

# TEST REPORT

Reference No..... : WTS20X08052413W-1  
FCC ID ..... : 2ADYY-KE5K  
Applicant ..... : TECNO MOBILE LIMITED  
Address ..... : ROOM 604 6/F SOUTH TOWER WORLD FINANCE CTR HARBOUR CITY  
17 CANTON ROAD TST KL  
Product Name ..... : Mobile Phone  
Test Model. .... : KE5k  
Standards ..... : FCC Part 22H, FCC Part 24E, FCC Part 27  
Date of Receipt sample .... : Aug.04, 2020  
Date of Test..... : Aug.04, 2020 to Aug.18, 2020  
Date of Issue ..... : Aug.18, 2020  
Test Result..... : Pass

Remarks:

The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

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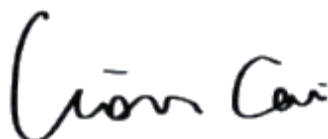
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**Report version**

| Version No. | Date of issue | Description |
|-------------|---------------|-------------|
| Rev.00      | Aug.18, 2020  | Original    |
| /           | /             | /           |

## 1. GENERAL INFORMATION

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### 1.1 Product Description for Equipment Under Test (EUT)

#### Client Information

Applicant: TECNO MOBILE LIMITED  
Address of applicant: ROOM 604 6/F SOUTH TOWER WORLD FINANCE CTR  
HARBOUR CITY 17 CANTON ROAD TST KL

Manufacturer: SHENZHEN TECNO TECHNOLOGY CO.,LTD.  
Address of manufacturer: 101,Building 24,Waijing Industrial Park,Fumin Community,  
Fucheng Street,Longhua District,Shenzhen City,P.R.China

| General Description of EUT:                                                            |                                                                      |
|----------------------------------------------------------------------------------------|----------------------------------------------------------------------|
| Product Name:                                                                          | Mobile Phone                                                         |
| Trade Name:                                                                            | TECNO T                                                              |
| Model No.:                                                                             | KE5k                                                                 |
| Adding Model(s):                                                                       | /                                                                    |
| Rated Voltage:                                                                         | DC 3.85V                                                             |
| Battery:                                                                               | 4900mAh                                                              |
| Adapter Model:                                                                         | U100TSA<br>Input: AC100-240V,~50/60Hz, 0.3A;<br>Output: DC5.0V, 2.0A |
| Software Version:                                                                      | /                                                                    |
| Hardware Version:                                                                      | /                                                                    |
| Note: The test data is gathered from a production sample provided by the manufacturer. |                                                                      |

| <b>Technical Characteristics of EUT:</b> |                                                                                      |
|------------------------------------------|--------------------------------------------------------------------------------------|
| <b>2G</b>                                |                                                                                      |
| Support Networks:                        | GSM, GPRS, EDGE                                                                      |
| Support Band:                            | GSM850/PCS1900                                                                       |
| Uplink Frequency:                        | GSM/GPRS/EDGE 850: 824~849MHz<br>GSM/GPRS/EDGE 1900: 1850~1910MHz                    |
| Downlink Frequency:                      | GSM/GPRS/EDGE 850: 869~894MHz<br>GSM/GPRS/EDGE 1900: 1930~1990MHz                    |
| Max RF Output Power:                     | GSM850: 32.85dBm, GSM1900: 30.01dBm<br>EDGE850: 26.65dBm, EDGE1900: 26.56dBm         |
| Type of Emission:                        | GSM850: 255KGXW, GSM1900: 253KGXW<br>EDGE850: 257KG7W, EDGE1900: 249KG7W             |
| Type of Modulation:                      | GMSK, 8PSK                                                                           |
| Type of Antenna:                         | Integral Antenna                                                                     |
| Antenna Gain:                            | GSM850: -3.38dBi; GSM1900: -0.76dBi                                                  |
| GPRS/EDGE Class:                         | Class 12                                                                             |
| <b>3G</b>                                |                                                                                      |
| Support Networks:                        | WCDMA, HSDPA, HSUPA                                                                  |
| Support Band:                            | WCDMA Band 2, WCDMA Band 4, WCDMA Band 5                                             |
| Uplink Frequency:                        | WCDMA Band 2: 1850~1910MHz<br>WCDMA Band 4: 1710~1755MHz<br>WCDMA Band 5: 824~849MHz |
| Downlink Frequency:                      | WCDMA Band 2: 1930~1990MHz<br>WCDMA Band 4: 2110~2155MHz<br>WCDMA Band 5: 869~894MHz |
| RF Output Power:                         | WCDMA Band 2: 22.99dBm,<br>WCDMA Band 4: 22.98dBm<br>WCDMA Band 5: 23.10dBm          |
| Type of Emission:                        | WCDMA Band 2: 4M20F9W<br>WCDMA Band 4: 4M19F9W<br>WCDMA Band 5: 4M19F9W              |
| Type of Modulation:                      | BPSK                                                                                 |
| Antenna Type:                            | Integral Antenna                                                                     |
| Antenna Gain:                            | WCDMA Band 2: -0.76dBi,<br>WCDMA Band 4: -0.32dBi,<br>WCDMA Band 5: -3.38dBi         |

## 1.2 Test Standards

The tests were performed according to following standards:

**FCC Rules Part 2:** FREQUENCY ALLOCATIONS AND RADIO TREATY MATTERS; GENERAL RULES AND REGULATIONS.

**FCC Rules Part 22:** PRIVATE LAND MOBILE RADIO SERVICES.

**FCC Rules Part 24:** PUBLIC MOBILE SERVICES.

**FCC Rules Part 27:** MISCELLANEOUS WIRELESS COMMUNICATIONS SERVICES.

**TIA/EIA 603 E March 2016:** Land Mobile FM or PM Communications Equipment Measurement and Performance Standards.

**ANSI C63.26-2015:** American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services

**KDB 971168 D01 Power Meas License Digital Systems v03r01:** MEASUREMENT GUIDANCE FOR CERTIFICATION OF LICENSED DIGITAL TRANSMITTERS.

**Maintenance of compliance** is the responsibility of the manufacturer. Any modification of the product, which result in lowering the emission, should be checked to ensure compliance has been maintained.

## 1.3 Test Methodology

All measurements contained in this report were conducted with TIA/EIA 603 E/ KDB 971168/ ANSI C63.26. The equipment under test (EUT) was configured to measure its highest possible emission level. The test modes were adapted accordingly in reference to the Operating Instructions.

## 1.4 Test Facility

### Address of the test laboratory

Laboratory: Waltek Testing Group (Shenzhen) Co., Ltd.

Address: 1/F., Room 101, Building 1, Hongwei Industrial Park, Liuxian 2nd Road, Block 70 Bao'an District, Shenzhen, Guangdong, China

### FCC – Registration No.: 125990

Waltek Testing Group (Shenzhen) Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files. The Designation Number is CN5010, and Test Firm Registration Number is 125990.

### Industry Canada (IC) Registration No.: 11464A

The 3m Semi-anechoic chamber of Waltek Testing Group (Shenzhen) Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 11464A.

## 1.5 EUT Setup and Test Mode

The EUT was operated in the engineering mode to fix the Tx frequency that was for the purpose of the measurements. All testing shall be performed under maximum output power condition, and to measure its highest possible emissions level, more detailed description as follows:

| Test Mode List |              |                            |
|----------------|--------------|----------------------------|
| Test Mode      | Description  | Remark                     |
| TM1            | GSM 850      | Low, Middle, High Channels |
| TM2            | GPRS 850     | Low, Middle, High Channels |
| TM3            | EDGE 850     | Low, Middle, High Channels |
| TM4            | GSM 1900     | Low, Middle, High Channels |
| TM5            | GPRS 1900    | Low, Middle, High Channels |
| TM6            | EDGE 1900    | Low, Middle, High Channels |
| TM7            | WCDMA Band 5 | Low, Middle, High Channels |
| TM8            | HSDPA Band 5 | Low, Middle, High Channels |
| TM9            | HSUPA Band 5 | Low, Middle, High Channels |
| TM10           | WCDMA Band 4 | Low, Middle, High Channels |
| TM11           | HSDPA Band 4 | Low, Middle, High Channels |
| TM12           | HSUPA Band 4 | Low, Middle, High Channels |
| TM13           | WCDMA Band 2 | Low, Middle, High Channels |
| TM14           | HSDPA Band 2 | Low, Middle, High Channels |
| TM15           | HSUPA Band 2 | Low, Middle, High Channels |

| Testing Configure                                                                                                                                   |                   |                   |                |
|-----------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-------------------|----------------|
| Support Band                                                                                                                                        | Support Standard  | Channel Frequency | Channel Number |
| GSM 850                                                                                                                                             | GSM/GPRS/EDGE     | 824.2 MHz         | 128            |
|                                                                                                                                                     |                   | 836.6 MHz         | 190            |
|                                                                                                                                                     |                   | 848.8 MHz         | 251            |
| PCS 1900                                                                                                                                            | GSM/GPRS/EDGE     | 1850.2 MHz        | 512            |
|                                                                                                                                                     |                   | 1880.0 MHz        | 661            |
|                                                                                                                                                     |                   | 1909.8 MHz        | 810            |
| WCDMA Band 5                                                                                                                                        | WCDMA/HSDPA/HSUPA | 826.4 MHz         | 4132           |
|                                                                                                                                                     |                   | 836.6 MHz         | 4183           |
|                                                                                                                                                     |                   | 846.6 MHz         | 4233           |
| WCDMA Band 4                                                                                                                                        | WCDMA/HSDPA/HSUPA | 1712.4 MHz        | 1312           |
|                                                                                                                                                     |                   | 1732.4 MHz        | 1412           |
|                                                                                                                                                     |                   | 1752.6 MHz        | 1513           |
| WCDMA Band 2                                                                                                                                        | WCDMA/HSDPA/HSUPA | 1852.4 MHz        | 9262           |
|                                                                                                                                                     |                   | 1880.0 MHz        | 9400           |
|                                                                                                                                                     |                   | 1907.6 MHz        | 9538           |
| Note: the transmitter has been tested on the communications mode of GSM, GPRS, EDGE, WCDMA, HSDPA, HSUPA compliance test and record the worst case. |                   |                   |                |

| Test Conditions    |           |
|--------------------|-----------|
| Temperature:       | 22~25 °C  |
| Relative Humidity: | 50~55 %.  |
| ATM Pressure:      | 1019 mbar |

| EUT Cable List and Details |            |                     |                        |
|----------------------------|------------|---------------------|------------------------|
| Cable Description          | Length (m) | Shielded/Unshielded | With / Without Ferrite |
| USB Cable                  | 1.0        | Shielded            | Without Ferrite        |
| Earphone Cable             | 1.2        | Unshielded          | Without Ferrite        |

| Auxiliary Equipment List and Details |              |       |               |
|--------------------------------------|--------------|-------|---------------|
| Description                          | Manufacturer | Model | Serial Number |
| Notebook                             | Lenovo       | E40   | /             |

## 1.6 Measurement Uncertainty

| Measurement uncertainty        |            |                               |
|--------------------------------|------------|-------------------------------|
| Parameter                      | Conditions | Uncertainty                   |
| RF Output Power                | Conducted  | $\pm 0.42\text{dB}$           |
| Occupied Bandwidth             | Conducted  | $\pm 1.5\%$                   |
| Frequency Stability            | Conducted  | 2.3%                          |
| Transmitter Spurious Emissions | Conducted  | $\pm 0.42\text{dB}$           |
| Transmitter Spurious Emissions | Radiated   | 30-200MHz $\pm 4.52\text{dB}$ |
|                                |            | 0.2-1GHz $\pm 5.56\text{dB}$  |
|                                |            | 1-6GHz $\pm 3.84\text{dB}$    |
|                                |            | 6-18GHz $\pm 3.92\text{dB}$   |



**1.7 Test Equipment List and Details**

| No.       | Description             | Manufacturer           | Model                 | Serial No.  | Cal Date   | Due. Date  |
|-----------|-------------------------|------------------------|-----------------------|-------------|------------|------------|
| SEMT-1075 | Communication Tester    | Rohde & Schwarz        | CMW500                | 148650      | 2020-04-28 | 2021-04-27 |
| SEMT-1063 | GSM Tester              | Rohde & Schwarz        | CMU200                | 114403      | 2020-04-28 | 2021-04-27 |
| SEMT-1072 | Spectrum Analyzer       | Agilent                | E4407B                | MY41440400  | 2020-04-28 | 2021-04-27 |
| SEMT-1079 | Spectrum Analyzer       | Agilent                | N9020A                | US47140102  | 2020-04-28 | 2021-04-27 |
| SEMT-1080 | Signal Generator        | Agilent                | 83752A                | 3610A01453  | 2020-04-28 | 2021-04-27 |
| SEMT-1081 | Vector Signal Generator | Agilent                | N5182A                | MY47070202  | 2020-04-28 | 2021-04-27 |
| SEMT-1028 | Power Divider           | Weinschel              | 1506A                 | PM204       | 2020-04-28 | 2021-04-27 |
| SEMT-1082 | Power Divider           | RF-Lambda              | RFLT4W5M18G           | 14110400027 | 2020-04-28 | 2021-04-27 |
| SEMT-1031 | Spectrum Analyzer       | Rohde & Schwarz        | FSP30                 | 836079/035  | 2020-04-28 | 2021-04-27 |
| SEMT-1007 | EMI Test Receiver       | Rohde & Schwarz        | ESVB                  | 825471/005  | 2020-04-28 | 2021-04-27 |
| SEMT-1008 | Amplifier               | Agilent                | 8447F                 | 3113A06717  | 2020-04-28 | 2021-04-27 |
| SEMT-1043 | Amplifier               | C&D                    | PAP-1G18              | 2002        | 2020-04-28 | 2021-04-27 |
| SEMT-1069 | Loop Antenna            | Schwarz beck           | FMZB 1516             | 9773        | 2019-05-05 | 2021-05-04 |
| SEMT-1068 | Broadband Antenna       | Schwarz beck           | VULB9163              | 9163-333    | 2019-05-05 | 2021-05-04 |
| SEMT-1042 | Horn Antenna            | ETS                    | 3117                  | 00086197    | 2019-05-05 | 2021-05-04 |
| SEMT-1121 | Horn Antenna            | Schwarzbeck            | BBHA 9170             | BBHA9170582 | 2019-05-05 | 2021-05-04 |
| SEMT-1168 | Pre-amplifier           | Direction Systems Inc. | PAP-0126              | 14141-12838 | 2020-04-28 | 2021-04-27 |
| SEMT-1169 | Pre-amplifier           | Direction Systems Inc. | PAP-2640              | 14145-14153 | 2020-04-28 | 2021-04-27 |
| SEMT-1163 | Spectrum Analyzer       | Rohde & Schwarz        | FSP40                 | 100612      | 2020-04-28 | 2021-04-27 |
| SEMT-1170 | DRG Horn Antenna        | A.H. SYSTEMS           | SAS-574               | 571         | 2019-05-05 | 2021-05-04 |
| SEMT-1166 | Power Limiter           | Agilent                | N9356B                | MY45450376  | 2020-04-28 | 2021-04-27 |
| SEMT-1048 | RF Limiter              | ATTEN                  | AT-BSF-2400~2500      | /           | 2020-04-28 | 2021-04-27 |
| SEMT-1076 | RF Switcher             | Top Precision          | RCS03-A2              | /           | 2020-04-28 | 2021-04-27 |
| SEMT-C001 | Cable                   | Zheng DI               | LL142-07-07-10M(A)    | /           | 2020-03-17 | 2021-03-16 |
| SEMT-C002 | Cable                   | Zheng DI               | ZT40-2.92J-2.92J-6M   | /           | 2020-03-17 | 2021-03-16 |
| SEMT-C003 | Cable                   | Zheng DI               | ZT40-2.92J-2.92J-2.5M | /           | 2020-03-17 | 2021-03-16 |
| SEMT-C004 | Cable                   | Zheng DI               | 2M0RFC                | /           | 2020-03-17 | 2021-03-16 |

|           |       |          |        |   |            |            |
|-----------|-------|----------|--------|---|------------|------------|
| SEMT-C005 | Cable | Zheng DI | 1M0RFC | / | 2020-03-17 | 2021-03-16 |
| SEMT-C006 | Cable | Zheng DI | 1M0RFC | / | 2020-03-17 | 2021-03-16 |

| Software List                             |              |        |         |
|-------------------------------------------|--------------|--------|---------|
| Description                               | Manufacturer | Model  | Version |
| EMI Test Software<br>(Radiated Emission)* | Farad        | EZ-EMC | RA-03A1 |

\*Remark: indicates software version used in the compliance certification testing

## 2. SUMMARY OF TEST RESULTS

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| FCC Rules                         | Description of Test Item                   | Result    |
|-----------------------------------|--------------------------------------------|-----------|
| §1.1307, §2.1093                  | RF Exposure                                | Compliant |
| §22.913(a), §24.232(c), §27.50(d) | RF Output Power                            | Compliant |
| §24.51, §27.50                    | Peak-to-average Ratio (PAR) of Transmitter | Compliant |
| §22.917(b), §24.238(b), §27.53    | Emission Bandwidth                         | Compliant |
| §22.917(a), §24.238(a), §27.53(h) | Spurious Emissions at Antenna Terminal     | Compliant |
| §22.917(a), §24.238(a), §27.53(h) | Spurious Radiation Emissions               | Compliant |
| §22.917(a), §24.238(a), §27.53(h) | Out of Band Emissions                      | Compliant |
| §22.355, §24.235, §27.54          | Frequency Stability                        | Compliant |

### **3. RF Exposure**

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#### **3.1 Standard Applicable**

According to §1.1307 and §2.1093, the portable transmitter must comply the RF exposure requirements.

#### **3.2 Test Result**

This product complied with the requirement of the RF exposure, please see the SAR report.

## 4. RF Output Power

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### 4.1 Standard Applicable

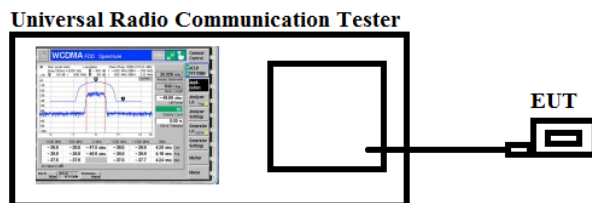
According to §22.913(a)(2), the ERP of mobile and portable stations transmitters and auxiliary test transmitters must not exceed 7 Watts.

According to §24.232(c), mobile and portable stations are limited to 2 watts EIRP and the equipment must employ a means for limiting power to the minimum necessary for successful communications.

According to §27.50(d)(4), fixed, mobile, and portable (hand-held) stations operating in the 1710-1755 MHz band and mobile and portable stations operating in the 1695-1710 MHz and 1755-1780 MHz bands are limited to 1 watt EIRP.

### 4.2 Test Procedure

- Conducted output power test method:



- Radiated power test method:

1. The setup of EUT is according with per ANSI/TIA Standard 603E and ANSI C63.26 measurement procedure.
2. 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.
3. The frequency range up to tenth harmonic of the fundamental frequency was investigated.
4. 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.

### 4.3 Summary of Test Results/Plots

➤ **Max. Radiated Power**

| Mode     | Channel | Antenna Polar | ERP (dBm) | Limit (dBm) | Result |
|----------|---------|---------------|-----------|-------------|--------|
| GSM850   | 128     | V             | 30.15     | <38.45      | Pass   |
|          |         | H             | 26.36     |             |        |
|          | 190     | V             | 30.47     |             |        |
|          |         | H             | 26.12     |             |        |
|          | 251     | V             | 30.43     |             |        |
|          |         | H             | 26.09     |             |        |
| GPRS850  | 128     | V             | 30.29     | <38.45      | Pass   |
|          |         | H             | 26.04     |             |        |
|          | 190     | V             | 30.11     |             |        |
|          |         | H             | 26.19     |             |        |
|          | 251     | V             | 30.69     |             |        |
|          |         | H             | 26.43     |             |        |
| EGPRS850 | 128     | V             | 24.16     | <38.45      | Pass   |
|          |         | H             | 20.29     |             |        |
|          | 190     | V             | 24.31     |             |        |
|          |         | H             | 20.47     |             |        |
|          | 251     | V             | 24.11     |             |        |
|          |         | H             | 20.03     |             |        |

| Mode      | Channel | Antenna Polar | EIRP (dBm) | Limit (dBm) | Result |
|-----------|---------|---------------|------------|-------------|--------|
| PCS1900   | 512     | V             | 28.21      | <33.00      | Pass   |
|           |         | H             | 24.13      |             |        |
|           | 661     | V             | 28.10      |             |        |
|           |         | H             | 24.39      |             |        |
|           | 810     | V             | 28.15      |             |        |
|           |         | H             | 24.11      |             |        |
| GPRS1900  | 512     | V             | 28.74      | <33.00      | Pass   |
|           |         | H             | 23.96      |             |        |
|           | 661     | V             | 28.42      |             |        |
|           |         | H             | 24.14      |             |        |
|           | 810     | V             | 28.39      |             |        |
|           |         | H             | 24.05      |             |        |
| EGPRS1900 | 512     | V             | 24.12      | <33.00      | Pass   |
|           |         | H             | 19.42      |             |        |
|           | 661     | V             | 24.06      |             |        |
|           |         | H             | 19.42      |             |        |
|           | 810     | V             | 24.36      |             |        |
|           |         | H             | 19.39      |             |        |

| Mode         | Channel | Antenna Polar | ERP   | Limit (dBm) | Result |
|--------------|---------|---------------|-------|-------------|--------|
| WCDMA Band V | 4132    | V             | 20.46 | <38.45      | Pass   |
|              |         | H             | 15.39 |             |        |
|              | 4183    | V             | 20.48 |             |        |
|              |         | H             | 15.02 |             |        |
|              | 4233    | V             | 20.69 |             |        |
|              |         | H             | 15.13 |             |        |

| Mode          | Channel | Antenna Polar | EIRP  | Limit (dBm) | Result |
|---------------|---------|---------------|-------|-------------|--------|
| WCDMA Band IV | 1312    | V             | 20.12 | <30.00      | Pass   |
|               |         | H             | 15.47 |             |        |
|               | 1412    | V             | 20.39 |             |        |
|               |         | H             | 15.25 |             |        |
|               | 1513    | V             | 20.12 |             |        |
|               |         | H             | 15.17 |             |        |

| Mode          | Channel | Antenna Polar | EIRP  | Limit (dBm) | Result |
|---------------|---------|---------------|-------|-------------|--------|
| WCDMA Band II | 9262    | V             | 20.39 | <33.00      | Pass   |
|               |         | H             | 14.02 |             |        |
|               | 9400    | V             | 20.31 |             |        |
|               |         | H             | 14.11 |             |        |
|               | 9538    | V             | 20.43 |             |        |
|               |         | H             | 14.05 |             |        |

Note: Pre-scan mode WCDMA/HSDPA/HSUPA find the worst case at WCDMA mode and recorded in the test report.



➤ **Max. Conducted Power (Average power)**

| Conducted Average power (dBm) |        |        |        |         |         |         |
|-------------------------------|--------|--------|--------|---------|---------|---------|
| Band                          | GSM850 |        |        | PCS1900 |         |         |
| Channel                       | 128    | 190    | 251    | 512     | 661     | 810     |
| Frequency(MHz)                | 824.20 | 836.60 | 848.80 | 1850.20 | 1880.00 | 1909.80 |
| GSM                           | 32.78  | 32.85  | 32.84  | 30.00   | 29.85   | 29.84   |
| GPRS(1Slot)                   | 32.79  | 32.83  | 32.85  | 30.01   | 29.87   | 29.87   |
| EGPRS(1Slot)                  | 26.53  | 26.65  | 26.52  | 26.56   | 26.40   | 26.05   |

| Conducted Average power (dBm) |              |       |       |               |        |        |
|-------------------------------|--------------|-------|-------|---------------|--------|--------|
| Band                          | WCDMA Band V |       |       | WCDMA Band II |        |        |
| Channel                       | 4132         | 4183  | 4233  | 9262          | 9400   | 9538   |
| Frequency(MHz)                | 826.4        | 836.6 | 846.6 | 1852.4        | 1880.0 | 1907.6 |
| RMC 12.2k                     | 22.96        | 23.10 | 22.97 | 22.96         | 22.96  | 22.99  |
| HSDPA Subtest-1               | 21.91        | 22.03 | 22.00 | 21.96         | 22.00  | 21.99  |
| HSDPA Subtest-2               | 21.87        | 22.01 | 21.96 | 21.95         | 21.96  | 21.95  |
| HSDPA Subtest-3               | 21.89        | 22.02 | 21.98 | 21.93         | 21.97  | 21.95  |
| HSDPA Subtest-4               | 21.87        | 22.01 | 21.97 | 21.92         | 21.98  | 21.94  |
| HSUPA Subtest-1               | 21.73        | 21.97 | 21.89 | 21.90         | 22.00  | 21.92  |
| HSUPA Subtest-2               | 21.71        | 21.95 | 21.85 | 21.87         | 21.95  | 21.91  |
| HSUPA Subtest-3               | 21.72        | 21.96 | 21.86 | 21.85         | 21.97  | 21.89  |
| HSUPA Subtest-4               | 21.71        | 21.95 | 21.85 | 21.86         | 21.98  | 21.87  |
| HSUPA Subtest-5               | 21.71        | 21.95 | 21.86 | 21.87         | 21.97  | 21.86  |

| Conducted Average power (dBm) |               |        |        |  |  |  |
|-------------------------------|---------------|--------|--------|--|--|--|
| Band                          | WCDMA Band IV |        |        |  |  |  |
| Channel                       | 1312          | 1412   | 1513   |  |  |  |
| Frequency(MHz)                | 1712.4        | 1733.4 | 1752.6 |  |  |  |
| RMC 12.2k                     | 22.98         | 22.87  | 22.80  |  |  |  |
| HSDPA Subtest-1               | 22.00         | 21.87  | 21.80  |  |  |  |
| HSDPA Subtest-2               | 21.96         | 21.85  | 21.78  |  |  |  |
| HSDPA Subtest-3               | 21.97         | 21.85  | 21.79  |  |  |  |
| HSDPA Subtest-4               | 21.98         | 21.84  | 21.76  |  |  |  |
| HSUPA Subtest-1               | 21.88         | 21.85  | 21.76  |  |  |  |
| HSUPA Subtest-2               | 21.85         | 21.82  | 21.75  |  |  |  |
| HSUPA Subtest-3               | 21.86         | 21.82  | 21.73  |  |  |  |
| HSUPA Subtest-4               | 21.85         | 21.83  | 21.74  |  |  |  |
| HSUPA Subtest-5               | 21.85         | 21.82  | 21.74  |  |  |  |

## 5. Peak-to-average Ratio (PAR) of Transmitter

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### 5.1 Standard Applicable

According to §24.232(d), power measurements for transmissions by stations authorized under this section may be made either in accordance with a Commission-approved average power technique or in compliance with paragraph (e) of this section. In both instances, equipment employed must be authorized in accordance with the provisions of §24.51, in measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

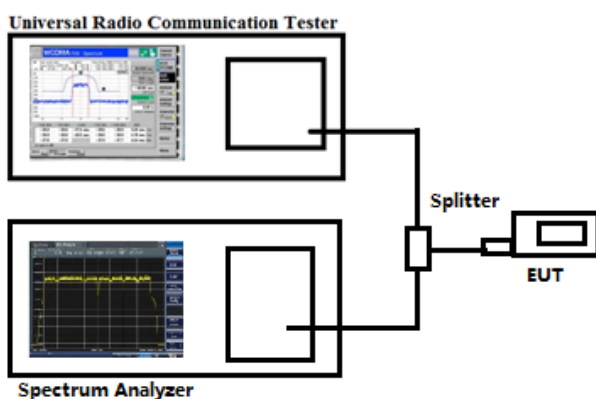
According to §27.50(B), the peak-to-average power ratio (PAPR) of the transmitter output power must not exceed 13 dB. The PAPR measurements should be made using either an instrument with complementary cumulative distribution function (CCDF) capabilities to determine that PAPR will not exceed 13 dB for more than 0.1 percent of the time or other Commission approved procedure. The measurement must be performed using a signal corresponding to the highest PAPR expected during periods of continuous transmission.

### 5.2 Test Procedure

According with KDB 971168

1. The signal analyzer's CCDF measurement profile is enabled
2. Frequency = carrier center frequency
3. Measurement BW > Emission bandwidth of signal
4. The signal analyzer was set to collect one million samples to generate the CCDF curve
5. The measurement interval was set depending on the type of signal analyzed. For continuous signals (>98% duty cycle), the measurement interval was set to 1ms. For burst transmissions, the spectrum analyzer is set to use an internal "RF Burst" trigger that is synced with an incoming pulse and the measurement interval is set to less than the duration of the "on time" of one burst to ensure that energy is only captured during a time in which the transmitter is operating at maximum power

Test Configuration for the emission bandwidth testing:



### 5.3 Summary of Test Results

| PCS1900      |         |                 |          |            |
|--------------|---------|-----------------|----------|------------|
| Test Mode    | Channel | Frequency (MHz) | PAR (dB) | Limit (dB) |
| GSM          | 661     | 1850.2          | 5.35     | 13         |
| GPRS(1 Slot) | 661     | 1850.2          | 5.14     | 13         |
| EDGE(1 Slot) | 661     | 1850.2          | 4.98     | 13         |

| WCDMA Band IV |         |                 |          |            |
|---------------|---------|-----------------|----------|------------|
| Test Mode     | Channel | Frequency (MHz) | PAR (dB) | Limit (dB) |
| WCDMA         | 1312    | 1712.4          | 5.98     | 13         |
|               | 1412    | 1733.4          | 4.35     | 13         |
|               | 1513    | 1752.6          | 5.12     | 13         |

| WCDMA Band II |         |                 |          |            |
|---------------|---------|-----------------|----------|------------|
| Test Mode     | Channel | Frequency (MHz) | PAR (dB) | Limit (dB) |
| WCDMA         | 9262    | 1852.4          | 4.05     | 13         |
|               | 9400    | 1880.0          | 4.62     | 13         |
|               | 9538    | 1907.6          | 4.48     | 13         |

Note: Only the worst case was selected to record.

## 6. Emission Bandwidth

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### 6.1 Standard Applicable

According to §22.917(b), the emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

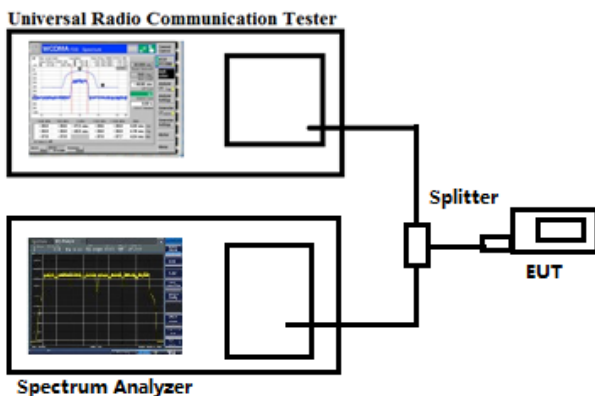
According to §24.238(b), the emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

According to §27.53, the emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

### 6.2 Test Procedure

The RF output terminal of the transmitter was connected to the input of the spectrum analyzer via a suitable attenuation. The RBW of the spectrum analyzer was set to 10kHz for GSM mode and 100kHz for WCDMA mode, VBW shall be at least 3 times the RBW, and the 26dB bandwidth was recorded.

