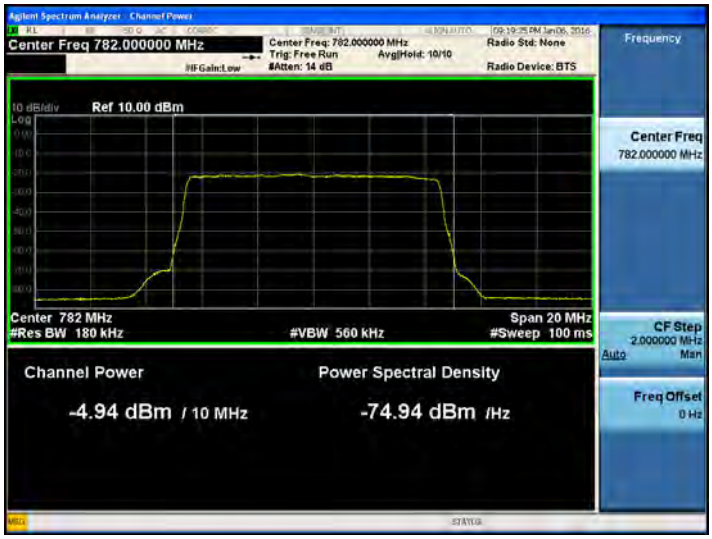
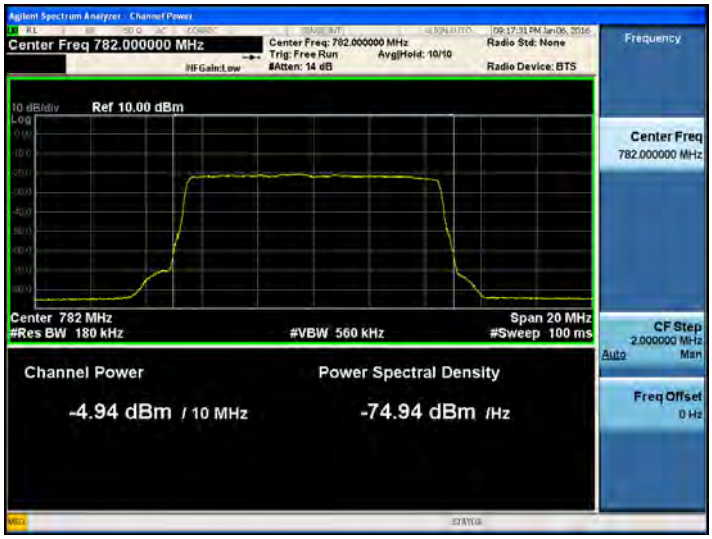
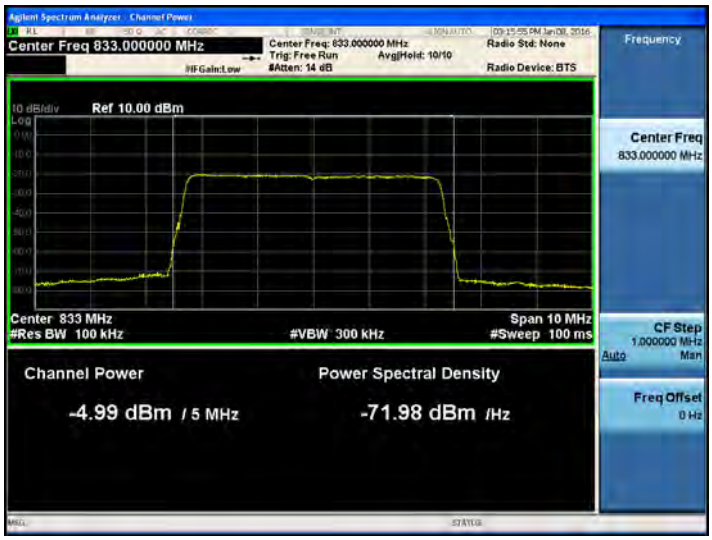
**700MHz LTE10MHz Band UL**

| [700 Band AGC threshold Uplink LTE 10 MHz Mid] | [700 Band +3dB above the threshold Uplink LTE 10 MHz Mid] |
|---|---|
|  |  |

## SMR 800,850Cellular LTE5MHz Band UL

**[SMR 800,850Cellular AGC threshold Uplink LTE 5 MHz Low]**

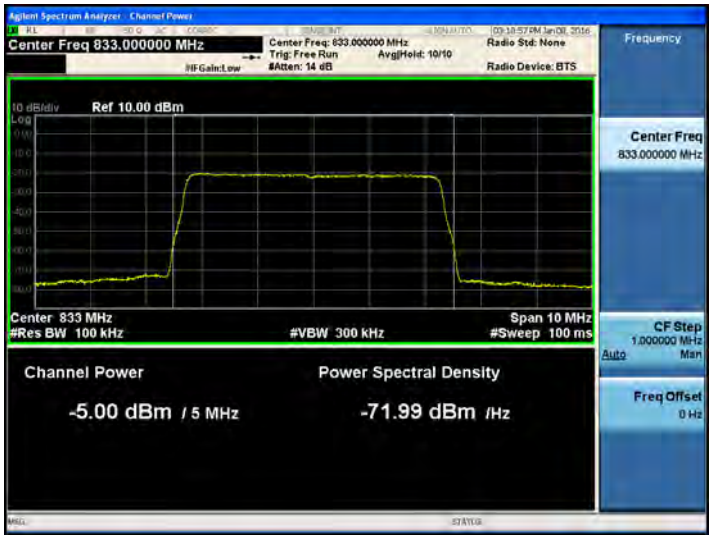
**[SMR 800,850Cellular AGC threshold Uplink LTE 5 MHz Mid]**




**[SMR 800,850Cellular AGC threshold Uplink LTE 5 MHz High]**

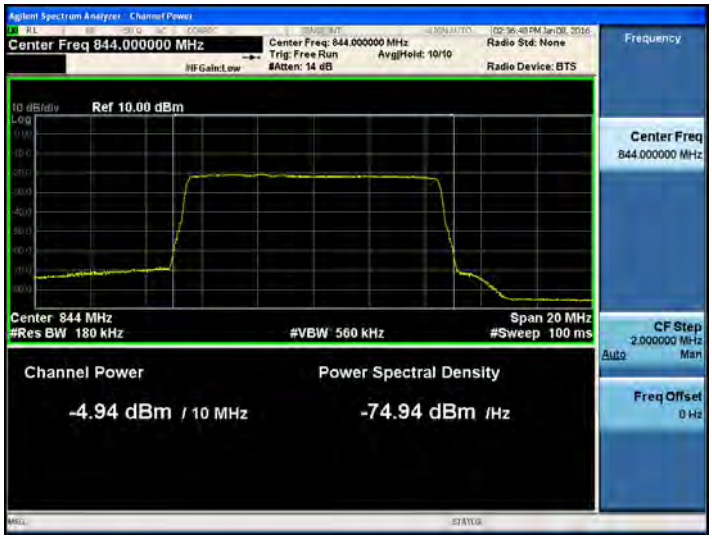
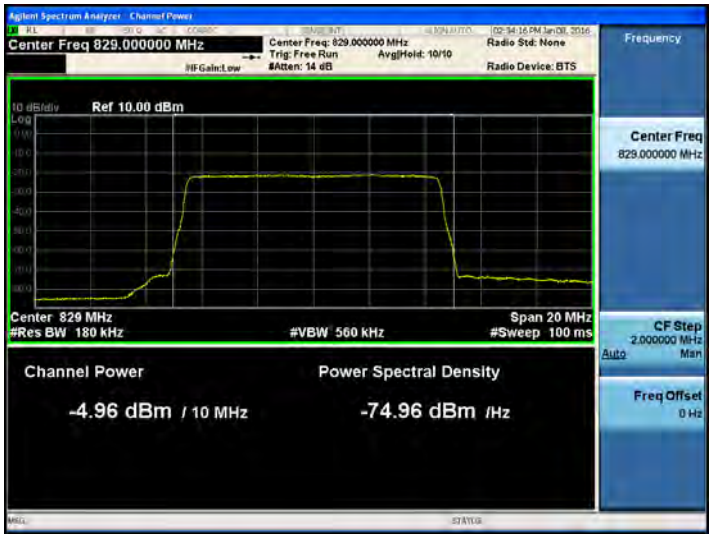
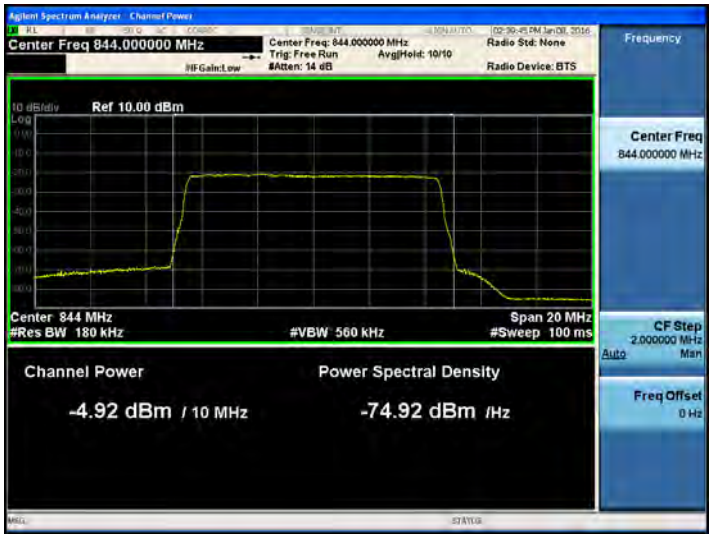
**[SMR 800,850Cellular +3dB above the threshold Uplink LTE 5 MHz Low]**

**[SMR 800,850Cellular +3dB above the threshold Uplink LTE 5 MHz Mid]**



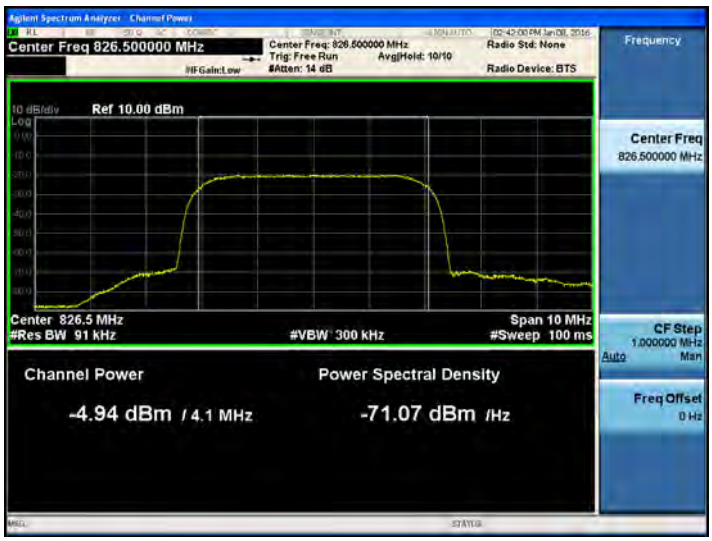

**[SMR 800,850Cellular +3dB above the threshold Uplink LTE 5 MHz High]**

## 850Cellular LTE10MHz Band UL

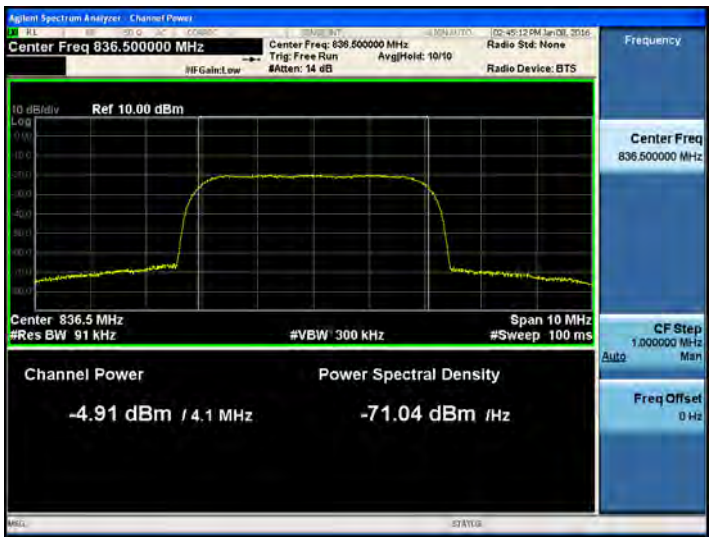
| [850Cellular AGC threshold Uplink LTE 10 MHz Low] | [850Cellular AGC threshold Uplink LTE 10 MHz High] |
|---|---|
| |   |
| **[850Cellular +3dB above the threshold Uplink LTE 10 MHz Low]** | **[850Cellular +3dB above the threshold Uplink LTE 10 MHz Mid]** |
|   |   |

## 850Cellular UMTS Band UL

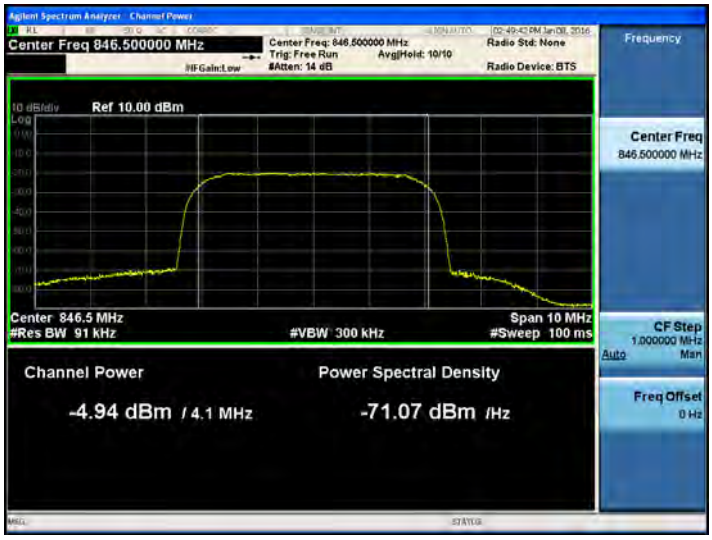
**[850Cellular AGC threshold Uplink UMTS Low]**



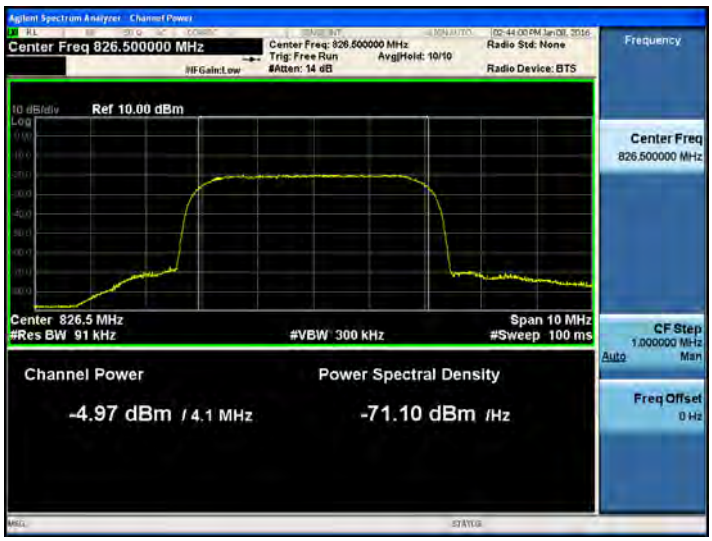

**[850Cellular AGC threshold Uplink UMTS Mid]**



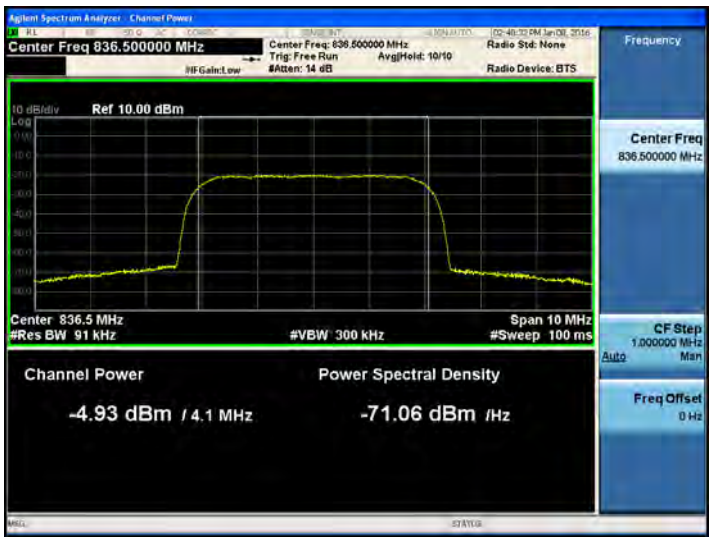

**[850Cellular AGC threshold Uplink UMTS High]**



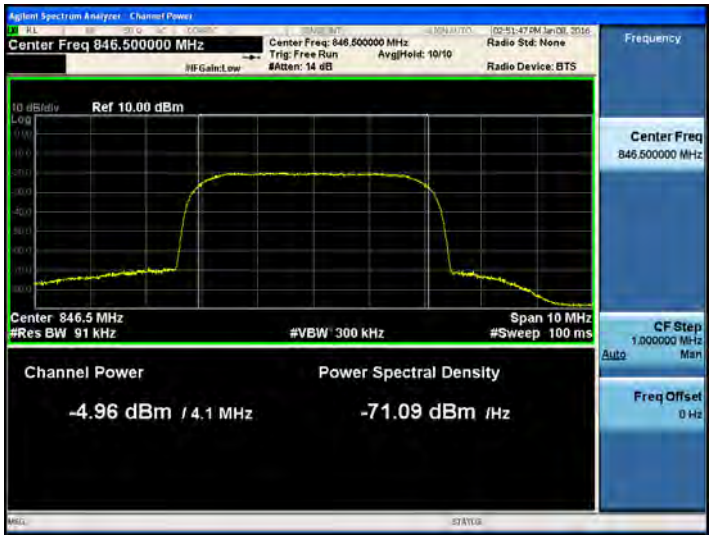
**[850Cellular +3dB above the AGC threshold Uplink UMTS Low]**




**[850Cellular +3dB above the AGC threshold Uplink UMTS Mid]**

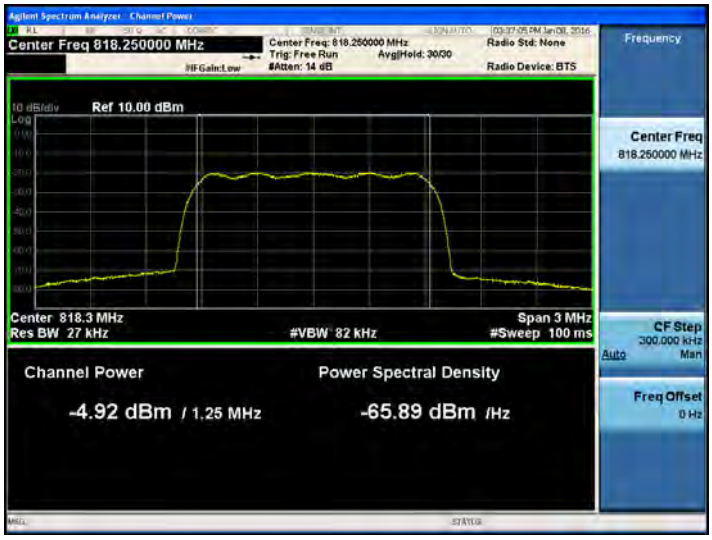



**[850Cellular +3dB above the AGC threshold Uplink UMTS High]**

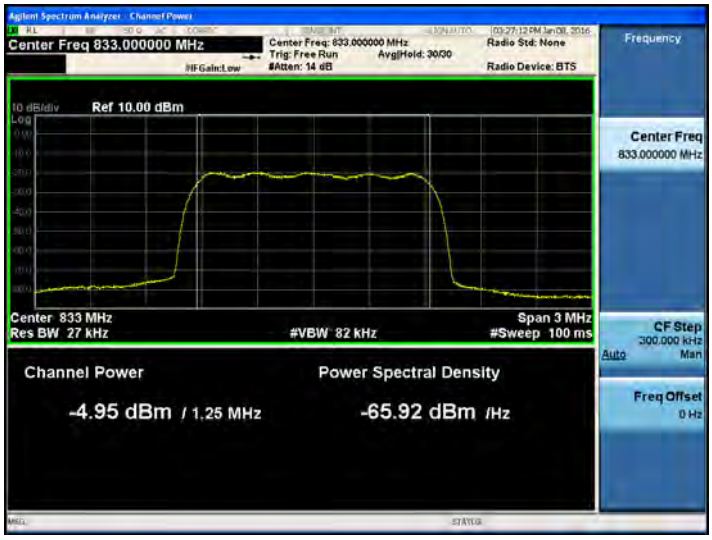


## SMR 800,850Cellular CDMA Band UL

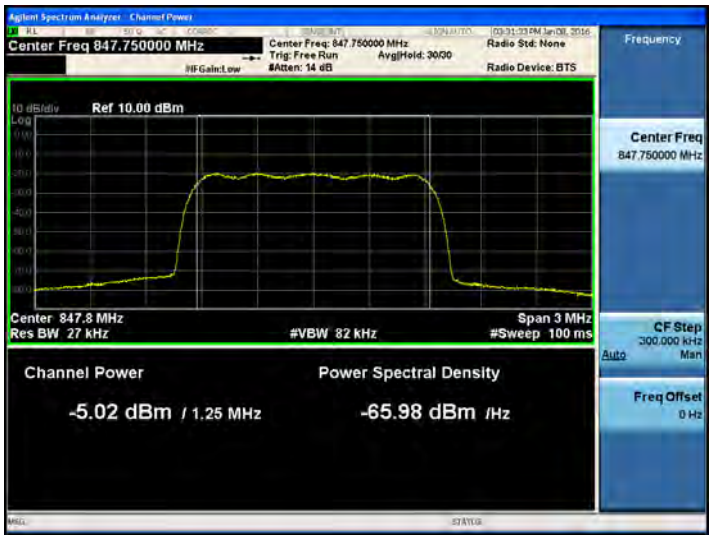
**[SMR 800,850Cellular AGC threshold Uplink CDMA Low]**



