

Appendix D: Conducted Spurious Emission

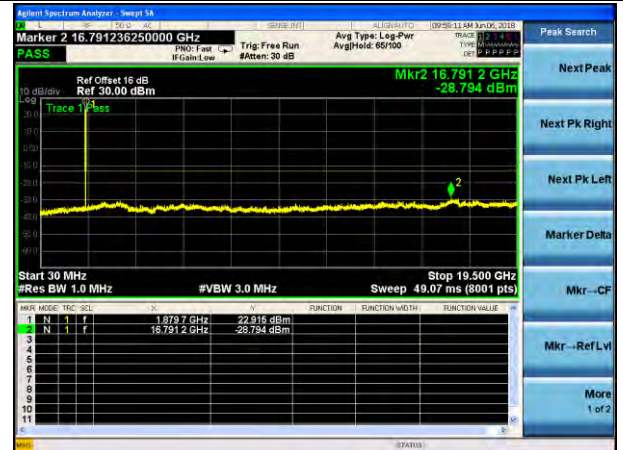
Test Graphs

Test Mode: LTE Band 2

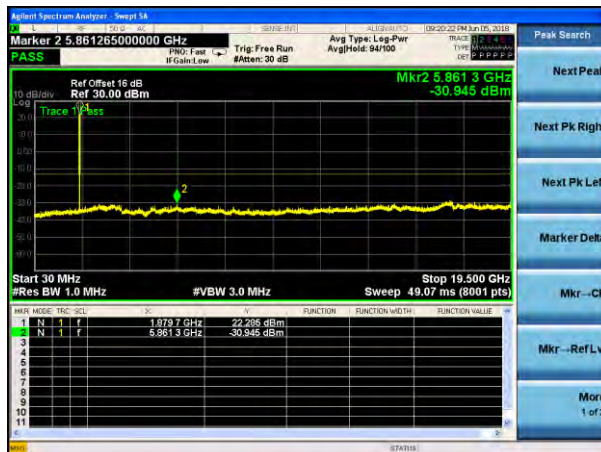
Channel Bandwidth: 1.4MHz (QPSK)

Test Mode: LTE Band 2

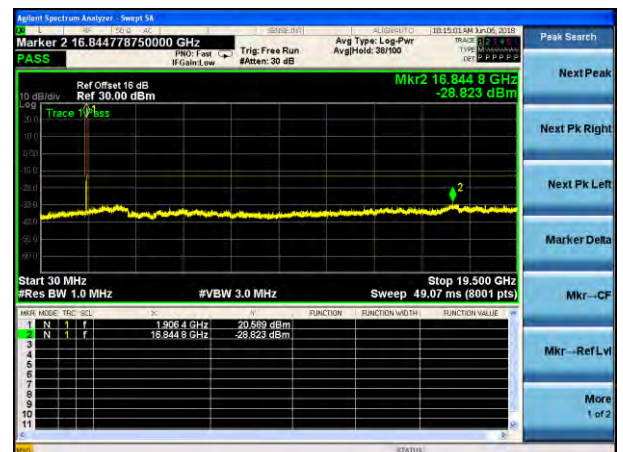
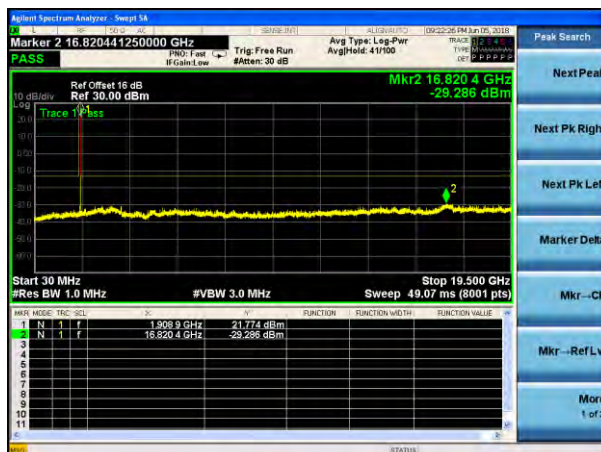
Channel Bandwidth: 1.4MHz (16QAM)



Lowest channel



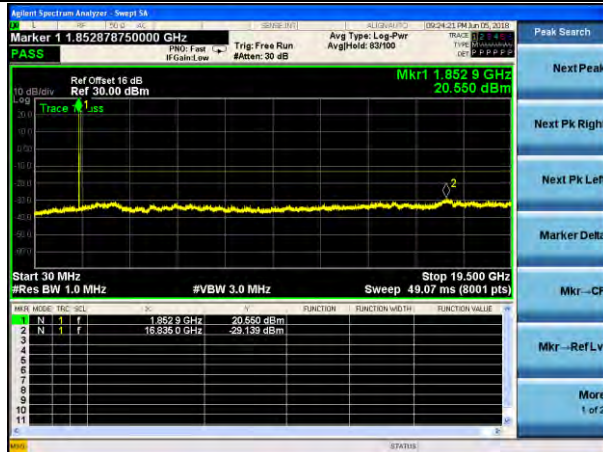
Middle channel



Highest channel

Test Mode: LTE Band 2
Channel Bandwidth: 3MHz (QPSK)

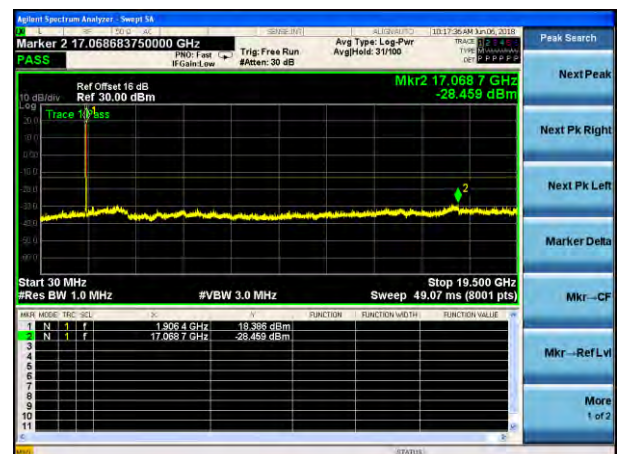
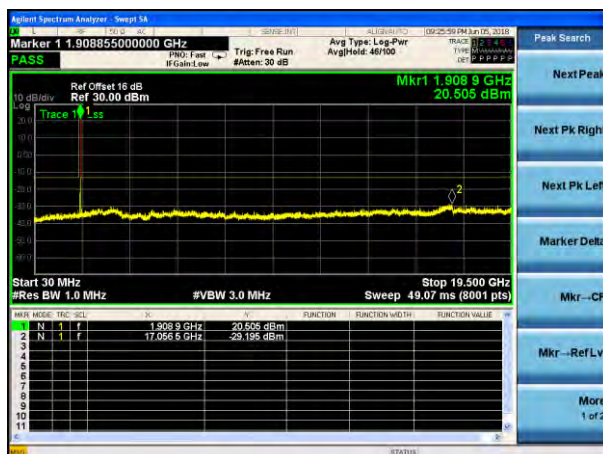
Test Mode: LTE Band 2
Channel Bandwidth: 3MHz (16QAM)



Lowest channel



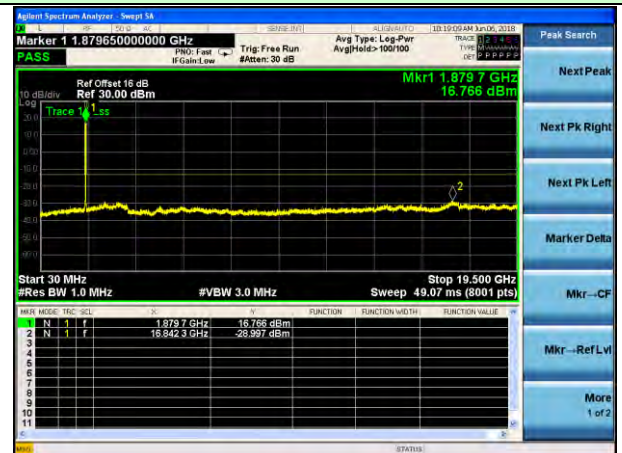
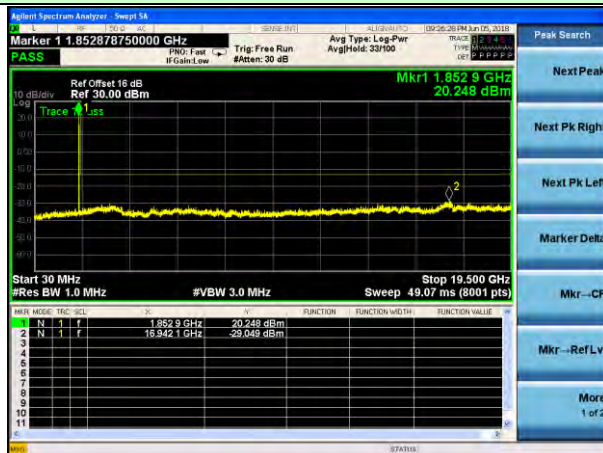
Middle channel



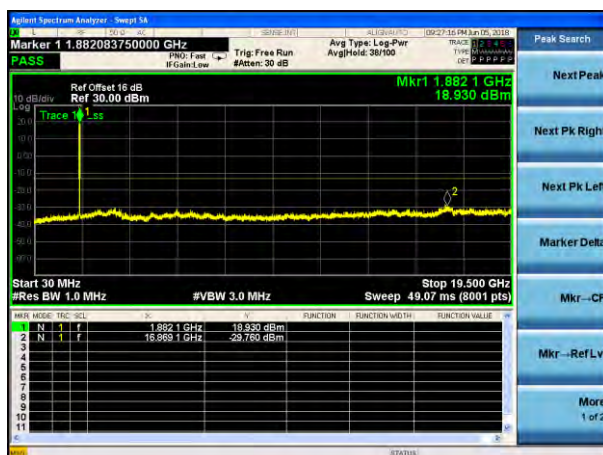
Highest channel

Test Mode: LTE Band 2
Channel Bandwidth: 5MHz(QPSK)

