

## 6 FCC §2.1053 & §24.238(a) - Spurious Radiated Emissions

### 6.1 Applicable Standards

According to FCC §24.238(a) the power of any emissions 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.

### 6.2 Test Procedure

The transmitter was placed on the 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 tenth 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 =  $10 \log(\text{TX Power in Watts}/0.001)$  – the absolute level  
 Spurious attenuation limit in dB =  $43 + 10 \text{Log}_{10}(\text{power out in Watts})$

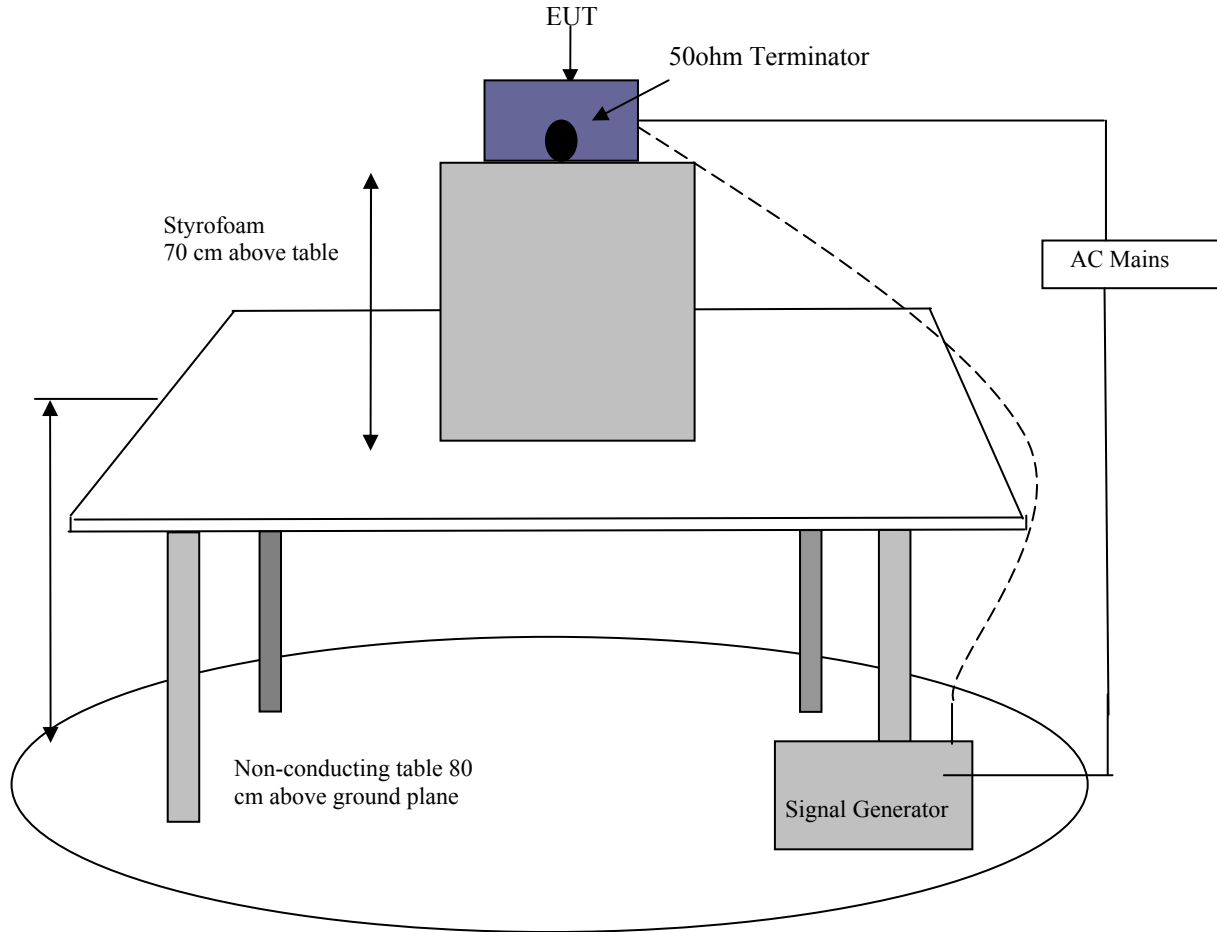
### 6.3 Test Equipment List and Details

Manufacturer	Description	Model No.	Serial No.	Calibration Date	Calibration Interval
Sunol Science Corp	System Controller	SC99V	122303-1	N/A	N/A
Sunol Sciences	Antenna, Biconi-Log	JB3	A020106-2	2014-09-17	1 year
COM-POWER	Antenna, Dipole	AD-100	721033DB1, 2 721033DB3, 4	2014-11-03	2 year
Hewlett Packard	Pre-amplifier 1GHz-26.5GHz	8447D	2944A06639	2015-05-08	1 year
HP/ Agilent	Pre Amplifier	8449B OPT HO2	3008A0113	2015-05-19	1 year
Agilent	Analyzer, Spectrum	E4440A	MY44303352	2014-11-13	1 year
Eaton	Antenna, Horn	96001	2617	2014-11-18	1 year
EMCO	Antenna, Horn	3115	9511-4627	2015-01-15	1 year

**Statement of Traceability:** *BACL Corp.* attests that all calibrations have been performed per the A2LA requirements, traceable to the NIST.

### 6.4 Test Setup Block Diagram

Radiated Emissions Testing



### 6.5 Test Environmental Conditions

<b>Temperature:</b>	20-21°C
<b>Relative Humidity:</b>	47-49 %
<b>ATM Pressure:</b>	101.4-101.6 kPa

The testing was performed by Bo Li on 2014-04-18 in 5 Meter Chamber 3.

## 6.6 Test Results

### Carrier Wave Signal

Downlink (Channel frequency = 1940 MHz)

Indicated		Azimuth (degree)	Test Antenna		Substituted					Limit (dBm)	Margin (dB)
Frequency (MHz)	S.A. Amp. (dBuV)		Height (cm)	Polarity (H/V)	Frequency (MHz)	Level (dBm)	Ant. Gain Correction (dB)	Cable Loss (dB)	Absolute Level (dBm)		
67.45	50.89	76	162	V	67.45	-45.85	0	0.2	-46.05	-13	-33.05
66.869	43.42	311	235	H	66.869	-53.6	0	0.2	-53.8	-13	-40.8
46.35	48.02	360	100	V	46.35	-48.72	0	0.2	-48.92	-13	-35.92
106.156	43.54	275	258	H	106.156	-54.12	0	0.26	-54.38	-13	-41.38
1000	49.35	260	100	V	1000	-54.37	6.845	0.64	-48.165	-13	-35.165
3862	52.73	89	100	H	3862	-40.68	9.251	1.47	-32.899	-13	-19.899
3862	54.63	290	100	V	3862	-39.66	8.653	1.47	-32.477	-13	-19.477
1990	46.41	307	100	H	1990	-53.81	8.983	0.92	-45.747	-13	-32.747

Downlink (Channel frequency = 1960 MHz)

Indicated		Azimuth (degree)	Test Antenna		Substituted					Limit (dBm)	Margin (dB)
Frequency (MHz)	S.A. Amp. (dBuV)		Height (cm)	Polarity (H/V)	Frequency (MHz)	Level (dBm)	Ant. Gain Correction (dB)	Cable Loss (dB)	Absolute Level (dBm)		
67.45	50.89	76	162	V	67.45	-45.85	0	0.2	-46.05	-13	-33.05
66.869	43.42	311	235	H	66.869	-53.6	0	0.2	-53.8	-13	-40.8
46.35	48.02	360	100	V	46.35	-48.72	0	0.2	-48.92	-13	-35.92
106.156	43.54	275	258	H	106.156	-54.12	0	0.26	-54.38	-13	-41.38
3918	65	52	100	V	3918	-29.29	8.653	1.47	-22.107	-13	-9.107
3918	61.02	21	100	H	3918	-32.39	9.251	1.47	-24.609	-13	-11.609
9640	45.42	163	100	V	9640	-34.22	11.235	2.3	-25.285	-13	-12.285
9658	45.94	227	100	H	9658	-40.52	12.074	2.3	-30.746	-13	-17.746

Downlink (Channel frequency = 1980 MHz)

Indicated		Azimuth (degree)	Test Antenna		Substituted					Limit (dBm)	Margin (dB)
Frequency (MHz)	S.A. Amp. (dBuV)		Height (cm)	Polarity (H/V)	Frequency (MHz)	Level (dBm)	Ant. Gain Correction (dB)	Cable Loss (dB)	Absolute Level (dBm)		
67.45	50.89	76	162	V	67.45	-45.85	0	0.2	-46.05	-13	-33.05
66.869	43.42	311	235	H	66.869	-53.6	0	0.2	-53.8	-13	-40.8
46.35	48.02	360	100	V	46.35	-48.72	0	0.2	-48.92	-13	-35.92
106.156	43.54	275	258	H	106.156	-54.12	0	0.26	-54.38	-13	-41.38
4457	45.76	126	100	V	4457	-47.03	10.398	1.39	-38.022	-13	-25.022
3975	62.83	165	100	H	3975	-31.06	9.283	1.52	-23.297	-13	-10.297
3975	65.81	93	100	V	3975	-27.17	8.817	1.52	-19.873	-13	-6.873
9613	45.52	181	100	H	9613	-40.94	12.074	2.3	-31.166	-13	-18.166

Uplink (Channel frequency = 1860 MHz)

Indicated		Azimuth (degree)	Test Antenna		Substituted					Limit (dBm)	Margin (dB)
Frequency (MHz)	S.A. Amp. (dBuV)		Height (cm)	Polarity (H/V)	Frequency (MHz)	Level (dBm)	Ant. Gain Correction (dB)	Cable Loss (dB)	Absolute Level (dBm)		
67.45	50.89	76	162	V	67.45	-45.85	0	0.2	-46.05	-13	-33.05
66.869	43.42	311	235	H	66.869	-53.6	0	0.2	-53.8	-13	-40.8
46.35	48.02	360	100	V	46.35	-48.72	0	0.2	-48.92	-13	-35.92
106.156	43.54	275	258	H	106.156	-54.12	0	0.26	-54.38	-13	-41.38
3692	75	313	100	V	3692	-49.5	9.503	1.47	-41.467	-13	-28.467
3692	75.08	179	100	H	3692	-48.66	9.586	1.47	-40.544	-13	-27.544
9245	48.66	301	100	V	9245	-63.34	11.701	2.3	-53.939	-13	-40.939
7913	45.72	220	100	H	7913	-71.84	11.167	1.91	-62.583	-13	-49.583

## Uplink (Channel frequency = 1880 MHz)

Indicated		Azimuth (degree)	Test Antenna		Substituted					Limit (dBm)	Margin (dB)
Frequency (MHz)	S.A. Amp. (dBuV)		Height (cm)	Polarity (H/V)	Frequency (MHz)	Level (dBm)	Ant. Gain Correction (dB)	Cable Loss (dB)	Absolute Level (dBm)		
67.45	50.89	76	162	V	67.45	-45.85	0	0.2	-46.05	-13	-33.05
66.869	43.42	311	235	H	66.869	-53.6	0	0.2	-53.8	-13	-40.8
46.35	48.02	360	100	V	46.35	-48.72	0	0.2	-48.92	-13	-35.92
106.156	43.54	275	258	H	106.156	-54.12	0	0.26	-54.38	-13	-41.38
3748	83.48	43	100	V	3748	-41.02	9.503	1.47	-32.987	-13	-19.987
3748	82.53	40	100	H	3748	-41.21	9.533	1.47	-33.147	-13	-20.147
5760	46.4	359	100	V	5760	-74.94	11.073	1.1	-64.967	-13	-51.967
4428	46.15	0	100	H	4428	-77.77	10.885	1.39	-68.275	-13	-55.275

## Uplink (Channel frequency = 1900 MHz)

Indicated		Azimuth (degree)	Test Antenna		Substituted					Limit (dBm)	Margin (dB)
Frequency (MHz)	S.A. Amp. (dBuV)		Height (cm)	Polarity (H/V)	Frequency (MHz)	Level (dBm)	Ant. Gain Correction (dB)	Cable Loss (dB)	Absolute Level (dBm)		
67.45	50.89	76	162	V	67.45	-45.85	0	0.2	-46.05	-13	-33.05
66.869	43.42	311	235	H	66.869	-53.6	0	0.2	-53.8	-13	-40.8
46.35	48.02	360	100	V	46.35	-48.72	0	0.2	-48.92	-13	-35.92
106.156	43.54	275	258	H	106.156	-54.12	0	0.26	-54.38	-13	-41.38
3833	78.16	13	100	V	3833	-44.89	9.151	1.47	-37.209	-13	-24.209
3833	73.18	350	100	H	3833	-49.96	9.255	1.47	-42.175	-13	-29.175
5732	60.75	110	100	V	5732	-60.59	11.073	1.1	-50.617	-13	-37.617
5732	52.99	264	100	H	5732	-68.26	11.093	1.1	-58.267	-13	-45.267

## 7 FCC §2.1051 & §24.238(a) - Spurious Emissions at Antenna Terminals

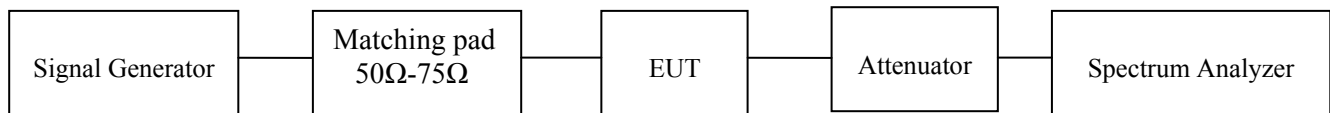
### 7.1 Applicable Standards

According to FCC §24.238(a) and §2.1051 the power of any emissions 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

### 7.2 Test Procedure

The EUT was connected to the spectrum analyzer and Signal Generator followed by 50Ω-75Ω matching pad.

The resolution bandwidth of the spectrum analyzer was set at 1MHz. Sufficient scans were taken to show any out of band emissions up to 10<sup>th</sup> harmonic.



### 7.3 Test Equipment List and Details

Manufacturers	Descriptions	Models	Serial Numbers	Calibration Dates	Calibration Interval
Agilent	Spectrum Analyzer	E4440A	MY44303352	2014-10-16	1 year
Agilent	Signal Generator	E4438C	MY45091309	2014-07-15	1 year

*Statement of Traceability: BACL Corp. attests that all calibrations have been performed per the A2LA requirements, traceable to the NIST.*

### 7.4 Test Environmental Conditions

<b>Temperature:</b>	21-23° C
<b>Relative Humidity:</b>	42-48 %
<b>ATM Pressure:</b>	101.4-102 kPa

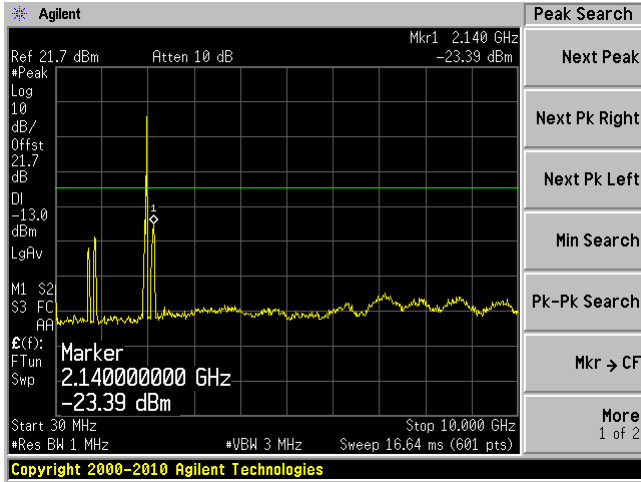
*The testing was performed by Ronak Patel 2015-06-08 to 2015-06-29 in the RF Site.*

### 7.5 Test Results

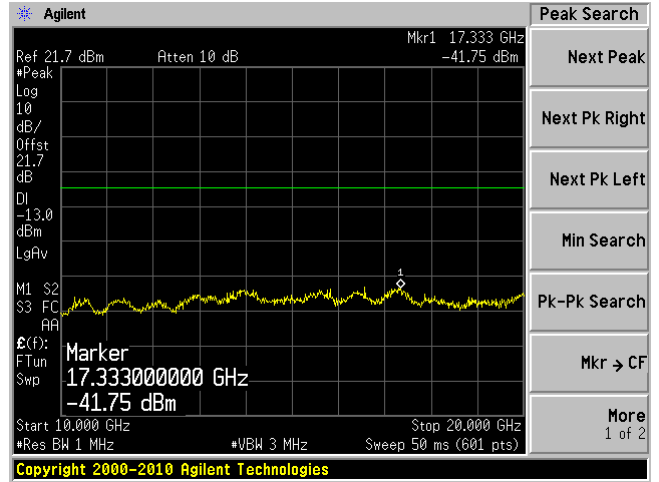
Please refer to the following plots.

GSM/GPRS DL

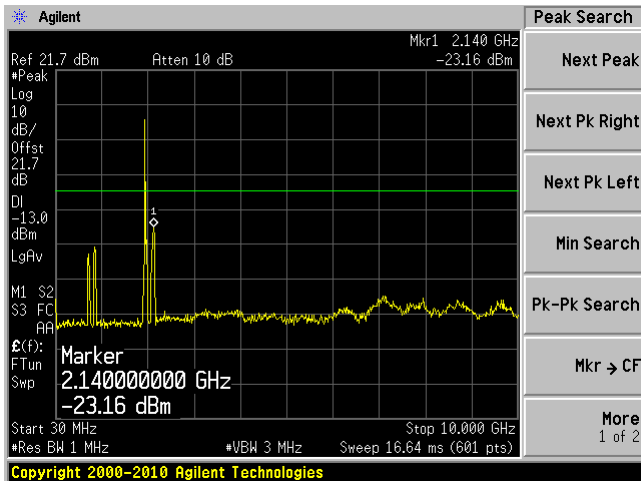
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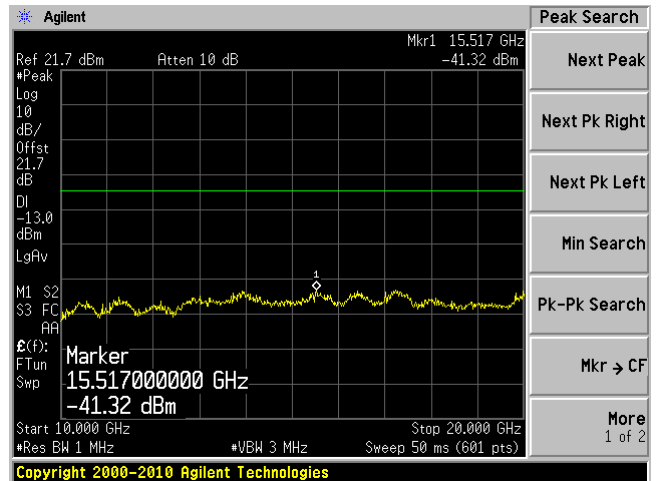
Low 10GHz-20GHz



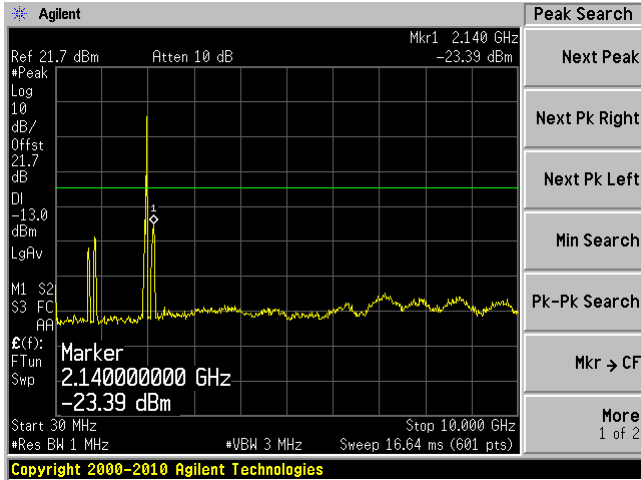
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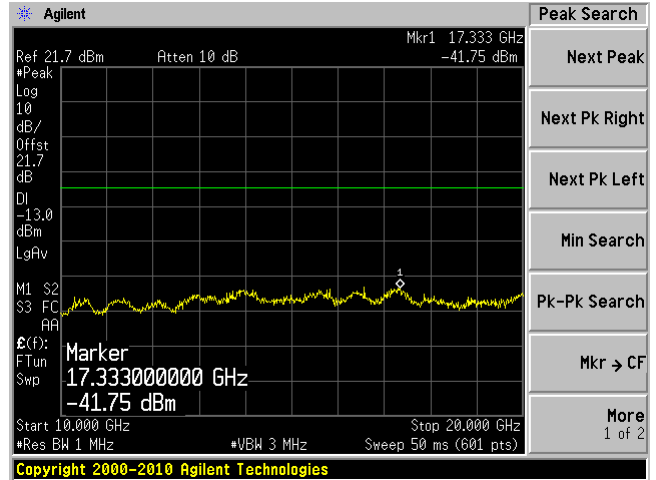
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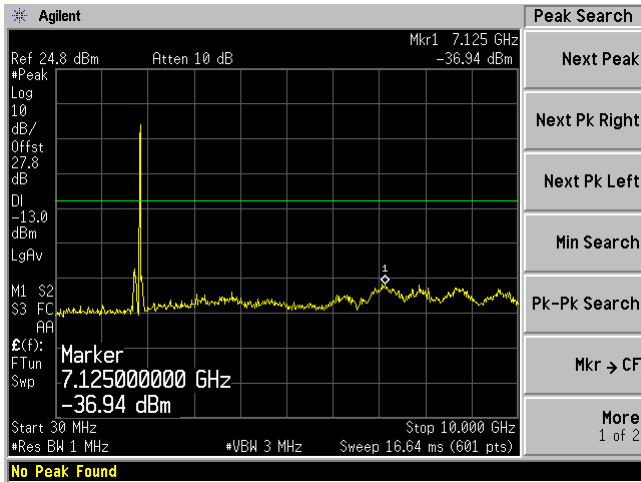


High 10GHz-20GHz

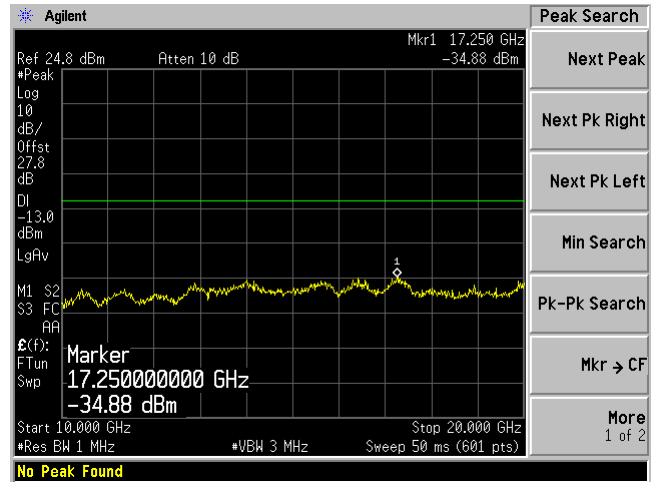


GSM/GPRS UL

Low 30MHz-10GHz

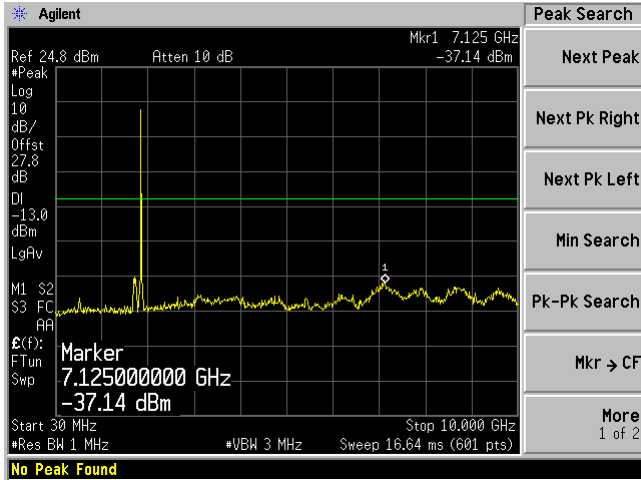


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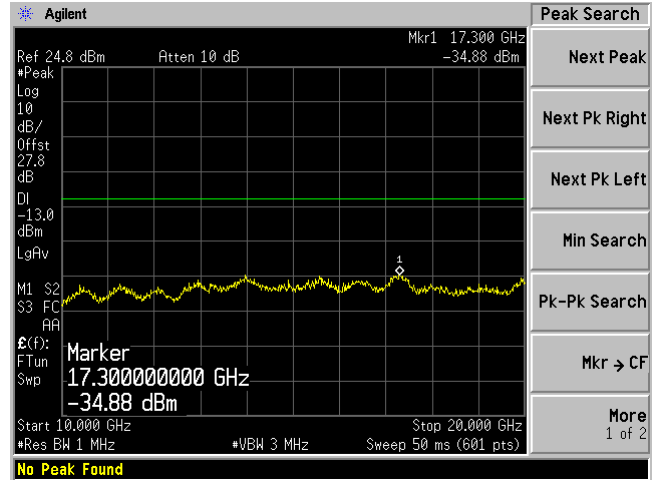




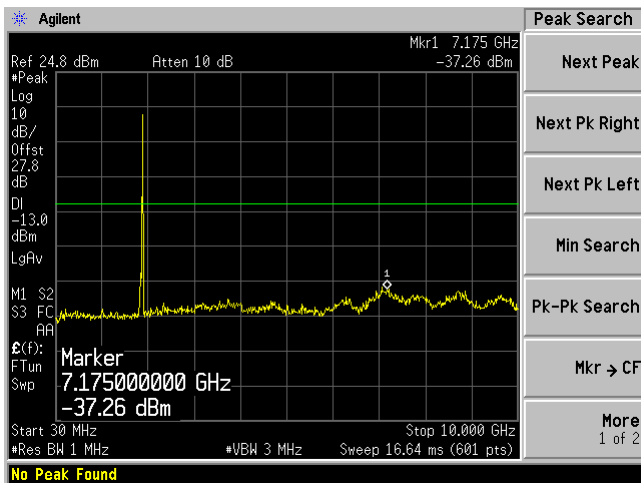
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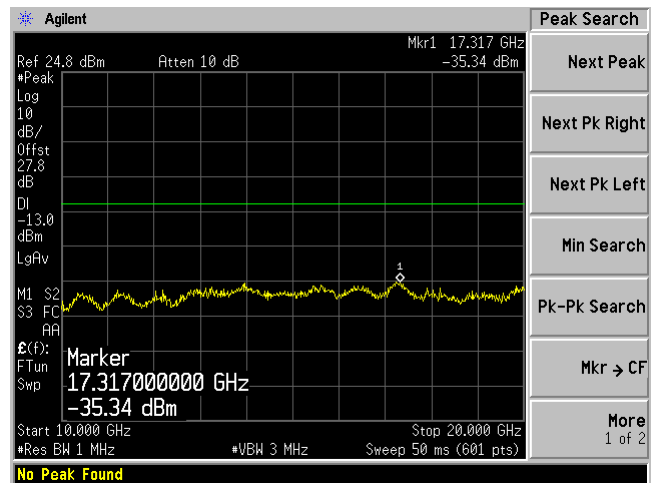
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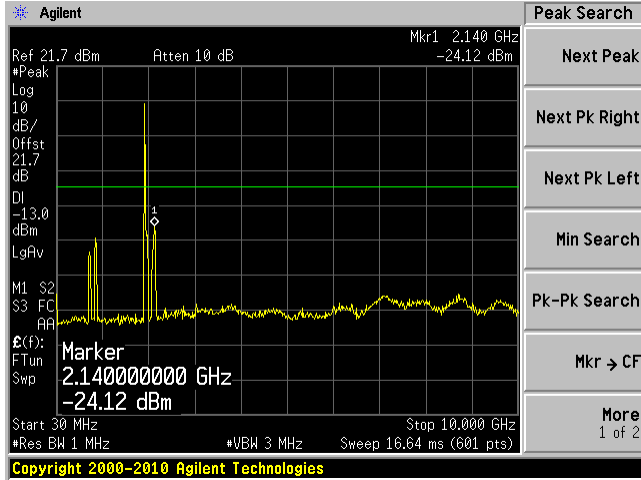


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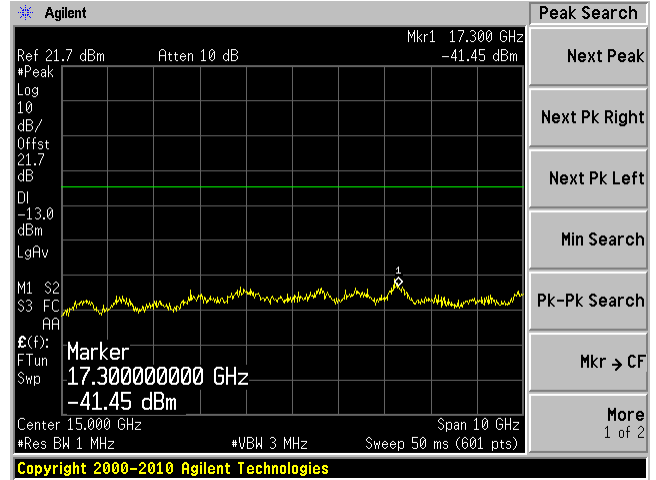


CDMA/EVDO DL

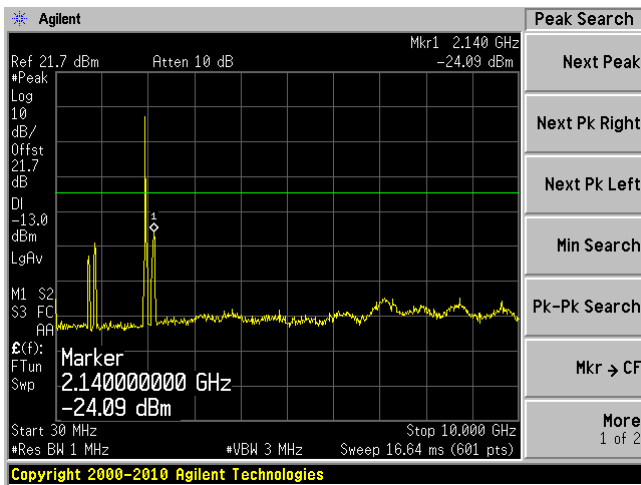
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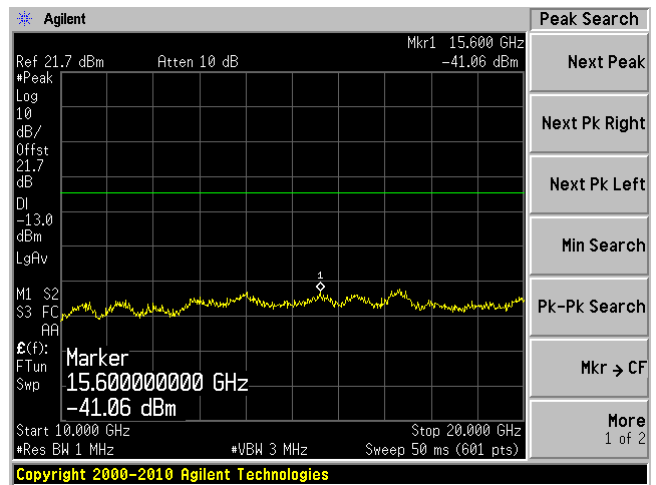
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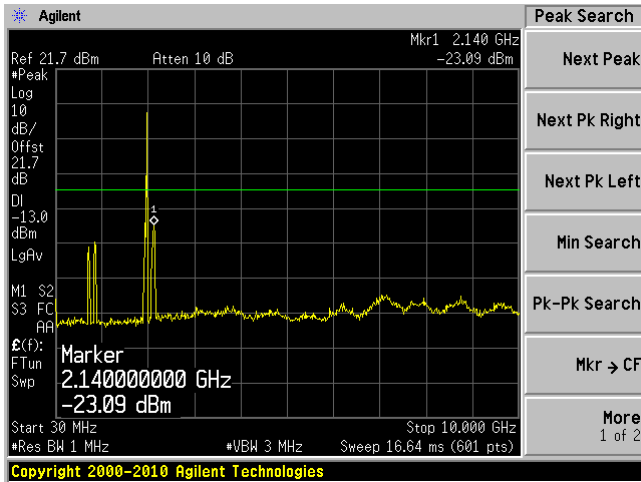
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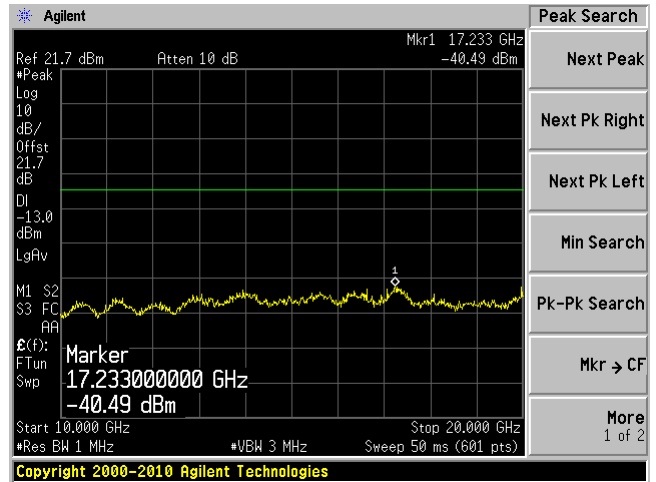
Middle 10GHz-20GHz



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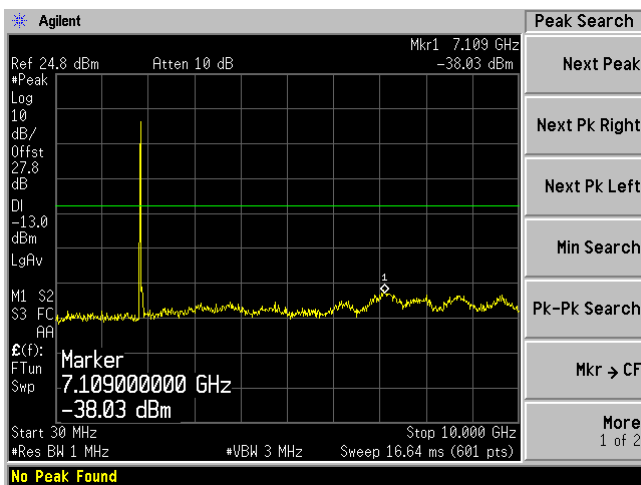


High 10GHz-20GHz

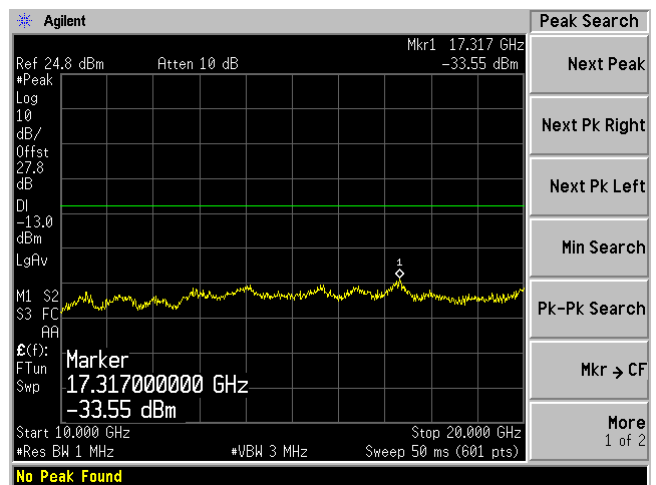


CDMA/EVDO UL

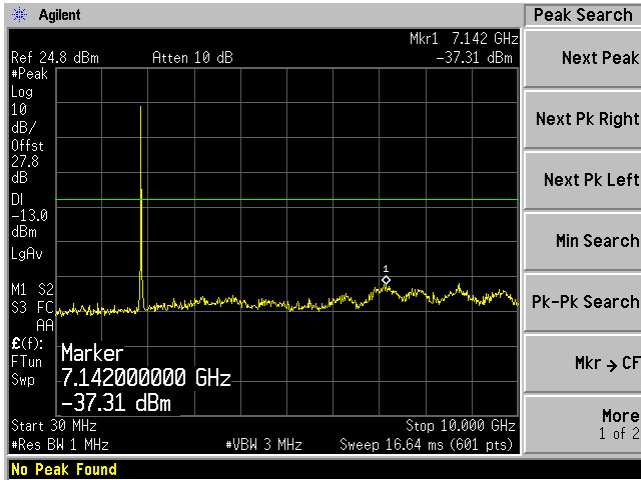
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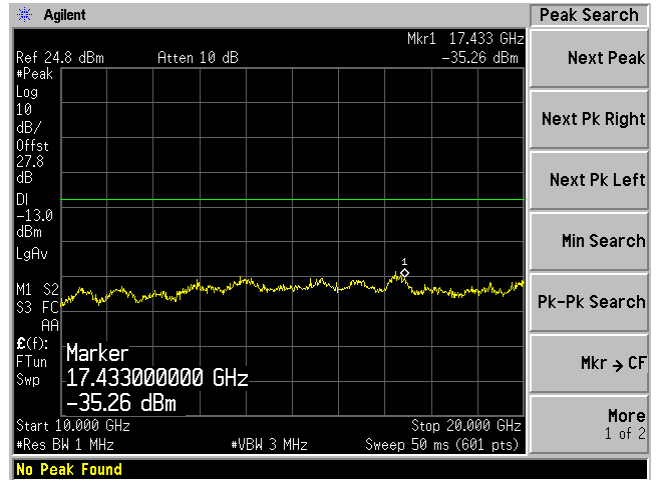
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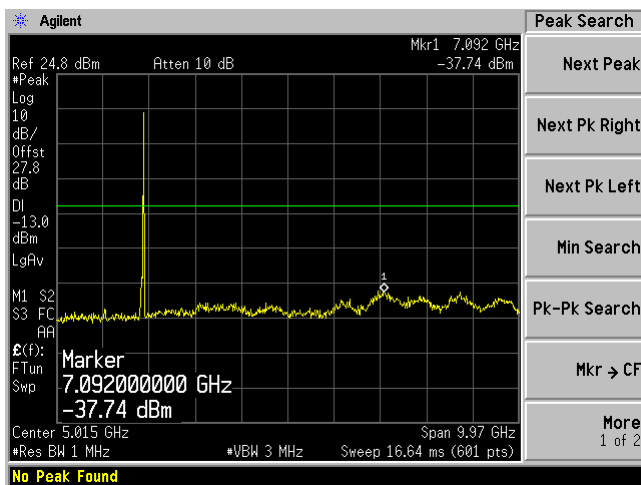
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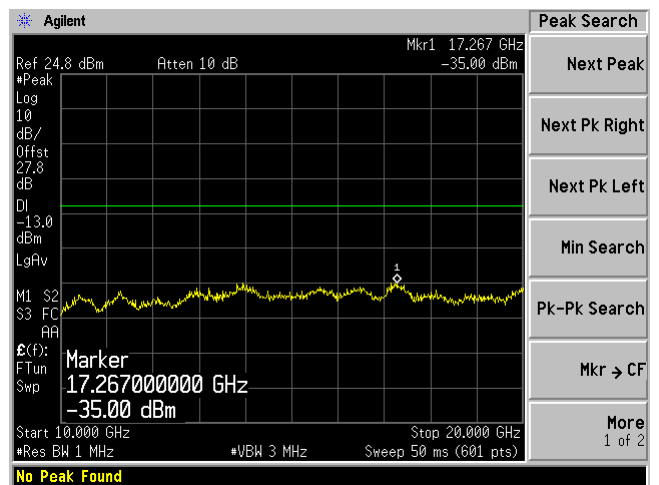
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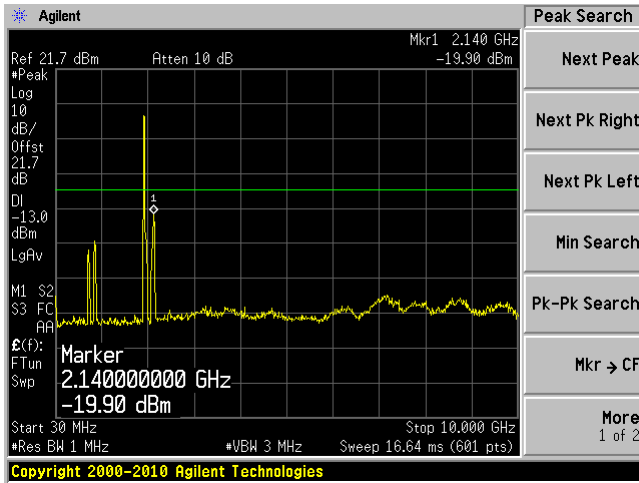


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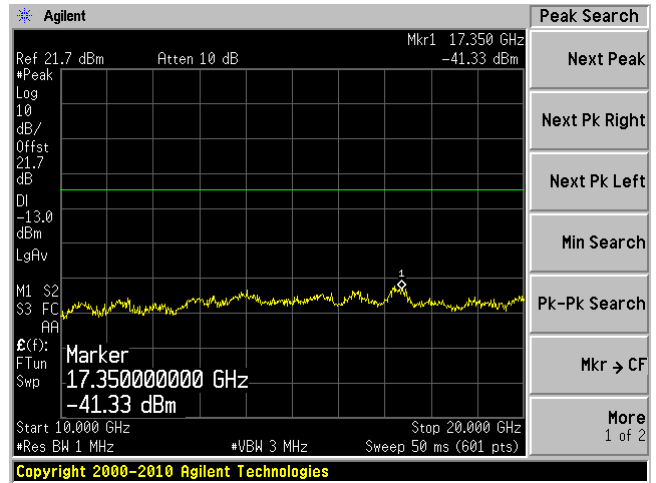


WCDMA DL

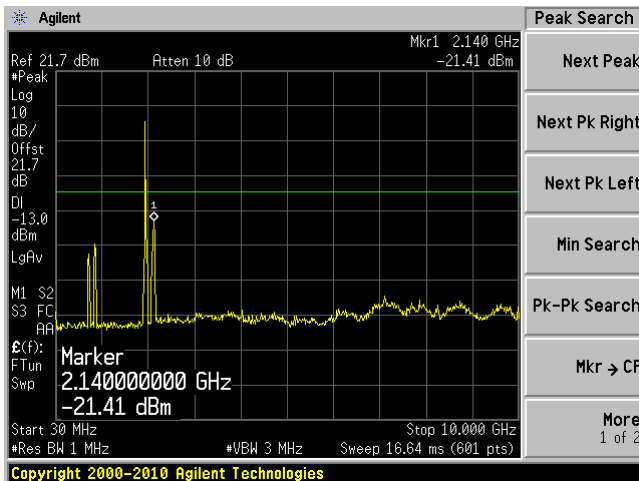
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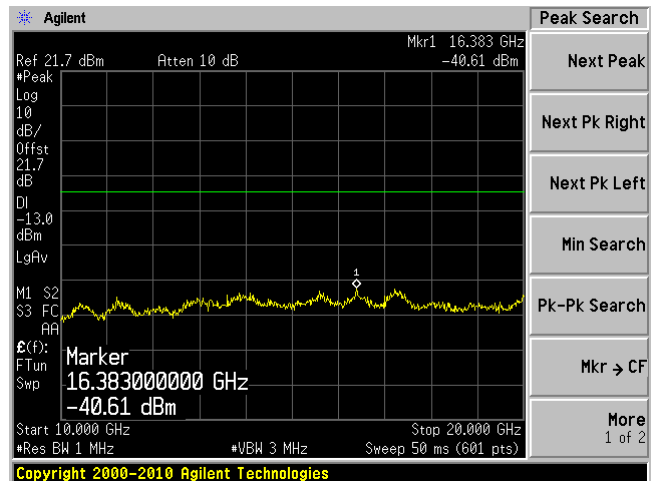
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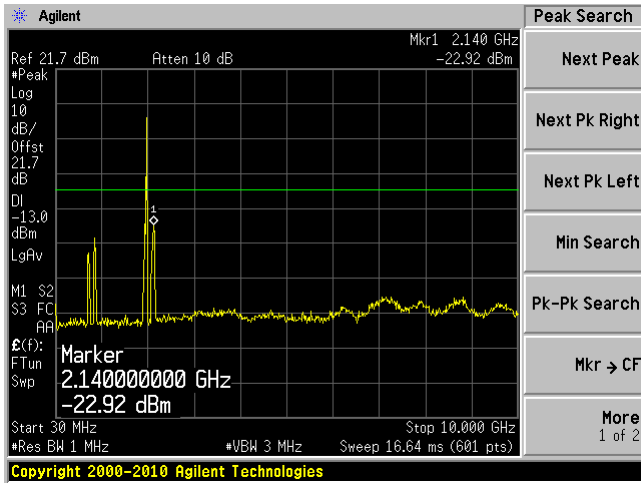
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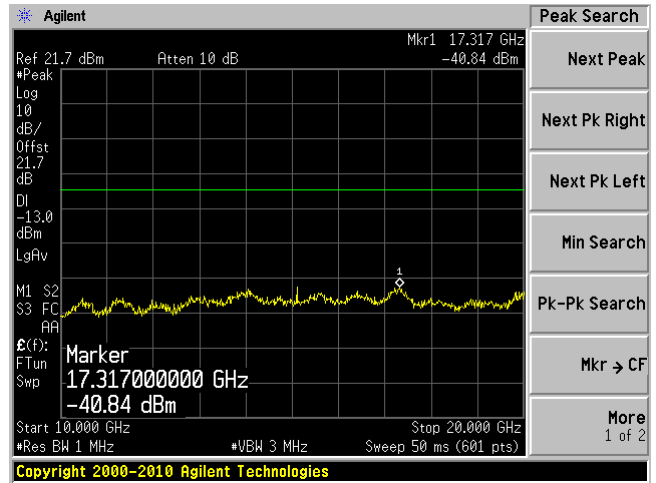
Middle 10GHz-20GHz



High 30MHz-10GHz

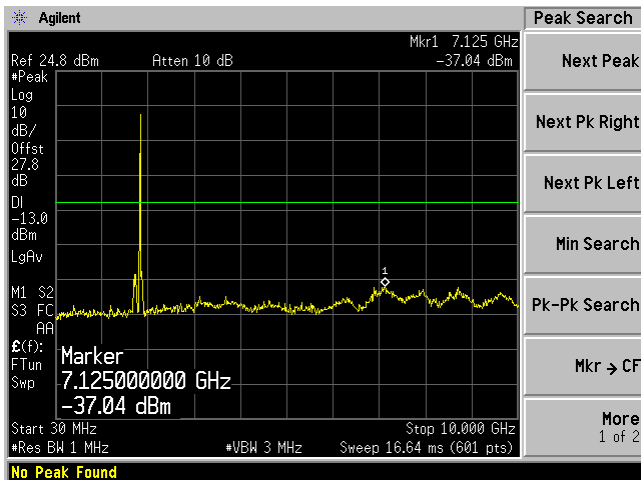


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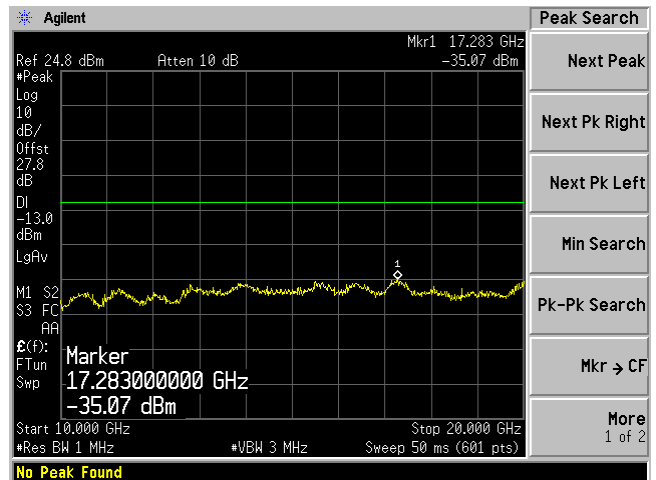


WCDMA UL

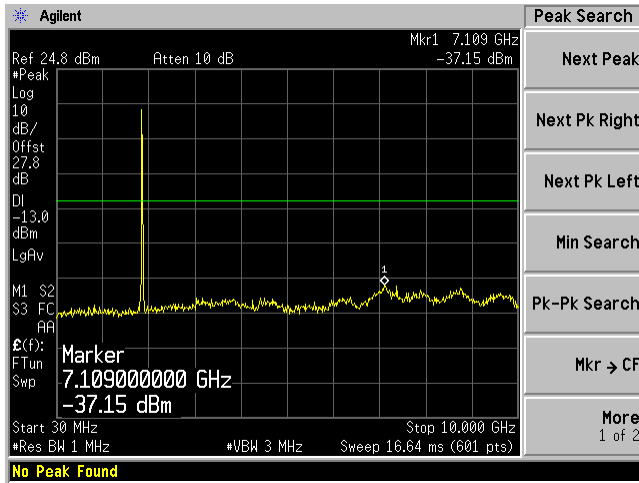
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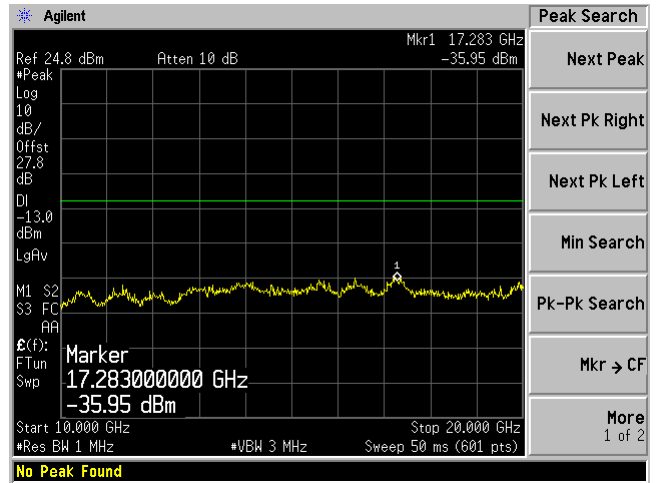
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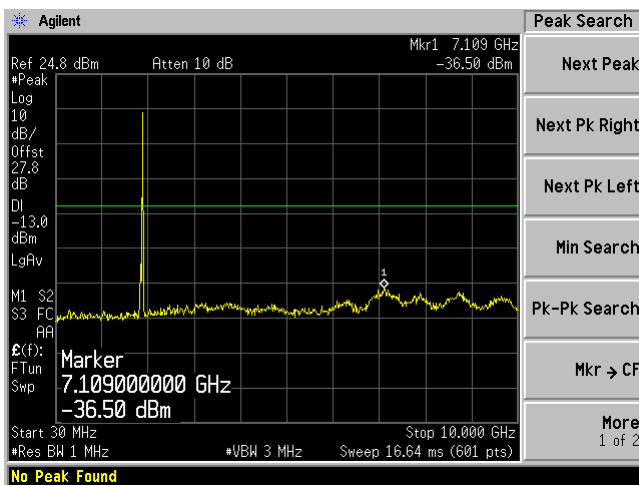
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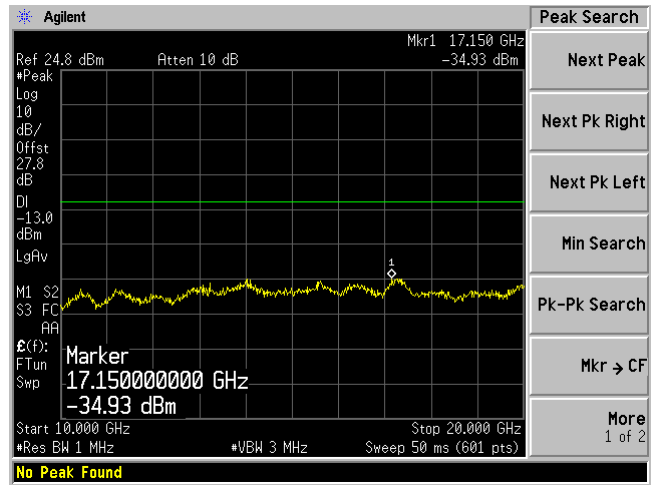
Middle 10GHz-20GHz



High 30MHz-10GHz

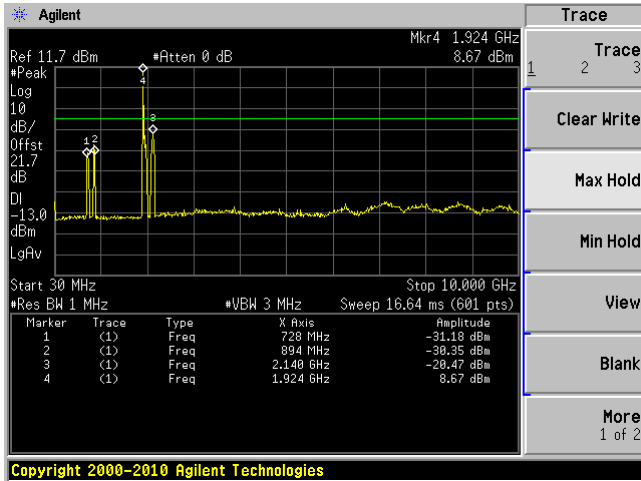


High 10GHz-20GHz

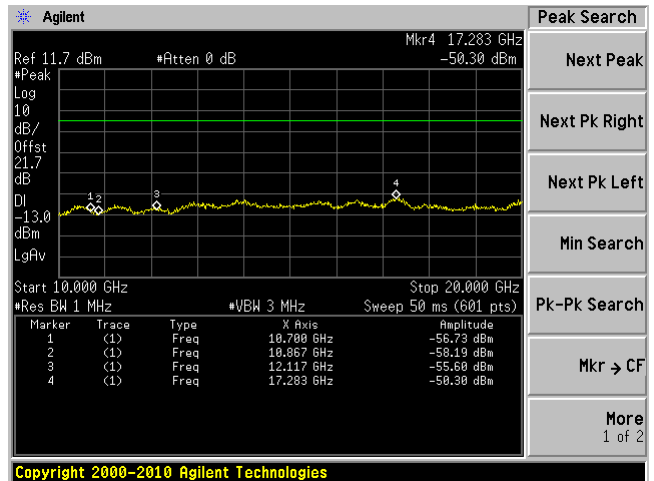


LTE 1.4 MHz QPSK DL

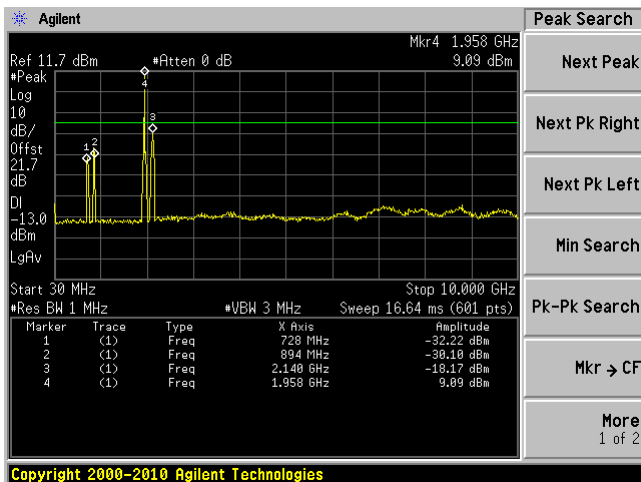
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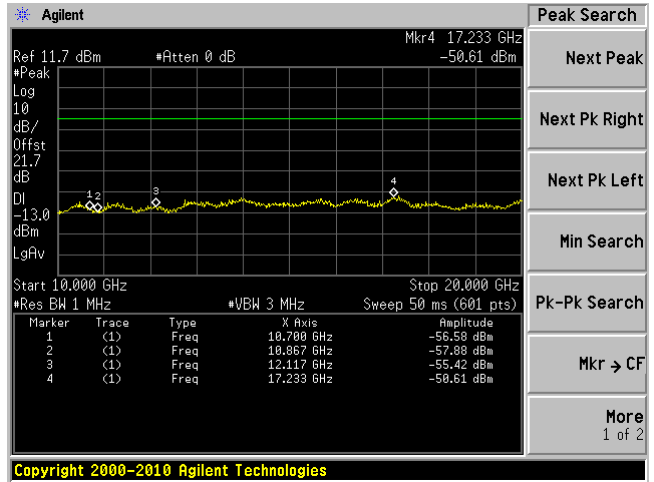
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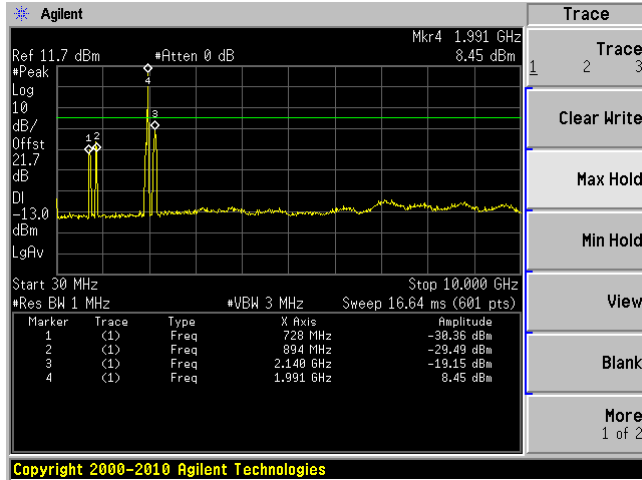


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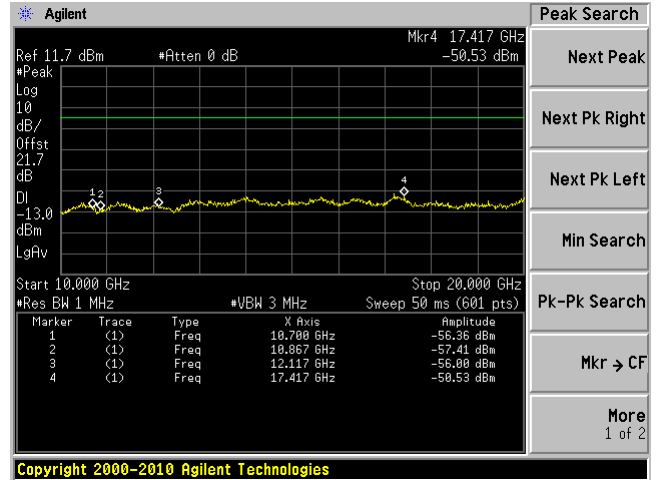




High 30MHz-10GHz

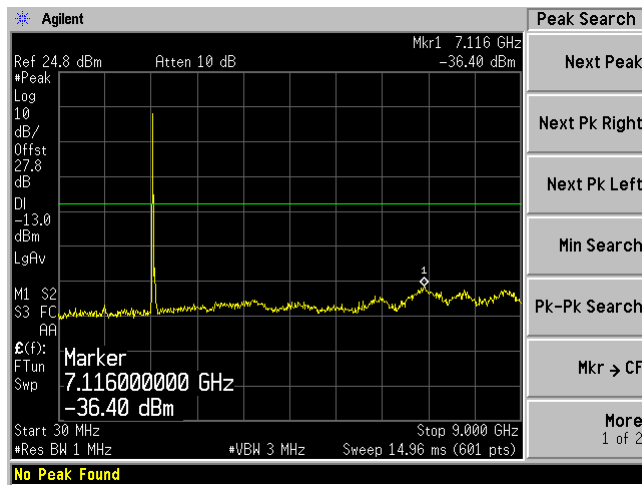


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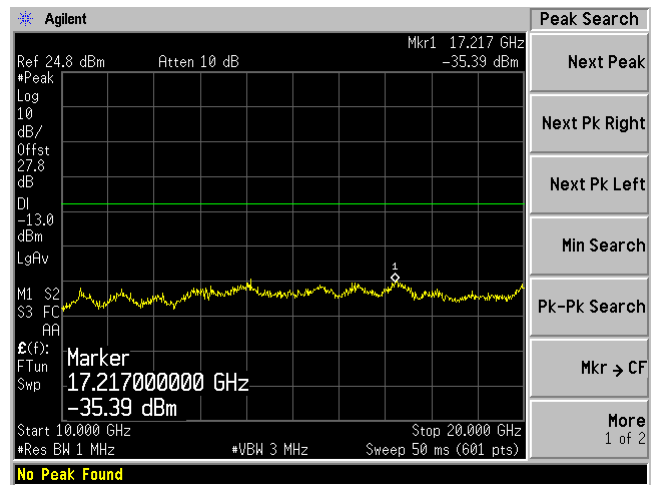