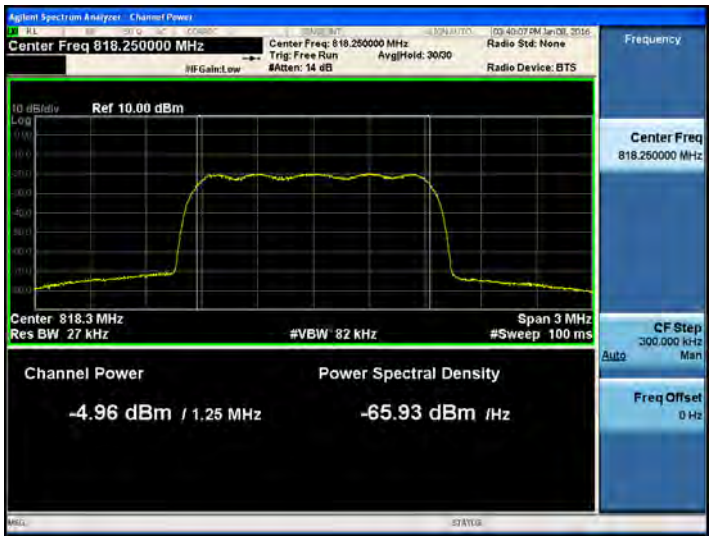

**[SMR 800,850Cellular AGC threshold Uplink CDMA Mid]**



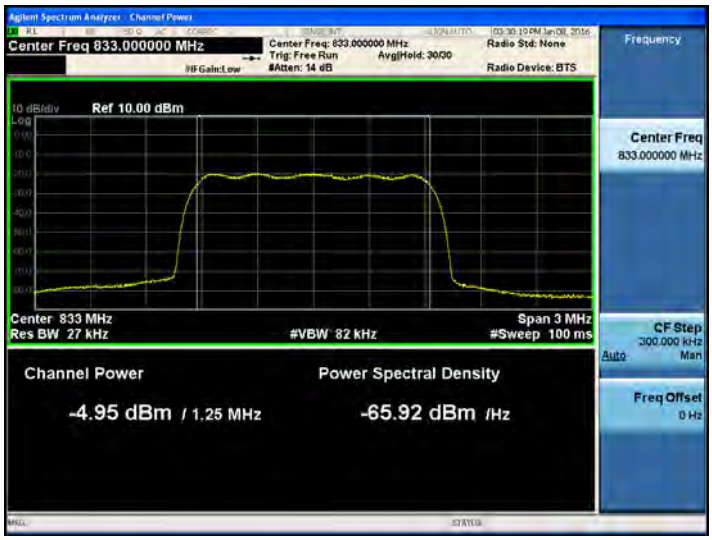

**[SMR 800,850Cellular AGC threshold Uplink CDMA High]**



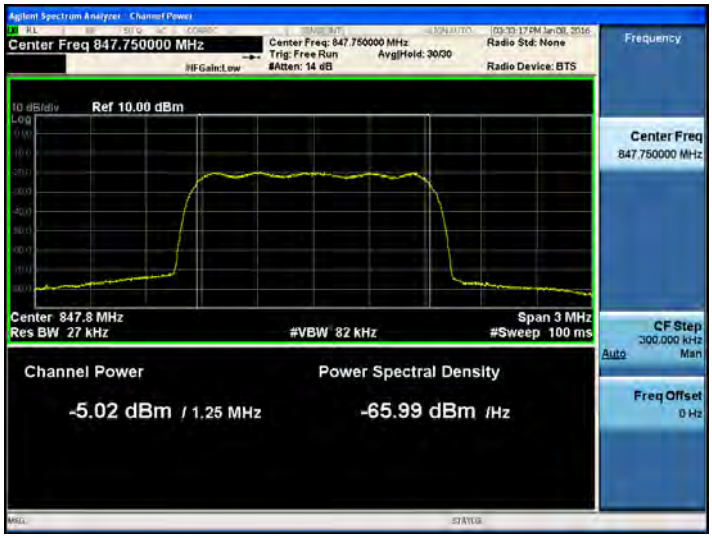
**[SMR 800,850Cellular +3dB above the AGC threshold Uplink CDMA Low]**




**[SMR 800,850Cellular +3dB above the AGC threshold Uplink CDMA Mid]**

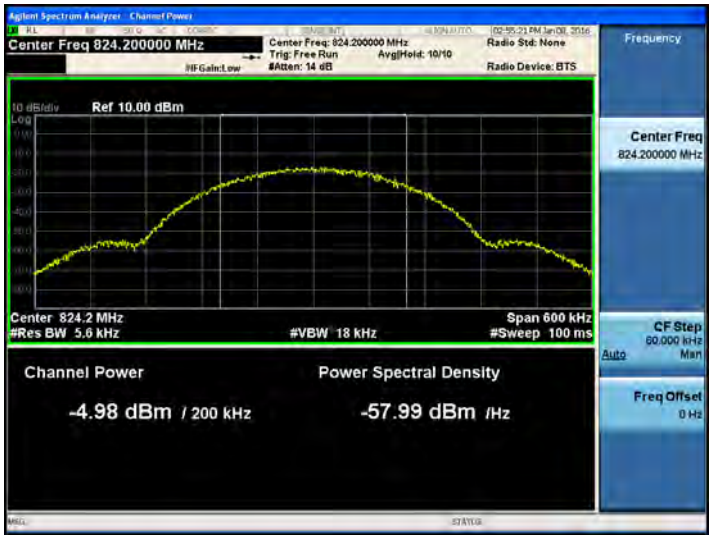



**[S SMR 800,850Cellular +3dB above the AGC threshold Uplink CDMA High]**

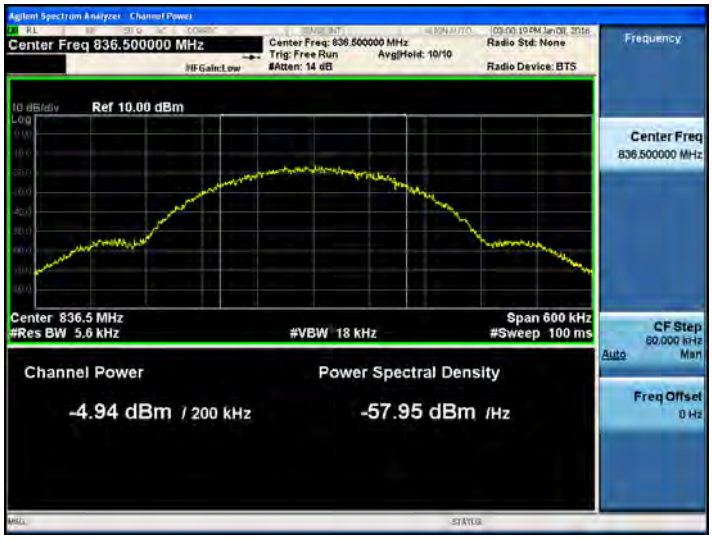


## 850Cellular GSM Band UL

**[850Cellular AGC threshold Uplink GSM Low]**




**[850Cellular AGC threshold Uplink GSM Mid]**




**[850Cellular AGC threshold Uplink GSM High]**

**[850Cellular +3dB above the AGC threshold Uplink GSM Low]**

**[850Cellular +3dB above the AGC threshold Uplink GSM Mid]**

**[850Cellular +3dB above the AGC threshold Uplink GSM High]**

## AWS 2100 LTE 5 MHz Band UL

| [AWS 2100 AGC threshold UPlink LTE 5 MHz Low] | [AWS 2100 AGC threshold Uplink LTE 5 MHz Mid] |
|---|---|
| | |



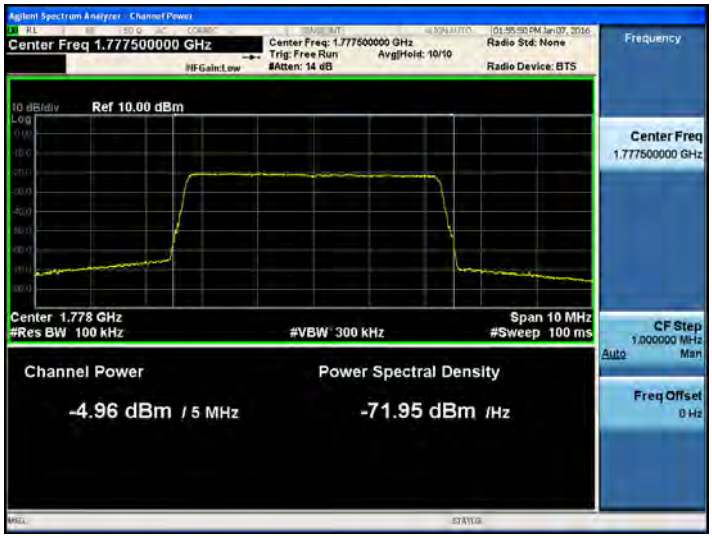


| [AWS 2100 AGC threshold Uplink LTE 5 MHz High] |
|---|
| |

**[AWS2100 +3dB above the threshold Uplink LTE 5 MHz Low]**

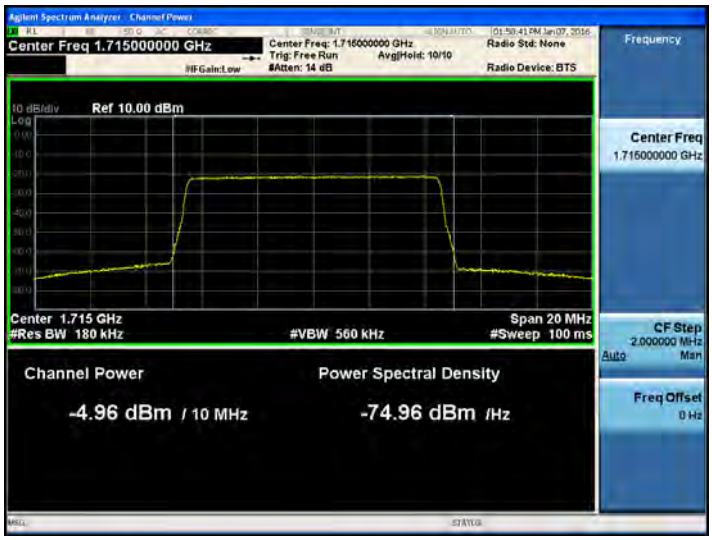
**[AWS2100 +3dB above the threshold Uplink LTE 5 MHz Mid]**

**[AWS2100+3dB above the threshold Uplink LTE 5 MHz High]**

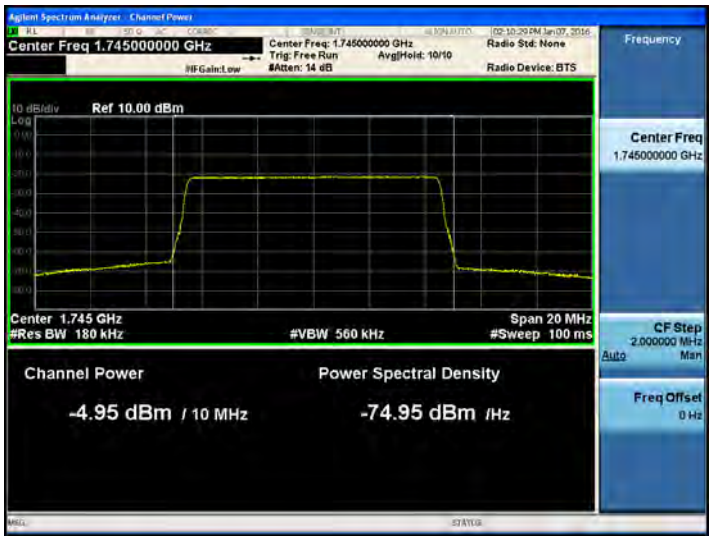


## AWS 2100 LTE 10 MHz Band UL

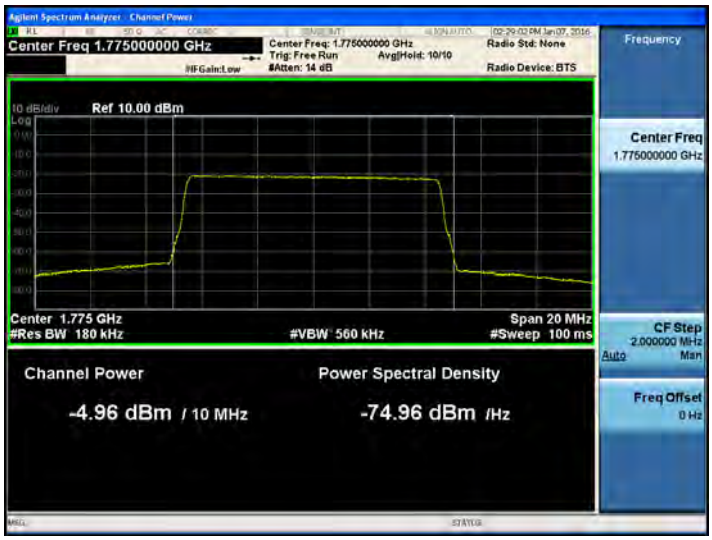
**[AWS 2100 AGC threshold Uplink LTE 10 MHz Low]**



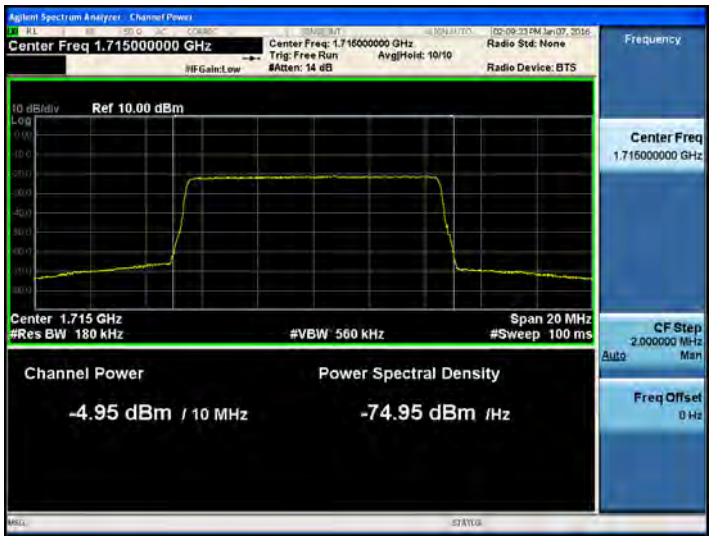

**[AWS 2100 AGC threshold Uplink LTE 10 MHz Mid]**




**[AWS 2100 AGC threshold Uplink LTE 10 MHz High]**

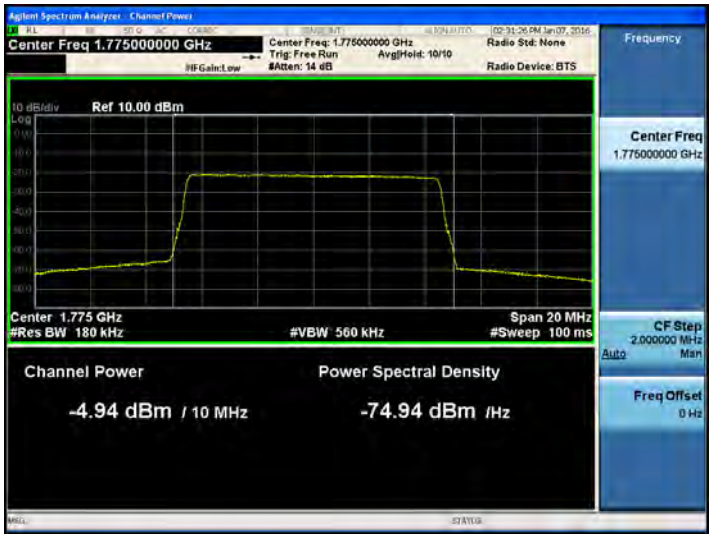


**[AWS2100 +3dB above the threshold Uplink LTE 10 MHz Low]**




**[AWS2100 +3dB above the threshold Uplink LTE 10 MHz Mid]**

**[AWS2100+3dB above the threshold Uplink LTE 10 MHz High]**

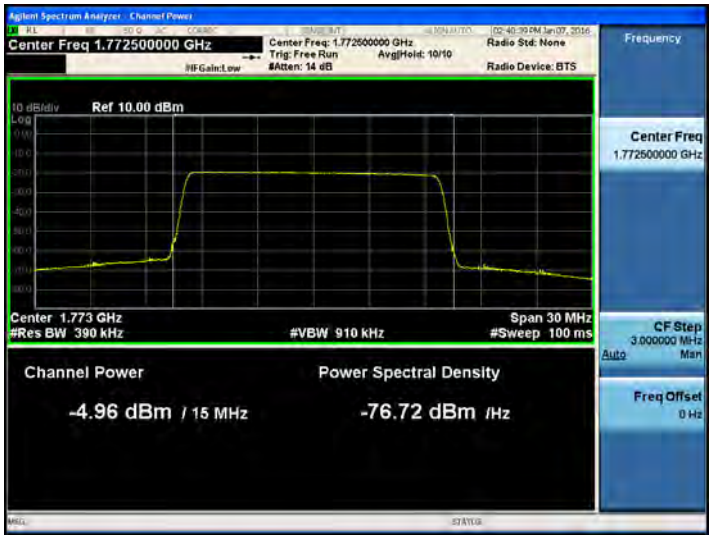


## AWS 2100 LTE 15 MHz Band UL

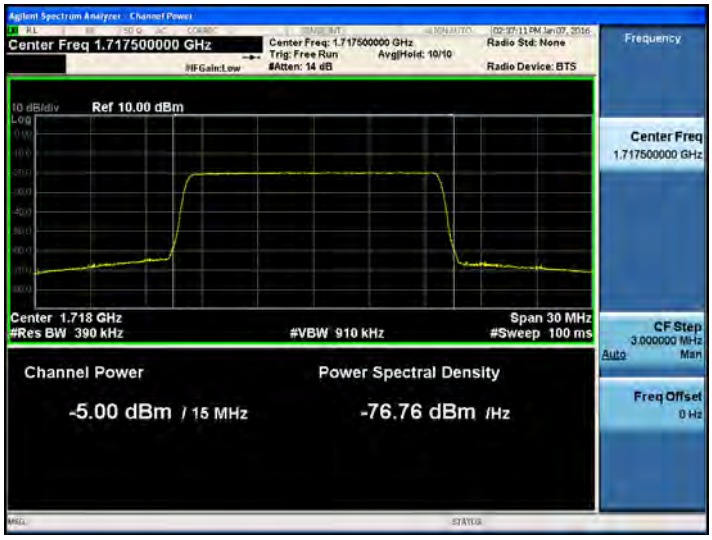
**[AWS 2100 AGC threshold Uplink LTE 15 MHz Low]**

**[AWS 2100 AGC threshold Uplink LTE 15 MHz Mid]**

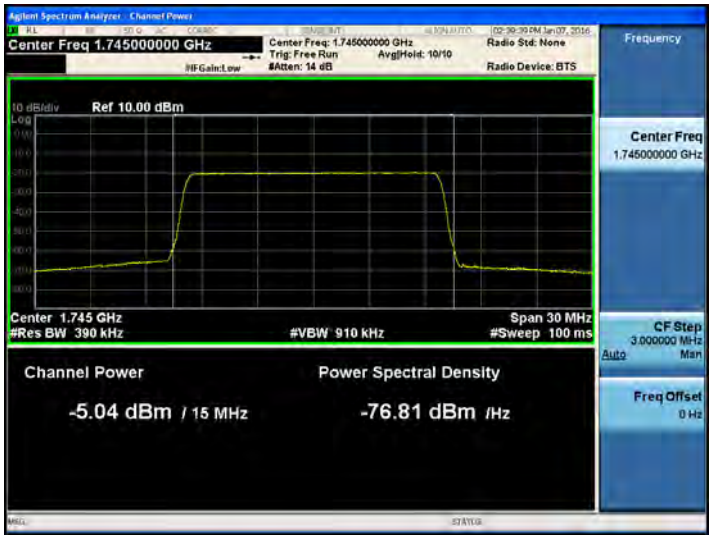
**[AWS 2100 AGC threshold Uplink LTE 15 MHz High]**