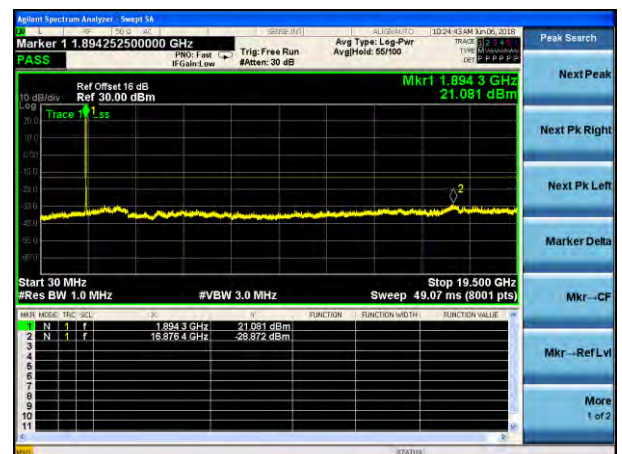
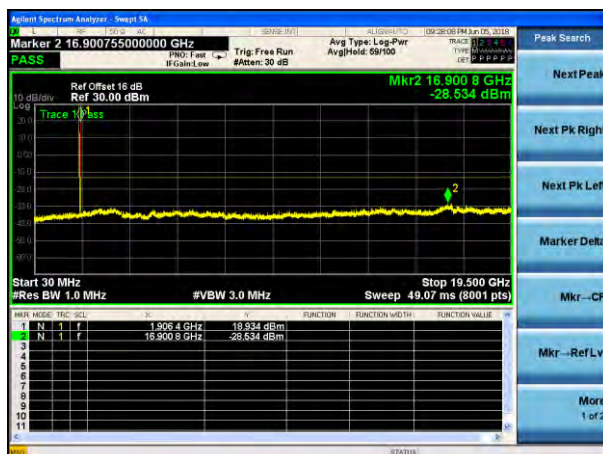
Test Mode: LTE Band 2
Channel Bandwidth: 5MHz(16QAM)



Lowest channel



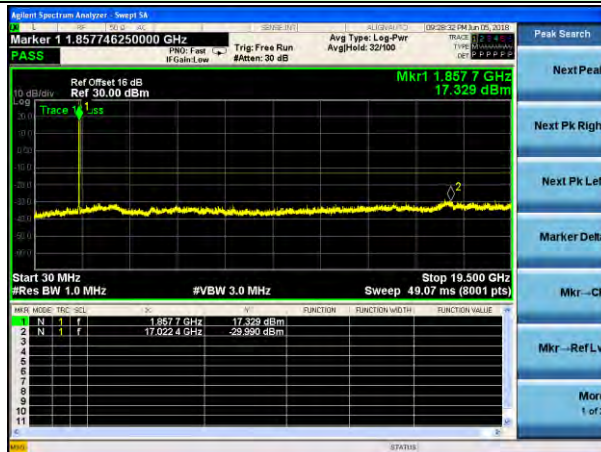
Middle channel



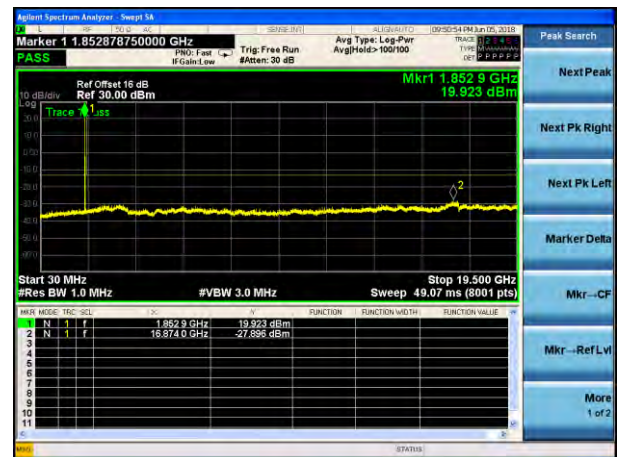
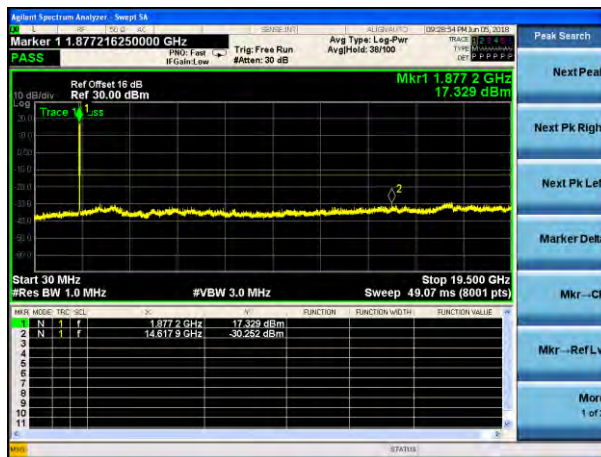
Highest channel

Test Mode: LTE Band 2
Channel Bandwidth: 10MHz(QPSK)

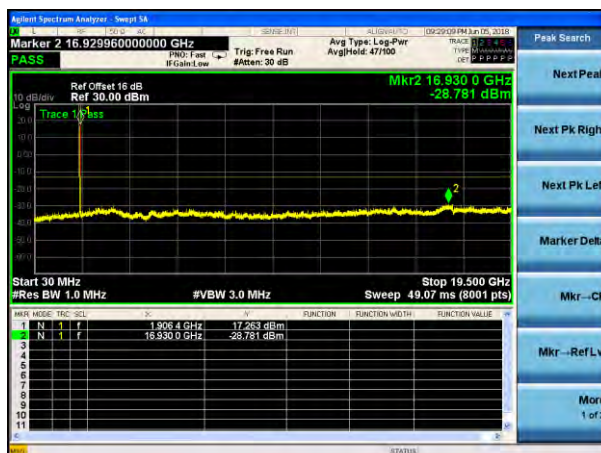
Test Mode: LTE Band 2
Channel Bandwidth: 10MHz(16QAM)



Lowest channel



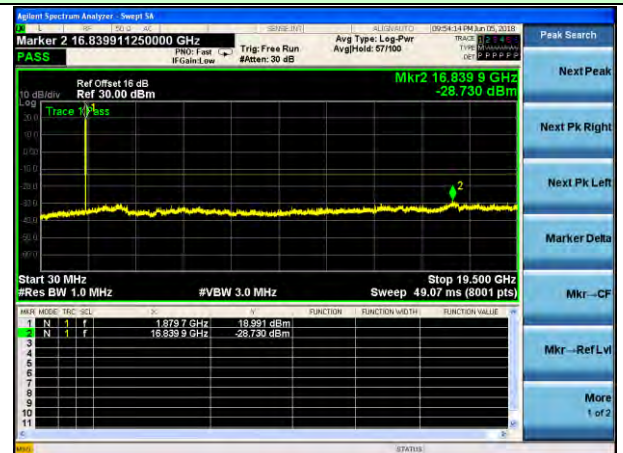
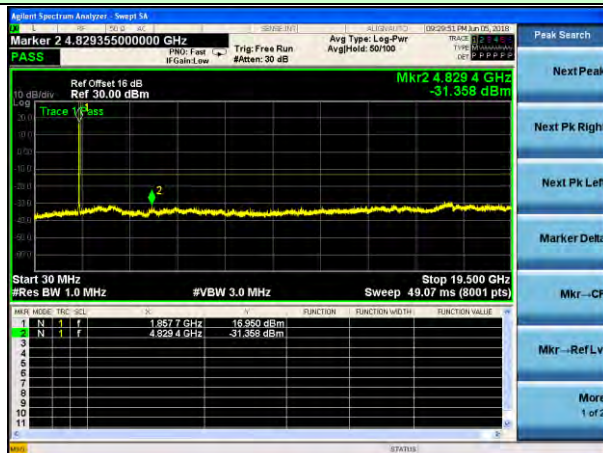
Middle channel



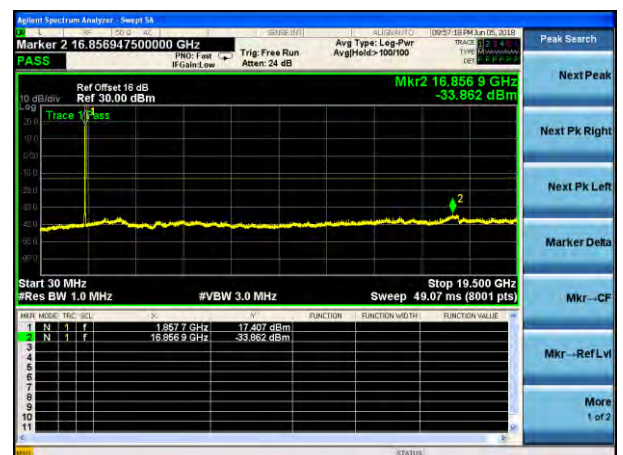
Highest channel

Test Mode: LTE Band 2
Channel Bandwidth: 15MHz(QPSK)

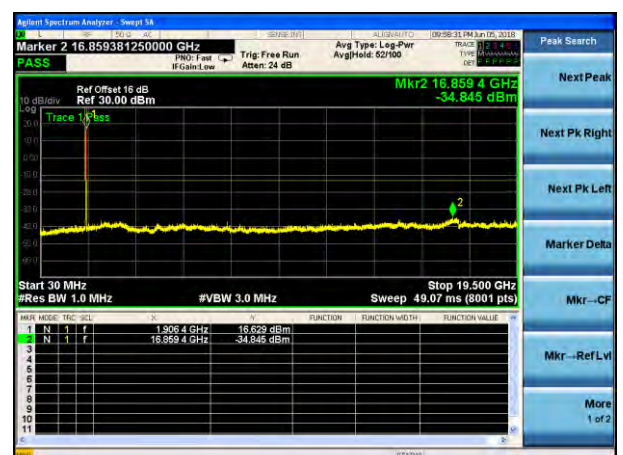
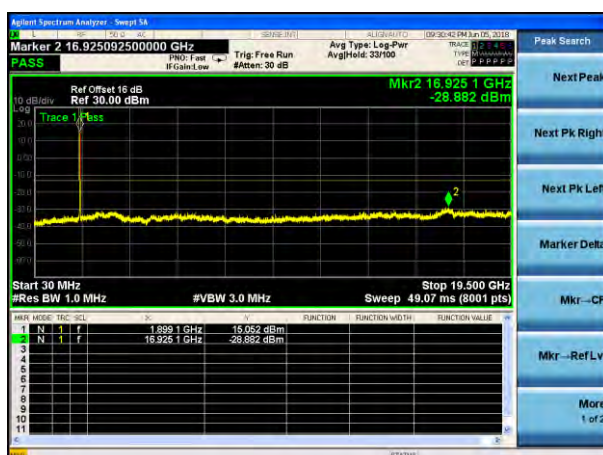
Test Mode: LTE Band 2
Channel Bandwidth: 15MHz(16QAM)