LTE 1.4 MHz QPSK UL

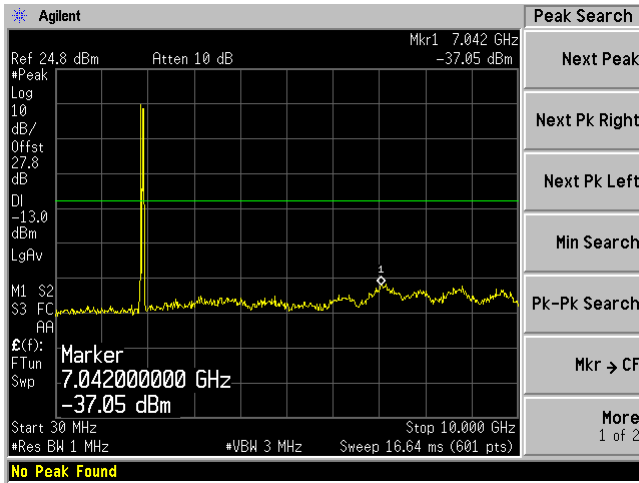
Low 30MHz-10GHz



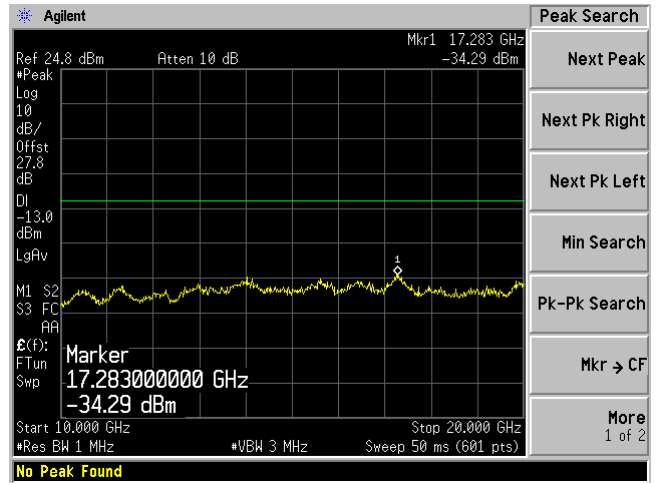
Low 10GHz-20GHz



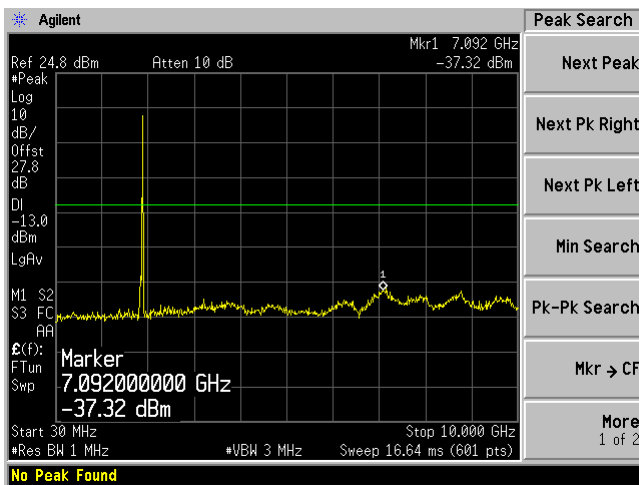
Middle 30MHz-10GHz



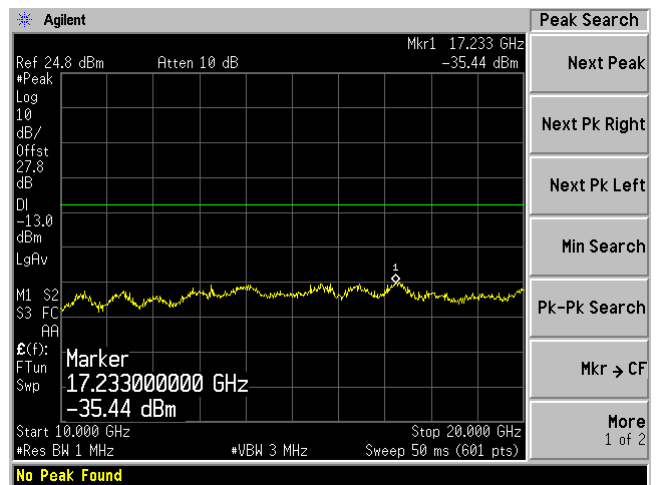
Middle 10GHz-20GHz



High 30MHz-10GHz

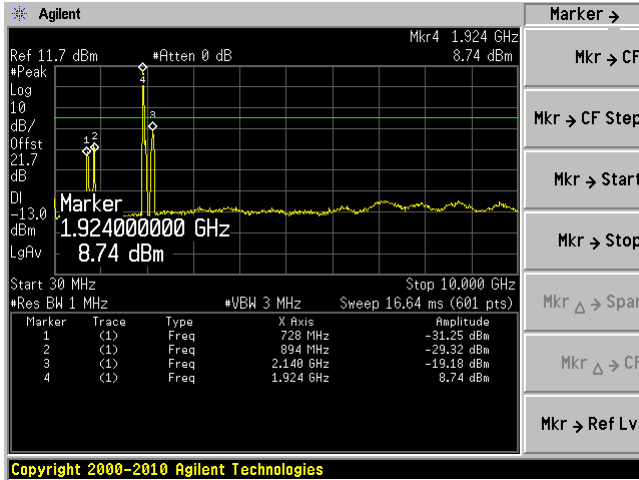


High 10GHz-20GHz

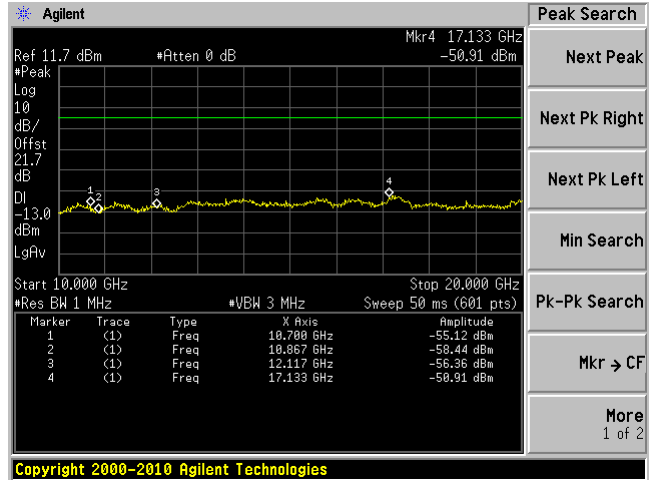


LTE 3 MHz QPSK UL

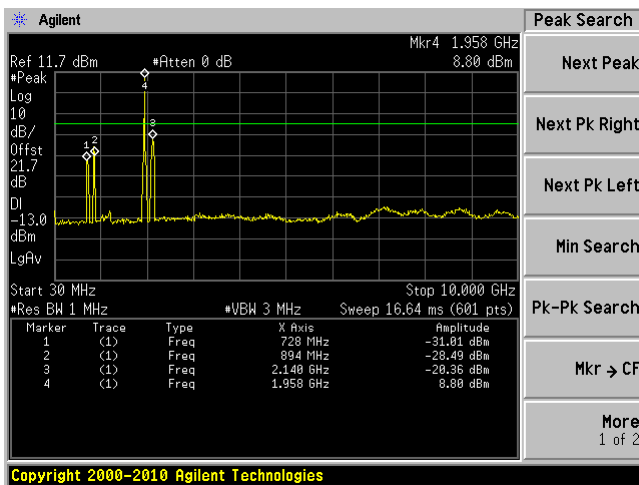
Low 30MHz-10GHz



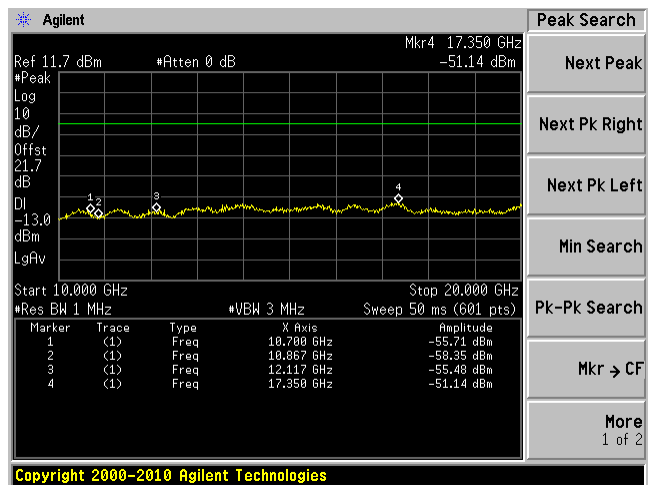
Low 10GHz-20GHz



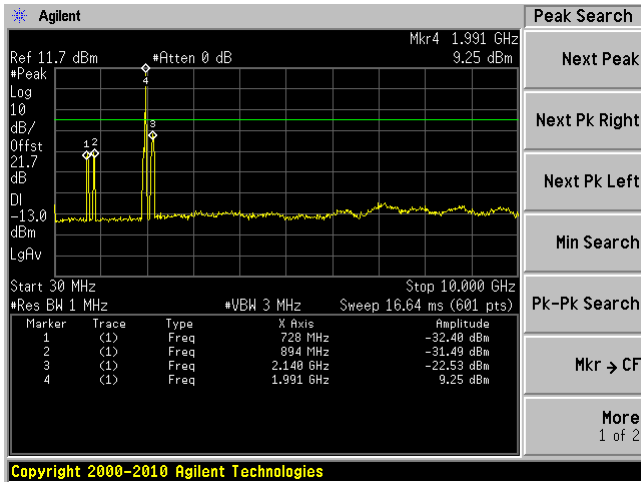
Middle 30MHz-10GHz



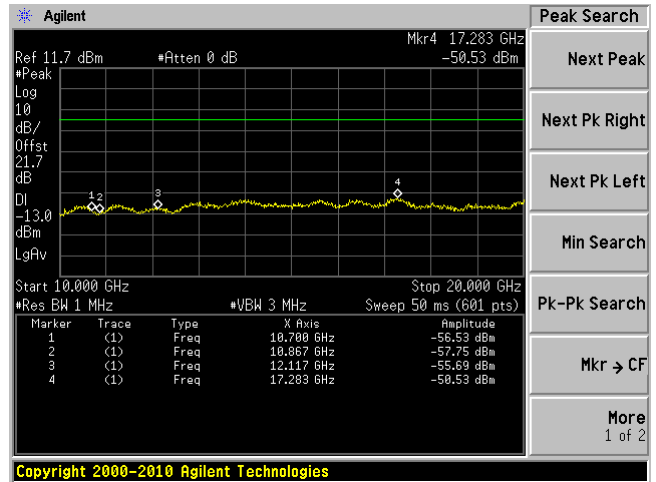
Middle 10GHz-20GHz



High 30MHz-10GHz

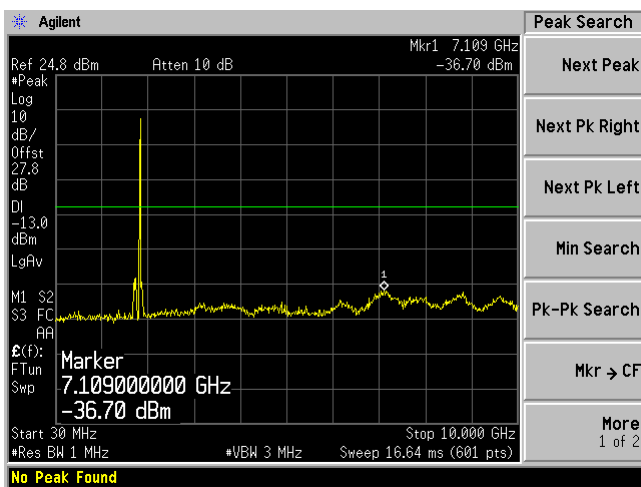


High 10GHz-20GHz

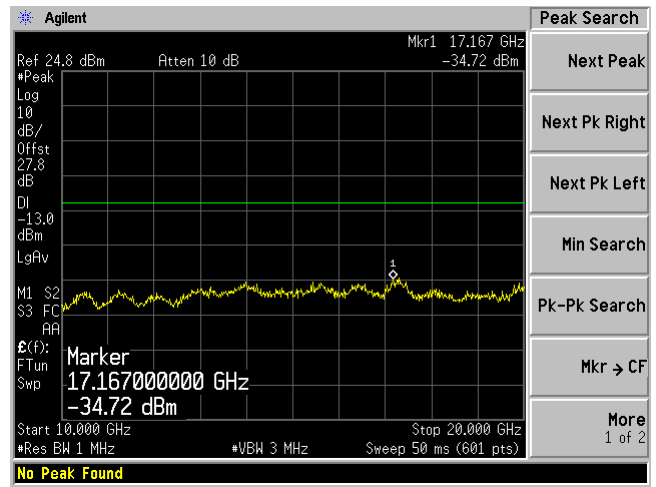


LTE 3 MHz QPSK UL

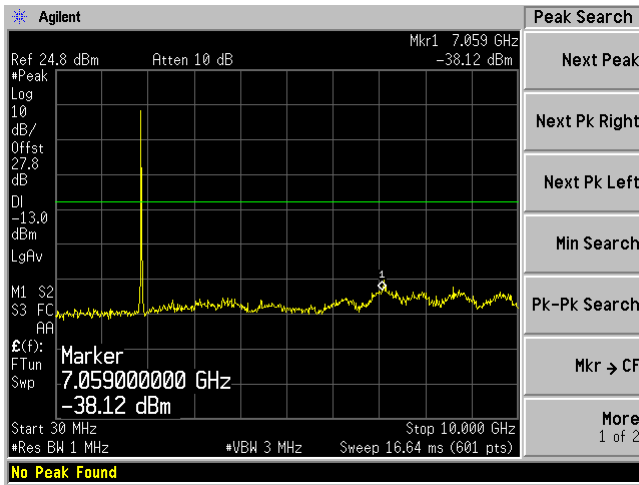
Low 30MHz-10GHz



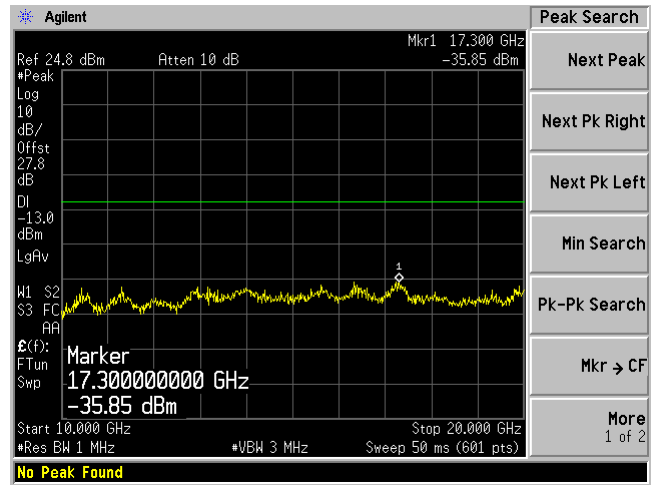
Low 10GHz-20GHz



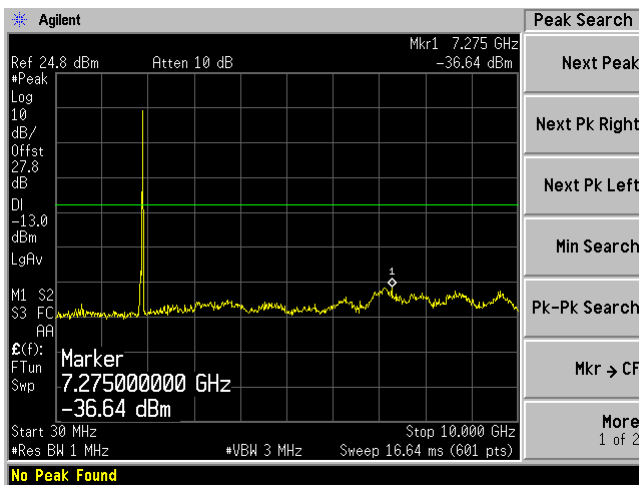
Middle 30MHz-10GHz



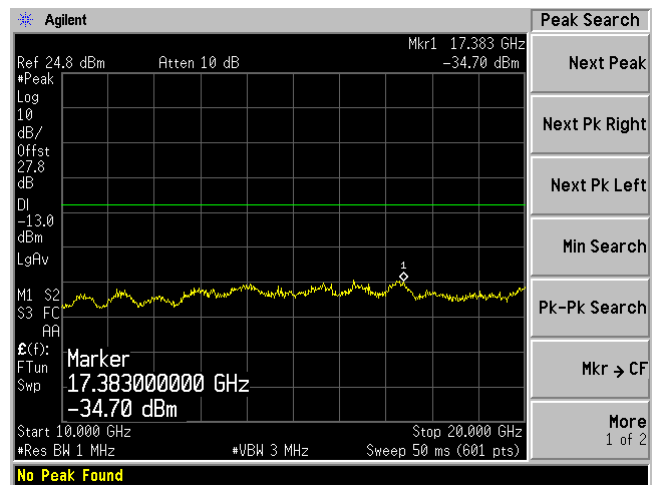
Middle 10GHz-20GHz



High 30MHz-10GHz

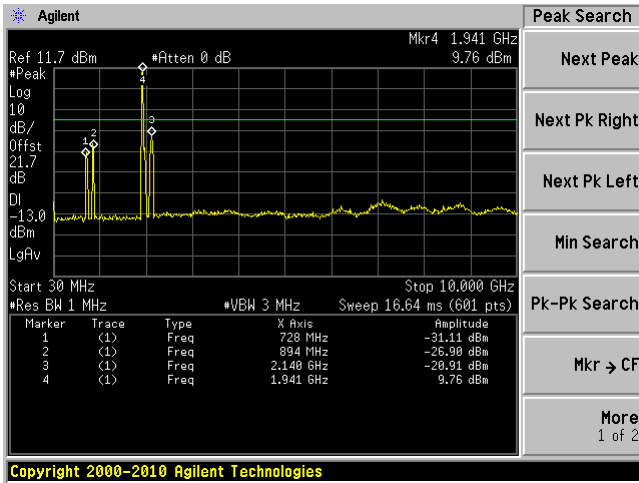


High 10GHz-20GHz

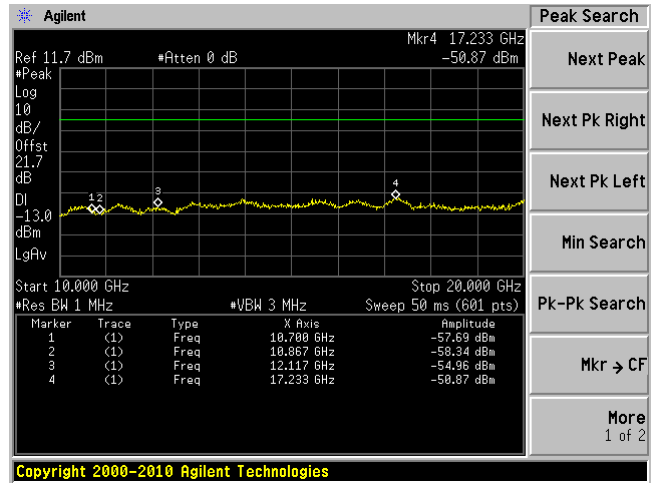


LTE 5 MHz QPSK DL

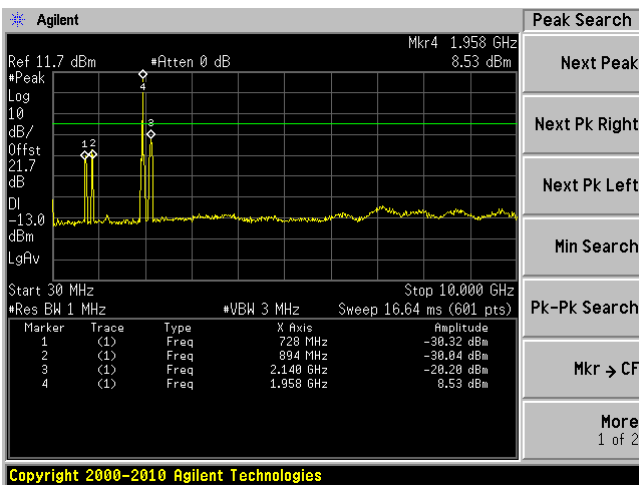
Low 30MHz-10GHz



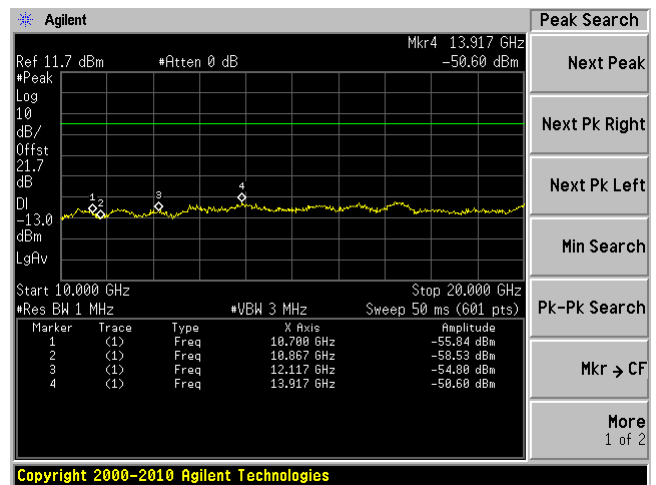
Low 10GHz-20GHz



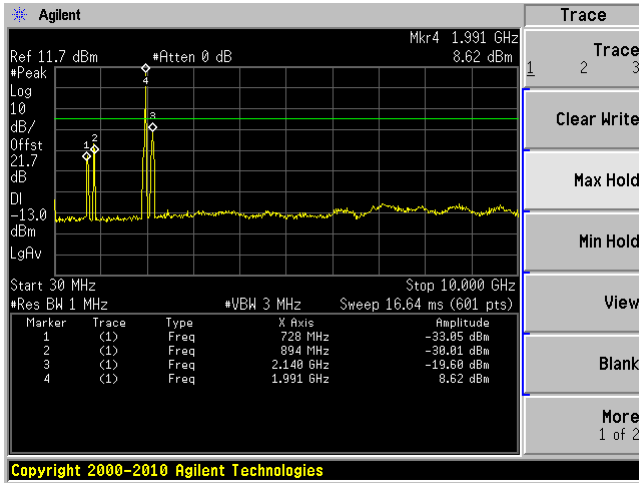
Middle 30MHz-10GHz



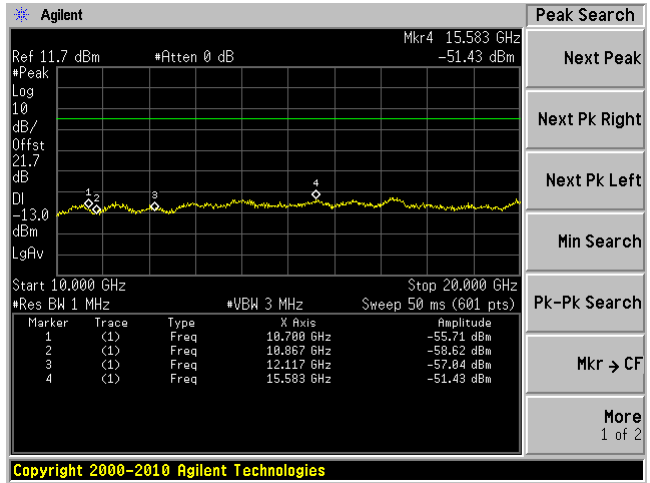
Middle 10GHz-20GHz



High 30MHz-10GHz

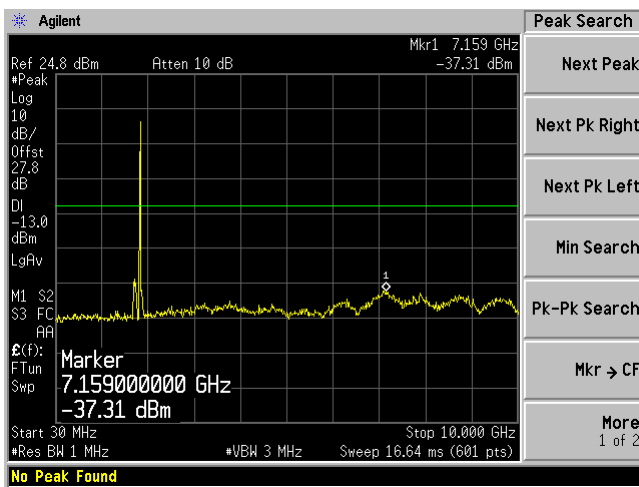


High 10GHz-20GHz

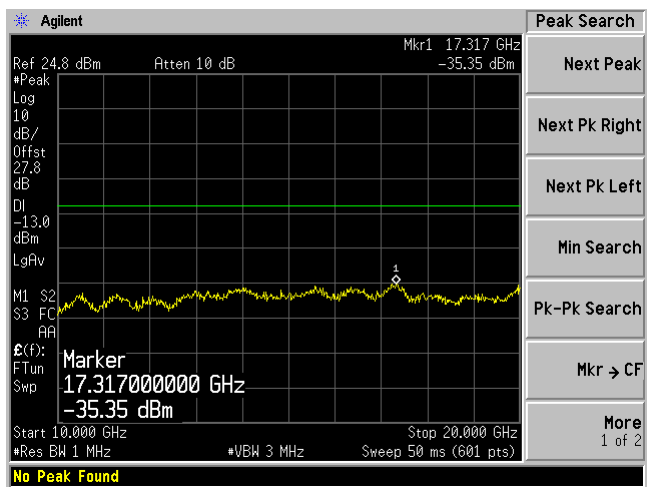


LTE 5 MHz QPSK UL

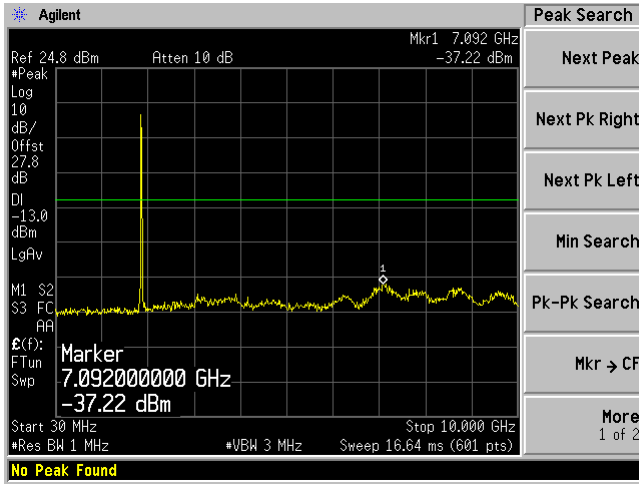
Low 30MHz-10GHz



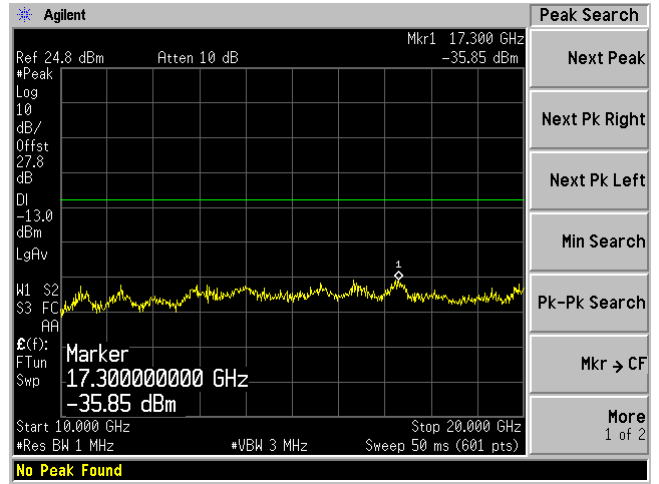
Low 10GHz-20GHz



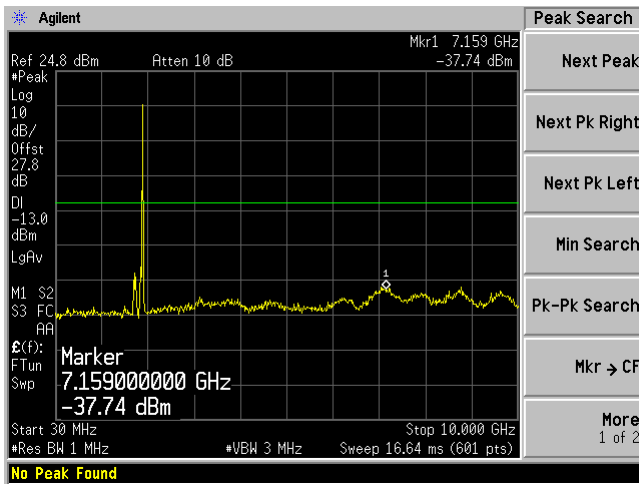
Middle 30MHz-10GHz



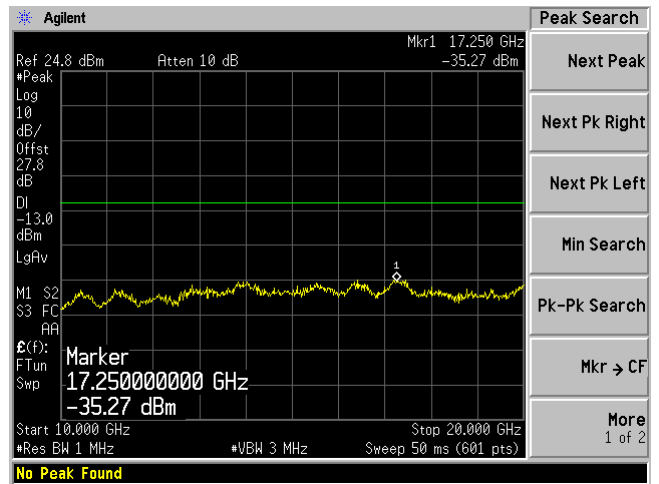
Middle 10GHz-20GHz



High 30MHz-10GHz



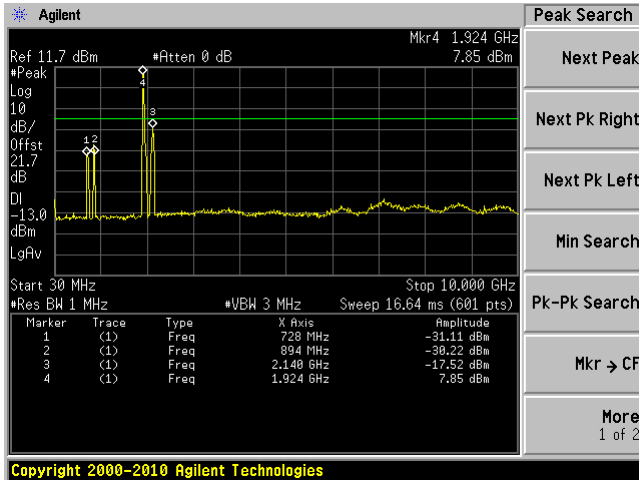
High 10GHz-20GHz



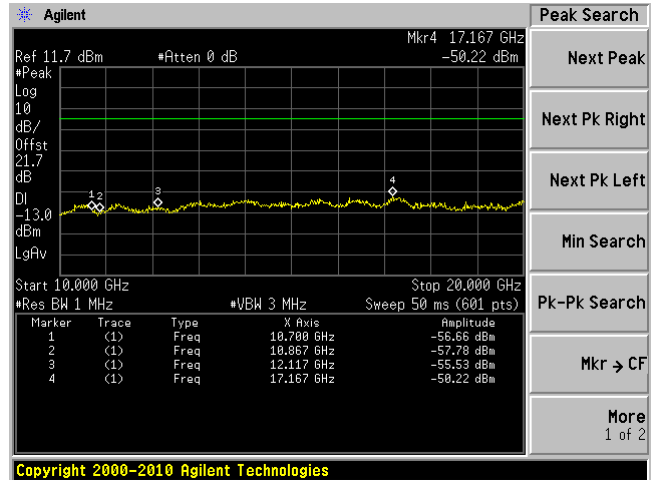


LTE 10 MHz QPSK DL

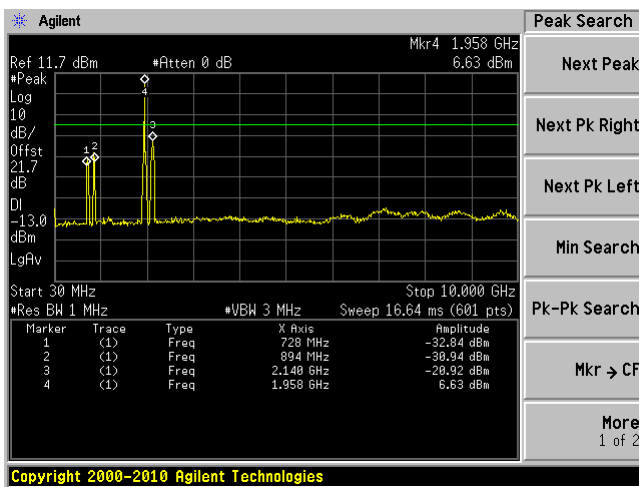
Low 30MHz-10GHz



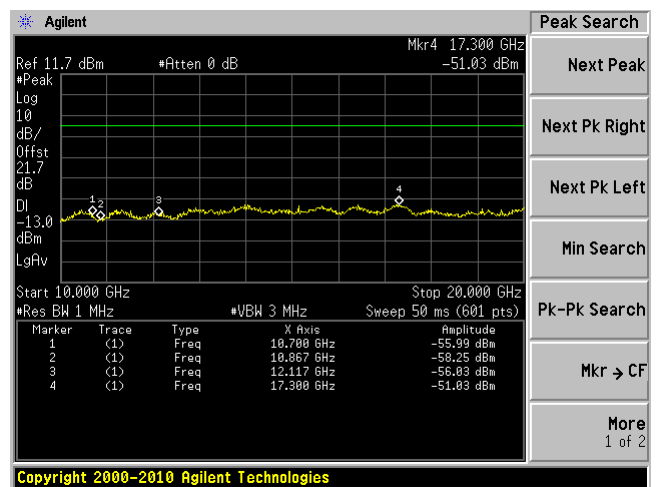
Low 10GHz-20GHz



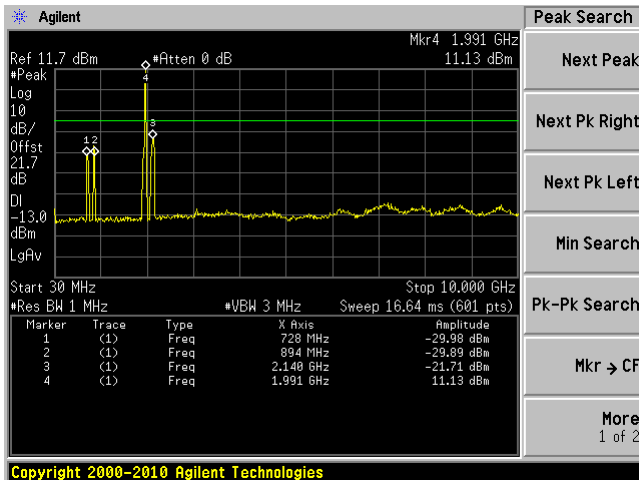
Middle 30MHz-10GHz



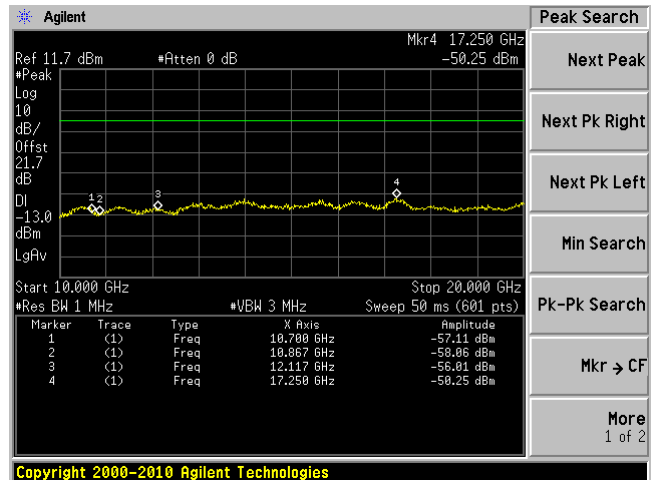
Middle 10GHz-20GHz



High 30MHz-10GHz

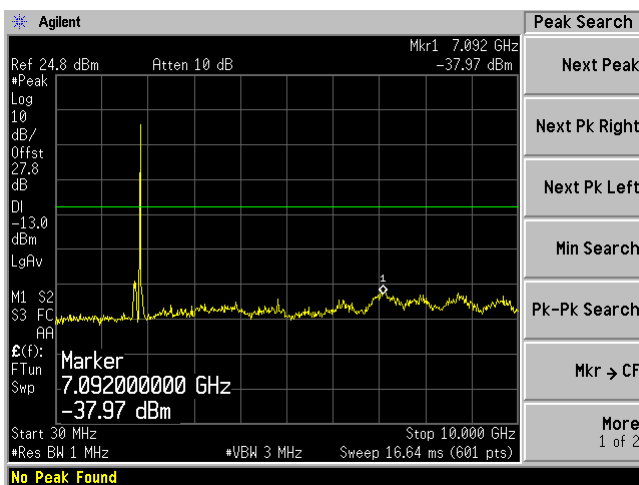


High 10GHz-20GHz

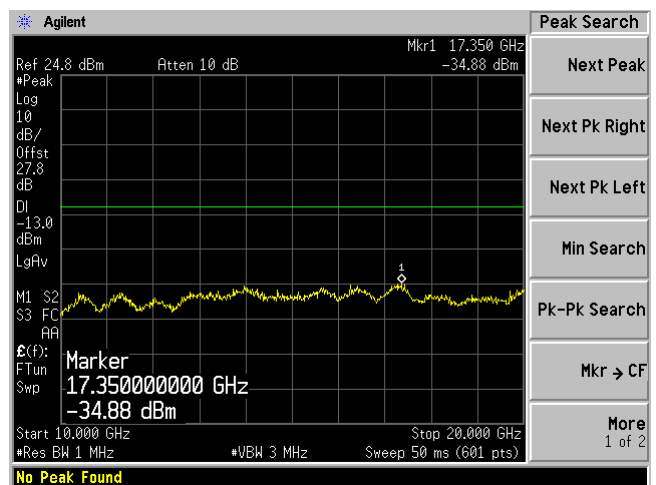


LTE 10 MHz QPSK UL

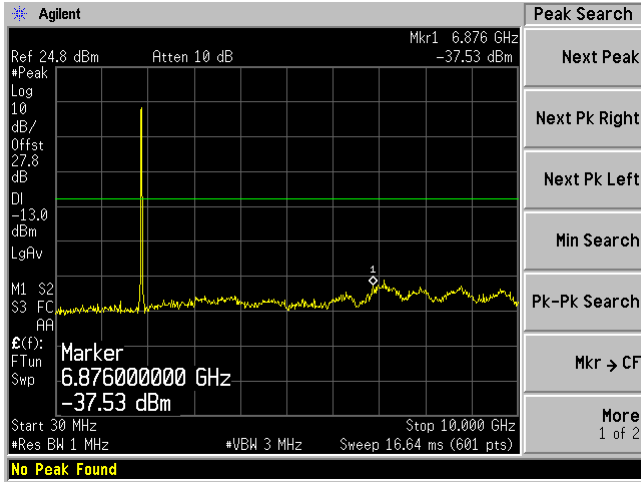
Low 30MHz-10GHz



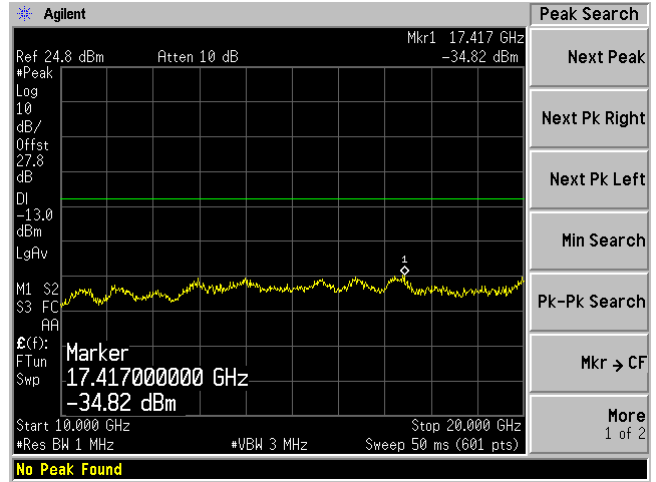
Low 10GHz-20GHz



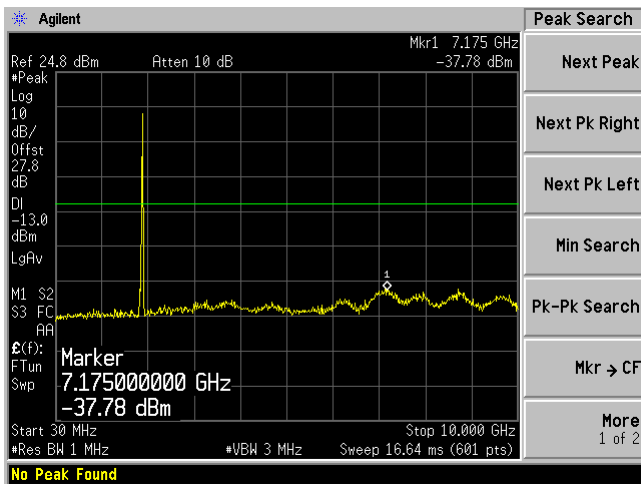
Middle 30MHz-10GHz



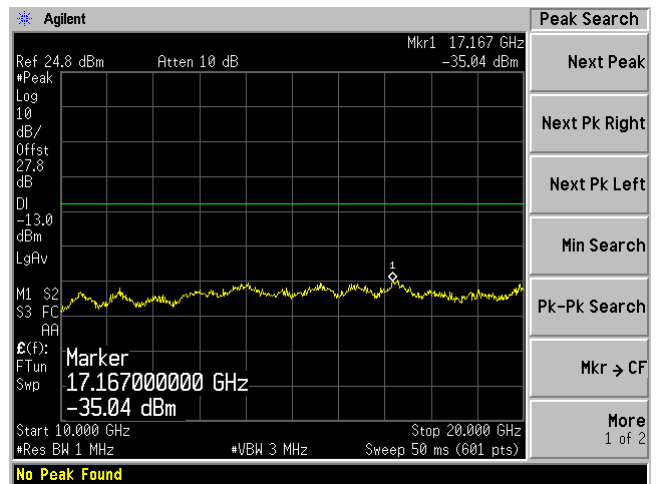
Middle 10GHz-20GHz



High 30MHz-10GHz

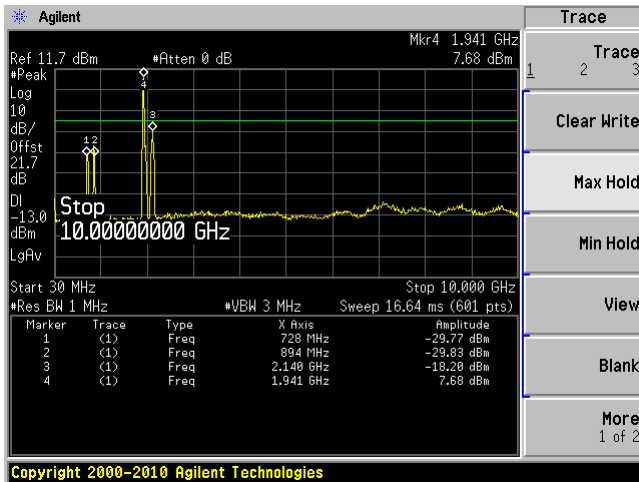


High 10GHz-20GHz

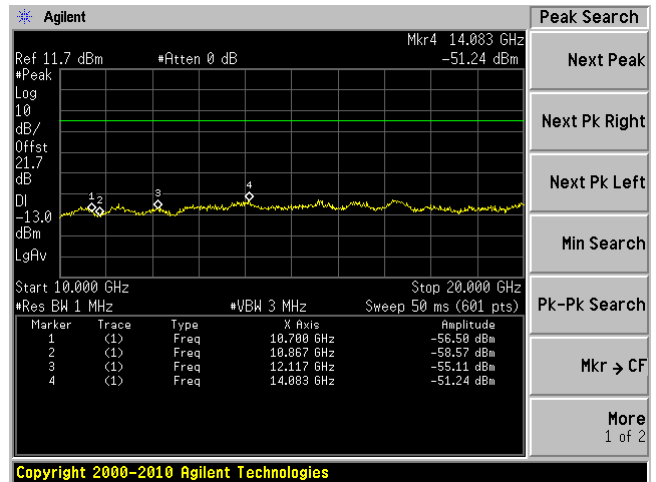


LTE 15 MHz QPSK DL

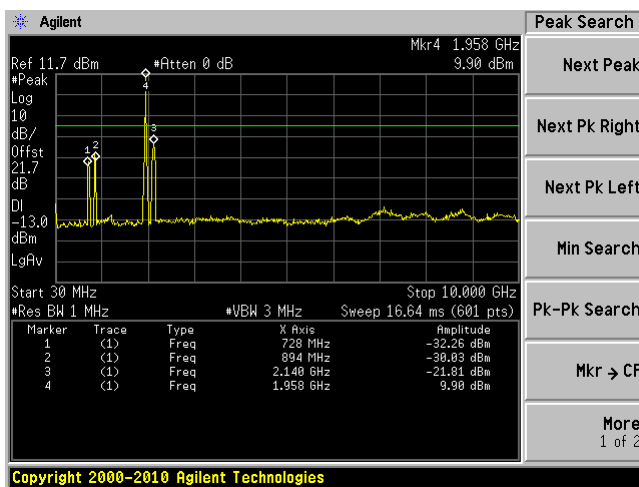
Low 30MHz-10GHz



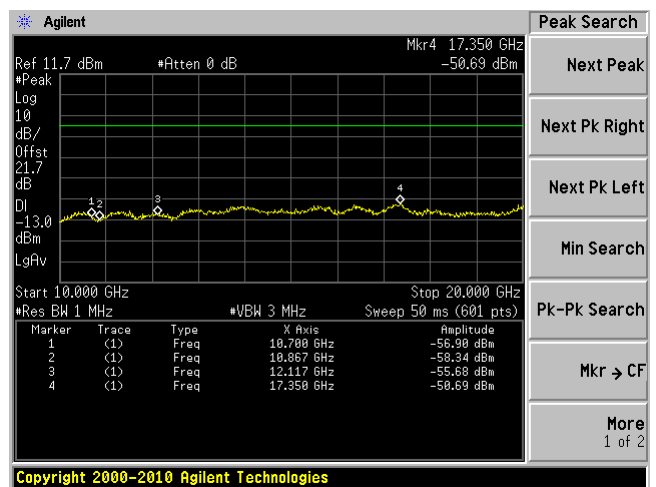
Low 10GHz-20GHz



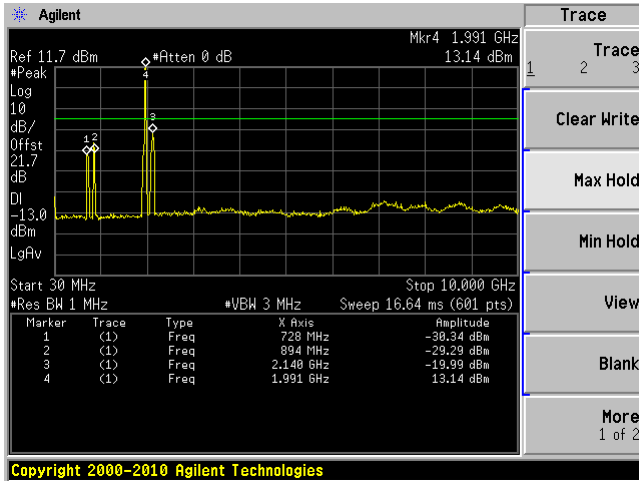
Middle 30MHz-10GHz



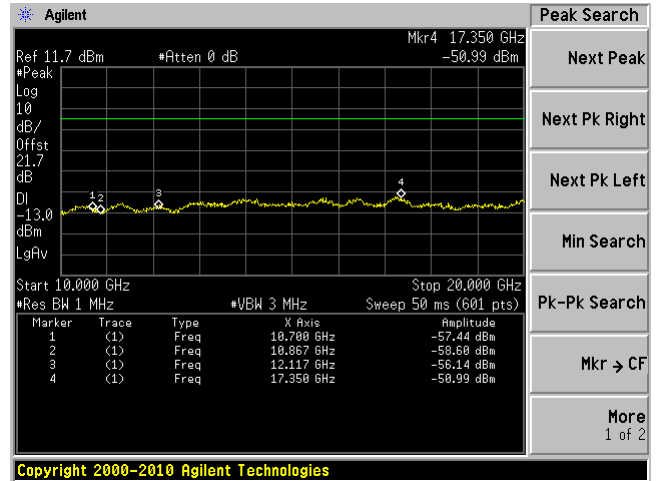
Middle 10GHz-20GHz



High 30MHz-10GHz

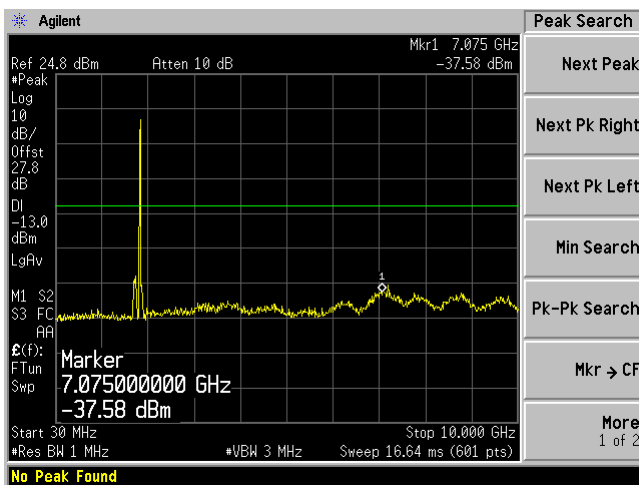


High 10GHz-20GHz

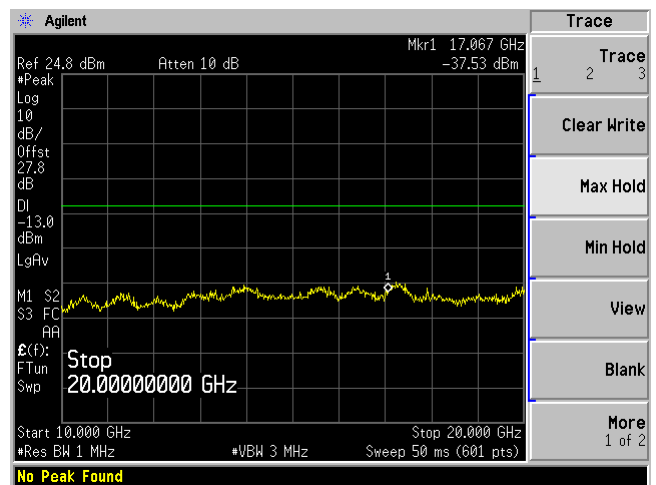


LTE 15 MHz QPSK UL

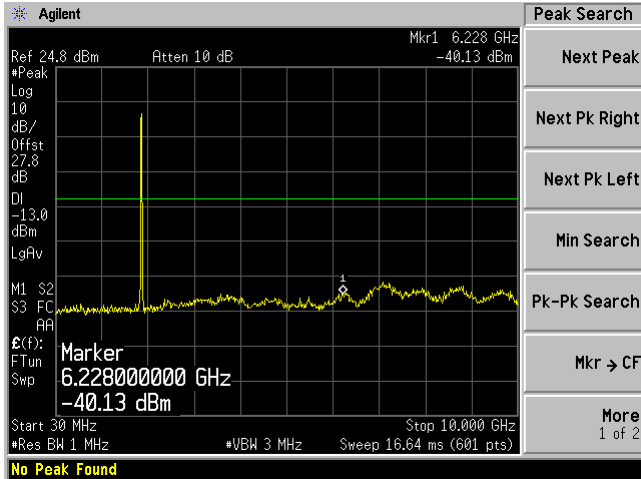
Low 30MHz-10GHz



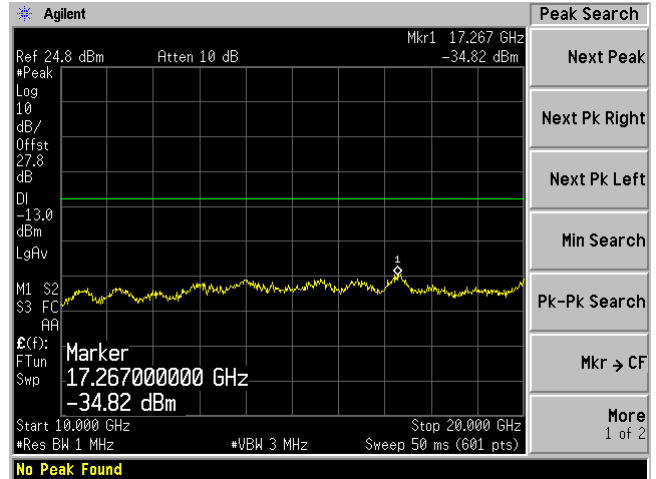
Low 10GHz-20GHz



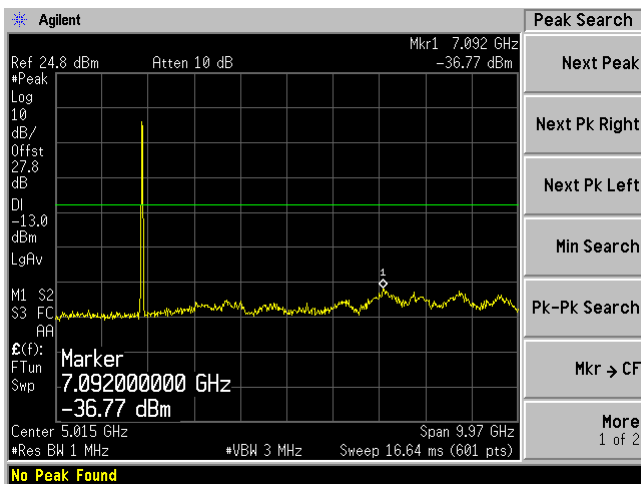
Middle 30MHz-10GHz



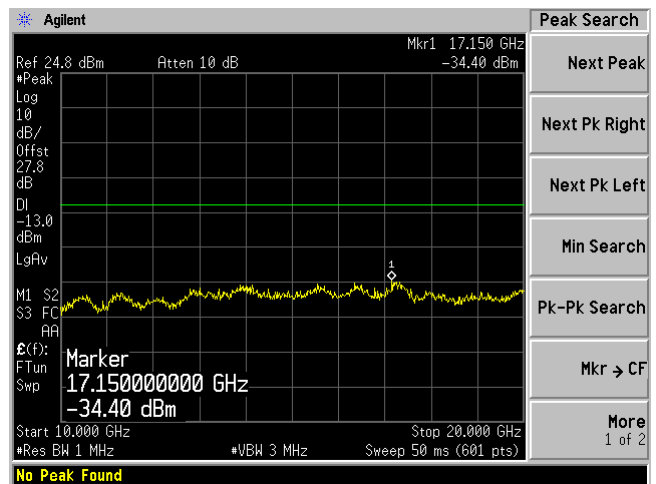
Middle 10GHz-20GHz



High 30MHz-10GHz

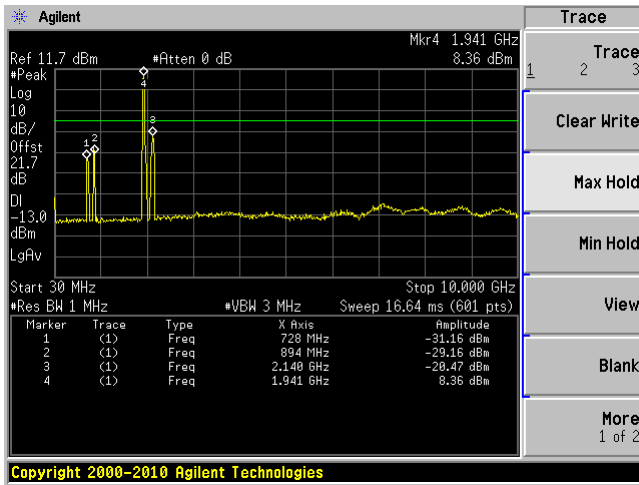


High 10GHz-20GHz

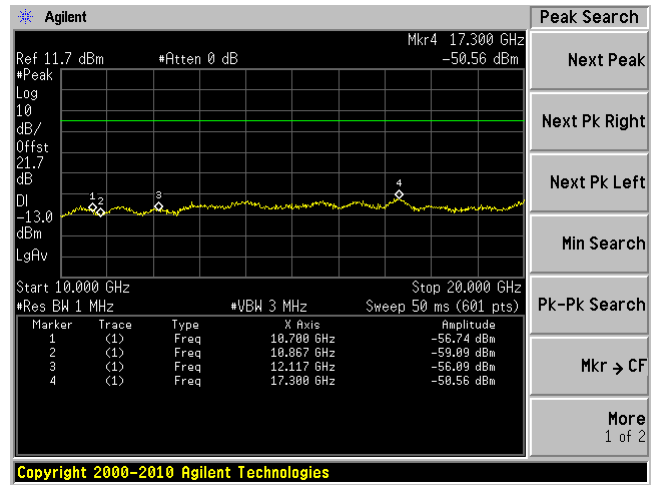


LTE 20 MHz QPSK DL

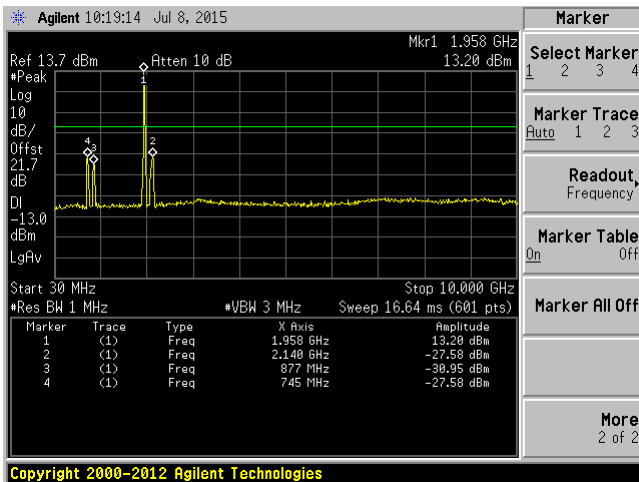
Low 30MHz-10GHz



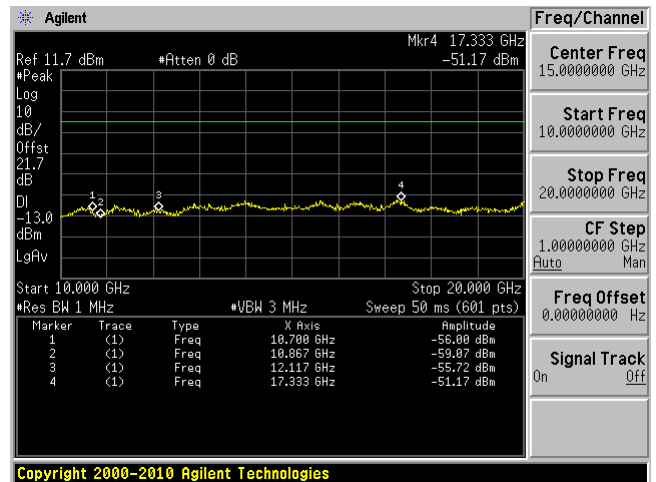
Low 10GHz-20GHz



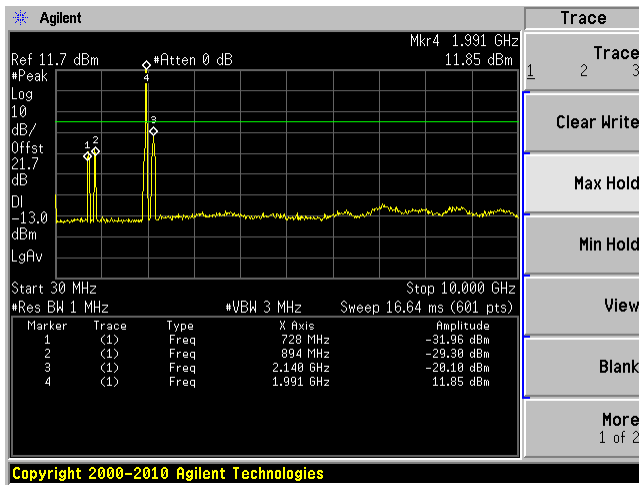
Middle 30MHz-10GHz



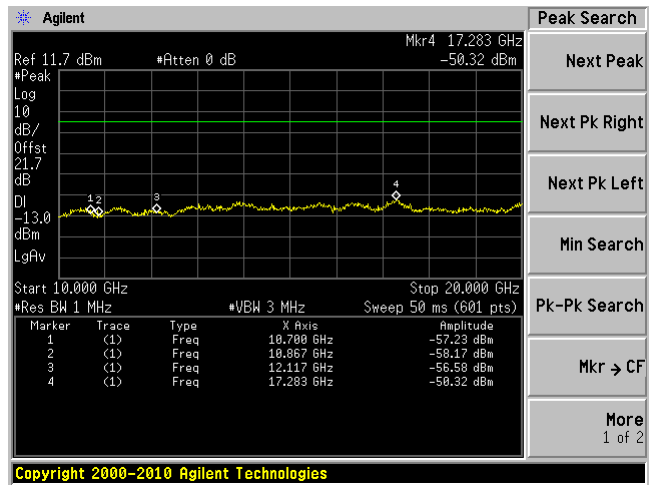
Middle 10GHz-20GHz



High 30MHz-10GHz

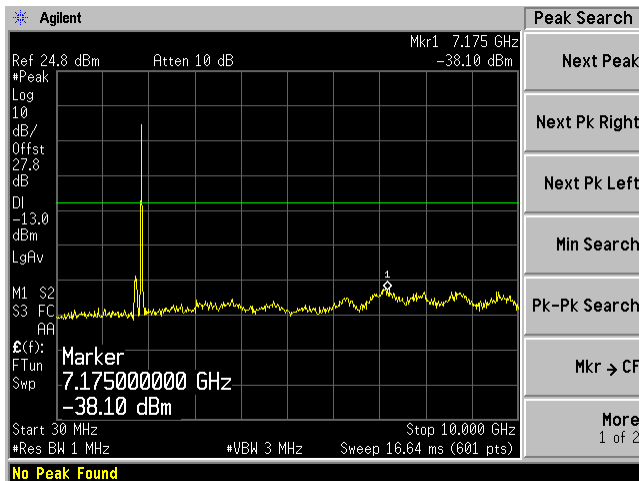


High 10GHz-20GHz

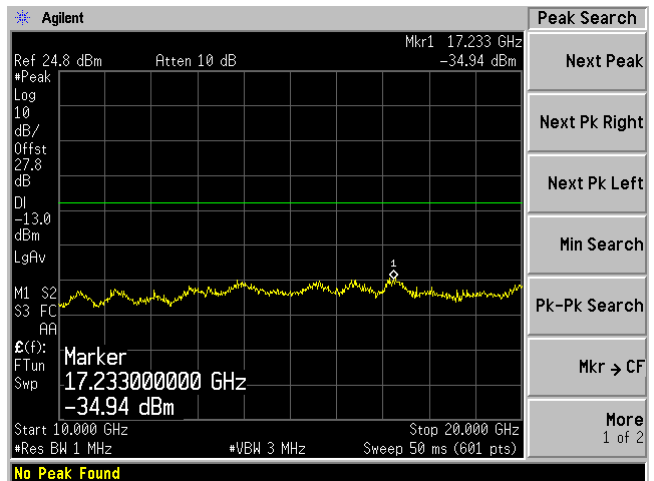


LTE 20 MHz QPSK UL

Low 30MHz-10GHz

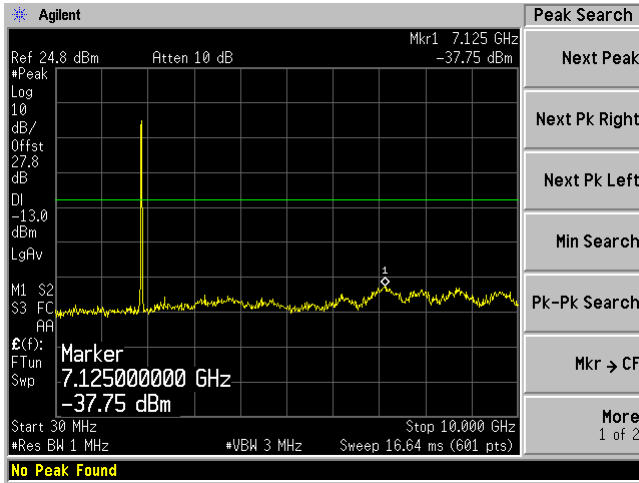


Low 10GHz-20GHz

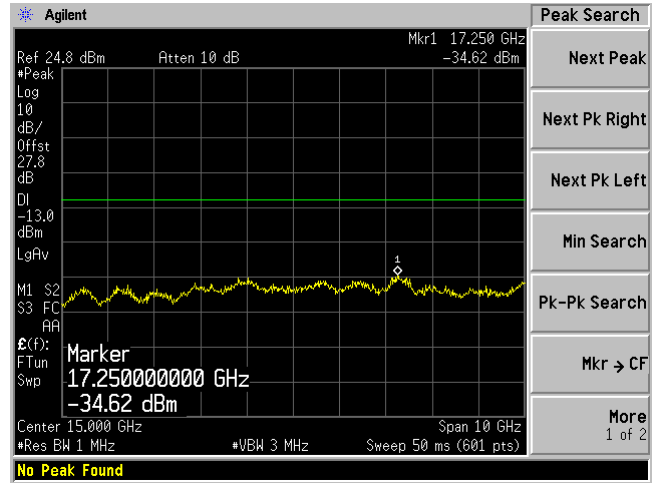




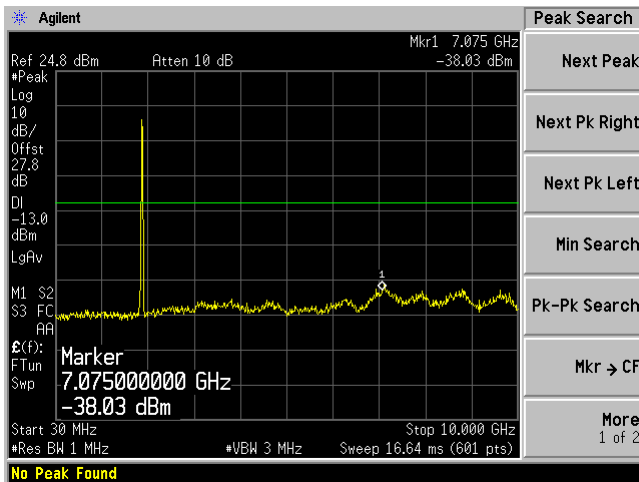
Middle 30MHz-10GHz



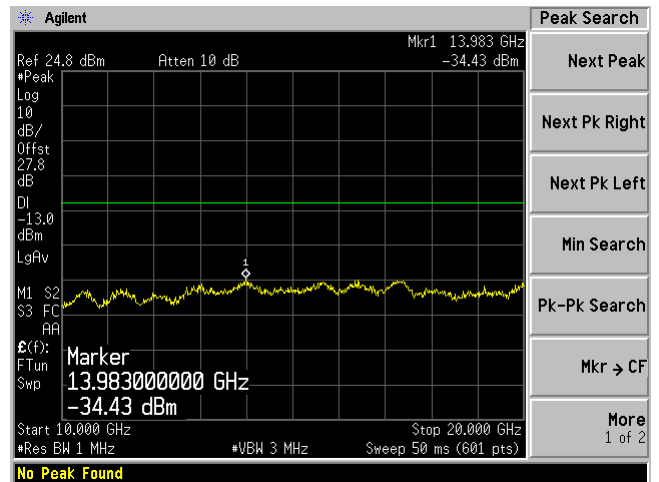
Middle 10GHz-20GHz



High 30MHz-10GHz

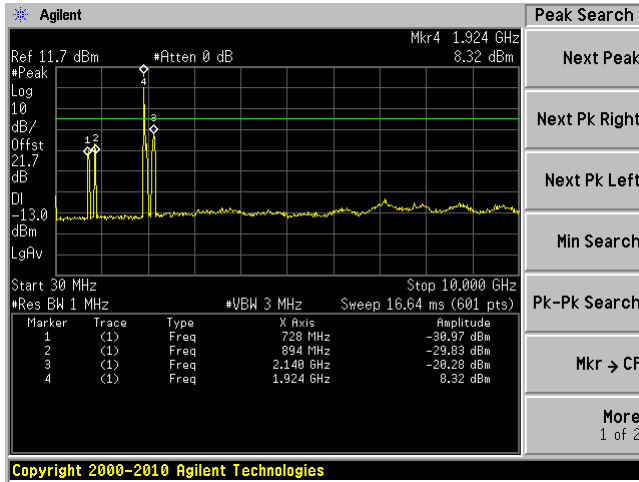


High 10GHz-20GHz

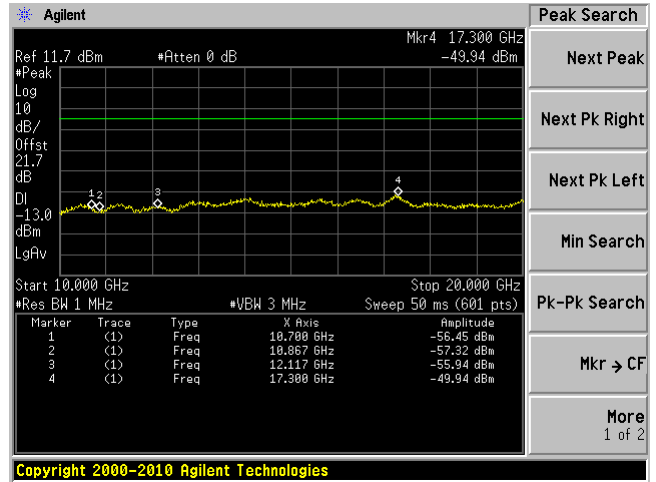


LTE 1.4 MHz 16QAM DL

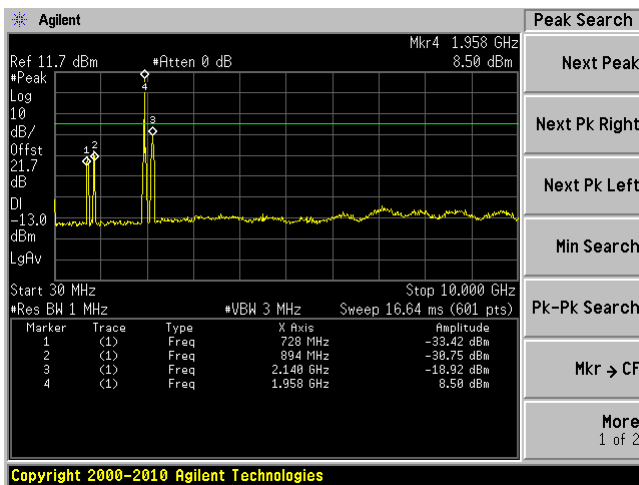
Low 30MHz-10GHz



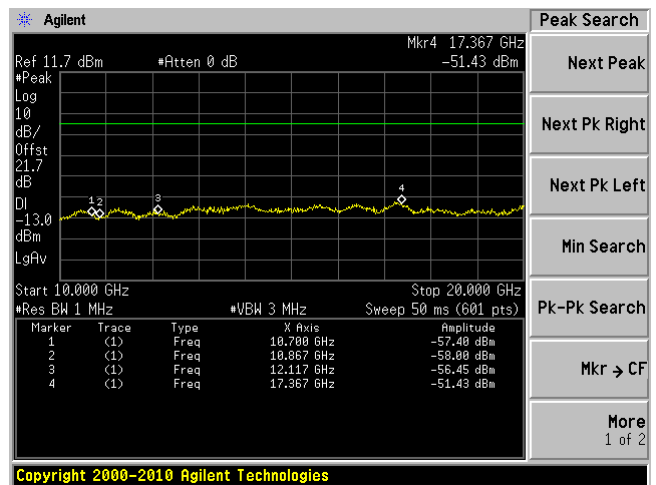
Low 10GHz-20GHz



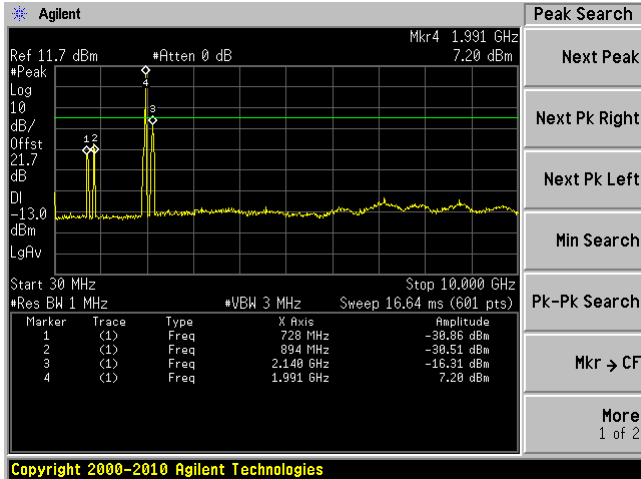
Middle 30MHz-10GHz



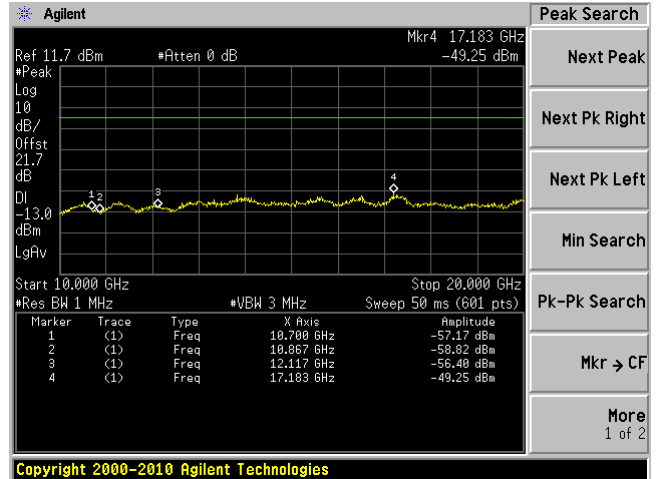
Middle 10GHz-20GHz