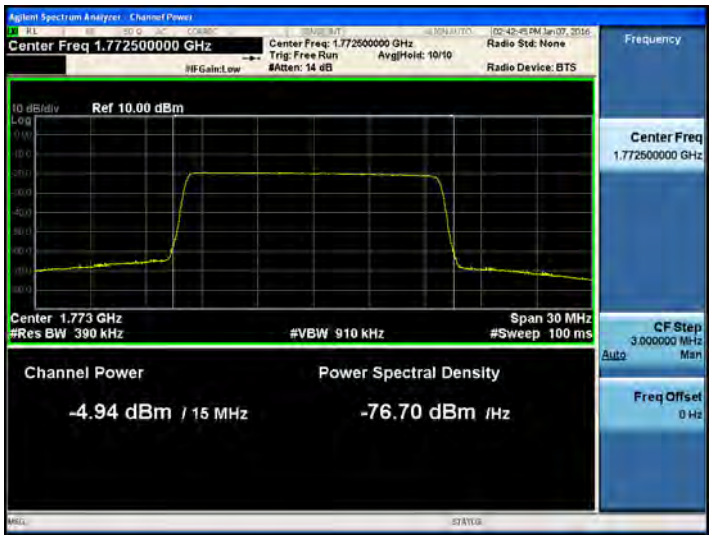
**[AWS2100 +3dB above the threshold Uplink LTE 15 MHz Low]**




**[AWS2100 +3dB above the threshold Uplink LTE 15 MHz Mid]**

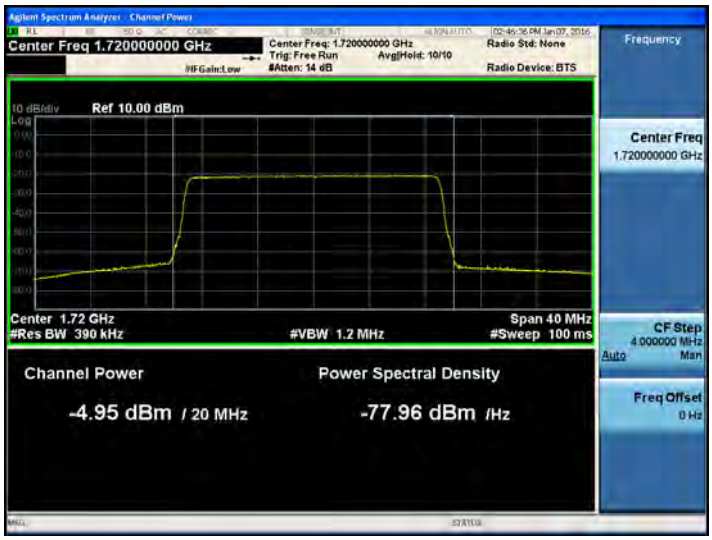



**[AWS2100+3dB above the threshold Uplink LTE 15 MHz High]**

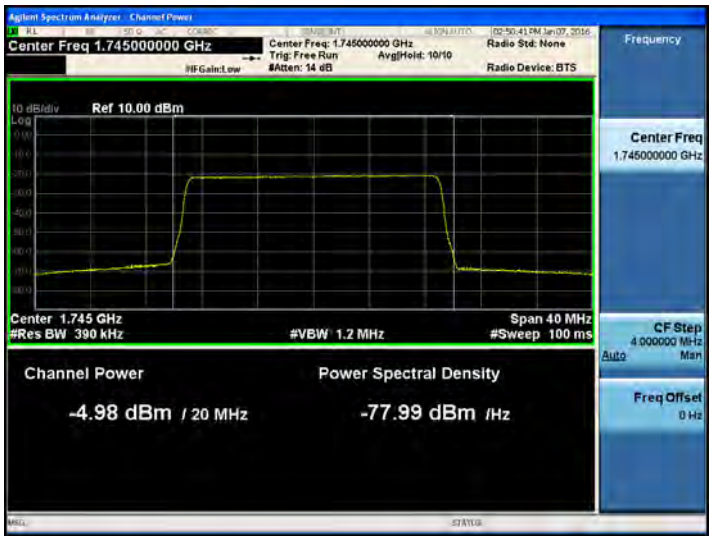


## AWS 2100 LTE 20 MHz Band UL

**[AWS 2100 AGC threshold Uplink LTE 20 MHz Low]**

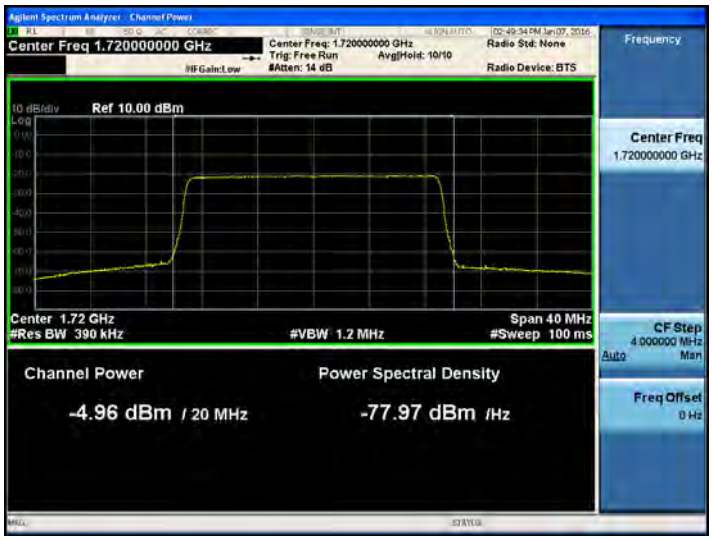



**[AWS 2100 AGC threshold Uplink LTE 20 MHz Mid]**

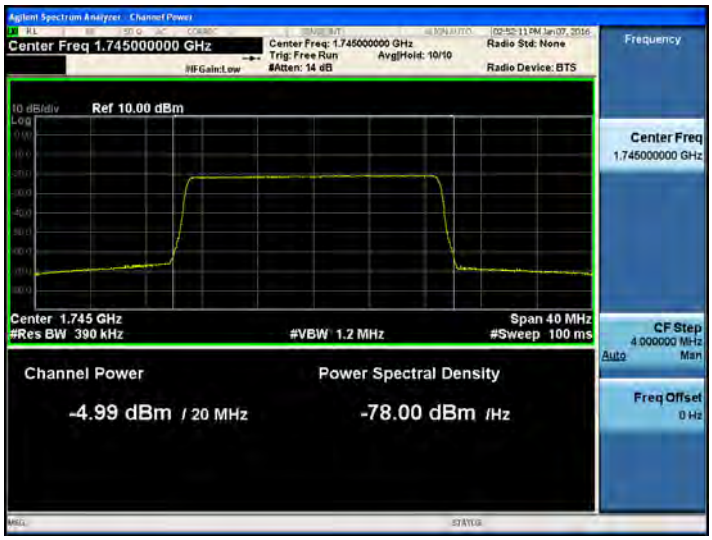



**[AWS 2100 AGC threshold Uplink LTE 20 MHz High]**

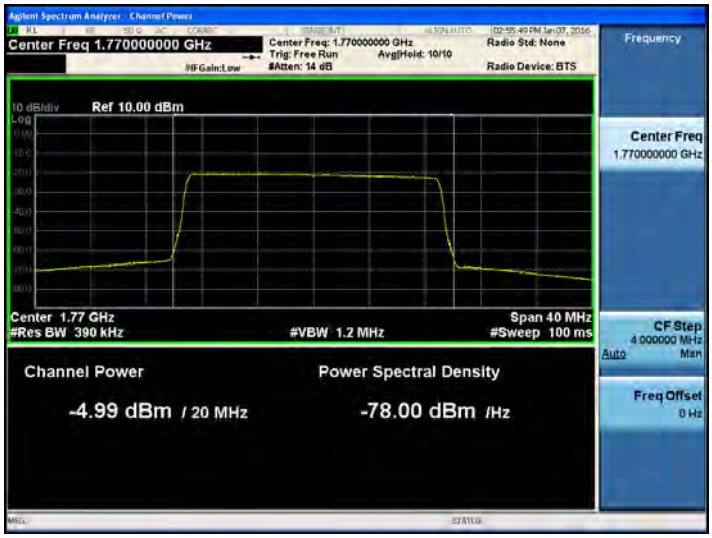
**[AWS2100 +3dB above the threshold Uplink LTE 20 MHz Low]**




**[AWS2100 +3dB above the threshold Uplink LTE 20 MHz Mid]**

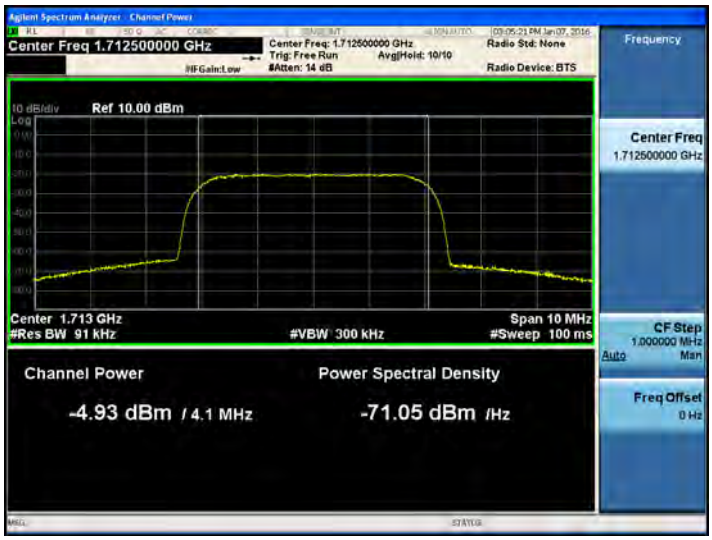



**[AWS2100+3dB above the threshold Uplink LTE 20 MHz High]**

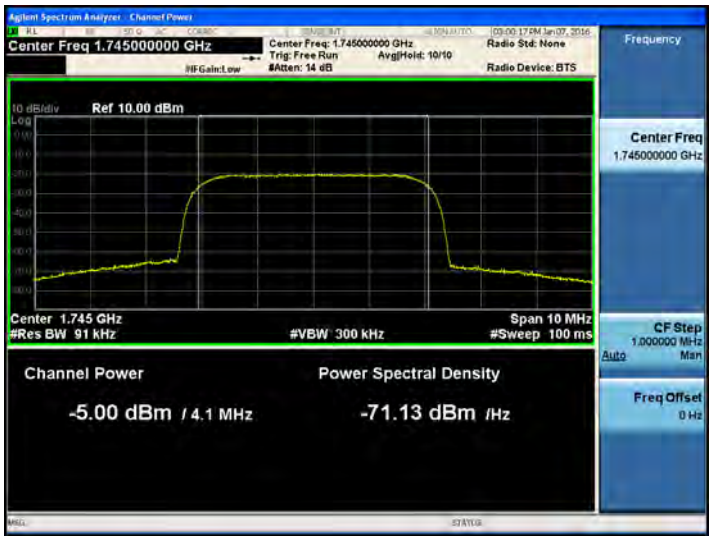


## AWS 2100 UMTS Band UL

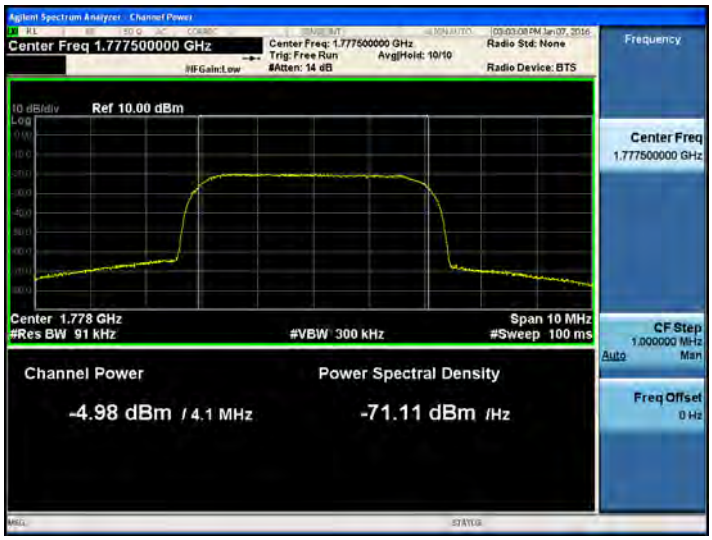
**[AWS 2100 AGC threshold Uplink UMTS Low]**



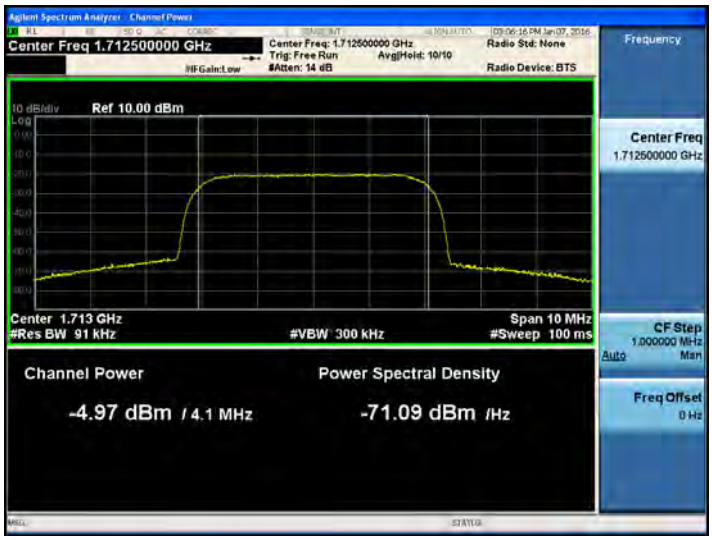

**[AWS 2100 AGC threshold Uplink UMTS Mid]**



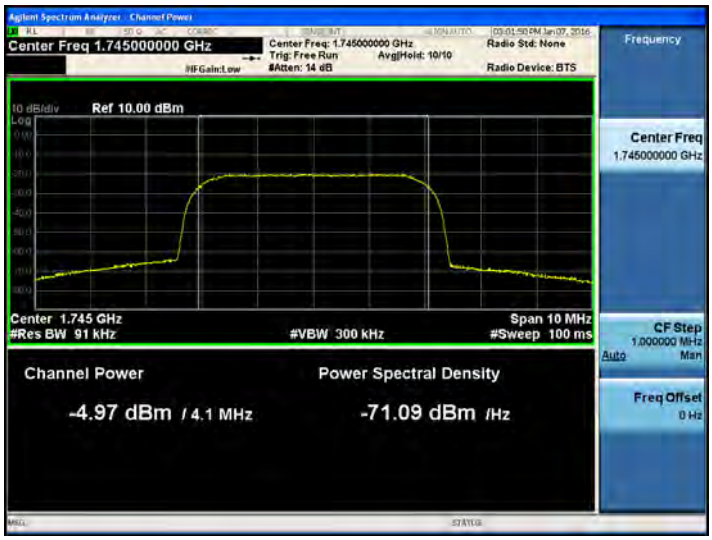

**[AWS 2100 AGC threshold Uplink UMTS High]**



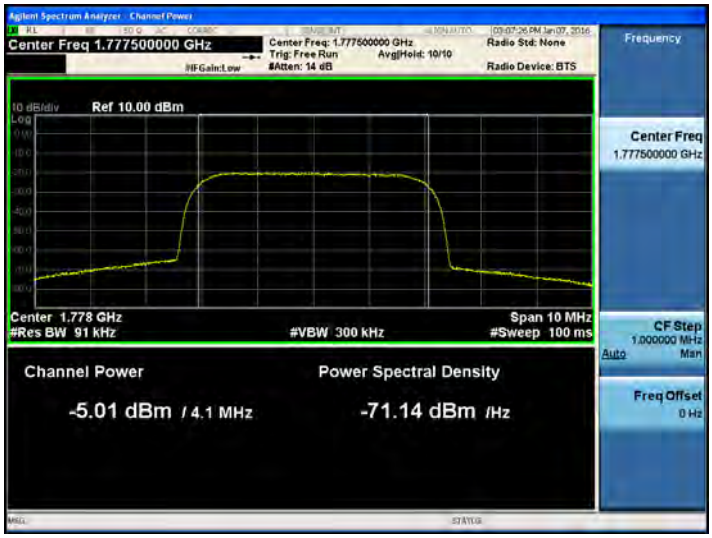
**[AWS2100 +3dB above the threshold Uplink UMTS Low]**



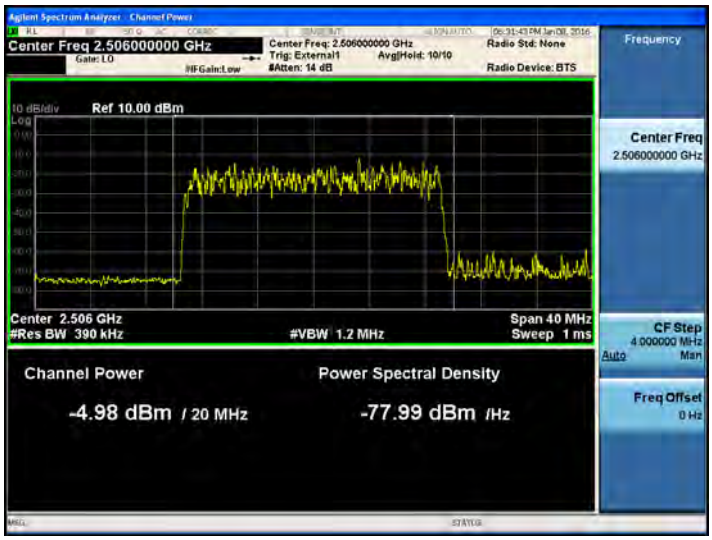
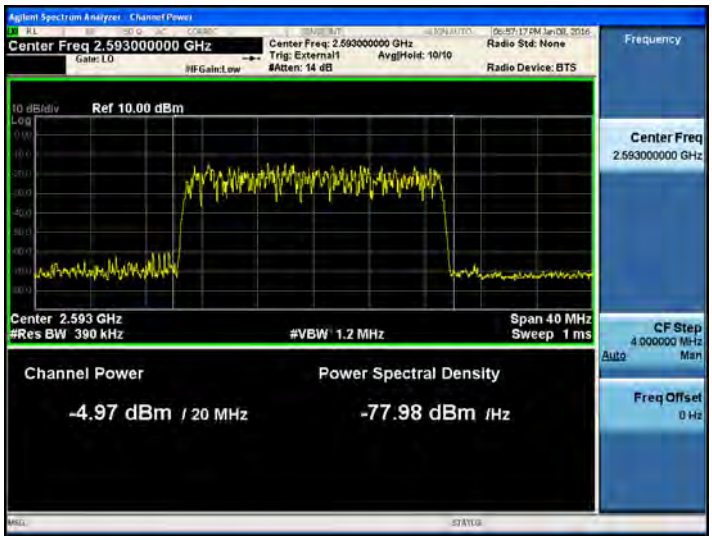

**[AWS2100 +3dB above the threshold Uplink UMTS Mid]**




**[AWS2100+3dB above the threshold Uplink UMTS High]**

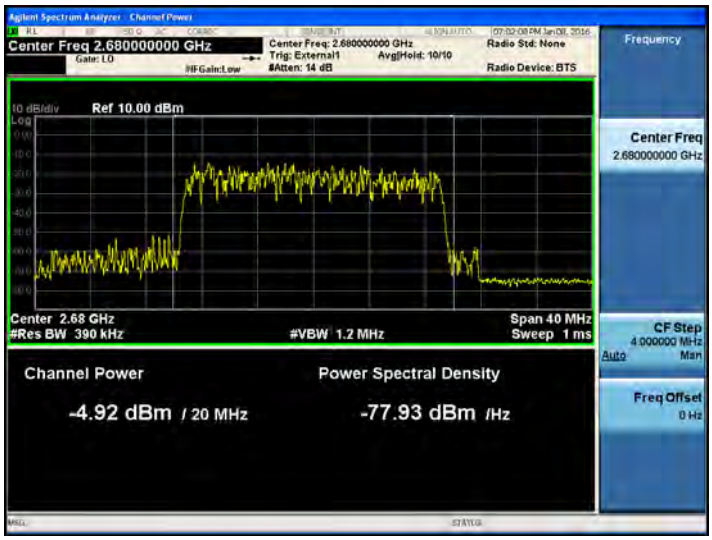


## BRS LTE 20 MHz Band UL

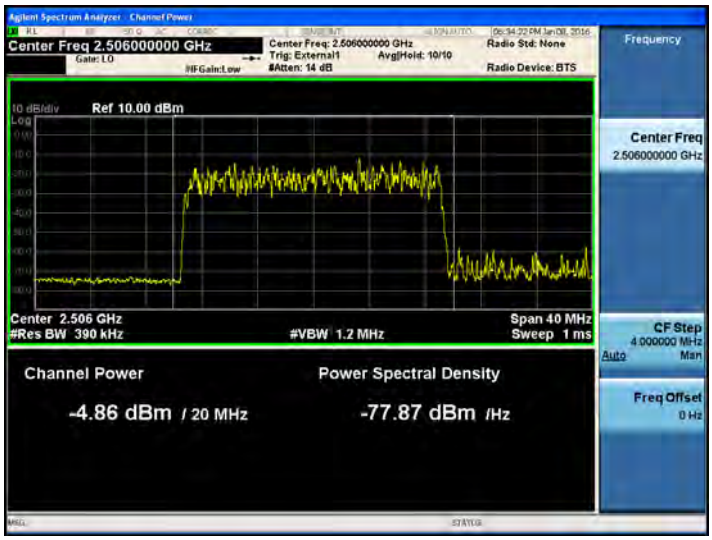
| [BRS AGC threshold Uplink LTE 20MHz Low] | [BRS AGC threshold Uplink LTE 20MHz Mid] |
|---|---|
|  |  |