Lowest channel



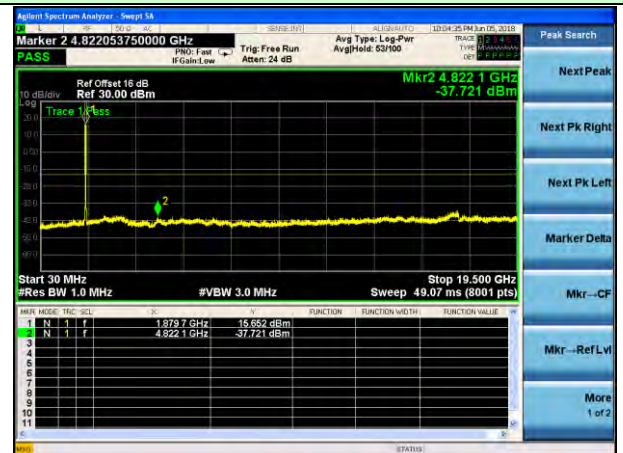
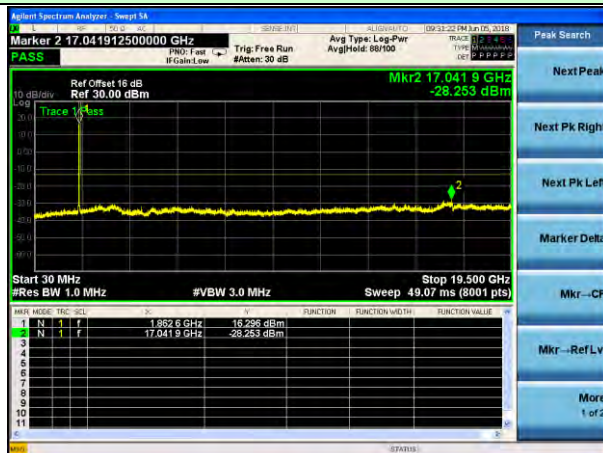
Middle channel



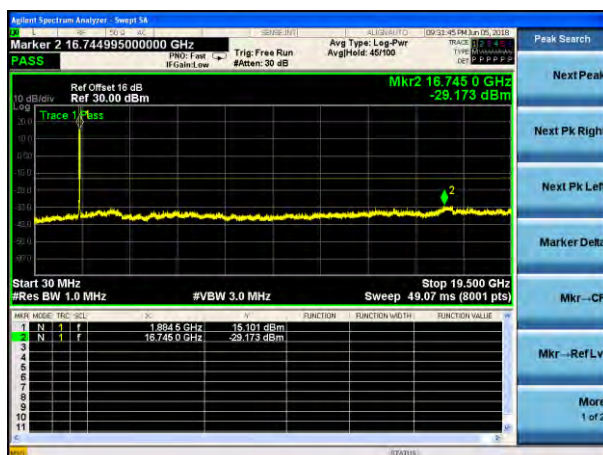
Highest channel

Test Mode: LTE Band 2
Channel Bandwidth: 20MHz(QPSK)

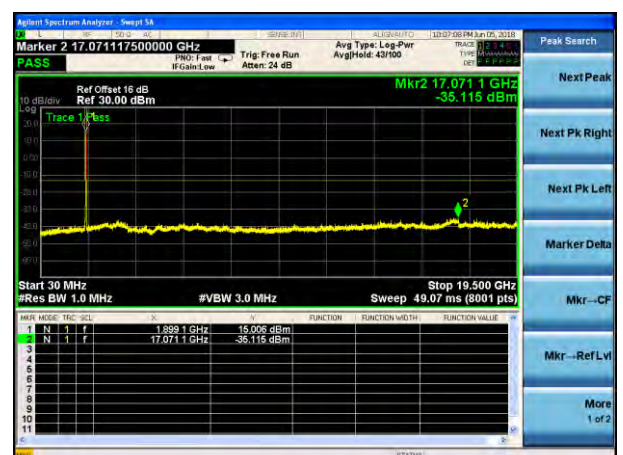
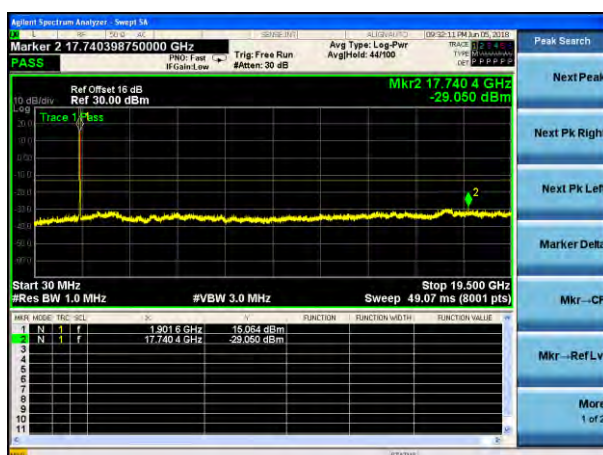
Test Mode: LTE Band 2
Channel Bandwidth: 20MHz(16QAM)



Lowest channel



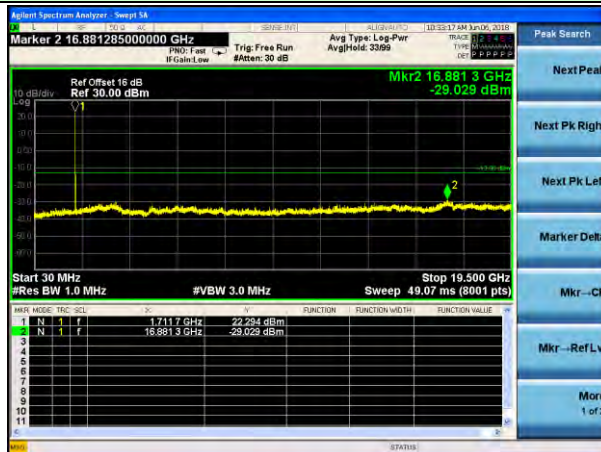
Middle channel



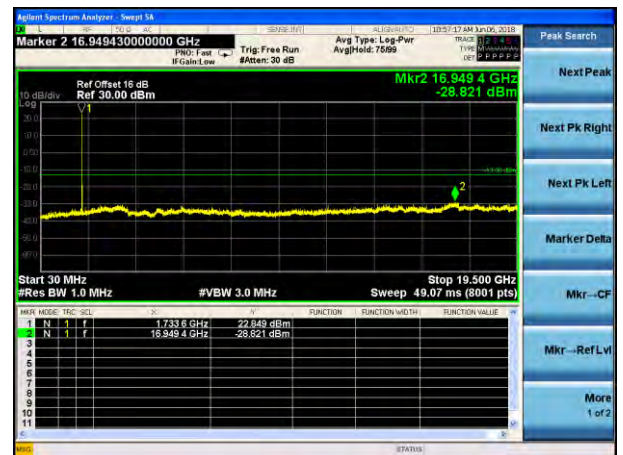
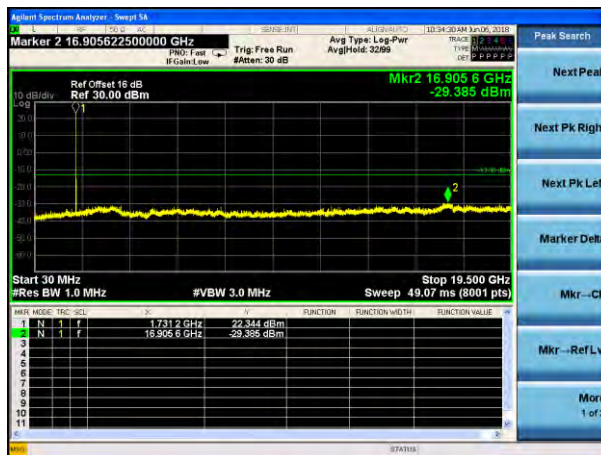
Highest channel

Test Mode: LTE Band 4
Channel Bandwidth: 1.4MHz (QPSK)

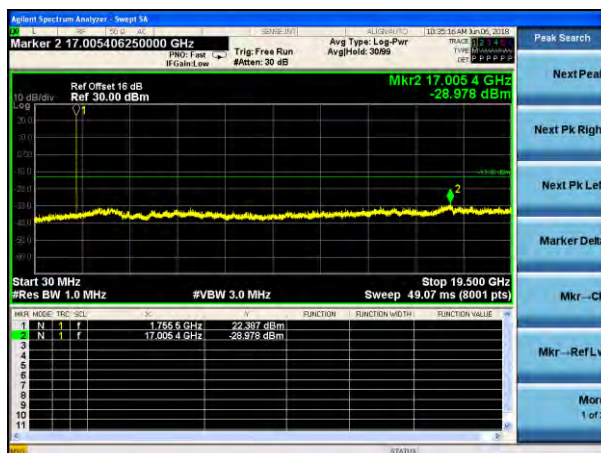
Test Mode: LTE Band 4
Channel Bandwidth: 1.4MHz (16QAM)



Lowest channel



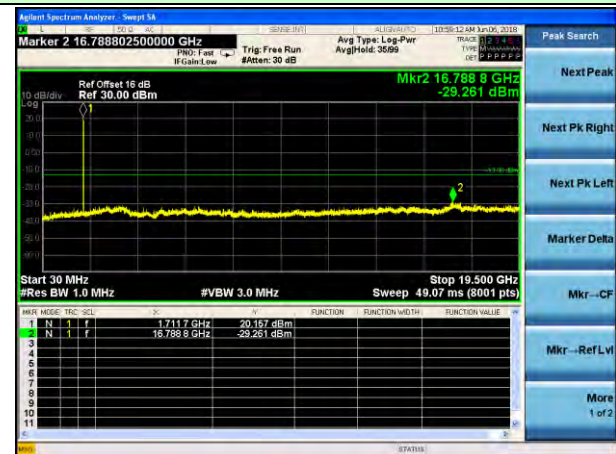
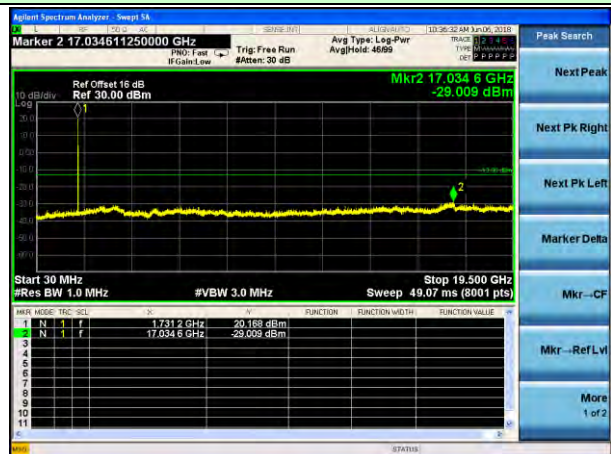
Middle channel