High 30MHz-10GHz

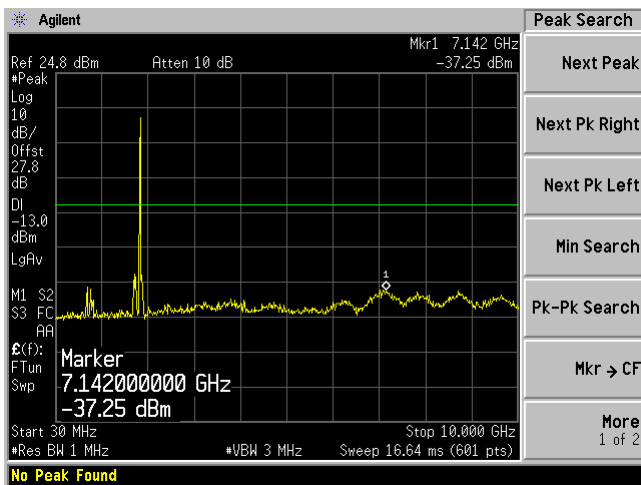


High 10GHz-20GHz

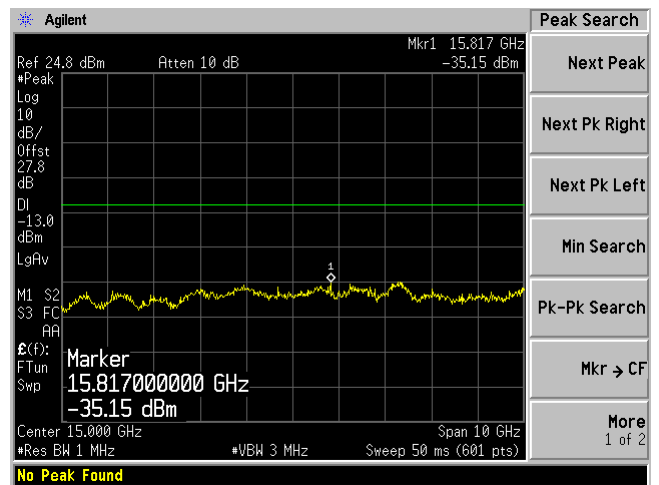


LTE 1.4 MHz 16QAM UL

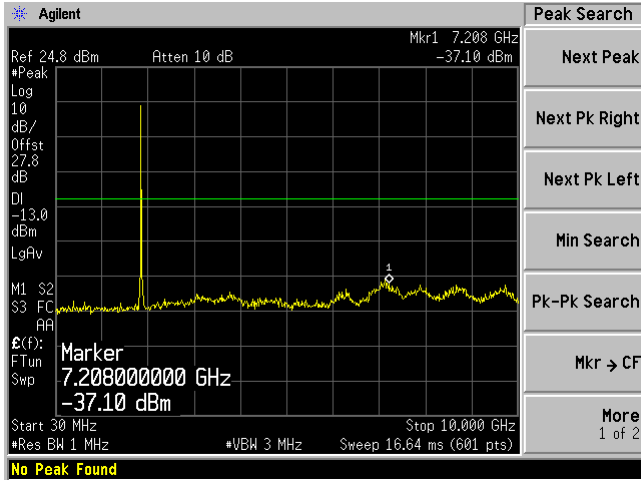
Low 30MHz-10GHz



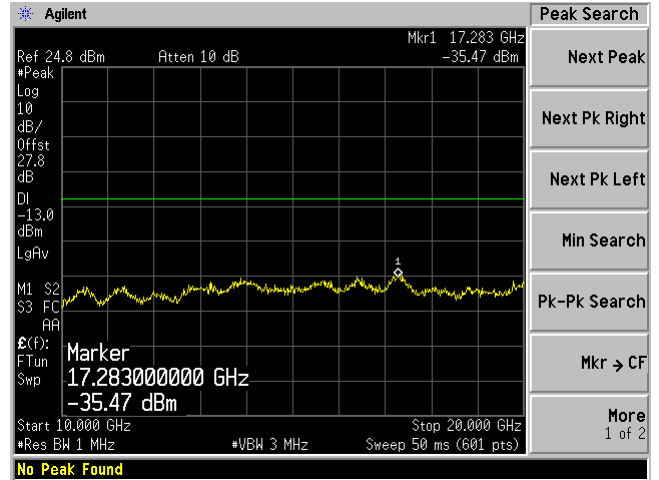
Low 10GHz-20GHz



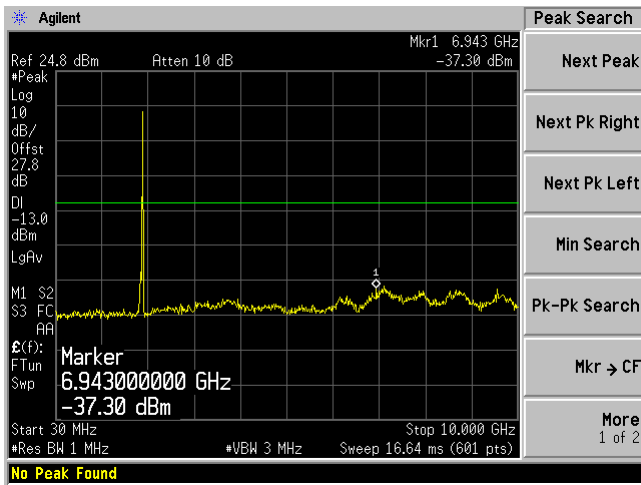
Middle 30MHz-10GHz



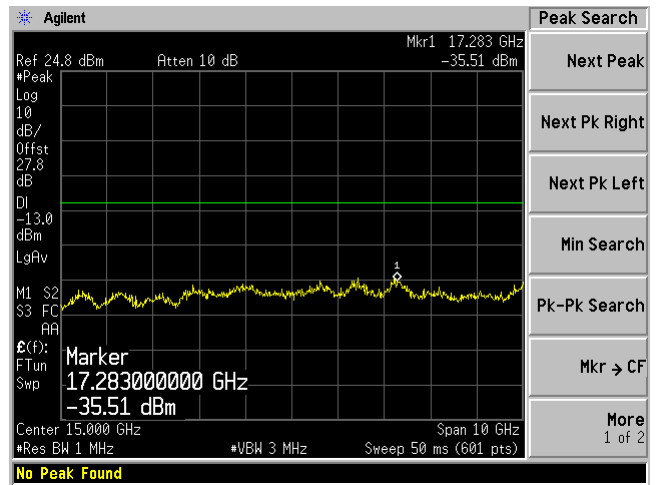
Middle 10GHz-20GHz



High 30MHz-10GHz

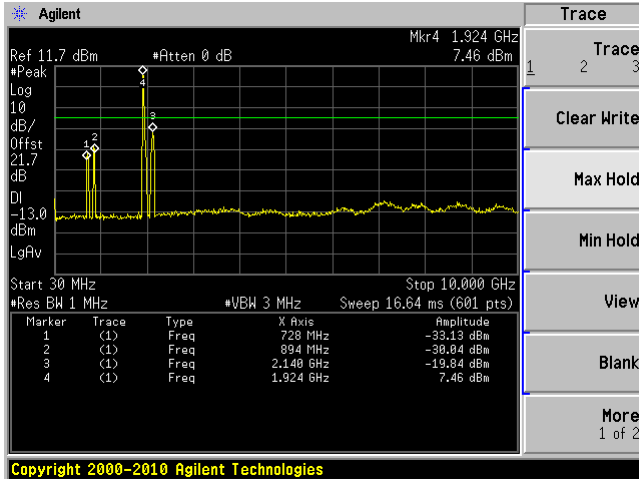


High 10GHz-20GHz

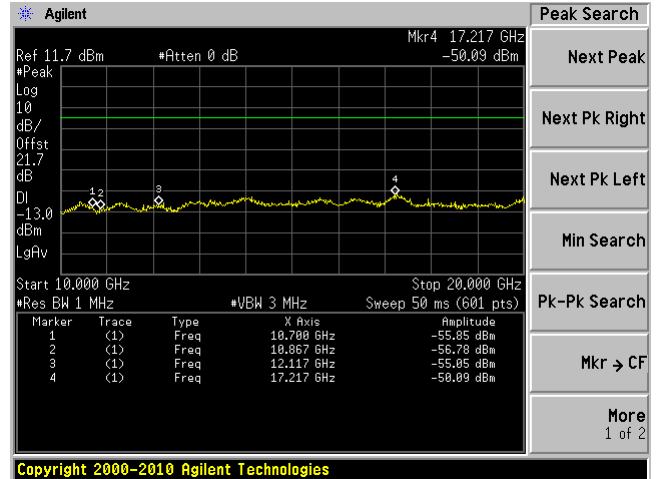


LTE 3 MHz 16QAM DL

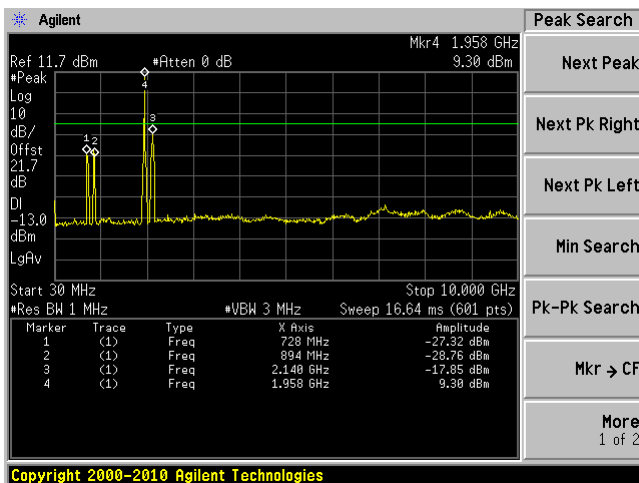
Low 30MHz-10GHz



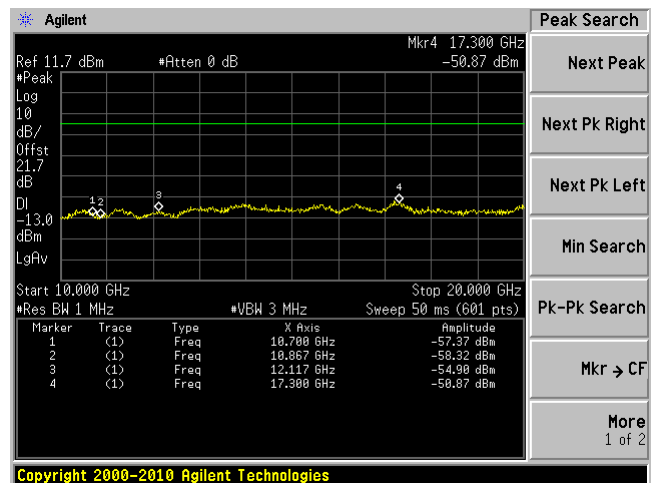
Low 10GHz-20GHz



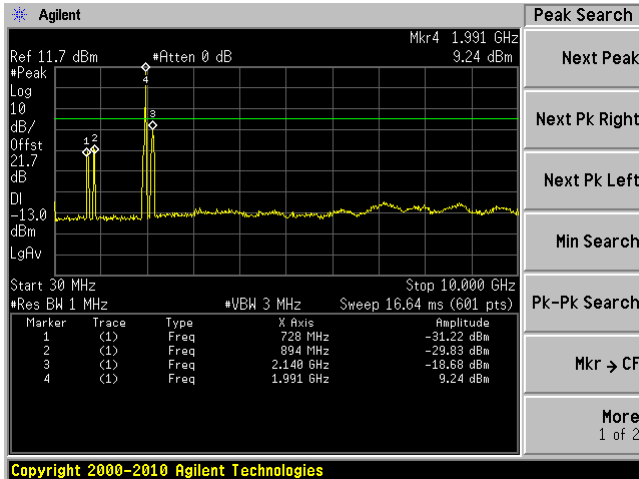
Middle 30MHz-10GHz



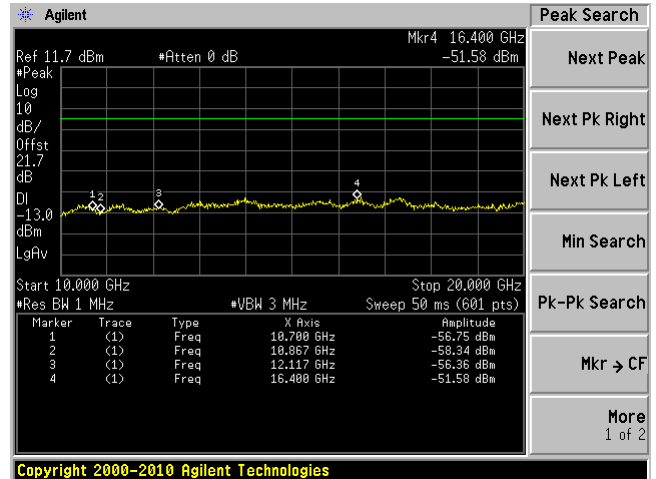
Middle 10GHz-20GHz



High 30MHz-10GHz

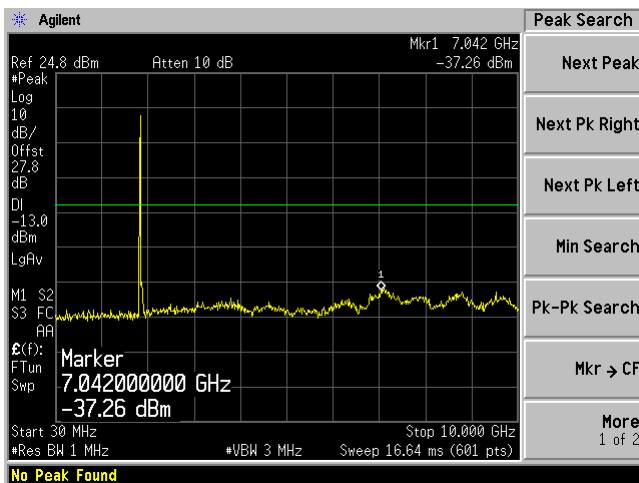


High 10GHz-20GHz

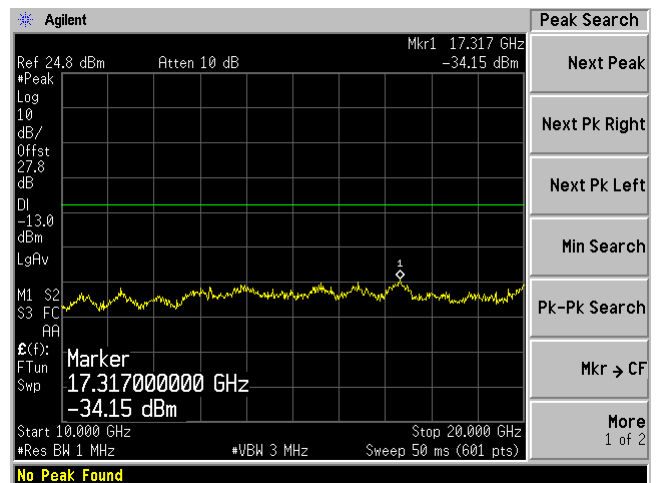


LTE 3 MHz 16QAM UL

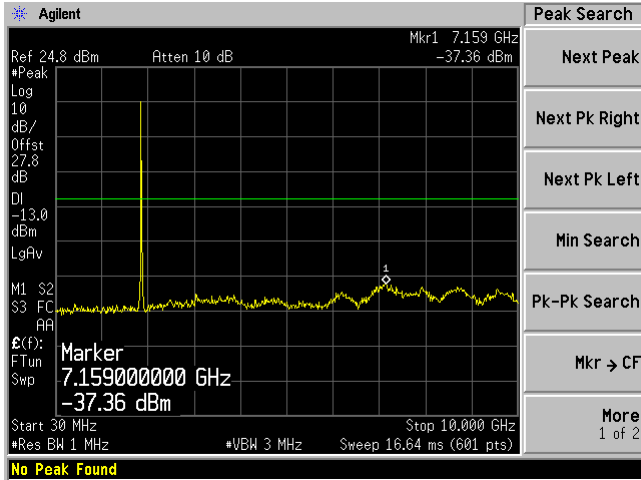
Low 30MHz-10GHz



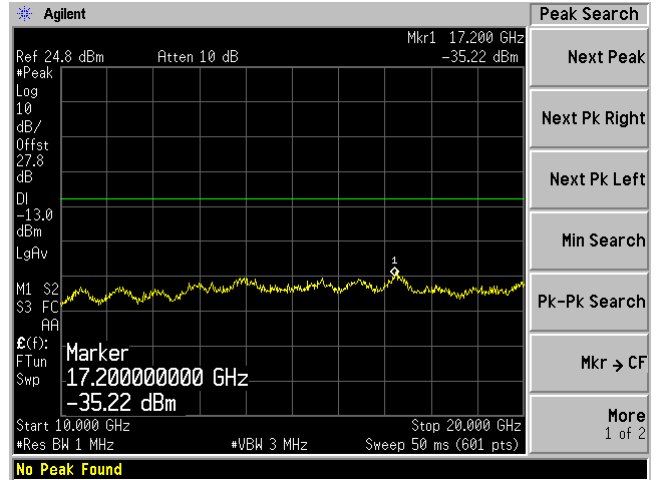
Low 10GHz-20GHz



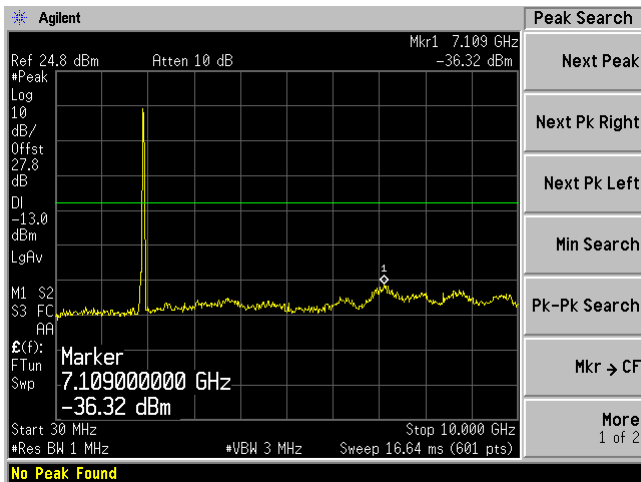
Middle 30MHz-10GHz



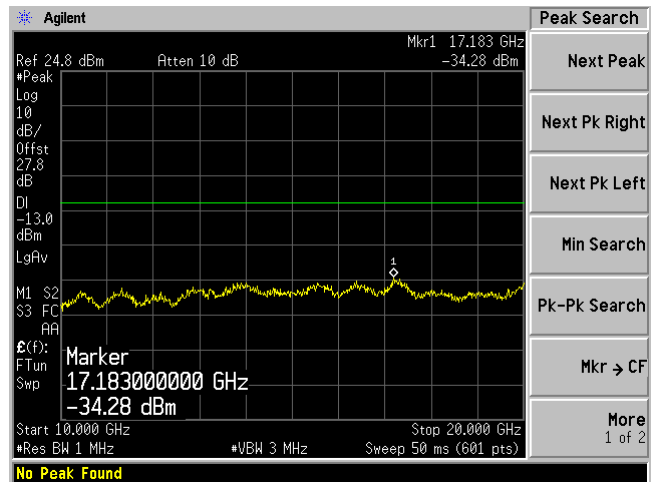
Middle 10GHz-20GHz



High 30MHz-10GHz

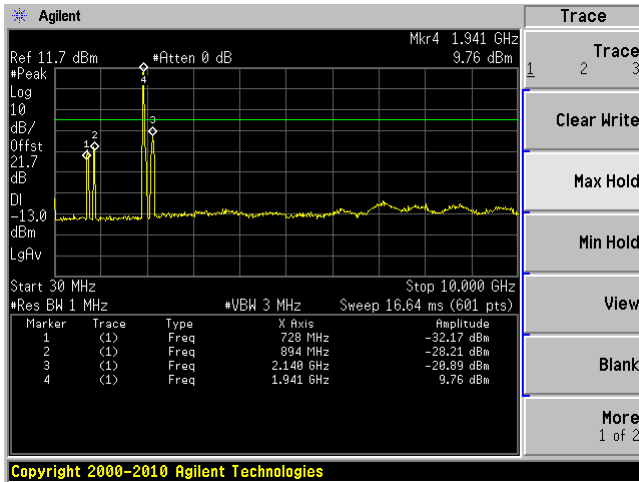


High 10GHz-20G

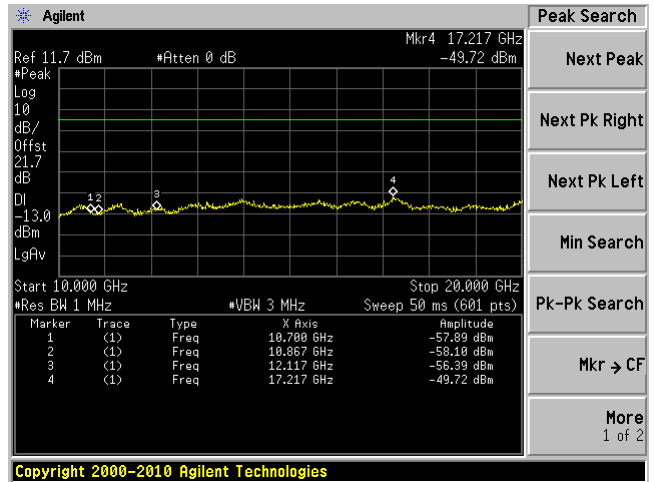


LTE 5 MHz 16QAM DL

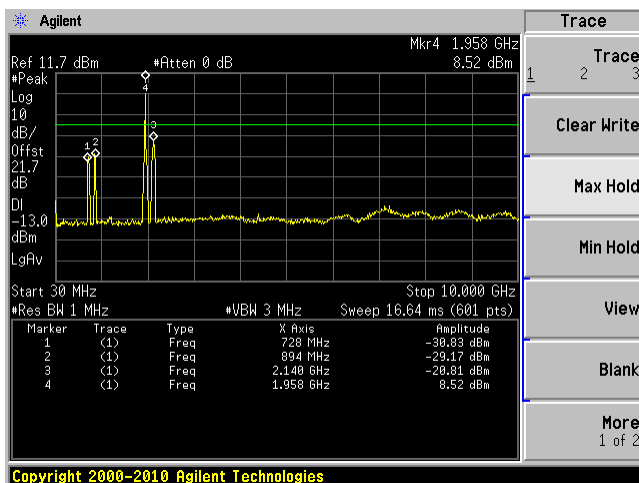
Low 30MHz-10GHz



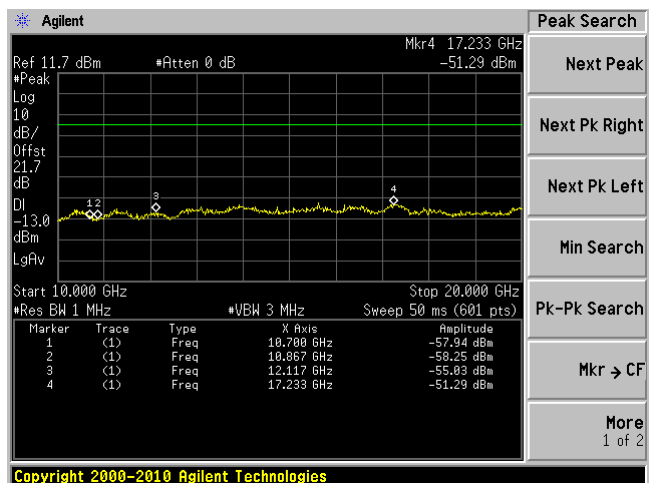
Low 10GHz-20GHz



Middle 30MHz-10GHz

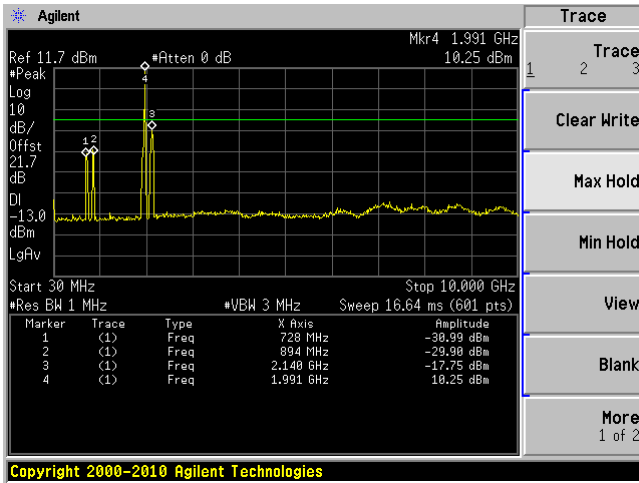


Middle 10GHz-20GHz

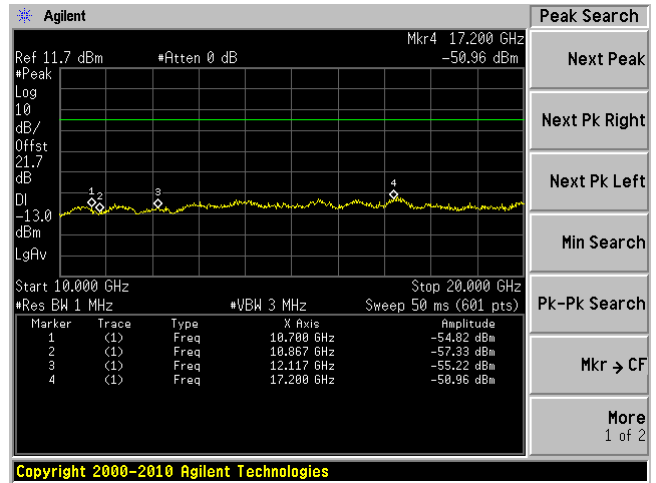




High 30MHz-10GHz

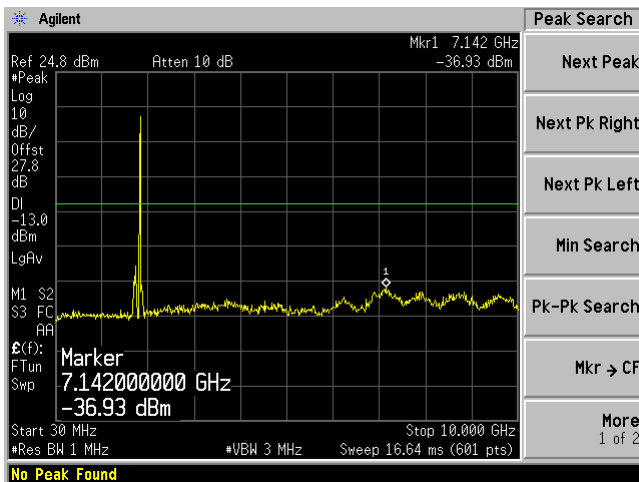


High 10GHz-20GHz

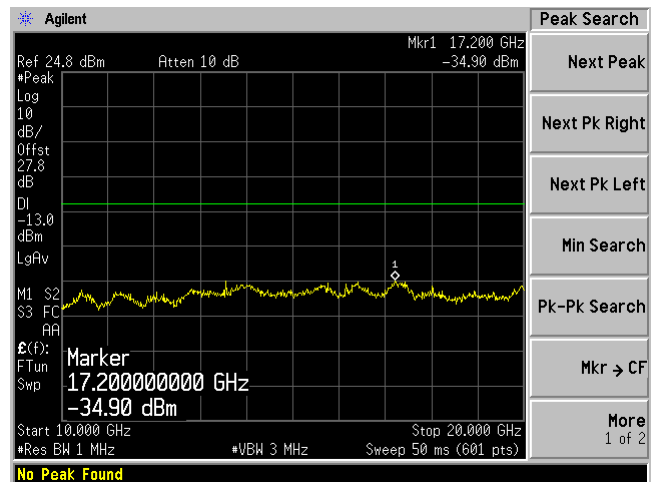


LTE 5 MHz 16QAM UL

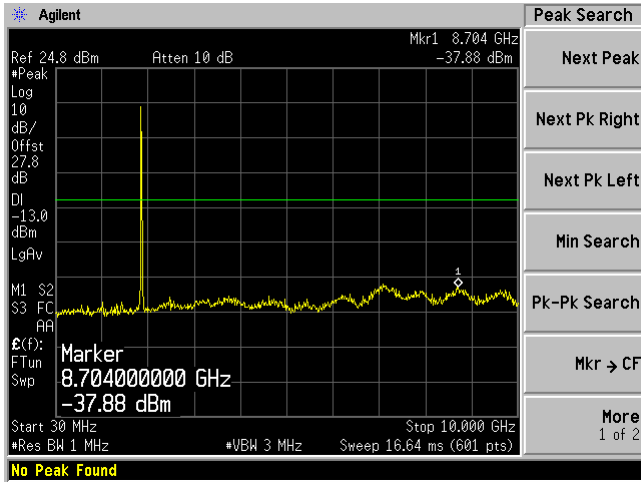
Low 30MHz-10GHz



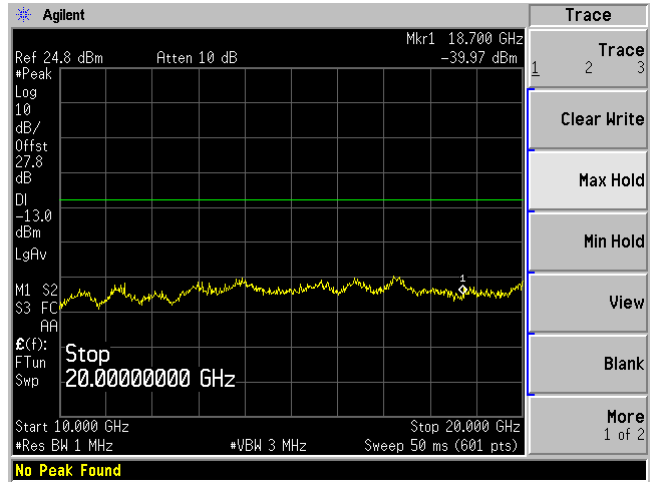
Low 10GHz-20GHz



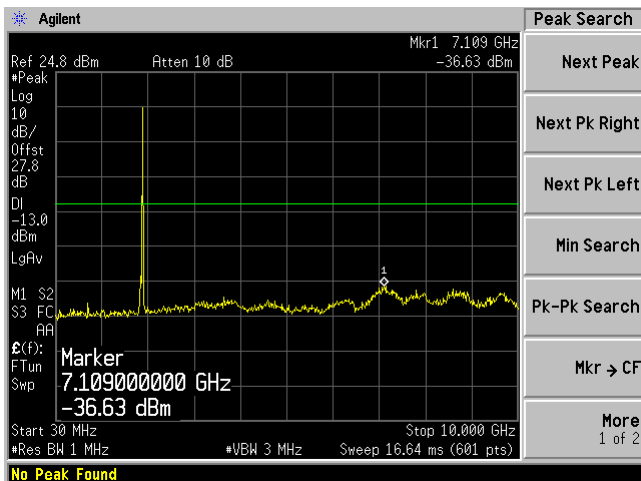
Middle 30MHz-10GHz



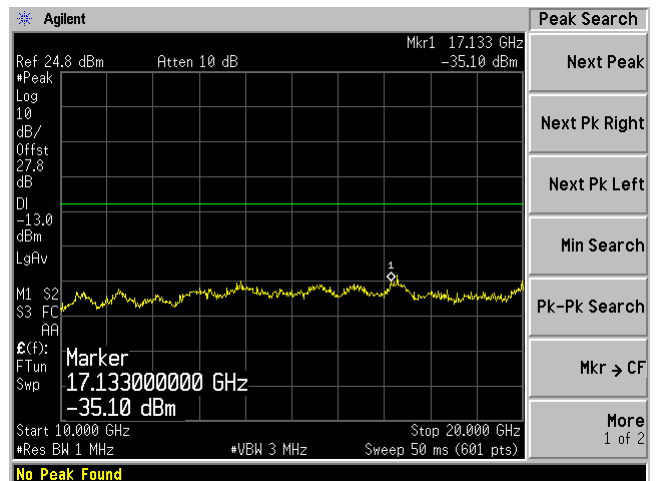
Middle 10GHz-20GHz



High 30MHz-10GHz

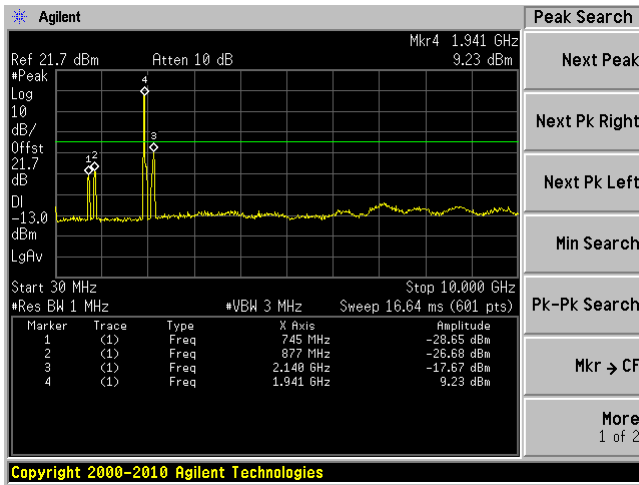


High 10GHz-20GHz

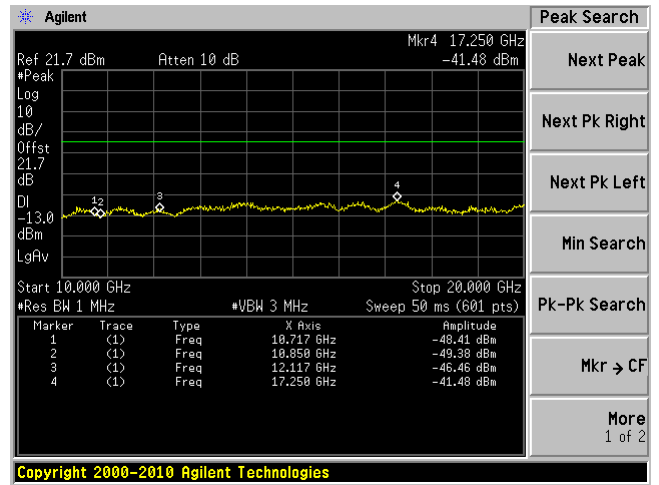


LTE 10 MHz 16QAM DL

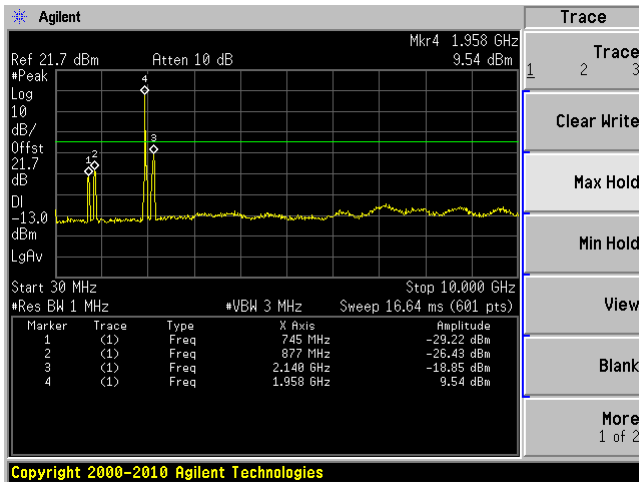
Low 30MHz-10GHz



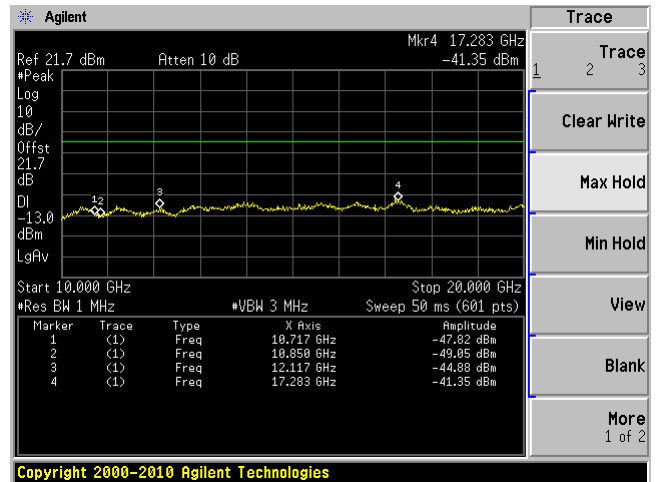
Low 10GHz-20GHz



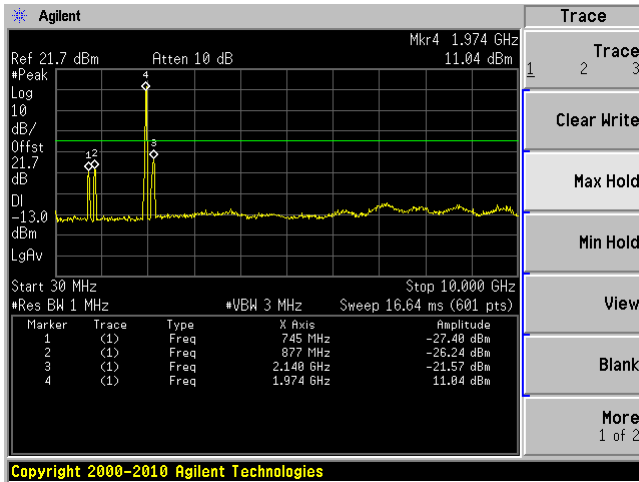
Middle 30MHz-10GHz



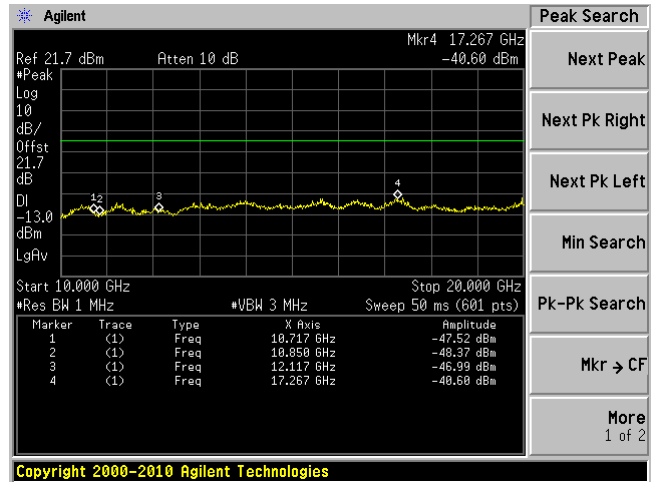
Middle 10GHz-20GHz



High 30MHz-10GHz

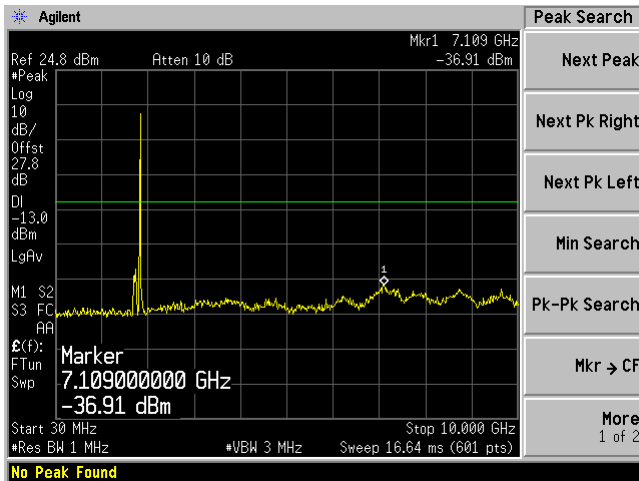


High 10GHz-20GHz

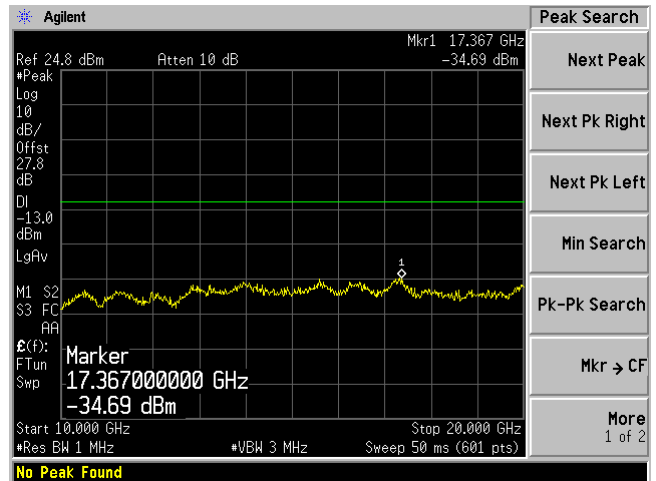


LTE 10 MHz 16QAM UL

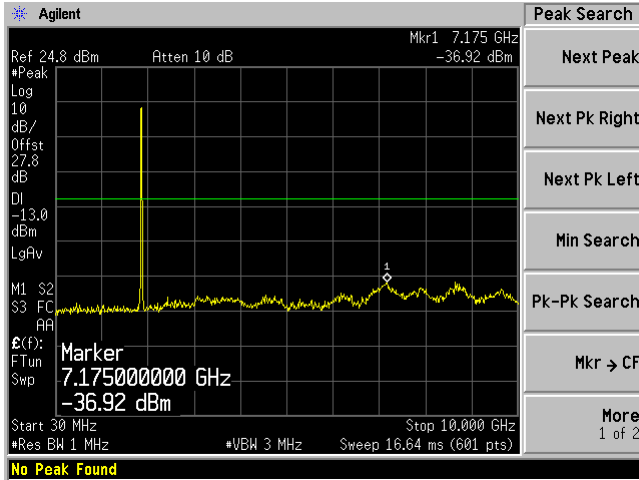
Low 30MHz-10GHz



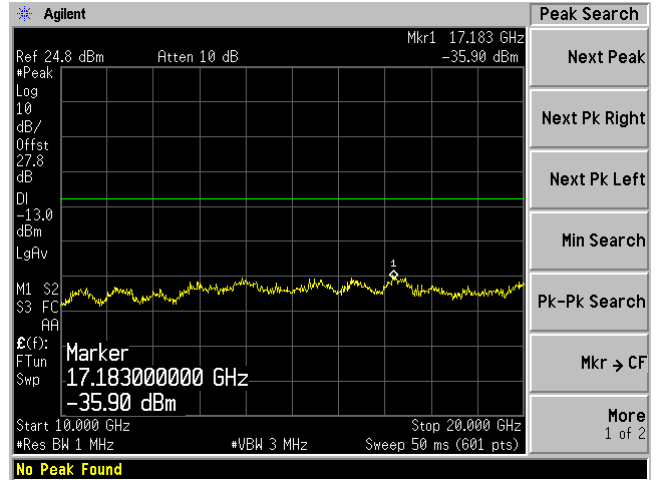
Low 10GHz-20GHz



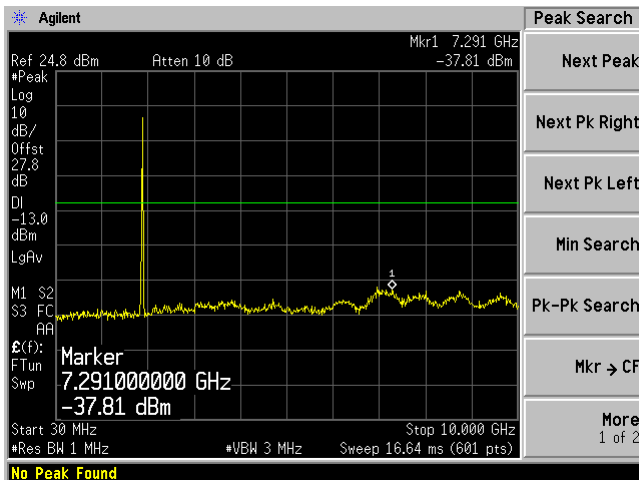
Middle 30MHz-10GHz



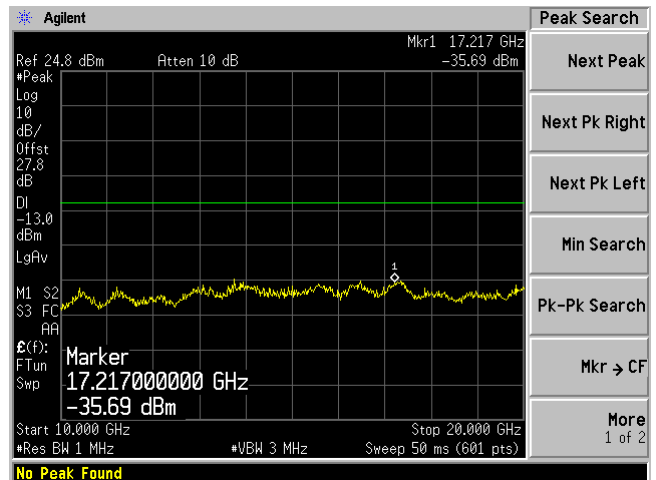
Middle 10GHz-20GHz



High 30MHz-10GHz

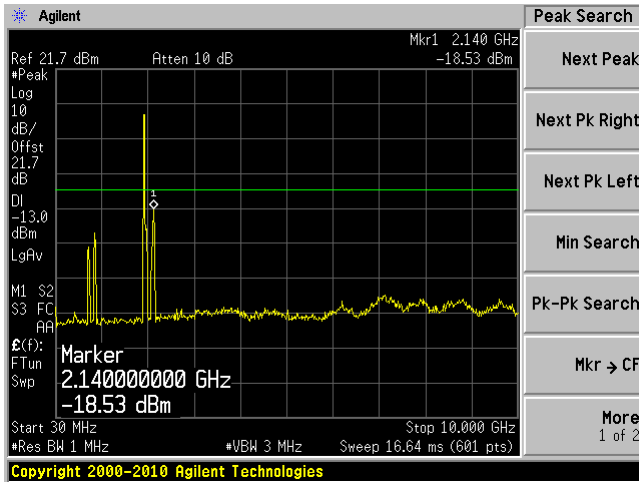


High 10GHz-20GHz

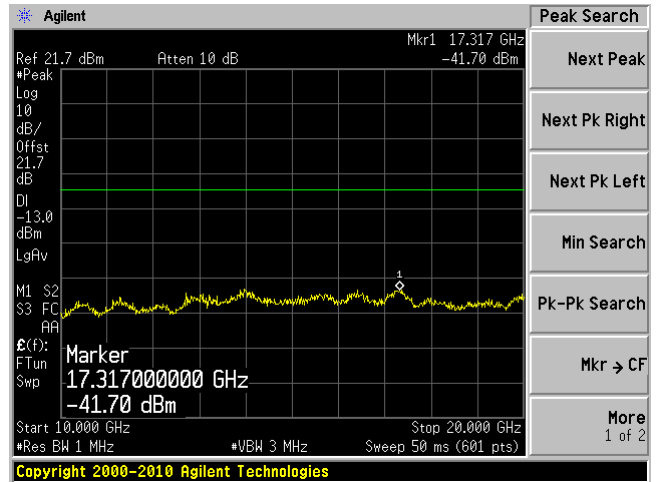


LTE 15 MHz 16QAM DL

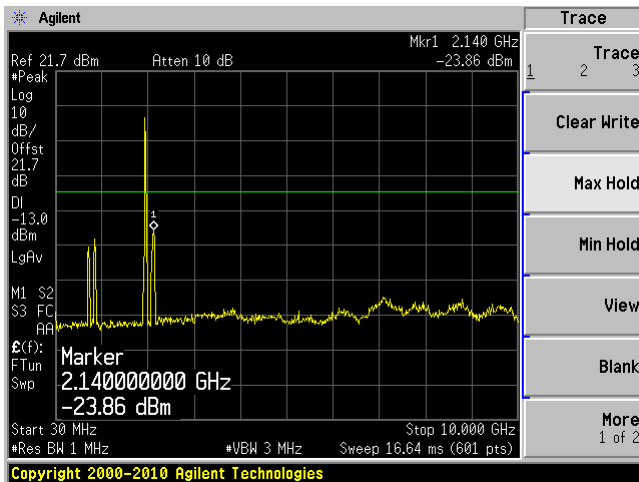
Low 30MHz-10GHz



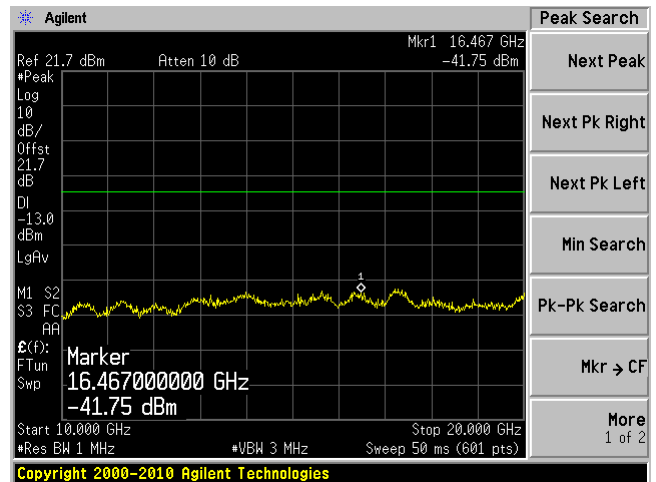
Low 10GHz-20GHz



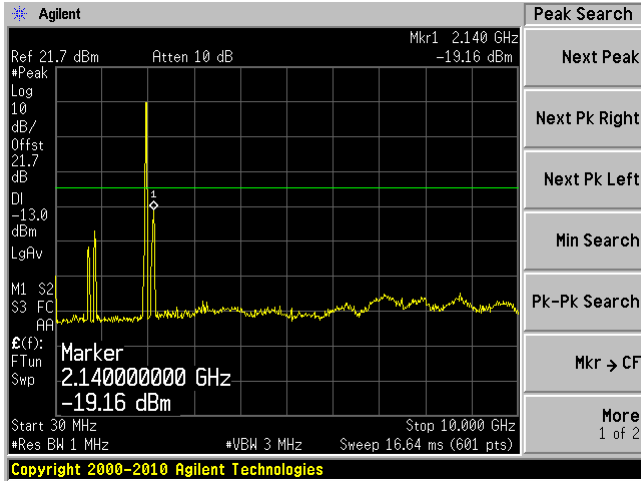
Middle 30MHz-10GHz



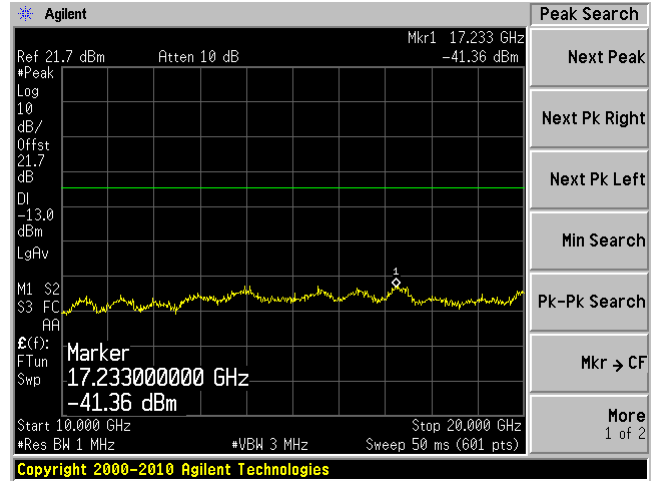
Middle 10GHz-20GHz



High 30MHz-10GHz

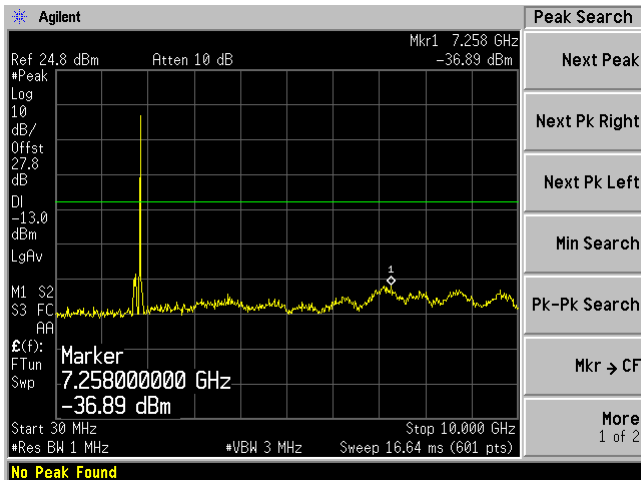


High 10GHz-20GHz

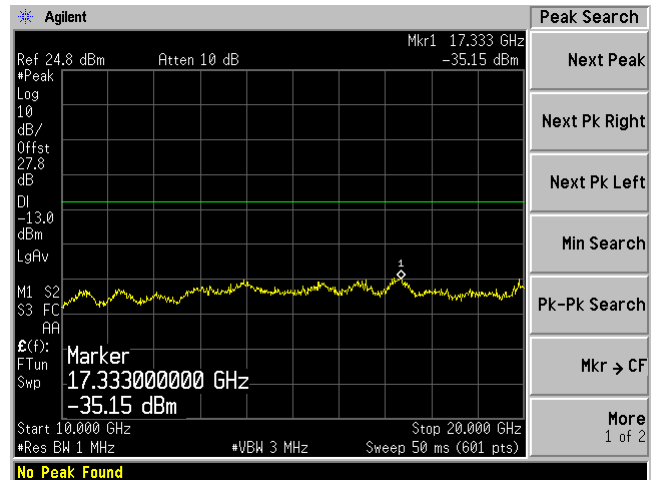


LTE 15 MHz 16QAM UL

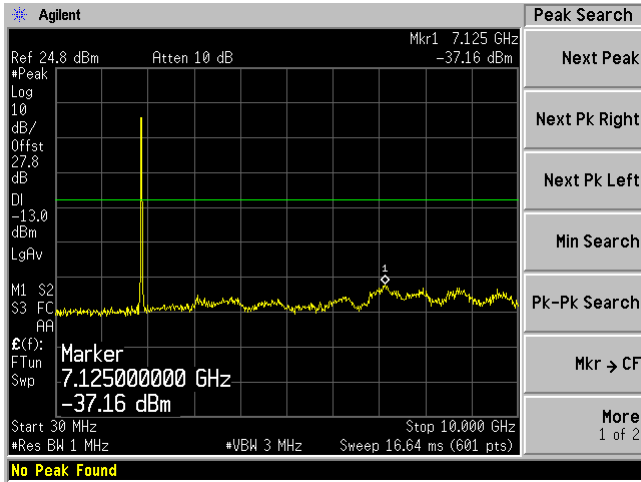
Low 30MHz-10GHz



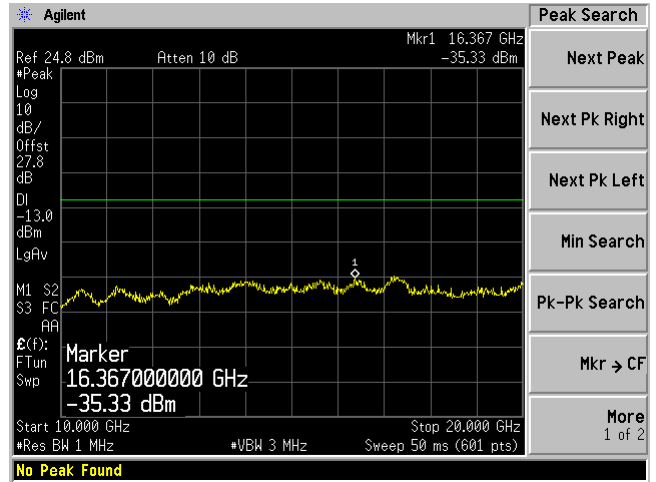
Low 10GHz-20GHz



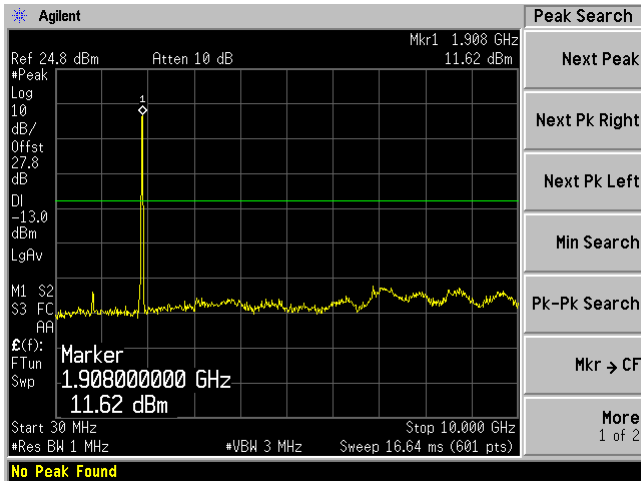
Middle 30MHz-10GHz



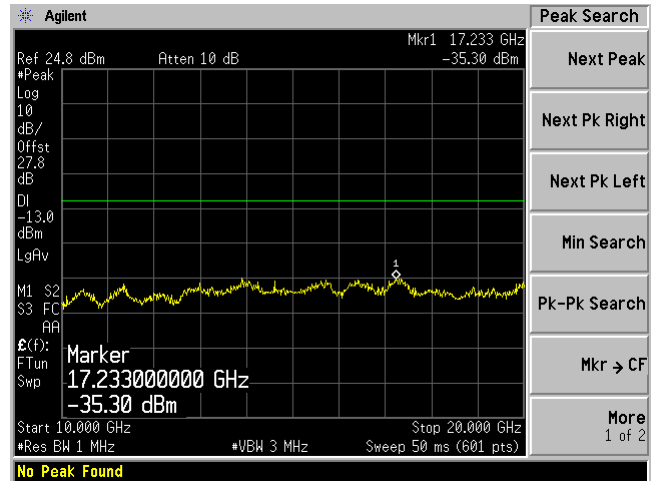
Middle 10GHz-20GHz



High 30MHz-10GHz



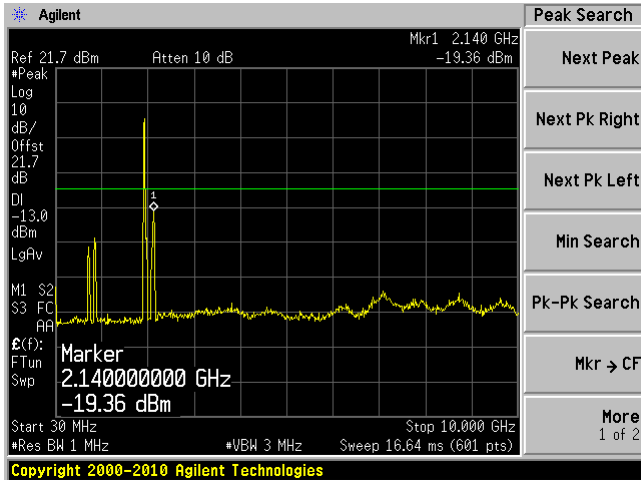
High 10GHz-20GHz



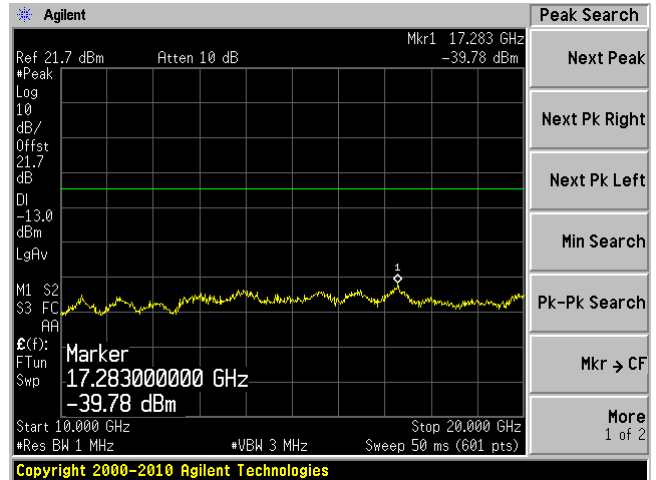


LTE 20 MHz 16QAM DL

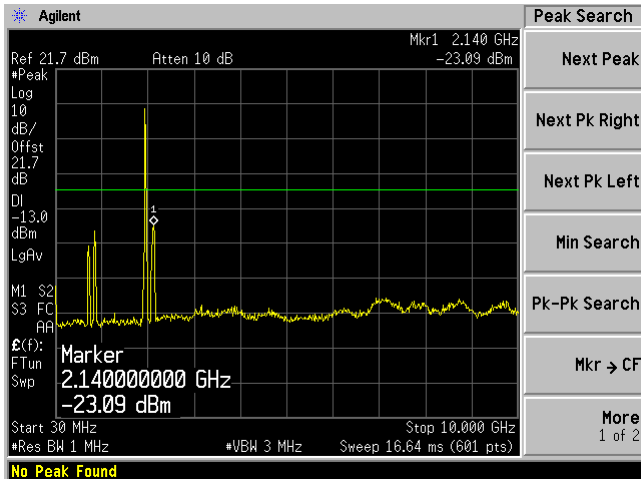
Low 30MHz-10GHz



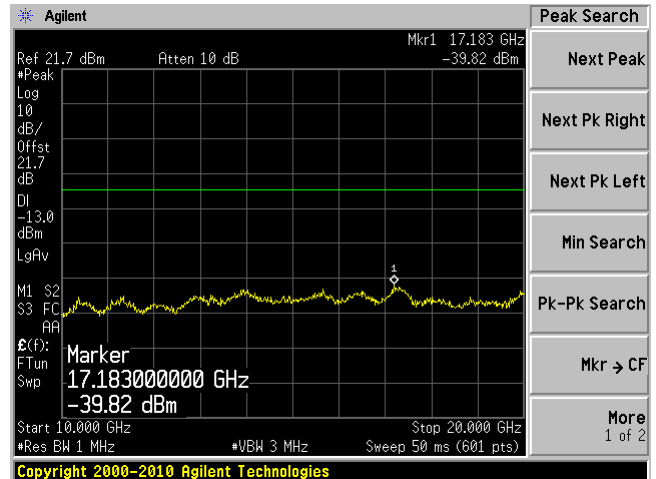
Low 10GHz-20GHz



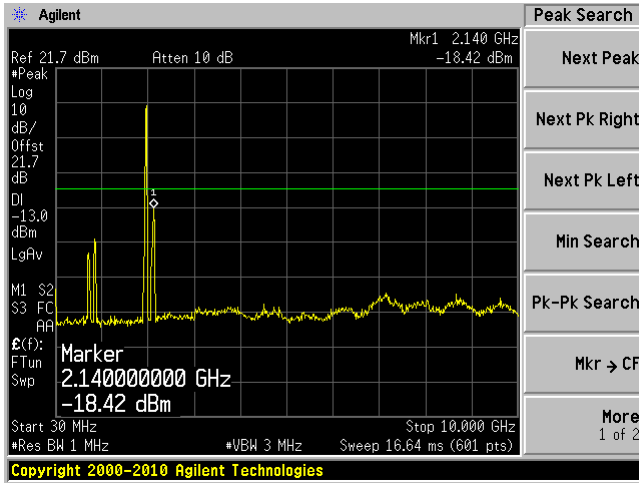
Middle 30MHz-10GHz



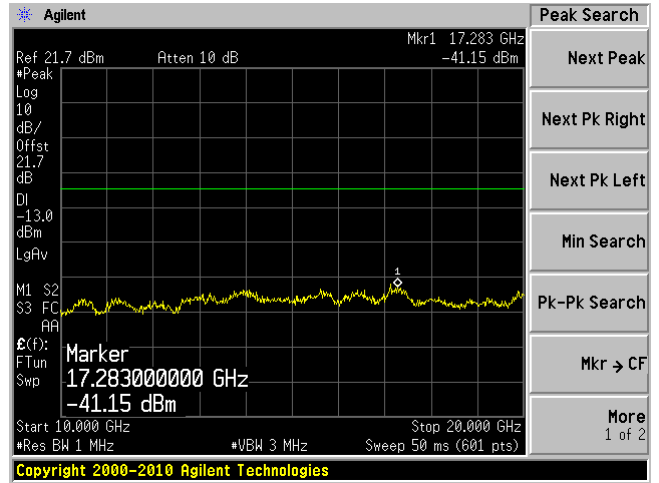
Middle 10GHz-20GHz



High 30MHz-10GHz

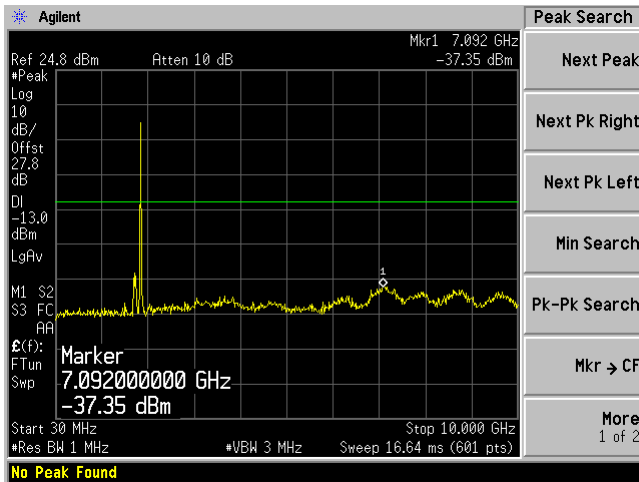


High 10GHz-20GHz

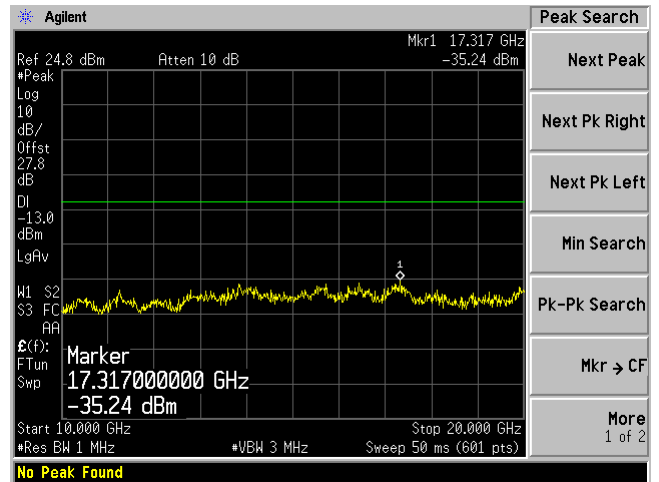


LTE 20 MHz 16QAM UL

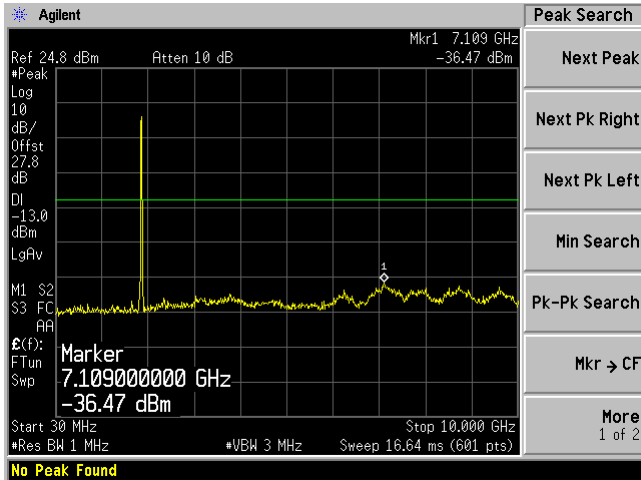
Low 30MHz-10GHz



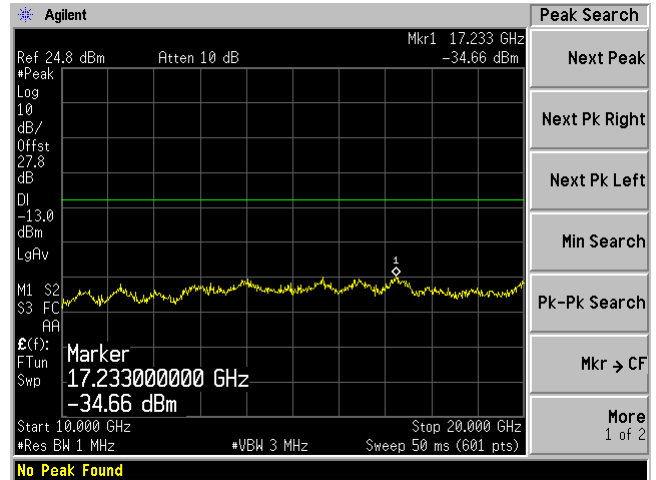
Low 10GHz-20GHz



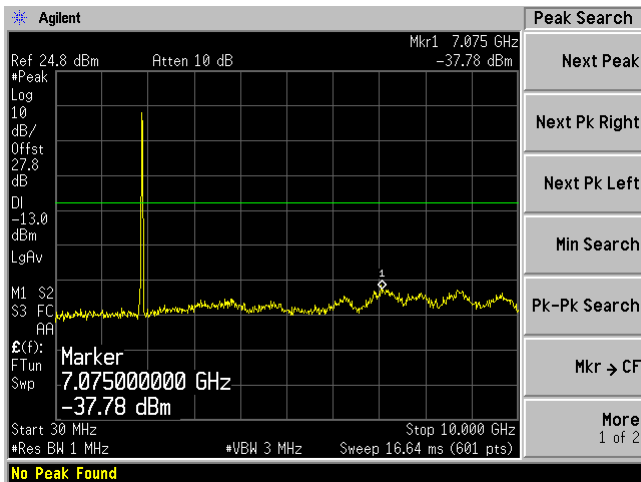
Middle 30MHz-10GHz



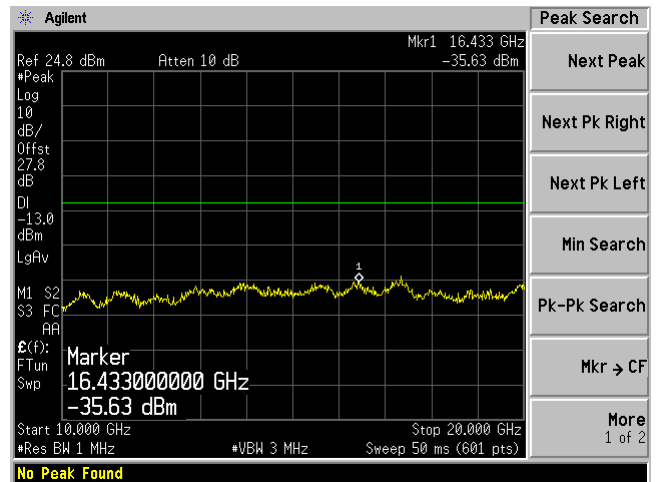
Middle 10GHz-20GHz



High 30MHz-10GHz

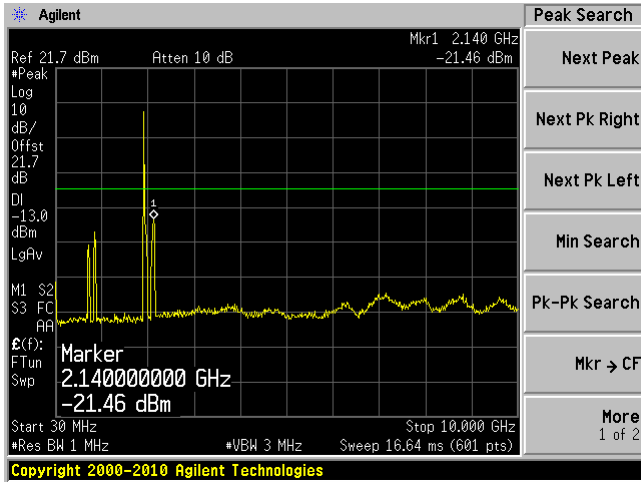


High 10GHz-20GHz

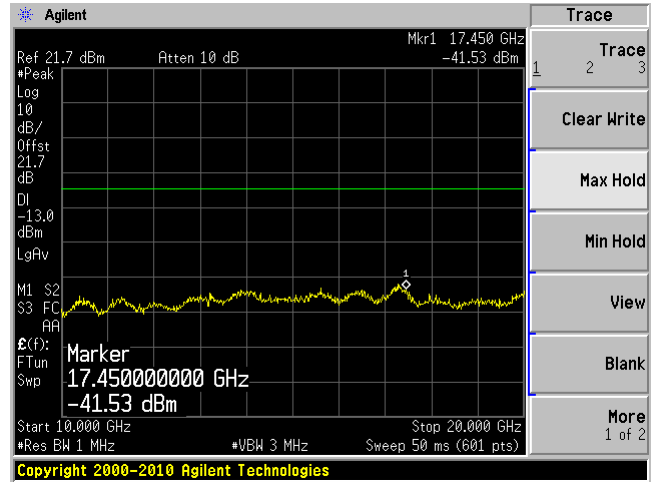


LTE 1.4 MHz 64QAM DL

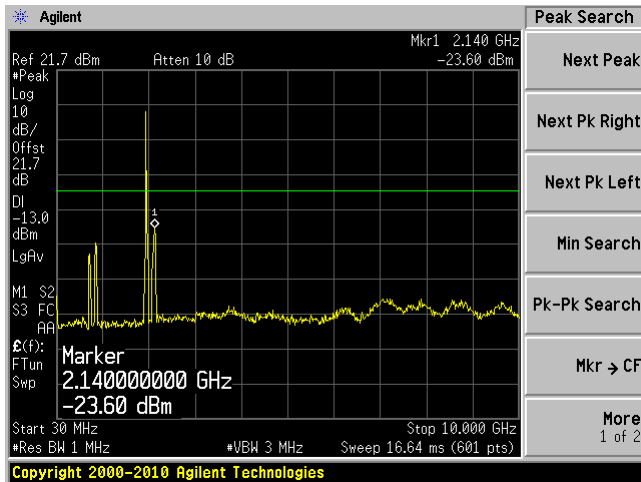
Low 30MHz-10GHz



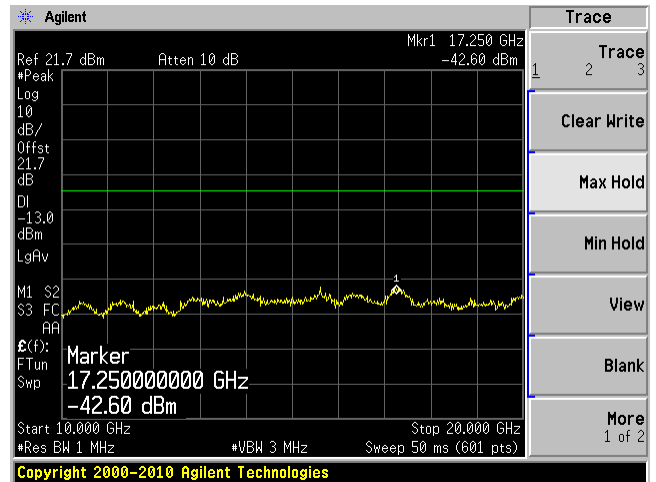
Low 10GHz-20GHz