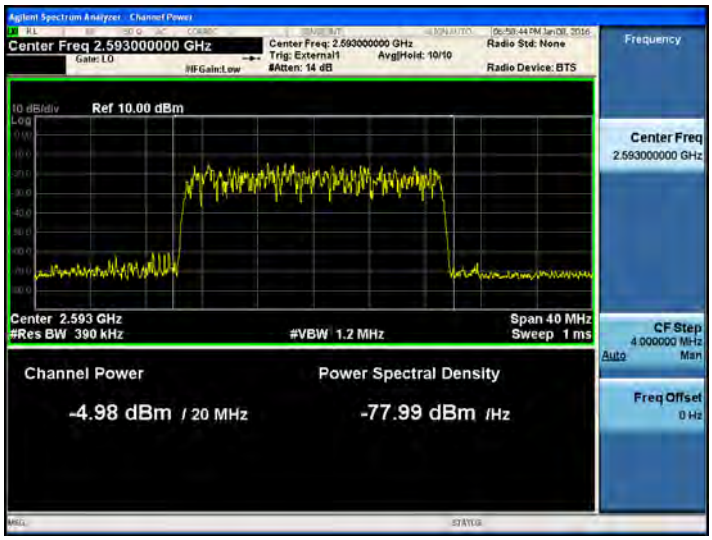


| [BRS AGC threshold Uplink LTE 20MHz High] |
|---|
|  |

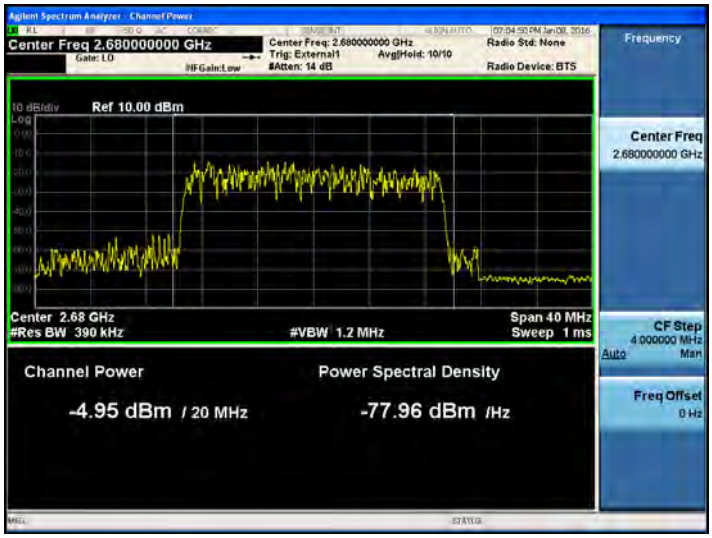
**[BRS +3dB above the threshold Uplink LTE 20MHz Low]**




**[BRS +3dB above the threshold Uplink LTE 20MHz Mid]**



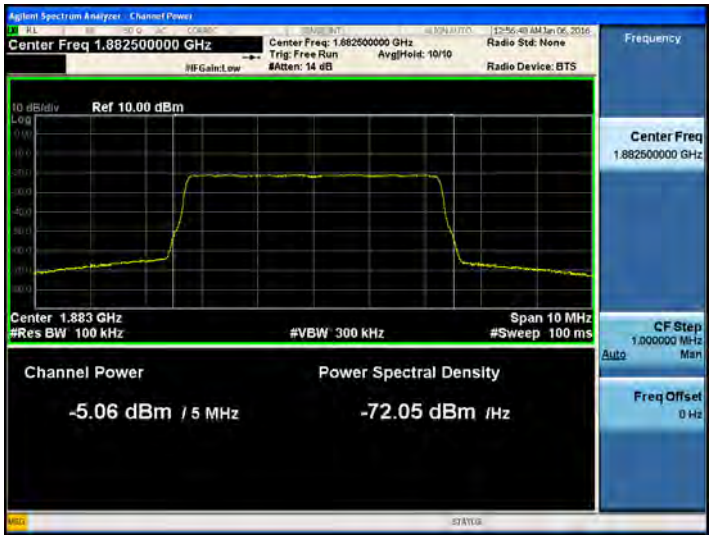

**[BRS +3dB above the threshold Uplink LTE 20MHz High]**



## PCS 1900 LTE 5 MHz Band UL

**[PCS 1900 AGC threshold Uplink LTE 5MHz Low]**

**[PCS 1900 AGC threshold Uplink LTE 5MHz Mid]**




**[PCS 1900 AGC threshold Uplink LTE 5MHz High]**

**[PCS 1900 +3dB above the threshold Uplink LTE 5MHz Low]**

**[PCS 1900 +3dB above the threshold Uplink LTE 5MHz Mid]**

**[PCS 1900 +3dB above the threshold Uplink LTE 5MHz High]**

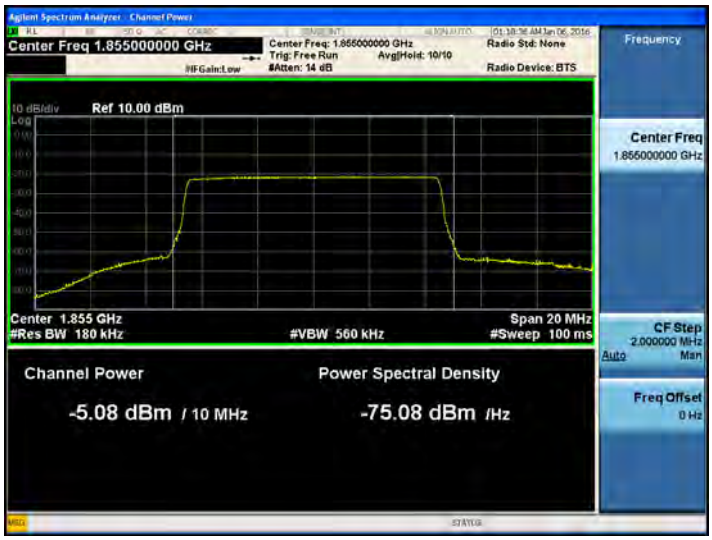
## PCS 1900 LTE 10 MHz Band UL

**[PCS 1900 AGC threshold Uplink LTE 10MHz Low]**

**[PCS 1900 AGC threshold Uplink LTE 10MHz Mid]**

**[PCS 1900 AGC threshold Uplink LTE 10MHz High]**

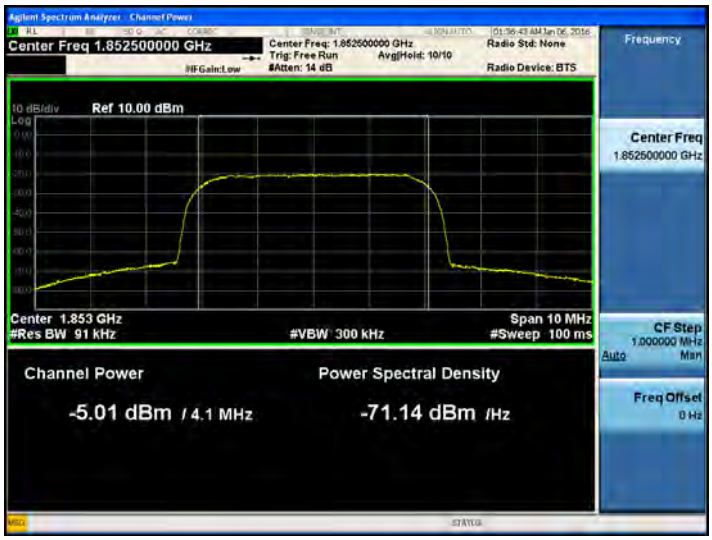
**[PCS 1900 +3dB above the threshold Uplink LTE 10MHz Low]**




**[PCS 1900 +3dB above the threshold Uplink LTE 10MHz Mid]**

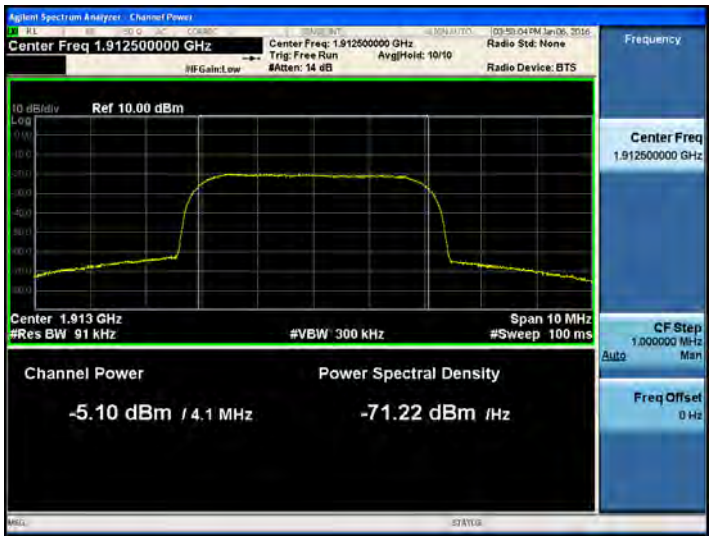
**[PCS 1900 +3dB above the threshold Uplink LTE 10MHz High]**

## PCS 1900 UMTS Band UL

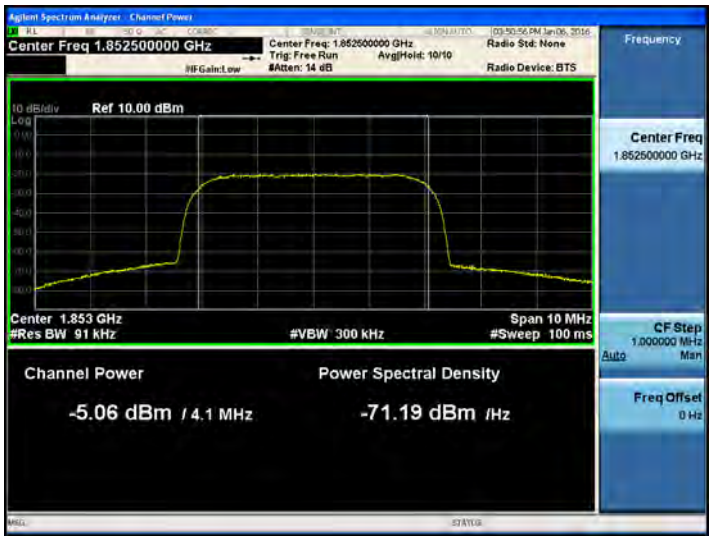
| [PCS 1900 AGC threshold Uplink UMTS Low] | [PCS 1900 AGC threshold Uplink UMTS Mid] |
|---|---|
|  | |



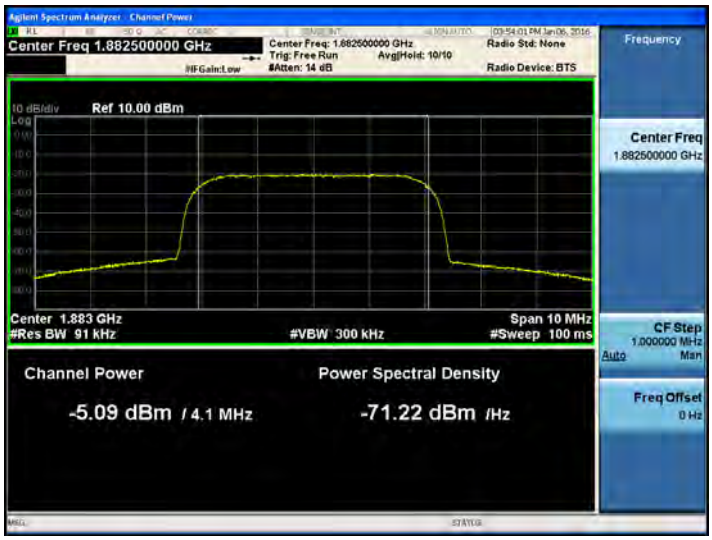


| [PCS 1900 AGC threshold Uplink UMTS High] |
|---|
|  |

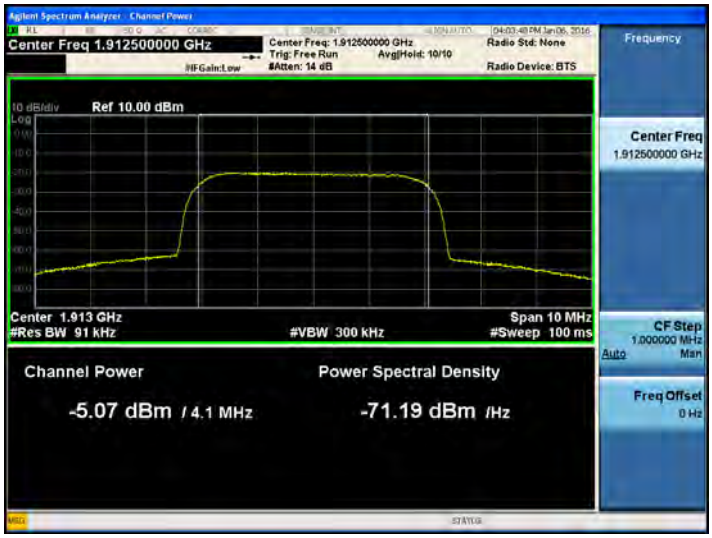
**[PCS 1900 +3dB above the threshold Uplink UMTS Low]**




**[PCS 1900 +3dB above the threshold Uplink UMTS Mid]**

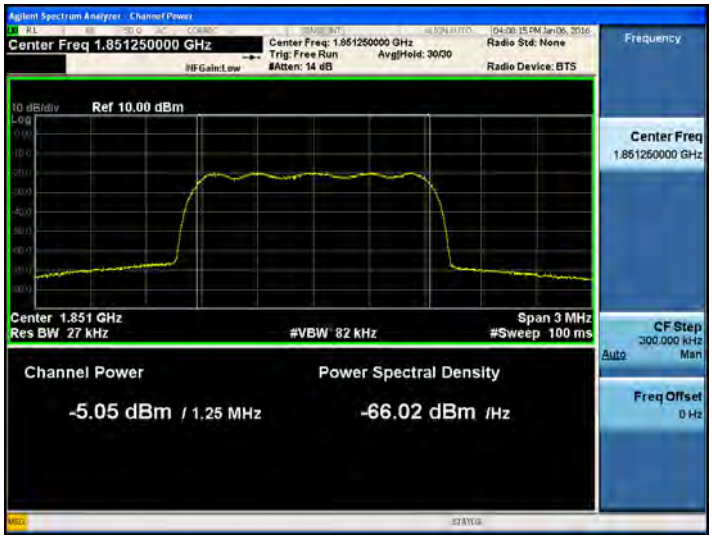



**[PCS 1900 +3dB above the threshold Uplink UMTS High]**

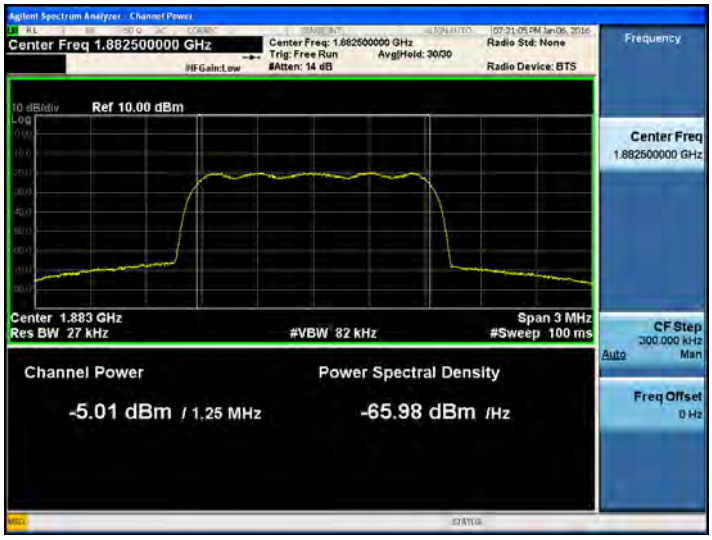


## PCS 1900 CDMA Band UL

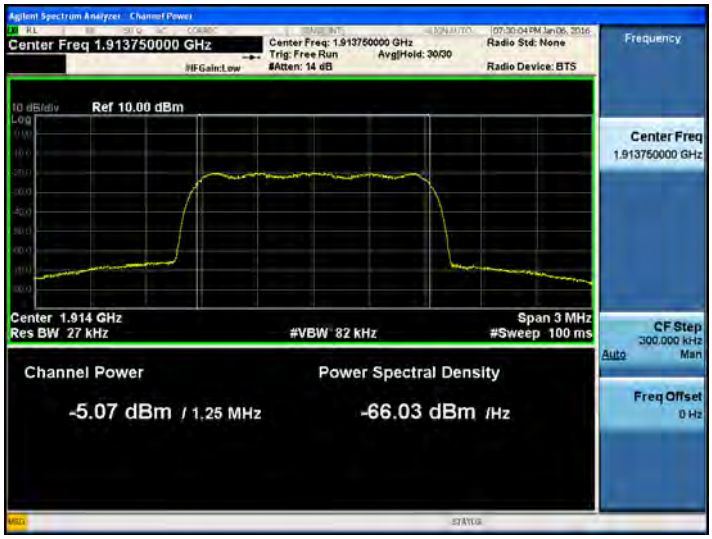
**[PCS 1900 AGC threshold Uplink CDMA Low]**



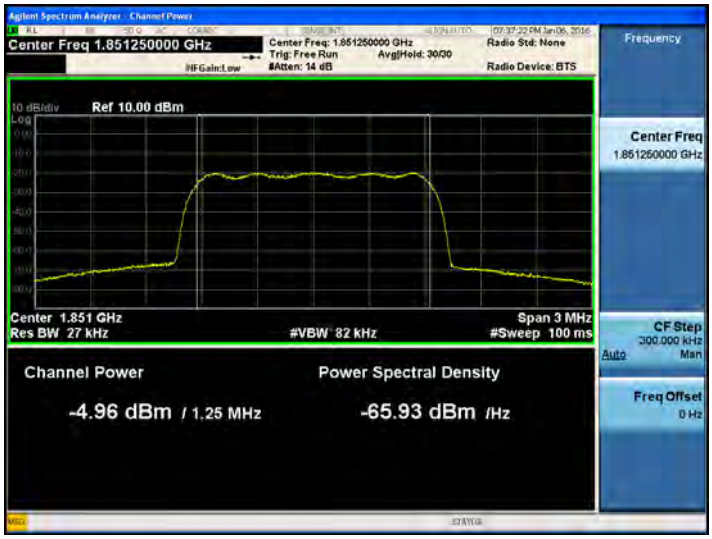

**[PCS 1900 AGC threshold Uplink CDMA Mid]**



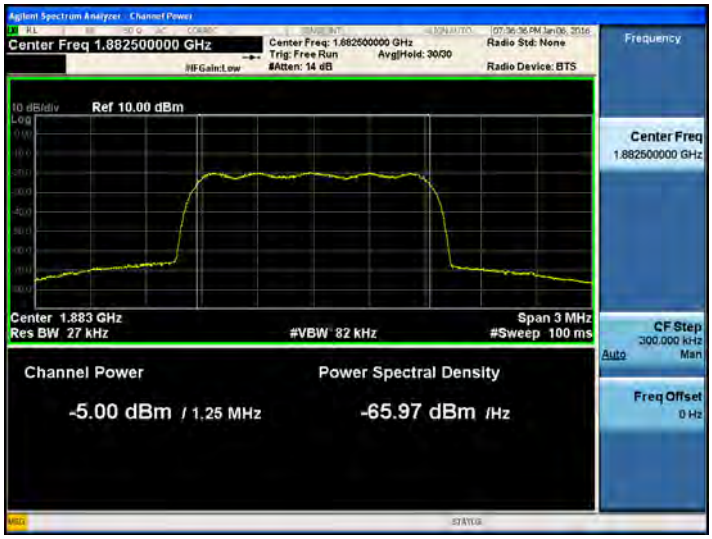

**[PCS 1900 AGC threshold Uplink CDMA High]**



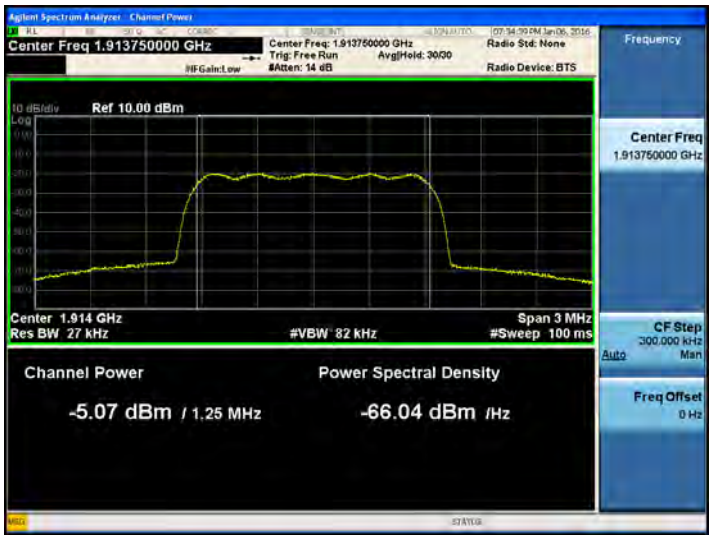
**[PCS 1900 +3dB above the threshold Uplink CDMA Low]**