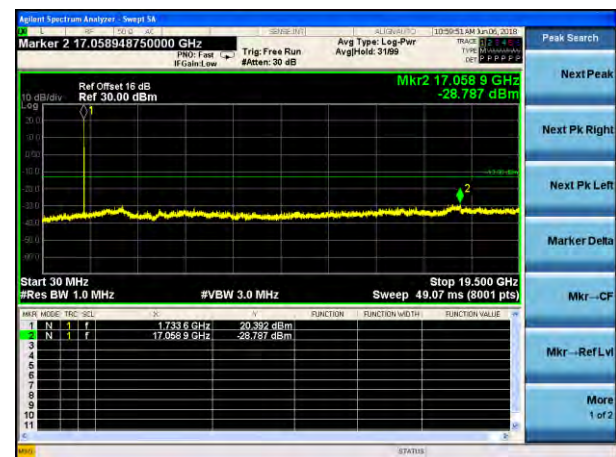
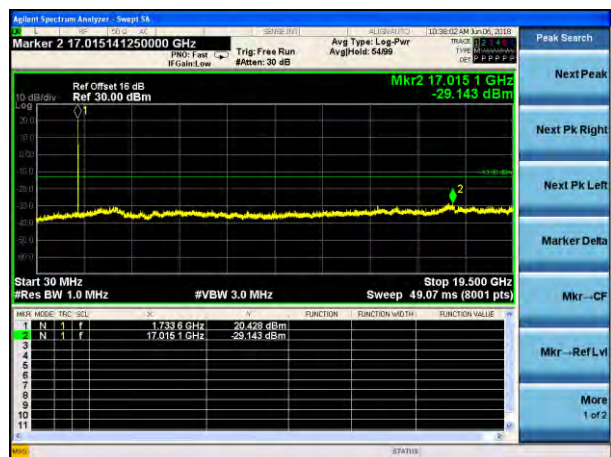
Highest channel

Test Mode: LTE Band 4
Channel Bandwidth: 3MHz (QPSK)

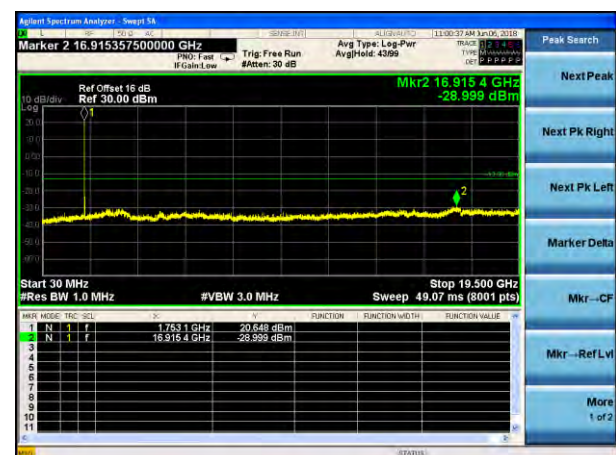
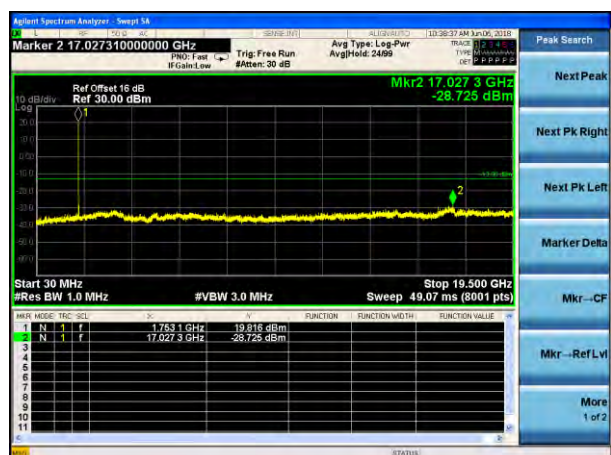
Test Mode: LTE Band 4
Channel Bandwidth: 3MHz (16QAM)



Lowest channel



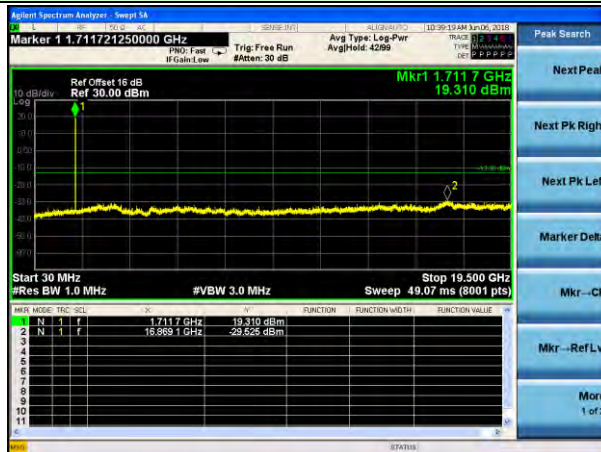
Middle channel



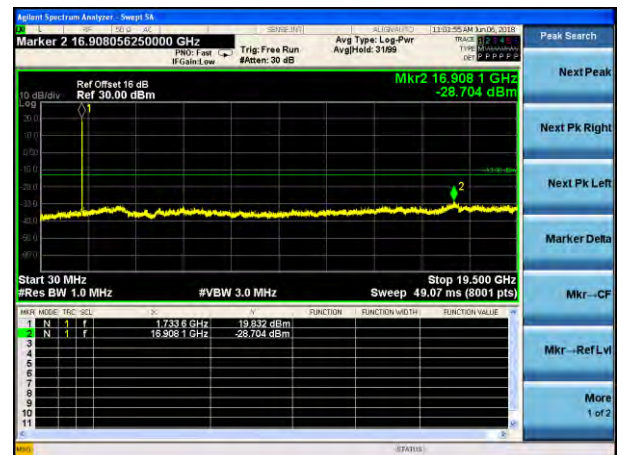
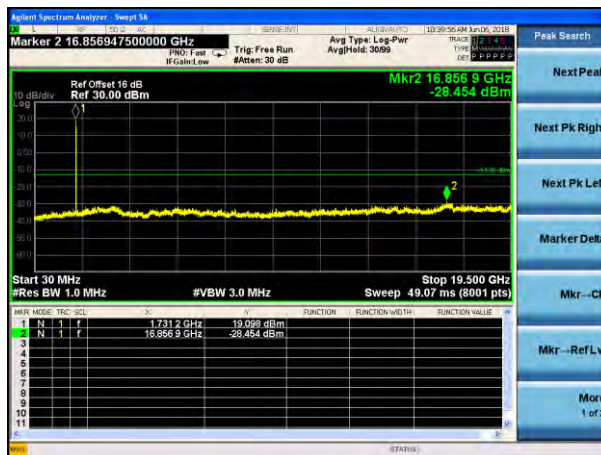
Highest channel

Test Mode: LTE Band 4
Channel Bandwidth: 5MHz (QPSK)

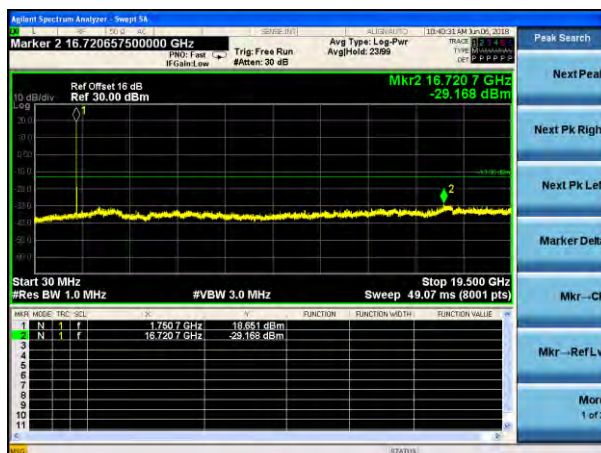
Test Mode: LTE Band 4
Channel Bandwidth: 5MHz (16QAM)



Lowest channel



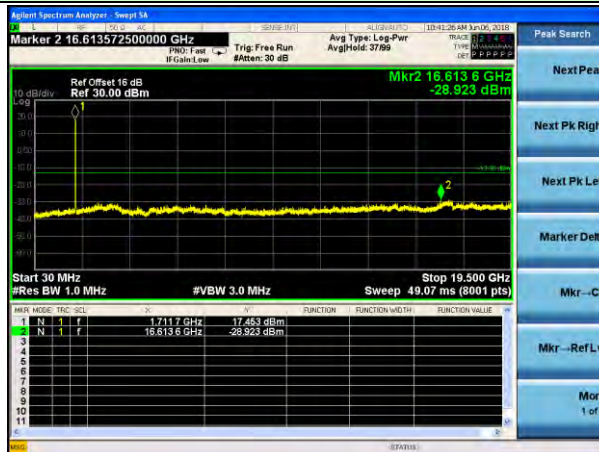
Middle channel



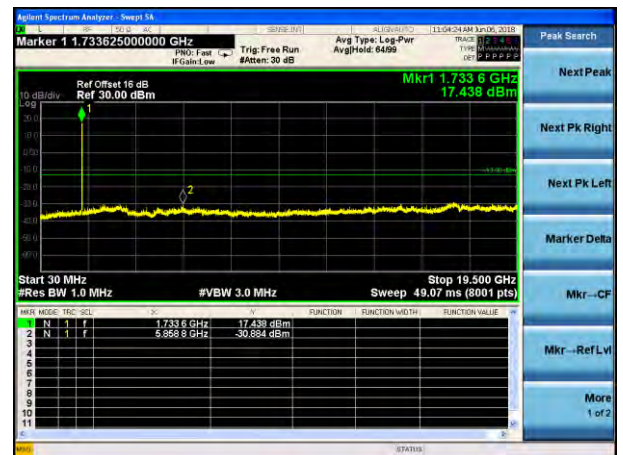
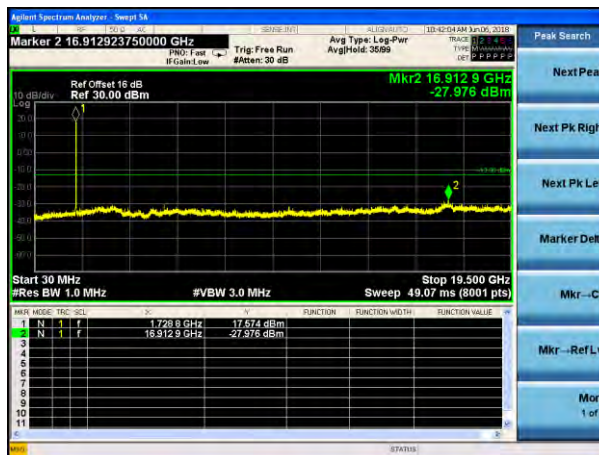
Highest channel

