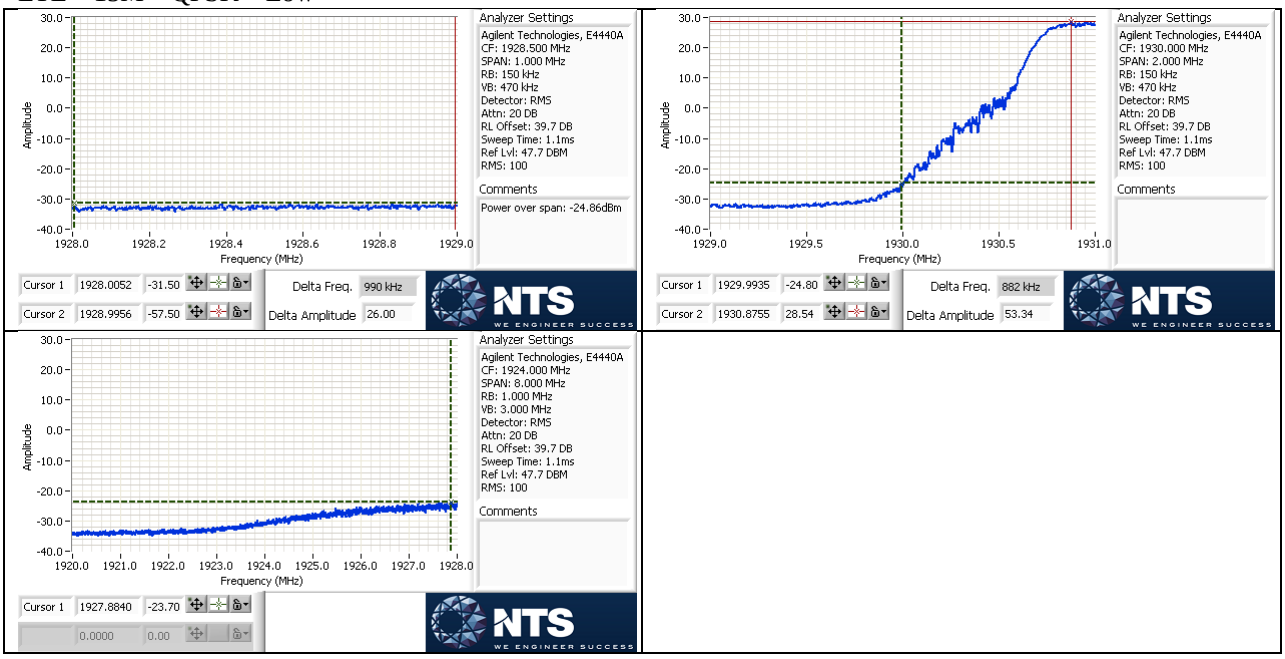
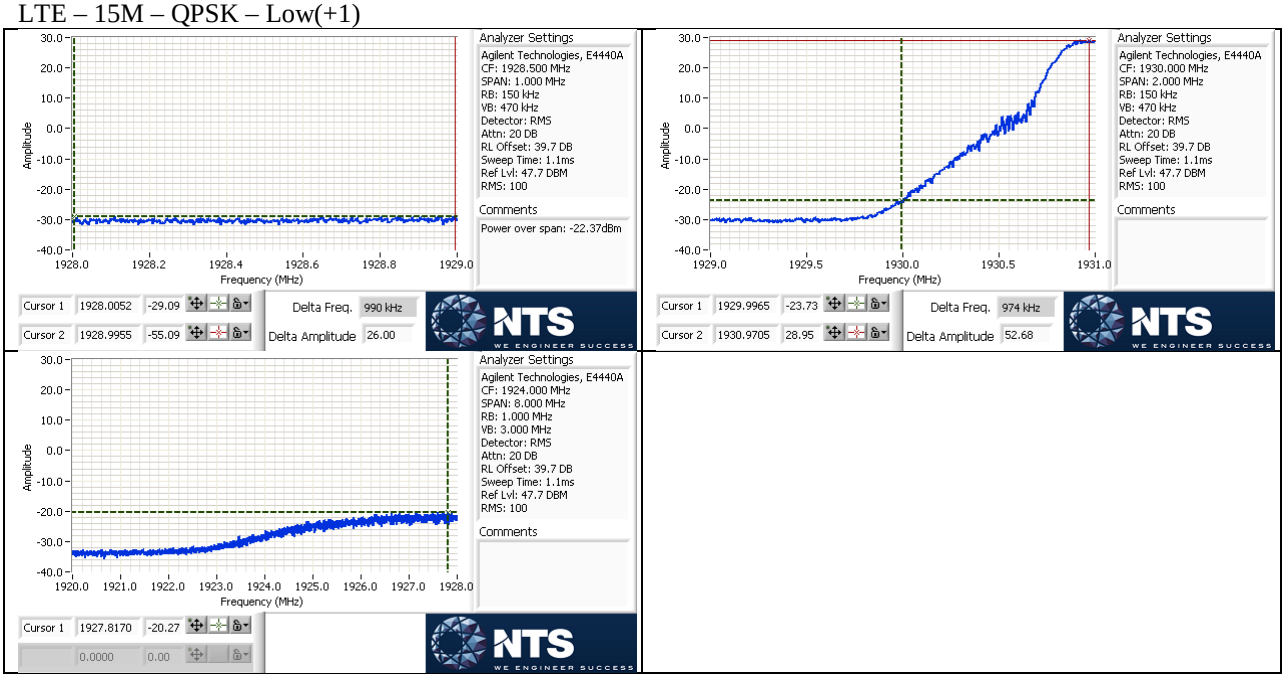
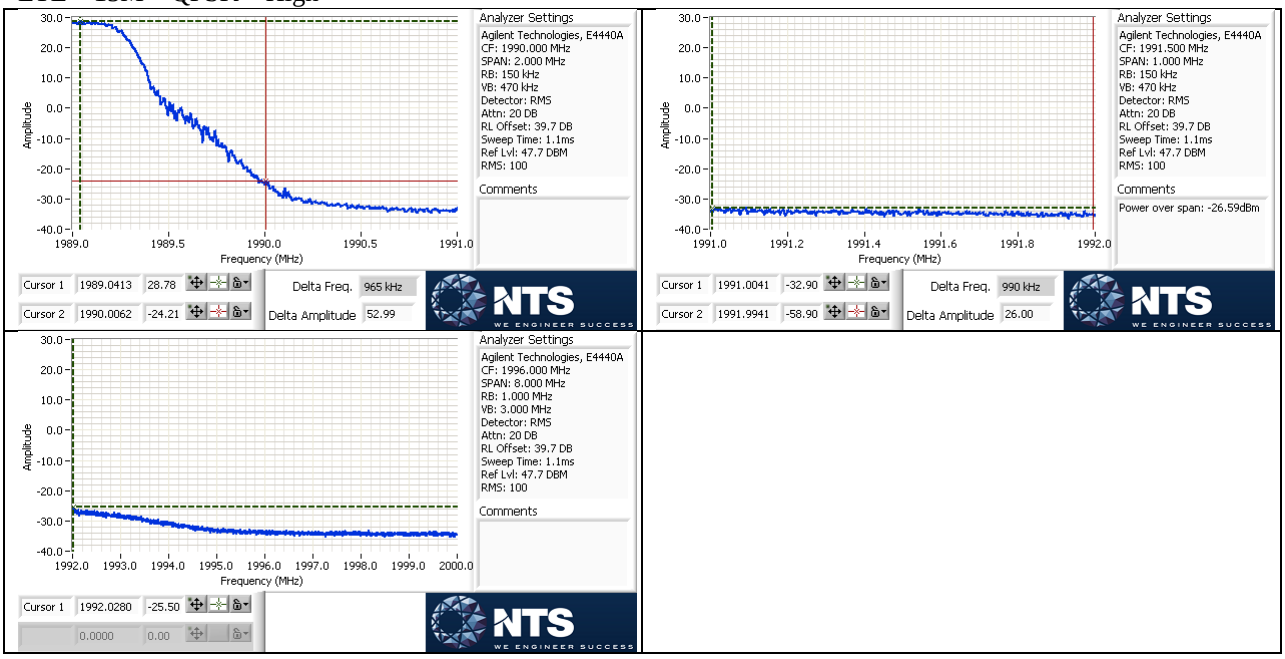
LTE – 15M – QPSK – Low



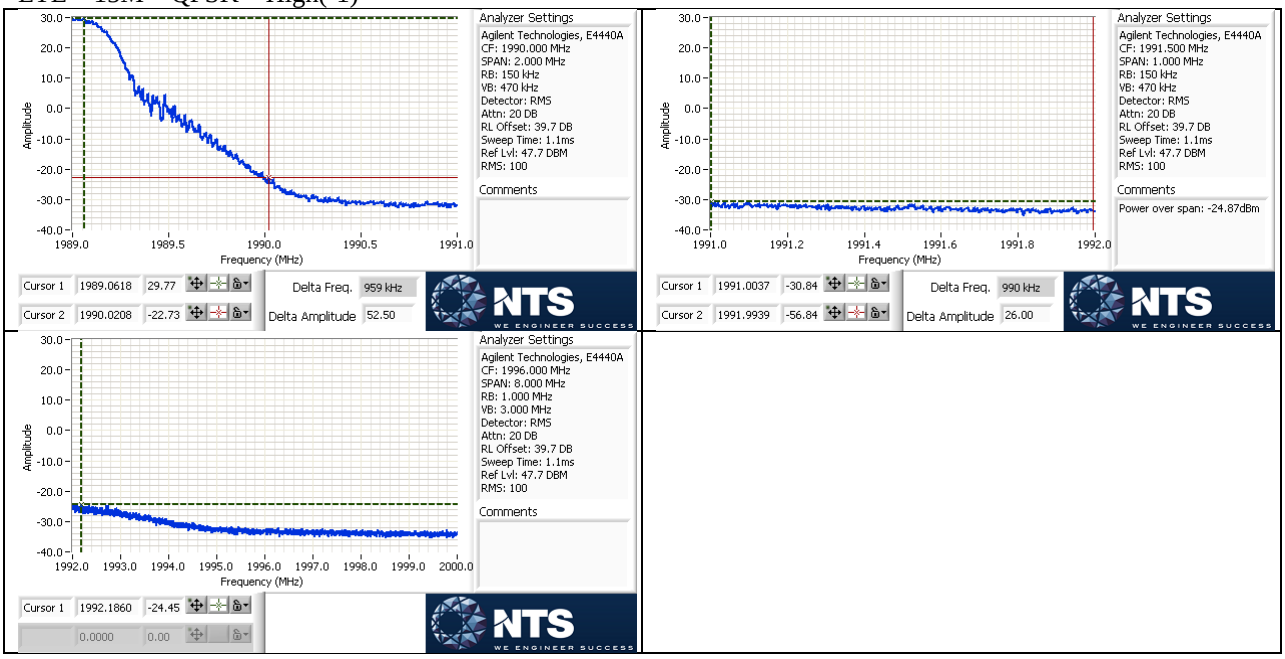
LTE – 15M – QPSK – Low(+1)



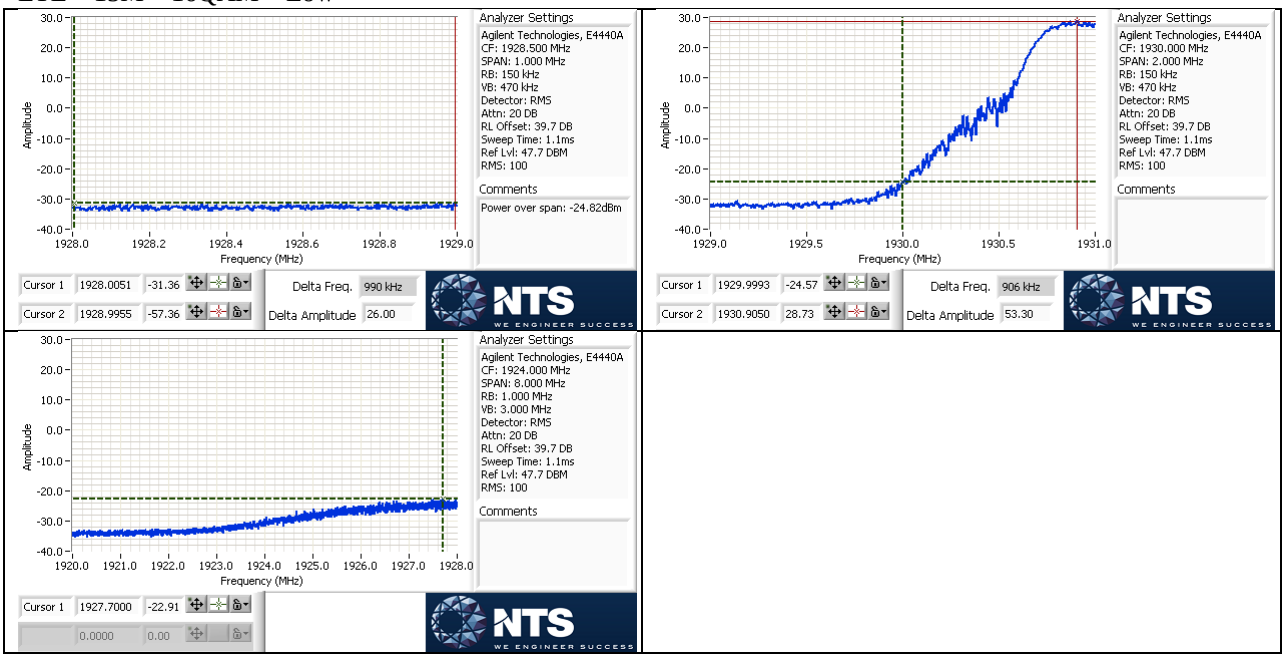
LTE – 15M – QPSK – High



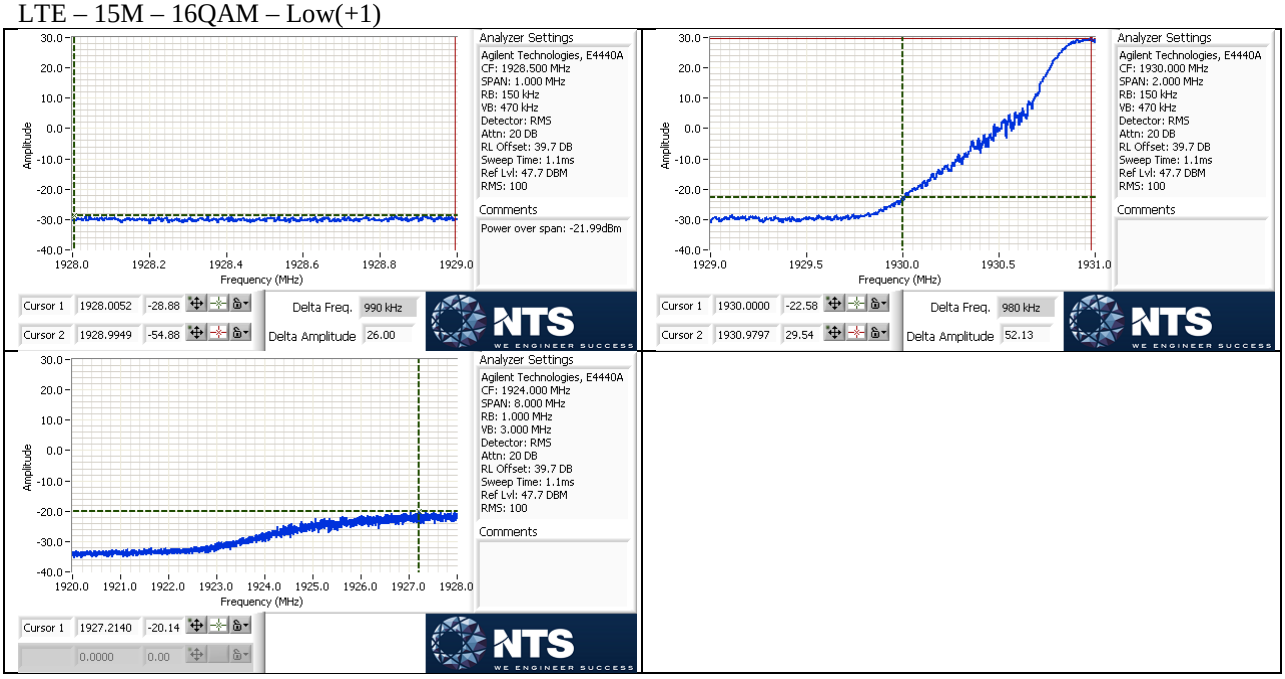
LTE – 15M – QPSK – High(-1)