**[PCS 1900 +3dB above the threshold Uplink CDMA Mid]**

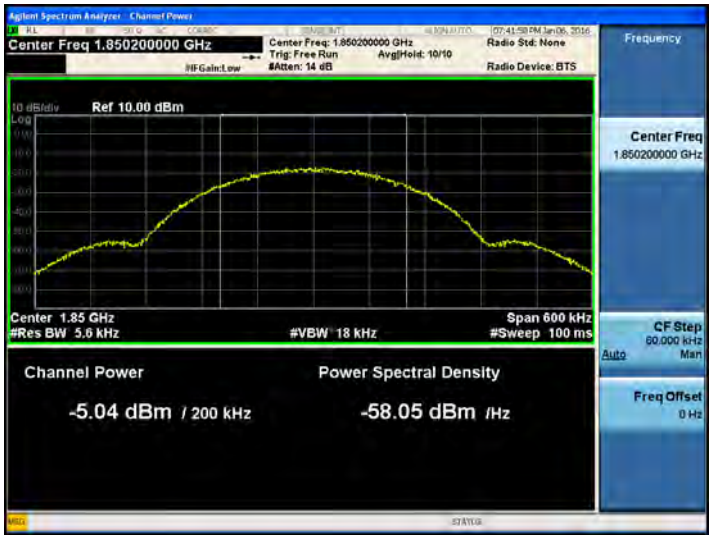



**[PCS 1900 +3dB above the threshold Uplink CDMA High]**



## PCS 1900 GSM Band UL

**[PCS 1900 AGC threshold Uplink GSM Low]**




**[PCS 1900 AGC threshold Uplink GSM Mid]**

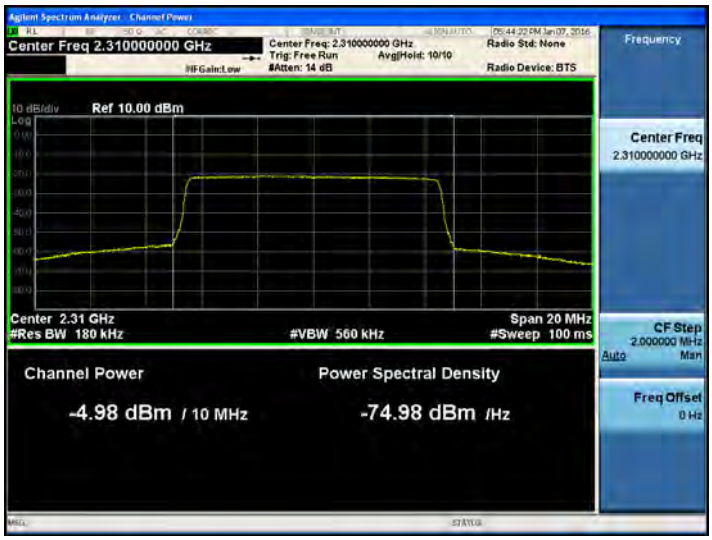
**[PCS 1900 AGC threshold Uplink GSM High]**

**[PCS 1900 +3dB above the threshold Uplink GSM Low]**

**[PCS 1900 +3dB above the threshold Uplink GSM Mid]**

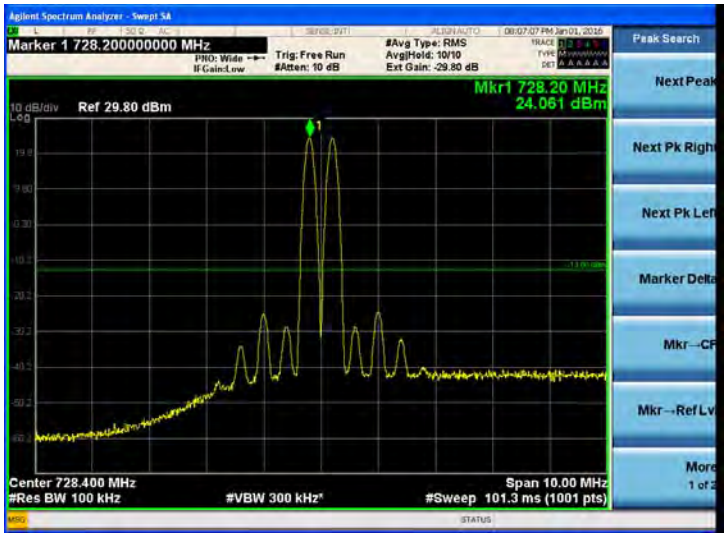
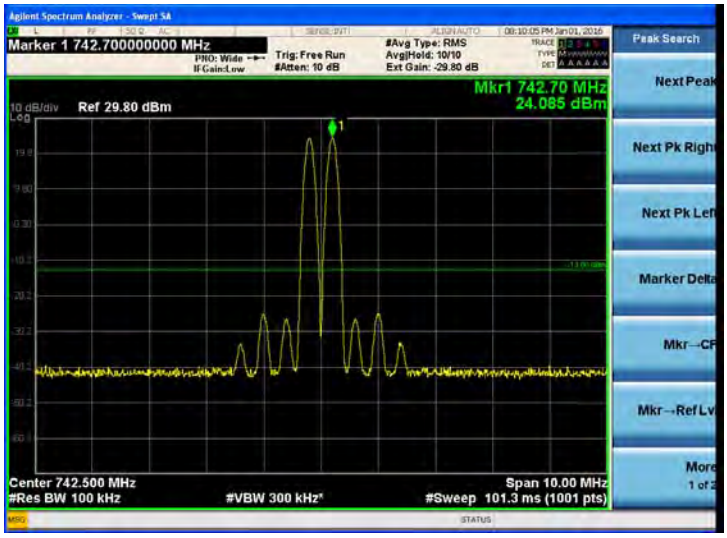
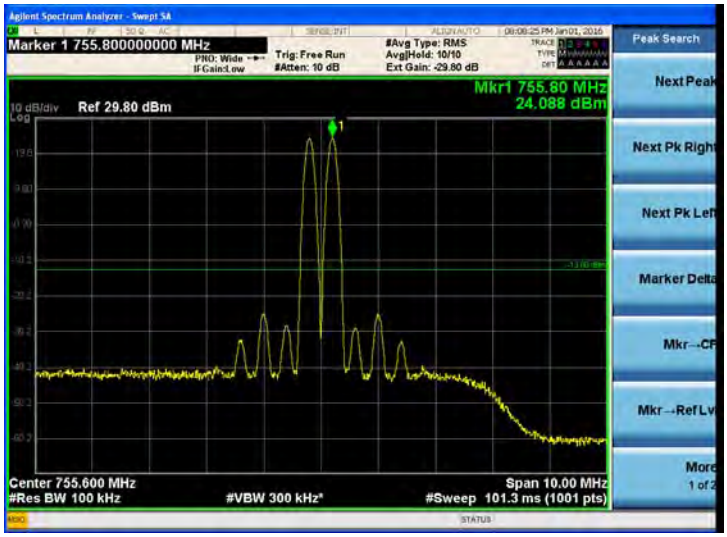
**[PCS 1900 +3dB above the threshold Uplink GSM High]**

## WCS LTE 10MHz Band UL

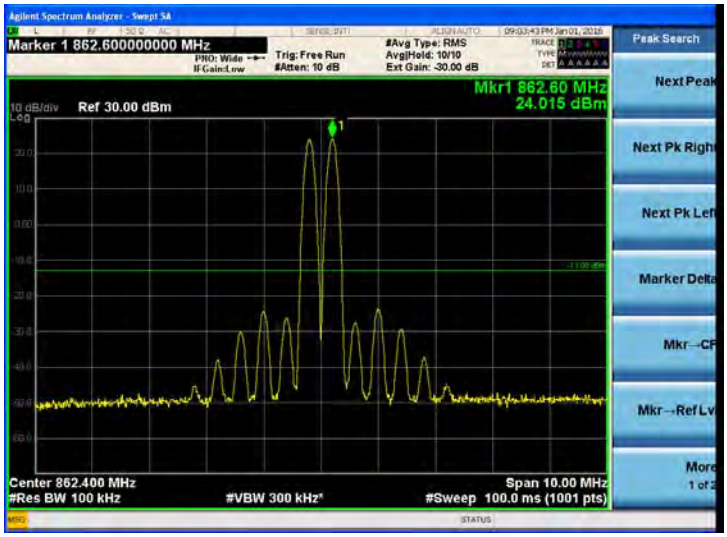
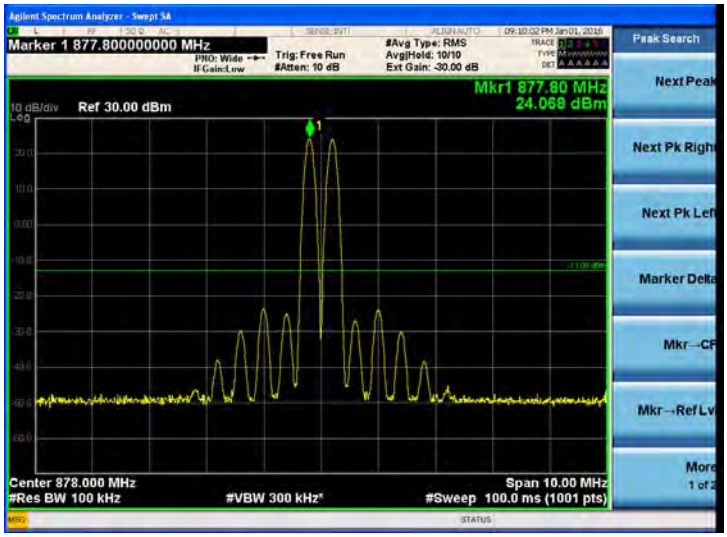
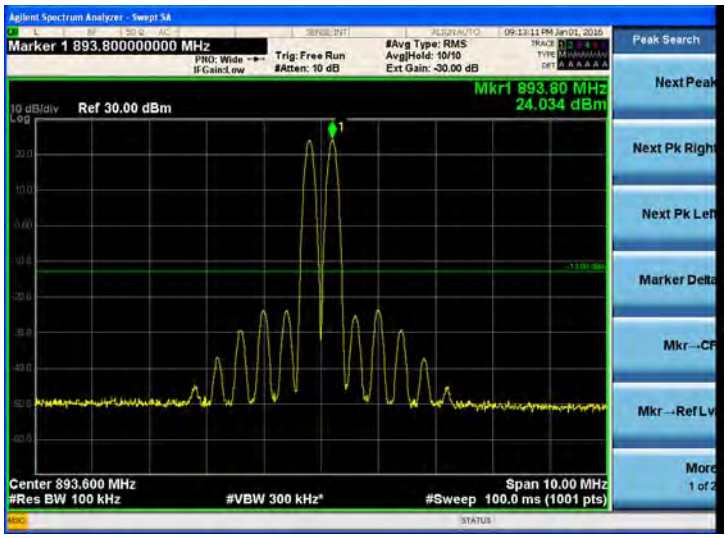
| [WCS AGC threshold Uplink LTE 10MHz] | [WCS +3dB above the threshold Uplink LTE 10MHz] |
|---|---|
| |  |

**Multi-channel Enhancer for IC**

**700 MHz Band DL**

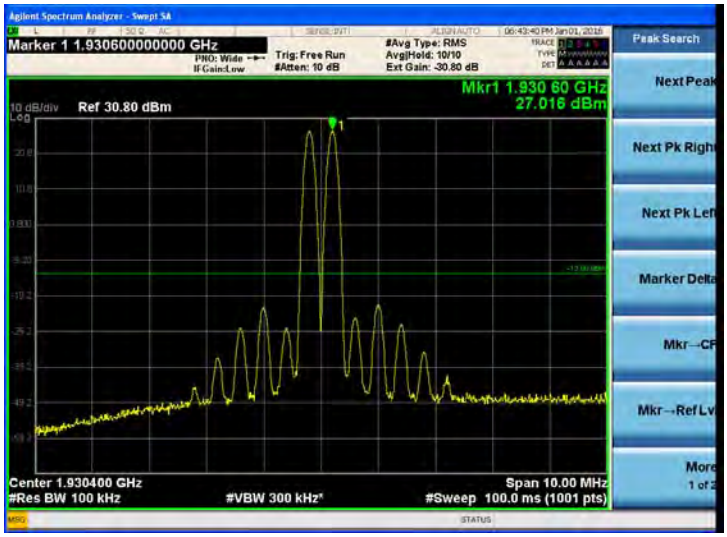
| [700MHz Downlink Low] | [700MHz Downlink Mid] |
|---|---|
|   |   |
| **[700MHz Downlink High]** | |
|   | |

## SMR 800,850Cellular Band DL

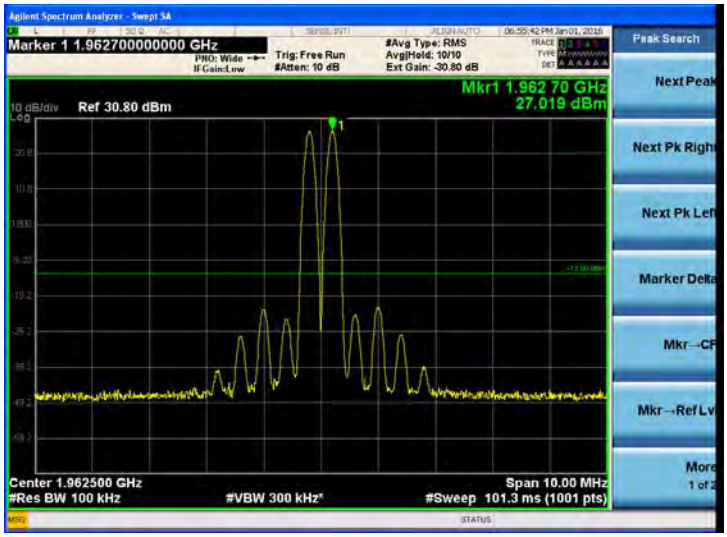
| [SMR 800,850Cellular Downlink Low] | [SMR 800,850Cellular Downlink Mid] |
|---|---|
|  |  |
| **[SMR 800,850Cellular Downlink High]** | |
|  | |

## PCS1900 Band DL

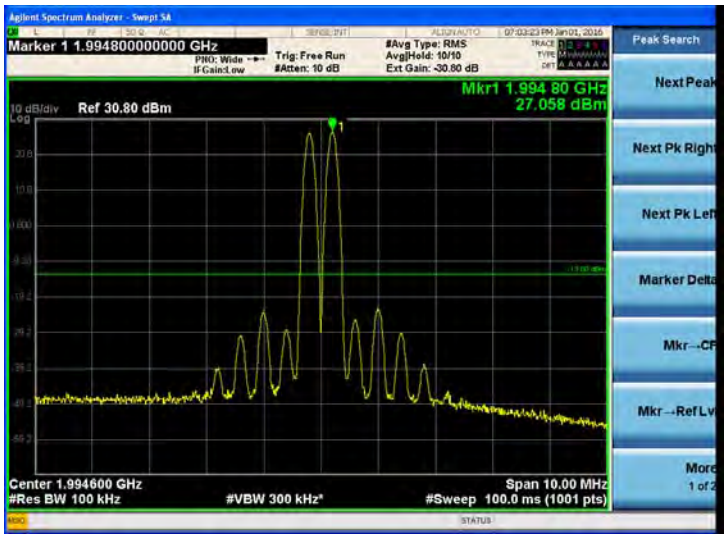
**[PCS1900 Downlink Low]**



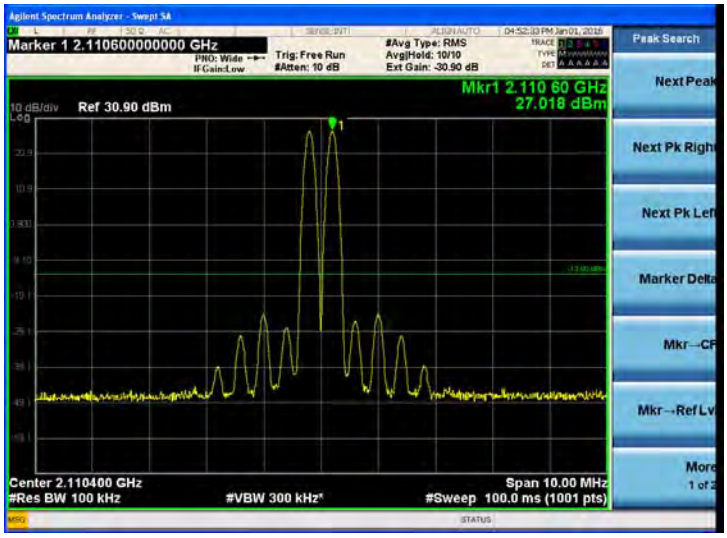
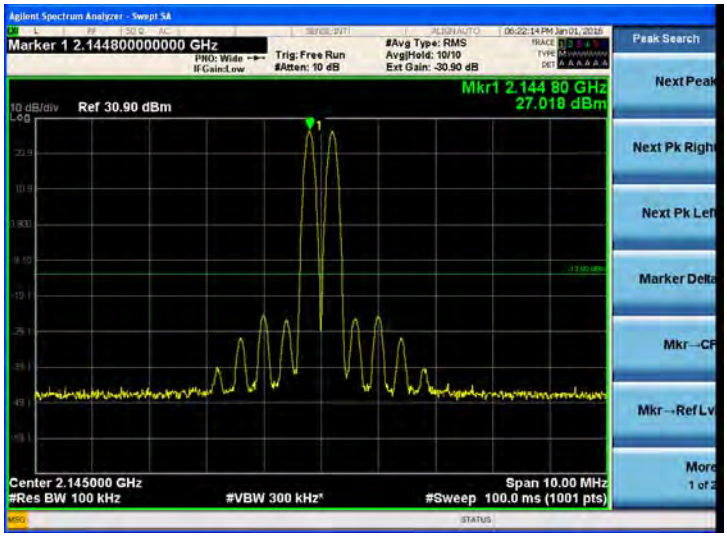
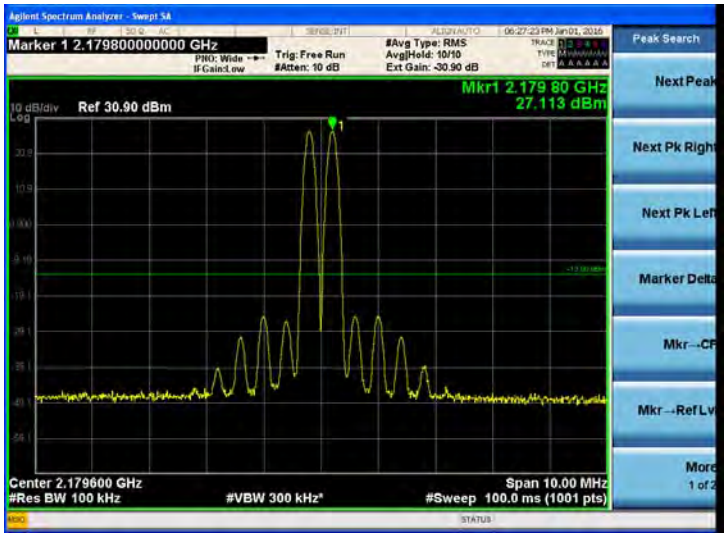

**[PCS1900 Downlink Mid]**



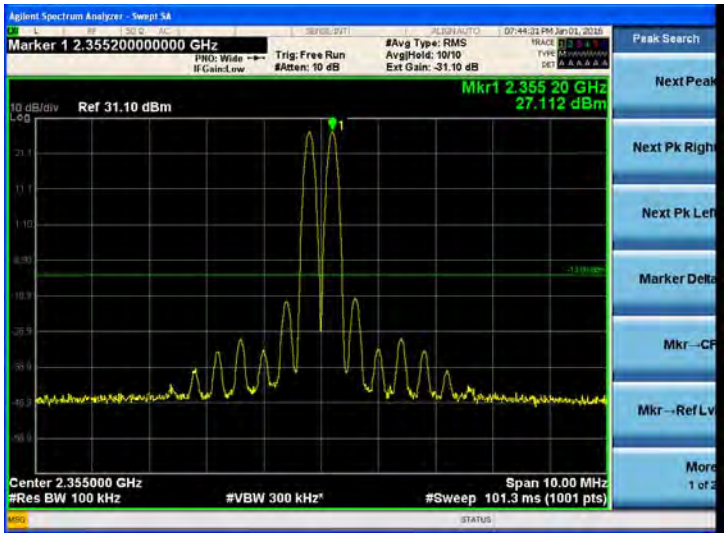
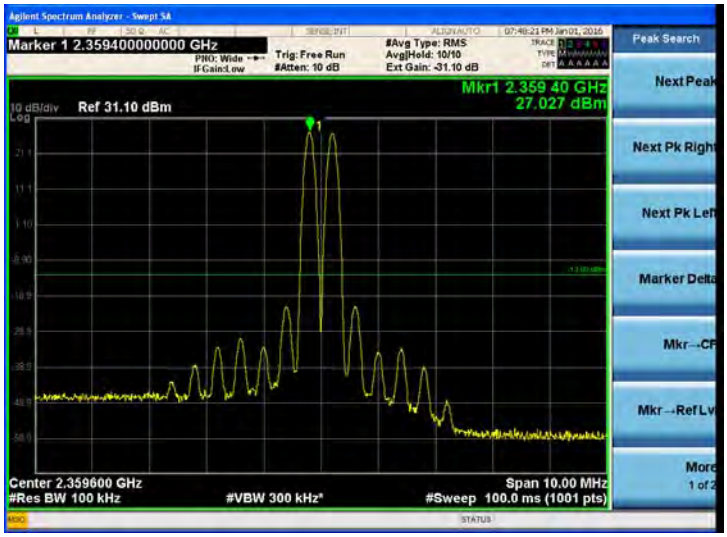