Test Mode: LTE Band 4
Channel Bandwidth: 10MHz (QPSK)

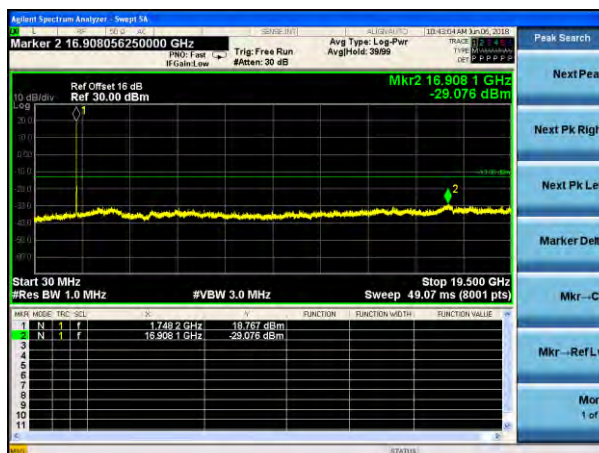
Test Mode: LTE Band 4
Channel Bandwidth: 10MHz (16QAM)



Lowest channel



Middle channel



Highest channel

Agilent Spectrum Analyzer - Sweep 58

Marker 2 16.876417500000 GHz

Trig: Free Run
#Aten: 30 dB

Avg Type: Log-Pwr
AvgHold: 3099

10:44:50 AM Jun 06, 2018

Peak 2 16.876 4 GHz
-28.542 dBm

10 dB/div

Ref Offset 16 dB
Ref 30.00 dBm

Start 30 MHz
#Res BW 1.0 MHz

Stop 19.500 GHz
Sweep 49.07 ms (8001 pts)

#VBW 3.0 MHz

MARK	FREQ	AMPL	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	16.876 4 GHz	-28.542 dBm			
2	16.876 4 GHz	-28.542 dBm			

Agilent Spectrum Analyzer - Sweep 14

Marker 2 16.871550000000 GHz

Trig: Free Run
#Atten: 30 dB

Arg Type: Log-Pwr
Avg/Res: 3889

Time: 11:05:38 AM JUN 08, 2015

Peak Search

Next Peak

Next Pk Right

Next Pk Left

Marker Delta

Mkr--CF

Mkr--Ref Lvl

More

1 of 2

10 dB/div

Ref Offset 16 dB

Ref 30.00 dBm

Mkr2 16.871 6 GHz

-28.724 dBm

Start 30 MHz

#Res BW 1.0 MHz

#VBW 3.0 MHz

Stop 19,500 GHz

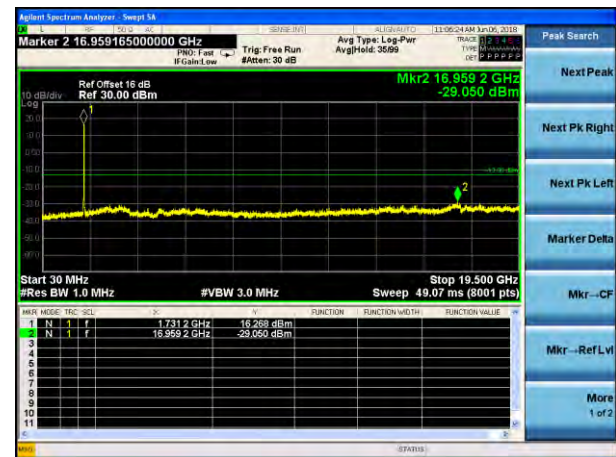
Sweep 49.07 ms (8001 pts)

MARK	FREQ	POW	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	16.871 0 GHz	-17.726 dBm			
2	16.871 6 GHz	-28.724 dBm			

Ref Offset 15 dB
Ref 30.00 dBm
Mkr2 16.8618 GHz
-29.054 dBm

Start 30 MHz
Stop 10000 GHz
Sweep 49.07 ms (6001 pts)
VBW 3.0 MHz

Peak Search
Next Peak



Ref Offset 16 dB
Ref 30.00 dBm

Mkr2 21.0857 GHz
-29.138 dBm

Start 30 MHz
#Res BW 1.0 MHz

#VBW 3.0 MHz

Stop 19.500 GHz
Sweep 49.07 ms (8001 pts)

WNR	MODE	FREQ	UNIT	FUNCTION	FUNCTION WITH	FUNCTION VALUE
1	N	21.08572 GHz	-29.138 dBm			
2	N	21.08572 GHz	-29.138 dBm			



Agilent Spectrum Analyzer - Sweep 18

Marker 2 16.783950000000 GHz

Ref Offset 16 dB
Ref 30.00 dBm

Trig: Free Run
#Atten: 30 dB

Avg Type: Log-Pwr
AvgHold: 5259

Peak 1 16.78395 GHz
Type: Max Hold
Det: PPKPP

Mkr2 16.78395 GHz
-28.111 dBm

Start 30 MHz
#Res BW 1.0 MHz
#VBW 3.0 MHz

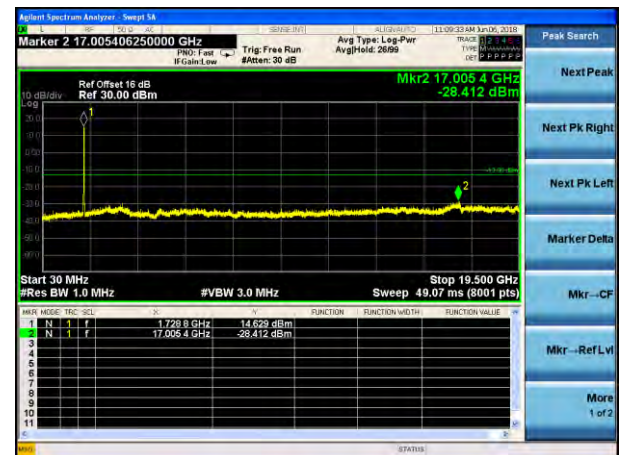
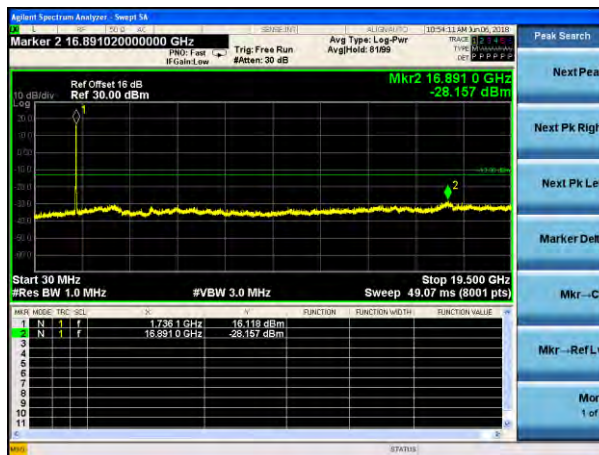
Stop 19.500 GHz
Sweep 49.07 ms (8001 pts)

PK#	FREQ	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	16.78395 GHz	16.78395 GHz	16.78395 GHz	-28.111 dBm
2	16.78395 GHz	16.78395 GHz	16.78395 GHz	-28.111 dBm

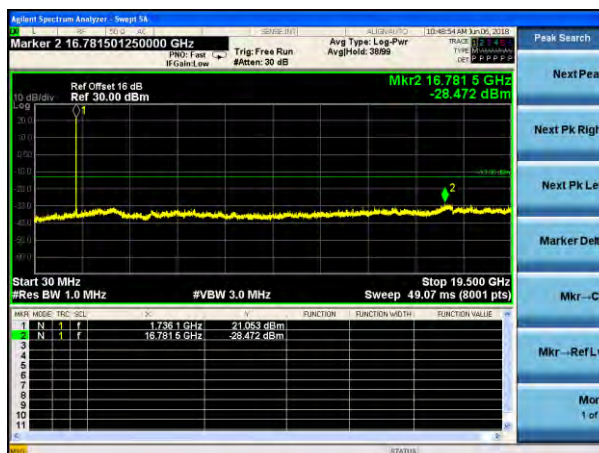
Spectrum Analyzer - Sweep 1A
 Marker 2 16.920225000000 GHz
 Trig: Free Run
 Avg Type: Log-Pwr
 Arg Pos: 2059
 Ref Offset 16 dB
 Ref 30.00 dBm
 Mkr2 16.920 2 GHz
 -29.293 dBm
 Start 30 MHz
 #Res BW 1.0 MHz
 #VBW 3.0 MHz
 Stop 19.500 GHz
 Sweep 49.07 ms (8001 pts)

ROW	MODE	FREQ	AMPL	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1.7263 GHz	14.538 dBm			
2	N	16.9202 GHz	-29.293 dBm			

Lowest channel



Middle channel



Highest channel

Agilent Spectrum Analyzer - Sweep 5A

Marker 2 3.298526250000 GHz

Ref Offset 16 dB
Ref 30.00 dBm

Trig: Free Run
IF Gain: Low
\$Att: 30 dB

Peak 1: 3.2985 GHz
Peak 2: 21.620 GHz

Start 30 MHz
#Res BW 1.0 MHz
#VBW 3.0 MHz

Stop 19.500 GHz
Sweep 49.07 ms (8001 pts)

PKR	MODE	TRC	SCN	F	FREQ	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f		826.8 MHz			21.620 dBm
2	N	1	f		3.298 5 GHz			-25.782 dBm