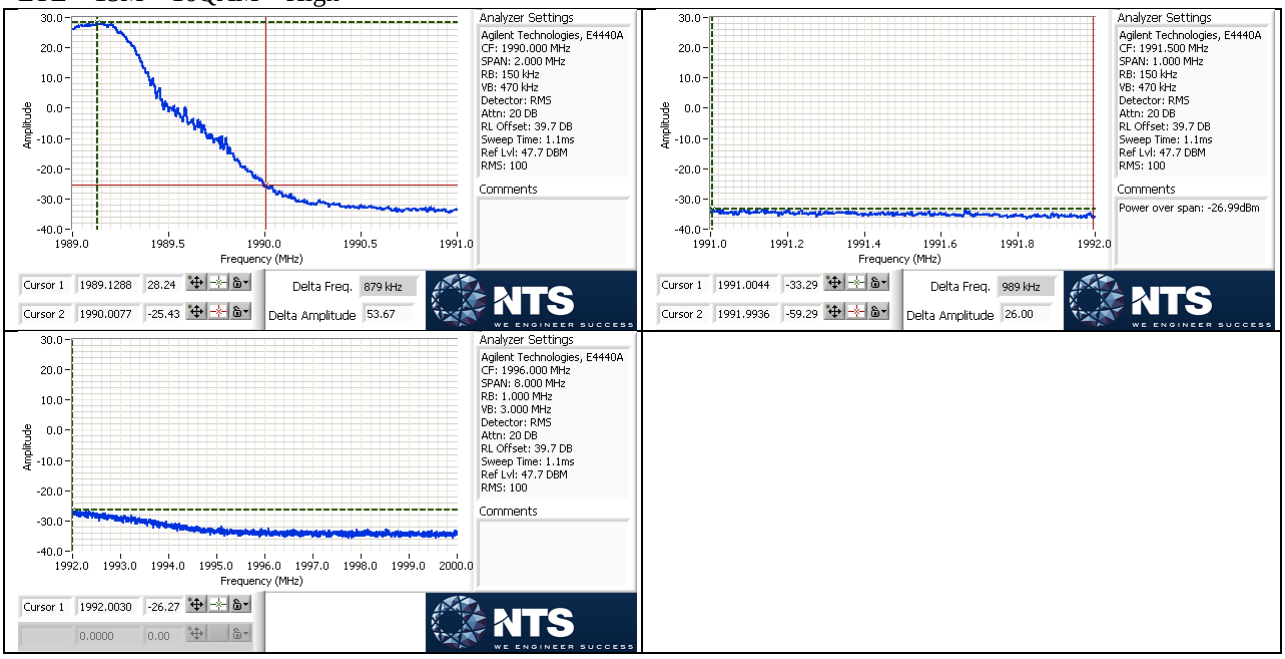
LTE – 15M – 16QAM – Low



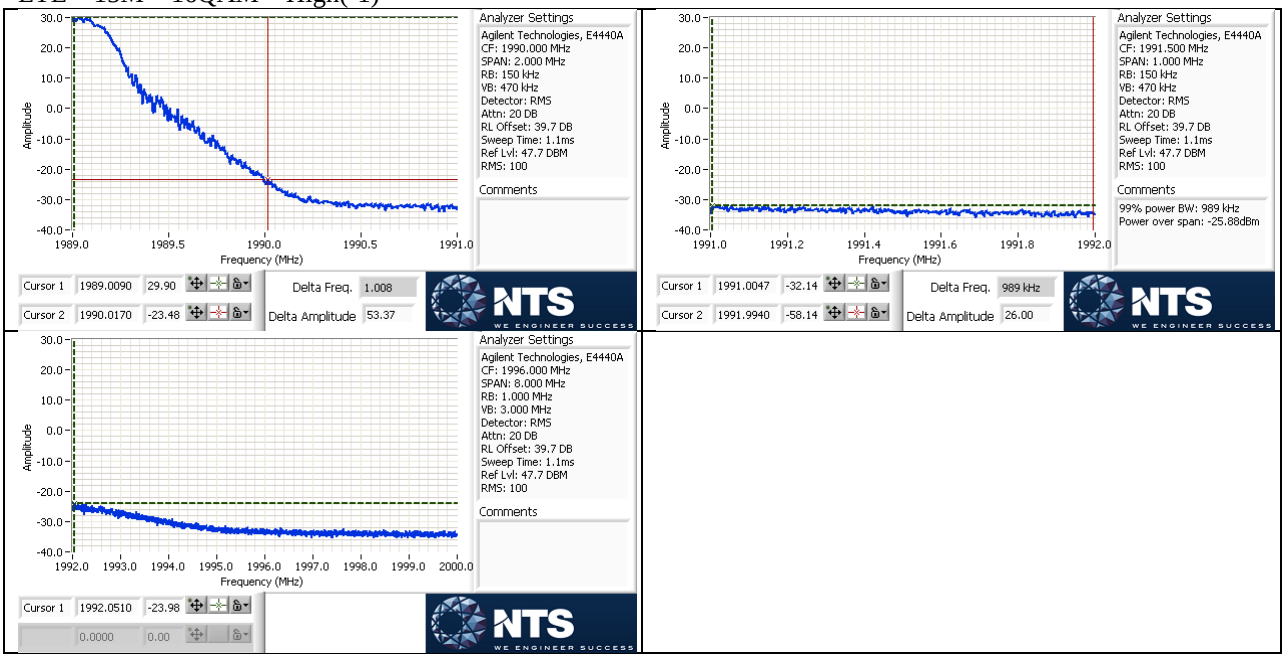
LTE – 15M – 16QAM – Low(+1)



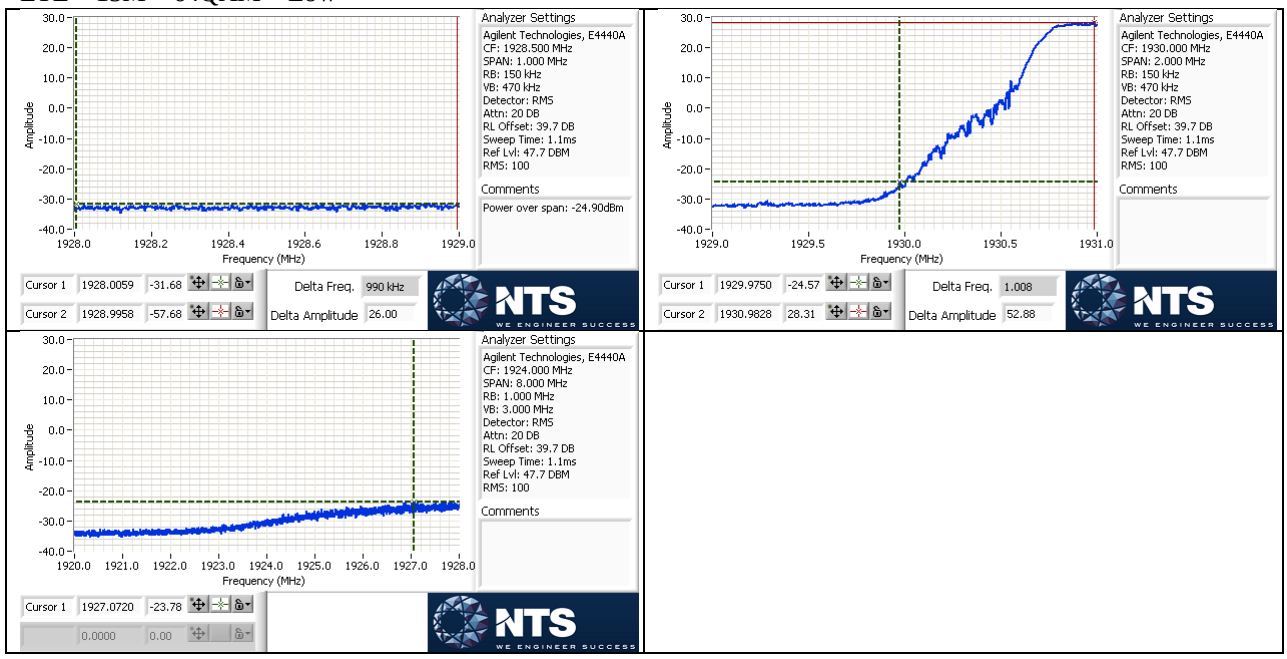
LTE – 15M – 16QAM – High



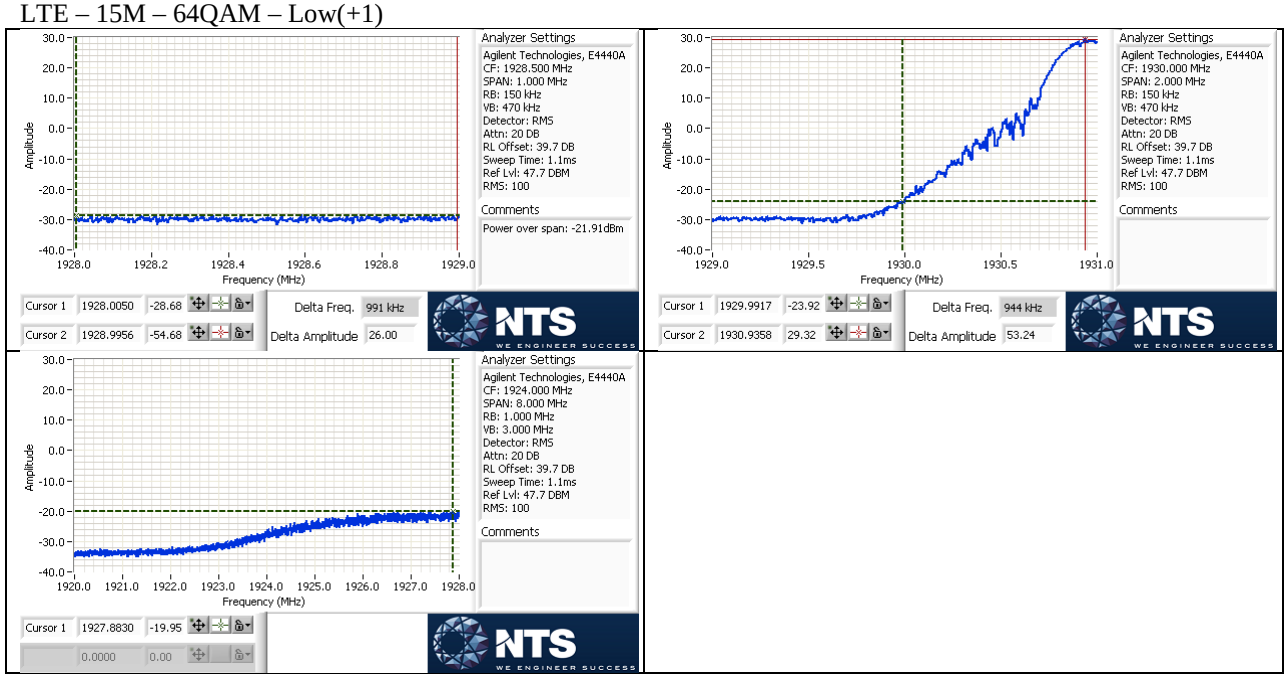
LTE – 15M – 16QAM – High(-1)



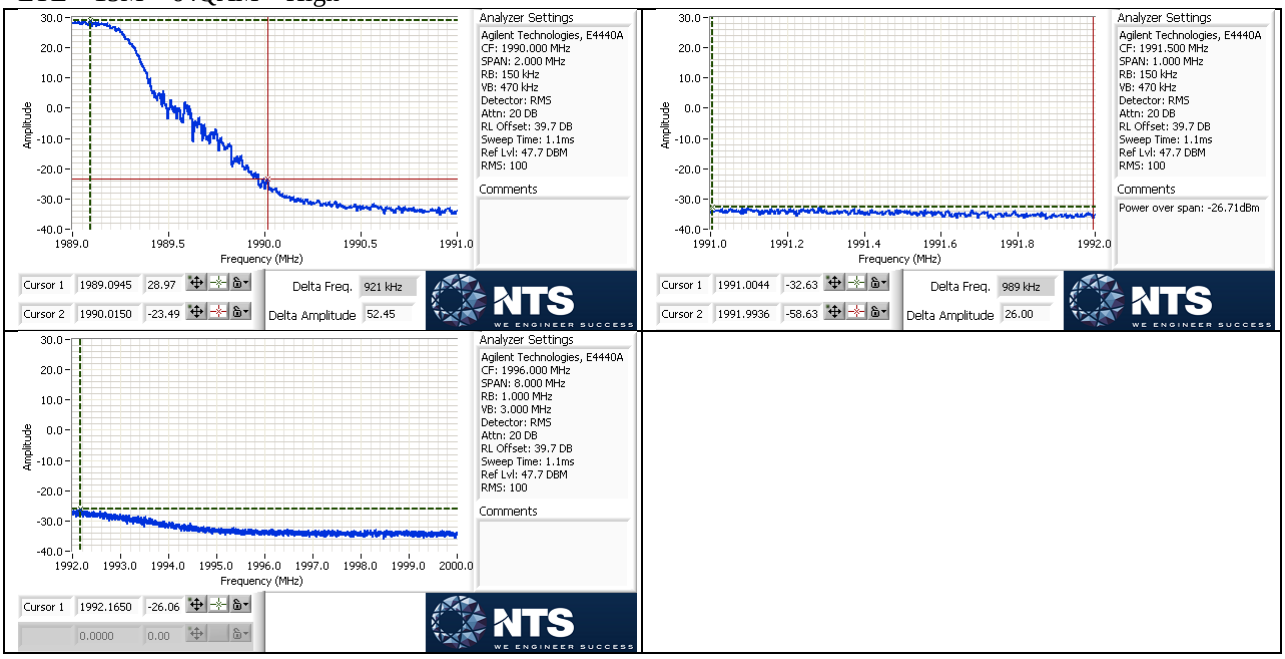
LTE – 15M – 64QAM – Low



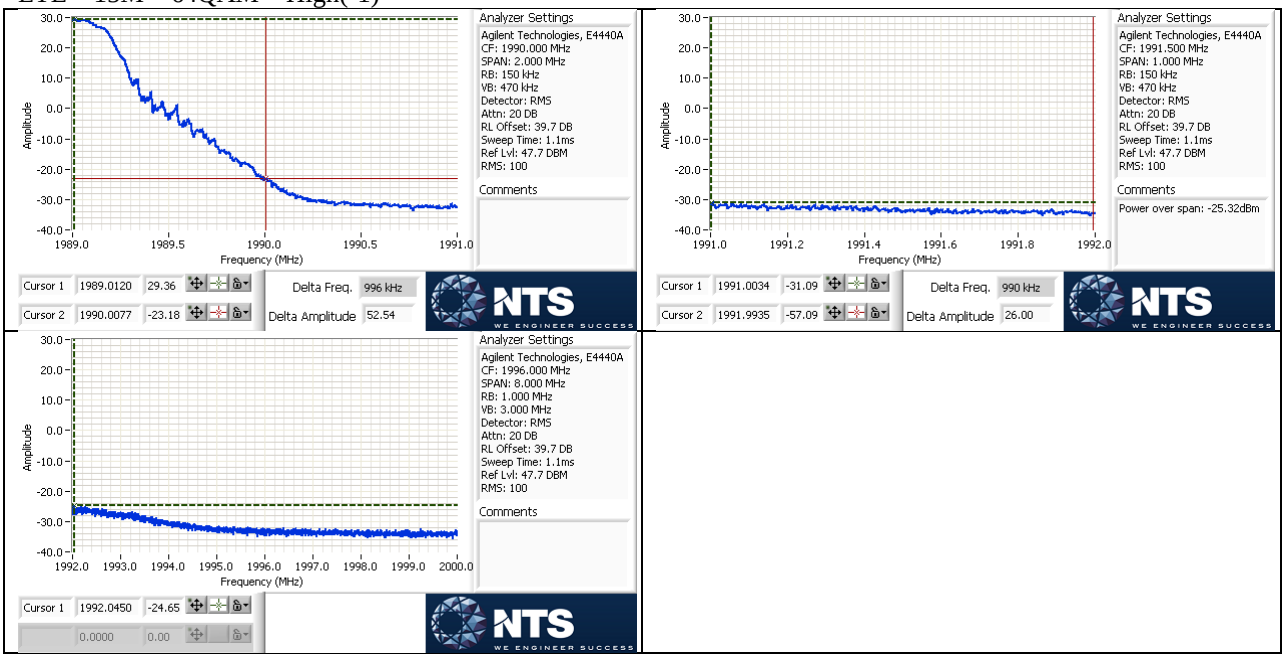
LTE – 15M – 64QAM – Low(+1)



