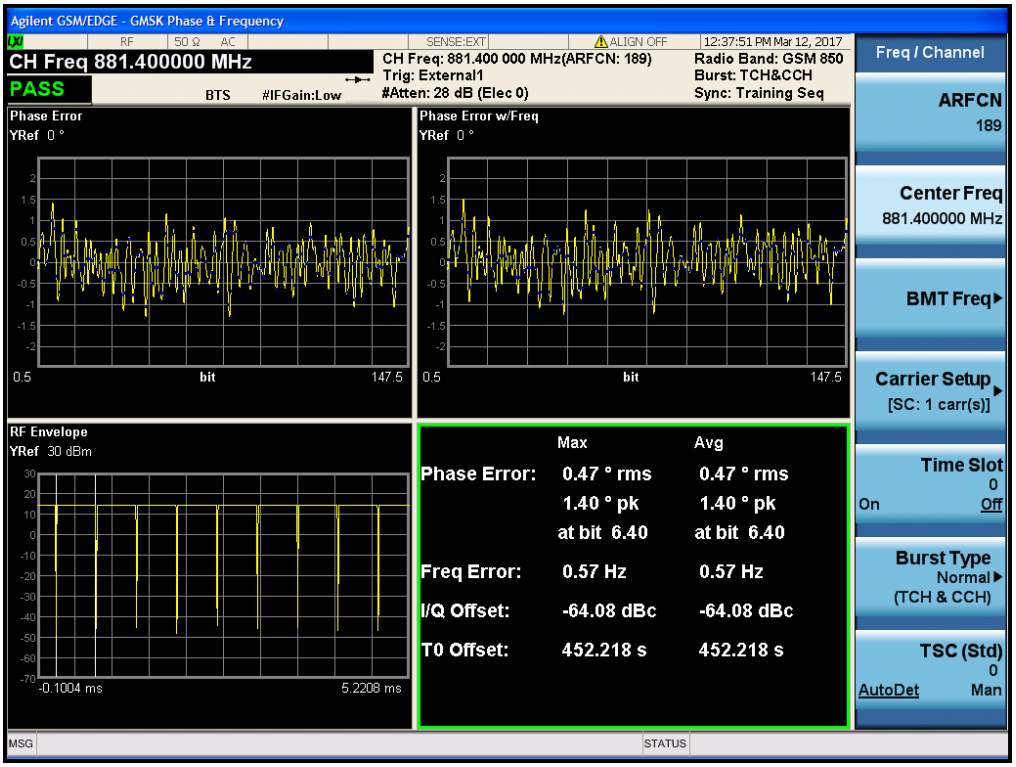
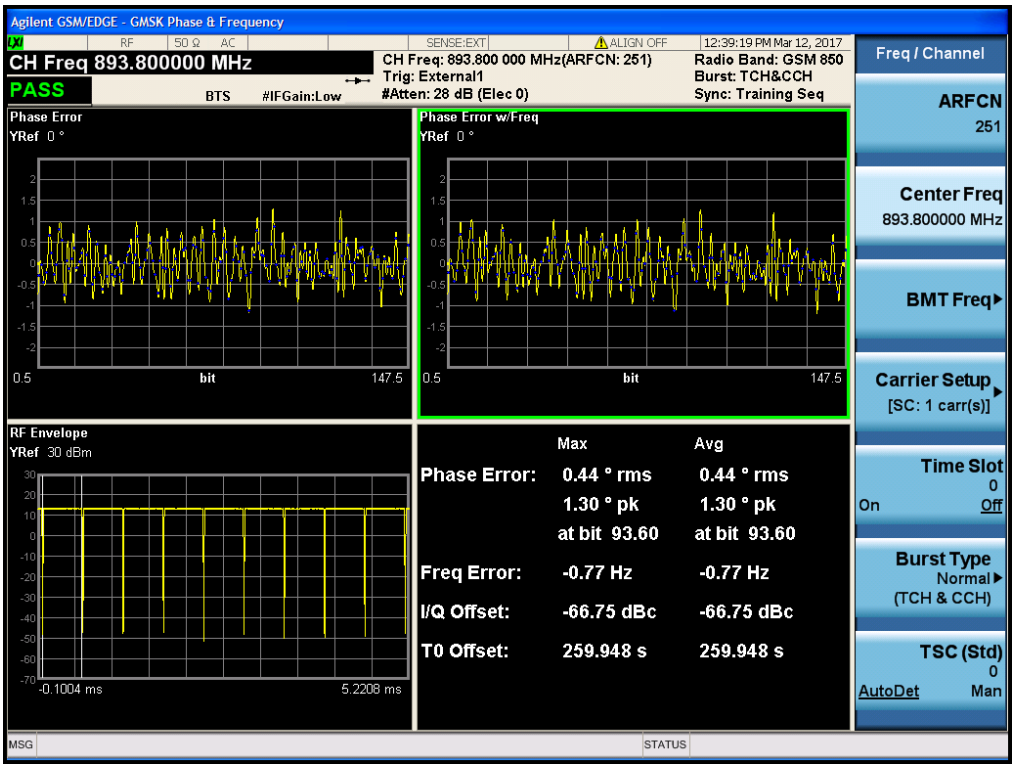
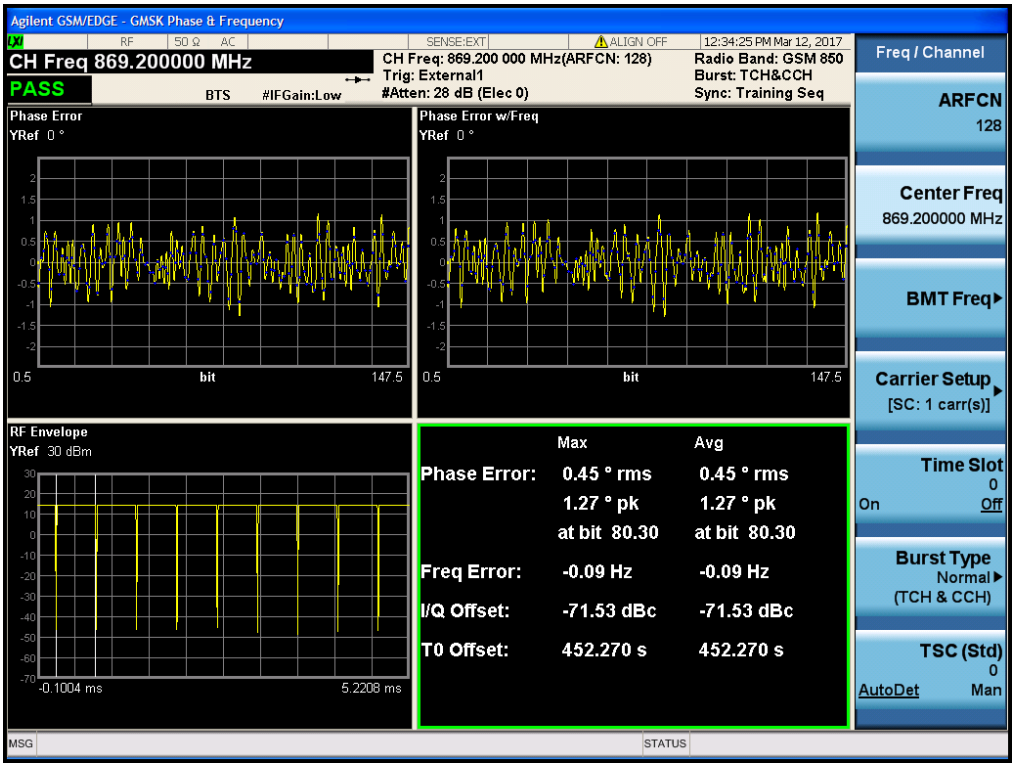
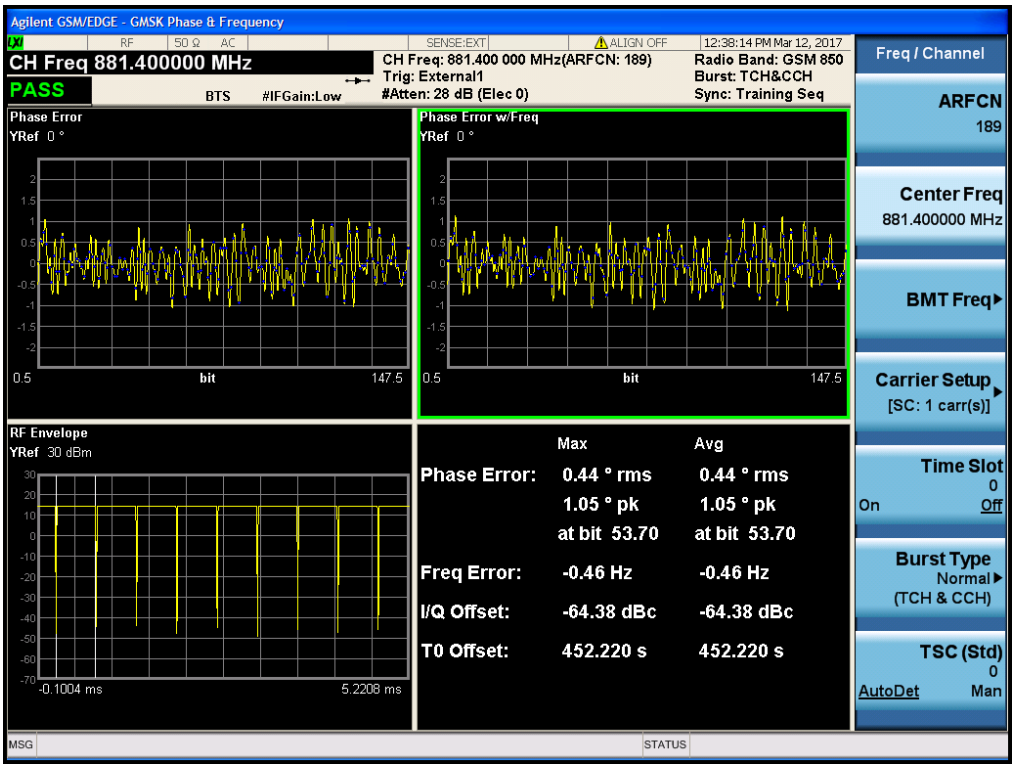
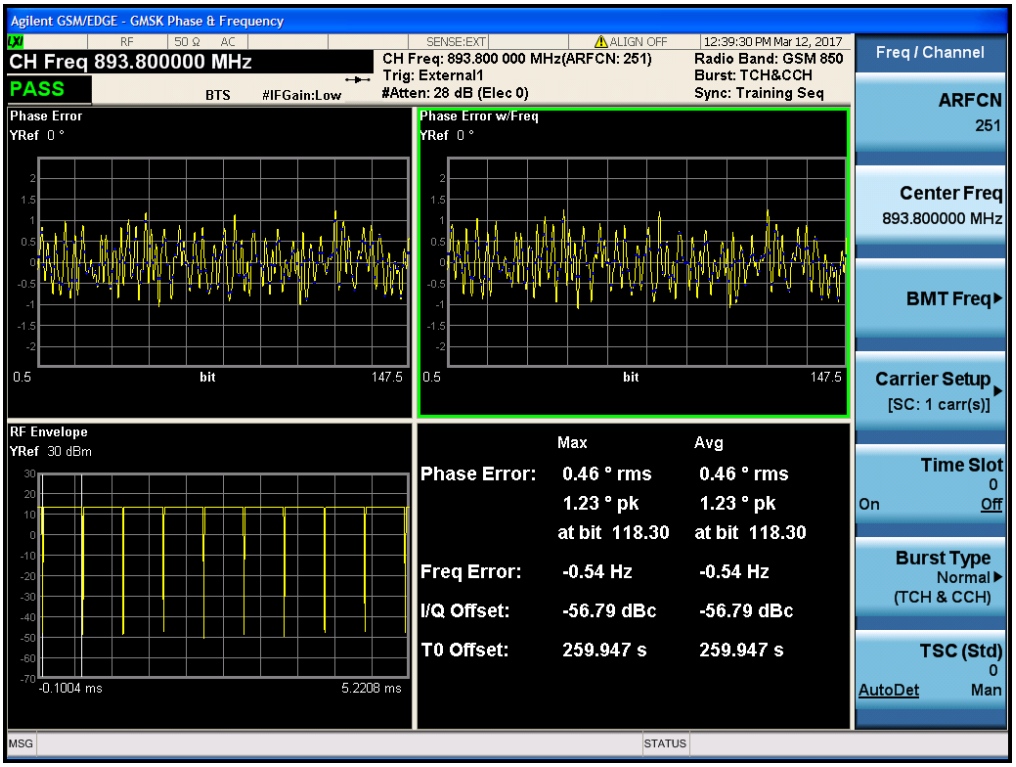



| Port | Modulation | Frequency (MHz) | Phase Error(°) | Frequency Error(Hz) |
|---|---|---|---|---|
| 1 | GMSK | 869.2 | 0.45 | -0.09 |
| | | 881.4 | 0.44 | -0.46 |
| | | 893.8 | 0.46 | -0.54 |


Agilent GSM/EDGE - GMSK Phase & Frequency
CH Freq 869.200000 MHz
PASS
BTS
#IFGain:Low
CH Freq: 869.200 000 MHz(ARFCN: 128)
Trig: External1
#Atten: 28 dB (Elec 0)
12:34:25 PM Mar 12, 2017
Radio Band: GSM 850
Burst: TCH&CCH
Sync: Training Seq
Phase Error
YRef 0 °
Phase Error w/Freq
YRef 0 °
bit
0.5
147.5
RF Envelope
YRef 30 dBm
-0.1004 ms
5.2208 ms
Max
Avg
Phase Error: 0.45 ° rms 0.45 ° rms
1.27 ° pk 1.27 ° pk
at bit 80.30 at bit 80.30
Freq Error: -0.09 Hz -0.09 Hz
I/Q Offset: -71.53 dBc -71.53 dBc
T0 Offset: 452.270 s 452.270 s
Freq / Channel
ARFCN 128
Center Freq 869.200000 MHz
BMT Freq
Carrier Setup [SC: 1 carr(s)]
Time Slot 0
On Off
Burst Type Normal (TCH & CCH)
TSC (Std) 0
AutoDet Man
MSG
STATUS


Agilent GSM/EDGE - GMSK Phase & Frequency
CH Freq 881.400000 MHz
PASS
BTS
#IFGain:Low
CH Freq: 881.400 000 MHz(ARFCN: 189)
Trig: External1
#Atten: 28 dB (Elec 0)
12:38:14 PM Mar 12, 2017
Radio Band: GSM 850
Burst: TCH&CCH
Sync: Training Seq
Phase Error
YRef 0 °
Phase Error w/Freq
YRef 0 °
bit
0.5
147.5
RF Envelope
YRef 30 dBm
-0.1004 ms
5.2208 ms
Max
Avg
Phase Error: 0.44 ° rms 0.44 ° rms
1.05 ° pk 1.05 ° pk
at bit 53.70 at bit 53.70
Freq Error: -0.46 Hz -0.46 Hz
I/Q Offset: -64.38 dBc -64.38 dBc
T0 Offset: 452.220 s 452.220 s
Freq / Channel
ARFCN 189
Center Freq 881.400000 MHz
BMT Freq
Carrier Setup [SC: 1 carr(s)]
Time Slot 0
On Off
Burst Type Normal (TCH & CCH)
TSC (Std) 0
AutoDet Man
MSG
STATUS


Agilent GSM/EDGE - GMSK Phase & Frequency
RF
50 Ω AC
SENSE:EXT
ALIGN OFF
12:39:30 PM Mar 12, 2017
CH Freq 893.800000 MHz
PASS
BTS
#IFGain:Low
CH Freq: 893.800 000 MHz(ARFCN: 251)
Trig: External1
#Atten: 28 dB (Elec 0)
Radio Band: GSM 850
Burst: TCH&CCH
Sync: Training Seq
Phase Error
YRef 0 °
bit
0.5
147.5
Phase Error w/Freq
YRef 0 °
RF Envelope
YRef 30 dBm
-0.1004 ms
5.2208 ms
Max
Avg
Phase Error: 0.46 ° rms 0.46 ° rms
1.23 ° pk 1.23 ° pk
at bit 118.30 at bit 118.30
Freq Error: -0.54 Hz -0.54 Hz
I/Q Offset: -56.79 dBc -56.79 dBc
T0 Offset: 259.947 s 259.947 s
Freq / Channel
ARFCN
251
Center Freq
893.800000 MHz
BMT Freq
Carrier Setup
[SC: 1 carr(s)]
Time Slot
0
On Off
Burst Type
Normal
(TCH & CCH)
TSC (Std)
0
AutoDet Man
MSG
STATUS

## 9 8 SPURIOUS RADIATED EMISSIONS

### 9.1 Applicable Standard: FCC CFR 47, §2.1053

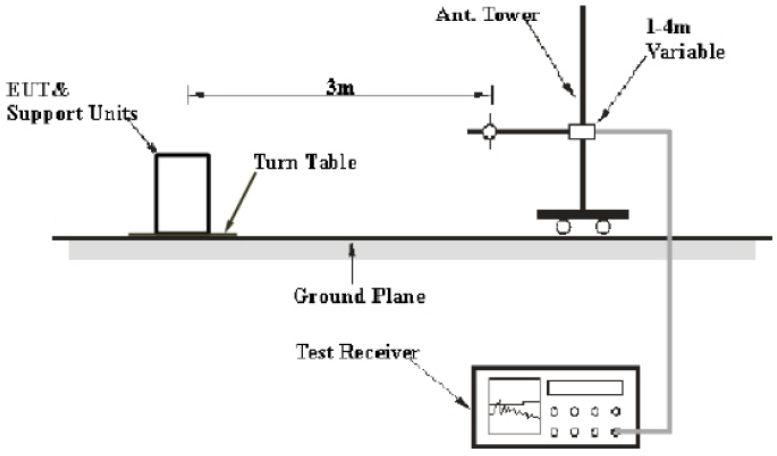
### 9.2 Test Equipment List and Details

| Manufacturer | Equipment | Model | Serial Number | Last Cal. | Cal. Interval |
|---|---|---|---|---|---|
| Albatross | Anechoic Chamber | 3m Site | A00017354 | 2016-11-18 | 1 year |
| R&S | EMI Test Receiver | ESI26 | 100058 | 2016-8-1 | 1 year |
| R&S | Log periodic Antenna | SWB-VUBA9163 | 9163-282 | 2016-12-7 | 1 year |
| R&S | Double-Ridged Waveguide Horn Antenna | HF906 TX | 100032 | 2016-6-29 | 1 year |

*__statement of traceability:__ ZTE Corporation Testing lab attest that all calibration have been performed per the NVLAP requirements, traceable to NIST.

Measurement Uncertainty
All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, antenna factor calibration, antenna directivity, antenna factor variation with height, antenna phase center variation, antenna factor frequency interpolation, measurement distance variation, site imperfections, mismatch (average), and system repeatability.
Based on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of a radiated emissions measurement at the EMC lab of ZTE Corp. is 3.6dB.

EUT Setup




The radiated emission tests were performed in the 3-meter Chamber, using the setup accordance with the FCC part 15.109. The specification used were the FCC 15.109 limits.

### 9.3 Test Procedure

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

The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and polarization as well as EUT azimuth were varied in order to identify the maximum level of emissions from the EUT .The test was performed by placing the EUT on 3-orthogonal axis.
The frequency range up to teeth harmonic of the fundamental frequency was investigated.
Remove the EUT and replace it with substitution antenna. A signal generator was connected to the substitution antenna by a non-radiating cable. The absolute levels of the spurious emissions were measured by the substitution.
Spurious emissions in dB =10 1g (TX pwr in Watts/0.001)-the absolute level
Spurious attenuation limit in dB =43+10 Lg P (power out in Watts)
The resolution bandwidth of the spectrum analyzer was set at 100KHz for 30MHz to 1GHz scanning, set at 1MHz or 3MHz for 1GHz to 20GHz scanning.

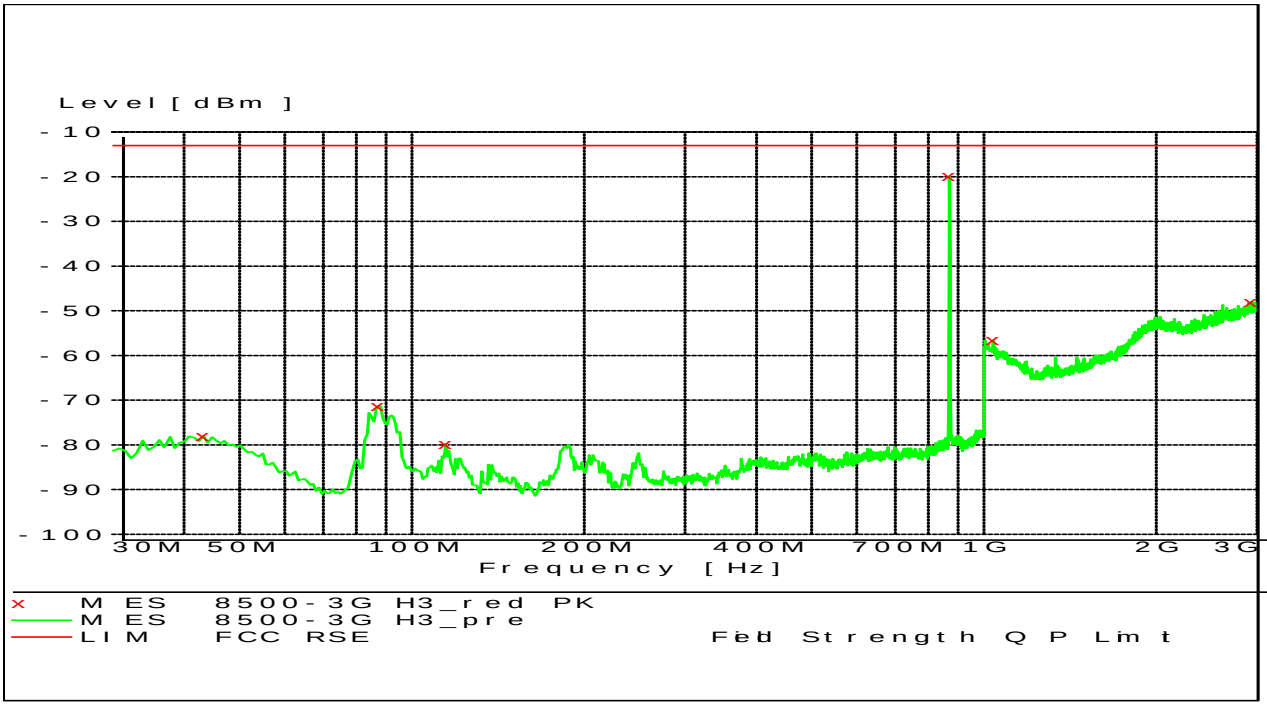
### 9.4 Test Results Summary: PASS

### 9.5 Environmental Conditions

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

### 9.6 Test data

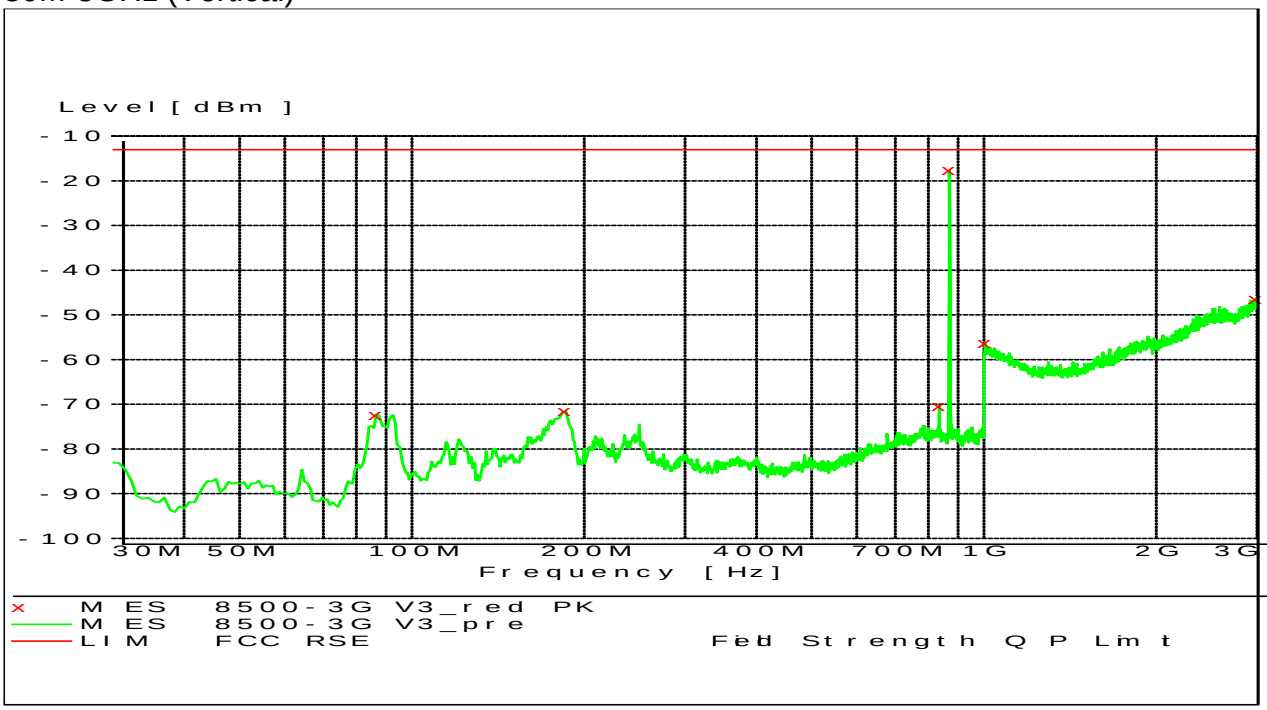
30M-3GHz (Horizontal)




| Frequency (MHz) | Level ( dBm ) | Azimuth (deg) | Height (cm) | Polarisation | Transd (dB) | Limit (dBm) | Margin (dB) |
|---|---|---|---|---|---|---|---|
| 43.192 | -77.93 | 139.4 | 100 | HOR | -121.9 | -13 | 64.9 |
| 87.424 | -71.24 | 174.1 | 200 | HOR | -130.4 | -13 | 58.2 |

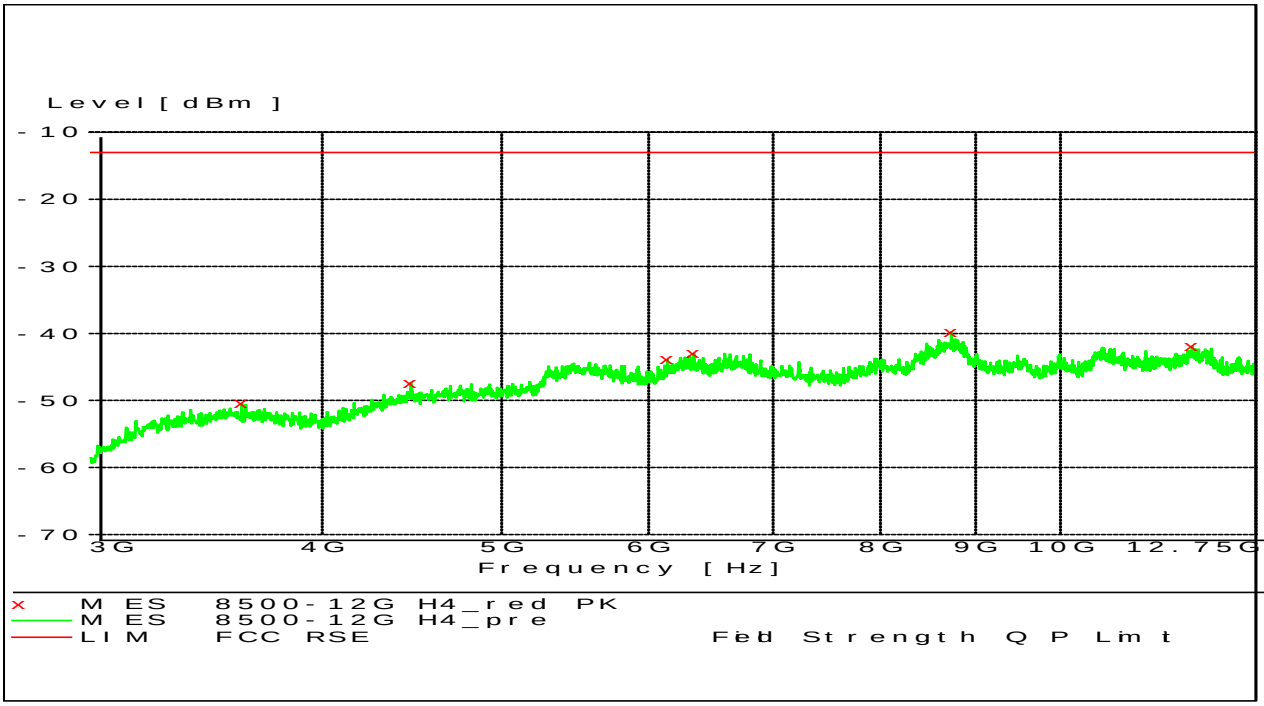
| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 114.584 | -79.74 | 122.3 | 200 | HOR | -131.9 | -13 | 66.7 |
| 870.408 | -19.88 | 46.6 | 100 | HOR | -122 | -13 | 6.9 |
| 1038.4 | -56.54 | 111.7 | 200 | HOR | -109.3 | -13 | 43.5 |
| 2931.2 | -47.97 | 334.1 | 200 | HOR | -98.8 | -13 | 35 |

30M-3GHz (Vertical)