Agilent Spectrum Analyzer - Sweep 10

Marker 2 3.298526250000 GHz

Trig: Free Run
#GainLow
#atten: 30 dB

Avg Type: Log-Pwr
AvgTime: 3599

11-EB13:AM JUN 08, 2018

TRACE 1: 1.0
TYPE: SWEPT
DEF: PRRF2

Peak Search

Next Peak

Next Pk Right

Next Pk Left

Marker Delta

Mkr--CF

Mkr--Ref Lvl

More 1 of 2

STATUS

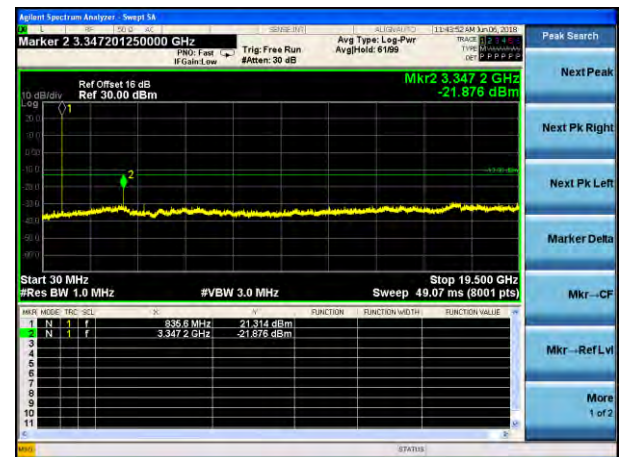
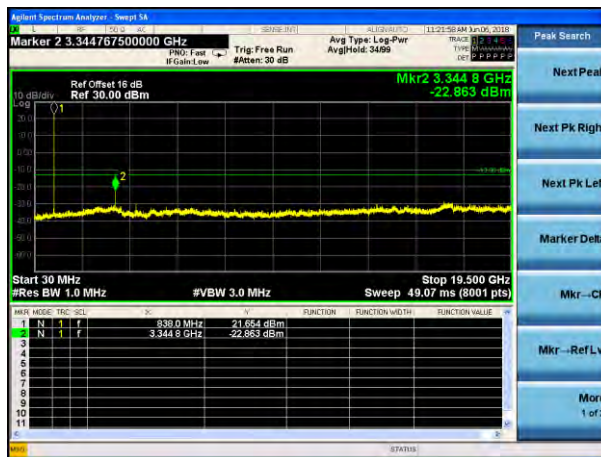
Ref Offset 16 dB
Ref 30.00 dBm

Mkr2 3.298 5 GHz
-24.155 dBm

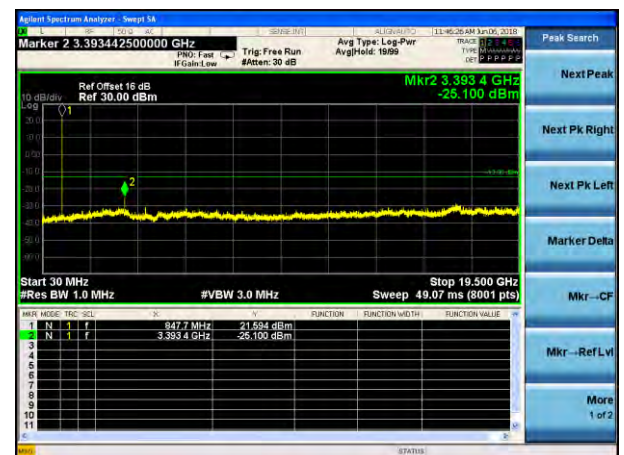
Start 30 MHz
#Res BW 10 MHz
#VBW 3.0 MHz
Sweep 49.07 ms (16000 pts)
Stop 30 MHz

MARK	NAME	FREQ	AMPL	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f			
1	N	1	f			
2	N	1	f			
3	N	1	f			
4	N	1	f			
5	N	1	f			
6	N	1	f			
7	N	1	f			
8	N	1	f			
9	N	1	f			
10	N	1	f			
11	N	1	f			

Lowest channel



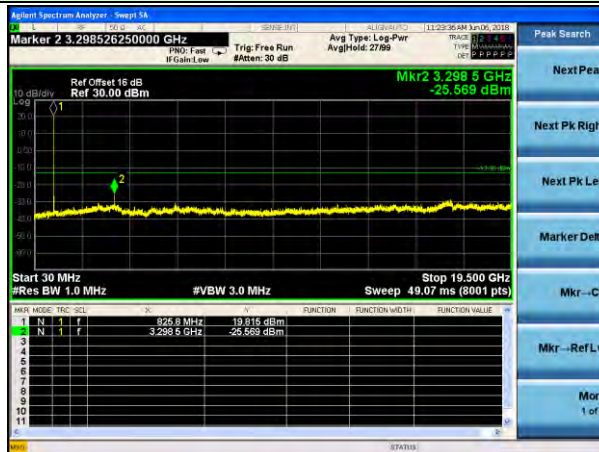
Middle channel



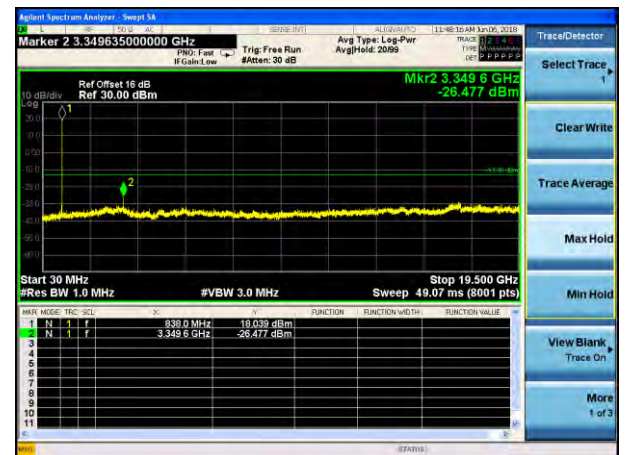
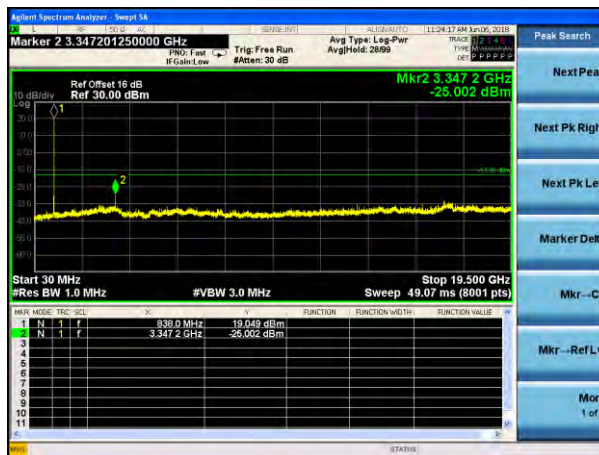
Highest channel

Test Mode: LTE Band 5
Channel Bandwidth: 3MHz (QPSK)

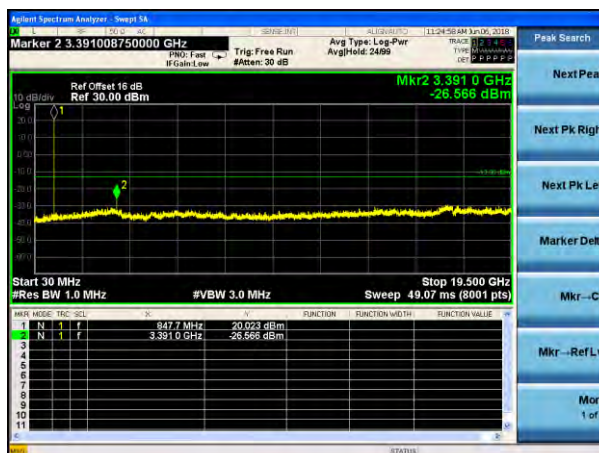
Test Mode: LTE Band 5
Channel Bandwidth: 3MHz (16QAM)



Lowest channel



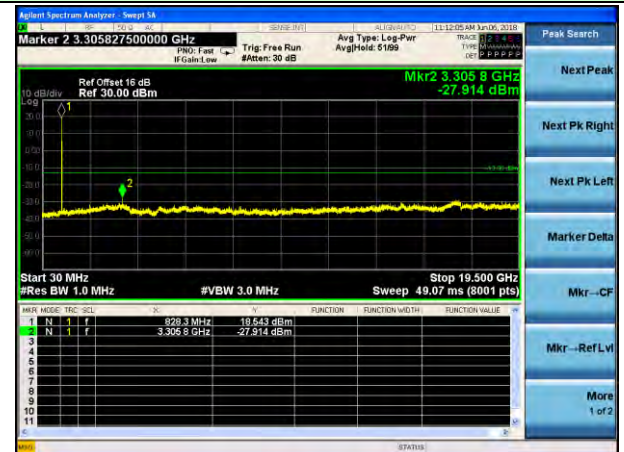
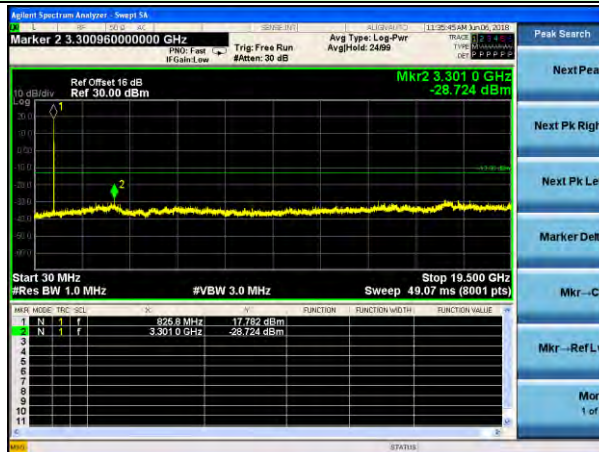
Middle channel



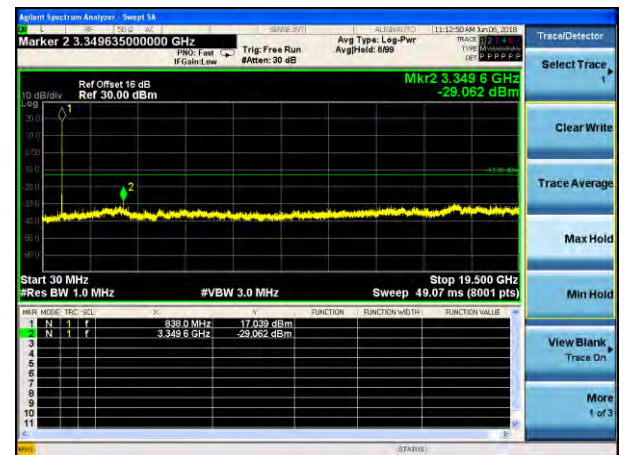
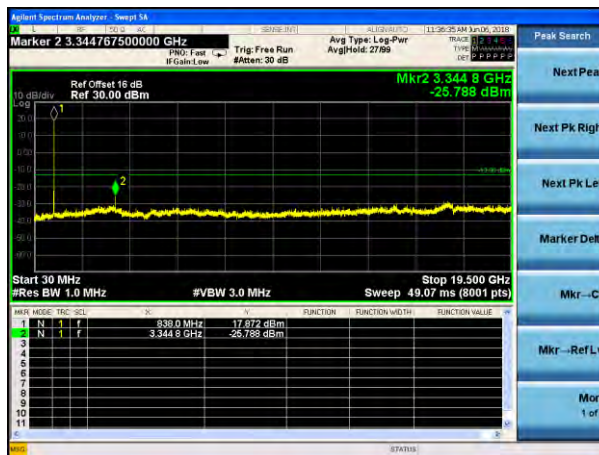
Highest channel

