NVLAP LAB CODE 200707-0

# FCC PART 22H & 24E

# MEASUREMENT AND TEST REPORT

For

## Think Wireless, Inc.

5497 Wiles Rd, Suite 205,
Coconut Creek, FL 33073, USA

## FCC ID: V23TWDBMPSB-01

| **Report Type:** | **Product Type:** |
|---|---|
| Original Report | Repeater |

| | |
|---|---|
| **Test Engineer:** | Wayne Cheng |
| **Report Number:** | RSZ10072801 |
| **Report Date:** | 2010-09-01 |
| **Reviewed By:** | Merry Zhao<br>EMC Engineer |
| **Prepared By:** | Bay Area Compliance Laboratories Corp. (Shenzhen)<br>6/F, the 3rd Phase of WanLi Industrial Building,<br>ShiHua Road, FuTian Free Trade Zone<br>Shenzhen, Guangdong, China<br>Tel: +86-755-33320018<br>Fax: +86-755-33320008 |

# TABLE OF CONTENTS

# GENERAL INFORMATION

## Product Description for Equipment under Test (EUT)

The *Think Wireless, Inc.*'s product, model number: *TWDBMPSB-01 (FCC ID: V23TWDBMPSB-01)* or the "EUT" as referred to in this report is a *Mobile Phone Signal Booster*, which measures approximately: 13.5 cm L x 11.0 cm W x 2.6 cm H, rated input voltage: 120V/60 Hz adapter.

Frequency Range:

Cellular Band: 824-849 MHz(Uplink), 869-894 MHz (Downlink)
PCS Band: 1850-1910 MHz (Uplink), 1930-1990 MHz (Downlink)

Transmitter Output Power:

Cellular Band: 15±2 dBm (Uplink), 3±2 dBm (Downlink)
PCS Band: 15±2 dBm (Uplink), 3±2 dBm (Downlink)

** All measurement and test data in this report was gathered from production sample serial number: 1007115 (Assigned by BACL, Shenzhen). The EUT was received on 2010-07-28.*

## Objective

This type approval report is prepared on behalf of *Think Wireless, Inc.* in accordance with Part 2, Subpart J, Part 22 Subpart H, and Part 24 Subpart E of the Federal Communication Commissions rules.

The objective is to determine compliance with FCC rules for output power, modulation characteristic, occupied bandwidth, and spurious emission at antenna terminal, spurious radiated emission, frequency stability, band edge and radiated margin.

## Related Submittal(s)/Grant(s)

N/A

## Test Methodology

All tests and measurements indicated in this document were performed in accordance with the Code of Federal Regulations Title 47 Part 2, Sub-part J as well as the following parts:

Part 22 Subpart H - Public Mobile Services
Part 24 Subpart E - Personal Communication Services

Applicable Standards: TIA/EIA 603-C, ANSI C63.4-2003.

All radiated and conducted emissions measurements were performed at Bay Area Compliance Laboratories Corp. The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

## Test Facility

The Test site used by Bay Area Compliance Laboratories Corp.(Shenzhen) to collect test data is located in the 6/F, the 3rd Phase of WanLi Industrial Building, ShiHua Road, FuTian Free Trade Zone Shenzhen, Guangdong, China.

Test site at Bay Area Compliance Laboratories Corp. (Shenzhen) has been fully described in reports submitted to the Federal Communication Commission (FCC). The details of these reports have been found to be in compliance with the requirements of Section 2.948 of the FCC Rules on November 21, 2007. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2003.

The Federal Communications Commission has the reports on file and is listed under FCC Registration No.: 382179. The test site has been approved by the FCC for public use and is listed in the FCC Public Access Link (PAL) database.

Additionally, Bay Area Compliance Laboratories Corp. (Shenzhen) is a National Institute of Standards and Technology (NIST) accredited laboratory, under the National Voluntary Laboratory Accredited Program (Lab Code 200707-0).

NVLAP LAB CODE 200707-0

The current scope of accreditations can be found at http://ts.nist.gov/Standards/scopes/2007070.htm

# SYSTEM TEST CONFIGURATION

## Justification

The EUT was configured for testing according to TIA/EIA-603-C.

The final qualification test was performed with the EUT operating at normal mode.

## Equipment Modifications

No modifications were made to the EUT.

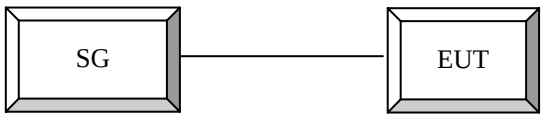
## Local Support Equipment List and Details

| Manufacturer | Device Name | Model | Serial Number | FCC ID |
|---|---|---|---|---|
| Agilent | ESG-D Series Signal Generator | E4432B | N/A | N/A |
| N/A | High Power RF Termination | (CDC-4GHz) 635R | T-E141-2 | N/A |
| Ro1Xde&SCHWARE | CMV200 | T-E177 | 109038 | N/A |

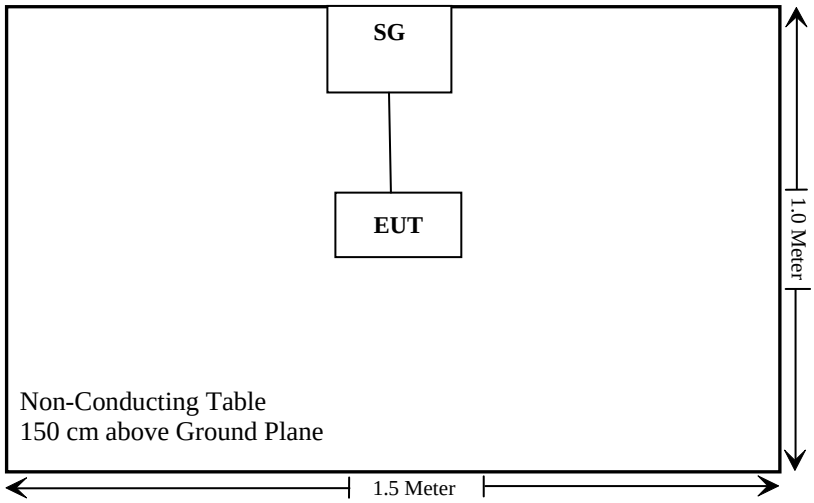
## External I/O Cable

| Cable Description | Length (M) | From/Port | To |
|---|---|---|---|
| Shielded undetachable Coaxial Cable | 1.00 | SG | EUT |
| Unshielded Detachable DC line Cable | 1.76 | EUT | adapter |

## Configuration of Test Setup



## Block Diagram of Test Setup



# SUMMARY OF TEST RESULTS

| FCC Rules | Description of Test | Result |
|---|---|---|
| §1.1307 (b)(1), §2.1091 | Maximum Permissible Exposure (MPE) | Compliant |
| §2.1046;<br>§22.913 (a); §24.232 (c) | RF Output Power | Compliant |
| §2.1047 | Modulation Characteristics | N/A |
| §2.1049; §22.905<br>§22.917; §24.238 | 99% & -26 dB Occupied Bandwidth | Compliant |
| §2.1051,<br>§22.917 (a); §24.238 (a) | Spurious Emissions at Antenna Terminal | Compliant |
| §2.1053<br>§22.917 (a); §24.238 (a) | Field Strength of Spurious Radiation | Compliant |
| §22.917 (a); §24.238 (a) | Out of band emission, Band Edge | Compliant |
| §2.1055<br>§22.355; §24.235 | Frequency stability vs. temperature<br>Frequency stability vs. voltage | N/A |

# FCC §1.1307 & §2.1091- MAXIMUM PERMISSIBLE EXPOSURE (MPE)

## Applicable Standard

According to FCC §1.1307 (b)(1) and §2.1091 systems operating under the provisions of this section shall be operated in a manner that ensures the public is not exposed to RF energy level in excess of the communication guidelines.

Limits for General Population/Uncontrolled Exposure

| Limits for General Population/Uncontrolled Exposure | | | | |
|---|---|---|---|---|
| **Frequency Range (MHz)** | **Electric Field Strength (V/m)** | **Magnetic Field Strength (A/m)** | **Power Density ($mw/cm^2$)** | **Averaging Time (Minutes)** |
| 0.3-1.34 | 614 | 1.63 | *(100) | 30 |
| 1.34-30 | 824/f | 2.19/f | *($180/f^2$) | 30 |
| 30-300 | 27.5 | 0.073 | 0.2 | 30 |
| 300-1500 | / | / | f/1500 | 30 |
| 1500-100,000 | / | / | 1.0 | 30 |

f = frequency in MHz
* = Plane-wave equivalent power density

## Test Data

Predication of MPE limit at a given distance

$$S = PG/4\pi R^2$$

Where:

S = power density (in appropriate units, e.g. $mW/cm^2$)
P = power input to the antenna (in appropriate units, e.g., mW).
G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally ***numeric*** gain.
R = distance to the center of radiation of the antenna (appropriate units, e.g., cm)

Cellular Band:

| Mode | Frequency (MHz) | Antenna Gain | | Conducted Power | | Evaluation Distance (cm) | Power Density ($mW/cm^2$) | MPE Limit ($mW/cm^2$) |
|---|---|---|---|---|---|---|---|---|
| | | (dBi) | (numeric) | (dBm) | (mW) | | | |
| UL | 836.5 | 5 | 3.16 | 16.63 | 46.03 | 20 | 0.029 | 0.558 |
| DL | 881.6 | 5 | 3.16 | 4.71 | 2.96 | 20 | 0.002 | 0.588 |

PCS Band:

| Mode | Frequency (MHz) | Antenna Gain | | Conducted Power | | Evaluation Distance (cm) | Power Density ($mW/cm^2$) | MPE Limit ($mW/cm^2$) |
|---|---|---|---|---|---|---|---|---|
| | | (dBi) | (numeric) | (dBm) | (mW) | | | |
| UL | 1850.2 | 5 | 3.16 | 16.72 | 46.99 | 20 | 0.03 | 1.0 |
| DL | 1960.0 | 5 | 3.16 | 4.37 | 2.74 | 20 | 0.002 | 1.0 |

**Result:** Compliant

# FCC §2.1047 - MODULATION CHARACTERISTIC

According to FCC § 2.1047(d), Part 22H & 24E there is no specific requirement for digital modulation, therefore modulation characteristic is not presented.

# FCC §2.1046, §22.913(a) & §24.232(c) - RF OUTPUT POWER

## Applicable Standard

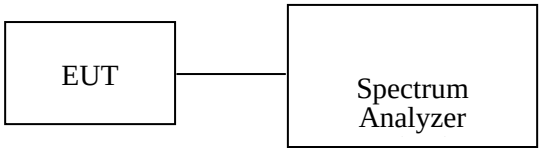
According to FCC §2.1046 and §22.913 (a), the ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 watts.

According to FCC §2.1046 and §24.232 (C), in no case may the peak output power of a base station transmitter exceed 2 watt EIRP.

## Test Procedure

*Conducted method:*

The RF output of the transmitter was connected to the wireless test set and the spectrum analyzer through sufficient attenuation.




*Radiated method:*

TIA 603-C section 2.2.17

## Test Equipment List and Details

| Manufacturer | Description | Model | Serial Number | Calibration Date | Calibration Due Date |
|---|---|---|---|---|---|
| Rohde & Schwarz | Spectrum Analyzer | FSEM30 | 849720/019 | 2010-07-08 | 2011-07-07 |
| Rohde & Schwarz | Universal Radio Communication Tester | CMU200 | 109038 | 2010-06-11 | 2011-06-10 |

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

## Test Data

### Environmental Conditions

| | |
|---|---|
| **Temperature:** | 25 °C |
| **Relative Humidity:** | 56 % |
| **ATM Pressure:** | 100.0kPa |

*The testing was performed by Wayne Cheng on 2010-08-27.*

**CDMA:**

**Downlink**

Cellular Band (Part 22H)

| Mode | Channel | Frequency (MHz) | Output Power (dBm) | Limit (dBm) |
|---|---|---|---|---|
| CDMA | Low | 869.7 | 1.21 | 38.45 |
| | Middle | 881.5 | 4.31 | 38.45 |
| | High | 893.3 | 3.03 | 38.45 |

PCS Band (Part 24E)

| Mode | Channel | Frequency (MHz) | Output Power (dBm) | Limit (dBm) |
|---|---|---|---|---|
| CDMA | Low | 1931.25 | 2.26 | 33 |
| | Middle | 1960.0 | 4.37 | 33 |
| | High | 1988.75 | 1.87 | 33 |

**Uplink**

Cellular Band (Part 22H)

| Mode | Channel | Frequency (MHz) | Output Power (dBm) | Limit (dBm) |
|---|---|---|---|---|
| CDMA | Low | 824.7 | 16.17 | 38.45 |
| | Middle | 836.5 | 16.63 | 38.45 |
| | High | 848.31 | 14.07 | 38.45 |

PCS Band (Part 24E)

| Mode | Channel | Frequency (MHz) | Output Power (dBm) | Limit (dBm) |
|---|---|---|---|---|
| CDMA | Low | 1851.25 | 14.81 | 33 |
| | Middle | 1880.0 | 16.59 | 33 |
| | High | 1908.75 | 13.19 | 33 |

**GSM:**

**Downlink**

Cellular Band (Part 22H)

| Mode | Channel | Frequency (MHz) | Output Power (dBm) | Limit (dBm) |
|---|---|---|---|---|
| GSM | Low | 869.2 | 1.16 | 38.45 |
| | Middle | 881.6 | 4.71 | 38.45 |
| | High | 893.8 | 3.10 | 38.45 |

PCS Band (Part 24E)

| Mode | Channel | Frequency (MHz) | Output Power (dBm) | Limit (dBm) |
|---|---|---|---|---|
| GSM | Low | 1930.2 | 1.57 | 33 |
| | Middle | 1960.0 | 4.37 | 33 |
| | High | 1989.8 | 1.80 | 33 |

**Uplink**

Cellular Band (Part 22H)

| Mode | Channel | Frequency (MHz) | Output Power (dBm) | Limit (dBm) |
|---|---|---|---|---|
| GSM | Low | 824.2 | 15.93 | 38.45 |
| | Middle | 836.6 | 16.33 | 38.45 |
| | High | 848.8 | 14.88 | 38.45 |

PCS Band (Part 24E)

| Mode | Channel | Frequency (MHz) | Output Power (dBm) | Limit (dBm) |
|---|---|---|---|---|
| GSM | Low | 1850.2 | 16.72 | 33 |
| | Middle | 1880.0 | 16.16 | 33 |
| | High | 1909.8 | 13.34 | 33 |

# FCC §2.1049, §22.917, §22.905 & §24.238 - OCCUPIED BANDWIDTH

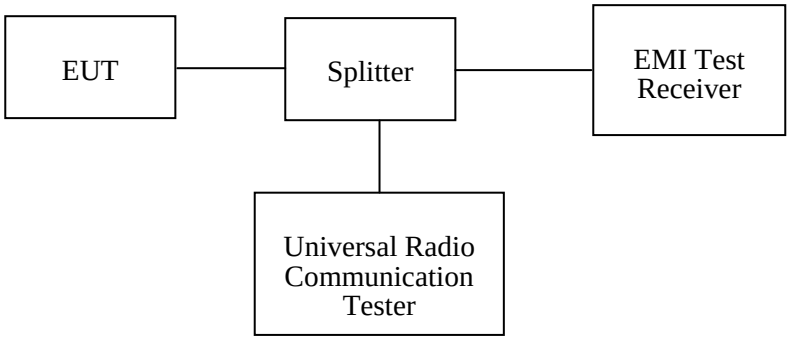
## Applicable Standards

FCC §2.1049, §22.917, §22.905 and §24.238.

## Test Procedure

The RF output of the transmitter was connected to the simulator and the spectrum analyzer through sufficient attenuation.

The resolution bandwidth of the spectrum analyzer was set at 30 kHz (Cellular /PCS) and the 26 dB & 99% bandwidth was recorded.




## Test Equipment List and Details

| Manufacturer | Description | Model | Serial Number | Calibration Date | Calibration Due Date |
|---|---|---|---|---|---|
| Rohde & Schwarz | EMI Test Receiver | ESCI | 100224 | 2009-11-24 | 2010-11-23 |
| Rohde & Schwarz | Universal Radio Communication Tester | CMU200 | 109038 | 2010-06-11 | 2011-06-10 |

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

## Test Data

### Environmental Conditions

| | |
|---|---|
| **Temperature:** | 25 °C |
| **Relative Humidity:** | 56% |
| **ATM Pressure:** | 100.0kPa |

*The testing was performed by Wayne Cheng on 2010-08-27.*

**CDMA, Downlink**

Cellular Band (Part 22H)

| Channel | Frequency (MHz) | 26 dB Occupied Bandwidth (kHz) | 99% Occupied Bandwidth (kHz) |
|---|---|---|---|
| Middle | 881.5 | 1404 | 1260 |

PCS Band (Part 24E)

| Channel | Frequency (MHz) | 26 dB Occupied Bandwidth (kHz) | 99% Occupied Bandwidth (kHz) |
|---|---|---|---|
| Middle | 1960.0 | 1404 | 1260 |

**CDMA, Uplink**

Cellular Band (Part 22H)

| Channel | Frequency (MHz) | 26 dB Occupied Bandwidth (kHz) | 99% Occupied Bandwidth (kHz) |
|---|---|---|---|
| Middle | 836.5 | 1416 | 1266 |

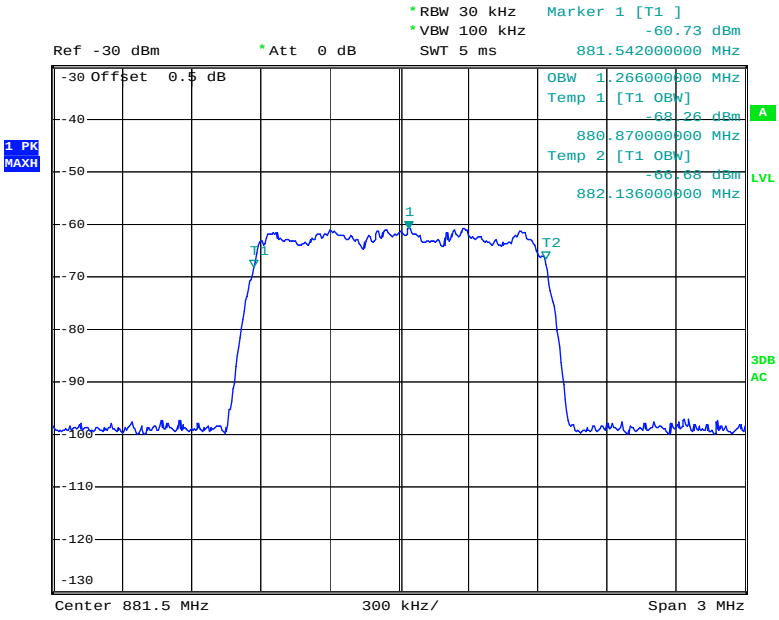
PCS Band (Part 24E)

| Channel | Frequency (MHz) | 26 dB Occupied Bandwidth (kHz) | 99% Occupied Bandwidth (kHz) |
|---|---|---|---|
| Middle | 1880.0 | 1410 | 1266 |

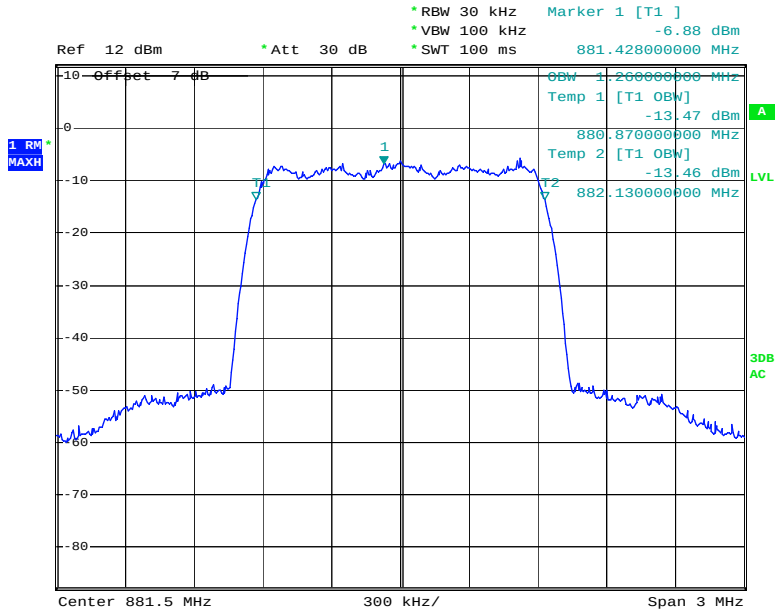
Please refer to the following plots.