Test Configuration for the emission bandwidth testing:



### 6.3 Summary of Test Results/Plots

| EUT Mode               | Channel | Frequency (MHz) | 99% Occupy bandwidth (kHz) | -26dB bandwidth (kHz) |
|------------------------|---------|-----------------|----------------------------|-----------------------|
| GSM 850 (GMSK)         | 128     | 824.20          | 233.2894                   | 294.891               |
|                        | 190     | 836.60          | 252.8779                   | 329.500               |
|                        | 251     | 848.80          | 255.0363                   | 312.049               |
| GPRS850 (GMSK,1Slot)   | 128     | 824.20          | 250.2393                   | 316.237               |
|                        | 190     | 836.60          | 249.6999                   | 307.041               |
|                        | 251     | 848.80          | 242.9178                   | 311.083               |
| EGPRS850 (8PSK,1Slot)  | 128     | 824.20          | 250.8285                   | 318.928               |
|                        | 190     | 836.60          | 256.9791                   | 306.610               |
|                        | 251     | 848.80          | 254.5847                   | 312.011               |
| PCS1900 (GMSK)         | 512     | 1850.20         | 253.4777                   | 312.102               |
|                        | 661     | 1880.00         | 252.7842                   | 320.182               |
|                        | 810     | 1909.80         | 248.5872                   | 305.576               |
| GPRS1900 (GMSK,1Slot)  | 512     | 1850.20         | 246.8409                   | 323.112               |
|                        | 661     | 1880.00         | 248.8186                   | 316.024               |
|                        | 810     | 1909.80         | 241.9533                   | 316.156               |
| EGPRS1900 (8PSK,1Slot) | 512     | 1850.20         | 244.5284                   | 316.452               |
|                        | 661     | 1880.00         | 247.8287                   | 314.056               |
|                        | 810     | 1909.80         | 249.3766                   | 316.914               |

| EUT Mode      | Channel | Frequency (MHz) | 99% Occupy bandwidth (kHz) | -26dB bandwidth (kHz) |
|---------------|---------|-----------------|----------------------------|-----------------------|
| WCDMA Band V  | 4132    | 826.40          | 4176.9                     | 4720                  |
|               | 4183    | 836.60          | 4184.3                     | 4702                  |
|               | 4233    | 846.60          | 4171.6                     | 4701                  |
| HSDPA         | 4132    | 826.40          | 4190.9                     | 4794                  |
|               | 4183    | 836.60          | 4184.7                     | 4704                  |
|               | 4233    | 846.60          | 4178.5                     | 4752                  |
| HSUPA         | 4132    | 826.40          | 4187.7                     | 4785                  |
|               | 4183    | 836.60          | 4191.8                     | 4726                  |
|               | 4233    | 846.60          | 4161.2                     | 4692                  |
| WCDMA Band II | 9262    | 1852.40         | 4174.9                     | 4714                  |
|               | 9400    | 1880.00         | 4157.6                     | 4720                  |
|               | 9538    | 1907.60         | 4174.5                     | 4704                  |
| HSDPA         | 9262    | 1852.40         | 4180.6                     | 5132                  |
|               | 9400    | 1880.00         | 4167.4                     | 4679                  |
|               | 9538    | 1907.60         | 4159.6                     | 4707                  |
| HSUPA         | 9262    | 1852.40         | 4196.3                     | 4713                  |
|               | 9400    | 1880.00         | 4181.1                     | 4675                  |
|               | 9538    | 1907.60         | 4186.6                     | 4715                  |
| WCDMA Band IV | 1312    | 1712.4          | 4167.8                     | 4709                  |
|               | 1412    | 1733.4          | 4180.8                     | 4697                  |
|               | 1513    | 1752.6          | 4181.5                     | 4743                  |
| HSDPA         | 1312    | 1712.4          | 4165.9                     | 4697                  |
|               | 1412    | 1733.4          | 4191.2                     | 4681                  |
|               | 1513    | 1752.6          | 4153.9                     | 4711                  |
| HSUPA         | 1312    | 1712.4          | 4184.3                     | 4709                  |
|               | 1412    | 1733.4          | 4178.6                     | 4701                  |
|               | 1513    | 1752.6          | 4184.8                     | 4708                  |

|                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| GSM900         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Low Channel    | <div><div><div><div>Agilent</div><div>R T</div></div><div><div>Ch Freq 824.2 MHz</div><div>Trig Free</div></div><div>Occupied Bandwidth</div></div><div><div>Ref 40.5 dBm</div><div>Atten 45 dB</div></div><div><div>#Peak</div><div>Log</div><div>10</div><div>dB/</div><div>Offset</div><div>6.5</div><div>dB</div></div><div><div>Center 824.2 MHz</div><div>Span 1 MHz</div><div>#Res BW 10 kHz</div><div>#VBW 30 kHz</div><div>Sweep 10.36 ms (1001 pts)</div></div><div><div>Occupied Bandwidth</div><div>233.2894 kHz</div><div>Occ BW % Pwr 99.00 %</div><div>x dB -26.00 dB</div><div>Transmit Freq Error 2.994 kHz</div><div>x dB Bandwidth 294.891 kHz</div></div></div> <div><div>Freq/Channel</div><div>Center Freq 824.200000 MHz</div><div>Start Freq 823.700000 MHz</div><div>Stop Freq 824.700000 MHz</div><div>CF Step 100.000000 kHz</div><div>Auto Man</div><div>Freq Offset 0.00000000 Hz</div><div>Signal Track On Off</div><div>Scale Type Log Lin</div></div>   |
| Middle Channel | <div><div><div><div>Agilent</div><div>R T</div></div><div><div>Ch Freq 836.6 MHz</div><div>Trig Free</div></div><div>Occupied Bandwidth</div></div><div><div>Ref 40.5 dBm</div><div>Atten 45 dB</div></div><div><div>#Peak</div><div>Log</div><div>10</div><div>dB/</div><div>Offset</div><div>6.5</div><div>dB</div></div><div><div>Center 836.6 MHz</div><div>Span 1 MHz</div><div>#Res BW 10 kHz</div><div>#VBW 30 kHz</div><div>Sweep 10.36 ms (1001 pts)</div></div><div><div>Occupied Bandwidth</div><div>252.8779 kHz</div><div>Occ BW % Pwr 99.00 %</div><div>x dB -26.00 dB</div><div>Transmit Freq Error 1.537 kHz</div><div>x dB Bandwidth 329.500 kHz</div></div></div> <div><div>Freq/Channel</div><div>Center Freq 836.600000 MHz</div><div>Start Freq 836.100000 MHz</div><div>Stop Freq 837.100000 MHz</div><div>CF Step 100.000000 kHz</div><div>Auto Man</div><div>Freq Offset 0.00000000 Hz</div><div>Signal Track On Off</div><div>Scale Type Log Lin</div></div>   |
| High Channel   | <div><div><div><div>Agilent</div><div>R T</div></div><div><div>Ch Freq 848.8 MHz</div><div>Trig Free</div></div><div>Occupied Bandwidth</div></div><div><div>Ref 40.5 dBm</div><div>Atten 45 dB</div></div><div><div>#Peak</div><div>Log</div><div>10</div><div>dB/</div><div>Offset</div><div>6.5</div><div>dB</div></div><div><div>Center 848.8 MHz</div><div>Span 1 MHz</div><div>#Res BW 10 kHz</div><div>#VBW 30 kHz</div><div>Sweep 10.36 ms (1001 pts)</div></div><div><div>Occupied Bandwidth</div><div>255.0363 kHz</div><div>Occ BW % Pwr 99.00 %</div><div>x dB -26.00 dB</div><div>Transmit Freq Error -896.344 Hz</div><div>x dB Bandwidth 312.049 kHz</div></div></div> <div><div>Freq/Channel</div><div>Center Freq 848.800000 MHz</div><div>Start Freq 848.300000 MHz</div><div>Stop Freq 849.300000 MHz</div><div>CF Step 100.000000 kHz</div><div>Auto Man</div><div>Freq Offset 0.00000000 Hz</div><div>Signal Track On Off</div><div>Scale Type Log Lin</div></div> |



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http://www.semtest.com.cn

|                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| EGPRS900       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Low Channel    | <div><div><div><div>Agilent</div><div>R T</div></div><div><div>Ch Freq 824.2 MHz</div><div>Trig Free</div></div><div>Occupied Bandwidth</div></div><div><div>Ref 40.5 dBm</div><div>Atten 45 dB</div></div><div><div>#Peak</div><div>Log</div><div>10</div><div>dB/</div><div>Offset</div><div>6.5</div><div>dB</div></div><div><div>Center 824.2 MHz</div><div>Span 1 MHz</div><div>#Res BW 10 kHz</div><div>#VBW 30 kHz</div><div>Sweep 10.36 ms (1001 pts)</div></div><div><div>Occupied Bandwidth</div><div>250.8285 kHz</div><div>Occ BW % Pwr 99.00 %</div><div>x dB -26.00 dB</div><div>Transmit Freq Error -2.208 kHz</div><div>x dB Bandwidth 318.928 kHz</div></div></div> <div><div>Freq/Channel</div><div>Center Freq 824.200000 MHz</div><div>Start Freq 823.700000 MHz</div><div>Stop Freq 824.700000 MHz</div><div>CF Step 100.000000 kHz</div><div>Auto Man</div><div>Freq Offset 0.0000000 Hz</div><div>Signal Track On Off</div><div>Scale Type Log Lin</div></div> |
| Middle Channel | <div><div><div><div>Agilent</div><div>R T</div></div><div><div>Ch Freq 836.6 MHz</div><div>Trig Free</div></div><div>Occupied Bandwidth</div></div><div><div>Ref 40.5 dBm</div><div>Atten 45 dB</div></div><div><div>#Peak</div><div>Log</div><div>10</div><div>dB/</div><div>Offset</div><div>6.5</div><div>dB</div></div><div><div>Center 836.6 MHz</div><div>Span 1 MHz</div><div>#Res BW 10 kHz</div><div>#VBW 30 kHz</div><div>Sweep 10.36 ms (1001 pts)</div></div><div><div>Occupied Bandwidth</div><div>256.9791 kHz</div><div>Occ BW % Pwr 99.00 %</div><div>x dB -26.00 dB</div><div>Transmit Freq Error -2.002 kHz</div><div>x dB Bandwidth 306.610 kHz</div></div></div> <div><div>Freq/Channel</div><div>Center Freq 836.600000 MHz</div><div>Start Freq 836.100000 MHz</div><div>Stop Freq 837.100000 MHz</div><div>CF Step 100.000000 kHz</div><div>Auto Man</div><div>Freq Offset 0.0000000 Hz</div><div>Signal Track On Off</div><div>Scale Type Log Lin</div></div> |
| High Channel   | <div><div><div><div>Agilent</div><div>R T</div></div><div><div>Ch Freq 848.8 MHz</div><div>Trig Free</div></div><div>Occupied Bandwidth</div></div><div><div>Ref 40.5 dBm</div><div>Atten 45 dB</div></div><div><div>#Peak</div><div>Log</div><div>10</div><div>dB/</div><div>Offset</div><div>6.5</div><div>dB</div></div><div><div>Center 848.8 MHz</div><div>Span 1 MHz</div><div>#Res BW 10 kHz</div><div>#VBW 30 kHz</div><div>Sweep 10.36 ms (1001 pts)</div></div><div><div>Occupied Bandwidth</div><div>254.5847 kHz</div><div>Occ BW % Pwr 99.00 %</div><div>x dB -26.00 dB</div><div>Transmit Freq Error -2.952 kHz</div><div>x dB Bandwidth 312.011 kHz</div></div></div> <div><div>Freq/Channel</div><div>Center Freq 848.800000 MHz</div><div>Start Freq 848.300000 MHz</div><div>Stop Freq 849.300000 MHz</div><div>CF Step 100.000000 kHz</div><div>Auto Man</div><div>Freq Offset 0.0000000 Hz</div><div>Signal Track On Off</div><div>Scale Type Log Lin</div></div> |

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PCS1900     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Low Channel | <div><div><div><div>Agilent</div><div>R</div><div>T</div></div><div><div>Ch Freq</div><div>1.8502 GHz</div><div>Trig</div><div>Free</div></div><div><div>Occupied Bandwidth</div><div></div></div></div><div><div>Ref 40.5 dBm</div><div>Atten 45 dB</div><div>#Peak</div><div>Log</div><div>10</div><div>dB/</div><div>Offset</div><div>6.5</div><div>dB</div></div><div><div>Center 1.85 GHz</div><div>#Res BW 10 kHz</div><div>#VBW 30 kHz</div><div>Sweep 10.36 ms (1001 pts)</div><div>Span 1 MHz</div></div><div><div>Occupied Bandwidth</div><div>253.4777 kHz</div><div>Occ BW % Pwr</div><div>99.00 %</div><div>x dB</div><div>-26.00 dB</div><div>Transmit Freq Error</div><div>1.102 kHz</div><div>x dB Bandwidth</div><div>312.102 kHz</div></div></div> <div><div>Trace/View</div><div>Trace</div><div>1</div><div>2</div><div>3</div><div>Clear Write</div><div>Max Hold</div><div>Min Hold</div><div>View</div><div>Blank</div><div>More</div><div>1 of 2</div></div> |

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| GPRS1900    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Low Channel | <div><div><div><div>Agilent</div><div>R</div><div>T</div></div><div><div>Ch Freq</div><div>1.8502 GHz</div><div>Trig</div><div>Free</div></div><div><div>Occupied Bandwidth</div><div></div></div></div><div><div>Ref 40.5 dBm</div><div>Atten 45 dB</div></div><div><div>#Peak</div><div>Log</div><div>10</div><div>dB/</div><div>Offset</div><div>6.5</div><div>dB</div></div><div><div>Center 1.85 GHz</div><div>#Res BW 10 kHz</div><div>#VBW 30 kHz</div><div>Sweep 10.36 ms (1001 pts)</div><div>Span 1 MHz</div></div><div><div>Occupied Bandwidth</div><div>246.8409 kHz</div><div>Occ BW % Pwr</div><div>99.00 %</div><div>x dB</div><div>-26.00 dB</div></div><div><div>Transmit Freq Error</div><div>2.714 kHz</div></div><div><div>x dB Bandwidth</div><div>323.112 kHz</div></div></div> <div><div>Freq/Channel</div><div>Center Freq</div><div>1.85020000 GHz</div><div>Start Freq</div><div>1.84970000 GHz</div><div>Stop Freq</div><div>1.85070000 GHz</div><div>CF Step</div><div>100.000000 kHz</div><div>Auto</div><div>Man</div><div>Freq Offset</div><div>0.00000000 Hz</div><div>Signal Track</div><div>On</div><div>Off</div><div>Scale Type</div><div>Log</div><div>Lin</div></div> |

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| EGPRS1900   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Low Channel | <div><div><div><div>Agilent</div><div>R T</div></div><div><div>Ch Freq 1.8502 GHz</div><div>Trig Free</div></div><div>Occupied Bandwidth</div><div></div></div><div><div>Ref 40.5 dBm</div><div>Atten 45 dB</div></div><div><div>#Peak</div><div>Log</div><div>10</div><div>dB/</div><div>Offset</div><div>6.5</div><div>dB</div></div><div><div>Center 1.85 GHz</div><div>#Res BW 10 kHz</div><div>#VBW 30 kHz</div><div>Sweep 10.36 ms (1001 pts)</div><div>Span 1 MHz</div></div><div><div>Occupied Bandwidth</div><div>244.5284 kHz</div><div>Occ BW % Pwr 99.00 %</div><div>x dB -26.00 dB</div><div>Transmit Freq Error -866.207 Hz</div><div>x dB Bandwidth 316.452 kHz</div></div></div> <div><div>Freq/Channel</div><div>Center Freq 1.85020000 GHz</div><div>Start Freq 1.84970000 GHz</div><div>Stop Freq 1.85070000 GHz</div><div>CF Step 100.000000 kHz</div><div>Auto Man</div><div>Freq Offset 0.00000000 Hz</div><div>Signal Track On Off</div><div>Scale Type Log Lin</div></div> |

|                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| WCDMA Band V   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Low Channel    | <div><div><div><div>Agilent</div><div>R</div><div>T</div></div><div><div>Ch Freq</div><div>826.4 MHz</div><div>Trig</div><div>Free</div></div><div><div>Occupied Bandwidth</div><div></div></div></div><div><div>Ref 30 dBm</div><div>Atten 35 dB</div><div><div>#Peak</div><div>Log</div><div>10</div><div>dB/</div><div>Offset</div><div>6.5</div><div>dB</div></div><div></div><div><div>Center 826.4 MHz</div><div>#Res BW 100 kHz</div><div>#VBW 300 kHz</div><div>Sweep 10 ms (1001 pts)</div><div>Span 10 MHz</div></div><div><div>Occupied Bandwidth</div><div>4.1769 MHz</div><div>Occ BW % Pwr</div><div>99.00 %</div><div>x dB</div><div>-26.00 dB</div><div>Transmit Freq Error</div><div>-7.181 kHz</div><div>x dB Bandwidth</div><div>4.720 MHz</div></div></div><div><div>Freq/Channel</div><div>Center Freq</div><div>826.400000 MHz</div><div>Start Freq</div><div>821.400000 MHz</div><div>Stop Freq</div><div>831.400000 MHz</div><div>CF Step</div><div>1.00000000 MHz</div><div>Auto</div><div>Man</div><div>Freq Offset</div><div>0.00000000 Hz</div><div>Signal Track</div><div>On</div><div>Off</div><div>Scale Type</div><div>Log</div><div>Lin</div></div></div>  |
| Middle Channel | <div><div><div><div>Agilent</div><div>R</div><div>T</div></div><div><div>Ch Freq</div><div>836.6 MHz</div><div>Trig</div><div>Free</div></div><div><div>Occupied Bandwidth</div><div></div></div></div><div><div>Ref 30 dBm</div><div>Atten 35 dB</div><div><div>#Peak</div><div>Log</div><div>10</div><div>dB/</div><div>Offset</div><div>6.5</div><div>dB</div></div><div></div><div><div>Center 836.6 MHz</div><div>#Res BW 100 kHz</div><div>#VBW 300 kHz</div><div>Sweep 10 ms (1001 pts)</div><div>Span 10 MHz</div></div><div><div>Occupied Bandwidth</div><div>4.1843 MHz</div><div>Occ BW % Pwr</div><div>99.00 %</div><div>x dB</div><div>-26.00 dB</div><div>Transmit Freq Error</div><div>-9.838 kHz</div><div>x dB Bandwidth</div><div>4.702 MHz</div></div></div><div><div>Trace/View</div><div>1</div><div>2</div><div>3</div><div>Trace</div><div>Clear Write</div><div>Max Hold</div><div>Min Hold</div><div>View</div><div>Blank</div><div>More</div><div>1 of 2</div></div></div>                                                                                                                                                                                        |
| High Channel   | <div><div><div><div>Agilent</div><div>R</div><div>T</div></div><div><div>Ch Freq</div><div>846.6 MHz</div><div>Trig</div><div>Free</div></div><div><div>Occupied Bandwidth</div><div></div></div></div><div><div>Ref 30 dBm</div><div>Atten 35 dB</div><div><div>#Peak</div><div>Log</div><div>10</div><div>dB/</div><div>Offset</div><div>6.5</div><div>dB</div></div><div></div><div><div>Center 846.6 MHz</div><div>#Res BW 100 kHz</div><div>#VBW 300 kHz</div><div>Sweep 10 ms (1001 pts)</div><div>Span 10 MHz</div></div><div><div>Occupied Bandwidth</div><div>4.1716 MHz</div><div>Occ BW % Pwr</div><div>99.00 %</div><div>x dB</div><div>-26.00 dB</div><div>Transmit Freq Error</div><div>-11.752 kHz</div><div>x dB Bandwidth</div><div>4.701 MHz</div></div></div><div><div>Freq/Channel</div><div>Center Freq</div><div>846.600000 MHz</div><div>Start Freq</div><div>841.600000 MHz</div><div>Stop Freq</div><div>851.600000 MHz</div><div>CF Step</div><div>1.00000000 MHz</div><div>Auto</div><div>Man</div><div>Freq Offset</div><div>0.00000000 Hz</div><div>Signal Track</div><div>On</div><div>Off</div><div>Scale Type</div><div>Log</div><div>Lin</div></div></div> |

|                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| WCDMA Band V- HSDPA |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Low Channel         | <div><div><div>Agilent</div><div><div>Ch Freq826.4 MHz</div><div>TrigFree</div></div><div>Occupied Bandwidth</div><div><div>Ref 30 dBm</div><div>Atten 35 dB</div><div><div>#Peak</div><div>Log</div><div>10</div><div>dB/</div><div>Offset</div><div>6.5</div><div>dB</div></div></div><div><div>Center 826.4 MHz</div><div>#Res BW 100 kHz</div><div>#VBW 300 kHz</div><div>Sweep 10 ms (1001 pts)</div><div>Span 10 MHz</div></div><div><div>Occupied Bandwidth</div><div>4.1909 MHz</div><div>Occ BW % Pwr99.00 %</div><div>x dB-26.00 dB</div><div>Transmit Freq Error-3.646 kHz</div><div>x dB Bandwidth4.794 MHz</div></div></div><div><div>Trace/View</div><div>Trace123</div><div>Clear Write</div><div>Max Hold</div><div>Min Hold</div><div>View</div><div>Blank</div><div>More1 of 2</div></div></div>                                                                                                                      |
| Middle Channel      | <div><div><div>Agilent</div><div><div>Ch Freq836.6 MHz</div><div>TrigFree</div></div><div>Occupied Bandwidth</div><div><div>Ref 30 dBm</div><div>Atten 35 dB</div><div><div>#Peak</div><div>Log</div><div>10</div><div>dB/</div><div>Offset</div><div>6.5</div><div>dB</div></div></div><div><div>Center 836.6 MHz</div><div>#Res BW 100 kHz</div><div>#VBW 300 kHz</div><div>Sweep 10 ms (1001 pts)</div><div>Span 10 MHz</div></div><div><div>Occupied Bandwidth</div><div>4.1847 MHz</div><div>Occ BW % Pwr99.00 %</div><div>x dB-26.00 dB</div><div>Transmit Freq Error-10.536 kHz</div><div>x dB Bandwidth4.704 MHz</div></div></div><div><div>Freq/Channel</div><div>Center Freq836.600000 MHz</div><div>Start Freq831.600000 MHz</div><div>Stop Freq841.600000 MHz</div><div>CF Step1.00000000 MHz</div><div>AutoMan</div><div>Freq Offset0.00000000 Hz</div><div>Signal TrackOnOff</div><div>Scale TypeLogLin</div></div></div> |
| High Channel        | <div><div><div>Agilent</div><div><div>Ch Freq846.6 MHz</div><div>TrigFree</div></div><div>Occupied Bandwidth</div><div><div>Ref 30 dBm</div><div>Atten 35 dB</div><div><div>#Peak</div><div>Log</div><div>10</div><div>dB/</div><div>Offset</div><div>6.5</div><div>dB</div></div></div><div><div>Center 846.6 MHz</div><div>#Res BW 100 kHz</div><div>#VBW 300 kHz</div><div>Sweep 10 ms (1001 pts)</div><div>Span 10 MHz</div></div><div><div>Occupied Bandwidth</div><div>4.1785 MHz</div><div>Occ BW % Pwr99.00 %</div><div>x dB-26.00 dB</div><div>Transmit Freq Error-20.939 kHz</div><div>x dB Bandwidth4.752 MHz</div></div></div><div><div>Trace/View</div><div>Trace123</div><div>Clear Write</div><div>Max Hold</div><div>Min Hold</div><div>View</div><div>Blank</div><div>More1 of 2</div></div></div>                                                                                                                     |

|                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| WCDMA Band V- HSUPA |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Low Channel         | <div><div><div>Agilent</div><div><div>Ch Freq826.4 MHz</div><div>TrigFree</div></div><div>Occupied Bandwidth</div><div><div>Ref 30 dBm</div><div>Atten 35 dB</div><div><div>#Peak</div><div>Log</div><div>10</div><div>dB/</div><div>Offset</div><div>6.5</div><div>dB</div></div></div><div><div>Center 826.4 MHz</div><div>#Res BW 100 kHz</div><div>#VBW 300 kHz</div><div>Sweep 10 ms (1001 pts)</div><div>Span 10 MHz</div></div><div><div>Occupied Bandwidth</div><div>4.1877 MHz</div><div>Occ BW % Pwr99.00 %</div><div>x dB-26.00 dB</div><div>Transmit Freq Error1.671 kHz</div><div>x dB Bandwidth4.785 MHz</div></div></div><div><div>Freq/Channel</div><div>Center Freq826.400000 MHz</div><div>Start Freq821.400000 MHz</div><div>Stop Freq831.400000 MHz</div><div>CF Step1.00000000 MHz</div><div>AutoMan</div><div>Freq Offset0.00000000 Hz</div><div>Signal TrackOnOff</div><div>Scale TypeLogLin</div></div></div>  |
| Middle Channel      | <div><div><div>Agilent</div><div><div>Ch Freq836.6 MHz</div><div>TrigFree</div></div><div>Occupied Bandwidth</div><div><div>Ref 30 dBm</div><div>Atten 35 dB</div><div><div>#Peak</div><div>Log</div><div>10</div><div>dB/</div><div>Offset</div><div>6.5</div><div>dB</div></div></div><div><div>Center 836.6 MHz</div><div>#Res BW 100 kHz</div><div>#VBW 300 kHz</div><div>Sweep 10 ms (1001 pts)</div><div>Span 10 MHz</div></div><div><div>Occupied Bandwidth</div><div>4.1918 MHz</div><div>Occ BW % Pwr99.00 %</div><div>x dB-26.00 dB</div><div>Transmit Freq Error-7.603 kHz</div><div>x dB Bandwidth4.726 MHz</div></div></div><div><div>Freq/Channel</div><div>Center Freq836.600000 MHz</div><div>Start Freq831.600000 MHz</div><div>Stop Freq841.600000 MHz</div><div>CF Step1.00000000 MHz</div><div>AutoMan</div><div>Freq Offset0.00000000 Hz</div><div>Signal TrackOnOff</div><div>Scale TypeLogLin</div></div></div> |
| High Channel        | <div><div><div>Agilent</div><div><div>Ch Freq846.6 MHz</div><div>TrigFree</div></div><div>Occupied Bandwidth</div><div><div>Ref 30 dBm</div><div>Atten 35 dB</div><div><div>#Peak</div><div>Log</div><div>10</div><div>dB/</div><div>Offset</div><div>6.5</div><div>dB</div></div></div><div><div>Center 846.6 MHz</div><div>#Res BW 100 kHz</div><div>#VBW 300 kHz</div><div>Sweep 10 ms (1001 pts)</div><div>Span 10 MHz</div></div><div><div>Occupied Bandwidth</div><div>4.1612 MHz</div><div>Occ BW % Pwr99.00 %</div><div>x dB-26.00 dB</div><div>Transmit Freq Error-9.402 kHz</div><div>x dB Bandwidth4.692 MHz</div></div></div><div><div>Freq/Channel</div><div>Center Freq846.600000 MHz</div><div>Start Freq841.600000 MHz</div><div>Stop Freq851.600000 MHz</div><div>CF Step1.00000000 MHz</div><div>AutoMan</div><div>Freq Offset0.00000000 Hz</div><div>Signal TrackOnOff</div><div>Scale TypeLogLin</div></div></div> |



| WCDMA Band IV  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Low Channel    | <div><div><div><div>Agilent</div><div>R T</div></div><div><div>Ch Freq 1.7124 GHz</div><div>Trig Free</div></div><div>Occupied Bandwidth</div><div><div>Ref 30 dBm</div><div>Atten 35 dB</div><div><div>#Peak</div><div>Log</div><div>10</div><div>dB/</div><div>Offset</div><div>6.5</div><div>dB</div></div><div><div>Center 1.712 GHz</div><div>#Res BW 100 kHz</div><div>#VBW 300 kHz</div><div>Sweep 10 ms (1001 pts)</div><div>Span 10 MHz</div></div><div><div>Occupied Bandwidth</div><div>4.1678 MHz</div><div>Occ BW % Pwr 99.00 %</div><div>x dB -26.00 dB</div><div>Transmit Freq Error 34.696 Hz</div><div>x dB Bandwidth 4.709 MHz</div></div></div></div><div><div>Freq/Channel</div><div>Center Freq 1.71240000 GHz</div><div>Start Freq 1.70740000 GHz</div><div>Stop Freq 1.71740000 GHz</div><div>CF Step 1.00000000 MHz</div><div>Auto Man</div><div>Freq Offset 0.00000000 Hz</div><div>Signal Track On Off</div><div>Scale Type Log Lin</div></div></div> |
| Middle Channel | <div><div><div><div>Agilent</div><div>R T</div></div><div><div>Ch Freq 1.7324 GHz</div><div>Trig Free</div></div><div>Occupied Bandwidth</div><div><div>Ref 30 dBm</div><div>Atten 35 dB</div><div><div>#Peak</div><div>Log</div><div>10</div><div>dB/</div><div>Offset</div><div>6.5</div><div>dB</div></div><div><div>Center 1.732 GHz</div><div>#Res BW 100 kHz</div><div>#VBW 300 kHz</div><div>Sweep 10 ms (1001 pts)</div><div>Span 10 MHz</div></div><div><div>Occupied Bandwidth</div><div>4.1808 MHz</div><div>Occ BW % Pwr 99.00 %</div><div>x dB -26.00 dB</div><div>Transmit Freq Error 2.636 kHz</div><div>x dB Bandwidth 4.697 MHz</div></div></div></div><div><div>Freq/Channel</div><div>Center Freq 1.73240000 GHz</div><div>Start Freq 1.72740000 GHz</div><div>Stop Freq 1.73740000 GHz</div><div>CF Step 1.00000000 MHz</div><div>Auto Man</div><div>Freq Offset 0.00000000 Hz</div><div>Signal Track On Off</div><div>Scale Type Log Lin</div></div></div> |
| High Channel   | <div><div><div><div>Agilent</div><div>R T</div></div><div><div>Ch Freq 1.7526 GHz</div><div>Trig Free</div></div><div>Occupied Bandwidth</div><div><div>Ref 30 dBm</div><div>Atten 35 dB</div><div><div>#Peak</div><div>Log</div><div>10</div><div>dB/</div><div>Offset</div><div>6.5</div><div>dB</div></div><div><div>Center 1.753 GHz</div><div>#Res BW 100 kHz</div><div>#VBW 300 kHz</div><div>Sweep 10 ms (1001 pts)</div><div>Span 10 MHz</div></div><div><div>Occupied Bandwidth</div><div>4.1815 MHz</div><div>Occ BW % Pwr 99.00 %</div><div>x dB -26.00 dB</div><div>Transmit Freq Error 77.540 Hz</div><div>x dB Bandwidth 4.743 MHz</div></div></div></div><div><div>Freq/Channel</div><div>Center Freq 1.75260000 GHz</div><div>Start Freq 1.74760000 GHz</div><div>Stop Freq 1.75760000 GHz</div><div>CF Step 1.00000000 MHz</div><div>Auto Man</div><div>Freq Offset 0.00000000 Hz</div><div>Signal Track On Off</div><div>Scale Type Log Lin</div></div></div> |

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| WCDMA Band IV- HSDPA |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Low Channel          | <div><div><div>Agilent</div><div><div>Ch Freq</div><div>1.7124 GHz</div><div>Trig</div><div>Free</div></div><div>Occupied Bandwidth</div></div><div><div>Ref 30 dBm</div><div>Atten 35 dB</div><div><div>#Peak</div><div>Log</div><div>10</div><div>dB/</div><div>Offset</div><div>6.5</div><div>dB</div></div><div><div>Center 1.712 GHz</div><div>#Res BW 100 kHz</div><div>#VBW 300 kHz</div><div>Sweep 10 ms (1001 pts)</div><div>Span 10 MHz</div></div><div><div>Occupied Bandwidth</div><div>4.1659 MHz</div><div>Occ BW % Pwr</div><div>99.00 %</div><div>x dB</div><div>-26.00 dB</div><div>Transmit Freq Error</div><div>3.424 kHz</div><div>x dB Bandwidth</div><div>4.697 MHz</div></div></div><div><div>Freq/Channel</div><div>Center Freq</div><div>1.71240000 GHz</div><div>Start Freq</div><div>1.70740000 GHz</div><div>Stop Freq</div><div>1.71740000 GHz</div><div>CF Step</div><div>1.00000000 MHz</div><div>Auto</div><div>Man</div><div>Freq Offset</div><div>0.00000000 Hz</div><div>Signal Track</div><div>On</div><div>Off</div><div>Scale Type</div><div>Log</div><div>Lin</div></div></div>  |
| Middle Channel       | <div><div><div>Agilent</div><div><div>Ch Freq</div><div>1.7324 GHz</div><div>Trig</div><div>Free</div></div><div>Occupied Bandwidth</div></div><div><div>Ref 30 dBm</div><div>Atten 35 dB</div><div><div>#Peak</div><div>Log</div><div>10</div><div>dB/</div><div>Offset</div><div>6.5</div><div>dB</div></div><div><div>Center 1.732 GHz</div><div>#Res BW 100 kHz</div><div>#VBW 300 kHz</div><div>Sweep 10 ms (1001 pts)</div><div>Span 10 MHz</div></div><div><div>Occupied Bandwidth</div><div>4.1912 MHz</div><div>Occ BW % Pwr</div><div>99.00 %</div><div>x dB</div><div>-26.00 dB</div><div>Transmit Freq Error</div><div>840.390 Hz</div><div>x dB Bandwidth</div><div>4.681 MHz</div></div></div><div><div>Freq/Channel</div><div>Center Freq</div><div>1.73240000 GHz</div><div>Start Freq</div><div>1.72740000 GHz</div><div>Stop Freq</div><div>1.73740000 GHz</div><div>CF Step</div><div>1.00000000 MHz</div><div>Auto</div><div>Man</div><div>Freq Offset</div><div>0.00000000 Hz</div><div>Signal Track</div><div>On</div><div>Off</div><div>Scale Type</div><div>Log</div><div>Lin</div></div></div> |
| High Channel         | <div><div><div>Agilent</div><div><div>Ch Freq</div><div>1.7526 GHz</div><div>Trig</div><div>Free</div></div><div>Occupied Bandwidth</div></div><div><div>Ref 30 dBm</div><div>Atten 35 dB</div><div><div>#Peak</div><div>Log</div><div>10</div><div>dB/</div><div>Offset</div><div>6.5</div><div>dB</div></div><div><div>Center 1.753 GHz</div><div>#Res BW 100 kHz</div><div>#VBW 1 MHz</div><div>Sweep 4 ms (401 pts)</div><div>Span 10 MHz</div></div><div><div>Occupied Bandwidth</div><div>4.1539 MHz</div><div>Occ BW % Pwr</div><div>99.00 %</div><div>x dB</div><div>-26.00 dB</div><div>Transmit Freq Error</div><div>4.884 kHz</div><div>x dB Bandwidth</div><div>4.711 MHz</div></div></div><div><div>Freq/Channel</div><div>Center Freq</div><div>1.75260000 GHz</div><div>Start Freq</div><div>1.74760000 GHz</div><div>Stop Freq</div><div>1.75760000 GHz</div><div>CF Step</div><div>1.00000000 MHz</div><div>Auto</div><div>Man</div><div>Freq Offset</div><div>0.00000000 Hz</div><div>Signal Track</div><div>On</div><div>Off</div><div>Scale Type</div><div>Log</div><div>Lin</div></div></div>      |