Test Mode: LTE Band 5
Channel Bandwidth: 5MHz (QPSK)

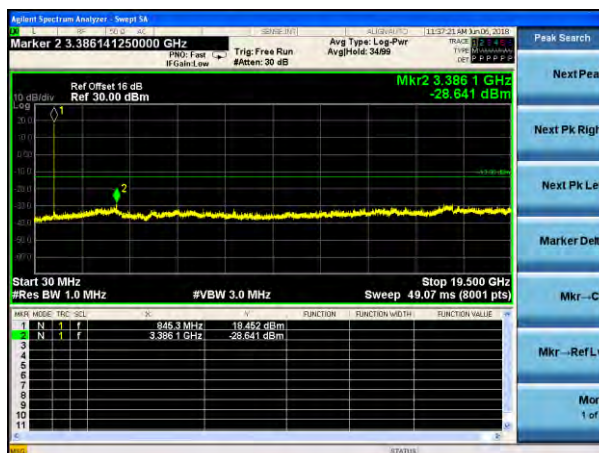
Test Mode: LTE Band 5
Channel Bandwidth: 5MHz (16QAM)



Lowest channel



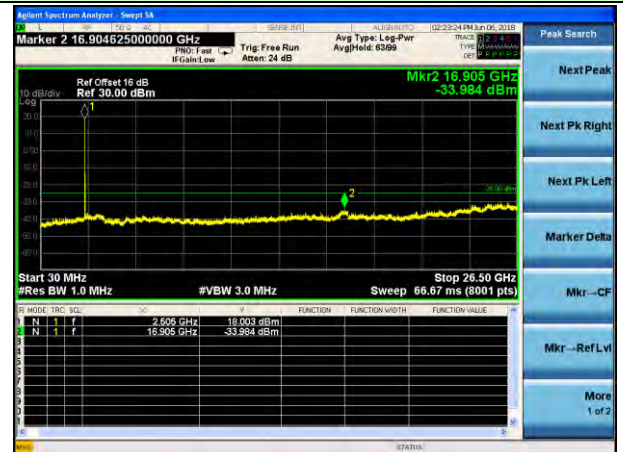
Middle channel



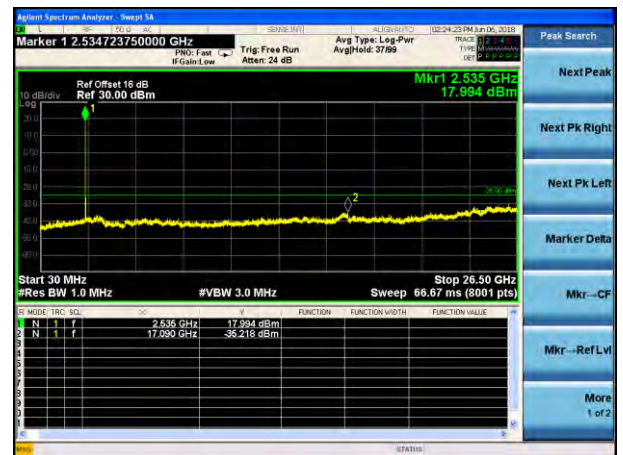
Highest channel

Test Mode: LTE Band 7
Channel Bandwidth: 5MHz (QPSK)

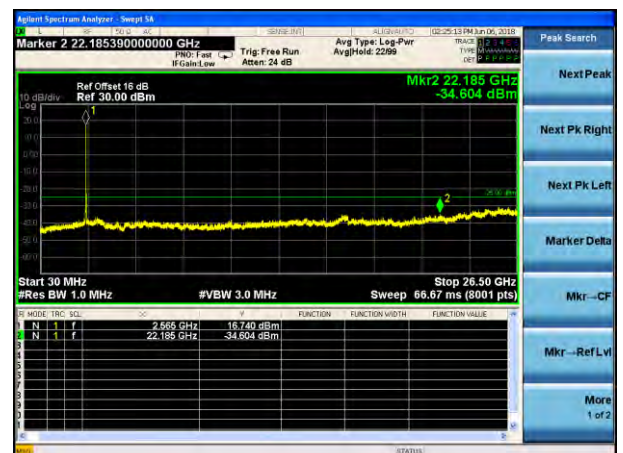
Test Mode: LTE Band 7
Channel Bandwidth: 5MHz (16QAM)



Lowest channel



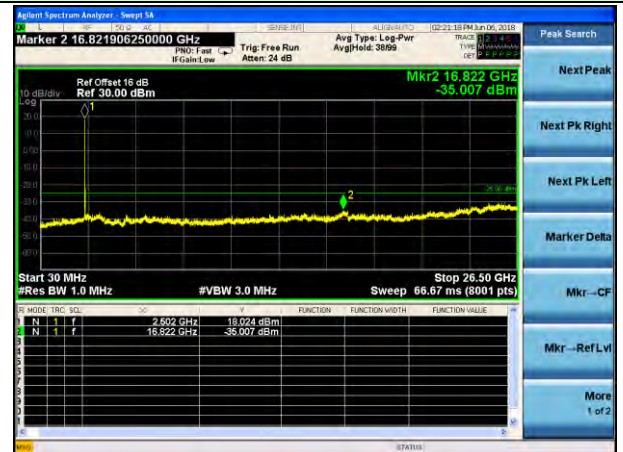
Middle channel



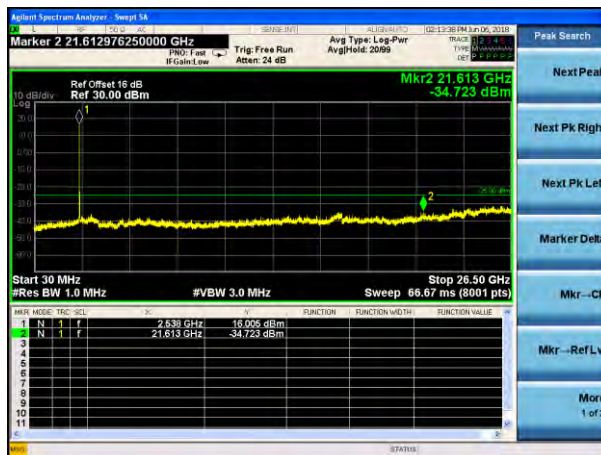
Highest channel

Test Mode: LTE Band 7
Channel Bandwidth: 10MHz (QPSK)

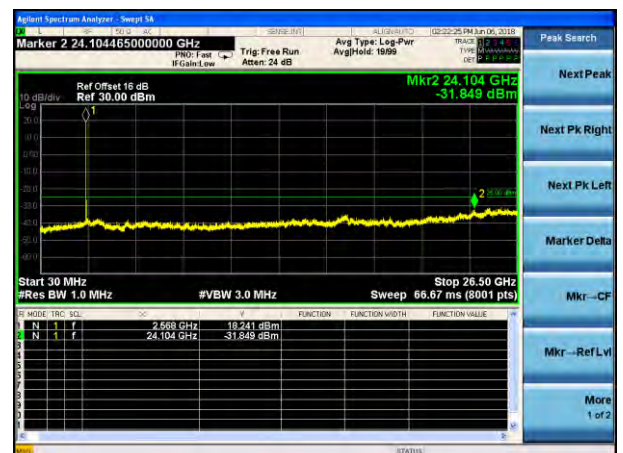
Test Mode: LTE Band 7
Channel Bandwidth: 10MHz (16QAM)



Lowest channel



Middle channel



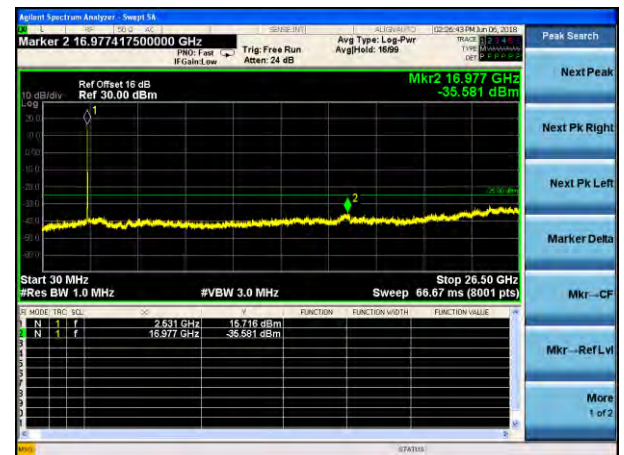
Highest channel

Test Mode: LTE Band 7
Channel Bandwidth:15MHz (QPSK)

Test Mode: LTE Band 7
Channel Bandwidth:1 5MHz (16QAM)



Lowest channel



Middle channel



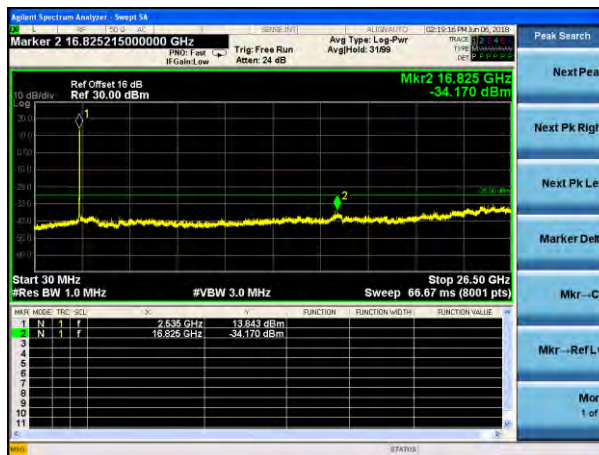
Highest channel

Test Mode: LTE Band 7
Channel Bandwidth:20MHz (QPSK)

Test Mode: LTE Band 7
Channel Bandwidth:20MHz (16QAM)



Lowest channel



Middle channel



Highest channel

Agilent Spectrum Analyzer - Sweep 5A

Marker 2 17.02242500000 GHz

Trig: Free Run
Atten: 24 dB

Ref Offset 16 dB
Ref 30.00 dBm

Avk Type: Leg-Pwr
AvgHeld: 4789

PLAC: 11:57:46 AM JUN 06, 2018
TIME: 0.000000
DET: 2.000000

Peak Search

Next Peak

Next Pk Right

Next Pk Left

Marker Delta

Mkr--CF

Mkr--Ref Lvl

More 1 of 2

Start 30 MHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Sweep 49.07 ms (8001 pts)

Stop 19.500 GHz

PK#	MODE	TRIG	FREQ	AVG	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	706.6 MHz	17.269 dBm		
2	N	1	f	17.022 4 GHz	-33.991 dBm		

The graph shows a spectrum with a yellow trace. Two markers are present: Marker 1 at 706.6 MHz (17.269 dBm) and Marker 2 at 17.022 4 GHz (-33.991 dBm). The y-axis is labeled '10 dB/div' and 'Ref 30.00 dBm'. The x-axis is labeled '17.022 4 GHz'.