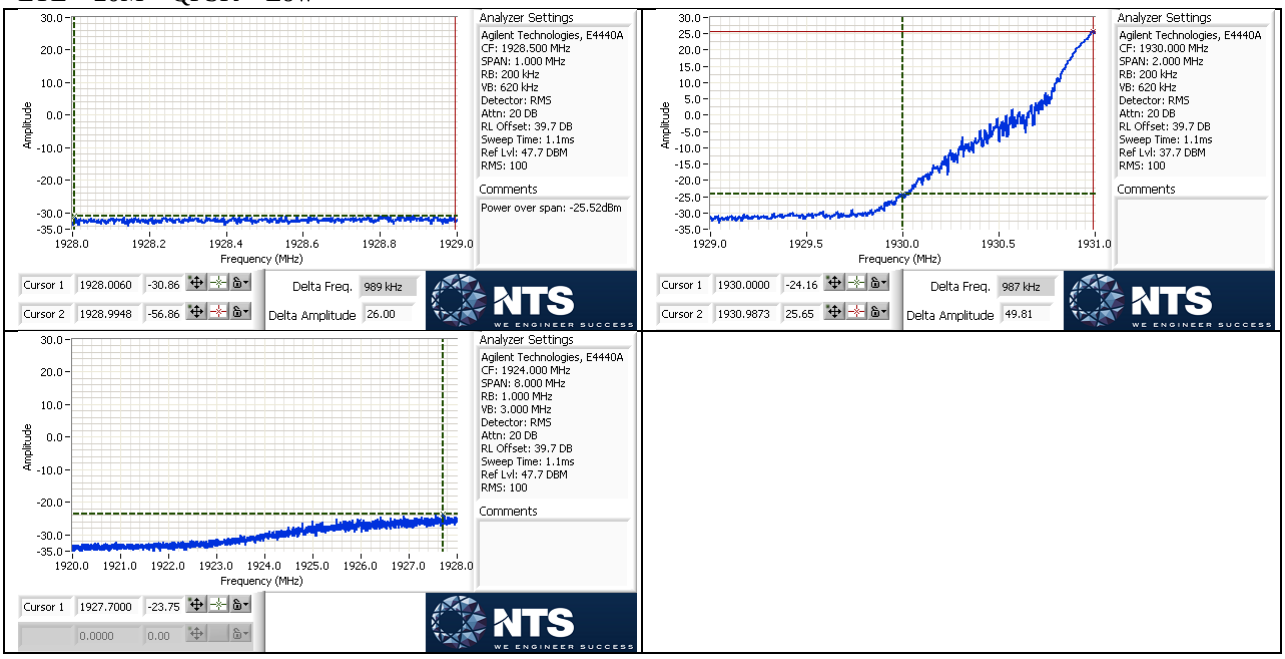
LTE – 15M – 64QAM – High



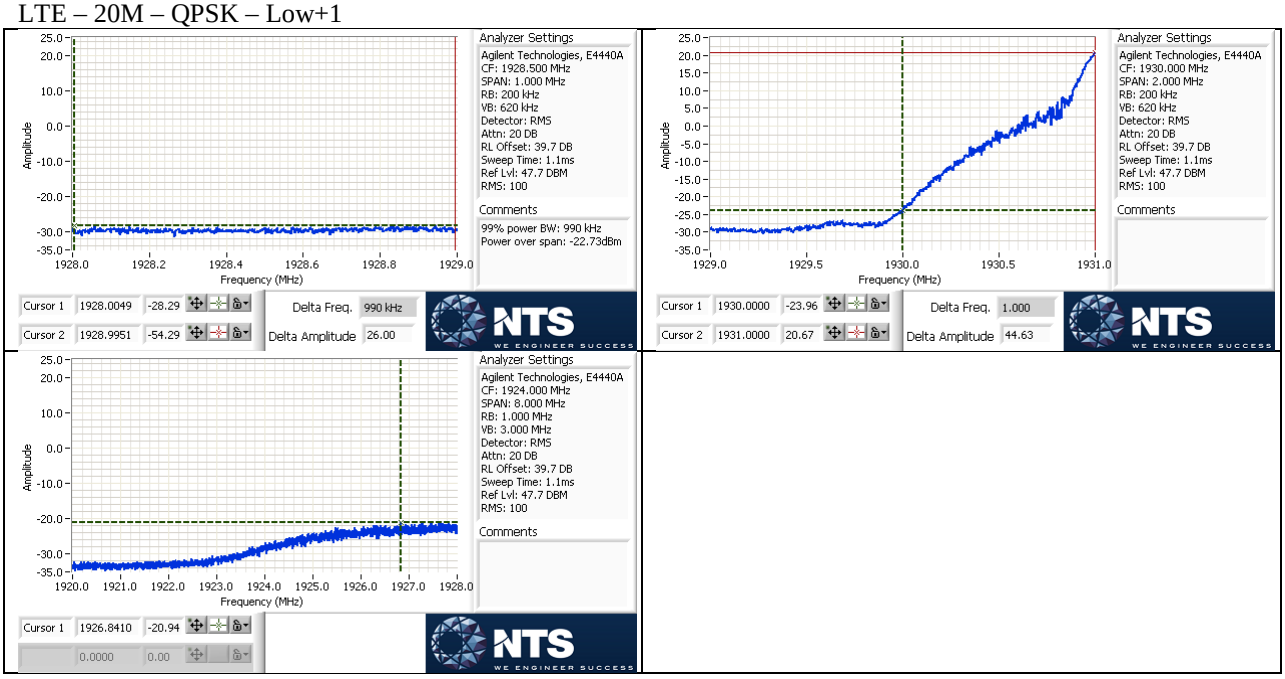
LTE – 15M – 64QAM – High(-1)



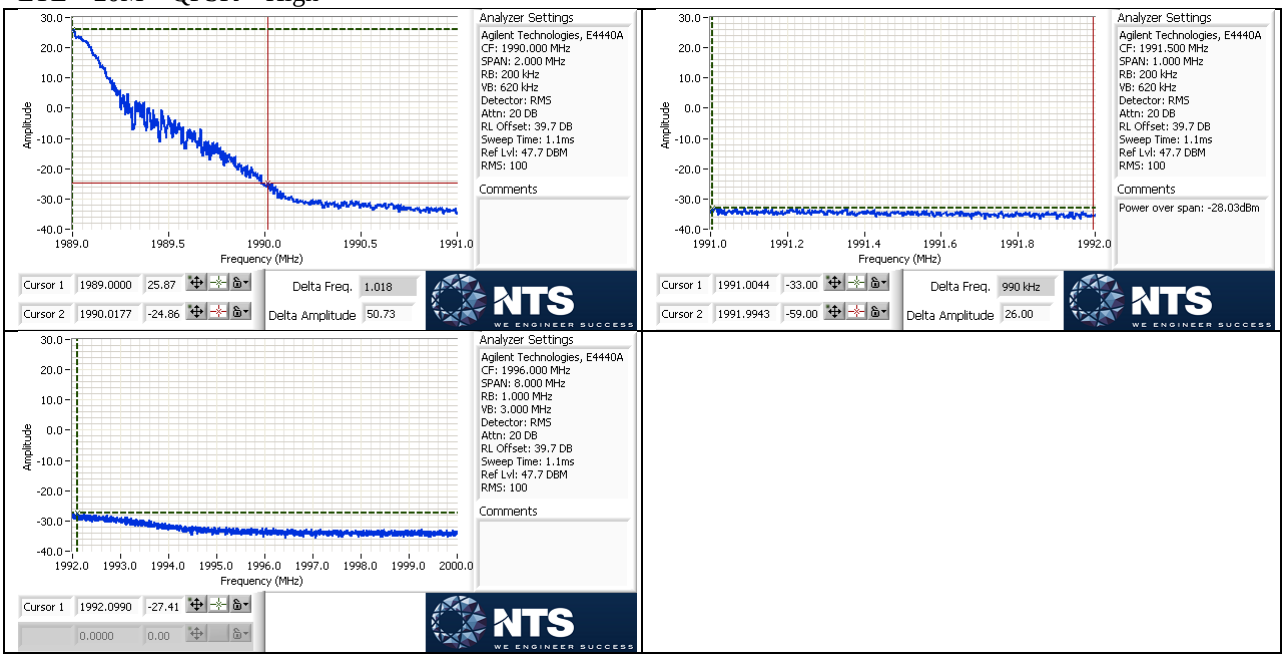
LTE – 20M – QPSK – Low



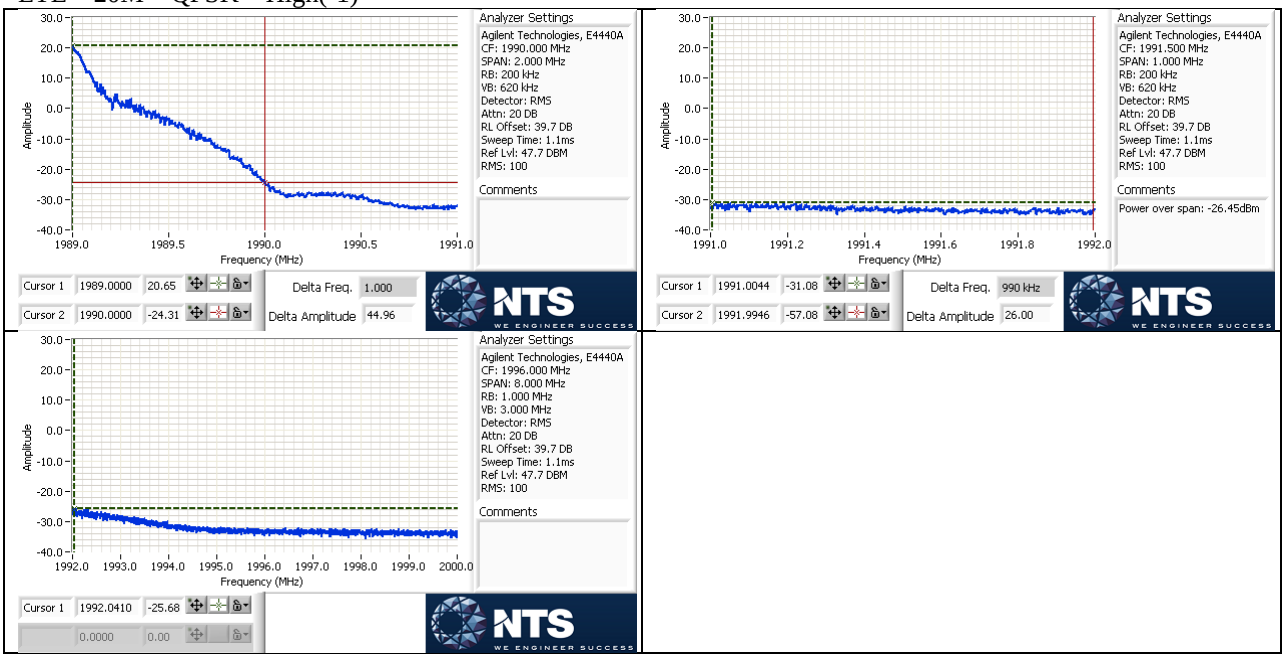
LTE – 20M – QPSK – Low+1



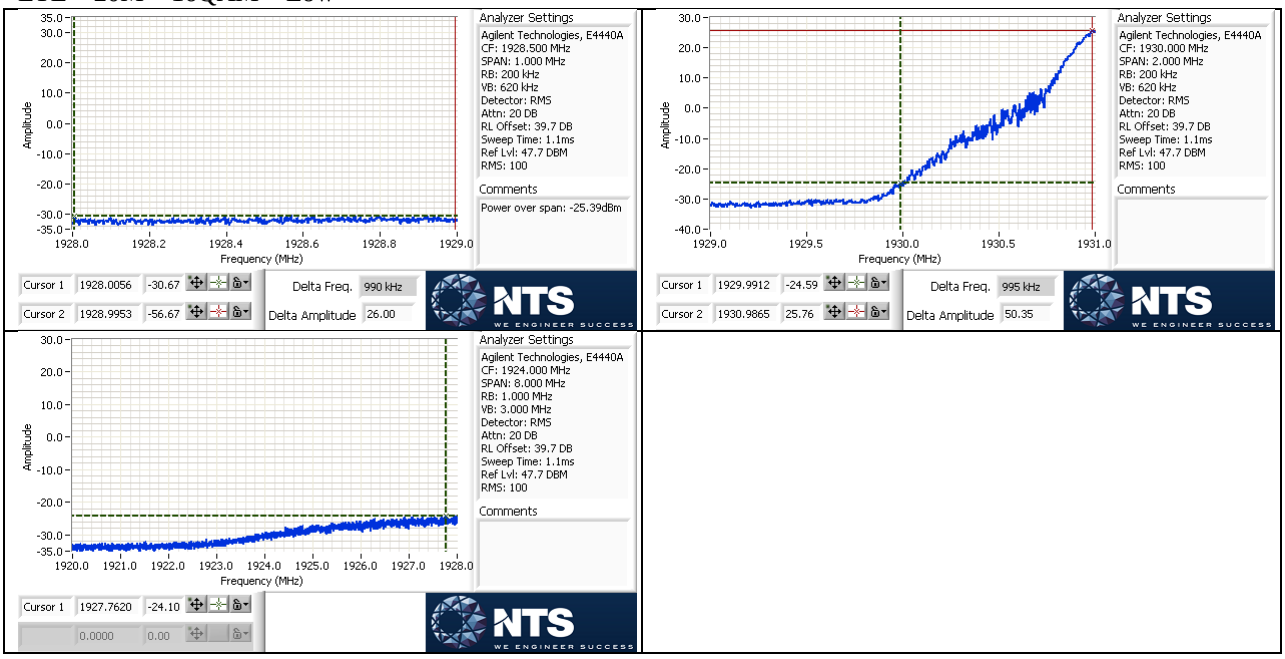
LTE – 20M – QPSK – High



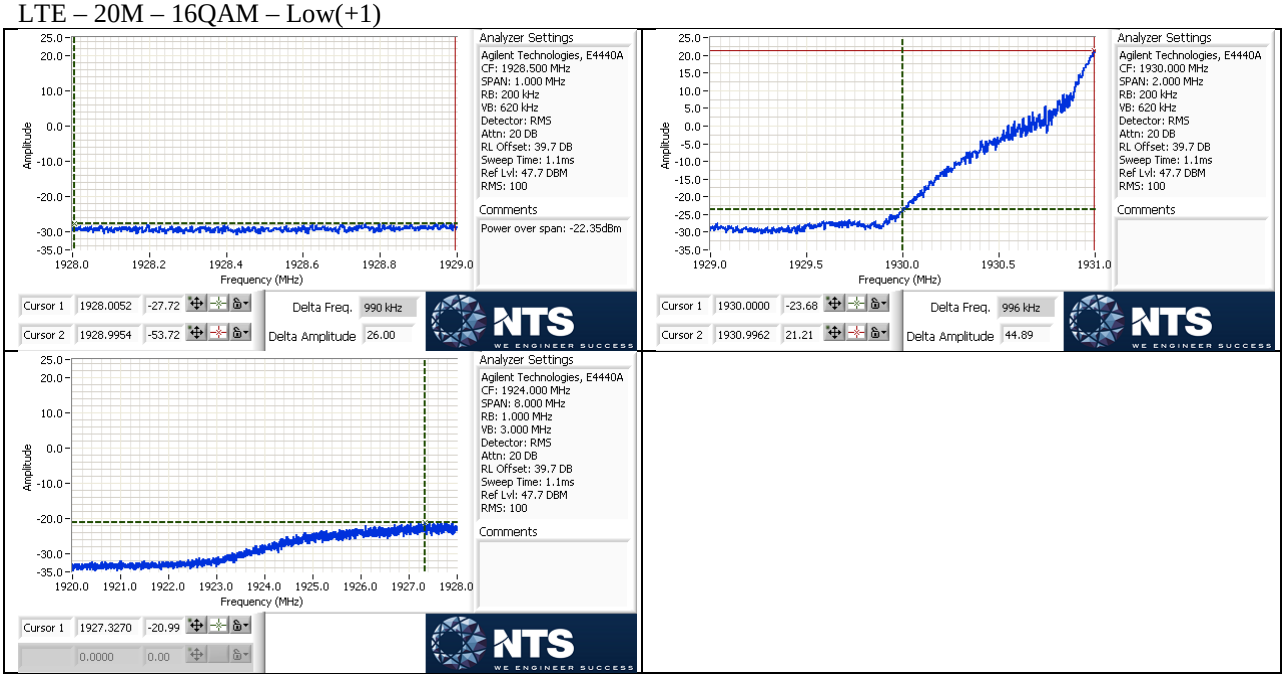
LTE – 20M – QPSK – High(-1)



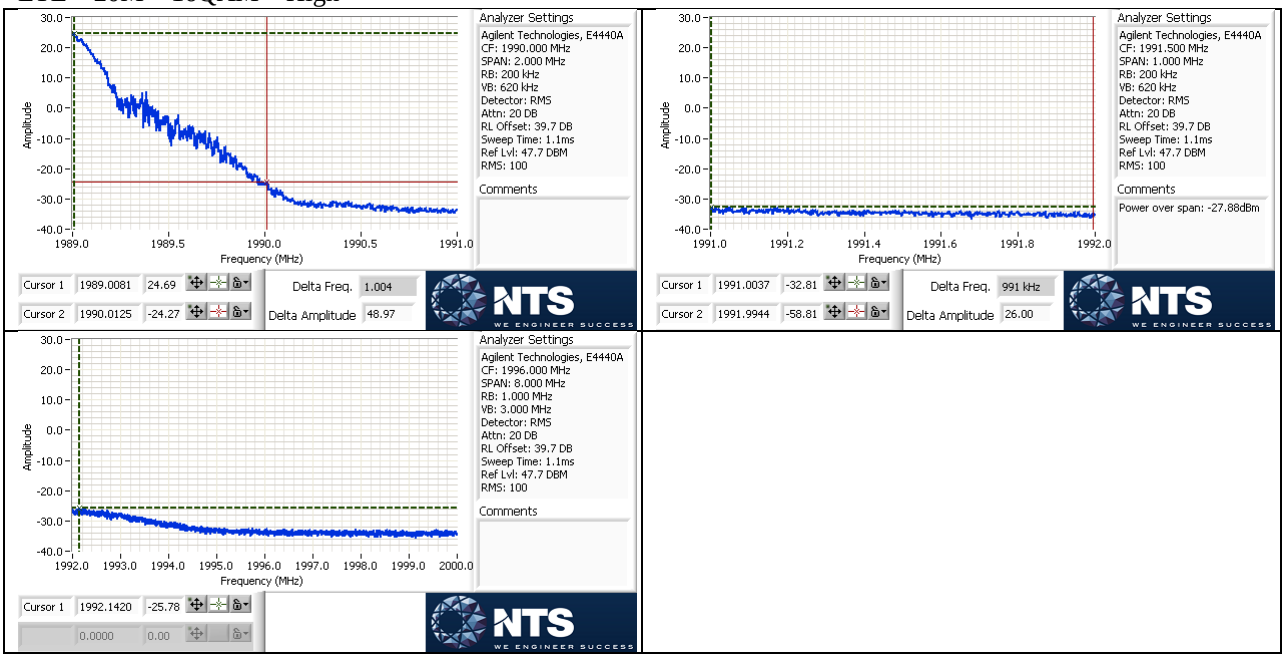
LTE – 20M – 16QAM – Low



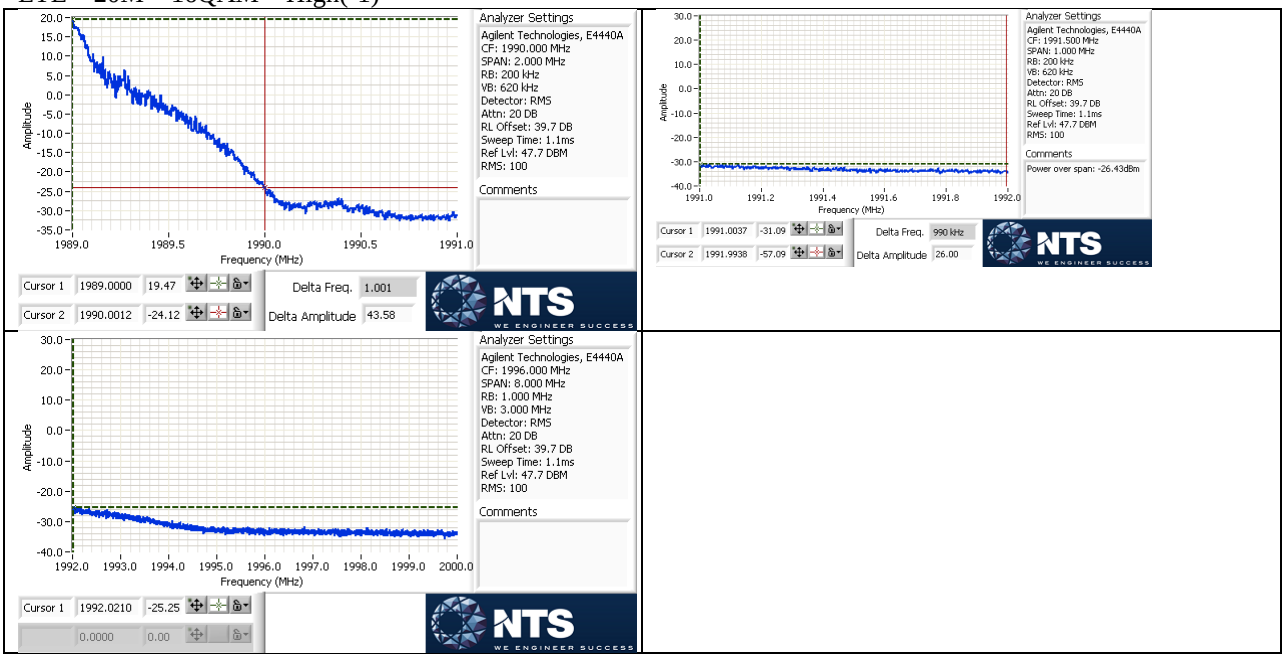
LTE – 20M – 16QAM – Low(+1)