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|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| WCDMA Band IV- HSUPA |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Low Channel          | <div><div><div><div>Agilent</div><div>R</div><div>T</div></div><div><div>Ch Freq</div><div>1.7124 GHz</div><div>Trig</div><div>Free</div></div><div><div>Occupied Bandwidth</div><div></div></div></div><div><div>Ref 30 dBm</div><div>Atten 35 dB</div><div><div>#Peak</div><div>Log</div><div>10</div><div>dB/</div><div>Offset</div><div>6.5</div><div>dB</div></div><div></div></div><div><div>Center 1.712 GHz</div><div>Span 10 MHz</div><div>#Res BW 100 kHz</div><div>#VBW 300 kHz</div><div>Sweep 10 ms (1001 pts)</div></div><div><div>Occupied Bandwidth</div><div>4.1843 MHz</div><div>Occ BW % Pwr</div><div>99.00 %</div><div>x dB</div><div>-26.00 dB</div><div>Transmit Freq Error</div><div>-2.047 kHz</div><div>x dB Bandwidth</div><div>4.709 MHz</div></div></div> <div><div>Freq/Channel</div><div>Center Freq</div><div>1.71240000 GHz</div><div>Start Freq</div><div>1.70740000 GHz</div><div>Stop Freq</div><div>1.71740000 GHz</div><div>CF Step</div><div>1.00000000 MHz</div><div>Auto</div><div>Man</div><div>Freq Offset</div><div>0.00000000 Hz</div><div>Signal Track</div><div>On</div><div>Off</div><div>Scale Type</div><div>Log</div><div>Lin</div></div> |

| WCDMA Band II  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
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| Low Channel    | <div><div><div><div>Agilent</div><div>R T</div></div><div><div>Ch Freq 1.8524 GHz</div><div>Trig Free</div></div><div>Occupied Bandwidth</div><div><div>Ref 30 dBm</div><div>Atten 35 dB</div><div><div>#Peak</div><div>Log</div><div>10</div><div>dB/</div><div>Offset</div><div>6.5</div><div>dB</div></div><div><div>Center 1.852 GHz</div><div>#Res BW 100 kHz</div><div>#VBW 300 kHz</div><div>Sweep 10 ms (1001 pts)</div><div>Span 10 MHz</div></div><div><div>Occupied Bandwidth</div><div>4.1749 MHz</div><div>Occ BW % Pwr 99.00 %</div><div>x dB -26.00 dB</div><div>Transmit Freq Error -1.449 kHz</div><div>x dB Bandwidth 4.714 MHz</div></div></div></div><div><div>Freq/Channel</div><div>Center Freq 1.85240000 GHz</div><div>Start Freq 1.84740000 GHz</div><div>Stop Freq 1.85740000 GHz</div><div>CF Step 1.00000000 MHz</div><div>Auto Man</div><div>Freq Offset 0.00000000 Hz</div><div>Signal Track On Off</div><div>Scale Type Log Lin</div></div></div> |
| Middle Channel | <div><div><div><div>Agilent</div><div>R T</div></div><div><div>Ch Freq 1.88 GHz</div><div>Trig Free</div></div><div>Occupied Bandwidth</div><div><div>Ref 30 dBm</div><div>Atten 35 dB</div><div><div>#Peak</div><div>Log</div><div>10</div><div>dB/</div><div>Offset</div><div>6.5</div><div>dB</div></div><div><div>Center 1.88 GHz</div><div>#Res BW 100 kHz</div><div>#VBW 300 kHz</div><div>Sweep 10 ms (1001 pts)</div><div>Span 10 MHz</div></div><div><div>Occupied Bandwidth</div><div>4.1576 MHz</div><div>Occ BW % Pwr 99.00 %</div><div>x dB -26.00 dB</div><div>Transmit Freq Error -7.063 kHz</div><div>x dB Bandwidth 4.720 MHz</div></div></div></div><div><div>Freq/Channel</div><div>Center Freq 1.88000000 GHz</div><div>Start Freq 1.87500000 GHz</div><div>Stop Freq 1.88500000 GHz</div><div>CF Step 1.00000000 MHz</div><div>Auto Man</div><div>Freq Offset 0.00000000 Hz</div><div>Signal Track On Off</div><div>Scale Type Log Lin</div></div></div>    |
| High Channel   | <div><div><div><div>Agilent</div><div>R T</div></div><div><div>Ch Freq 1.9076 GHz</div><div>Trig Free</div></div><div>Occupied Bandwidth</div><div><div>Ref 30 dBm</div><div>Atten 35 dB</div><div><div>#Peak</div><div>Log</div><div>10</div><div>dB/</div><div>Offset</div><div>6.5</div><div>dB</div></div><div><div>Center 1.908 GHz</div><div>#Res BW 100 kHz</div><div>#VBW 300 kHz</div><div>Sweep 10 ms (1001 pts)</div><div>Span 10 MHz</div></div><div><div>Occupied Bandwidth</div><div>4.1745 MHz</div><div>Occ BW % Pwr 99.00 %</div><div>x dB -26.00 dB</div><div>Transmit Freq Error -4.950 kHz</div><div>x dB Bandwidth 4.704 MHz</div></div></div></div><div><div>Freq/Channel</div><div>Center Freq 1.90760000 GHz</div><div>Start Freq 1.90260000 GHz</div><div>Stop Freq 1.91260000 GHz</div><div>CF Step 1.00000000 MHz</div><div>Auto Man</div><div>Freq Offset 0.00000000 Hz</div><div>Signal Track On Off</div><div>Scale Type Log Lin</div></div></div> |

| WCDMA Band II- HSDPA |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Low Channel          | <div><div><div>Agilent</div><div><div>Ch Freq</div><div>1.8524 GHz</div><div>Trig</div><div>Free</div></div><div>Occupied Bandwidth</div></div><div><div>Ref 30 dBm</div><div>Atten 35 dB</div><div><div>#Peak</div><div>Log</div><div>10</div><div>dB/</div><div>Offset</div><div>6.5</div><div>dB</div></div><div><div>Center 1.852 GHz</div><div>#Res BW 100 kHz</div><div>#VBW 300 kHz</div><div>Sweep 10 ms (1001 pts)</div><div>Span 10 MHz</div></div><div><div>Occupied Bandwidth</div><div>4.1806 MHz</div><div>Occ BW % Pwr</div><div>99.00 %</div><div>x dB</div><div>-26.00 dB</div><div>Transmit Freq Error</div><div>-675.690 Hz</div><div>x dB Bandwidth</div><div>5.132 MHz</div></div></div><div><div>Freq/Channel</div><div>Center Freq</div><div>1.85240000 GHz</div><div>Start Freq</div><div>1.84740000 GHz</div><div>Stop Freq</div><div>1.85740000 GHz</div><div>CF Step</div><div>1.00000000 MHz</div><div>Auto</div><div>Man</div><div>Freq Offset</div><div>0.00000000 Hz</div><div>Signal Track</div><div>On</div><div>Off</div><div>Scale Type</div><div>Log</div><div>Lin</div></div></div> |
| Middle Channel       | <div><div><div>Agilent</div><div><div>Ch Freq</div><div>1.88 GHz</div><div>Trig</div><div>Free</div></div><div>Occupied Bandwidth</div></div><div><div>Ref 30 dBm</div><div>Atten 35 dB</div><div><div>#Peak</div><div>Log</div><div>10</div><div>dB/</div><div>Offset</div><div>6.5</div><div>dB</div></div><div><div>Center 1.88 GHz</div><div>#Res BW 100 kHz</div><div>#VBW 300 kHz</div><div>Sweep 10 ms (1001 pts)</div><div>Span 10 MHz</div></div><div><div>Occupied Bandwidth</div><div>4.1674 MHz</div><div>Occ BW % Pwr</div><div>99.00 %</div><div>x dB</div><div>-26.00 dB</div><div>Transmit Freq Error</div><div>-2.675 kHz</div><div>x dB Bandwidth</div><div>4.679 MHz</div></div></div><div><div>Freq/Channel</div><div>Center Freq</div><div>1.88000000 GHz</div><div>Start Freq</div><div>1.87500000 GHz</div><div>Stop Freq</div><div>1.88500000 GHz</div><div>CF Step</div><div>1.00000000 MHz</div><div>Auto</div><div>Man</div><div>Freq Offset</div><div>0.00000000 Hz</div><div>Signal Track</div><div>On</div><div>Off</div><div>Scale Type</div><div>Log</div><div>Lin</div></div></div>     |
| High Channel         | <div><div><div>Agilent</div><div><div>Ch Freq</div><div>1.9076 GHz</div><div>Trig</div><div>Free</div></div><div>Occupied Bandwidth</div></div><div><div>Ref 30 dBm</div><div>Atten 35 dB</div><div><div>#Peak</div><div>Log</div><div>10</div><div>dB/</div><div>Offset</div><div>6.5</div><div>dB</div></div><div><div>Center 1.908 GHz</div><div>#Res BW 100 kHz</div><div>#VBW 300 kHz</div><div>Sweep 10 ms (1001 pts)</div><div>Span 10 MHz</div></div><div><div>Occupied Bandwidth</div><div>4.1596 MHz</div><div>Occ BW % Pwr</div><div>99.00 %</div><div>x dB</div><div>-26.00 dB</div><div>Transmit Freq Error</div><div>-7.292 kHz</div><div>x dB Bandwidth</div><div>4.707 MHz</div></div></div><div><div>Freq/Channel</div><div>Center Freq</div><div>1.90760000 GHz</div><div>Start Freq</div><div>1.90260000 GHz</div><div>Stop Freq</div><div>1.91260000 GHz</div><div>CF Step</div><div>1.00000000 MHz</div><div>Auto</div><div>Man</div><div>Freq Offset</div><div>0.00000000 Hz</div><div>Signal Track</div><div>On</div><div>Off</div><div>Scale Type</div><div>Log</div><div>Lin</div></div></div>  |

|                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| WCDMA Band II- HSUPA |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Low Channel          | <div><div><div>Agilent</div><div><div>Ch Freq</div><div>1.8524 GHz</div><div>Trig</div><div>Free</div></div><div>Occupied Bandwidth</div></div><div><div>Ref 30 dBm</div><div>Atten 35 dB</div><div><div>#Peak</div><div>Log</div><div>10</div><div>dB/</div><div>Offset</div><div>6.5</div><div>dB</div></div><div><div>Center 1.852 GHz</div><div>#Res BW 100 kHz</div><div>#VBW 300 kHz</div><div>Sweep 10 ms (1001 pts)</div><div>Span 10 MHz</div></div><div><div>Occupied Bandwidth</div><div>4.1963 MHz</div><div>Occ BW % Pwr</div><div>99.00 %</div><div>x dB</div><div>-26.00 dB</div><div>Transmit Freq Error</div><div>-4.229 kHz</div><div>x dB Bandwidth</div><div>4.713 MHz</div></div></div><div><div>Freq/Channel</div><div>Center Freq</div><div>1.85240000 GHz</div><div>Start Freq</div><div>1.84740000 GHz</div><div>Stop Freq</div><div>1.85740000 GHz</div><div>CF Step</div><div>1.00000000 MHz</div><div>Auto</div><div>Man</div><div>Freq Offset</div><div>0.00000000 Hz</div><div>Signal Track</div><div>On</div><div>Off</div><div>Scale Type</div><div>Log</div><div>Lin</div></div></div>  |
| Middle Channel       | <div><div><div>Agilent</div><div><div>Ch Freq</div><div>1.88 GHz</div><div>Trig</div><div>Free</div></div><div>Occupied Bandwidth</div></div><div><div>Ref 30 dBm</div><div>Atten 35 dB</div><div><div>#Peak</div><div>Log</div><div>10</div><div>dB/</div><div>Offset</div><div>6.5</div><div>dB</div></div><div><div>Center 1.88 GHz</div><div>#Res BW 100 kHz</div><div>#VBW 300 kHz</div><div>Sweep 10 ms (1001 pts)</div><div>Span 10 MHz</div></div><div><div>Occupied Bandwidth</div><div>4.1811 MHz</div><div>Occ BW % Pwr</div><div>99.00 %</div><div>x dB</div><div>-26.00 dB</div><div>Transmit Freq Error</div><div>-9.996 kHz</div><div>x dB Bandwidth</div><div>4.675 MHz</div></div></div><div><div>Freq/Channel</div><div>Center Freq</div><div>1.88000000 GHz</div><div>Start Freq</div><div>1.87500000 GHz</div><div>Stop Freq</div><div>1.88500000 GHz</div><div>CF Step</div><div>1.00000000 MHz</div><div>Auto</div><div>Man</div><div>Freq Offset</div><div>0.00000000 Hz</div><div>Signal Track</div><div>On</div><div>Off</div><div>Scale Type</div><div>Log</div><div>Lin</div></div></div>     |
| High Channel         | <div><div><div>Agilent</div><div><div>Ch Freq</div><div>1.9076 GHz</div><div>Trig</div><div>Free</div></div><div>Occupied Bandwidth</div></div><div><div>Ref 30 dBm</div><div>Atten 35 dB</div><div><div>#Peak</div><div>Log</div><div>10</div><div>dB/</div><div>Offset</div><div>6.5</div><div>dB</div></div><div><div>Center 1.908 GHz</div><div>#Res BW 100 kHz</div><div>#VBW 300 kHz</div><div>Sweep 10 ms (1001 pts)</div><div>Span 10 MHz</div></div><div><div>Occupied Bandwidth</div><div>4.1866 MHz</div><div>Occ BW % Pwr</div><div>99.00 %</div><div>x dB</div><div>-26.00 dB</div><div>Transmit Freq Error</div><div>-11.740 kHz</div><div>x dB Bandwidth</div><div>4.715 MHz</div></div></div><div><div>Freq/Channel</div><div>Center Freq</div><div>1.90760000 GHz</div><div>Start Freq</div><div>1.90260000 GHz</div><div>Stop Freq</div><div>1.91260000 GHz</div><div>CF Step</div><div>1.00000000 MHz</div><div>Auto</div><div>Man</div><div>Freq Offset</div><div>0.00000000 Hz</div><div>Signal Track</div><div>On</div><div>Off</div><div>Scale Type</div><div>Log</div><div>Lin</div></div></div> |

## 7. Out of Band Emissions at Antenna Terminal

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### 7.1 Standard Applicable

According to §22.917(a), the power of any emissions outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $43 + 10 \log(P)$  dB.

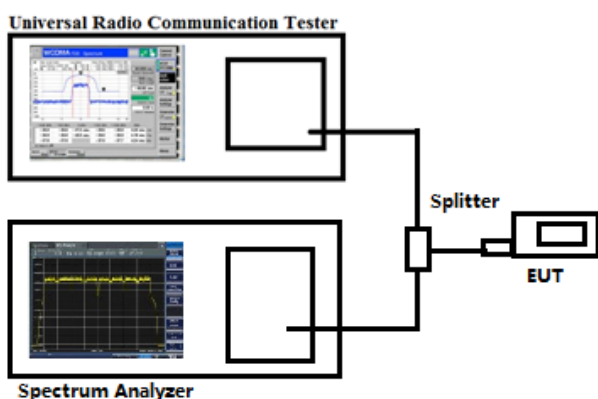
According to §24.238(a), the power of any emissions outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $43 + 10 \log(P)$  dB.

According to §27.53 (h), the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least  $43 + 10 \log_{10}(P)$  dB.

### 7.2 Test Procedure

The RF output terminal of the transmitter was connected to the input of the spectrum analyzer via a suitable attenuation. The RBW of the spectrum analyzer was set to 100kHz and 1MHz for the scan frequency from 30MHz to 1GHz and the scan frequency from 1GHz to up to 10<sup>th</sup> harmonic.

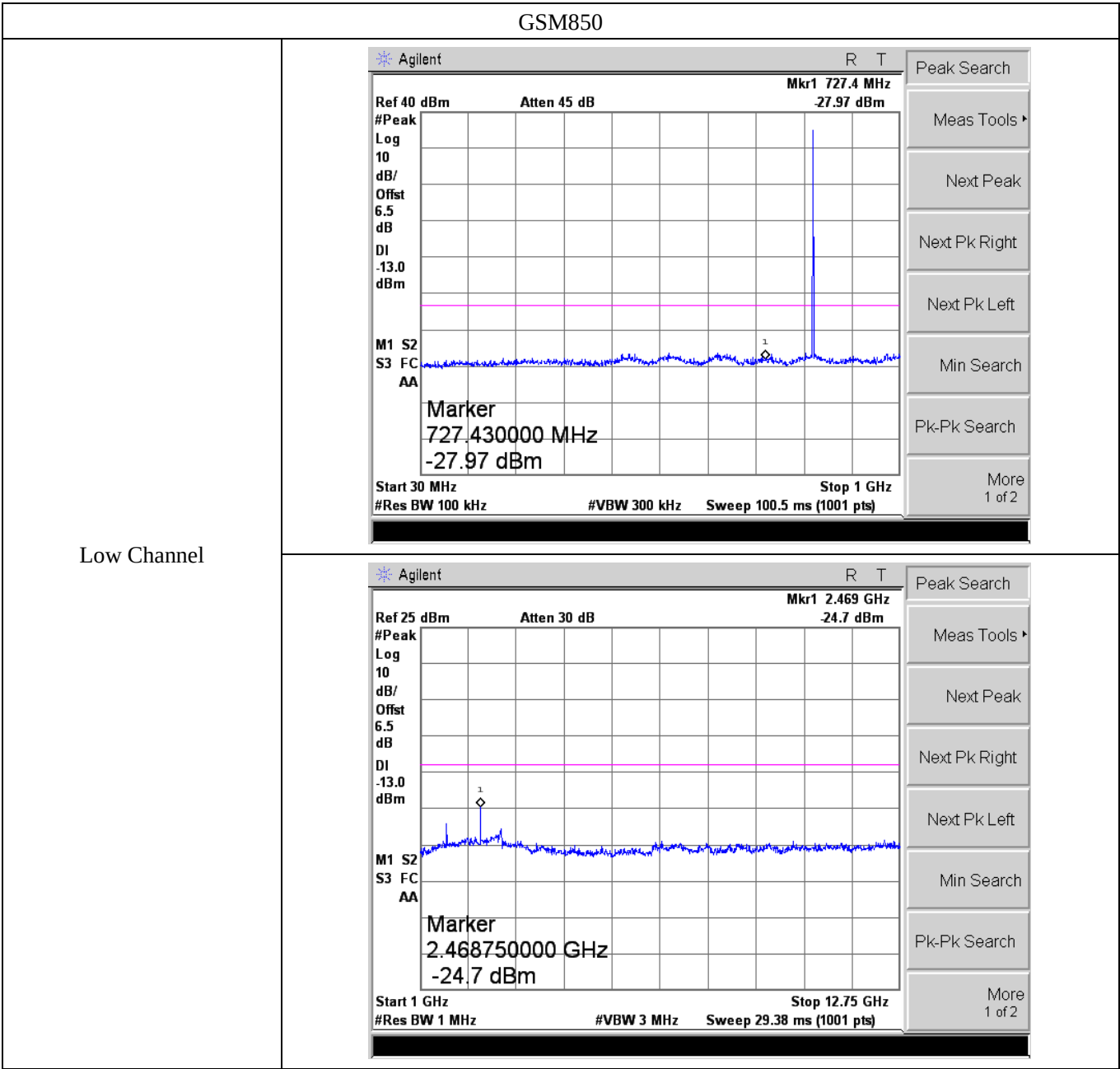
Test Configuration for the out of band emissions testing:



### 7.3 Summary of Test Results/Plots

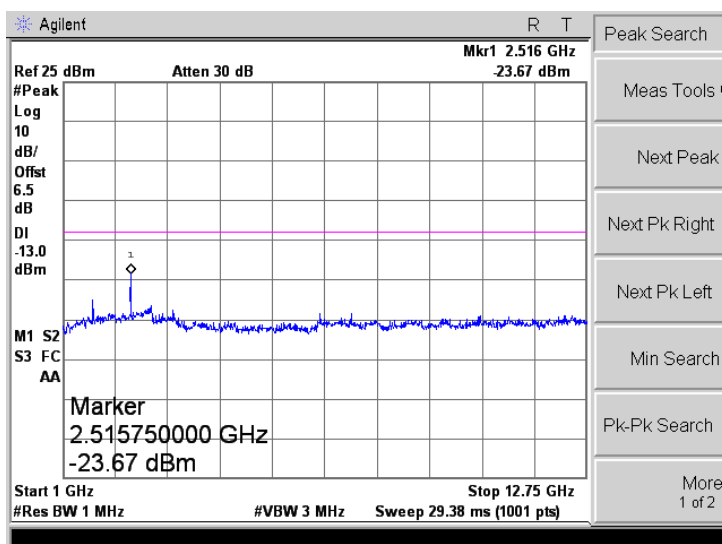
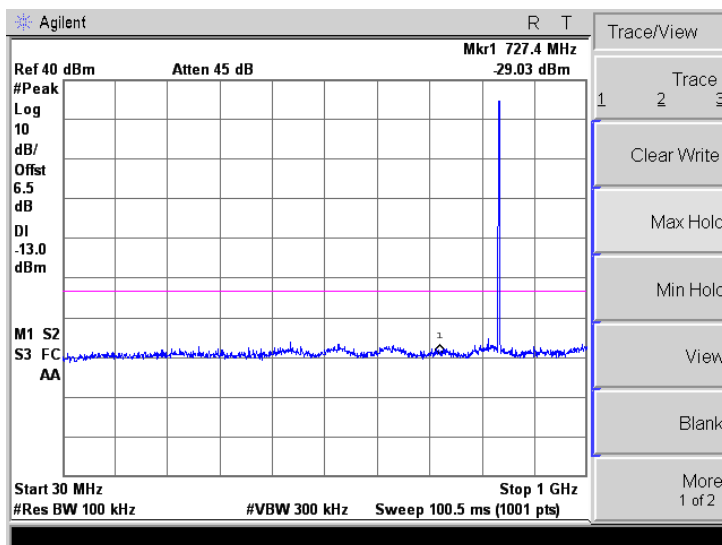
Note: Pre-scan mode WCDMA/HSDPA/HSUPA find the worst case at WCDMA mode and recorded in the test report.

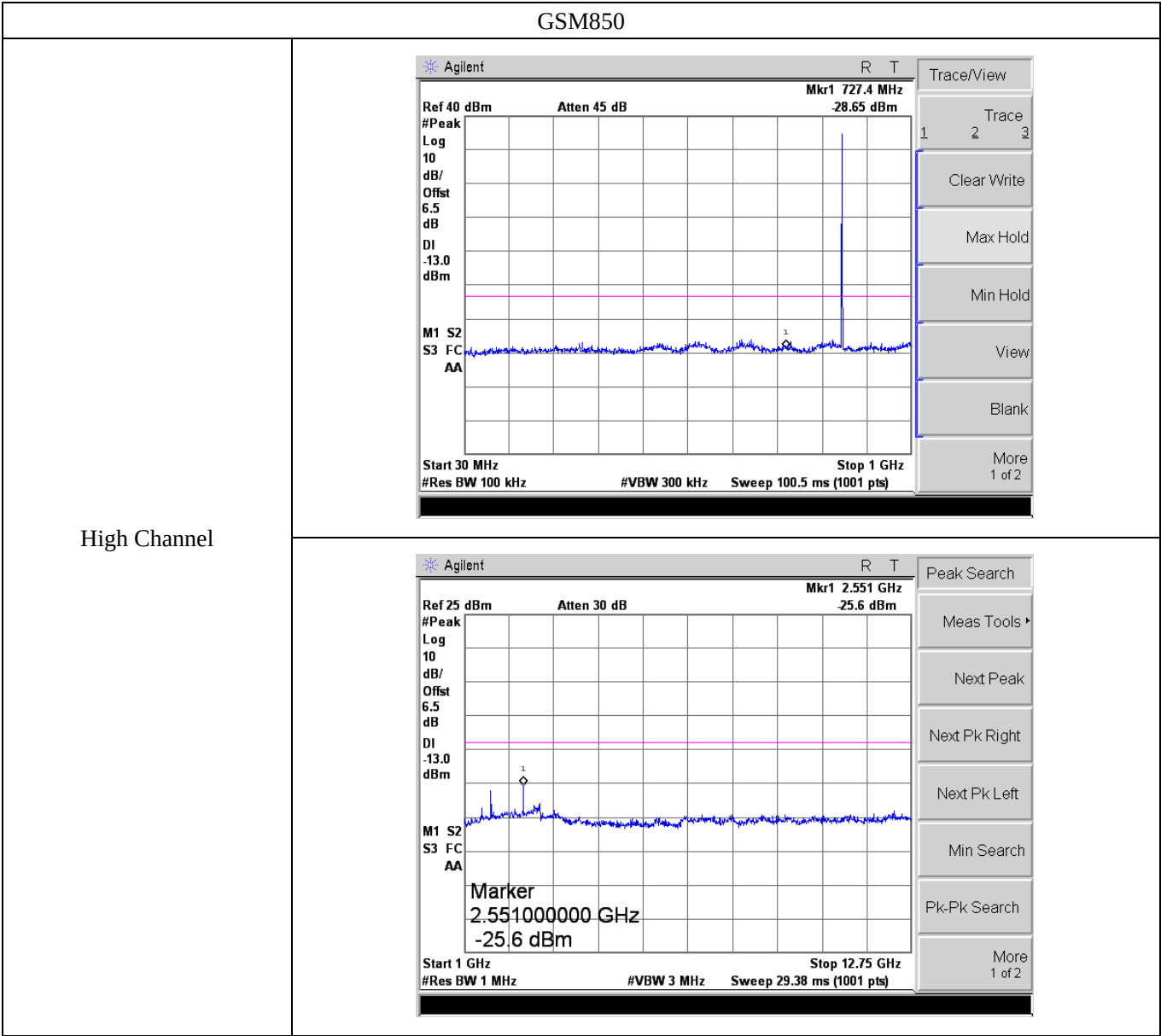
Please refer to the following test plots

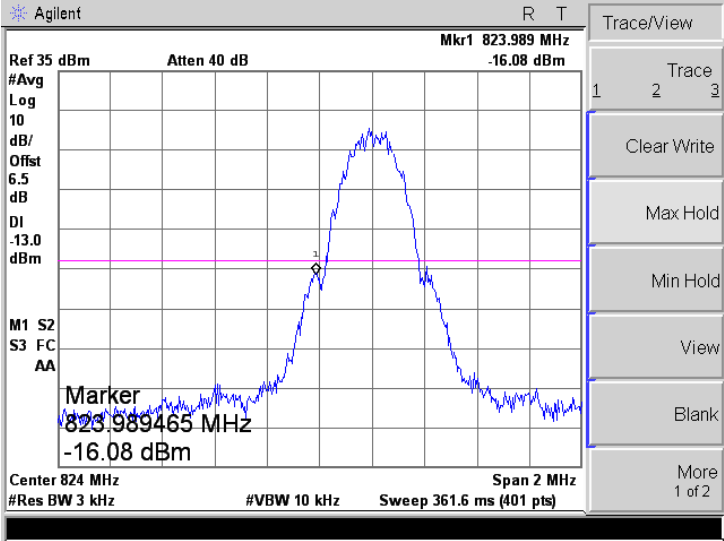
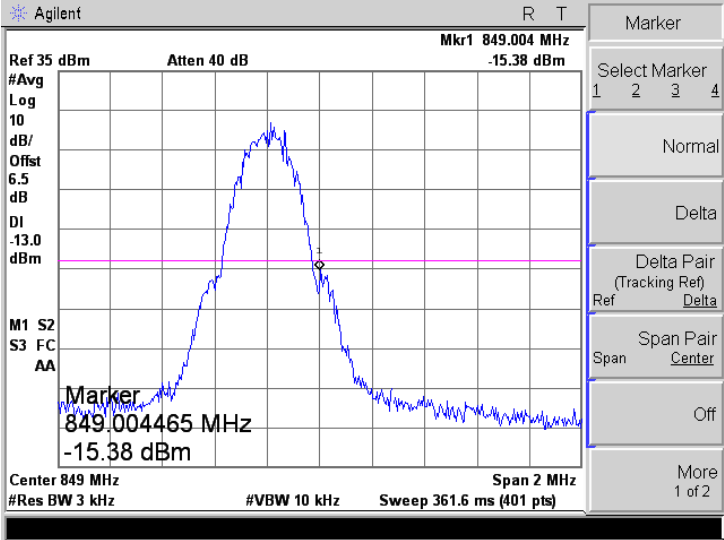


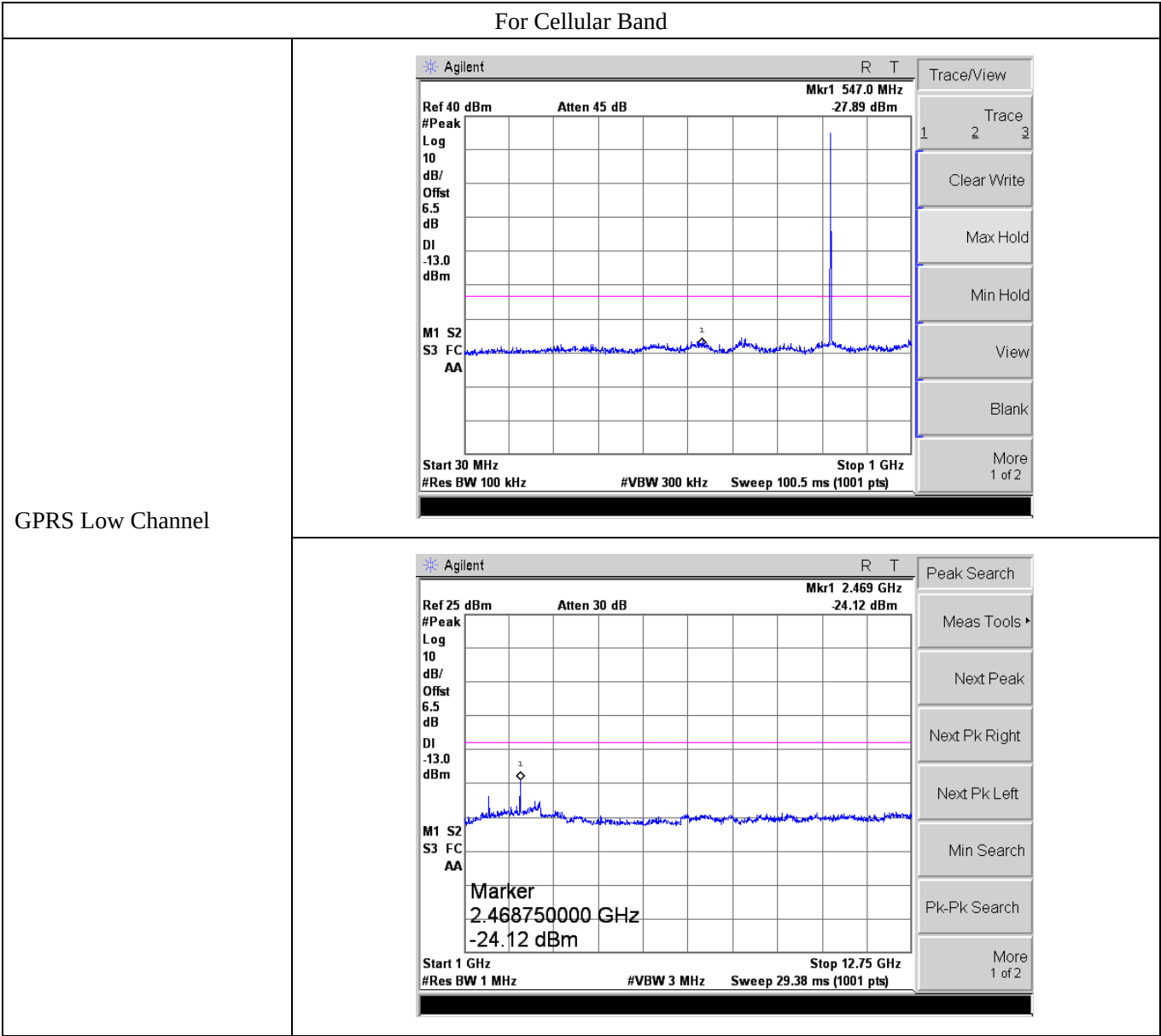


### Middle Channel

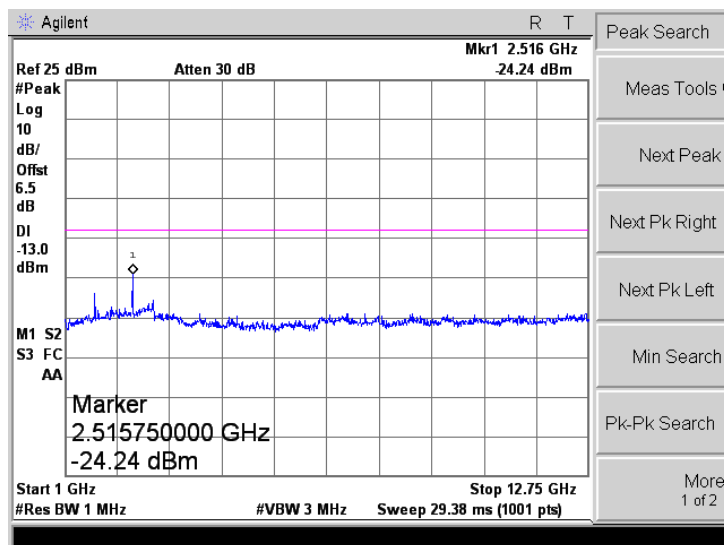


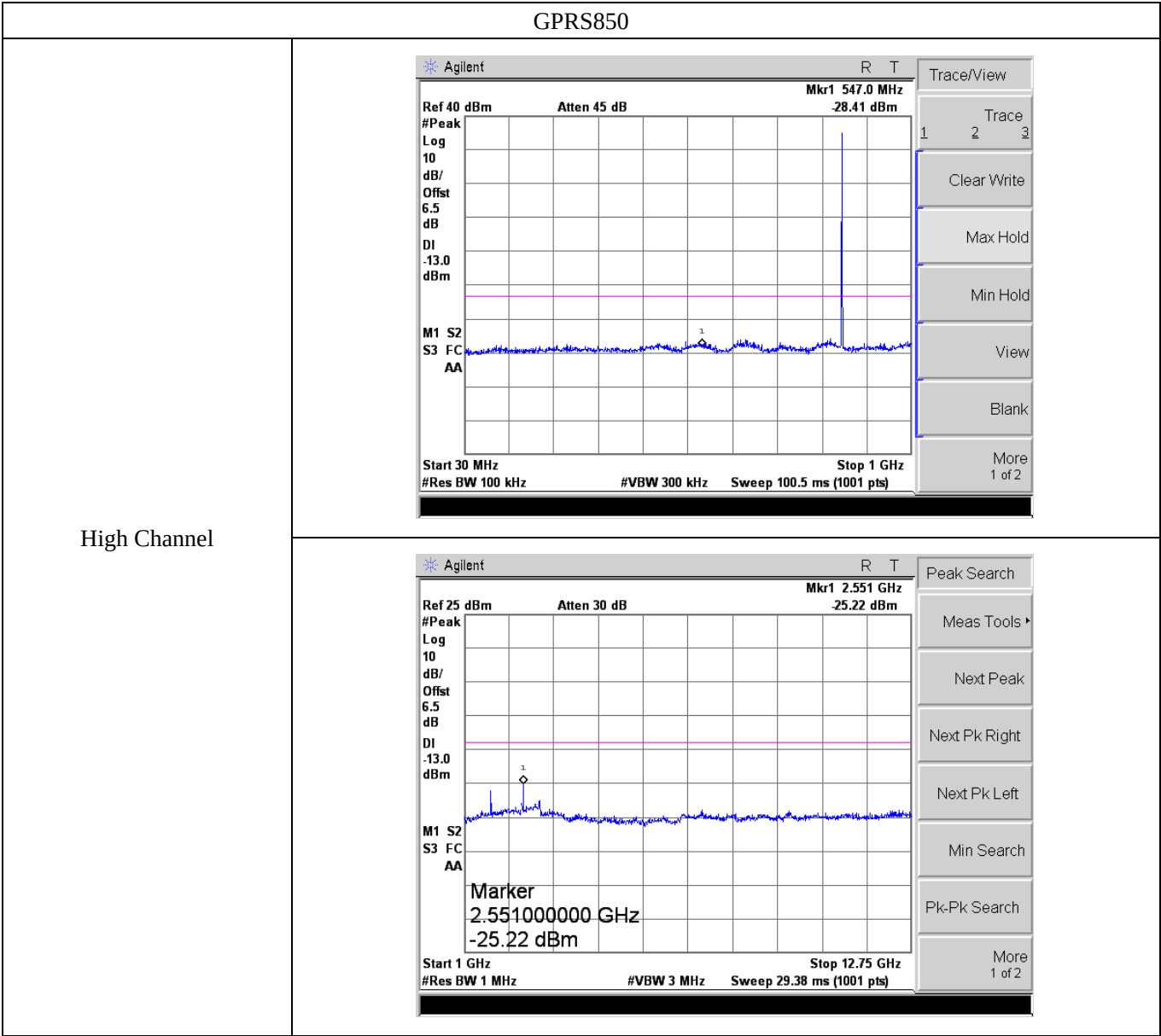


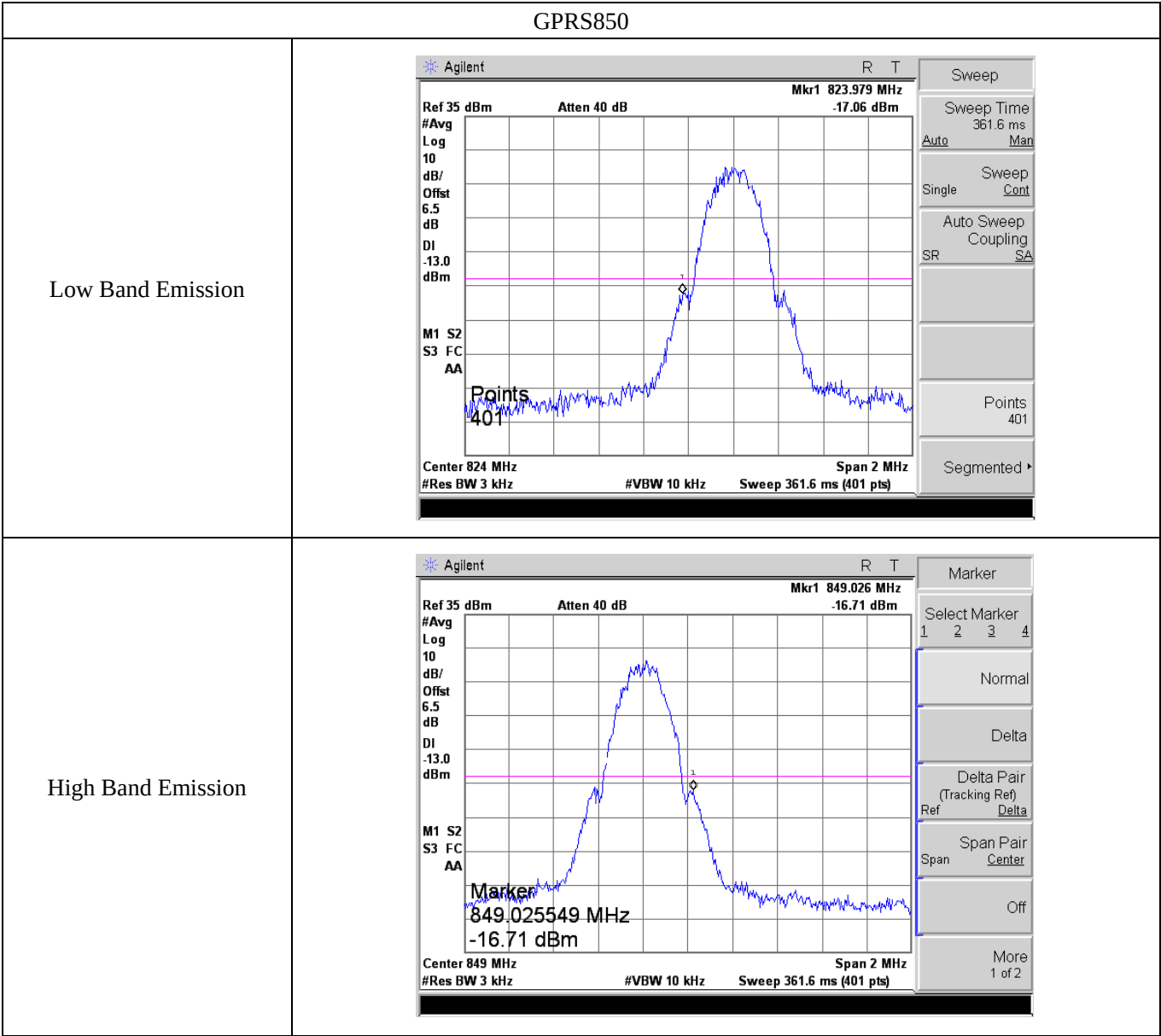
|                    |                                                                                     |
|--------------------|-------------------------------------------------------------------------------------|
| GSM850             |                                                                                     |
| Low Band Emission  |   |
| High Band Emission |  |

