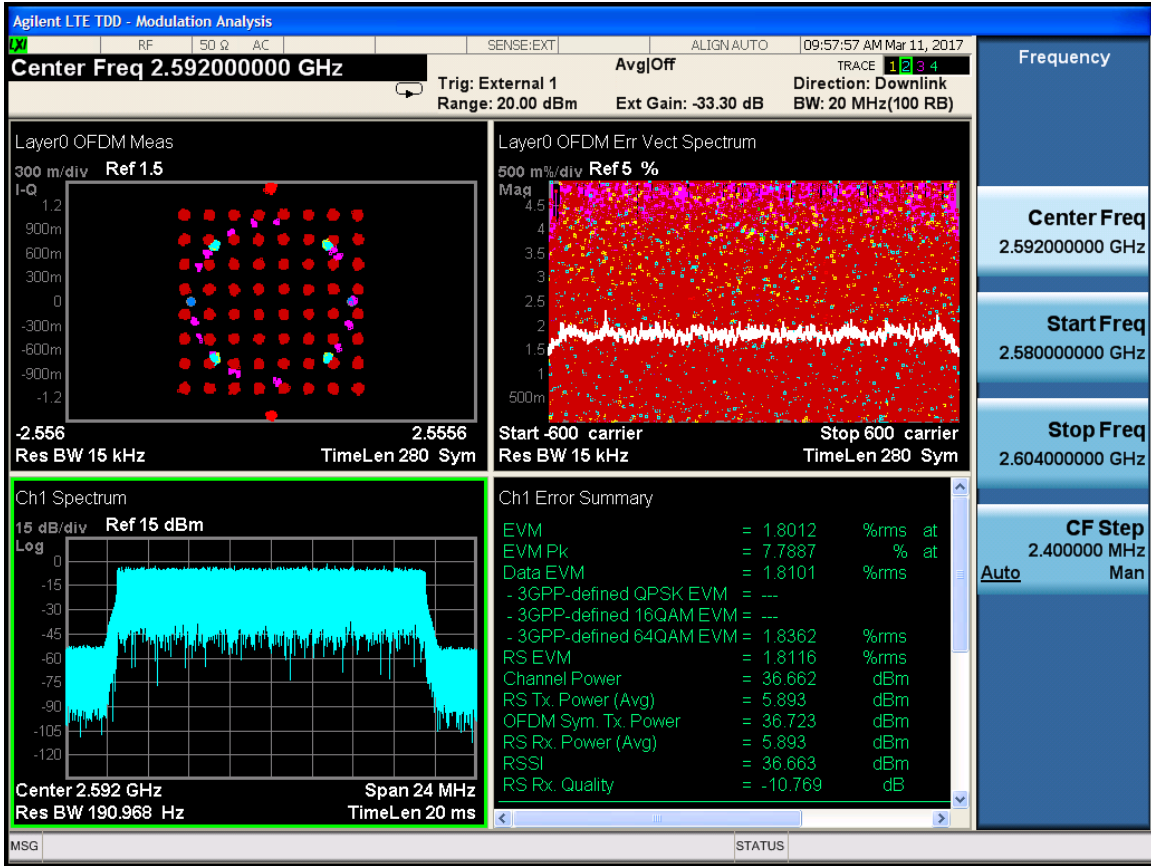


Frequency	
<b>Center Freq</b>	2.592000000 GHz
<b>Start Freq</b>	2.580000000 GHz
<b>Stop Freq</b>	2.604000000 GHz
<b>CF Step</b>	2.400000 MHz
<b>Auto</b>	<b>Man</b>





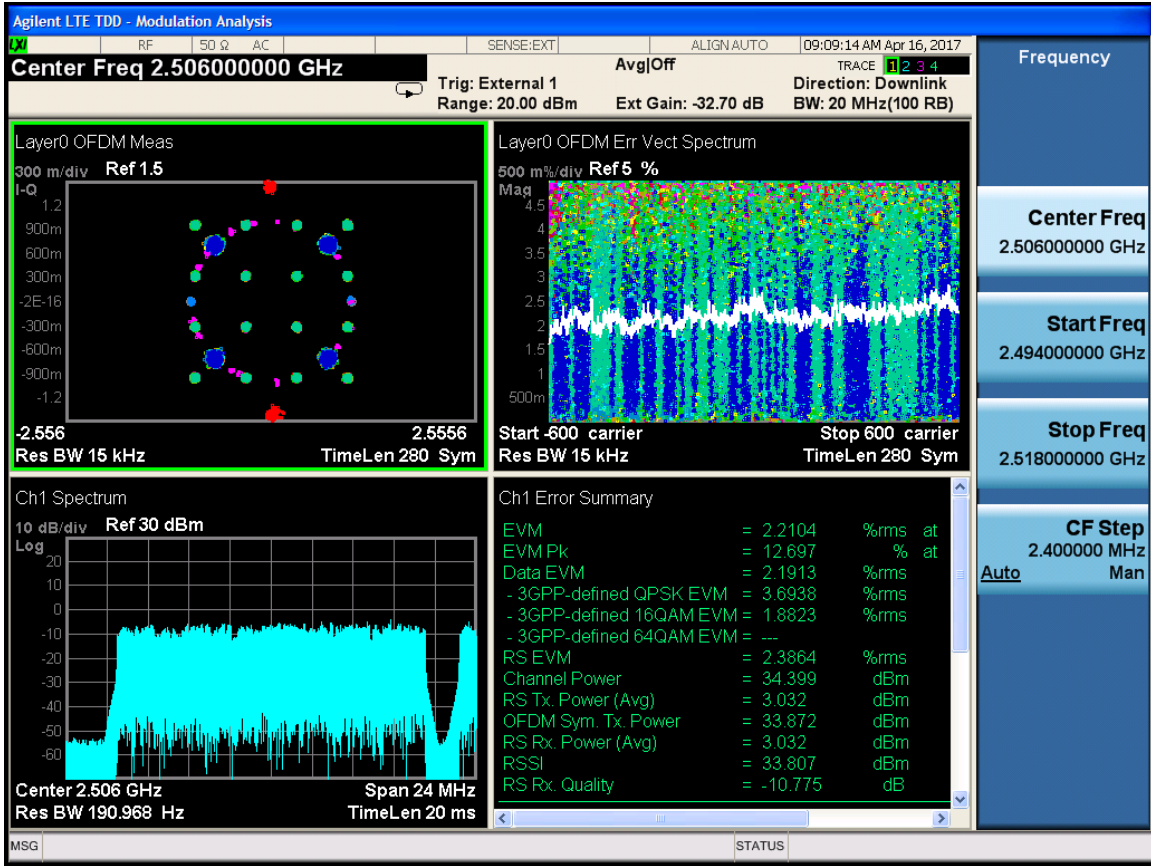
<b>Frequency</b>
<b>Center Freq</b> 2.592000000 GHz
<b>Start Freq</b> 2.580000000 GHz
<b>Stop Freq</b> 2.604000000 GHz
<b>CF Step</b> 2.400000 MHz
Auto Man