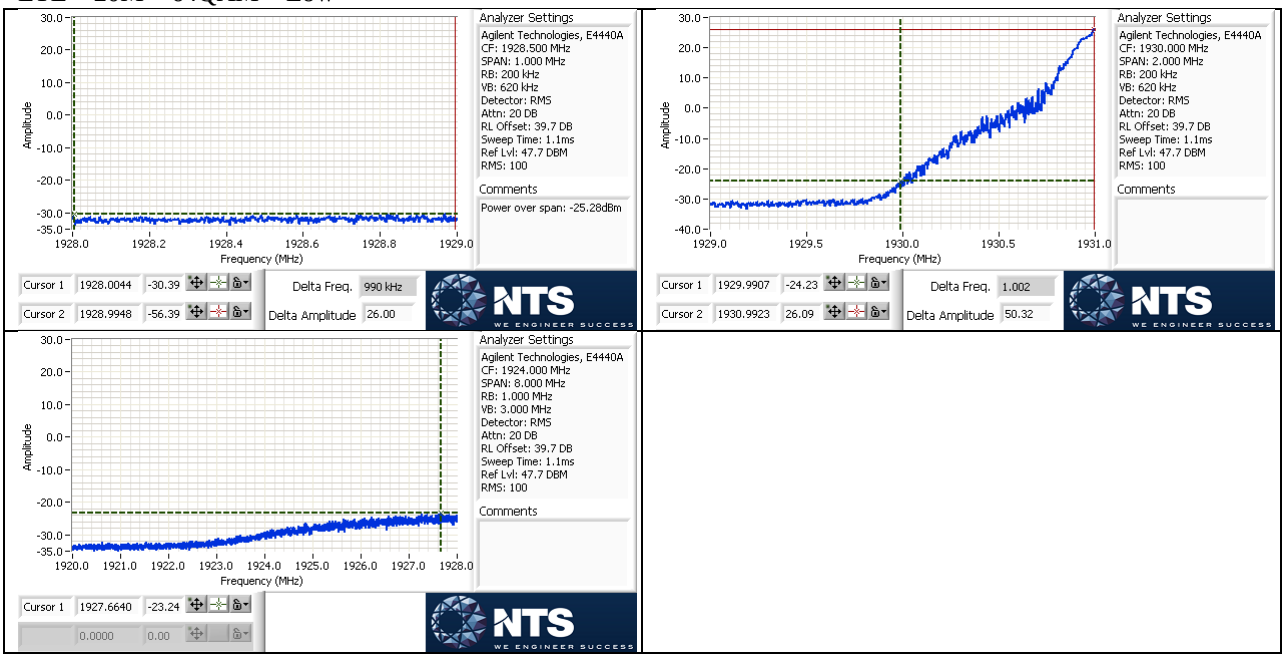
LTE – 20M – 16QAM – High



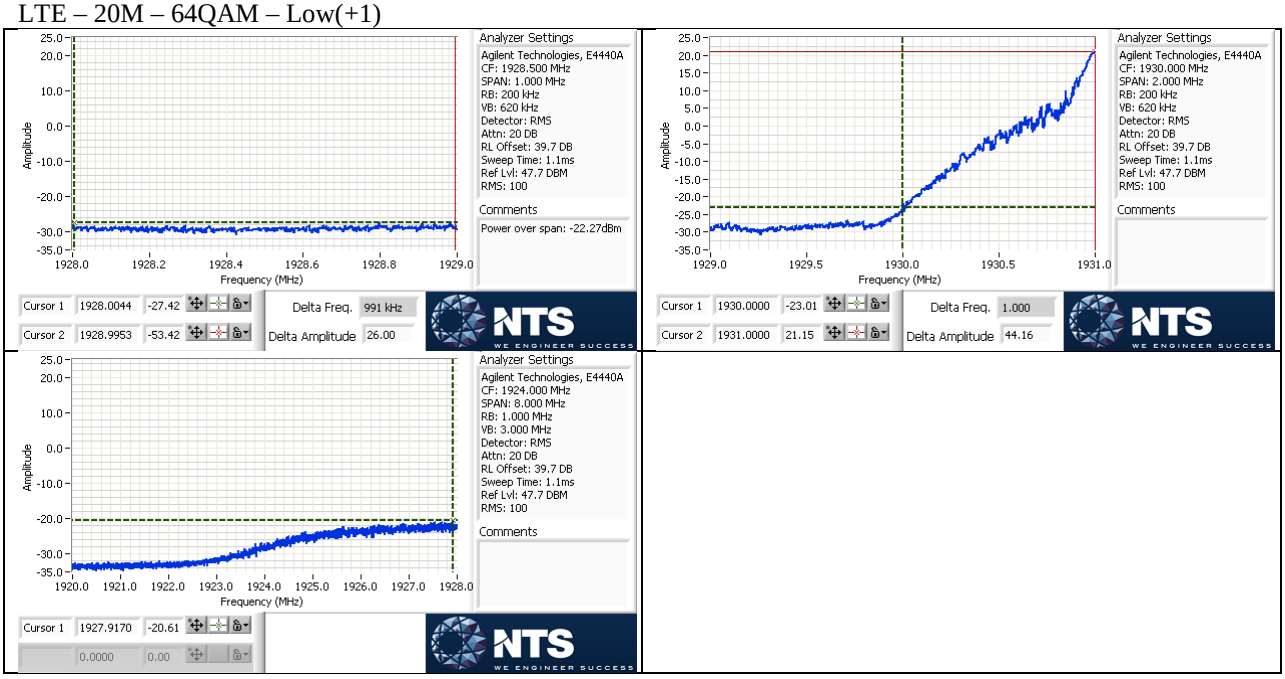
LTE – 20M – 16QAM – High(-1)



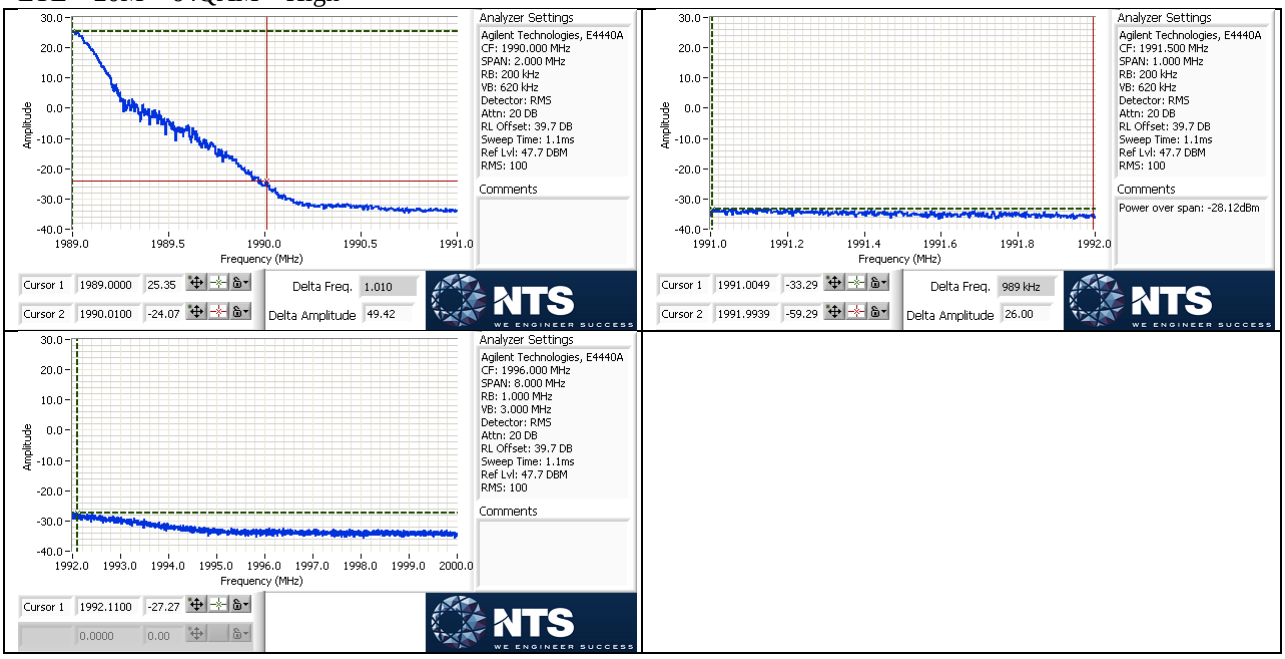
LTE – 20M – 64QAM – Low



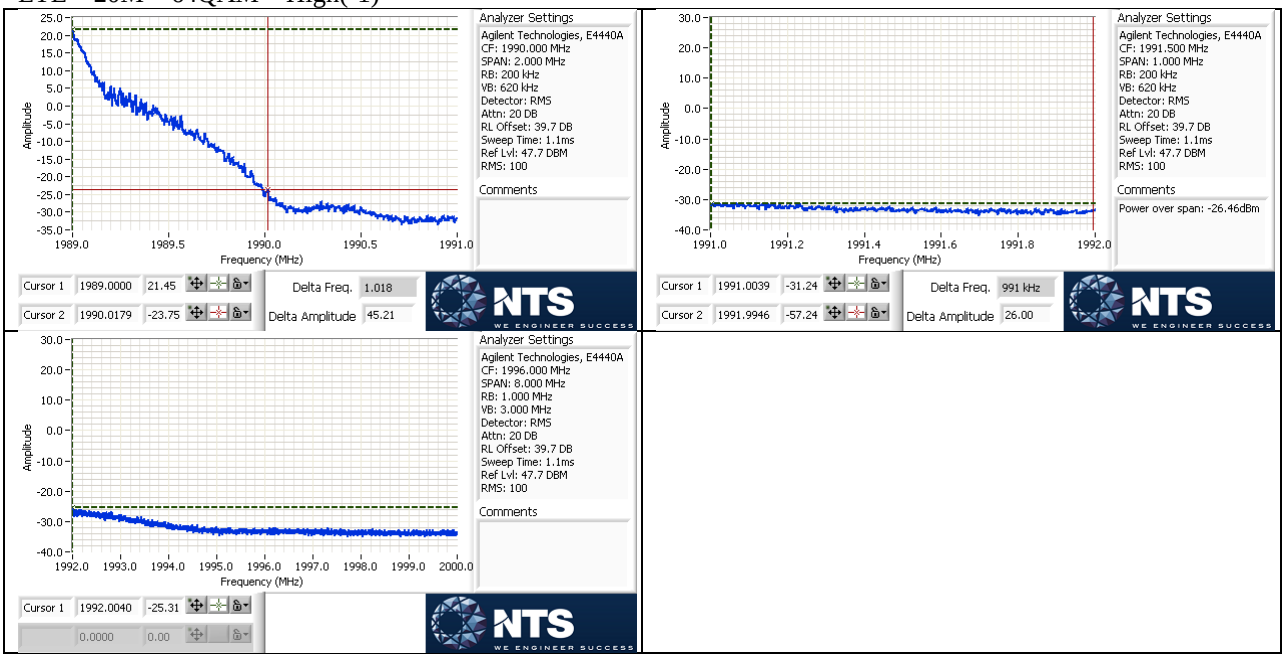
LTE – 20M – 64QAM – Low(+1)



LTE – 20M – 64QAM – High



LTE – 20M – 64QAM – High(-1)



Transmitter Antenna Port Conducted Spurious Emissions

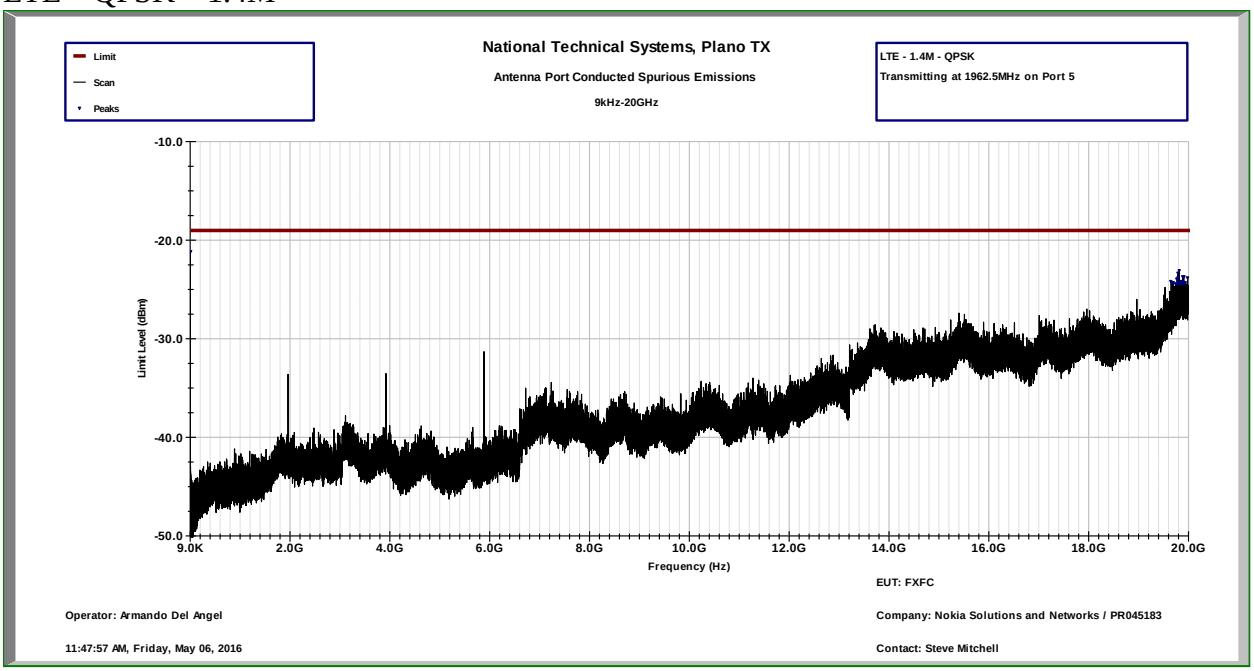
Tests performed at Port 5 on center channel for all modulations and bandwidth modes. Due to 4x4 MIMO operation, limit is -19.03dBm (-13dBm – 10*log(4)) per FCC KDB 662911D01 v02r01.