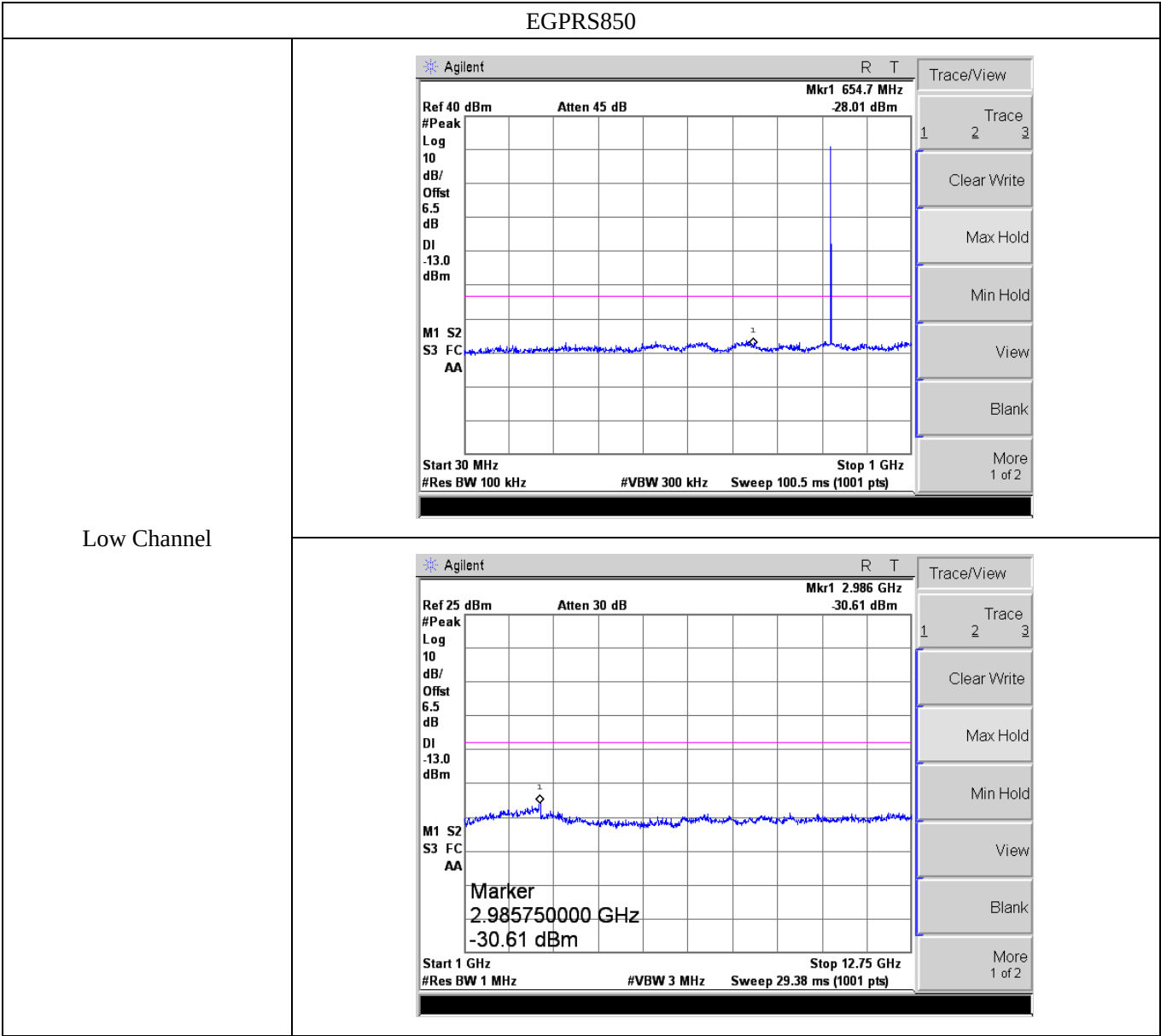


## Middle Channel

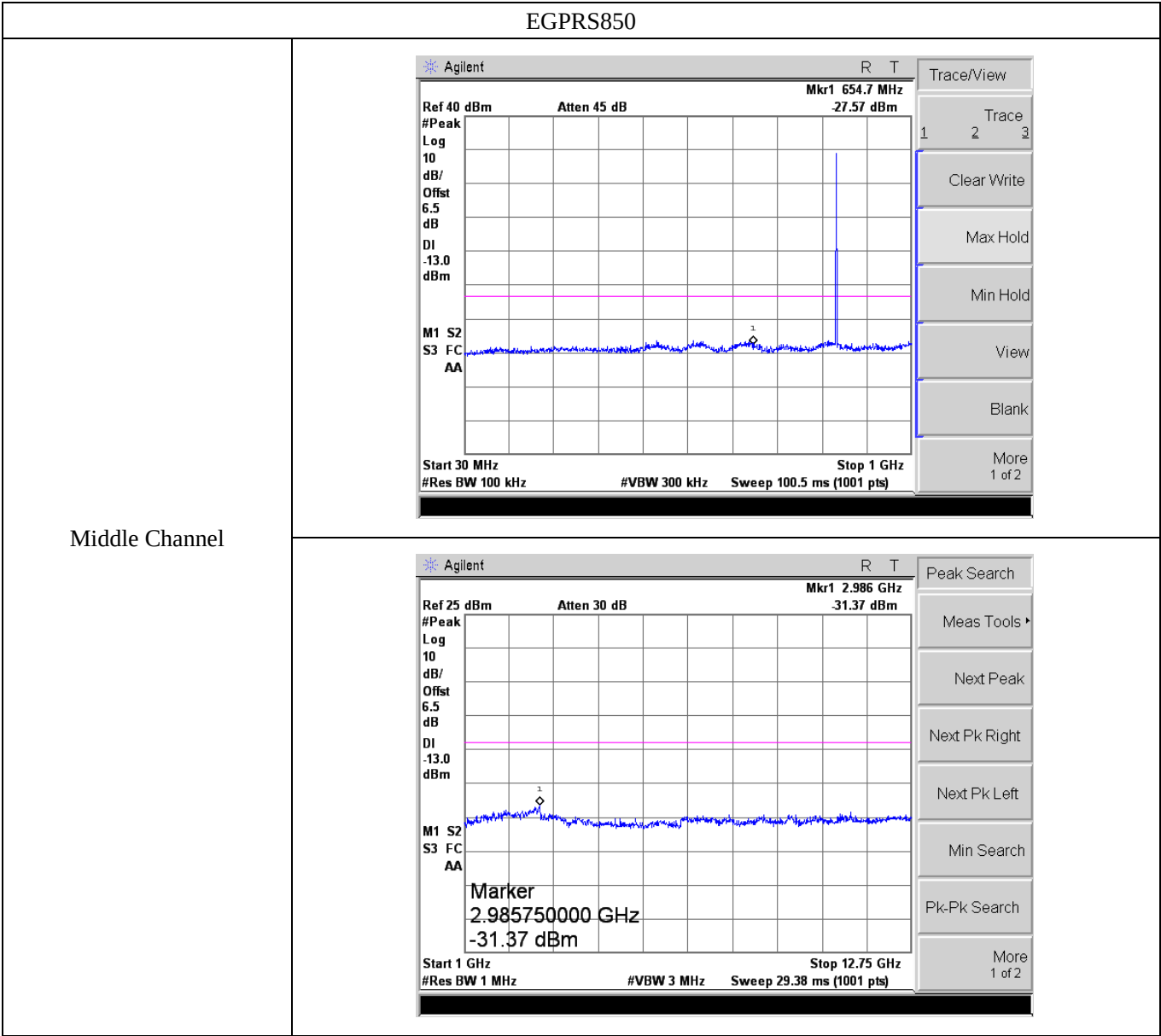


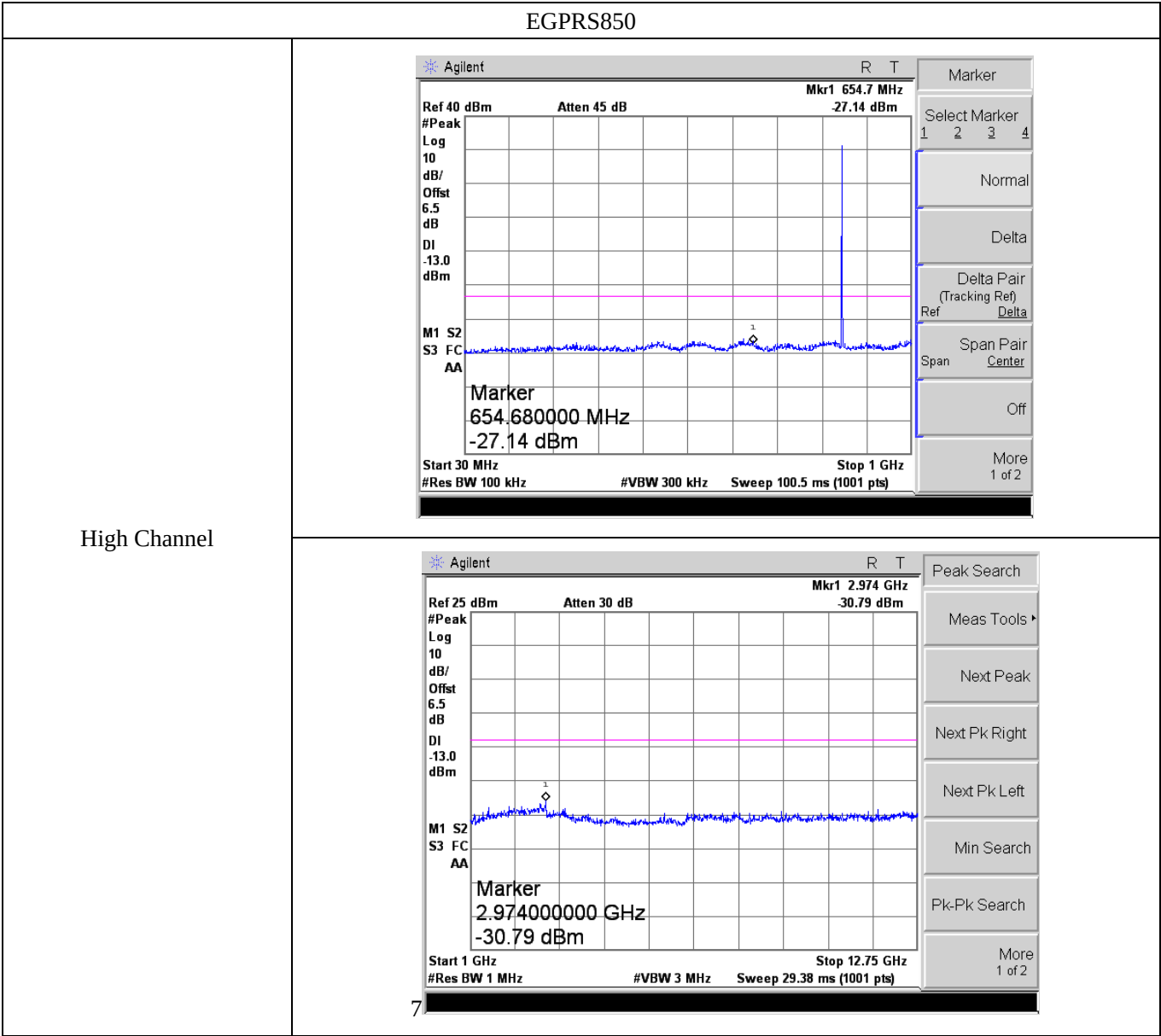


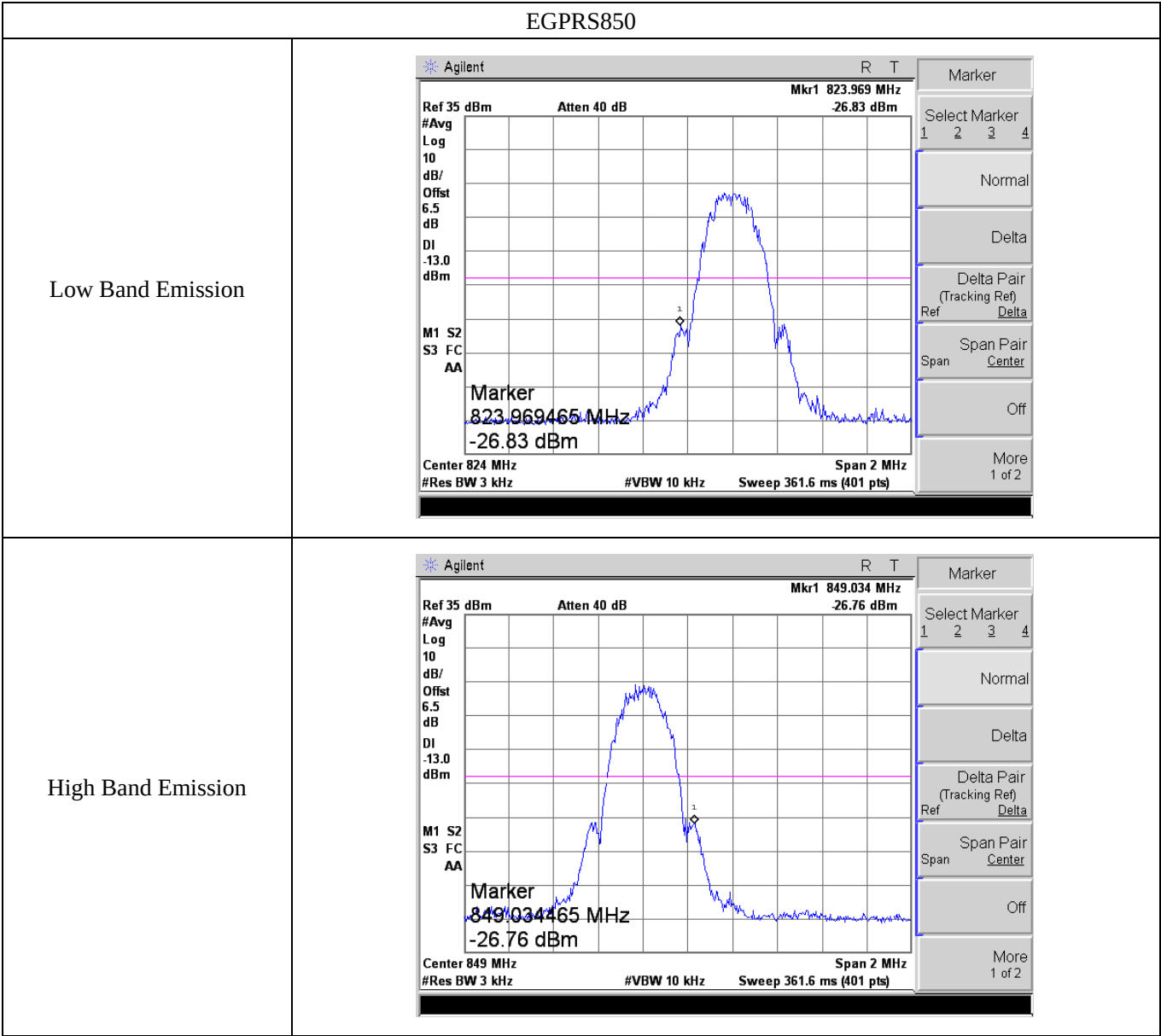


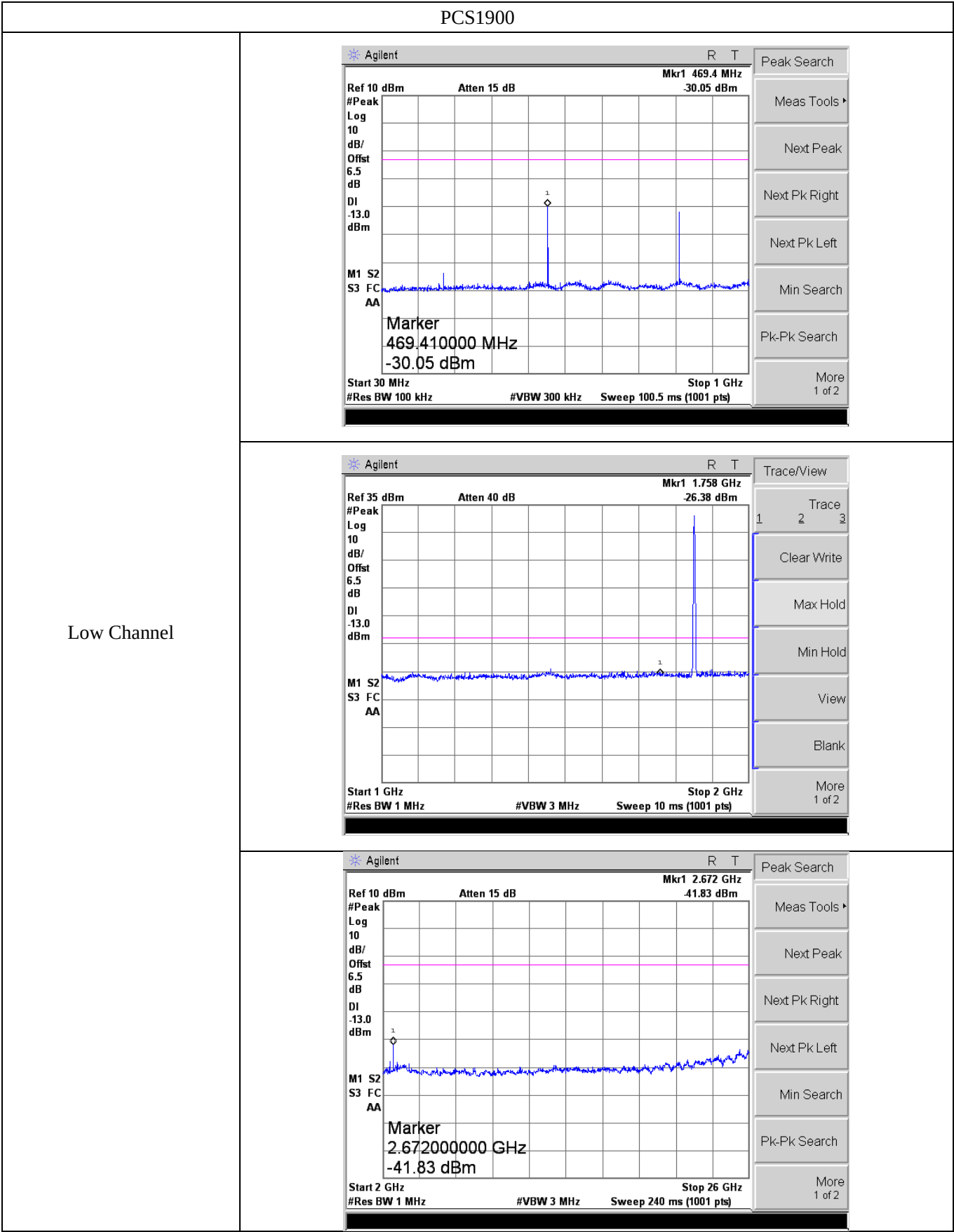


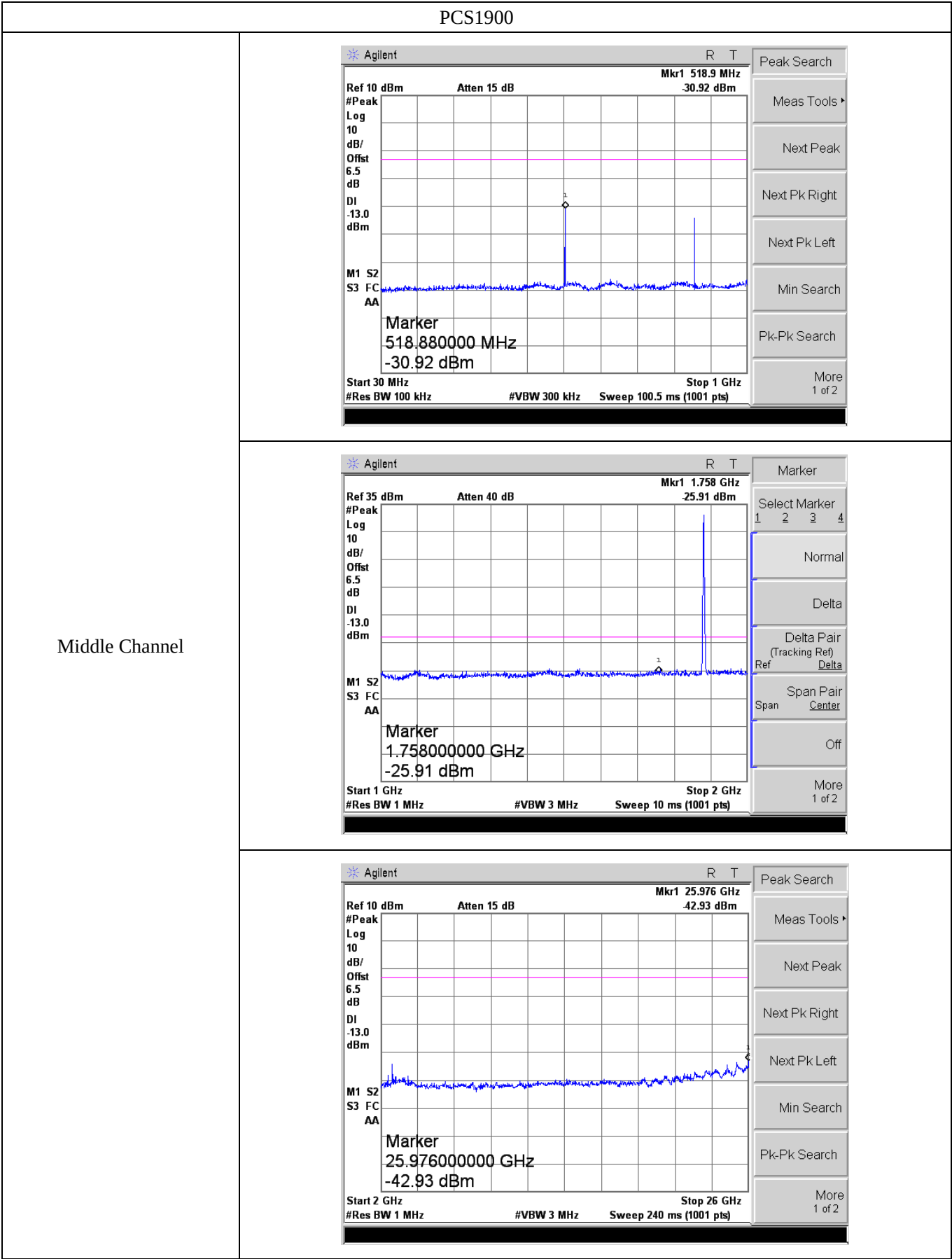


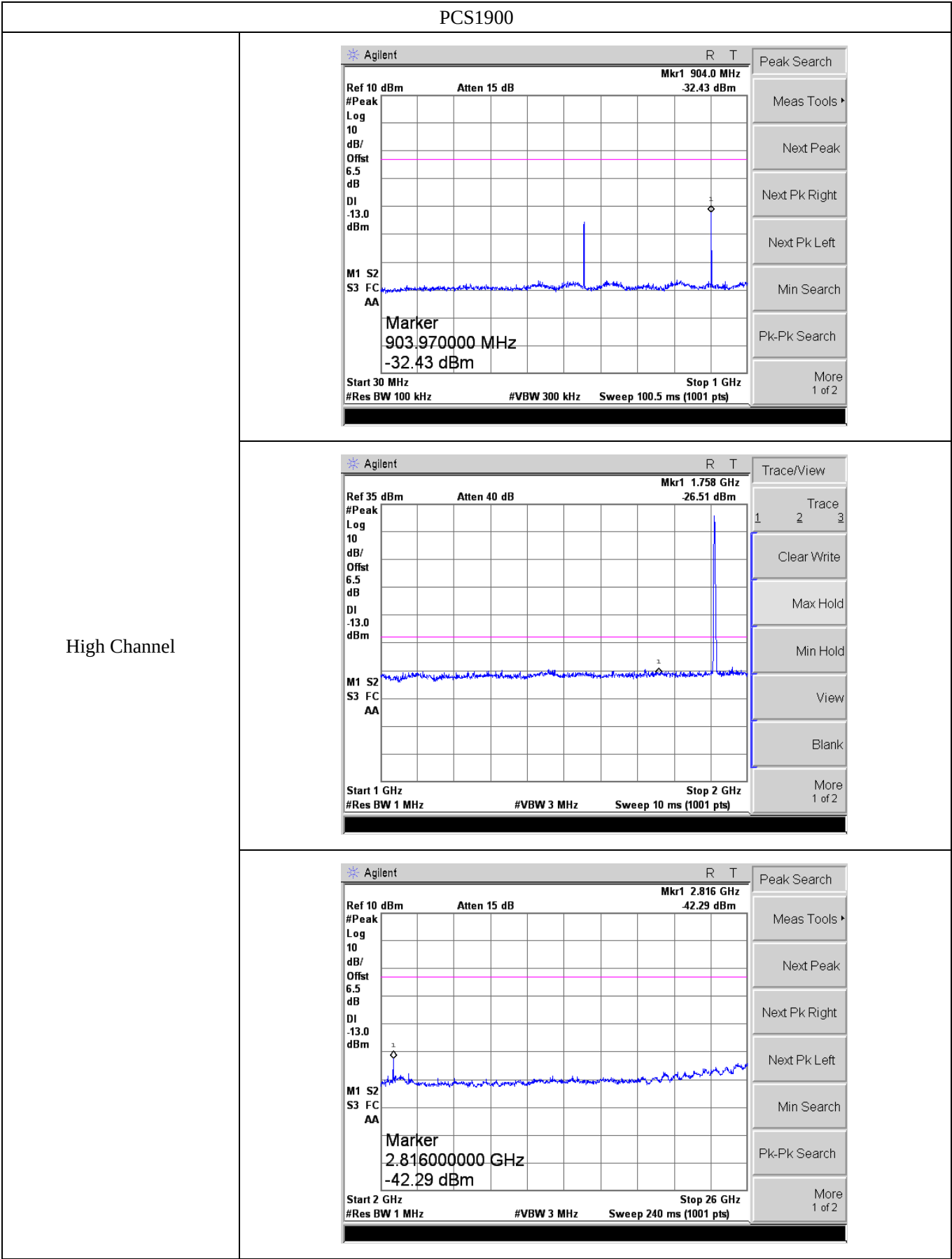


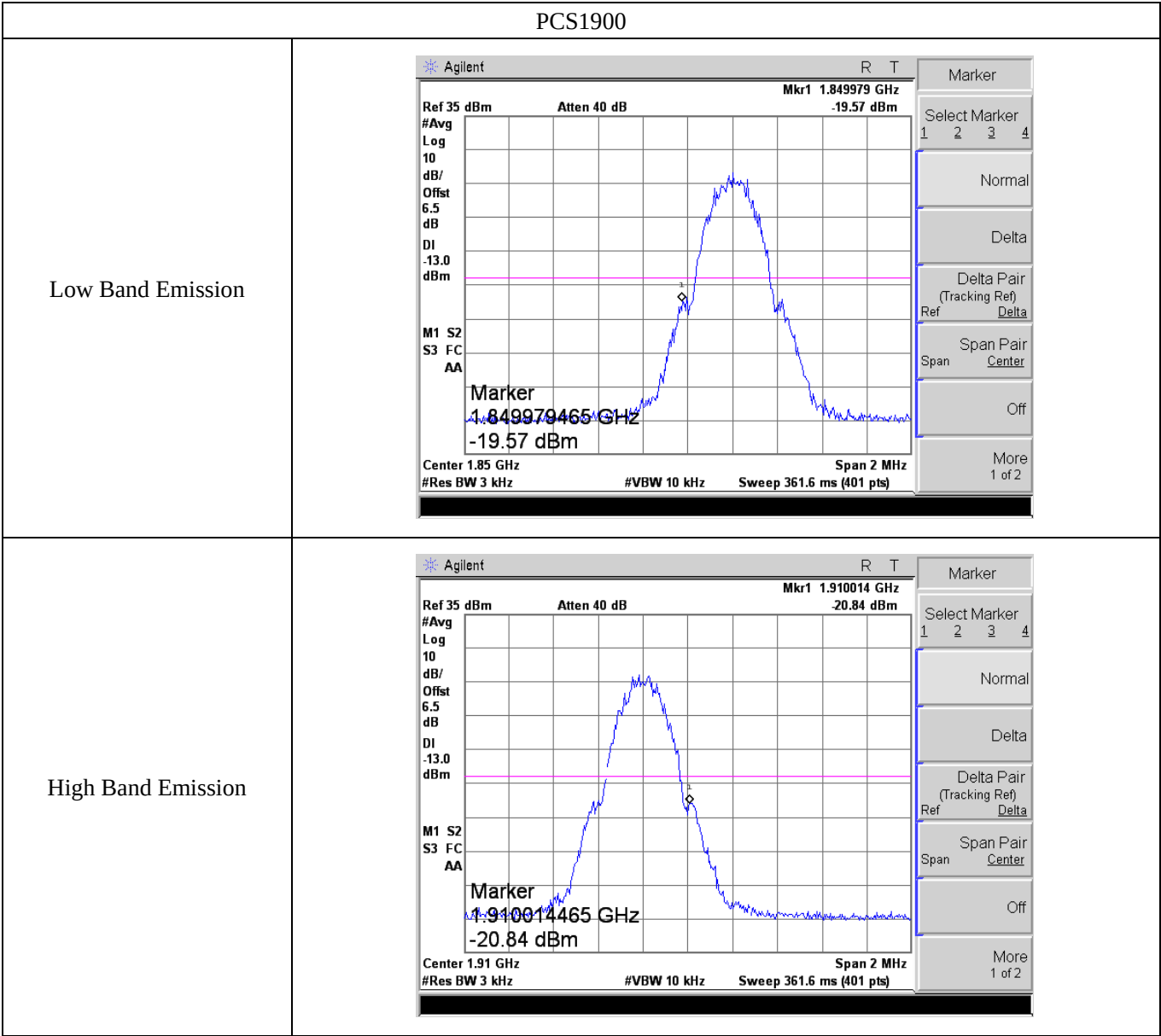




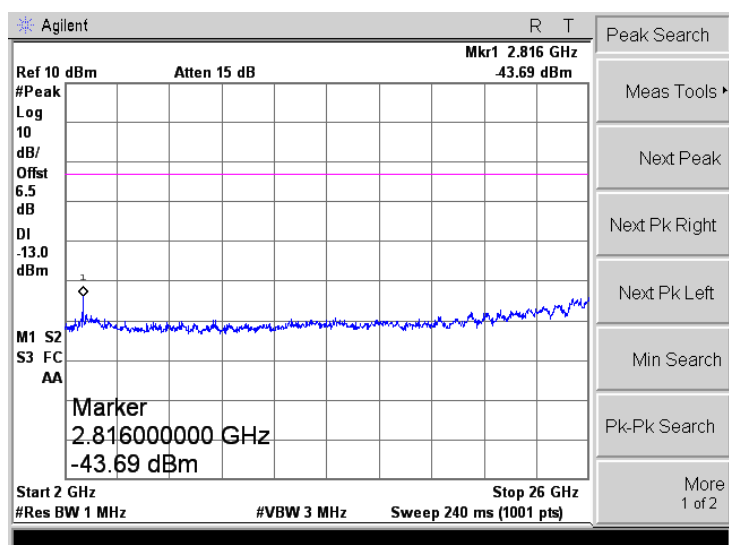
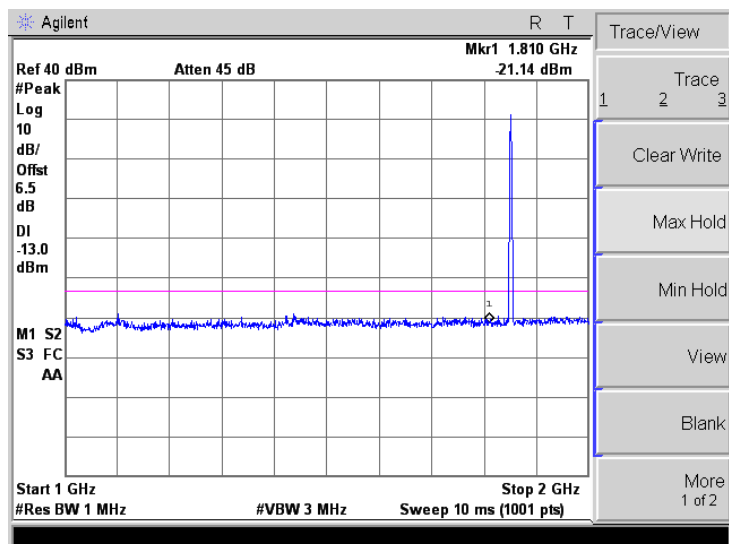
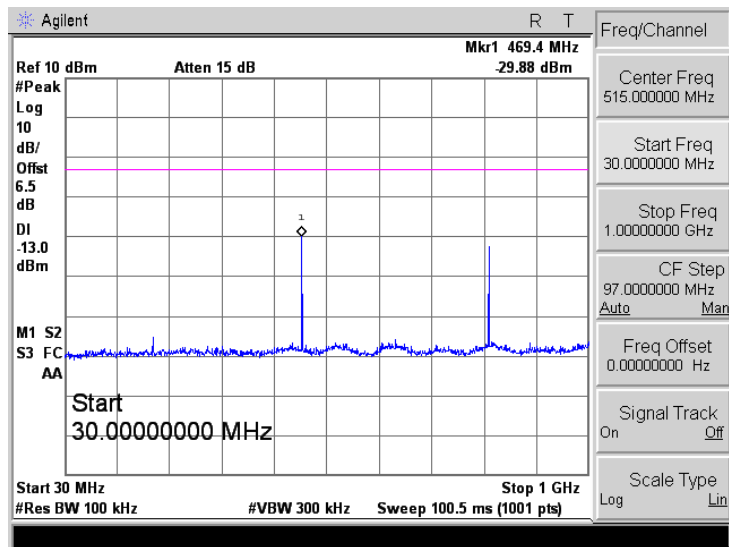