**CDMA, Cellular Band, Downlink:**

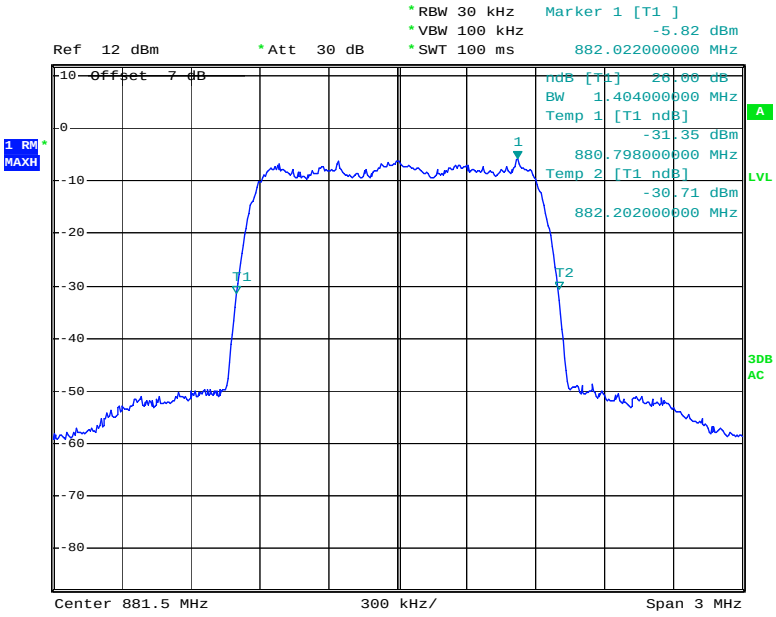
**Input Signal**




**99% Occupied Bandwidth (Middle Channel)**

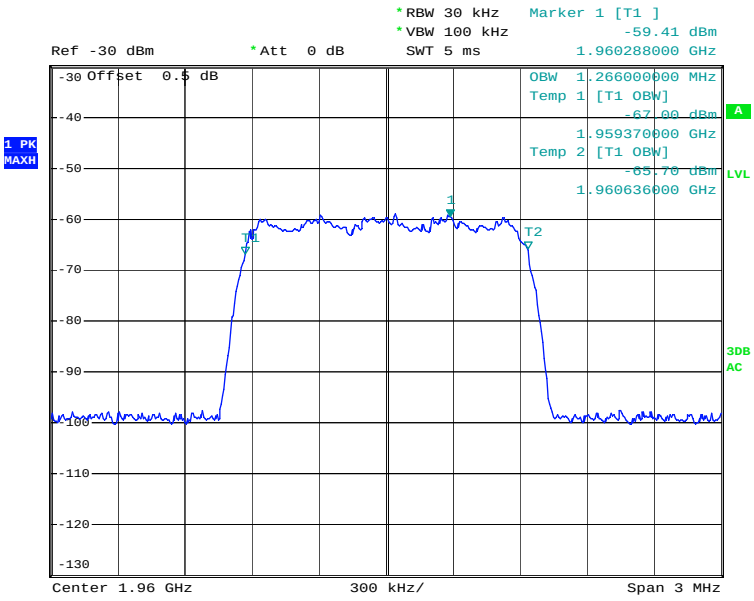


### 26 dB Bandwidth (Middle Channel)

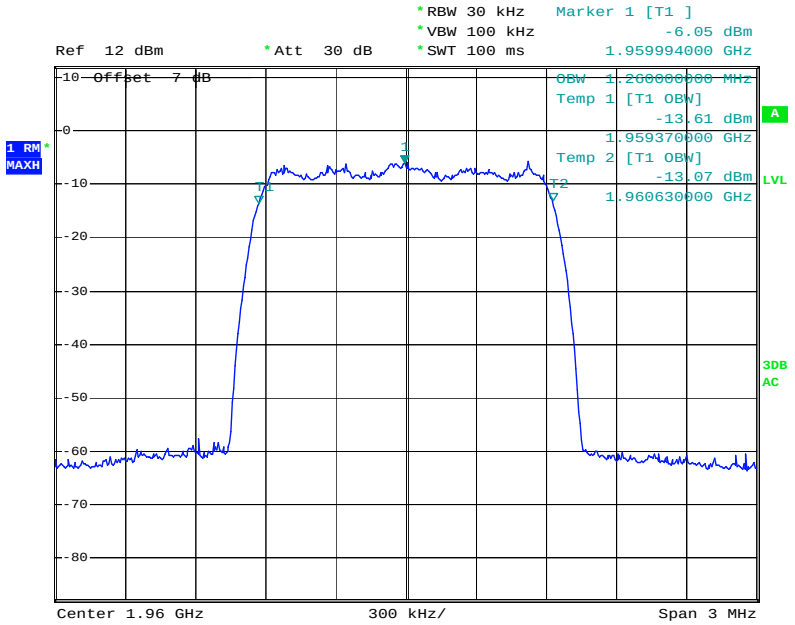



## CDMA, PCS Band, Downlink

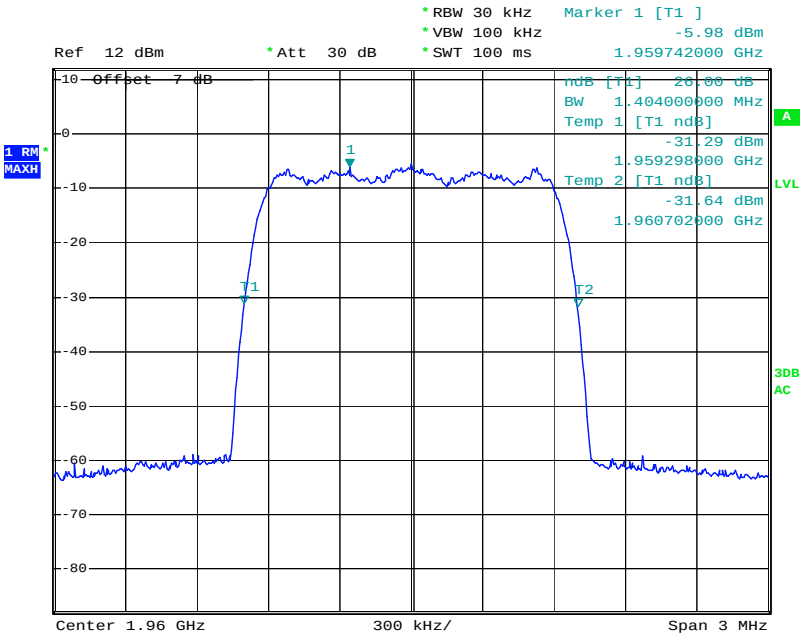
### Input Signal



## 99% Occupied Bandwidth (Middle Channel)

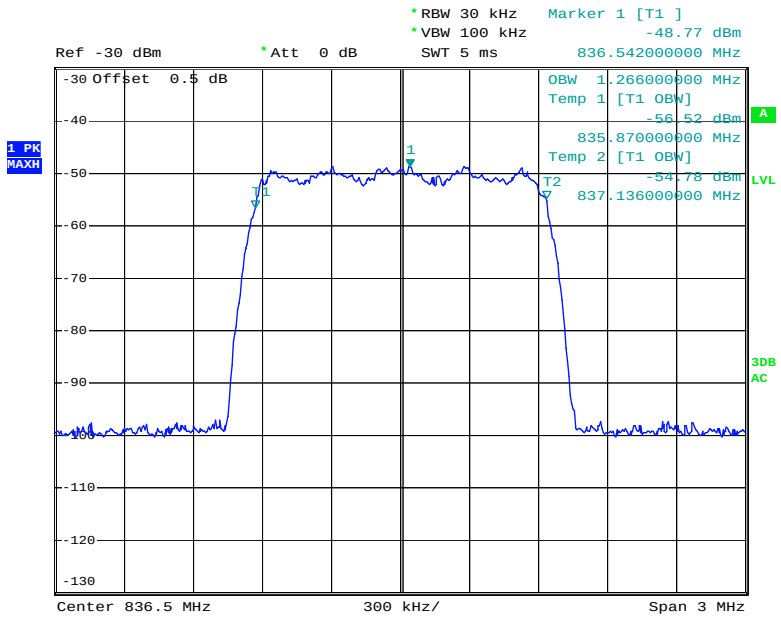



## 26 dB Bandwidth (Middle Channel)

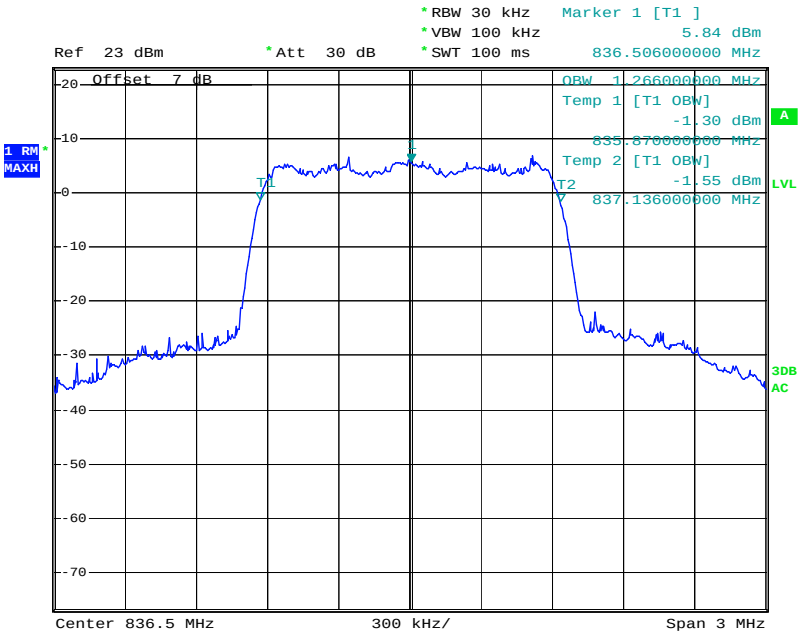


**CDMA, Cellular Band, Uplink:**

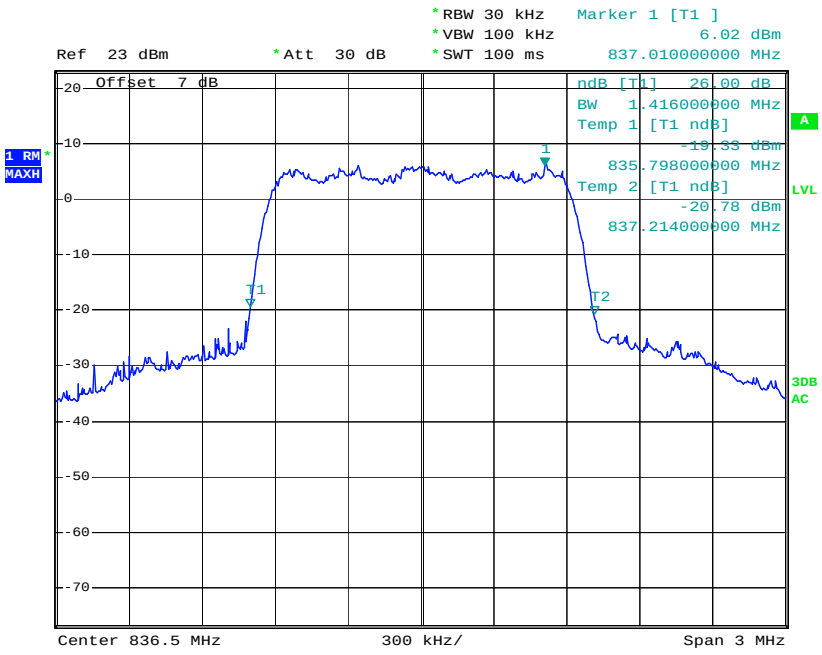
## Input Signal




## 99% Occupied Bandwidth (Middle Channel)

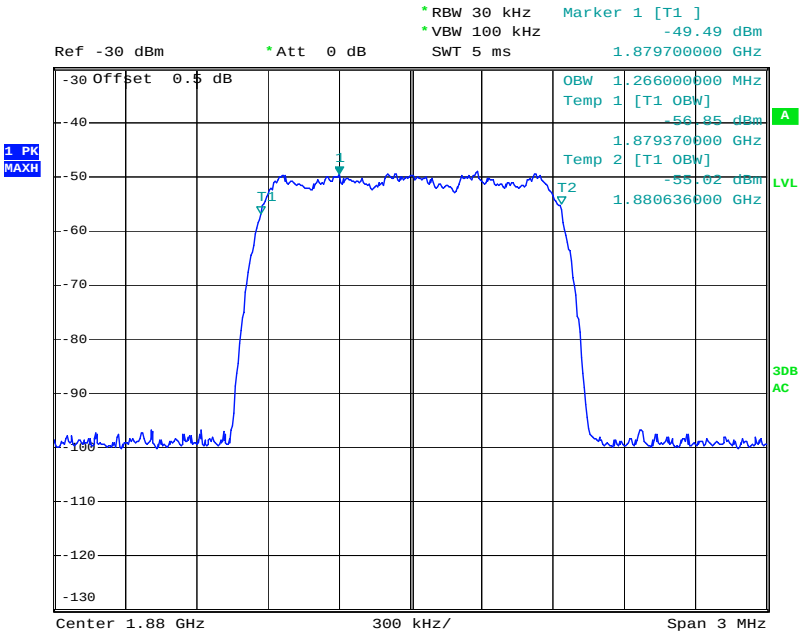


### 26 dB Bandwidth (Middle Channel)

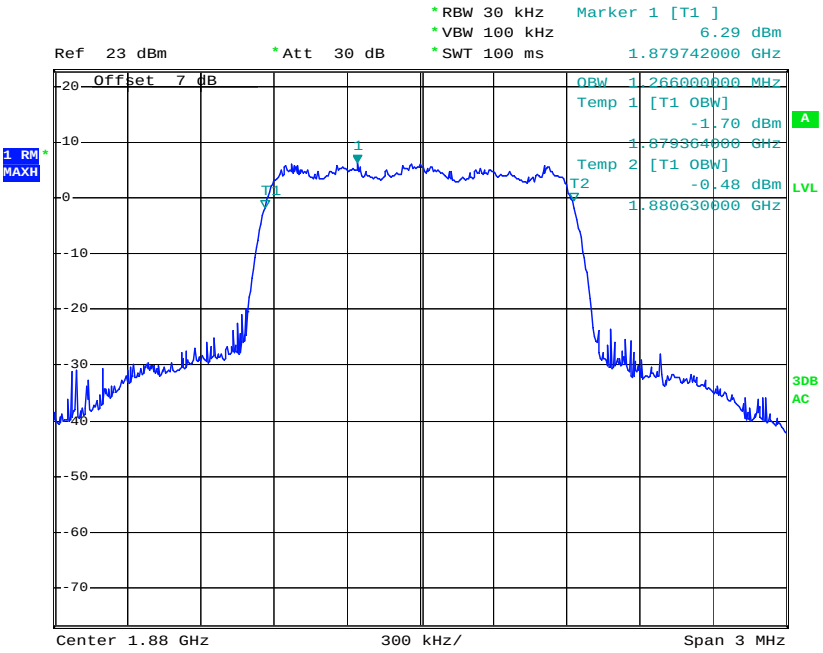



### CDMA, PCS Band, Uplink:

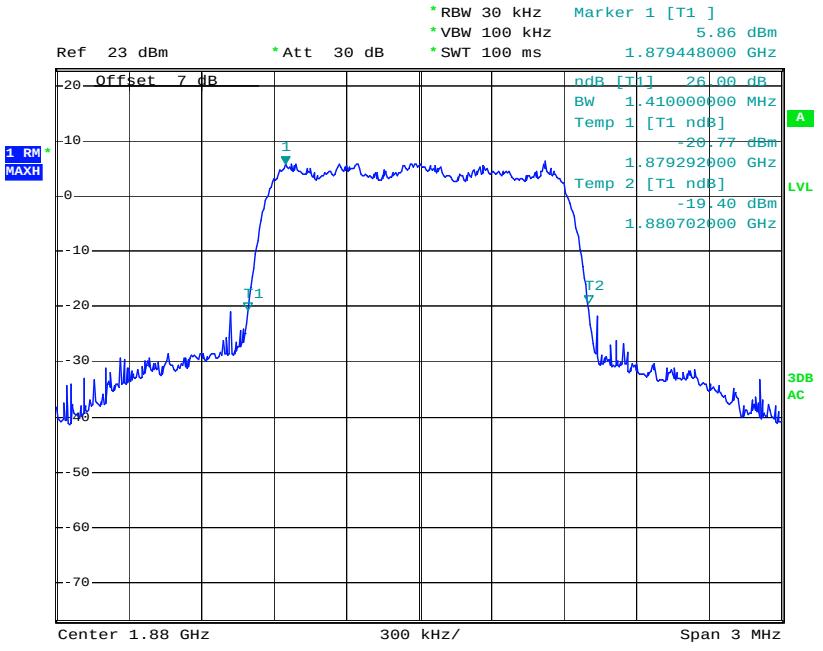
### Input Signal



## 99% Occupied Bandwidth (Middle Channel)




## 26 dB Occupied Bandwidth (Middle Channel)



**GSM, Downlink**

Cellular Band (Part 22H)

| Channel | Frequency (MHz) | 26 dB Occupied Bandwidth (kHz) | 99% Occupied Bandwidth (kHz) |
|---|---|---|---|
| Mid | 881.6 | 334 | 252 |

PCS Band (Part 24E)

| Channel | Frequency (MHz) | 26 dB Occupied Bandwidth (kHz) | 99% Occupied Bandwidth (kHz) |
|---|---|---|---|
| Mid | 1960.0 | 334 | 252 |

**GSM, Uplink**

Cellular Band (Part 22H)

| Channel | Frequency (MHz) | 26 dB Occupied Bandwidth (kHz) | 99% Occupied Bandwidth (kHz) |
|---|---|---|---|
| Mid | 836.6 | 334 | 252 |

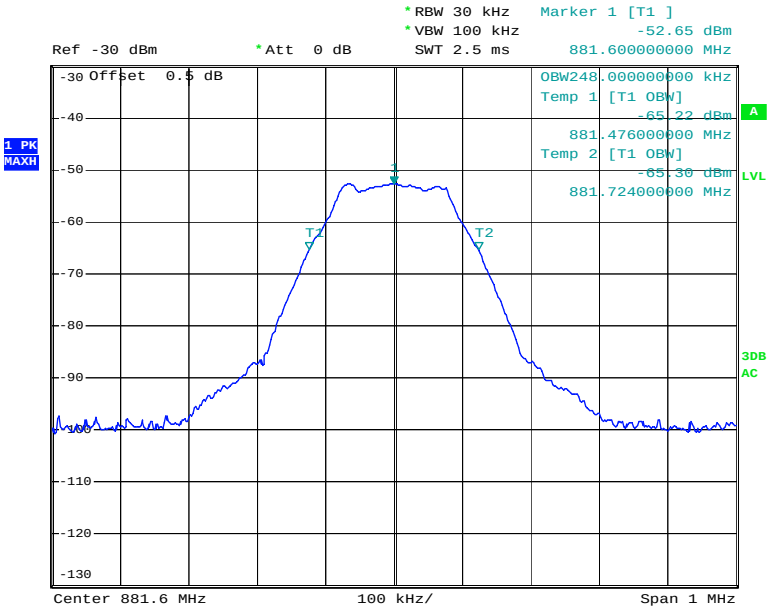
PCS Band (Part 24E)

| Channel | Frequency (MHz) | 26 dB Occupied Bandwidth (kHz) | 99% Occupied Bandwidth (kHz) |
|---|---|---|---|
| Mid | 1880.0 | 336 | 252 |

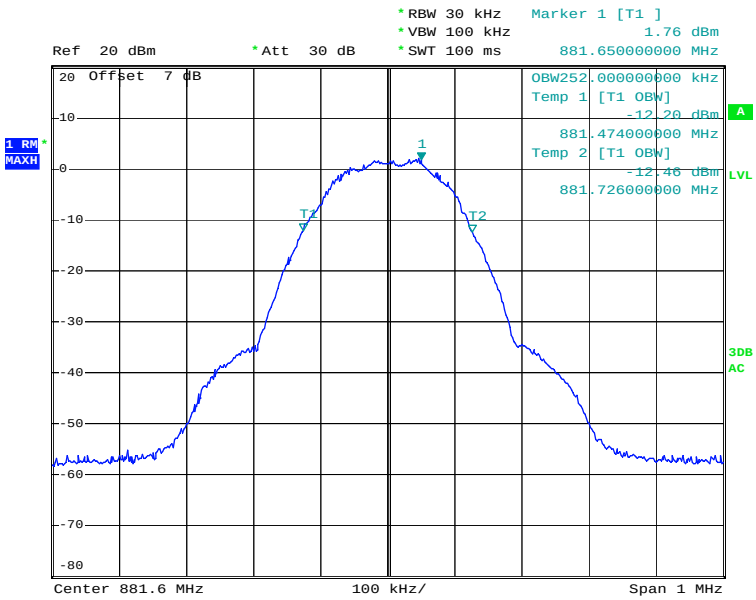
Please refer to the following plots.