**[PCS1900 Downlink High]**



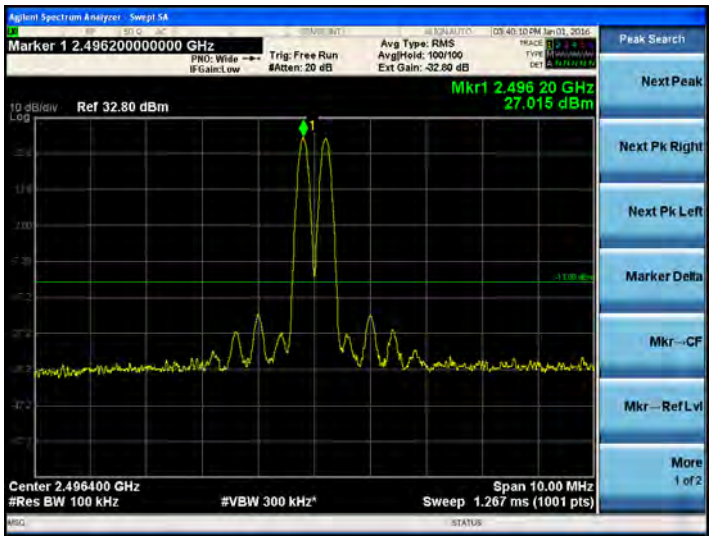
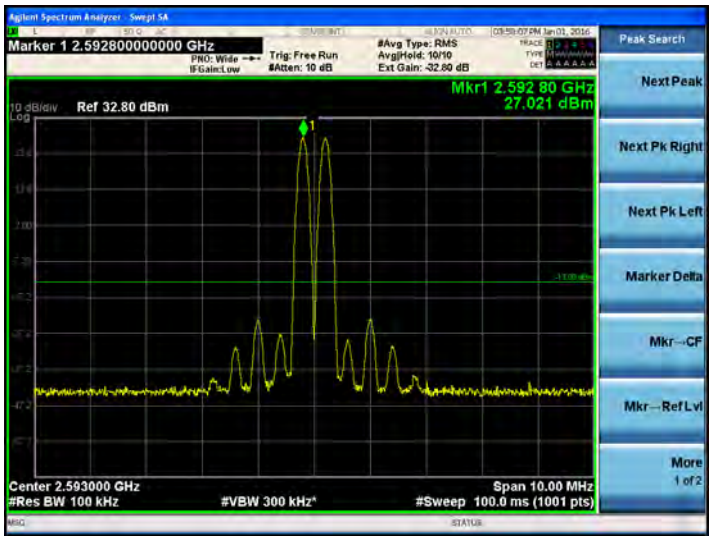
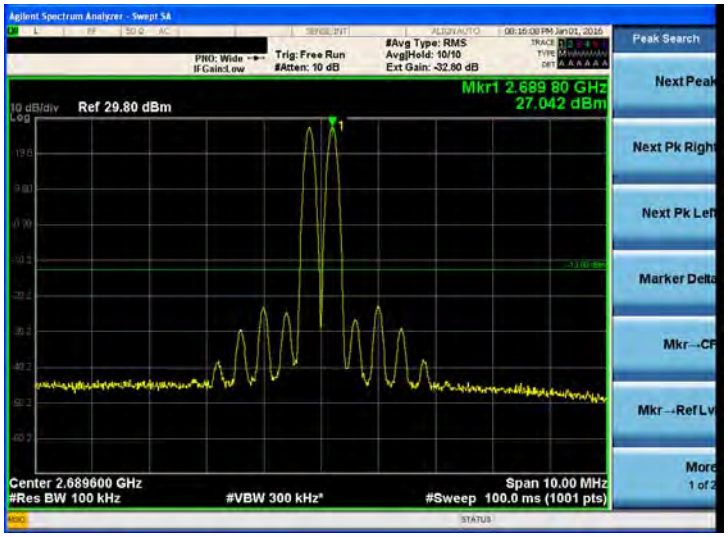
## AWS2100 Band DL

| [AWS2100 Downlink Low] | [AWS2100 Downlink Mid] |
|---|---|
|  |  |
| **[AWS2100 Downlink High]** | |
|  | |

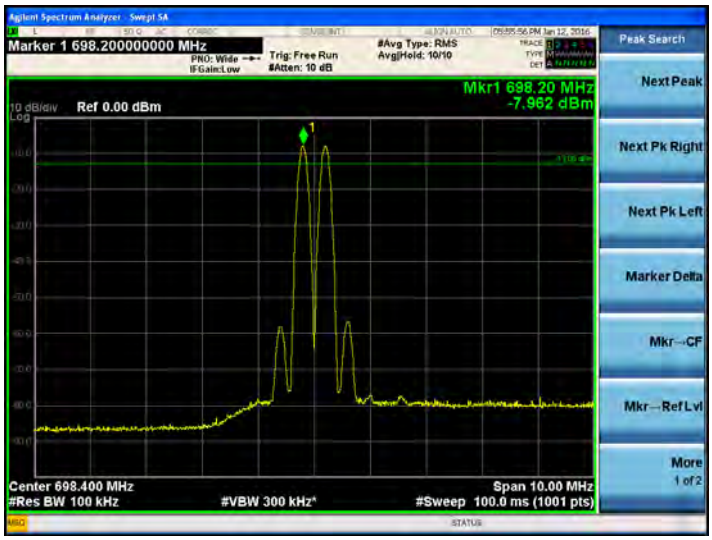
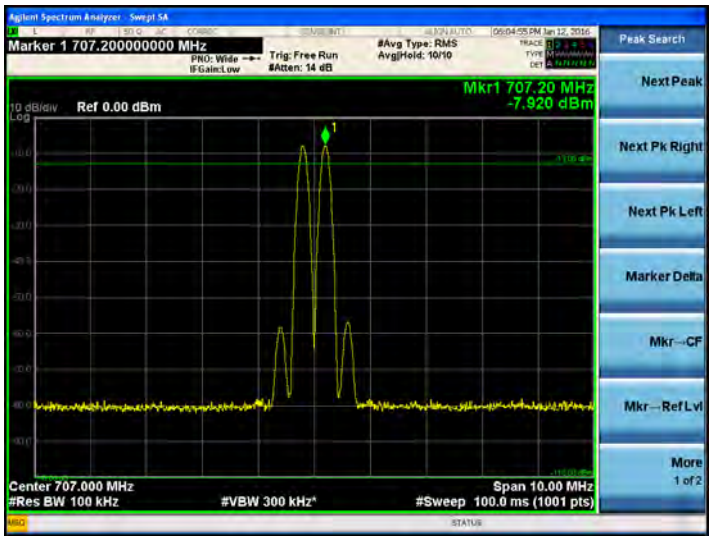
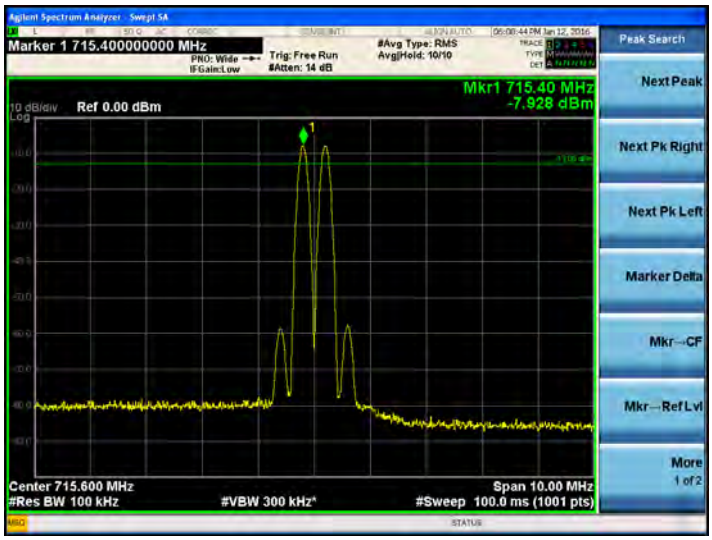
## WCS Band DL

| [WCS Downlink Low] | [WCS Downlink Mid] |
|---|---|
| |  |
| **[WCS Downlink High]** | |
|  | |

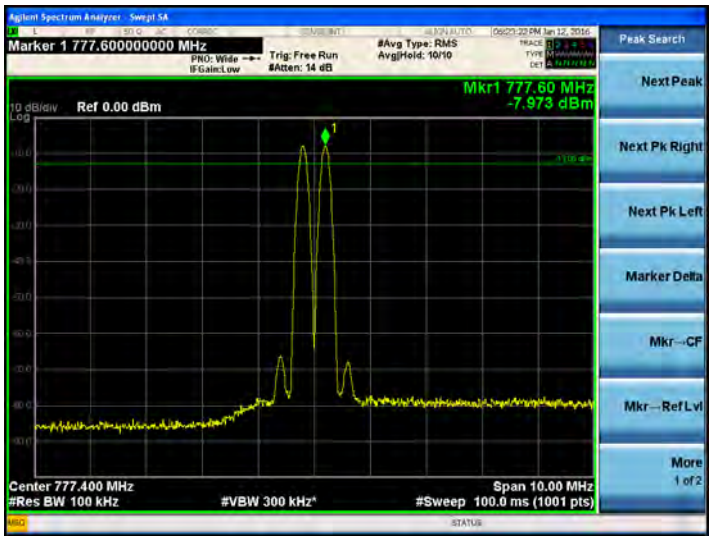
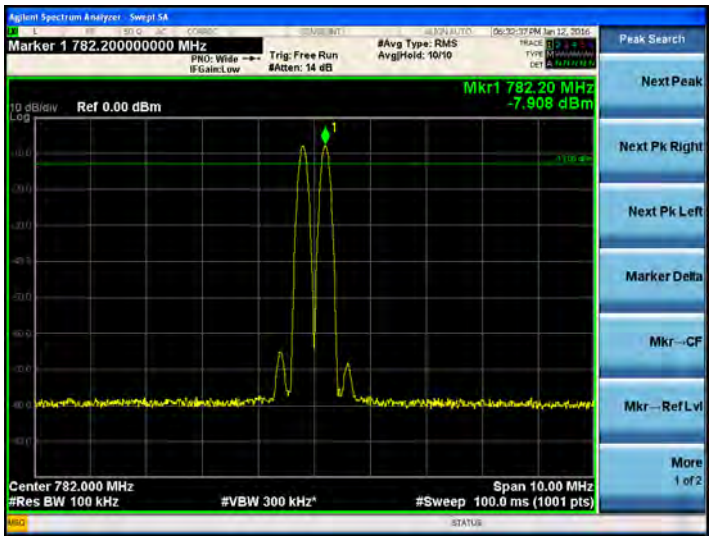
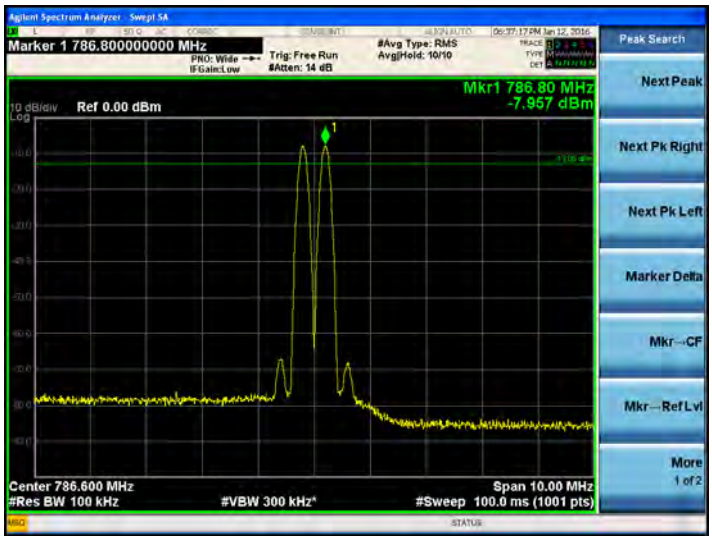
## BRS Band DL

| [BRS Downlink Low] | [BRS Downlink Mid] |
|---|---|
|  |  |
| **[BRS Downlink High]** | |
|  | |

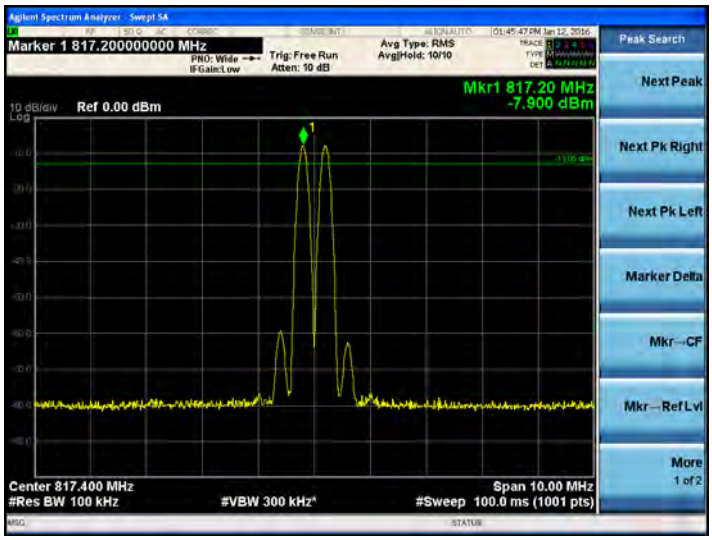
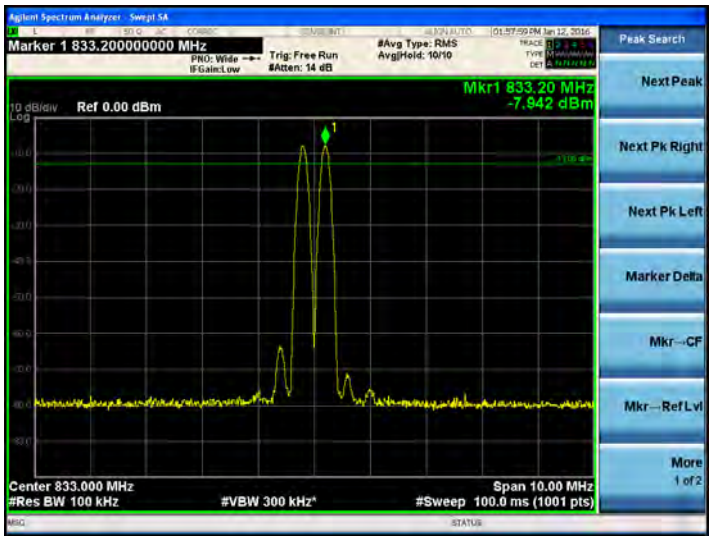
## 700 MHz Band_LTE 5MHz UL

| [700MHz LTE5MHz Uplink Low] | [700MHz LTE5MHz Uplink Mid] |
|---|---|
|  |  |
| **[700MHz LTE5MHz Uplink High]** | |
|  | |

## 700 MHz Band_LTE 10MHz UL

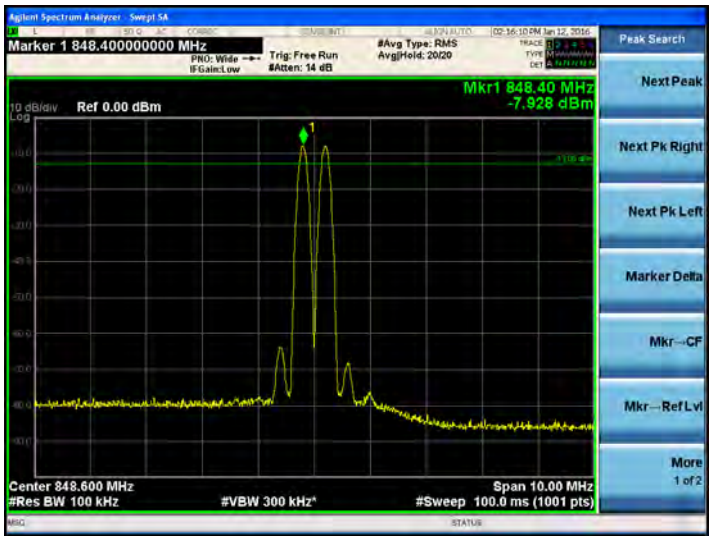
| [700MHz LTE10MHz Uplink Low] | [700MHz LTE10MHz Uplink Mid] |
|---|---|
|  |  |
| **[700MHz LTE10MHz Uplink High]** | |
|  | |

## SMR 800,850Cellular Band UL

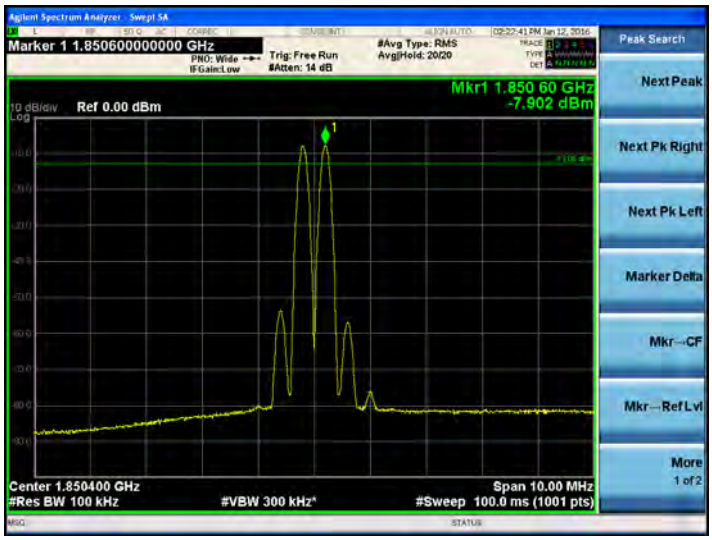
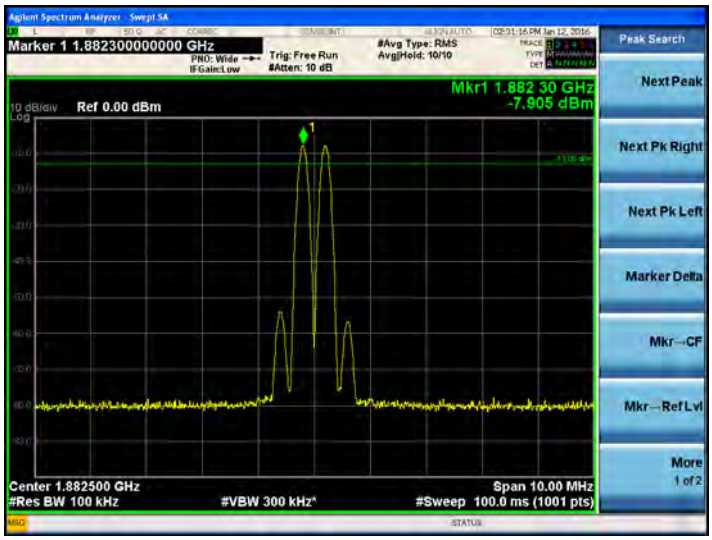
| [SMR 800,850Cellular Uplink Low] | [SMR 800,850Cellular Uplink Mid] |
|---|---|
|  |  |





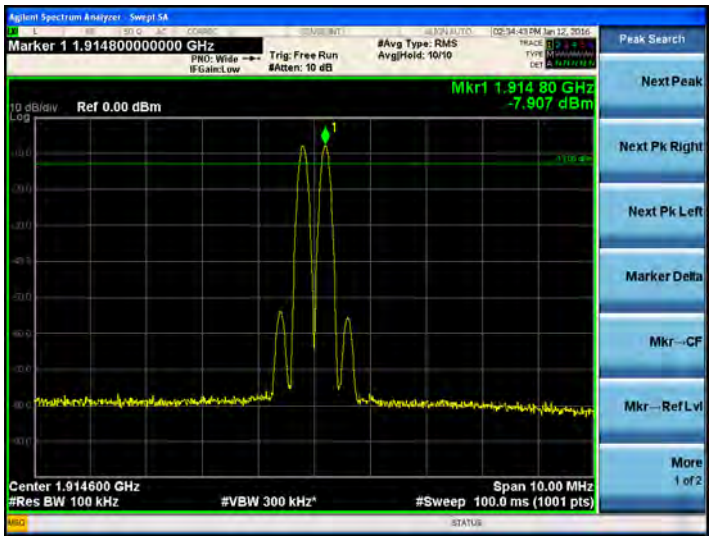
| [SMR 800,850Cellular Uplink High] |
|---|
|  |