## Two Carrier

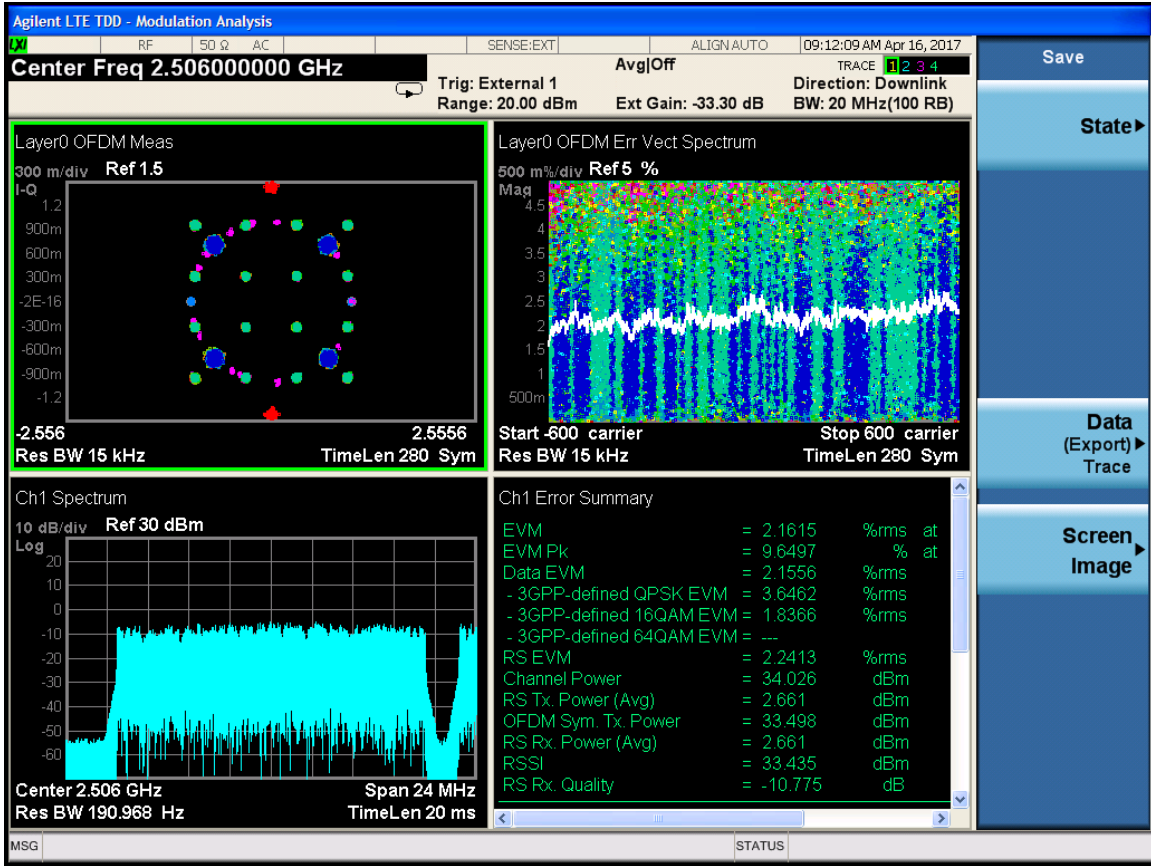
Channel Bandwidth: 20M+20M

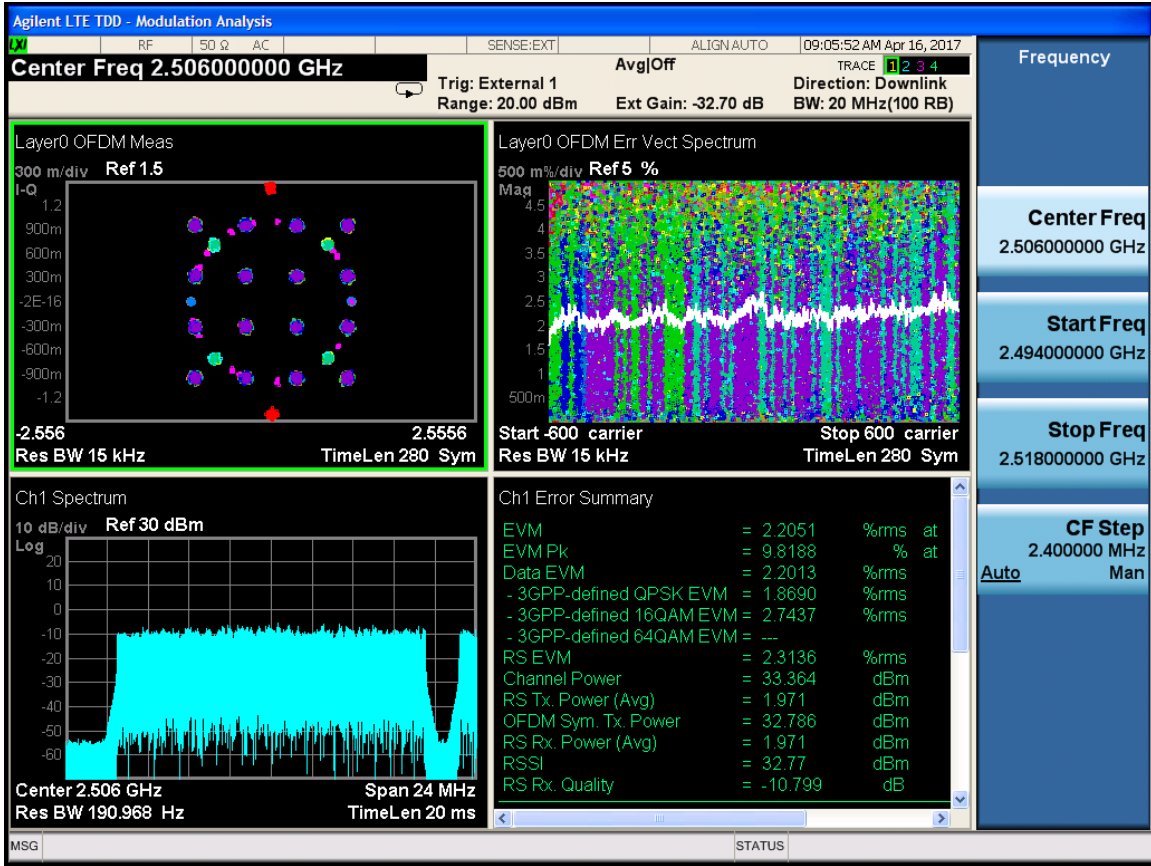
Port	Carrier Freq. c1+c2(MHz)	Occupied Bandwidth(MHz)		
		QPSK	16QAM	64QAM
0	2506	3.69	2.74	2.14
1		3.65	2.75	2.15
0	2526	3.66	2.78	2.13
1		3.67	2.76	2.15
0	2539	3.5	2.59	2.04
1		3.5	2.56	1.96
0	2559	3.51	2.63	1.99
1		3.46	2.6	1.95
0	2572	3.57	2.69	2.05
1		3.58	2.64	2.07
0	2592	3.57	2.73	2.09
1		3.56	2.67	2.06



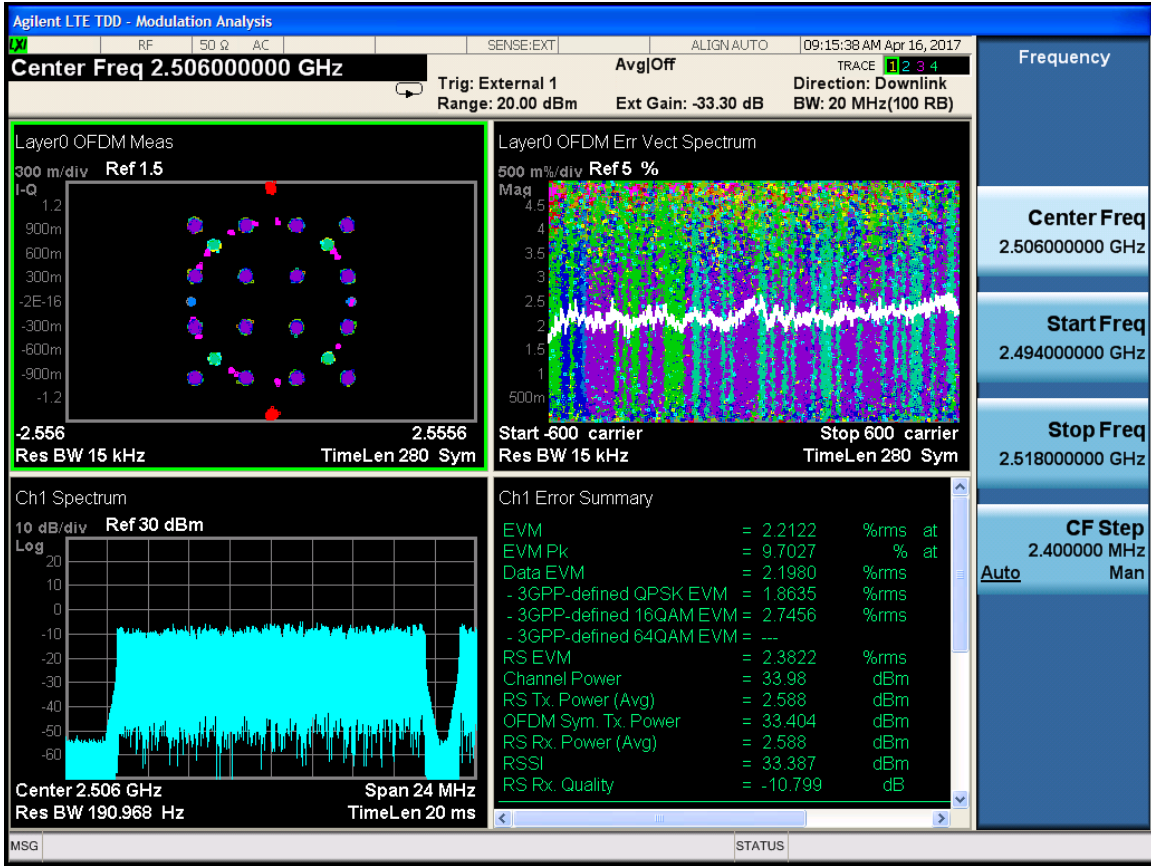
<b>Frequency</b>
<b>Center Freq</b> 2.506000000 GHz
<b>Start Freq</b> 2.494000000 GHz
<b>Stop Freq</b> 2.518000000 GHz
<b>CF Step</b> 2.400000 MHz
Auto Man



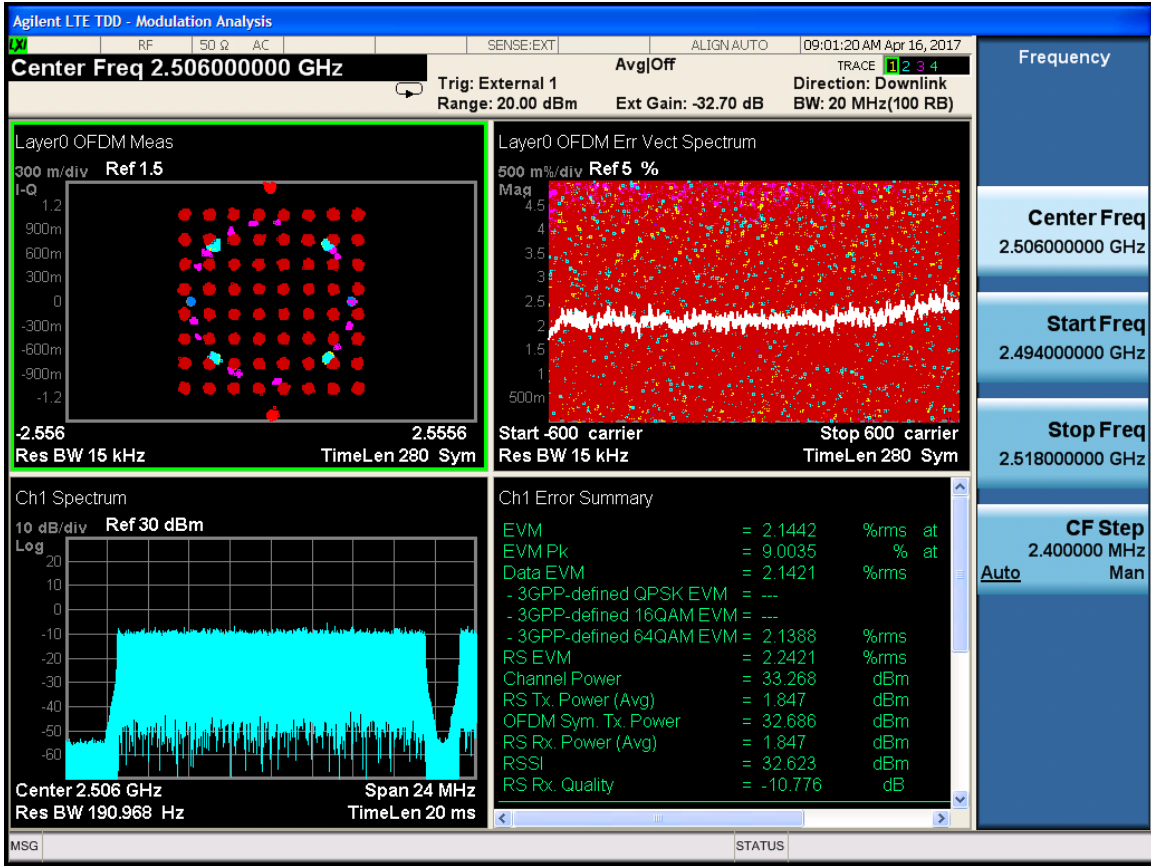




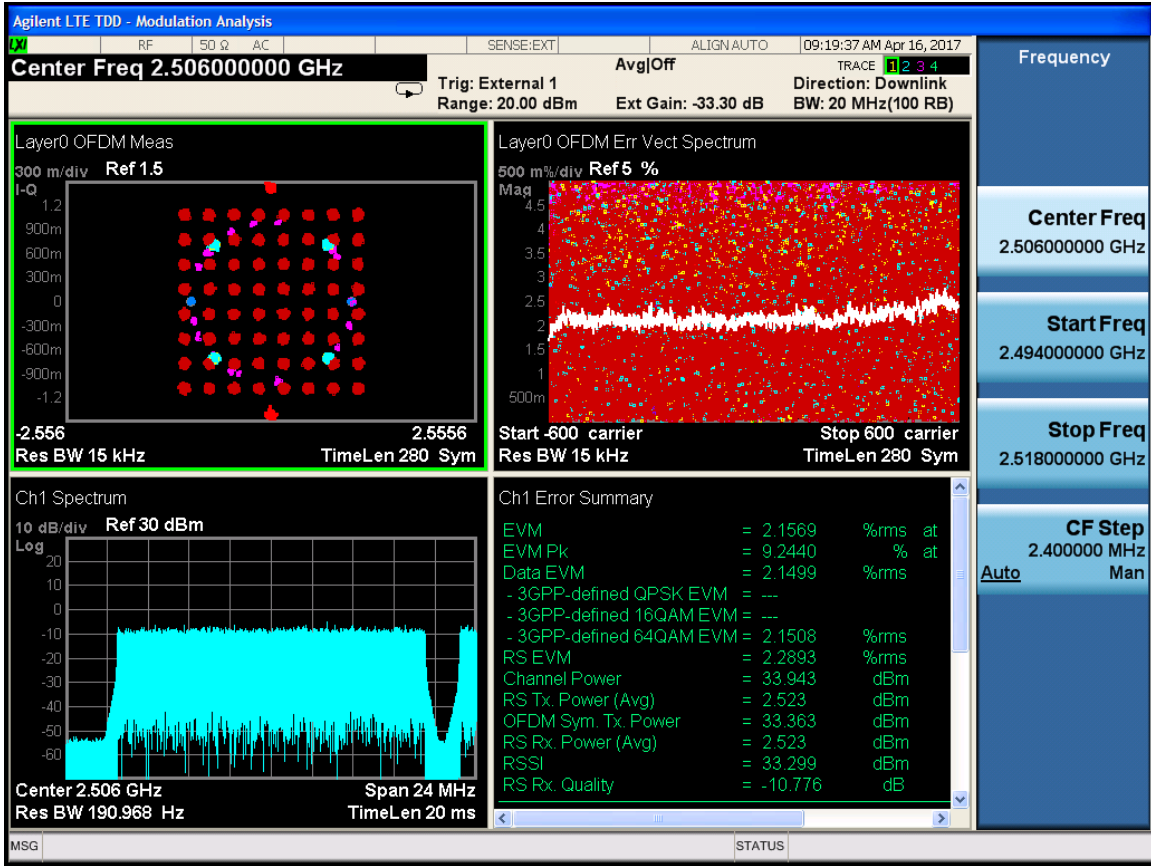
<b>Frequency</b>
<b>Center Freq</b> 2.506000000 GHz
<b>Start Freq</b> 2.494000000 GHz
<b>Stop Freq</b> 2.518000000 GHz
<b>CF Step</b> 2.400000 MHz
Auto Man