**GSM, Cellular Band, Downlink:**

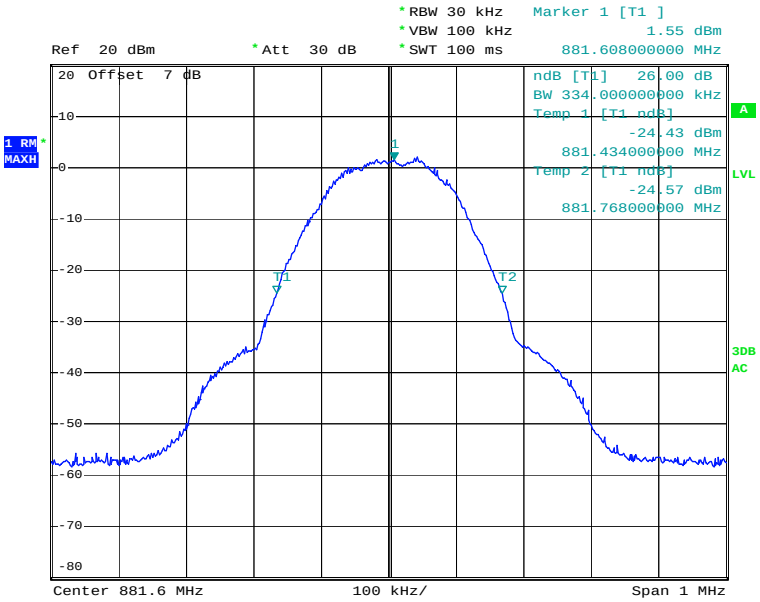
## Input Signal




## 99% Occupied Bandwidth (Middle Channel)

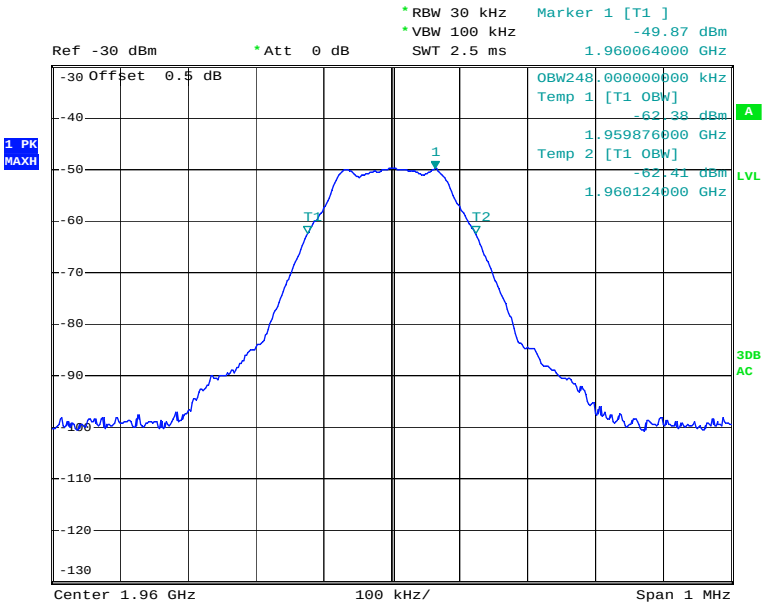


## 26 dB Bandwidth (Middle Channel)

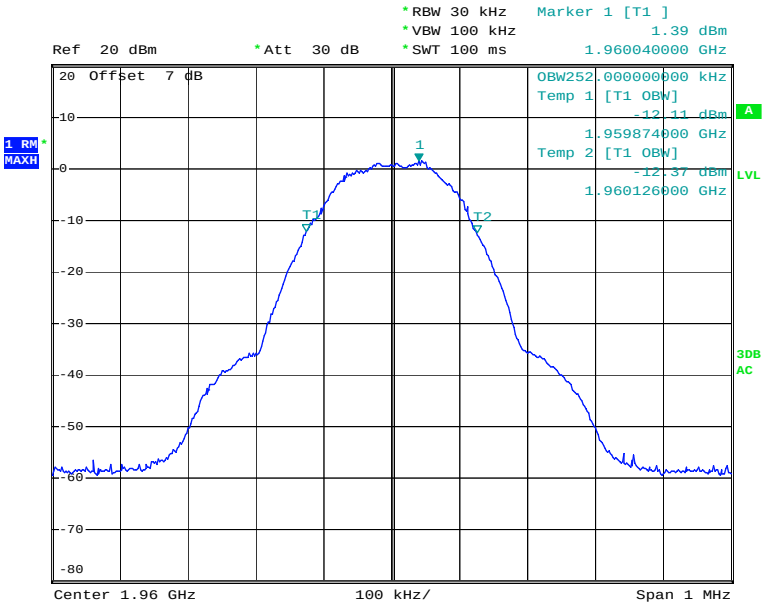



## GSM, PCS Band, Downlink:

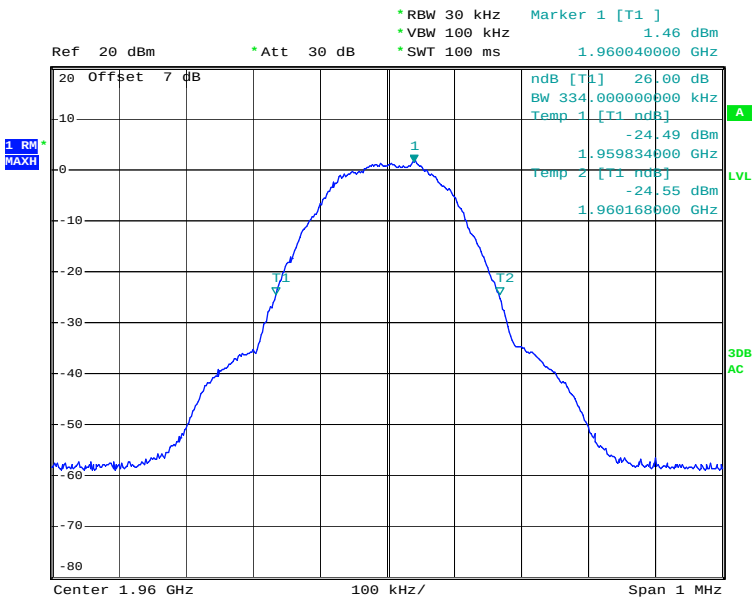
## Input Signal



## 99% Occupied Bandwidth (Middle Channel)

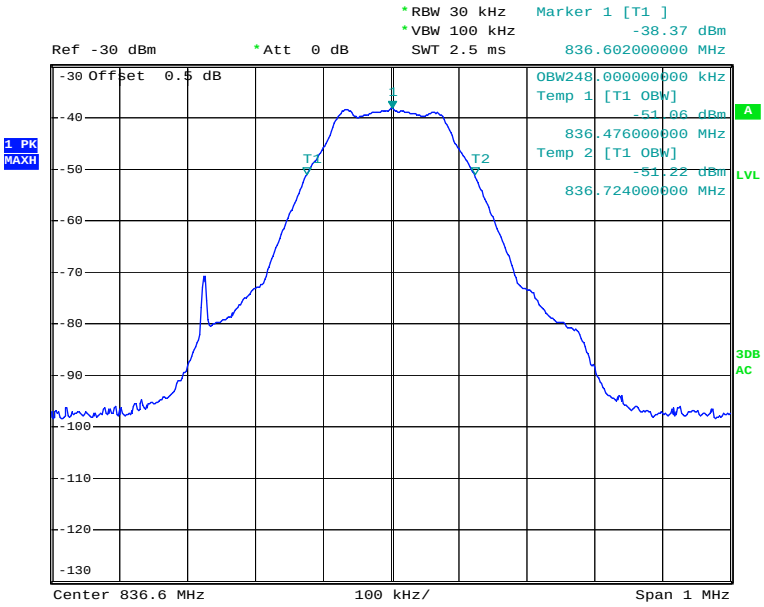



## 26 dB Bandwidth (Middle Channel)

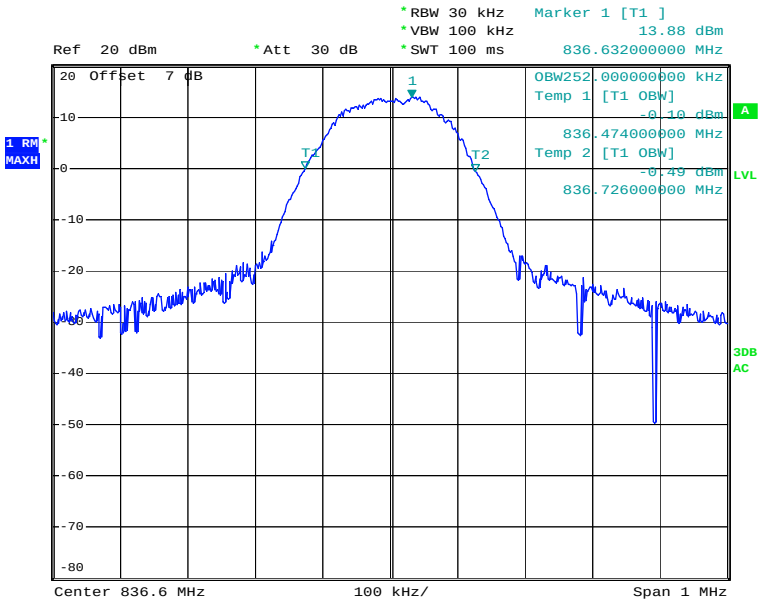


**GSM, Cellular Band, Uplink:**

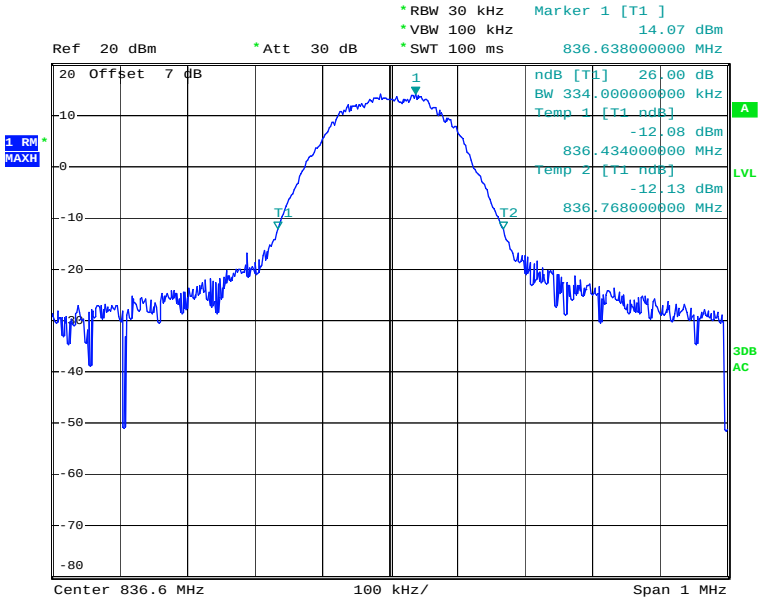
**Input Signal**




**99% Occupied Bandwidth (Middle Channel)**

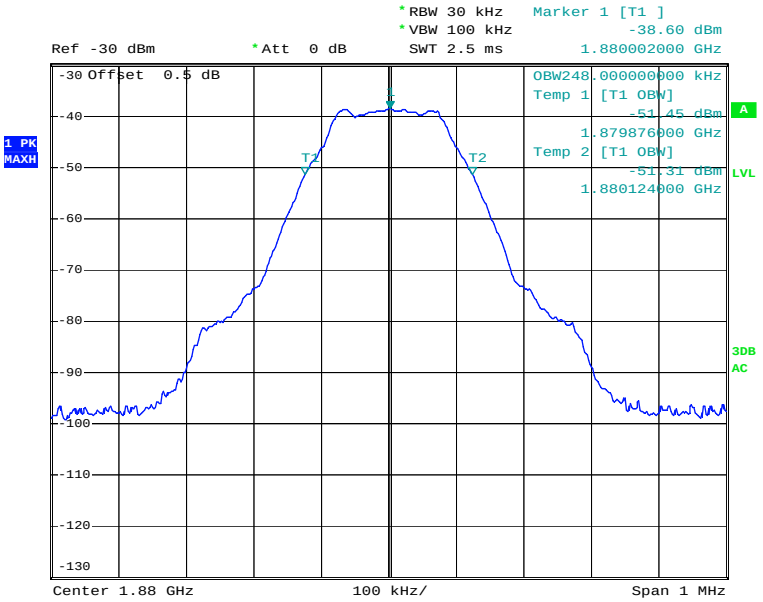


## 26 dB Bandwidth (Middle Channel)

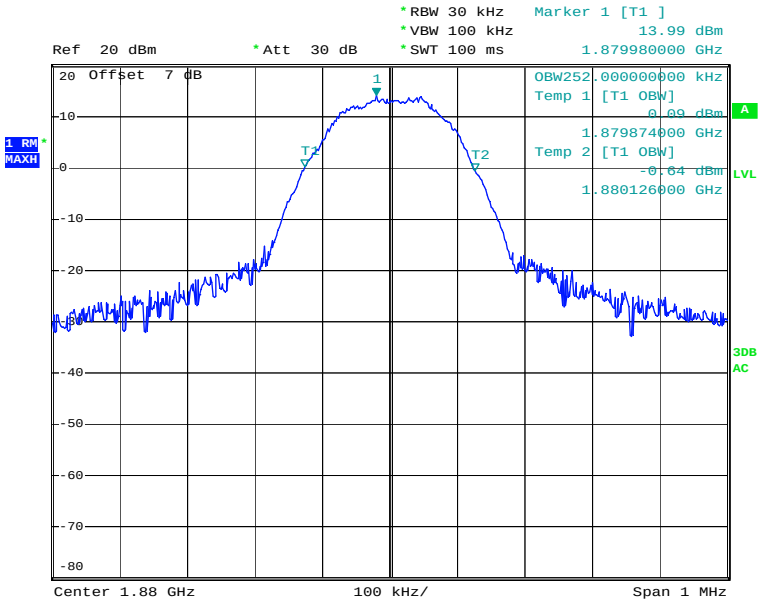



## GSM, PCS Band, Uplink:

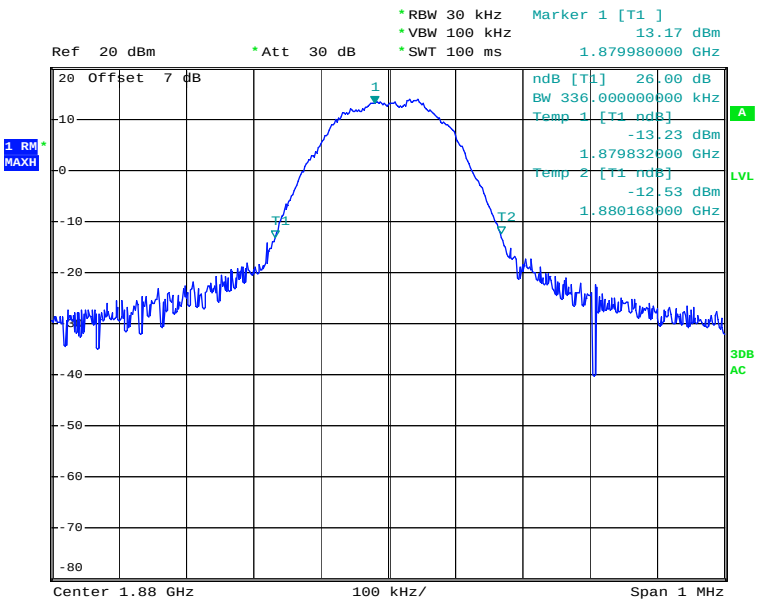
## Input Signal



## 99% Occupied Bandwidth (Middle Channel)




## 26 dB Occupied Bandwidth (Middle Channel)



# FCC §2.1051, §22.917(a) & §24.238(a) - SPURIOUS EMISSIONS AT ANTENNA TERMINALS

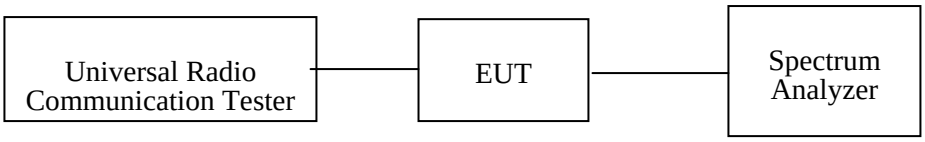
## Applicable Standards

FCC §2.1051, §22.917(a) and §24.238(a).

The spectrum was to be investigated to the tenth harmonics of the highest fundamental frequency as specified in § 2.1051.

## Test Procedure

The RF output of the transceiver was connected to a spectrum analyzer and simulator through appropriate attenuation. The resolution bandwidth of the spectrum analyzer was set at 100 kHz. Sufficient scans were taken to show any out of band emissions up to 10$^{th}$ harmonic.




## Test Equipment List and Details

| Manufacturer | Description | Model | Serial Number | Calibration Date | Calibration Due Date |
|---|---|---|---|---|---|
| Rohde & Schwarz | Spectrum Analyzer | FSEM30 | 849720/019 | 2010-07-08 | 2011-07-07 |
| Rohde & Schwarz | Universal Radio Communication Tester | CMU200 | 109038 | 2010-06-11 | 2011-06-10 |
| Rohde & Schwarz | EMI Test Receiver | ESCI | 100224 | 2009-11-24 | 2010-11-23 |

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

## Test Data

### Environmental Conditions

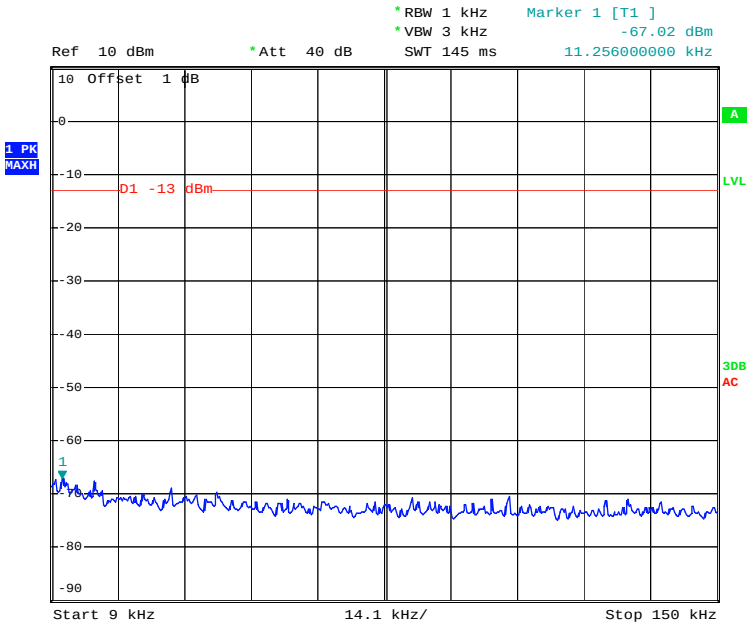
| | |
|---|---|
| **Temperature:** | 25 °C |
| **Relative Humidity:** | 56 % |
| **ATM Pressure:** | 100.0kPa |

*The testing was performed by Wayne Cheng on 2010-08-28.*

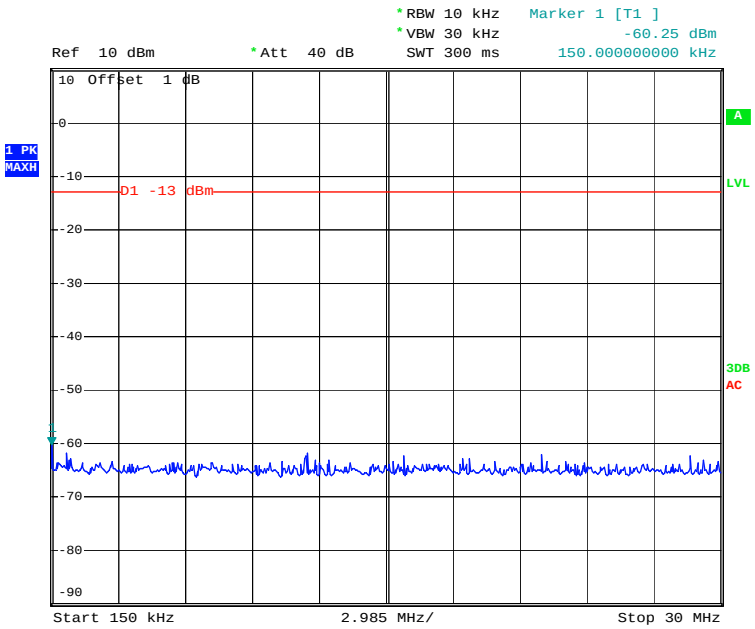
Please refer to the following plots.