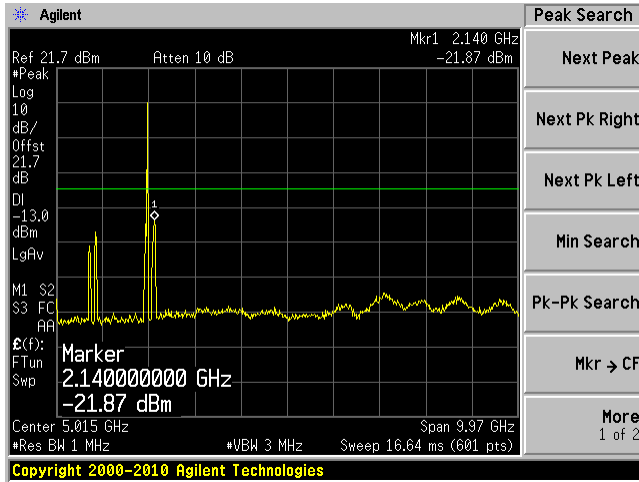
Middle 30MHz-10GHz



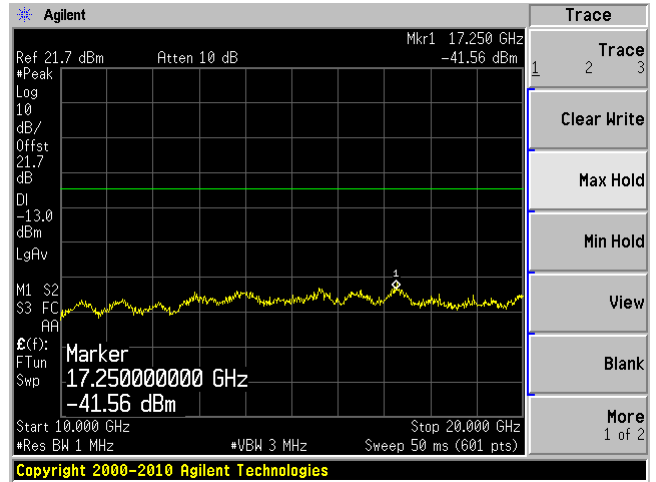
Middle 10GHz-20GHz



High 30MHz-10GHz

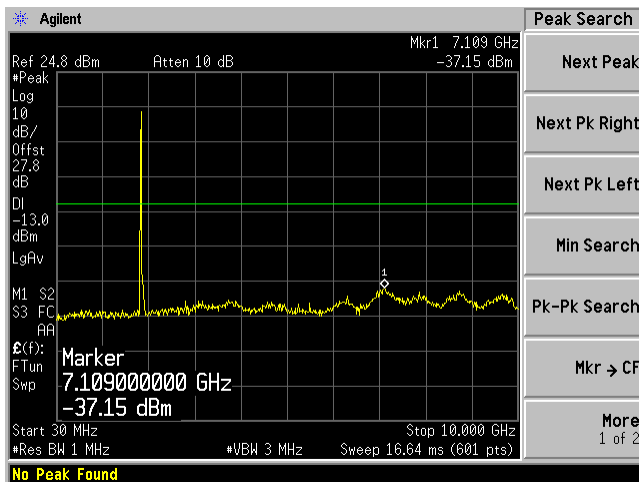


High 10GHz-20GHz

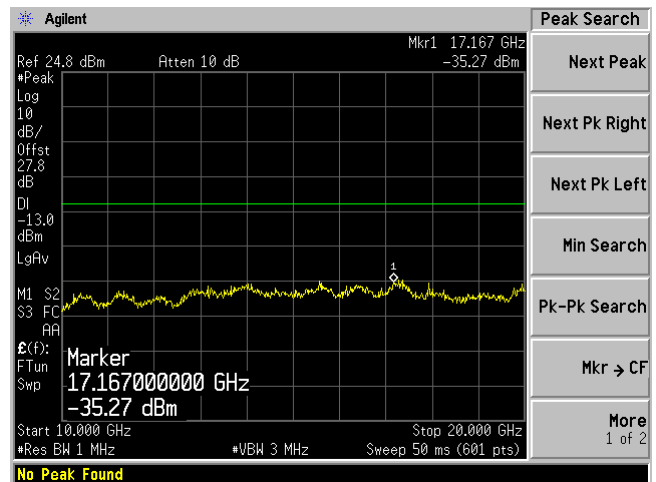


LTE 1.4 MHz 64QAM UL

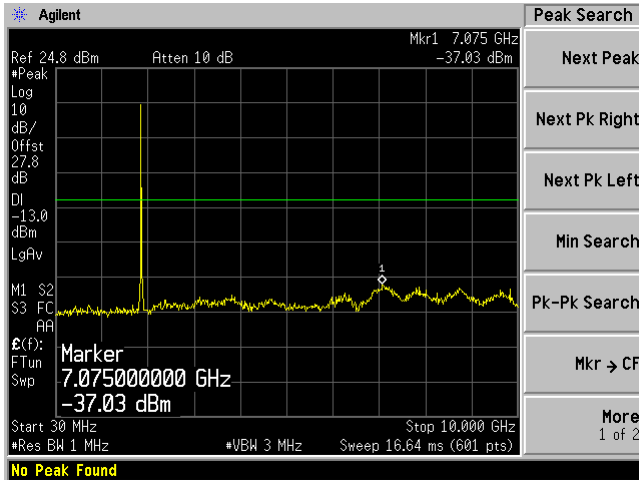
Low 30MHz-10GHz



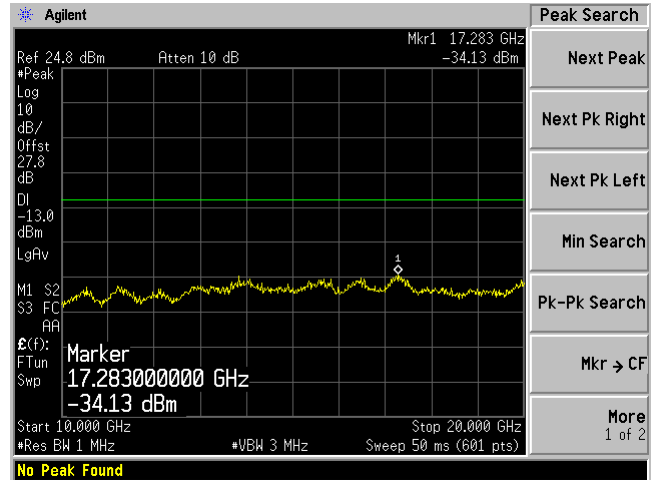
Low 10GHz-20GHz



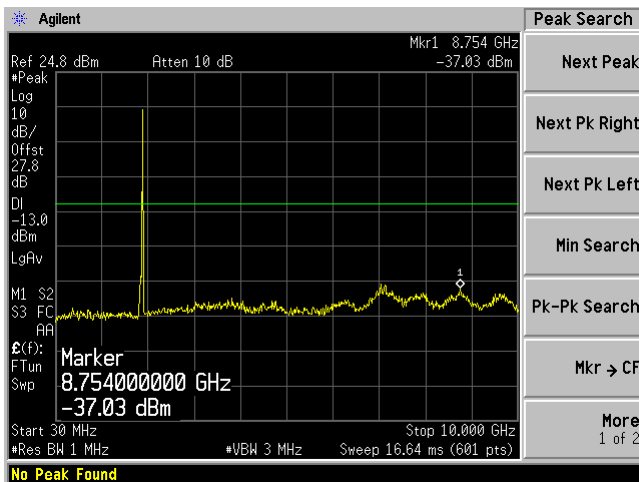
Middle 30MHz-10GHz



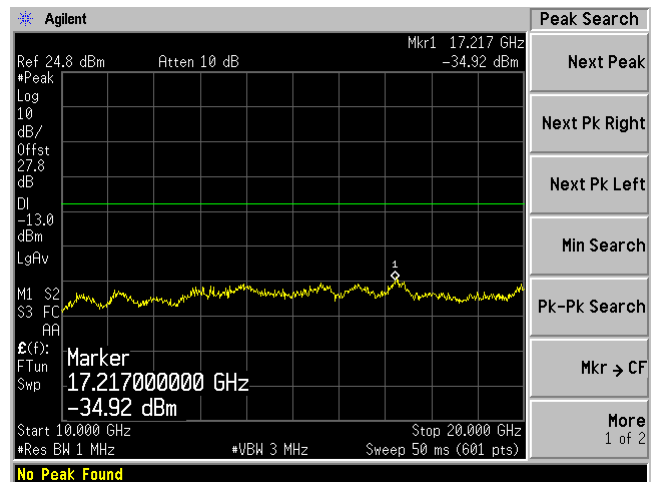
Middle 10GHz-20GHz



High 30MHz-10GHz

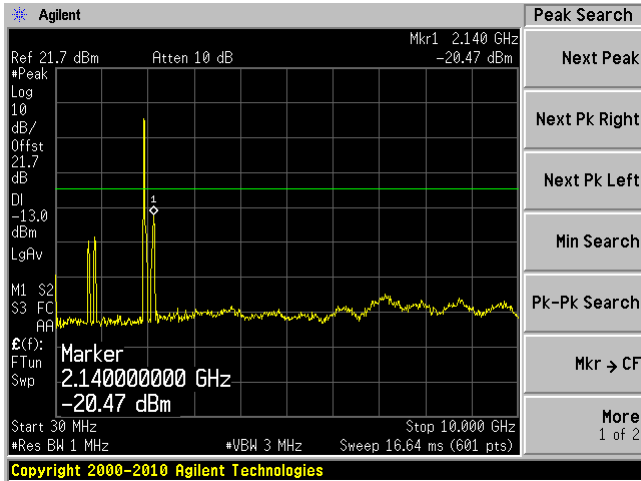


High 10GHz-20GHz

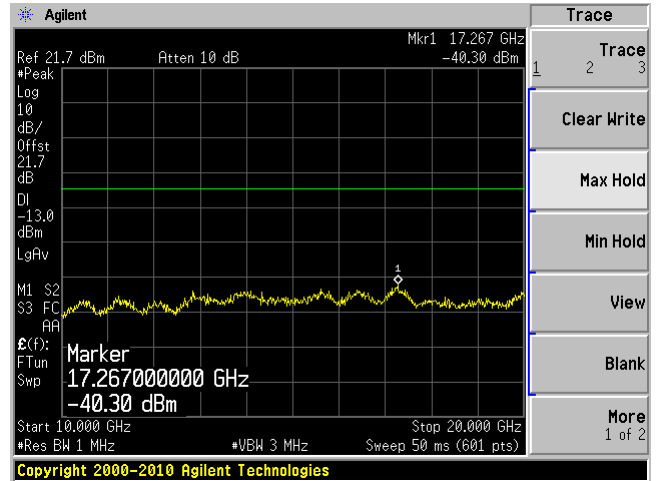


LTE 3 MHz 64QAM DL

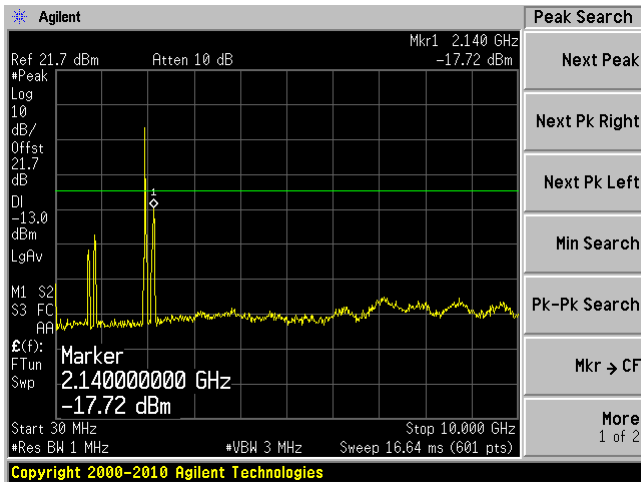
Low 30MHz-10GHz



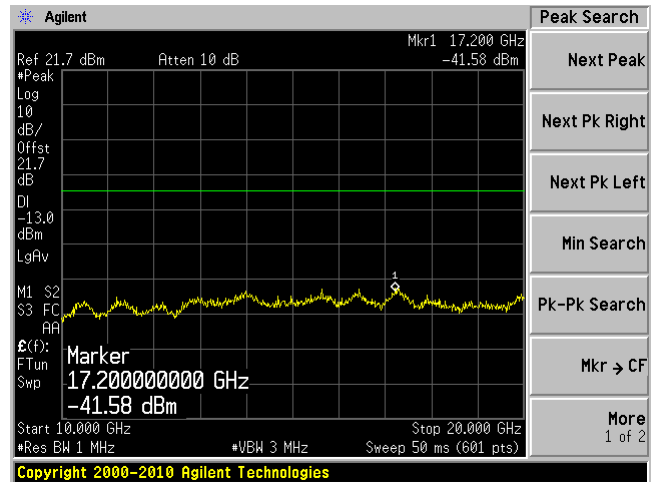
Low 10GHz-20GHz



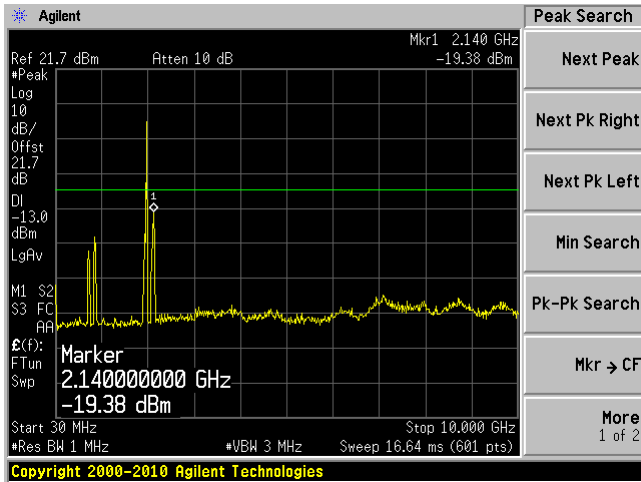
Middle 30MHz-10GHz



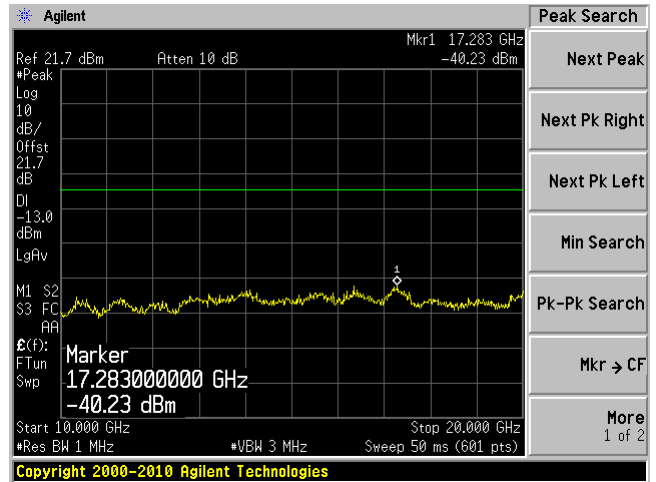
Middle 10GHz-20GHz



High 30MHz-10GHz

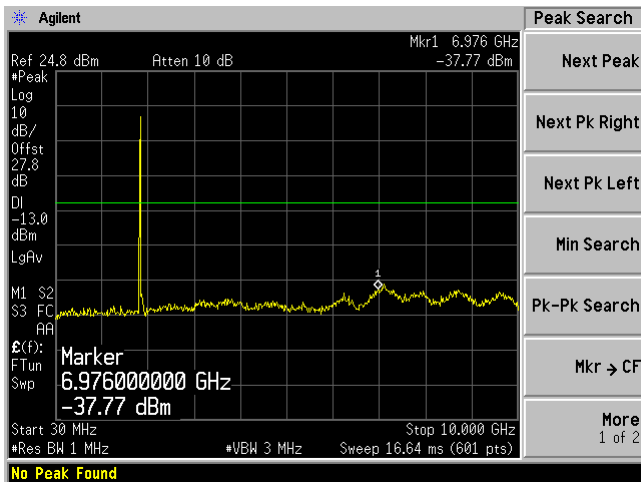


High 10GHz-20GHz

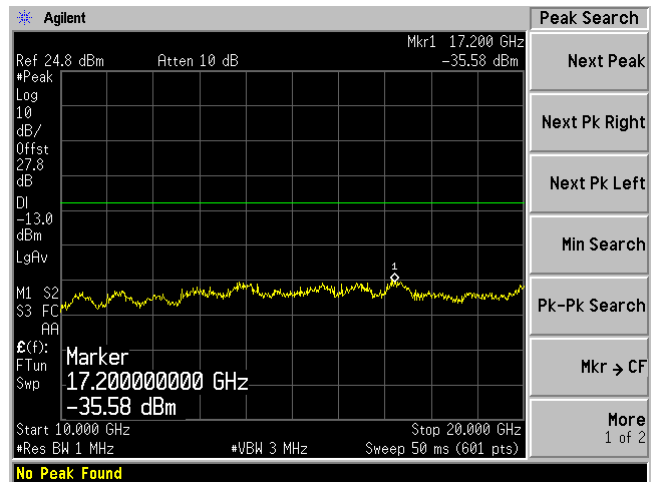


LTE 3 MHz 64QAM UL

Low 30MHz-10GHz

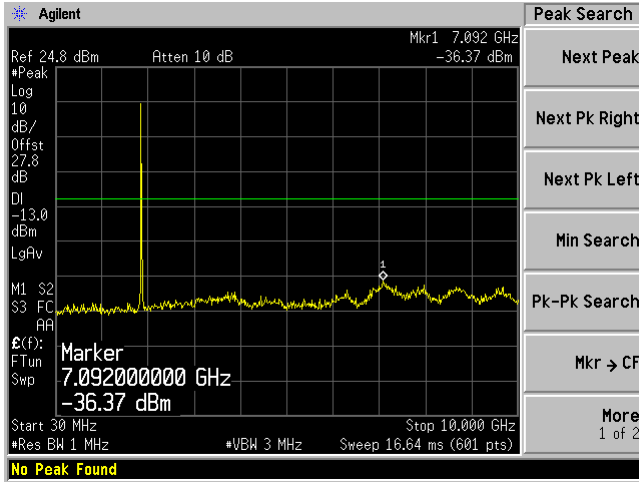


Low 10GHz-20GHz

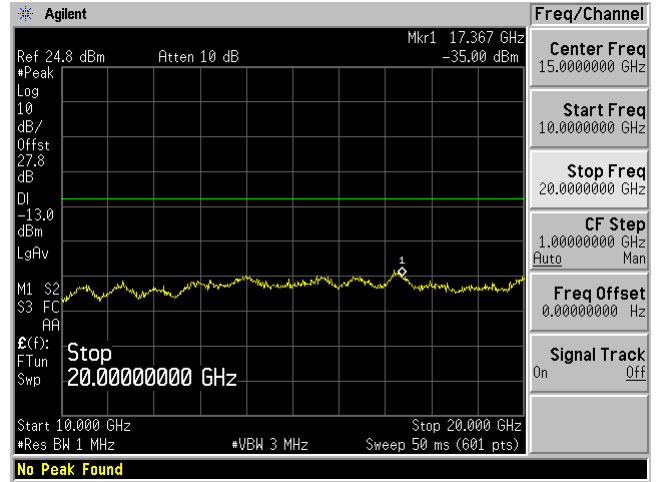




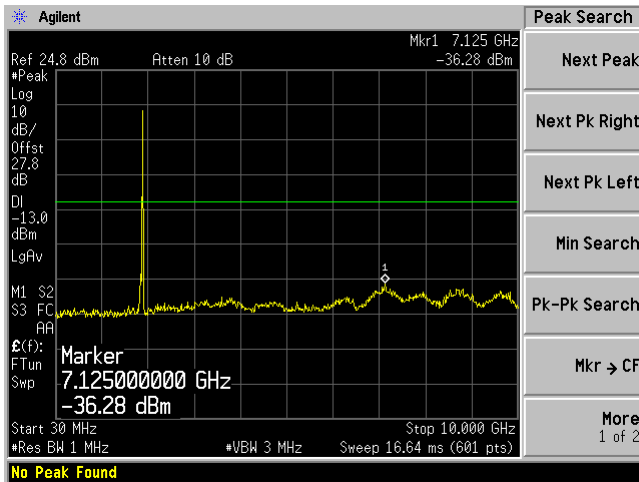
Middle 30MHz-10GHz



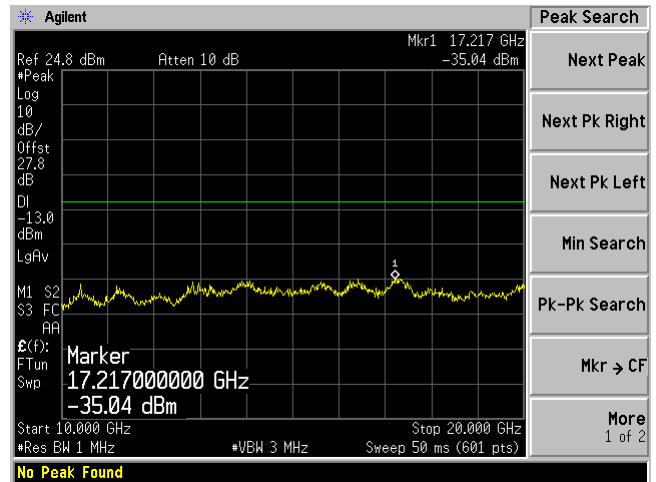
Middle 10GHz-20GHz



High 30MHz-10GHz

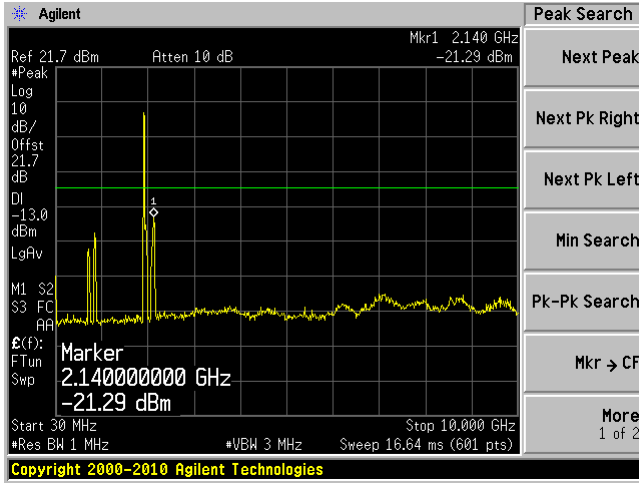


High 10GHz-20GHz

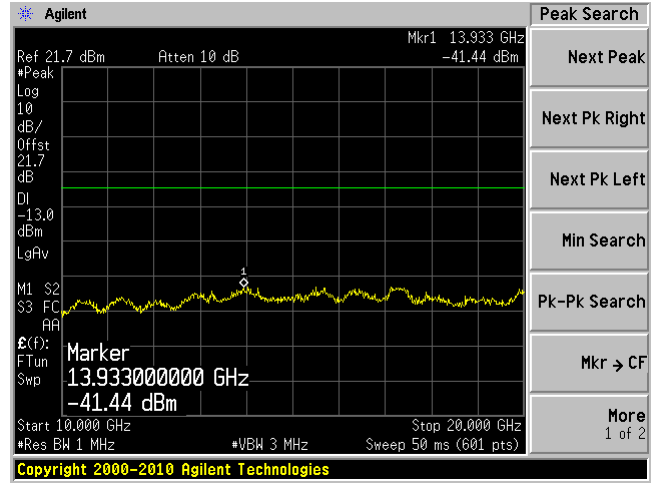


LTE 5 MHz 64QAM DL

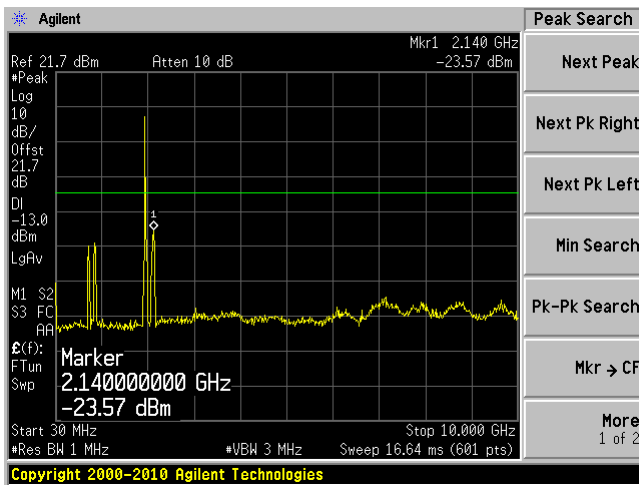
Low 30MHz-10GHz



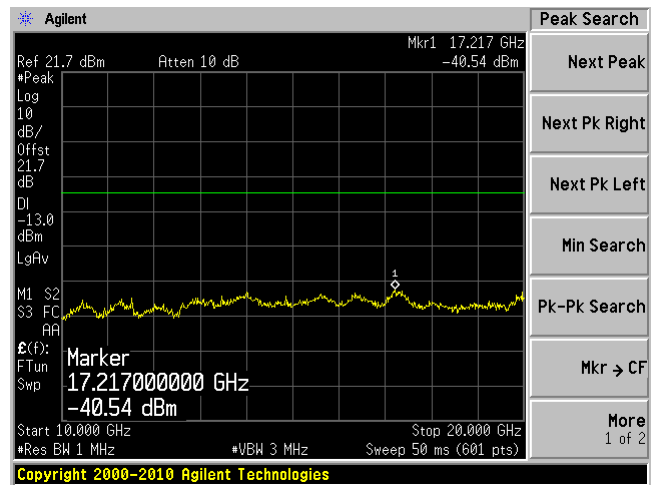
Low 10GHz-20GHz



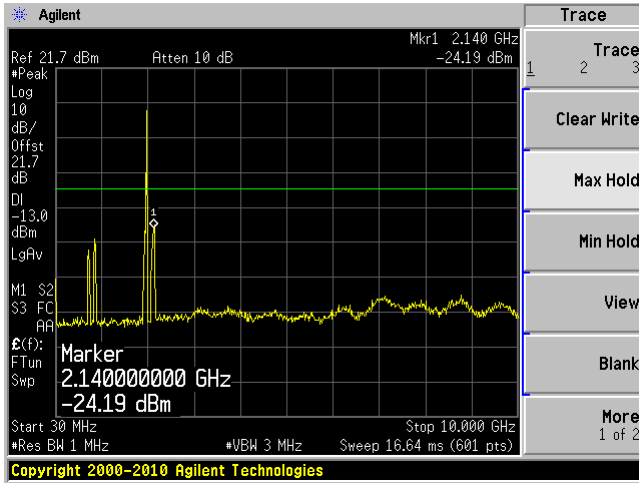
Middle 30MHz-10GHz



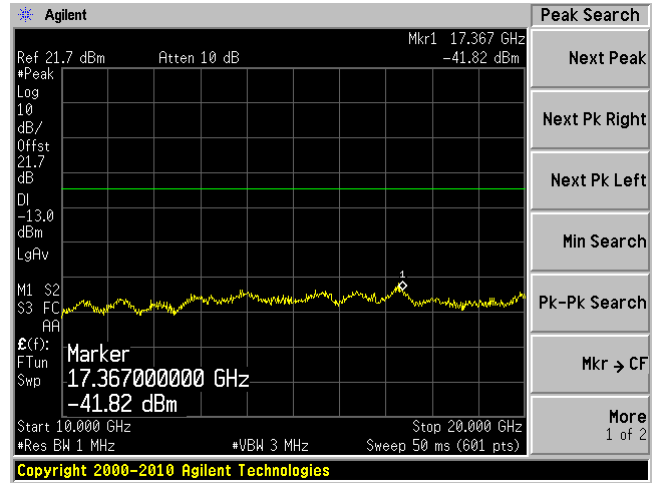
Middle 10GHz-20GHz



High 30MHz-10GHz

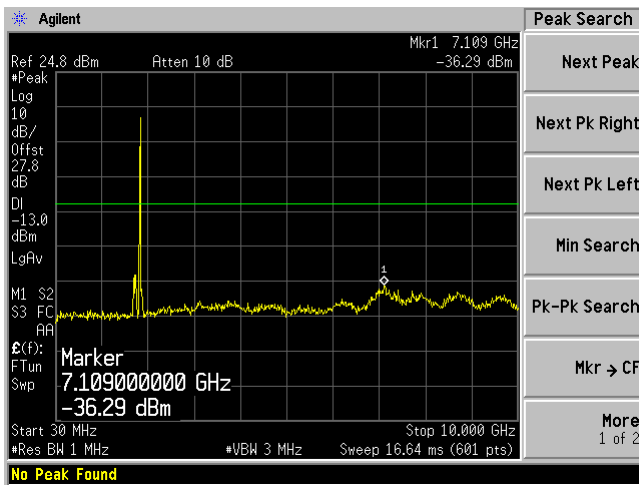


High 10GHz-20GHz

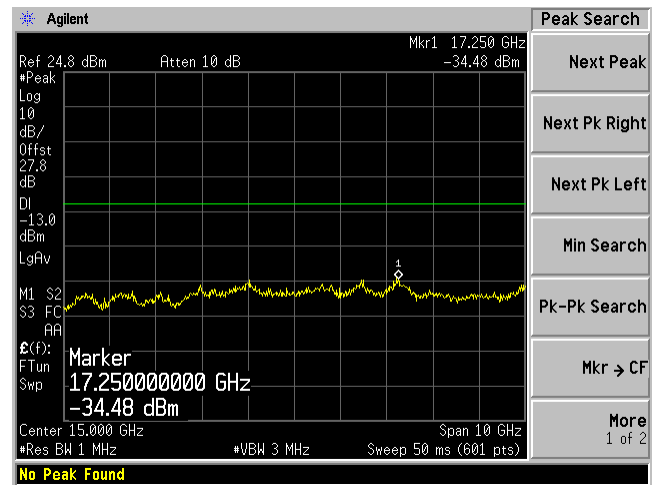


LTE 5 MHz 64QAM UL

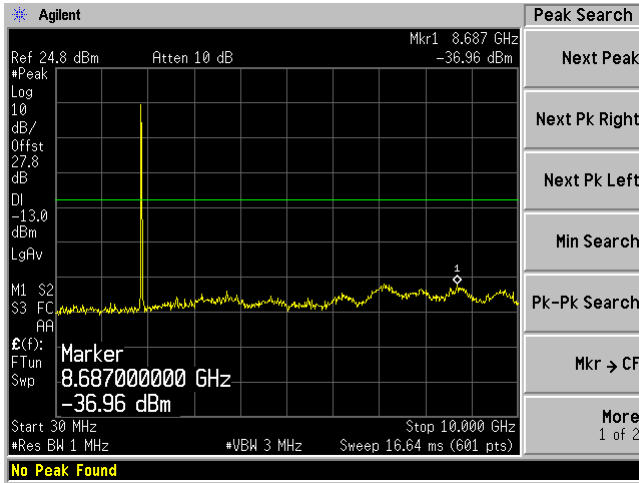
Low 30MHz-10GHz



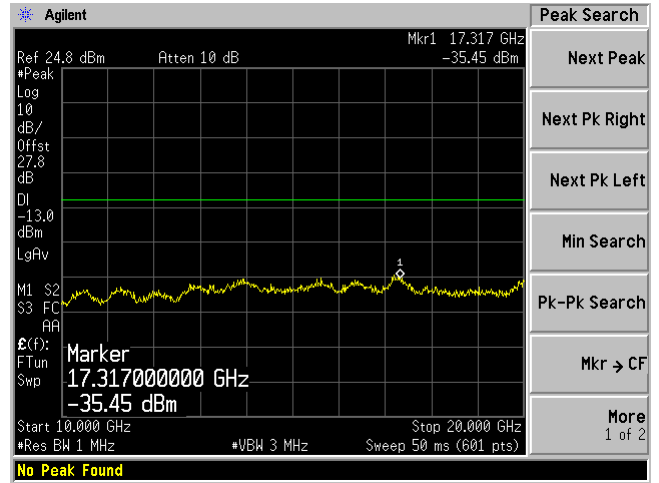
Low 10GHz-20GHz



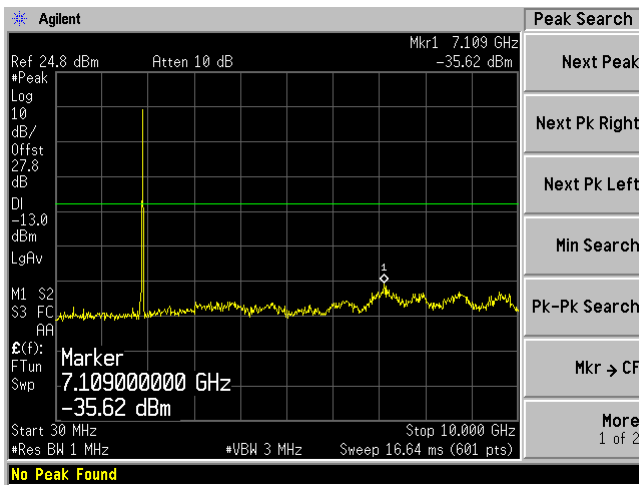
Middle 30MHz-10GHz



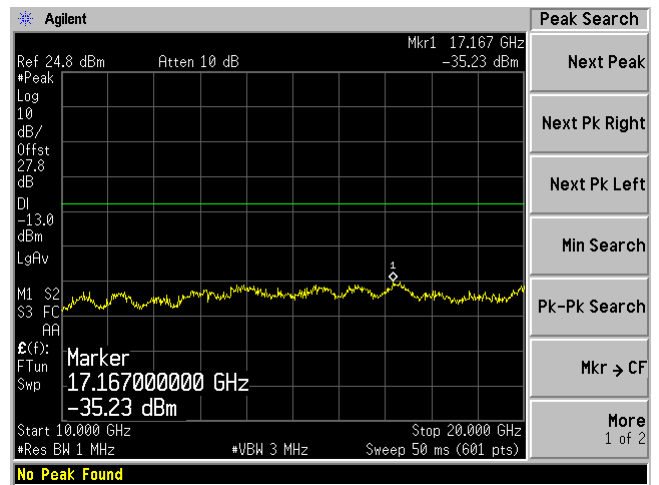
Middle 10GHz-20GHz



High 30MHz-10GHz

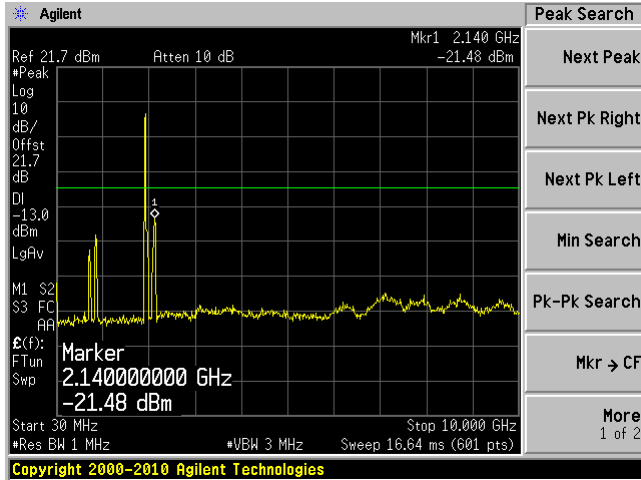


High 10GHz-20GHz

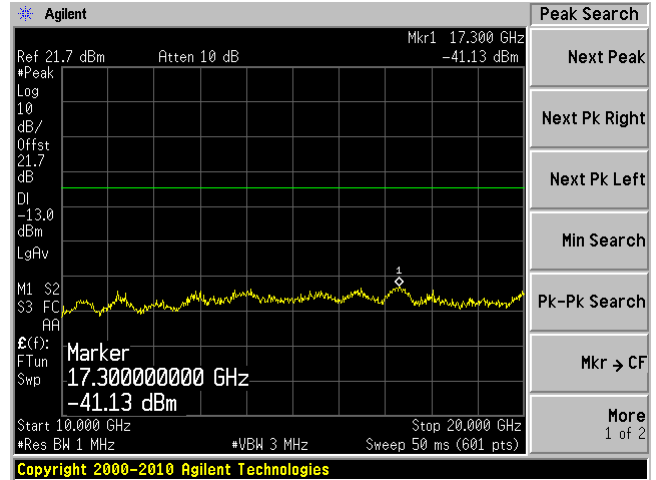


LTE 10 MHz 64QAM DL

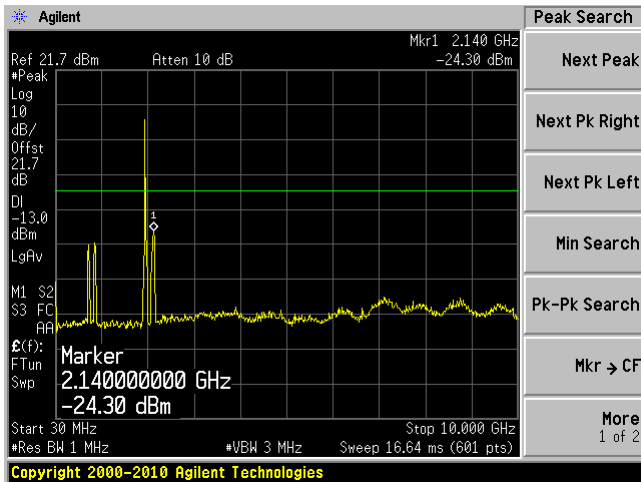
Low 30MHz-10GHz



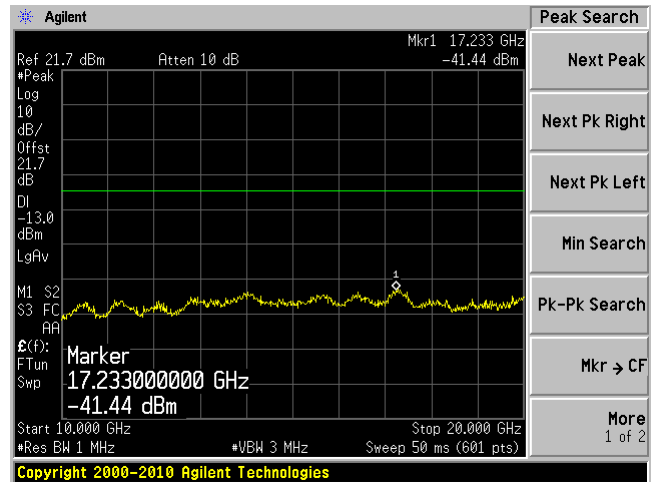
Low 10GHz-20GHz



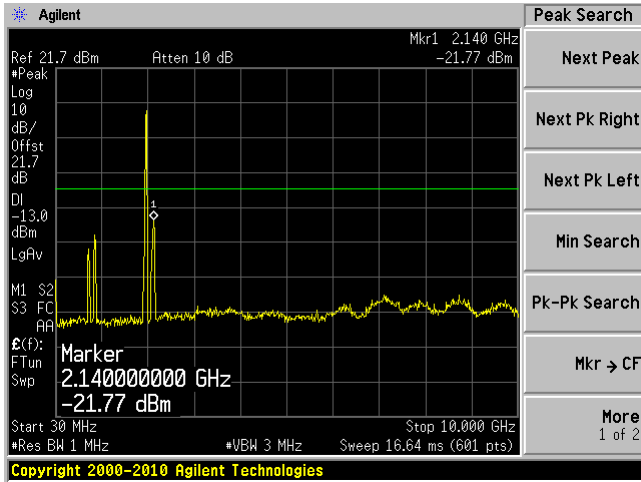
Middle 30MHz-10GHz



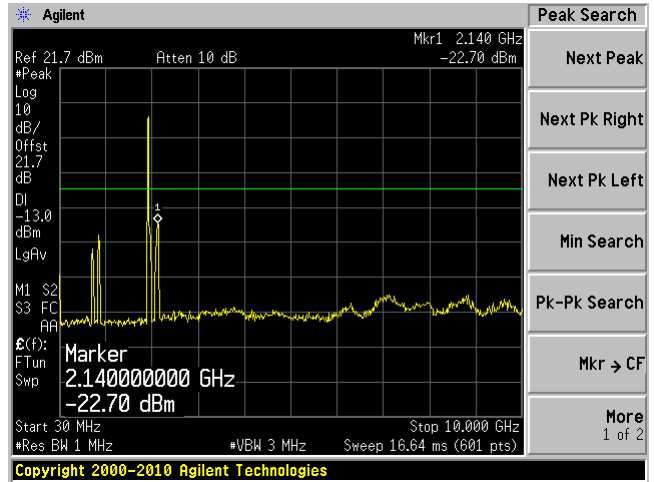
Middle 10GHz-20GHz



High 30MHz-10GHz

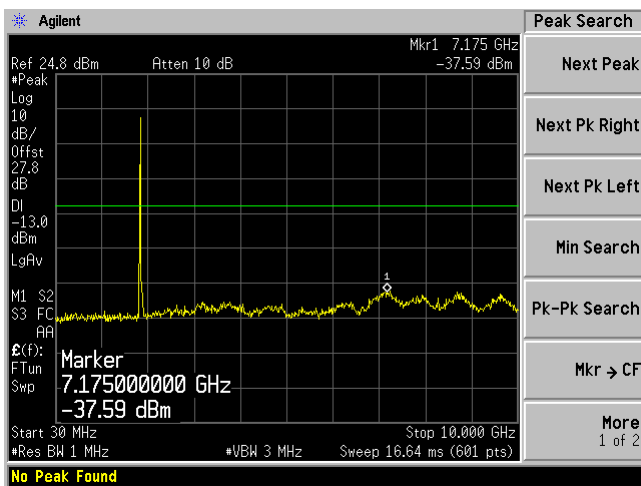


High 10GHz-20GHz

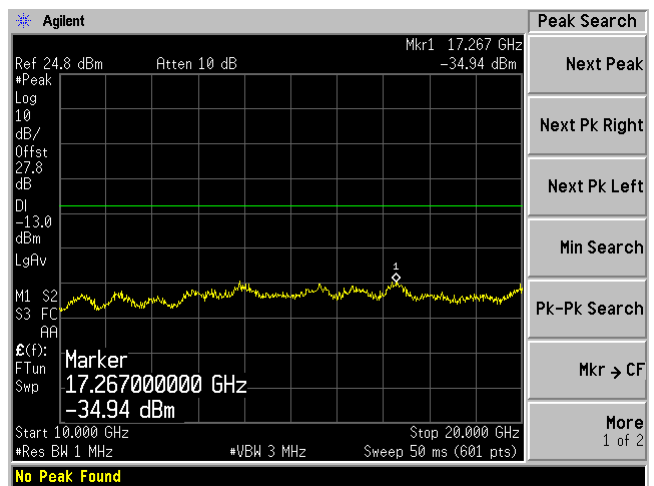


LTE 10 MHz 64QAM UL

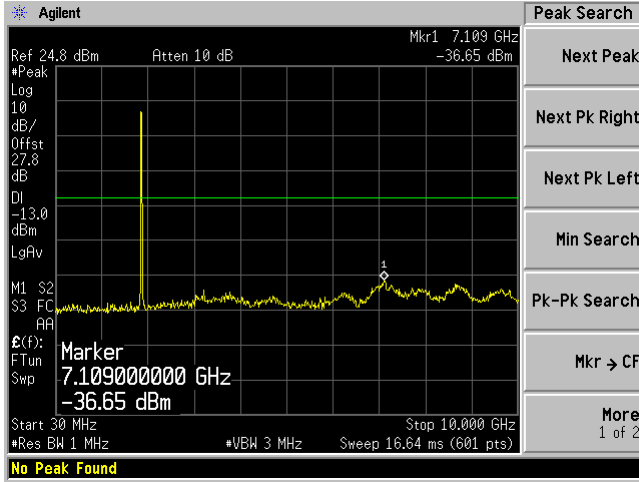
Low 30MHz-10GHz



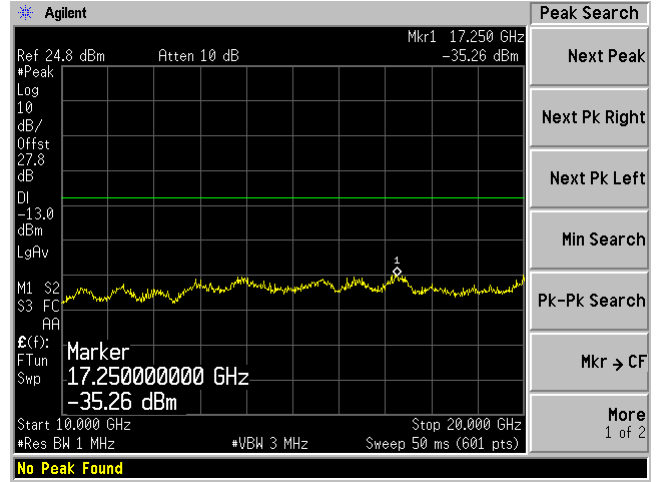
Low 10GHz-20GHz



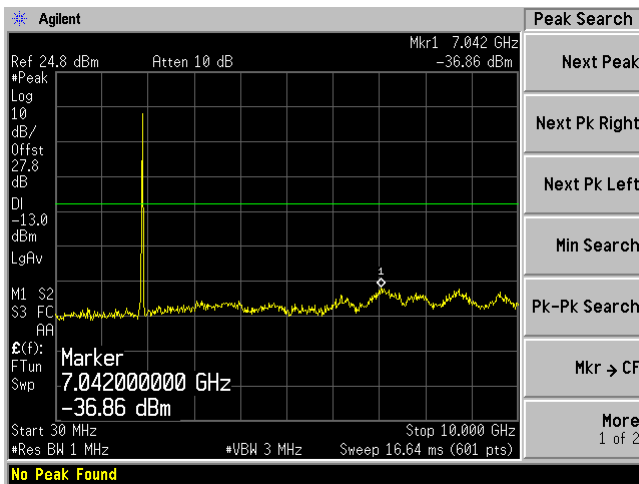
Middle 30MHz-10GHz



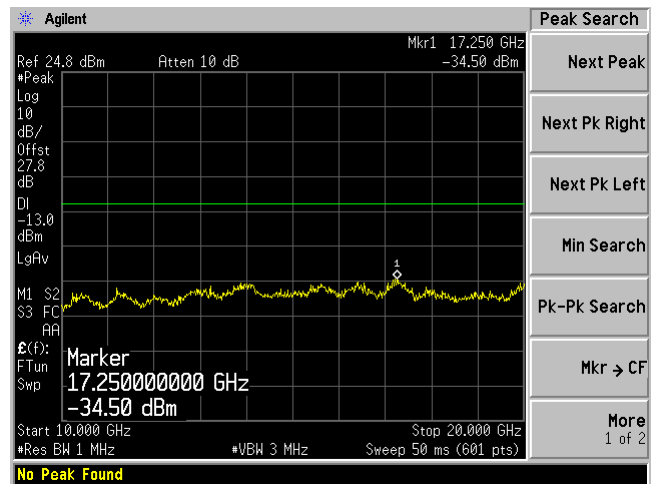
Middle 10GHz-20GHz



High 30MHz-10GHz

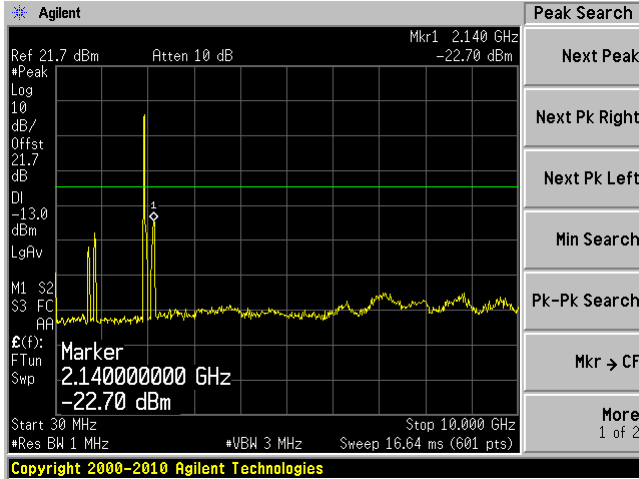


High 10GHz-20GHz

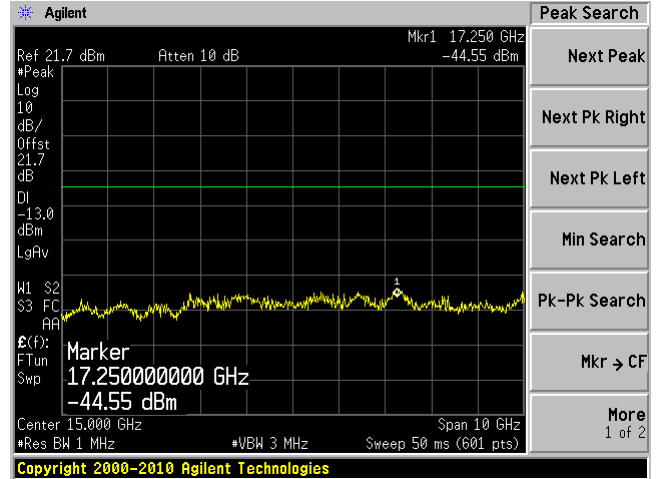


LTE 15 MHz 64QAM DL

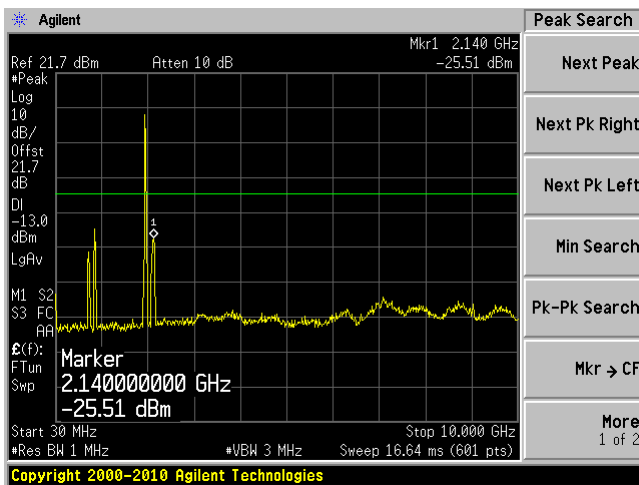
Low 30MHz-10GHz



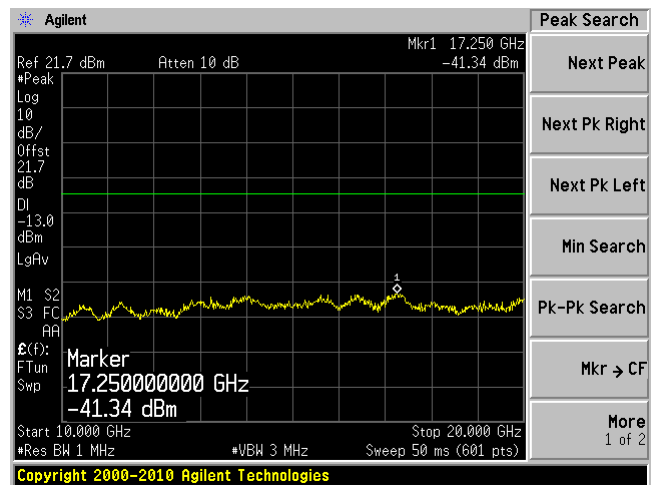
Low 10GHz-20GHz



Middle 30MHz-10GHz

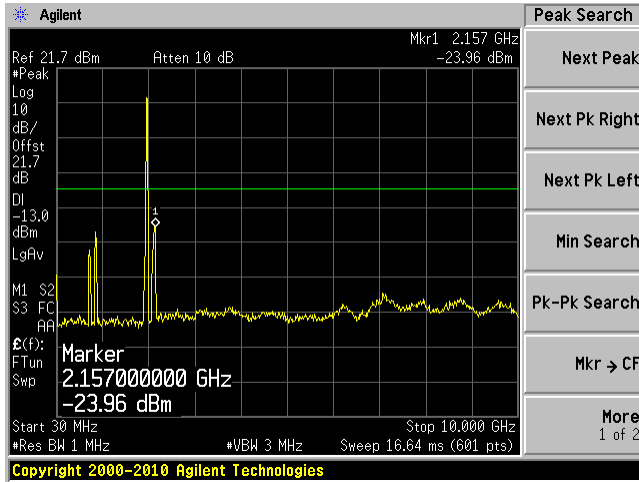


Middle 10GHz-20GHz

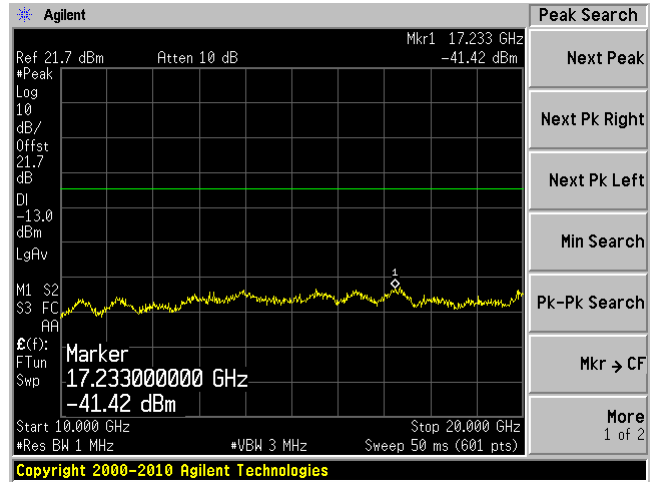




High 30MHz-10GHz

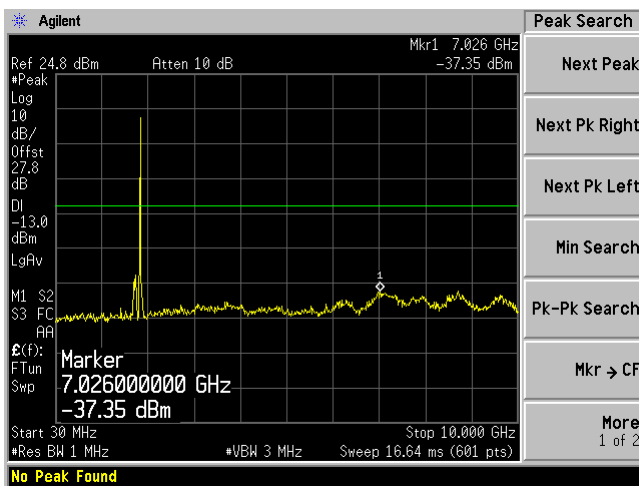


High 10GHz-20GHz

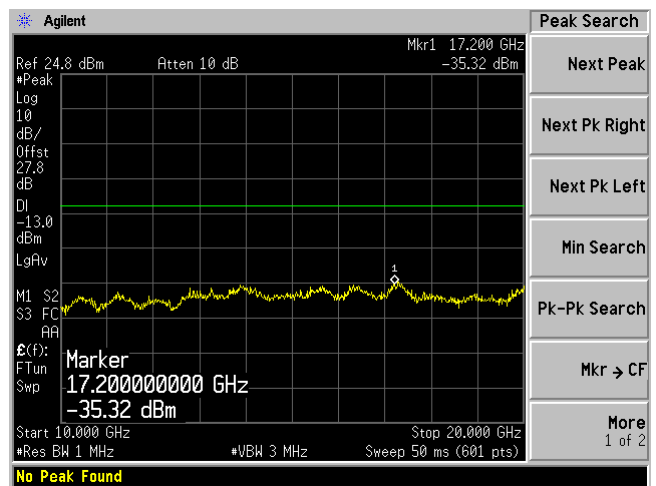


LTE 15 MHz 64QAM UL

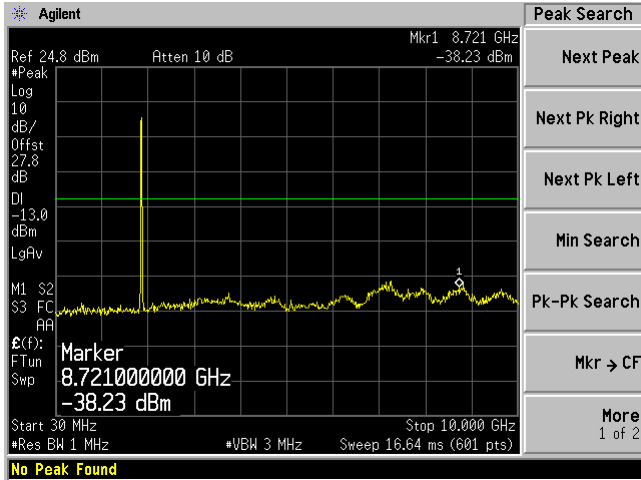
Low 30MHz-10GHz



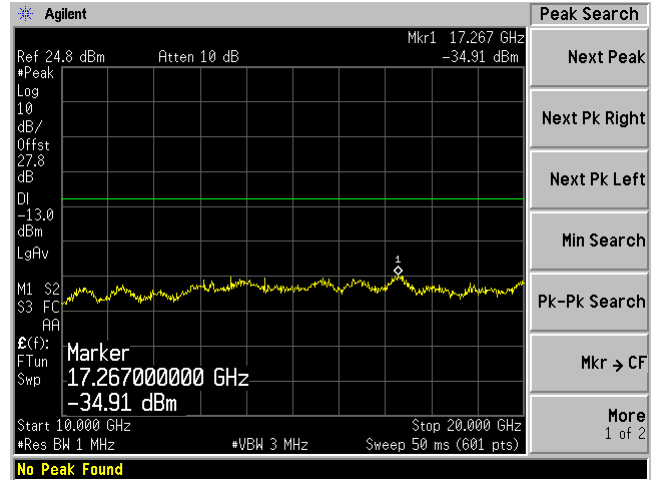
Low 10GHz-20GHz



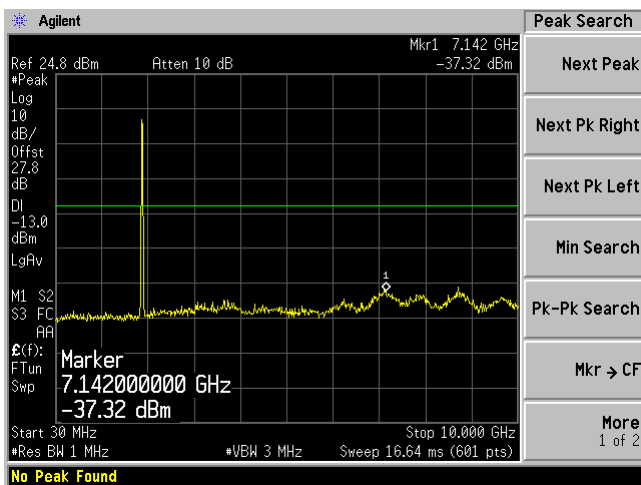
Middle 30MHz-10GHz



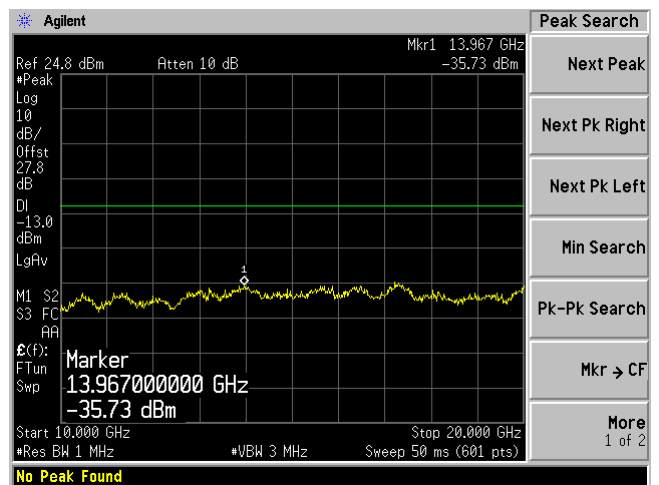
Middle 10GHz-20GHz



High 30MHz-10GHz

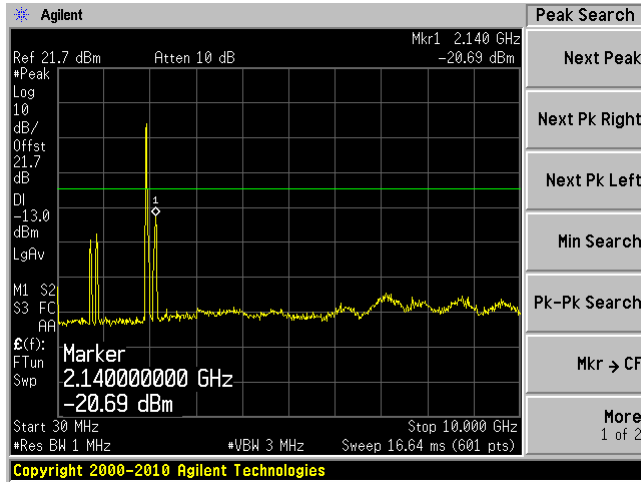


High 10GHz-20GHz

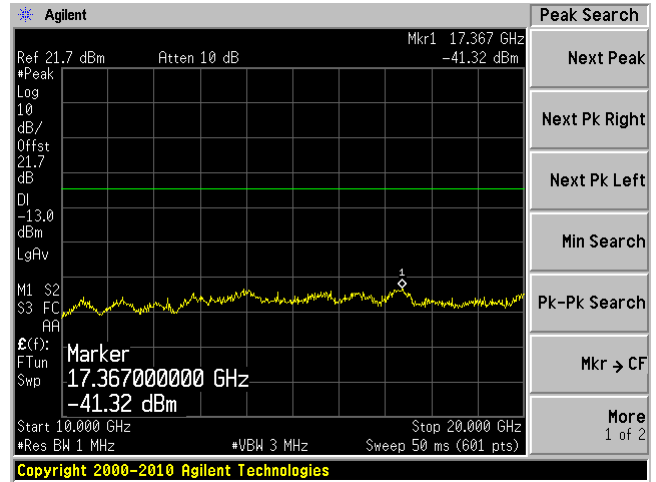


LTE 20 MHz 64QAM DL

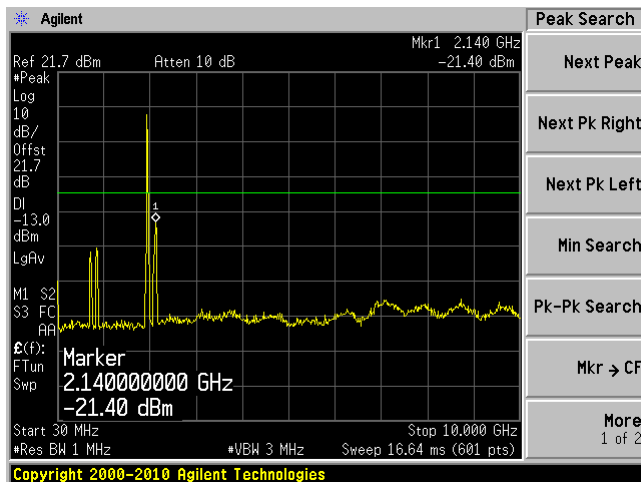
Low 30MHz-10GHz



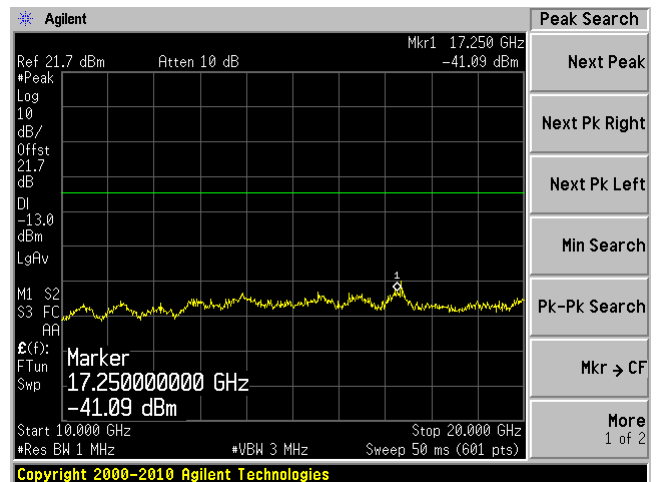
Low 10GHz-20GHz



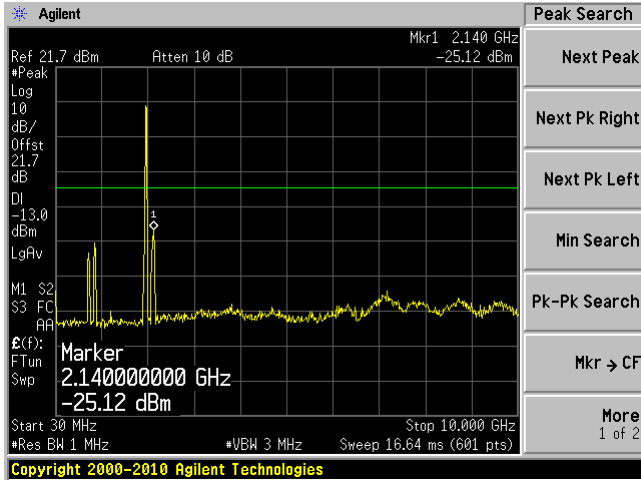
Middle 30MHz-10GHz



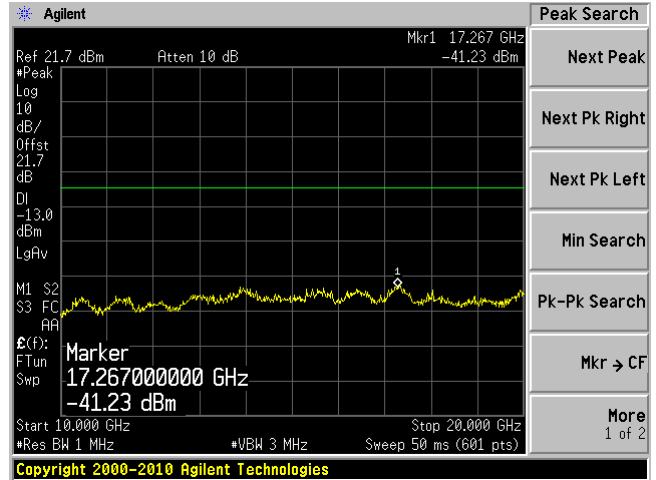
Middle 10GHz-20GHz



High 30MHz-10GHz

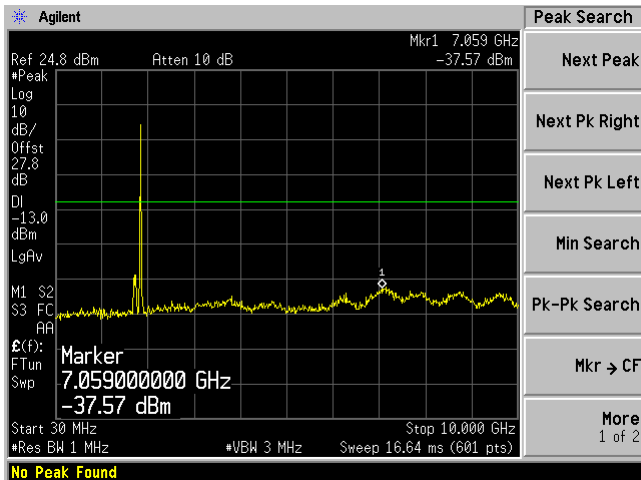


High 10GHz-20GHz

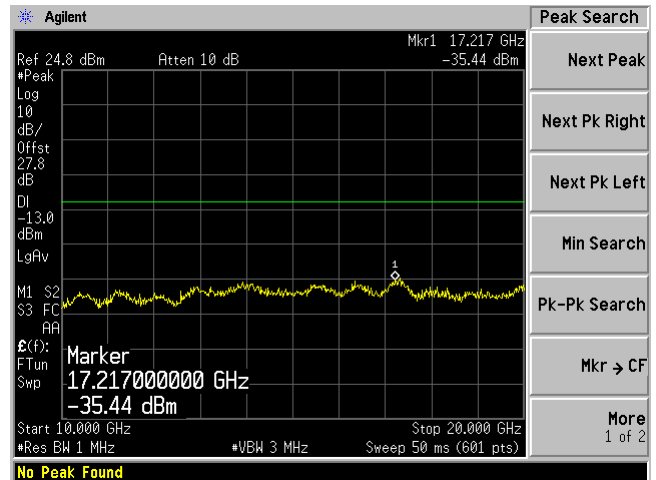


TE 20 MHz 64QAM UL

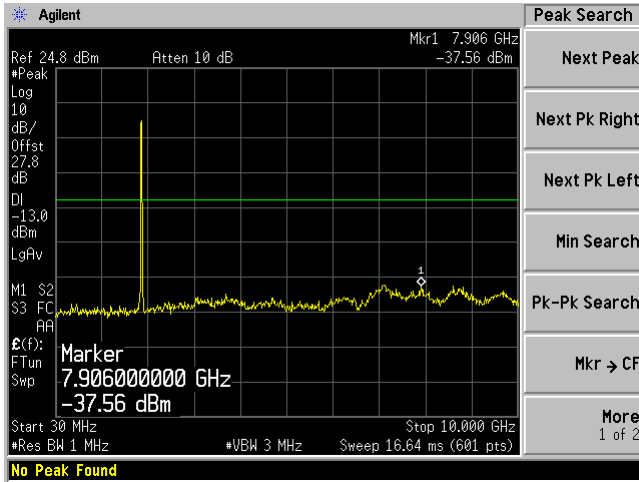
Low 30MHz-10GHz



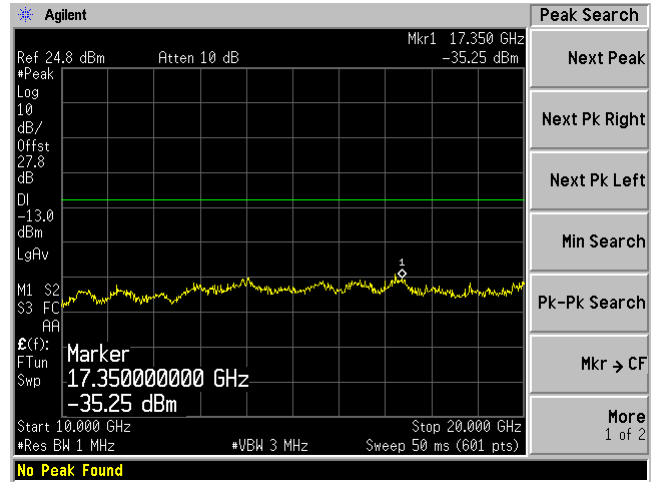
Low 10GHz-20GHz



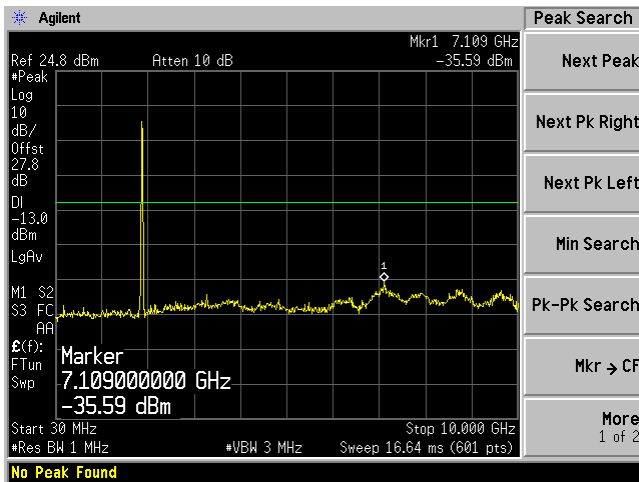
Middle 30MHz-10GHz



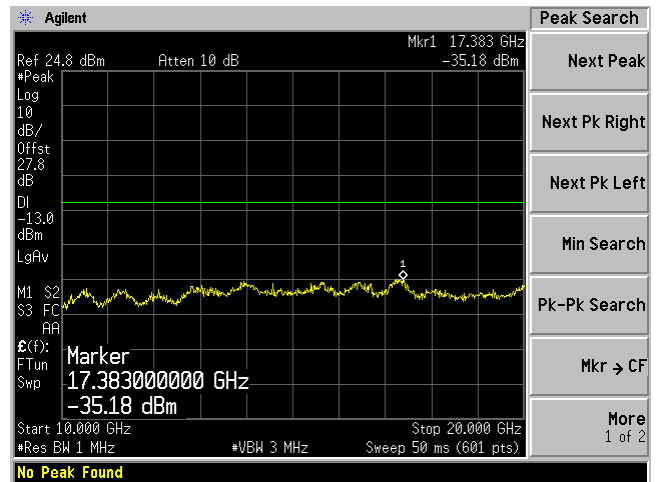
Middle 10GHz-20GHz



High 30MHz-10GHz



High 10GHz-20GHz



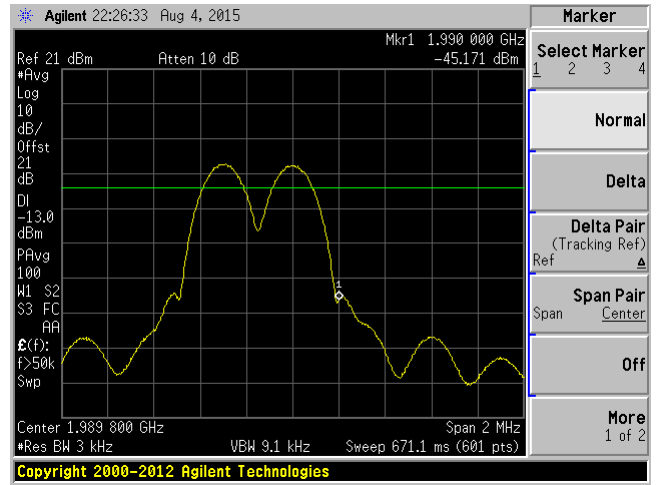
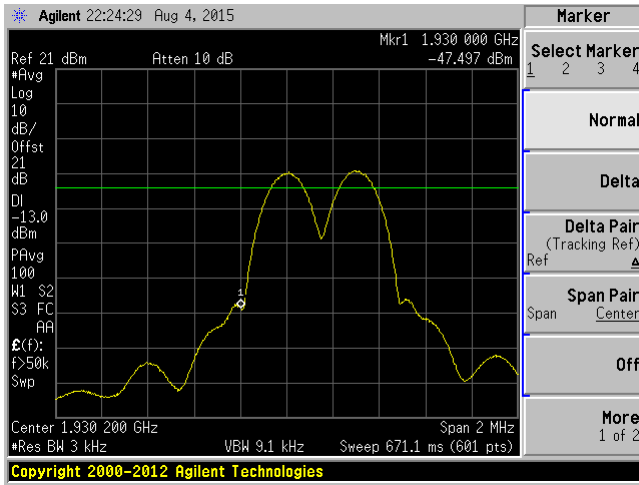
# Intermodulation