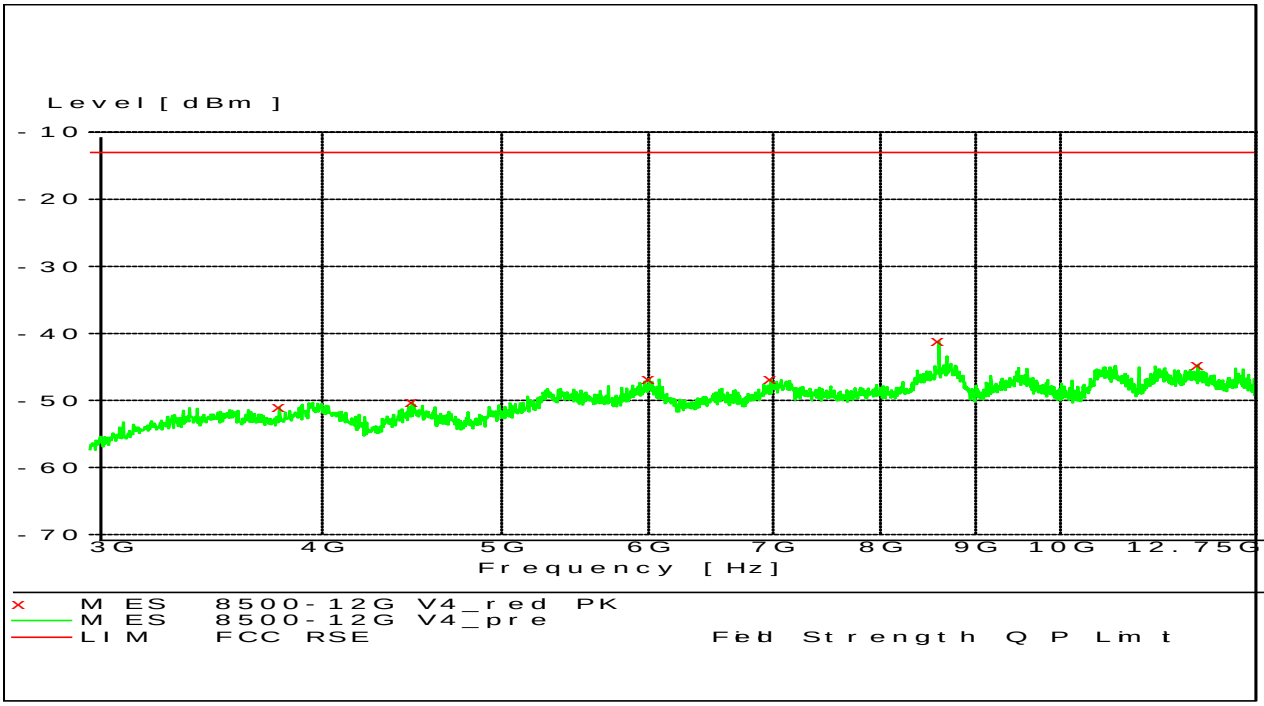

| Frequency (MHz) | Level ( dBm ) | Azimuth (deg) | Height (cm) | Polarisation | Transd (dB) | Limit (dBm) | Margin (dB) |
|---|---|---|---|---|---|---|---|
| 86.648 | -72.22 | 79.1 | 100 | VER | -130.8 | -13 | 59.2 |
| 185.2 | -71.59 | 109.6 | 100 | VER | -131.4 | -13 | 58.6 |
| 834.712 | -70.39 | 273.6 | 100 | VER | -119.2 | -13 | 57.4 |
| 870.408 | -17.73 | 20.8 | 100 | VER | -119.8 | -13 | 4.7 |
| 1004.8 | -56.21 | 163.7 | 100 | VER | -108.9 | -13 | 43.2 |
| 2984 | -46.45 | 328.3 | 100 | VER | -97.2 | -13 | 33.5 |

3-12.75GHz (Horizontal)




| Frequency (MHz) | Level ( dBm ) | Azimuth (deg) | Height (cm) | Polarisation | Transd (dB) | Limit (dBm) | Margin (dB) |
|---|---|---|---|---|---|---|---|
| 3620.8 | -50.45 | 99.7 | 200 | HOR | -89.2 | -13 | 37.4 |
| 4465.6 | -47.31 | 42.3 | 100 | HOR | -85.4 | -13 | 34.3 |
| 6145.6 | -43.9 | 194.2 | 100 | HOR | -78.7 | -13 | 30.9 |
| 6347.2 | -43 | 16 | 100 | HOR | -77.6 | -13 | 30 |
| 8734.2 | -39.76 | 226.9 | 100 | HOR | -72.5 | -13 | 26.8 |
| 11784 | -41.93 | 334.6 | 100 | HOR | -72.7 | -13 | 28.9 |

3-12.75GHz (Verticall)




| Frequency (MHz) | Level ( dBm ) | Azimuth (deg) | Height (cm) | Polarisation | Transd (dB) | Limit (dBm) | Margin (dB) |
|---|---|---|---|---|---|---|---|
| 3793.6 | -50.98 | 224.3 | 100 | VER | -89 | -13 | 38 |
| 4475.2 | -50.24 | 359.9 | 200 | VER | -87.7 | -13 | 37.2 |
| 6004.8 | -46.74 | 171.7 | 200 | VER | -81.4 | -13 | 33.7 |
| 6980.8 | -46.82 | 276.5 | 200 | VER | -80 | -13 | 33.8 |
| 8600.8 | -41.12 | 53.5 | 100 | VER | -77 | -13 | 28.1 |
| 11862.2 | -44.67 | 198 | 100 | VER | -76 | -13 | 31.7 |

## 10 SPURIOUS EMISSIONS AT ANTENNA TERMINALS

### 10.1 Applicable Standard: FCC§2.1051, §22.917

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

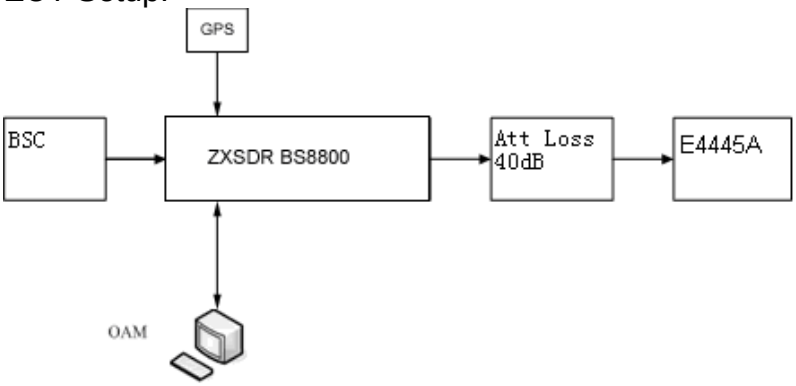
### 10.2 Test Equipment List and Details

| Manufacturer | Description | Model | Serial Number | Calibration Date | Calibration Due Date |
|---|---|---|---|---|---|
| Agilent | MXA Series Spectrum Analyzer | N9020A | MY52090451 | 2016-3-15 | 2017-3-15 |
| DST | DST100 40dB Attenuator | DTS100-40dB-N | N/A | N/A | N/A |
| Hewlett Packard | Hewlett Packard RF Cable | 8120-6192 | 01428251 | N/A | N/A |

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

### 10.3 Test Procedure

EUT Setup:




REMARKS: Attenuator loss (dB)=40dB, Cable Loss (dB)=3dB.

The RF output of the transceiver was connected to a spectrum analyzer through appropriate attenuation. The resolution bandwidth of the spectrum analyzer was set at 1 kHz for 9KHz to 150KHZ scaning, set at 10KHz for 150KHz to 30MHz scaning ,set at 100KHz for 30MHz to 1GHz scaning, set at 1MHz or 3MHz for 1GHz to 22GHz scaning. Sufficient scans were taken to show any out of band emissions up to 10th harmonic.

### 10.4 Test Data Environmental Conditions

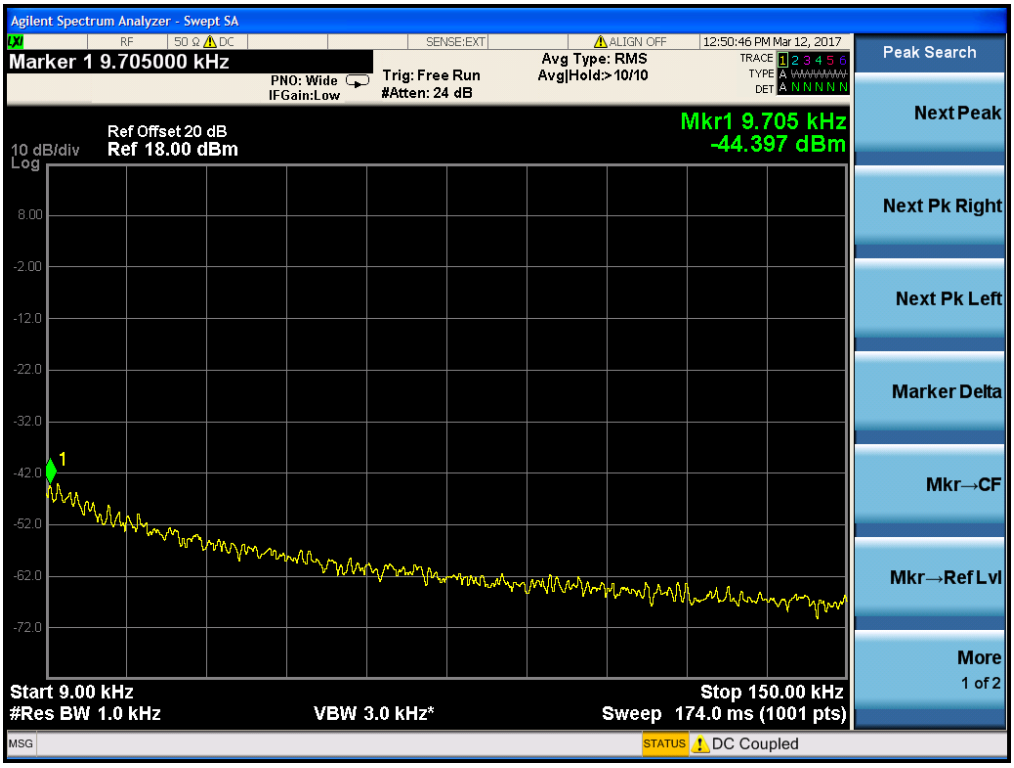
| | |
|---|---|
| Temperature: | 20 °C |
| Relative Humidity: | 53 % |
| ATM Pressure: | 1009 mbar |

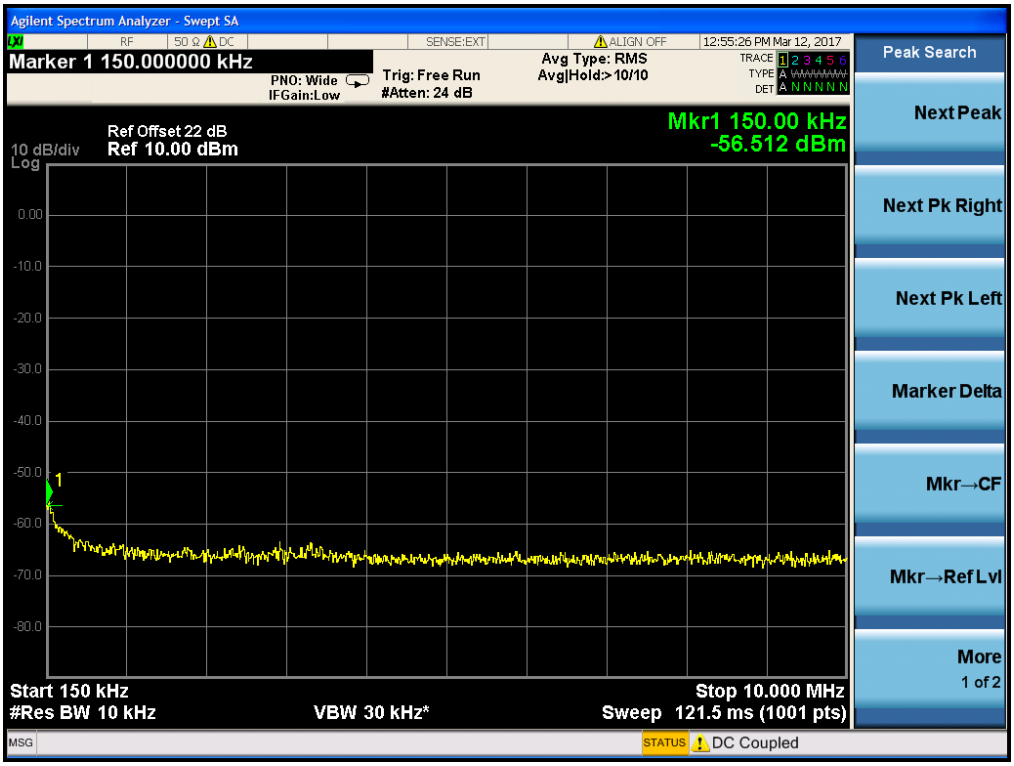
**10.5 Test Result: Pass**

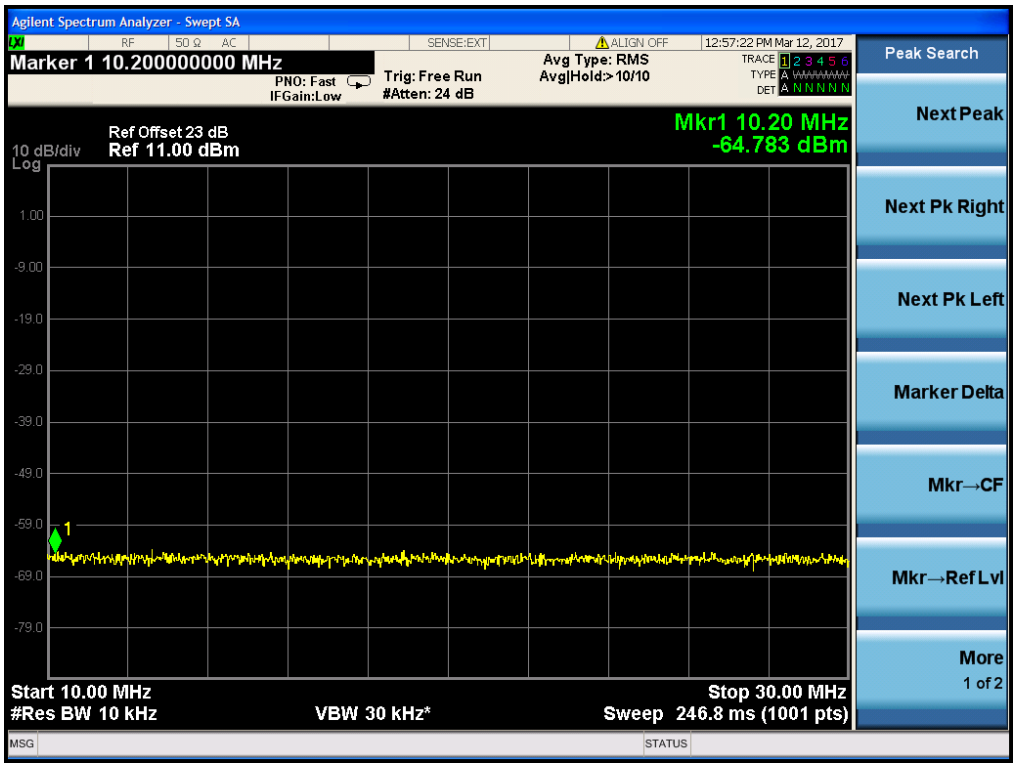
**10.6 Test Mode: Transmitting GSM**

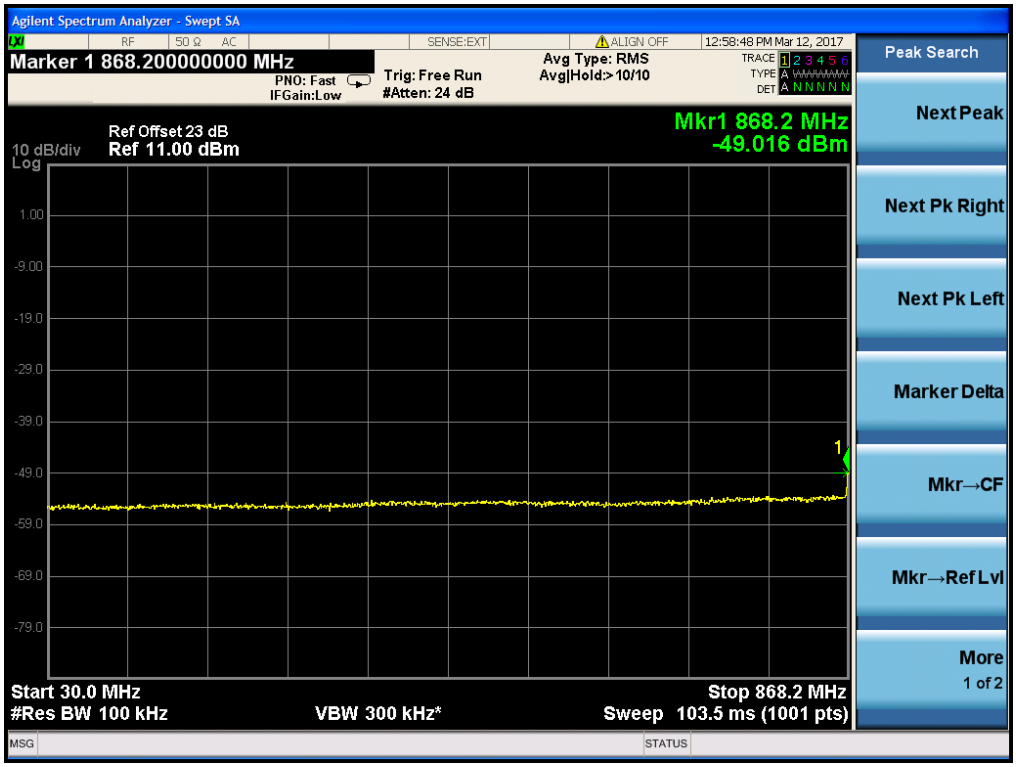
**10.7 Test Data:**

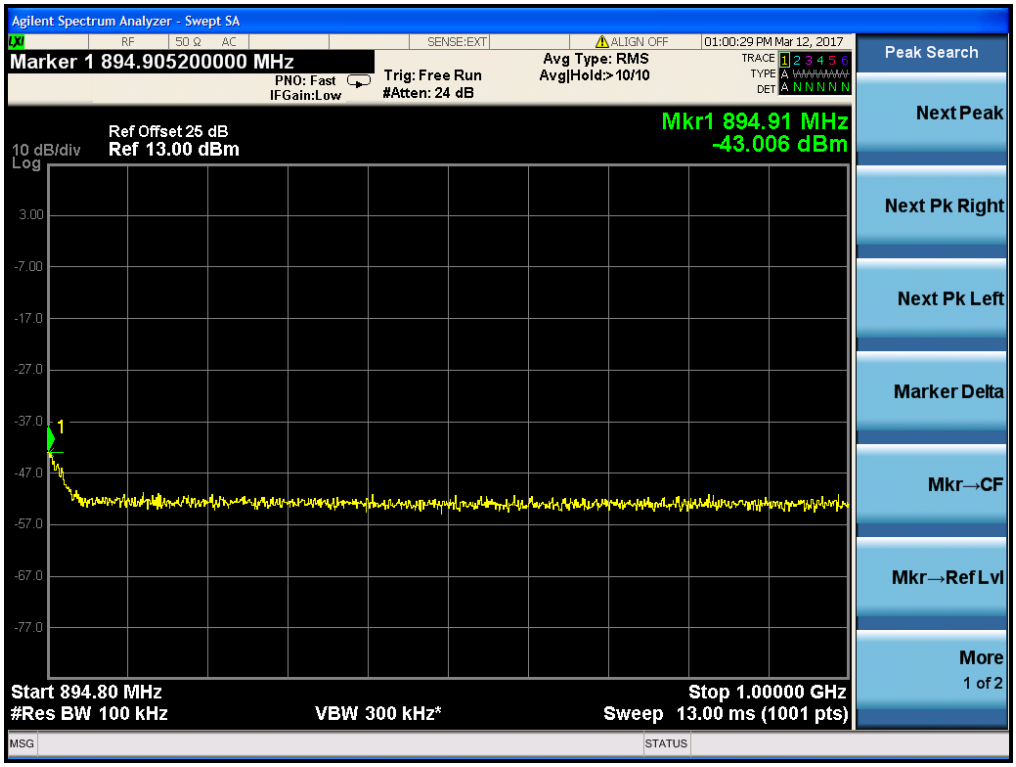
## Four Carriers Port1.

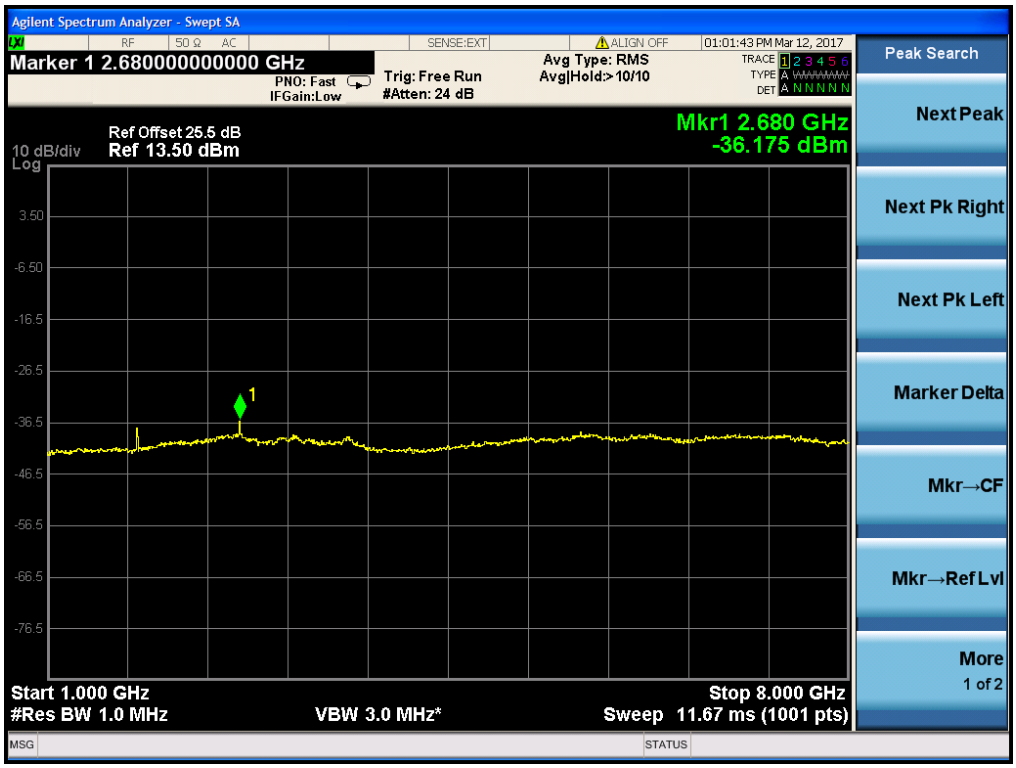



Agilent Spectrum Analyzer - Swept SA
RF 50 Ω AC
SENSE:EXT
ALIGN OFF
12:57:22 PM Mar 12, 2017
Marker 1 10.200000000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 24 dB
Avg Type: RMS
Avg|Hold:>10/10
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET A N N N N N
Ref Offset 23 dB
10 dB/div
Log
Ref 11.00 dBm
Mkr1 10.20 MHz
-64.783 dBm
1.00
-9.00
-19.0
-29.0
-39.0
-49.0
-59.0
-69.0
-79.0
1
Start 10.00 MHz
#Res BW 10 kHz
VBW 30 kHz*
Stop 30.00 MHz
Sweep 246.8 ms (1001 pts)
MSG
STATUS
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

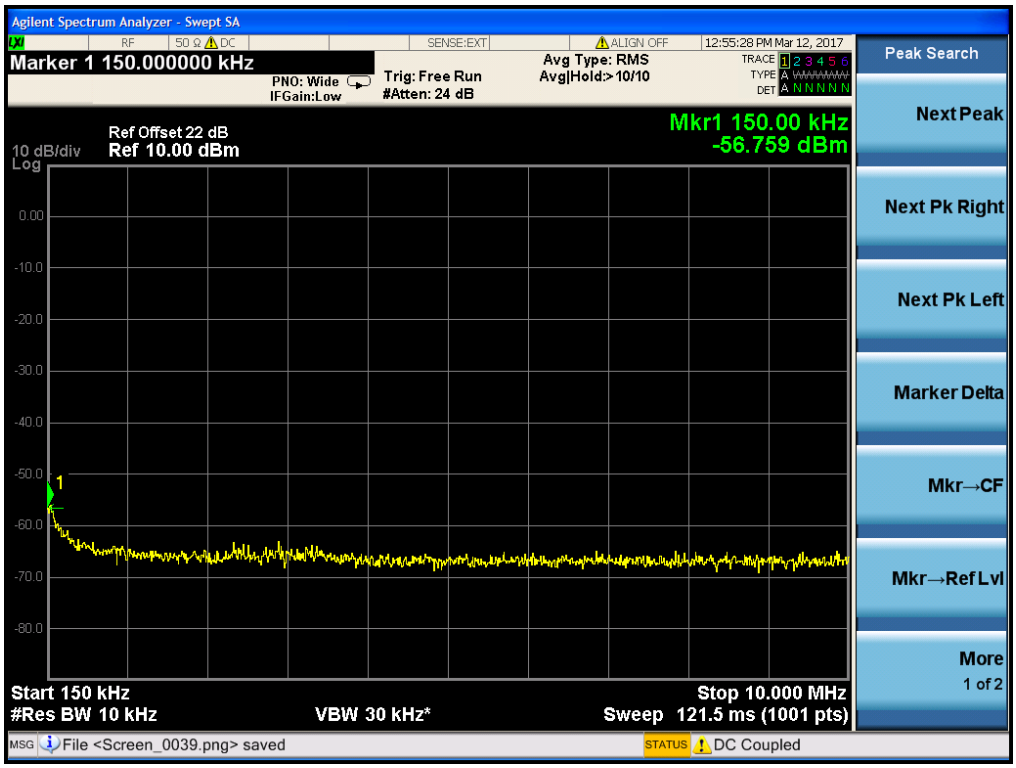

Agilent Spectrum Analyzer - Swept SA
RF 50 Ω AC
SENSE:EXT
ALIGN OFF
12:58:48 PM Mar 12, 2017
Marker 1 868.200000000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 24 dB
Avg Type: RMS
Avg|Hold:>10/10
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET A N N N N N
Ref Offset 23 dB
10 dB/div
Log
Ref 11.00 dBm
Mkr1 868.2 MHz
-49.016 dBm
1.00
-9.00
-19.0
-29.0
-39.0
-49.0
-59.0
-69.0
-79.0
1
Start 30.0 MHz
#Res BW 100 kHz
VBW 300 kHz*
Stop 868.2 MHz
Sweep 103.5 ms (1001 pts)
MSG
STATUS
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