**CDMA, Cellular Band, Downlink:**

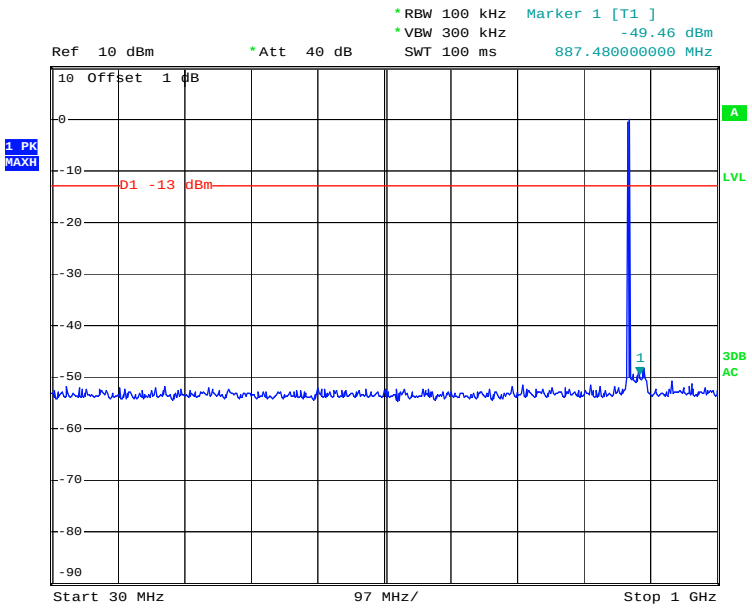
9-150 kHz – Low Channel



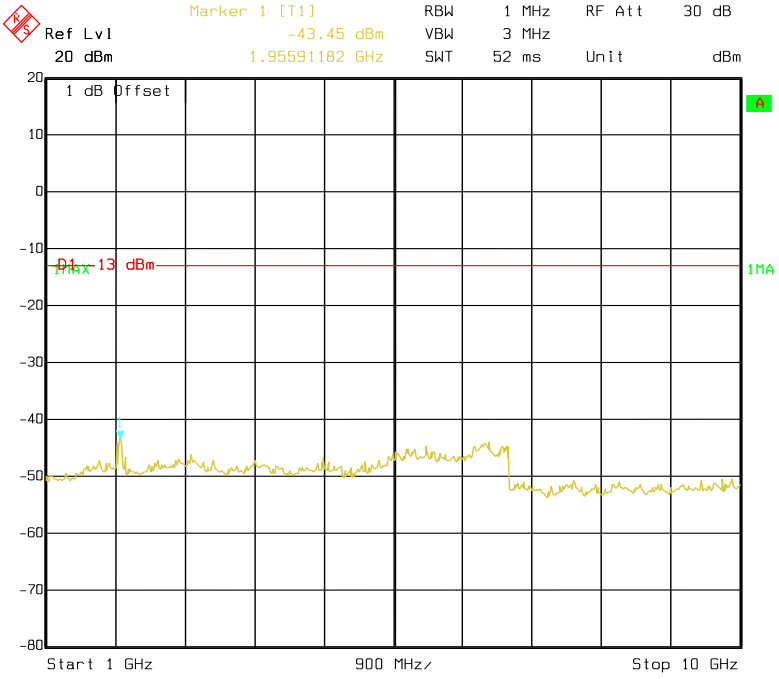

150 kHz – 30 MHz - Low Channel



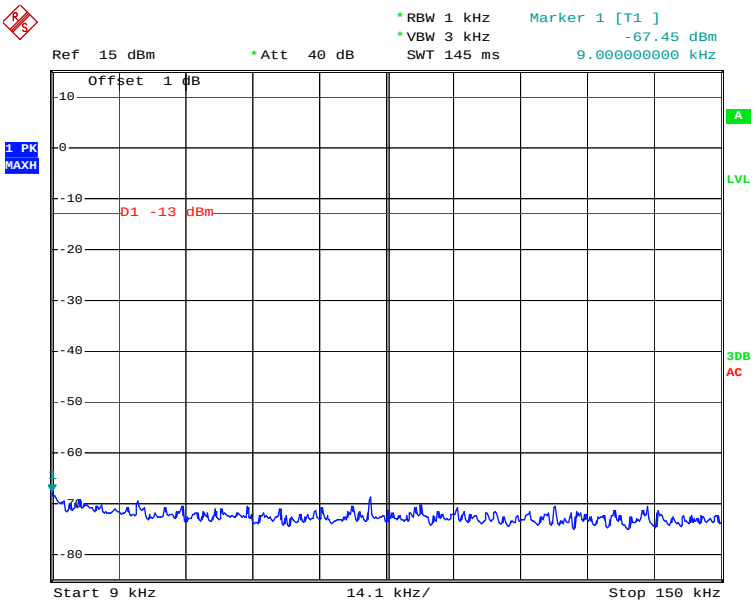
## 30 – 1000 MHz - Low Channel



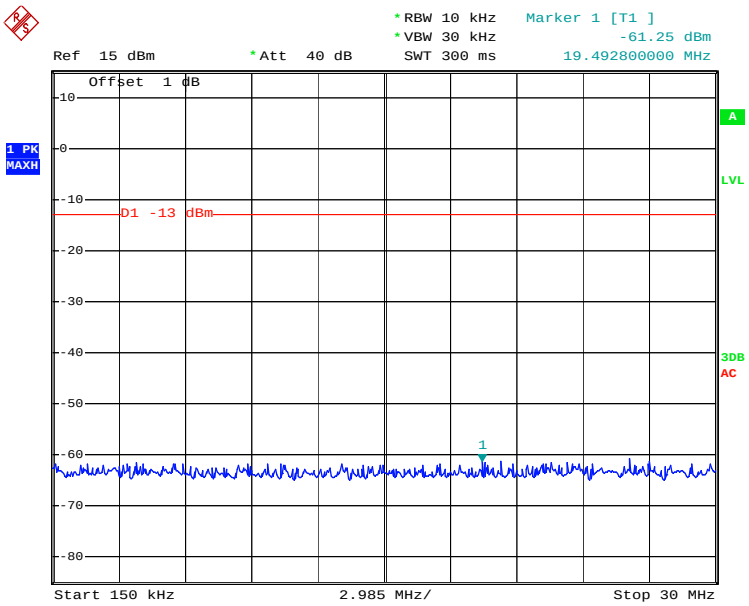

## 1 – 10 GHz - Low Channel



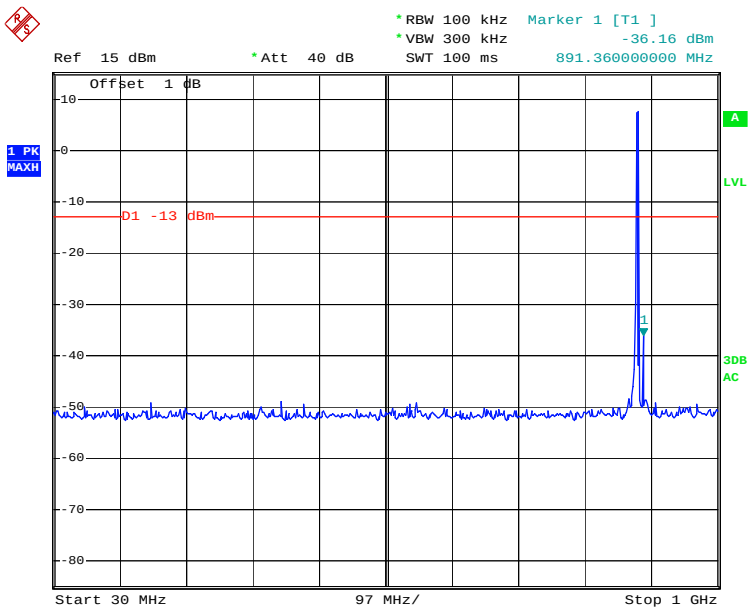
## 9-150 kHz - Middle Channel



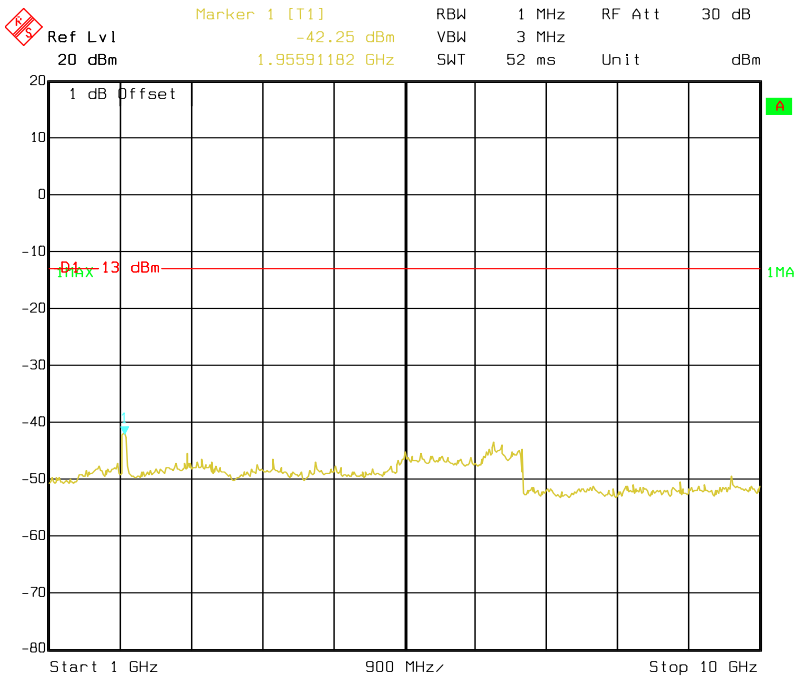

## 150 kHz – 30 MHz - Middle Channel



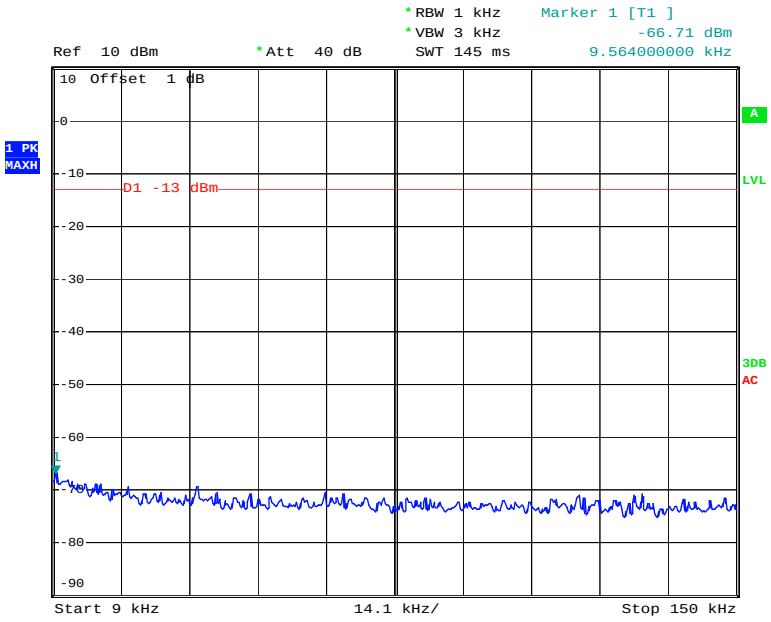
## 30 – 1000 MHz - Middle Channel



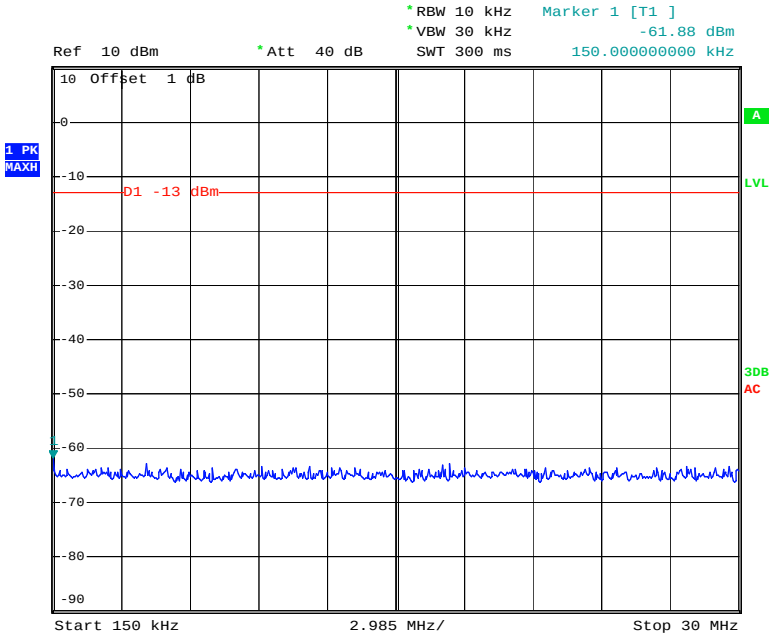

## 1 – 10 GHz - Middle Channel



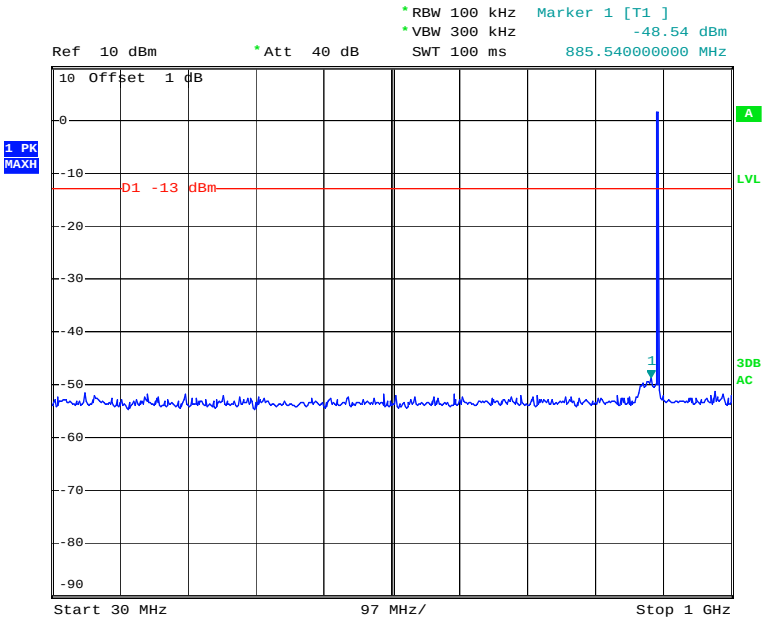
## 9-150 kHz – High Channel



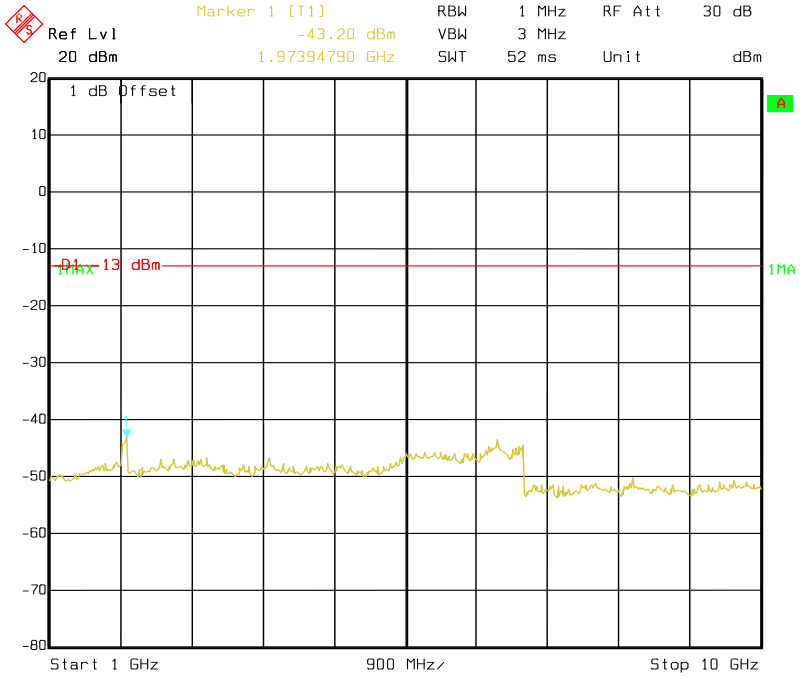

## 150 kHz – 30 MHz - High Channel



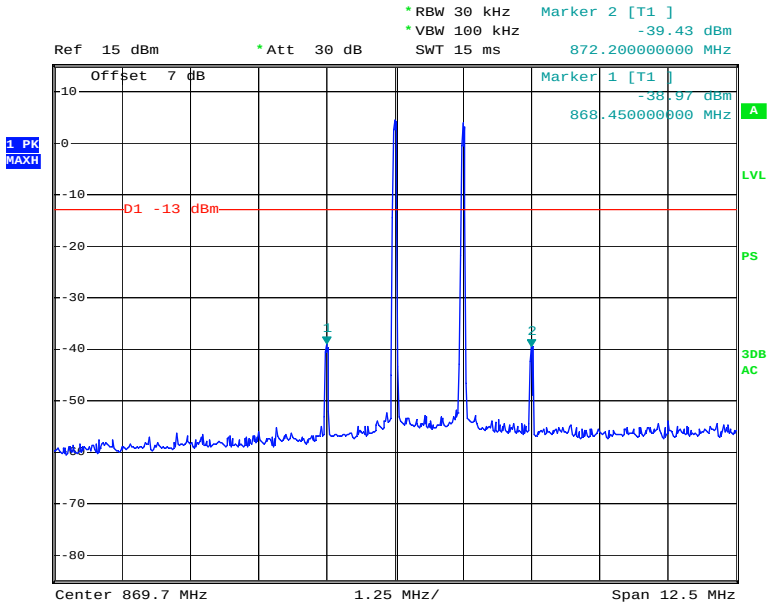
## 30 – 1000 MHz - High Channel



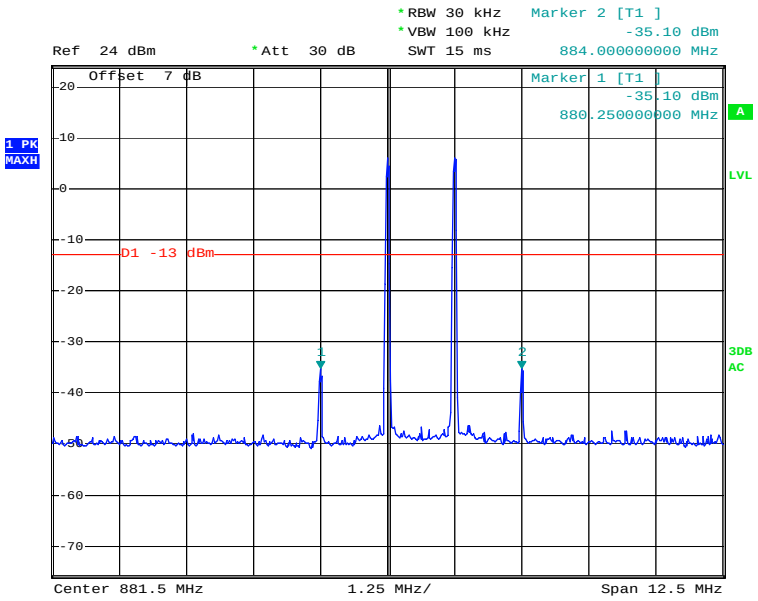

## 1 – 10 GHz - High Channel



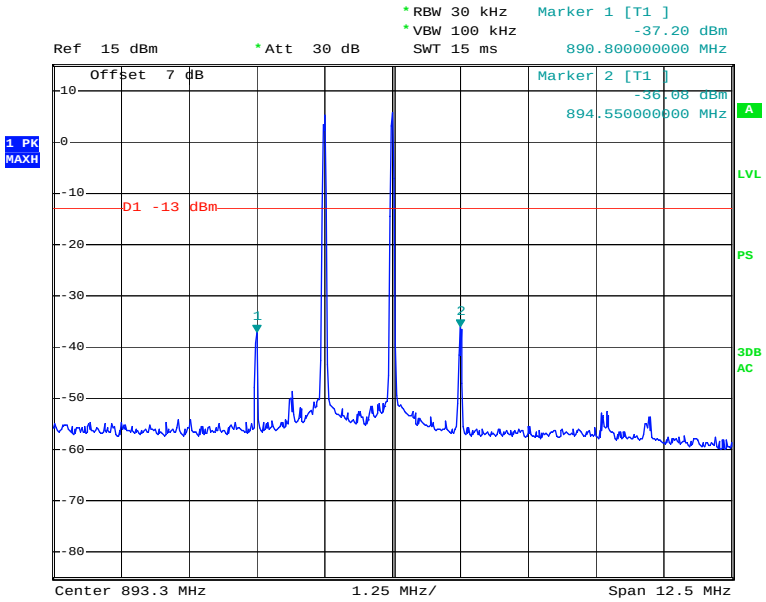
## Two tone Inter modulation (Low Channel)




## Two tone Inter modulation (Middle Channel)

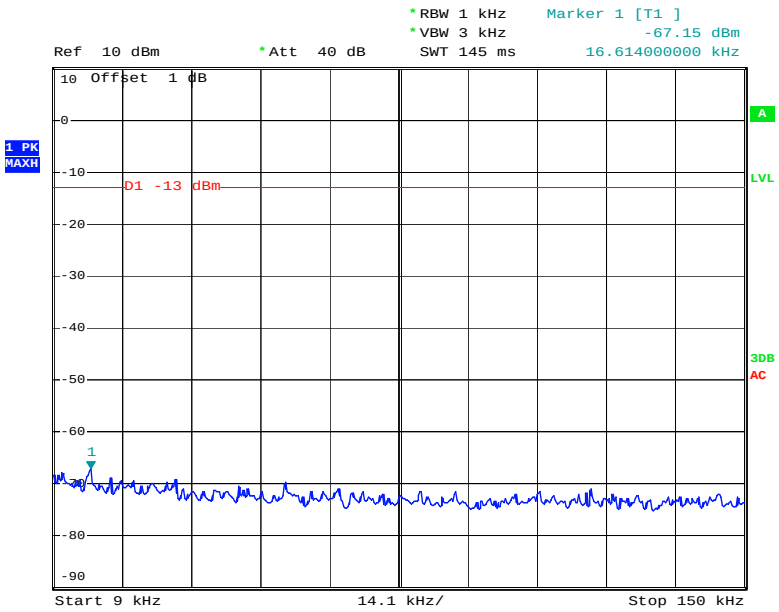


Two tone Inter modulation (High Channel)