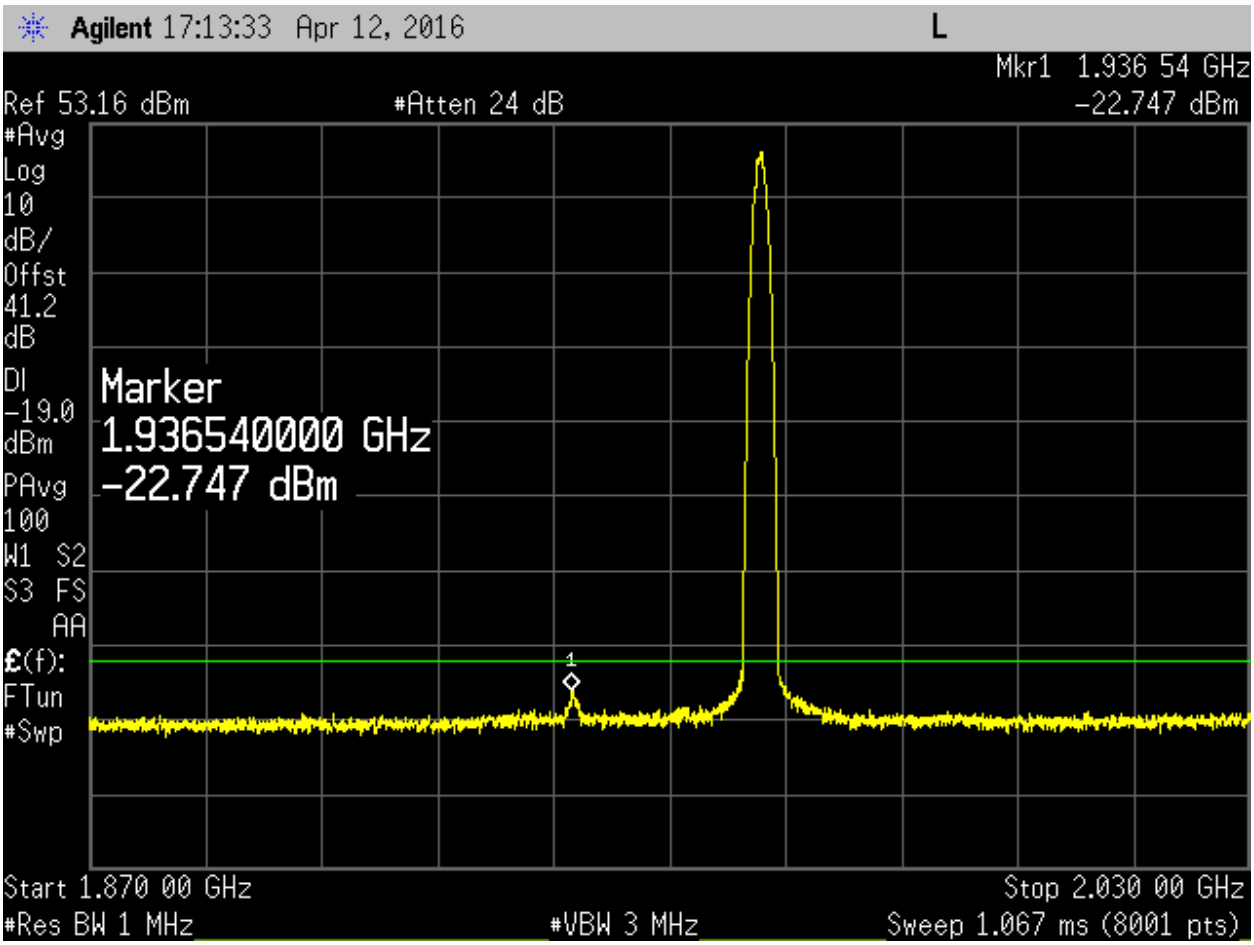
TILE6 measurement software was used during testing with the following settings:

Frequency Range	**RBW**	**VBW**	**Number of data points**	**Divided into**	**Detector**	**Sweep Time**	**Max hold over**
9kHz-150kHz	1kHz	3kHz	8000	1 segment	Peak	Auto	50 sweeps
150kHz-1.5MHz	100kHz	300kHz	8000	1 segment	Peak	Auto	50 sweeps
1.5MHz-20GHz	1MHz	3MHz	8000	10 segments	Peak	Auto	50 sweeps

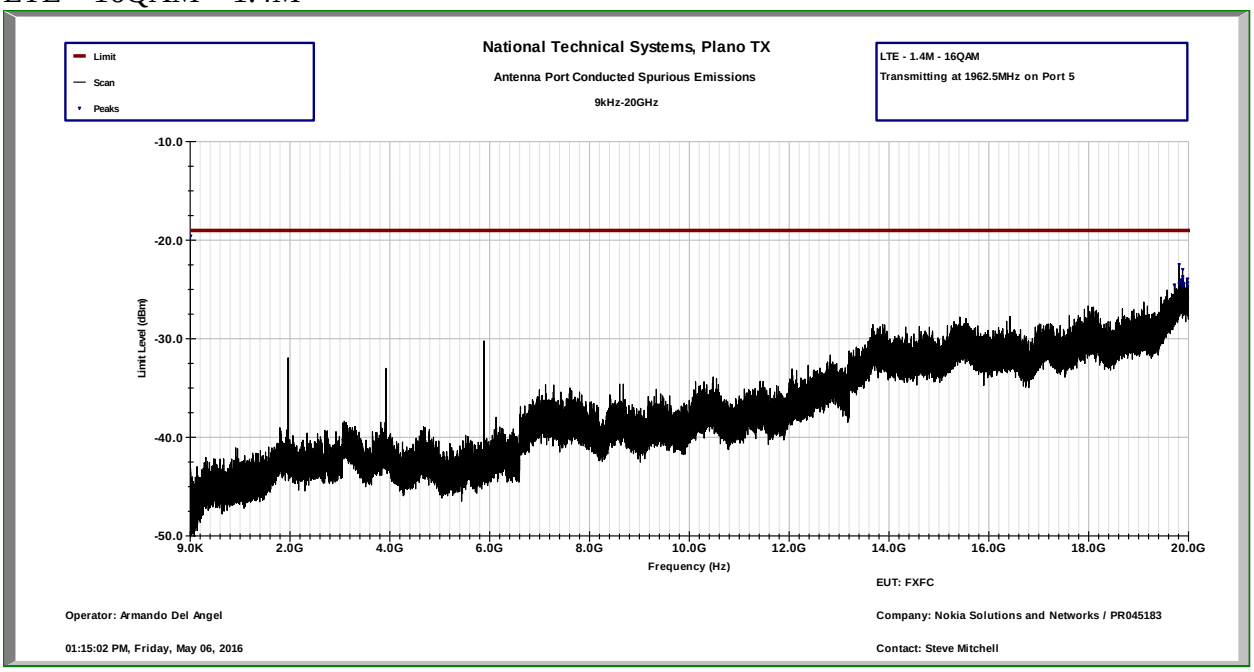
Corresponding plots are included on the following pages. 1st Plot was taken with a notch filter and a High-Pass Filter. The notch filter was used from 9kHz-4GHz with a stop-band of 1870-2030MHz. The High pass filter was used from 4GHz-20GHz with a pass-band of 2800-20000MHz. The 2nd plot was taken with no filter in order to measure the stop-band of the first filter 1870-2030MHz. This was accomplished with internal and external attenuation. The external attenuation was corrected through the PSA's reference offset, attenuator + cables = 41.2dB.

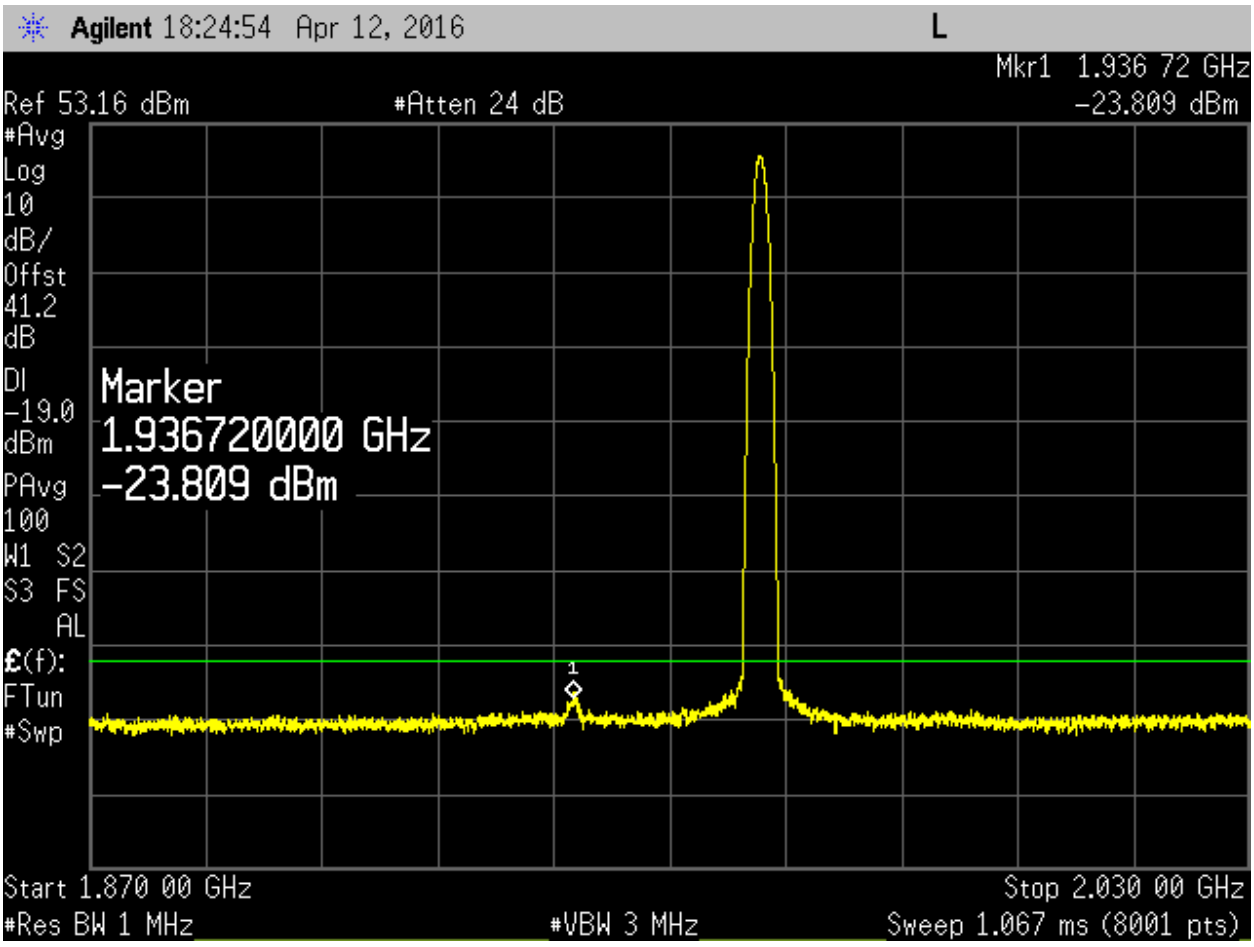
LTE – QPSK – 1.4M


Limit
Scan
Peaks
National Technical Systems, Plano TX
Antenna Port Conducted Spurious Emissions
9kHz-20GHz
LTE - 1.4M - QPSK
Transmitting at 1962.5MHz on Port 5
-10.0
-20.0
-30.0
-40.0
-50.0
Limit Level (dBm)
9.0K
2.0G
4.0G
6.0G
8.0G
10.0G
12.0G
14.0G
16.0G
18.0G
20.0G
Frequency (Hz)
EUT: FXFC
Operator: Armando Del Angel
Company: Nokia Solutions and Networks / PR045183
11:47:57 AM, Friday, May 06, 2016
Contact: Steve Mitchell

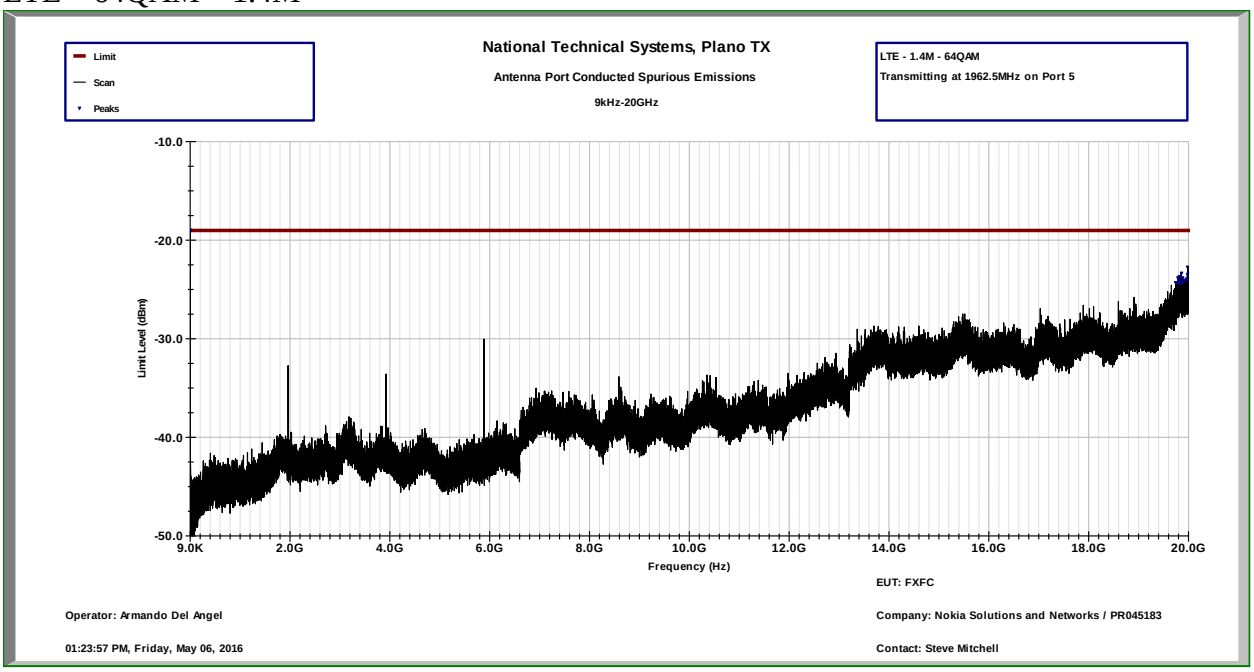

Agilent 17:13:33 Apr 12, 2016
L
Mkr1 1.936 54 GHz
Ref 53.16 dBm
#Atten 24 dB
-22.747 dBm
#Avg
Log
10
dB/
Offst
41.2
dB
Dl
-19.0
dBm
PAvg
100
W1 S2
S3 FS
AA
£(f):
FTun
#Swp
Marker
1.936540000 GHz
-22.747 dBm
Start 1.870 00 GHz
#Res BW 1 MHz
#VBW 3 MHz
Stop 2.030 00 GHz
Sweep 1.067 ms (8001 pts)