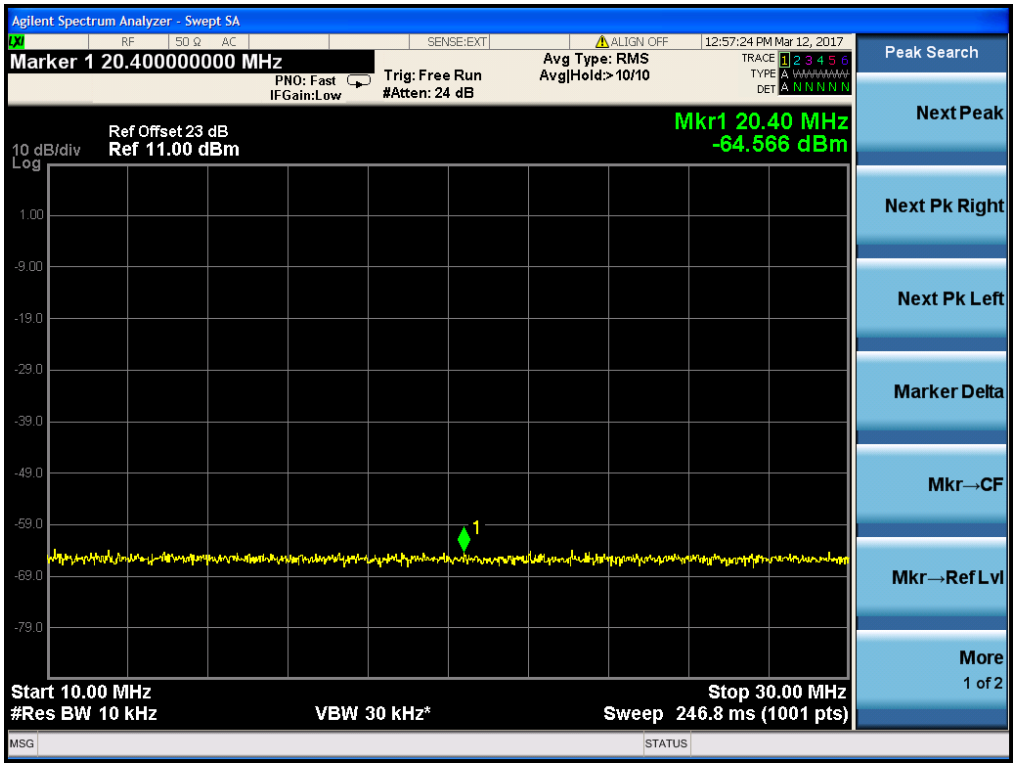


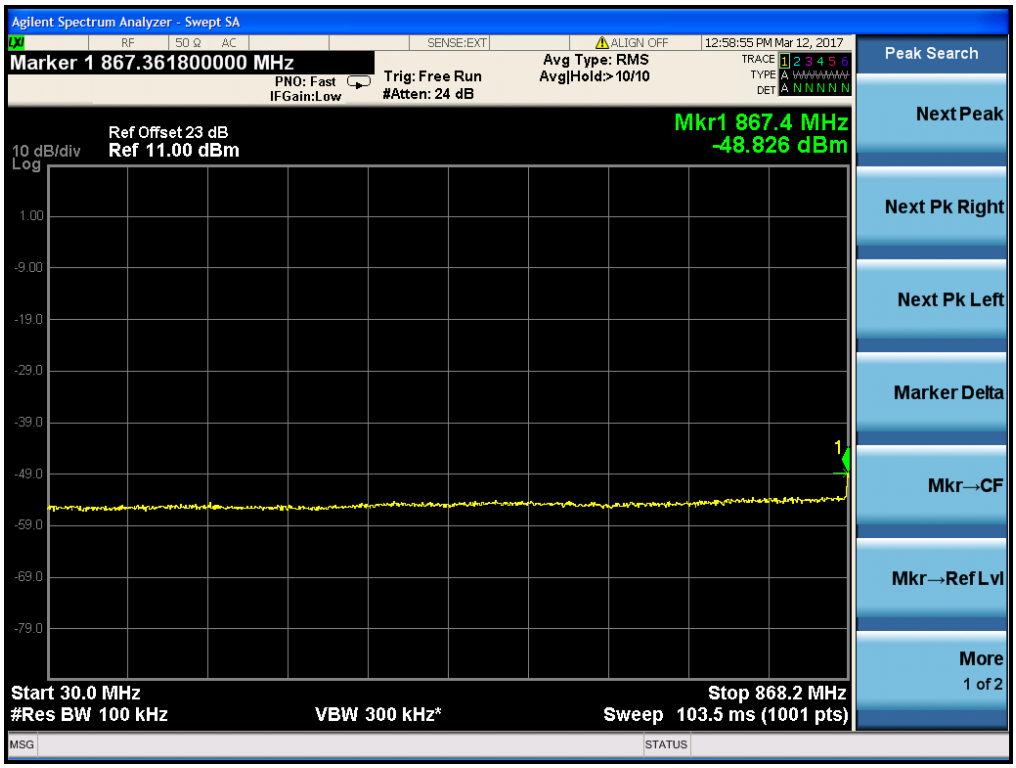



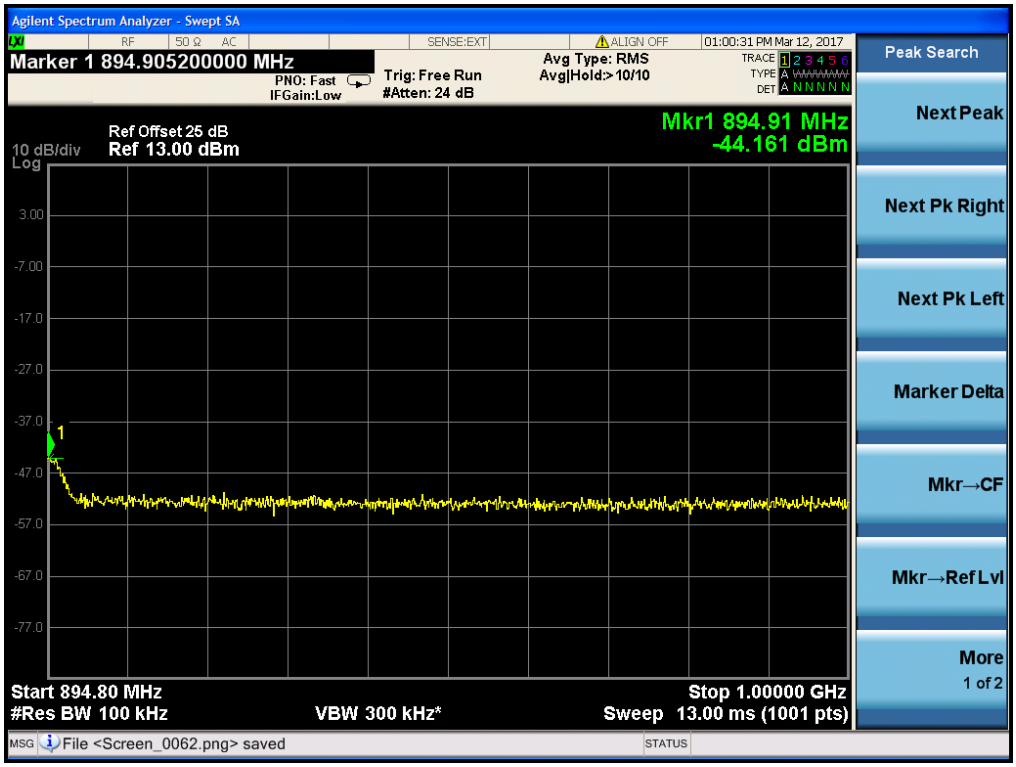

## Four Carriers Port4


Agilent Spectrum Analyzer - Swept SA
RF 50 Ω DC
SENSE:EXT
ALIGN OFF
12:51:27 PM Mar 12, 2017
Marker 1 9.705000 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 24 dB
Avg Type: RMS
Avg|Hold:>10/10
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET A N N N N N
Ref Offset 20 dB
10 dB/div
Ref 18.00 dBm
Log
Mkr1 9.705 kHz
-45.750 dBm
8.00
-2.00
-12.0
-22.0
-32.0
-42.0
-52.0
-62.0
-72.0
1
Start 9.00 kHz
#Res BW 1.0 kHz
VBW 3.0 kHz*
Stop 150.00 kHz
Sweep 174.0 ms (1001 pts)
MSG
File <Screen_0031.png> saved
STATUS
DC Coupled
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2


Agilent Spectrum Analyzer - Swept SA
RF 50 Ω DC
SENSE:EXT
ALIGN OFF
12:55:28 PM Mar 12, 2017
Marker 1 150.000000 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 24 dB
Avg Type: RMS
Avg|Hold:>10/10
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET A N N N N N
Ref Offset 22 dB
10 dB/div
Ref 10.00 dBm
Log
Mkr1 150.00 kHz
-56.759 dBm
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
1
Start 150 kHz
#Res BW 10 kHz
VBW 30 kHz*
Stop 10.000 MHz
Sweep 121.5 ms (1001 pts)
MSG
File <Screen_0039.png> saved
STATUS
DC Coupled
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2


Agilent Spectrum Analyzer - Swept SA
RF 50 Ω AC
SENSE:EXT
ALIGN OFF
12:57:24 PM Mar 12, 2017
Marker 1 20.400000000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 24 dB
Avg Type: RMS
Avg|Hold:>10/10
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET A N N N N N
Ref Offset 23 dB
10 dB/div
Log
Ref 11.00 dBm
Mkr1 20.40 MHz
-64.566 dBm
1.00
-9.00
-19.0
-29.0
-39.0
-49.0
-59.0
-69.0
-79.0
Start 10.00 MHz
#Res BW 10 kHz
VBW 30 kHz*
Stop 30.00 MHz
Sweep 246.8 ms (1001 pts)
MSG
STATUS
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

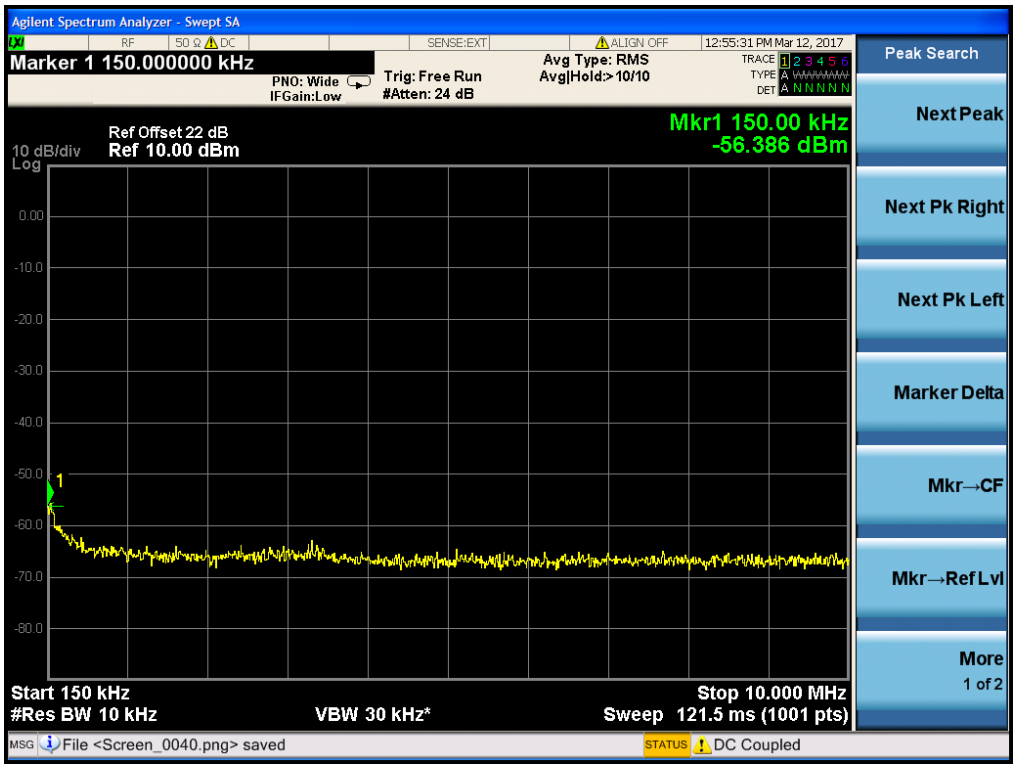

Agilent Spectrum Analyzer - Swept SA
RF 50 Ω AC
SENSE:EXT
ALIGN OFF
12:58:55 PM Mar 12, 2017
Marker 1 867.361800000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 24 dB
Avg Type: RMS
Avg|Hold:>10/10
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET A N N N N N
Ref Offset 23 dB
10 dB/div
Log
Ref 11.00 dBm
Mkr1 867.4 MHz
-48.826 dBm
1.00
-9.00
-19.0
-29.0
-39.0
-49.0
-59.0
-69.0
-79.0
Start 30.0 MHz
#Res BW 100 kHz
VBW 300 kHz*
Stop 868.2 MHz
Sweep 103.5 ms (1001 pts)
MSG
STATUS
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

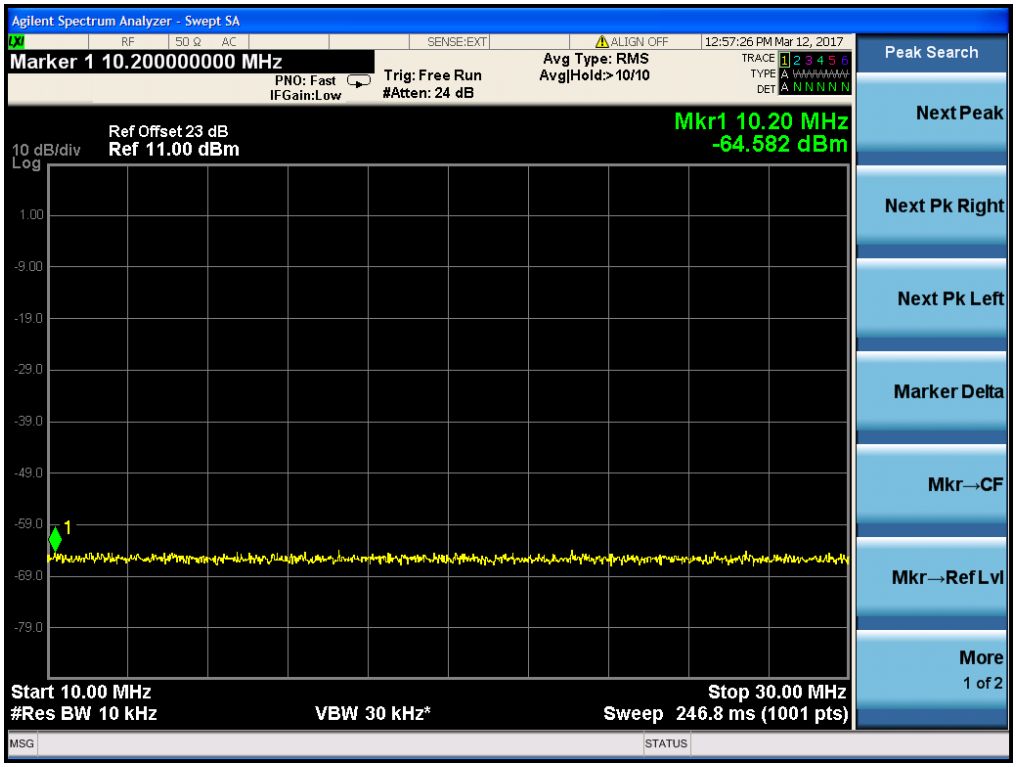


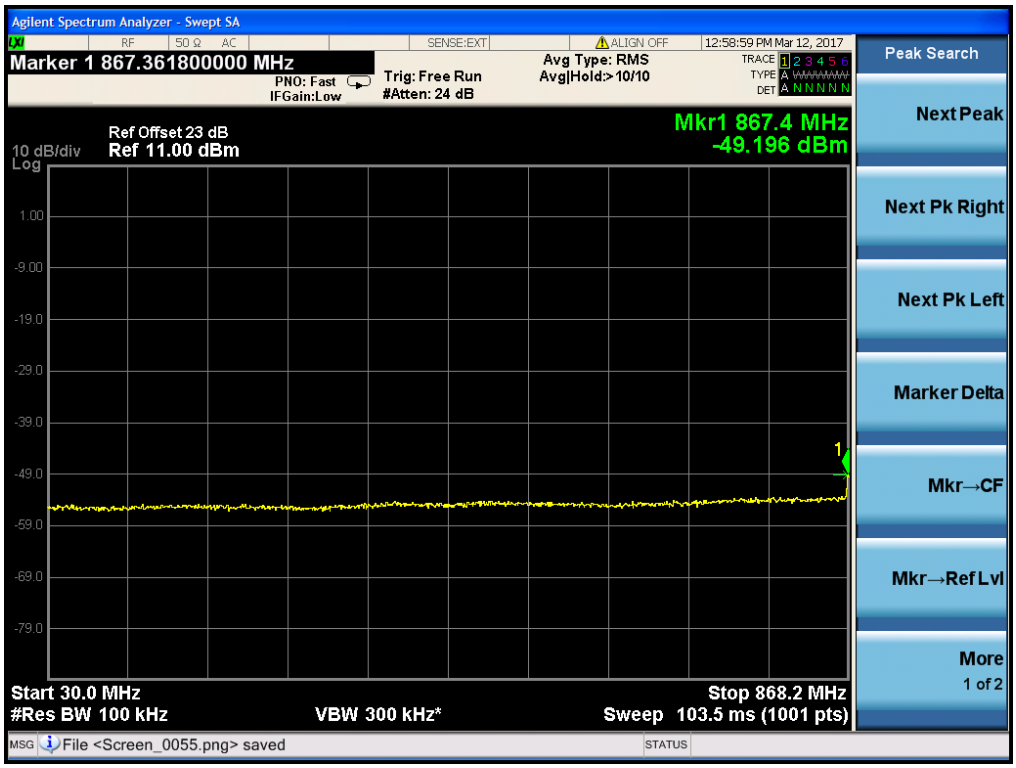


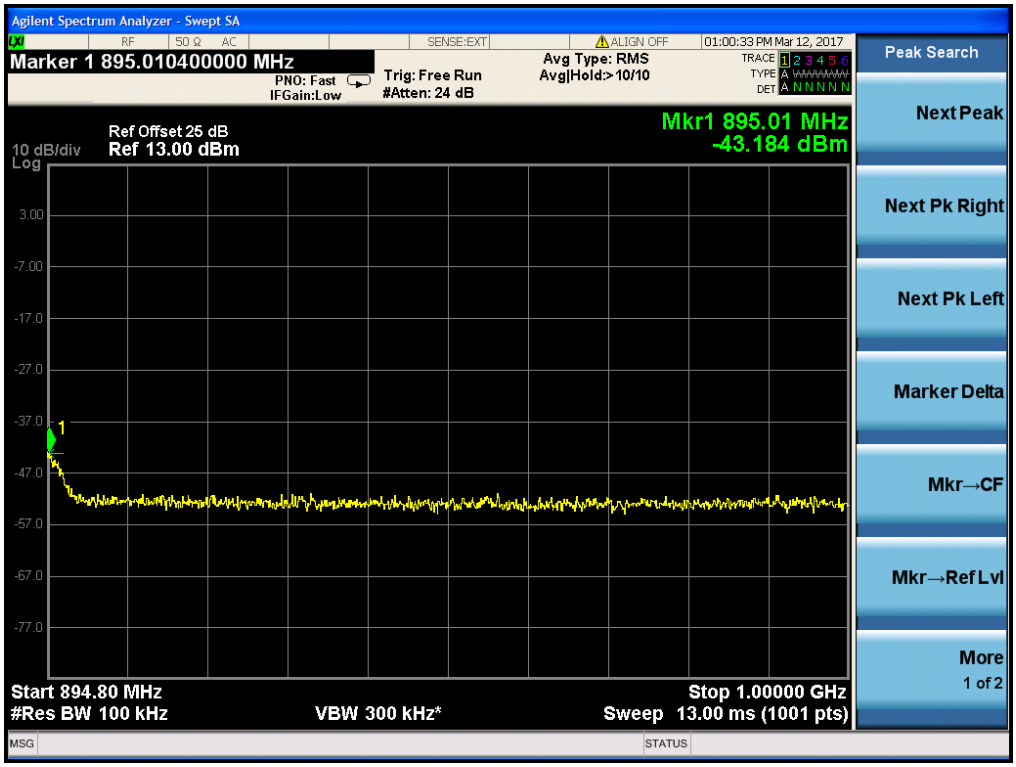
## Three Carriers Port1


Agilent Spectrum Analyzer - Swept SA
Marker 1 10.410000 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 24 dB
Avg Type: RMS
Avg|Hold:>10/10
12:51:31 PM Mar 12, 2017
Ref Offset 20 dB
10 dB/div
Ref 18.00 dBm
Mkr1 10.410 kHz
-44.129 dBm
Start 9.00 kHz
#Res BW 1.0 kHz
VBW 3.0 kHz*
Stop 150.00 kHz
Sweep 174.0 ms (1001 pts)
DC Coupled
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2


Agilent Spectrum Analyzer - Swept SA
Marker 1 150.000000 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 24 dB
Avg Type: RMS
Avg|Hold:>10/10
12:55:31 PM Mar 12, 2017
Ref Offset 22 dB
10 dB/div
Ref 10.00 dBm
Mkr1 150.00 kHz
-56.386 dBm
Start 150 kHz
#Res BW 10 kHz
VBW 30 kHz*
Stop 10.000 MHz
Sweep 121.5 ms (1001 pts)
File <Screen_0040.png> saved
DC Coupled
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2


Agilent Spectrum Analyzer - Swept SA
RF 50 Ω AC
SENSE:EXT
ALIGN OFF
12:57:26 PM Mar 12, 2017
Marker 1 10.200000000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 24 dB
Avg Type: RMS
Avg|Hold:>10/10
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET A N N N N N
Ref Offset 23 dB
10 dB/div
Log
Ref 11.00 dBm
Mkr1 10.20 MHz
-64.582 dBm
1.00
-9.00
-19.0
-29.0
-39.0
-49.0
-59.0
-69.0
-79.0
Start 10.00 MHz
#Res BW 10 kHz
VBW 30 kHz*
Stop 30.00 MHz
Sweep 246.8 ms (1001 pts)
MSG
STATUS
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

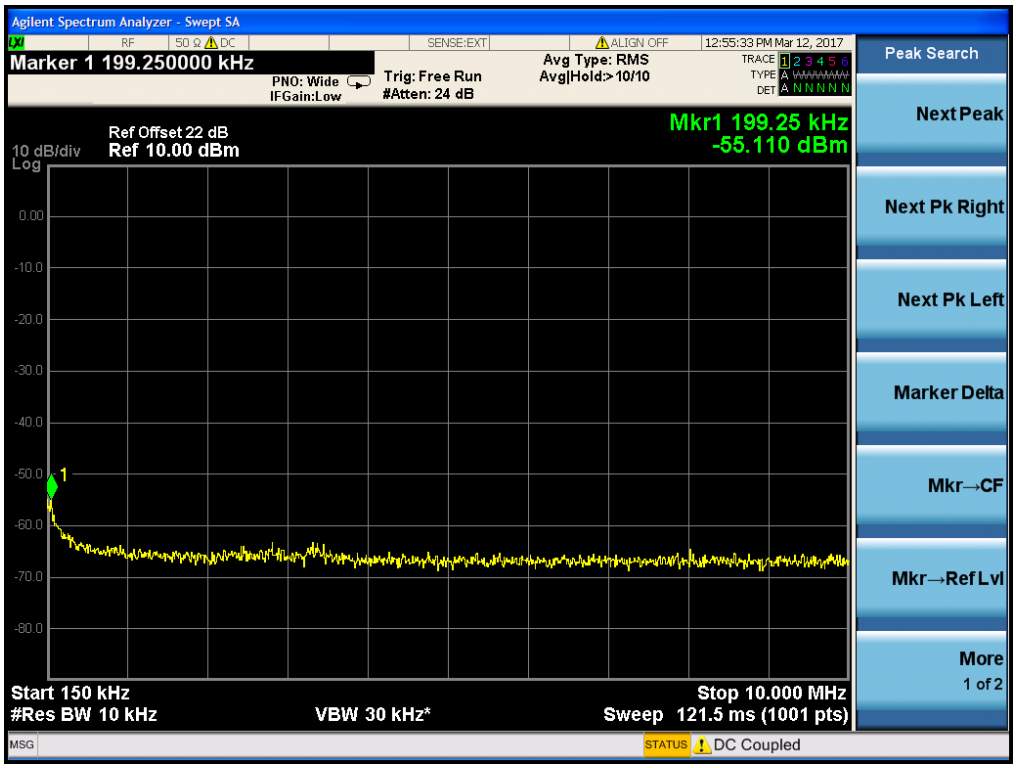

Agilent Spectrum Analyzer - Swept SA
RF 50 Ω AC
SENSE:EXT
ALIGN OFF
12:58:59 PM Mar 12, 2017
Marker 1 867.361800000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 24 dB
Avg Type: RMS
Avg|Hold:>10/10
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET A N N N N N
Ref Offset 23 dB
10 dB/div
Log
Ref 11.00 dBm
Mkr1 867.4 MHz
-49.196 dBm
1.00
-9.00
-19.0
-29.0
-39.0
-49.0
-59.0
-69.0
-79.0
Start 30.0 MHz
#Res BW 100 kHz
VBW 300 kHz*
Stop 868.2 MHz
Sweep 103.5 ms (1001 pts)
MSG
File <Screen_0055.png> saved
STATUS
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

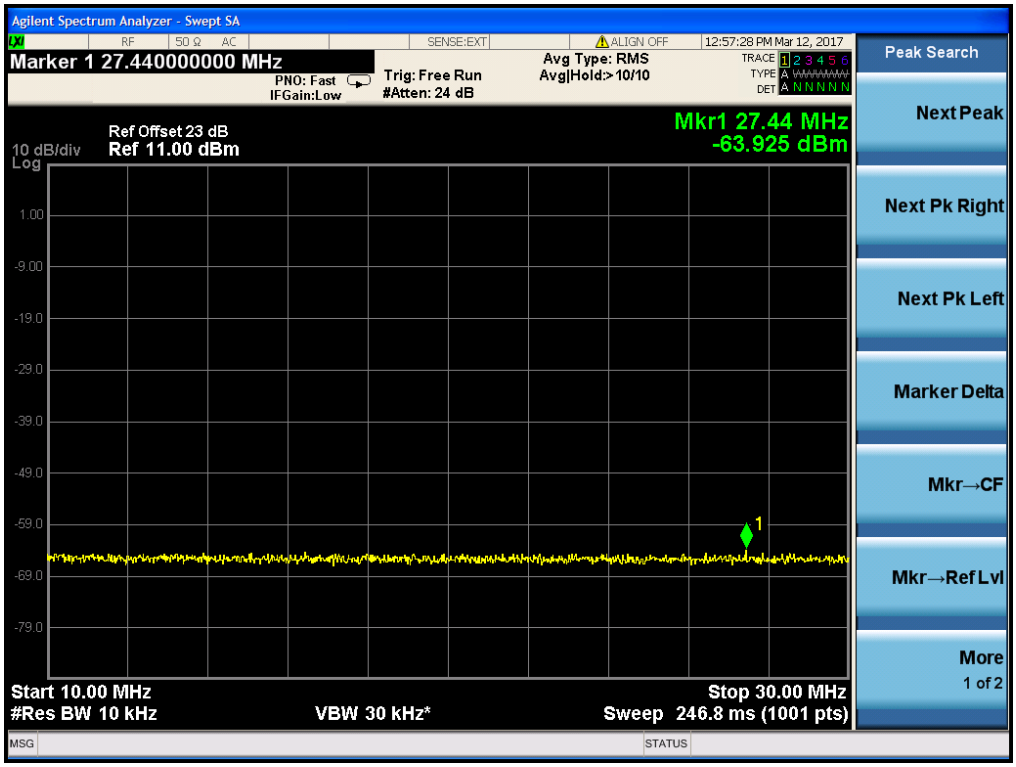


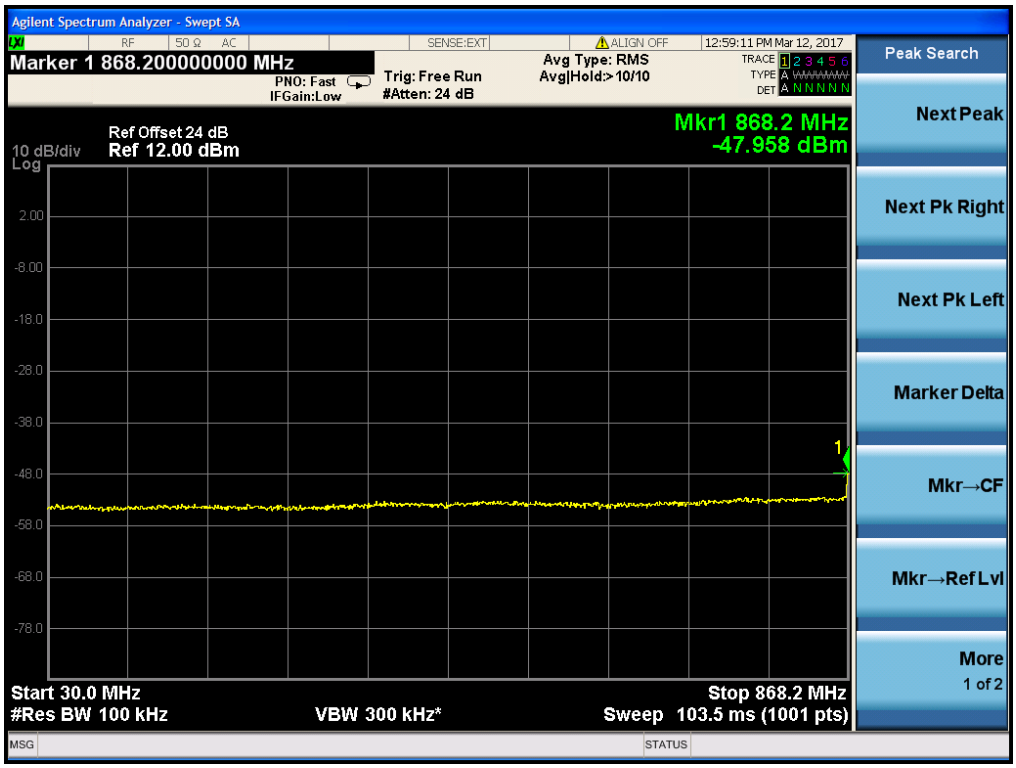


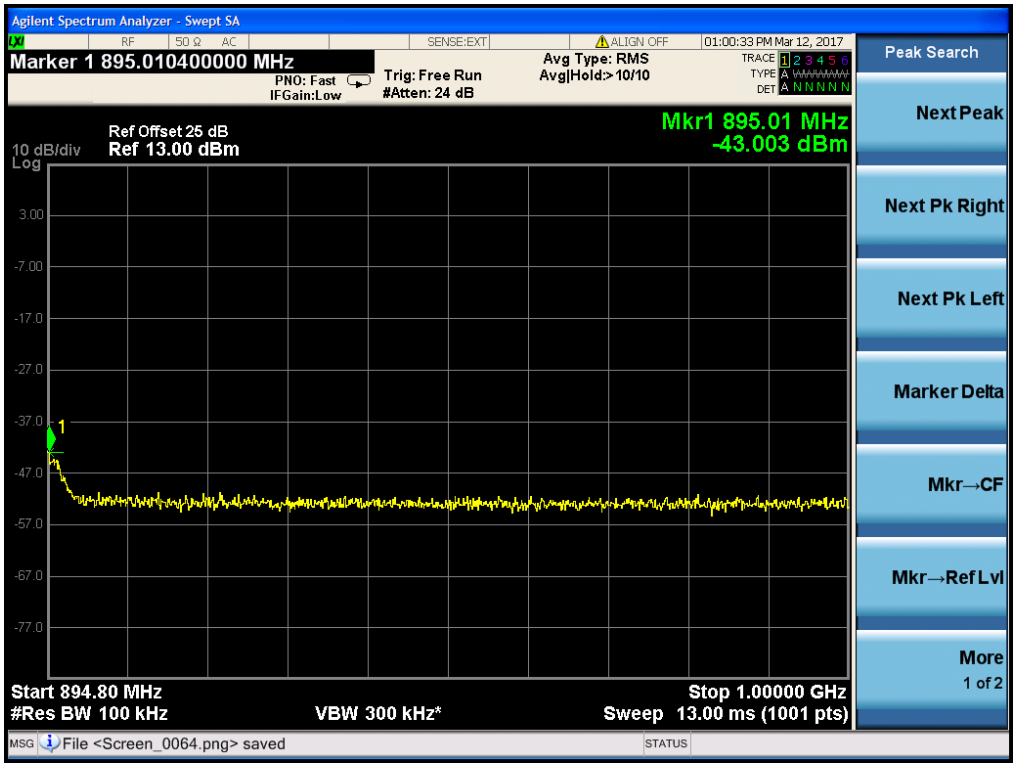
**Three Carriers Port**4

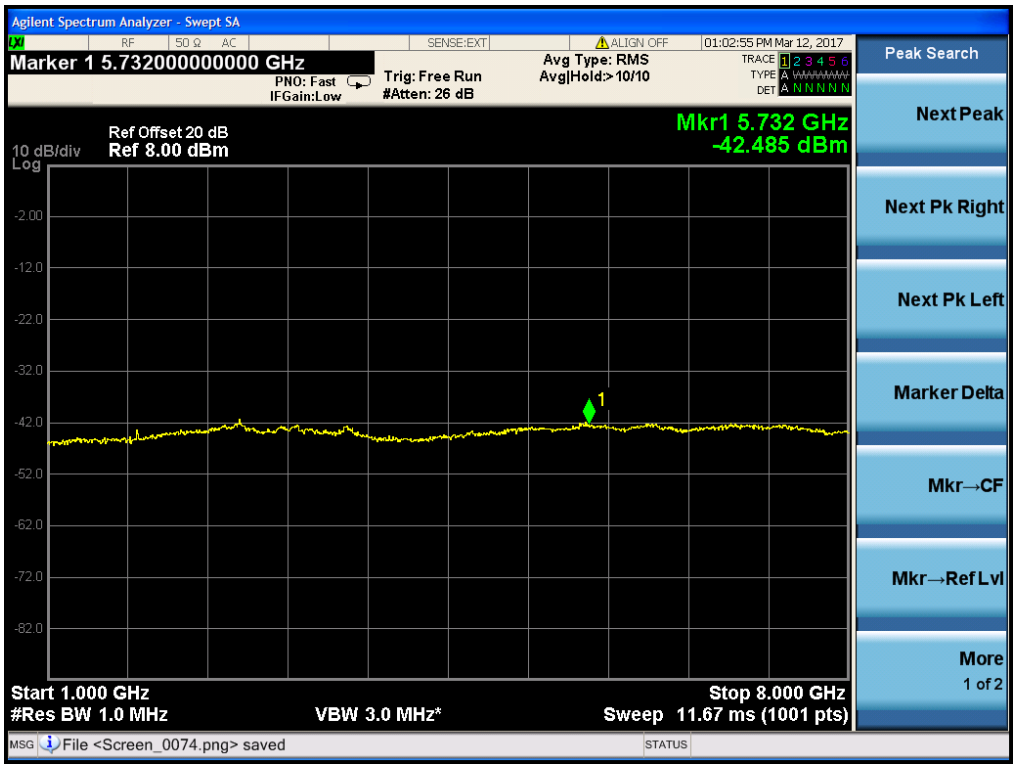

Agilent Spectrum Analyzer - Swept SA
RF 50 Ω DC
SENSE:EXT
ALIGN OFF
12:51:32 PM Mar 12, 2017
Marker 1 10.410000 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 24 dB
Avg Type: RMS
Avg|Hold:>10/10
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET A N N N N N
Ref Offset 20 dB
10 dB/div
Log
Ref 18.00 dBm
Mkr1 10.410 kHz
-44.927 dBm
8.00
-2.00
-12.0
-22.0
-32.0
-42.0
-52.0
-62.0
-72.0
1
Start 9.00 kHz
#Res BW 1.0 kHz
VBW 3.0 kHz*
Stop 150.00 kHz
Sweep 174.0 ms (1001 pts)
MSG
File <Screen_0033.png> saved
STATUS
DC Coupled
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2