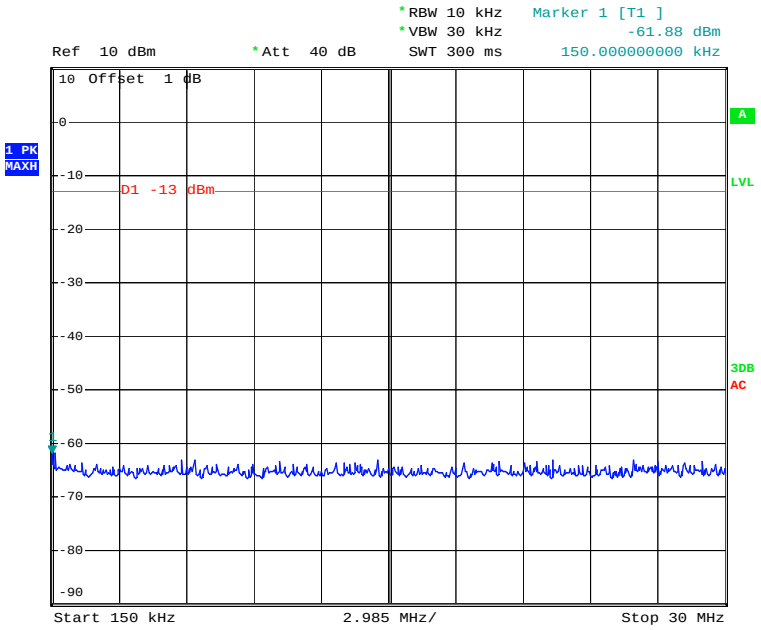



**CDMA, PCS Band, Downlink:**

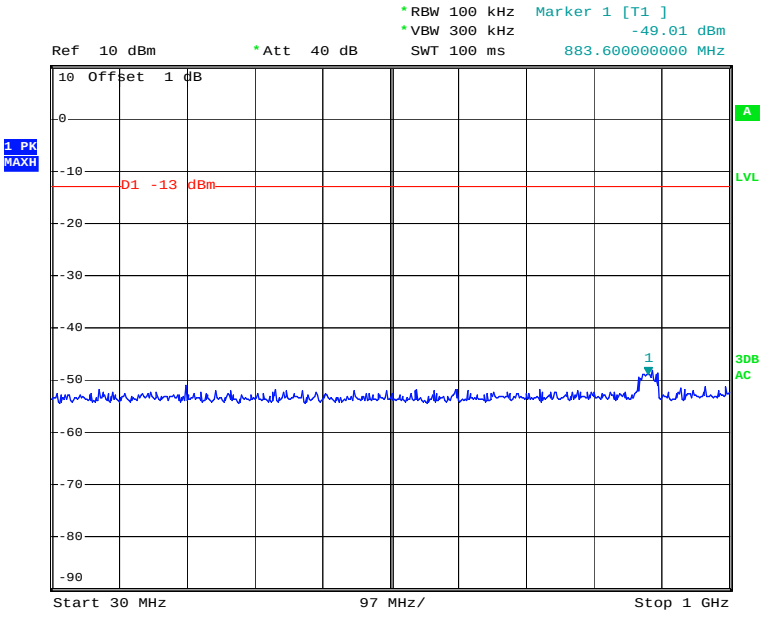
9-150 kHz – Low Channel



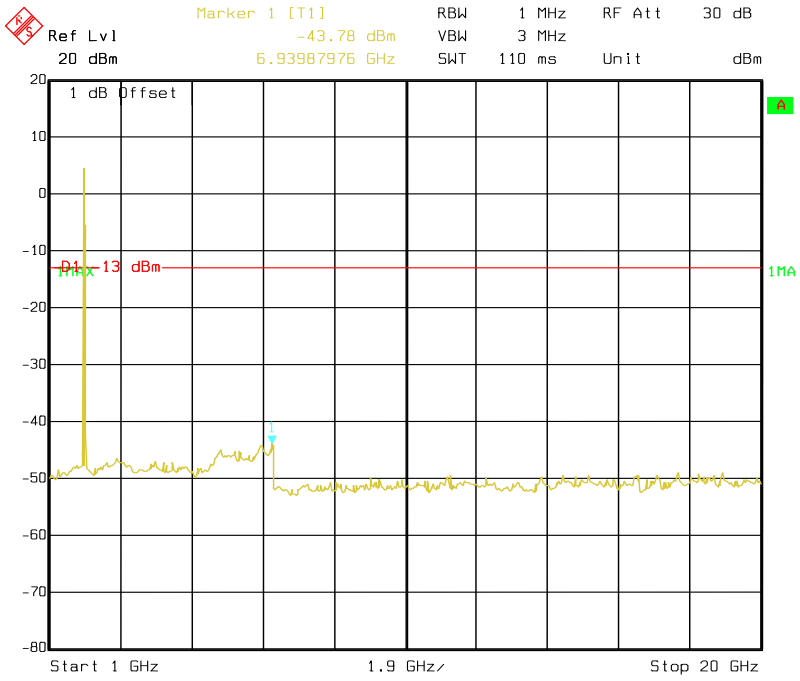
## 150 kHz – 30 MHz - Low Channel



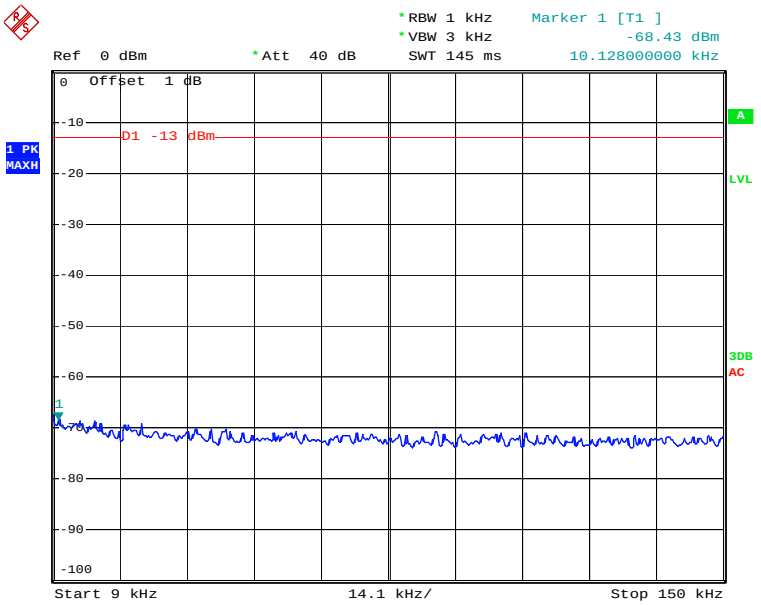

## 30 – 1000 MHz - Low Channel



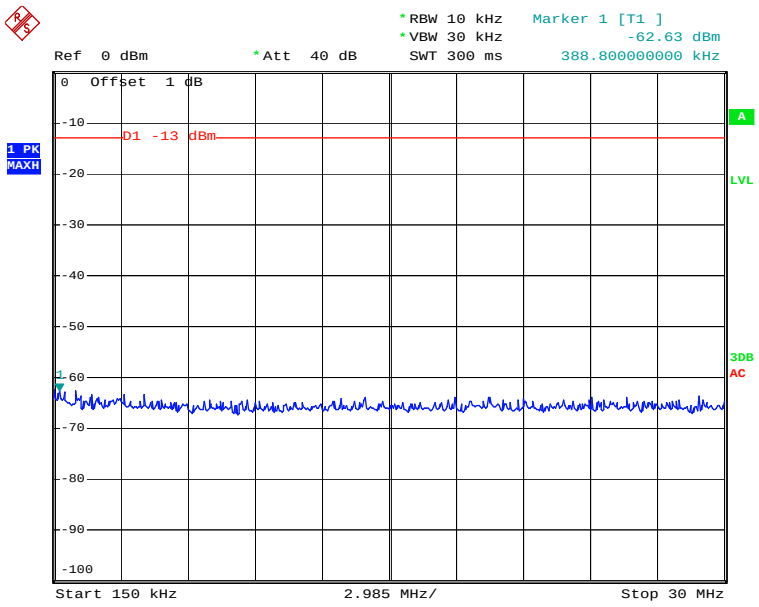
## 1 – 20 GHz - Low Channel



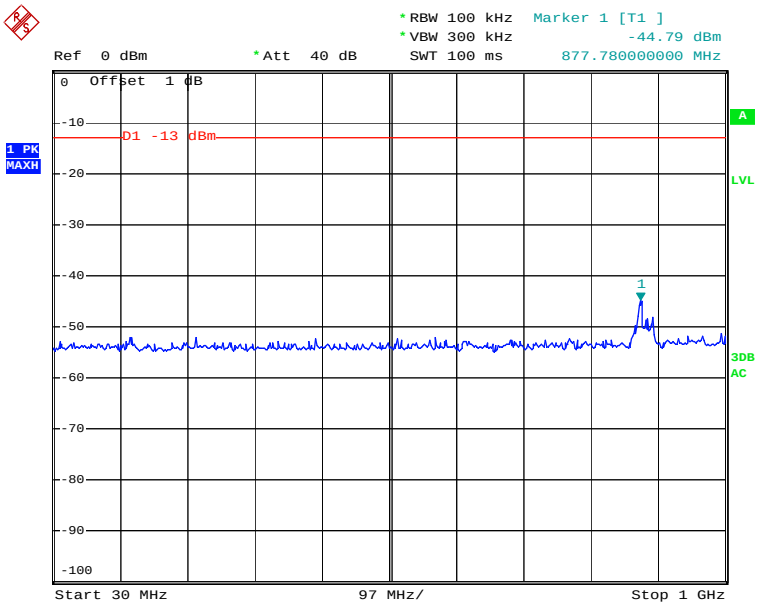

## 9-150 kHz - Middle Channel



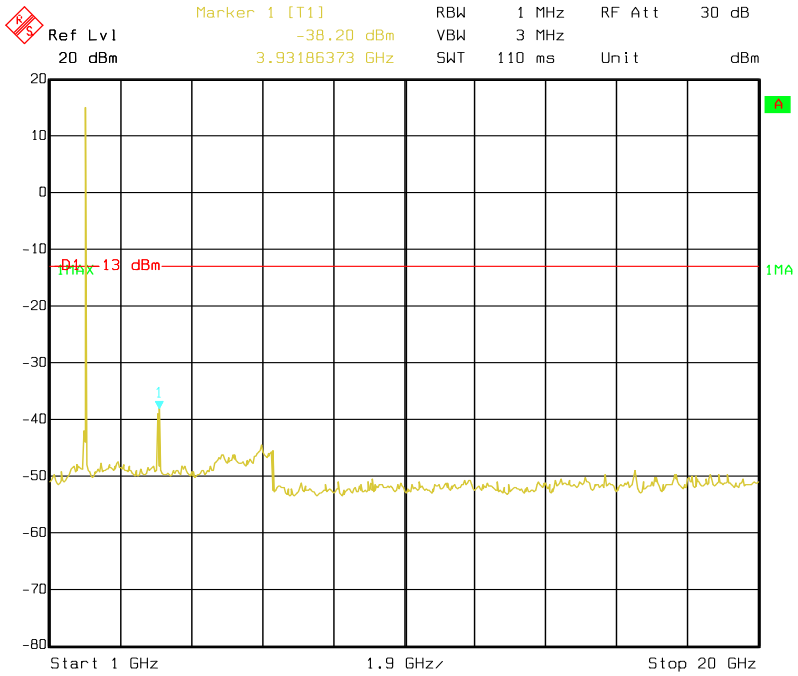
## 150 kHz – 30 MHz - Middle Channel



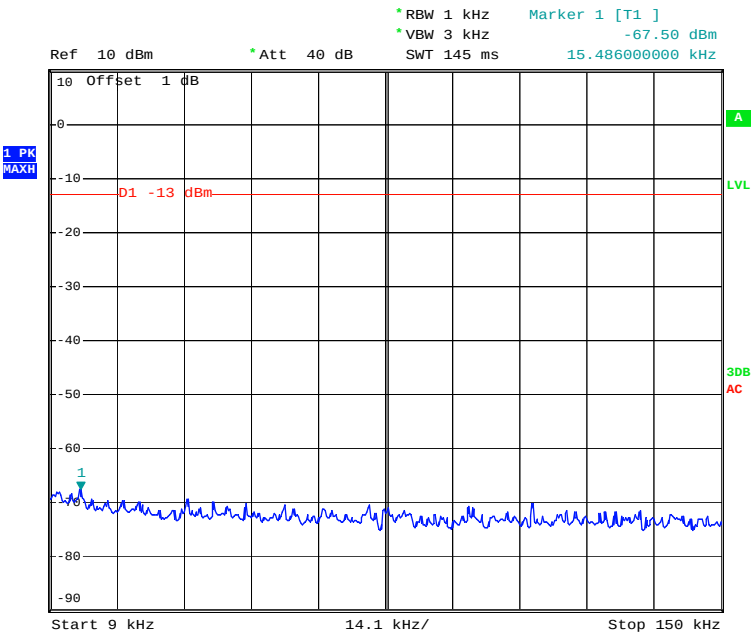

## 30 – 1000 MHz - Middle Channel



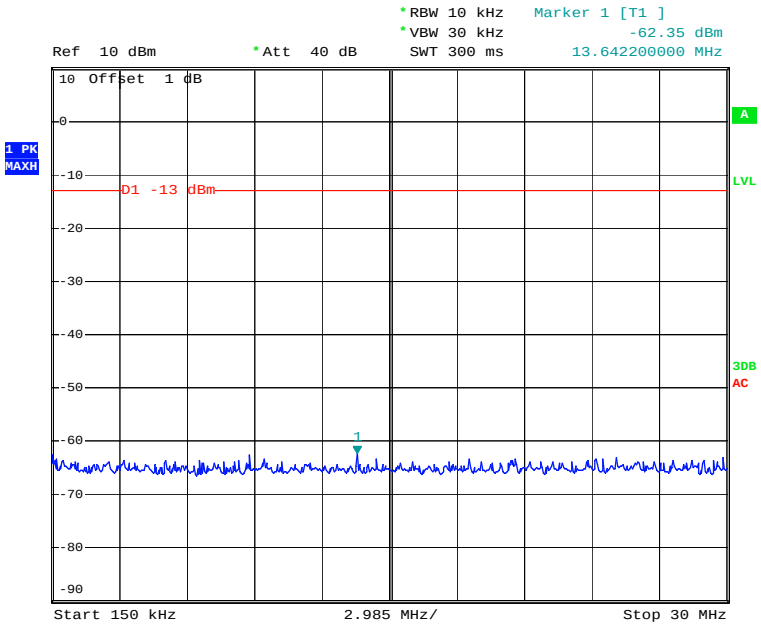
## 1 – 20 GHz - Middle Channel



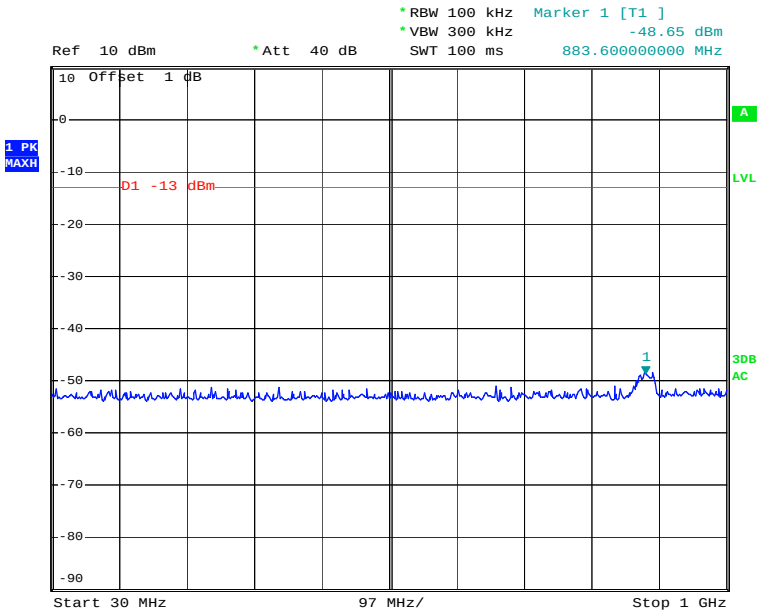

## 9-150 kHz – High Channel



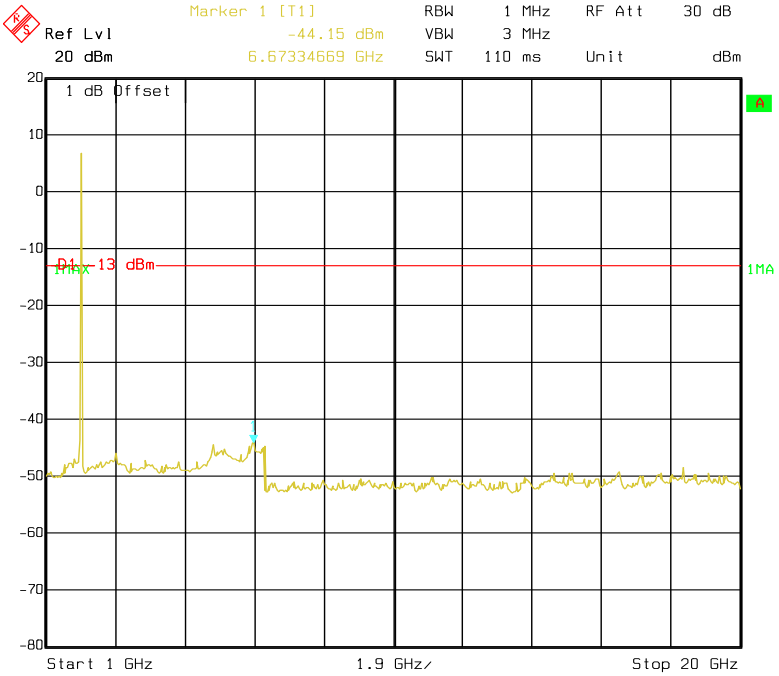
## 150 kHz – 30 MHz - High Channel



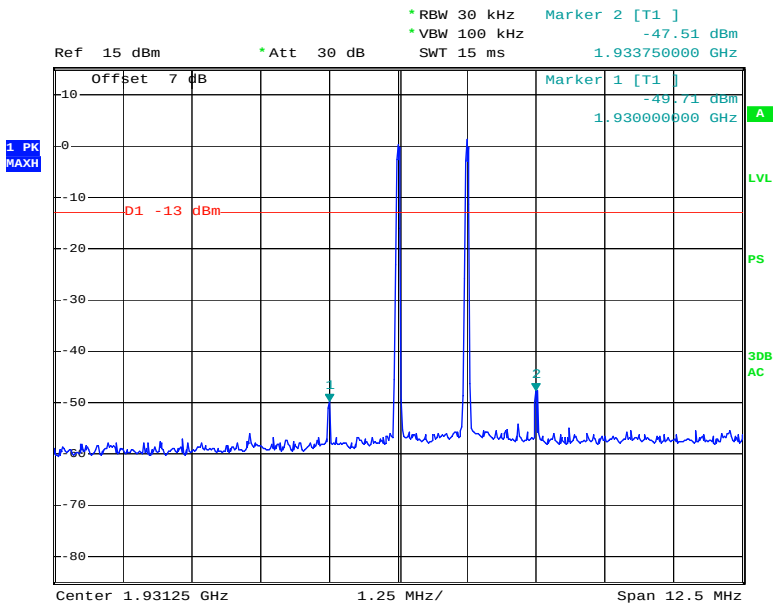

## 30 – 1000 MHz - High Channel



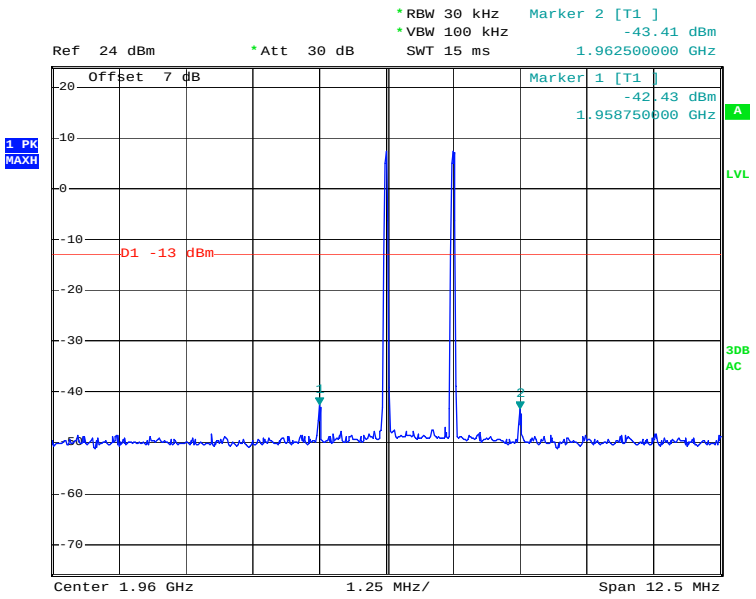
## 1 – 20 GHz - High Channel



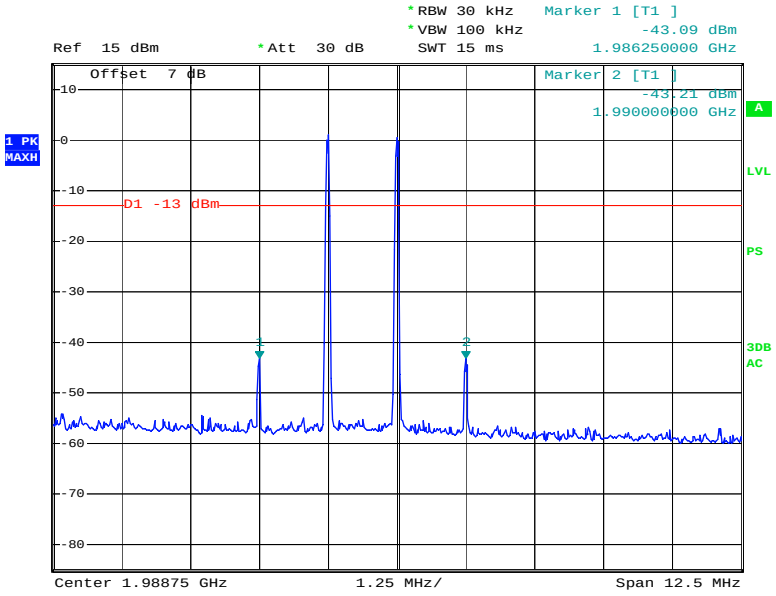

## Two tone Inter modulation (Low Channel)



## Two tone Inter modulation (Middle Channel)

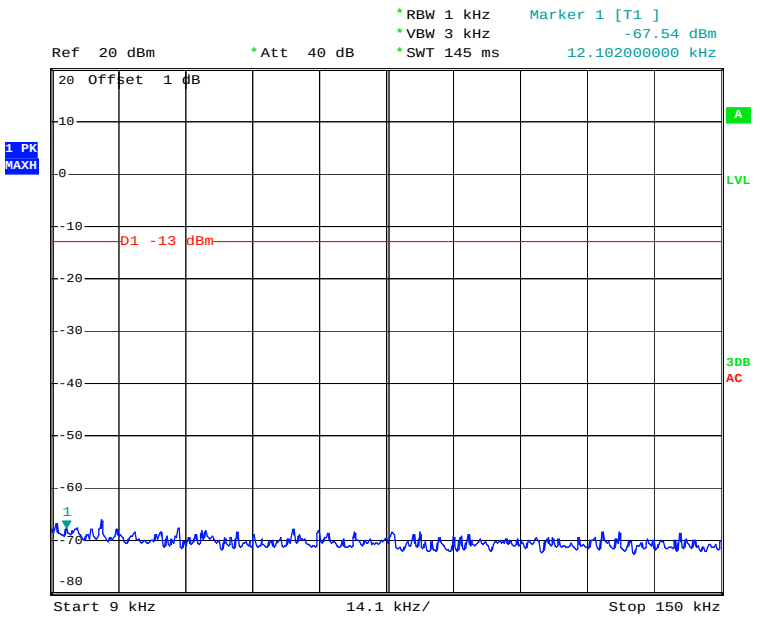