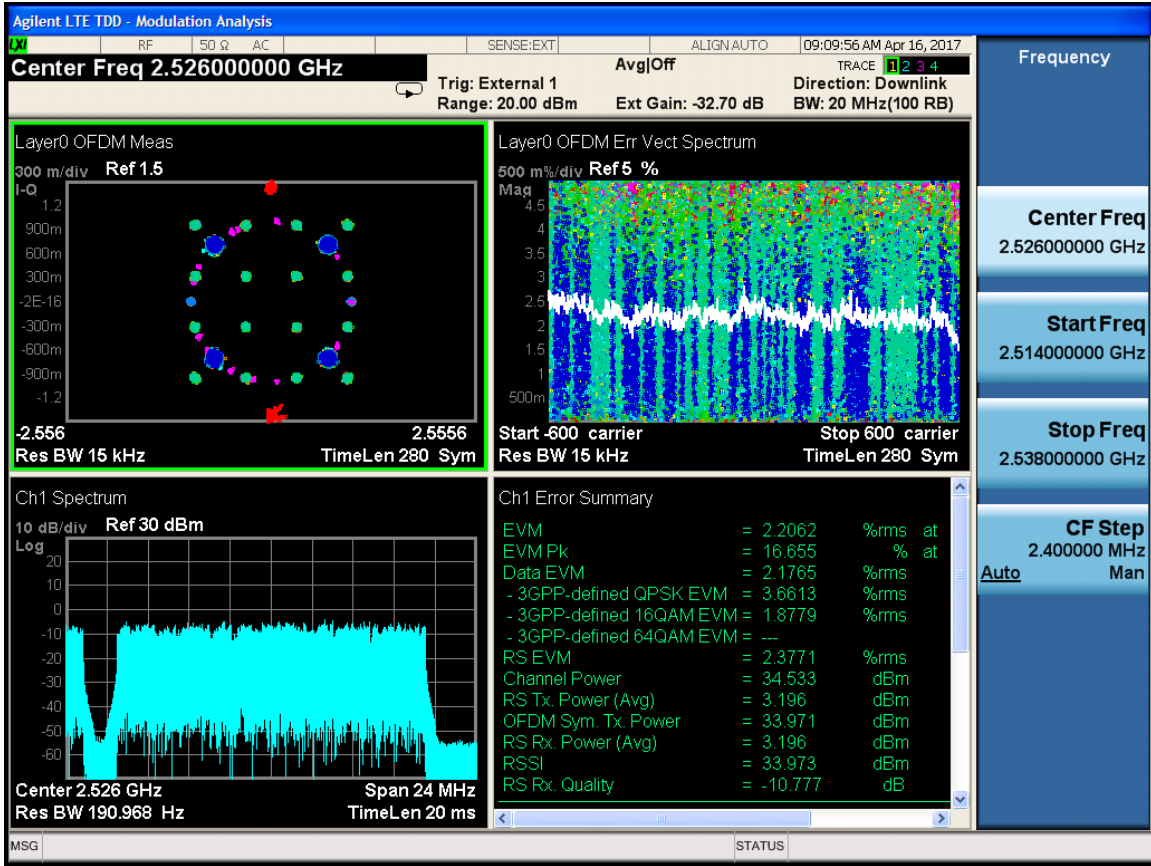


Frequency	
Center Freq	2.506000000 GHz
Start Freq	2.494000000 GHz
Stop Freq	2.518000000 GHz
CF Step	2.400000 MHz
Auto	Man

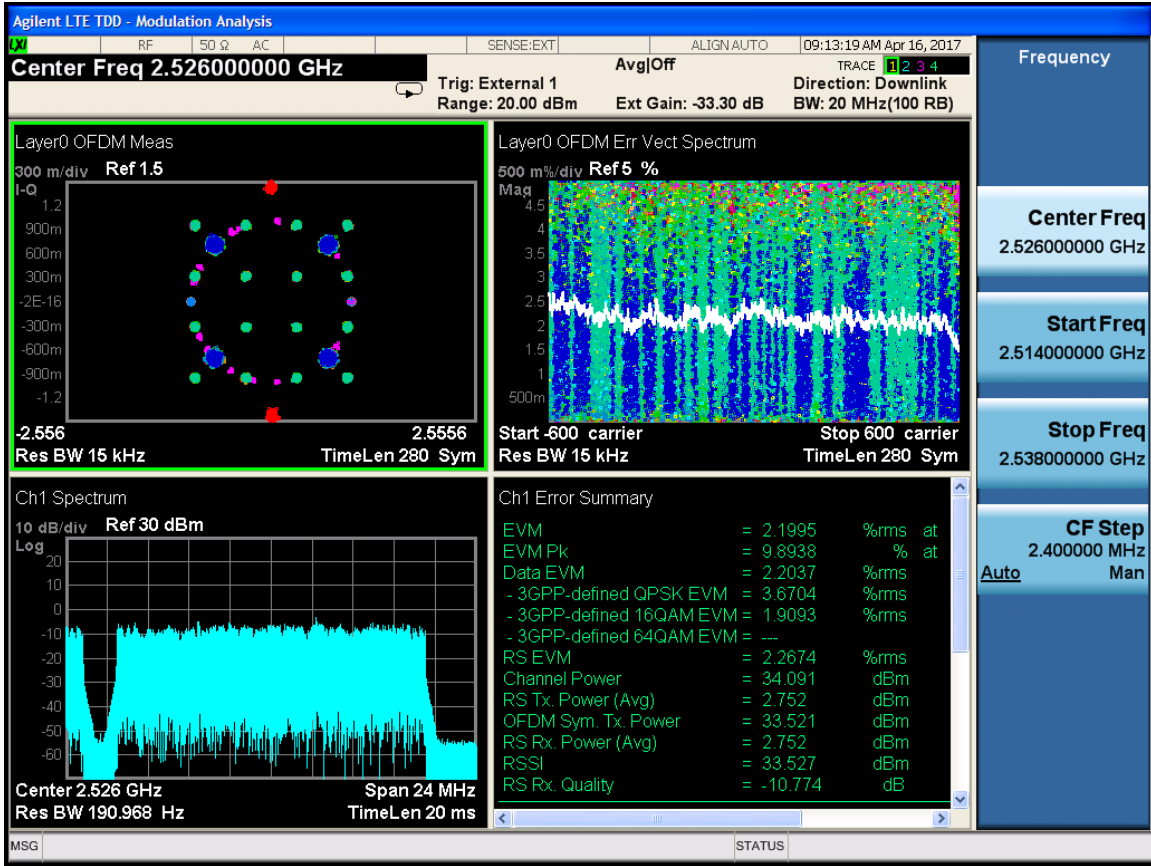


Frequency	
Center Freq	2.506000000 GHz
Start Freq	2.494000000 GHz
Stop Freq	2.518000000 GHz
CF Step	2.400000 MHz
Auto	Man



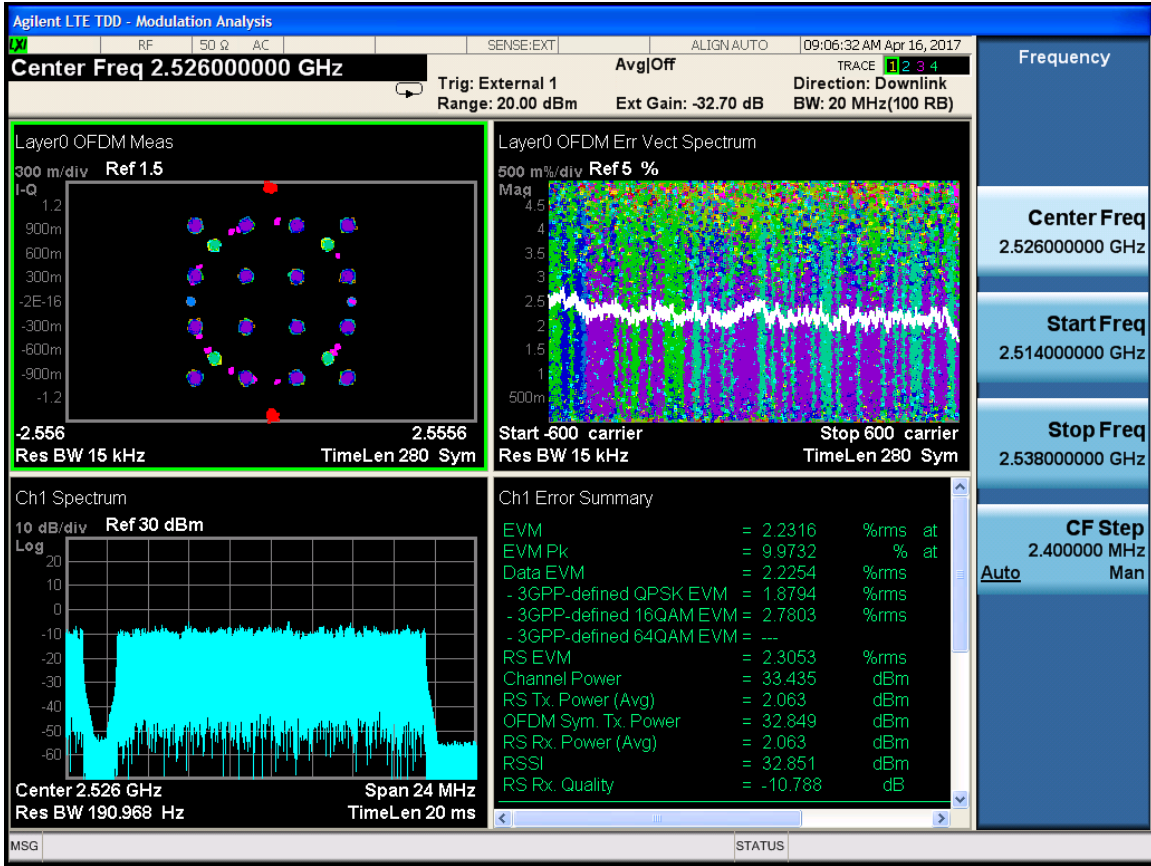


Frequency	
Center Freq	2.526000000 GHz
Start Freq	2.514000000 GHz
Stop Freq	2.538000000 GHz
CF Step	2.400000 MHz
Auto	Man