Downlink (ALC off)

GSM

Low Channel

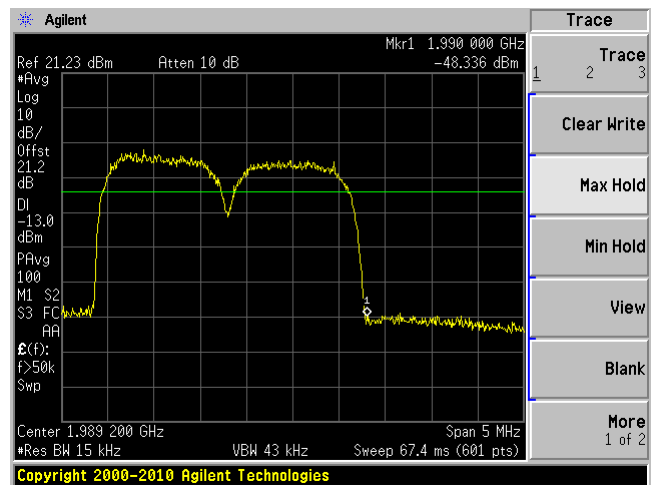
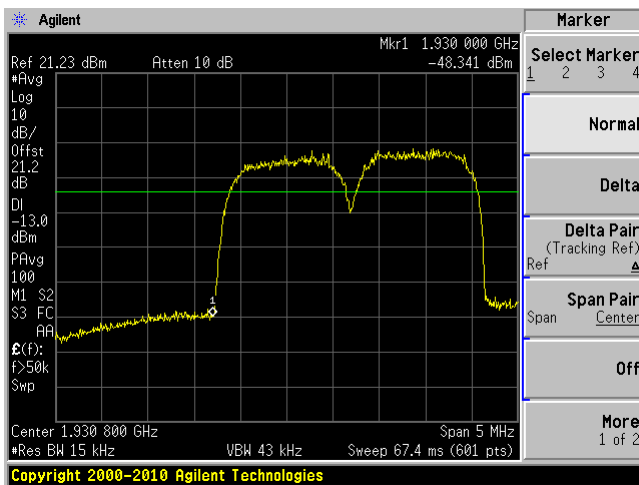
High Channel



CDMA

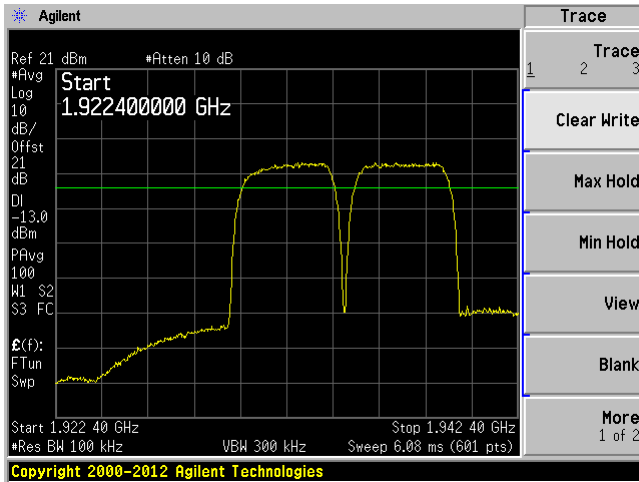
Low Channel

High Channel

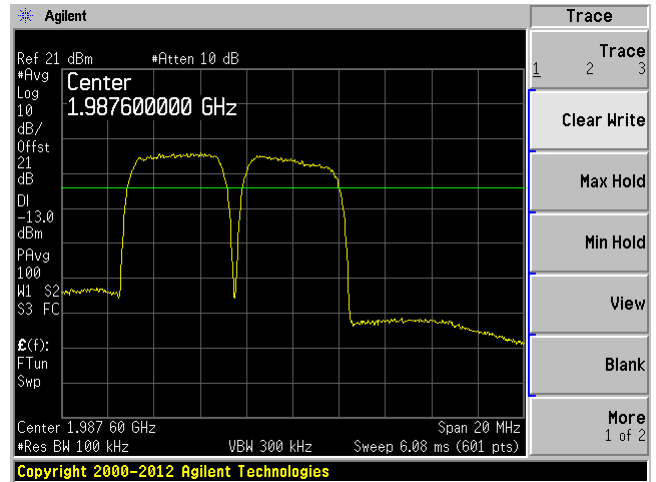


### WCDMA

#### Low Channel

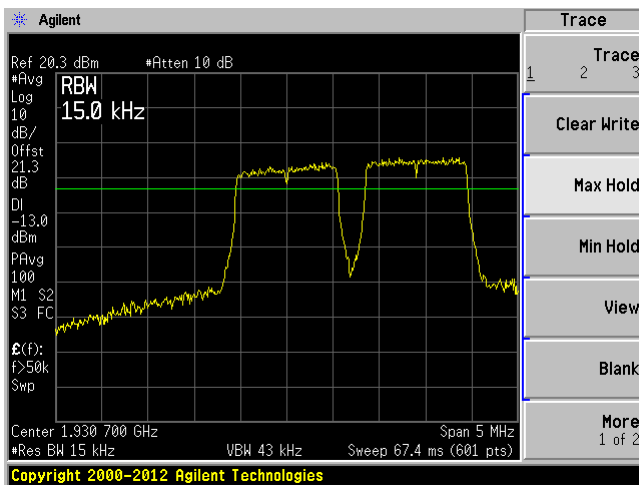


#### High Channel

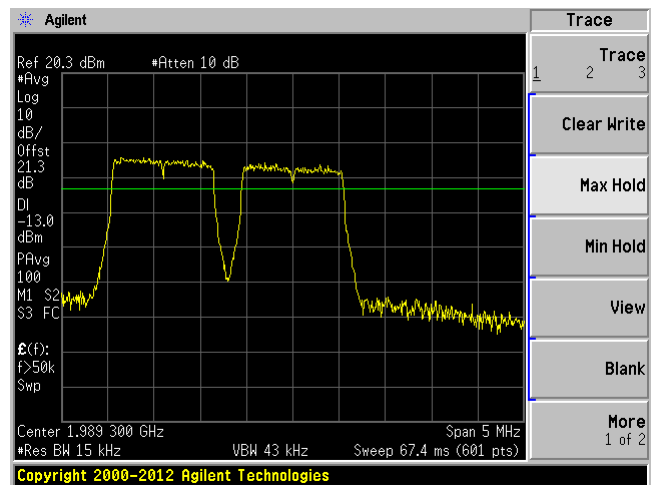


### LTE-QPSK 1.4 MHz

#### Low Channel

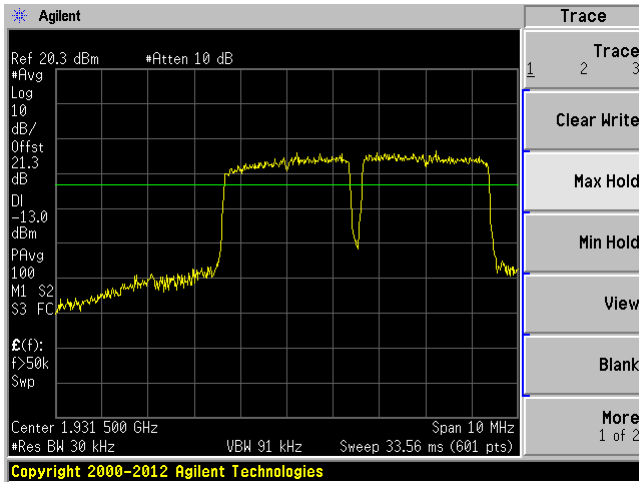


#### High Channel

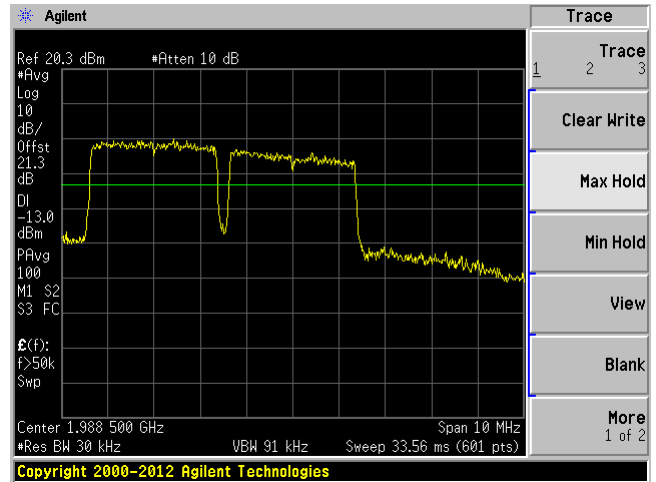


### LTE-QPSK 3 MHz

Low Channel

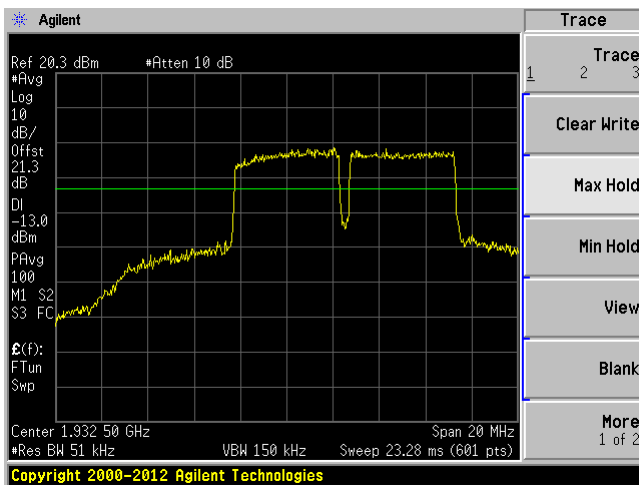


High Channel

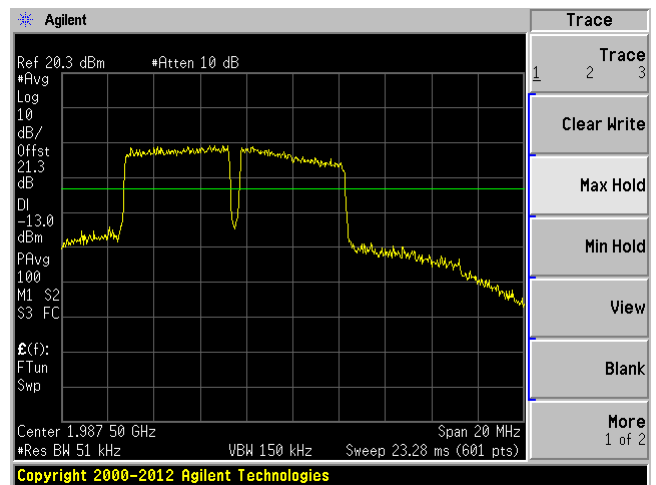


### LTE-QPSK 5 MHz

Low Channel



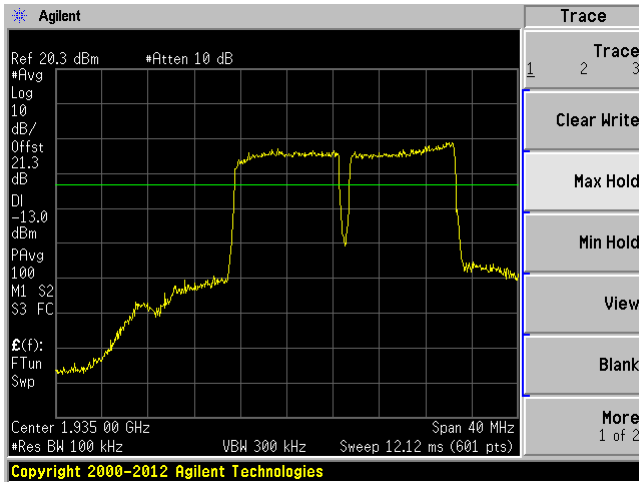
High Channel



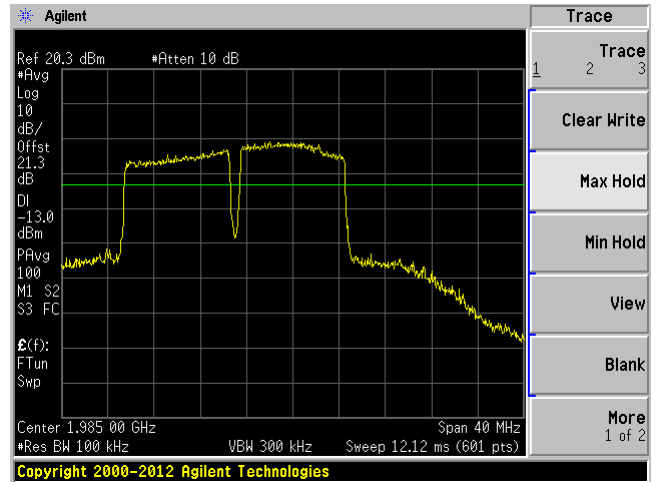


### LTE-QPSK 10 MHz

Low Channel

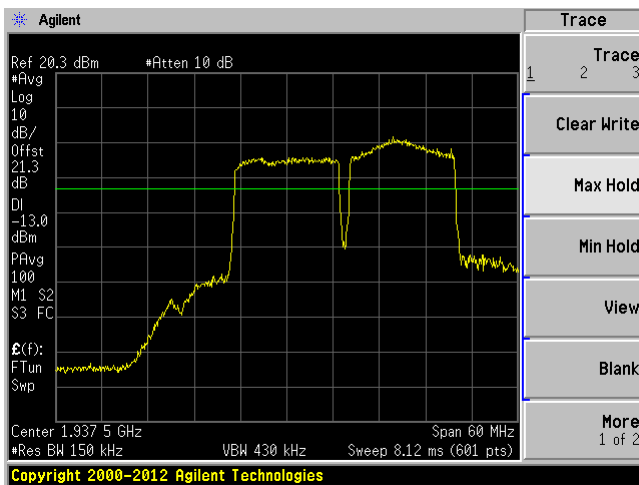


High Channel

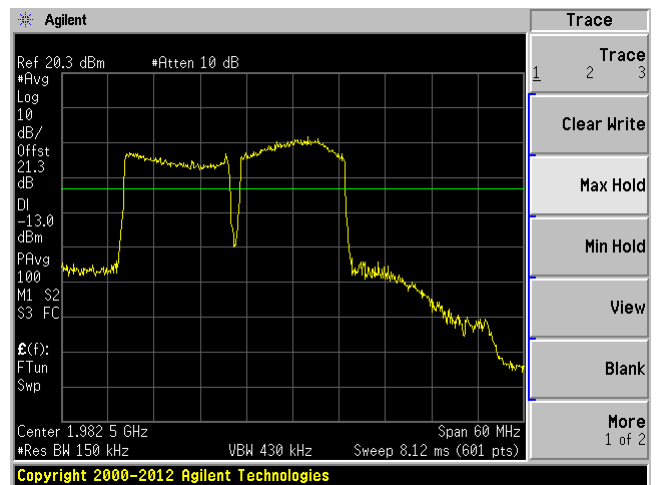


### LTE-QPSK 15 MHz

Low Channel



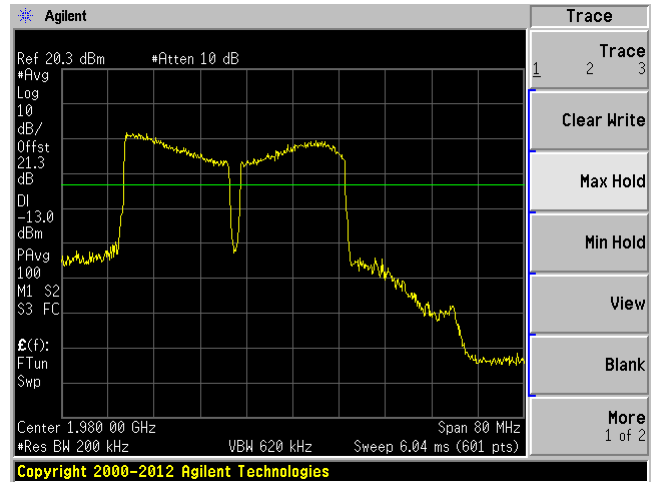
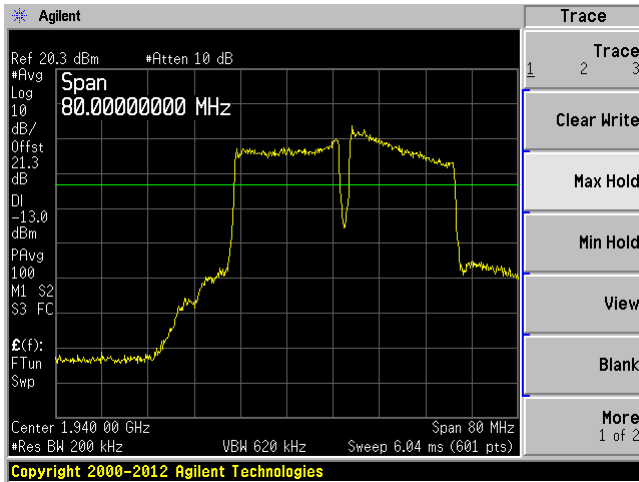
High Channel



### LTE-QPSK 20 MHz

Low Channel

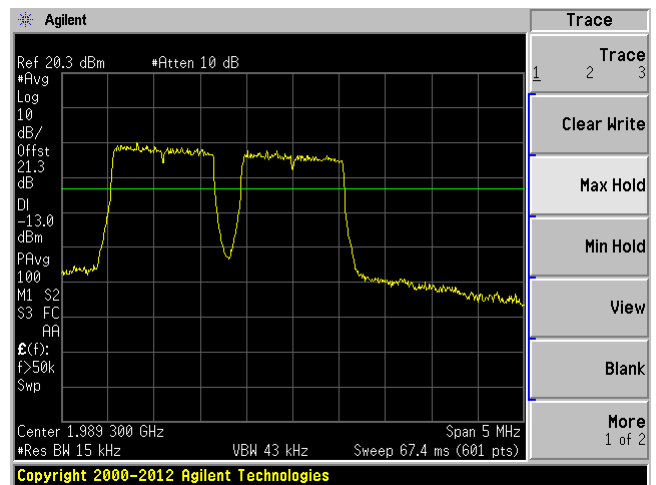
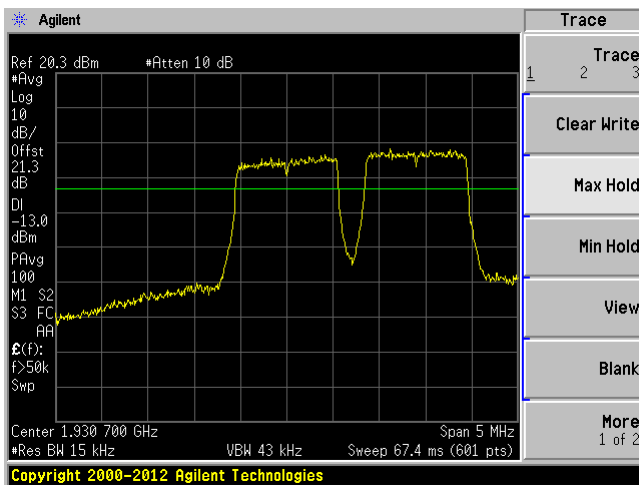
High Channel



### LTE-16QAM 1.4 MHz

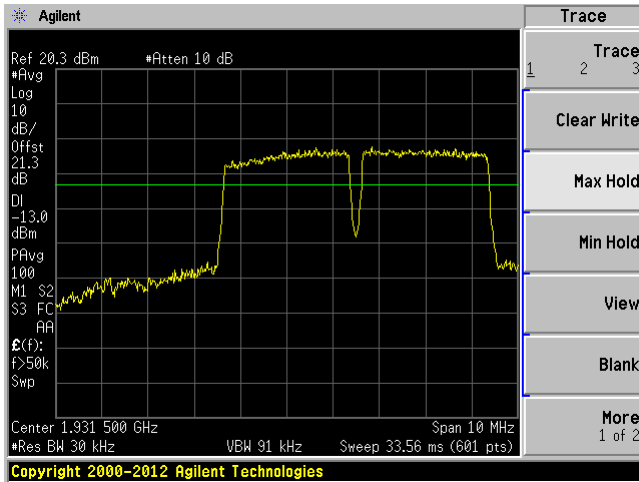
Low Channel

High Channel

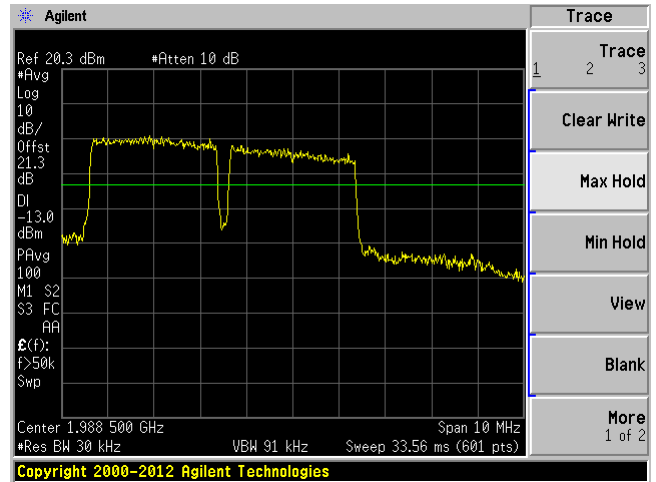


### LTE-16QAM 3 MHz

Low Channel

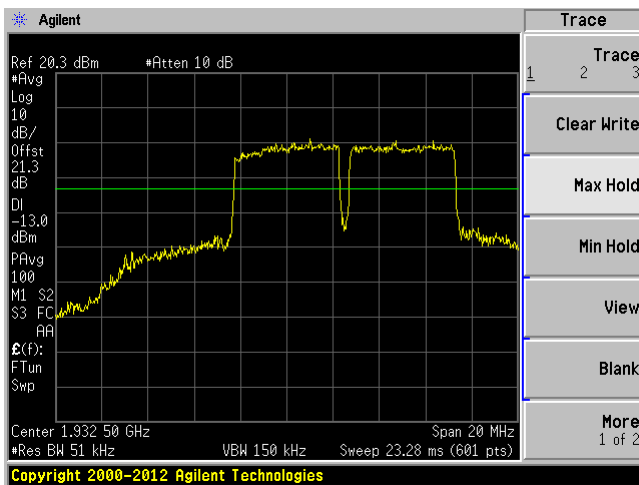


High Channel

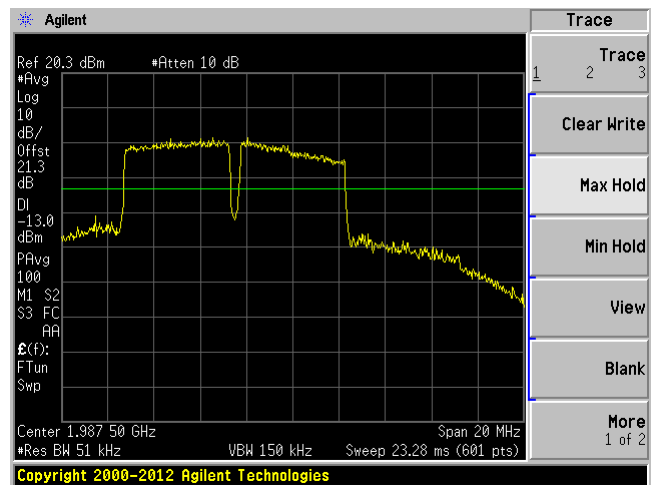


### LTE-16QAM 5 MHz

Low Channel



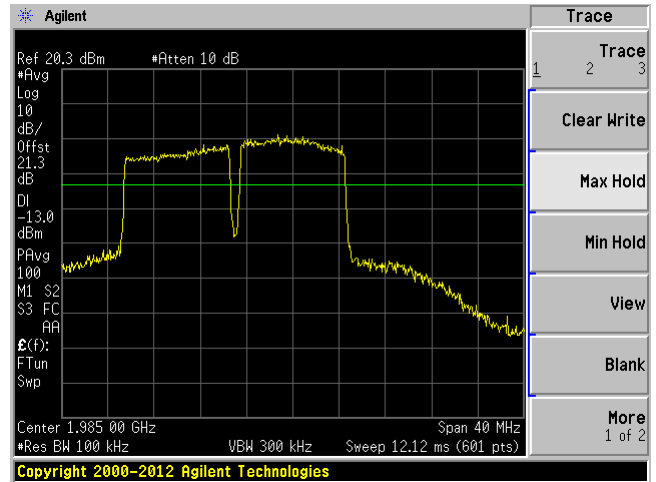
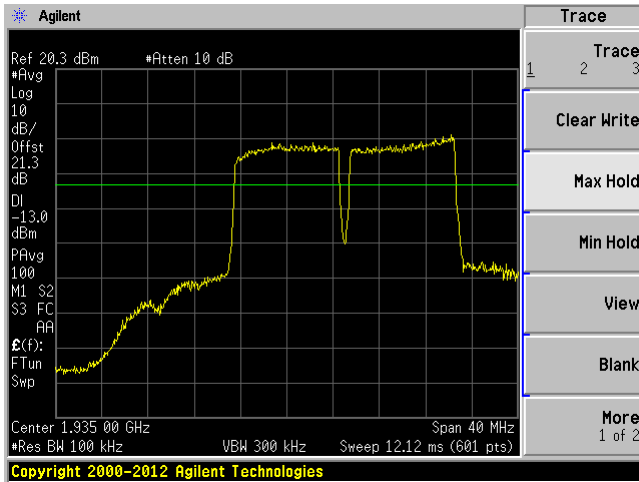
High Channel



### LTE-16QAM 10 MHz

Low Channel

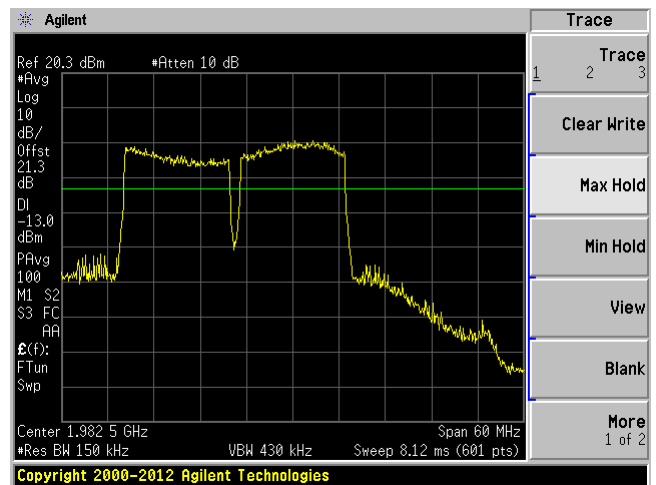
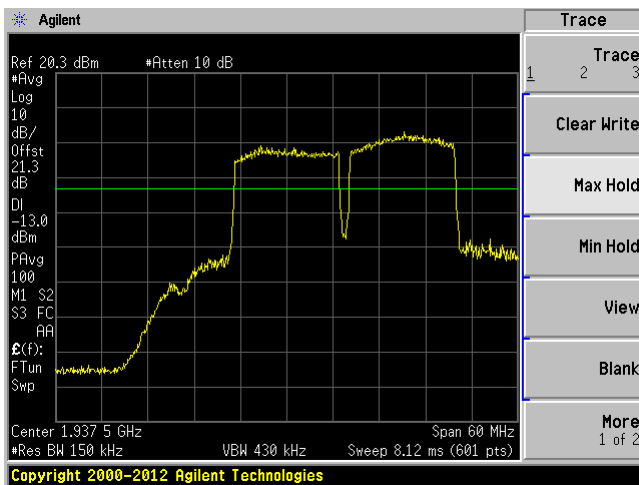
High Channel



### LTE-16QAM 15 MHz

Low Channel

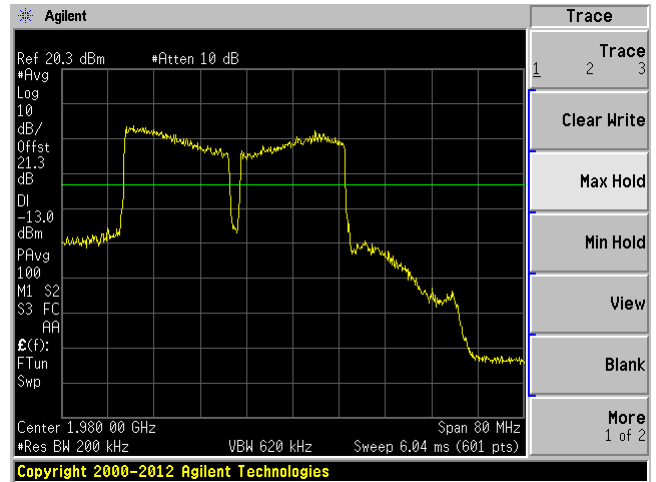
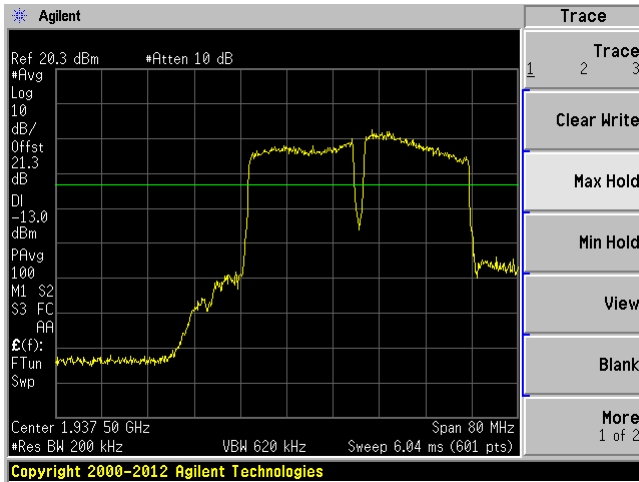
High Channel



### LTE-16QAM 20 MHz

Low Channel

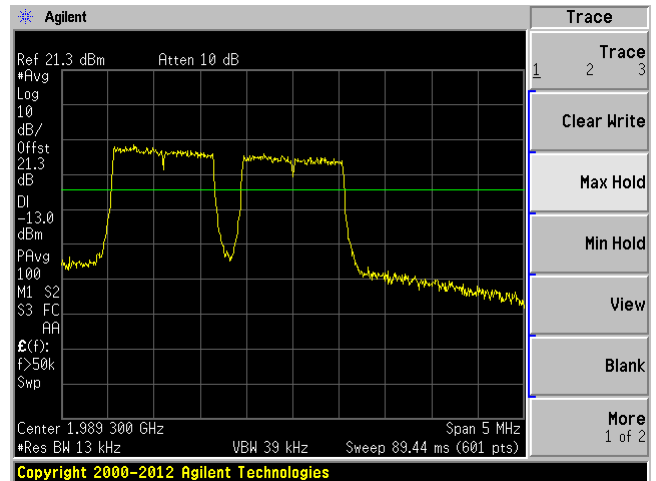
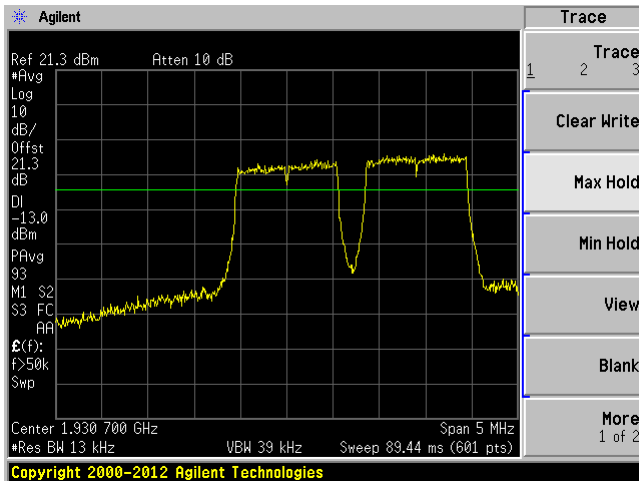
High Channel



### LTE-64QAM 1.4 MHz

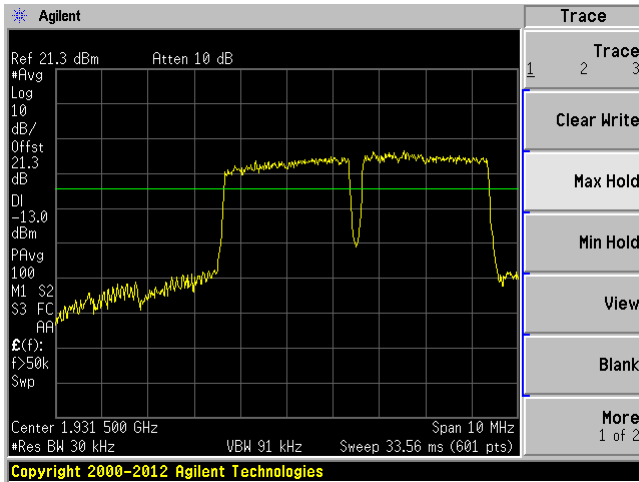
Low Channel

High Channel

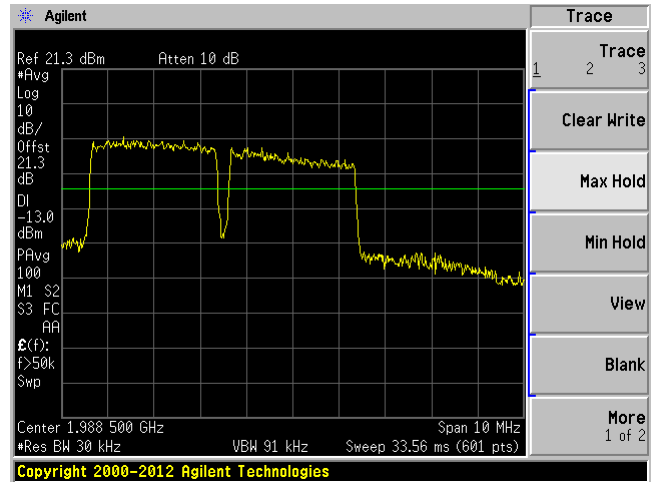


### LTE-64QAM 3 MHz

Low Channel

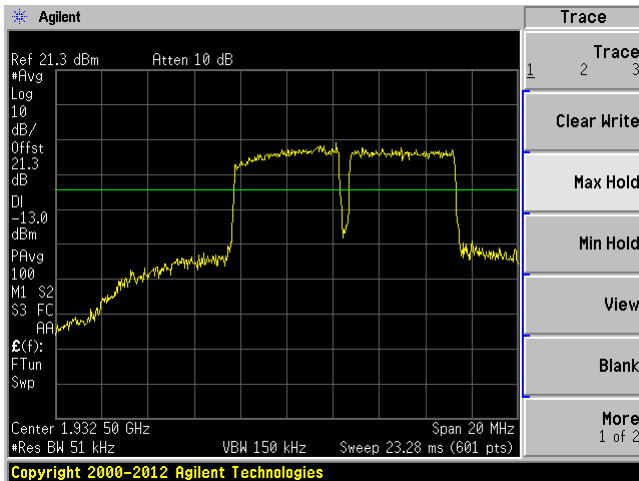


High Channel

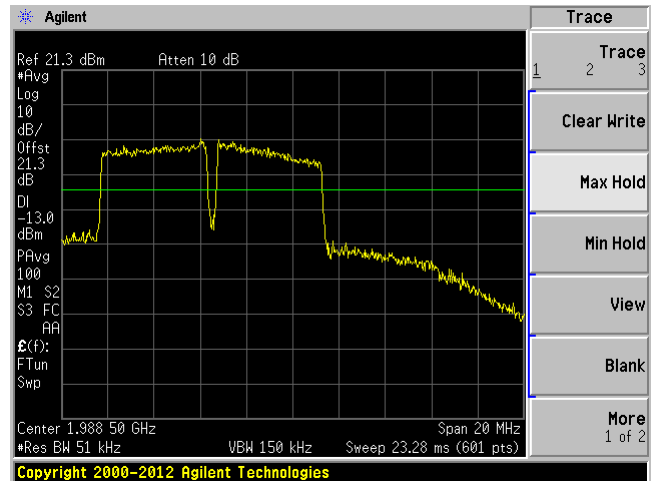


### LTE-64QAM 5 MHz

Low Channel

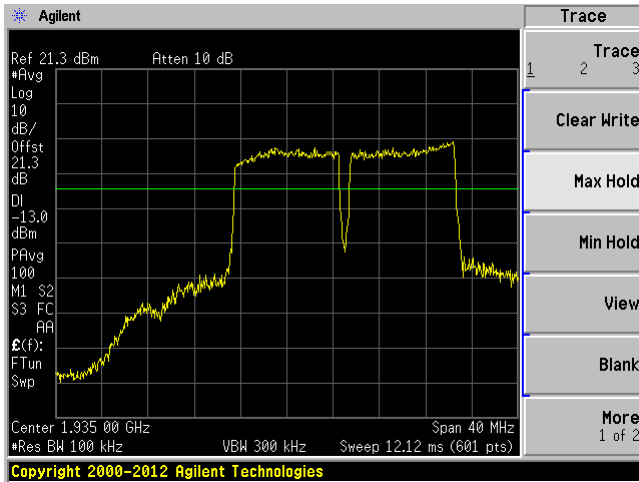


High Channel

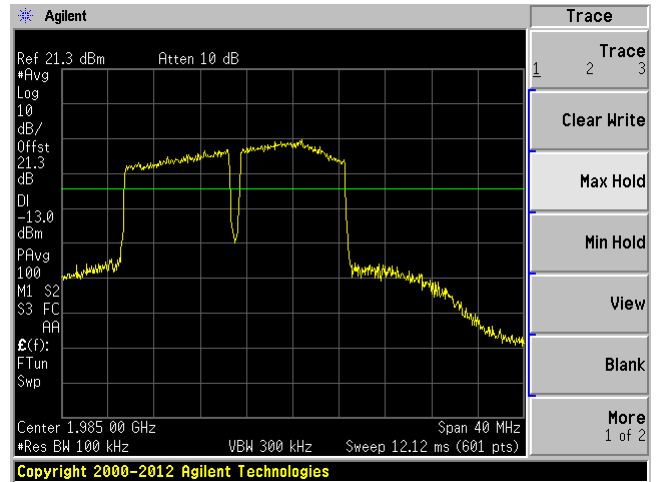


### LTE-64QAM 10 MHz

Low Channel

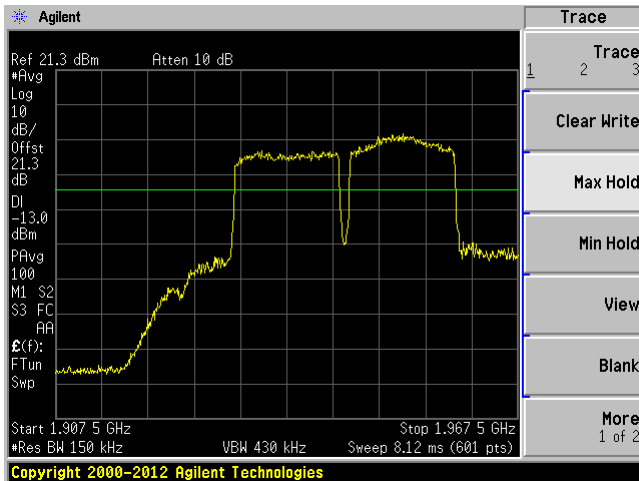


High Channel

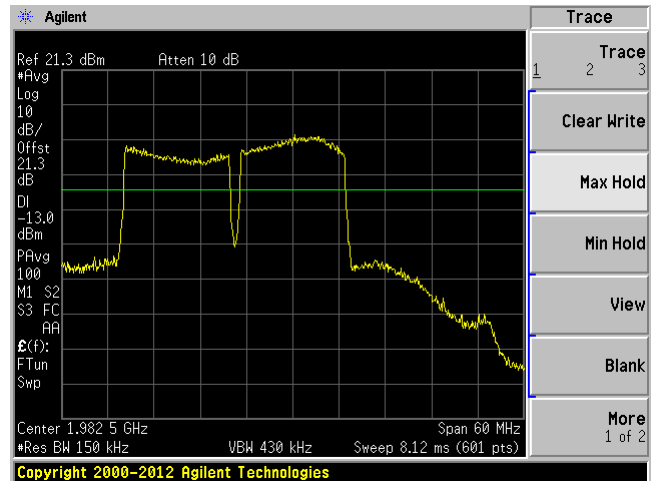


### LTE-64QAM 15 MHz

Low Channel

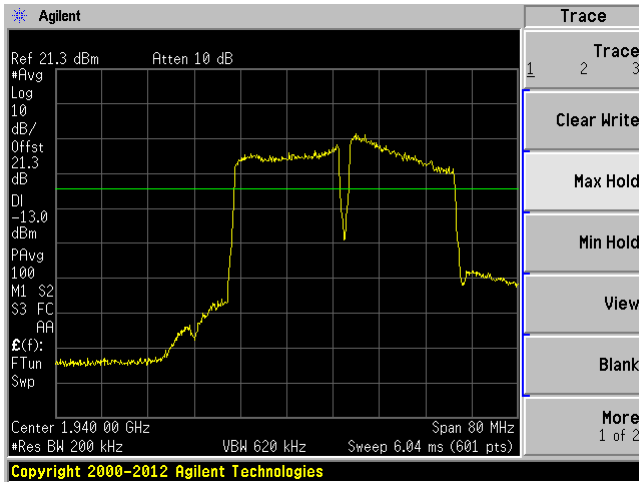


High Channel

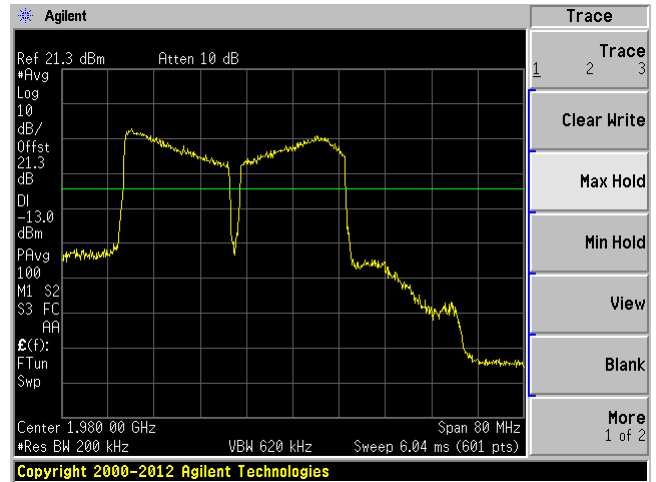


### LTE-64QAM 20 MHz

Low Channel



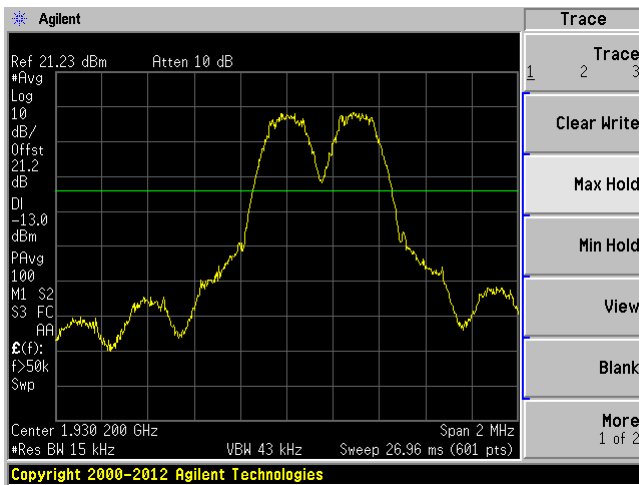
High Channel



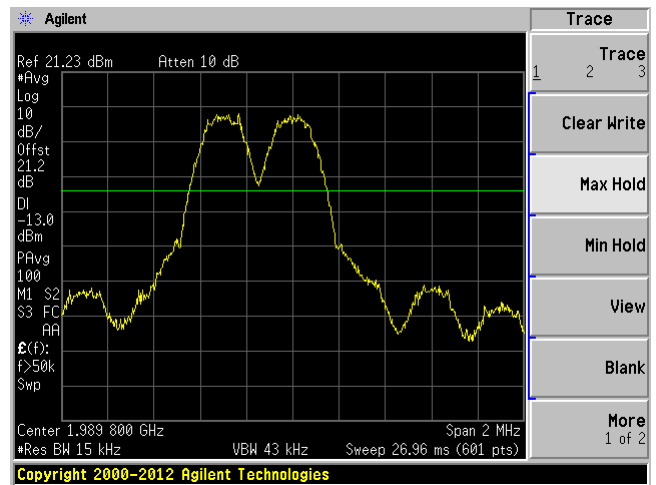
### Downlink (ALC on)

### GSM

Low Channel



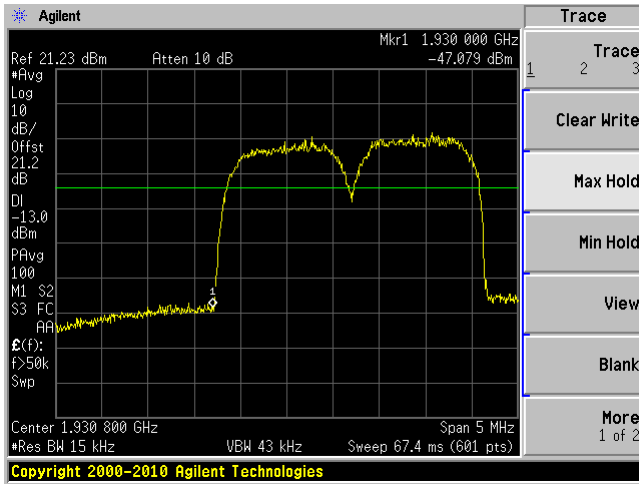
High Channel



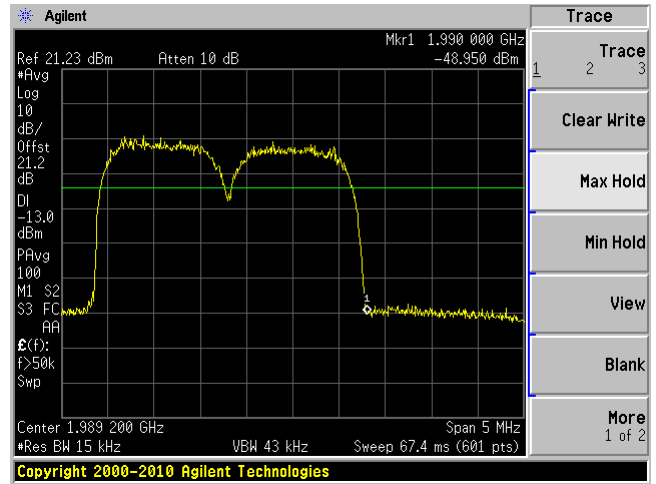


### CDMA

#### Low Channel

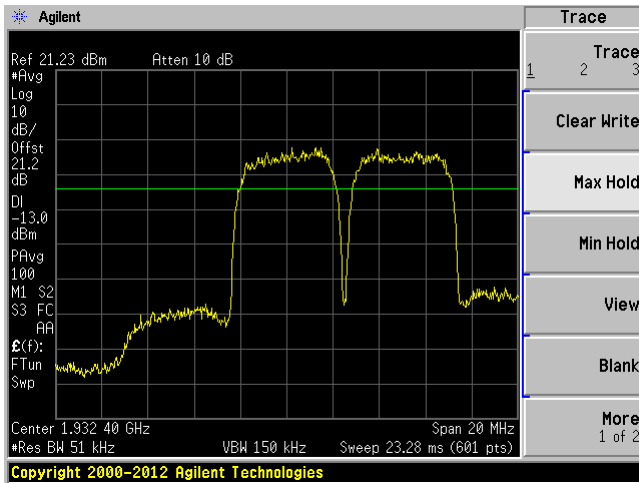


#### High Channel

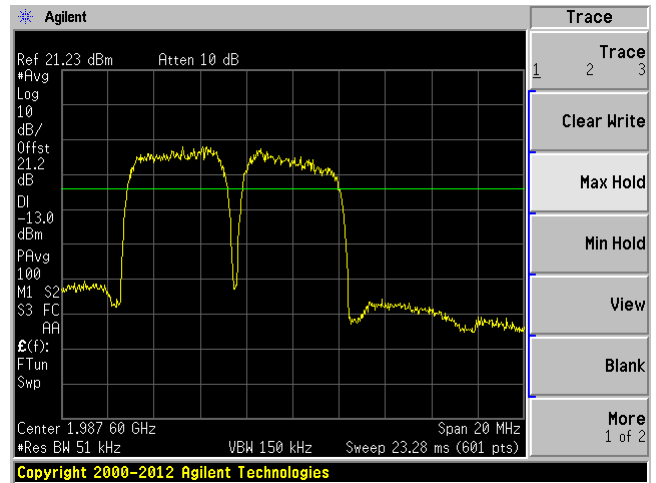


### WCDMA

#### Low Channel



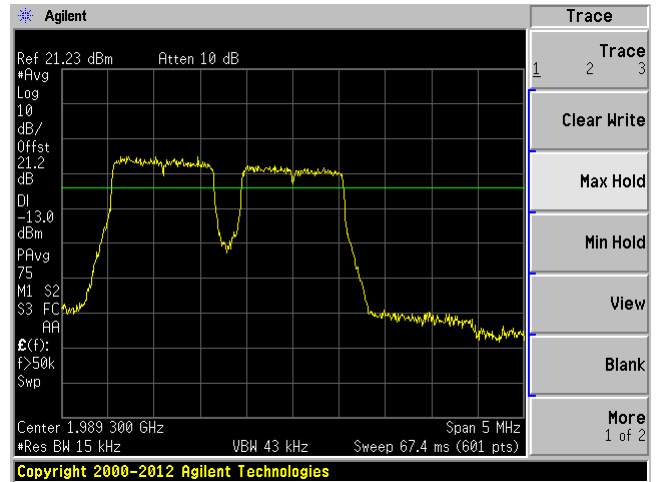
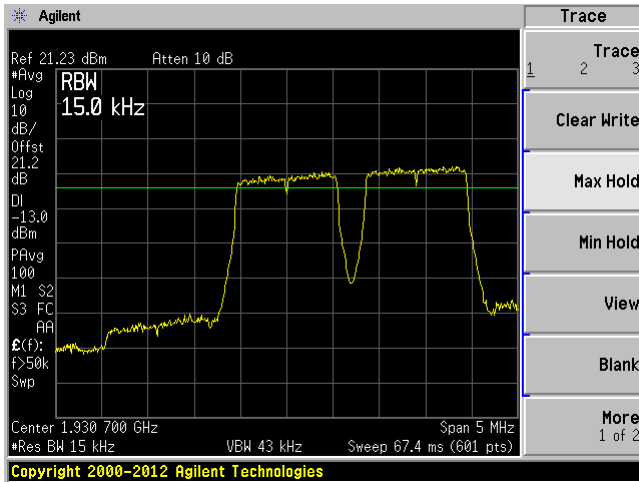
#### High Channel



### LTE-QPSK 1.4 MHz

Low Channel

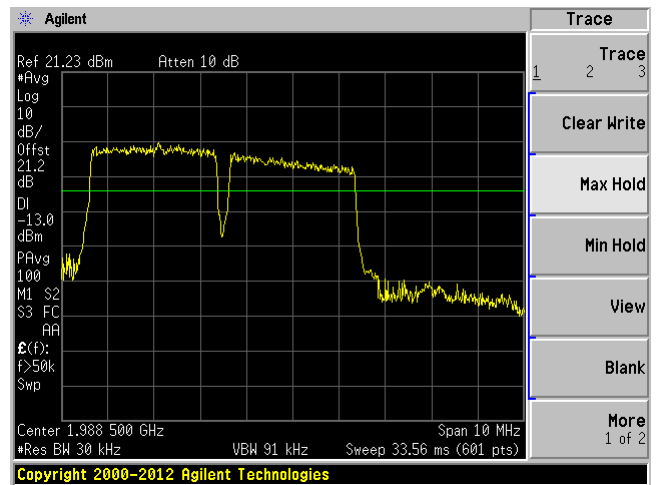
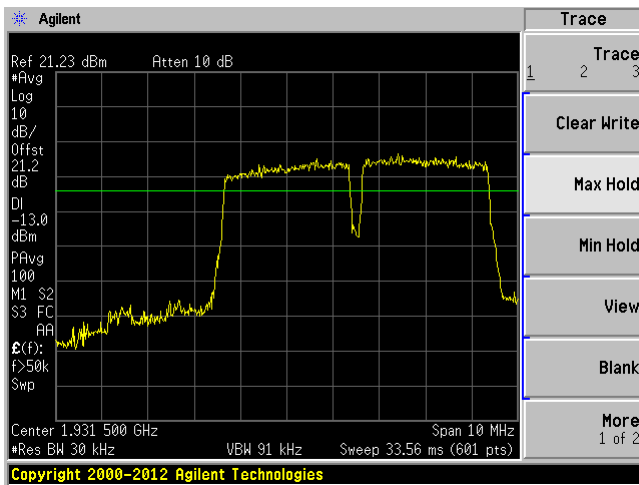
High Channel



### LTE-QPSK 3 MHz

Low Channel

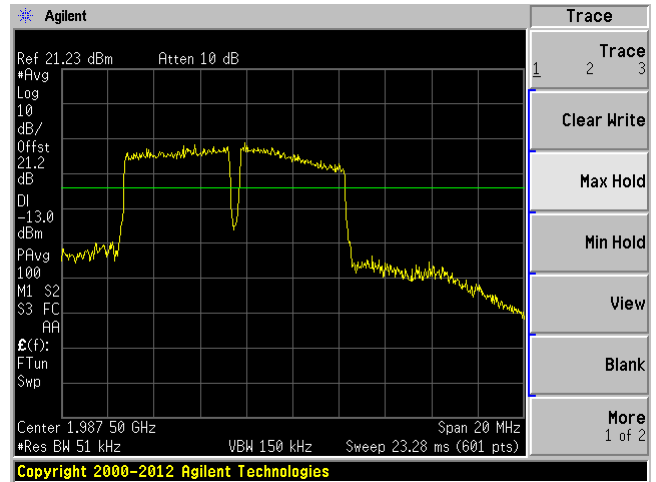
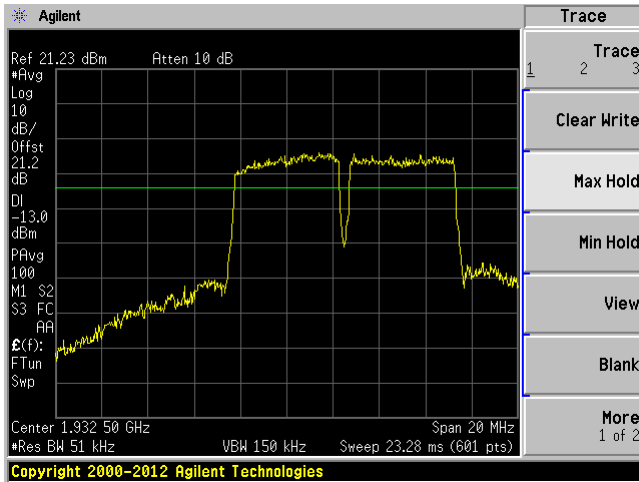
High Channel



### LTE-QPSK 5 MHz

Low Channel

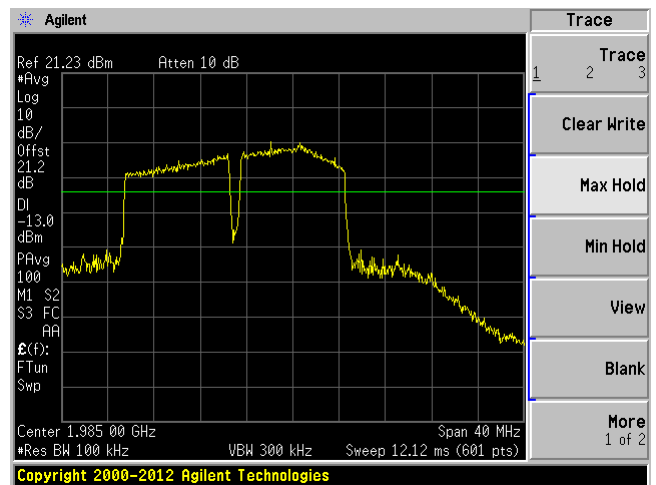
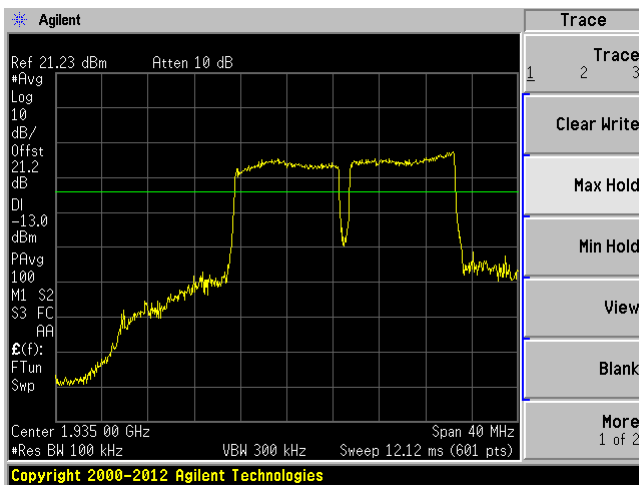
High Channel