## Two tone Inter modulation (High Channel)

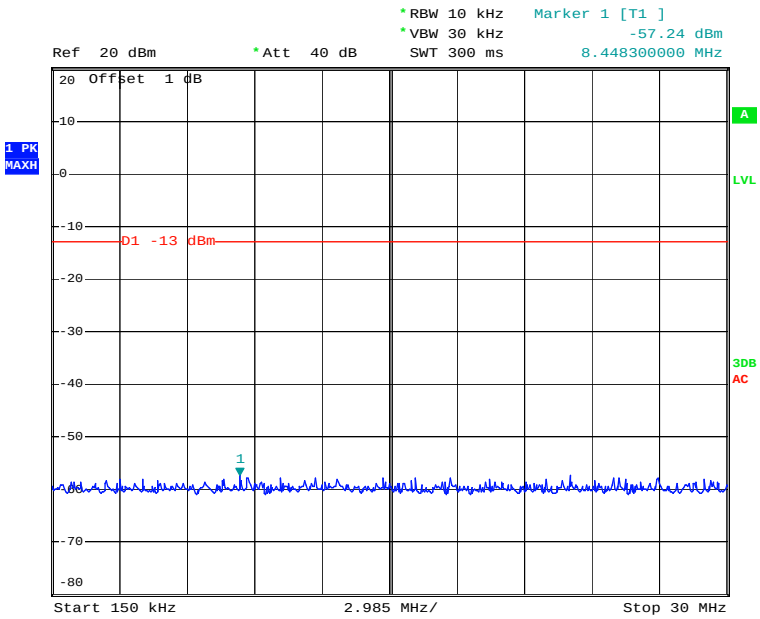


**CDMA, Cellular Band, Uplink:**

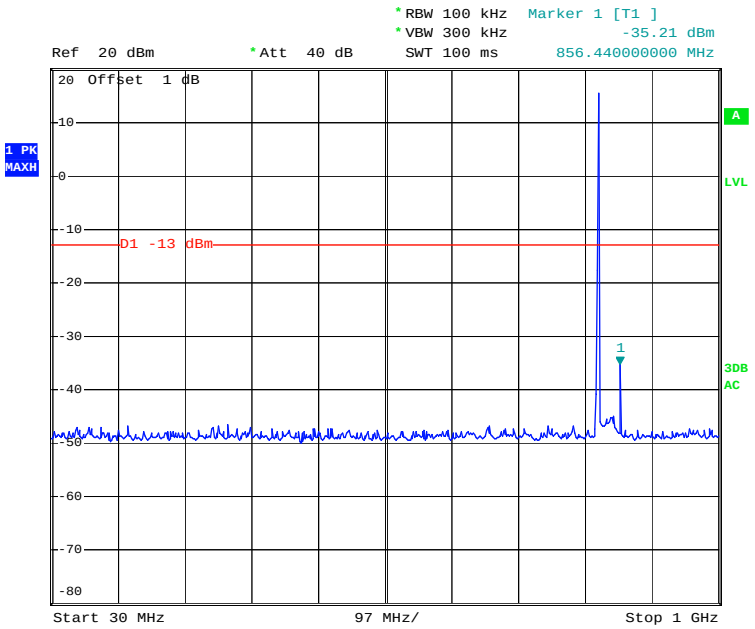
9-150 kHz – Low Channel



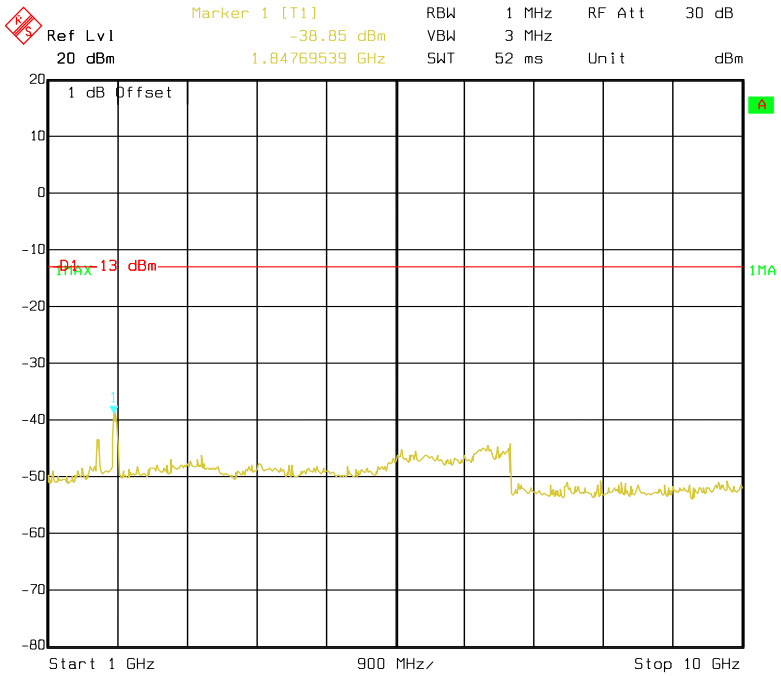

150 kHz – 30 MHz - Low Channel



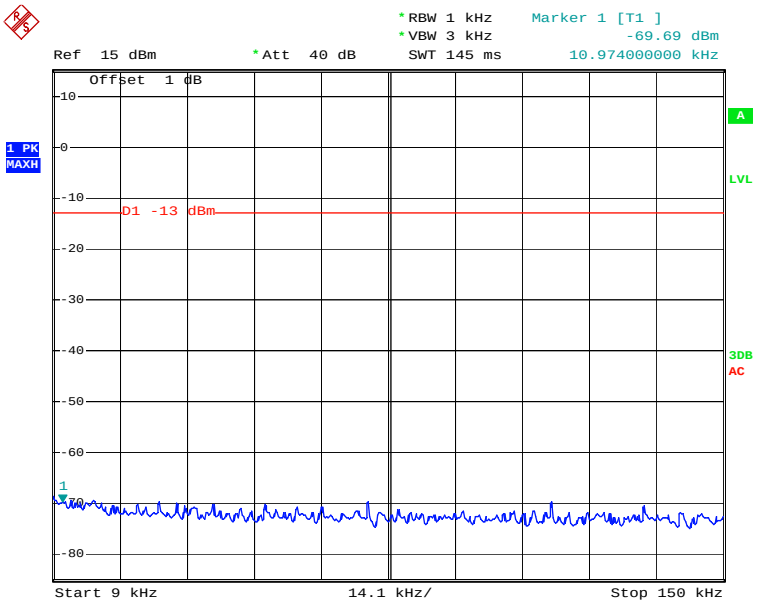
## 30 – 1000 MHz - Low Channel



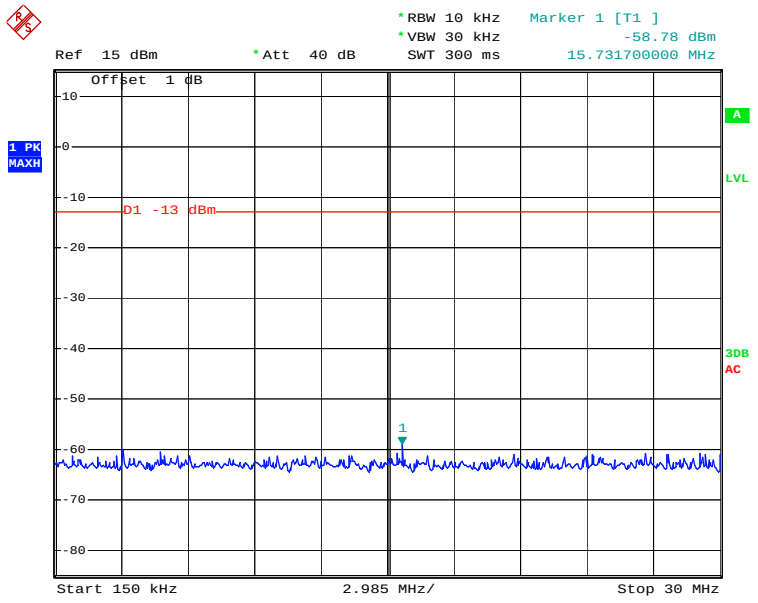

## 1 – 10 GHz - Low Channel



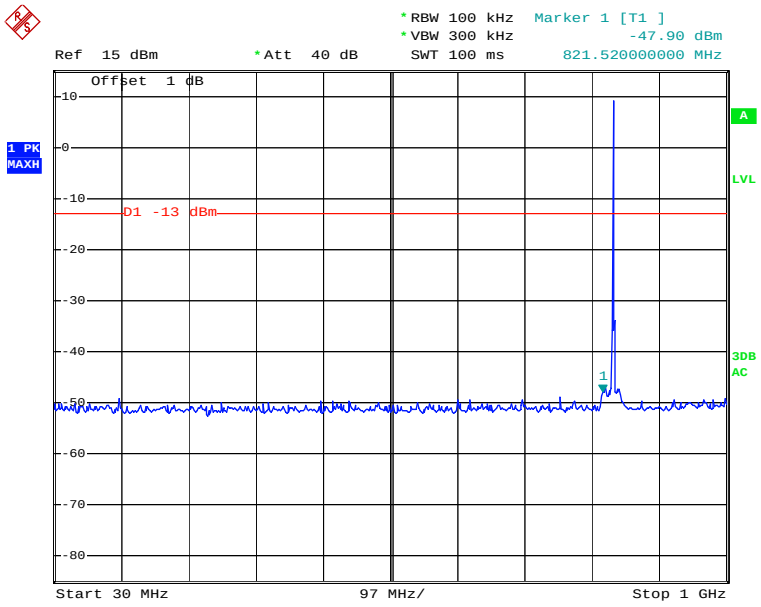
## 9-150 kHz - Middle Channel



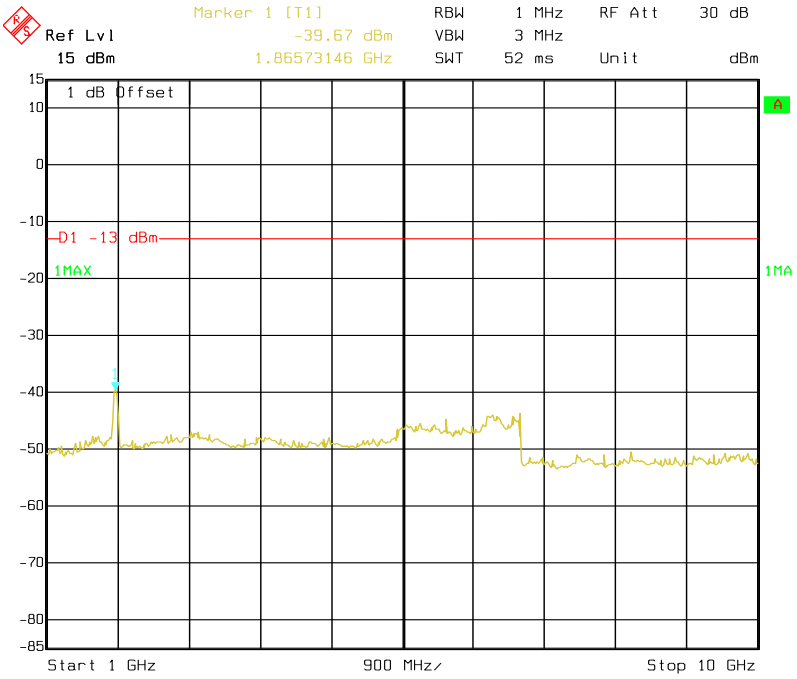

## 150 kHz – 30 MHz - Middle Channel



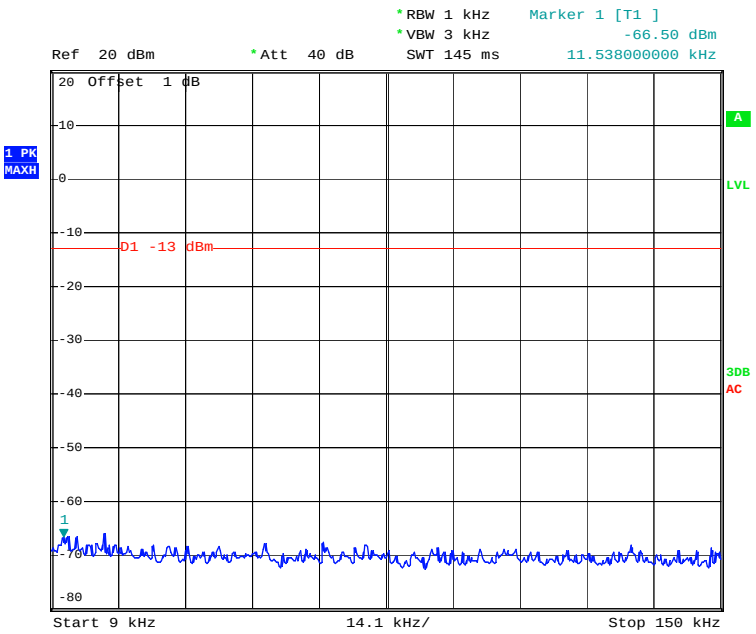
## 30 – 1000 MHz - Middle Channel



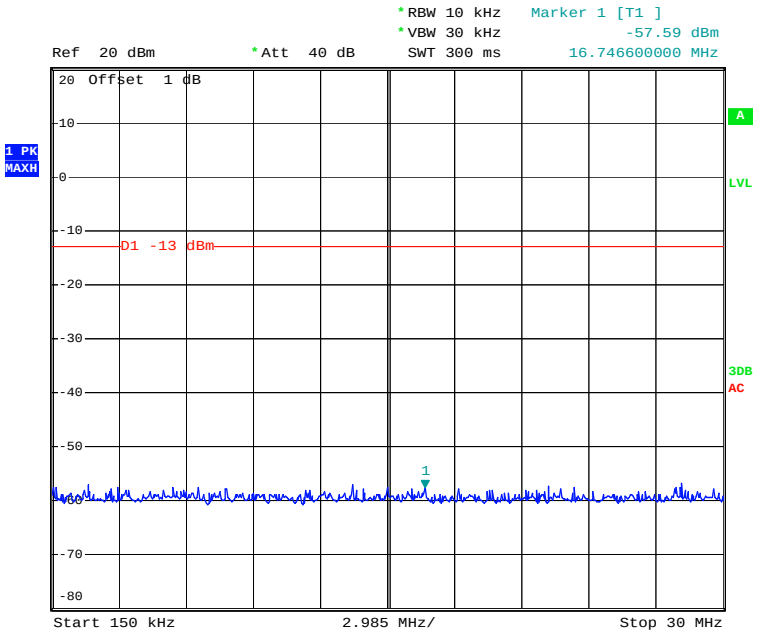

## 1 – 10 GHz - Middle Channel



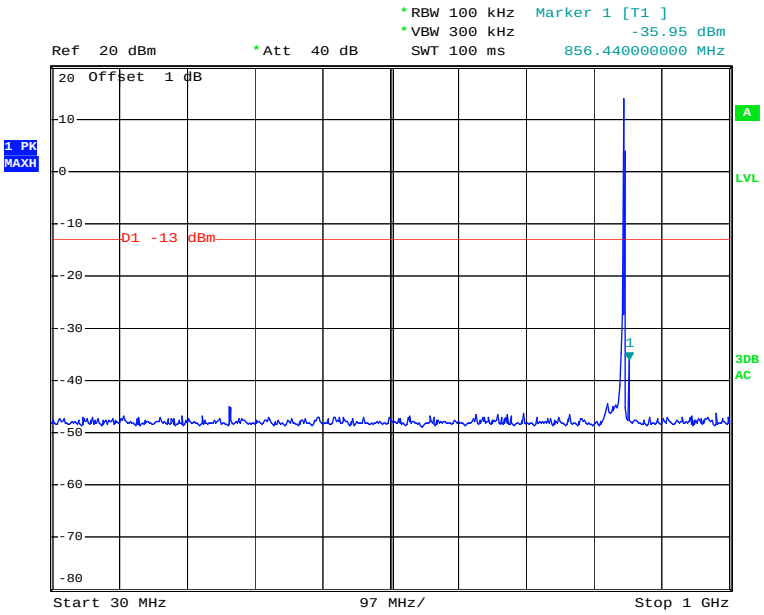
## 9-150 kHz – High Channel



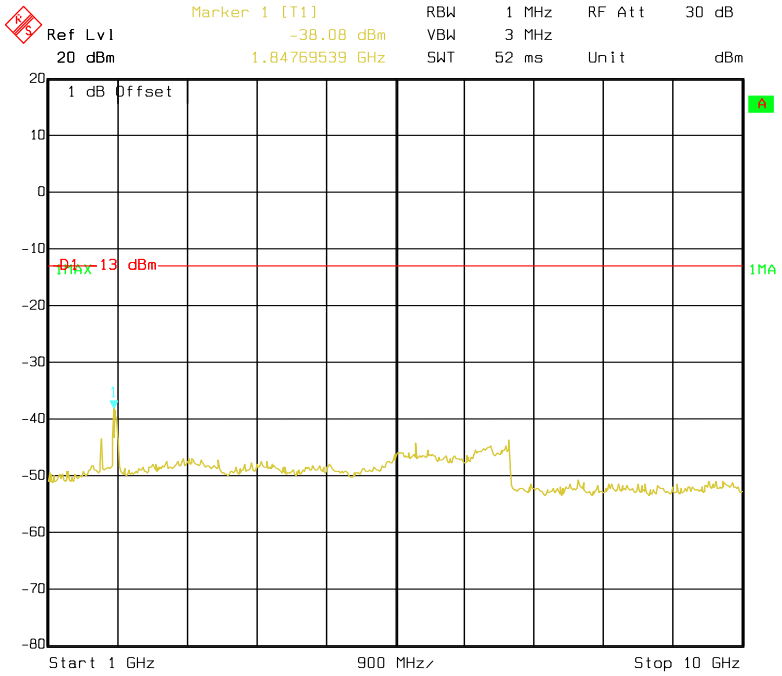

## 150 kHz – 30 MHz - High Channel



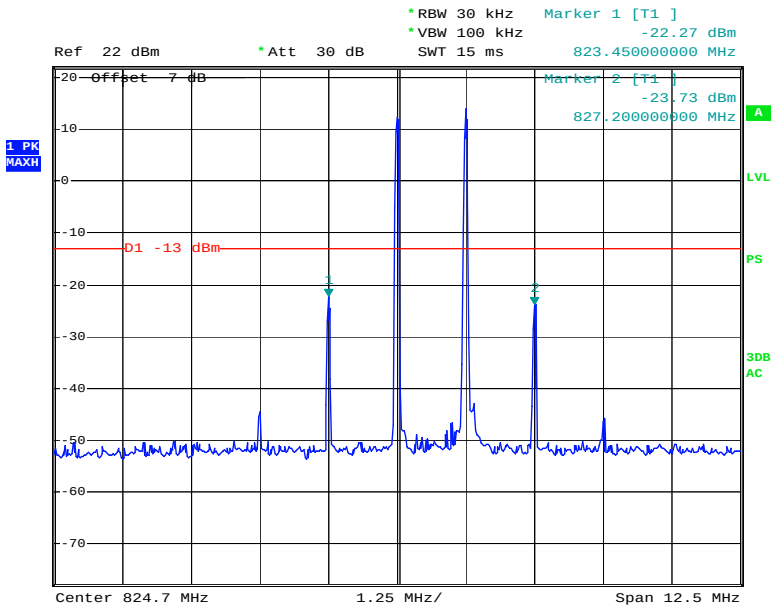
## 30 – 1000 MHz - High Channel



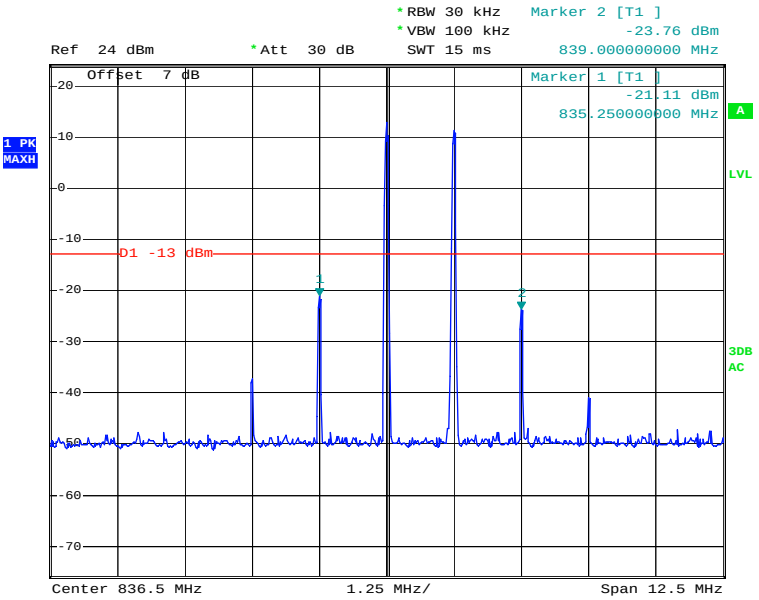

## 1 – 10 GHz - High Channel



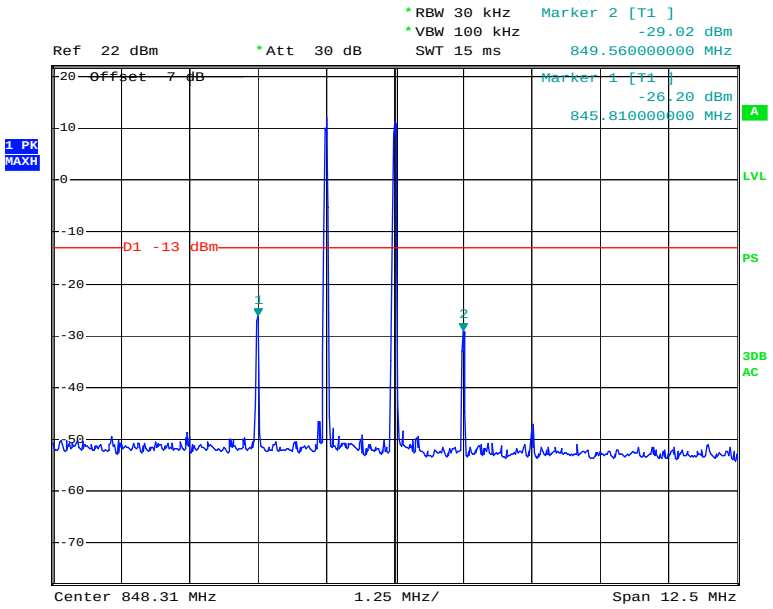
## Two tone Inter modulation (Low Channel)




## Two tone Inter modulation (Middle Channel)

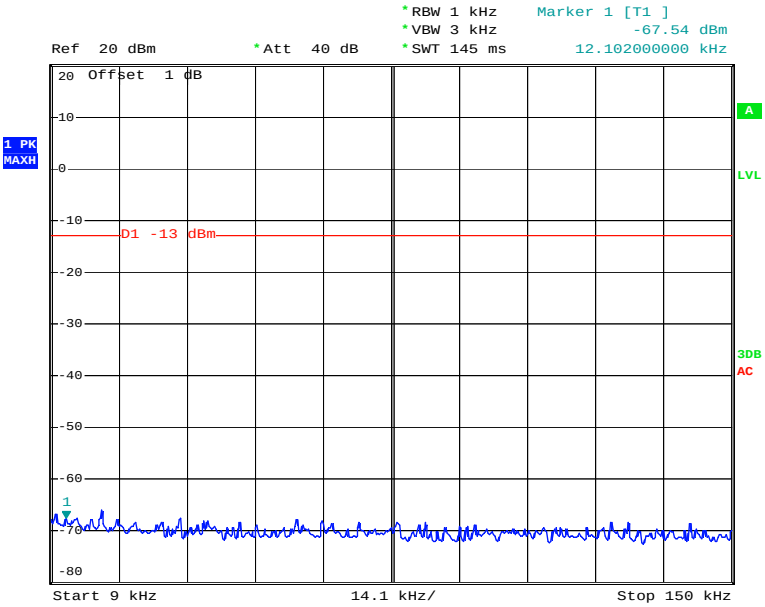


Two tone Inter modulation (High Channel)