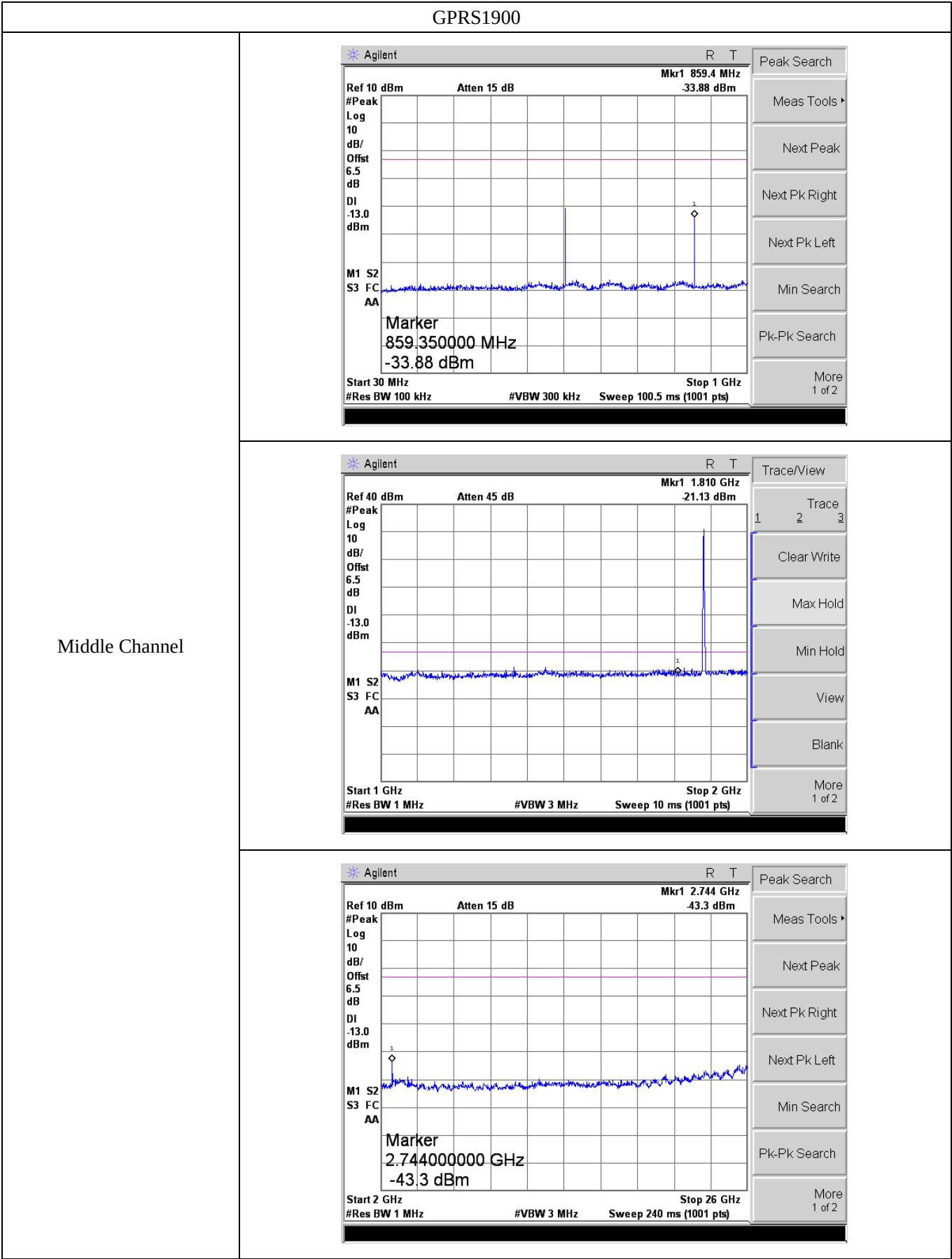




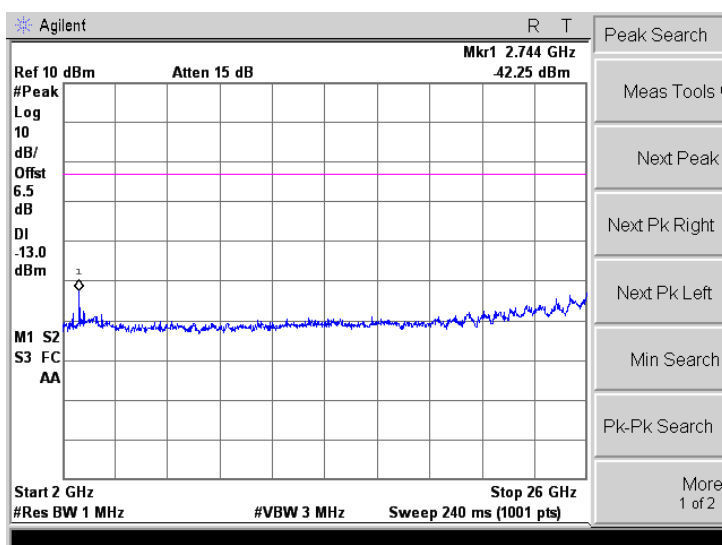
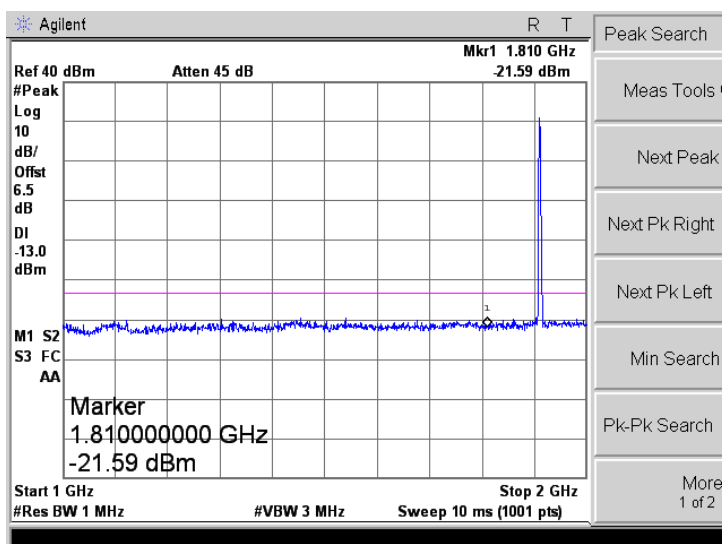
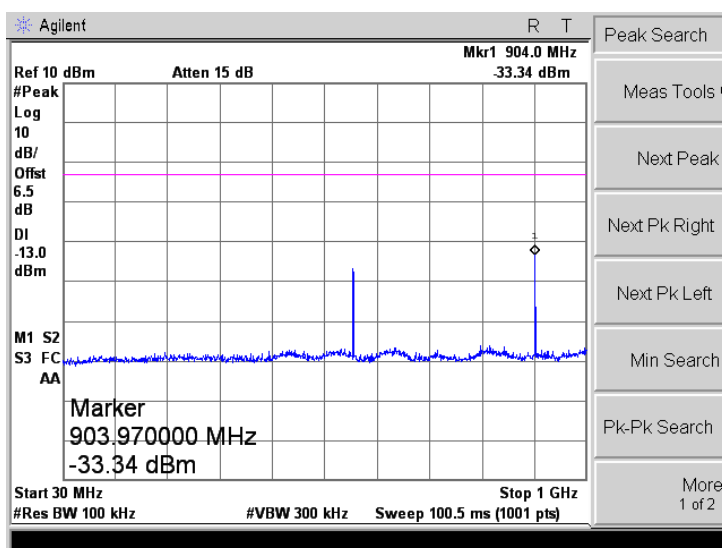
## Low Channel

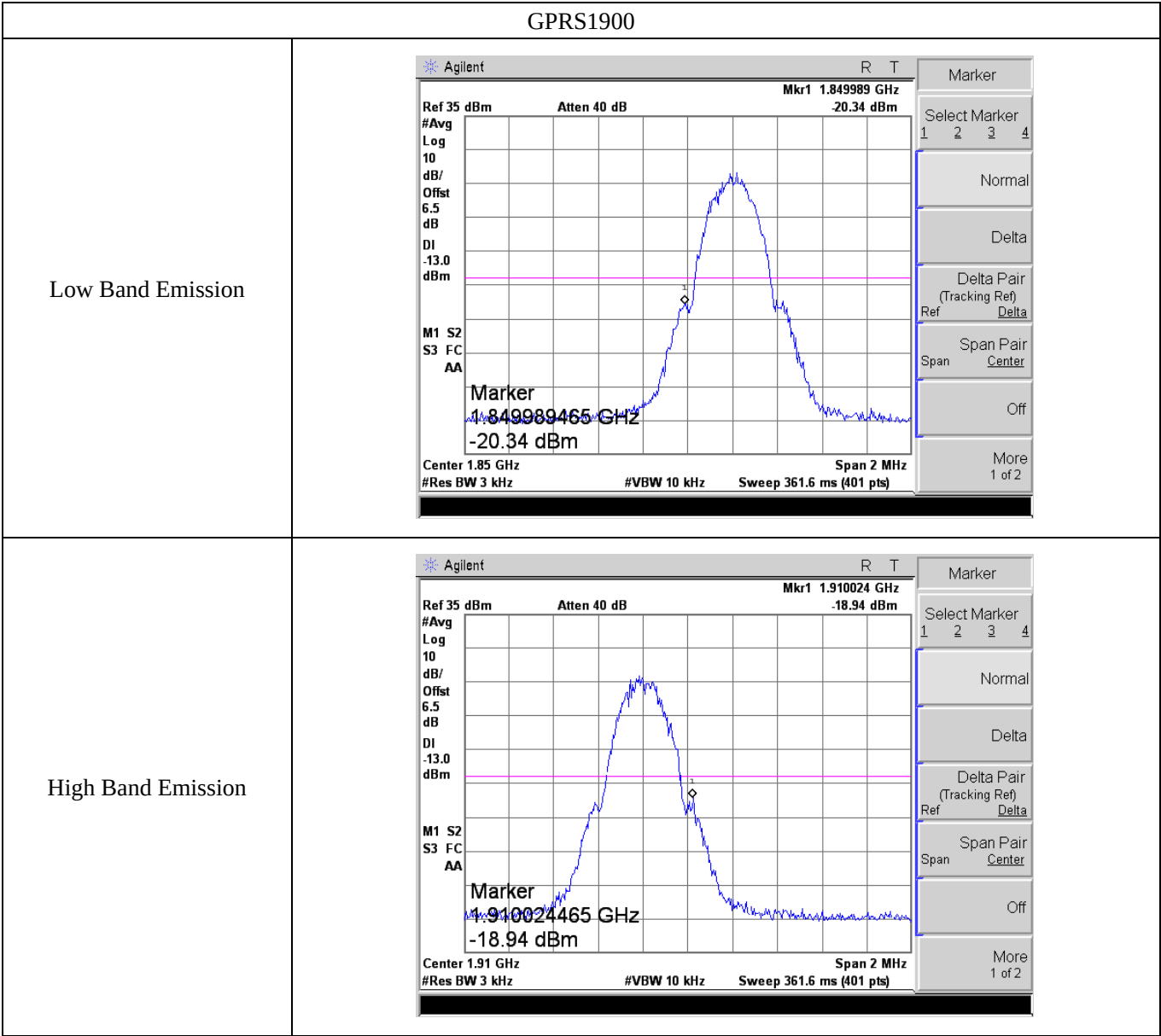


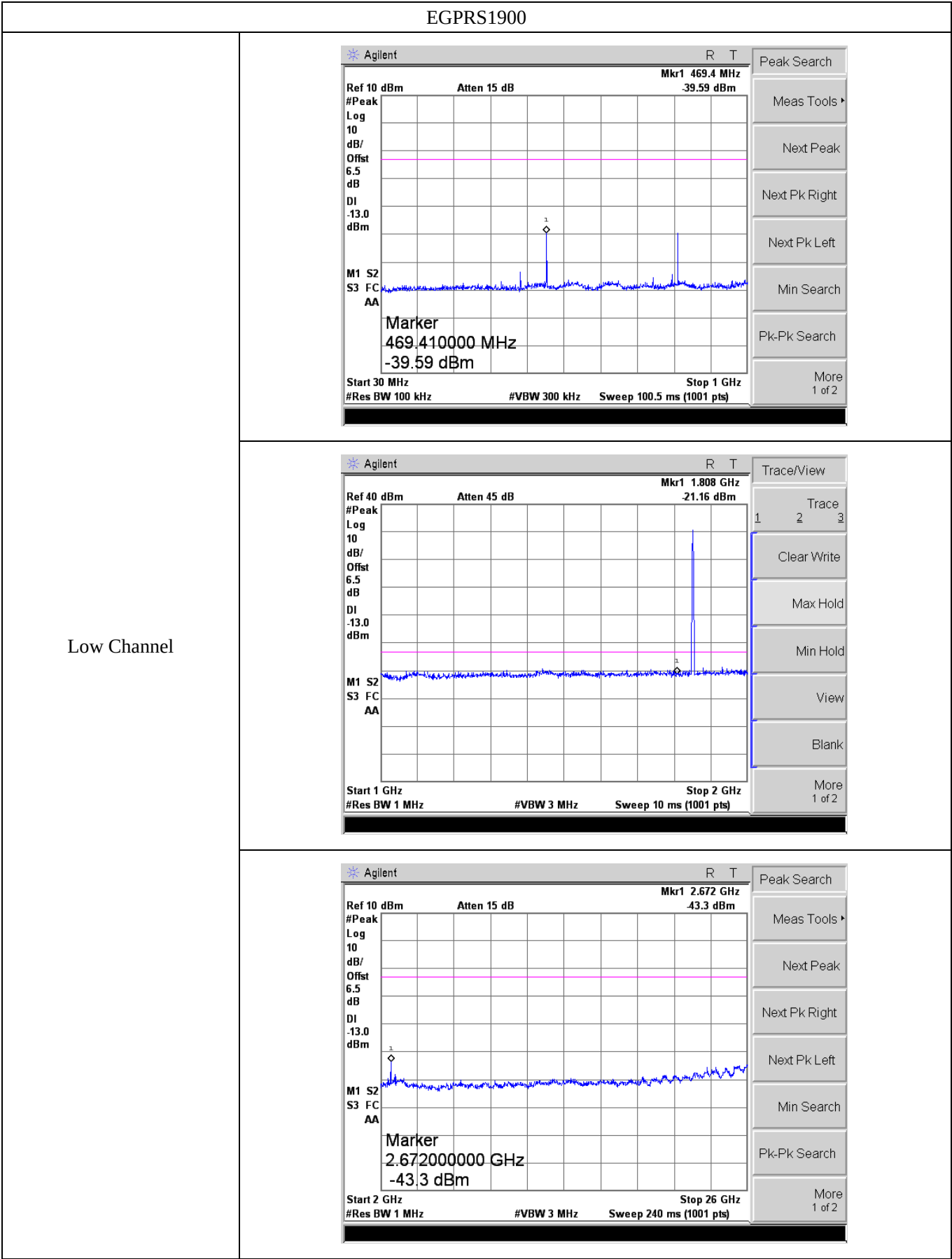




## High Channel



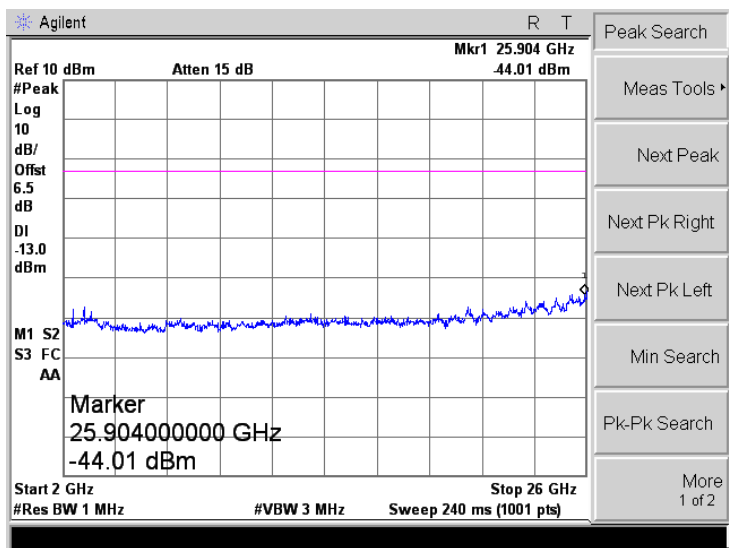
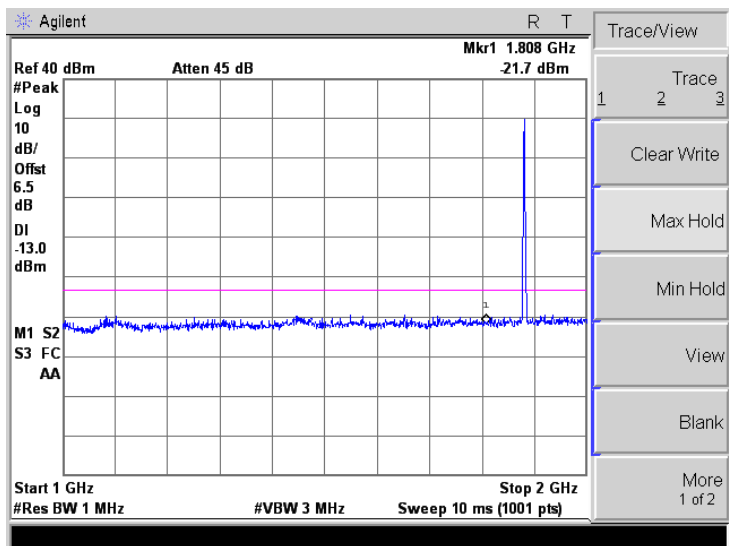
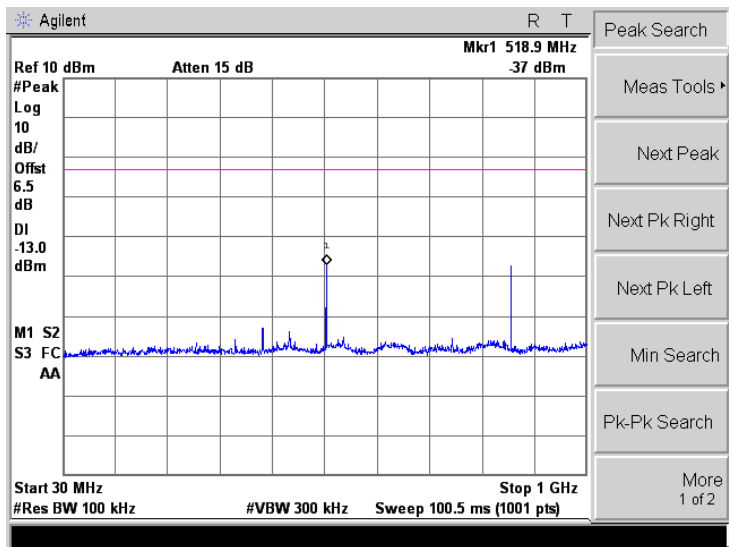


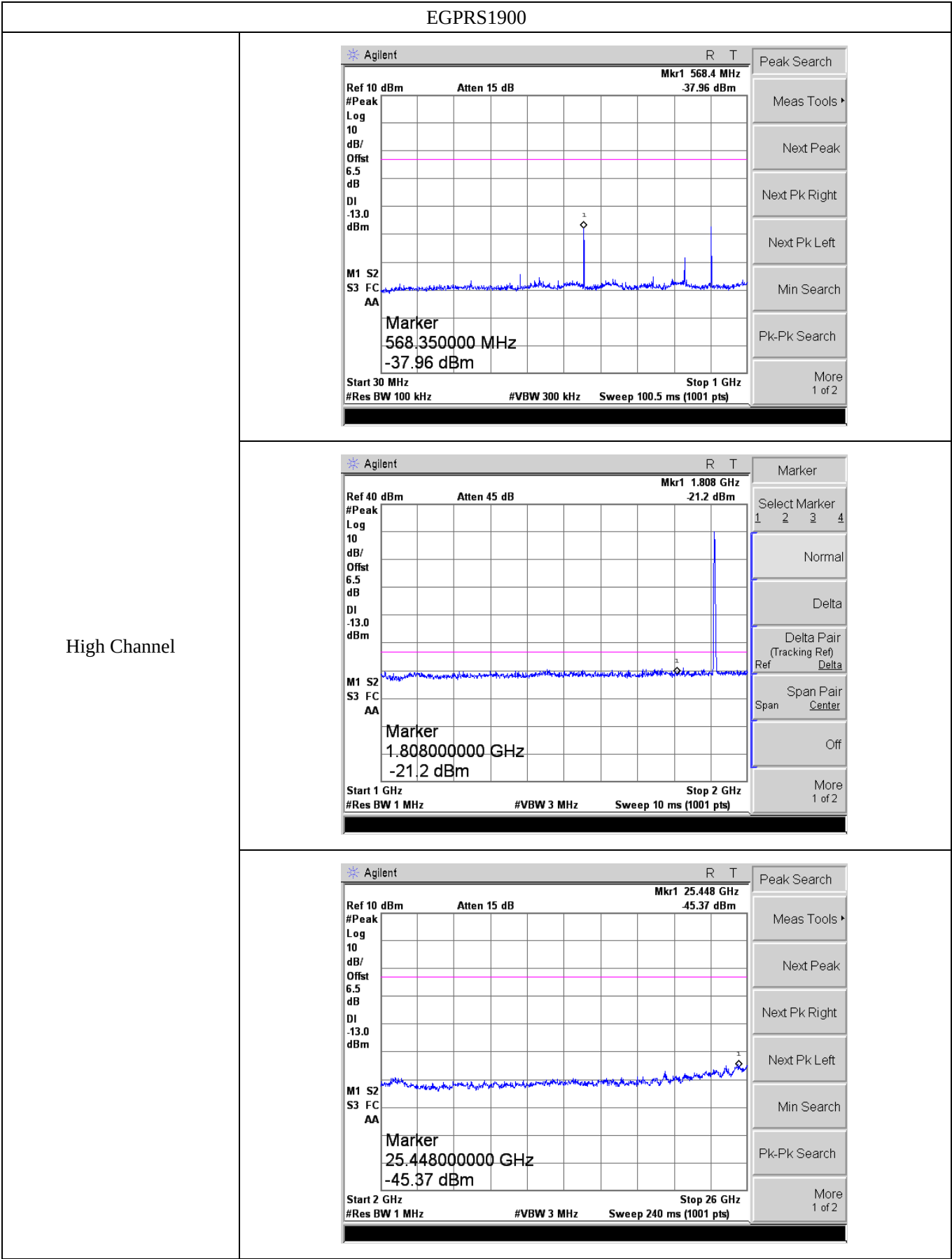


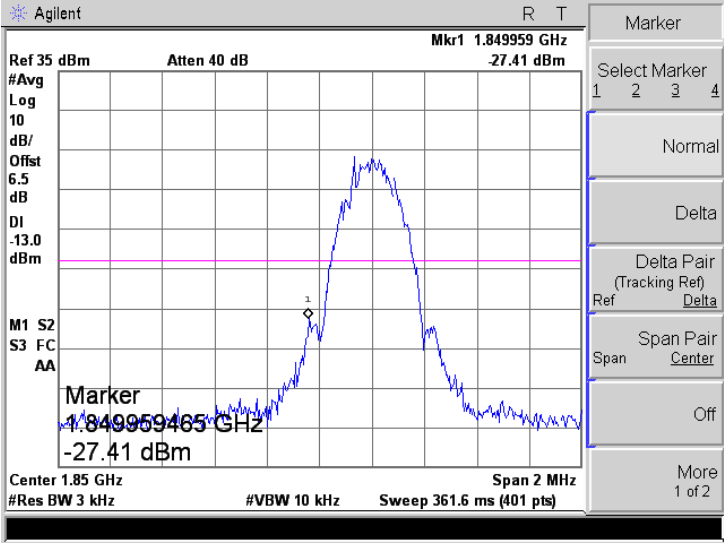
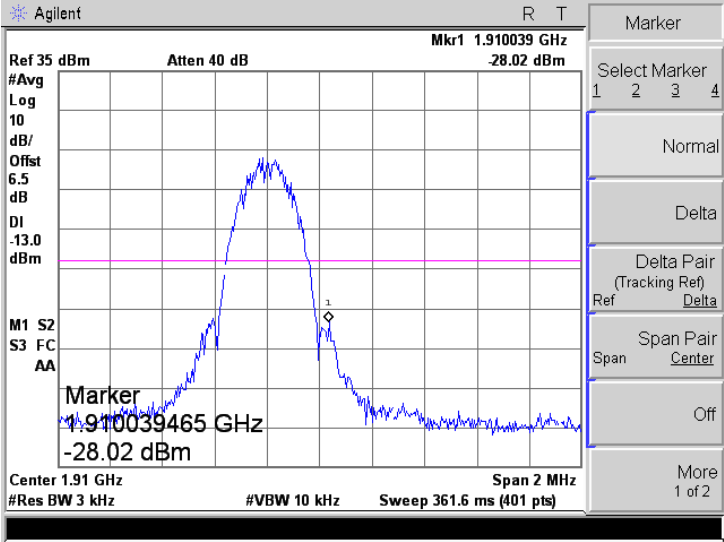
Low Channel

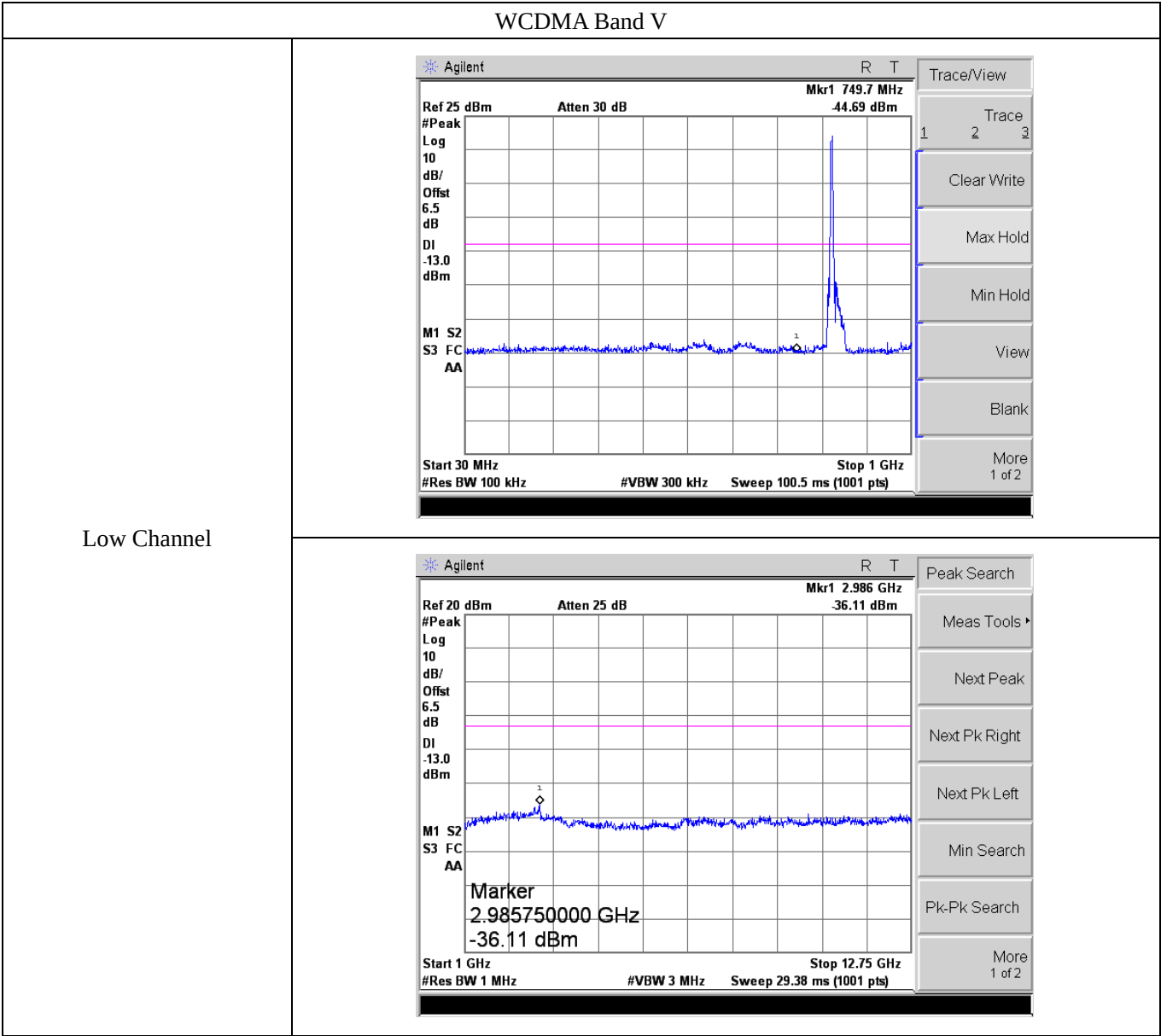
EGPRS1900

Middle Channel

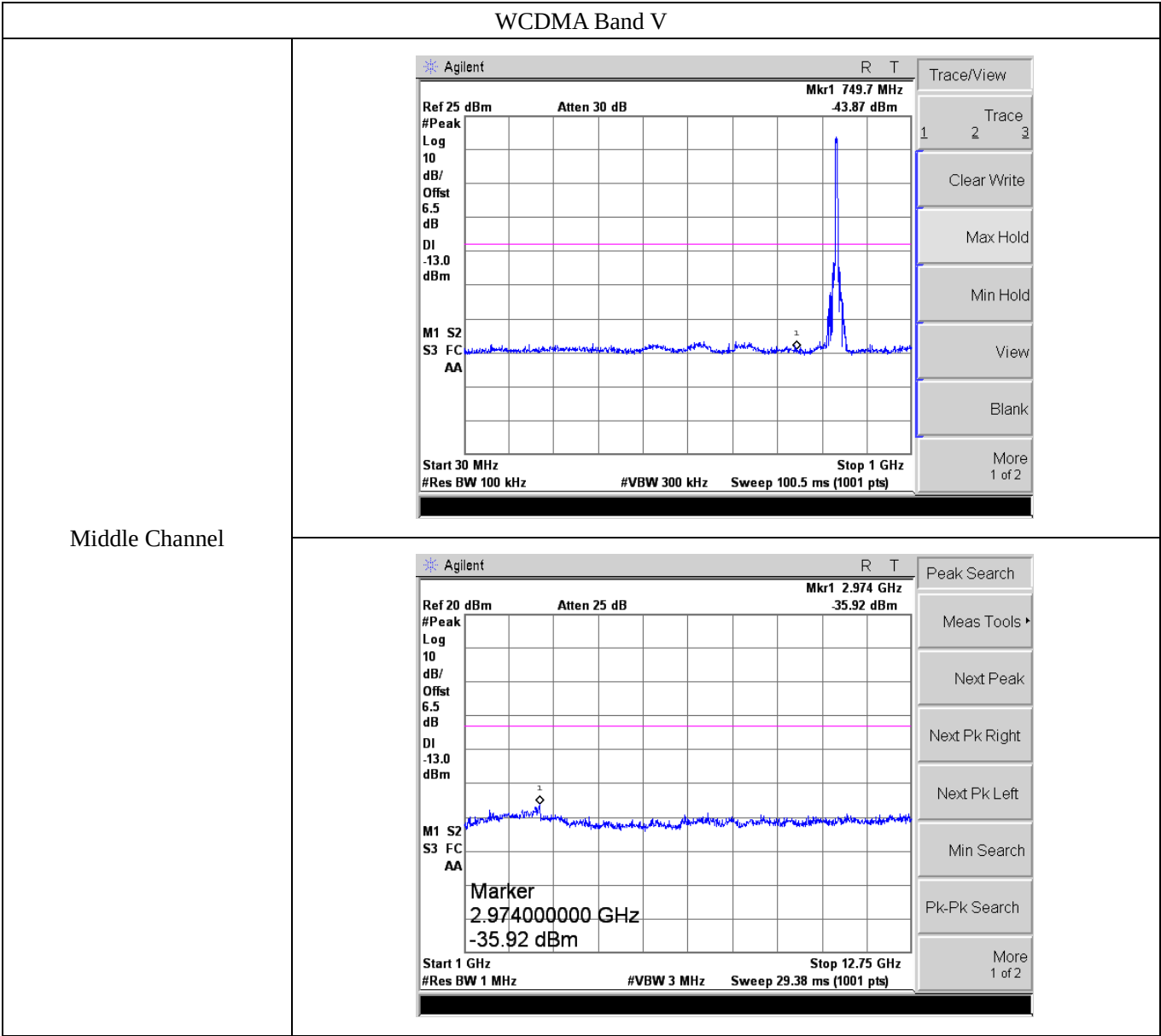


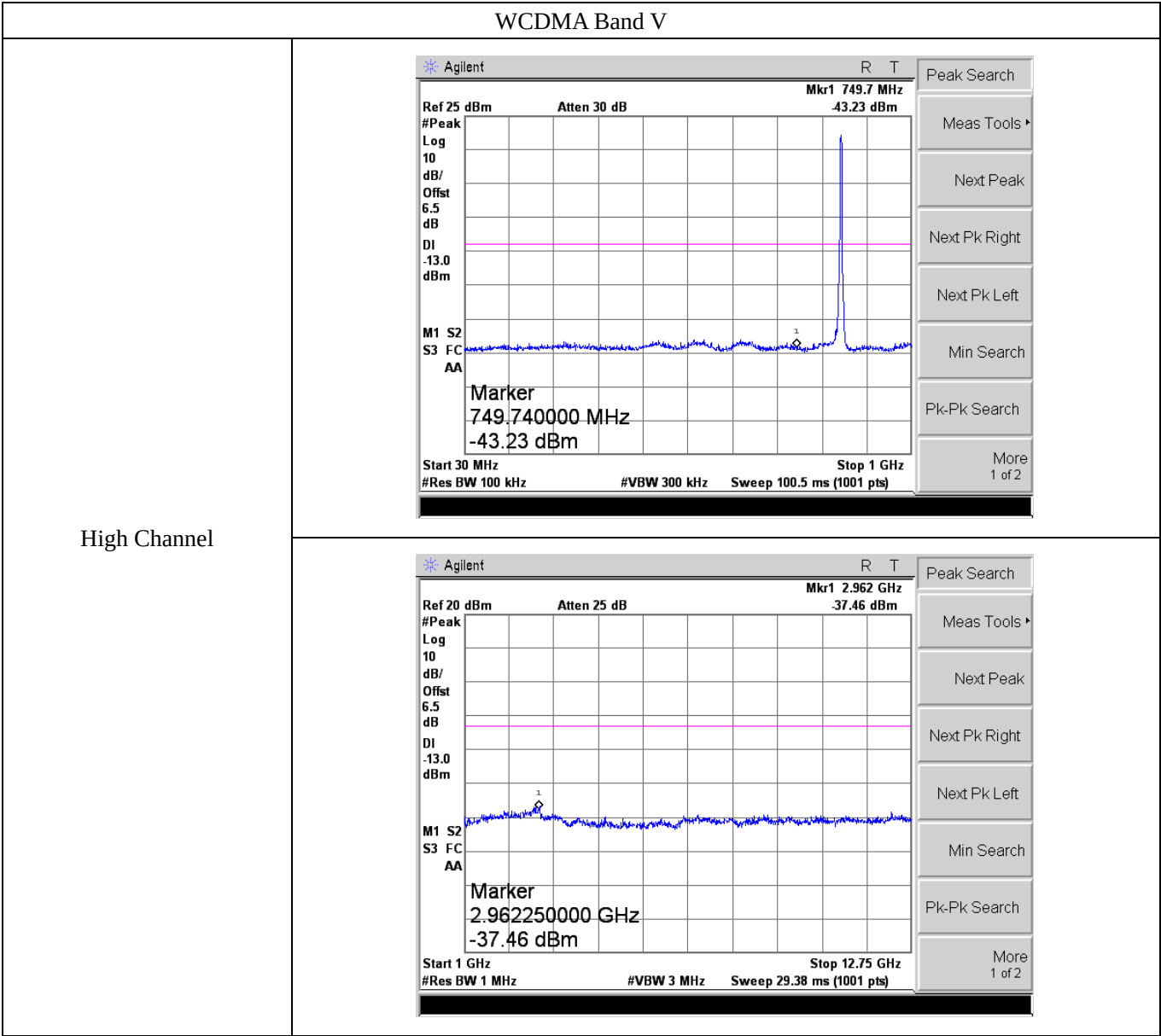


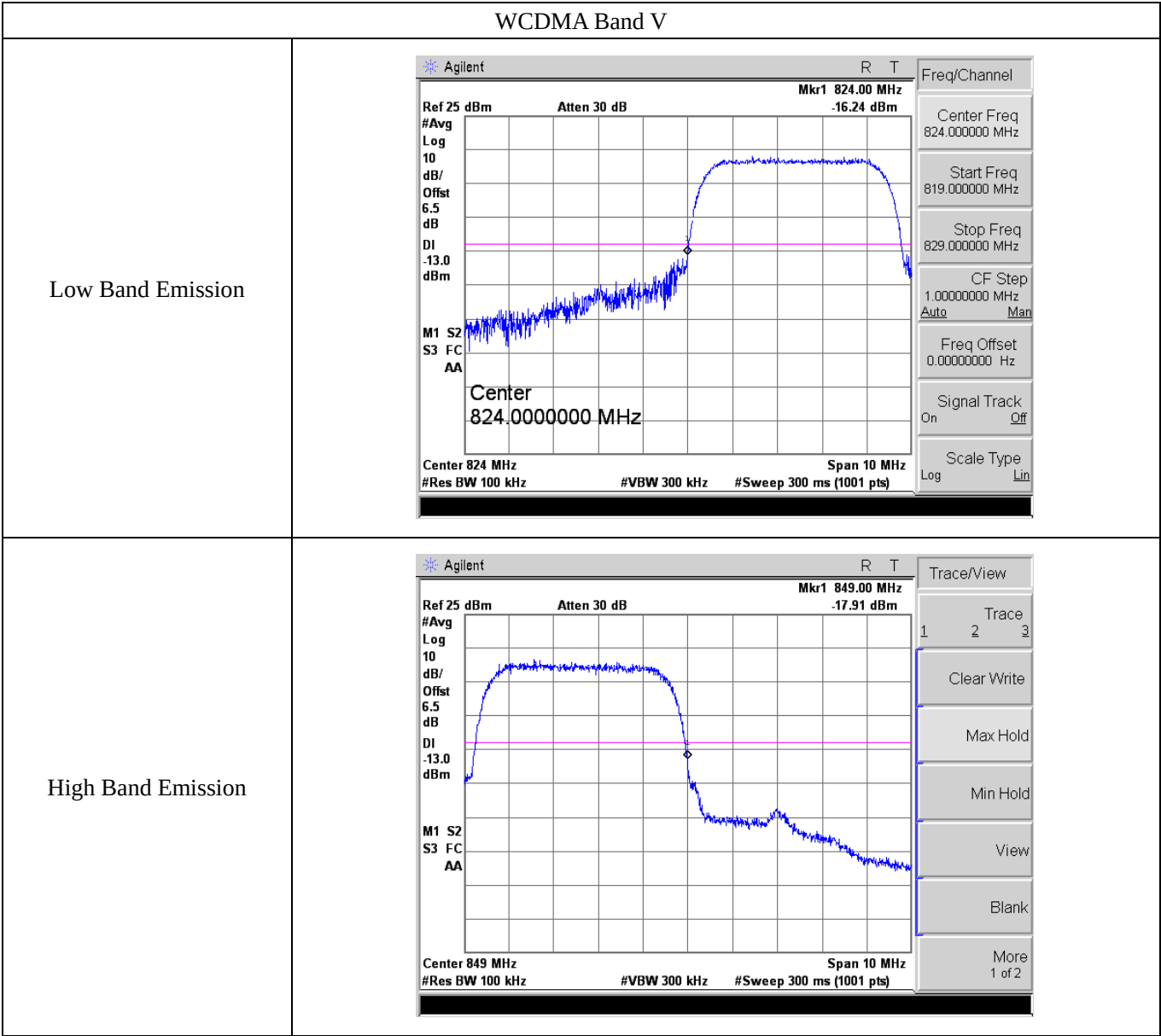
| EGPRS1900          |                                                                                     |
|--------------------|-------------------------------------------------------------------------------------|
| Low Band Emission  |   |
| High Band Emission |  |