### LTE-QPSK 10 MHz

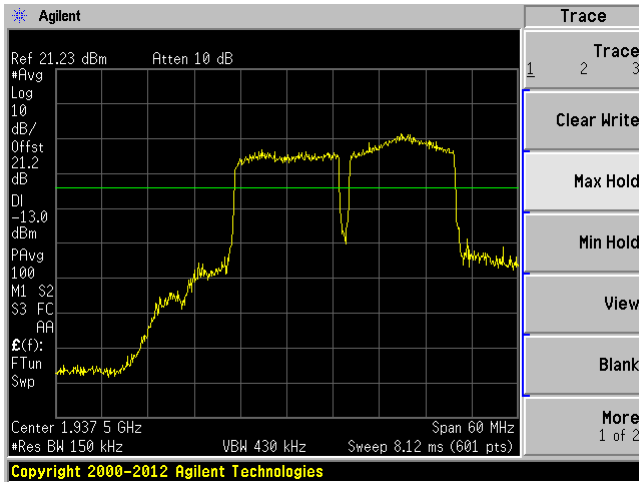
Low Channel

High Channel

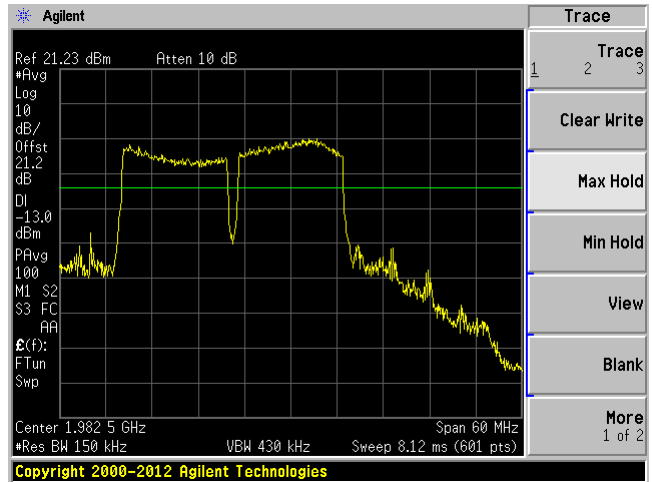


### LTE-QPSK 15 MHz

Low Channel

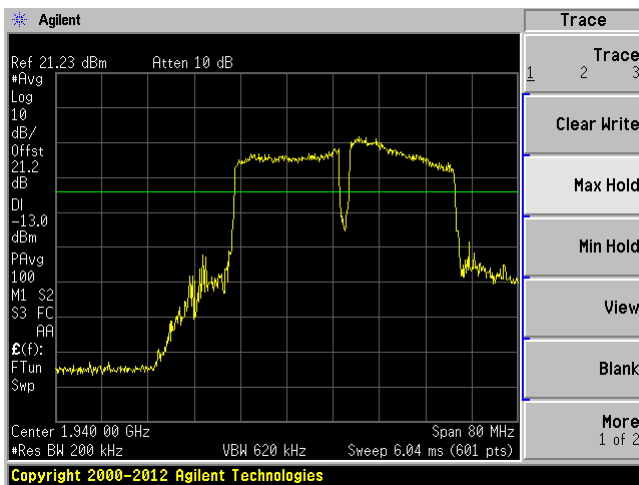


High Channel

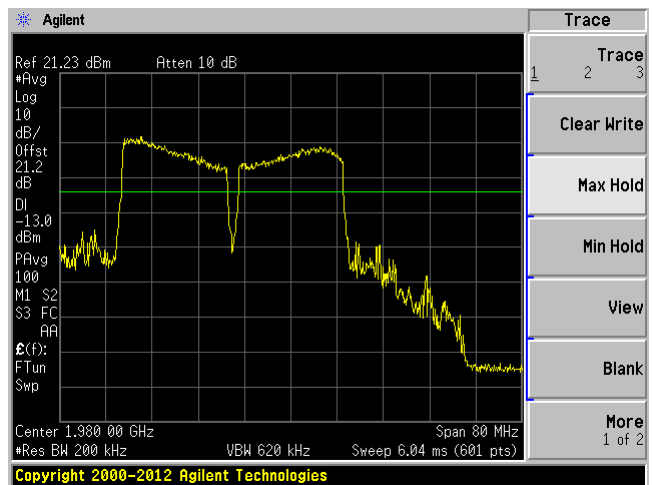


### LTE-QPSK 20 MHz

Low Channel



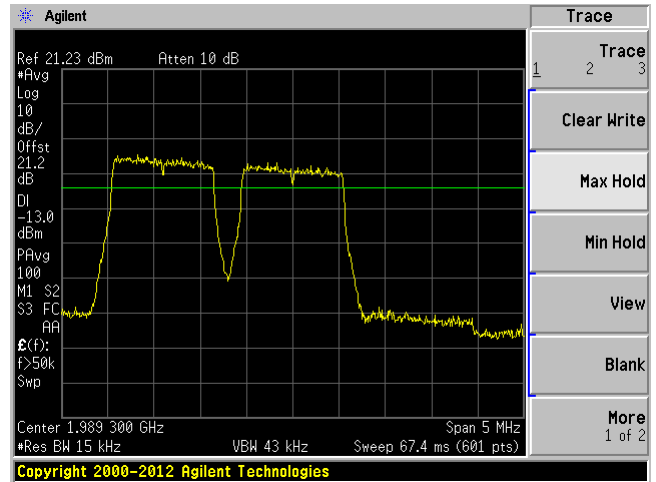
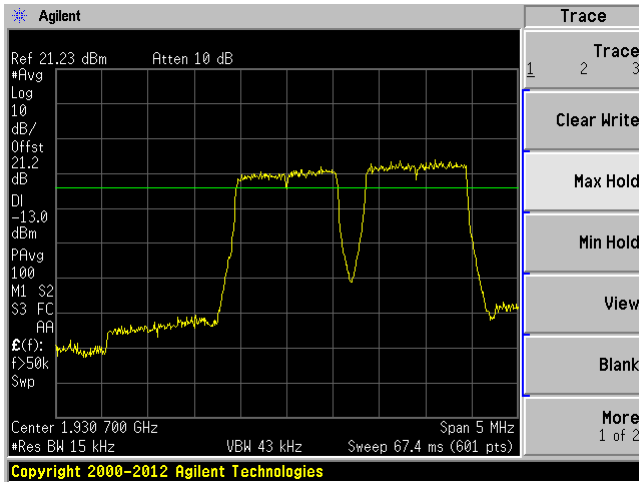
High Channel



### LTE-16QAM 1.4 MHz

Low Channel

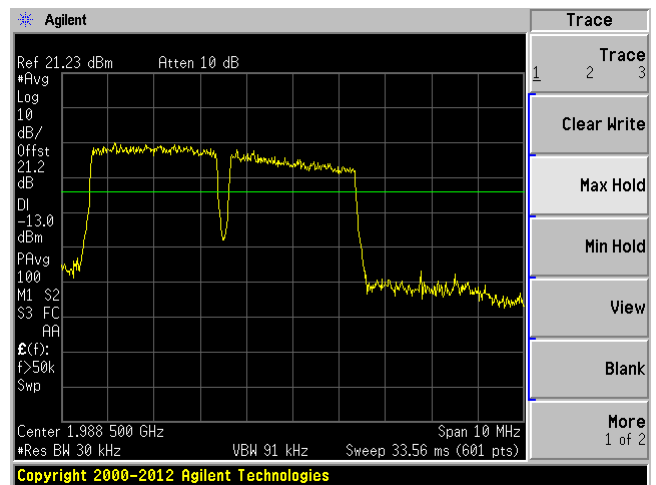
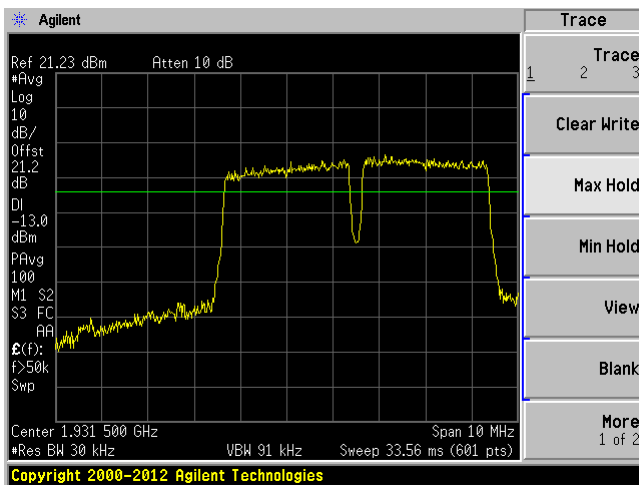
High Channel



### LTE-16QAM 3 MHz

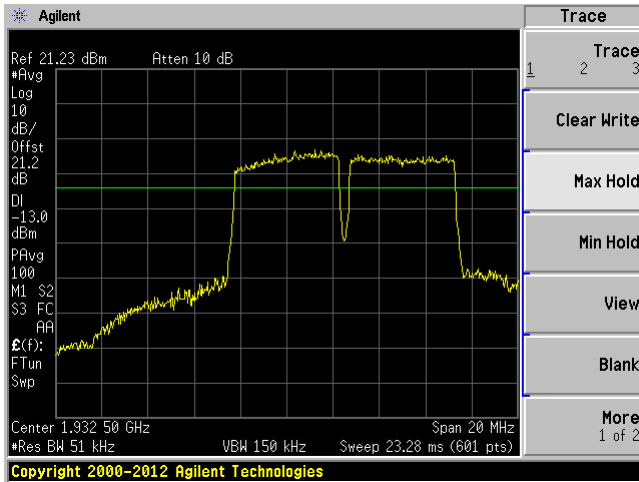
Low Channel

High Channel

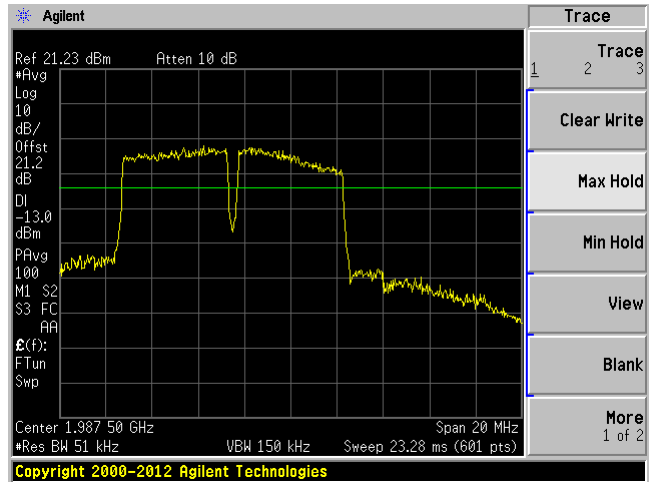


### LTE-16QAM 5 MHz

Low Channel

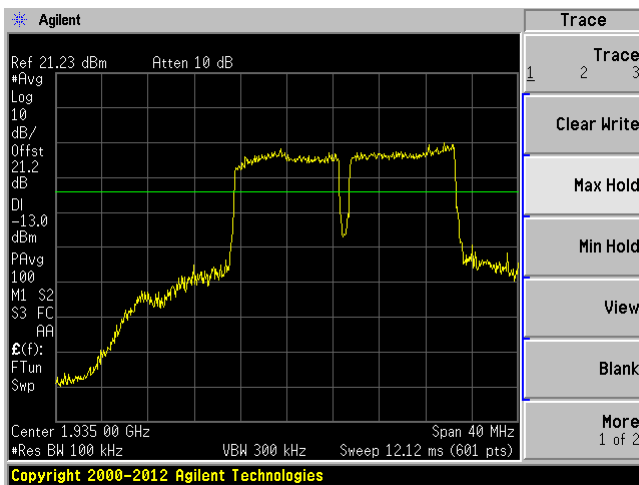


High Channel

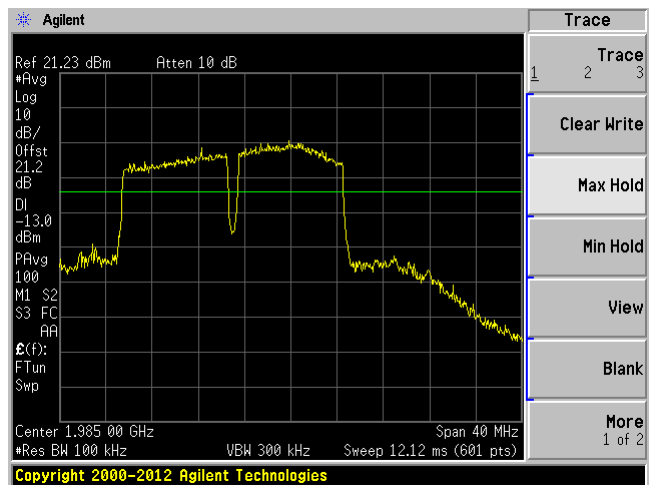


### LTE-16QAM 10 MHz

Low Channel



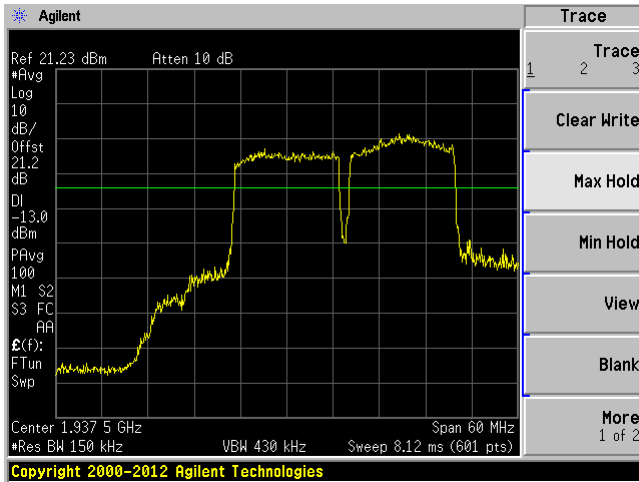
High Channel



### LTE-16QAM 15 MHz

Low Channel

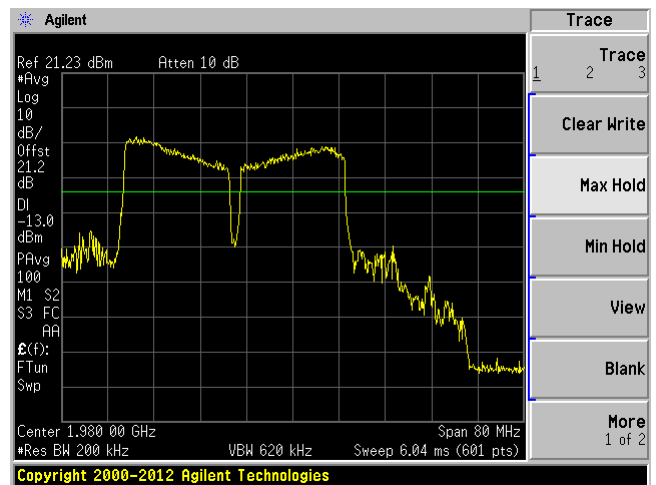
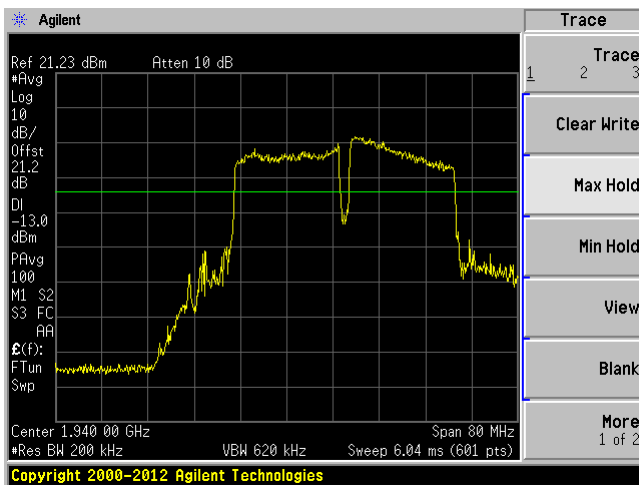
High Channel



### LTE-16QAM 20 MHz

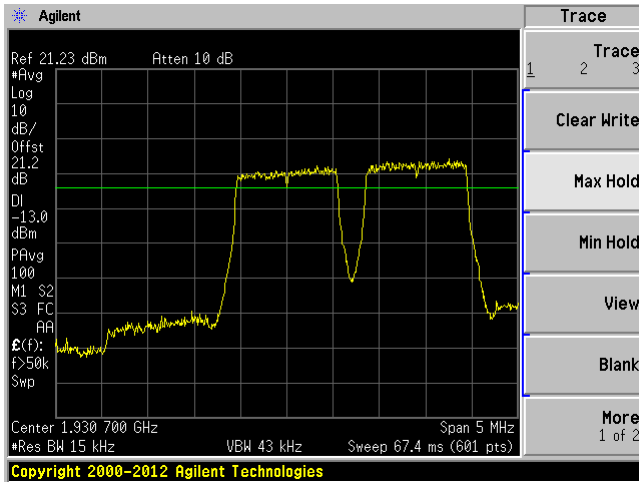
Low Channel

High Channel

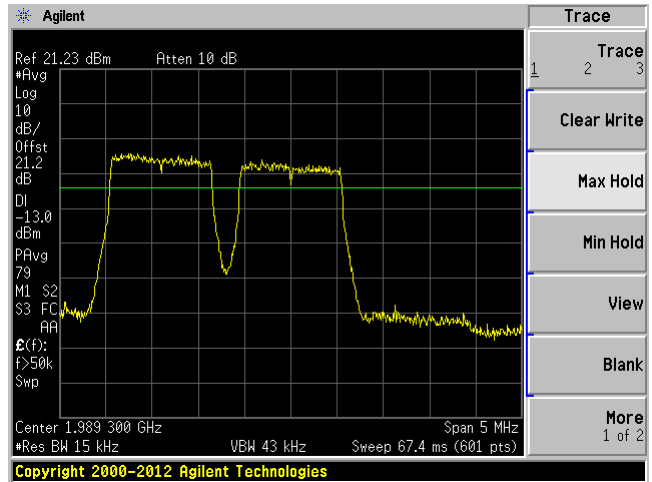


### LTE-64QAM 1.4 MHz

Low Channel

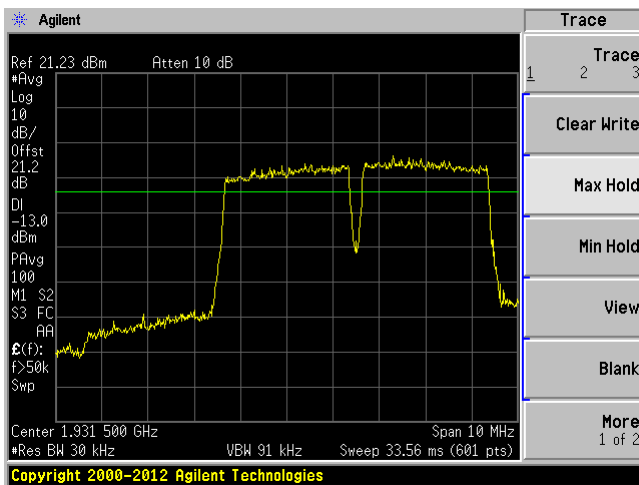


High Channel

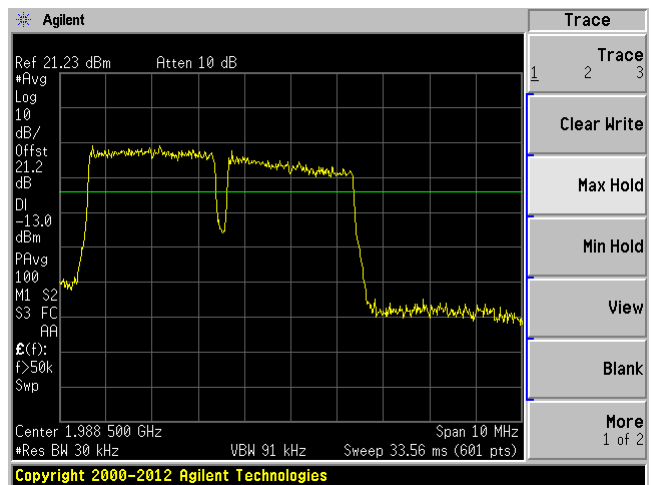


### LTE-64QAM 3 MHz

Low Channel



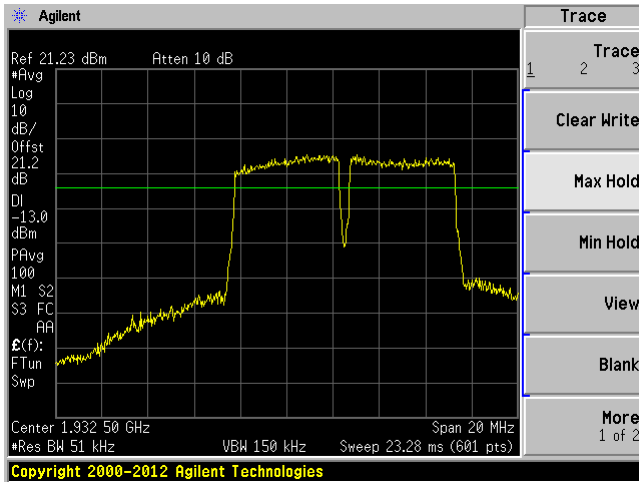
High Channel



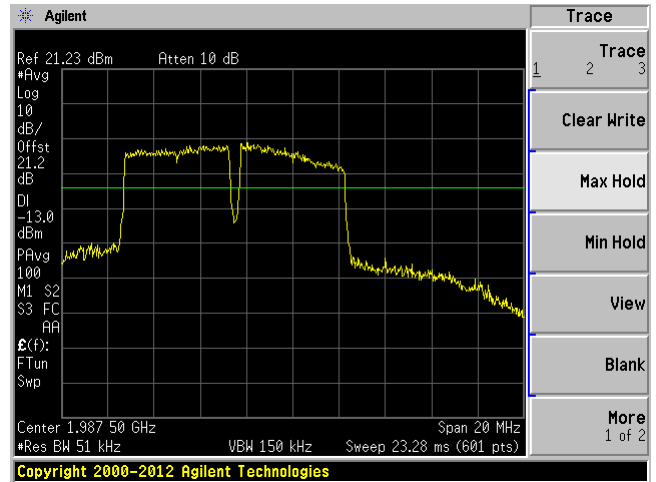


### LTE-64QAM 5 MHz

Low Channel

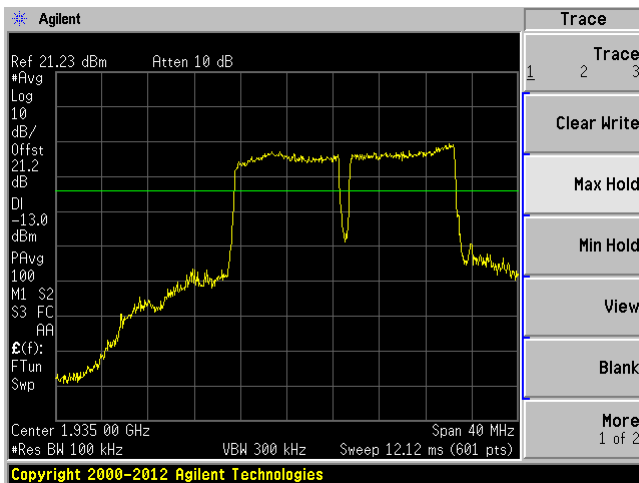


High Channel

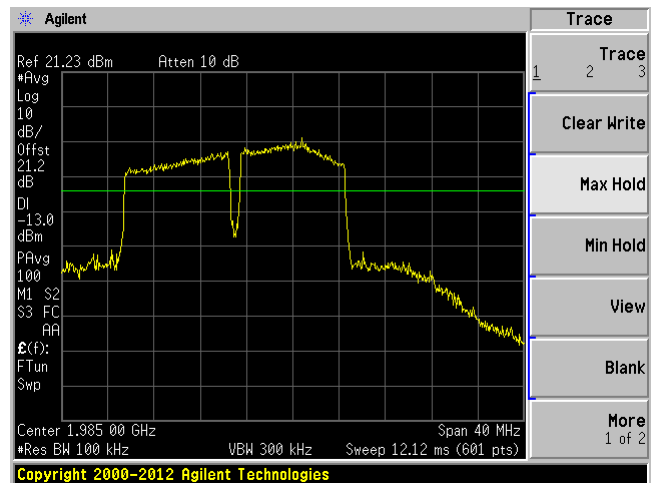


### LTE-64QAM 10 MHz

Low Channel

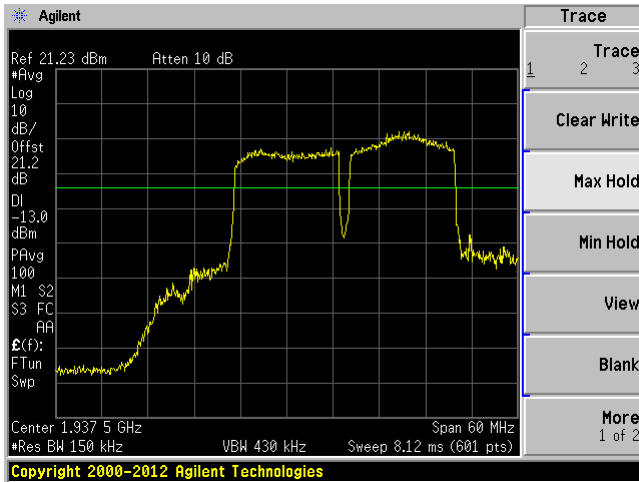


High Channel

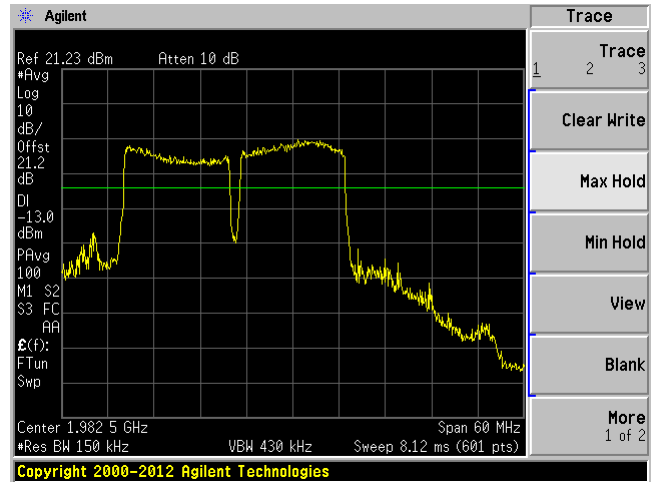


### LTE-64QAM 15 MHz

Low Channel

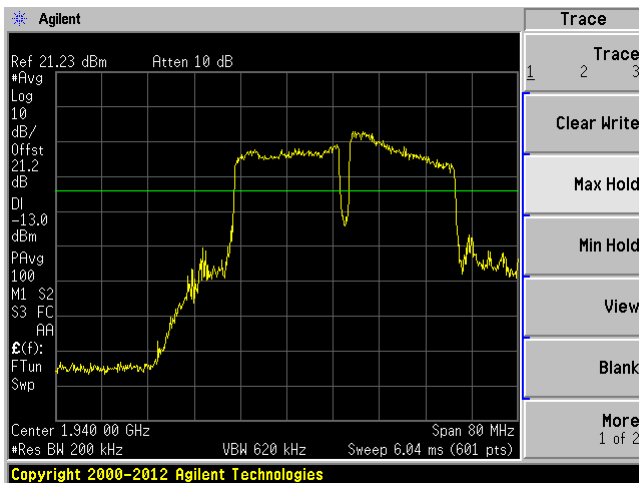


High Channel

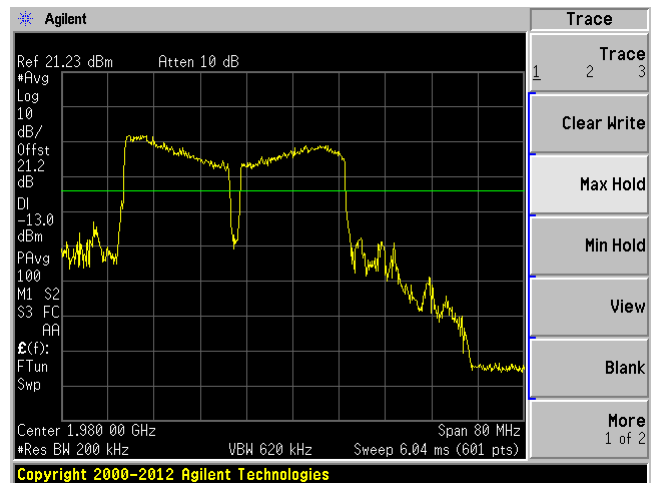


### LTE-64QAM 20 MHz

Low Channel



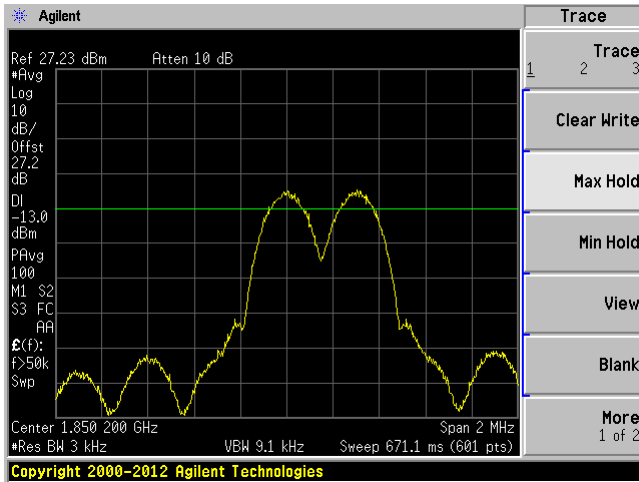
High Channel



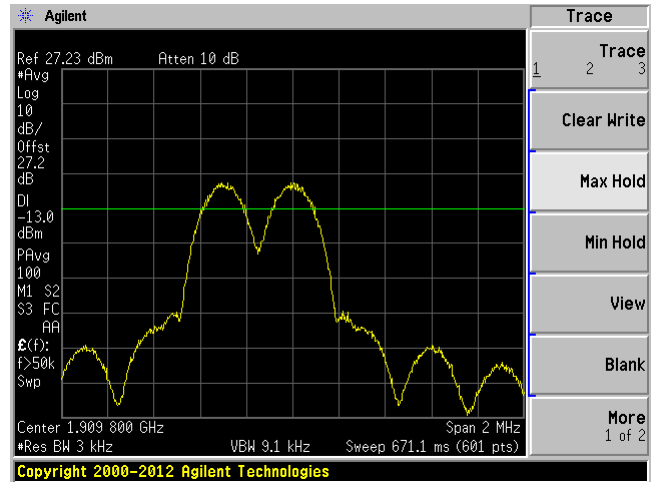
### Uplink (ALC off)

### GSM

#### Low Channel

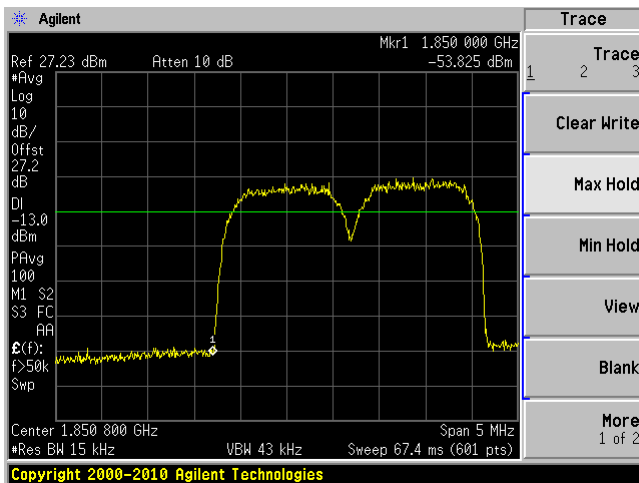


#### High Channel

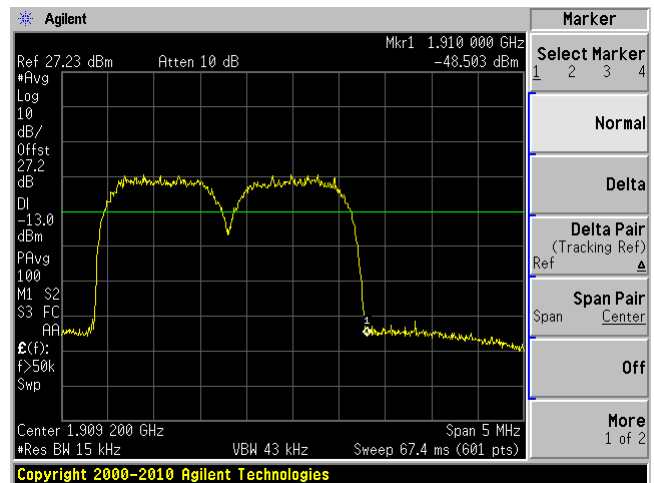


### CDMA

#### Low Channel

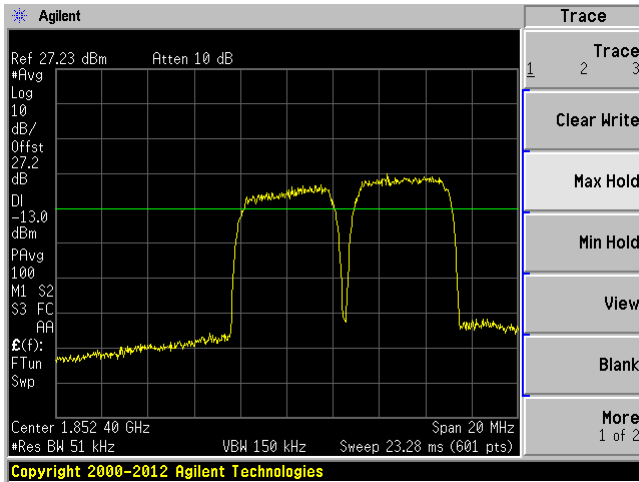


#### High Channel

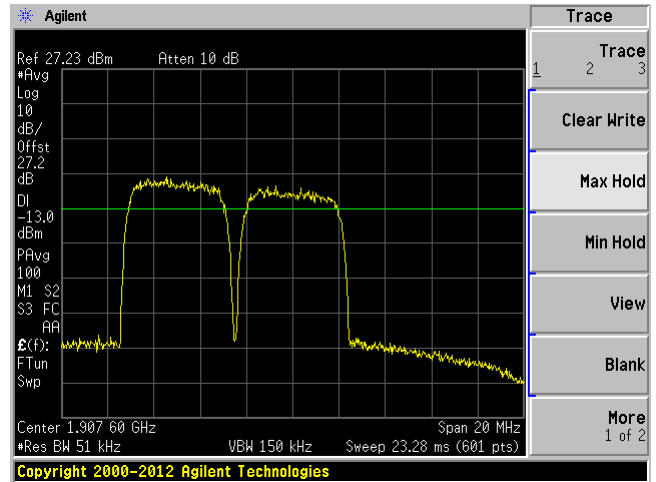


### WCDMA

#### Low Channel

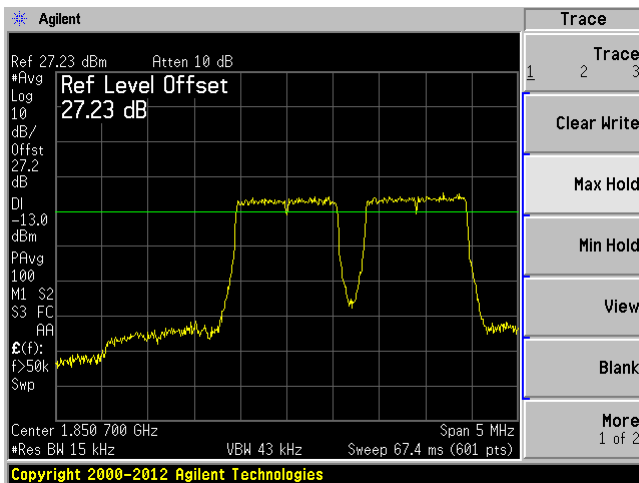


#### High Channel

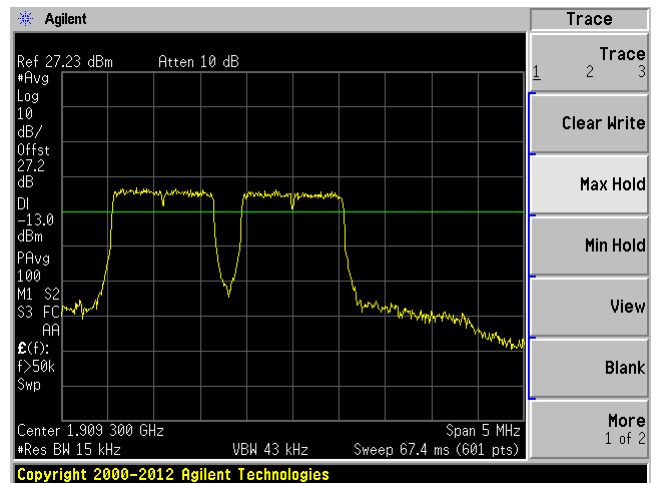


### LTE-QPSK 1.4 MHz

#### Low Channel



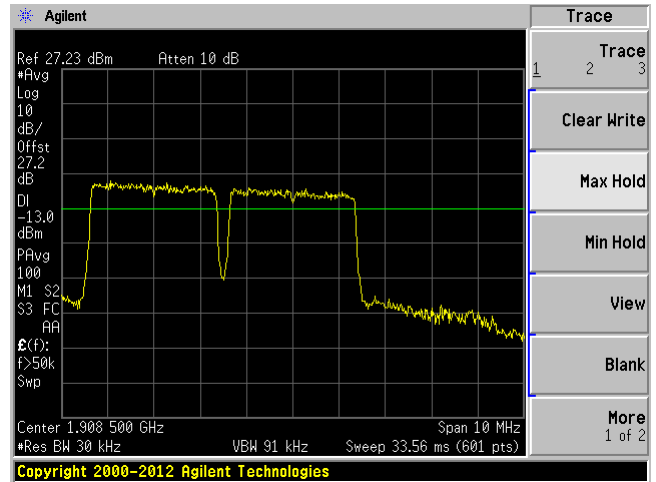
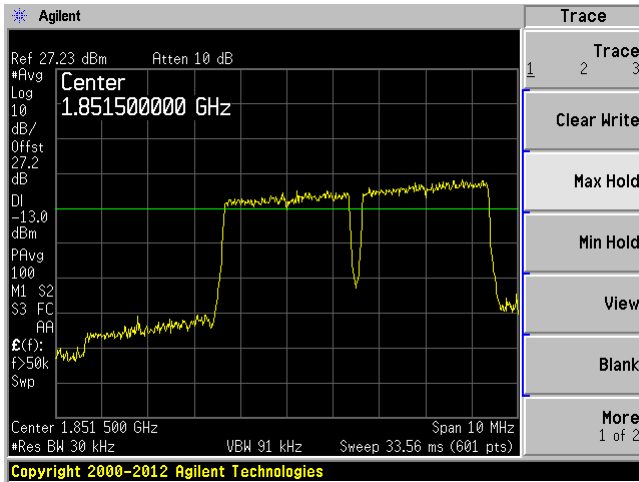
#### High Channel



### LTE-QPSK 3 MHz

Low Channel

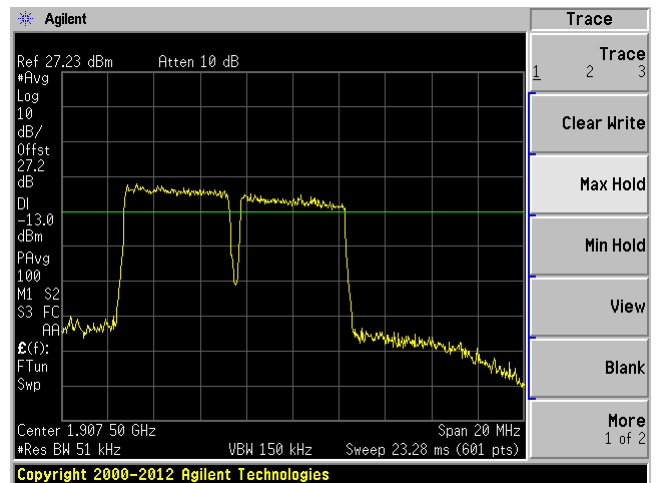
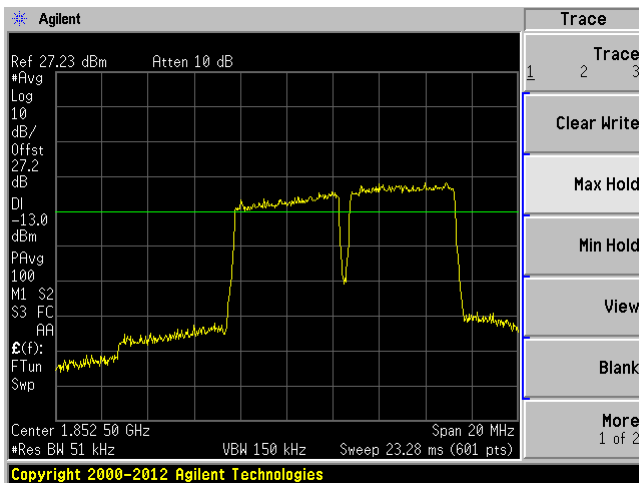
High Channel



### LTE-QPSK 5 MHz

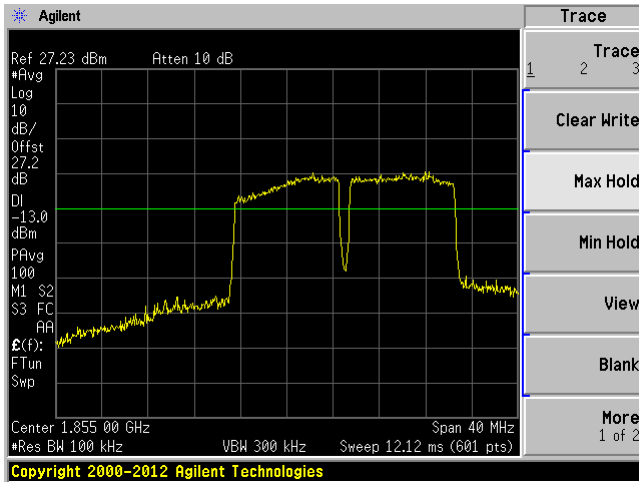
Low Channel

High Channel

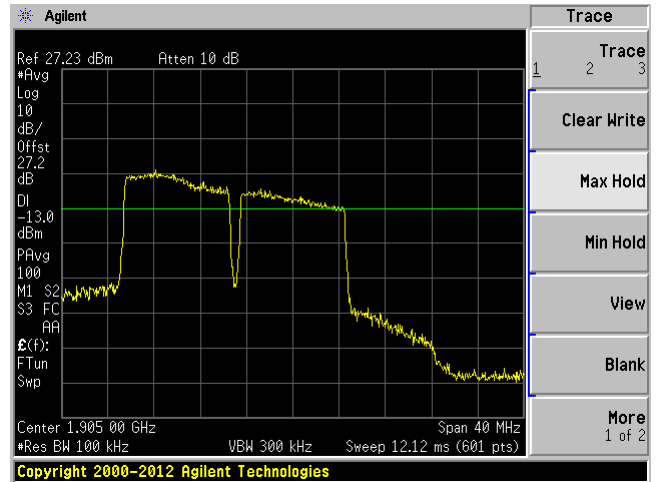


### LTE-QPSK 10 MHz

Low Channel

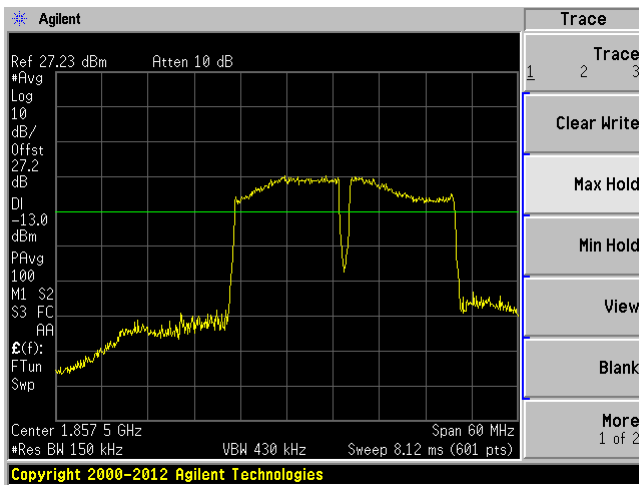


High Channel

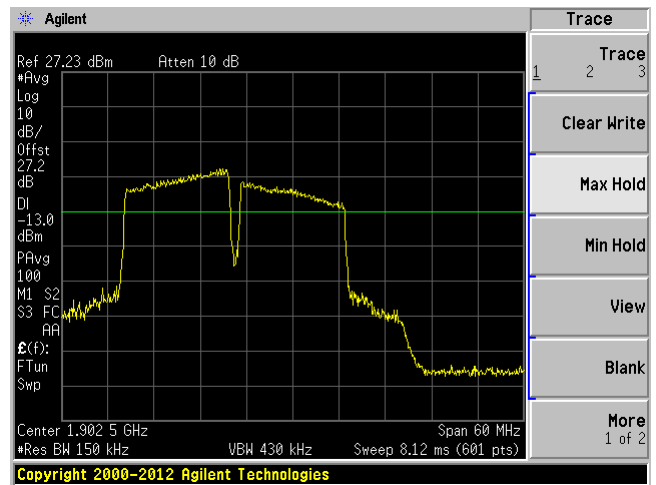


### LTE-QPSK 15 MHz

Low Channel

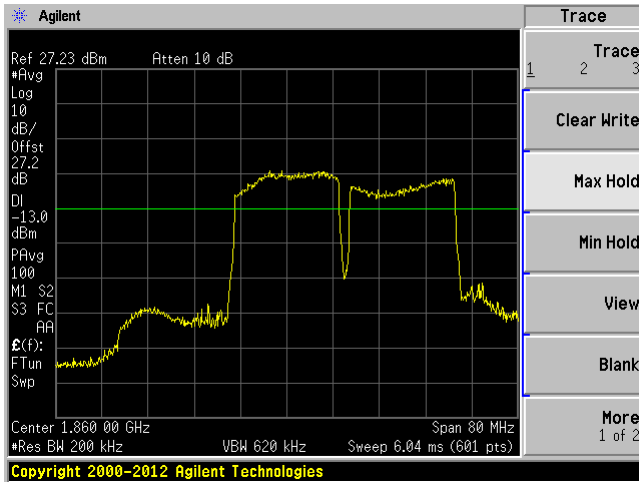


High Channel

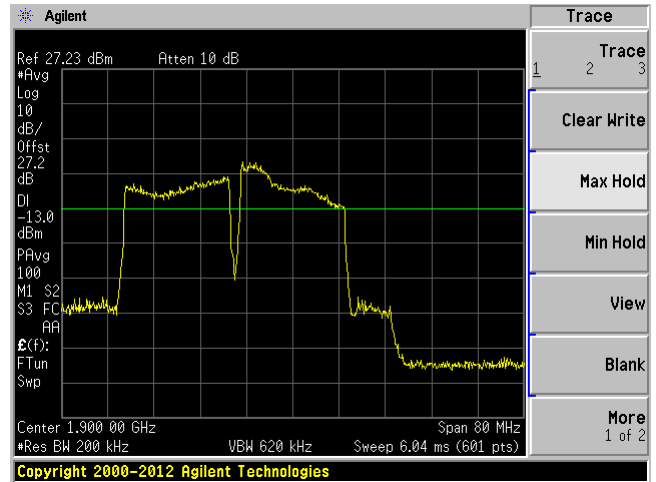


### LTE-QPSK 20 MHz

Low Channel

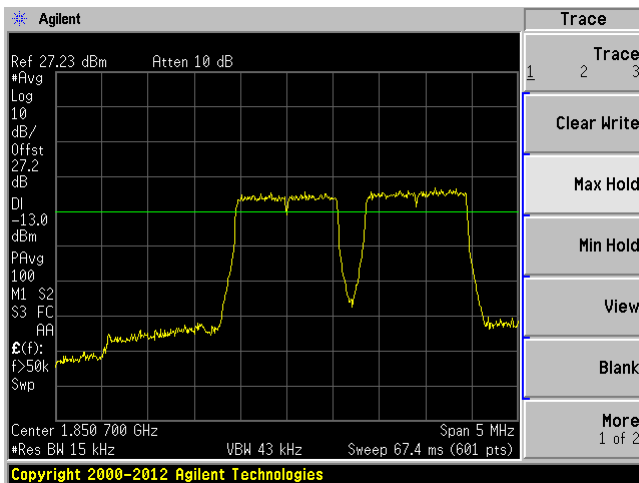


High Channel

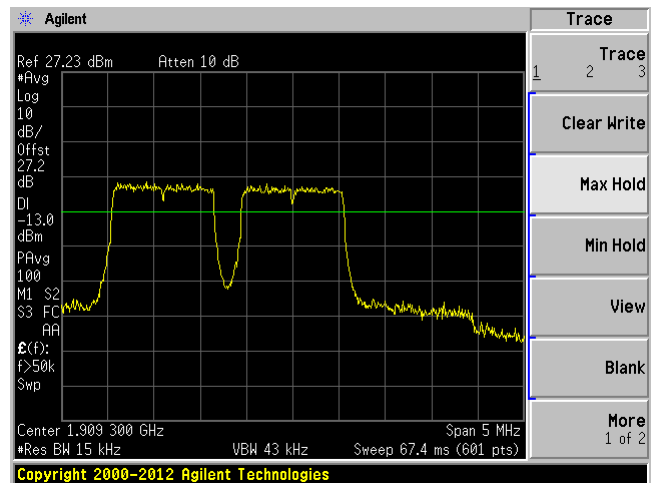


### LTE-16QAM 1.4 MHz

Low Channel

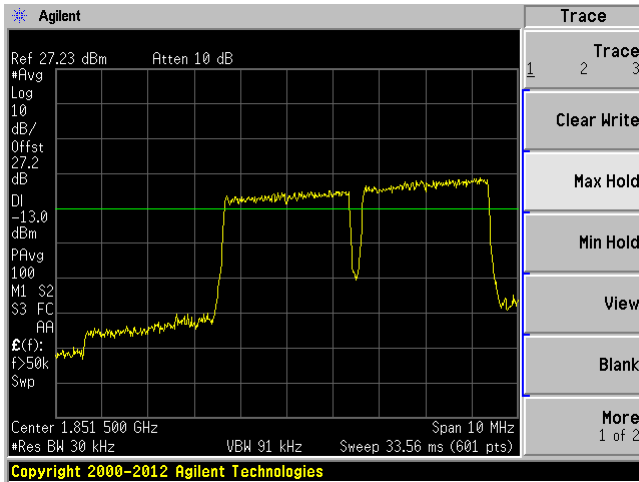


High Channel

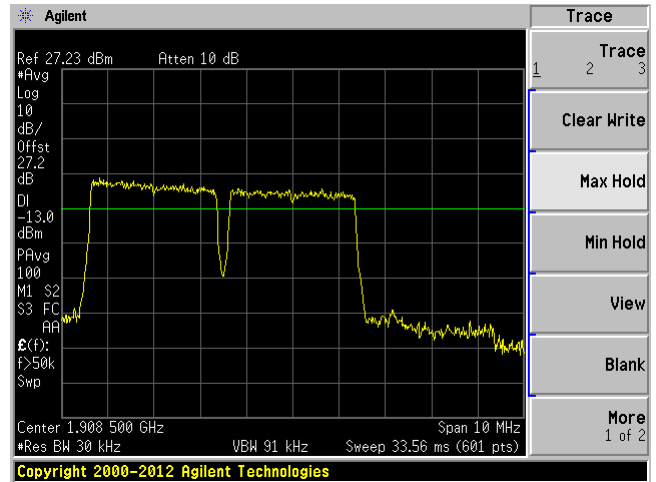


### LTE-16QAM 3 MHz

Low Channel

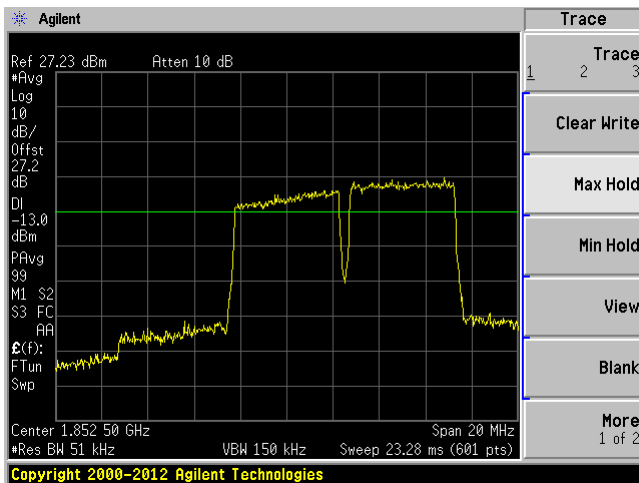


High Channel

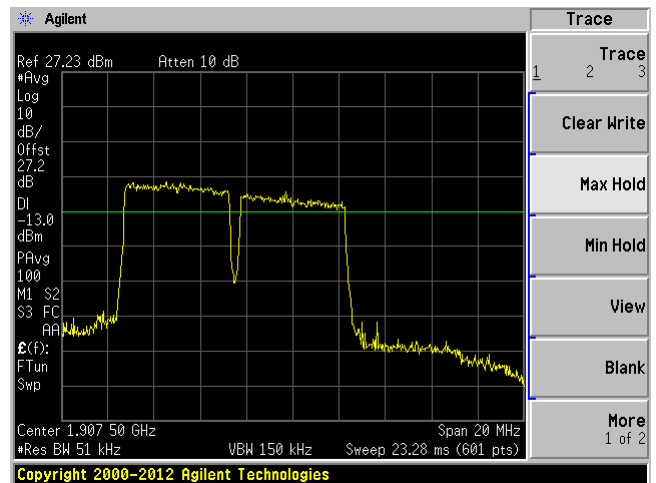


### LTE-16QAM 5 MHz

Low Channel



High Channel

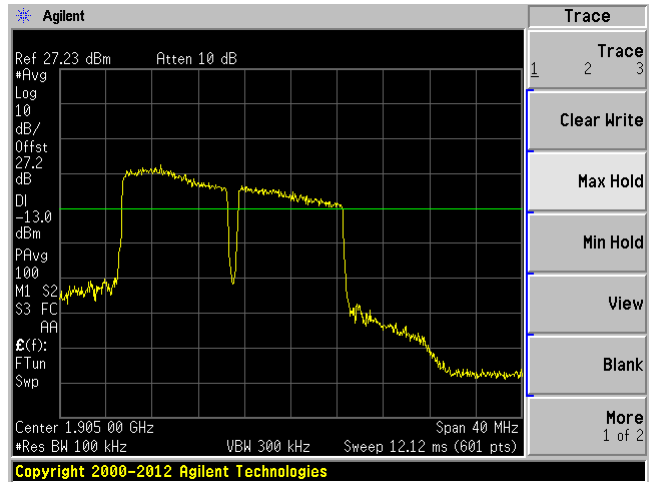
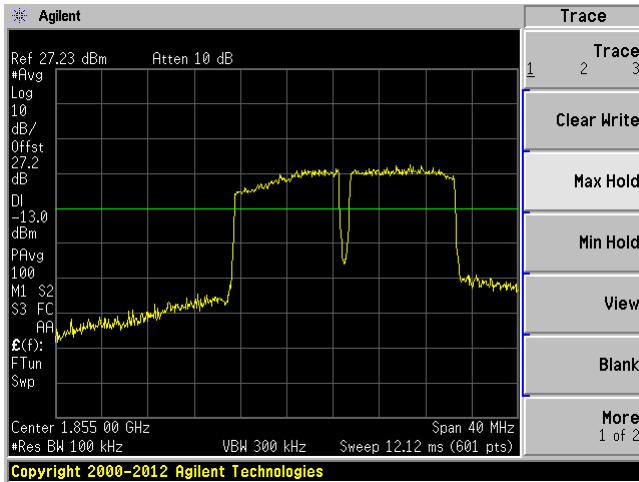




### LTE-16QAM 10 MHz

Low Channel

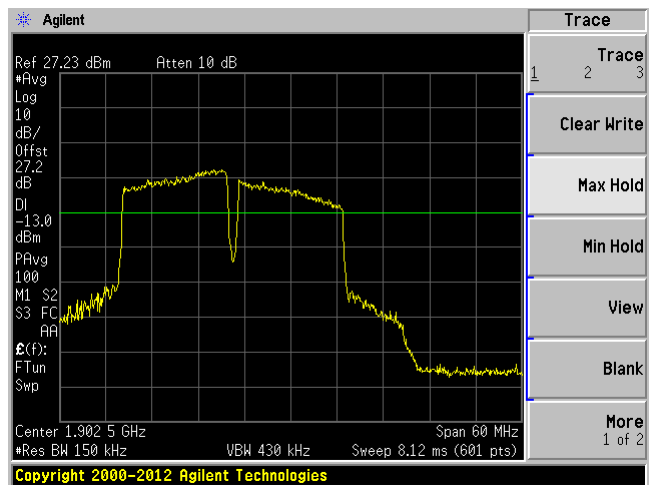
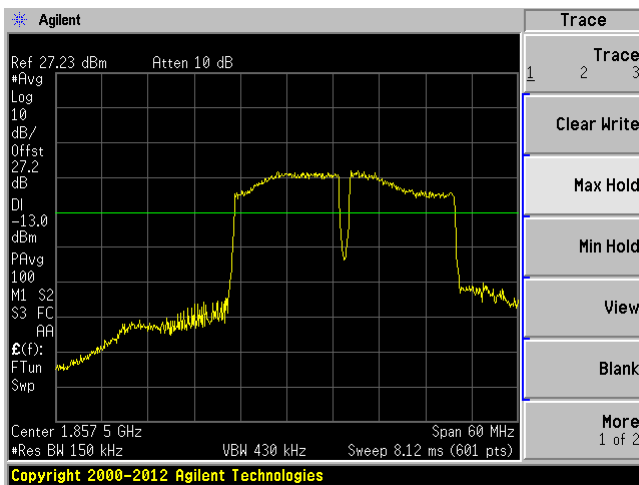
High Channel



### LTE-16QAM 15 MHz

Low Channel

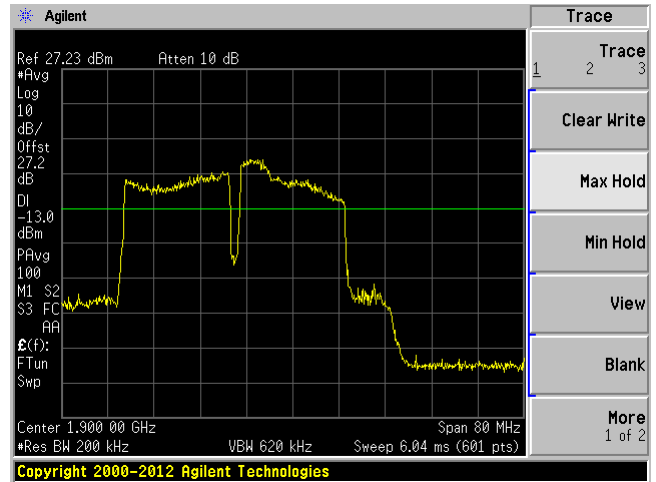
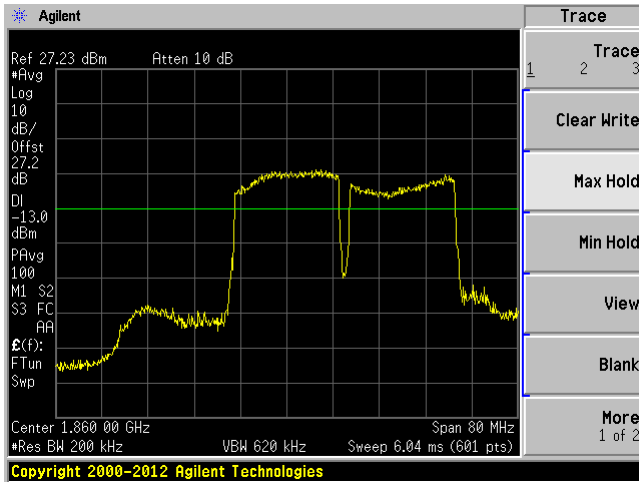
High Channel



### LTE-16QAM 20 MHz

Low Channel

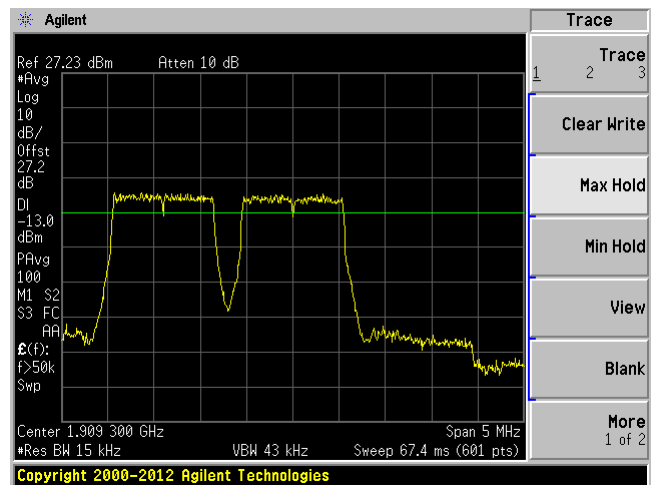
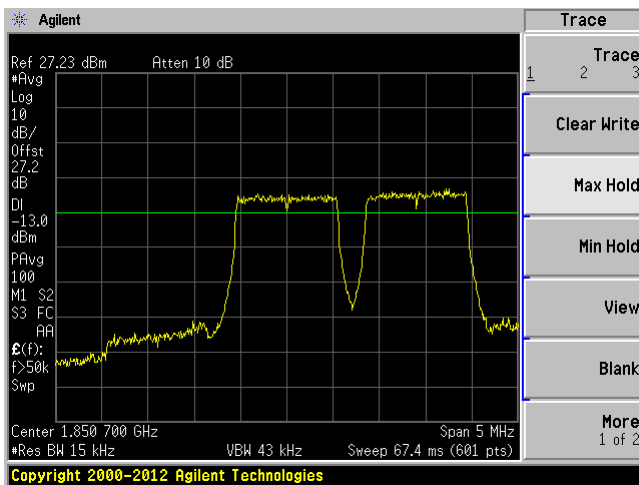
High Channel