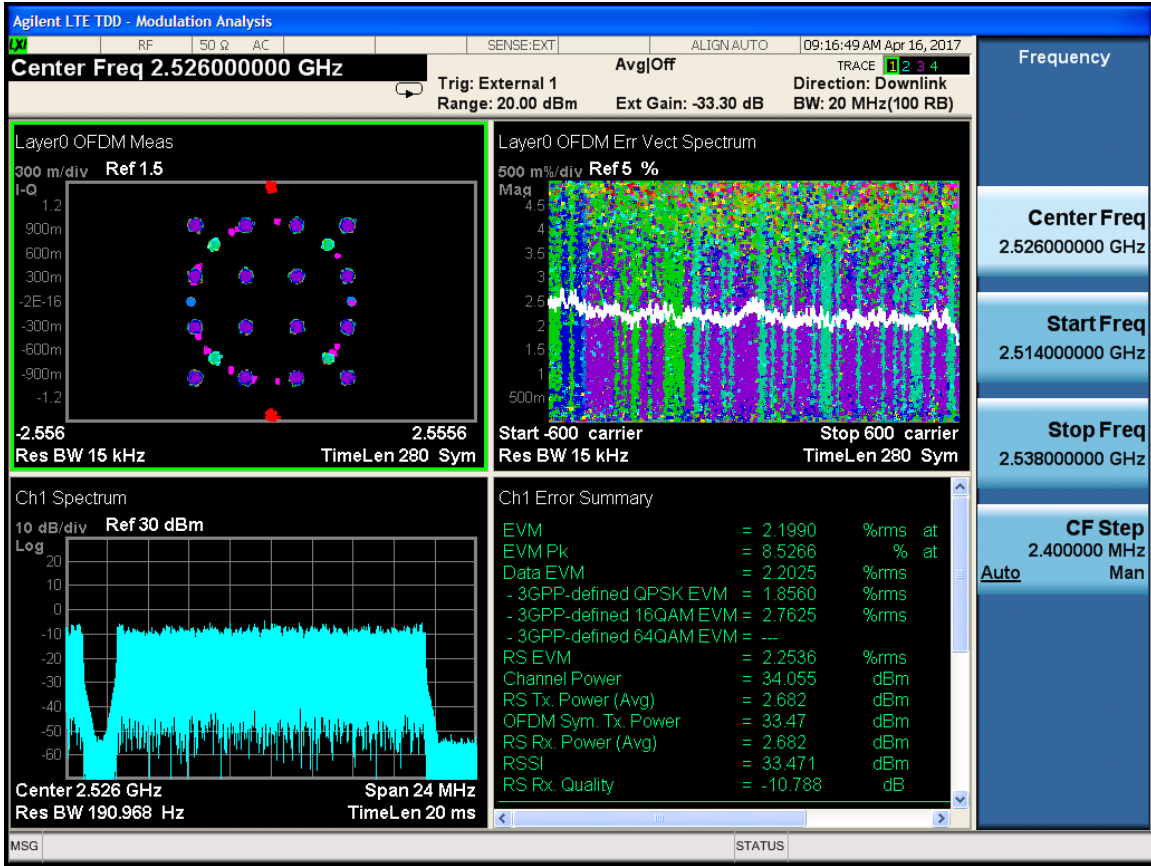


<b>Frequency</b>
<b>Center Freq</b> 2.526000000 GHz
<b>Start Freq</b> 2.514000000 GHz
<b>Stop Freq</b> 2.538000000 GHz
<b>CF Step</b> 2.400000 MHz
Auto Man