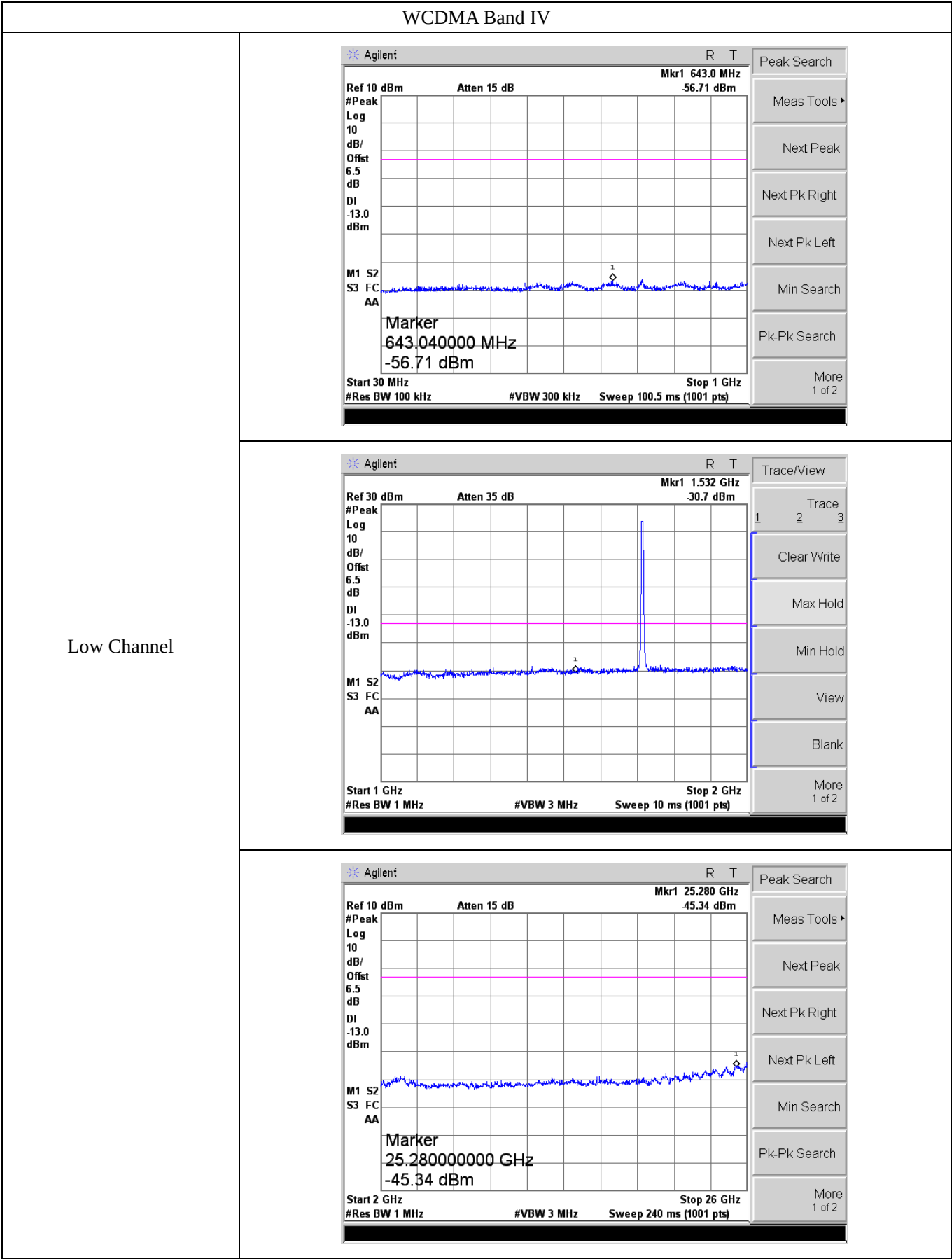












Agilent

R T

Peak Search

Meas Tools

Next Peak

Next Pk Right

Next Pk Left

Min Search

Pk-Pk Search

More 1 of 2

Ref 10 dBm

Atten 15 dB

Mkr1 25.280 GHz

-45.34 dBm

#Peak

Log

10

dB/

Offset

6.5

dB

DI

-13.0

dBm

M1 S2

S3 FC

AA

Marker

25.28000000 GHz

-45.34 dBm

Start 2 GHz

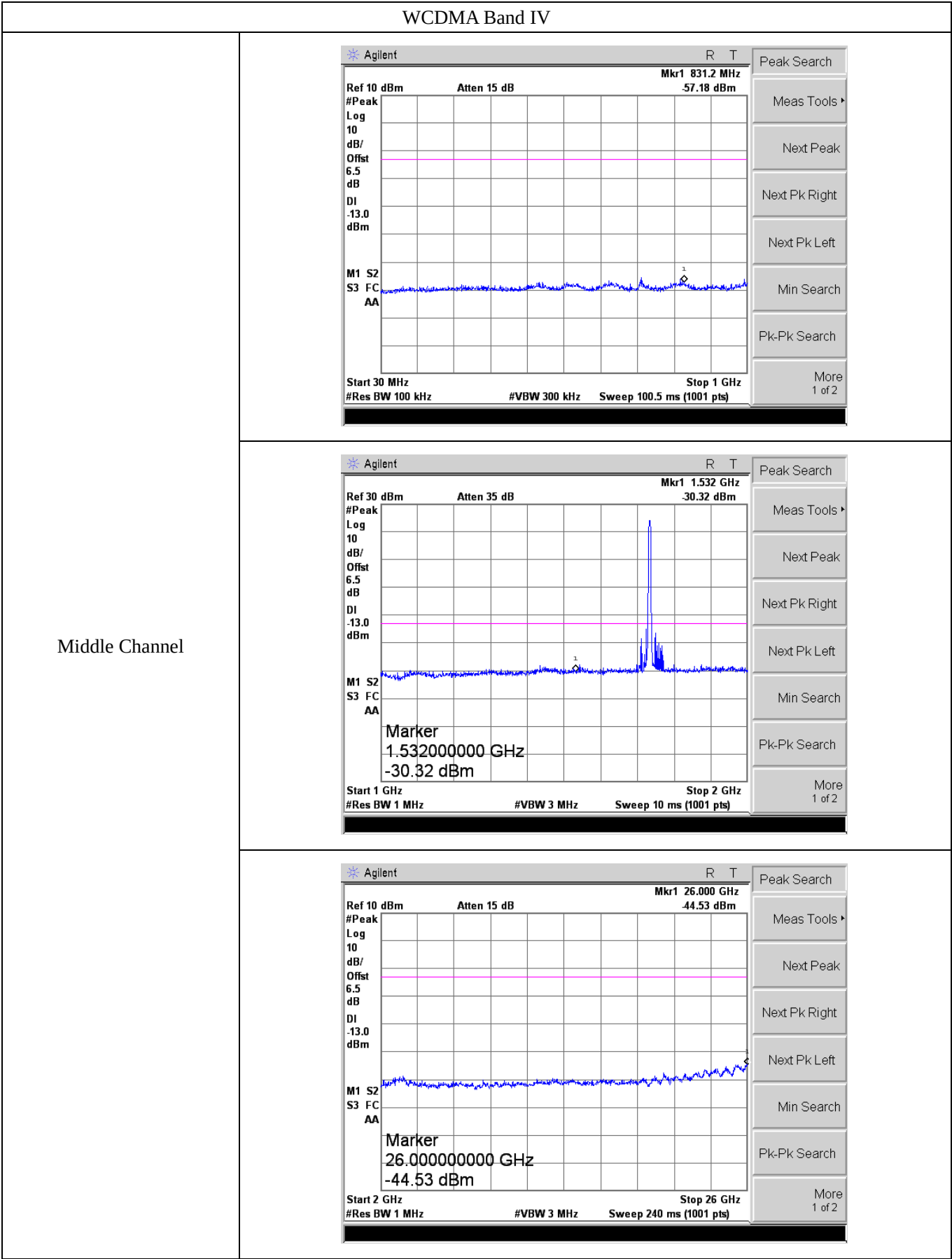
Stop 26 GHz

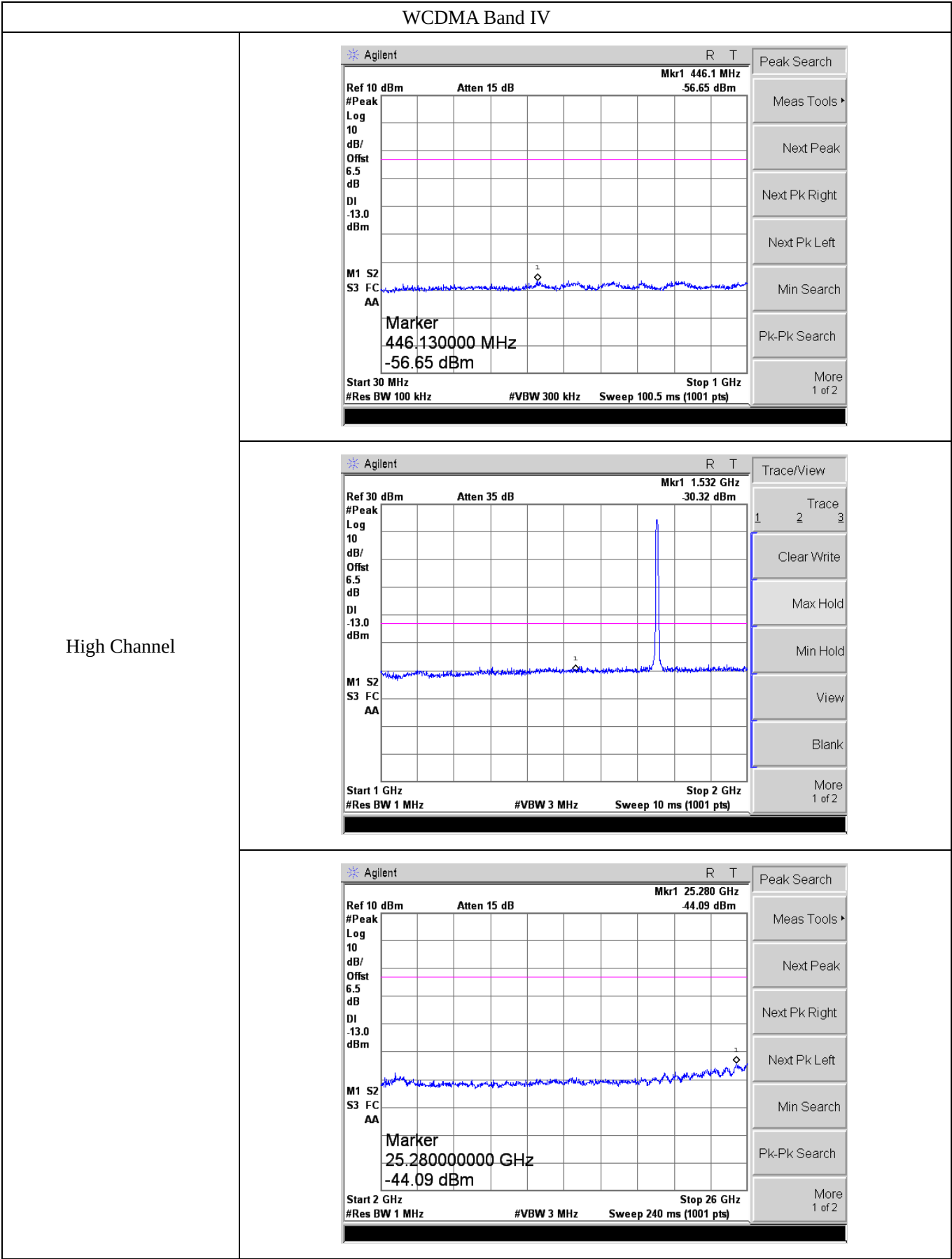
#Res BW 1 MHz

#VBW 3 MHz

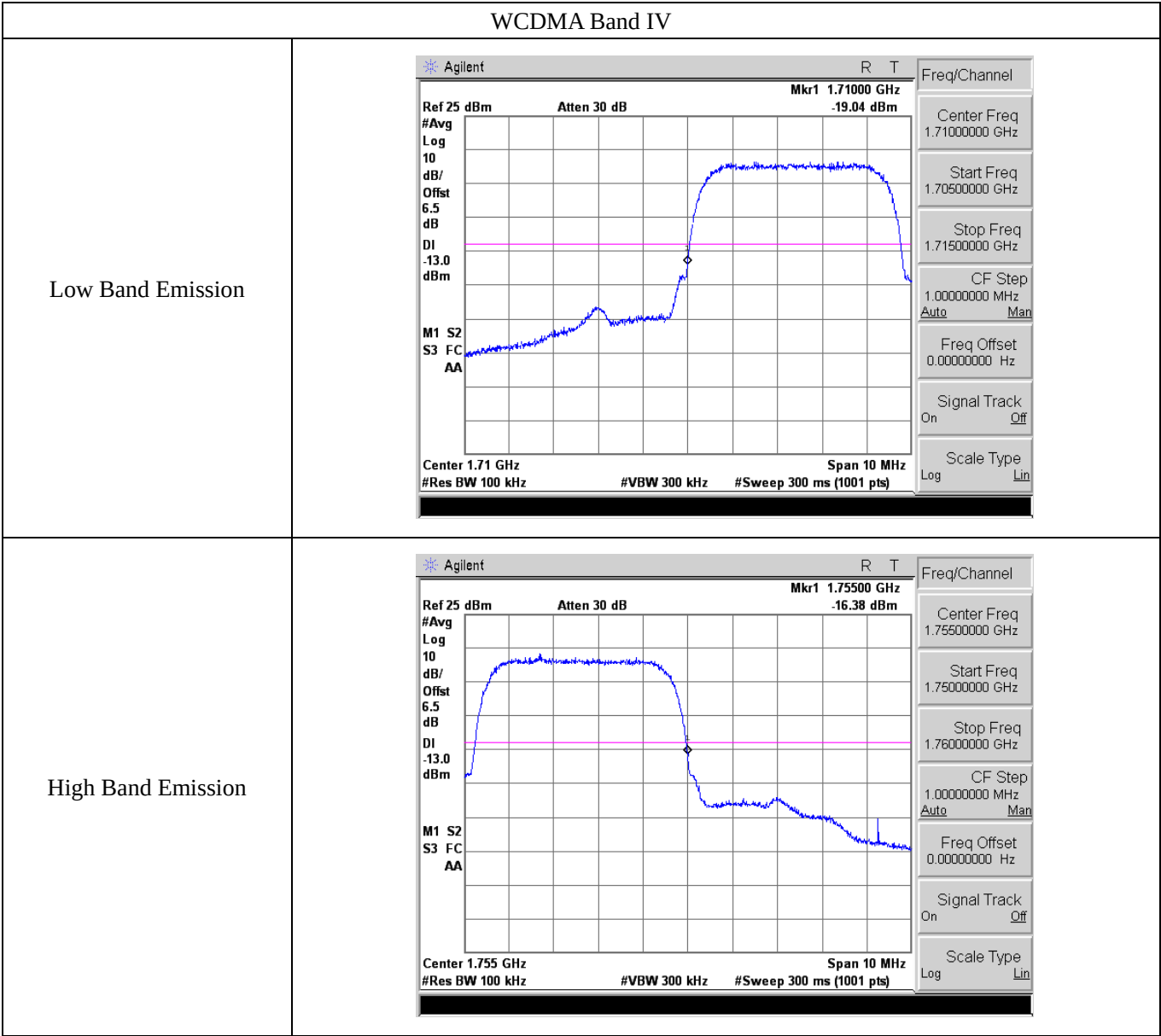
Sweep 240 ms (1001 pts)

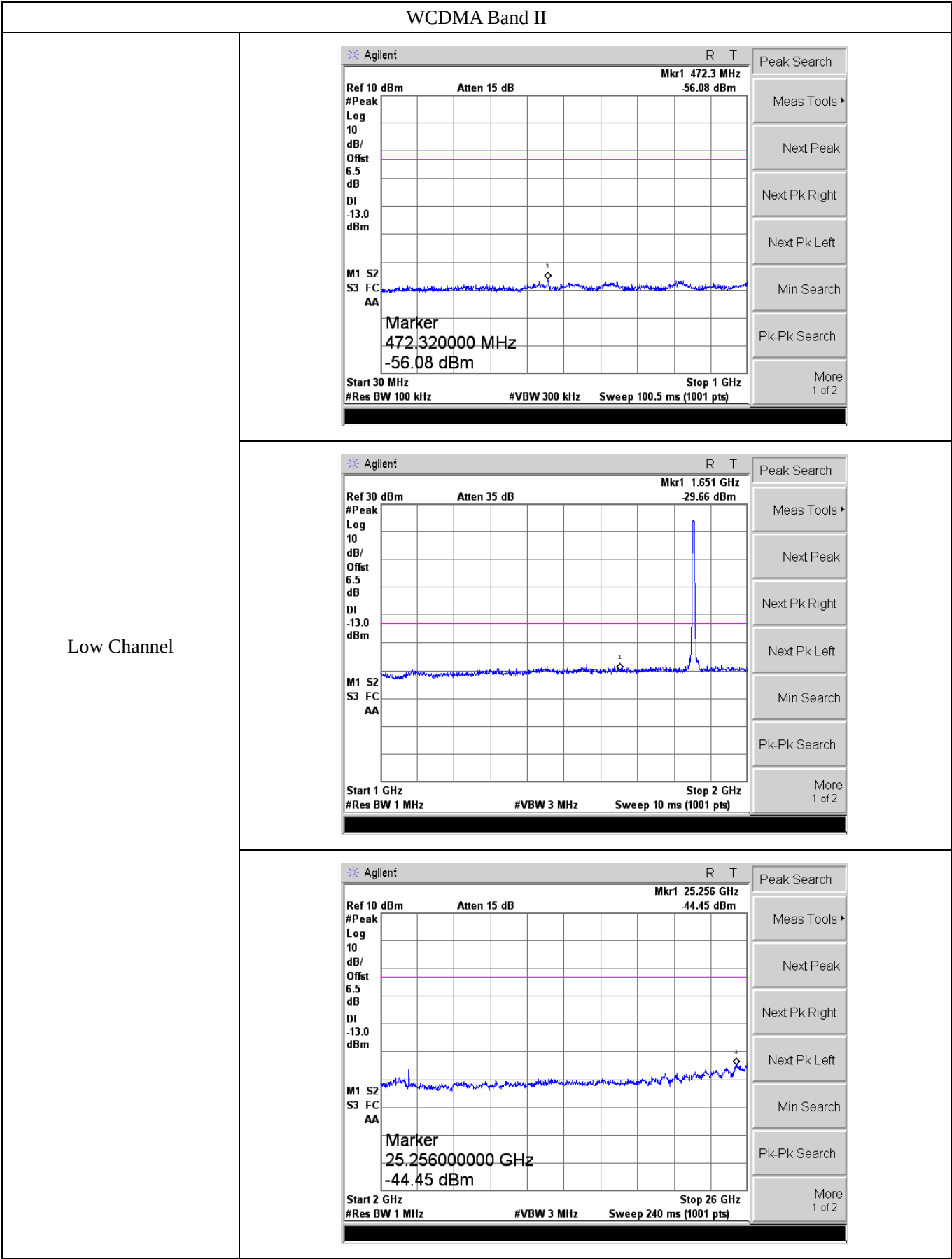
Low Channel



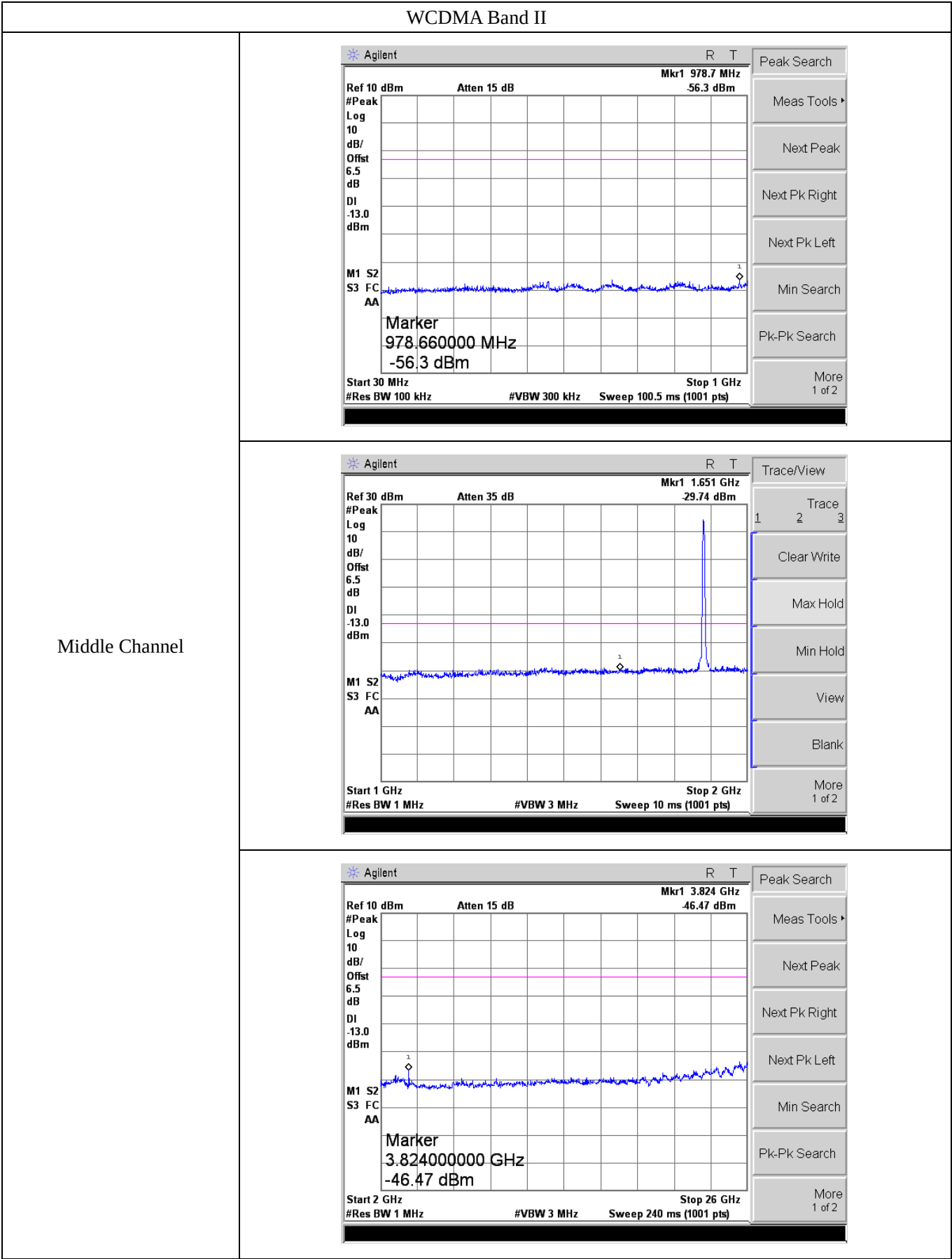


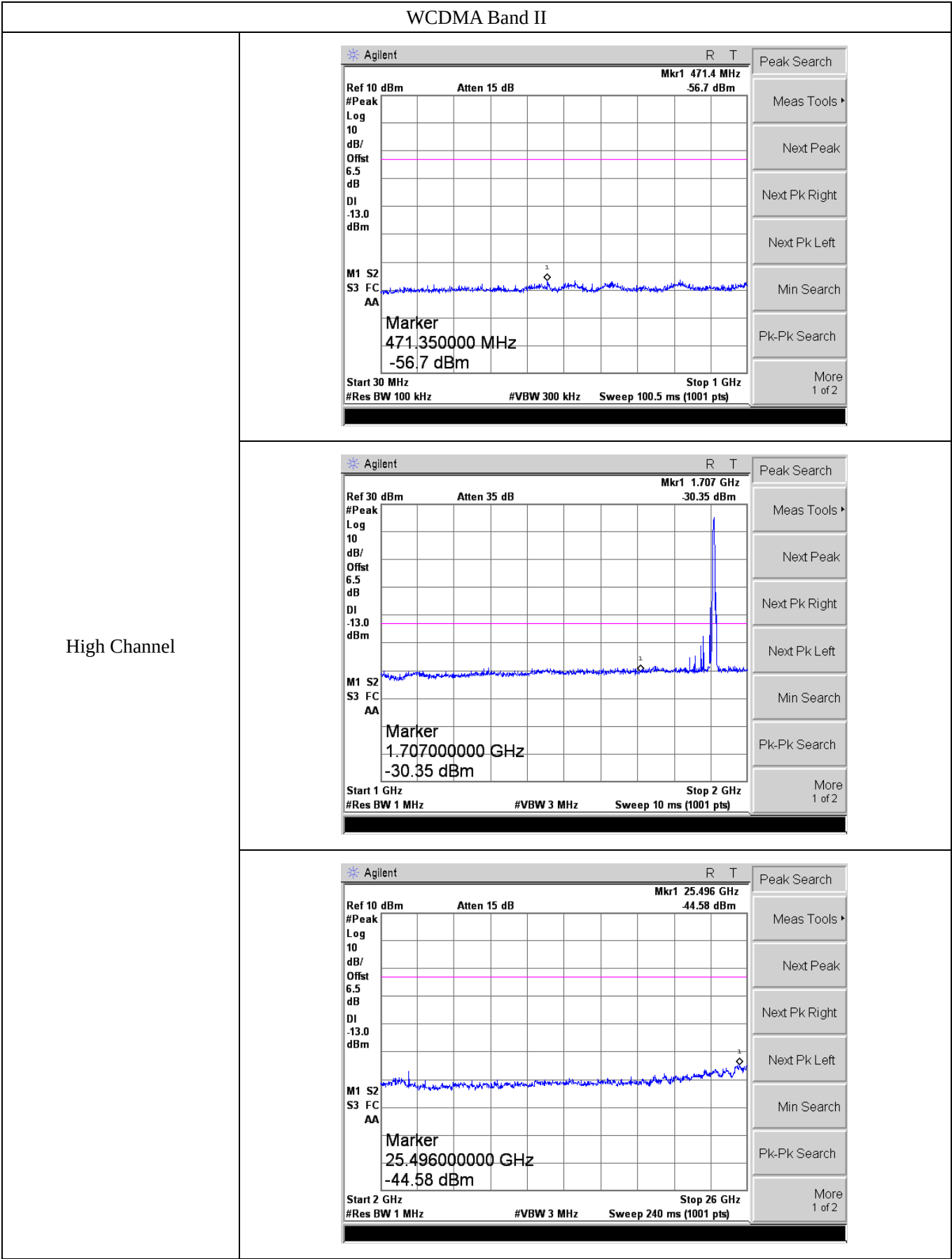
High Channel

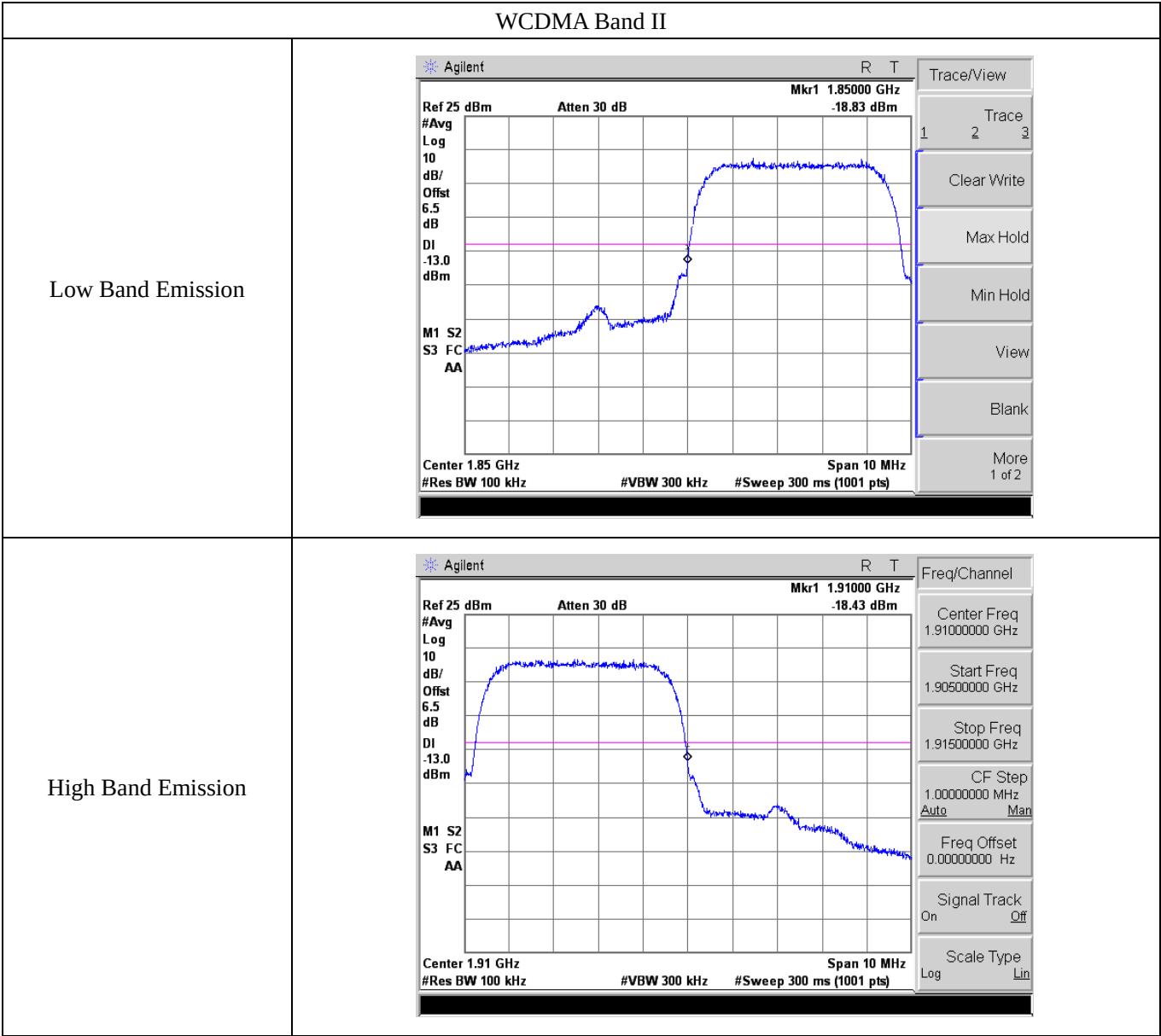












## 8. Spurious Radiated Emissions

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### 8.1 Standard Applicable

According to §22.917(a), the power of any emissions outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $43 + 10 \log(P)$  dB.

According to §24.238(a), the power of any emissions outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $43 + 10 \log(P)$  dB.

According to §27.53 (h), the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least  $43 + 10 \log_{10}(P)$  dB.

### 8.2 Test Procedure

1. The setup of EUT is according with per ANSI/TIA Standard 603E and ANSI C63.26 measurement procedure.
2. 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.
3. The frequency range up to tenth harmonic of the fundamental frequency was investigated.
4. 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.