Agilent Spectrum Analyzer - Swept SA
RF 50 Ω DC
SENSE:EXT
ALIGN OFF
12:55:33 PM Mar 12, 2017
Marker 1 199.250000 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 24 dB
Avg Type: RMS
Avg|Hold:>10/10
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET A N N N N N
Ref Offset 22 dB
10 dB/div
Log
Ref 10.00 dBm
Mkr1 199.25 kHz
-55.110 dBm
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
1
Start 150 kHz
#Res BW 10 kHz
VBW 30 kHz*
Stop 10.000 MHz
Sweep 121.5 ms (1001 pts)
MSG
STATUS
DC Coupled
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

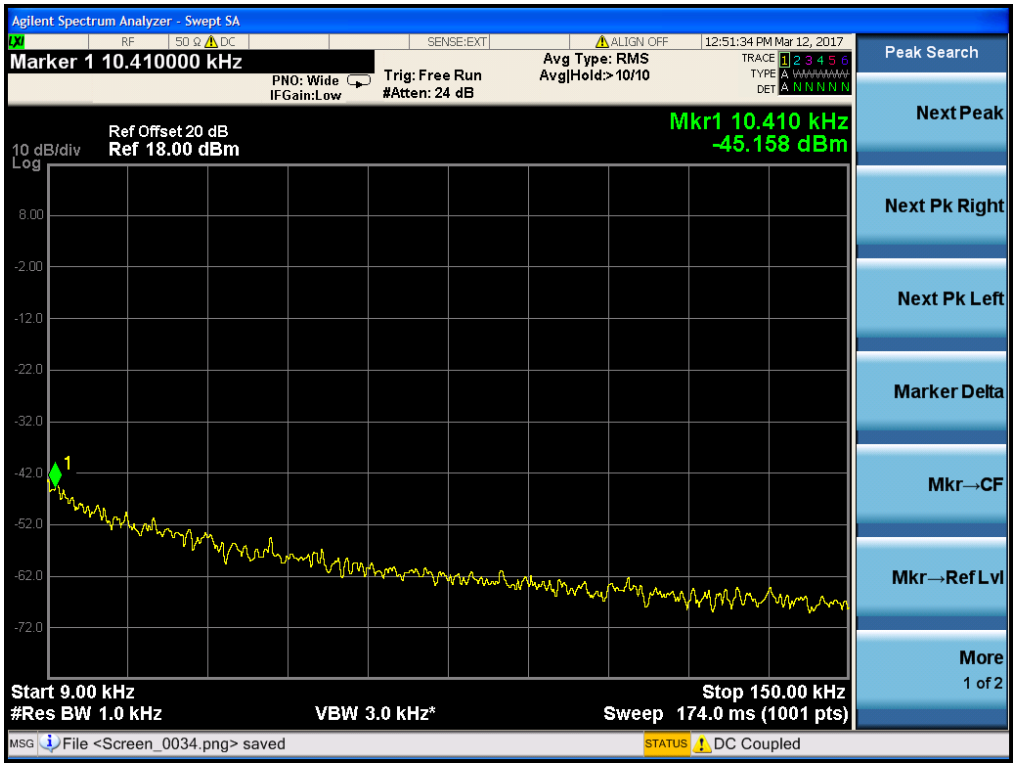

Agilent Spectrum Analyzer - Swept SA
RF 50 Ω AC
SENSE:EXT
ALIGN OFF
12:57:28 PM Mar 12, 2017
Marker 1 27.440000000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 24 dB
Avg Type: RMS
Avg|Hold:>10/10
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET A N N N N N
Ref Offset 23 dB
10 dB/div
Log
Ref 11.00 dBm
Mkr1 27.44 MHz
-63.925 dBm
1.00
-9.00
-19.0
-29.0
-39.0
-49.0
-59.0
-69.0
-79.0
Start 10.00 MHz
#Res BW 10 kHz
VBW 30 kHz*
Stop 30.00 MHz
Sweep 246.8 ms (1001 pts)
MSG
STATUS
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

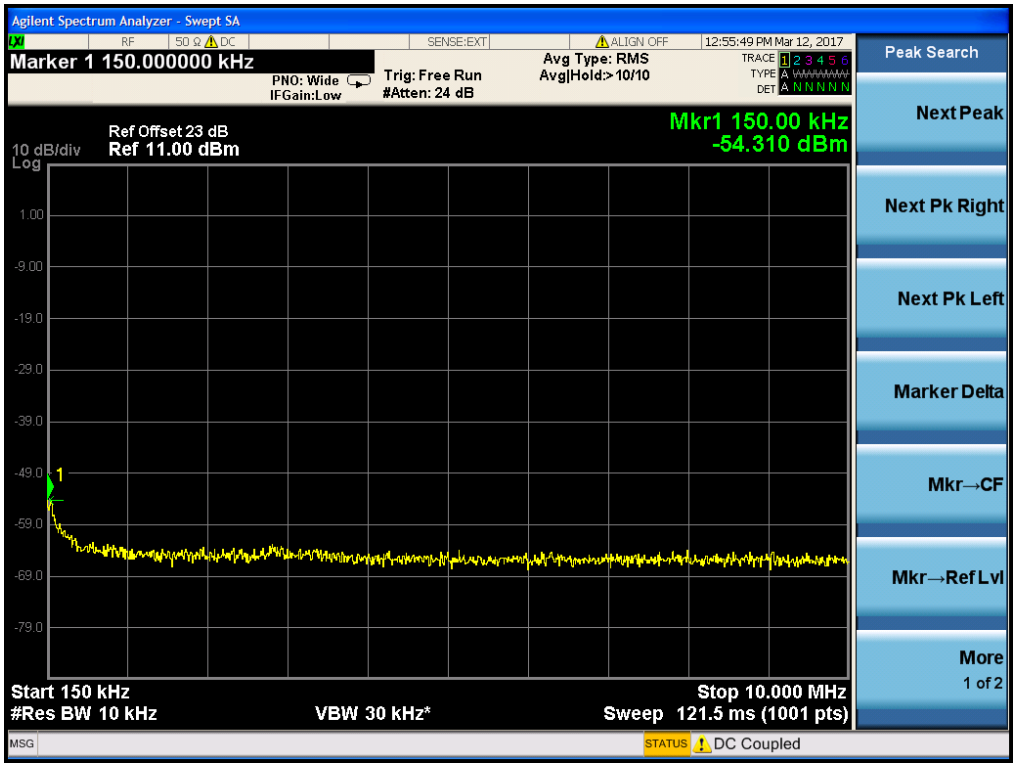

Agilent Spectrum Analyzer - Swept SA
RF 50 Ω AC
SENSE:EXT
ALIGN OFF
12:59:11 PM Mar 12, 2017
Marker 1 868.200000000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 24 dB
Avg Type: RMS
Avg|Hold:>10/10
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET A N N N N N
Ref Offset 24 dB
10 dB/div
Log
Ref 12.00 dBm
Mkr1 868.2 MHz
-47.958 dBm
2.00
-8.00
-18.0
-28.0
-38.0
-48.0
-58.0
-68.0
-78.0
Start 30.0 MHz
#Res BW 100 kHz
VBW 300 kHz*
Stop 868.2 MHz
Sweep 103.5 ms (1001 pts)
MSG
STATUS
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

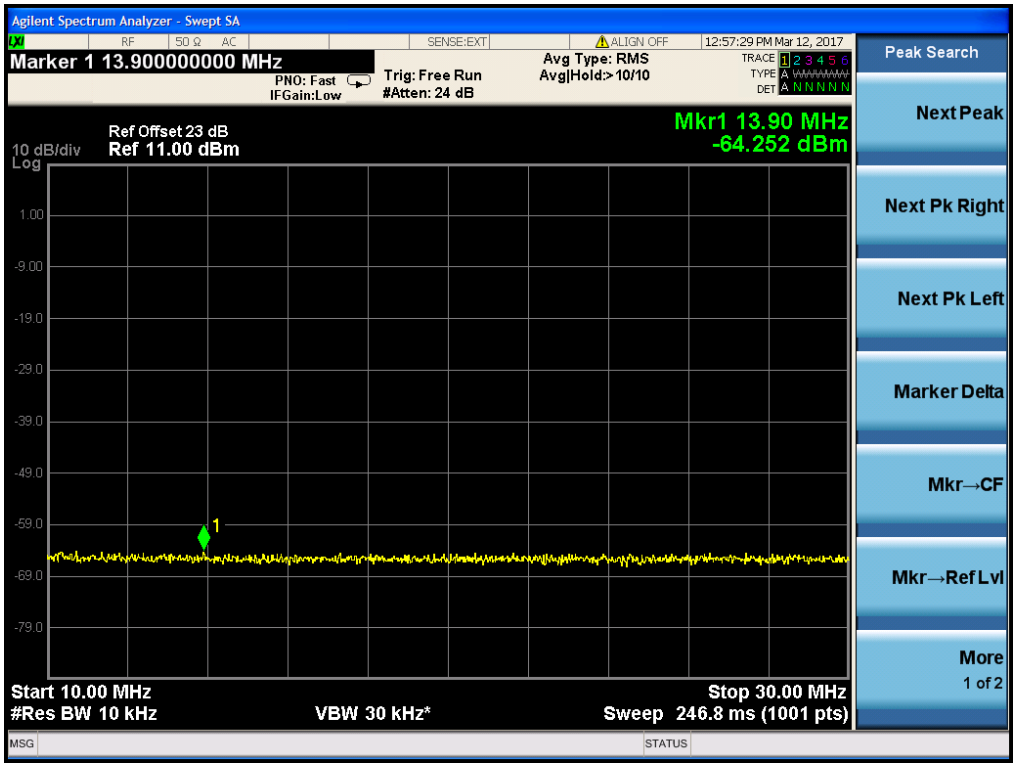


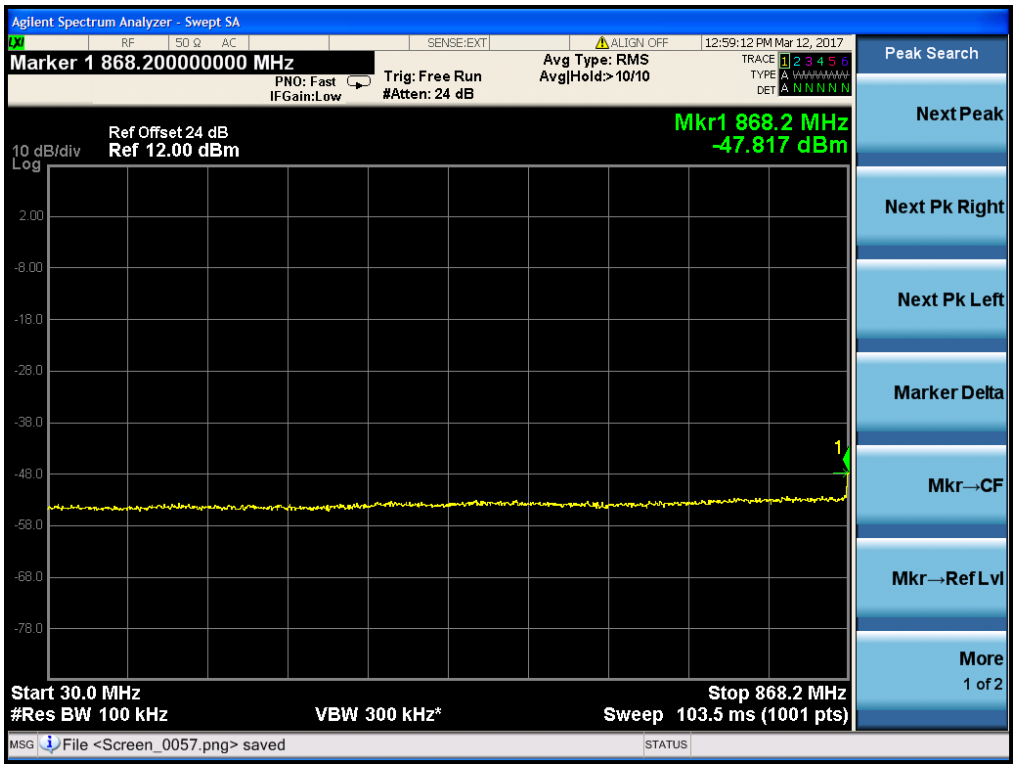



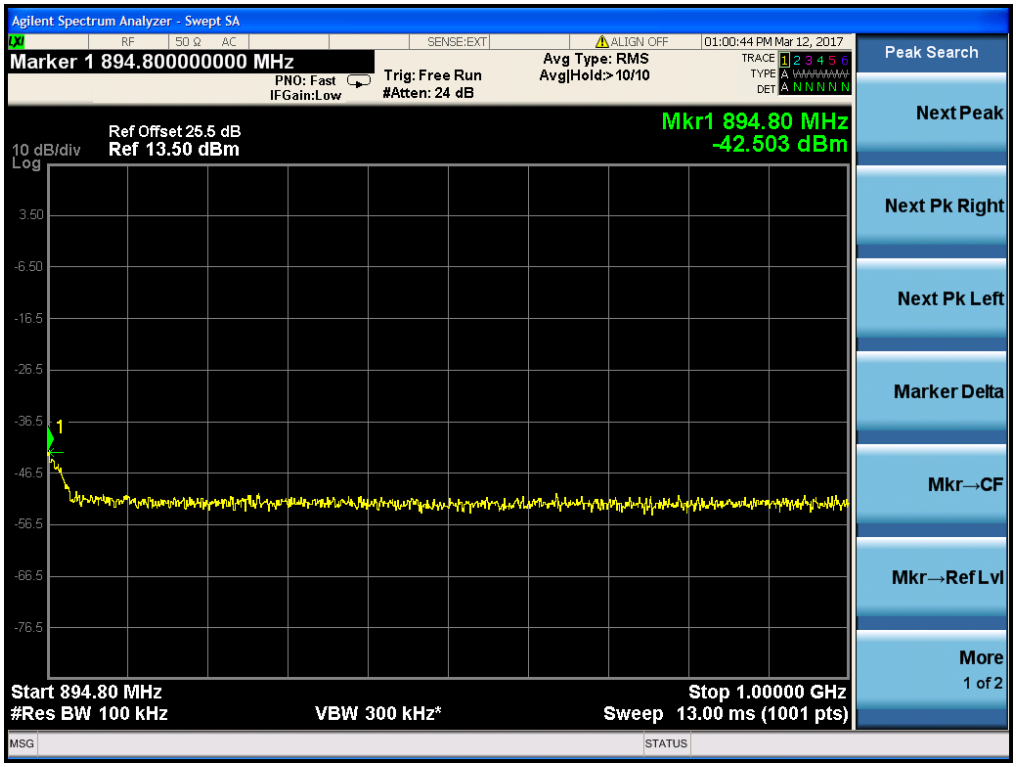

## Two Carriers Port1


Agilent Spectrum Analyzer - Swept SA
Marker 1 10.410000 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 24 dB
Avg Type: RMS
Avg|Hold:>10/10
12:51:34 PM Mar 12, 2017
Ref Offset 20 dB
10 dB/div
Ref 18.00 dBm
Log
Mkr1 10.410 kHz
-45.158 dBm
8.00
-2.00
-12.0
-22.0
-32.0
-42.0
-52.0
-62.0
-72.0
Start 9.00 kHz
#Res BW 1.0 kHz
VBW 3.0 kHz*
Stop 150.00 kHz
Sweep 174.0 ms (1001 pts)
File <Screen_0034.png> saved
DC Coupled
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2


Agilent Spectrum Analyzer - Swept SA
Marker 1 150.000000 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 24 dB
Avg Type: RMS
Avg|Hold:>10/10
12:55:49 PM Mar 12, 2017
Ref Offset 23 dB
10 dB/div
Ref 11.00 dBm
Log
Mkr1 150.00 kHz
-54.310 dBm
1.00
-9.00
-19.0
-29.0
-39.0
-49.0
-59.0
-69.0
-79.0
Start 150 kHz
#Res BW 10 kHz
VBW 30 kHz*
Stop 10.000 MHz
Sweep 121.5 ms (1001 pts)
DC Coupled
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

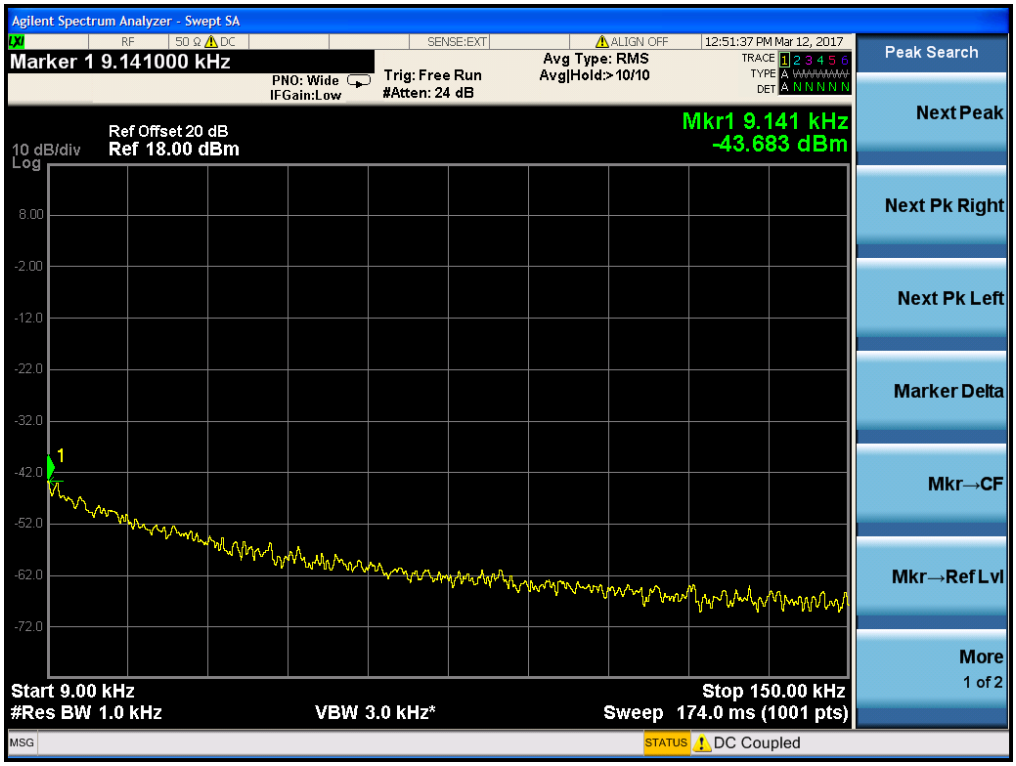

Agilent Spectrum Analyzer - Swept SA
RF 50 Ω AC
SENSE:EXT
ALIGN OFF
12:57:29 PM Mar 12, 2017
Marker 1 13.900000000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 24 dB
Avg Type: RMS
Avg|Hold:>10/10
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET A N N N N N
Ref Offset 23 dB
10 dB/div
Log
Ref 11.00 dBm
Mkr1 13.90 MHz
-64.252 dBm
1.00
-9.00
-19.0
-29.0
-39.0
-49.0
-59.0
-69.0
-79.0
1
Start 10.00 MHz
#Res BW 10 kHz
VBW 30 kHz*
Stop 30.00 MHz
Sweep 246.8 ms (1001 pts)
MSG
STATUS
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

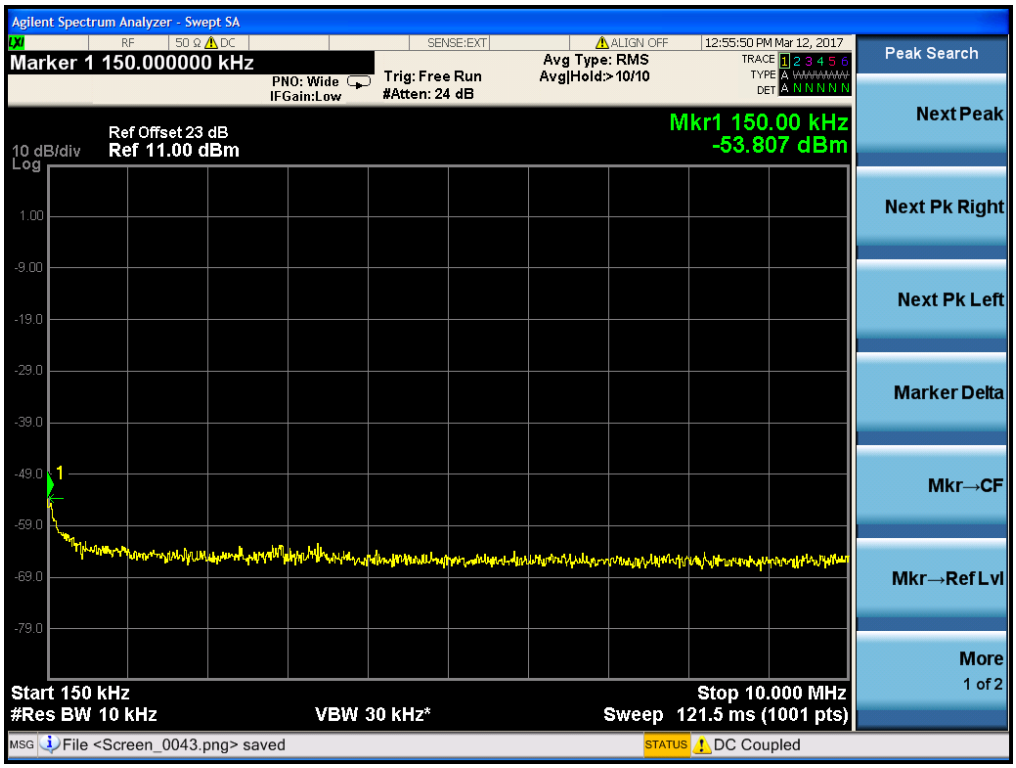

Agilent Spectrum Analyzer - Swept SA
RF 50 Ω AC
SENSE:EXT
ALIGN OFF
12:59:12 PM Mar 12, 2017
Marker 1 868.200000000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 24 dB
Avg Type: RMS
Avg|Hold:>10/10
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET A N N N N N
Ref Offset 24 dB
10 dB/div
Log
Ref 12.00 dBm
Mkr1 868.2 MHz
-47.817 dBm
2.00
-8.00
-18.0
-28.0
-38.0
-48.0
-58.0
-68.0
-78.0
1
Start 30.0 MHz
#Res BW 100 kHz
VBW 300 kHz*
Stop 868.2 MHz
Sweep 103.5 ms (1001 pts)
MSG
File <Screen_0057.png> saved
STATUS
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