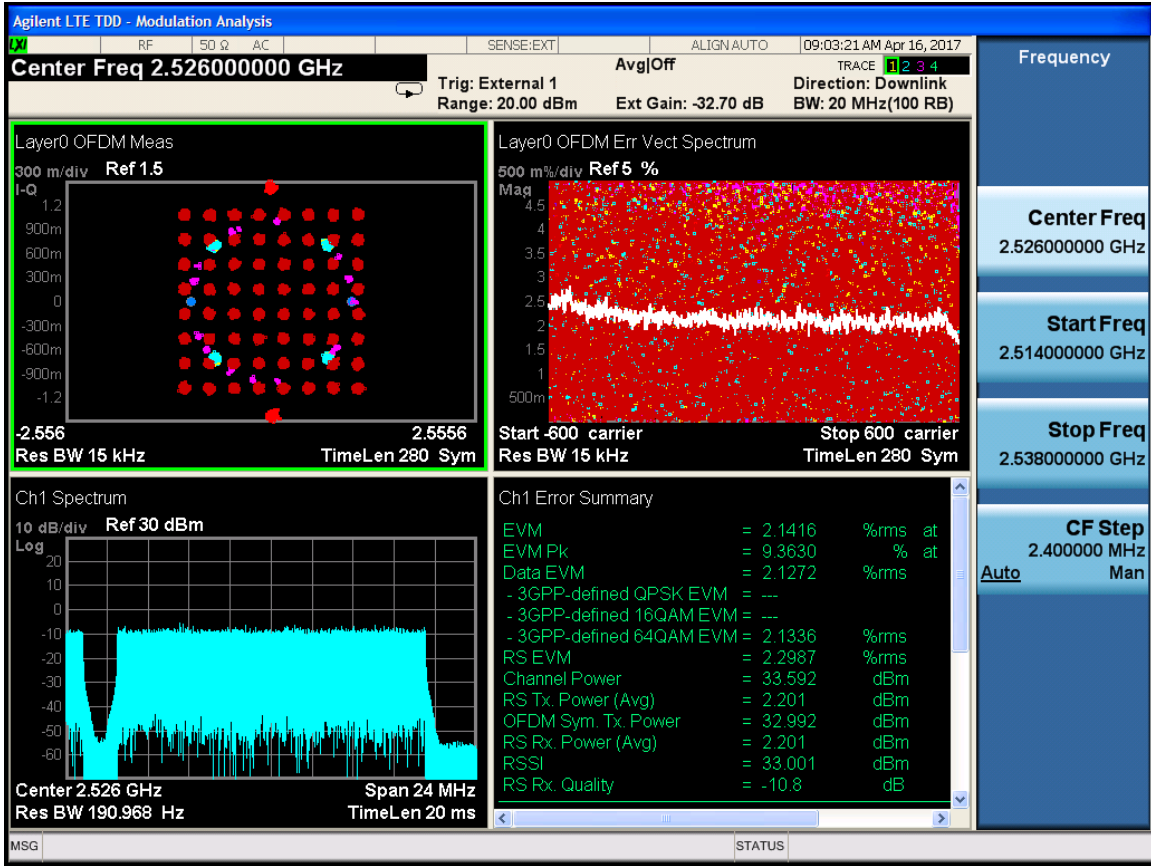


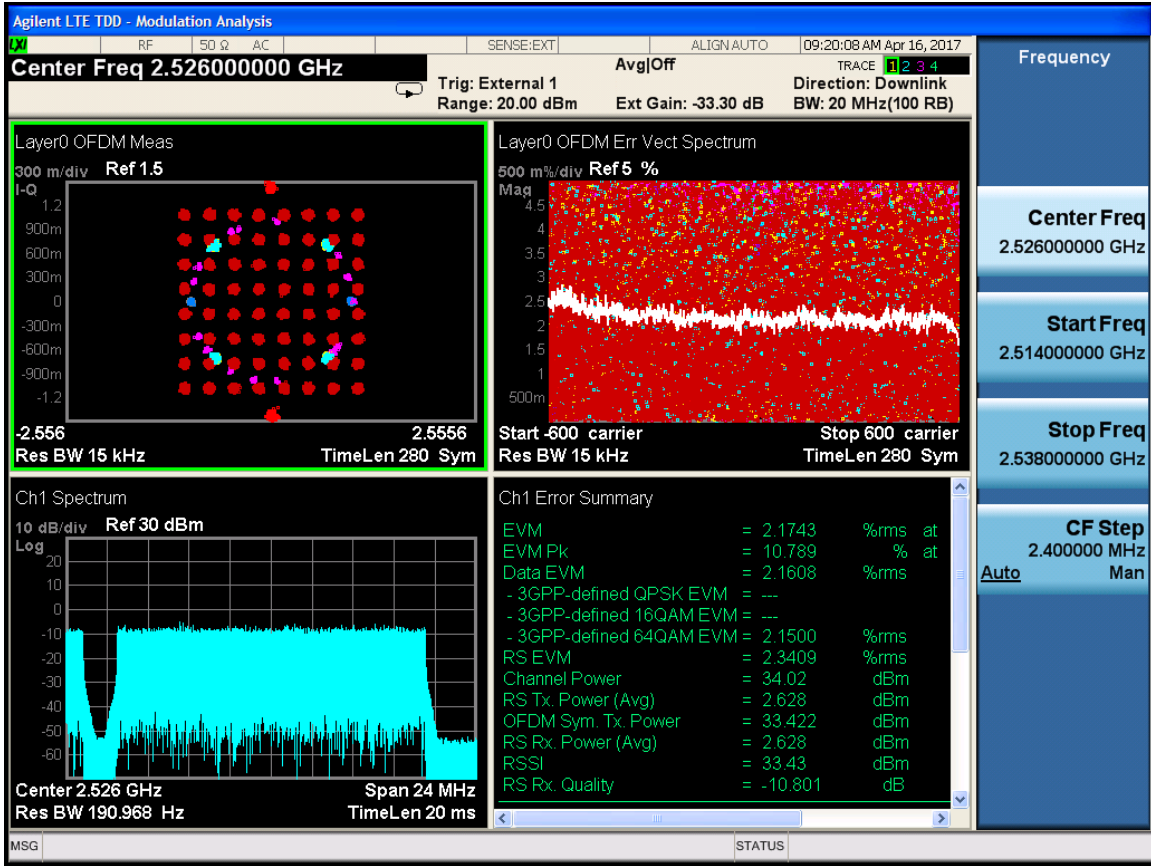


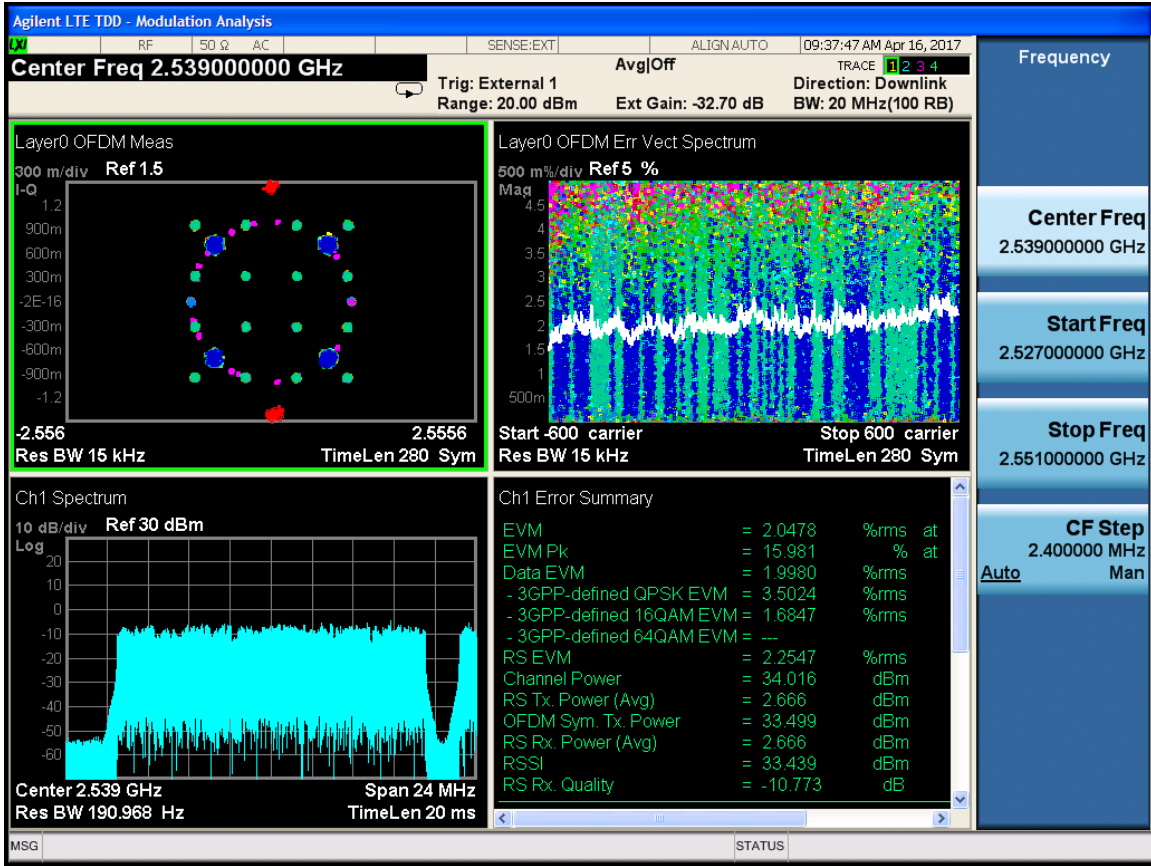


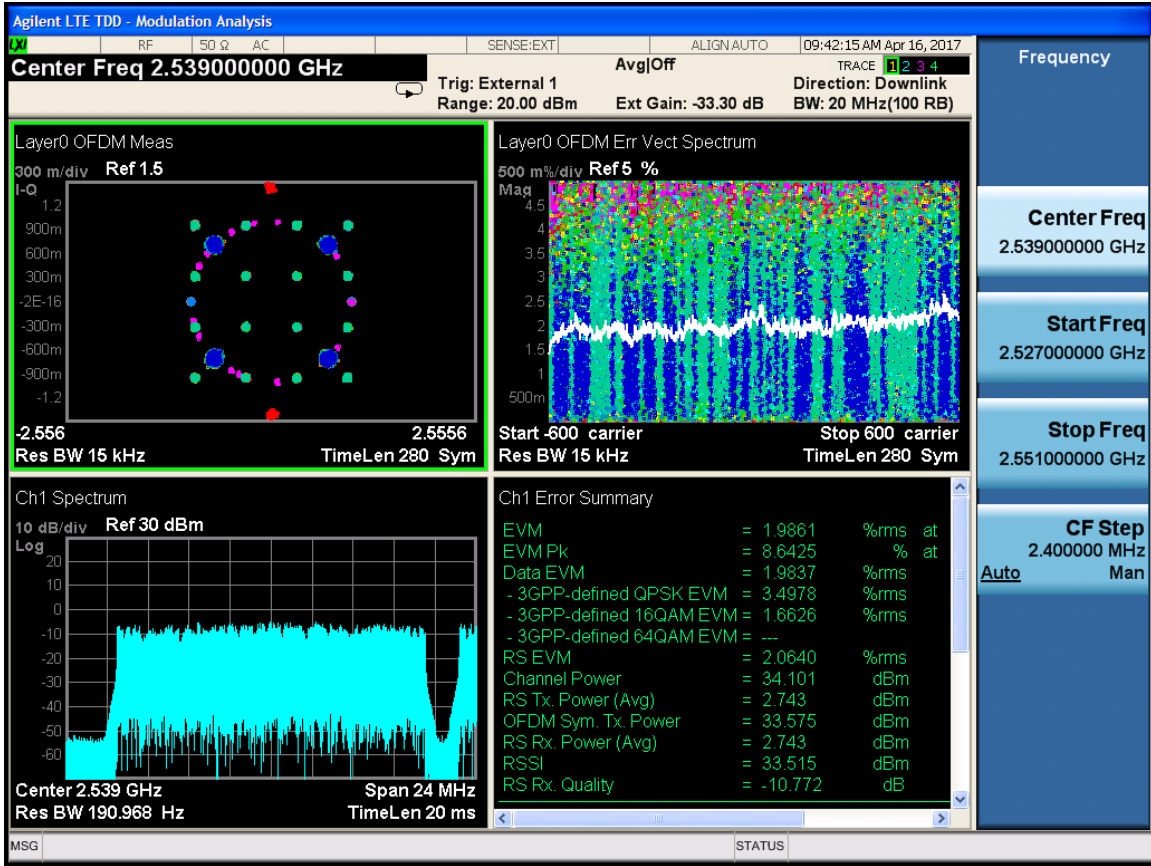


Frequency	
Center Freq	2.526000000 GHz
Start Freq	2.514000000 GHz
Stop Freq	2.538000000 GHz
CF Step	2.400000 MHz
Auto	Man

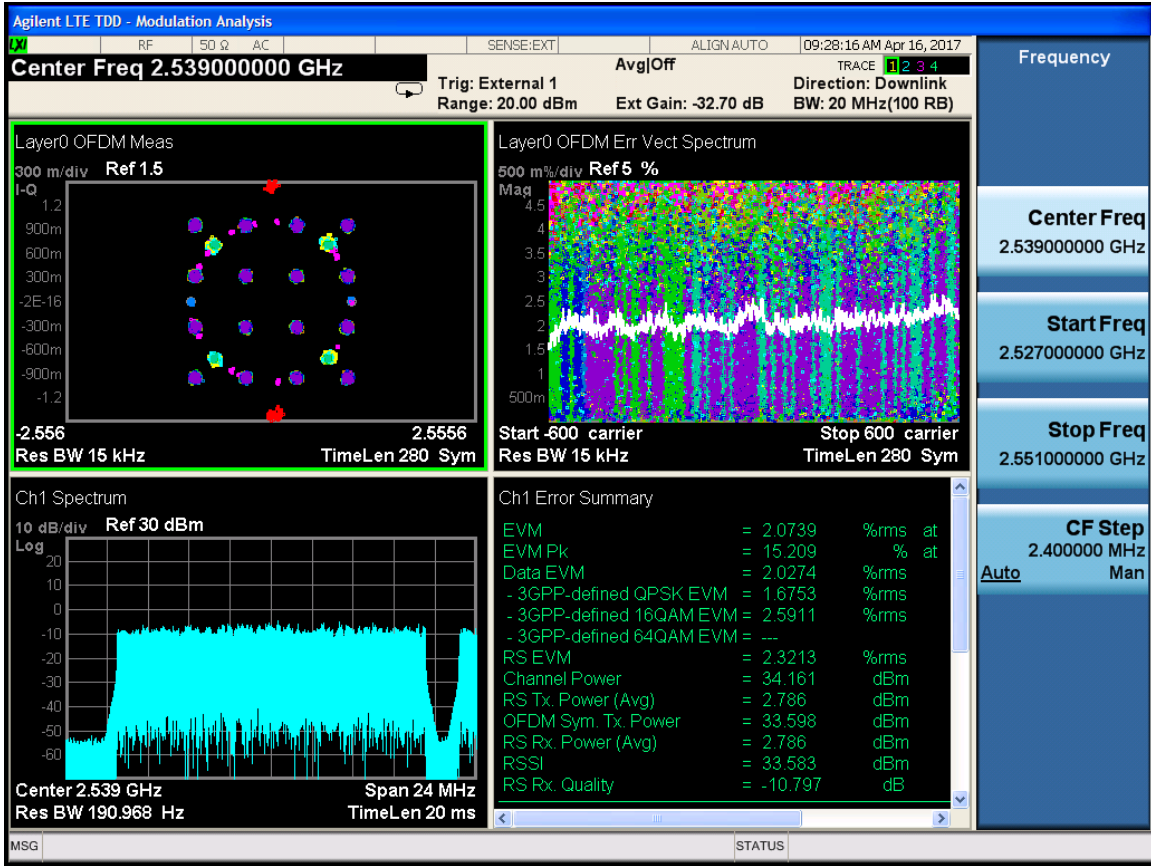




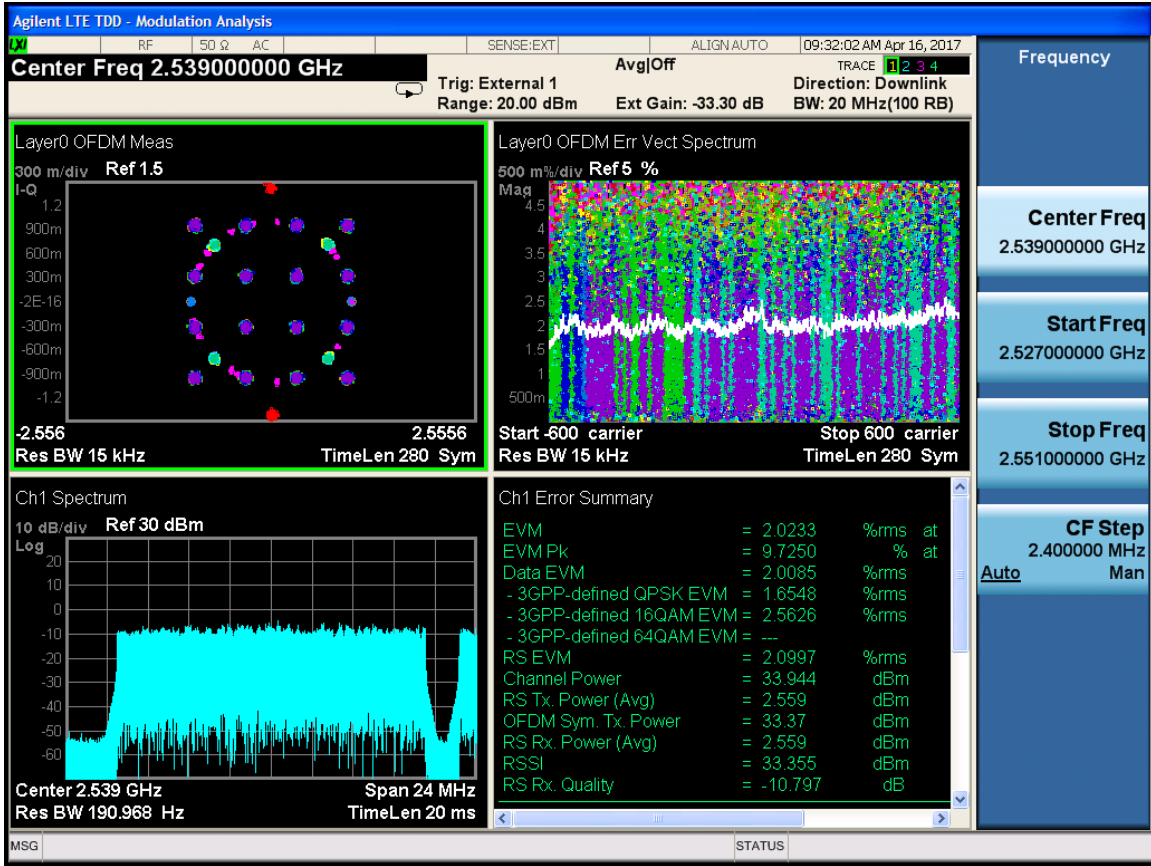




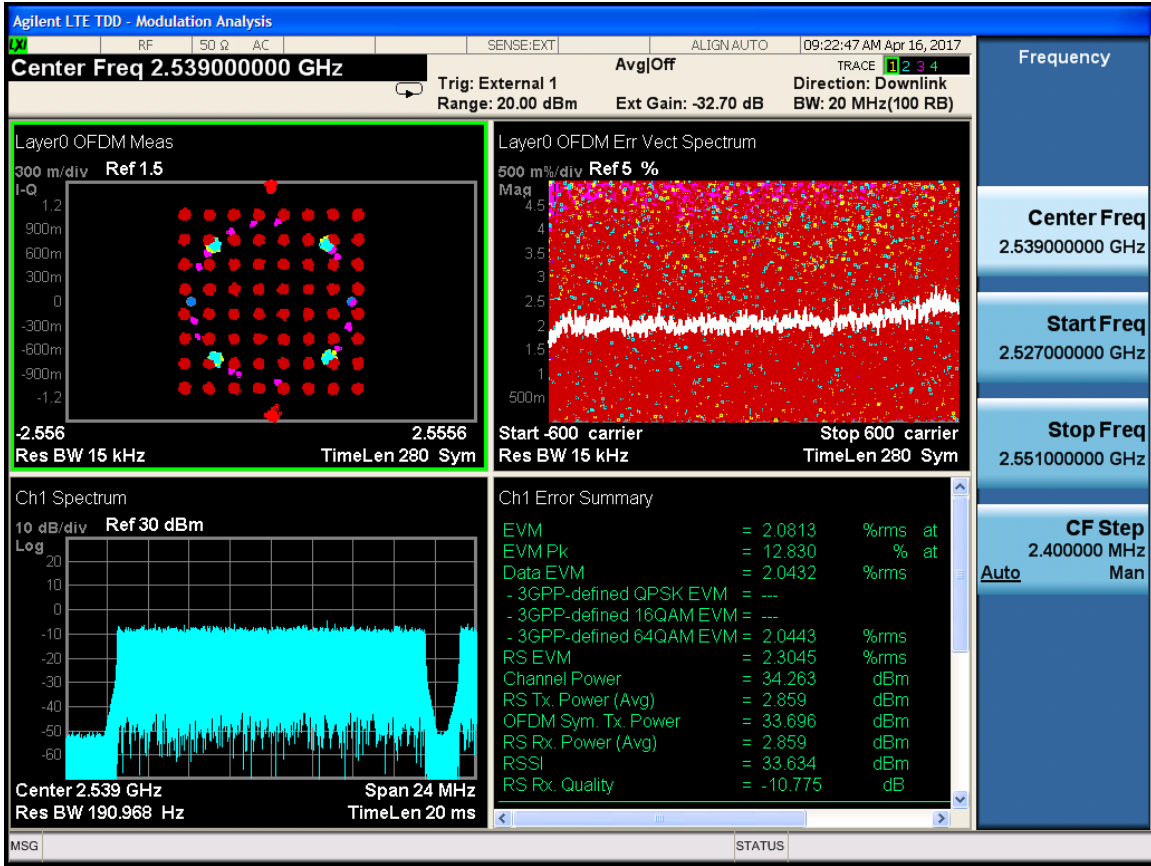
Frequency	
Center Freq	2.539000000 GHz
Start Freq	2.527000000 GHz
Stop Freq	2.551000000 GHz
CF Step	2.400000 MHz
Auto	Man