Agilent Spectrum Analyzer - Sweep 54

Marker 2 16.866825000000 GHz

Ref Offset 16 dB
Ref 30.00 dBm

Trig: Free Run
Atten: 24 dB

Avg Type: Log-Pwr
Avg Noise: 4599

17:25:05 PM Jun 05, 2018

Peak Search

Next Peak

Next Pk Right

Next Pk Left

Marker Delta

Mkr--CF

Mkr--Ref Lvl

More 1 of 2

Start 30 MHz
#Res BW 1.0 MHz

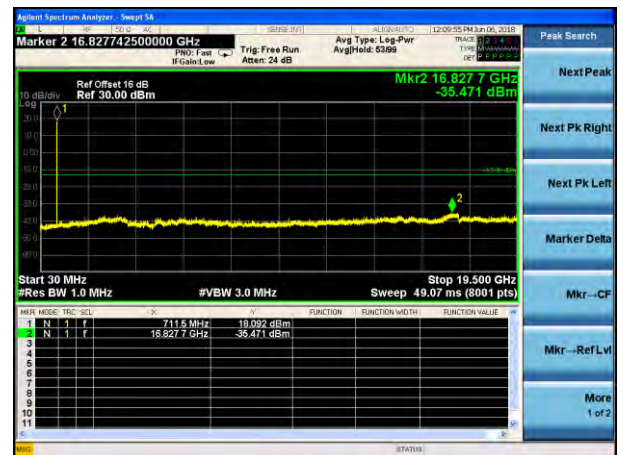
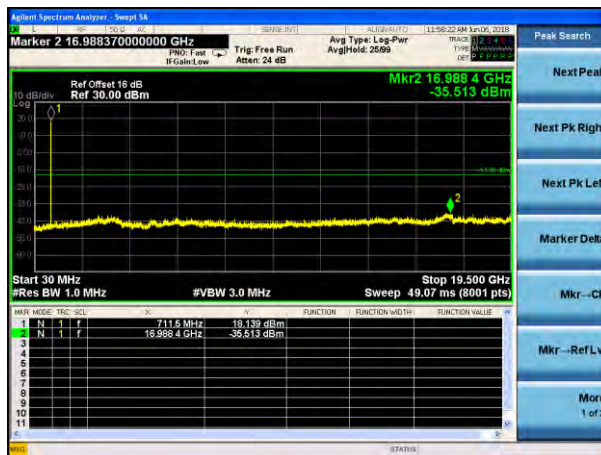
#VBW 3.0 MHz

Stop 19.500 GHz

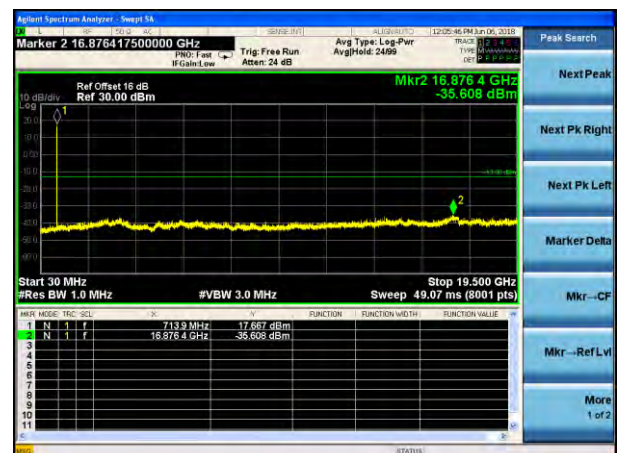
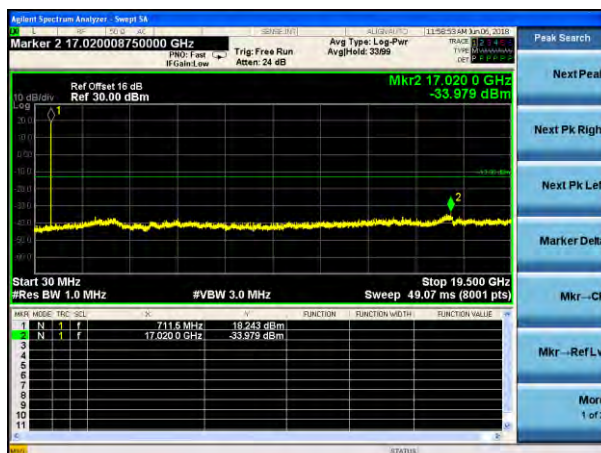
Sweep 49.07 ms (6001 pts)

MARK	NAME	FREQ (GHz)	POWER (dBm)	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N 1 f	709.0 MHz	-17.673 dBm			
1	N 1 f	16.8667 GHz	-36.268 dBm			

Lowest channel



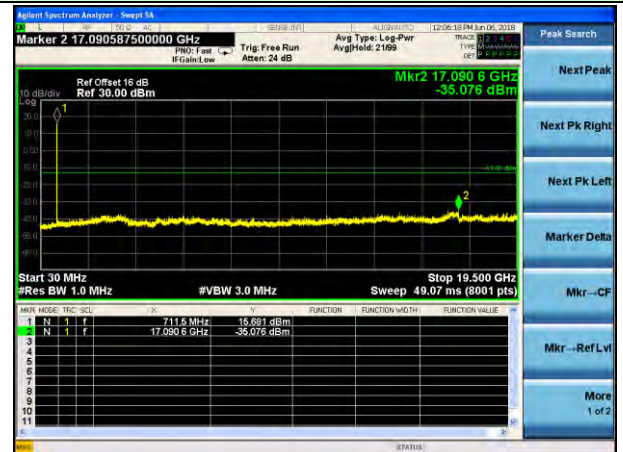
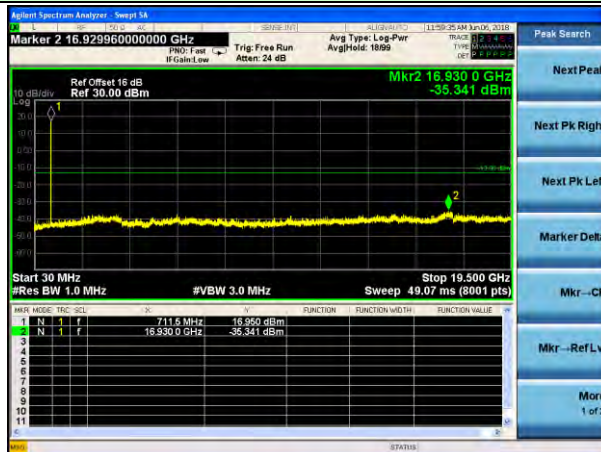
Middle channel



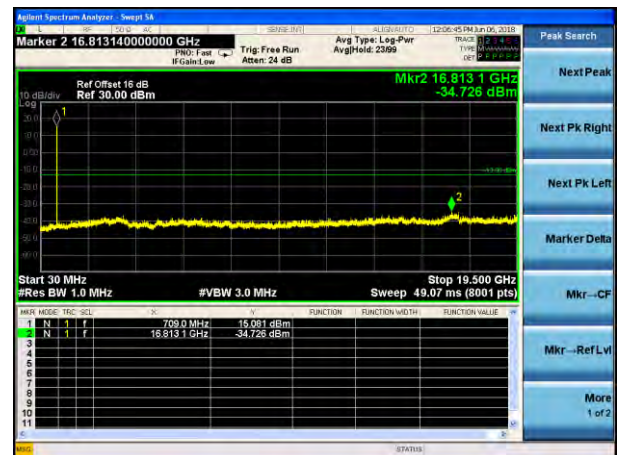
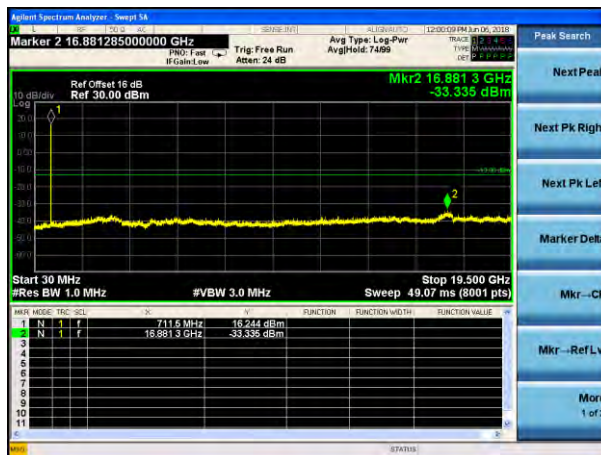
Highest channel

Test Mode: LTE Band 17
Channel Bandwidth:10MHz (QPSK)

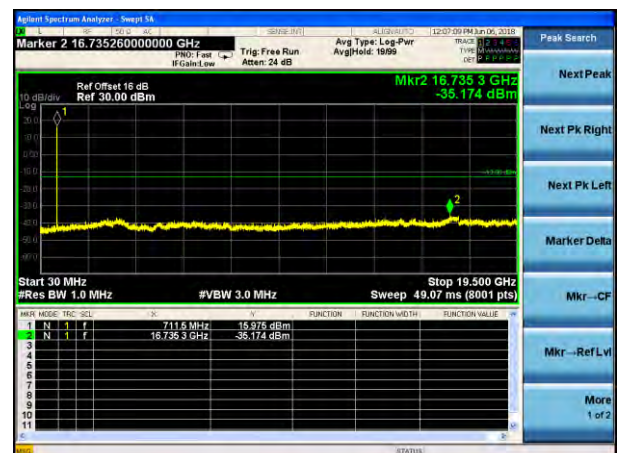
Test Mode: LTE Band 17
Channel Bandwidth:10MHz (16QAM)



Lowest channel



Middle channel



Highest channel