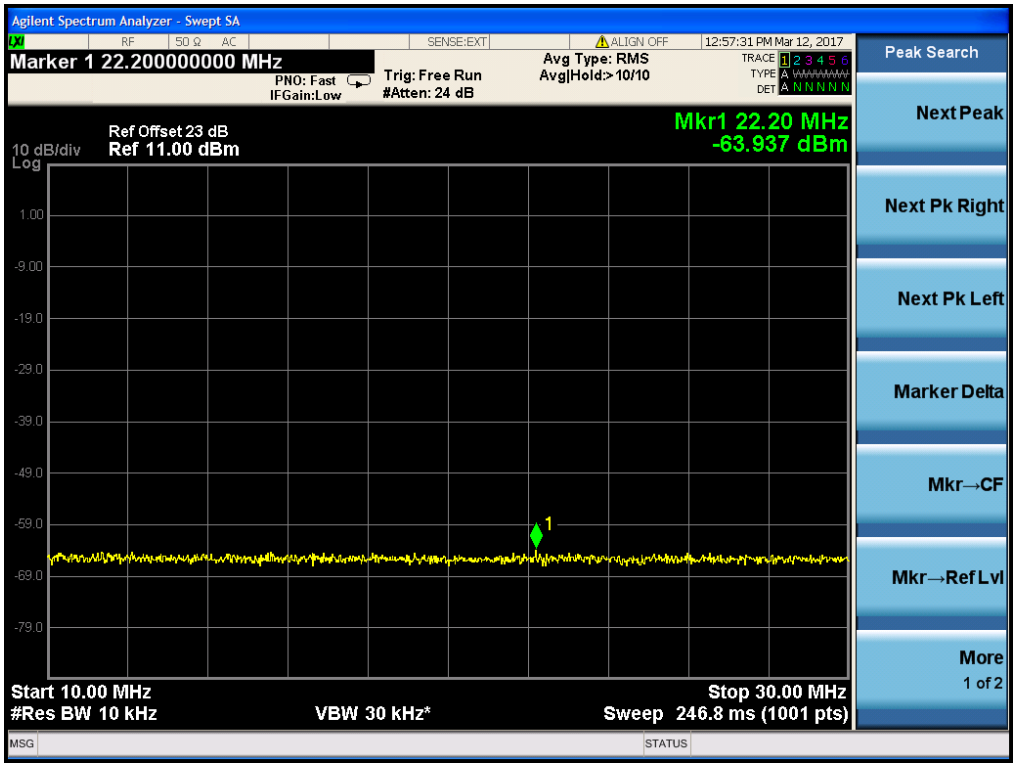


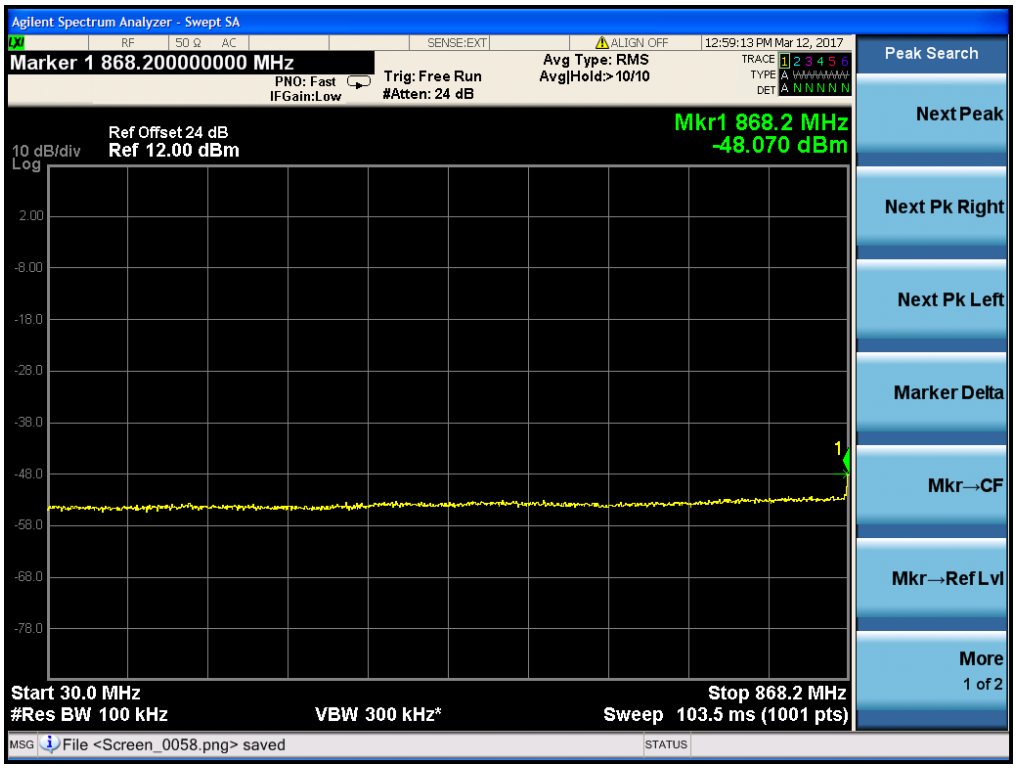


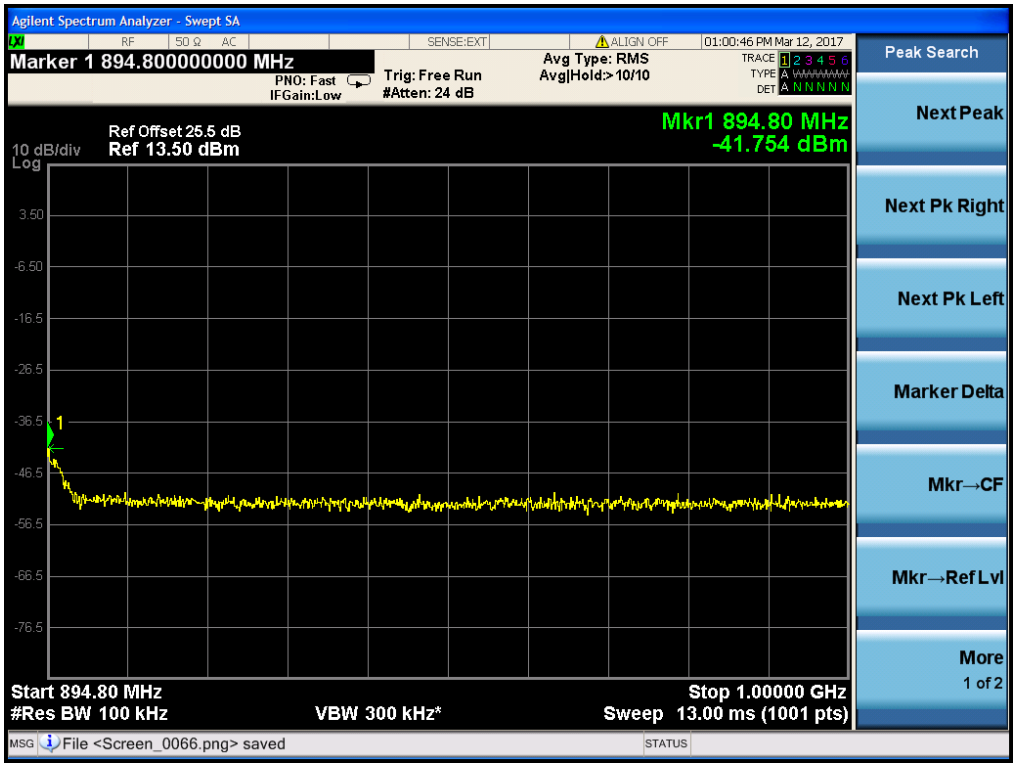
## Two Carriers Port4


Agilent Spectrum Analyzer - Swept SA
RF 50 Ω DC
SENSE:EXT
ALIGN OFF
12:51:37 PM Mar 12, 2017
Marker 1 9.141000 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 24 dB
Avg Type: RMS
Avg|Hold:>10/10
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET A N N N N N
Ref Offset 20 dB
10 dB/div
Log
Ref 18.00 dBm
Mkr1 9.141 kHz
-43.683 dBm
8.00
-2.00
-12.0
-22.0
-32.0
-42.0
-52.0
-62.0
-72.0
1
Start 9.00 kHz
#Res BW 1.0 kHz
VBW 3.0 kHz*
Stop 150.00 kHz
Sweep 174.0 ms (1001 pts)
MSG
STATUS
DC Coupled
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2


Agilent Spectrum Analyzer - Swept SA
RF 50 Ω DC
SENSE:EXT
ALIGN OFF
12:55:50 PM Mar 12, 2017
Marker 1 150.000000 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 24 dB
Avg Type: RMS
Avg|Hold:>10/10
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET A N N N N N
Ref Offset 23 dB
10 dB/div
Log
Ref 11.00 dBm
Mkr1 150.00 kHz
-53.807 dBm
1.00
-9.00
-19.0
-29.0
-39.0
-49.0
-59.0
-69.0
-79.0
1
Start 150 kHz
#Res BW 10 kHz
VBW 30 kHz*
Stop 10.000 MHz
Sweep 121.5 ms (1001 pts)
MSG
File <Screen_0043.png> saved
STATUS
DC Coupled
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

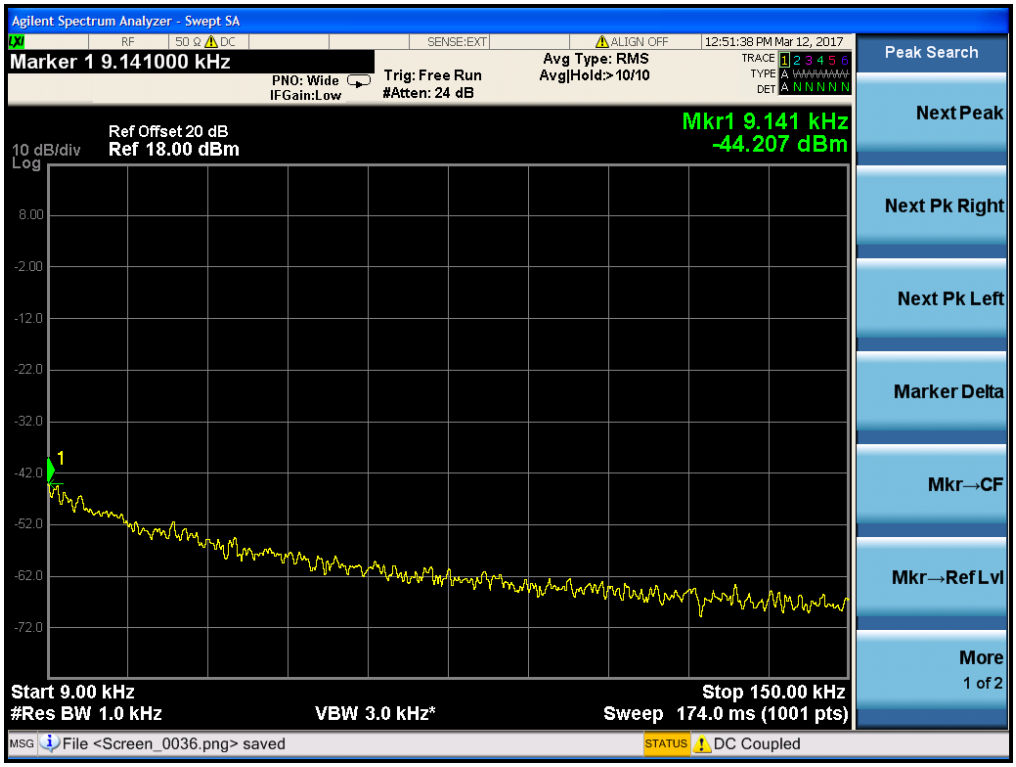

Agilent Spectrum Analyzer - Swept SA
RF 50 Ω AC
SENSE:EXT
ALIGN OFF
12:57:31 PM Mar 12, 2017
Marker 1 22.200000000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 24 dB
Avg Type: RMS
Avg|Hold:>10/10
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET A N N N N N
Ref Offset 23 dB
10 dB/div
Log
Ref 11.00 dBm
Mkr1 22.20 MHz
-63.937 dBm
1.00
-9.00
-19.0
-29.0
-39.0
-49.0
-59.0
-69.0
-79.0
Start 10.00 MHz
#Res BW 10 kHz
VBW 30 kHz*
Stop 30.00 MHz
Sweep 246.8 ms (1001 pts)
MSG
STATUS
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

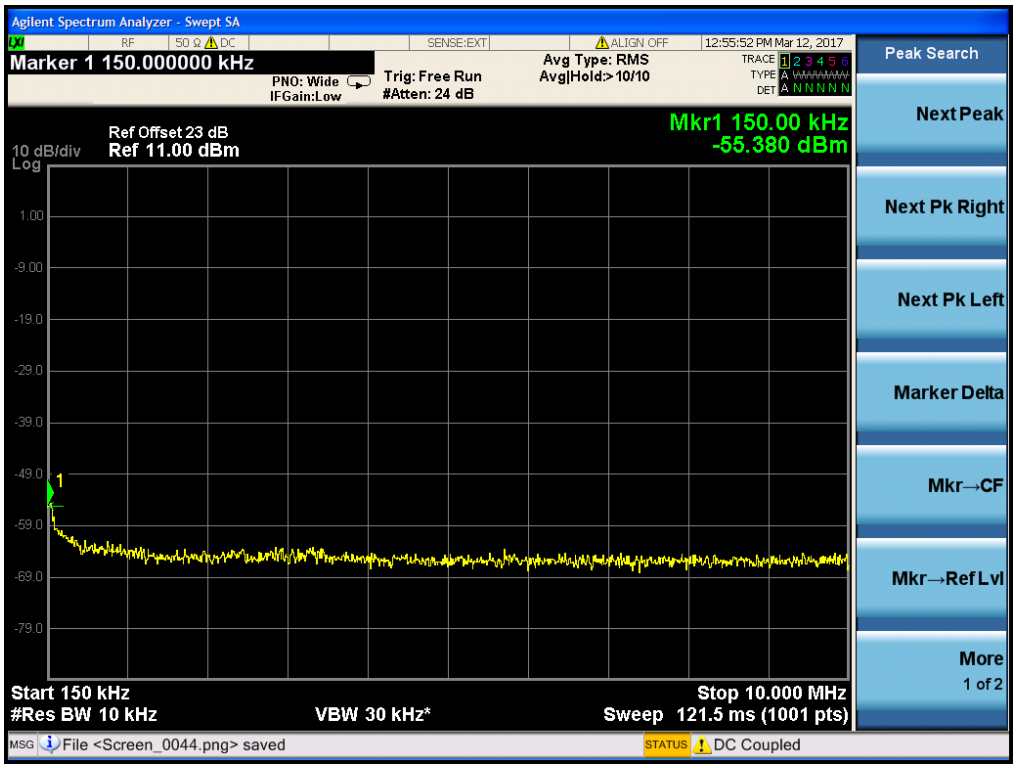

Agilent Spectrum Analyzer - Swept SA
RF 50 Ω AC
SENSE:EXT
ALIGN OFF
12:59:13 PM Mar 12, 2017
Marker 1 868.200000000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 24 dB
Avg Type: RMS
Avg|Hold:>10/10
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET A N N N N N
Ref Offset 24 dB
10 dB/div
Log
Ref 12.00 dBm
Mkr1 868.2 MHz
-48.070 dBm
2.00
-8.00
-18.0
-28.0
-38.0
-48.0
-58.0
-68.0
-78.0
Start 30.0 MHz
#Res BW 100 kHz
VBW 300 kHz*
Stop 868.2 MHz
Sweep 103.5 ms (1001 pts)
MSG
File <Screen_0058.png> saved
STATUS
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

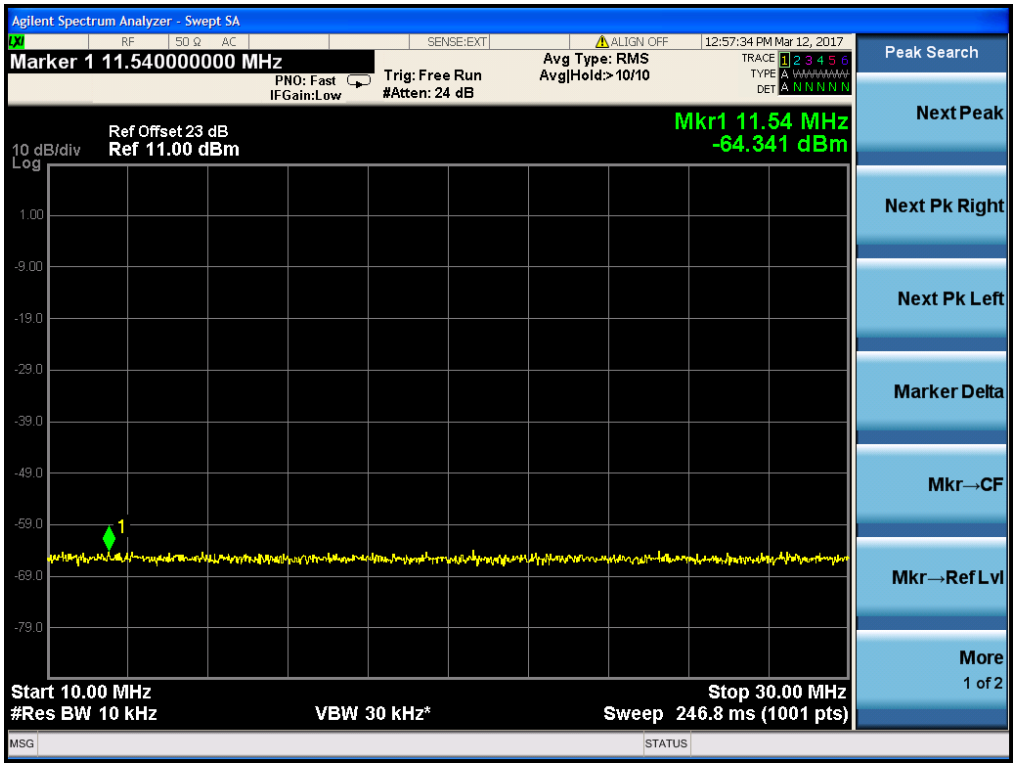


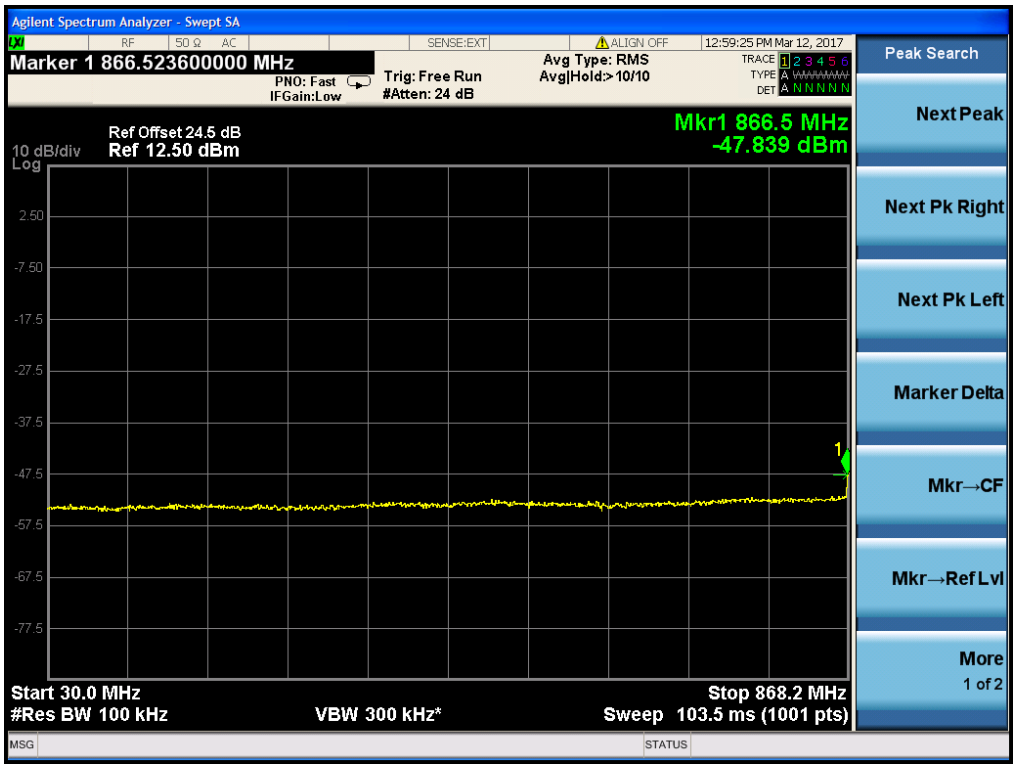


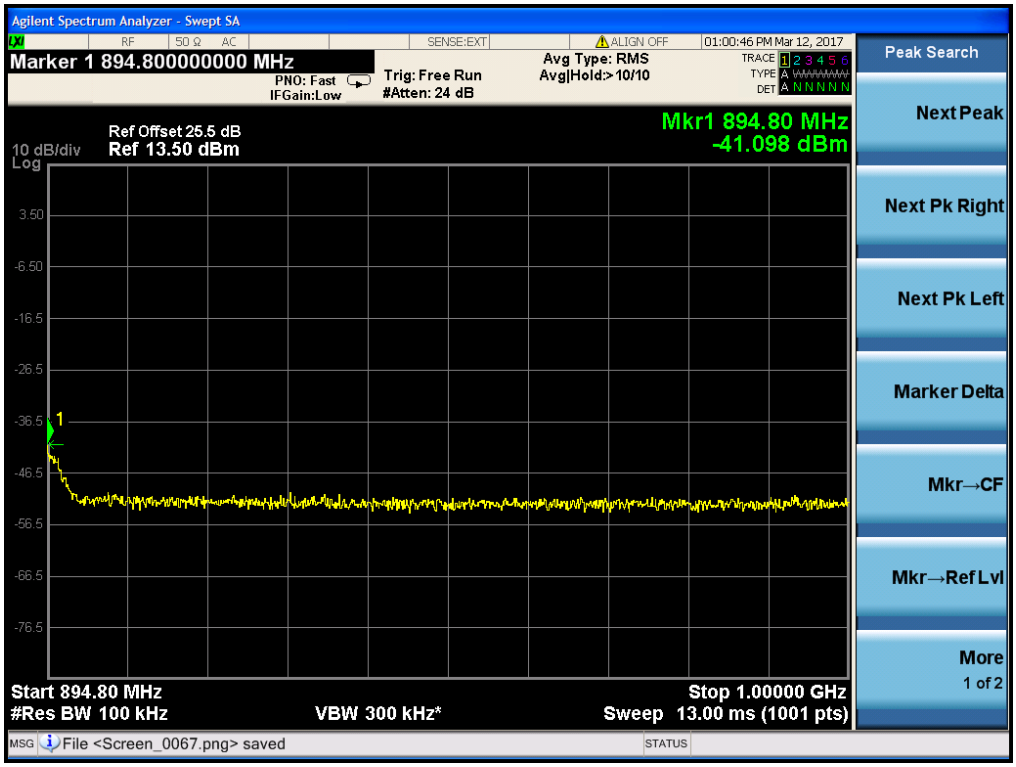
## One Carriers Port1


Agilent Spectrum Analyzer - Swept SA
Marker 1 9.141000 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 24 dB
Avg Type: RMS
Avg|Hold:>10/10
12:51:38 PM Mar 12, 2017
Ref Offset 20 dB
10 dB/div
Ref 18.00 dBm
Mkr1 9.141 kHz
-44.207 dBm
Start 9.00 kHz
#Res BW 1.0 kHz
VBW 3.0 kHz*
Stop 150.00 kHz
Sweep 174.0 ms (1001 pts)
File <Screen_0036.png> saved
DC Coupled
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2


Agilent Spectrum Analyzer - Swept SA
Marker 1 150.000000 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 24 dB
Avg Type: RMS
Avg|Hold:>10/10
12:55:52 PM Mar 12, 2017
Ref Offset 23 dB
10 dB/div
Ref 11.00 dBm
Mkr1 150.00 kHz
-55.380 dBm
Start 150 kHz
#Res BW 10 kHz
VBW 30 kHz*
Stop 10.000 MHz
Sweep 121.5 ms (1001 pts)
File <Screen_0044.png> saved
DC Coupled
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2


Agilent Spectrum Analyzer - Swept SA
RF 50 Ω AC
SENSE:EXT
ALIGN OFF
12:57:34 PM Mar 12, 2017
Marker 1 11.540000000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 24 dB
Avg Type: RMS
Avg|Hold:>10/10
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET A N N N N N
Ref Offset 23 dB
10 dB/div
Ref 11.00 dBm
Mkr1 11.54 MHz
-64.341 dBm
1.00
-9.00
-19.0
-29.0
-39.0
-49.0
-59.0
-69.0
-79.0
Start 10.00 MHz
#Res BW 10 kHz
VBW 30 kHz*
Stop 30.00 MHz
Sweep 246.8 ms (1001 pts)
MSG
STATUS
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

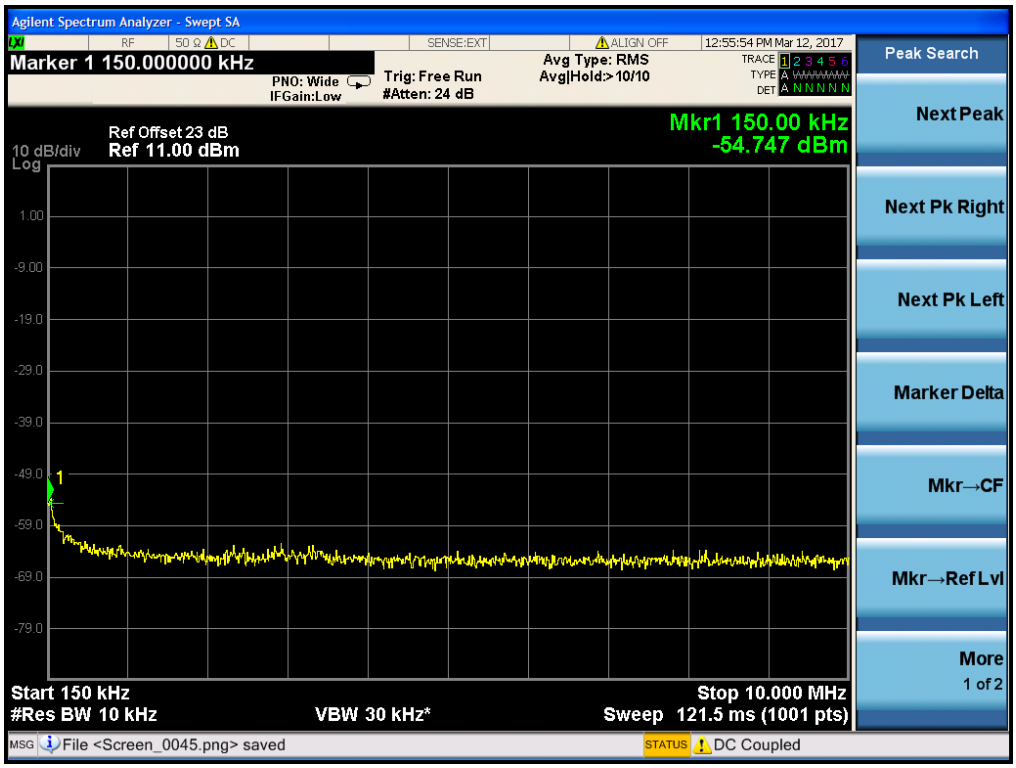

Agilent Spectrum Analyzer - Swept SA
RF 50 Ω AC
SENSE:EXT
ALIGN OFF
12:59:25 PM Mar 12, 2017
Marker 1 866.523600000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 24 dB
Avg Type: RMS
Avg|Hold:>10/10
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET A N N N N N
Ref Offset 24.5 dB
10 dB/div
Ref 12.50 dBm
Mkr1 866.5 MHz
-47.839 dBm
2.50
-7.50
-17.5
-27.5
-37.5
-47.5
-57.5
-67.5
-77.5
Start 30.0 MHz
#Res BW 100 kHz
VBW 300 kHz*
Stop 868.2 MHz
Sweep 103.5 ms (1001 pts)
MSG
STATUS
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

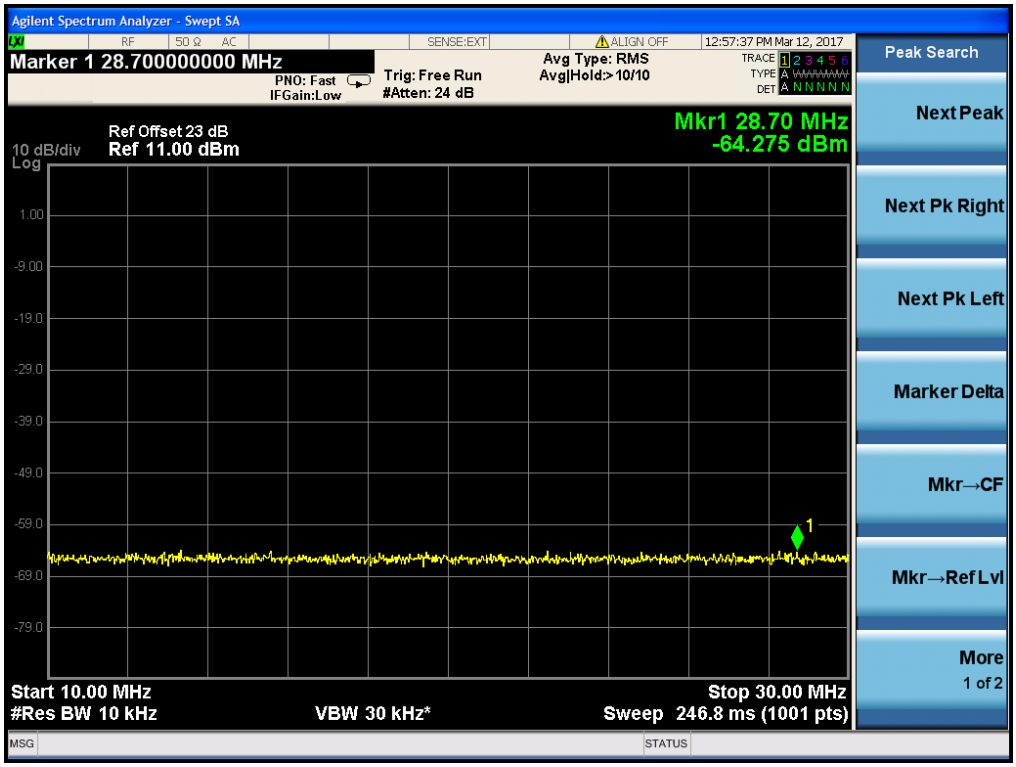


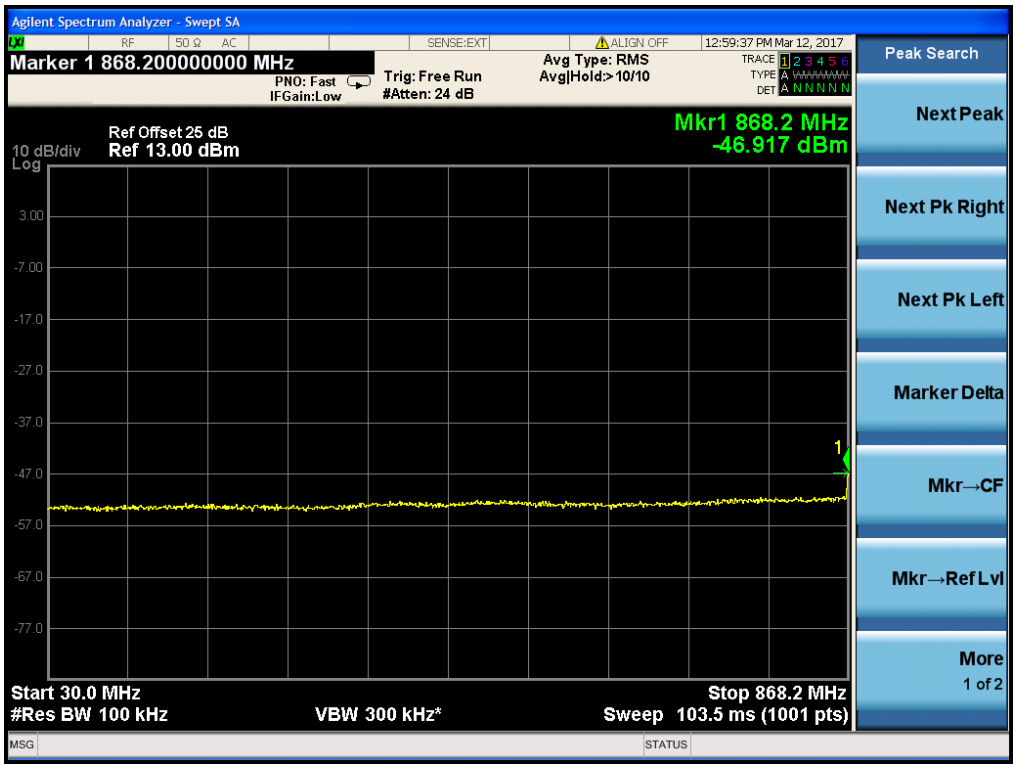


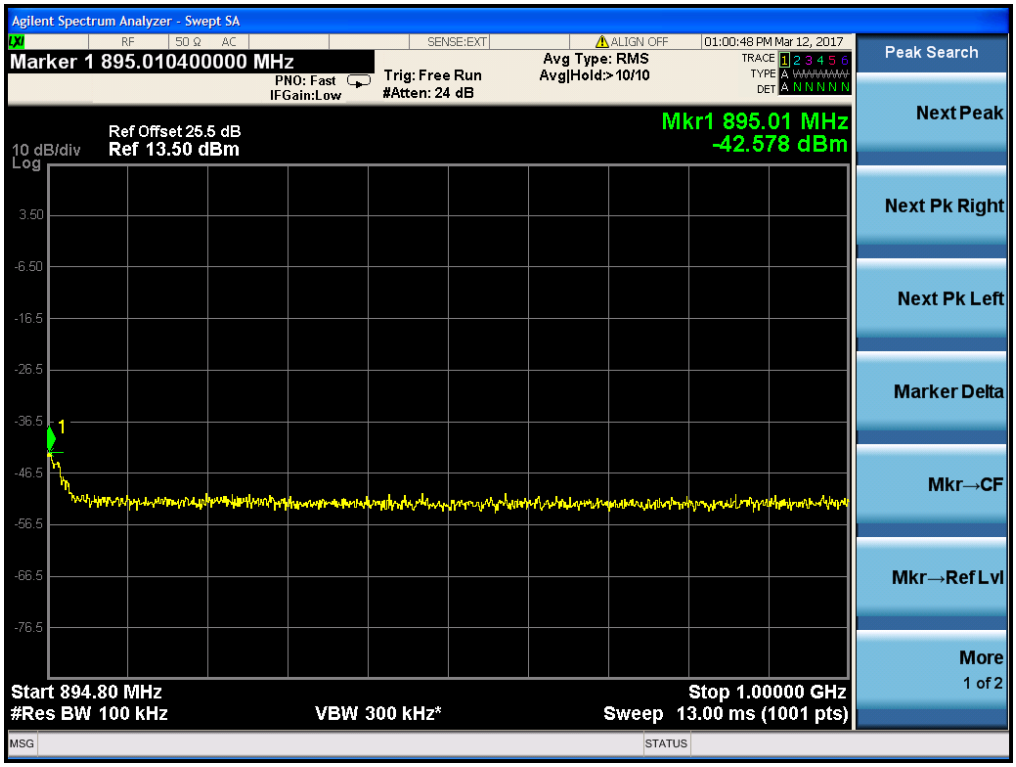
## One Carriers Port4


Agilent Spectrum Analyzer - Swept SA
Marker 1 9.141000 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 24 dB
Avg Type: RMS
Avg|Hold:>10/10
12:51:40 PM Mar 12, 2017
Ref Offset 20 dB
10 dB/div
Ref 18.00 dBm
Mkr1 9.141 kHz
-44.817 dBm
Start 9.00 kHz
#Res BW 1.0 kHz
VBW 3.0 kHz*
Stop 150.00 kHz
Sweep 174.0 ms (1001 pts)
File <Screen_0037.png> saved
DC Coupled
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2