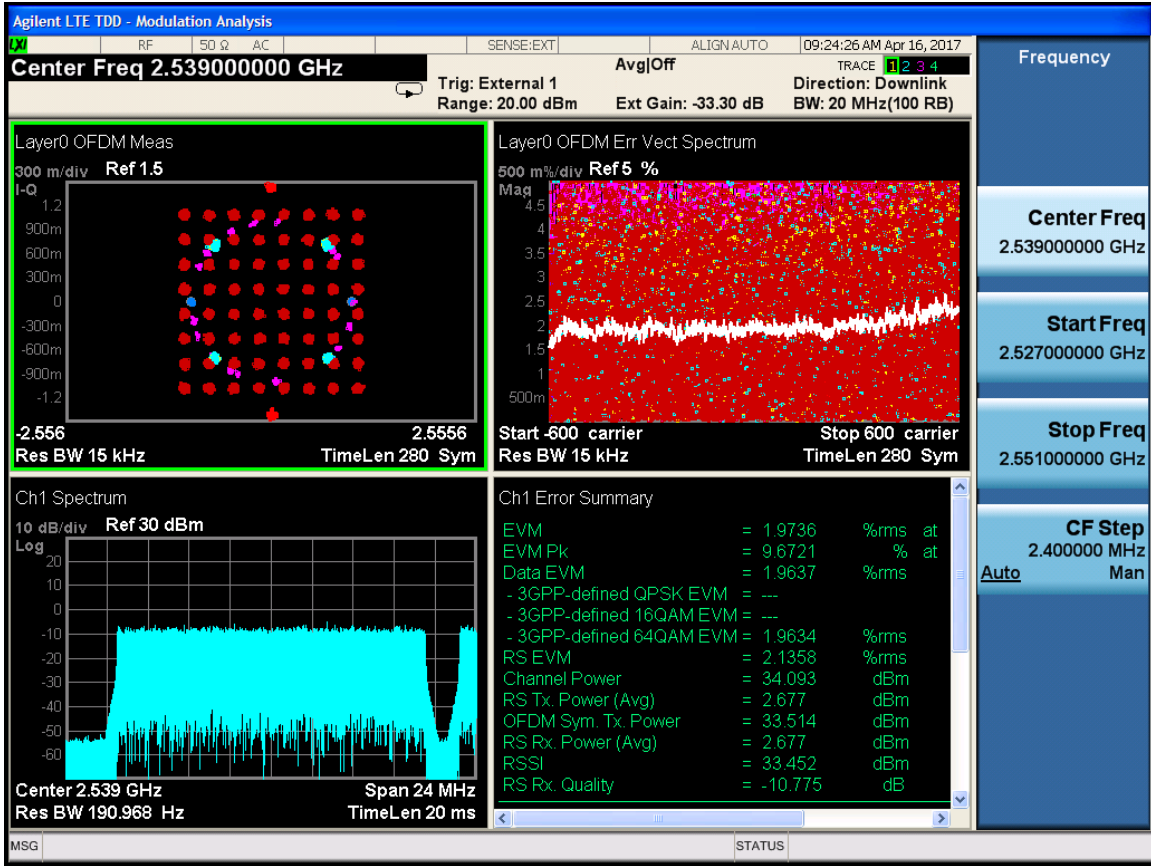
Frequency	
Center Freq	2.539000000 GHz
Start Freq	2.527000000 GHz
Stop Freq	2.551000000 GHz
CF Step	2.400000 MHz
Auto	Man