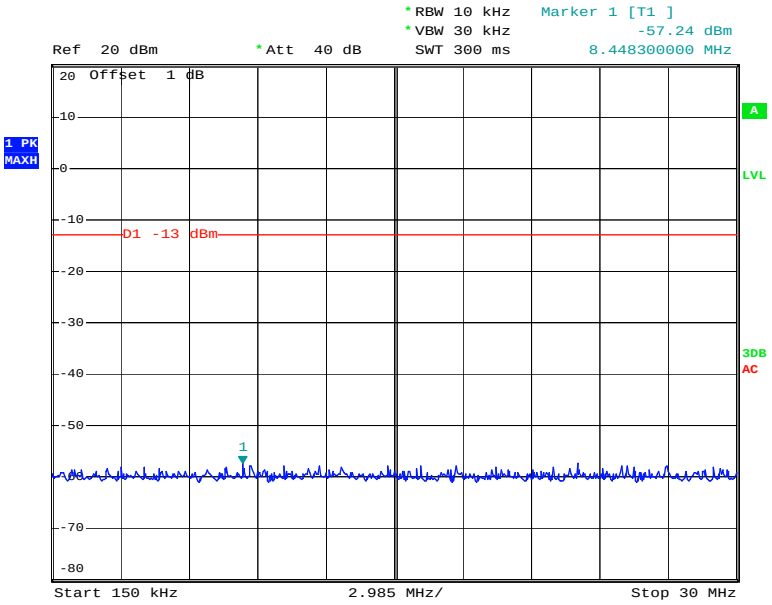



**CDMA, PCS Band, Uplink:**

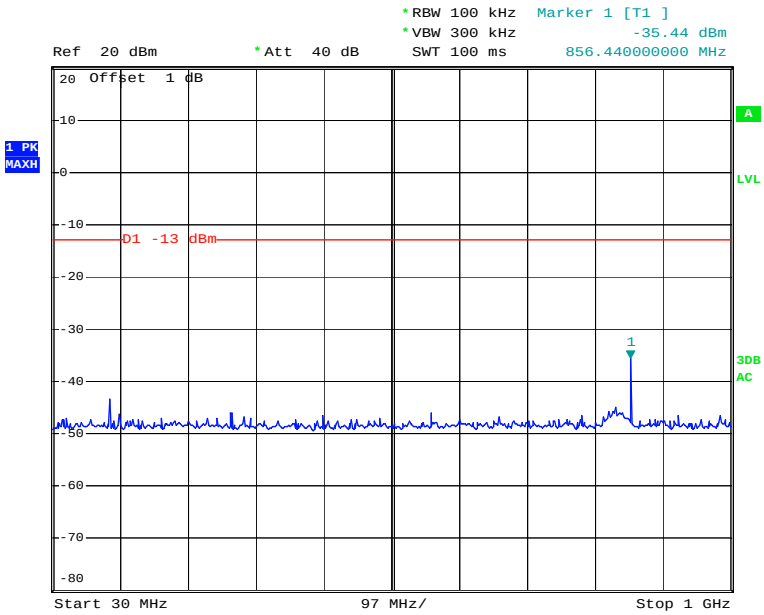
9-150 kHz – Low Channel



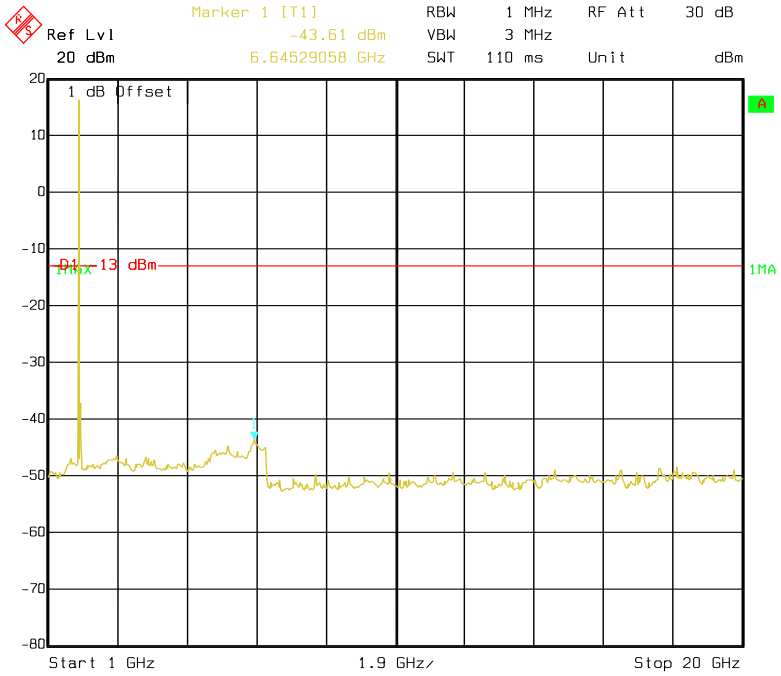
## 150 kHz – 30 MHz - Low Channel



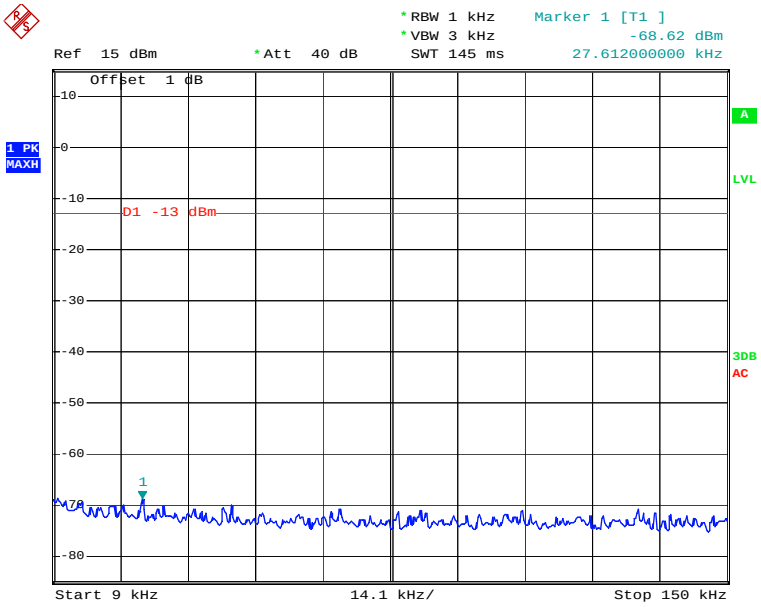

## 30 – 1000 MHz - Low Channel



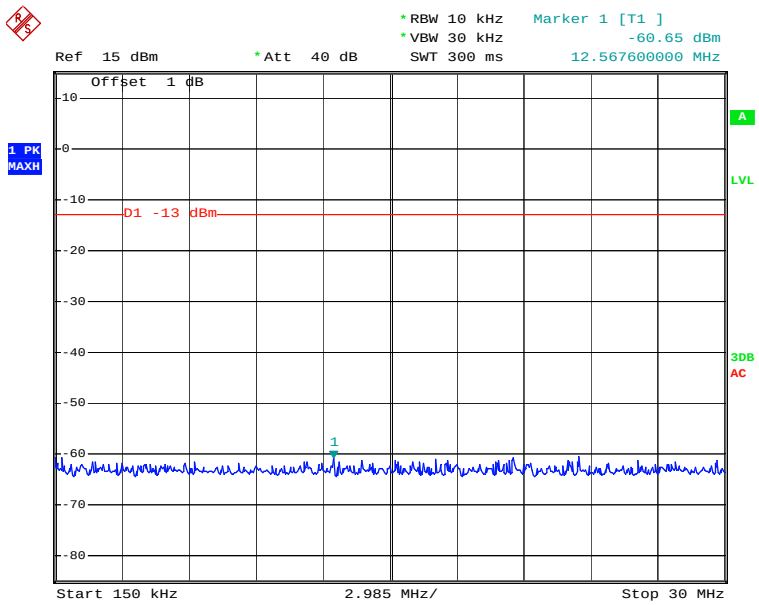
## 1 – 20 GHz - Low Channel



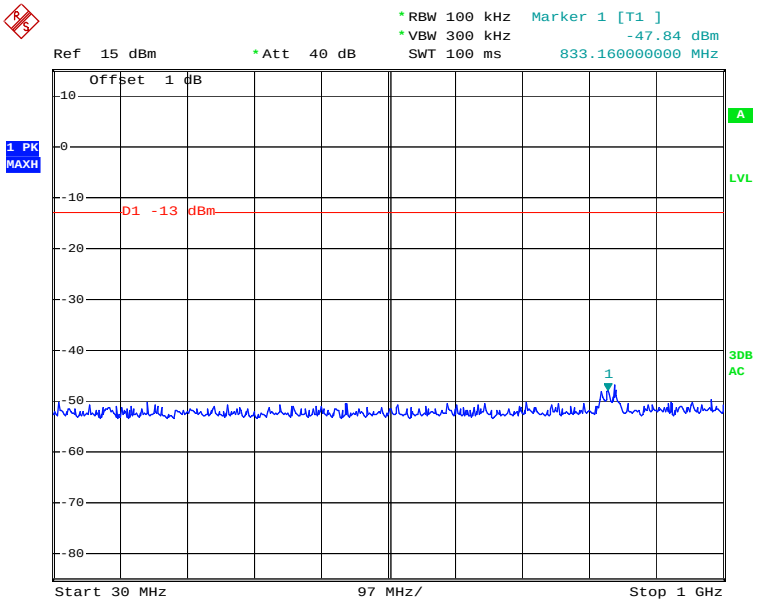

## 9-150 kHz - Middle Channel



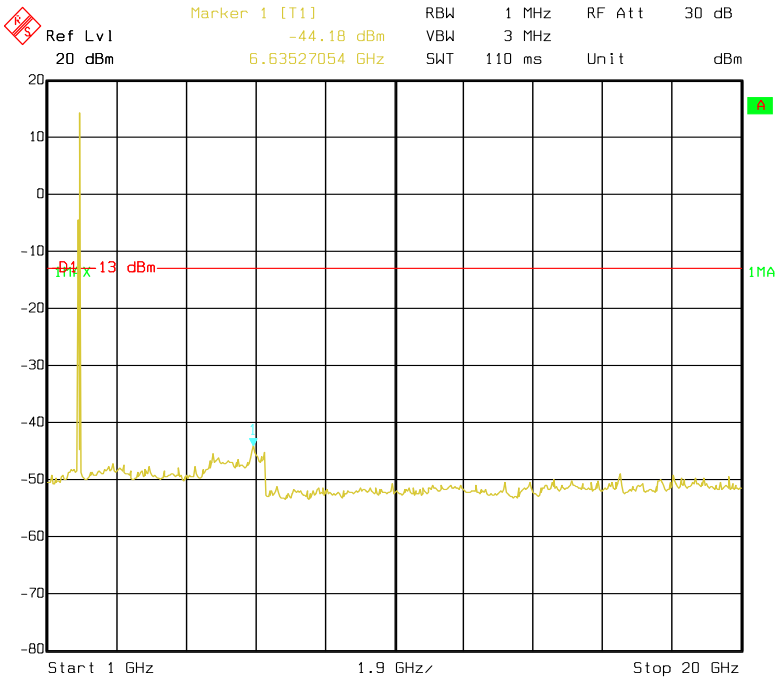
## 150 kHz – 30 MHz - Middle Channel



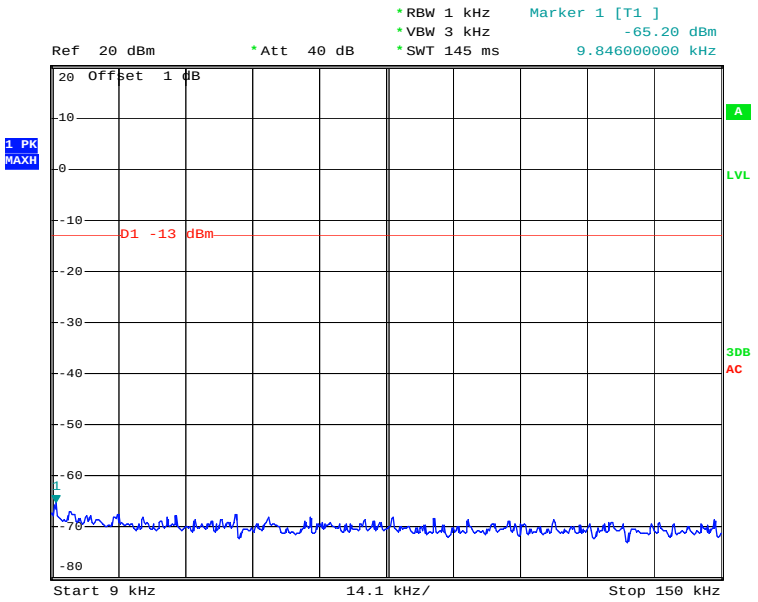

## 30 – 1000 MHz - Middle Channel



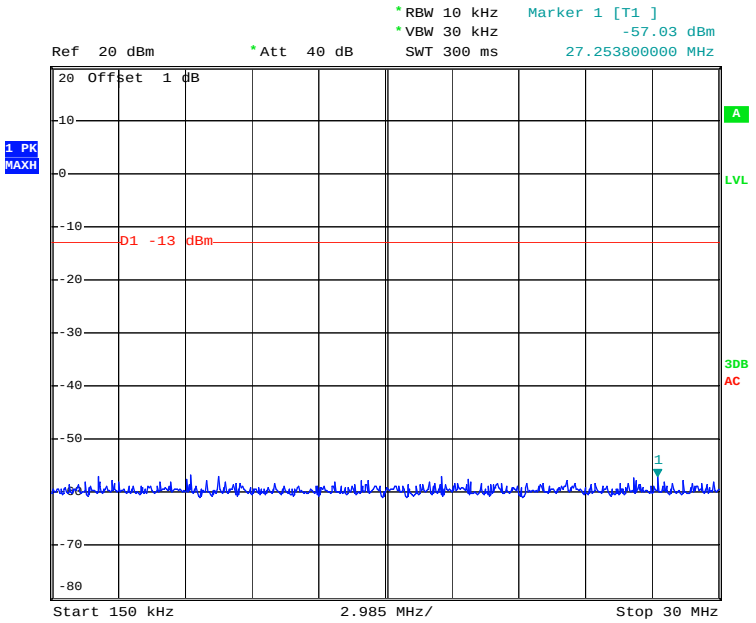
## 1 – 20 GHz - Middle Channel



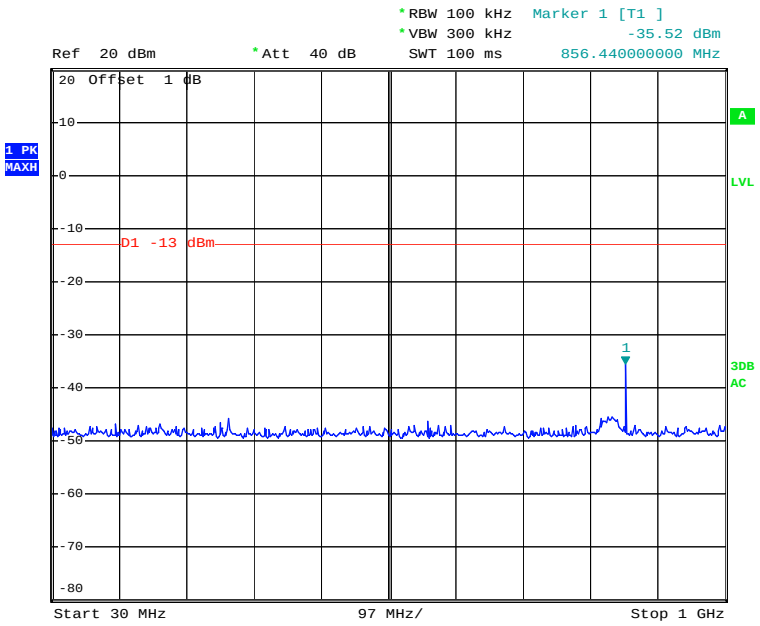

## 9-150 kHz – High Channel



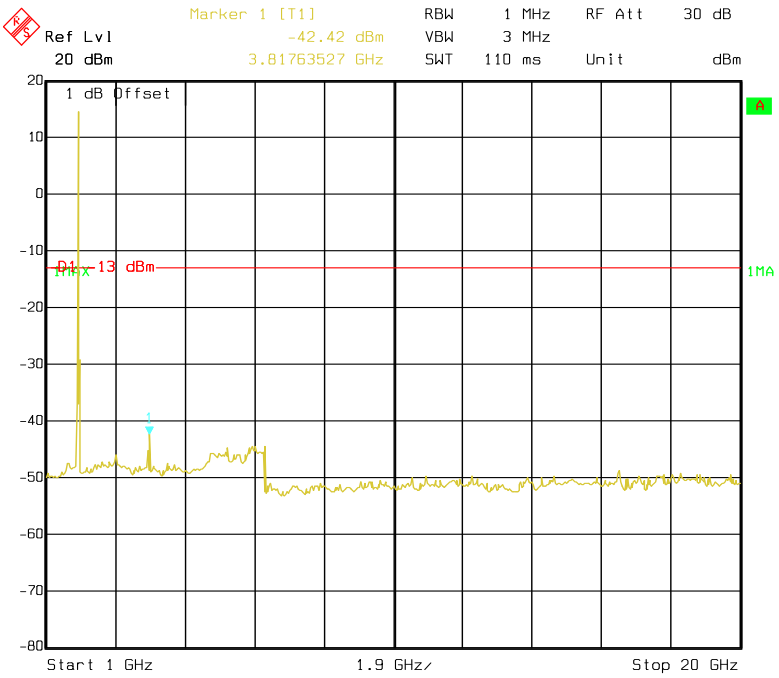
## 150 kHz – 30 MHz - High Channel



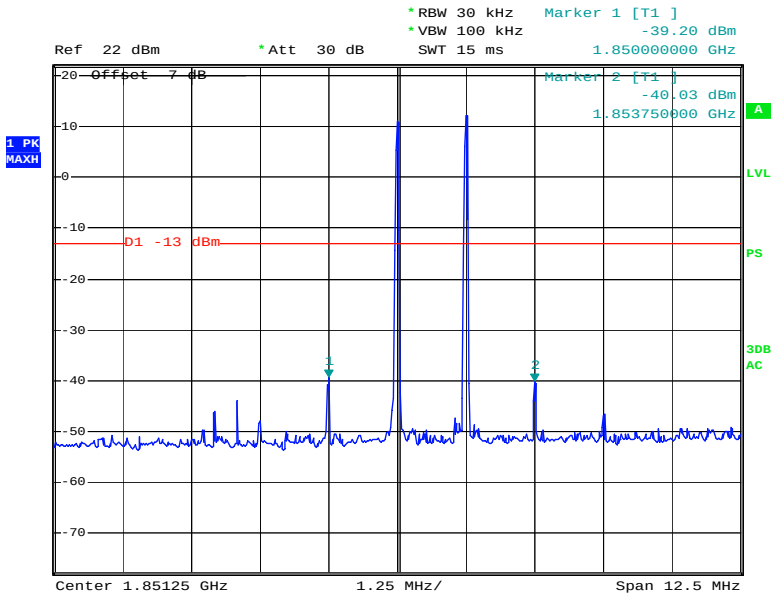

## 30 – 1000 MHz - High Channel



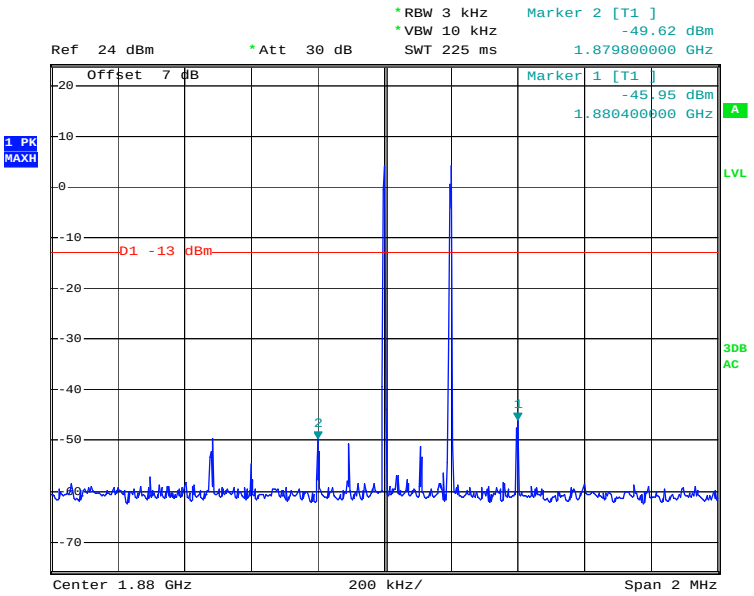
## 1 – 20 GHz - High Channel



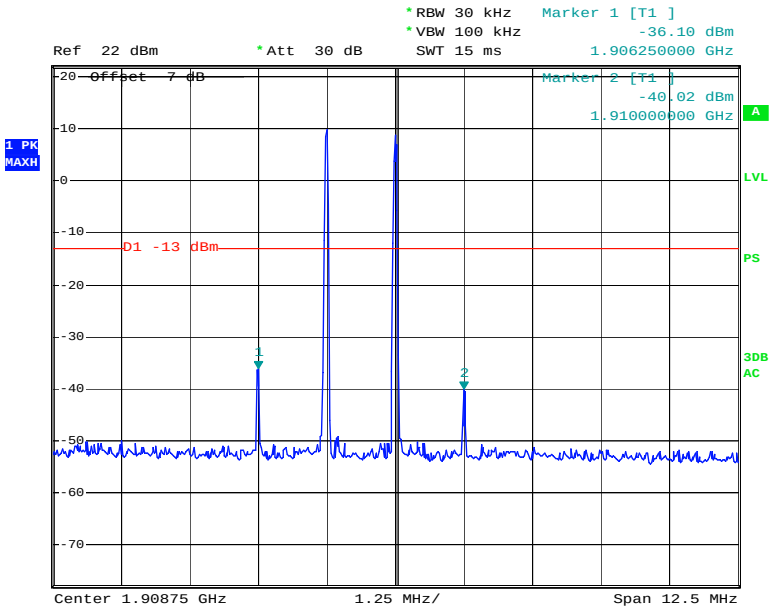

## Two tone Inter modulation (Low Channel)



## Two tone Inter modulation (Middle Channel)

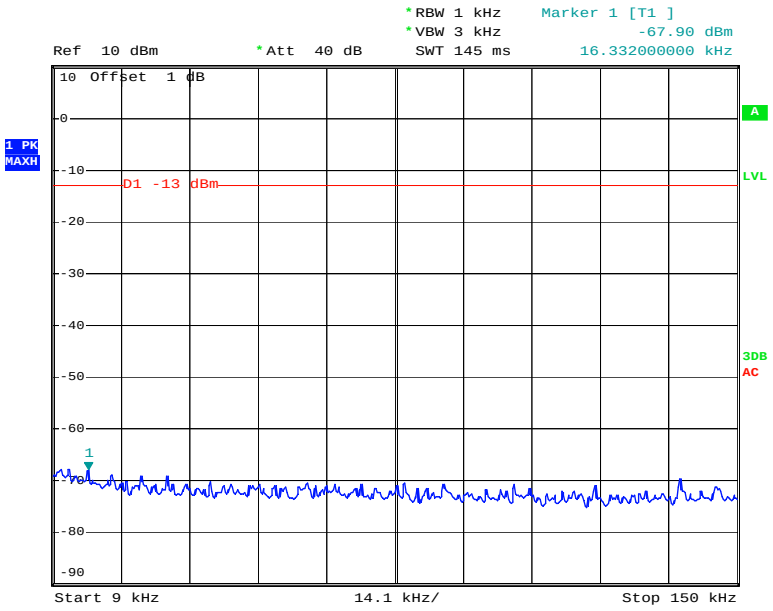



## Two tone Inter modulation (High Channel)

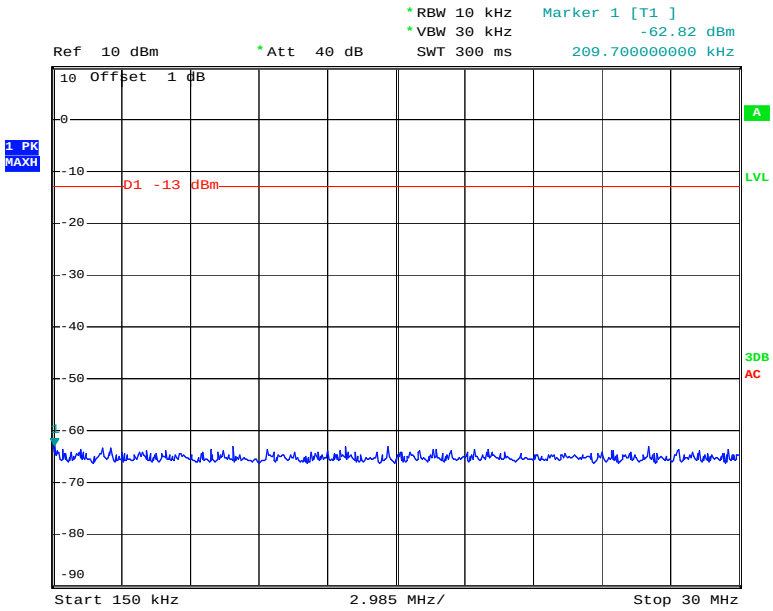


**GSM, Cellular Band, Downlink:**

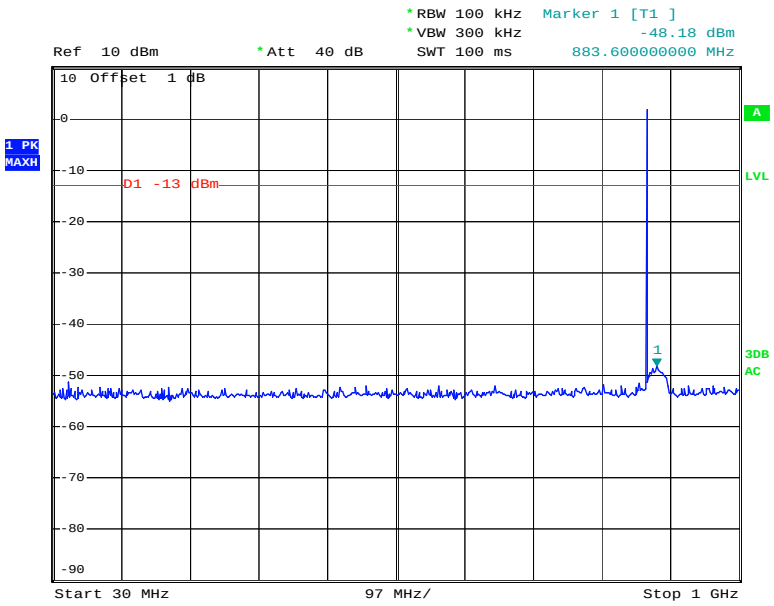
9-150 kHz – Low Channel



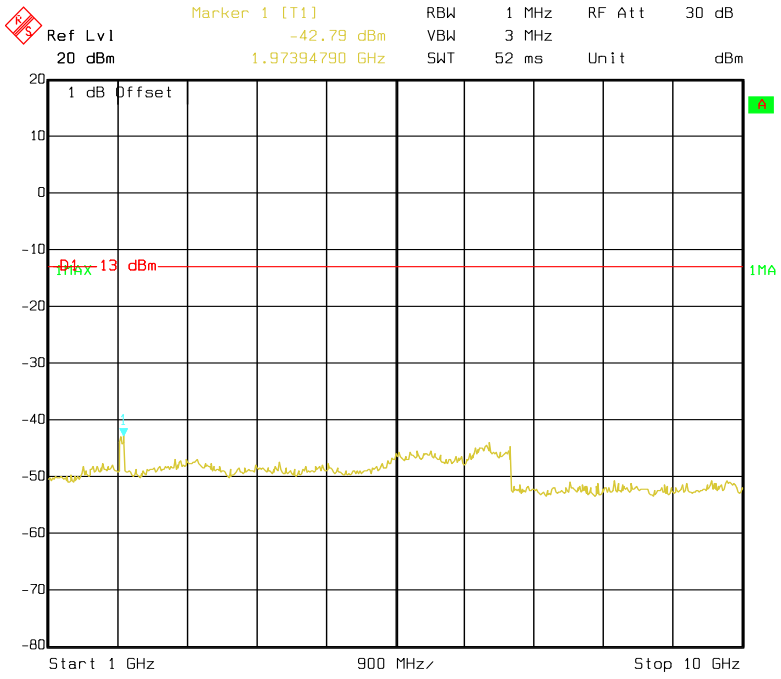

150 kHz – 30 MHz - Low Channel