Agilent Spectrum Analyzer - Swept SA
Marker 1 150.000000 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 24 dB
Avg Type: RMS
Avg|Hold:>10/10
12:55:54 PM Mar 12, 2017
Ref Offset 23 dB
10 dB/div
Ref 11.00 dBm
Mkr1 150.00 kHz
-54.747 dBm
Start 150 kHz
#Res BW 10 kHz
VBW 30 kHz*
Stop 10.000 MHz
Sweep 121.5 ms (1001 pts)
File <Screen_0045.png> saved
DC Coupled
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2


Agilent Spectrum Analyzer - Swept SA
RF 50 Ω AC
SENSE:EXT
ALIGN OFF
12:57:37 PM Mar 12, 2017
Marker 1 28.700000000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 24 dB
Avg Type: RMS
Avg|Hold:>10/10
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET A N N N N N
Ref Offset 23 dB
10 dB/div
Ref 11.00 dBm
Mkr1 28.70 MHz
-64.275 dBm
1.00
-9.00
-19.0
-29.0
-39.0
-49.0
-59.0
-69.0
-79.0
Start 10.00 MHz
#Res BW 10 kHz
VBW 30 kHz*
Stop 30.00 MHz
Sweep 246.8 ms (1001 pts)
MSG
STATUS
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2


Agilent Spectrum Analyzer - Swept SA
RF 50 Ω AC
SENSE:EXT
ALIGN OFF
12:59:37 PM Mar 12, 2017
Marker 1 868.200000000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 24 dB
Avg Type: RMS
Avg|Hold:>10/10
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET A N N N N N
Ref Offset 25 dB
10 dB/div
Ref 13.00 dBm
Mkr1 868.2 MHz
-46.917 dBm
3.00
-7.00
-17.0
-27.0
-37.0
-47.0
-57.0
-67.0
-77.0
Start 30.0 MHz
#Res BW 100 kHz
VBW 300 kHz*
Stop 868.2 MHz
Sweep 103.5 ms (1001 pts)
MSG
STATUS
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2


Agilent Spectrum Analyzer - Swept SA
RF 50 Ω AC
SENSE:EXT
ALIGN OFF
01:00:48 PM Mar 12, 2017
Marker 1 895.010400000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 24 dB
Avg Type: RMS
Avg|Hold:>10/10
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET A N N N N N
Ref Offset 25.5 dB
10 dB/div
Log
Ref 13.50 dBm
Mkr1 895.01 MHz
-42.578 dBm
3.50
-6.50
-16.5
-26.5
-36.5
-46.5
-56.5
-66.5
-76.5
Start 894.80 MHz
#Res BW 100 kHz
VBW 300 kHz*
Stop 1.00000 GHz
Sweep 13.00 ms (1001 pts)
MSG
STATUS
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2


Agilent Spectrum Analyzer - Swept SA
RF 50 Ω AC
SENSE:EXT
ALIGN OFF
01:03:45 PM Mar 12, 2017
Marker 1 2.680000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 26 dB
Avg Type: RMS
Avg|Hold:>10/10
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET A N N N N N
Ref Offset 22 dB
10 dB/div
Log
Ref 10.00 dBm
Mkr1 2.680 GHz
-39.769 dBm
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
Start 1.000 GHz
#Res BW 1.0 MHz
VBW 3.0 MHz*
Stop 8.000 GHz
Sweep 11.67 ms (1001 pts)
start
Agilent Spectrum Ana...
1:03 PM
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

## 11 10 OCCUPIED BANDWIDTH

### 11.1 Applicable Standard: FCC §2.1049 §22.917

### 11.2 Test Equipment List and Details

| Manufacturer | Description | Model | Serial Number | Calibration Date | Calibration Due Date |
|---|---|---|---|---|---|
| Agilent | MXA Series Spectrum Analyzer | N9020A | MY52090451 | 2016-3-15 | 2017-3-15 |
| DST | DST100 40dB Attenuator | DTS100-40dB-N | N/A | N/A | N/A |
| Hewlett Packard | Hewlett Packard RF Cable | 8120-6192 | 01428251 | N/A | N/A |

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

### 11.3 Test Procedure

The RF out of the transmitter was connected to the input of the spectrum analyzer through sufficient attenuation. The resolution bandwidth of the spectrum analyzer was set at 1% of the span or higher and 99%Power bandwidth was recorded.

### 11.4 Environmental Conditions

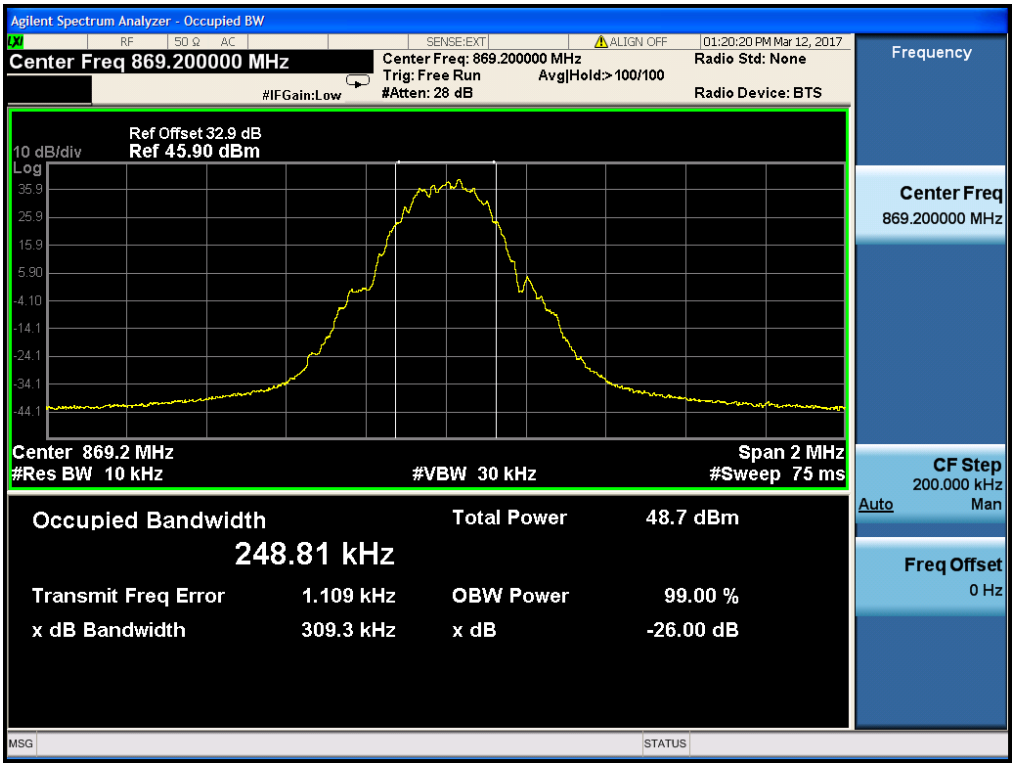
| | |
|---|---|
| Temperature: | 20 ° C |
| Relative Humidity: | 53% |
| ATM Pressure: | 1009mbar |

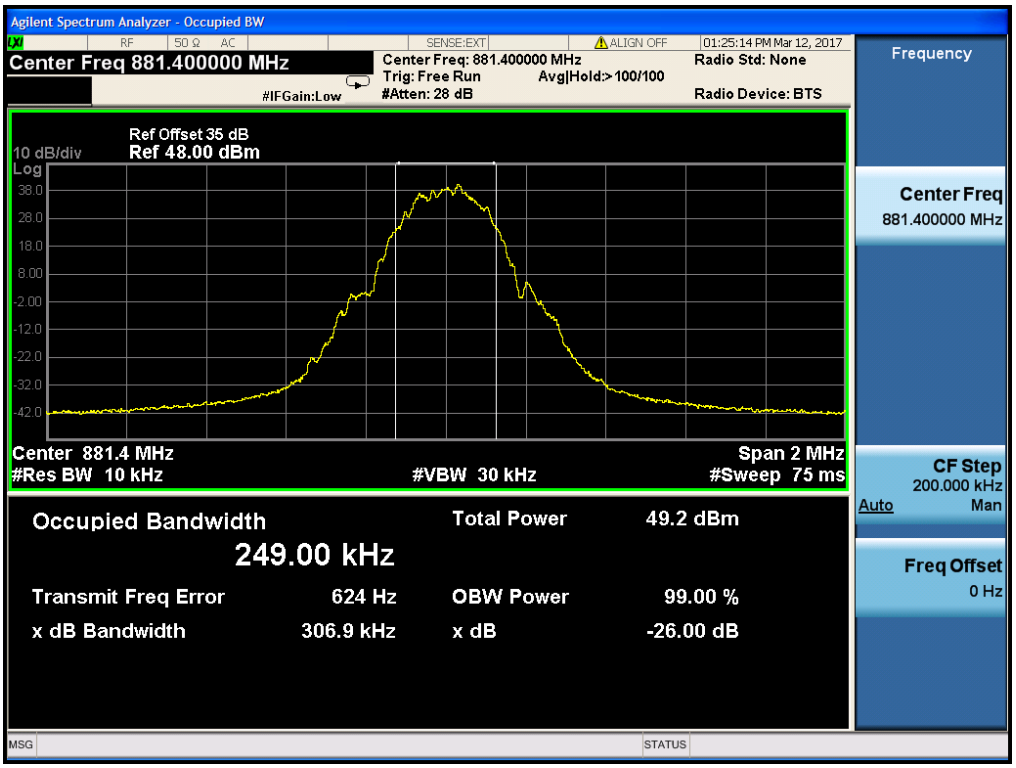
### 11.5 Test Result: Pass

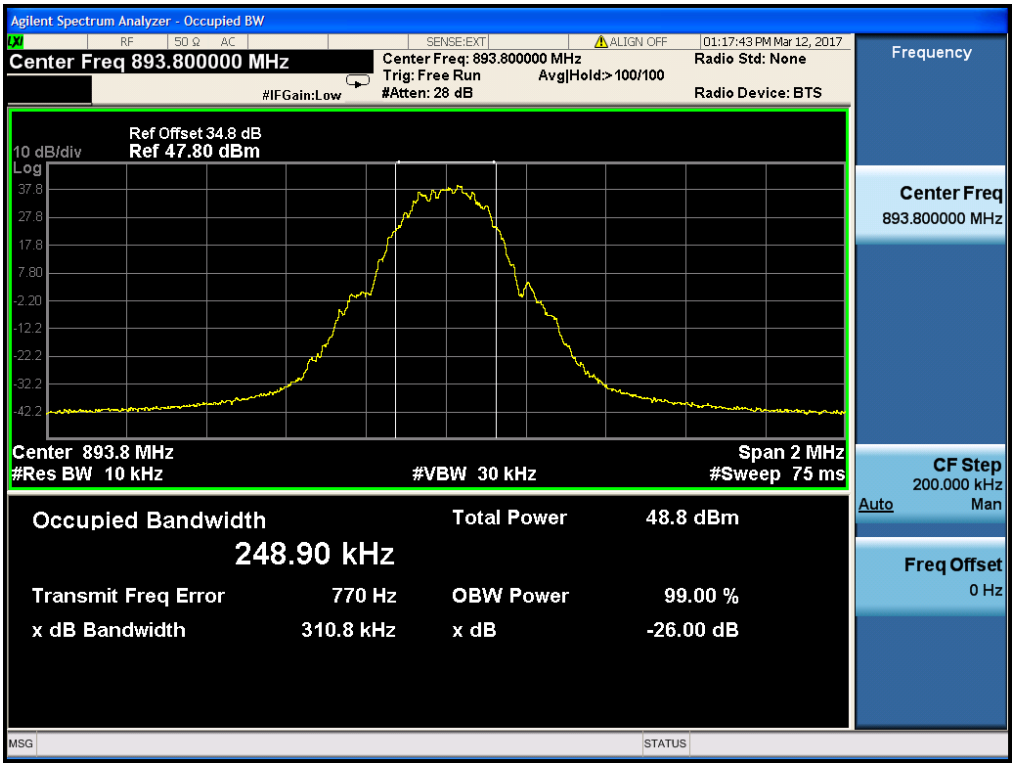
### 11.6 Test Mode: Transmitting GSM

### 11.7 Test Data

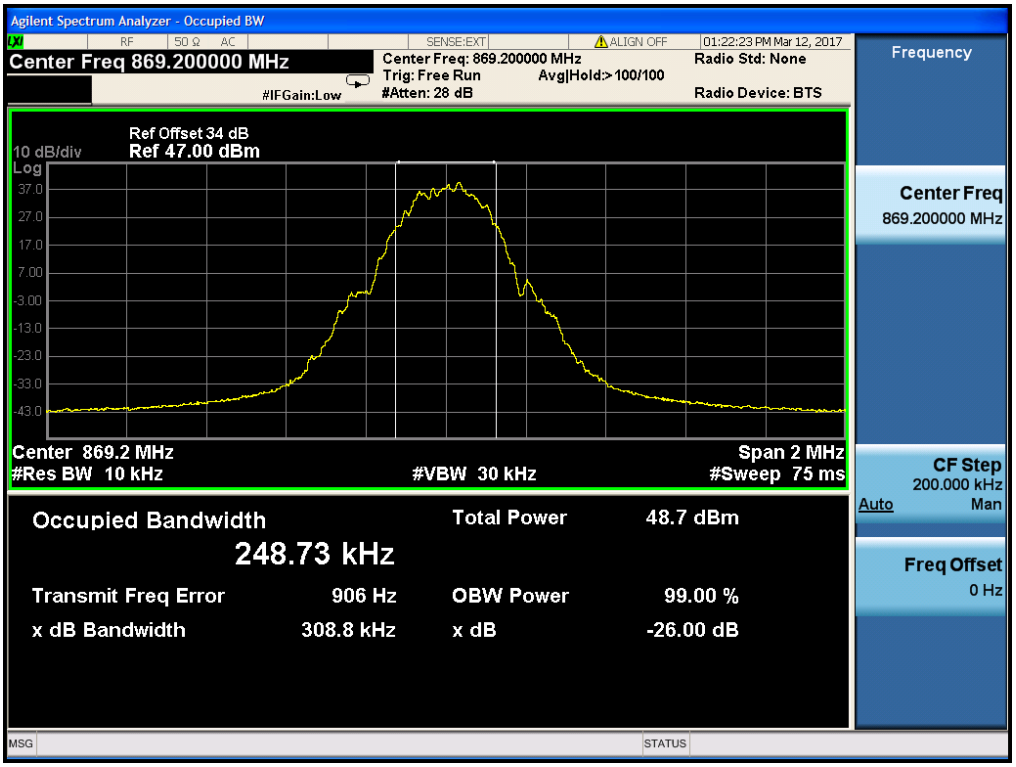
| Port | Modulation | Frequency (MHz) | 99% Power Bandwidth (kHz) | Limit (kHz) |
|---|---|---|---|---|
| 1 | GMSK | 869.2/881.4/893.8 | 248.81/249/248.9 | 250 |

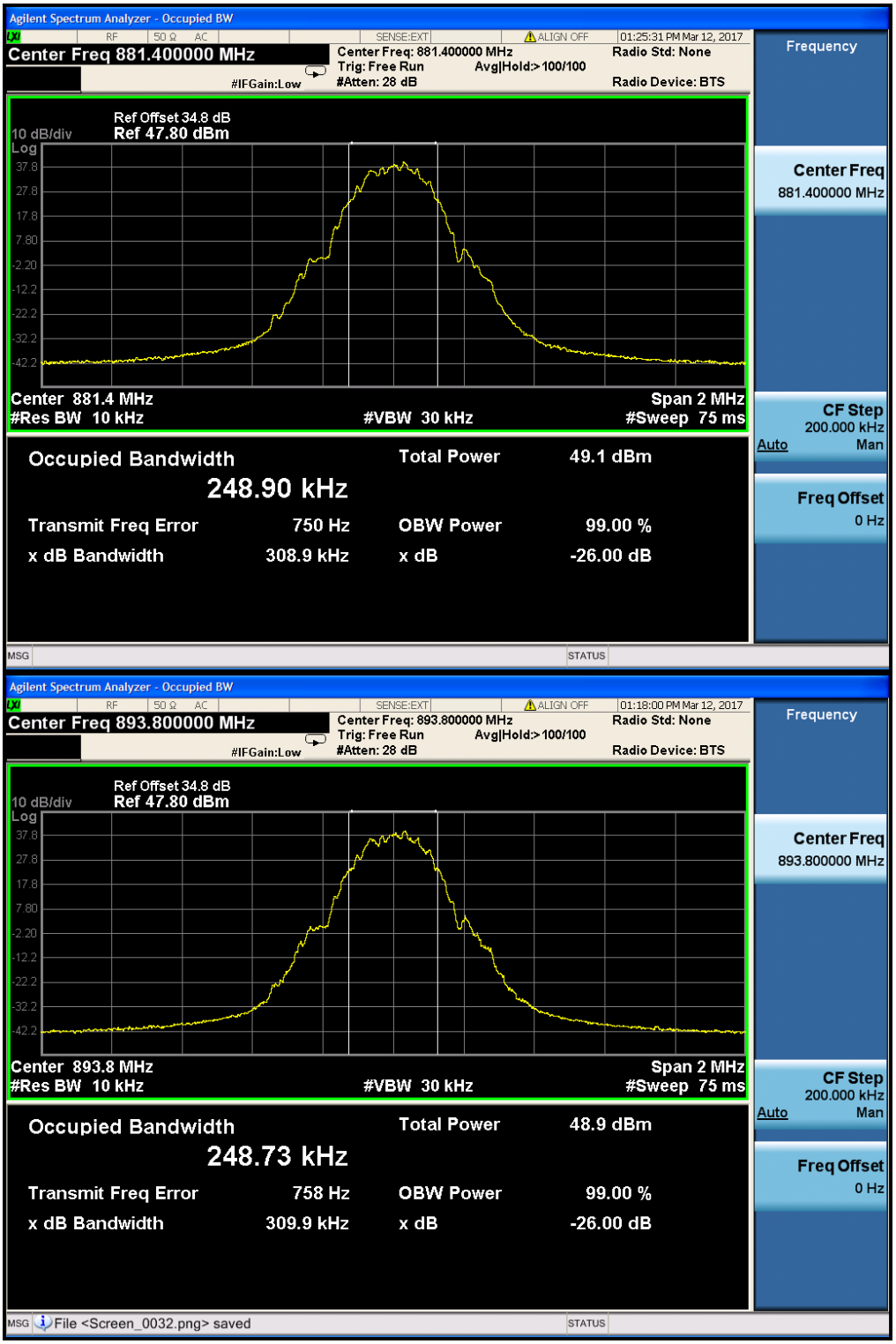

Agilent Spectrum Analyzer - Occupied BW
RF 50 Ω AC
SENSE:EXT
ALIGN OFF
01:20:20 PM Mar 12, 2017
Center Freq 869.200000 MHz
Center Freq: 869.200000 MHz
Trig: Free Run
Avg|Hold:>100/100
#IFGain:Low
#Atten: 28 dB
Radio Std: None
Radio Device: BTS
Ref Offset 32.9 dB
10 dB/div
Ref 45.90 dBm
Log
35.9
25.9
15.9
5.90
-4.10
-14.1
-24.1
-34.1
-44.1
Center 869.2 MHz
#Res BW 10 kHz
#VBW 30 kHz
Span 2 MHz
#Sweep 75 ms
Occupied Bandwidth
248.81 kHz
Total Power 48.7 dBm
Transmit Freq Error 1.109 kHz
OBW Power 99.00 %
x dB Bandwidth 309.3 kHz
x dB -26.00 dB
MSG
STATUS
Frequency
Center Freq
869.200000 MHz
CF Step
200.000 kHz
Auto
Man
Freq Offset
0 Hz


Agilent Spectrum Analyzer - Occupied BW
RF 50 Ω AC
SENSE:EXT
ALIGN OFF
01:25:14 PM Mar 12, 2017
Center Freq 881.400000 MHz
Center Freq: 881.400000 MHz
Trig: Free Run
Avg|Hold:>100/100
#IFGain:Low
#Atten: 28 dB
Radio Std: None
Radio Device: BTS
Ref Offset 35 dB
10 dB/div
Ref 48.00 dBm
Log
38.0
28.0
18.0
8.00
-2.00
-12.0
-22.0
-32.0
-42.0
Center 881.4 MHz
#Res BW 10 kHz
#VBW 30 kHz
Span 2 MHz
#Sweep 75 ms
Occupied Bandwidth
249.00 kHz
Total Power 49.2 dBm
Transmit Freq Error 624 Hz
OBW Power 99.00 %
x dB Bandwidth 306.9 kHz
x dB -26.00 dB
MSG
STATUS
Frequency
Center Freq
881.400000 MHz
CF Step
200.000 kHz
Auto
Man
Freq Offset
0 Hz

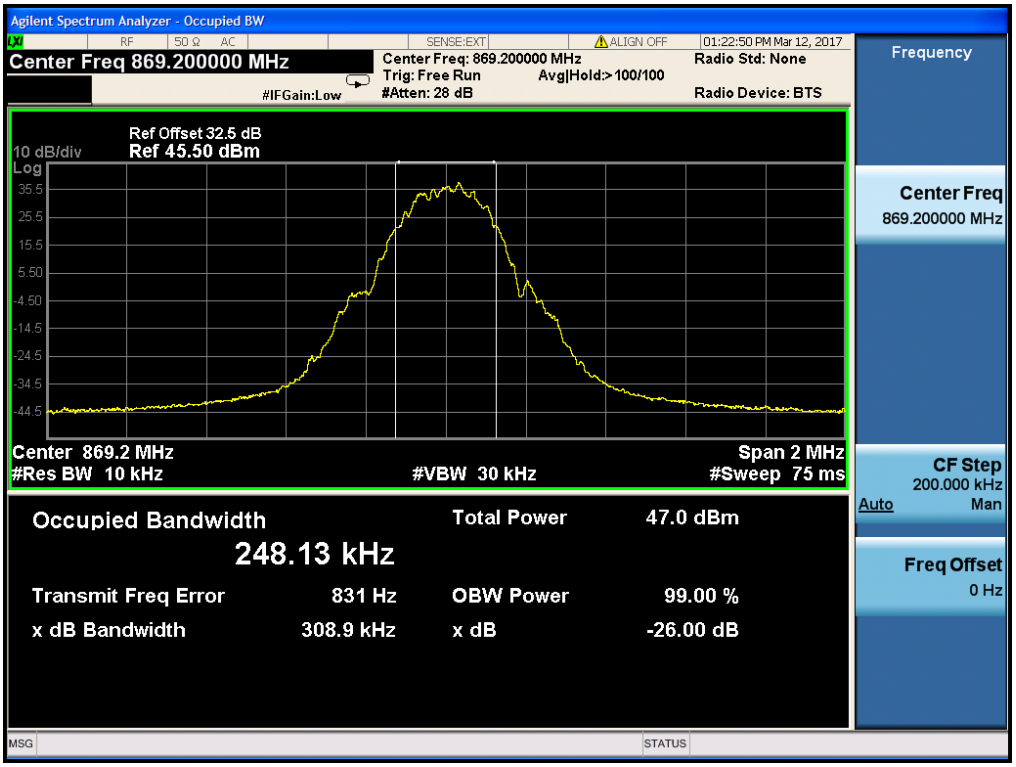


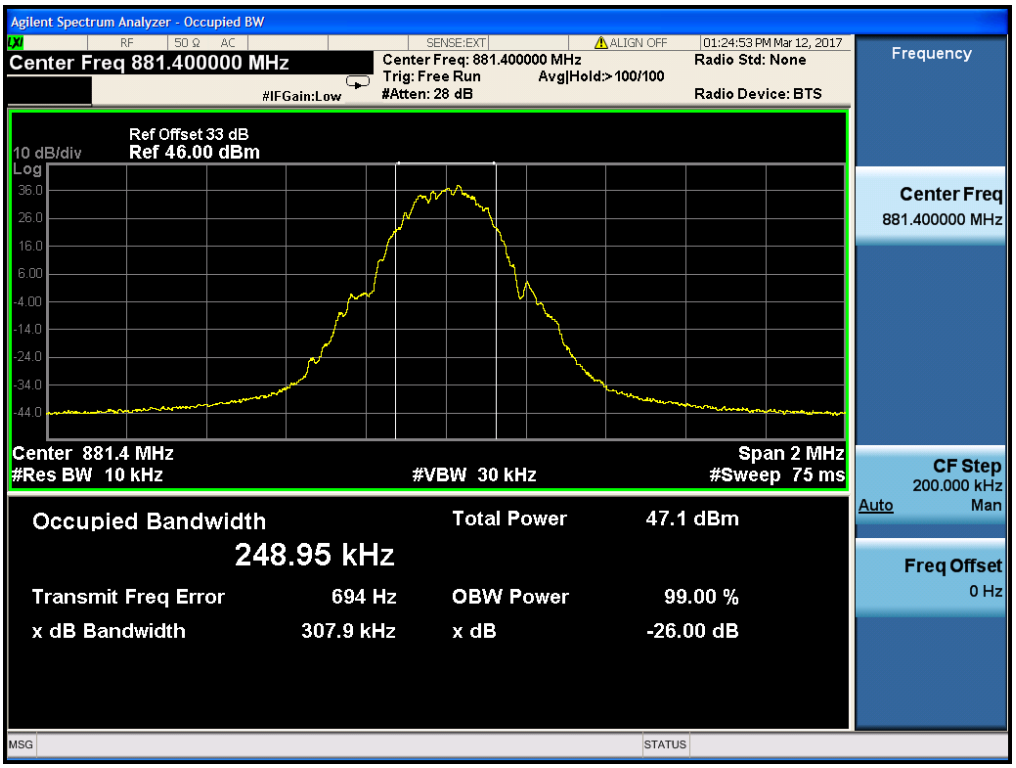

| Port | Modulation | Frequency (MHz) | 99% Power Bandwidth (kHz) | Limit (kHz) |
|---|---|---|---|---|
| 4 | GMSK | 869.2/881.4/893.8 | 248.73/248.9/248.73 | 250 |