## PCS1900 Band UL

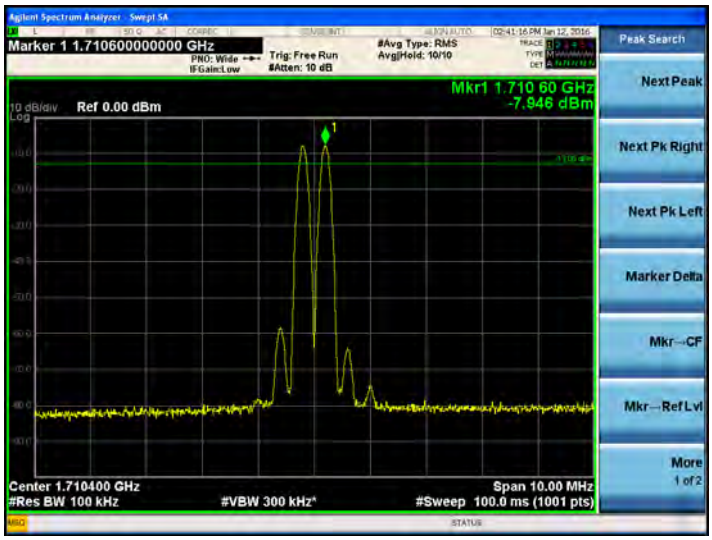
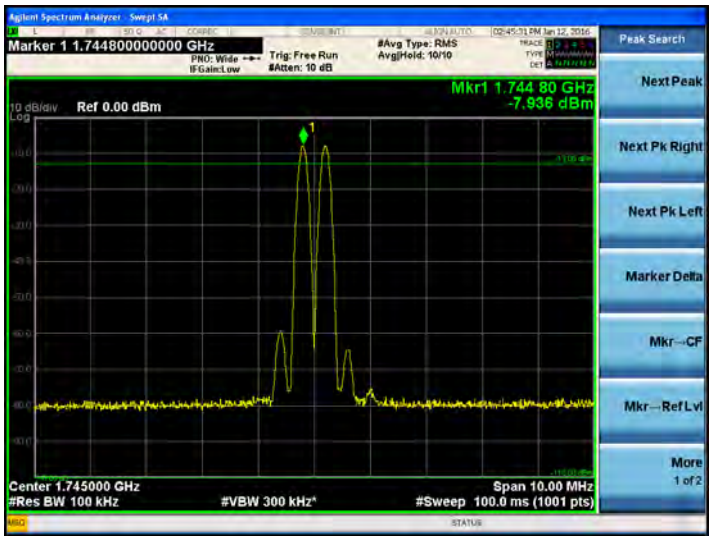
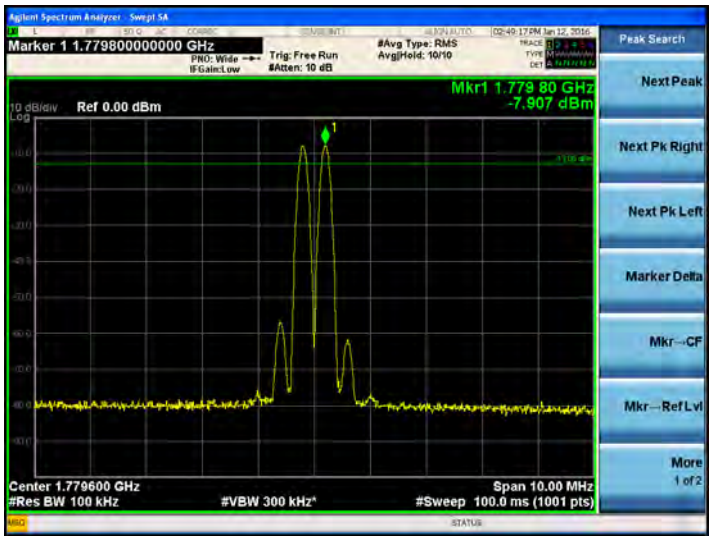
| [PCS1900 Uplink Low] | [PCS1900 Uplink Mid] |
|---|---|
|  |  |



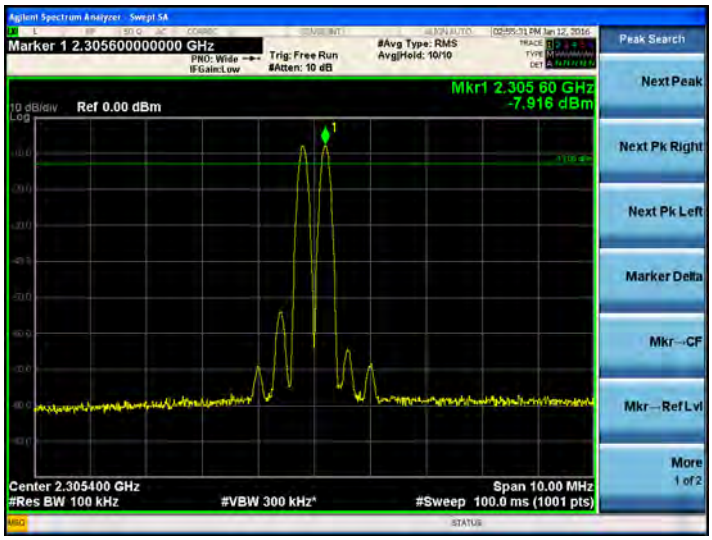
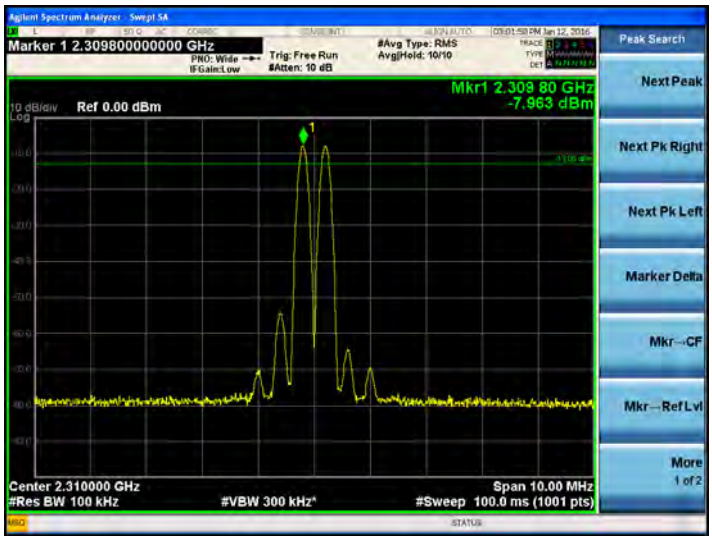
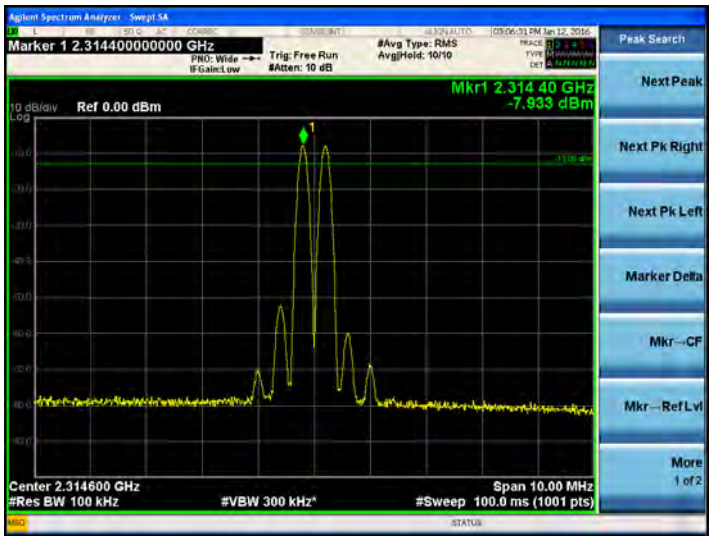


| [PCS1900 Uplink High] |
|---|
|  |

## AWS2100 Band UL

| [AWS2100 Uplink Low] | [AWS2100 Uplink Mid] |
|---|---|
|  |  |
| **[AWS2100 Uplink High]** | |
|  | |

## WCS Band UL

| [WCS Uplink Low] | [WCS Uplink Mid] |
|---|---|
|  |  |
| **[WCS Uplink High]** | |
|  | |

## Power Back-off for IC

| [700 MHz Band Downlink 3 Carrier] | [700 MHz Band Uplink 3 Carrier] |
|---|---|
| | |
| **[800 MHz Band Downlink 3 Carrier]** | **[800 MHz Band Uplink 3 Carrier]** |
| | |

| [AWS 2100 Band Downlink 3 Carrier] | [AWS 2100 Band Uplink 3 Carrier] |
|---|---|
| | |
| **[BRS Band Downlink 3 Carrier]** | **[BRS Band Uplink 3 Carrier]** |
| | **No test**<br>**Note. Because BRS Band is TDD System(the uplink and downlink transmissions usually share the same frequency), worst case(downlink) is tested** |

| [PCS 1900 Band Downlink 3 Carrier] | [PCS 1900 Band Uplink 3 Carrier] |
|---|---|
| | |
| **[WCS Band Downlink 3 Carrier]** | **[WCS Band Uplink 3 Carrier]** |
| **NO Test**<br>**Note. The minimum 30MHz bandwidth required to test**<br>**But wcs band supports 10MHz bandwidth** | **NO Test**<br>**Note. The minimum 30MHz bandwidth required to test**<br>**But wcs band supports 10MHz bandwidth** |

# 7. OCCUPIED BANDWIDTH

**FCC Rules**

**Test Requirement(s):**

**§ 2.1049 Measurements required: Occupied bandwidth:**

The occupied bandwidth, that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission shall be measured under the specified conditions of § 2.1049 (a) through (i) as applicable.

**Test Procedures:**

Measurements were in accordance with the test methods section 3.4 of KDB 935210 D05 v01 and section 4.2 of KDB 971168 D01 v02r02.

Test is 99% OBW measured and used.

a) Connect a signal generator to the input of the EUT.

b) Configure the signal generator to transmit the AWGN signal.

c) Configure the signal amplitude to be just below the AGC threshold level (see 3.2), but not more than 0.5 dB below.

d) Connect a spectrum analyzer to the output of the EUT using appropriate attenuation.

e) Set the spectrum analyzer center frequency to the center frequency of the operational band under test. The span range of the spectrum analyzer shall be between 2 times to 5 times the OBW.

f) The nominal resolution bandwidth (RBW) shall be in the range of 1% to 5 % of the anticipated OBW, and the VBW shall be ≥ 3 × RBW.

g) Set the reference level of the instrument as required to preclude the signal from exceeding the maximum spectrum analyzer input mixer level for linear operation. In general, the peak of the spectral envelope must be more than [10 log (OBW / RBW)] below the reference level.

NOTE—Steps f) and g) may require iteration to enable adjustments within the specified tolerances.

h) The noise floor of the spectrum analyzer at the selected RBW shall be at least 36 dB below the reference level.

i) Set spectrum analyzer detection function to positive peak.

j) Set the trace mode to max hold.

k) Use the 99 % power bandwidth function of the spectrum analyzer (if available) and report the measured bandwidth.

l) Repeat steps e) to k) with the input signal connected directly to the spectrum analyzer (i.e., input signal measurement).

m) Compare the spectral plot of the input signal (determined from step l) to the output signal

(determined from step k) to affirm that they are similar (in passband and rolloff characteristic features and relative spectral locations), and include plot(s) and descriptions in test report.

n) Repeat for all frequency bands authorized for use by the EUT.

**IC Rules**

**Test Requirements: RSS-GEN 4.6.1**

When an occupied bandwidth value is not specified in the applicable RSS, the transmitted signal bandwidth to be reported is to be its 99% emission bandwidth, as calculated or measured.

**Test Procedures: RSS-GEN 4.6.1**

The transmitter shall be operated at its maximum carrier power measured under normal test conditions.

The span of the analyzer shall be set to capture all products of the modulation process, including the emission skirts. The resolution bandwidth shall be set to as close to 1% of the selected span as is possible without being below 1%. The video bandwidth shall be set to 3 times the resolution bandwidth.

Video averaging is not permitted. Where practical, a sampling detector shall be used given that a peak or peak hold may produce a wider bandwidth than actual.

The trace data points are recovered and directly summed in linear terms. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5% of the total is reached and that frequency recorded. The process is repeated for the highest frequency data points. This frequency is recorded. The span between the two recorded frequencies is the occupied bandwidth.

**Test Results:** The EUT complies with the requirements of this section.

| Input Signal | Input Level (dBm) | Maximum Amp Gain |
|---|---|---|
| 700 MHz | DL : -15 dBm<br>UL : -42 dBm | DL : 42 dB<br>UL : 37 dB |
| SMR800 | | |
| 850 Cellular | | |
| PCS 1900 | DL : -15 dBm<br>UL : -45 dBm | DL : 45 dB<br>UL : 40 dB |
| AWS 2100 | | |
| WCS | | |
| BRS | | |

**[Downlink Output]**

| | Channel | Frequency (MHz) | OBW (MHz) |
|---|---|---|---|
| 700 Band_ LTE 5 MHz AGC threshold | Low | 731.50 | 4.556 |
| | Middle | 742.50 | 4.529 |
| | High | 753.50 | 4.533 |
| 700 Band_ LTE 5 MHz +3dBm above the AGC threshold | Low | 731.50 | 4.438 |
| | Middle | 742.50 | 4.528 |
| | High | 753.50 | 4.432 |
| 700 Band_ LTE 10 MHz AGC threshold | Low | 734.00 | 9.032 |
| | Middle | 741.00 | 9.002 |
| | High | 751.00 | 8.998 |
| 700 Band_ LTE 10 MHz +3dBm above the AGC threshold | Low | 734.00 | 9.023 |
| | Middle | 741.00 | 9.018 |
| | High | 751.00 | 9.012 |

| | Channel | Frequency (MHz) | OBW (MHz) |
|---|---|---|---|
| SMR 800 ,850 Cellular Band_ LTE 5 MHz AGC threshold | Low | 864.50 | 4.541 |
| | Middle | 878.00 | 4.533 |
| | High | 891.50 | 4.542 |
| SMR 800 ,850 Cellular Band_ LTE 5 MHz +3dBm above the AGC threshold | Low | 864.50 | 4.535 |
| | Middle | 878.00 | 4.546 |
| | High | 891.50 | 4.540 |
| 850 Cellular Band_ LTE 10 MHz AGC threshold | Low | 874.00 | 9.011 |
| | Middle | - | |
| | High | 889.00 | 9.025 |
| 850 Cellular Band_ LTE 10 MHz +3dBm above the AGC threshold | Low | 874.00 | 9.003 |
| | Middle | - | |
| | High | 889.00 | 8.930 |

| | Channel | Frequency (MHz) | OBW (MHz) |
|---|---|---|---|
| 850 Cellular Band_ UMTS AGC threshold | Low | 871.50 | 4.163 |
| | Middle | 881.50 | 4.173 |
| | High | 891.50 | 4.178 |
| 850 Cellular Band_ UMTS +3dBm above the AGC threshold | Low | 871.50 | 4.167 |
| | Middle | 881.50 | 4.177 |
| | High | 891.50 | 4.181 |
| SMR 800 ,850 Cellular Band_ CDMA AGC threshold | Low | 863.25 | 1.272 |
| | Middle | 878.00 | 1.269 |
| | High | 892.75 | 1.271 |
| SMR 800 ,850 Cellular Band_ CDMA +3dBm above the AGC threshold | Low | 863.25 | 1.276 |
| | Middle | 878.00 | 1.270 |
| | High | 892.75 | 1.268 |

| | Channel | Frequency (MHz) | OBW (MHz) |
|---|---|---|---|
| 850 Cellular Band_ GSM AGC threshold | Low | 869.20 | 0.247 |
| | Middle | 881.50 | 0.246 |
| | High | 893.80 | 0.246 |
| 850 Cellular Band_ GSM +3dBm above the AGC threshold | Low | 869.20 | 0.247 |
| | Middle | 881.50 | 0.246 |
| | High | 893.80 | 0.246 |

| | Channel | Frequency (MHz) | OBW (MHz) |
|---|---|---|---|
| AWS 2100 Band_ LTE 5 MHz AGC threshold | Low | 2112.50 | 4.542 |
| | Middle | 2145.00 | 4.531 |
| | High | 2177.50 | 4.535 |
| AWS 2100 Band_ LTE 5 MHz +3dBm above the AGC threshold | Low | 2112.50 | 4.532 |
| | Middle | 2145.00 | 4.530 |
| | High | 2177.50 | 4.537 |
| AWS 2100 Band_ LTE 10 MHz AGC threshold | Low | 2115.00 | 9.016 |
| | Middle | 2145.00 | 9.030 |
| | High | 2175.00 | 9.008 |
| AWS 2100 Band_ LTE 10 MHz +3dBm above the AGC threshold | Low | 2115.00 | 9.012 |
| | Middle | 2145.00 | 9.033 |
| | High | 2175.00 | 9.023 |

| | Channel | Frequency (MHz) | OBW (MHz) |
|---|---|---|---|
| AWS 2100 Band_ LTE 15 MHz AGC threshold | Low | 2117.50 | 13.528 |
| | Middle | 2145.00 | 13.540 |
| | High | 2172.50 | 13.527 |
| AWS 2100 Band_ LTE 15 MHz +3dBm above the AGC threshold | Low | 2117.50 | 13.523 |
| | Middle | 2145.00 | 13.547 |
| | High | 2172.50 | 13.542 |
| AWS 2100 Band_ LTE 20 MHz AGC threshold | Low | 2120.00 | 17.963 |
| | Middle | 2145.00 | 17.988 |
| | High | 2170.00 | 17.976 |
| AWS 2100 Band_ LTE 20 MHz +3dBm above the AGC threshold | Low | 2120.00 | 17.962 |
| | Middle | 2145.00 | 17.977 |
| | High | 2170.00 | 17.974 |

| | Channel | Frequency (MHz) | OBW (MHz) |
|---|---|---|---|
| AWS 2100 Band_ UMTS AGC threshold | Low | 2112.50 | 4.171 |
| | Middle | 2145.00 | 4.163 |
| | High | 2177.50 | 4.184 |
| AWS 2100 Band_ UMTS +3dBm above the AGC threshold | Low | 2112.50 | 4.166 |
| | Middle | 2145.00 | 4.180 |
| | High | 2177.50 | 4.173 |

| | Channel | Frequency (MHz) | OBW (MHz) |
|---|---|---|---|
| BRS_ LTE 20 MHz AGC threshold | Low | 2506.00 | 17.966 |
| | Middle | 2593.00 | 17.988 |
| | High | 2680.00 | 17.983 |
| BRS_ LTE 20 MHz +3dBm above the AGC threshold | Low | 2506.00 | 17.962 |
| | Middle | 2593.00 | 17.972 |
| | High | 2680.00 | 17.974 |

| | Channel | Frequency (MHz) | OBW (MHz) |
|---|---|---|---|
| PCS 1900 Band_ LTE 5 MHz AGC threshold | Low | 1932.50 | 4.523 |
| | Middle | 1962.50 | 4.541 |
| | High | 1992.50 | 4.529 |
| PCS 1900 Band_ LTE 5 MHz +3dBm above the AGC threshold | Low | 1992.50 | 4.528 |
| | Middle | 1992.50 | 4.543 |
| | High | 1992.50 | 4.526 |
| PCS 1900 Band_ LTE 10 MHz AGC threshold | Low | 1935.00 | 9.011 |
| | Middle | 1960.00 | 9.016 |
| | High | 1990.00 | 9.016 |
| PCS 1900 Band_ LTE 10 MHz +3dBm above the AGC threshold | Low | 1935.00 | 9.001 |
| | Middle | 1960.00 | 9.022 |
| | High | 1990.00 | 9.015 |

| | Channel | Frequency (MHz) | OBW (MHz) |
|---|---|---|---|
| PCS 1900 Band_ UMTS AGC threshold | Low | 1932.50 | 4.166 |
| | Middle | 1962.50 | 4.176 |
| | High | 1992.50 | 4.175 |
| PCS 1900 Band_ UMTS +3dBm above the AGC threshold | Low | 1932.50 | 4.159 |
| | Middle | 1962.50 | 4.172 |
| | High | 1992.50 | 4.167 |
| PCS 1900 Band_ CDMA AGC threshold | Low | 1931.25 | 1.270 |
| | Middle | 1962.50 | 1.272 |
| | High | 1993.75 | 1.271 |
| PCS 1900 Band_ CDMA +3dBm above the AGC threshold | Low | 1931.25 | 1.270 |
| | Middle | 1962.50 | 1.268 |
| | High | 1993.75 | 1.267 |

| | Channel | Frequency (MHz) | OBW (MHz) |
|---|---|---|---|
| PCS 1900 Band_ GSM AGC threshold | Low | 1930.20 | 0.246 |
| | Middle | 1963.50 | 0.246 |
| | High | 1994.80 | 0.246 |
| PCS 1900 Band_ GSM +3dBm above the AGC threshold | Low | 1932.20 | 0.246 |
| | Middle | 1963.50 | 0.246 |
| | High | 1994.80 | 0.246 |

| | Channel | Frequency (MHz) | OBW (MHz) |
|---|---|---|---|
| WCS_ LTE 10MHz AGC threshold | Low | - | - |
| | Middle | 2355.00 | 8.982 |
| | High | - | - |
| WCS_ LTE 10MHz +3dBm above the AGC threshold | Low | - | - |
| | Middle | 2355.00 | 8.981 |
| | High | - | - |