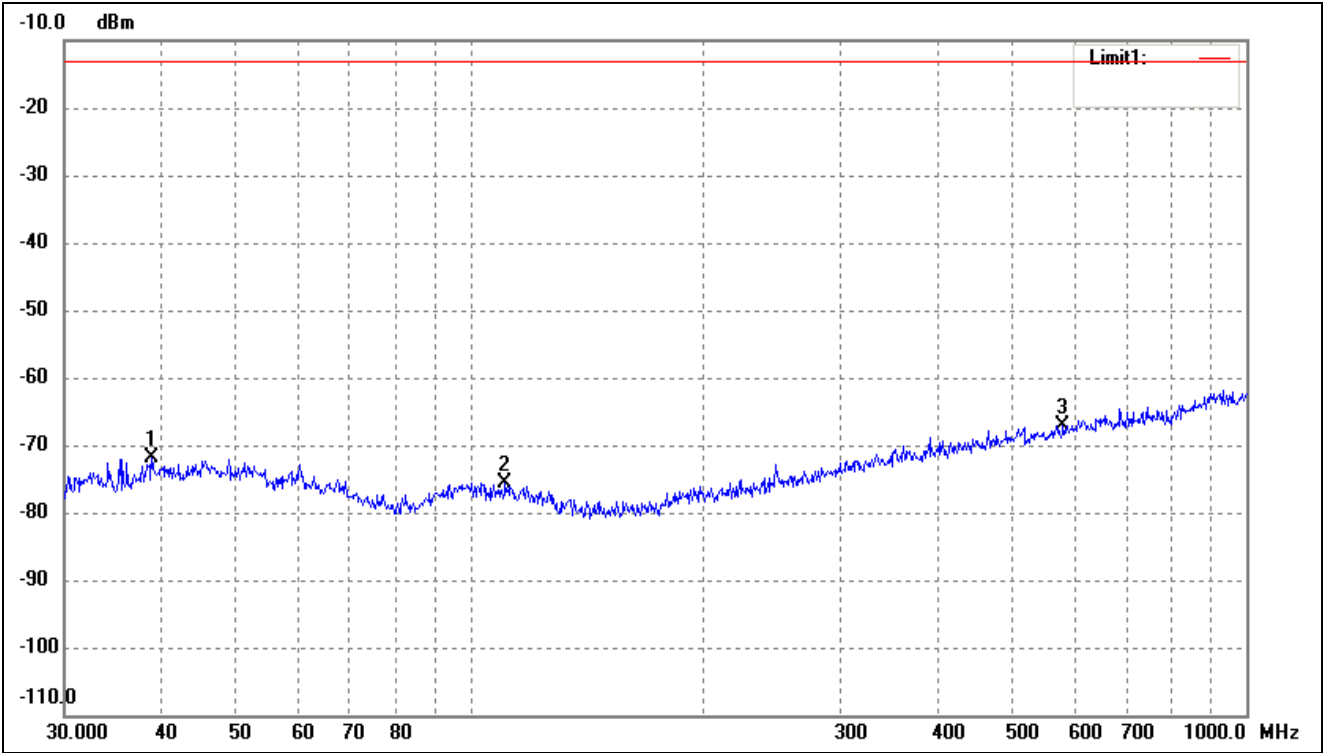
Spurious attenuation limit in dB =  $43 + 10 \log_{10}(\text{power out in Watts})$

### 8.3 Summary of Test Results/Plots

*Note: this EUT was tested in 3 orthogonal positions and the worst case position data was reported.*

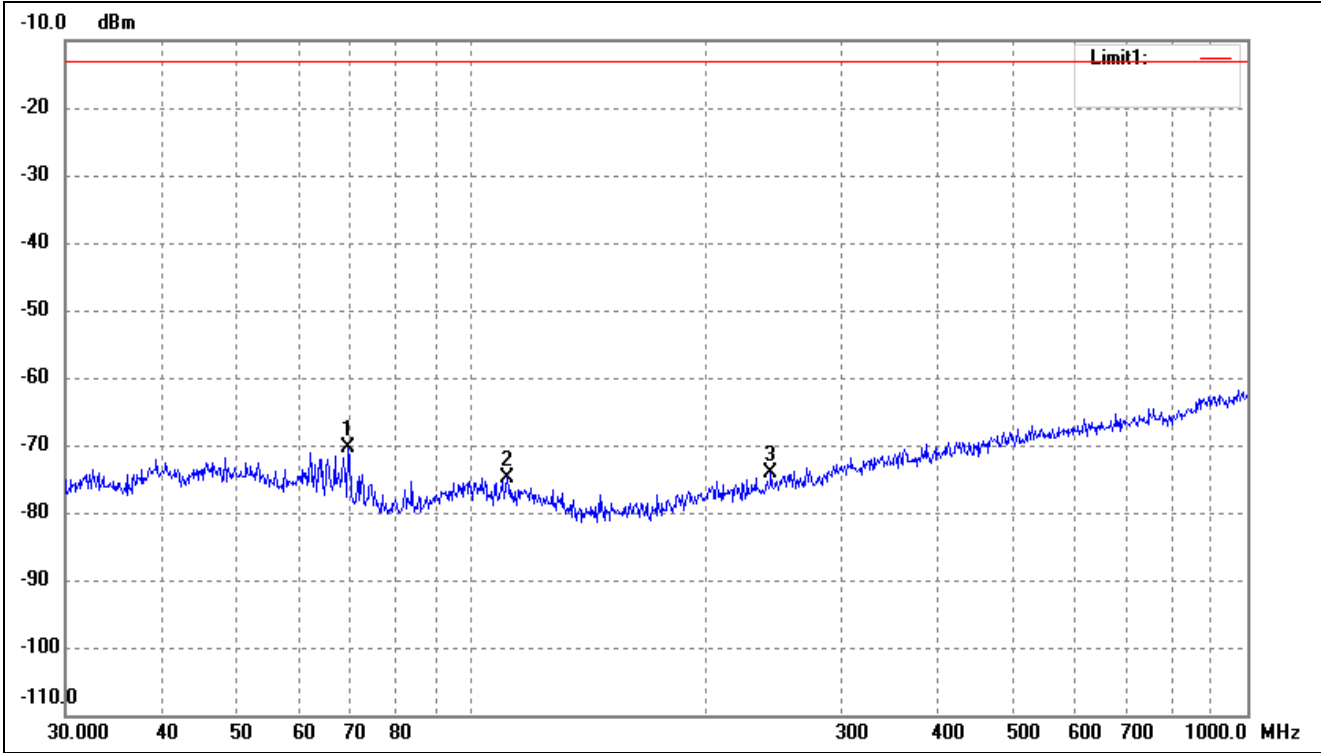
➤ Spurious Emissions Below 1GHz

|                   |        |           |            |
|-------------------|--------|-----------|------------|
| For Cellular Band |        |           |            |
| Test Channel      | GSM850 | Polarity: | Horizontal |



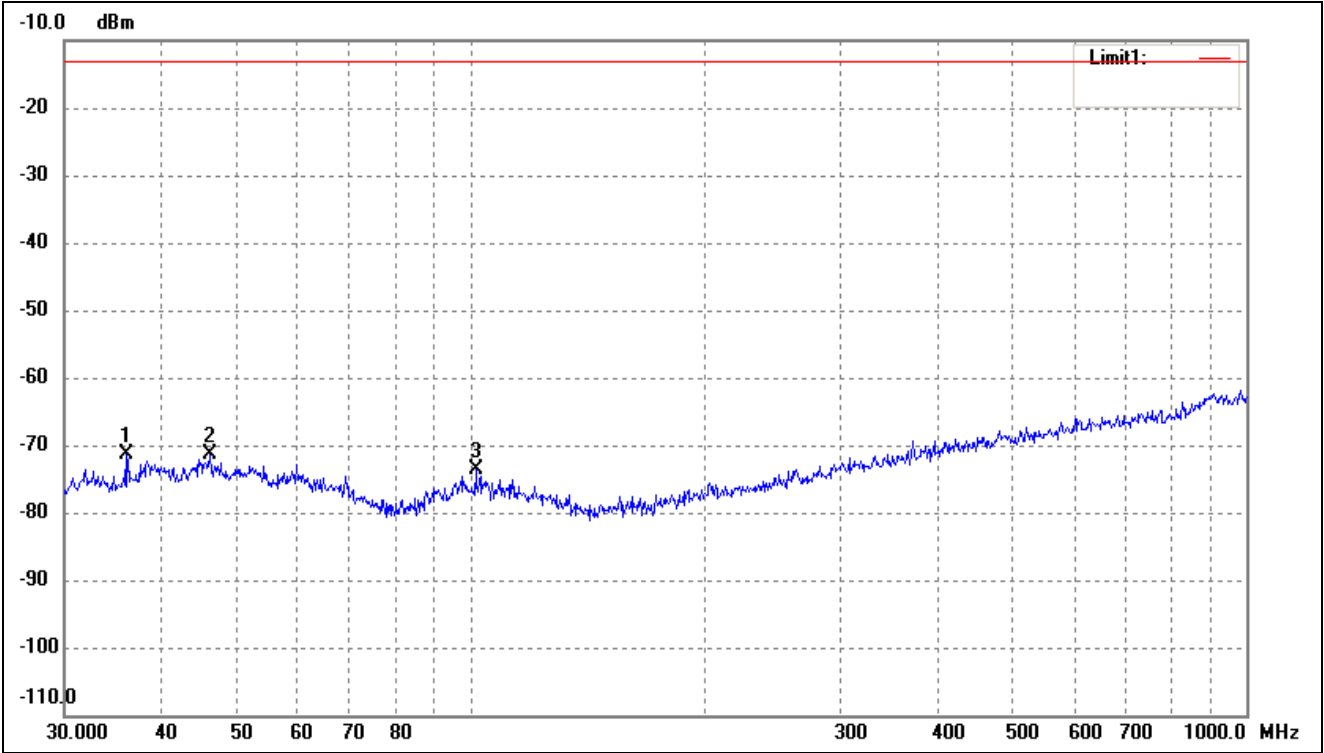
| No. | Frequency<br>(MHz) | Reading<br>(dBm) | Correct<br>Factor(dB) | Result<br>(dBm) | Limit<br>(dBm) | Margin<br>(dB) | Remark |
|-----|--------------------|------------------|-----------------------|-----------------|----------------|----------------|--------|
| 1   | 38.8879            | -71.38           | -0.60                 | -71.98          | -13.00         | -58.98         | ERP    |
| 2   | 110.9571           | -74.09           | -1.61                 | -75.70          | -13.00         | -62.70         | ERP    |
| 3   | 580.7026           | -76.40           | 9.38                  | -67.02          | -13.00         | -54.02         | ERP    |

|                   |        |           |          |
|-------------------|--------|-----------|----------|
| For Cellular Band |        |           |          |
| Test Channel      | GSM850 | Polarity: | Vertical |



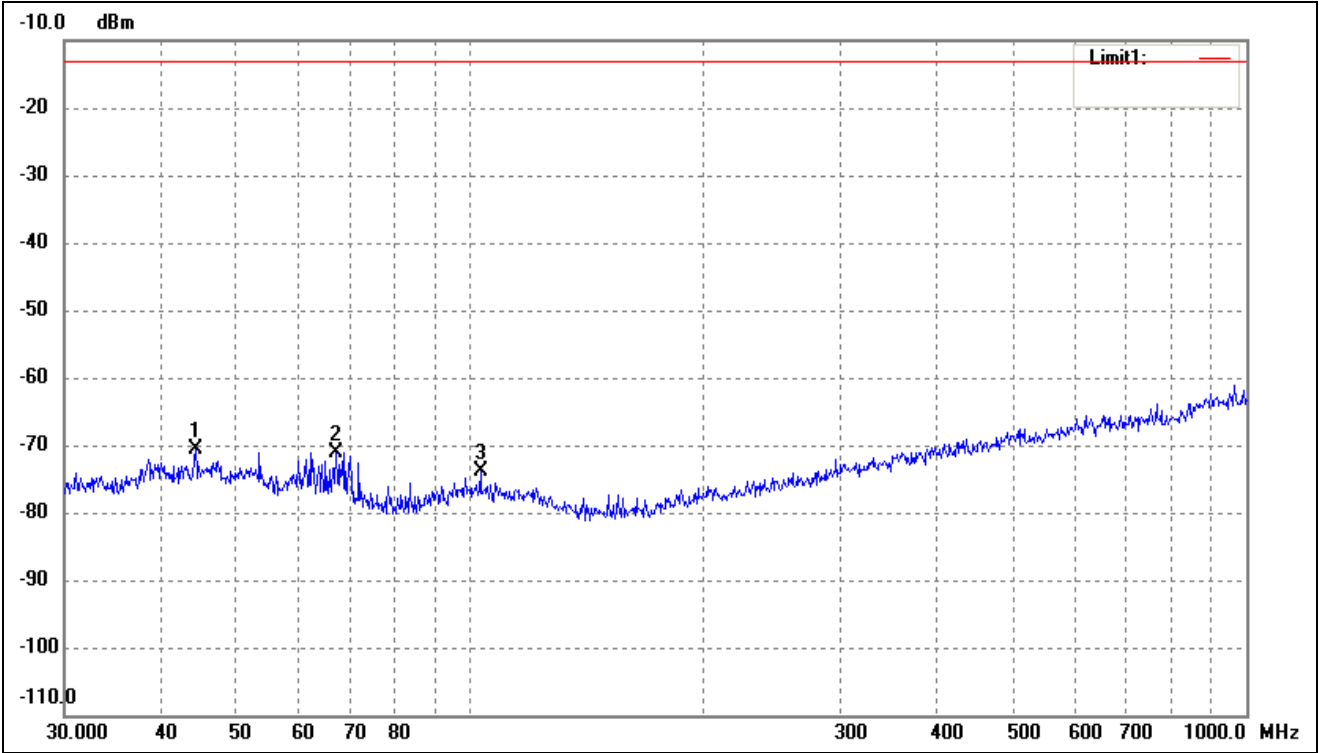
| No. | Frequency<br>(MHz) | Reading<br>(dBm) | Correct<br>Factor(dB) | Result<br>(dBm) | Limit<br>(dBm) | Margin<br>(dB) | Remark |
|-----|--------------------|------------------|-----------------------|-----------------|----------------|----------------|--------|
| 1   | 69.3568            | -67.73           | -2.74                 | -70.47          | -13.00         | -57.47         | ERP    |
| 2   | 111.3468           | -73.10           | -1.65                 | -74.75          | -13.00         | -61.75         | ERP    |
| 3   | 243.3772           | -74.71           | 0.54                  | -74.17          | -13.00         | -61.17         | ERP    |

|                   |         |           |            |
|-------------------|---------|-----------|------------|
| For Cellular Band |         |           |            |
| Test Channel      | GSM1900 | Polarity: | Horizontal |



| No. | Frequency<br>(MHz) | Reading<br>(dBm) | Correct<br>Factor(dB) | Result<br>(dBm) | Limit<br>(dBm) | Margin<br>(dB) | Remark |
|-----|--------------------|------------------|-----------------------|-----------------|----------------|----------------|--------|
| 1   | 36.0007            | -69.59           | -1.70                 | -71.29          | -13.00         | -58.29         | ERP    |
| 2   | 46.1780            | -71.46           | 0.07                  | -71.39          | -13.00         | -58.39         | ERP    |
| 3   | 101.6443           | -71.98           | -1.52                 | -73.50          | -13.00         | -60.50         | ERP    |

|                   |         |           |          |
|-------------------|---------|-----------|----------|
| For Cellular Band |         |           |          |
| Test Channel      | GSM1900 | Polarity: | Vertical |

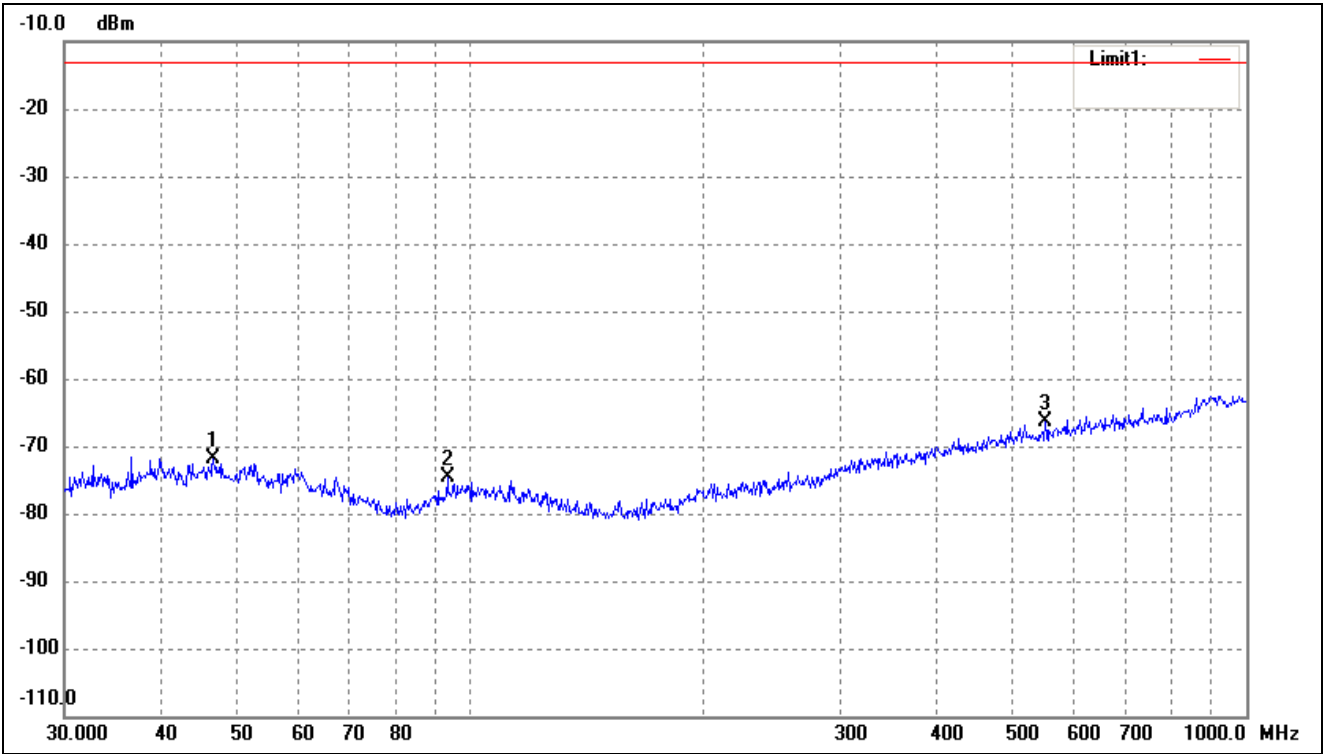


| No. | Frequency<br>(MHz) | Reading<br>(dBm) | Correct<br>Factor(dB) | Result<br>(dBm) | Limit<br>(dBm) | Margin<br>(dB) | Remark |
|-----|--------------------|------------------|-----------------------|-----------------|----------------|----------------|--------|
| 1   | 44.2752            | -70.66           | -0.03                 | -70.69          | -13.00         | -57.69         | ERP    |
| 2   | 67.2022            | -68.65           | -2.43                 | -71.08          | -13.00         | -58.08         | ERP    |
| 3   | 103.0800           | -72.31           | -1.52                 | -73.83          | -13.00         | -60.83         | ERP    |

Note: Margin= (Reading+ Correct)- Limit

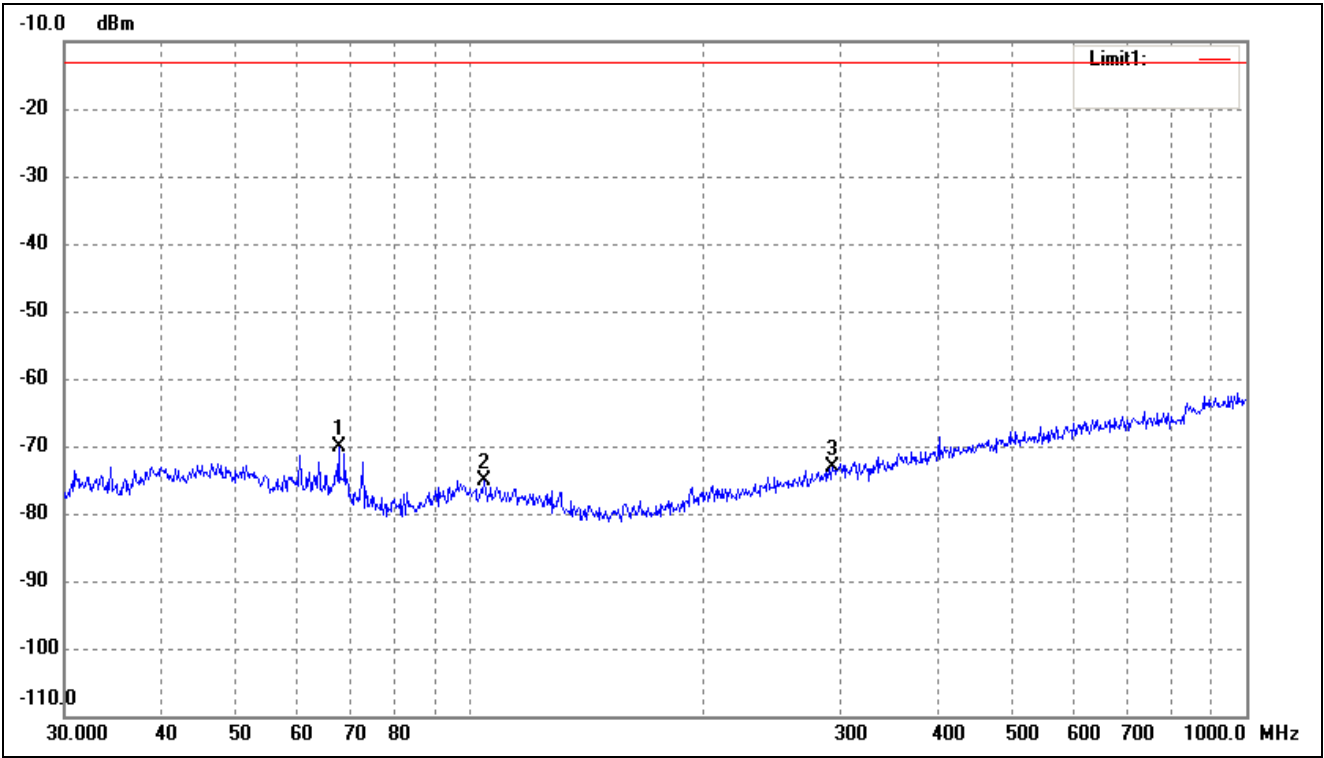


|              |              |           |            |
|--------------|--------------|-----------|------------|
| Test Channel | WCDMA Band V | Polarity: | Horizontal |
|--------------|--------------|-----------|------------|



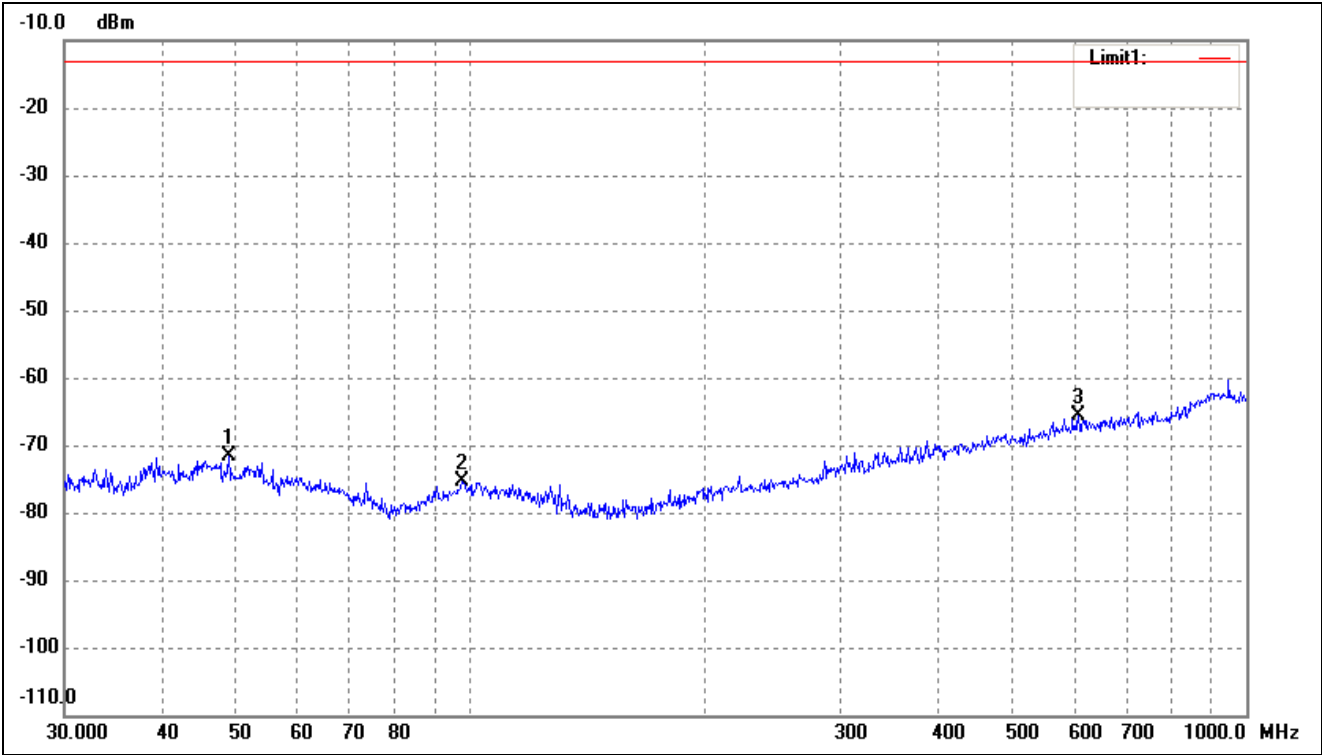
| No. | Frequency<br>(MHz) | Reading<br>(dBm) | Correct<br>Factor(dB) | Result<br>(dBm) | Limit<br>(dBm) | Margin<br>(dB) | Remark |
|-----|--------------------|------------------|-----------------------|-----------------|----------------|----------------|--------|
| 1   | 46.6664            | -72.07           | 0.09                  | -71.98          | -13.00         | -58.98         | ERP    |
| 2   | 93.4402            | -72.05           | -2.60                 | -74.65          | -13.00         | -61.65         | ERP    |
| 3   | 550.9480           | -74.43           | 8.05                  | -66.38          | -13.00         | -53.38         | ERP    |

|              |              |           |          |
|--------------|--------------|-----------|----------|
| Test Channel | WCDMA Band V | Polarity: | Vertical |
|--------------|--------------|-----------|----------|



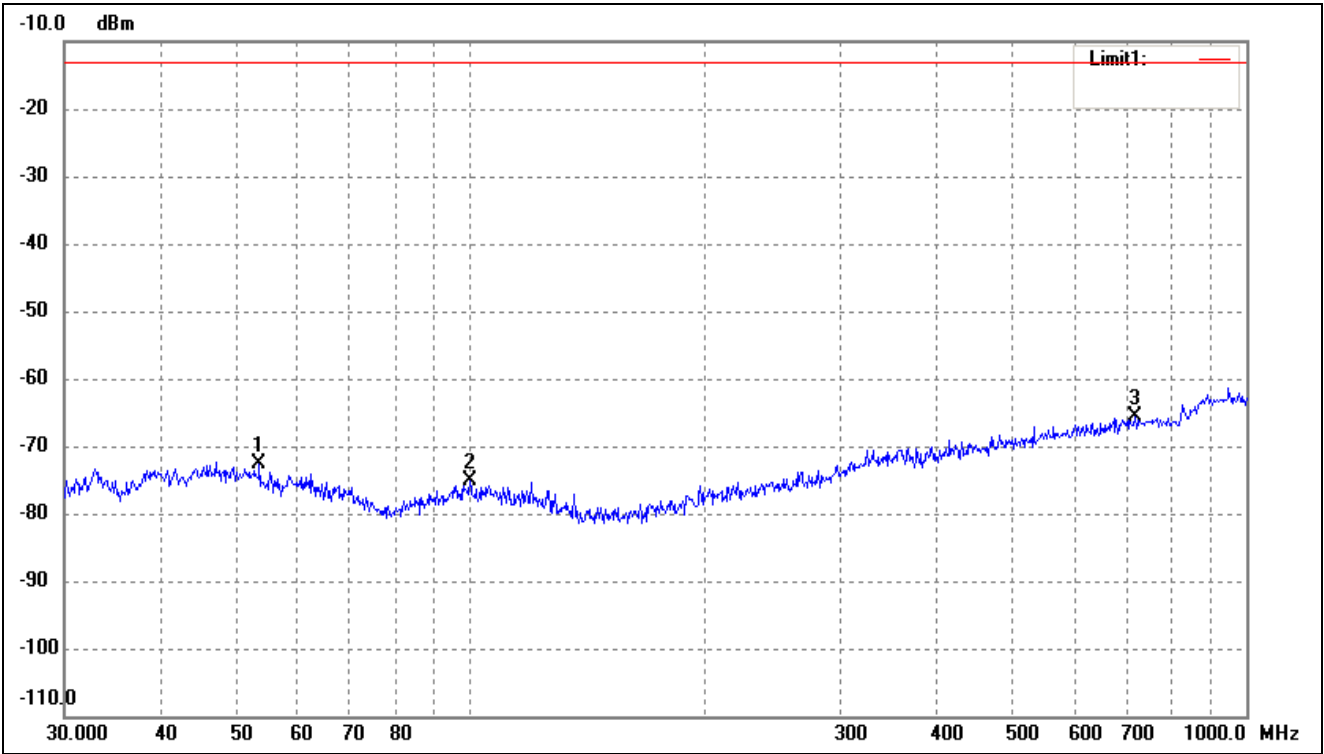
| No. | Frequency<br>(MHz) | Reading<br>(dBm) | Correct<br>dB | Result<br>(dBm) | Limit<br>(dBm) | Margin<br>(dB) | Remark |
|-----|--------------------|------------------|---------------|-----------------|----------------|----------------|--------|
| 1   | 67.6751            | -67.64           | -2.50         | -70.14          | -13.00         | -57.14         | ERP    |
| 2   | 104.1701           | -73.71           | -1.51         | -75.22          | -13.00         | -62.22         | ERP    |
| 3   | 293.0842           | -75.58           | 2.38          | -73.20          | -13.00         | -60.20         | ERP    |

|              |               |           |            |
|--------------|---------------|-----------|------------|
| Test Channel | WCDMA Band IV | Polarity: | Horizontal |
|--------------|---------------|-----------|------------|



| No. | Frequency<br>(MHz) | Reading<br>(dBm) | Correct<br>dB | Result<br>(dBm) | Limit<br>(dBm) | Margin<br>(dB) | Remark |
|-----|--------------------|------------------|---------------|-----------------|----------------|----------------|--------|
| 1   | 48.8429            | -71.90           | 0.20          | -71.70          | -13.00         | -58.70         | ERP    |
| 2   | 97.4560            | -73.38           | -1.95         | -75.33          | -13.00         | -62.33         | ERP    |
| 3   | 607.7867           | -75.36           | 9.80          | -65.56          | -13.00         | -52.56         | ERP    |

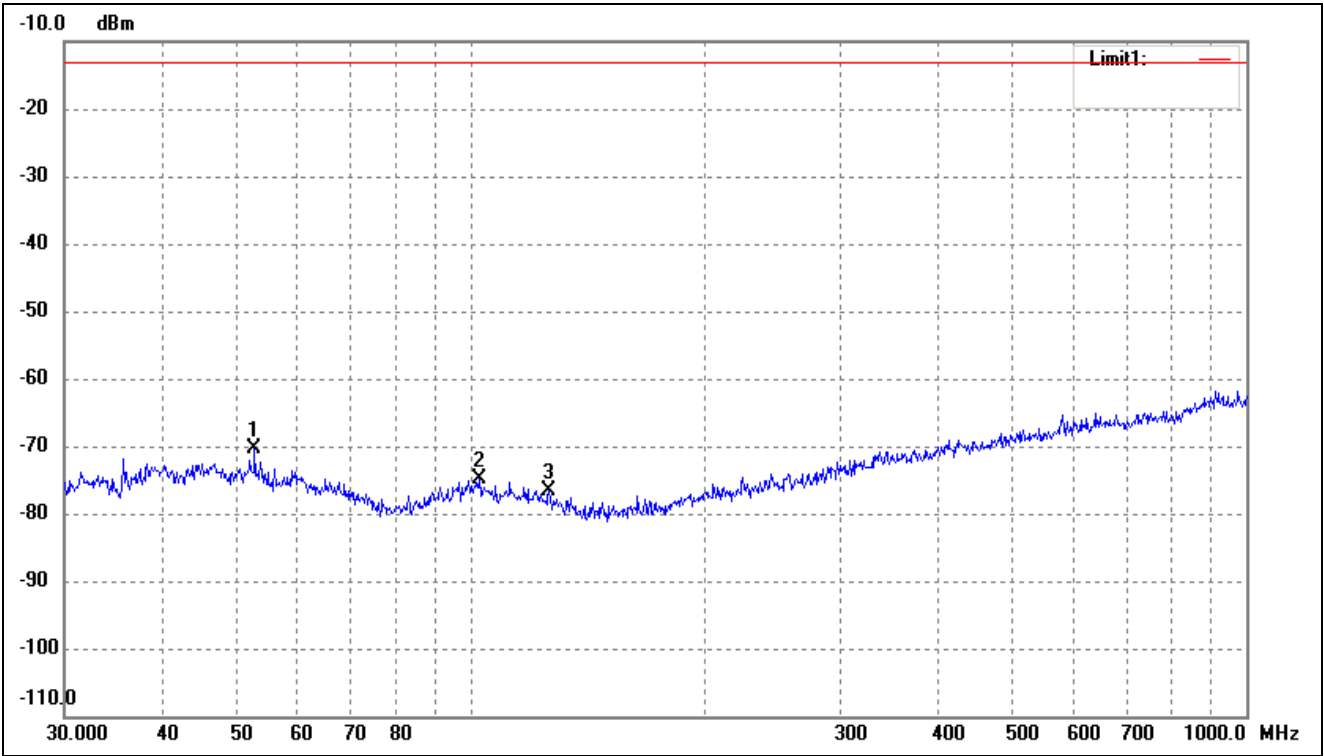
|              |               |           |          |
|--------------|---------------|-----------|----------|
| Test Channel | WCDMA Band IV | Polarity: | Vertical |
|--------------|---------------|-----------|----------|



| No. | Frequency | Reading | Correct    | Result | Limit  | Margin | Remark |
|-----|-----------|---------|------------|--------|--------|--------|--------|
|     | (MHz)     | (dBm)   | Factor(dB) | (dBm)  | (dBm)  | (dB)   |        |
| 1   | 53.5052   | -71.91  | -0.72      | -72.63 | -13.00 | -59.63 | ERP    |
| 2   | 99.8777   | -73.60  | -1.54      | -75.14 | -13.00 | -62.14 | ERP    |
| 3   | 719.1995  | -76.16  | 10.62      | -65.54 | -13.00 | -52.54 | ERP    |

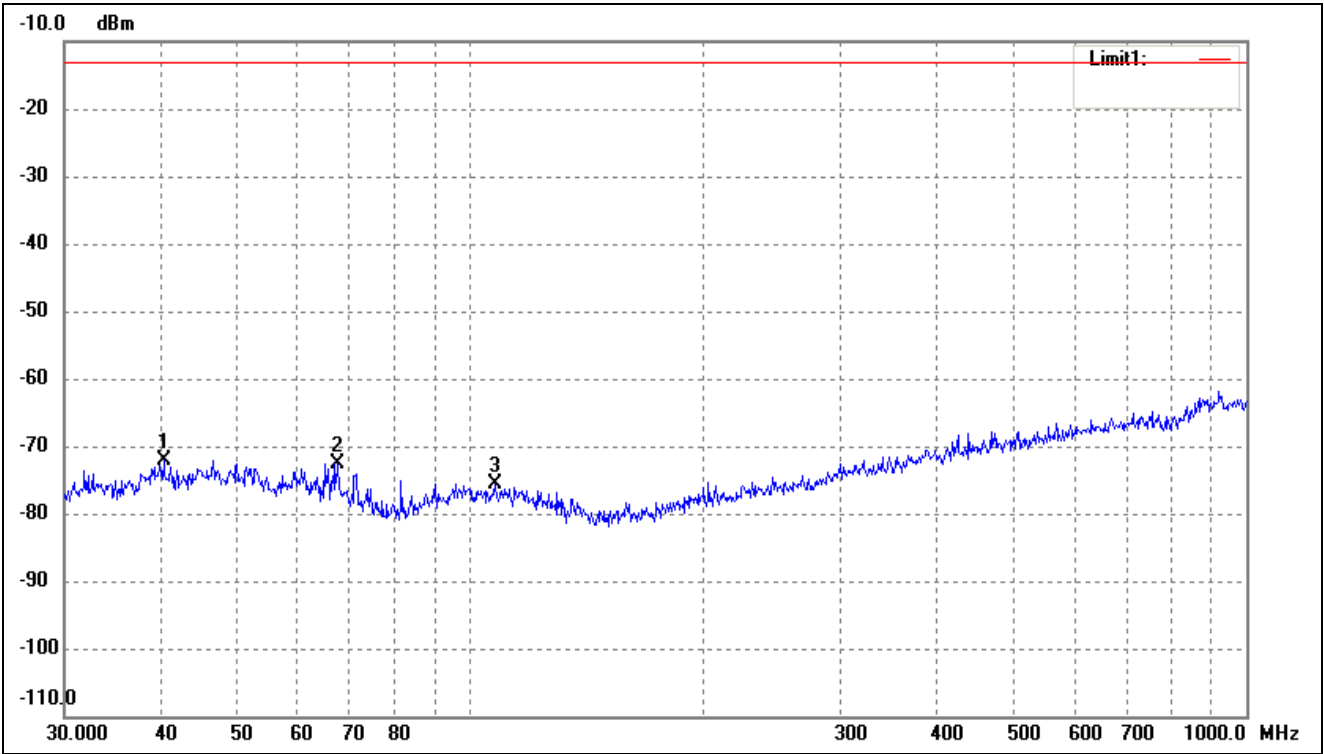
Note:  $Margin = (Reading + Correct) - Limit$

|              |               |           |            |
|--------------|---------------|-----------|------------|
| Test Channel | WCDMA Band II | Polarity: | Horizontal |
|--------------|---------------|-----------|------------|



| No. | Frequency<br>(MHz) | Reading<br>(dBm) | Correct<br>dB | Result<br>(dBm) | Limit<br>(dBm) | Margin<br>(dB) | Remark |
|-----|--------------------|------------------|---------------|-----------------|----------------|----------------|--------|
| 1   | 52.7600            | -69.75           | -0.51         | -70.26          | -13.00         | -57.26         | ERP    |
| 2   | 102.7192           | -73.43           | -1.52         | -74.95          | -13.00         | -61.95         | ERP    |
| 3   | 126.3286           | -72.38           | -4.19         | -76.57          | -13.00         | -63.57         | ERP    |

|              |               |           |          |
|--------------|---------------|-----------|----------|
| Test Channel | WCDMA Band II | Polarity: | Vertical |
|--------------|---------------|-----------|----------|



| No. | Frequency<br>(MHz) | Reading<br>(dBm) | Correct<br>Factor(dB) | Result<br>(dBm) | Limit<br>(dBm) | Margin<br>(dB) | Remark |
|-----|--------------------|------------------|-----------------------|-----------------|----------------|----------------|--------|
| 1   | 40.2757            | -71.93           | -0.18                 | -72.11          | -13.00         | -59.11         | ERP    |
| 2   | 67.4382            | -70.14           | -2.47                 | -72.61          | -13.00         | -59.61         | ERP    |
| 3   | 107.5101           | -74.03           | -1.52                 | -75.55          | -13.00         | -62.55         | ERP    |