### LTE-64QAM 1.4 MHz

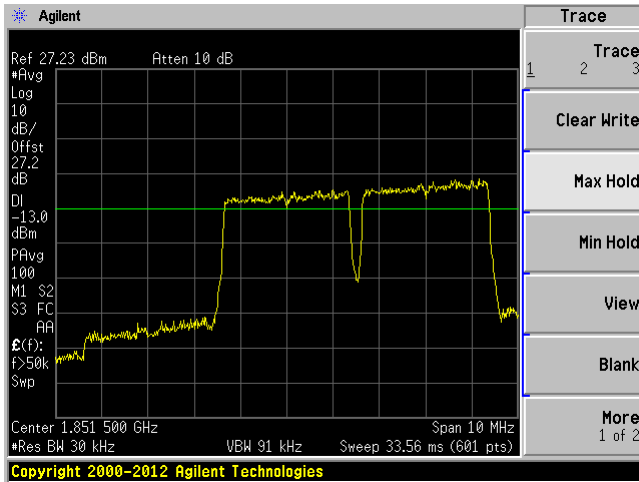
Low Channel

High Channel

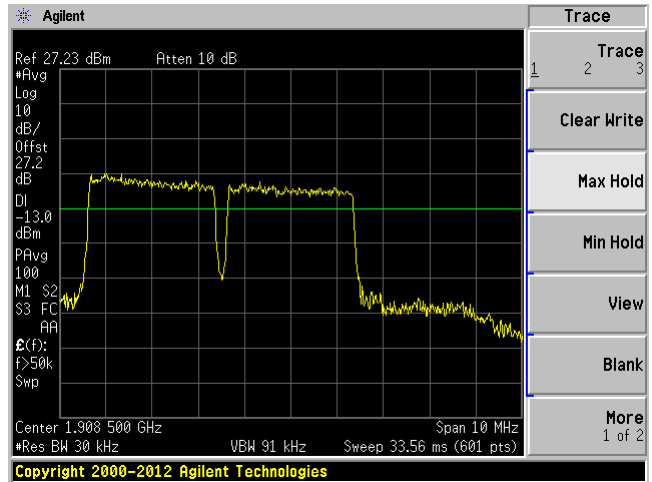


### LTE-64QAM 3 MHz

Low Channel

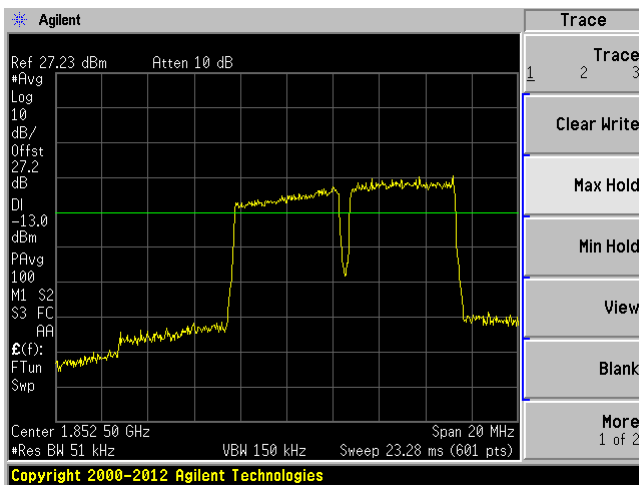


High Channel

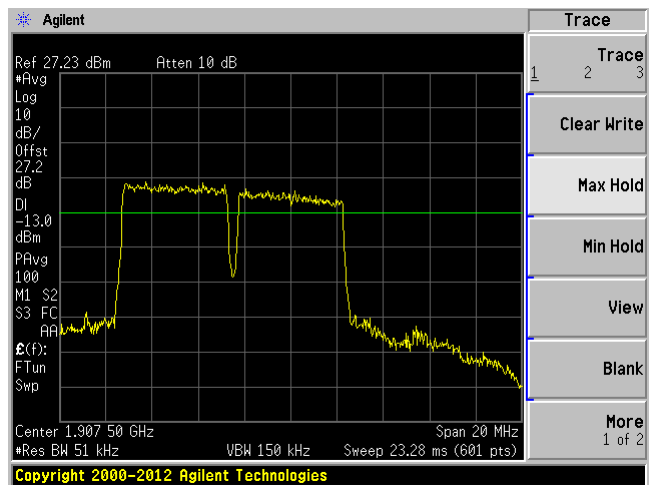


### LTE-64QAM 5 MHz

Low Channel

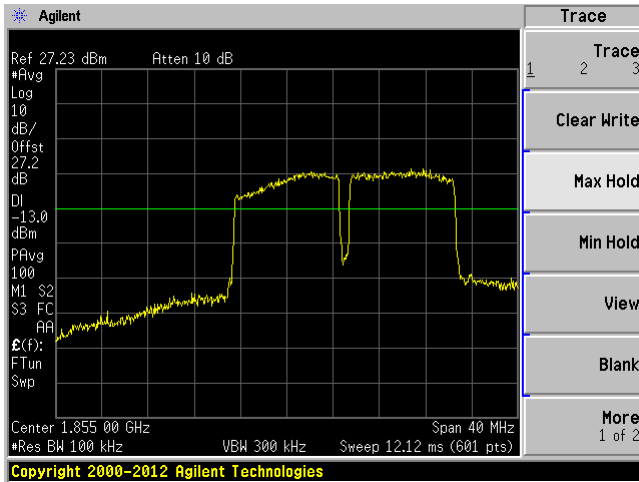


High Channel

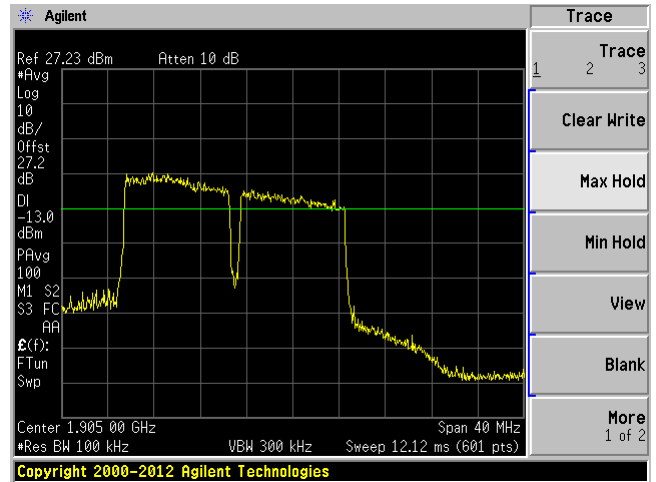


### LTE-64QAM 10 MHz

Low Channel

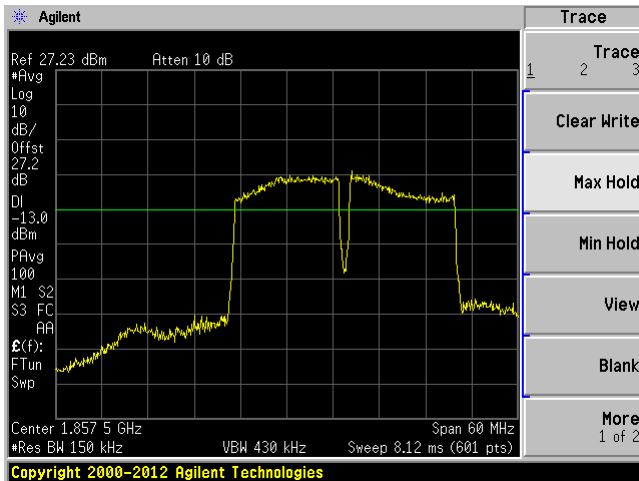


High Channel

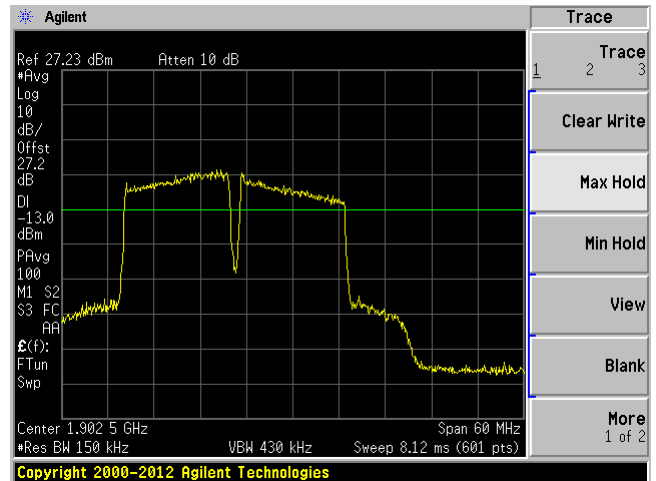


### LTE-64QAM 15 MHz

Low Channel

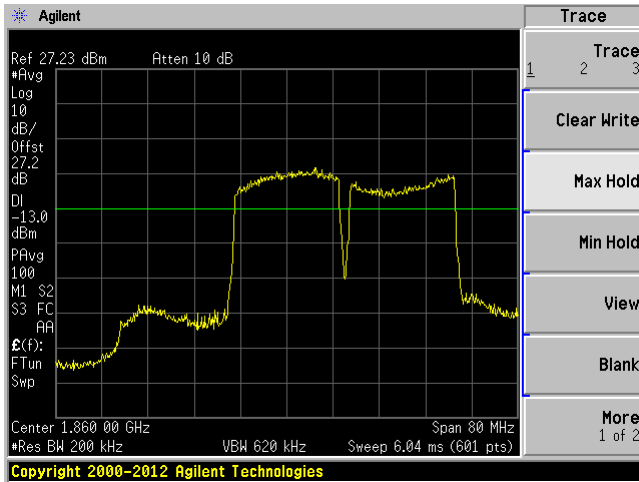


High Channel

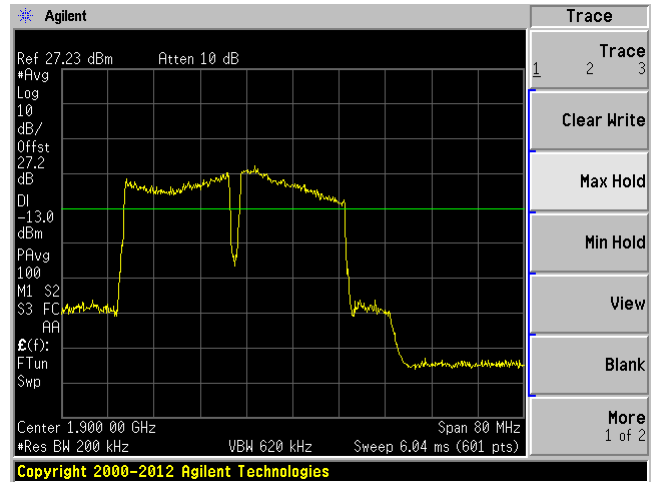


### LTE-64QAM 20 MHz

Low Channel

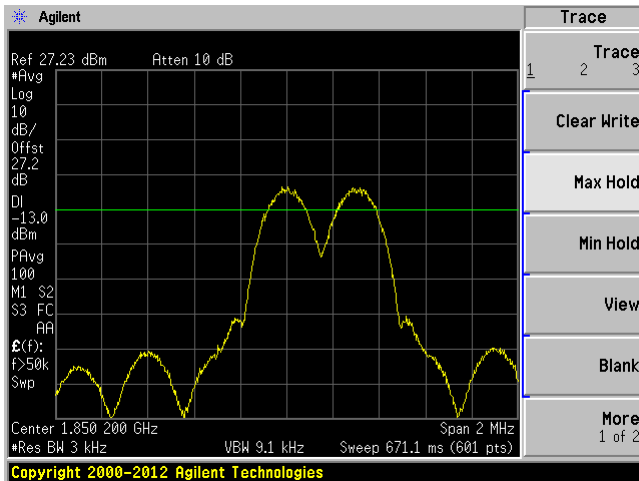


High Channel

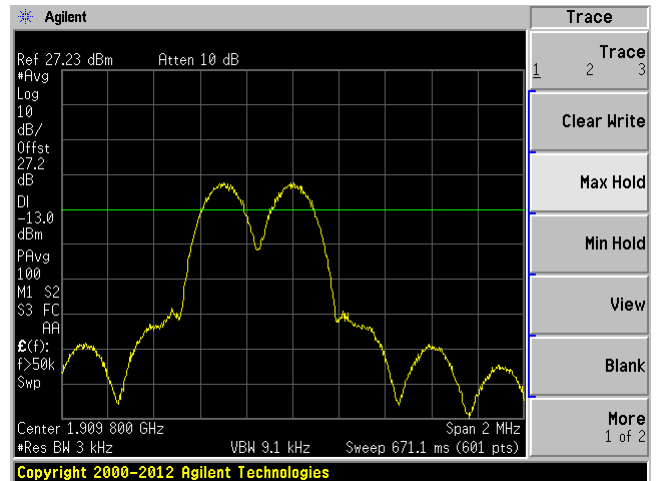


### Uplink (ALC on) GSM

Low Channel

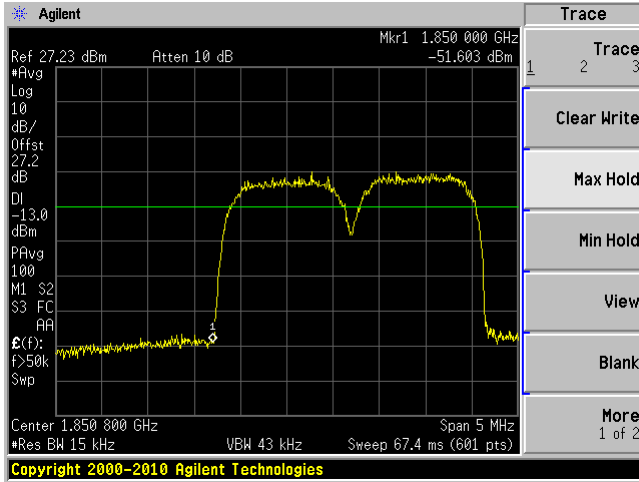


High Channel

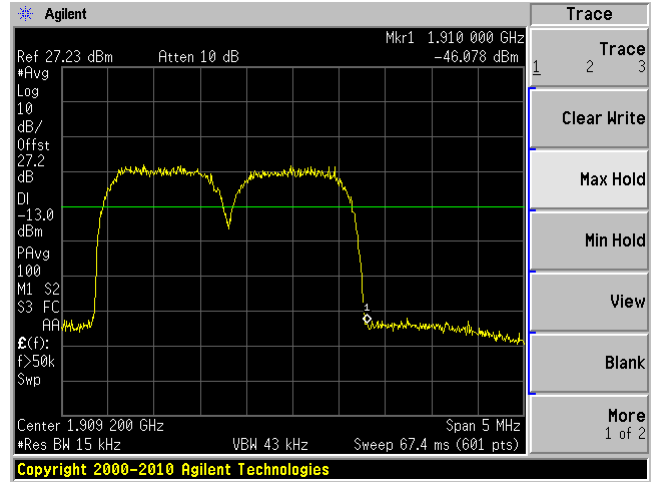


### CDMA

#### Low Channel

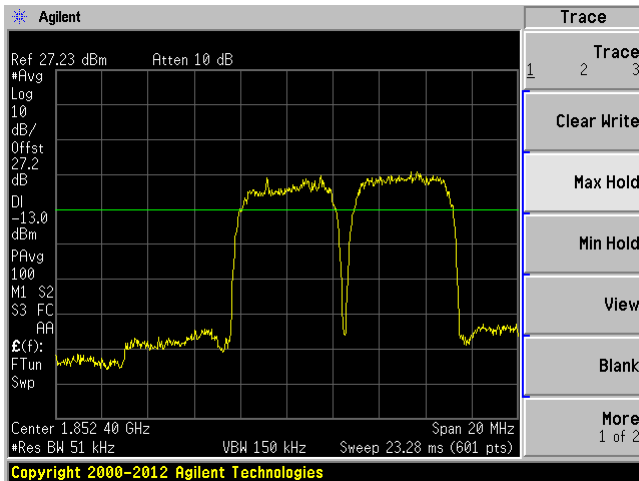


#### High Channel

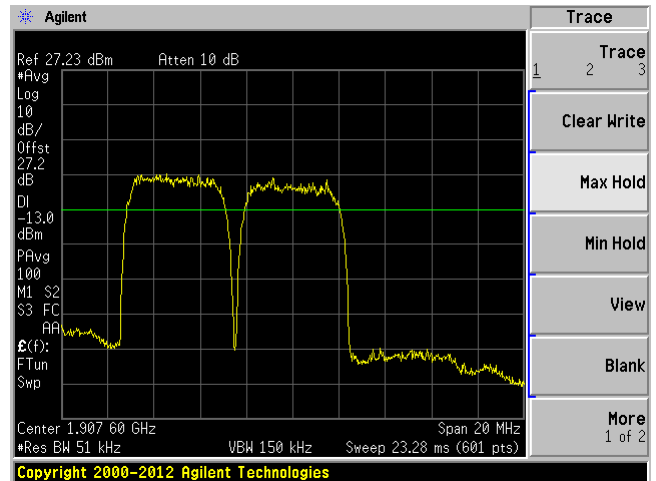


### WCDMA

#### Low Channel

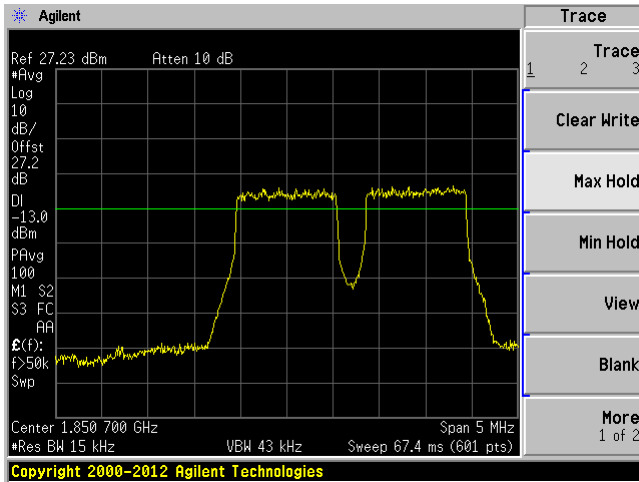


#### High Channel

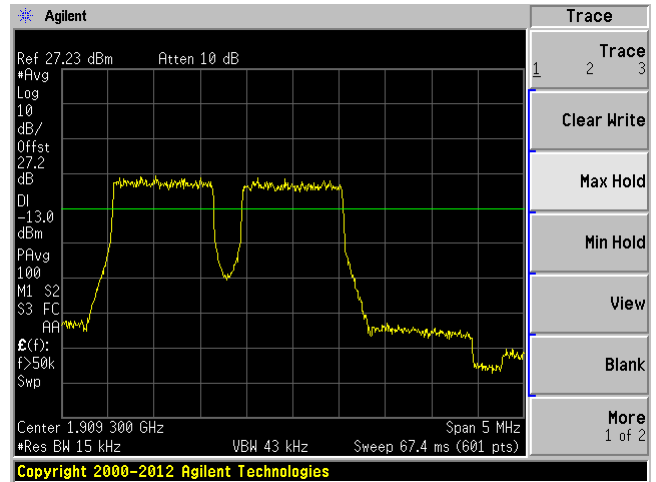


### LTE-QPSK 1.4 MHz

Low Channel

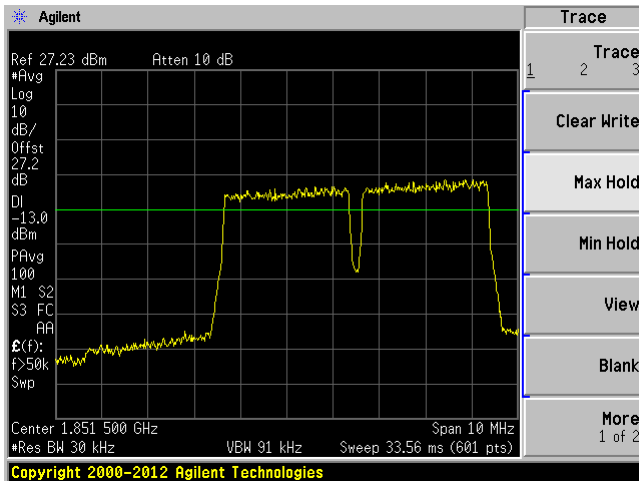


High Channel

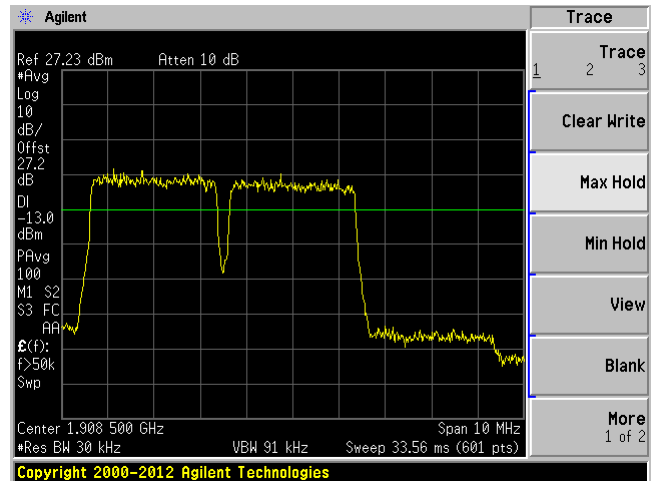


### LTE-QPSK 3 MHz

Low Channel

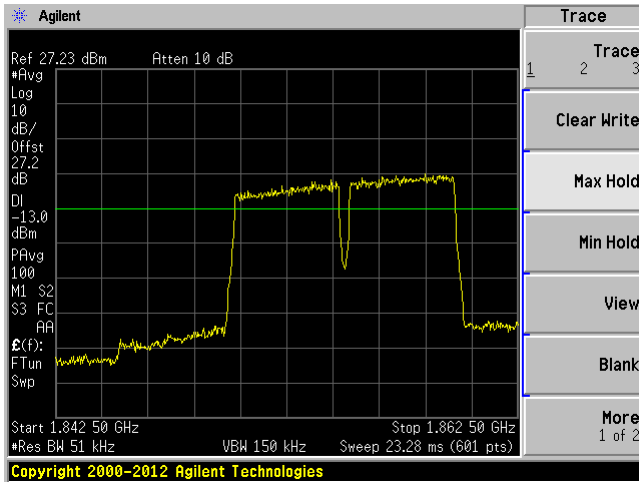


High Channel

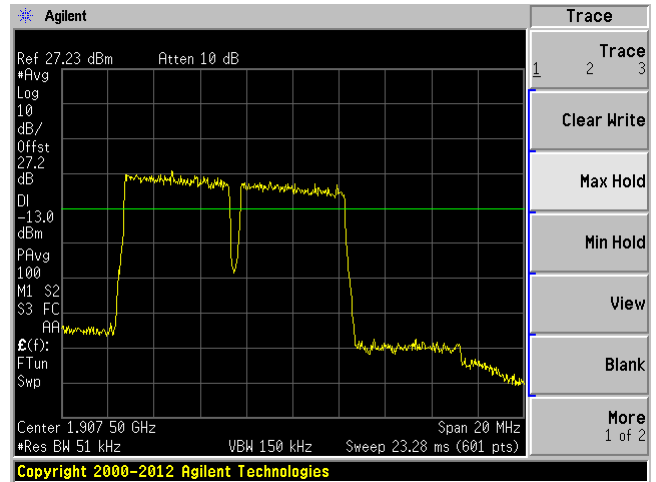


### LTE-QPSK 5 MHz

Low Channel

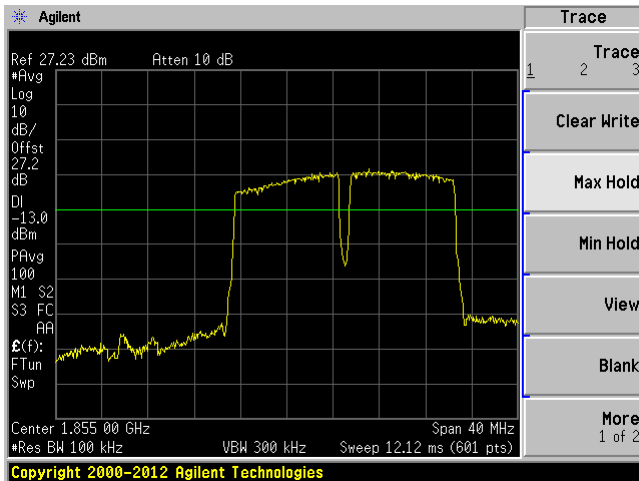


High Channel

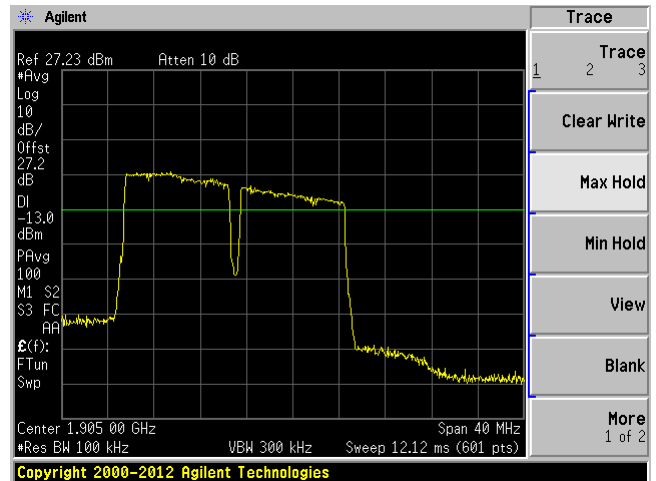


### LTE-QPSK 10 MHz

Low Channel



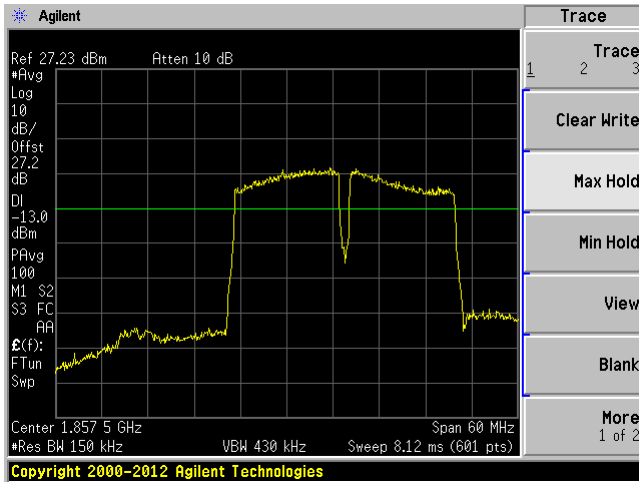
High Channel



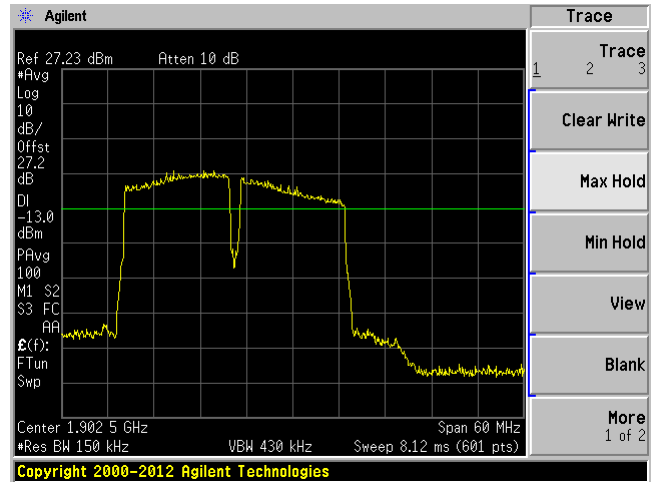


### LTE-QPSK 15 MHz

Low Channel

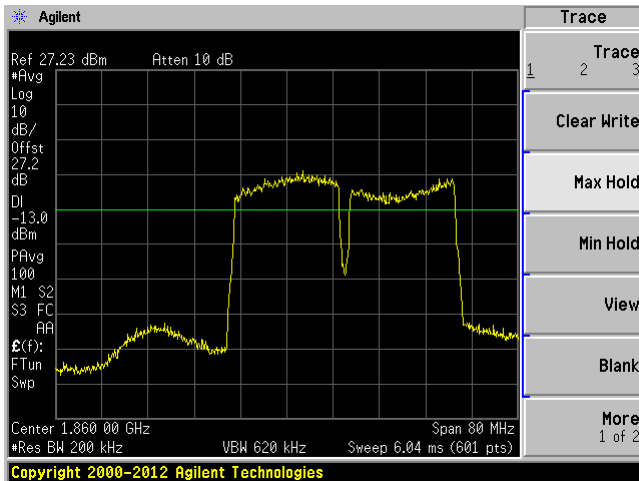


High Channel

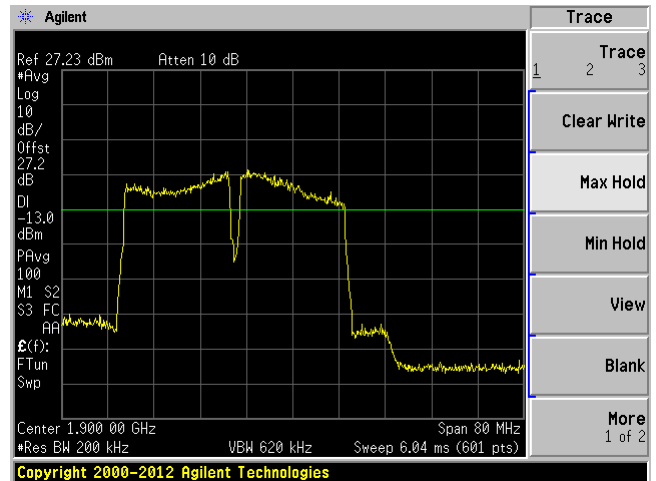


### LTE-QPSK 20 MHz

Low Channel

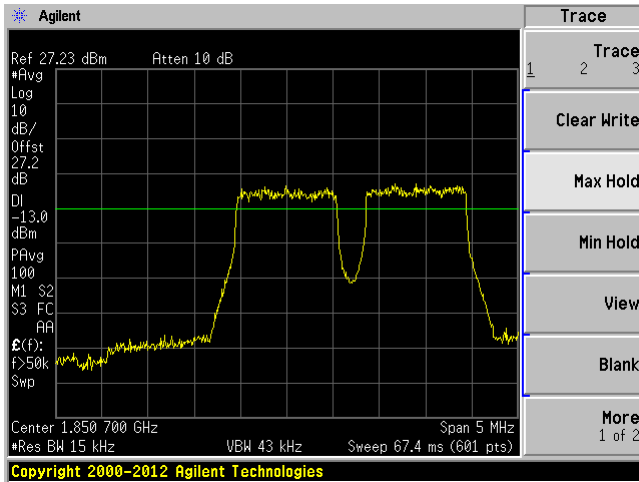


High Channel

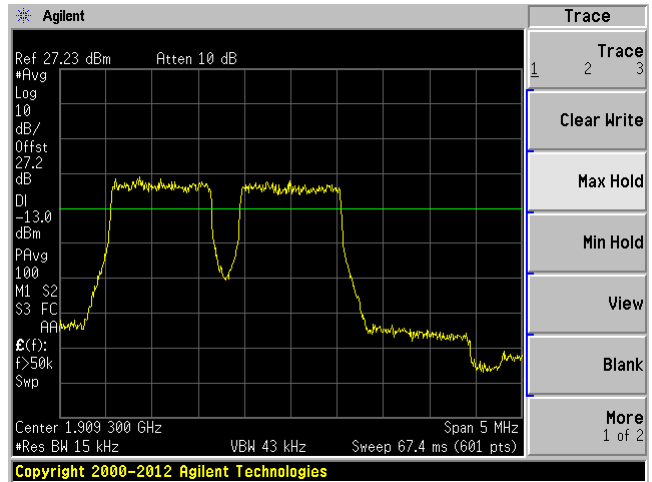


### LTE-16QAM 1.4 MHz

Low Channel

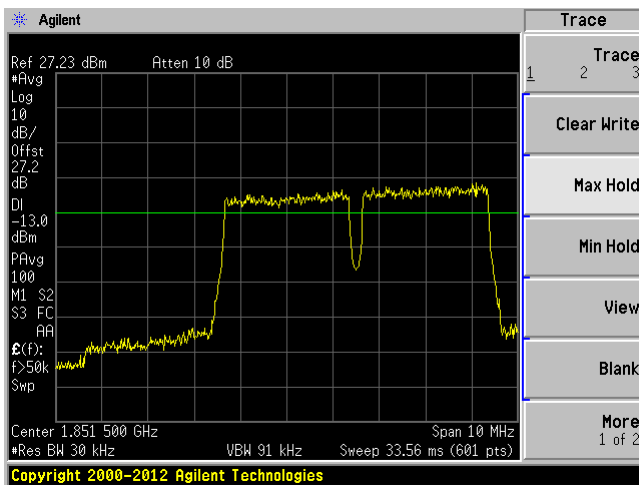


High Channel

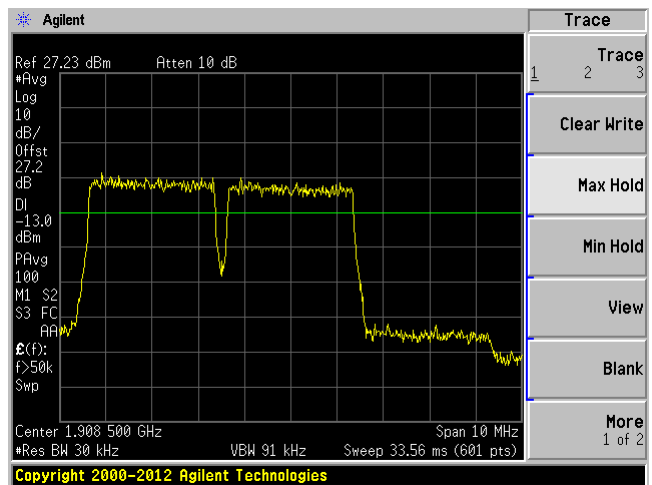


### LTE-16QAM 3 MHz

Low Channel

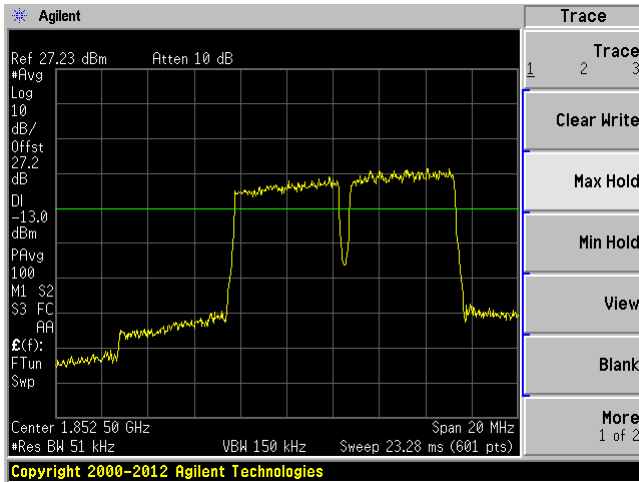


High Channel

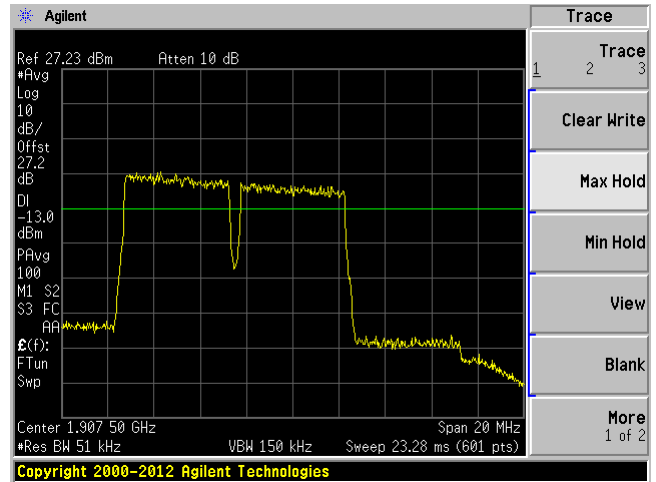


### LTE-16QAM 5 MHz

Low Channel

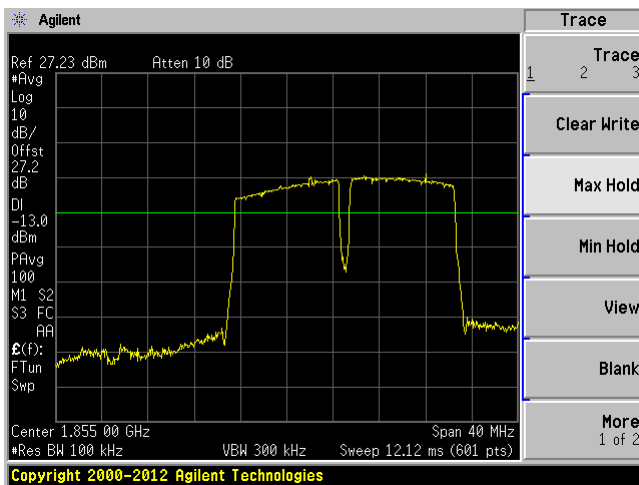


High Channel

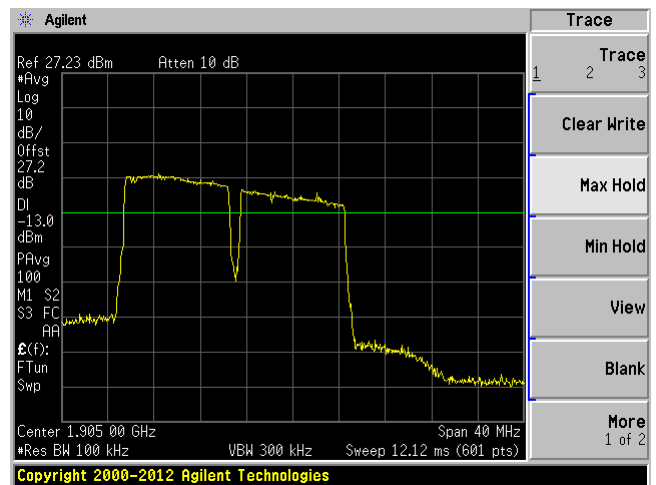


### LTE-16QAM 10 MHz

Low Channel



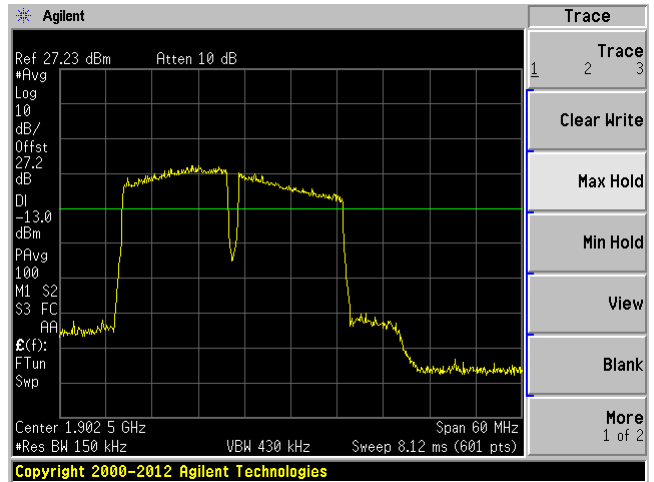
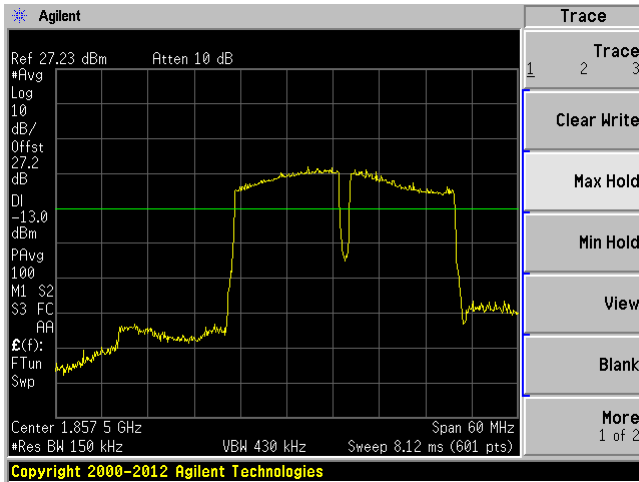
High Channel



### LTE-16QAM 15 MHz

Low Channel

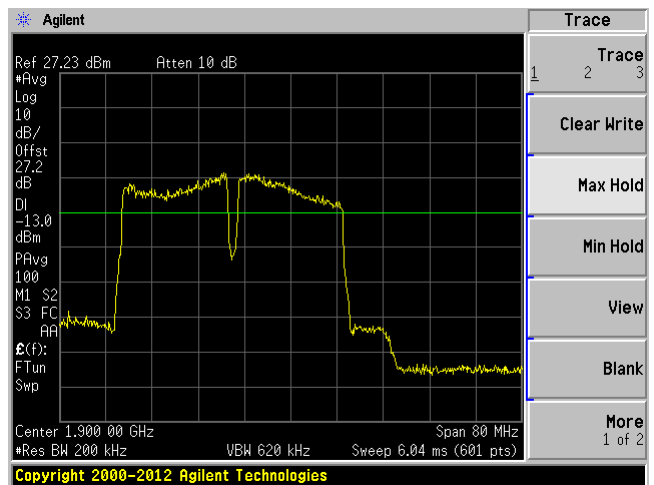
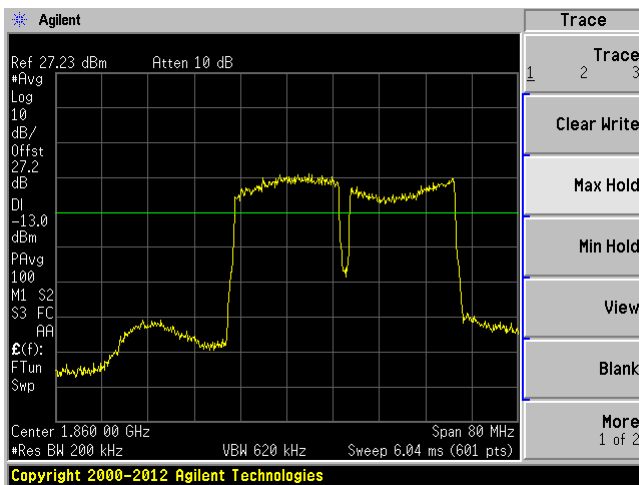
High Channel



### LTE-16QAM 20 MHz

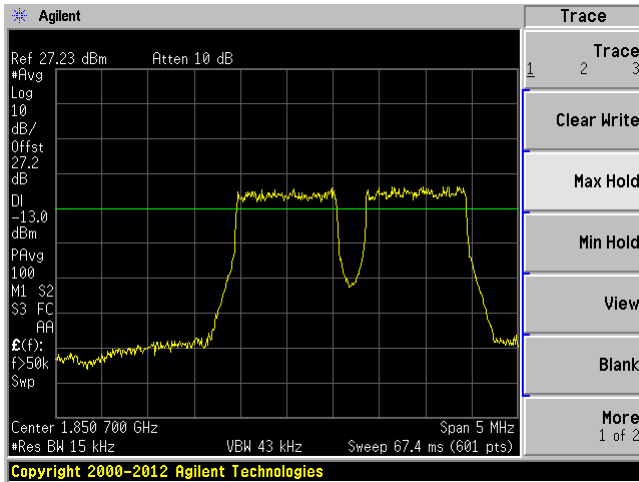
Low Channel

High Channel

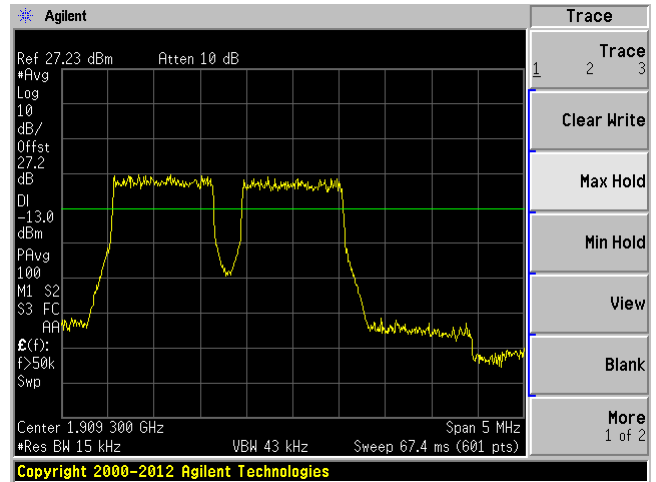


### LTE-64QAM 1.4 MHz

Low Channel

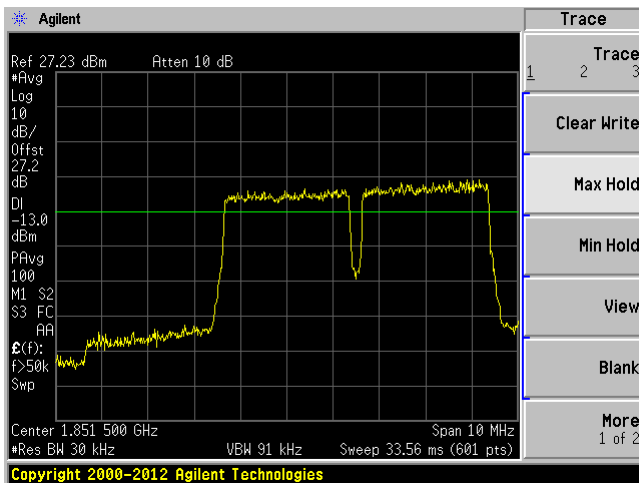


High Channel

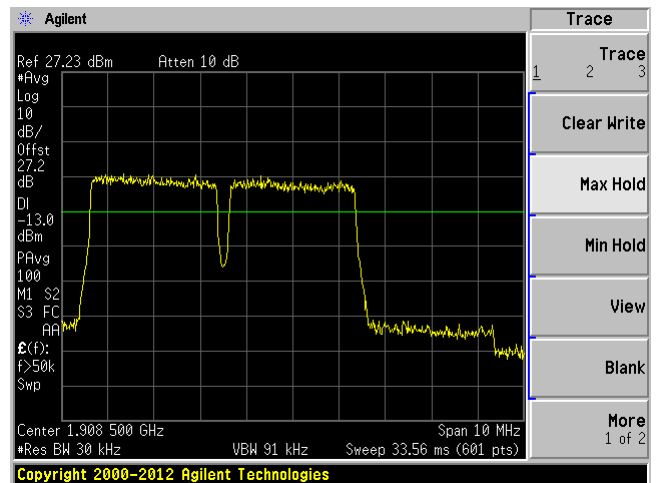


### LTE-64QAM 3 MHz

Low Channel

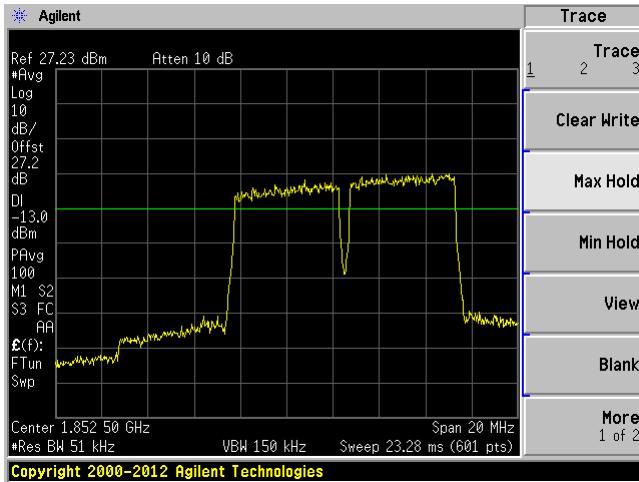


High Channel

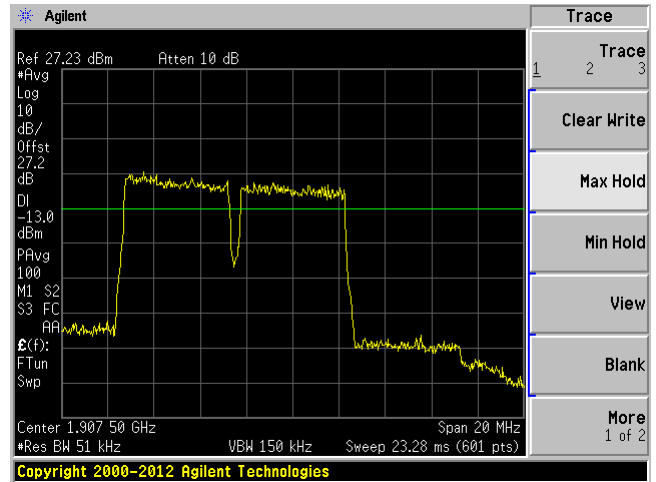


### LTE-64QAM 5 MHz

Low Channel

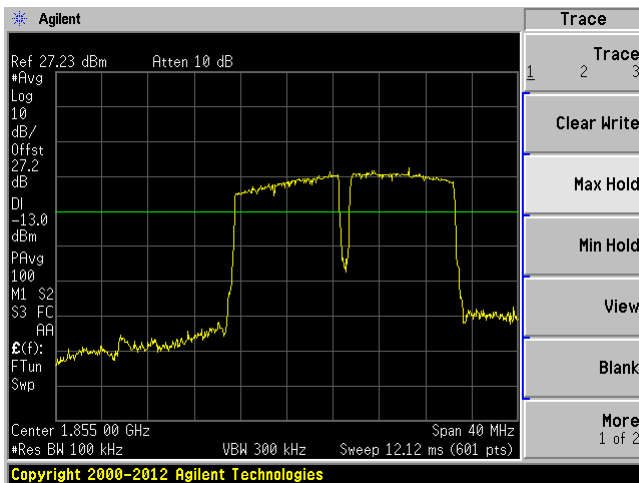


High Channel

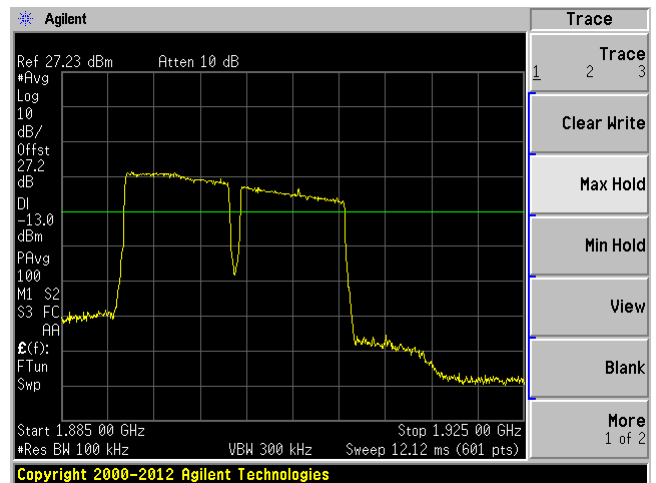


### LTE-64QAM 10 MHz

Low Channel



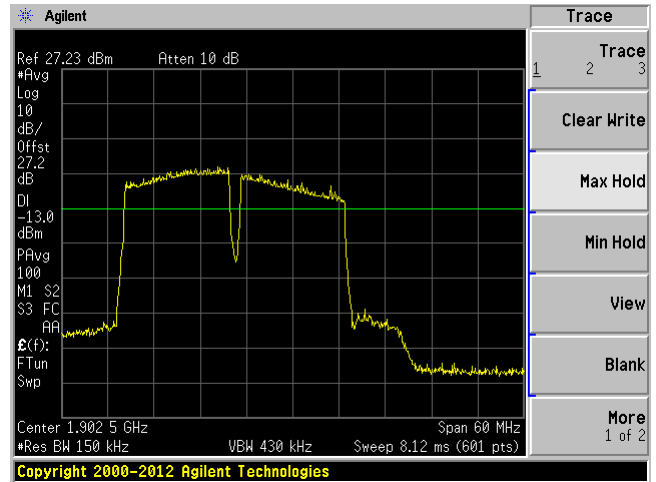
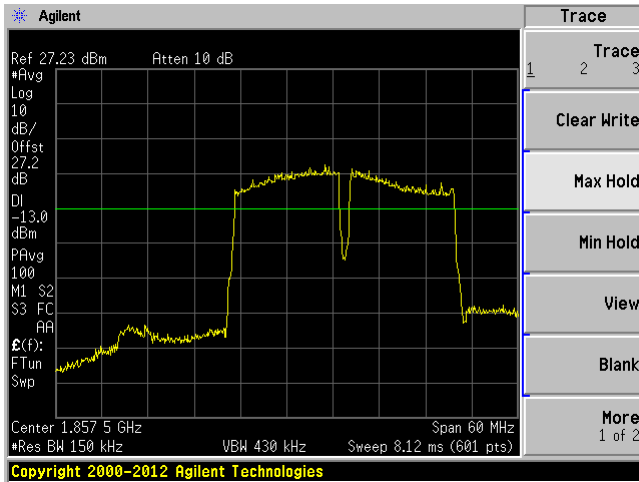
High Channel



### LTE-64QAM 15 MHz

Low Channel

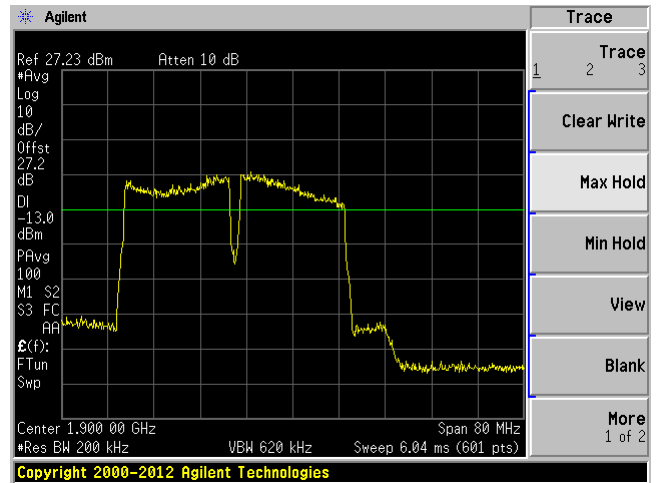
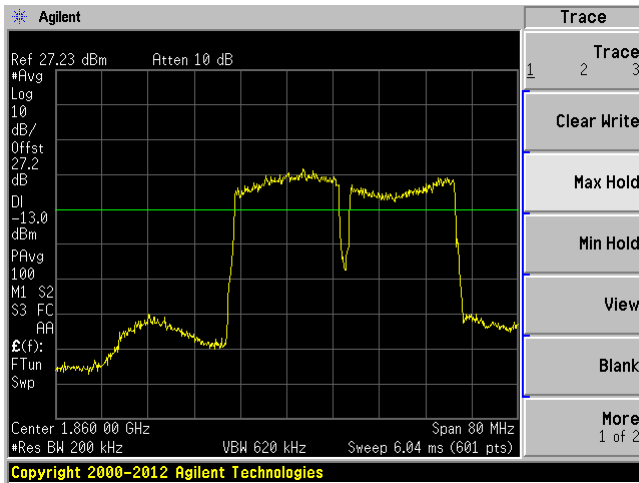
High Channel



### LTE-64QAM 20 MHz

Low Channel

High Channel



## 8 FCC §24.238(b) - Band Edge

### 8.1 Applicable Standards

According to FCC §24.238(b) the power of any emissions 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

### 8.2 Test Procedure

The EUT was connected to the spectrum analyzer and Signal Generator followed by 50Ω-75Ω matching pad.

The center of the spectrum analyzer was set according to center frequency of the EUT to be transmitted and resolution bandwidth was set to at least 1MHz or 1% of the emission bandwidth



### 8.3 Test Equipment List and Details

Manufacturers	Descriptions	Models	Serial Numbers	Calibration Dates	Calibration Interval
Agilent	Spectrum Analyzer	E4440A	MY44303352	2015-06-22	1 year
Agilent	Signal Generator	E4438C	MY45091309	2014-07-15	1 year

*Statement of Traceability: BACL Corp. attests that all calibrations have been performed per the A2LA requirements, traceable to the NIST.*

### 8.4 Test Environmental Conditions

<b>Temperature:</b>	21-23° C
<b>Relative Humidity:</b>	42-48 %
<b>ATM Pressure:</b>	101.4-102 kPa

*The testing was performed by Ronak Patel on 2015-06-08 to 2015-06-29 in the RF Site.*

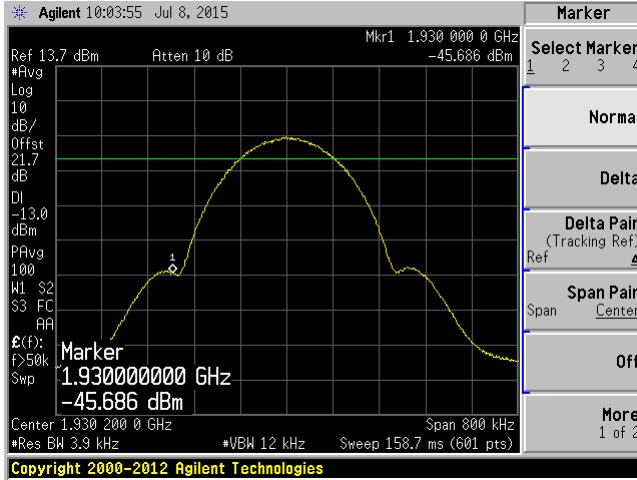
### 8.5 Test Results

Please refer to the following plots.

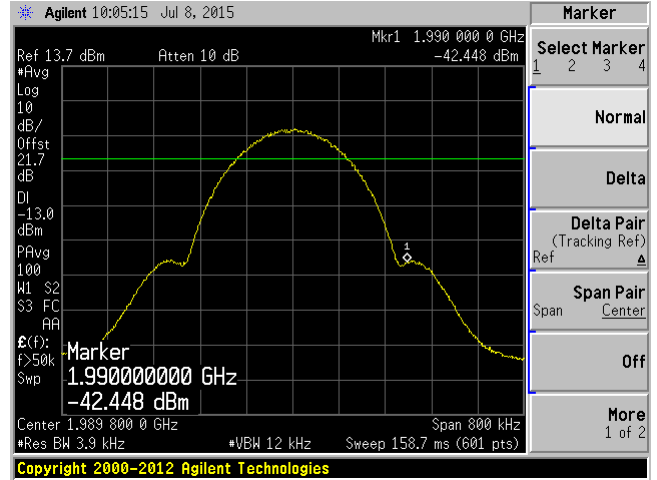


GSM/GPRS

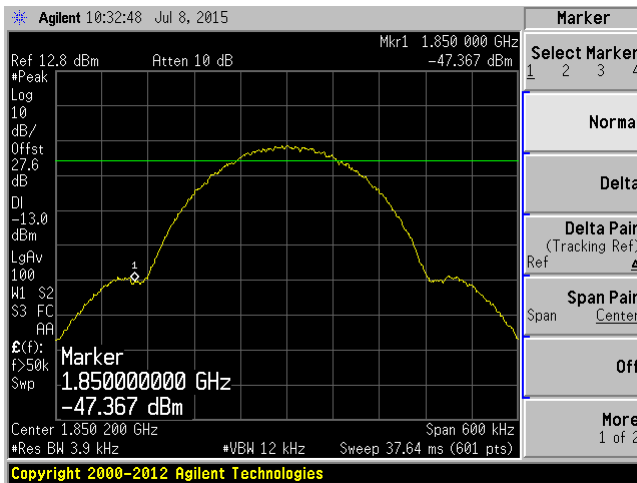
Low DL



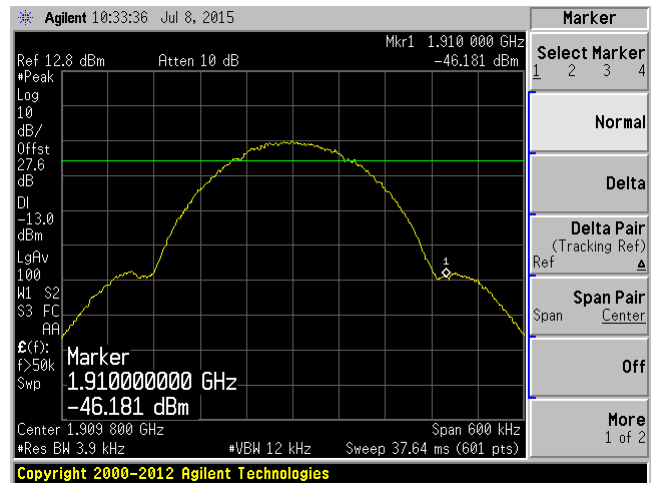
High DL



Low UL



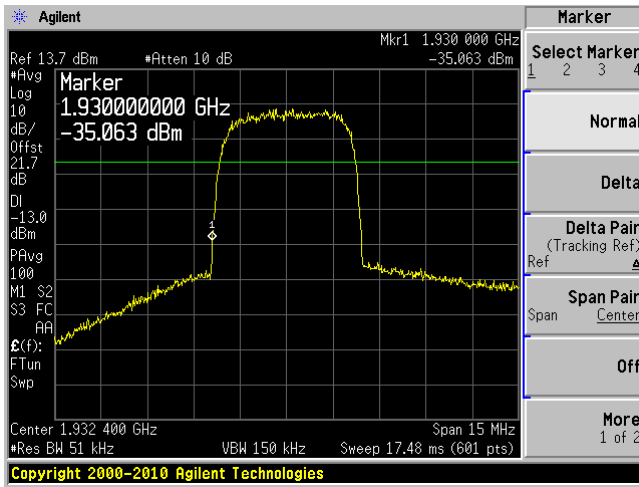
High UL



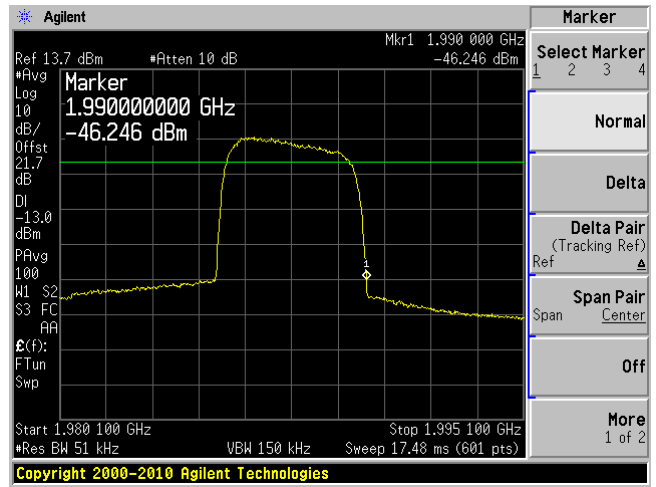


WCDMA

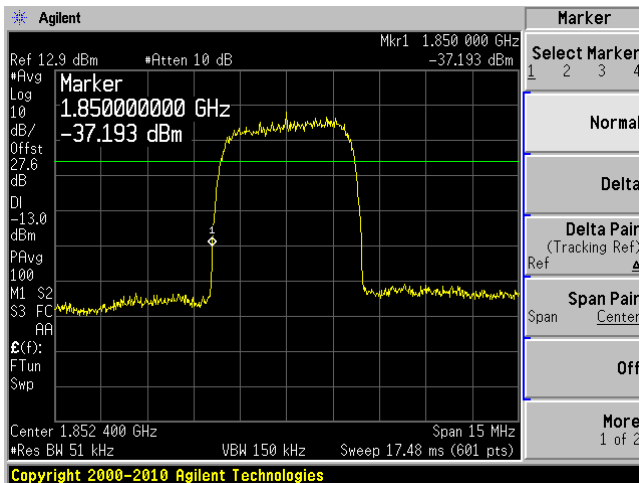
Low DL



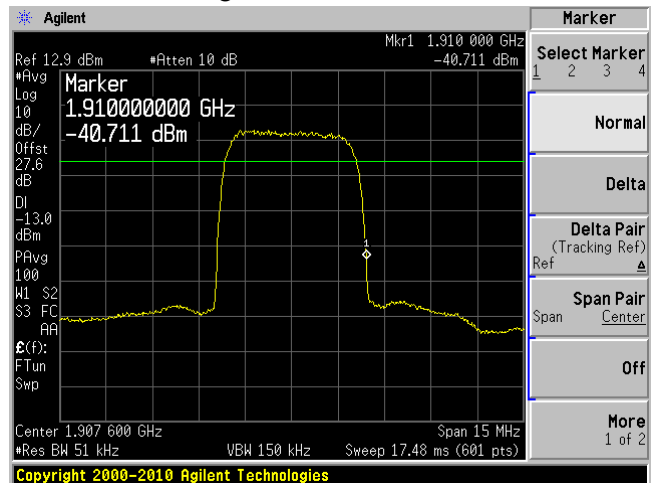
High DL



Low UL

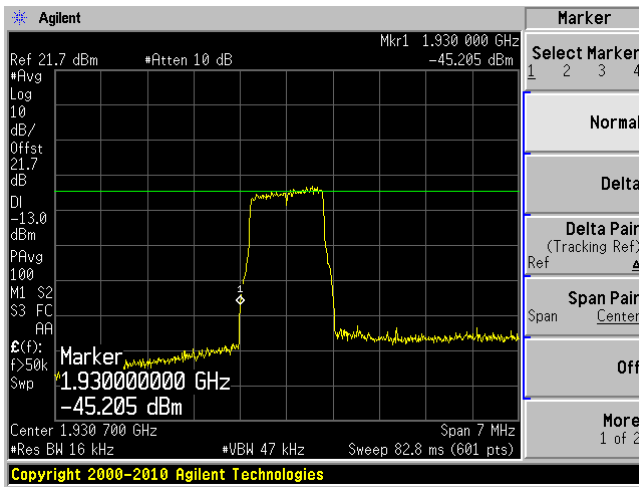


High UL

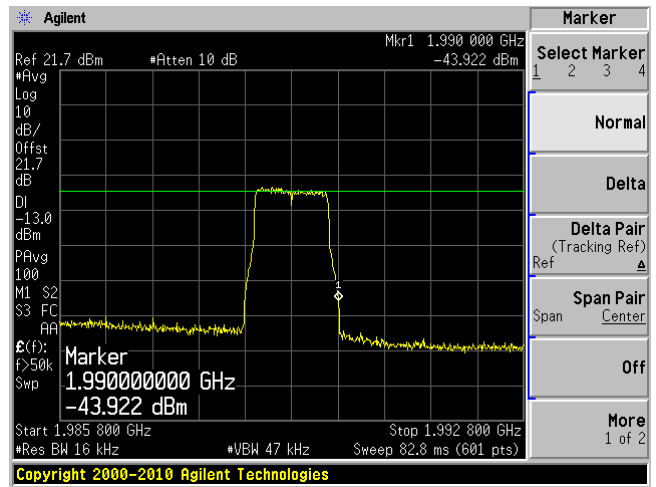


### LTE 1.4MHz DL QPSK

Low

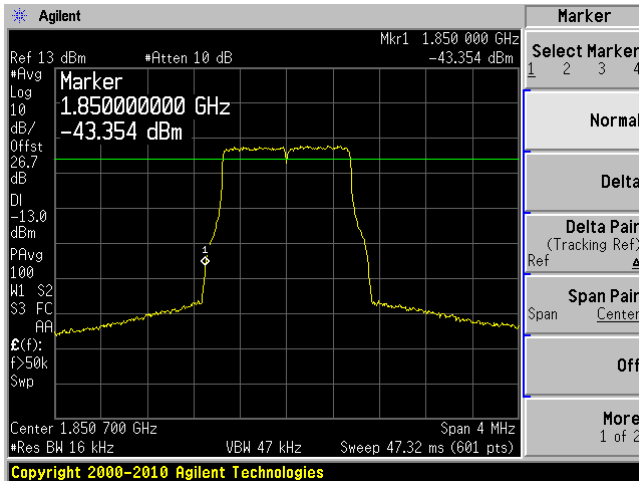


high

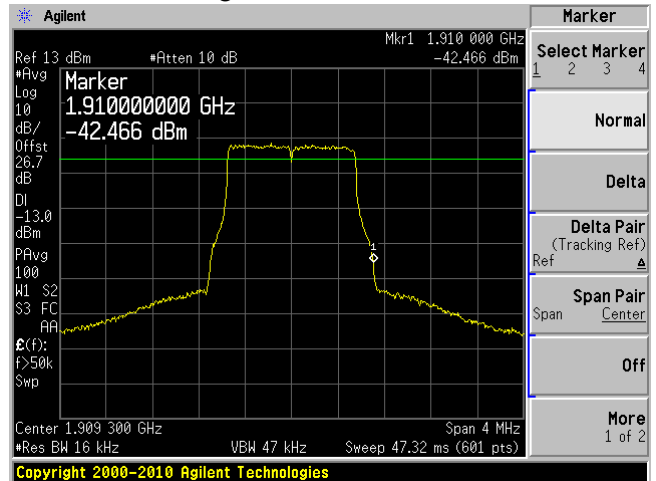


### LTE 1.4MHz UL QPSK

Low

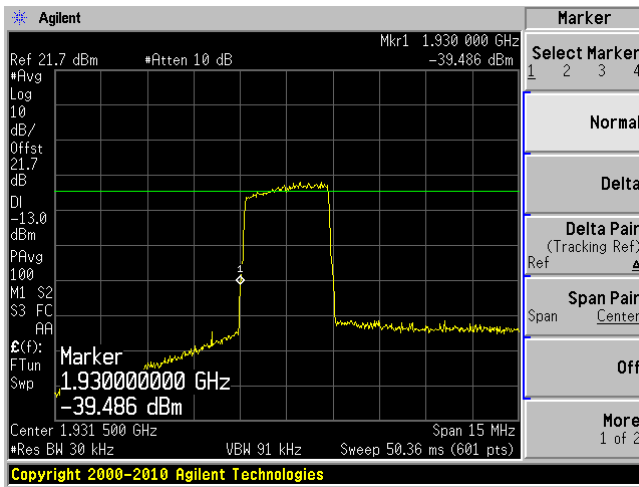


High

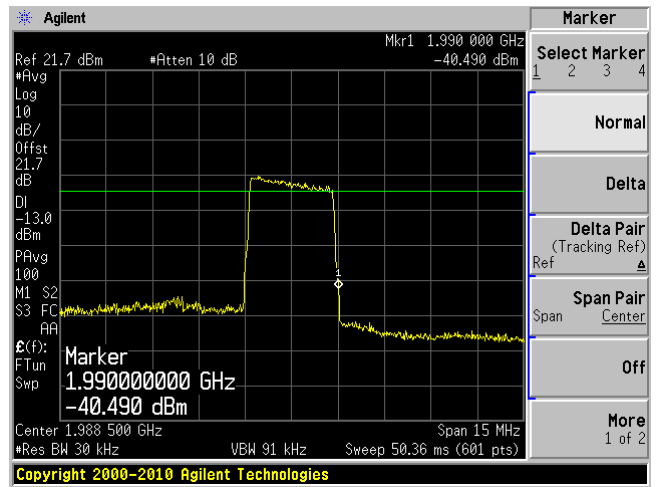


### LTE 3MHz DL QPSK

Low

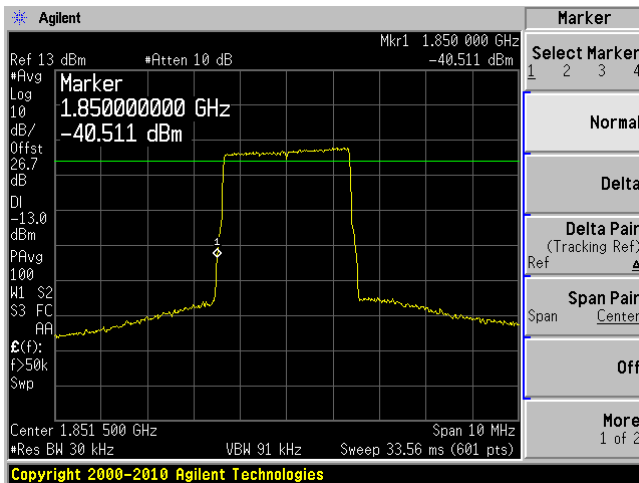


High

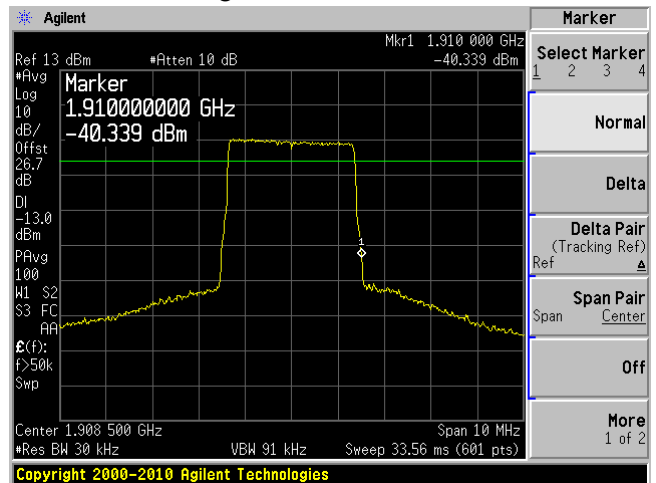


### LTE 3MHz UL QPSK

Low

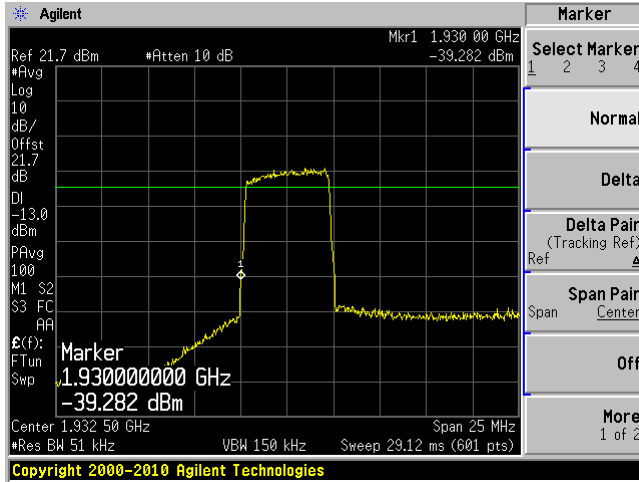


High

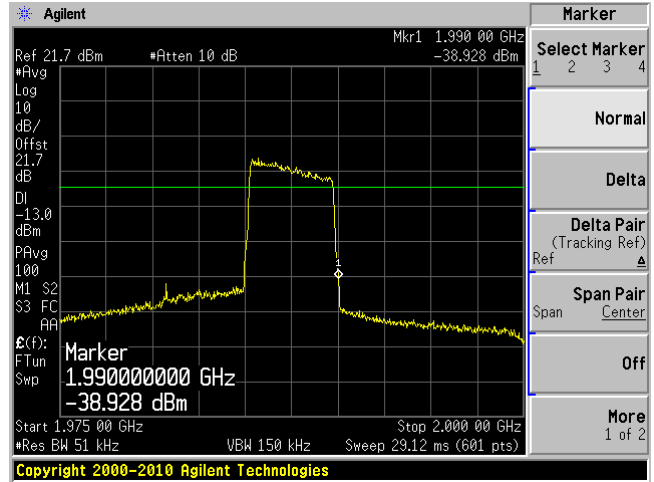


### LTE 5MHz DL QPSK

Low

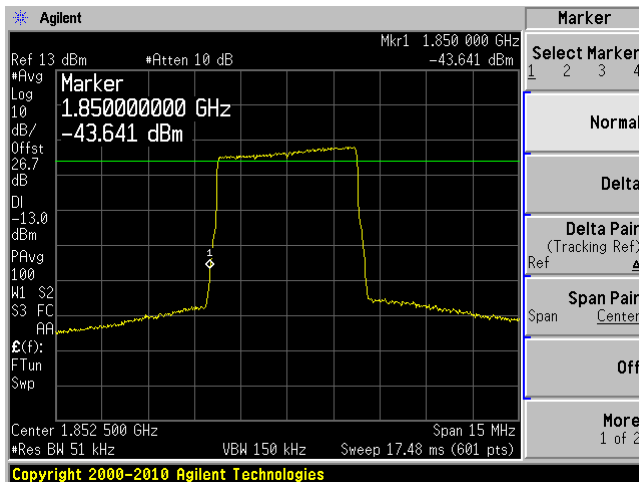


High

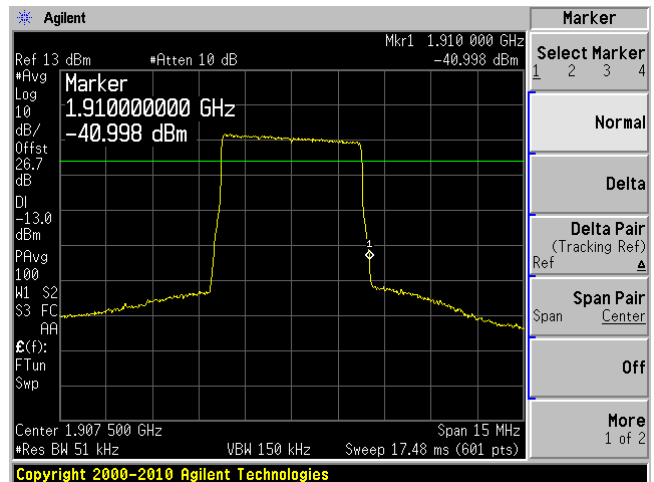


### LTE 5MHz UL QPSK

Low

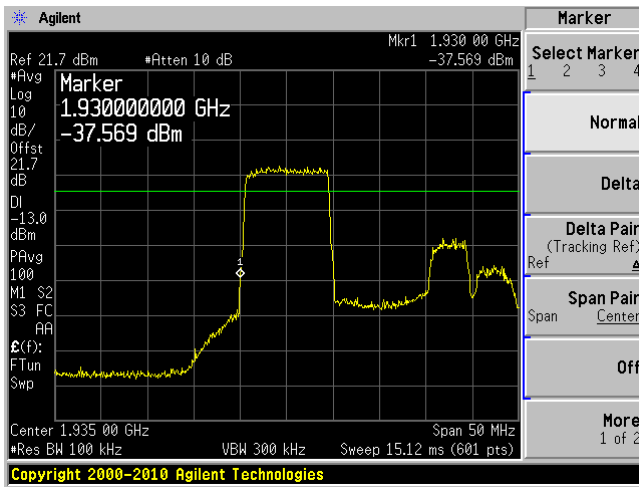


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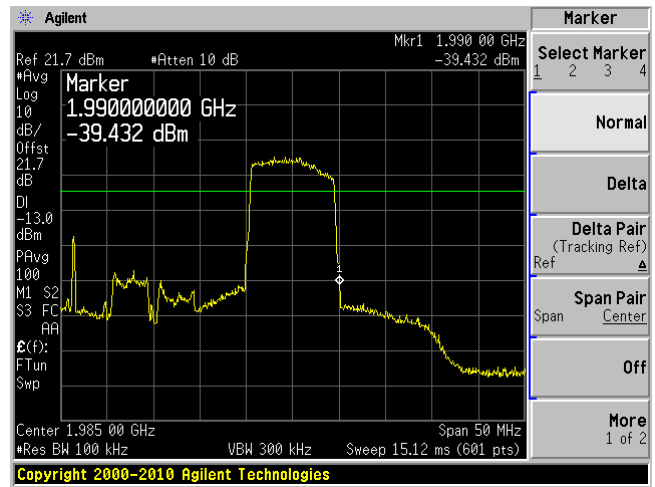