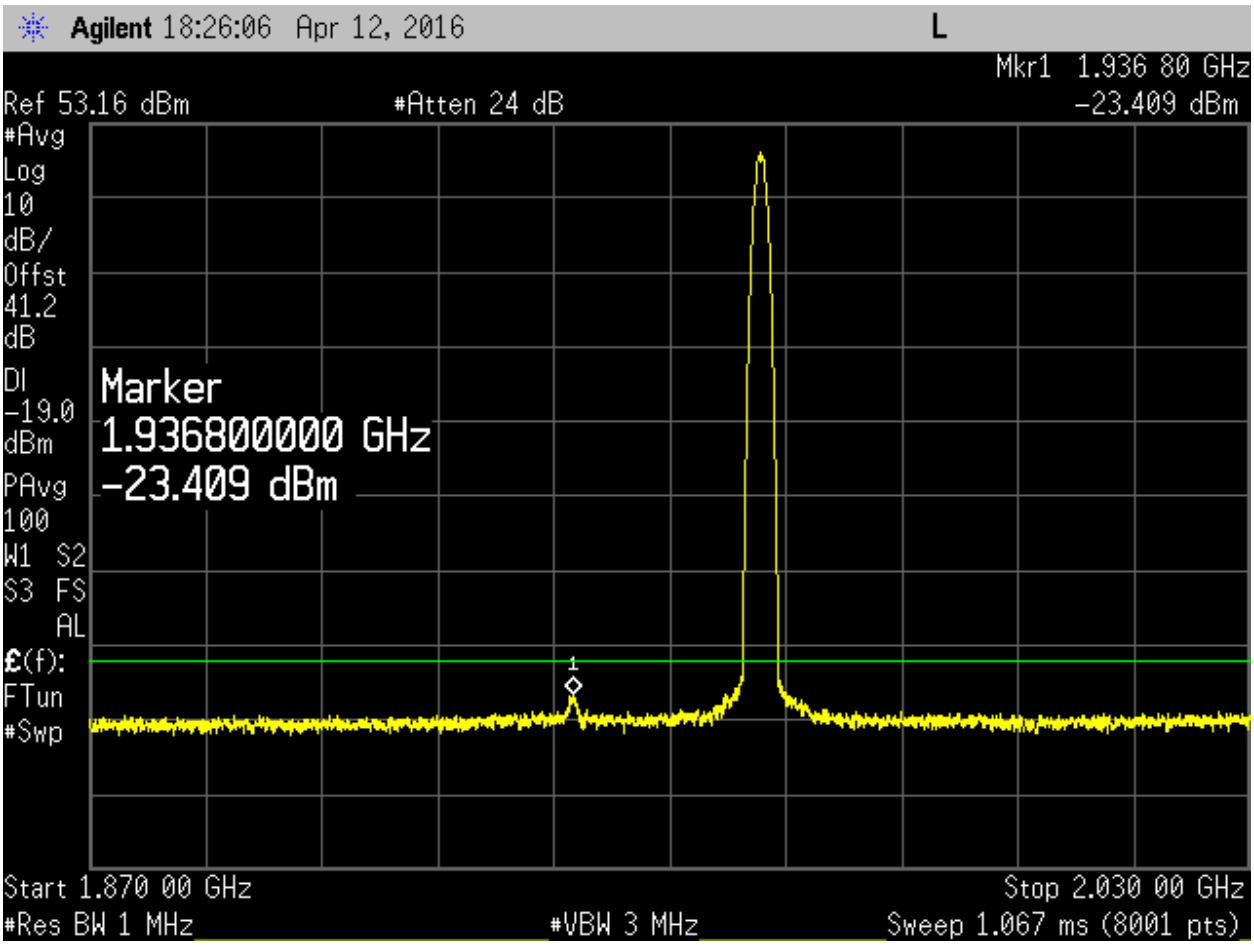
LTE – 16QAM – 1.4M



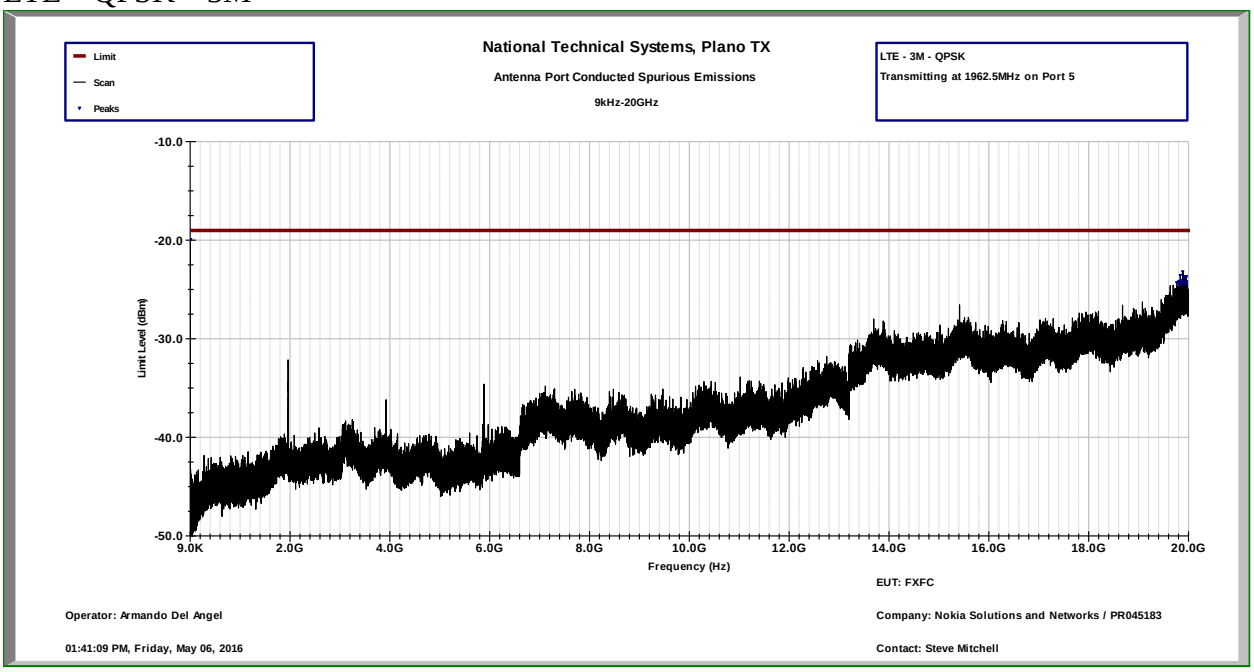


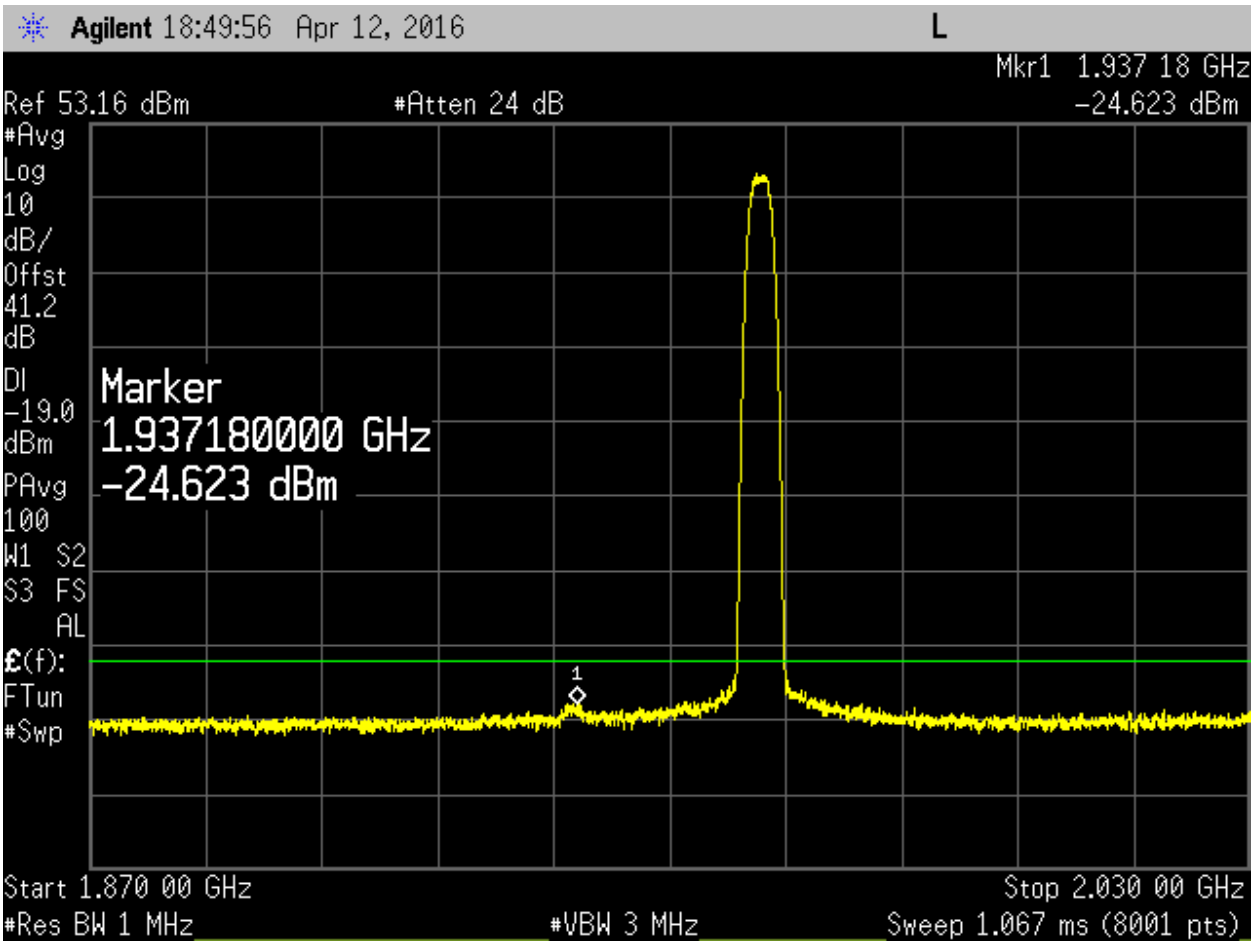
LTE – 64QAM – 1.4M



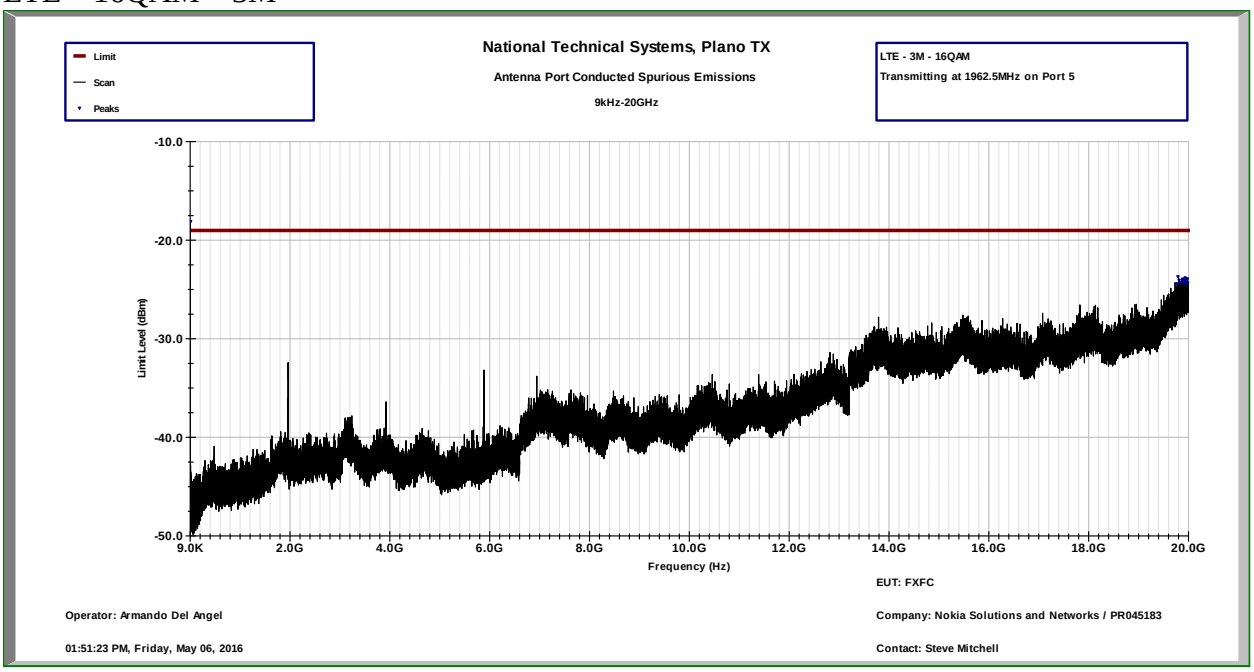


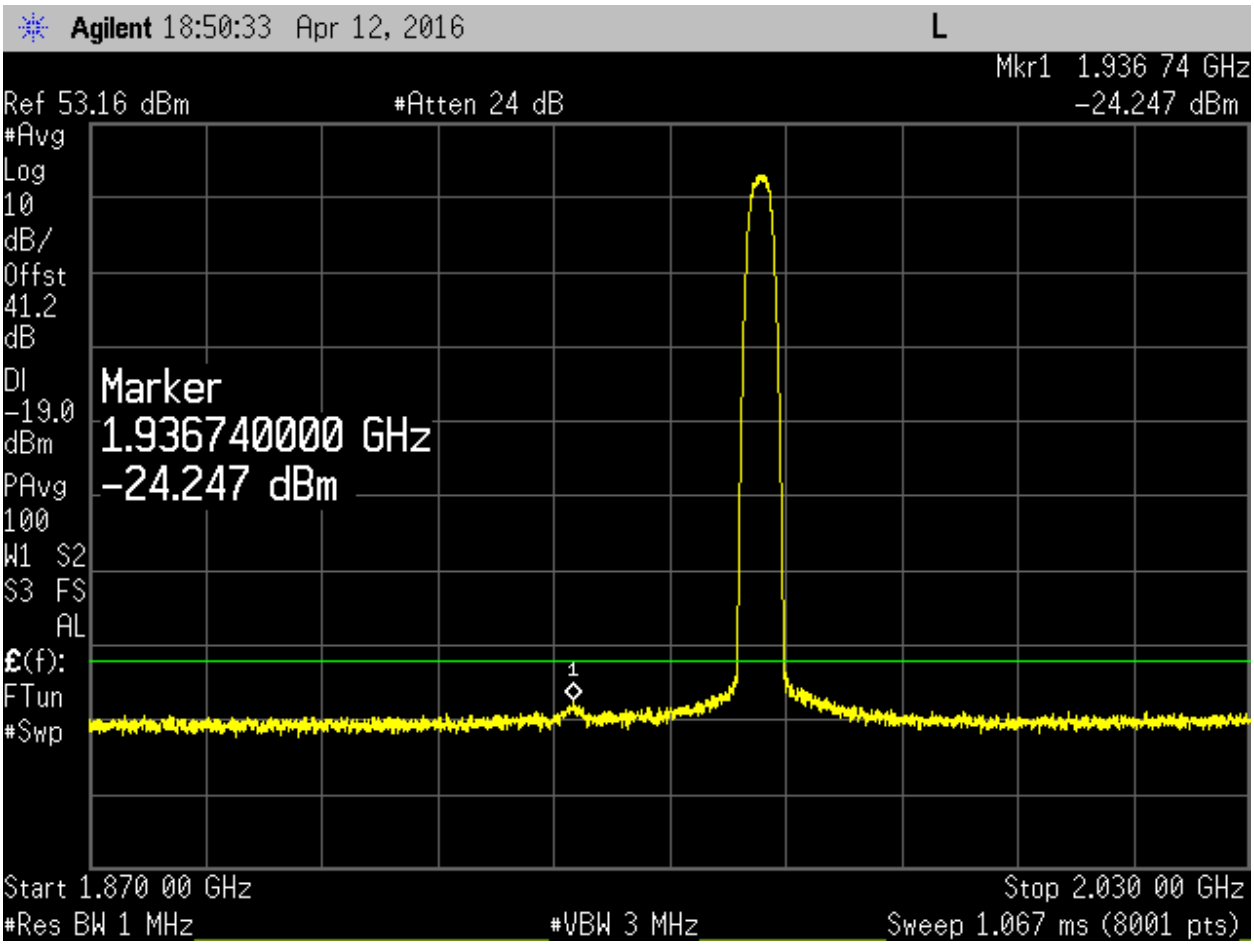
LTE – QPSK – 3M


Limit
Scan
Peaks
National Technical Systems, Plano TX
Antenna Port Conducted Spurious Emissions
9kHz-20GHz
LTE - 3M - QPSK
Transmitting at 1962.5MHz on Port 5
-10.0
-20.0
-30.0
-40.0
-50.0
Limit Level (dBm)
9.0K
2.0G
4.0G
6.0G
8.0G
10.0G
12.0G
14.0G
16.0G
18.0G
20.0G
Frequency (Hz)
EUT: FXFC
Operator: Armando Del Angel
Company: Nokia Solutions and Networks / PR045183
01:41:09 PM, Friday, May 06, 2016
Contact: Steve Mitchell

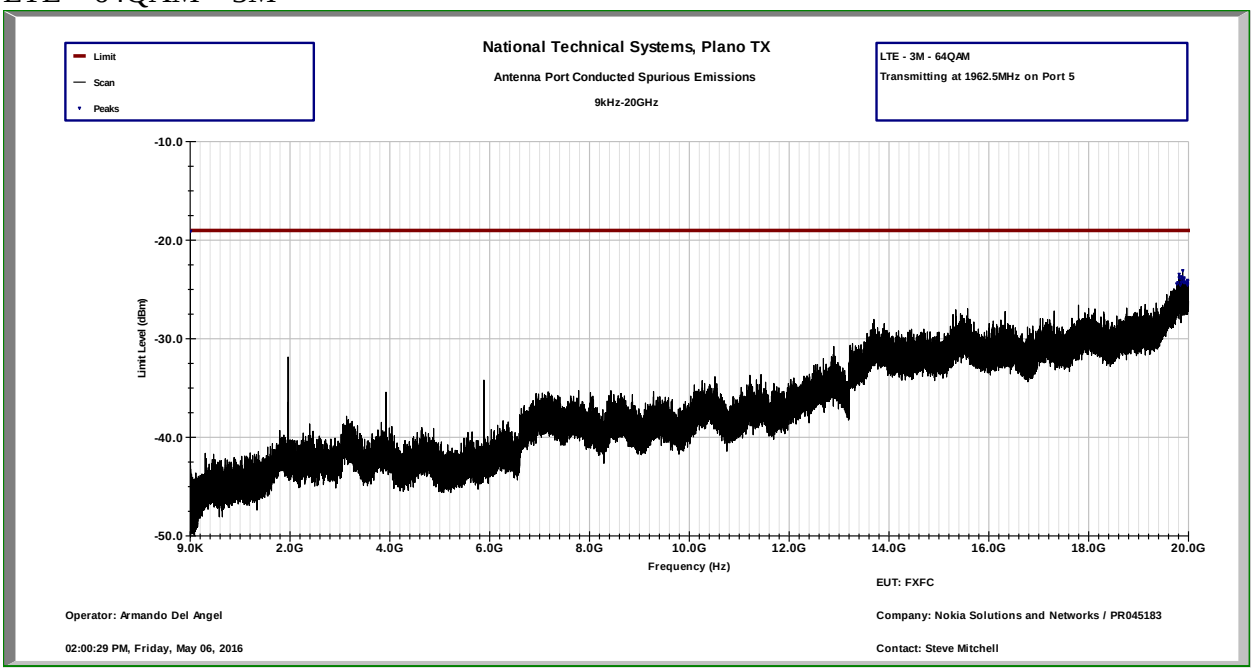

Agilent 18:49:56 Apr 12, 2016
L
Mkr1 1.937 18 GHz
-24.623 dBm
Ref 53.16 dBm
#Atten 24 dB
#Avg
Log
10
dB/
Offst
41.2
dB
Dl
-19.0
dBm
PAvg
100
W1 S2
S3 FS
AL
£(f):
FTun
#Swp
Marker
1.937180000 GHz
-24.623 dBm
1
Start 1.870 00 GHz
#Res BW 1 MHz
#VBW 3 MHz
Stop 2.030 00 GHz
Sweep 1.067 ms (8001 pts)