Note:  $Margin = (Reading + Correct) - Limit$

- Spurious Emissions Above 1GHz
- For Cellular Band\_GSM850 Mode

| Frequency                 | Reading | Correct | Result | Limit | Margin | Polar |
|---------------------------|---------|---------|--------|-------|--------|-------|
| (MHz)                     | (dBm)   | dB      | (dBm)  | (dBm) | (dB)   | H/V   |
| Low Channel (824.2MHz)    |         |         |        |       |        |       |
| 1648.4                    | -34.17  | 4.94    | -29.23 | -13   | -16.23 | H     |
| 2472.6                    | -41.84  | 8.46    | -33.38 | -13   | -20.38 | H     |
| 1648.4                    | -35.67  | 4.94    | -30.73 | -13   | -17.73 | V     |
| 2472.6                    | -43.13  | 8.46    | -34.67 | -13   | -21.67 | V     |
| Middle Channel (836.6MHz) |         |         |        |       |        |       |
| 1673.2                    | -35.94  | 5.11    | -30.83 | -13   | -17.83 | H     |
| 2509.8                    | -43.16  | 8.54    | -34.62 | -13   | -21.62 | H     |
| 1673.2                    | -37.26  | 5.11    | -32.15 | -13   | -19.15 | V     |
| 2509.8                    | -42.02  | 8.54    | -33.48 | -13   | -20.48 | V     |
| High Channel (848.8MHz)   |         |         |        |       |        |       |
| 1697.6                    | -36.82  | 5.25    | -31.57 | -13   | -18.57 | H     |
| 2546.4                    | -44.36  | 8.57    | -35.79 | -13   | -22.79 | H     |
| 1697.6                    | -37.34  | 5.25    | -32.09 | -13   | -19.09 | V     |
| 2546.4                    | -44.97  | 8.57    | -36.4  | -13   | -23.4  | V     |

- For PCS Band\_GSM1900 Mode

| Frequency                | Reading | Correct | Result | Limit | Margin | Polar |
|--------------------------|---------|---------|--------|-------|--------|-------|
| (MHz)                    | (dBm)   | dB      | (dBm)  | (dBm) | (dB)   | H/V   |
| Low Channel (1850.2MHz)  |         |         |        |       |        |       |
| 3700.4                   | -41.59  | 10.54   | -31.05 | -13   | -18.05 | H     |
| 5550.6                   | -48.89  | 13.37   | -35.52 | -13   | -22.52 | H     |
| 3700.4                   | -41.34  | 10.54   | -30.8  | -13   | -17.8  | V     |
| 5550.6                   | -49.71  | 13.37   | -36.34 | -13   | -23.34 | V     |
| Middle Channel (1880MHz) |         |         |        |       |        |       |
| 3760.0                   | -39.27  | 10.64   | -28.63 | -13   | -15.63 | H     |
| 5640.0                   | -46.84  | 13.54   | -33.3  | -13   | -20.3  | H     |
| 3760.0                   | -40.05  | 10.64   | -29.41 | -13   | -16.41 | V     |
| 5640.0                   | -48.62  | 13.54   | -35.08 | -13   | -22.08 | V     |
| High Channel (1909.8MHz) |         |         |        |       |        |       |
| 3819.6                   | -41.92  | 10.74   | -31.18 | -13   | -18.18 | H     |
| 5729.4                   | -47.51  | 13.71   | -33.8  | -13   | -20.80 | H     |
| 3819.6                   | -39.40  | 10.74   | -28.66 | -13   | -15.66 | V     |
| 5729.4                   | -49.07  | 13.71   | -35.36 | -13   | -22.36 | V     |

## ➤ For WCDMA Band V Mode

| Frequency                 | Reading | Correct | Result | Limit | Margin | Polar |
|---------------------------|---------|---------|--------|-------|--------|-------|
| (MHz)                     | (dBm)   | dB      | (dBm)  | (dBm) | (dB)   | H/V   |
| Low Channel (826.4MHz)    |         |         |        |       |        |       |
| 1652.8                    | -37.87  | 4.94    | -32.93 | -13   | -19.93 | H     |
| 2479.2                    | -41.12  | 8.46    | -32.66 | -13   | -19.66 | H     |
| 1652.8                    | -37.59  | 4.94    | -32.65 | -13   | -19.65 | V     |
| 2479.2                    | -43.38  | 8.46    | -34.92 | -13   | -21.92 | V     |
| Middle Channel (836.6MHz) |         |         |        |       |        |       |
| 1672.8                    | -36.82  | 5.11    | -31.71 | -13   | -18.71 | H     |
| 2509.2                    | -41.27  | 8.54    | -32.73 | -13   | -19.73 | H     |
| 1672.8                    | -35.94  | 5.11    | -30.83 | -13   | -17.83 | V     |
| 2509.2                    | -43.57  | 8.54    | -35.03 | -13   | -22.03 | V     |
| High Channel (846.6MHz)   |         |         |        |       |        |       |
| 1693.2                    | -36.15  | 5.25    | -30.9  | -13   | -17.90 | H     |
| 2539.8                    | -43.31  | 8.57    | -34.74 | -13   | -21.74 | H     |
| 1693.2                    | -37.2   | 5.25    | -31.95 | -13   | -18.95 | V     |
| 2539.8                    | -44.12  | 8.57    | -35.55 | -13   | -22.55 | V     |

## ➤ For WCDMA Band IV Mode

| Frequency                  | Reading | Correct | Result | Limit | Margin | Polar |
|----------------------------|---------|---------|--------|-------|--------|-------|
| (MHz)                      | (dBm)   | dB      | (dBm)  | (dBm) | (dB)   | H/V   |
| Low Channel (1712.4MHz)    |         |         |        |       |        |       |
| 3424.8                     | -33.61  | 8.65    | -24.96 | -13   | -11.96 | H     |
| 5137.2                     | -42.82  | 12.03   | -30.79 | -13   | -17.79 | H     |
| 3424.8                     | -34.18  | 8.65    | -25.53 | -13   | -12.53 | V     |
| 5137.2                     | -40.88  | 12.03   | -28.85 | -13   | -15.85 | V     |
| Middle Channel (1732.4MHz) |         |         |        |       |        |       |
| 3466.8                     | -32.56  | 8.91    | -23.65 | -13   | -10.65 | H     |
| 5200.2                     | -42.17  | 12.29   | -29.88 | -13   | -16.88 | H     |
| 3466.8                     | -34.77  | 8.91    | -25.86 | -13   | -12.86 | V     |
| 5200.2                     | -39.81  | 12.29   | -27.52 | -13   | -14.52 | V     |
| High Channel (1752.6MHz)   |         |         |        |       |        |       |
| 3505.2                     | -34.64  | 9.11    | -25.53 | -13   | -12.53 | H     |
| 5257.8                     | -41.32  | 12.56   | -28.76 | -13   | -15.76 | H     |
| 3505.2                     | -32.15  | 9.11    | -23.04 | -13   | -10.04 | V     |
| 5257.8                     | -42.47  | 12.56   | -29.91 | -13   | -16.91 | V     |



## ➤ For WCDMA Band II Mode

| Frequency                | Reading | Correct | Result | Limit | Margin | Polar |
|--------------------------|---------|---------|--------|-------|--------|-------|
| (MHz)                    | (dBm)   | dB      | (dBm)  | (dBm) | (dB)   | H/V   |
| Low Channel (1852.4MHz)  |         |         |        |       |        |       |
| 3704.8                   | -42.55  | 10.54   | -32.01 | -13   | -19.01 | H     |
| 5557.2                   | -48.04  | 13.37   | -34.67 | -13   | -21.67 | H     |
| 3704.8                   | -41.15  | 10.54   | -30.61 | -13   | -17.61 | V     |
| 5557.2                   | -46.51  | 13.37   | -33.14 | -13   | -20.14 | V     |
| Middle Channel (1880MHz) |         |         |        |       |        |       |
| 3760.0                   | -41.51  | 10.64   | -30.87 | -13   | -17.87 | H     |
| 5640.0                   | -49.13  | 13.54   | -35.59 | -13   | -22.59 | H     |
| 3760.0                   | -41.57  | 10.64   | -30.93 | -13   | -17.93 | V     |
| 5640.0                   | -48.19  | 13.54   | -34.65 | -13   | -21.65 | V     |
| High Channel (1907.6MHz) |         |         |        |       |        |       |
| 3815.2                   | -41.86  | 10.74   | -31.12 | -13   | -18.12 | H     |
| 5722.8                   | -46.82  | 13.71   | -33.11 | -13   | -20.11 | H     |
| 3815.2                   | -41.59  | 10.74   | -30.85 | -13   | -17.85 | V     |
| 5722.8                   | -49.72  | 13.71   | -36.01 | -13   | -23.01 | H     |

Note: Result=Reading+ Correct, Margin= Result- Limit

Note: Testing is carried out with frequency rang 9kHz to the tenth harmonics, other than listed in the table above are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

## 9. Frequency Stability

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### 9.1 Standard Applicable

According to §22.355, §24.235, §27.54 the limit is 2.5ppm.

### 9.2 Test Procedure

According to §2.1055, the following test procedure was performed.

The Frequency Stability is measured directly with a Frequency Domain Analyzer. Frequency Deviation in ppm is calculated from the measured peak to peak value.

The Carrier Frequency Stability over Power Supply Voltage and over Temperature is measured with a Frequency Domain Analyzer in histogram mode.

### 9.3 Summary of Test Results/Plots

Note: 1. Worst case at GSM850/PCS1900/WCDMA B2/B4/B5 middle channel

2. Normal Voltage NV=DC3.85V; Low Voltage LV=DC3.5V; High Voltage HV=DC4.35V

## ➤ Frequency stability V.S. Temperature measurement

| Reference Frequency: GSM850 Middle channel=190 channel=836.6MHz |                  |                 |             |             |        |
|-----------------------------------------------------------------|------------------|-----------------|-------------|-------------|--------|
| Power supplied (Vdc)                                            | Temperature ( ℃) | Frequency error |             | Limit (ppm) | Result |
|                                                                 |                  | Hz              | ppm         |             |        |
| NV                                                              | -30              | MCF (Hz)        | Error (ppm) | 2.50        | Pass   |
|                                                                 | -20              | 72              | 0.0864      |             |        |
|                                                                 | -10              | 61              | 0.0726      |             |        |
|                                                                 | 0                | 55              | 0.0653      |             |        |
|                                                                 | 10               | 48              | 0.0579      |             |        |
|                                                                 | 20               | 42              | 0.0506      |             |        |
|                                                                 | 30               | 35              | 0.0414      |             |        |
|                                                                 | 40               | 42              | 0.0506      |             |        |
|                                                                 | 50               | 50              | 0.0598      |             |        |
| Reference Frequency: PCS1900 Middle channel=661 channel=1880MHz |                  |                 |             |             |        |
| Power supplied (Vdc)                                            | Temperature ( ℃) | Frequency error |             | Limit (ppm) | Result |
|                                                                 |                  | Hz              | ppm         |             |        |
| NV                                                              | -30              | 66              | 0.0352      | 2.50        | Pass   |
|                                                                 | -20              | 55              | 0.0295      |             |        |
|                                                                 | -10              | 49              | 0.0262      |             |        |
|                                                                 | 0                | 42              | 0.0225      |             |        |
|                                                                 | 10               | 38              | 0.0200      |             |        |
|                                                                 | 20               | 30              | 0.0160      |             |        |
|                                                                 | 30               | 34              | 0.0180      |             |        |
|                                                                 | 40               | 39              | 0.0209      |             |        |
|                                                                 | 50               | 45              | 0.0237      |             |        |

| Reference Frequency: WCDMA Band V Middle channel=4183 channel=836.6MHz   |                   |                 |        |             |        |
|--------------------------------------------------------------------------|-------------------|-----------------|--------|-------------|--------|
| Power supplied (Vdc)                                                     | Temperature ( °C) | Frequency error |        | Limit (ppm) | Result |
|                                                                          |                   | Hz              | ppm    |             |        |
| NV                                                                       | -30               | 72              | 0.0864 | 2.50        | Pass   |
|                                                                          | -20               | 60              | 0.0717 |             |        |
|                                                                          | -10               | 52              | 0.0625 |             |        |
|                                                                          | 0                 | 45              | 0.0542 |             |        |
|                                                                          | 10                | 38              | 0.0460 |             |        |
|                                                                          | 20                | 31              | 0.0368 |             |        |
|                                                                          | 30                | 35              | 0.0414 |             |        |
|                                                                          | 40                | 42              | 0.0497 |             |        |
|                                                                          | 50                | 45              | 0.0542 |             |        |
| Reference Frequency: WCDMA Band IV Middle channel=1412 channel=1733.6MHz |                   |                 |        |             |        |
| Power supplied (Vdc)                                                     | Temperature ( °C) | Frequency error |        | Limit (ppm) | Result |
|                                                                          |                   | Hz              | ppm    |             |        |
| NV                                                                       | -30               | 81              | 0.0466 | 2.50        | Pass   |
|                                                                          | -20               | 68              | 0.0395 |             |        |
|                                                                          | -10               | 57              | 0.0329 |             |        |
|                                                                          | 0                 | 49              | 0.0284 |             |        |
|                                                                          | 10                | 42              | 0.0240 |             |        |
|                                                                          | 20                | 35              | 0.0204 |             |        |
|                                                                          | 30                | 42              | 0.0240 |             |        |
|                                                                          | 40                | 48              | 0.0275 |             |        |
|                                                                          | 50                | 54              | 0.0311 |             |        |

| Reference Frequency: WCDMA Band II Middle channel=9400 channel=1880MHz |                   |                 |        |             |        |
|------------------------------------------------------------------------|-------------------|-----------------|--------|-------------|--------|
| Power supplied (Vdc)                                                   | Temperature ( °C) | Frequency error |        | Limit (ppm) | Result |
|                                                                        |                   | Hz              | ppm    |             |        |
| NV                                                                     | -30               | 56              | 0.0299 | 2.50        | Pass   |
|                                                                        | -20               | 44              | 0.0233 |             |        |
|                                                                        | -10               | 38              | 0.0205 |             |        |
|                                                                        | 0                 | 32              | 0.0168 |             |        |
|                                                                        | 10                | 24              | 0.0127 |             |        |
|                                                                        | 20                | 18              | 0.0094 |             |        |
|                                                                        | 30                | 25              | 0.0131 |             |        |
|                                                                        | 40                | 32              | 0.0172 |             |        |
|                                                                        | 50                | 37              | 0.0196 |             |        |

➤ Frequency stability V.S. Voltage measurement

| Reference Frequency: GSM850 (GSM link) Middle channel=190 channel=836.6MHz |                      |                 |        |             |        |
|----------------------------------------------------------------------------|----------------------|-----------------|--------|-------------|--------|
| Temperature ( °C)                                                          | Power supplied (Vdc) | Frequency error |        | Limit (ppm) | Result |
|                                                                            |                      | Hz              | ppm    |             |        |
| 25                                                                         | HV                   | 33              | 0.0395 | 2.50        | Pass   |
|                                                                            | NV                   | 28              | 0.0340 |             |        |
|                                                                            | LV                   | 35              | 0.0414 |             |        |
| Reference Frequency: PCS1900 (GSM link) Middle channel=661 channel=1880MHz |                      |                 |        |             |        |
| Temperature ( °C)                                                          | Power supplied (Vdc) | Frequency error |        |             | Result |
|                                                                            |                      | Hz              | ppm    |             |        |
| 25                                                                         | HV                   | 42              | 0.0225 | 2.50        | Pass   |
|                                                                            | NV                   | 28              | 0.0151 |             |        |
|                                                                            | LV                   | 35              | 0.0188 |             |        |

| Reference Frequency: WCDMA Band V Middle channel=4183 channel=836.6MHz   |                      |                 |        |             |        |
|--------------------------------------------------------------------------|----------------------|-----------------|--------|-------------|--------|
| Temperature ( °C)                                                        | Power supplied (Vdc) | Frequency error |        | Limit (ppm) |        |
|                                                                          |                      | Hz              | ppm    | Result      |        |
| 25                                                                       | HV                   | 45              | 0.0542 | 2.50        | Pass   |
|                                                                          | NV                   | 38              | 0.0460 |             |        |
|                                                                          | LV                   | 45              | 0.0533 |             |        |
| Reference Frequency: WCDMA Band IV Middle channel=1412 channel=1733.6MHz |                      |                 |        |             |        |
| Temperature ( °C)                                                        | Power supplied (Vdc) | Frequency error |        |             | Result |
|                                                                          |                      | Hz              | ppm    |             |        |
| 25                                                                       | HV                   | 60              | 0.0346 | 2.50        | Pass   |
|                                                                          | NV                   | 48              | 0.0275 |             |        |
|                                                                          | LV                   | 42              | 0.0244 |             |        |
| Reference Frequency: WCDMA Band II Middle channel=9400 channel=1880MHz   |                      |                 |        |             |        |
| Temperature ( °C)                                                        | Power supplied (Vdc) | Frequency error |        |             | Result |
|                                                                          |                      | Hz              | ppm    |             |        |
| 25                                                                       | HV                   | 45              | 0.0241 | 2.50        | Pass   |
|                                                                          | NV                   | 37              | 0.0196 |             |        |
|                                                                          | LV                   | 46              | 0.0245 |             |        |

## 10. Modulation characteristics

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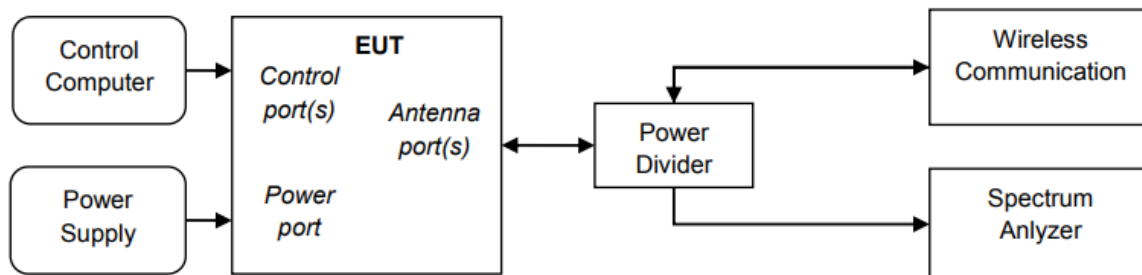
### 10.1 Standard Applicable

According to §2.1047, measurements required: Modulation characteristics is given below:

- (a) Voice modulated communication equipment. A curve or equivalent data showing the frequency response of the audio modulating circuit over a range of 100 to 5000 Hz shall be submitted. For equipment required to have an audio low-pass filter, a curve showing the frequency response of the filter, or of all circuitry installed between the modulation limiter and the modulated stage shall be submitted.
- (b) Equipment which employs modulation limiting. A curve or family of curves showing the percentage of modulation versus the modulation input voltage shall be supplied. The information submitted shall be sufficient to show modulation limiting capability throughout the range of modulating frequencies and input modulating signal levels employed.
- (c) Single sideband and independent sideband radiotelephone transmitters which employ a device or circuit to limit peak envelope power. A curve showing the peak envelope power output versus the modulation input voltage shall be supplied. The modulating signals shall be the same in frequency as specified in paragraph (c) of §2.1049 for the occupied bandwidth tests.
- (d) Other types of equipment. A curve or equivalent data which shows that the equipment will meet the modulation requirements of the rules under which the equipment is to be licensed.

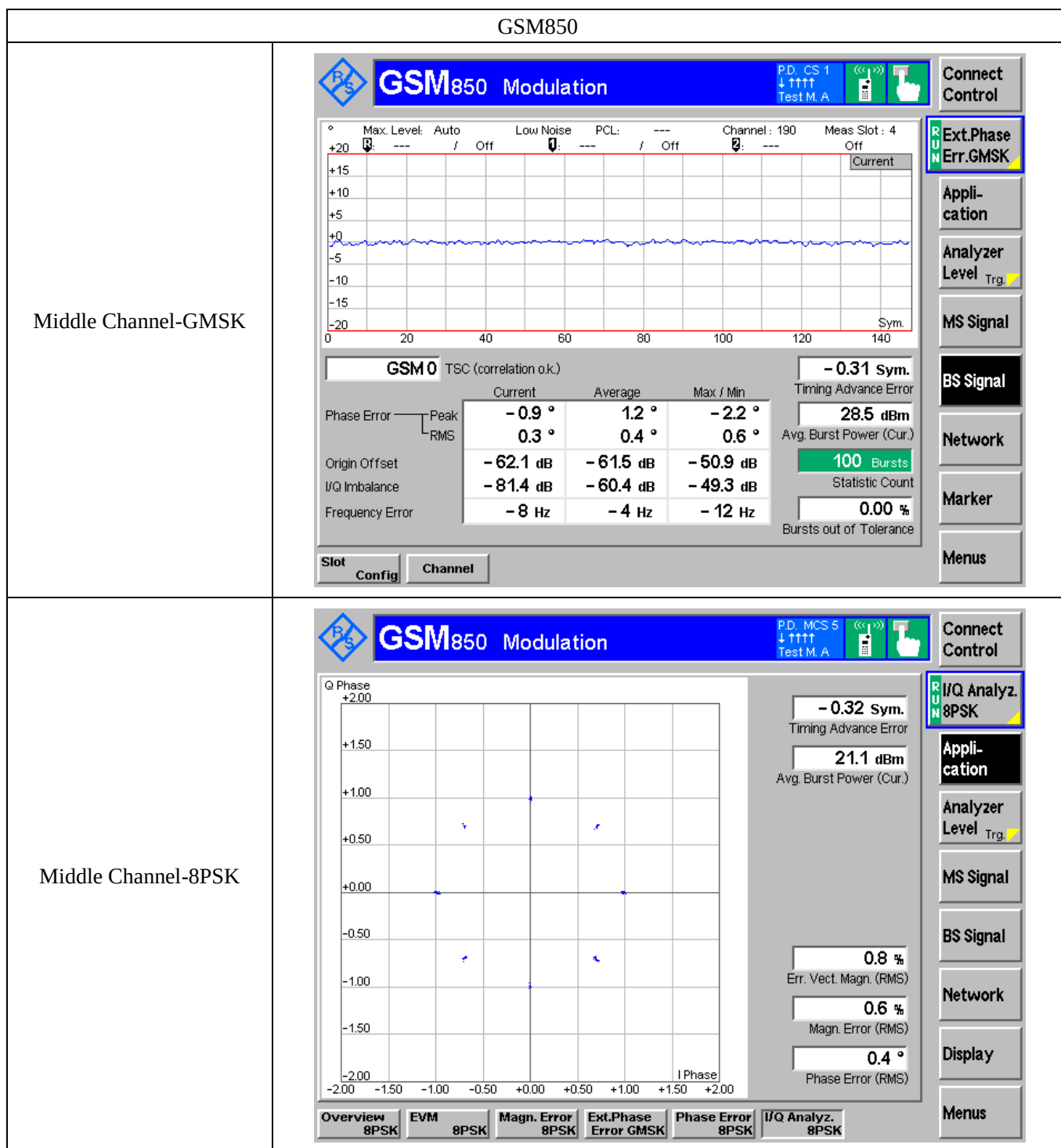
### 10.2 Test Procedure

According to ANSI C63.26-2015 section 5.3.2, the following test setup was performed.

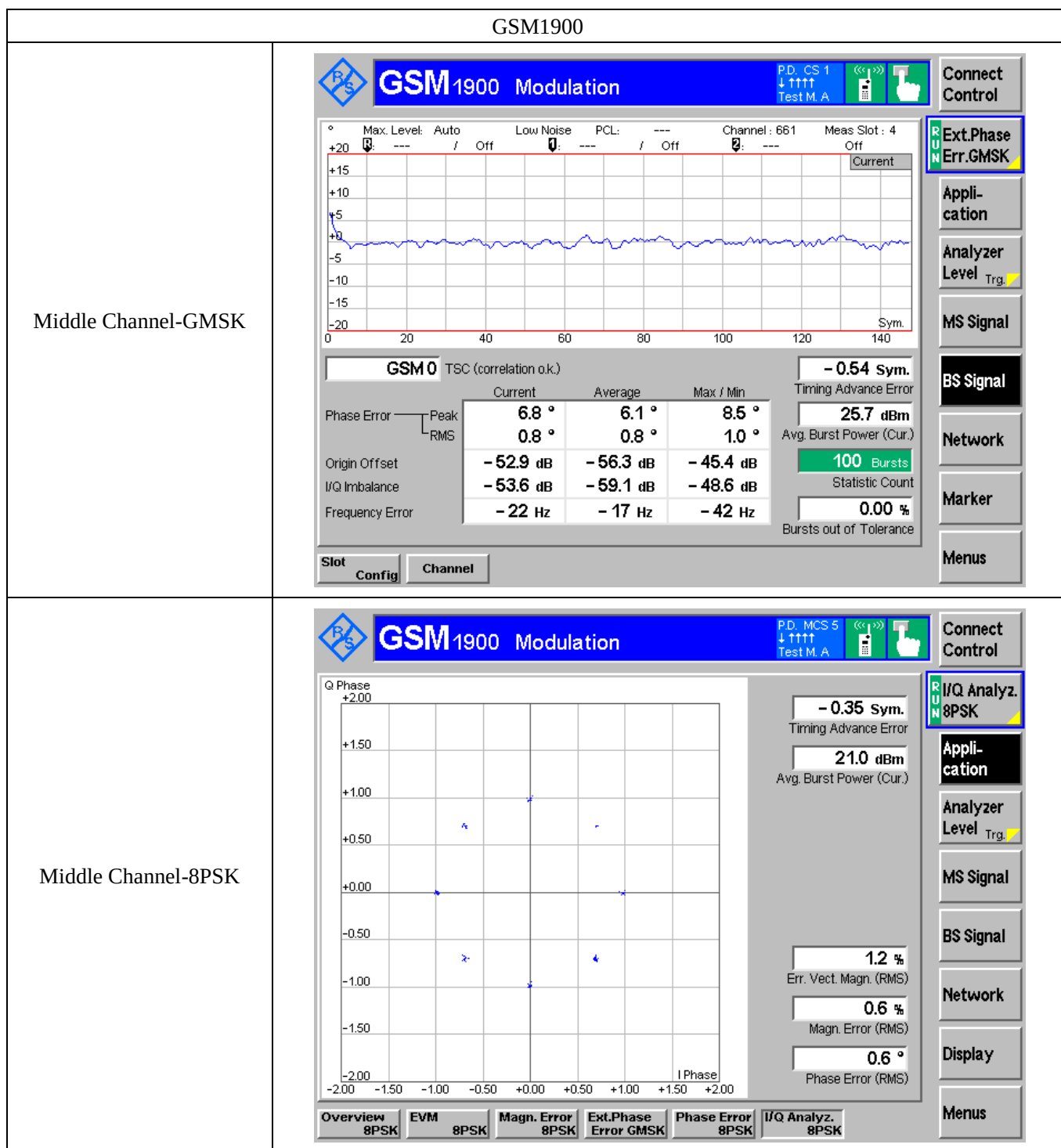


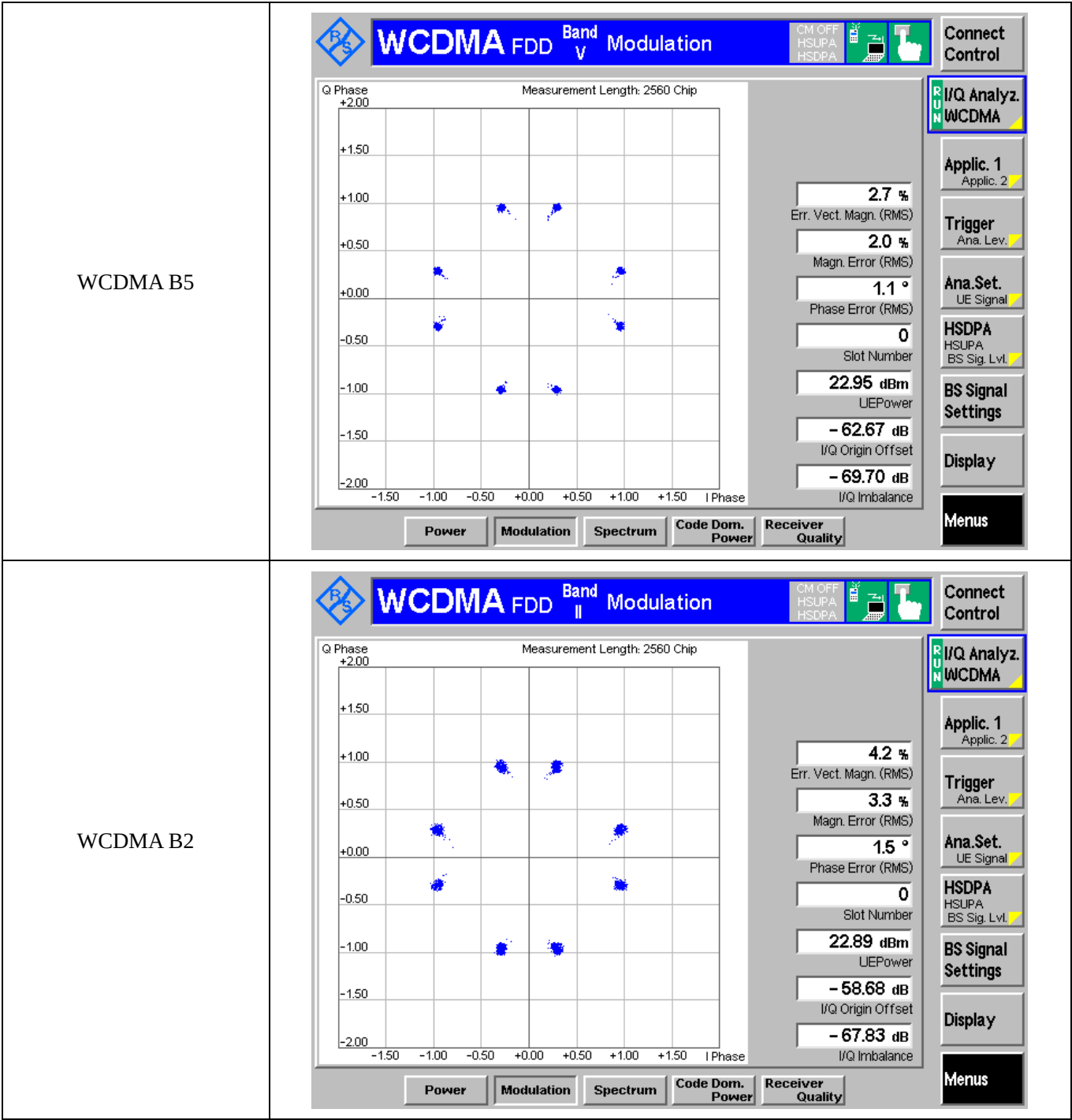
### 10.3 Summary of Test Results/Plots

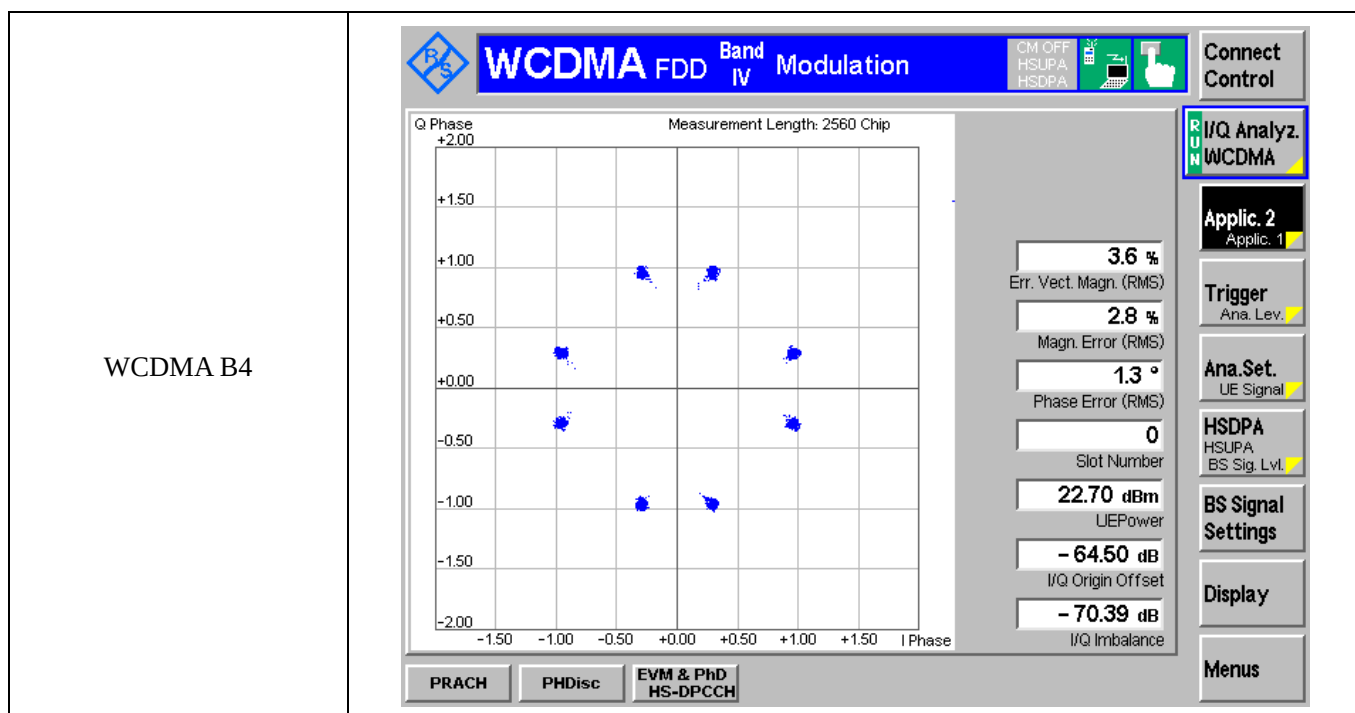
Only the worst case was selected to record











\*\*\*\*\* END OF REPORT \*\*\*\*\*