### LTE 10MHz DL QPSK

Low

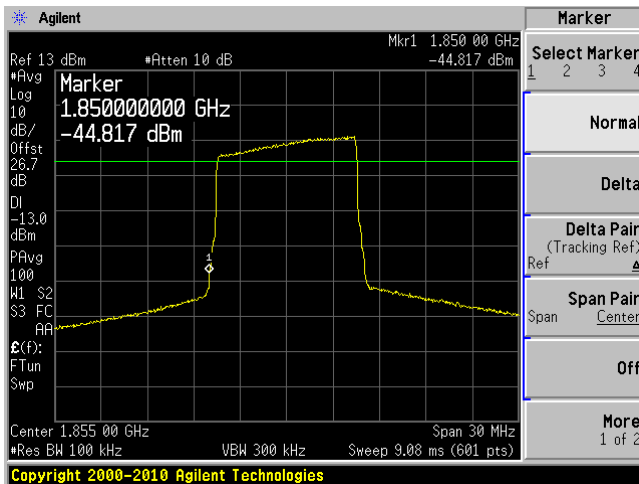


High

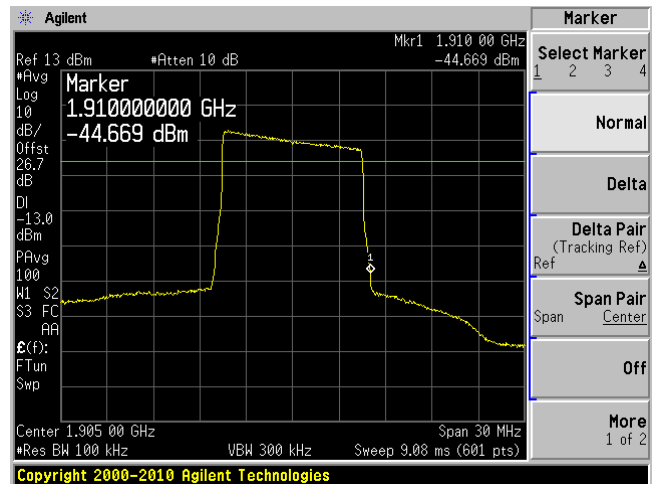


### LTE 10MHz UL QPSK

Low

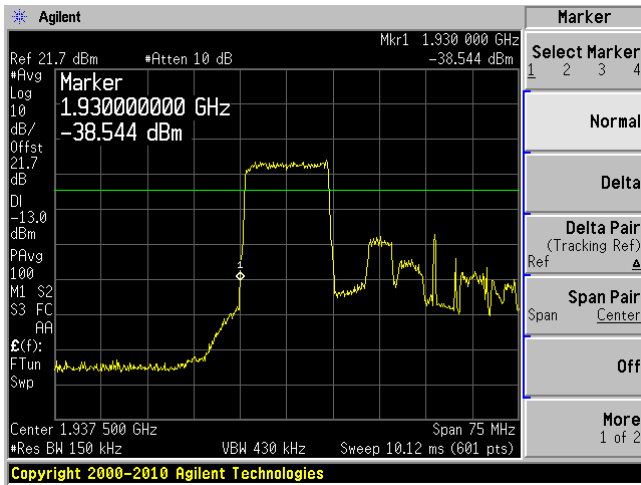


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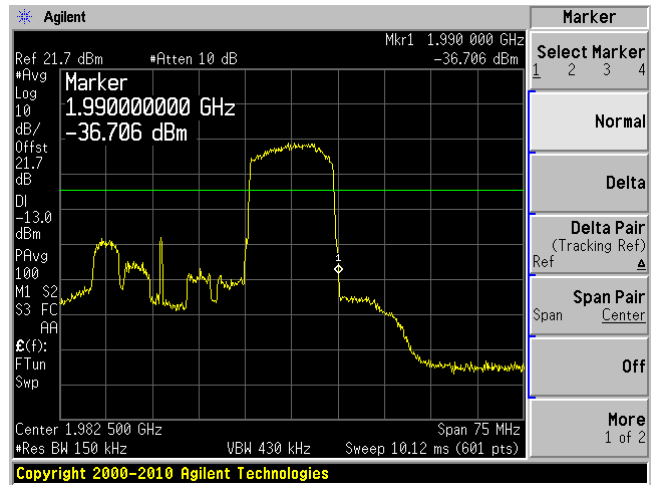


### LTE 15MHz DL QPSK

Low

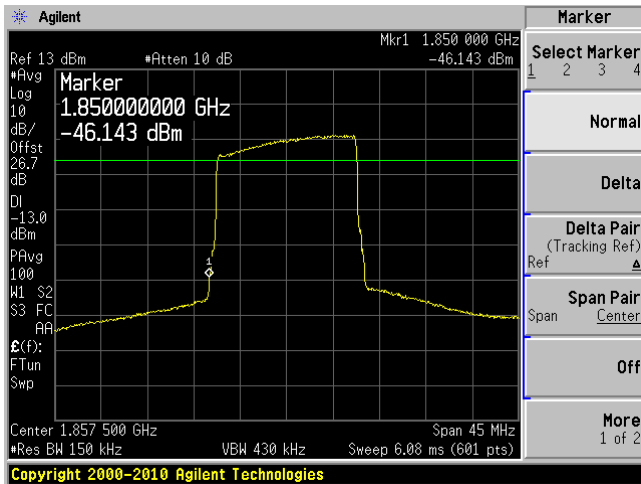


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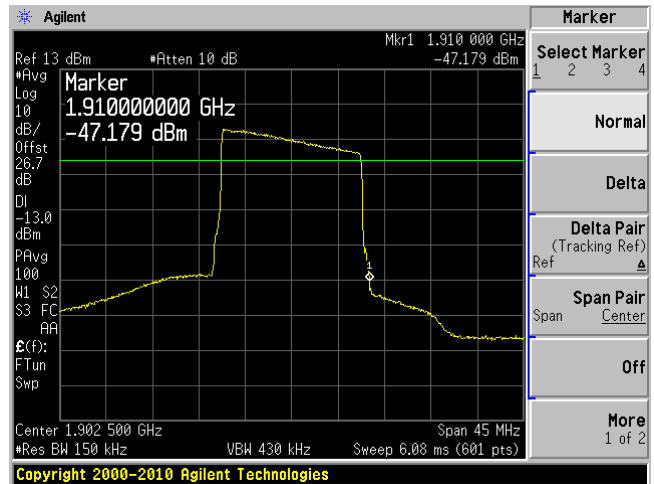


### LTE 15MHz UL QPSK

Low



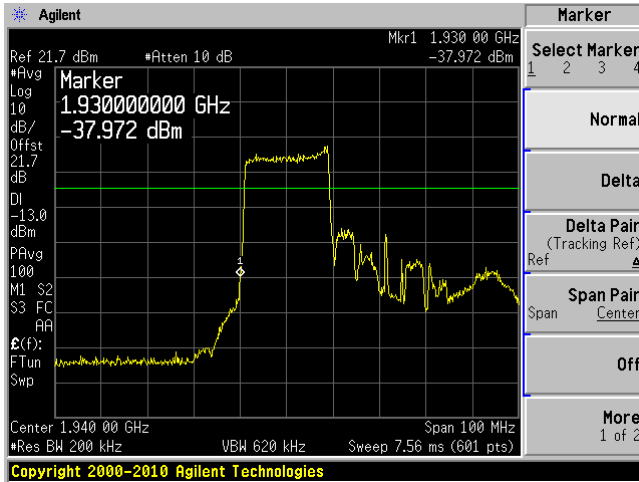
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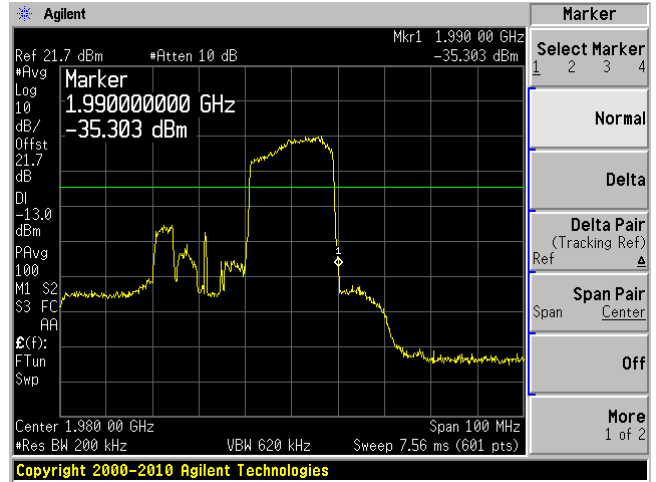


### LTE 20MHz DL QPSK

Low

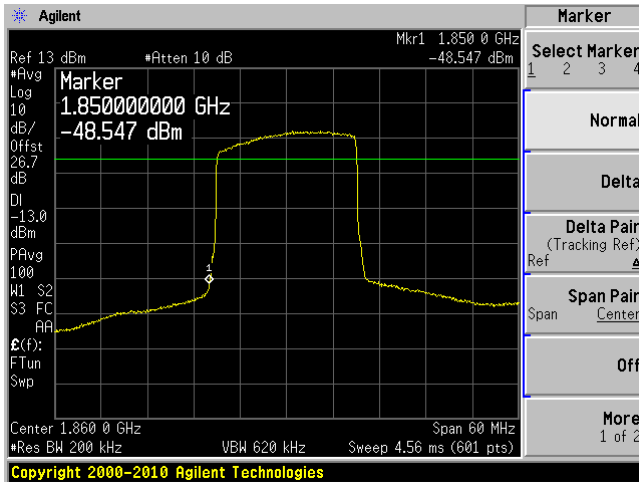


High

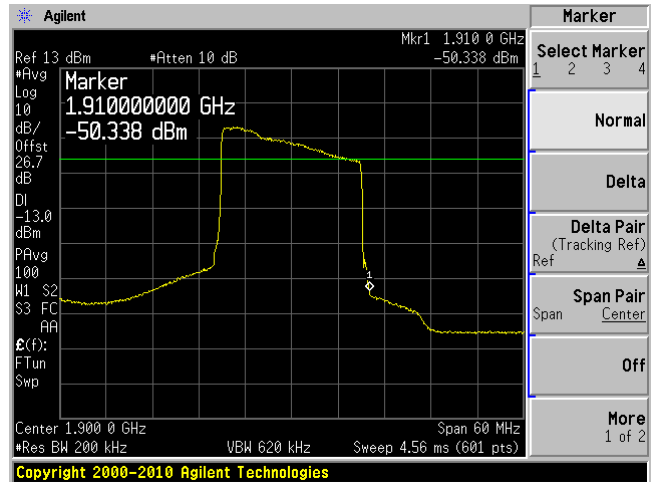


### LTE 20MHz UL QPSK

Low

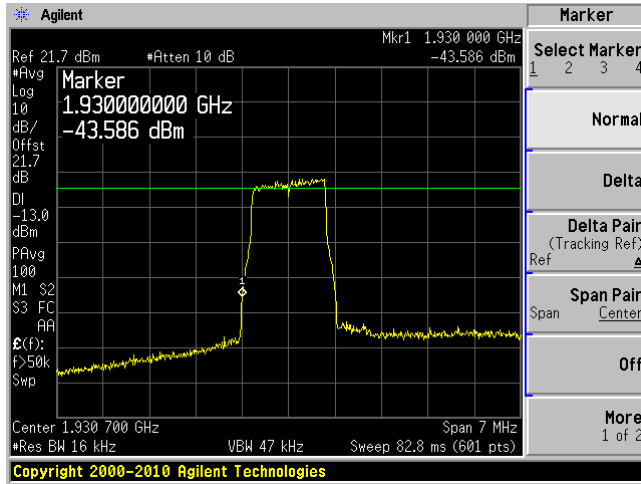


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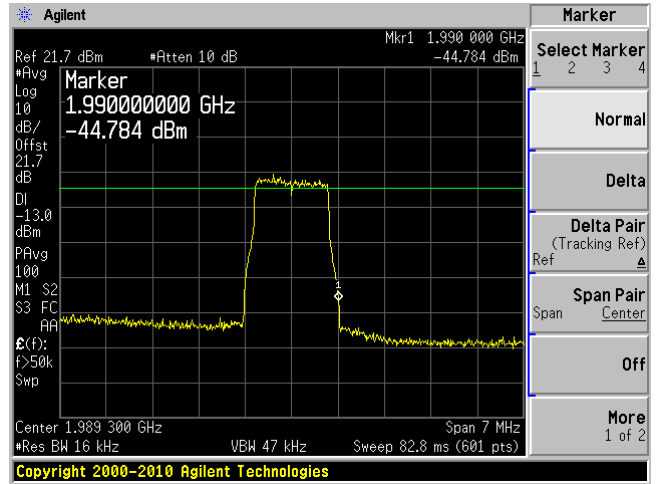


### LTE 1.4MHZ DL 16QAM

Low

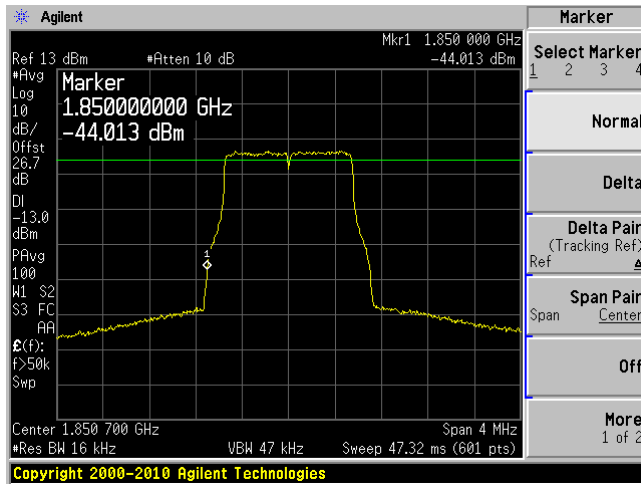


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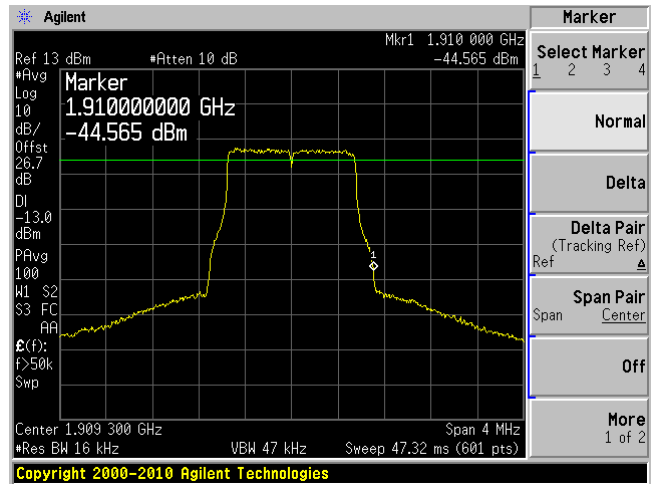


### LTE 1.4MHZ UL 16QAM

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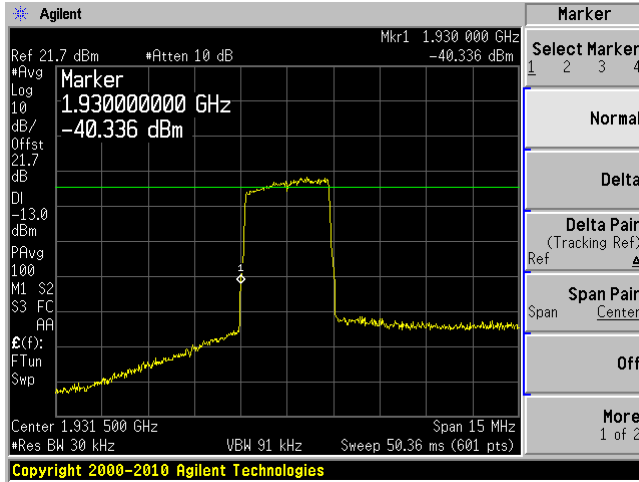


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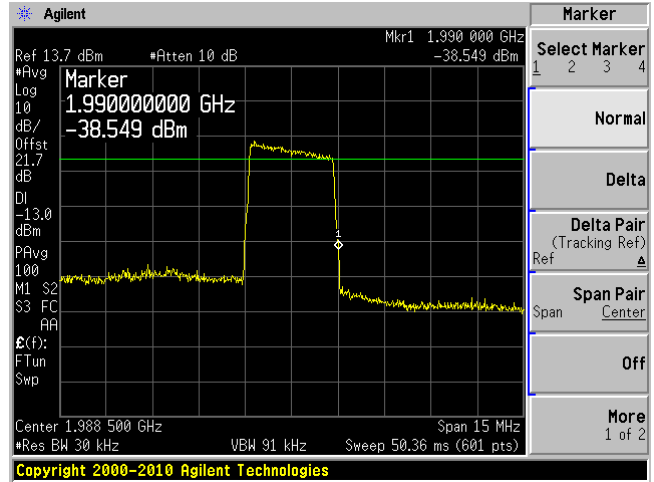


### LTE 3 MHz DL 16QAM

Low

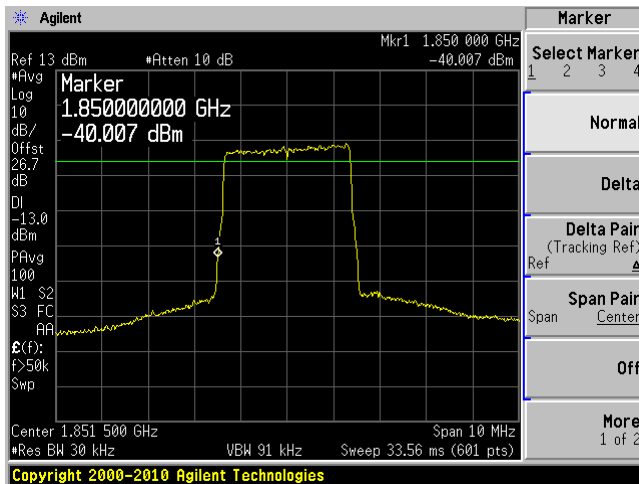


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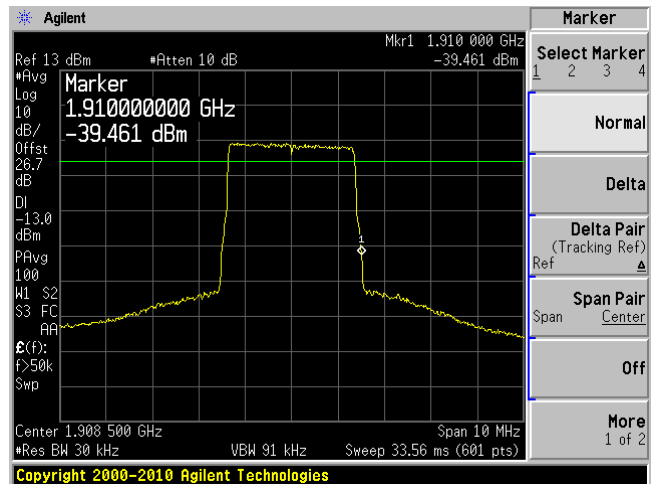


### LTE 3 MHz UL 16QAM

Low

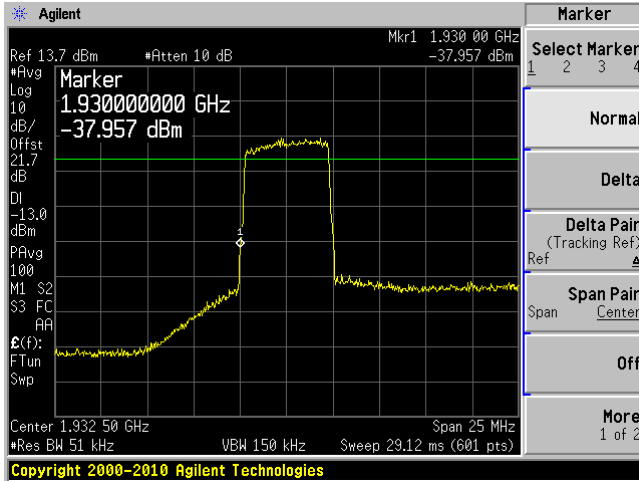


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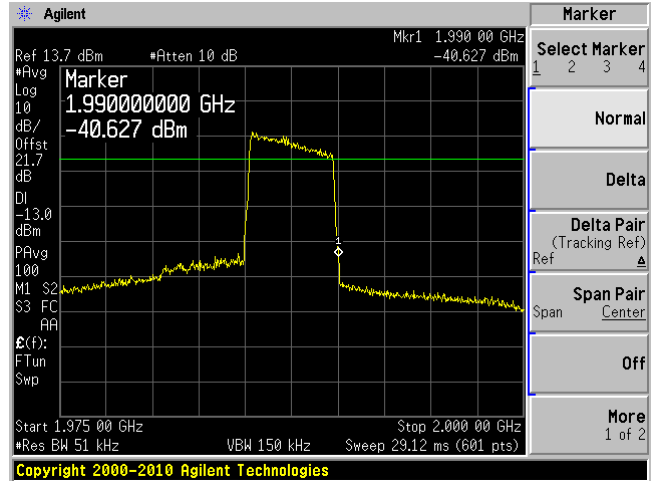


### LTE 5 MHz DL 16QAM

Low

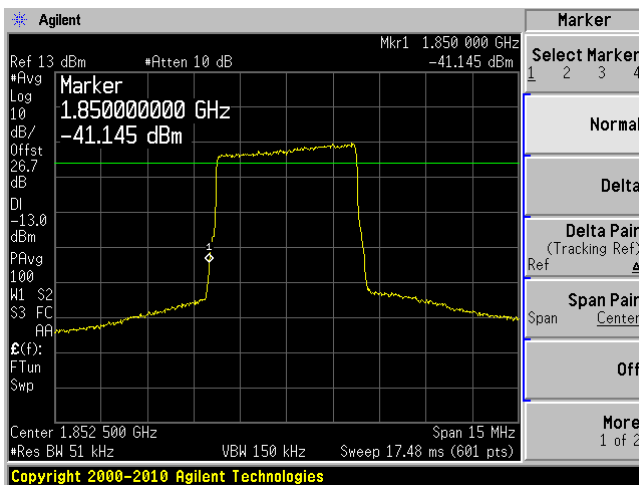


High

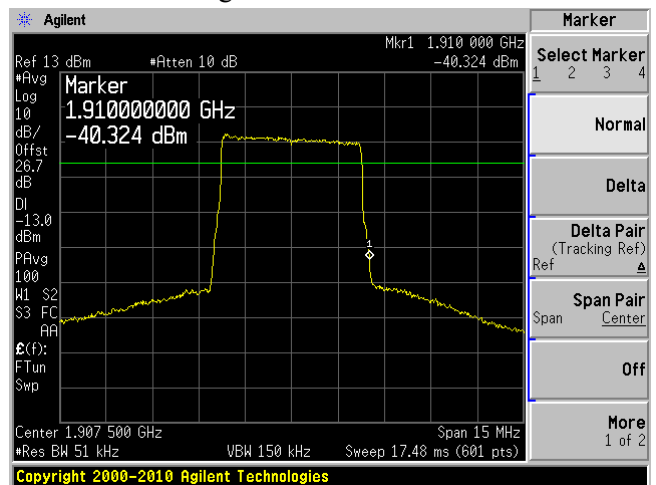


### LTE 5 MHz UL 16QAM

Low

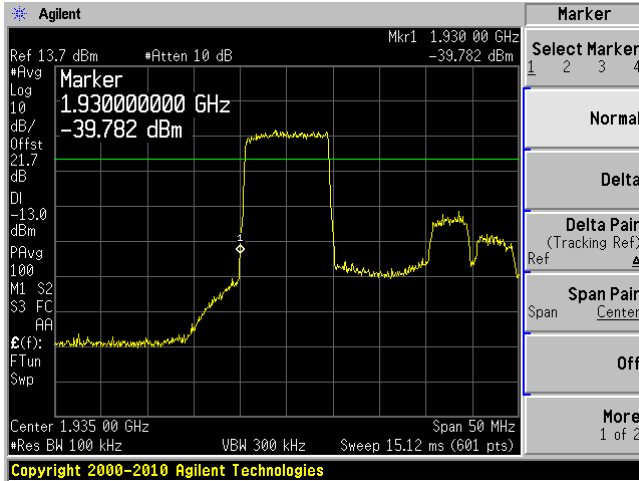


High

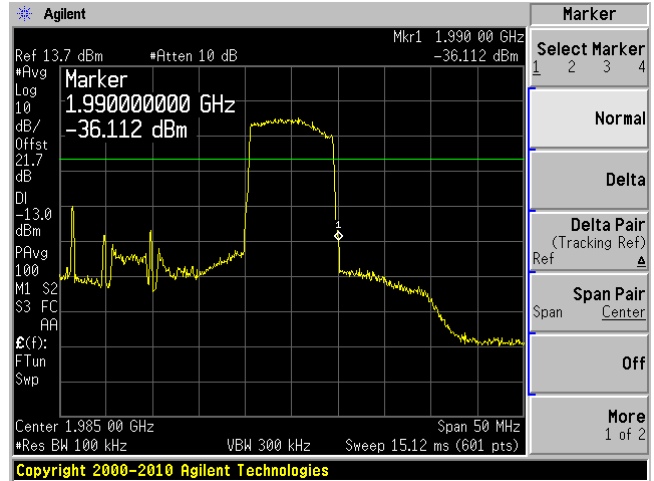


### LTE 10 MHz DL 16QAM

Low

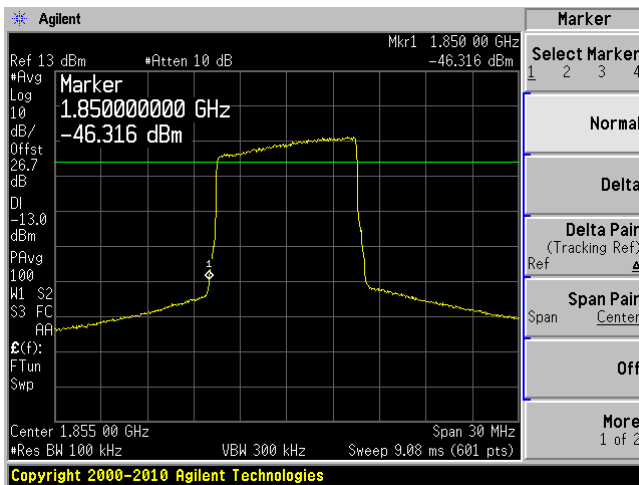


High

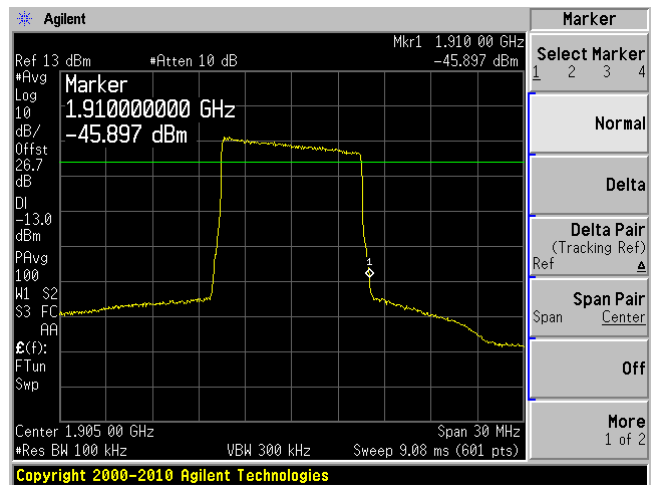


### LTE 10 MHz UL 16QAM

Low

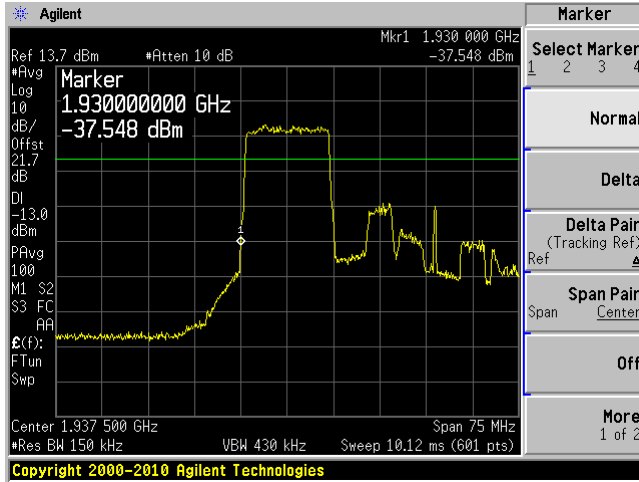


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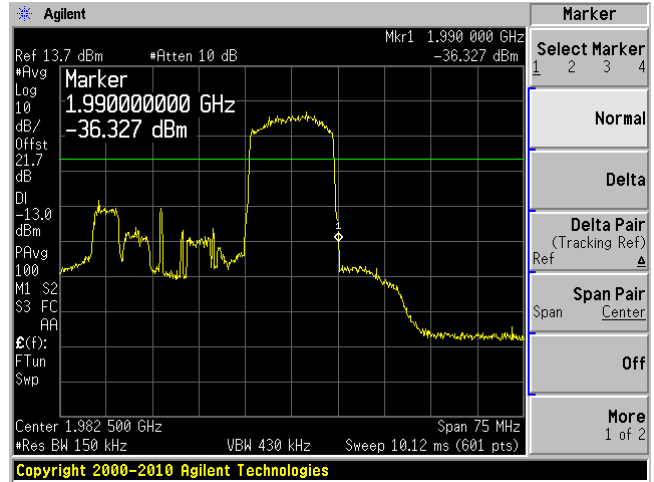


### LTE 15 MHz DL 16QAM

Low

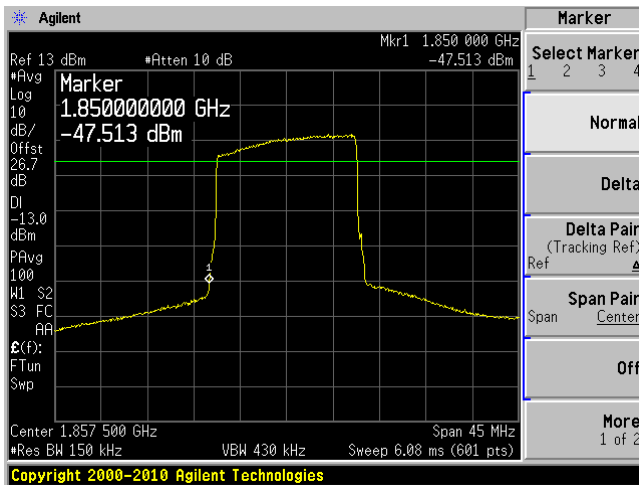


High

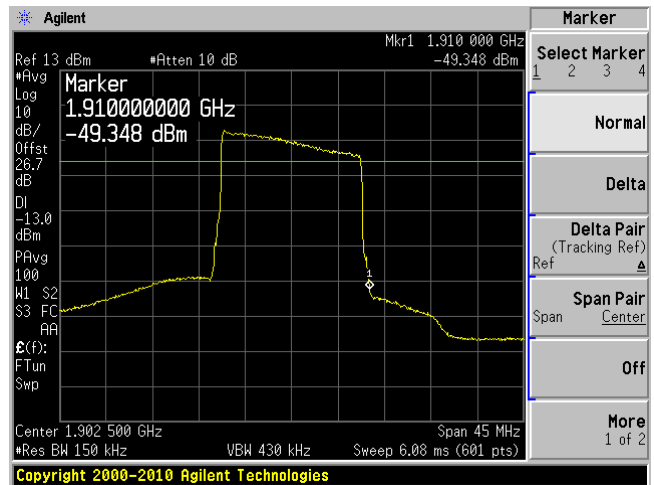


### LTE 15 MHz UL 16QAM

Low

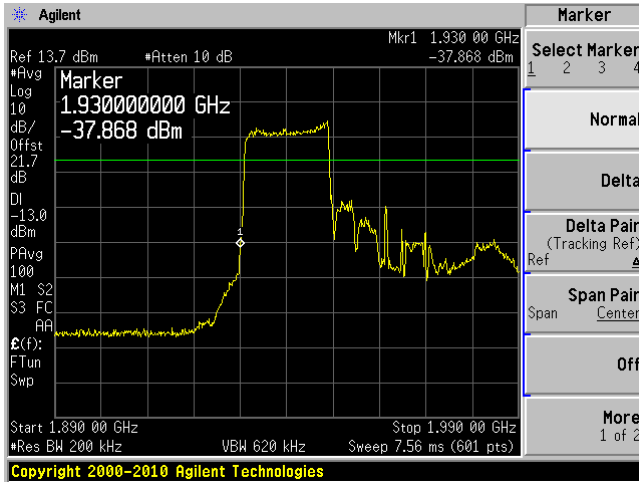


High

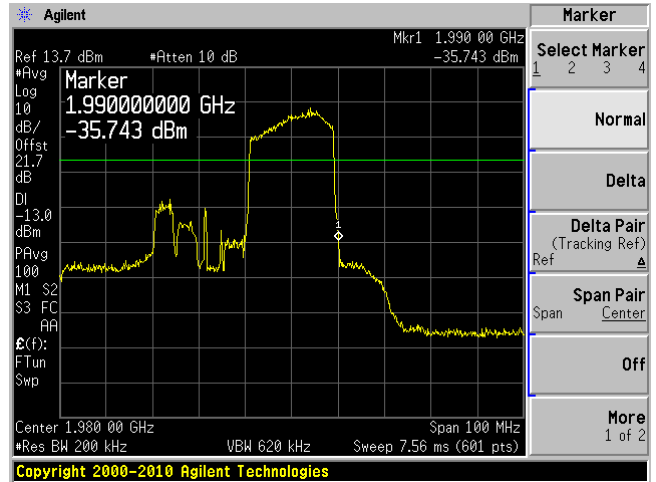


### LTE 20 MHz DL 16QAM

Low

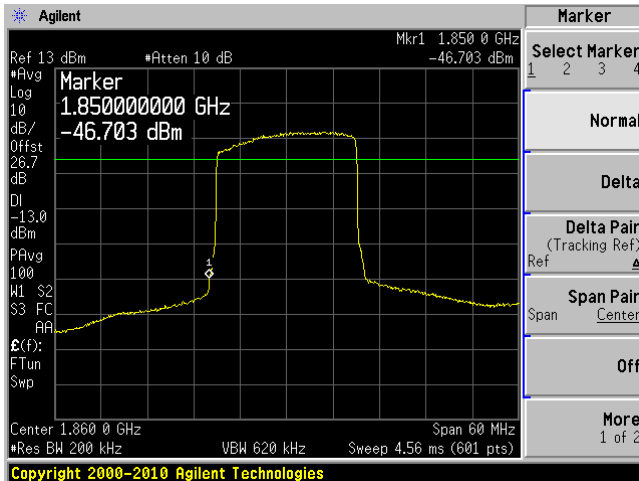


High

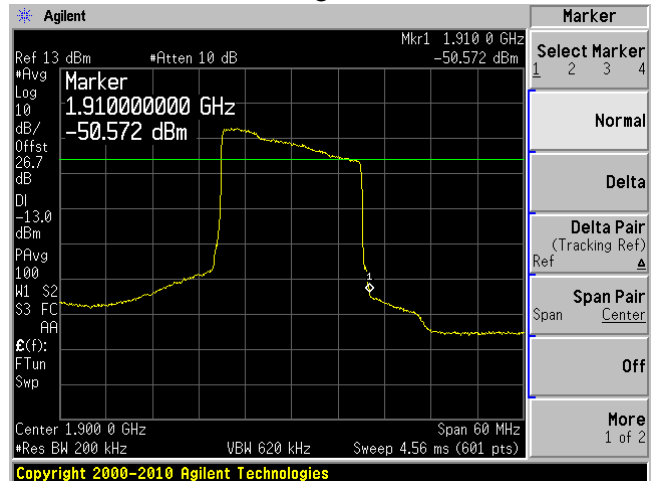


### LTE 20 MHz UL 16QAM

Low

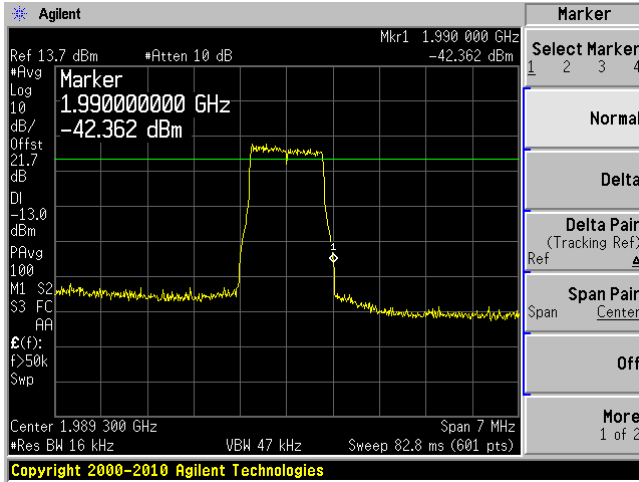


High

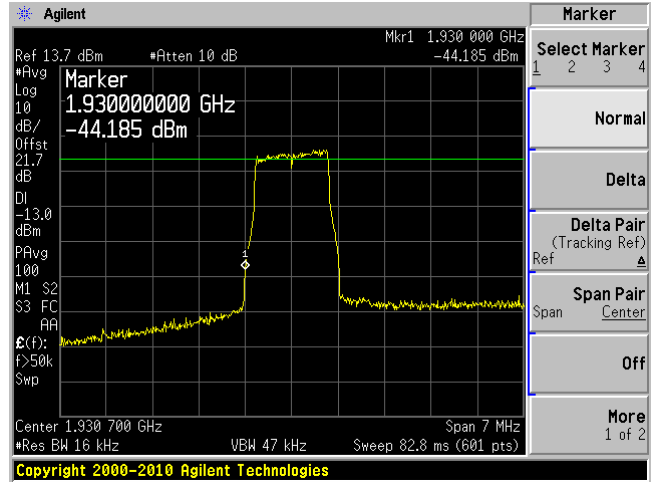


### LTE 1.4 MHz DL 64QAM

Low

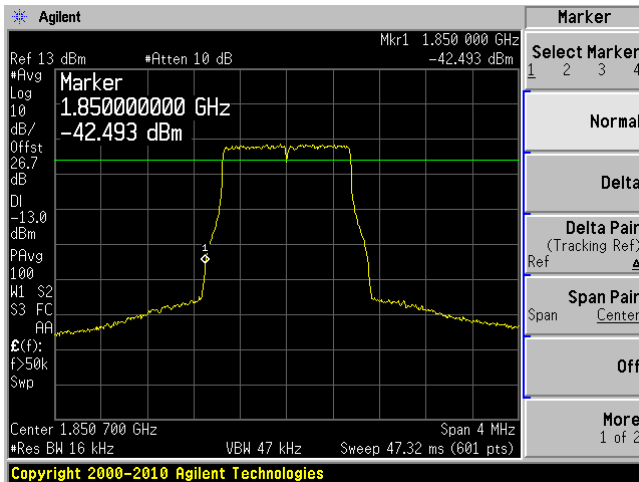


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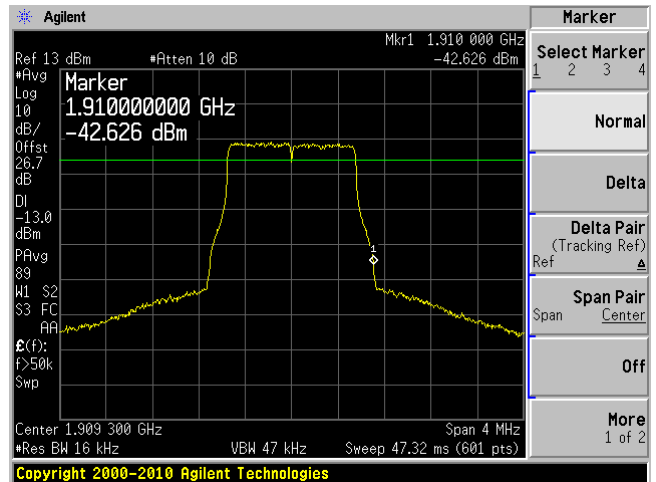


### LTE 1.4 MHz UL 64QAM

Low



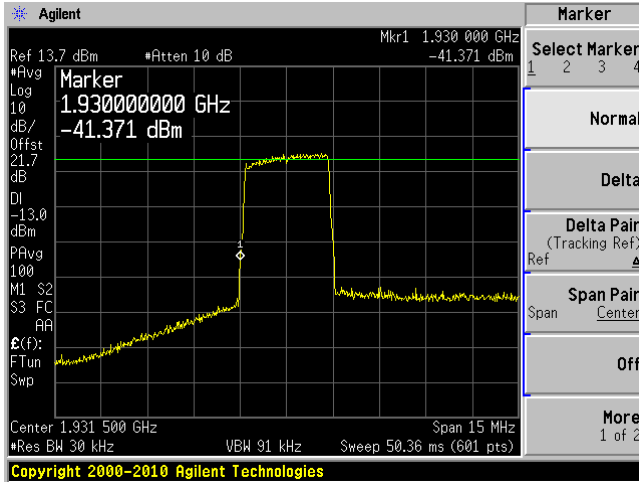
High



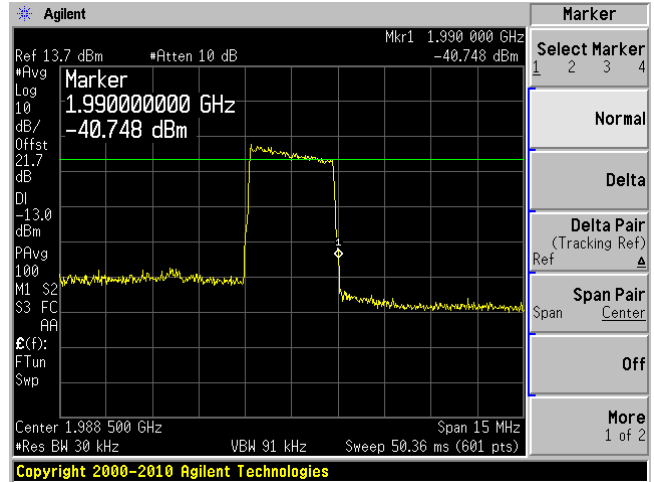


### LTE 3 MHz DL 64QAM

Low

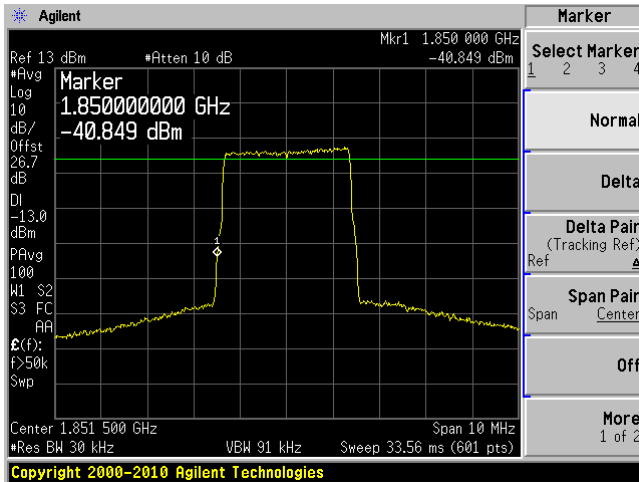


High

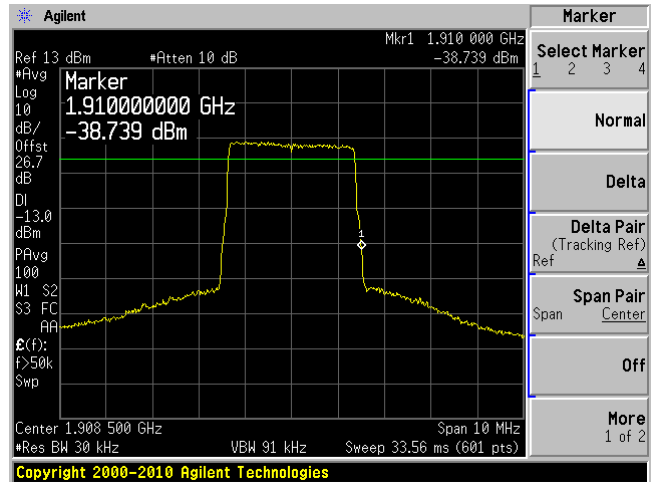


### LTE 3 MHz UL 64QAM

Low

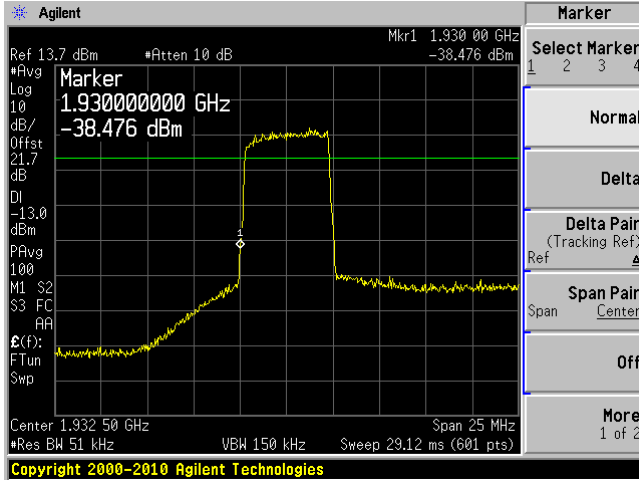


High

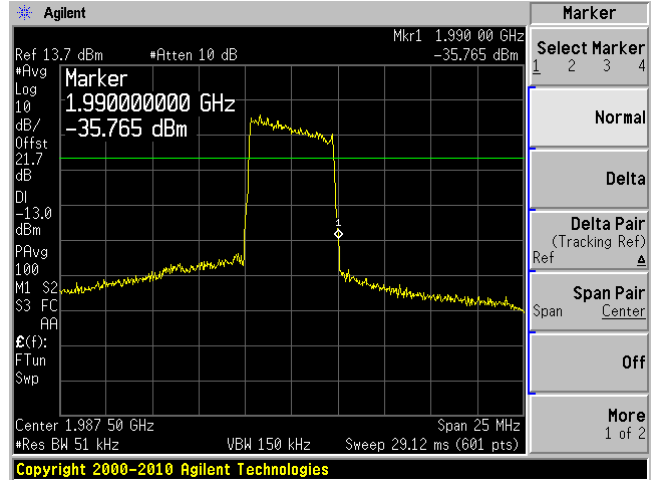


### LTE 5 MHz DL 64QAM

Low

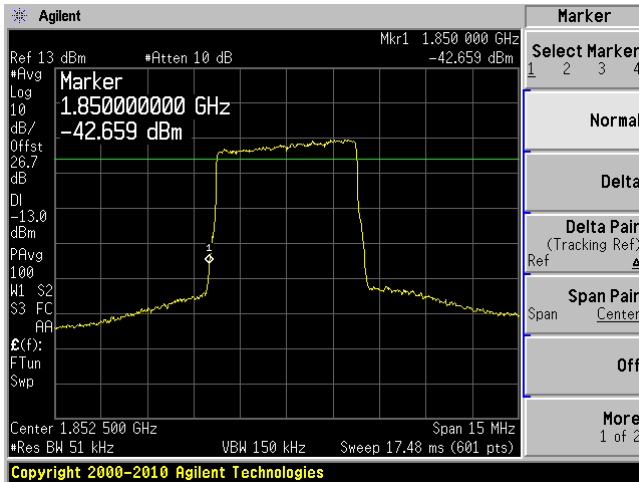


High

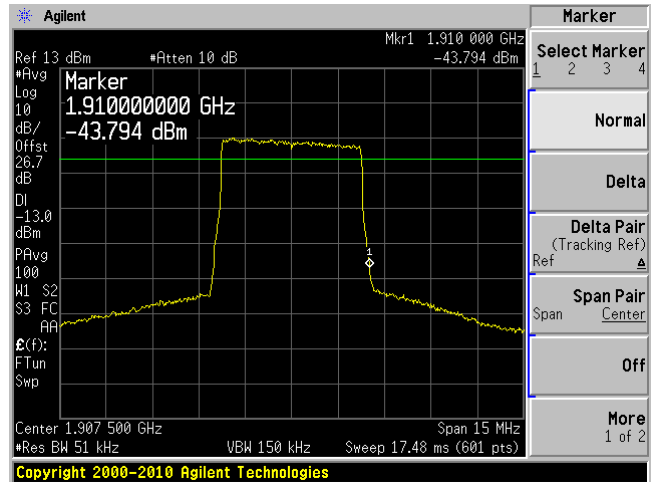


### LTE 5 MHz UL 64QAM

Low

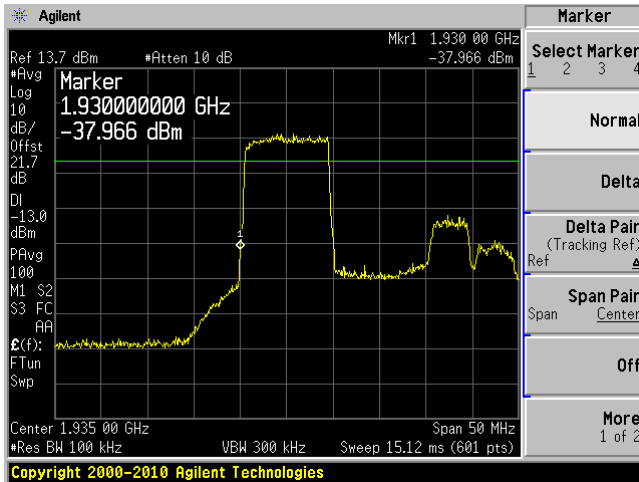


High



### LTE 10 MHz DL 64QAM

Low

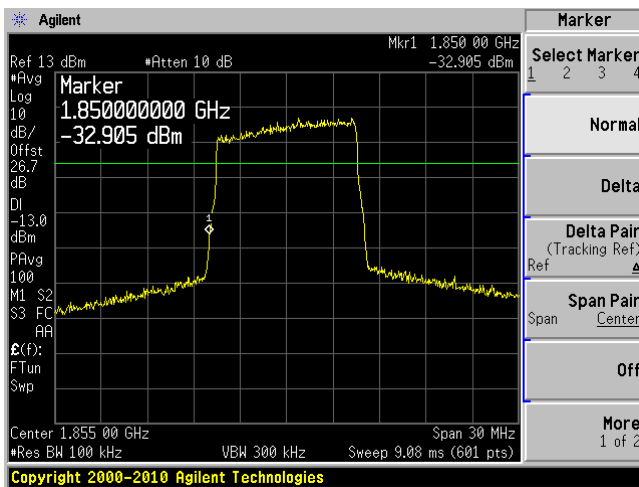


High

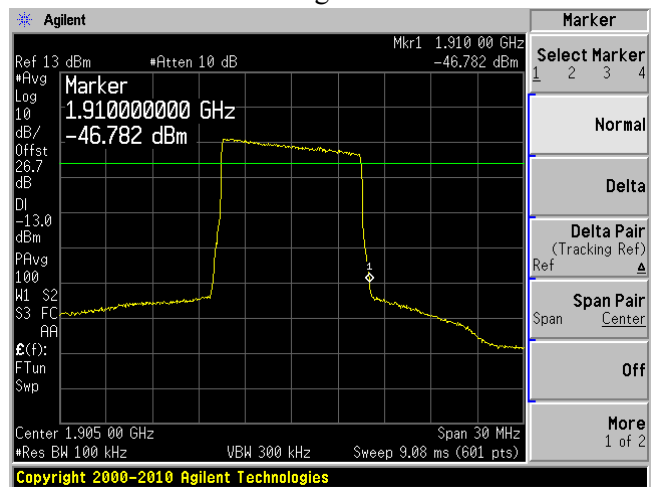


### LTE 10 MHz UL 64QAM

Low

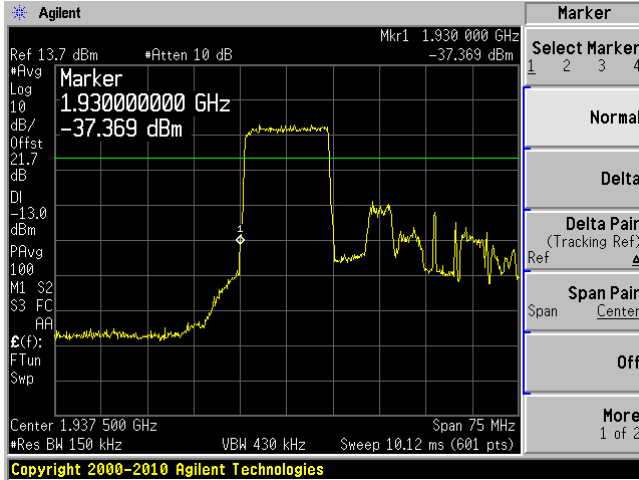


High

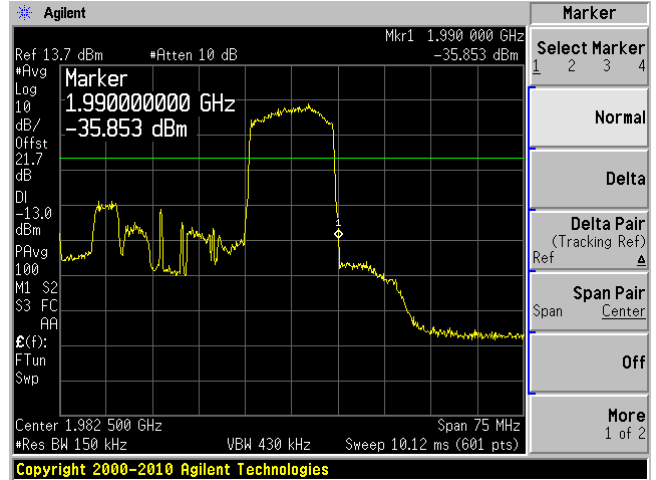


### LTE 15 MHz DL 64QAM

Low

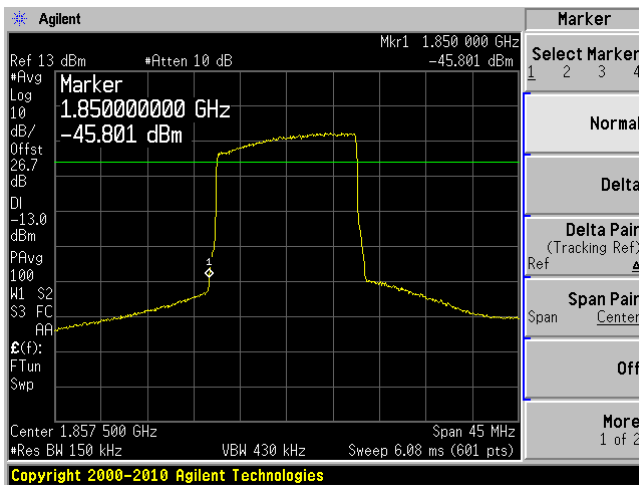


High

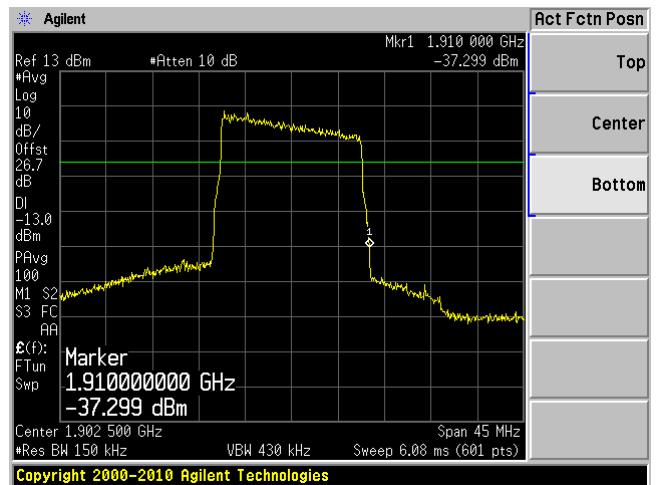


### LTE 15 MHz UL 64QAM

Low

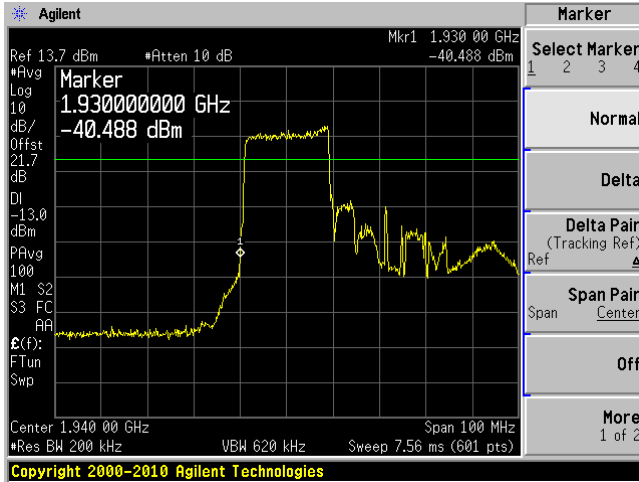


High

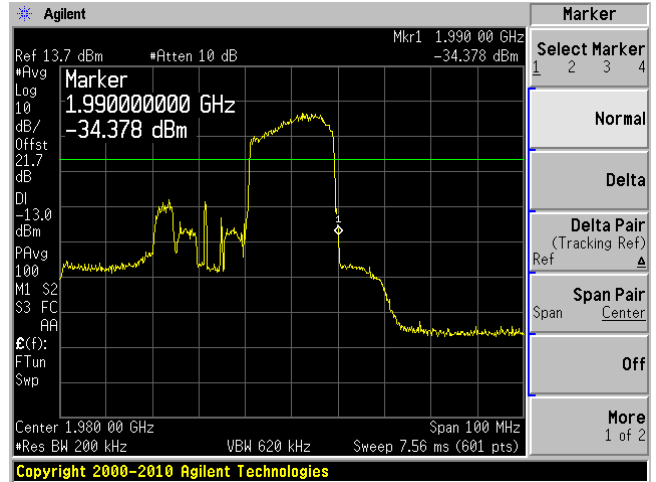


### LTE 20 MHz DL 64QAM

Low

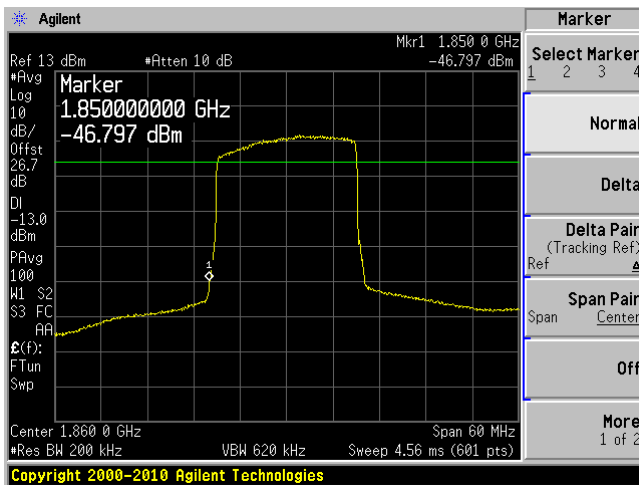


High

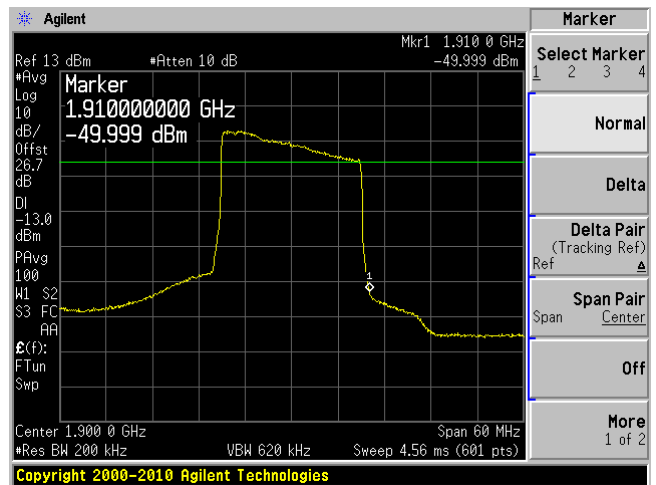


### LTE 20 MHz UL 64QAM

Low



High



## 9 FCC §20.21 – Out of Band Rejection

### 9.1 Applicable Standard

According to FCC Part 20.21, a frequency selective booster shall have  $-20$  dB at the band edge referenced to the gain in the center of the pass band of the booster, where band edge is the end of the licensee's allocated spectrum.

### 9.2 Test Procedure

KDB 935210 D05, Section 3.3.

The RF output of the transceiver was connected to a spectrum analyzer through appropriate attenuation. The span of the spectrum analyzer was set to be wide enough in order to capture the spectrum of entire operating band.

### 9.3 Test Equipment List and Details

Manufacturers	Descriptions	Models	Serial Numbers	Calibration Dates	Calibration Interval
Agilent	Spectrum Analyzer	E4440A	MY44303352	2014-10-16	1 year
Agilent	Signal Generator	E4438C	MY45091309	2014-07-15	1 year

*Statement of Traceability: BACL Corp. attests that all calibrations have been performed per the A2LA requirements, traceable to the NIST.*

### 9.4 Test Environmental Conditions

<b>Temperature:</b>	21-23° C
<b>Relative Humidity:</b>	42-48 %
<b>ATM Pressure:</b>	101.4-102 kPa

*The testing was performed by Ronak Patel on 2015-06-08 to 2015-06-29 in the RF Site.*

### 9.5 Test Results

Please refer to the following plot,



## 10 FCC §2.1091 - RF Exposure

### 10.1 Applicable Standards

According to §2.1091 (Mobile Devices) RF exposure is calculated.

Limits for General Population/Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm <sup>2</sup> )	Averaging Time (minute)
<b>Limits for General Population/Uncontrolled Exposure</b>				
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f <sup>2</sup> )	30
30-300	27.5	0.073	0.2	30
300-1500	/	/	f/1500	30
1500-100,000	/	/	1.0	30

Note: f = frequency in MHz

\* = Plane-wave equivalent power density

### 10.2 MPE Prediction

Predication of MPE limit at a given distance, Equation from OET Bulletin 65, Edition 97-01

$$S = PG/4\pi R^2$$

Where: S = power density

P = power input to antenna

G = power gain of the antenna in the direction of interest relative to an isotropic radiator

R = distance to the center of radiation of the antenna

### 10.3 Test Results

#### Downlink (Directional Antenna)

<u>Maximum peak output power at antenna input terminal (dBm):</u>	<u>16.04</u>
<u>Maximum peak output power at antenna input terminal (mW):</u>	<u>40.180</u>
<u>Prediction distance (cm):</u>	<u>30</u>
<u>Prediction frequency (MHz):</u>	<u>1960</u>
<u>Antenna Gain, typical (dBi):</u>	<u>10</u>
<u>Maximum Antenna Gain (numeric):</u>	<u>10</u>
<u>Power density at predication frequency and distance (mW/cm<sup>2</sup>):</u>	<u>0.036</u>
<u>MPE limit for uncontrolled exposure at predication frequency (mW/cm<sup>2</sup>):</u>	<u>1.0</u>



**Downlink (Omni Directional Antenna)**

<u>Maximum peak output power at antenna input terminal (dBm):</u>	<u>16.04</u>
<u>Maximum peak output power at antenna input terminal (mW):</u>	<u>40.180</u>
<u>Prediction distance (cm):</u>	<u>30</u>
<u>Prediction frequency (MHz):</u>	<u>1960</u>
<u>Antenna Gain, typical (dBi):</u>	<u>5</u>
<u>Maximum Antenna Gain (numeric):</u>	<u>3.1622</u>
<u>Power density at predication frequency and distance (mW/cm<sup>2</sup>):</u>	<u>0.0113</u>
<u>MPE limit for uncontrolled exposure at predication frequency (mW/cm<sup>2</sup>):</u>	<u>1.0</u>

**Uplink**

<u>Maximum peak output power at antenna input terminal (dBm):</u>	<u>15.86</u>
<u>Maximum peak output power at antenna input terminal (mW):</u>	<u>38.548</u>
<u>Prediction distance (cm):</u>	<u>30</u>
<u>Prediction frequency (MHz):</u>	<u>1852.5</u>
<u>Antenna Gain, typical (dBi):</u>	<u>10</u>
<u>Maximum Antenna Gain (numeric):</u>	<u>10</u>
<u>Power density at predication frequency and distance (mW/cm<sup>2</sup>):</u>	<u>0.0341</u>
<u>MPE limit for uncontrolled exposure at predication frequency (mW/cm<sup>2</sup>):</u>	<u>1.0</u>

**Results**

For uplink and downlink, the highest power density levels at **30 cm** are below the MPE uncontrolled exposure limit.