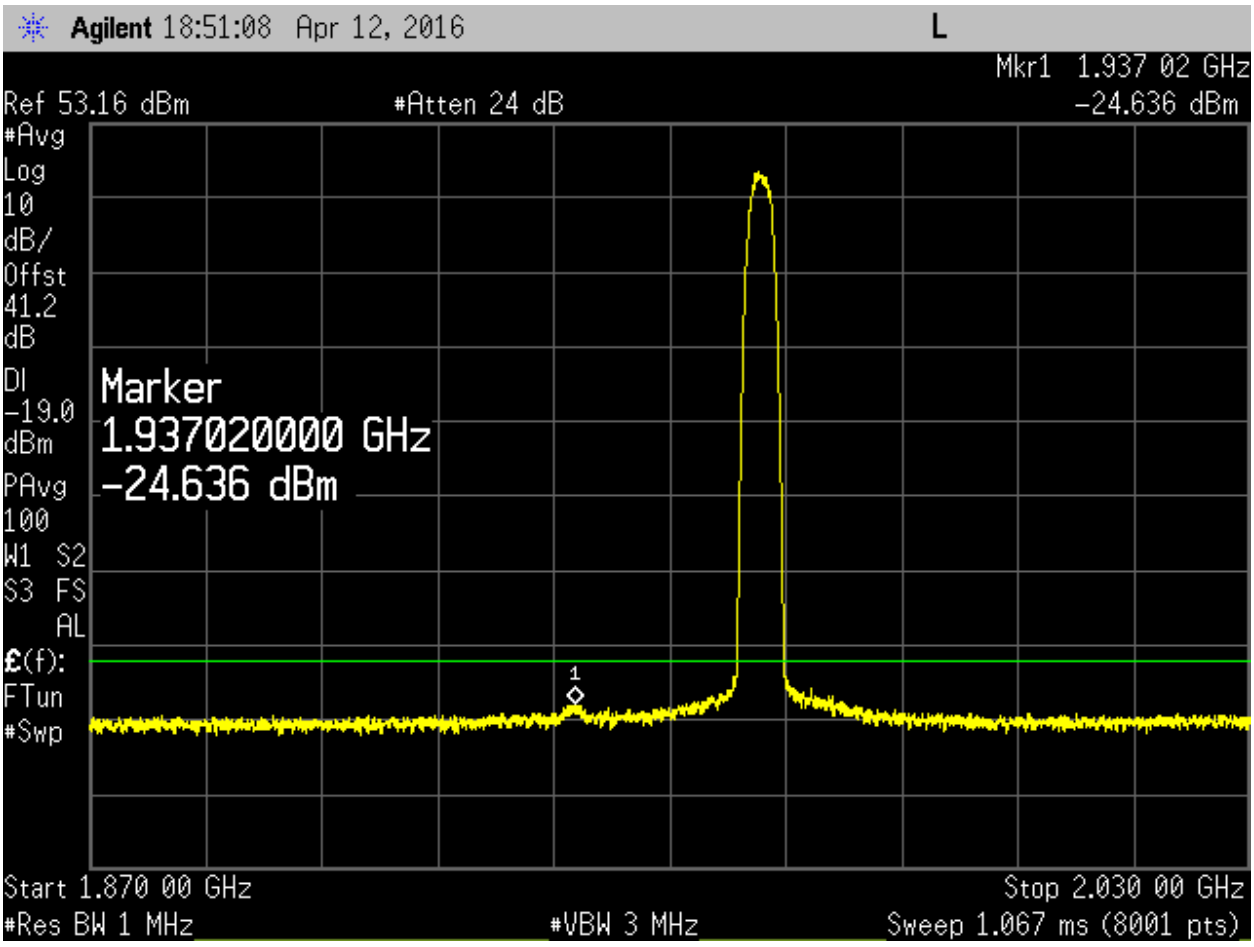
LTE – 16QAM – 3M


Limit
Scan
Peaks
National Technical Systems, Plano TX
Antenna Port Conducted Spurious Emissions
9kHz-20GHz
LTE - 3M - 16QAM
Transmitting at 1962.5MHz on Port 5
-10.0
-20.0
-30.0
-40.0
-50.0
Limit Level (dBm)
9.0K
2.0G
4.0G
6.0G
8.0G
10.0G
12.0G
14.0G
16.0G
18.0G
20.0G
Frequency (Hz)
EUT: FXFC
Operator: Armando Del Angel
Company: Nokia Solutions and Networks / PR045183
01:51:23 PM, Friday, May 06, 2016
Contact: Steve Mitchell

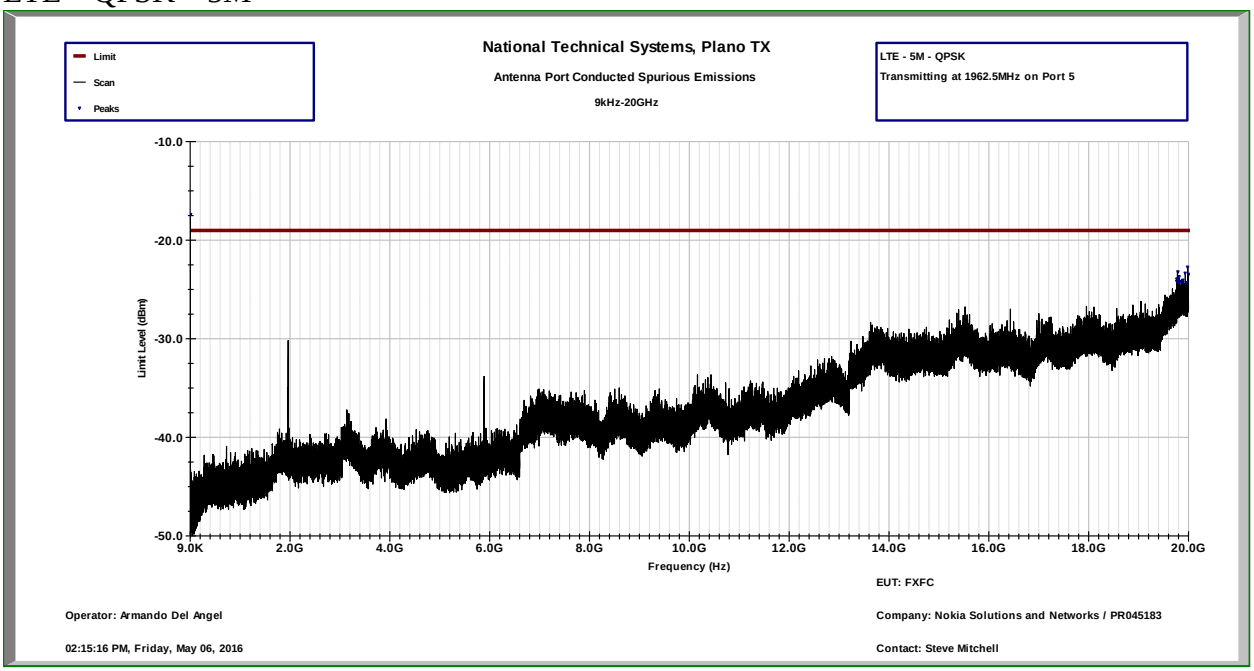

Agilent 18:50:33 Apr 12, 2016
L
Mkr1 1.936 74 GHz
-24.247 dBm
Ref 53.16 dBm
#Atten 24 dB
#Avg
Log
10
dB/
Offst
41.2
dB
Dl
-19.0
dBm
PAvg
100
W1 S2
S3 FS
AL
£(f):
FTun
#Swp
Marker
1.936740000 GHz
-24.247 dBm
Start 1.870 00 GHz
#Res BW 1 MHz
#VBW 3 MHz
Stop 2.030 00 GHz
Sweep 1.067 ms (8001 pts)

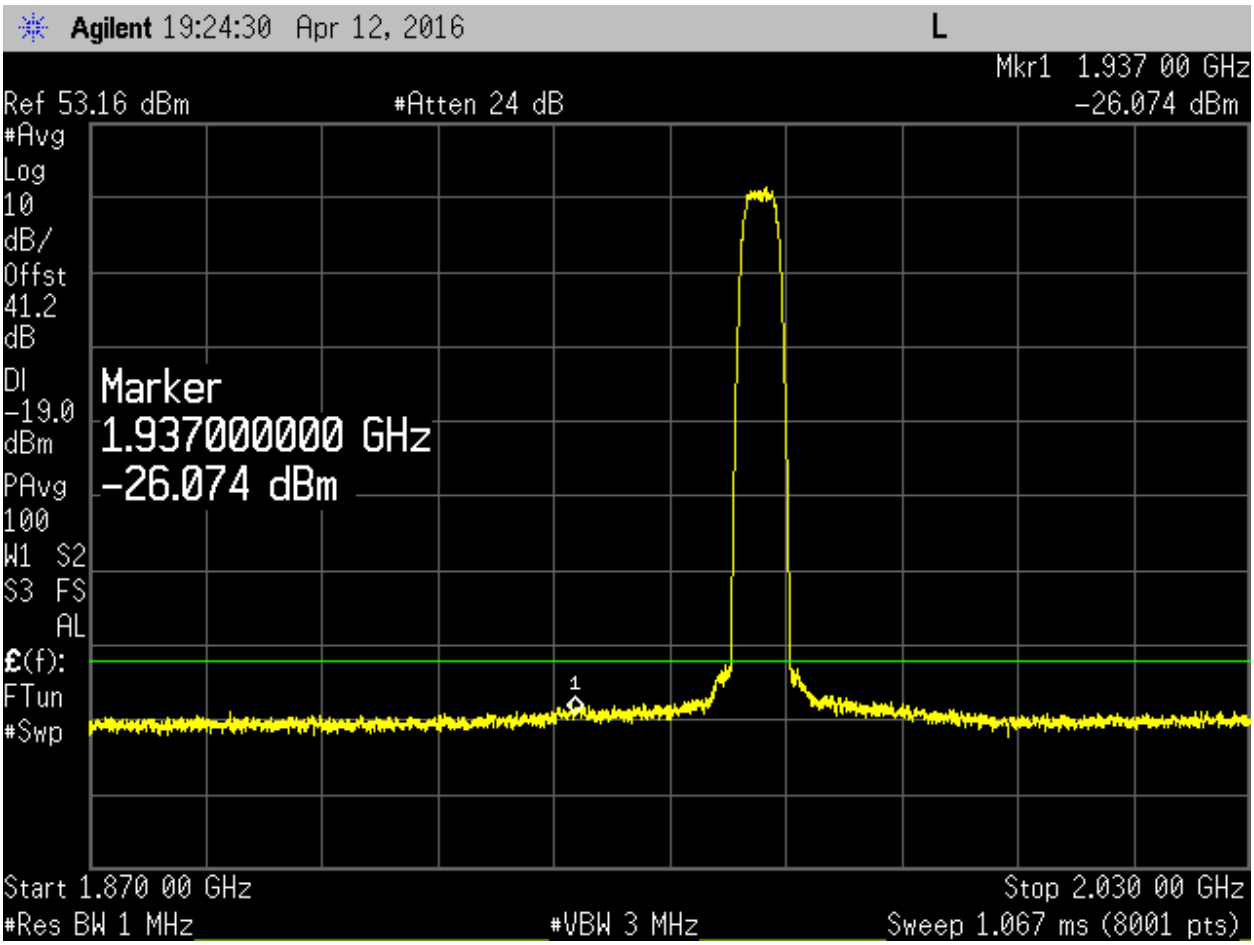
LTE – 64QAM – 3M


Limit
Scan
Peaks
National Technical Systems, Plano TX
Antenna Port Conducted Spurious Emissions
9kHz-20GHz
LTE - 3M - 64QAM
Transmitting at 1962.5MHz on Port 5
Limit Level (dBm)
-10.0
-20.0
-30.0
-40.0
-50.0
9.0K
2.0G
4.0G
6.0G
8.0G
10.0G
12.0G
14.0G
16.0G
18.0G
20.0G
Frequency (Hz)
EUT: FXFC
Operator: Armando Del Angel
Company: Nokia Solutions and Networks / PR045183
02:00:29 PM, Friday, May 06, 2016
Contact: Steve Mitchell

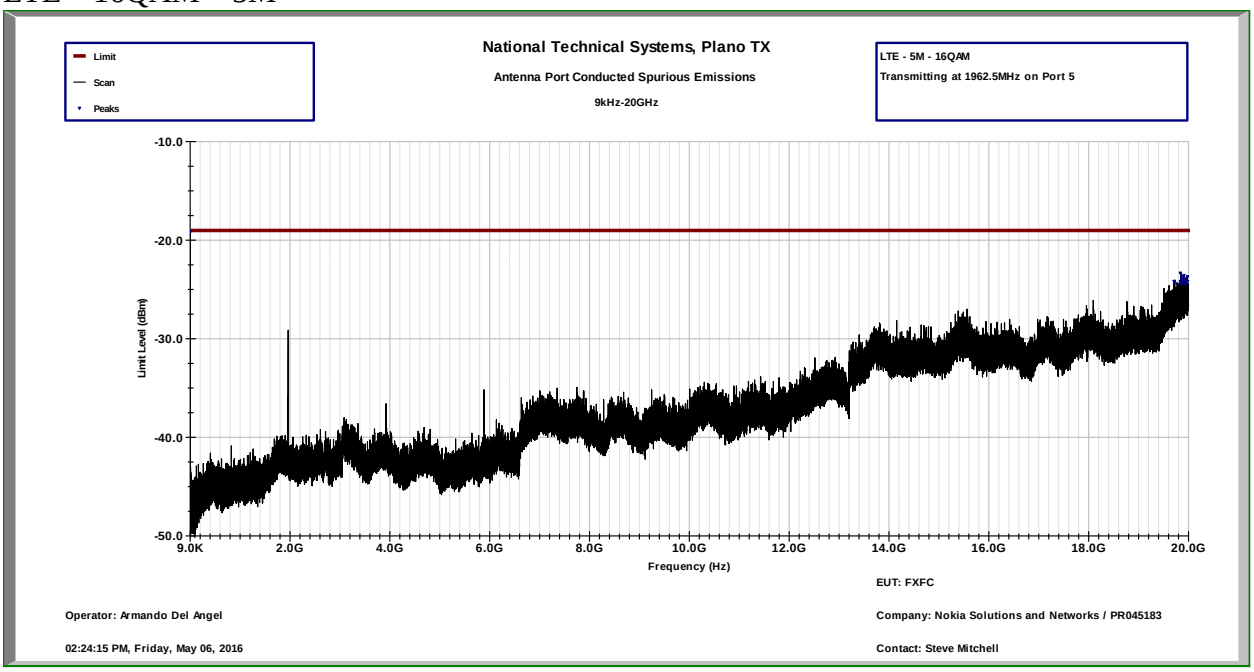

Agilent 18:51:08 Apr 12, 2016
L
Mkr1 1.937 02 GHz
-24.636 dBm
Ref 53.16 dBm
#Atten 24 dB
#Avg
Log
10
dB/
Offst
41.2
dB
Dl
-19.0
dBm
PAvg
100
W1 S2
S3 FS
AL
£(f):
FTun
#Swp
Marker
1.937020000 GHz
-24.636 dBm
1
Start 1.870 00 GHz
#Res BW 1 MHz
#VBW 3 MHz
Stop 2.030 00 GHz
Sweep 1.067 ms (8001 pts)

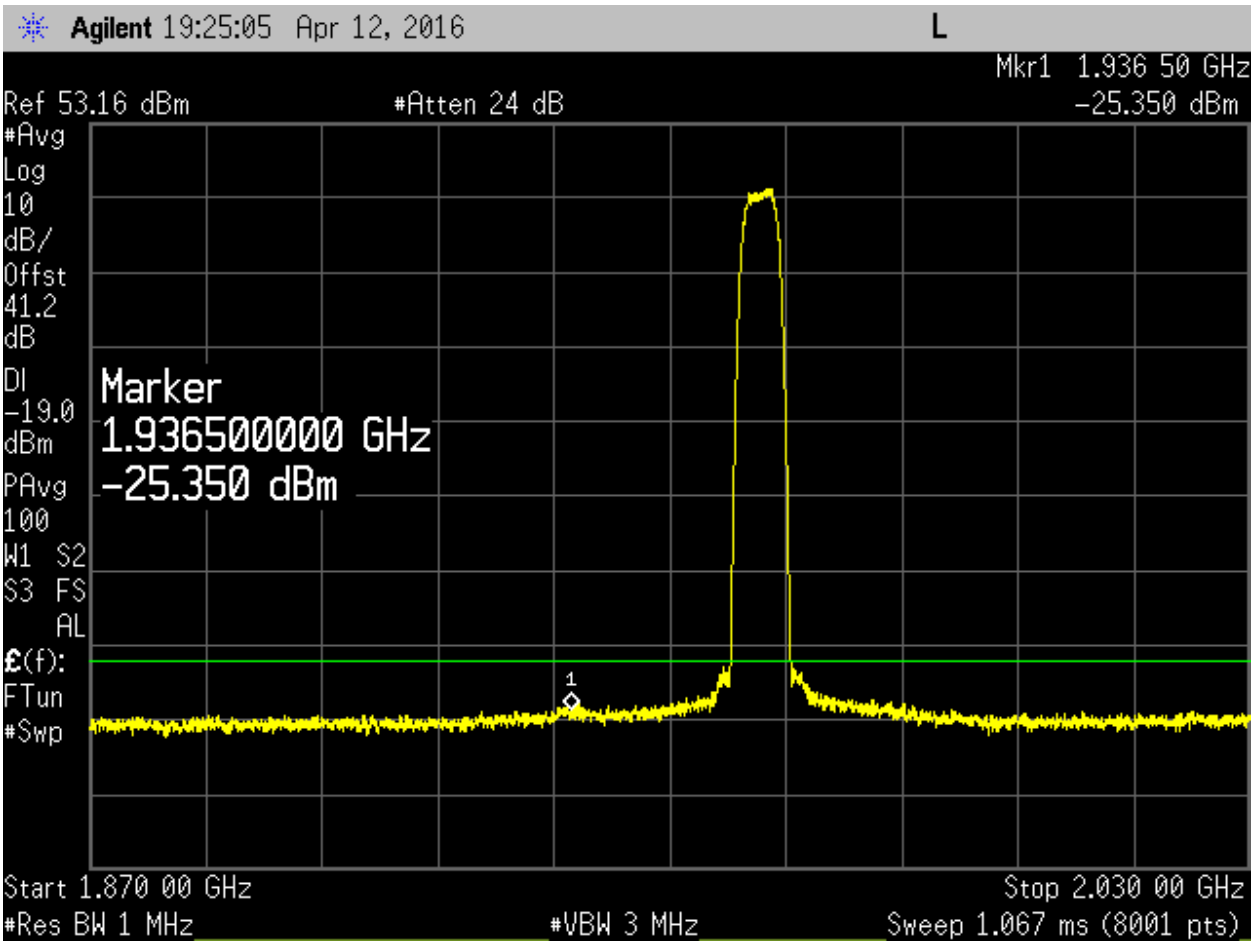
LTE – QPSK – 5M


Limit
Scan
Peaks
National Technical Systems, Plano TX
Antenna Port Conducted Spurious Emissions
9kHz-20GHz
LTE - 5M - QPSK
Transmitting at 1962.5MHz on Port 5
-10.0
-20.0
-30.0
-40.0
-50.0
Limit Level (dBm)
9.0K
2.0G
4.0G
6.0G
8.0G
10.0G
12.0G
14.0G
16.0G
18.0G
20.0G
Frequency (Hz)
EUT: FXFC
Operator: Armando Del Angel
Company: Nokia Solutions and Networks / PR045183
02:15:16 PM, Friday, May 06, 2016
Contact: Steve Mitchell