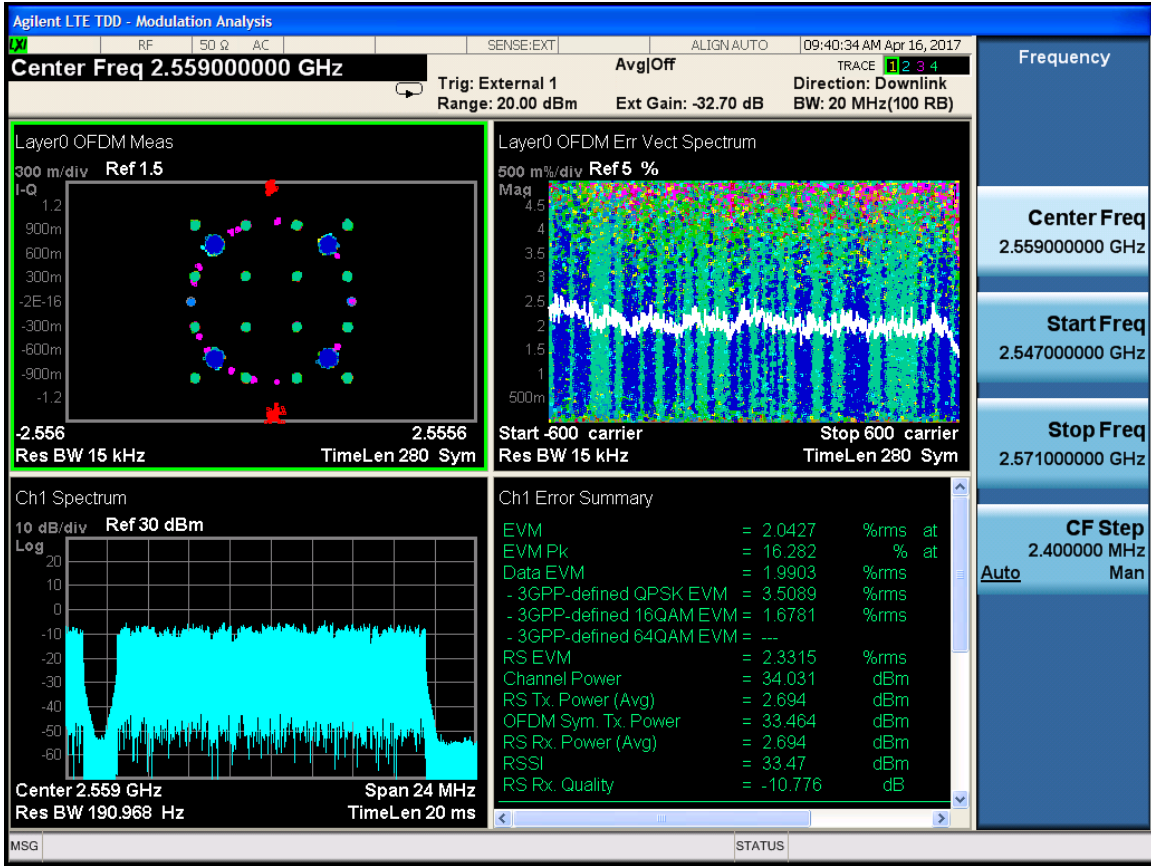




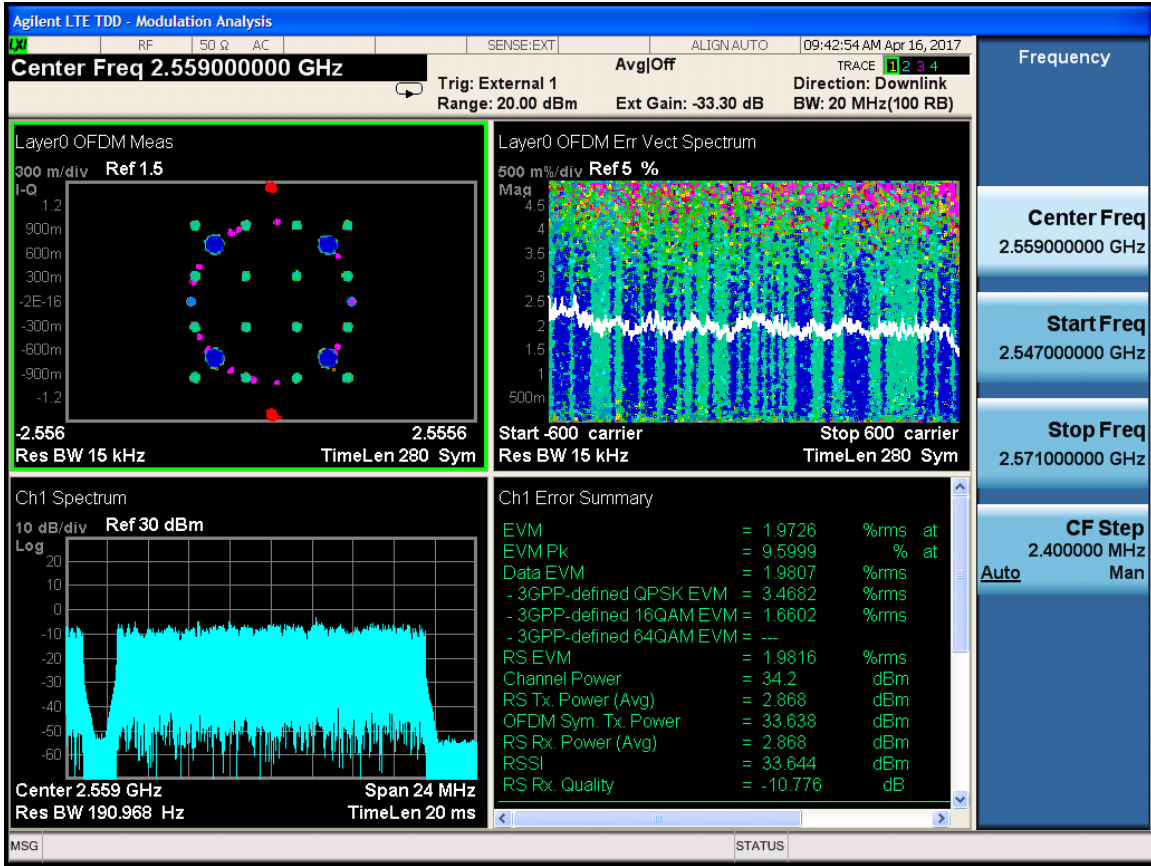




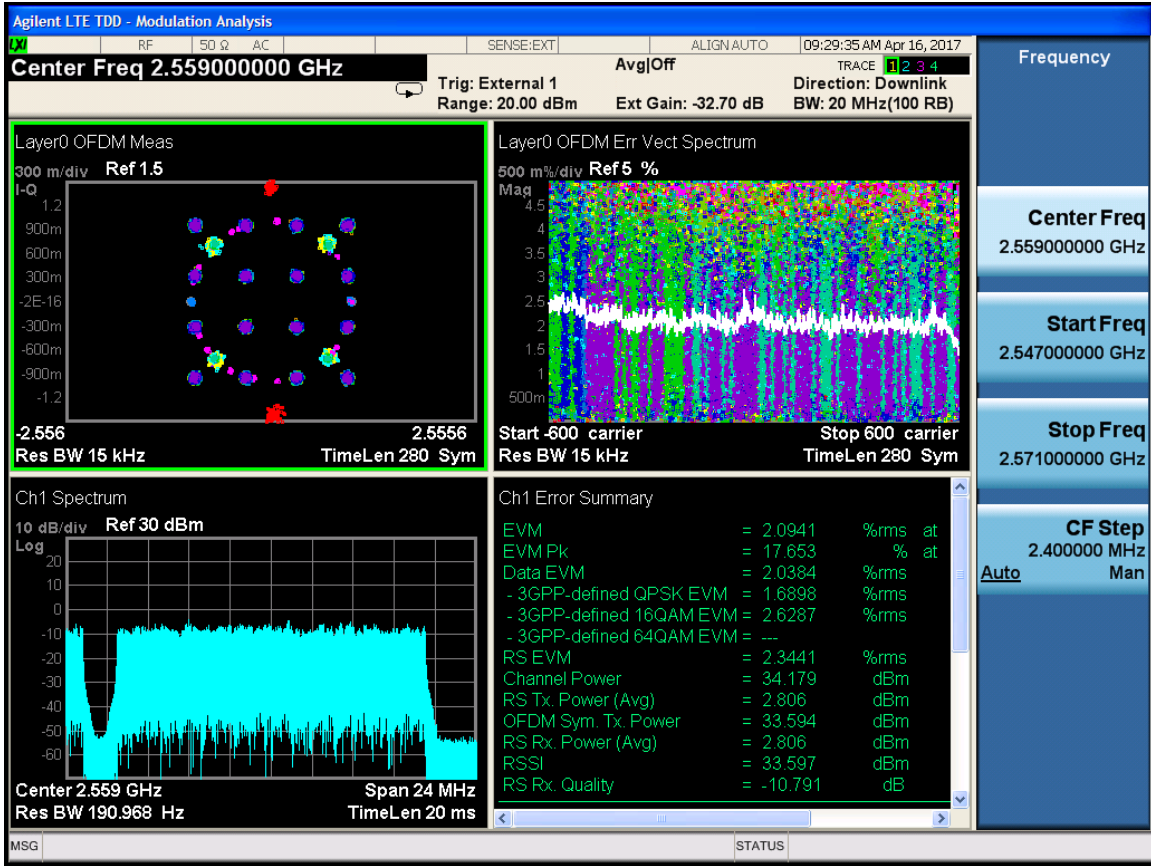




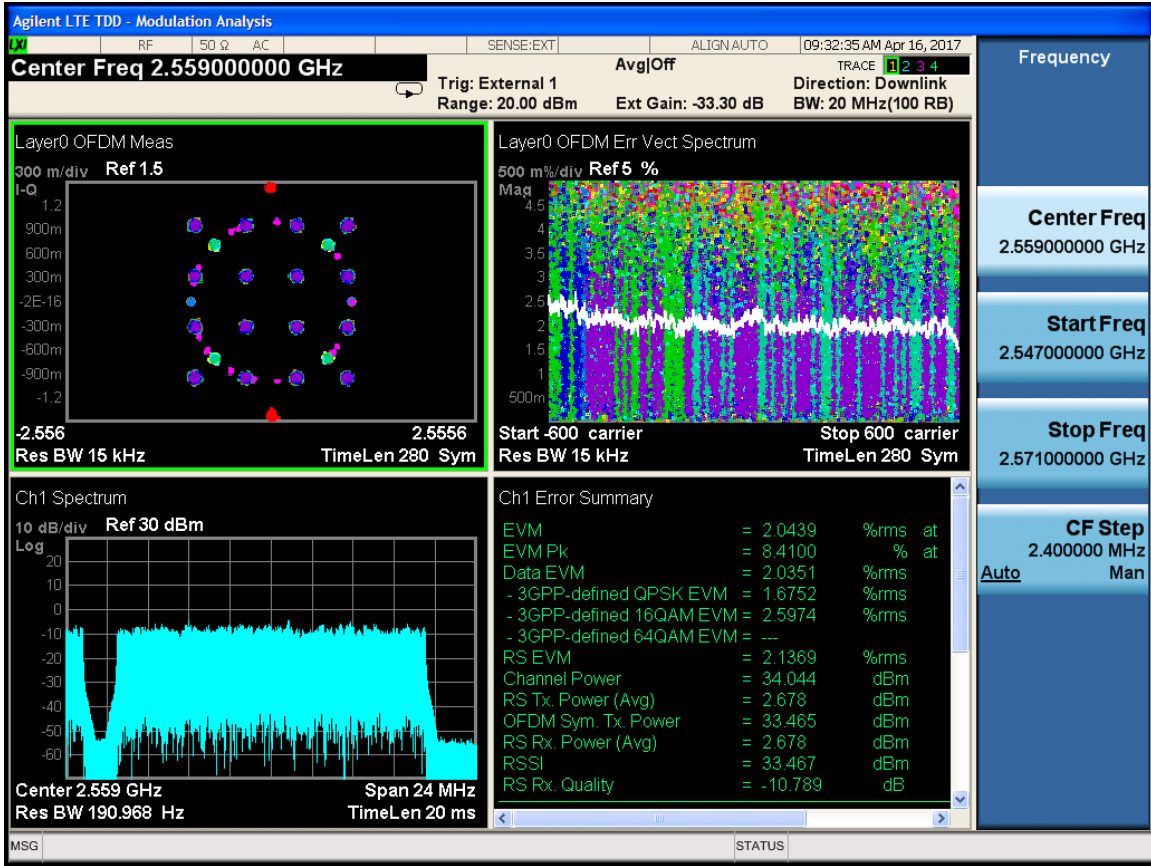
Frequency	
Center Freq	2.559000000 GHz
Start Freq	2.547000000 GHz
Stop Freq	2.571000000 GHz
CF Step	2.400000 MHz
Auto	Man

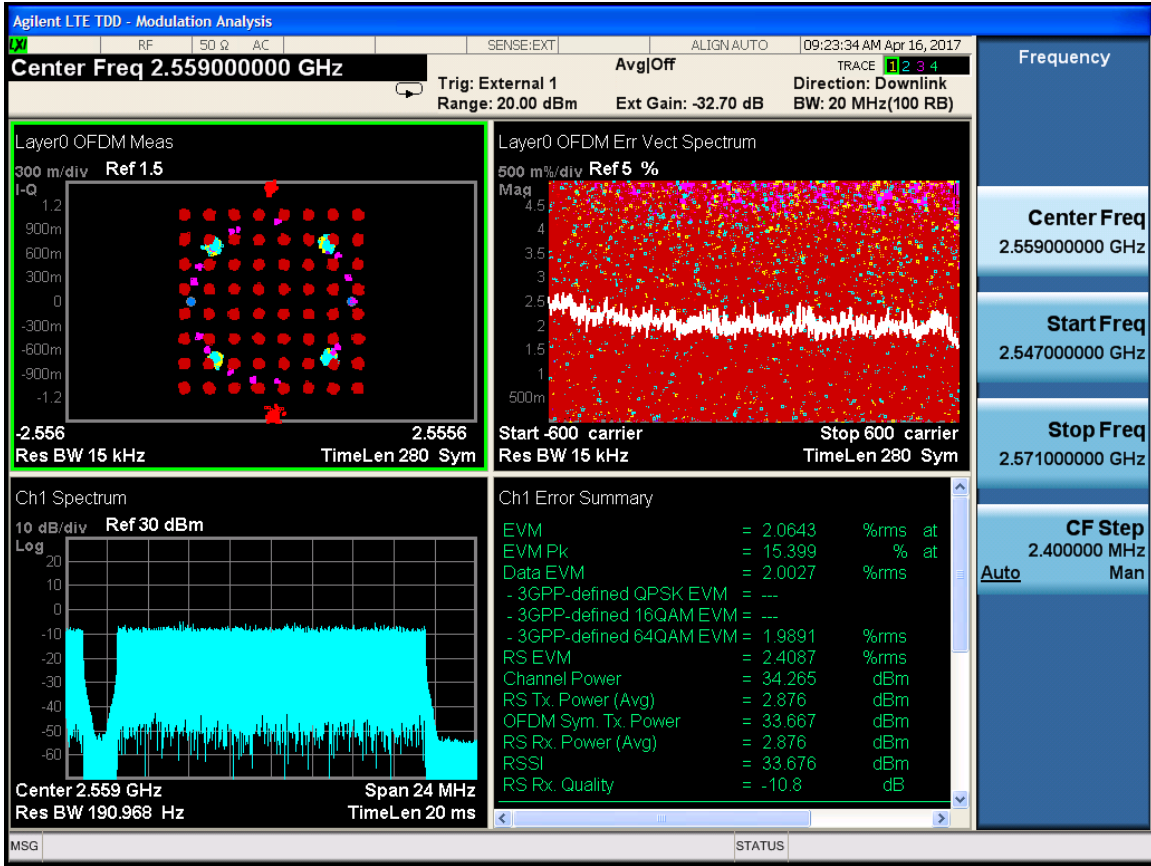


<b>Frequency</b>
<b>Center Freq</b> 2.559000000 GHz
<b>Start Freq</b> 2.547000000 GHz
<b>Stop Freq</b> 2.571000000 GHz
<b>CF Step</b> 2.400000 MHz
Auto Man

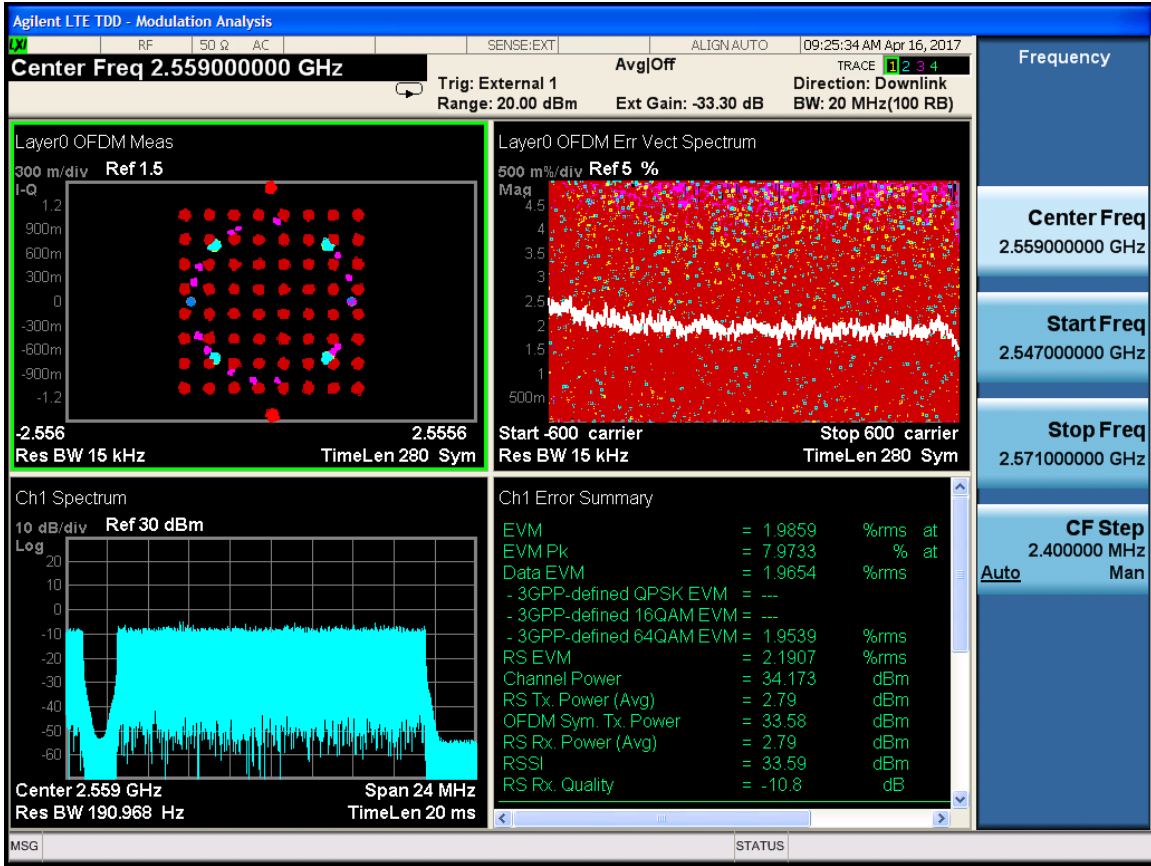


<b>Frequency</b>
<b>Center Freq</b> 2.559000000 GHz
<b>Start Freq</b> 2.547000000 GHz
<b>Stop Freq</b> 2.571000000 GHz
<b>CF Step</b> 2.400000 MHz
Auto Man