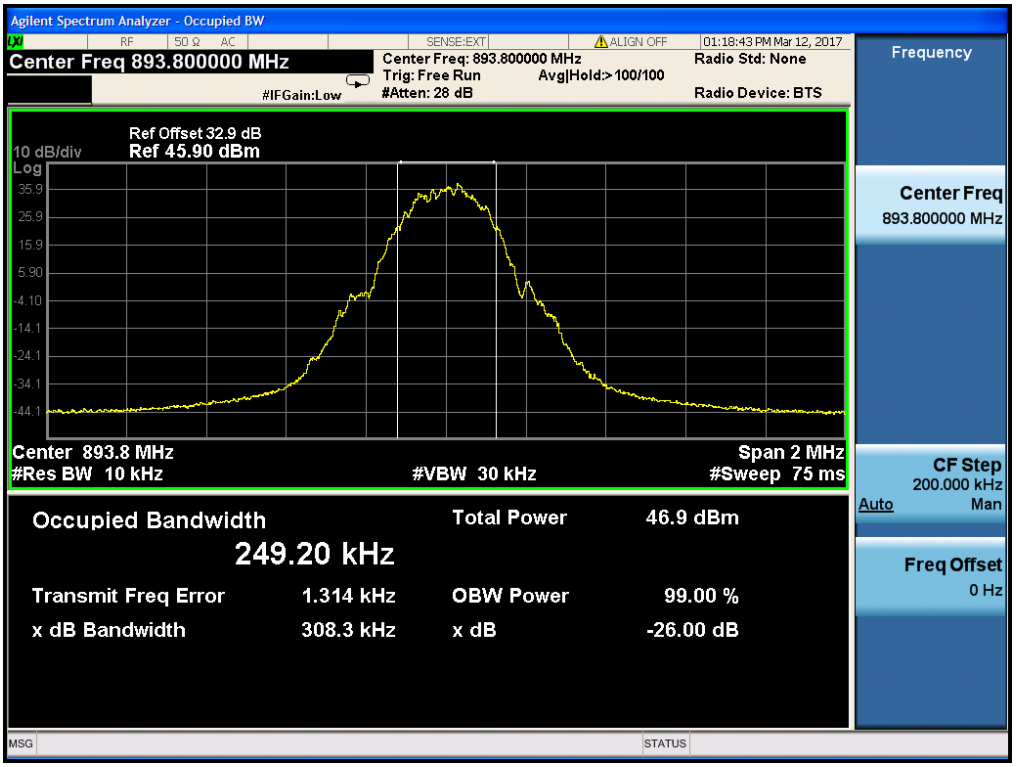




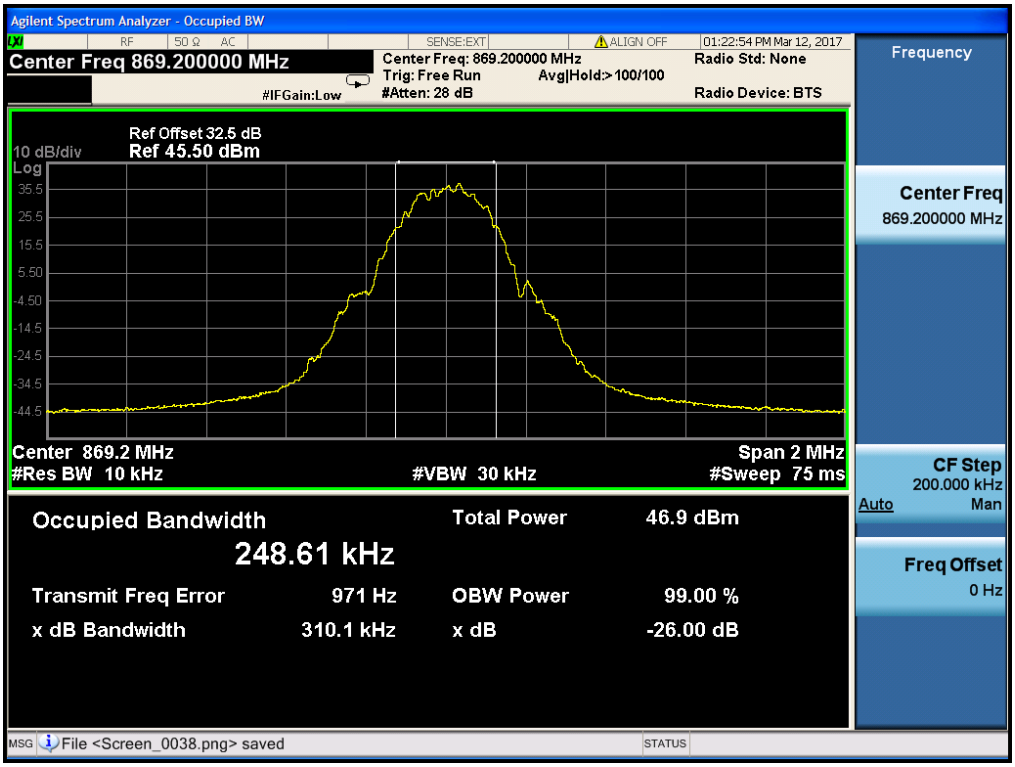

| Port | Modulation | Frequency (MHz) | 99% Power Bandwidth (kHz) | Limit (kHz) |
|---|---|---|---|---|
| 1 | 8PSK | 869.2/881.4/893.8 | 248.13/248.95/249.2 | 250 |

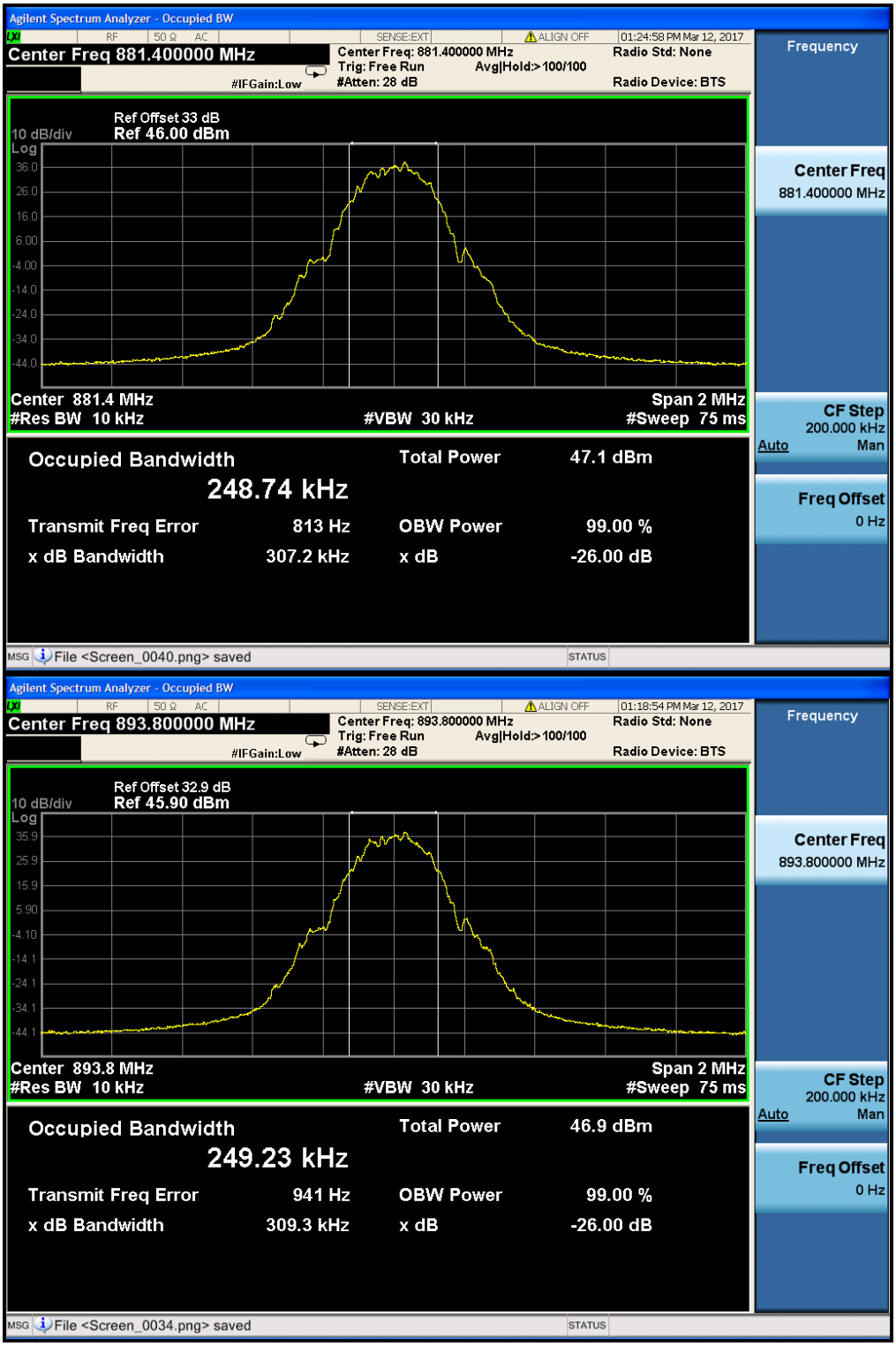

Agilent Spectrum Analyzer - Occupied BW
RF 50 Ω AC
SENSE:EXT
ALIGN OFF
01:22:50 PM Mar 12, 2017
Center Freq 869.200000 MHz
Center Freq: 869.200000 MHz
Trig: Free Run Avg|Hold:>100/100
#IFGain:Low #Atten: 28 dB
Radio Std: None
Radio Device: BTS
Frequency
Ref Offset 32.5 dB
10 dB/div Ref 45.50 dBm
Log
35.5
25.5
15.5
5.50
-4.50
-14.5
-24.5
-34.5
-44.5
Center 869.2 MHz
#Res BW 10 kHz
#VBW 30 kHz
Span 2 MHz
#Sweep 75 ms
Occupied Bandwidth
248.13 kHz
Total Power 47.0 dBm
Transmit Freq Error 831 Hz
OBW Power 99.00 %
x dB Bandwidth 308.9 kHz
x dB -26.00 dB
Center Freq
869.200000 MHz
CF Step
200.000 kHz
Auto Man
Freq Offset
0 Hz
MSG
STATUS


Agilent Spectrum Analyzer - Occupied BW
RF 50 Ω AC
SENSE:EXT
ALIGN OFF
01:24:53 PM Mar 12, 2017
Center Freq 881.400000 MHz
Center Freq: 881.400000 MHz
Trig: Free Run Avg|Hold:>100/100
#IFGain:Low #Atten: 28 dB
Radio Std: None
Radio Device: BTS
Frequency
Ref Offset 33 dB
10 dB/div Ref 46.00 dBm
Log
36.0
26.0
16.0
6.00
-4.00
-14.0
-24.0
-34.0
-44.0
Center 881.4 MHz
#Res BW 10 kHz
#VBW 30 kHz
Span 2 MHz
#Sweep 75 ms
Occupied Bandwidth
248.95 kHz
Total Power 47.1 dBm
Transmit Freq Error 694 Hz
OBW Power 99.00 %
x dB Bandwidth 307.9 kHz
x dB -26.00 dB
Center Freq
881.400000 MHz
CF Step
200.000 kHz
Auto Man
Freq Offset
0 Hz
MSG
STATUS




| Port | Modulation | Frequency (MHz) | 99% Power Bandwidth (kHz) | Limit (kHz) |
|---|---|---|---|---|
| 4 | 8PSK | 869.2/881.4/893.8 | 248.61/248.74/249.23 | 250 |




Agilent Spectrum Analyzer - Occupied BW
Center Freq 881.400000 MHz
Center Freq: 881.400000 MHz
Trig: Free Run
Avg|Hold:>100/100
#Atten: 28 dB
#IFGain:Low
Radio Std: None
Radio Device: BTS
01:24:58 PM Mar 12, 2017
Ref Offset 33 dB
10 dB/div
Ref 46.00 dBm
Log
36.0
26.0
16.0
6.00
-4.00
-14.0
-24.0
-34.0
-44.0
Center 881.4 MHz
#Res BW 10 kHz
#VBW 30 kHz
Span 2 MHz
#Sweep 75 ms
Occupied Bandwidth
248.74 kHz
Total Power 47.1 dBm
Transmit Freq Error 813 Hz
OBW Power 99.00 %
x dB Bandwidth 307.2 kHz
x dB -26.00 dB
Frequency
Center Freq
881.400000 MHz
CF Step
200.000 kHz
Auto
Man
Freq Offset
0 Hz
File <Screen_0040.png> saved
Agilent Spectrum Analyzer - Occupied BW
Center Freq 893.800000 MHz
Center Freq: 893.800000 MHz
Trig: Free Run
Avg|Hold:>100/100
#Atten: 28 dB
#IFGain:Low
Radio Std: None
Radio Device: BTS
01:18:54 PM Mar 12, 2017
Ref Offset 32.9 dB
10 dB/div
Ref 45.90 dBm
Log
35.9
25.9
15.9
5.90
-4.10
-14.1
-24.1
-34.1
-44.1
Center 893.8 MHz
#Res BW 10 kHz
#VBW 30 kHz
Span 2 MHz
#Sweep 75 ms
Occupied Bandwidth
249.23 kHz
Total Power 46.9 dBm
Transmit Freq Error 941 Hz
OBW Power 99.00 %
x dB Bandwidth 309.3 kHz
x dB -26.00 dB
Frequency
Center Freq
893.800000 MHz
CF Step
200.000 kHz
Auto
Man
Freq Offset
0 Hz
File <Screen_0034.png> saved

## 12 11 BAND EDGES

### 12.1 Applicable Standard: FCC §2.1051

According to §2.1051 and §24.238, the power of any emission 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. The limit (dBm) should < P –(43+10log(P)) = -13dBm.

### 12.2 Test Equipment List and Details

| Manufacturer | Description | Model | Serial Number | Calibration Date | Calibration Due Date |
|---|---|---|---|---|---|
| Agilent | MXA Series Spectrum Analyzer | N9020A | MY52090451 | 2016-3-25 | 2017-3-25 |
| DST | DST100 40dB Attenuator | DTS100-40dB-N | N/A | N/A | N/A |
| Hewlett Packard | Hewlett Packard RF Cable | 8120-6192 | 01428251 | N/A | N/A |

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

### 12.3 Test Procedure

The RF output of the transmitter was connected to the input of the spectrum analyzer through sufficient attenuation.
The center of the spectrum analyzer was set to block edge frequency.

### 12.4 Test Data Environmental Conditions

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

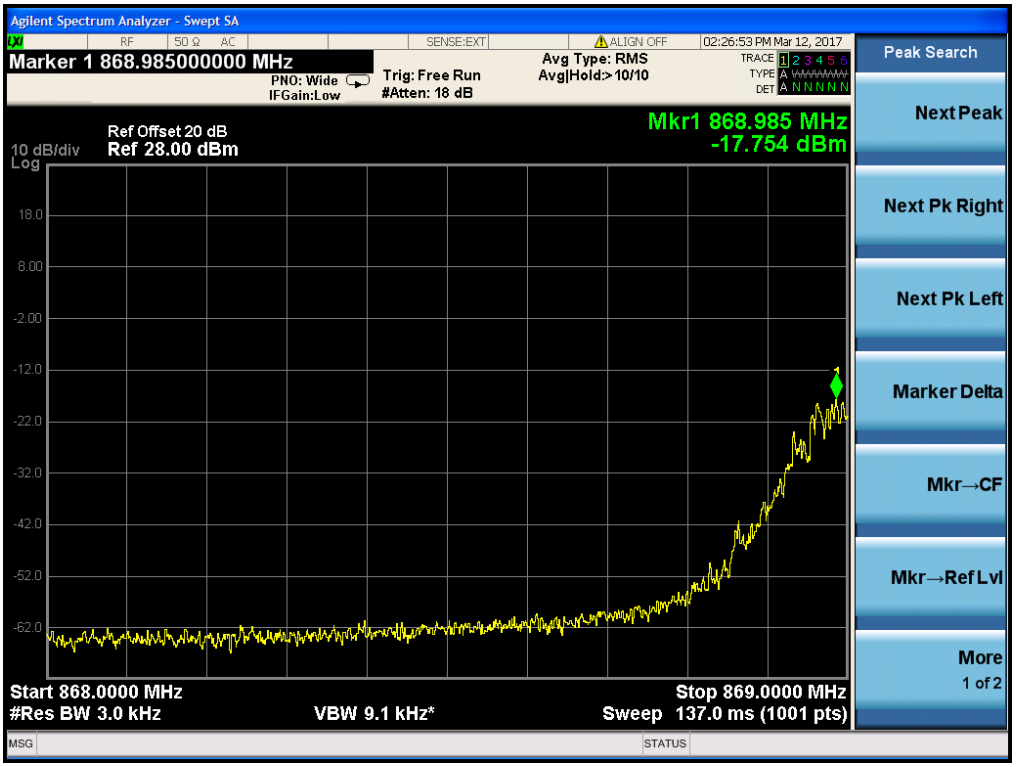
### 12.5 Test Result: Pass

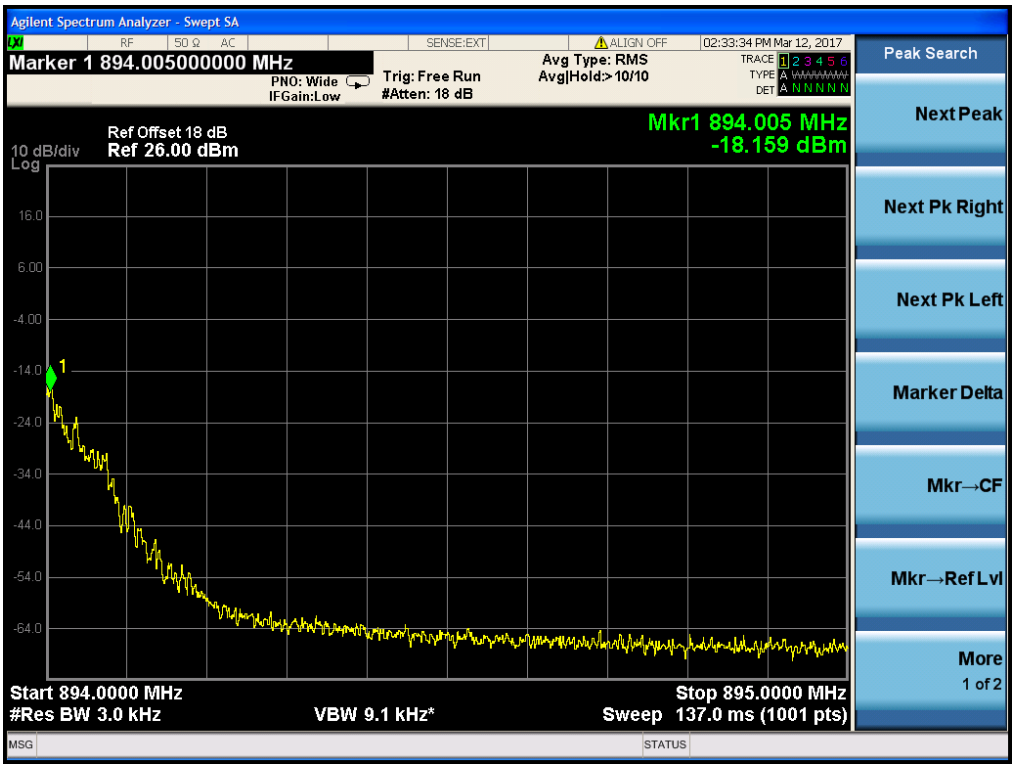
### 12.6 Test Mode: Transmitting GSM

### 12.7 Test Data

**Four carriers Port 1**

| Port | Frequency channel | Max bandedge Emission (dBm) | Limit (dBm) |
|---|---|---|---|
| 1 | 869.2/869.8/ 870.4 /871 | -17.754 | -13.00 |
| | 892/892.6/893.2/893.8 | -18.159 | -13.00 |

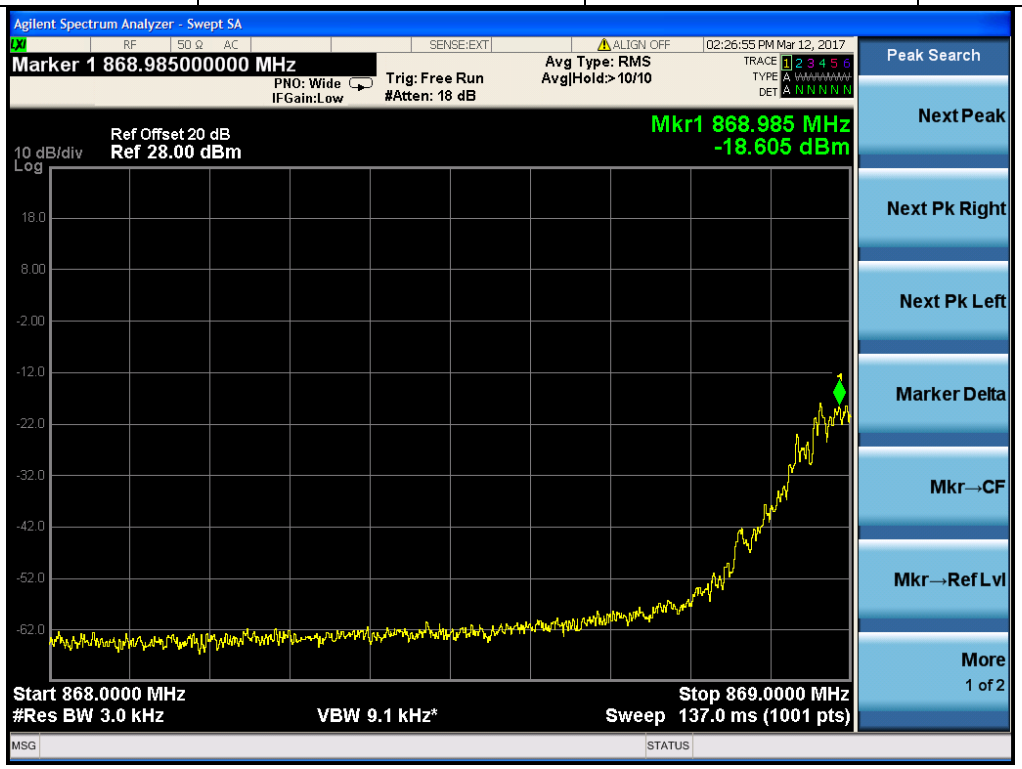


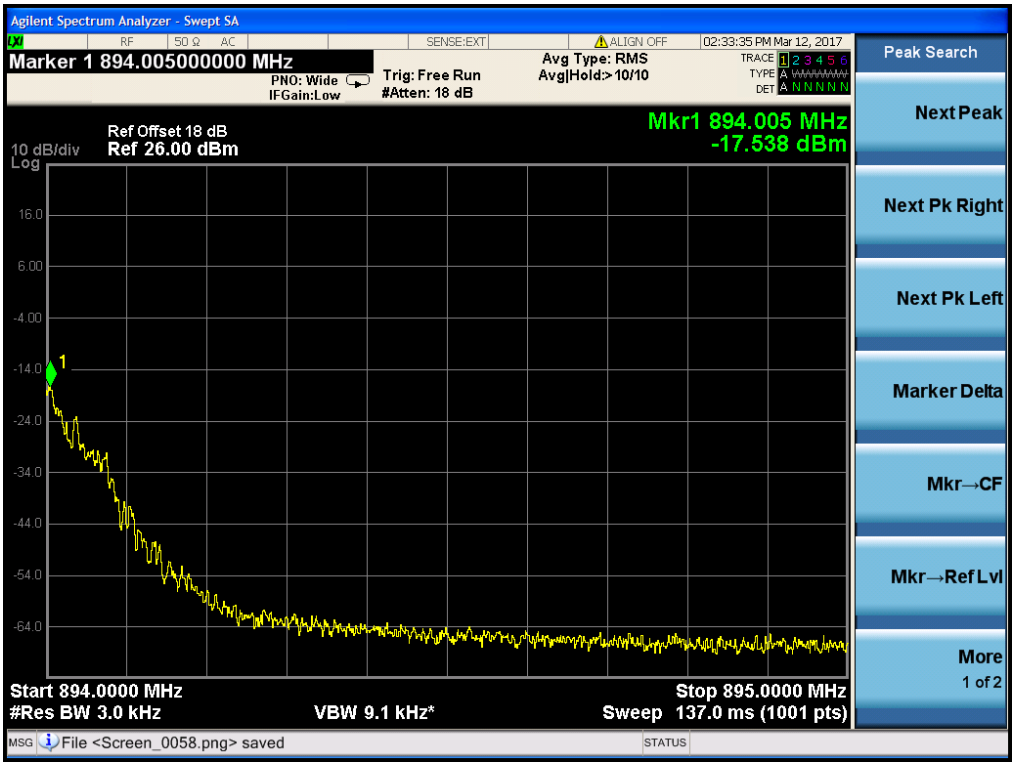




**Four carriers Port 4**

| Port | Frequency channel | Max bandedge Emission (dBm) | Limit (dBm) |
|---|---|---|---|

| | | | |
|---|---|---|---|
| 4 | 869.2/869.8/ 870.4 /871 | -18.605 | -13.00 |
| | 892/892.6/893.2/893.8 | -17.538 | -13.00 |



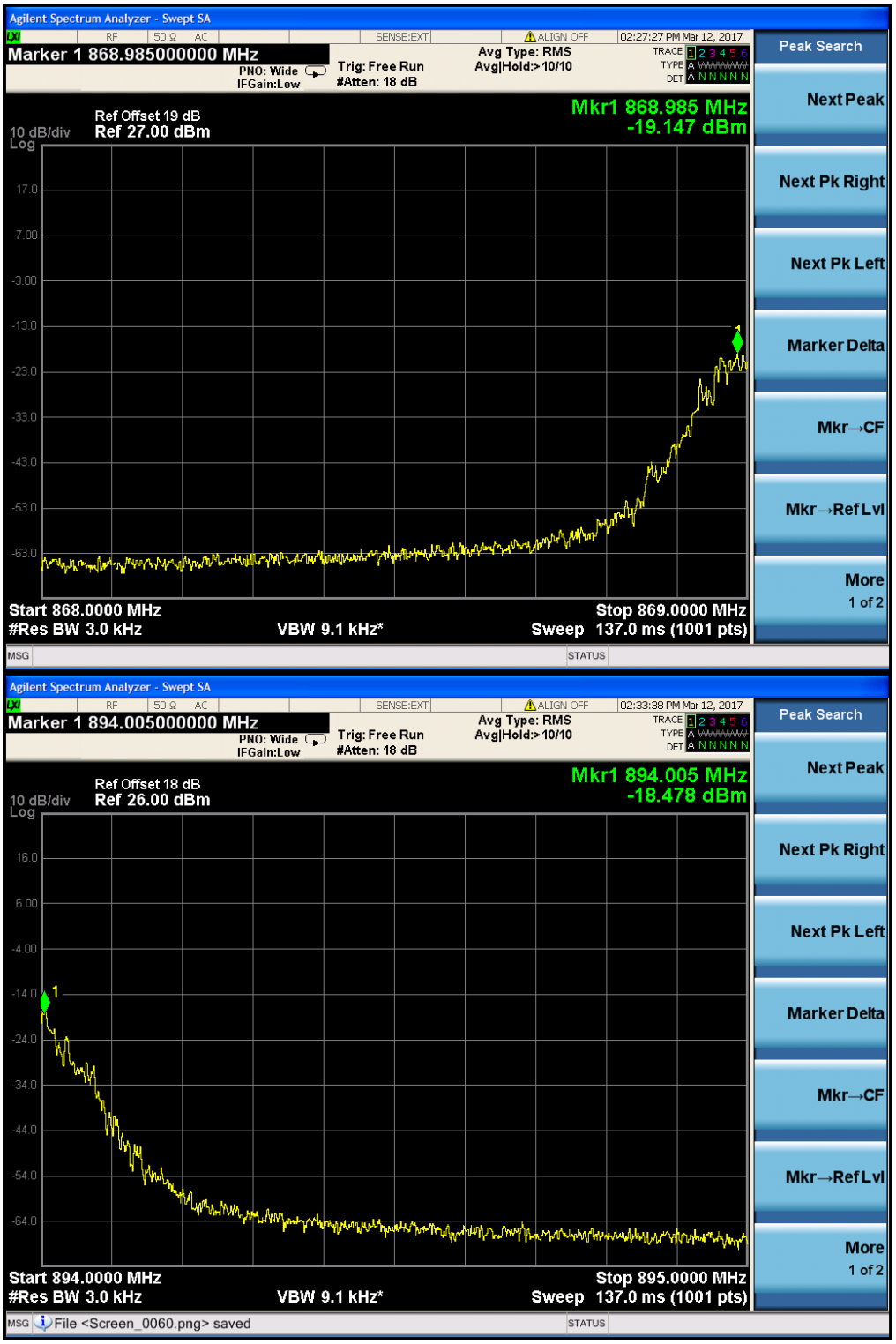




**Three carriers Port 1**

| Port | Frequency channel | Max bandedge Emission (dBm) | Limit (dBm) |
|---|---|---|---|
| 1 | 869.2/869.8/ 870.4 | -18.47 | -13.00 |
| | 892.6/893.2/893.8 | -18.128 | -13.00 |