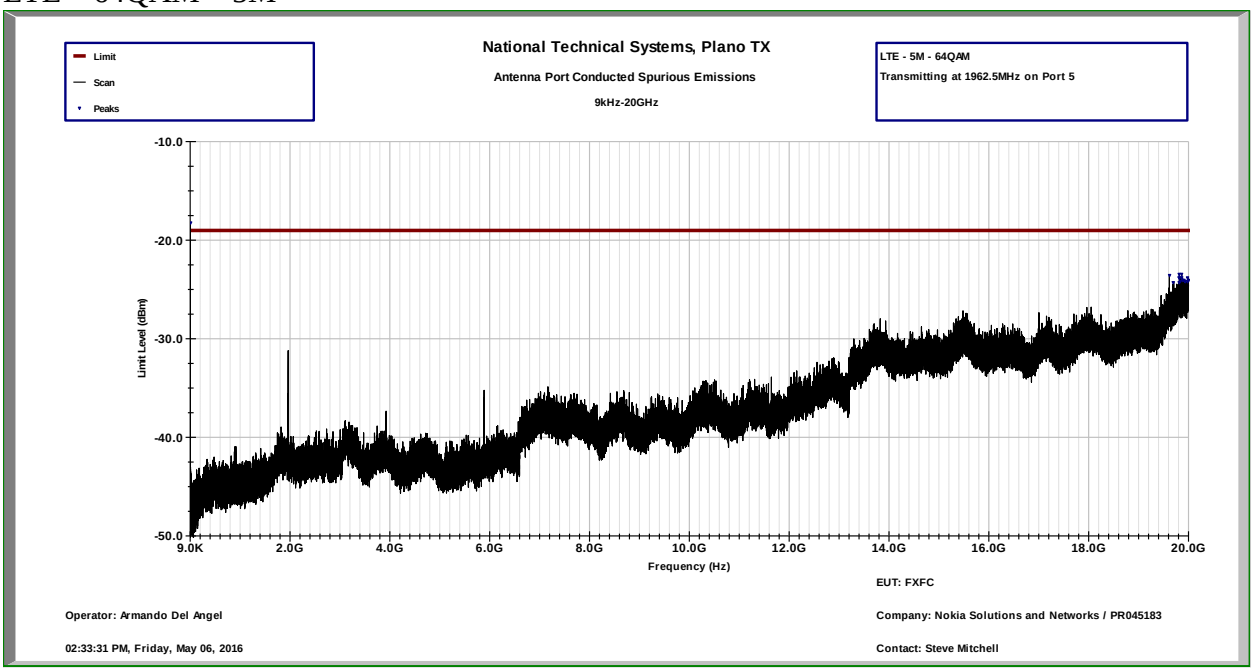

Agilent 19:24:30 Apr 12, 2016
L
Mkr1 1.937 00 GHz
Ref 53.16 dBm
#Atten 24 dB
-26.074 dBm
#Avg
Log
10
dB/
Offst
41.2
dB
Dl
-19.0
dBm
PAvg
100
W1 S2
S3 FS
AL
£(f):
FTun
#Swp
Marker
1.937000000 GHz
-26.074 dBm
1
Start 1.870 00 GHz
Stop 2.030 00 GHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1.067 ms (8001 pts)

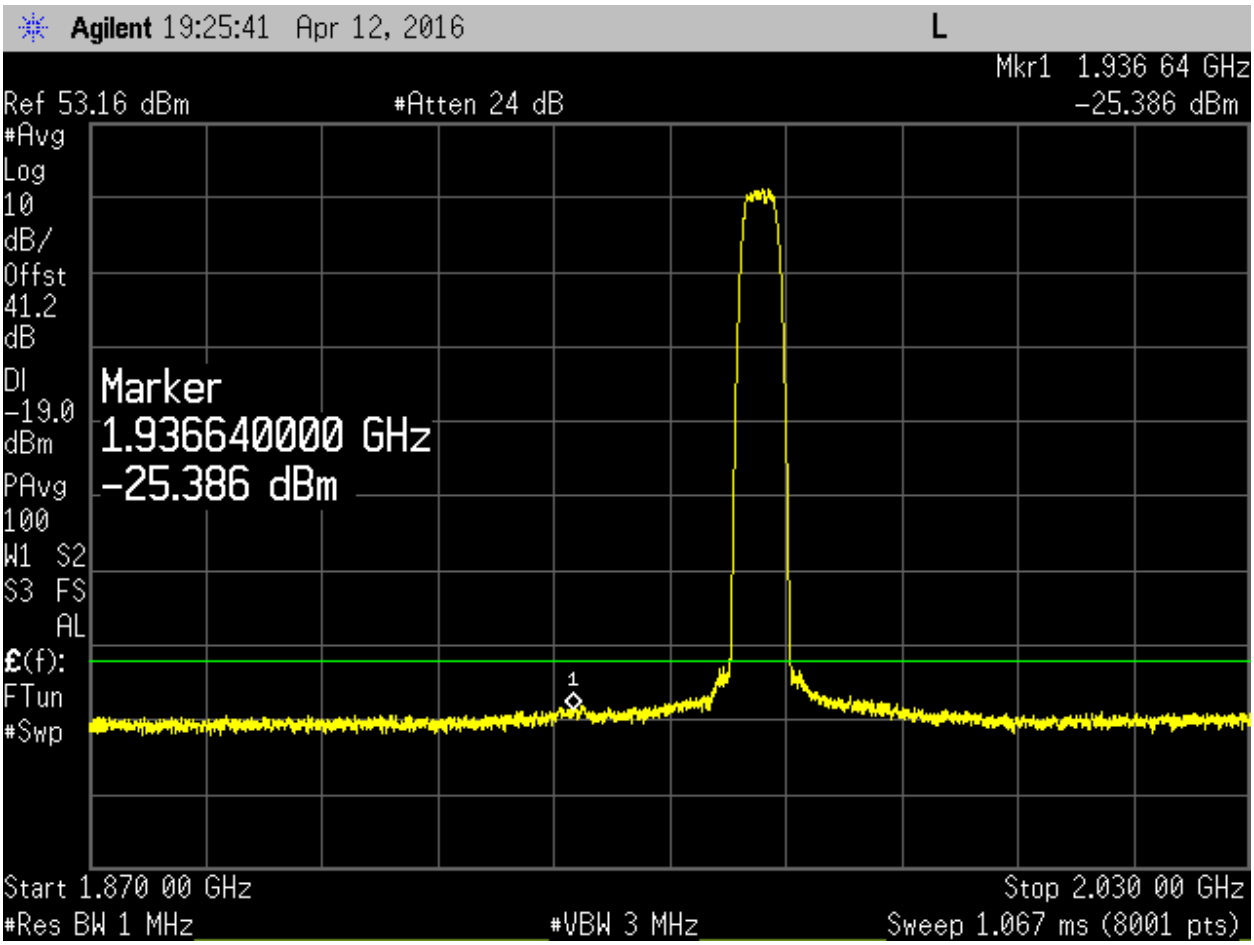
LTE – 16QAM – 5M


Limit
Scan
Peaks
National Technical Systems, Plano TX
Antenna Port Conducted Spurious Emissions
9kHz-20GHz
LTE - 5M - 16QAM
Transmitting at 1962.5MHz on Port 5
-10.0
-20.0
-30.0
-40.0
-50.0
Limit Level (dBm)
9.0K
2.0G
4.0G
6.0G
8.0G
10.0G
12.0G
14.0G
16.0G
18.0G
20.0G
Frequency (Hz)
EUT: FXFC
Operator: Armando Del Angel
Company: Nokia Solutions and Networks / PR045183
02:24:15 PM, Friday, May 06, 2016
Contact: Steve Mitchell

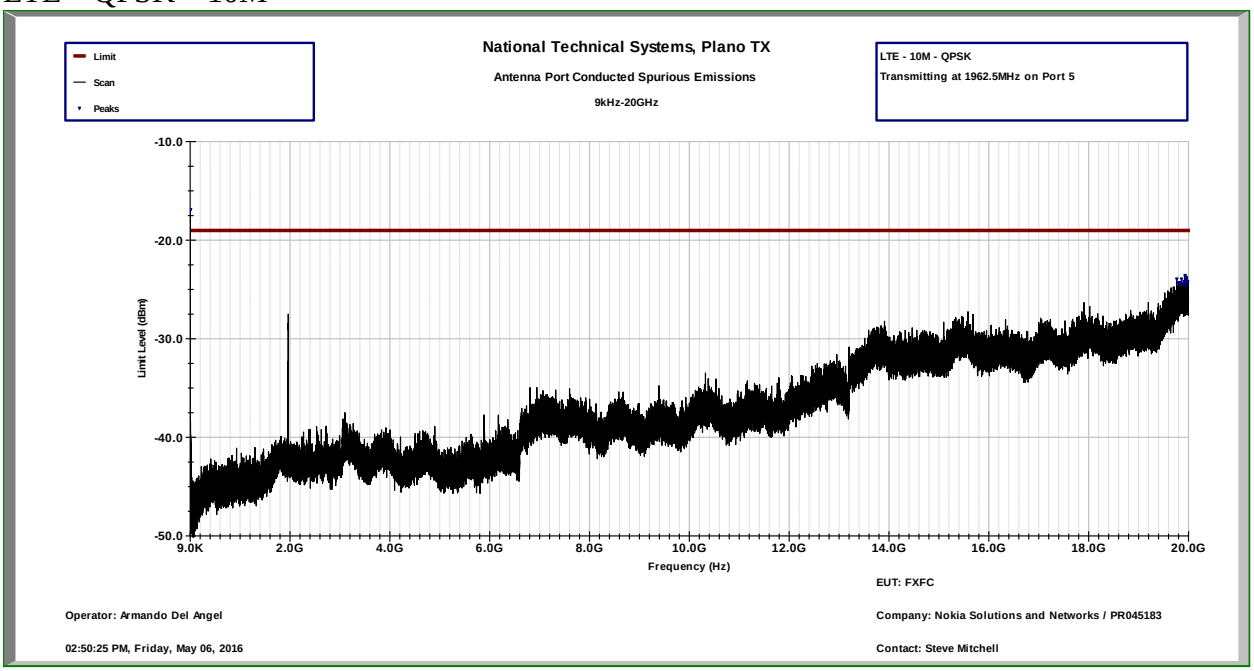

Agilent 19:25:05 Apr 12, 2016
L
Mkr1 1.936 50 GHz
Ref 53.16 dBm
#Atten 24 dB
-25.350 dBm
#Avg
Log
10
dB/
Offst
41.2
dB
Dl
-19.0
dBm
PAvg
100
W1 S2
S3 FS
AL
£(f):
FTun
#Swp
Marker
1.936500000 GHz
-25.350 dBm
1
Start 1.870 00 GHz
Stop 2.030 00 GHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1.067 ms (8001 pts)

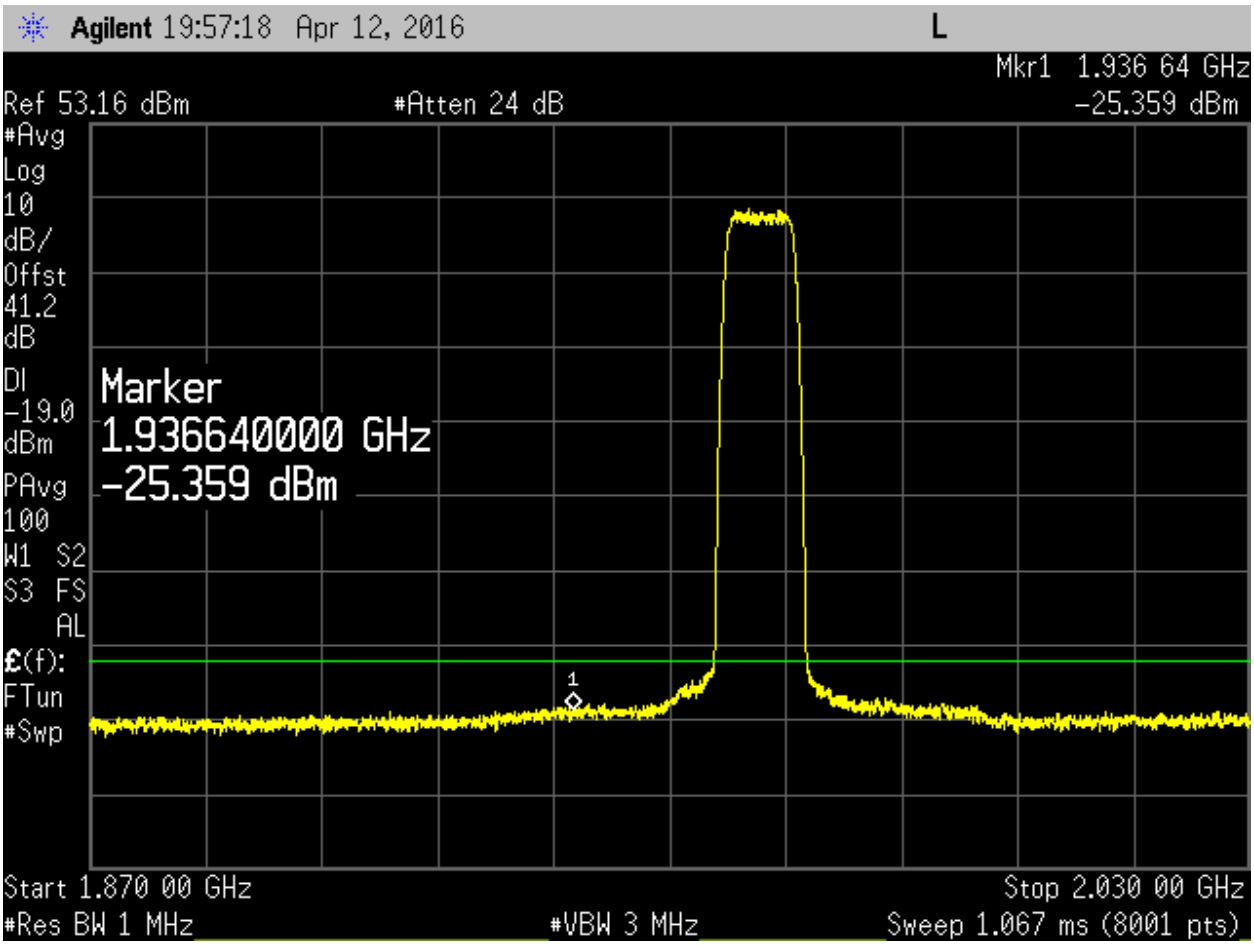
LTE – 64QAM – 5M


Limit
Scan
Peaks
National Technical Systems, Plano TX
Antenna Port Conducted Spurious Emissions
9kHz-20GHz
LTE - 5M - 64QAM
Transmitting at 1962.5MHz on Port 5
-10.0
-20.0
-30.0
-40.0
-50.0
Limit Level (dBm)
9.0K
2.0G
4.0G
6.0G
8.0G
10.0G
12.0G
14.0G
16.0G
18.0G
20.0G
Frequency (Hz)
EUT: FXFC
Operator: Armando Del Angel
Company: Nokia Solutions and Networks / PR045183
02:33:31 PM, Friday, May 06, 2016
Contact: Steve Mitchell


Agilent 19:25:41 Apr 12, 2016
L
Mkr1 1.936 64 GHz
-25.386 dBm
Ref 53.16 dBm
#Atten 24 dB
#Avg
Log
10
dB/
Offst
41.2
dB
Dl
-19.0
dBm
PAvg
100
W1 S2
S3 FS
AL
£(f):
FTun
#Swp
Marker
1.936640000 GHz
-25.386 dBm
1
Start 1.870 00 GHz
#Res BW 1 MHz
#VBW 3 MHz
Stop 2.030 00 GHz
Sweep 1.067 ms (8001 pts)

LTE – QPSK – 10M


Limit
Scan
Peaks
National Technical Systems, Plano TX
Antenna Port Conducted Spurious Emissions
9kHz-20GHz
LTE - 10M - QPSK
Transmitting at 1962.5MHz on Port 5
-10.0
-20.0
-30.0
-40.0
-50.0
Limit Level (dBm)
9.0K
2.0G
4.0G
6.0G
8.0G
10.0G
12.0G
14.0G
16.0G
18.0G
20.0G
Frequency (Hz)
EUT: FXFC
Operator: Armando Del Angel
Company: Nokia Solutions and Networks / PR045183
02:50:25 PM, Friday, May 06, 2016
Contact: Steve Mitchell


Agilent 19:57:18 Apr 12, 2016
L
Mkr1 1.936 64 GHz
-25.359 dBm
Ref 53.16 dBm
#Atten 24 dB
#Avg
Log
10
dB/
Offst
41.2
dB
Dl
-19.0
dBm
PAvg
100
W1 S2
S3 FS
AL
£(f):
FTun
#Swp
Marker
1.936640000 GHz
-25.359 dBm
1
Start 1.870 00 GHz
#Res BW 1 MHz
#VBW 3 MHz
Stop 2.030 00 GHz
Sweep 1.067 ms (8001 pts)