**[Downlink Input]**

| | Channel | Frequency (MHz) | OBW (MHz) |
|---|---|---|---|
| 700 Band_ LTE 5 MHz AGC threshold | Low | 731.50 | 4.538 |
| | Middle | 742.50 | 4.530 |
| | High | 753.50 | 4.532 |
| 700 Band_ LTE 10 MHz AGC threshold | Low | 734.00 | 9.018 |
| | Middle | 741.00 | 9.019 |
| | High | 751.00 | 9.018 |

| | Channel | Frequency (MHz) | OBW (MHz) |
|---|---|---|---|
| SMR 800 ,850 Cellular Band_ LTE 5 MHz AGC threshold | Low | 864.50 | 4.540 |
| | Middle | 878.00 | 4.526 |
| | High | 891.50 | 4.540 |
| 850 Cellular Band_ LTE 10 MHz AGC threshold | Low | 874.00 | 9.028 |
| | Middle | - | |
| | High | 889.00 | 9.017 |

| | Channel | Frequency (MHz) | OBW (MHz) |
|---|---|---|---|
| 850 Cellular Band_ UMTS AGC threshold | Low | 871.50 | 4.168 |
| | Middle | 881.50 | 4.176 |
| | High | 891.50 | 4.173 |
| SMR 800 ,850 Cellular Band_ CDMA AGC threshold | Low | 863.25 | 1.269 |
| | Middle | 878.00 | 1.272 |
| | High | 892.75 | 1.271 |
| 850 Cellular Band_ GSM AGC threshold | Low | 869.20 | 0.246 |
| | Middle | 881.50 | 0.246 |
| | High | 893.80 | 0.246 |

| | Channel | Frequency (MHz) | OBW (MHz) |
|---|---|---|---|
| AWS 2100 Band_ LTE 5 MHz AGC threshold | Low | 2112.50 | 4.545 |
| | Middle | 2145.00 | 4.542 |
| | High | 2177.50 | 4.537 |
| AWS 2100 Band_ LTE 10 MHz AGC threshold | Low | 2115.00 | 9.013 |
| | Middle | 2145.00 | 9.020 |
| | High | 2175.00 | 9.017 |
| AWS 2100 Band_ LTE 15 MHz AGC threshold | Low | 2117.50 | 13.548 |
| | Middle | 2145.00 | 13.525 |
| | High | 2172.50 | 13.543 |
| AWS 2100 Band_ LTE 20 MHz AGC threshold | Low | 2120.00 | 17.982 |
| | Middle | 2145.00 | 17.982 |
| | High | 2170.00 | 17.987 |

| | Channel | Frequency (MHz) | OBW (MHz) |
|---|---|---|---|
| AWS 2100 Band_ UMTS AGC threshold | Low | 2112.50 | 4.171 |
| | Middle | 2145.00 | 4.172 |
| | High | 2177.50 | 4.165 |

| | Channel | Frequency (MHz) | OBW (MHz) |
|---|---|---|---|
| BRS_ LTE 20 MHz AGC threshold | Low | 2506.00 | 17.992 |
| | Middle | 2593.00 | 17.979 |
| | High | 2680.00 | 17.980 |

| | Channel | Frequency (MHz) | OBW (MHz) |
|---|---|---|---|
| PCS 1900 Band_ LTE 5 MHz AGC threshold | Low | 1932.50 | 4.532 |
| | Middle | 1962.50 | 4.538 |
| | High | 1992.50 | 4.544 |
| PCS 1900 Band_ LTE 10 MHz AGC threshold | Low | 1935.00 | 9.009 |
| | Middle | 1960.00 | 9.004 |
| | High | 1990.00 | 9.006 |

| | Channel | Frequency (MHz) | OBW (MHz) |
|---|---|---|---|
| PCS 1900 Band_ UMTS AGC threshold | Low | 1932.50 | 4.173 |
| | Middle | 1962.50 | 4.175 |
| | High | 1992.50 | 4.173 |
| PCS 1900 Band_ CDMA AGC threshold | Low | 1931.25 | 1.270 |
| | Middle | 1962.50 | 1.269 |
| | High | 1993.75 | 1.268 |
| PCS 1900 Band_ GSM AGC threshold | Low | 1930.20 | 0.246 |
| | Middle | 1963.50 | 0.246 |
| | High | 1994.80 | 0.246 |

| | Channel | Frequency (MHz) | OBW (MHz) |
|---|---|---|---|
| WCS_ LTE 10MHz AGC threshold | Low | - | - |
| | Middle | 2355.00 | 9.009 |
| | High | - | - |

**[Uplink Output]**

| | Channel | Frequency (MHz) | OBW (MHz) |
|---|---|---|---|
| 700 Band_ LTE 5 MHz AGC threshold | Low | 700.50 | 4.540 |
| | Middle | 707.00 | 4.545 |
| | High | 713.50 | 4.513 |
| 700 Band_ LTE 5 MHz +3dBm above the AGC threshold | Low | 700.50 | 4.542 |
| | Middle | 707.00 | 4.551 |
| | High | 713.50 | 4.525 |
| 700 Band_ LTE 10 MHz AGC threshold | Low | - | - |
| | Middle | 782.00 | 8.972 |
| | High | - | - |
| 700 Band_ LTE 10 MHz +3dBm above the AGC threshold | Low | - | - |
| | Middle | 782.00 | 8.979 |
| | High | - | - |

| | Channel | Frequency (MHz) | OBW (MHz) |
|---|---|---|---|
| SMR 800 ,850 Cellular Band_ LTE 5 MHz AGC threshold | Low | 819.50 | 4.526 |
| | Middle | 833.00 | 4.524 |
| | High | 846.50 | 4.539 |
| SMR 800 ,850 Cellular Band_ LTE 5 MHz +3dBm above the AGC threshold | Low | 819.50 | 4.552 |
| | Middle | 833.00 | 4.536 |
| | High | 846.50 | 4.534 |
| 850 Cellular Band_ LTE 10 MHz AGC threshold | Low | 829.00 | 8.989 |
| | Middle | - | |
| | High | 844.00 | 8.997 |
| 850 Cellular Band_ LTE 10 MHz +3dBm above the AGC threshold | Low | 829.00 | 9.002 |
| | Middle | - | |
| | High | 844.00 | 9.007 |

| | Channel | Frequency (MHz) | OBW (MHz) |
|---|---|---|---|
| 850 Cellular Band_ UMTS AGC threshold | Low | 826.50 | 4.172 |
| | Middle | 836.50 | 4.175 |
| | High | 846.50 | 4.169 |
| 850 Cellular Band_ UMTS +3dBm above the AGC threshold | Low | 826.50 | 4.167 |
| | Middle | 836.50 | 4.175 |
| | High | 846.50 | 4.168 |
| SMR 800 ,850 Cellular Band_ CDMA AGC threshold | Low | 818.25 | 1.270 |
| | Middle | 833.00 | 1.268 |
| | High | 847.75 | 1.269 |
| SMR 800 ,850 Cellular Band_ CDMA +3dBm above the AGC threshold | Low | 818.25 | 1.273 |
| | Middle | 833.00 | 1.272 |
| | High | 847.75 | 1.266 |

| | Channel | Frequency (MHz) | OBW (MHz) |
|---|---|---|---|
| 850 Cellular Band_ GSM AGC threshold | Low | 824.20 | 0.246 |
| | Middle | 836.50 | 0.594 |
| | High | 848.80 | 0.246 |
| 850 Cellular Band_ GSM +3dBm above the AGC threshold | Low | 824.20 | 0.246 |
| | Middle | 836.50 | 0.246 |
| | High | 848.80 | 0.246 |

| | Channel | Frequency (MHz) | OBW (MHz) |
|---|---|---|---|
| AWS 2100 Band_ LTE 5 MHz AGC threshold | Low | 1712.50 | 4.531 |
| | Middle | 1745.00 | 4.542 |
| | High | 1777.50 | 4.547 |
| AWS 2100 Band_ LTE 5 MHz +3dBm above the AGC threshold | Low | 1712.50 | 4.529 |
| | Middle | 1745.00 | 4.530 |
| | High | 1777.50 | 4.547 |
| AWS 2100 Band_ LTE 10 MHz AGC threshold | Low | 1715.00 | 9.008 |
| | Middle | 1745.00 | 9.022 |
| | High | 1775.00 | 9.010 |
| AWS 2100 Band_ LTE 10 MHz +3dBm above the AGC threshold | Low | 1715.00 | 9.010 |
| | Middle | 1745.00 | 9.020 |
| | High | 1775.00 | 9.011 |

| | Channel | Frequency (MHz) | OBW (MHz) |
|---|---|---|---|
| AWS 2100 Band_ LTE 15 MHz AGC threshold | Low | 1717.50 | 13.526 |
| | Middle | 1745.00 | 13.539 |
| | High | 1772.50 | 13.522 |
| AWS 2100 Band_ LTE 15 MHz +3dBm above the AGC threshold | Low | 1717.50 | 13.542 |
| | Middle | 1745.00 | 13.531 |
| | High | 1772.50 | 13.526 |
| AWS 2100 Band_ LTE 20 MHz AGC threshold | Low | 1720.00 | 17.963 |
| | Middle | 1745.00 | 17.982 |
| | High | 1770.00 | 17.960 |
| AWS 2100 Band_ LTE 20 MHz +3dBm above the AGC threshold | Low | 1720.00 | 17.970 |
| | Middle | 1745.00 | 17.988 |
| | High | 1770.00 | 17.960 |

| | Channel | Frequency (MHz) | OBW (MHz) |
|---|---|---|---|
| AWS 2100 Band_ UMTS AGC threshold | Low | 1712.50 | 4.165 |
| | Middle | 1745.00 | 4.165 |
| | High | 1777.50 | 4.174 |
| AWS 2100 Band_ UMTS +3dBm above the AGC threshold | Low | 1712.50 | 4.167 |
| | Middle | 1745.00 | 4.178 |
| | High | 1777.50 | 4.169 |

| | Channel | Frequency (MHz) | OBW (MHz) |
|---|---|---|---|
| BRS_ LTE 20 MHz AGC threshold | Low | 2506.00 | 17.964 |
| | Middle | 2593.00 | 17.977 |
| | High | 2680.00 | 17.974 |
| BRS_ LTE 20 MHz +3dBm above the AGC threshold | Low | 2506.00 | 17.964 |
| | Middle | 2593.00 | 17.986 |
| | High | 2680.00 | 17.967 |

| | Channel | Frequency (MHz) | OBW (MHz) |
|---|---|---|---|
| PCS 1900 Band_ LTE 5 MHz AGC threshold | Low | 1852.50 | 4.510 |
| | Middle | 1882.50 | 4.510 |
| | High | 1912.50 | 4.514 |
| PCS 1900 Band_ LTE 5 MHz +3dBm above the AGC threshold | Low | 1852.50 | 4.511 |
| | Middle | 1882.50 | 4.517 |
| | High | 1912.50 | 4.512 |
| PCS 1900 Band_ LTE 10 MHz AGC threshold | Low | 1855.00 | 9.010 |
| | Middle | 1882.50 | 9.015 |
| | High | 1910.00 | 8.992 |
| PCS 1900 Band_ LTE 10 MHz +3dBm above the AGC threshold | Low | 1855.00 | 9.002 |
| | Middle | 1882.50 | 9.015 |
| | High | 1910.00 | 9.011 |

| | Channel | Frequency (MHz) | OBW (MHz) |
|---|---|---|---|
| PCS 1900 Band_ UMTS AGC threshold | Low | 1852.50 | 4.167 |
| | Middle | 1882.50 | 4.176 |
| | High | 1912.50 | 4.179 |
| PCS 1900 Band_ UMTS +3dBm above the AGC threshold | Low | 1852.50 | 4.168 |
| | Middle | 1882.50 | 4.165 |
| | High | 1912.50 | 4.174 |
| PCS 1900 Band_ CDMA AGC threshold | Low | 1851.25 | 1.270 |
| | Middle | 1882.50 | 1.272 |
| | High | 1913.75 | 1.275 |
| PCS 1900 Band_ CDMA +3dBm above the AGC threshold | Low | 1851.25 | 1.272 |
| | Middle | 1882.50 | 1.271 |
| | High | 1913.75 | 1.267 |

| | Channel | Frequency (MHz) | OBW (MHz) |
|---|---|---|---|
| PCS 1900 Band_ GSM AGC threshold | Low | 1850.20 | 0.246 |
| | Middle | 1882.50 | 0.246 |
| | High | 1914.80 | 0.246 |
| PCS 1900 Band_ GSM +3dBm above the AGC threshold | Low | 1850.20 | 0.246 |
| | Middle | 1882.50 | 0.246 |
| | High | 1914.80 | 0.246 |

| | Channel | Frequency (MHz) | OBW (MHz) |
|---|---|---|---|
| WCS_ LTE 10MHz AGC threshold | Low | - | - |
| | Middle | 2310.00 | 9.012 |
| | High | - | - |
| WCS_ LTE 10MHz +3dBm above the AGC threshold | Low | - | - |
| | Middle | 2310.00 | 9.010 |
| | High | - | - |

**[Uplink Input]**

| | Channel | Frequency (MHz) | OBW (MHz) |
|---|---|---|---|
| 700 Band_ LTE 5 MHz AGC threshold | Low | 700.50 | 4.532 |
| | Middle | 707.00 | 4.542 |
| | High | 713.50 | 4.541 |
| 700 Band_ LTE 10 MHz AGC threshold | Low | - | - |
| | Middle | 782.00 | 9.004 |
| | High | - | - |

| | Channel | Frequency (MHz) | OBW (MHz) |
|---|---|---|---|
| SMR 800 ,850 Cellular Band_ LTE 5 MHz AGC threshold | Low | 819.50 | 4.535 |
| | Middle | 833.00 | 4.547 |
| | High | 846.50 | 4.537 |
| 850 Cellular Band_ LTE 10 MHz AGC threshold | Low | 829.00 | 9.012 |
| | Middle | - | |
| | High | 844.00 | 9.018 |

| | Channel | Frequency (MHz) | OBW (MHz) |
|---|---|---|---|
| 850 Cellular Band_ UMTS AGC threshold | Low | 826.50 | 4.169 |
| | Middle | 836.50 | 4.172 |
| | High | 846.50 | 4.174 |
| SMR 800 ,850 Cellular Band_ CDMA AGC threshold | Low | 818.25 | 1.265 |
| | Middle | 833.00 | 1.268 |
| | High | 847.75 | 1.273 |
| 850 Cellular Band_ GSM AGC threshold | Low | 824.20 | 0.247 |
| | Middle | 836.50 | 0.248 |
| | High | 848.80 | 0.247 |

| | Channel | Frequency (MHz) | OBW (MHz) |
|---|---|---|---|
| AWS 2100 Band_ LTE 5 MHz AGC threshold | Low | 1712.50 | 4.547 |
| | Middle | 1745.00 | 4.531 |
| | High | 1777.50 | 4.516 |
| AWS 2100 Band_ LTE 10 MHz AGC threshold | Low | 1715.00 | 9.021 |
| | Middle | 1745.00 | 9.014 |
| | High | 1775.00 | 9.018 |
| AWS 2100 Band_ LTE 15 MHz AGC threshold | Low | 1717.50 | 13.525 |
| | Middle | 1745.00 | 13.546 |
| | High | 1772.50 | 13.543 |
| AWS 2100 Band_ LTE 20 MHz AGC threshold | Low | 1720.00 | 17.991 |
| | Middle | 1745.00 | 17.993 |
| | High | 1770.00 | 17.996 |

| | Channel | Frequency (MHz) | OBW (MHz) |
|---|---|---|---|
| AWS 2100 Band_ UMTS AGC threshold | Low | 1712.50 | 4.179 |
| | Middle | 1745.00 | 4.177 |
| | High | 1777.50 | 4.178 |

| | Channel | Frequency (MHz) | OBW (MHz) |
|---|---|---|---|
| BRS_ LTE 20 MHz AGC threshold | Low | 2506.00 | 17.989 |
| | Middle | 2593.00 | 17.992 |
| | High | 2680.00 | 17.980 |

| | Channel | Frequency (MHz) | OBW (MHz) |
|---|---|---|---|
| PCS 1900 Band_ LTE 5 MHz AGC threshold | Low | 1852.50 | 4.513 |
| | Middle | 1882.50 | 4.507 |
| | High | 1912.50 | 4.512 |
| PCS 1900 Band_ LTE 10 MHz AGC threshold | Low | 1855.00 | 9.021 |
| | Middle | 1882.50 | 9.012 |
| | High | 1910.00 | 9.016 |

| | Channel | Frequency (MHz) | OBW (MHz) |
|---|---|---|---|
| PCS 1900 Band_ UMTS AGC threshold | Low | 1852.50 | 4.169 |
| | Middle | 1882.50 | 4.173 |
| | High | 1912.50 | 4.175 |
| PCS 1900 Band_ CDMA AGC threshold | Low | 1851.25 | 1.268 |
| | Middle | 1882.50 | 1.275 |
| | High | 1913.75 | 1.267 |
| PCS 1900 Band_ GSM AGC threshold | Low | 1850.20 | 0.246 |
| | Middle | 1882.50 | 0.246 |
| | High | 1914.80 | 0.247 |

| | Channel | Frequency (MHz) | OBW (MHz) |
|---|---|---|---|
| WCS_ LTE 10MHz AGC threshold | Low | - | - |
| | Middle | 2310.00 | 9.021 |
| | High | - | - |

## Plots of Occupied Bandwidth
## 700 MHz Band_LTE 5MHz DL_Output

**[700 Band AGC threshold Downlink Output LTE 5 MHz Low]**

**[700 Band AGC threshold Downlink Output LTE 5 MHz Mid]**

**[700 Band AGC threshold Downlink Output LTE 5 MHz High]**

**[700 Band +3dBm above the AGC threshold Downlink Output LTE 5 MHz Low]**

**[700 Band +3dBm above the AGC threshold Downlink Output LTE 5 MHz Mid]**

**[700 Band +3dBm above the AGC threshold Downlink Output LTE 5 MHz High]**

## 700 MHz Band_LTE 10MHz DL_Output

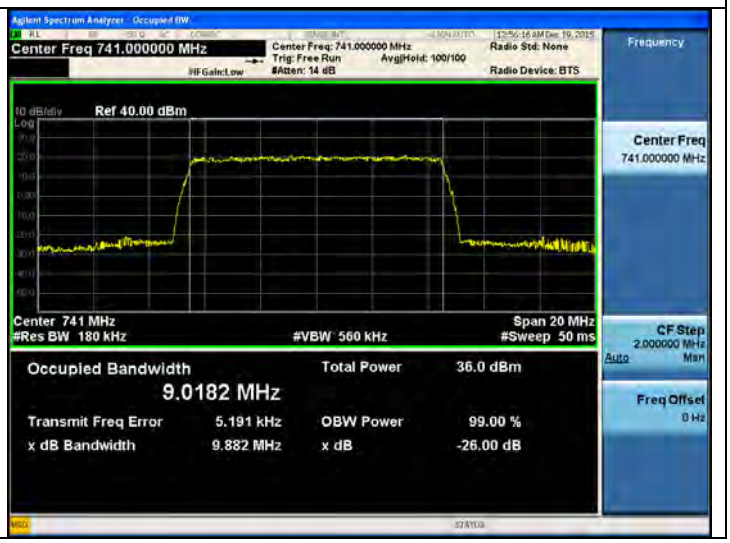
**[700 Band AGC threshold Downlink Output LTE 10 MHz Low]**

**[700 Band AGC threshold Downlink Output LTE 10 MHz Mid]**

**[700 Band AGC threshold Downlink Output LTE 10 MHz High]**

**[700 Band +3dBm above the AGC threshold Downlink Output LTE 10 MHz Low]**

**[700 Band +3dBm above the AGC threshold Downlink Output LTE 10 MHz Mid]**




**[700 Band +3dBm above the AGC threshold Downlink Output LTE 10 MHz High]**

## SMR 800,850 Cellular Band_LTE 5 MHz DL_Output

**[SMR 800,850 Cellular Band AGC threshold Downlink Output LTE 5 MHz Low]**

**[SMR 800,850 Cellular Band AGC threshold Downlink Output LTE 5 MHz Mid]**

**[SMR 800,850 Cellular Band AGC threshold Downlink Output LTE 5 MHz High]**

**[SMR 800,850 Cellular Band +3dBm above the AGC threshold Downlink Output LTE 5 MHz Low]**

**SMR 800,850 Cellular Band +3dBm above the AGC threshold Downlink Output LTE 5 MHz Mid]**

**[SMR 800,850 Cellular Band +3dBm above the AGC threshold Downlink Output LTE 5 MHz High]**

## 850 Cellular Band_LTE 10 MHz DL_Output

| [850 Cellular Band AGC threshold Downlink Output LTE 10 MHz Low] | [850 Cellular Band AGC threshold Downlink Output LTE 10 MHz High] |
|---|---|
| | |
| **[850 Cellular Band +3dBm above the AGC threshold Downlink Output LTE 10 MHz Low]** | **[850 Cellular Band +3dBm above the AGC threshold Downlink Output LTE 10 MHz High]** |
| | |

## 850 Cellular Band_UMTS DL_Output

**[850 Cellular Band AGC threshold Downlink Output UMTS Low]**

**[850 Cellular Band AGC threshold Downlink Output UMTS Mid]**

**[850 Cellular Band AGC threshold Downlink Output UMTS High]**