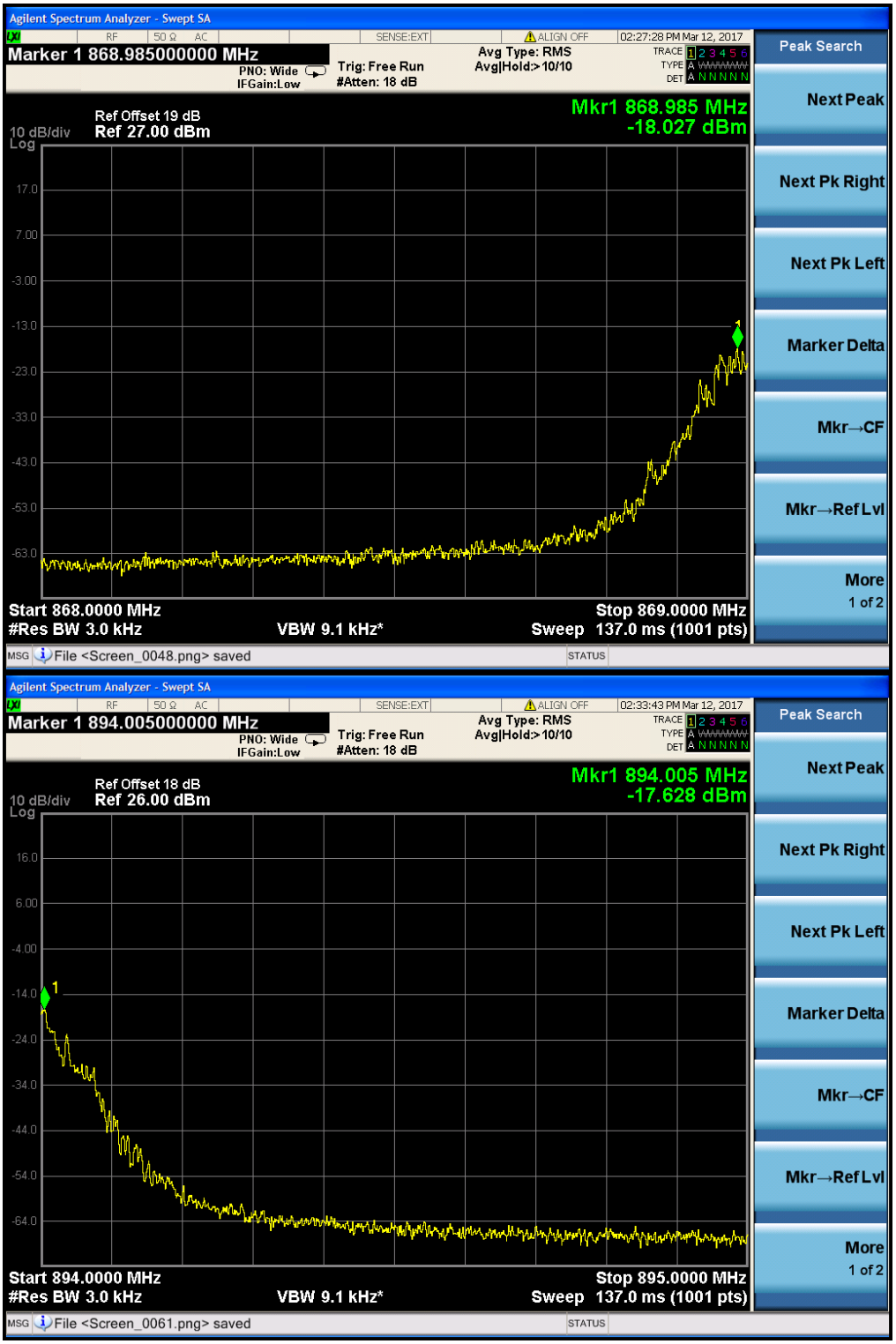

**Three carriers Port 4**

| Port | Frequency channel | Max bandedge Emission (dBm) | Limit (dBm) |
|---|---|---|---|
| 4 | 869.2/869.8/ 870.4 | -19.147 | -13.00 |
| | 892.6/893.2/893.8 | -18.478 | -13.00 |



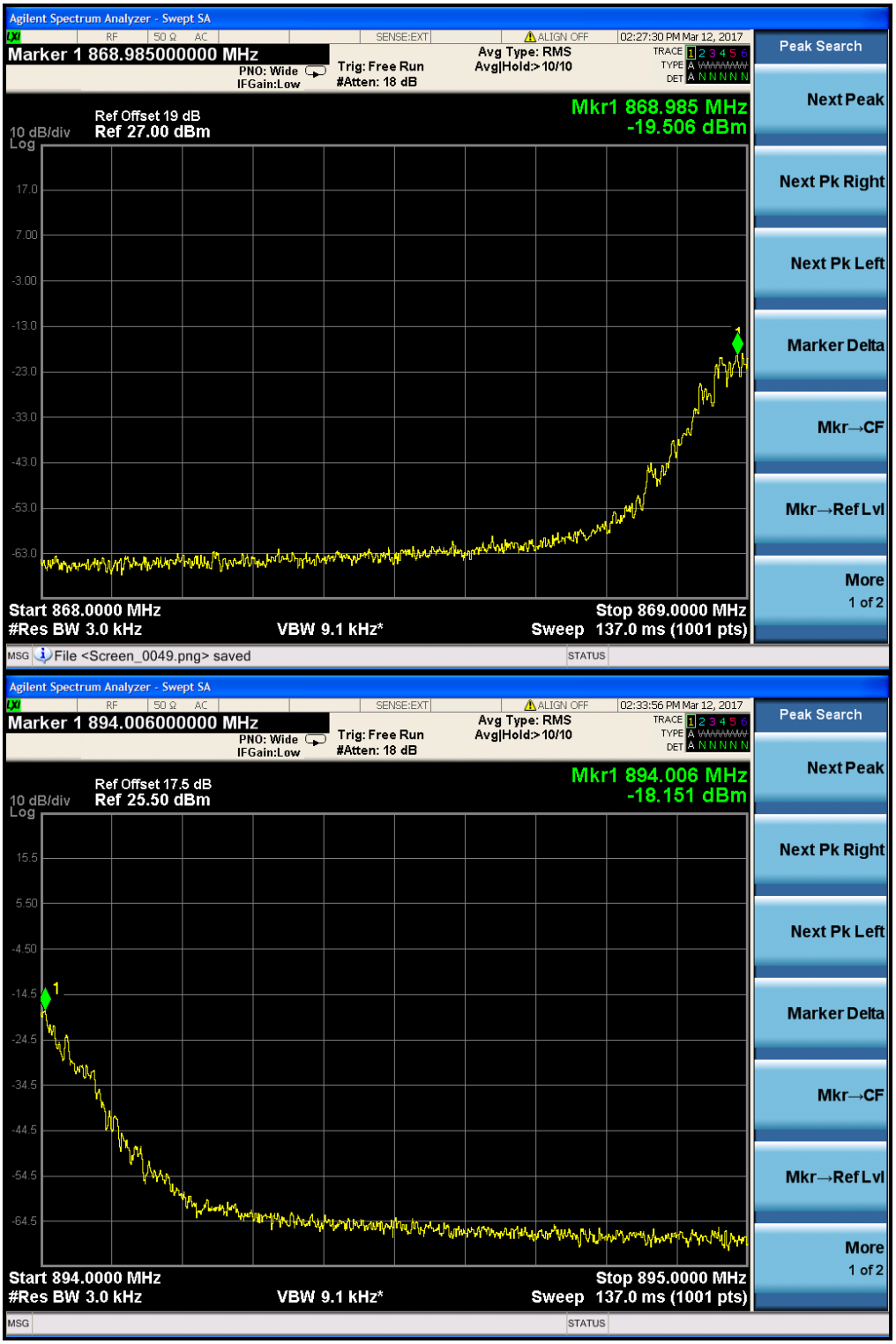

## Two carriers Port 1

| Port | Frequency channel | Max bandedge Emission (dBm) | Limit (dBm) |
|---|---|---|---|
| 1 | 869.2/869.8 | -18.027 | -13.00 |
| | 893.2/893.8 | -17.628 | -13.00 |



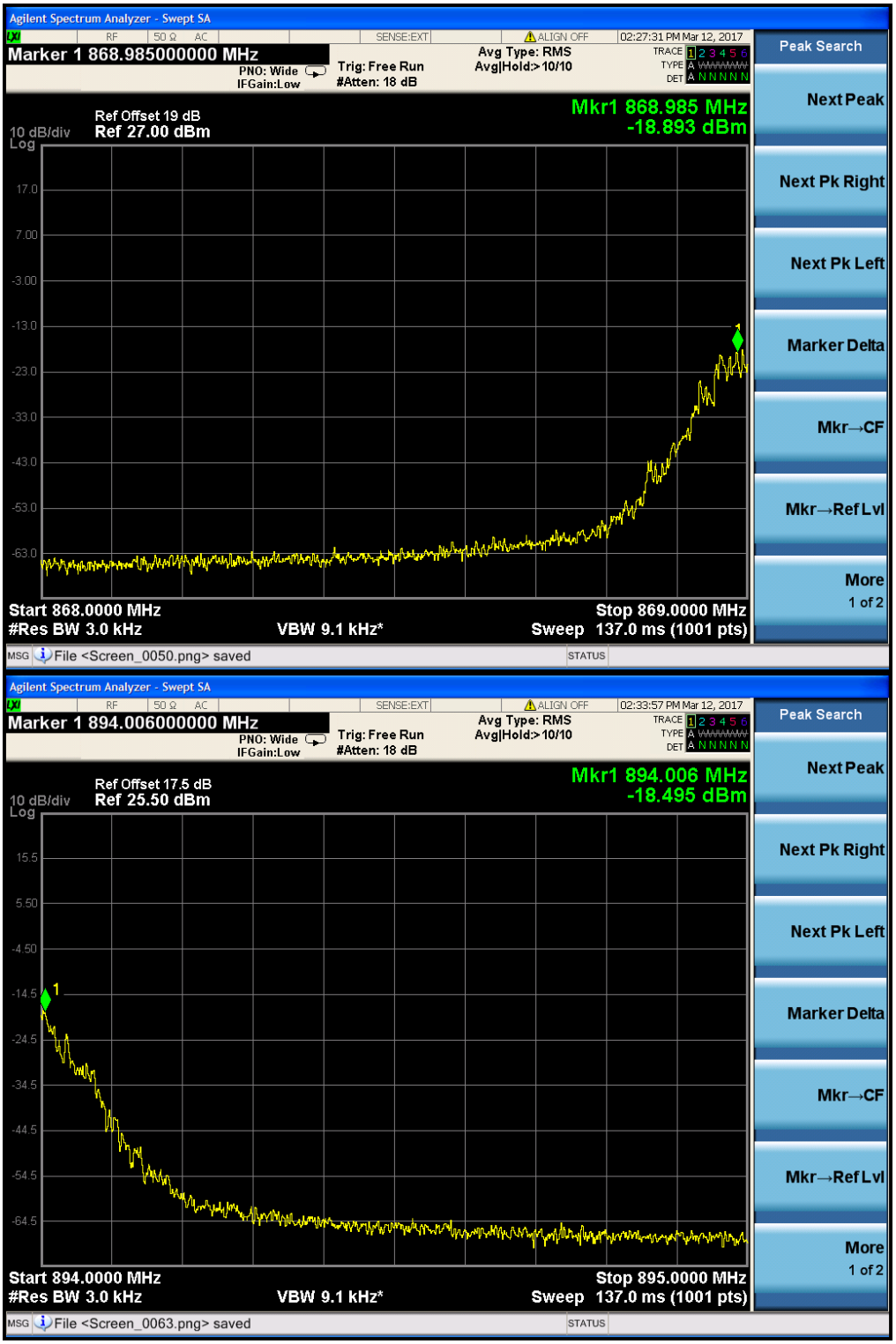

## Two carriers Port 4

| Port | Frequency channel | Max bandedge Emission (dBm) | Limit (dBm) |
|---|---|---|---|
| 4 | 869.2/869.8 | -19.506 | -13.00 |
| | 893.2/893.8 | -18.151 | -13.00 |




**One carriers Port 1**

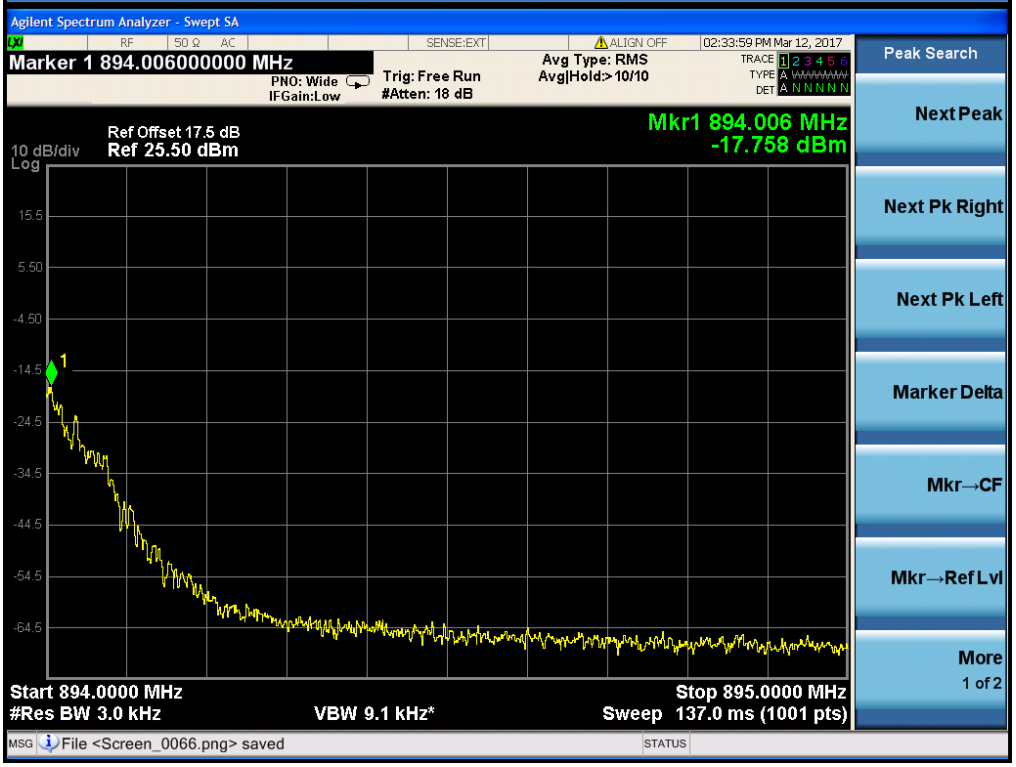
| Port | Frequency channel | Max bandedge Emission (dBm) | Limit (dBm) |
|---|---|---|---|
| 1 | 869.2 | -18.893 | -13.00 |
| | 893.8 | -18.495 | -13.00 |




## One carriers Port 4

| Port | Frequency channel | Max bandedge Emission (dBm) | Limit (dBm) |
|---|---|---|---|
| 4 | 869.2 | -16.535 | -13.00 |
| | 893.8 | -17.758 | -13.00 |


Agilent Spectrum Analyzer - Swept SA
RF 50 Ω AC
SENSE:EXT
ALIGN OFF
02:27:44 PM Mar 12, 2017
Marker 1 868.994000000 MHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 18 dB
Avg Type: RMS
Avg|Hold:>10/10
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET A N N N N N
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
Ref Offset 21 dB
10 dB/div
Log
Ref 29.00 dBm
Mkr1 868.994 MHz
-16.535 dBm
19.0
9.00
-1.00
-11.0
-21.0
-31.0
-41.0
-51.0
-61.0
Start 868.0000 MHz
#Res BW 3.0 kHz
VBW 9.1 kHz*
Stop 869.0000 MHz
Sweep 137.0 ms (1001 pts)
MSG
STATUS


Agilent Spectrum Analyzer - Swept SA
RF 50 Ω AC
SENSE:EXT
ALIGN OFF
02:33:59 PM Mar 12, 2017
Marker 1 894.006000000 MHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 18 dB
Avg Type: RMS
Avg|Hold:>10/10
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET A N N N N N
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
Ref Offset 17.5 dB
10 dB/div
Log
Ref 25.50 dBm
Mkr1 894.006 MHz
-17.758 dBm
15.5
5.50
-4.50
-14.5
-24.5
-34.5
-44.5
-54.5
-64.5
Start 894.0000 MHz
#Res BW 3.0 kHz
VBW 9.1 kHz*
Stop 895.0000 MHz
Sweep 137.0 ms (1001 pts)
MSG
File <Screen_0066.png> saved
STATUS

## 13 12 FREQUENCY STABILITY

### 13.1 Applicable Standard: FCC § 2.1055

Requirements: FCC § 2.1055 (a)(d),
The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

### 13.2 Test Equipment List and Details

| Manufacturer | Description | Model | Serial Number | Calibration Date | Calibration Due Date |
|---|---|---|---|---|---|
| GZ-ESPEC | Temperature Chamber | GRW-120 | 00020268 | 2017-1-22 | 2018-1-22 |
| Agilent | MXA Series Spectrum Analyzer | N9020A | MY52090451 | 2016-3-25 | 2017-3-15 |
| DST | DST100 40dB Attenuator | DTS100-40dB-N | N/A | N/A | N/A |
| Hewlett Packard | Hewlett Packard RF Cable | 8120-6192 | 01428251 | N/A | N/A |

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

### 13.3 Test Procedure

Frequency Stability vs. Temperature: The equipment under test was connected to an external DC power supply and the RF output was connected to a Spectrum Analyzer via feed-through attenuators. The EUT was placed inside the temperature chamber. The DC leads and RF output cable exited the chamber through an opening made for the purpose. After the temperature stabilized for approximately 150 minutes, the frequency output was recorded from the counter.
Frequency Stability vs. Voltage: An external variable DC power supply Source. The voltage was set to 115% of the nominal value and was then decreased until the transmitter light no longer illuminated; i.e., the end point. The output frequency was recorded for each voltage.

### 13.4 Environmental Conditions

| | |
|---|---|
| Normal condition: | 25° C |
| Relative Humidity: | 54% |
| ATM Pressure: | 1011 mbar |

### 13.5 Test Result: Pass

### 13.6 Test Mode: Transmitting GSM

### 13.7 Test Data

#### 13.7.1 Frequency Stability Versus Temperature

| Frequency Stability vs. Temperature Port1 |
|---|

| Temperature ℃ | Power Supplied VDC | Frequency Measure Error Hz | Error ppm | Limit | Result |
|---|---|---|---|---|---|
| f=869.2MHz | | | | | |
| -40 | -48 | -6.19 | -0.00712 | 0.02ppm | PASS |
| -30 | -48 | 7.76 | 0.00893 | 0.02ppm | PASS |
| -20 | -48 | -5.58 | -0.00642 | 0.02ppm | PASS |
| -10 | -48 | -5.41 | -0.00622 | 0.02ppm | PASS |
| 0 | -48 | -4.54 | -0.00522 | 0.02ppm | PASS |
| 10 | -48 | 4.41 | 0.00507 | 0.02ppm | PASS |
| 20 | -48 | 4.77 | 0.00549 | 0.02ppm | PASS |
| 30 | -48 | 3.27 | 0.00376 | 0.02ppm | PASS |
| 40 | -48 | -6.46 | -0.00743 | 0.02ppm | PASS |
| 50 | -48 | -4.06 | -0.00467 | 0.02ppm | PASS |
| 55 | -48 | -3.16 | -0.00364 | 0.02ppm | PASS |
| f=881.4MHz | | | | | |
| -40 | -48 | 4.78 | 0.00542 | 0.02ppm | PASS |
| -30 | -48 | 6.92 | 0.00785 | 0.02ppm | PASS |
| -20 | -48 | -5.35 | -0.00607 | 0.02ppm | PASS |
| -10 | -48 | -5.66 | -0.00642 | 0.02ppm | PASS |
| 0 | -48 | -4.27 | -0.00484 | 0.02ppm | PASS |
| 10 | -48 | 5.83 | 0.00661 | 0.02ppm | PASS |
| 20 | -48 | 3.68 | 0.00418 | 0.02ppm | PASS |
| 30 | -48 | 3.55 | 0.00403 | 0.02ppm | PASS |
| 40 | -48 | -4.02 | -0.00456 | 0.02ppm | PASS |
| 50 | -48 | 2.86 | 0.00324 | 0.02ppm | PASS |
| 55 | -48 | 3.93 | 0.00446 | 0.02ppm | PASS |
| f=893.8MHz | | | | | |
| -40 | -48 | 6.09 | 0.00681 | 0.02ppm | PASS |
| -30 | -48 | 5.47 | 0.00612 | 0.02ppm | PASS |
| -20 | -48 | -6.42 | -0.00718 | 0.02ppm | PASS |
| -10 | -48 | -7.25 | -0.00811 | 0.02ppm | PASS |
| 0 | -48 | 4.18 | 0.00468 | 0.02ppm | PASS |
| 10 | -48 | -3.91 | -0.00437 | 0.02ppm | PASS |
| 20 | -48 | -4.03 | -0.00451 | 0.02ppm | PASS |
| 30 | -48 | 4.71 | 0.00527 | 0.02ppm | PASS |
| 40 | -48 | -3.77 | -0.00422 | 0.02ppm | PASS |
| 50 | -48 | -3.24 | -0.00362 | 0.02ppm | PASS |
| 55 | -48 | 3.62 | 0.00405 | 0.02ppm | PASS |

Frequency Stability vs. Temperature Port4

| Temperature ℃ | Power Supplied VDC | Frequency Measure Error Hz | Error ppm | Limit | Result |
|---|---|---|---|---|---|
| f=869.2MHz | | | | | |
| -40 | -48 | -5.25 | -0.00604 | 0.02ppm | PASS |
| -30 | -48 | 4.76 | 0.00547 | 0.02ppm | PASS |
| -20 | -48 | -3.94 | -0.00453 | 0.02ppm | PASS |
| -10 | -48 | -5.71 | -0.00622 | 0.02ppm | PASS |
| 0 | -48 | -5.58 | -0.00642 | 0.02ppm | PASS |
| 10 | -48 | 3.85 | 0.00443 | 0.02ppm | PASS |
| 20 | -48 | 4.77 | 0.00549 | 0.02ppm | PASS |
| 30 | -48 | 3.27 | 0.00376 | 0.02ppm | PASS |
| 40 | -48 | -5.76 | -0.00663 | 0.02ppm | PASS |
| 50 | -48 | -4.06 | -0.00467 | 0.02ppm | PASS |
| 55 | -48 | -5.24 | -0.00603 | 0.02ppm | PASS |
| f=881.4MHz | | | | | |
| -40 | -48 | 5.78 | 0.00655 | 0.02ppm | PASS |
| -30 | -48 | 6.45 | 0.00731 | 0.02ppm | PASS |
| -20 | -48 | -5.35 | -0.00607 | 0.02ppm | PASS |
| -10 | -48 | -5.66 | -0.00642 | 0.02ppm | PASS |
| 0 | -48 | -4.27 | -0.00484 | 0.02ppm | PASS |
| 10 | -48 | 4.73 | 0.00537 | 0.02ppm | PASS |
| 20 | -48 | 3.68 | 0.00418 | 0.02ppm | PASS |
| 30 | -48 | 4.55 | 0.005 | 0.02ppm | PASS |
| 40 | -48 | -4.72 | -0.00535 | 0.02ppm | PASS |
| 50 | -48 | 5.86 | 0.00665 | 0.02ppm | PASS |
| 55 | -48 | 3.93 | 0.00446 | 0.02ppm | PASS |
| f=893.8MHz | | | | | |
| -40 | -48 | 4.09 | 0.00458 | 0.02ppm | PASS |
| -30 | -48 | 5.47 | 0.00612 | 0.02ppm | PASS |
| -20 | -48 | -6.42 | -0.00718 | 0.02ppm | PASS |
| -10 | -48 | -7.25 | -0.00811 | 0.02ppm | PASS |
| 0 | -48 | 4.18 | 0.00468 | 0.02ppm | PASS |
| 10 | -48 | -5.91 | -0.00661 | 0.02ppm | PASS |
| 20 | -48 | -4.03 | -0.00451 | 0.02ppm | PASS |
| 30 | -48 | 4.71 | 0.00527 | 0.02ppm | PASS |
| 40 | -48 | -5.77 | -0.00645 | 0.02ppm | PASS |
| 50 | -48 | -5.26 | -0.00588 | 0.02ppm | PASS |
| 55 | -48 | 4.67 | 0.00522 | 0.02ppm | PASS |

### 13.7.2 Frequency Stability Versus Voltage

| Frequency Stability vs. Voltage Port1 |
|---|

| VoltageVDC | Temperature ℃ | Frequency Measure Error Hz | Error ppm | Limit | Result |
|---|---|---|---|---|---|
| f=869.2MHz | | | | | |
| 37 | 20 | 2.94 | 0.00338 | 0.02ppm | PASS |
| 41 | 20 | 3.35 | 0.00385 | 0.02ppm | PASS |
| 45 | 20 | -3.67 | -0.00422 | 0.02ppm | PASS |
| 47 | 20 | -6.34 | -0.00729 | 0.02ppm | PASS |
| 51 | 20 | -6.89 | -0.00793 | 0.02ppm | PASS |
| 53 | 20 | -5.68 | -0.00653 | 0.02ppm | PASS |
| 55 | 20 | 3.52 | 0.00405 | 0.02ppm | PASS |
| 57 | 20 | -5.52 | -0.00635 | 0.02ppm | PASS |
| 61 | 20 | -3.45 | -0.00397 | 0.02ppm | PASS |
| f=881.4MHz | | | | | |
| 37 | 20 | -3.99 | -0.00453 | 0.02ppm | PASS |
| 41 | 20 | -4.67 | -0.00530 | 0.02ppm | PASS |
| 45 | 20 | -3.51 | -0.00398 | 0.02ppm | PASS |
| 47 | 20 | -5.31 | -0.00602 | 0.02ppm | PASS |
| 51 | 20 | 5.32 | 0.00604 | 0.02ppm | PASS |
| 53 | 20 | 2.57 | 0.00292 | 0.02ppm | PASS |
| 55 | 20 | 4.82 | 0.00547 | 0.02ppm | PASS |
| 57 | 20 | 4.62 | 0.00524 | 0.02ppm | PASS |
| 61 | 20 | -6.01 | -0.00682 | 0.02ppm | PASS |
| f=893.8MHz | | | | | |
| 37 | 20 | 4.17 | 0.00467 | 0.02ppm | PASS |
| 41 | 20 | -3.30 | -0.00369 | 0.02ppm | PASS |
| 45 | 20 | -4.32 | -0.00483 | 0.02ppm | PASS |
| 47 | 20 | 4.26 | 0.00477 | 0.02ppm | PASS |
| 51 | 20 | -5.03 | -0.00563 | 0.02ppm | PASS |
| 53 | 20 | 3.74 | 0.00418 | 0.02ppm | PASS |
| 55 | 20 | 2.79 | 0.00312 | 0.02ppm | PASS |
| 57 | 20 | -5.27 | -0.00590 | 0.02ppm | PASS |

| | | | | | |
|---|---|---|---|---|---|
| 61 | 20 | -2.04 | -0.00228 | 0.02ppm | PASS |

| Frequency Stability vs. Voltage Port4 | | | | | |
|---|---|---|---|---|---|
| VoltageVDC | Temperature ℃ | Frequency Measure Error Hz | Error ppm | Limit | Result |
| f=869.2MHz | | | | | |
| 37 | 20 | 3.57 | 0.00411 | 0.02ppm | PASS |
| 41 | 20 | -4.62 | -0.00532 | 0.02ppm | PASS |
| 45 | 20 | 3.35 | 0.00385 | 0.02ppm | PASS |
| 47 | 20 | -5.24 | -0.00602 | 0.02ppm | PASS |
| 51 | 20 | -6.29 | -0.00724 | 0.02ppm | PASS |
| 53 | 20 | -5.79 | -0.00666 | 0.02ppm | PASS |
| 55 | 20 | 4.37 | 0.00503 | 0.02ppm | PASS |
| 57 | 20 | -5.14 | -0.00591 | 0.02ppm | PASS |
| 61 | 20 | -4.75 | -0.00546 | 0.02ppm | PASS |
| f=881.4MHz | | | | | |
| 37 | 20 | -4.29 | -0.00453 | 0.02ppm | PASS |
| 41 | 20 | -4.42 | -0.00501 | 0.02ppm | PASS |
| 45 | 20 | -5.69 | -0.00645 | 0.02ppm | PASS |
| 47 | 20 | -5.31 | -0.00602 | 0.02ppm | PASS |
| 51 | 20 | 6.18 | 0.00701 | 0.02ppm | PASS |
| 53 | 20 | 3.27 | 0.00371 | 0.02ppm | PASS |
| 55 | 20 | 4.53 | 0.00514 | 0.02ppm | PASS |
| 57 | 20 | 4.62 | 0.00524 | 0.02ppm | PASS |
| 61 | 20 | -6.01 | -0.00682 | 0.02ppm | PASS |
| f=893.8MHz | | | | | |
| 37 | 20 | 4.17 | 0.00467 | 0.02ppm | PASS |
| 41 | 20 | -3.30 | -0.00369 | 0.02ppm | PASS |
| 45 | 20 | -4.32 | -0.00483 | 0.02ppm | PASS |
| 47 | 20 | 4.26 | 0.00477 | 0.02ppm | PASS |

| | | | | | |
|---|---|---|---|---|---|
| 51 | 20 | -5.03 | -0.00563 | 0.02ppm | PASS |
| 53 | 20 | 3.74 | 0.00418 | 0.02ppm | PASS |
| 55 | 20 | 4.49 | 0.00502 | 0.02ppm | PASS |
| 57 | 20 | -5.27 | -0.00590 | 0.02ppm | PASS |
| 61 | 20 | -4.52 | -0.00506 | 0.02ppm | PASS |

---End of Report---