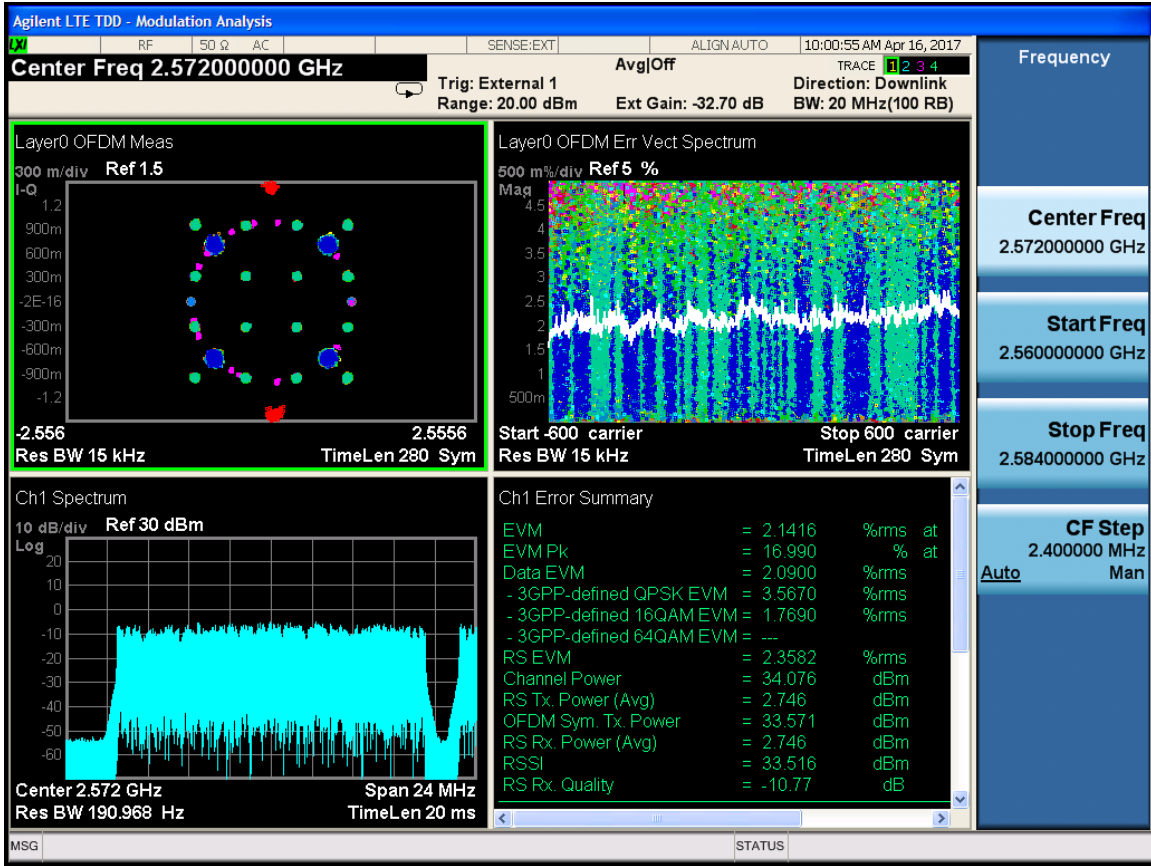


<b>Frequency</b>
<b>Center Freq</b> 2.559000000 GHz
<b>Start Freq</b> 2.547000000 GHz
<b>Stop Freq</b> 2.571000000 GHz
<b>CF Step</b> 2.400000 MHz
Auto Man

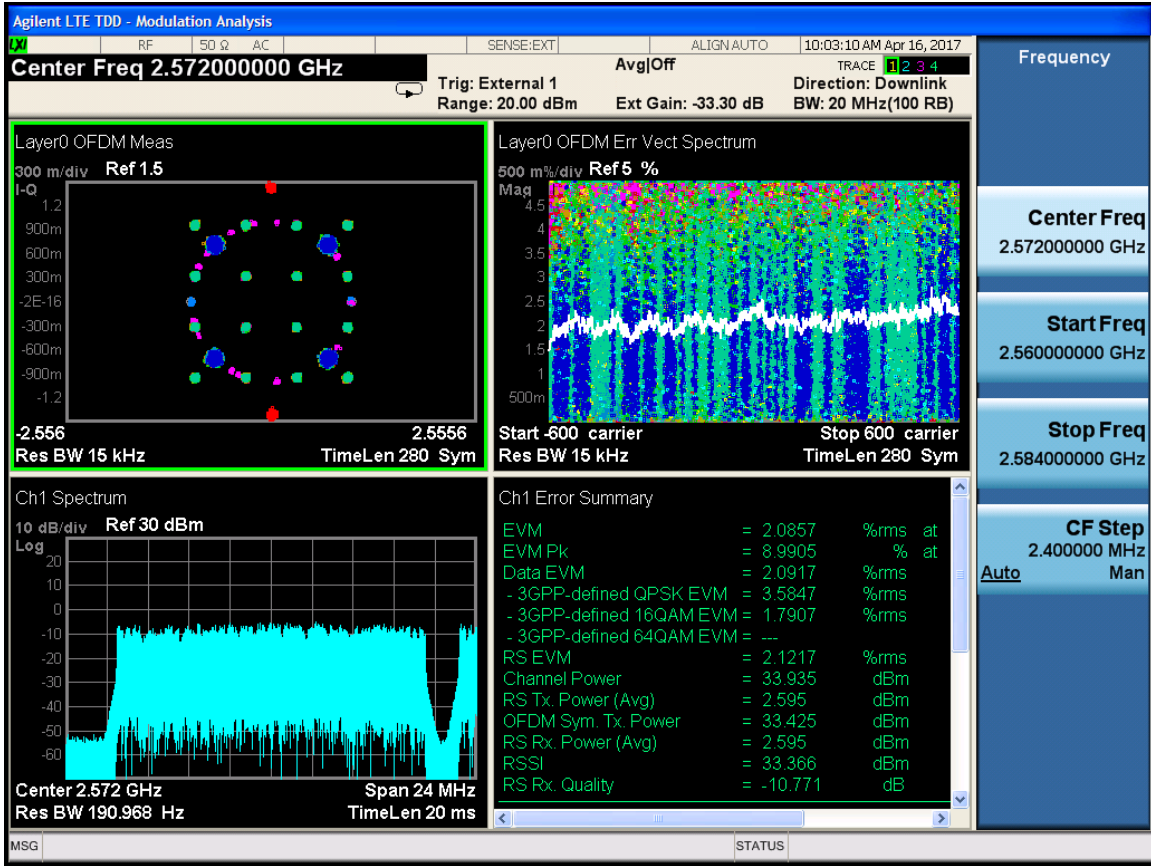


<b>Frequency</b>
<b>Center Freq</b> 2.559000000 GHz
<b>Start Freq</b> 2.547000000 GHz
<b>Stop Freq</b> 2.571000000 GHz
<b>CF Step</b> 2.400000 MHz
Auto Man

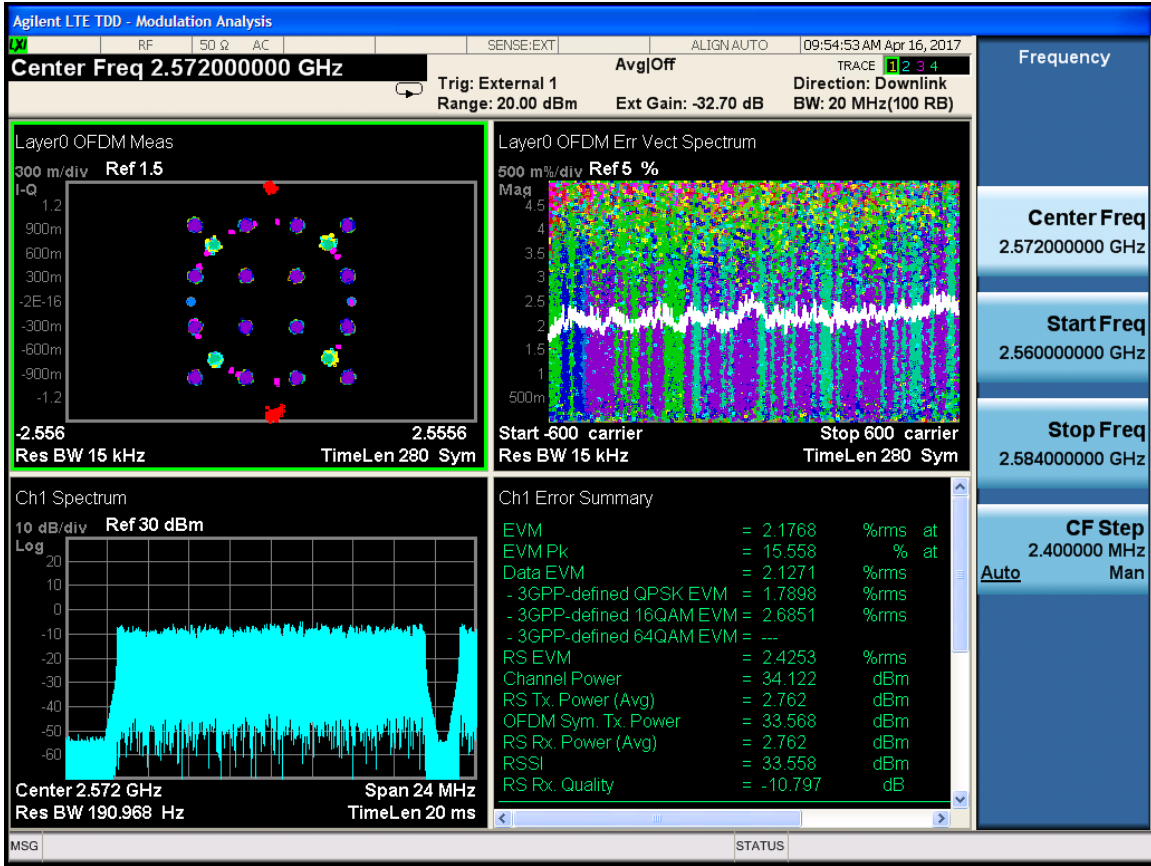








<b>Frequency</b>
<b>Center Freq</b> 2.57200000 GHz
<b>Start Freq</b> 2.56000000 GHz
<b>Stop Freq</b> 2.58400000 GHz
<b>CF Step</b> 2.400000 MHz
Auto Man



Frequency	
Center Freq	2.572000000 GHz
Start Freq	2.560000000 GHz
Stop Freq	2.584000000 GHz
CF Step	2.400000 MHz
Auto	Man