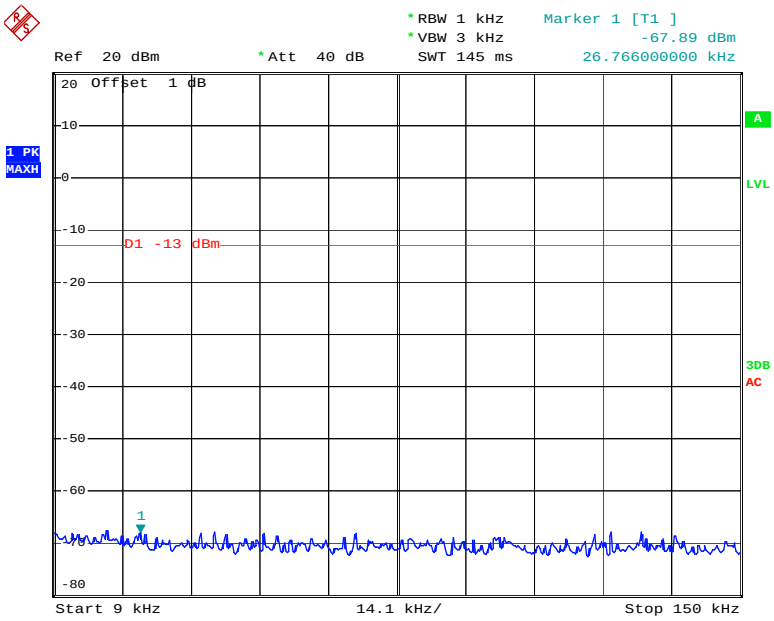
## 30 – 1000 MHz - Low Channel



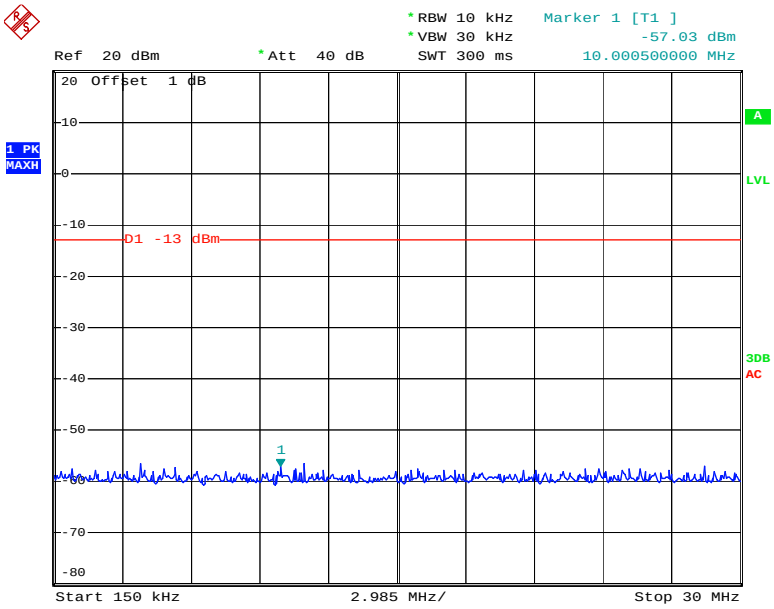

## 1 – 10 GHz - Low Channel



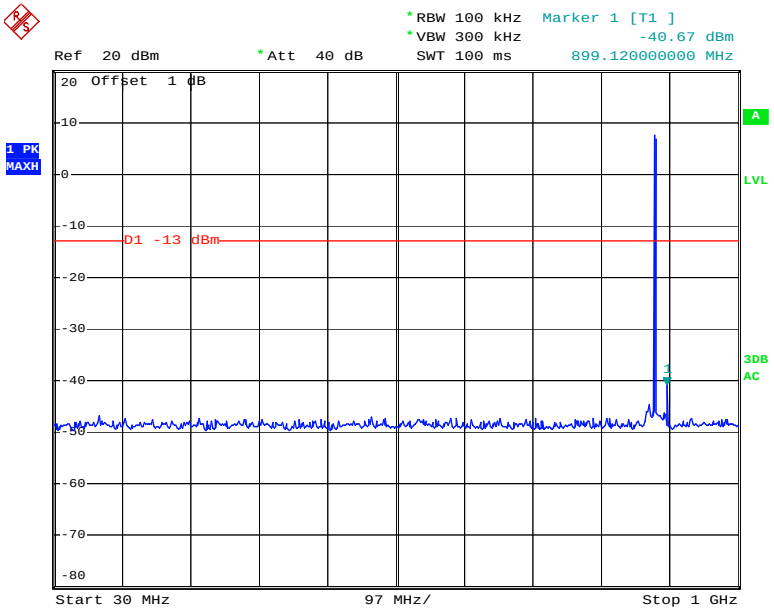
## 9-150 kHz - Middle Channel



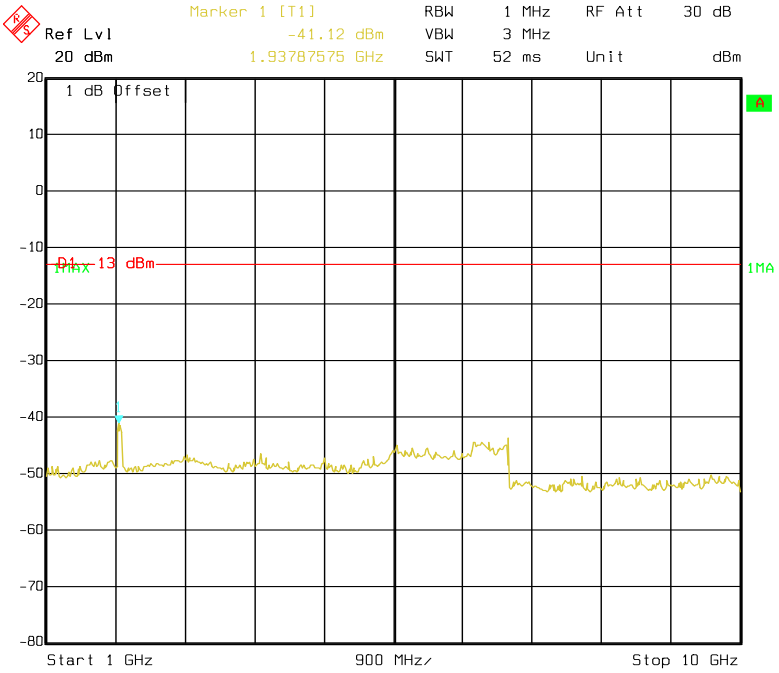

## 150 kHz – 30 MHz - Middle Channel



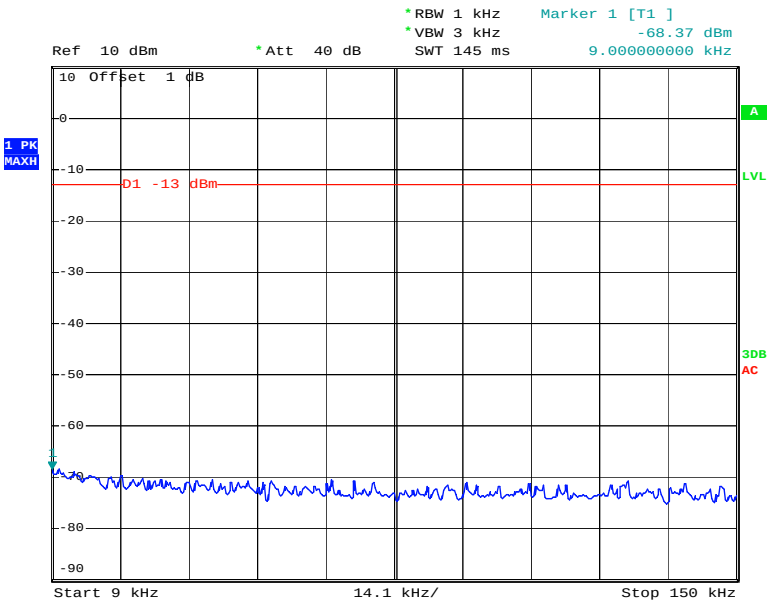
## 30 – 1000 MHz - Middle Channel



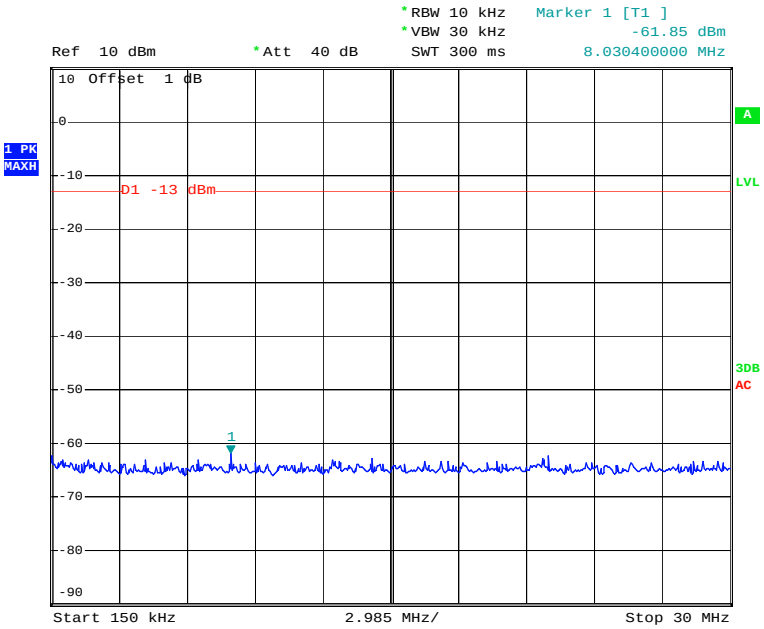

## 1 – 10 GHz - Middle Channel



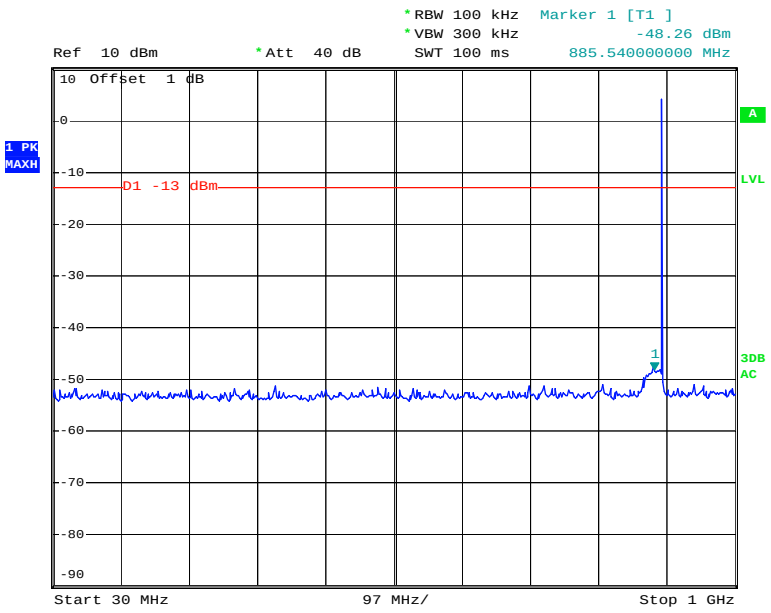
## 9-150 kHz – High Channel



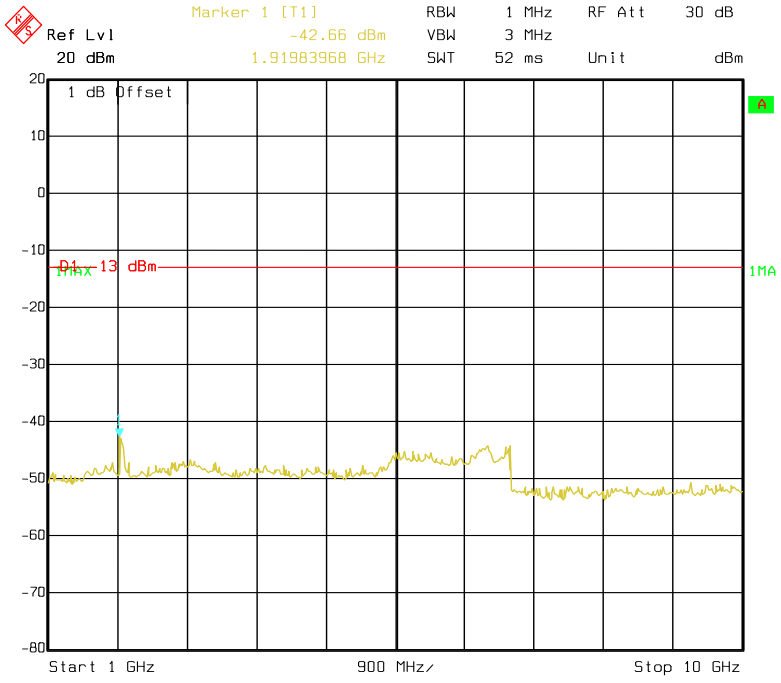

## 150 kHz – 30 MHz - High Channel



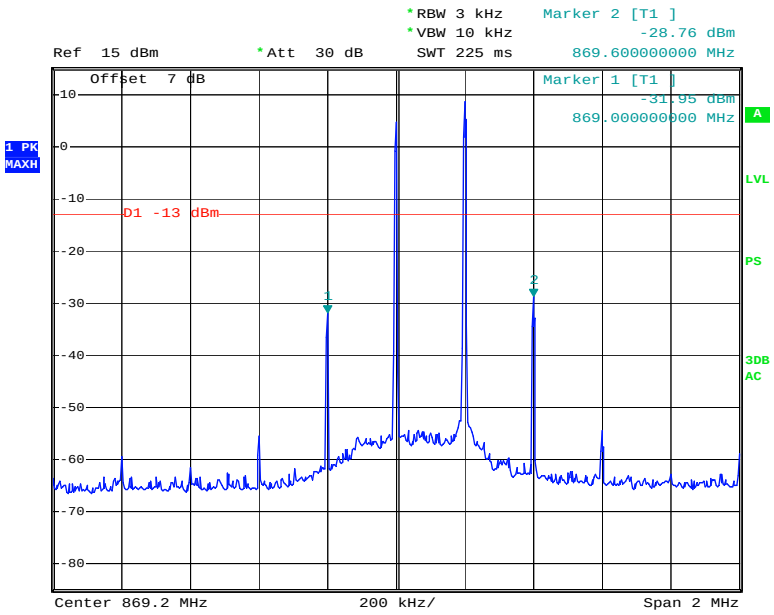
## 30 – 1000 MHz - High Channel



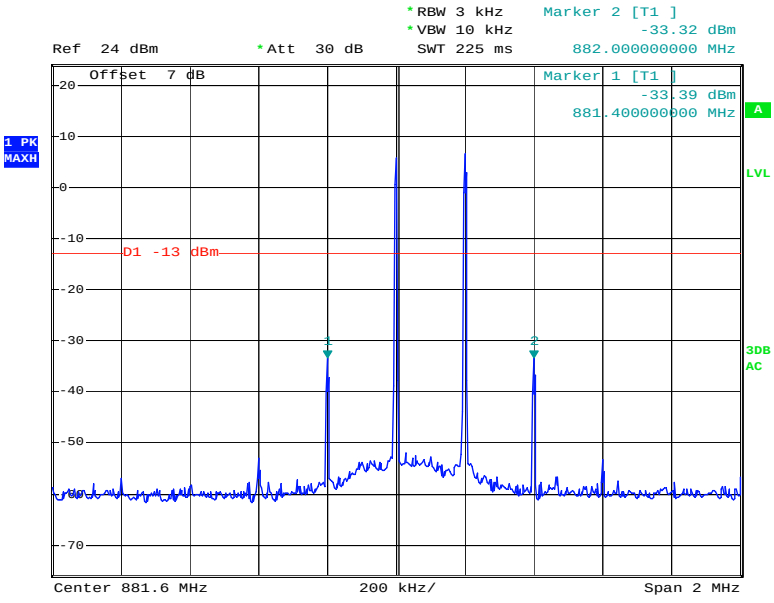

## 1 – 10 GHz - High Channel



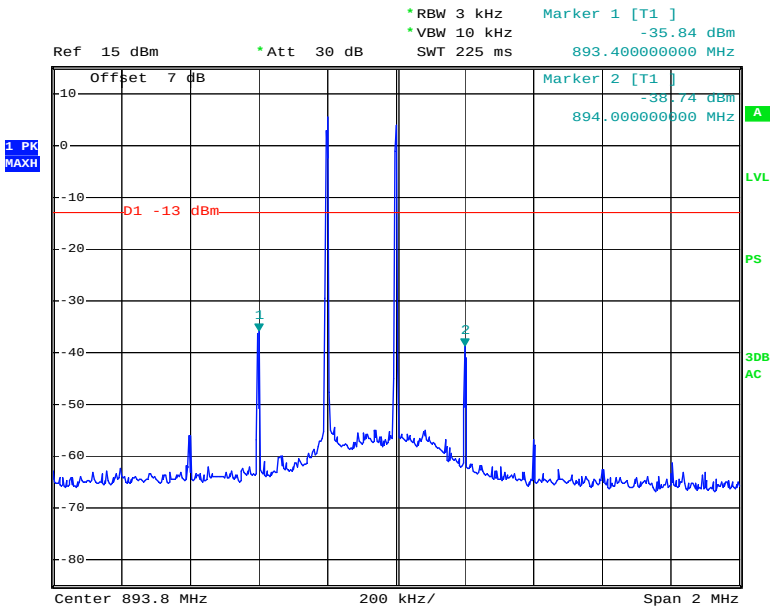
## Two tone Inter modulation (Low Channel)




## Two tone Inter modulation (Middle Channel)

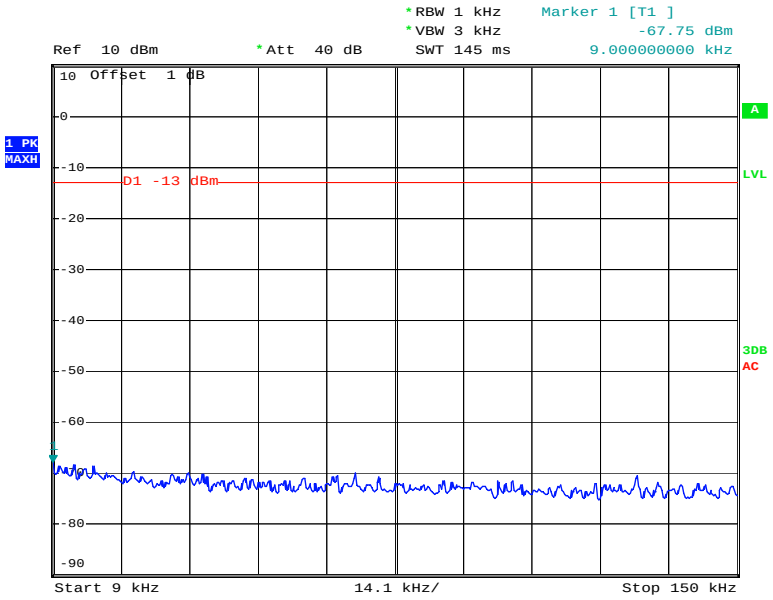


Two tone Inter modulation (High Channel)

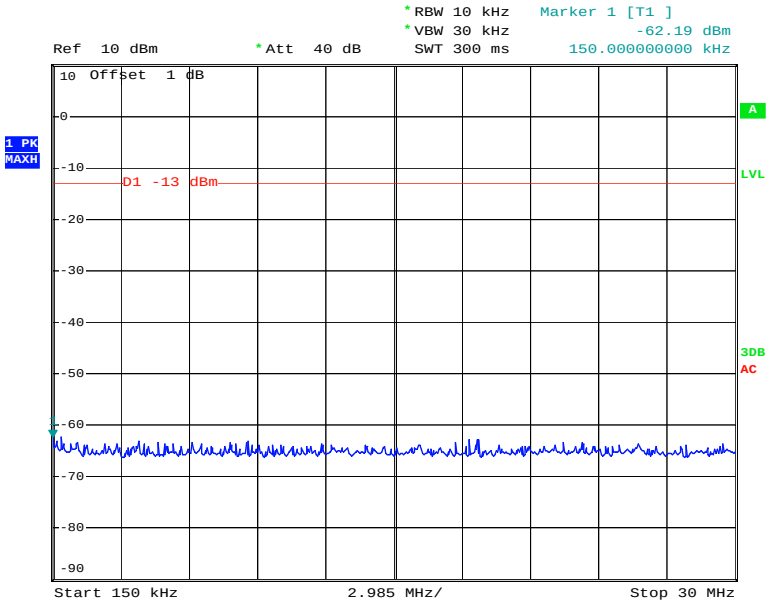



**GSM, PCS Band, Downlink:**

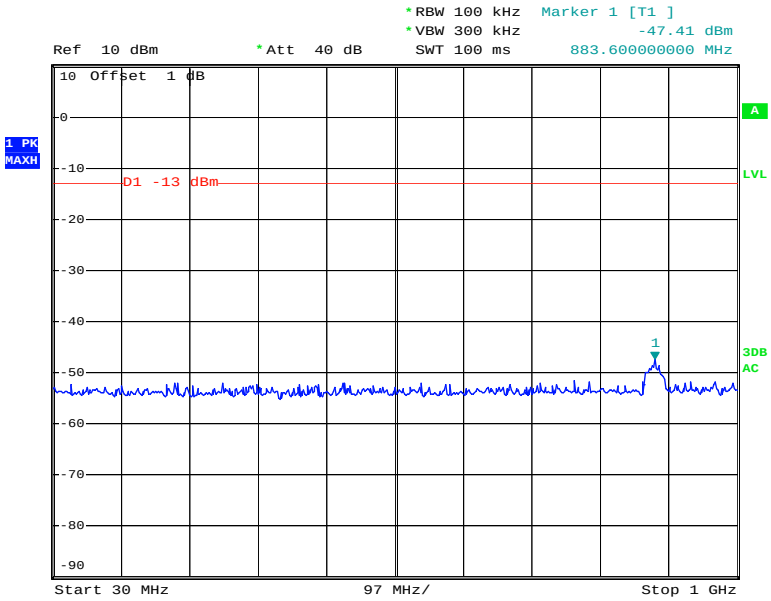
9-150 kHz – Low Channel



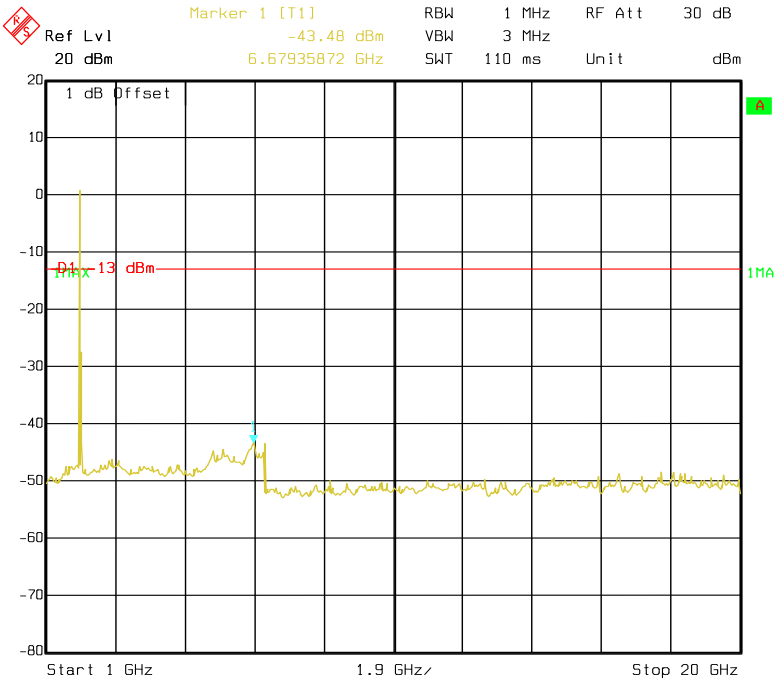
## 150 kHz – 30 MHz - Low Channel



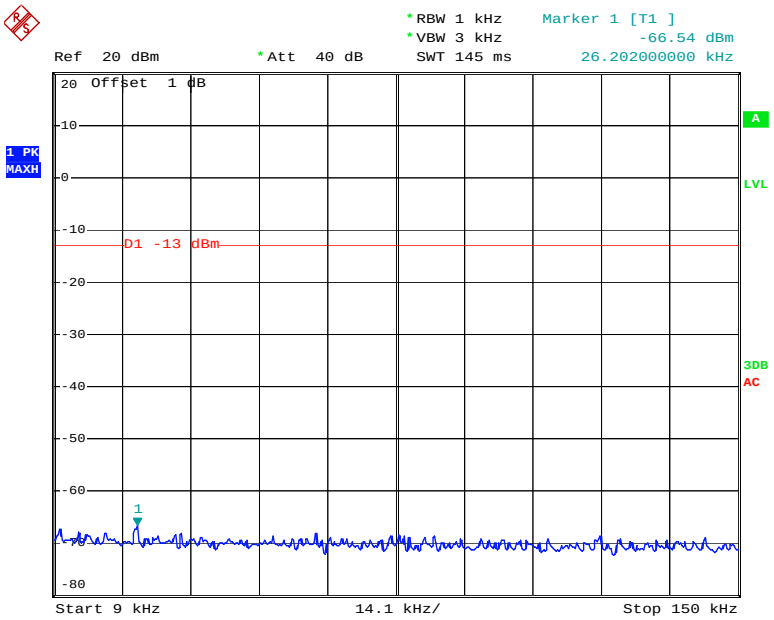

## 30 – 1000 MHz - Low Channel



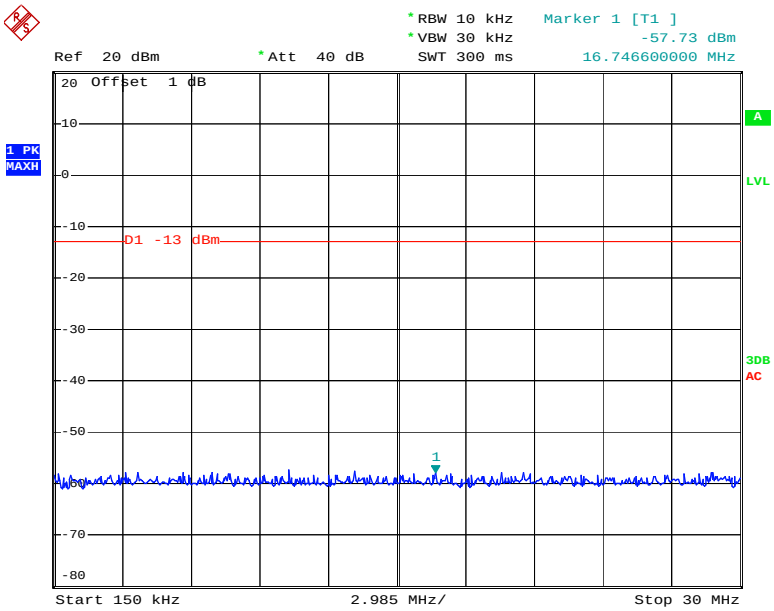
## 1 – 20 GHz - Low Channel



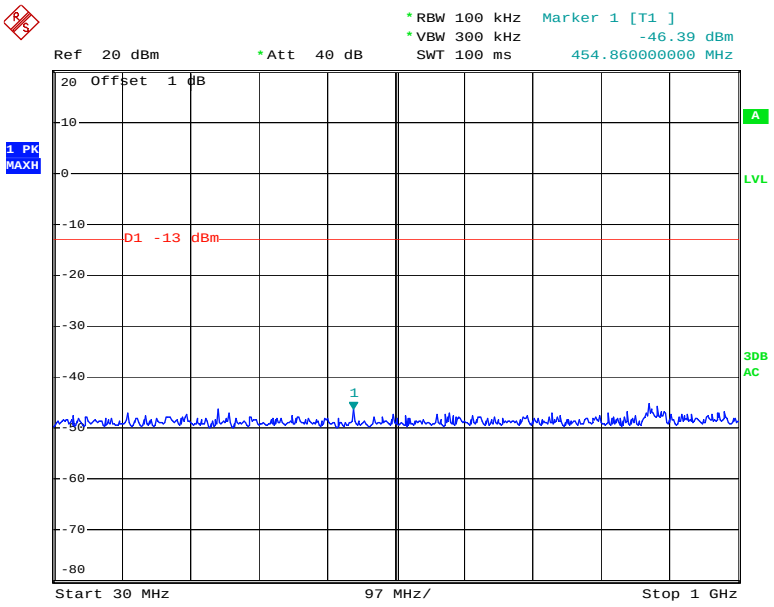

## 9-150 kHz - Middle Channel



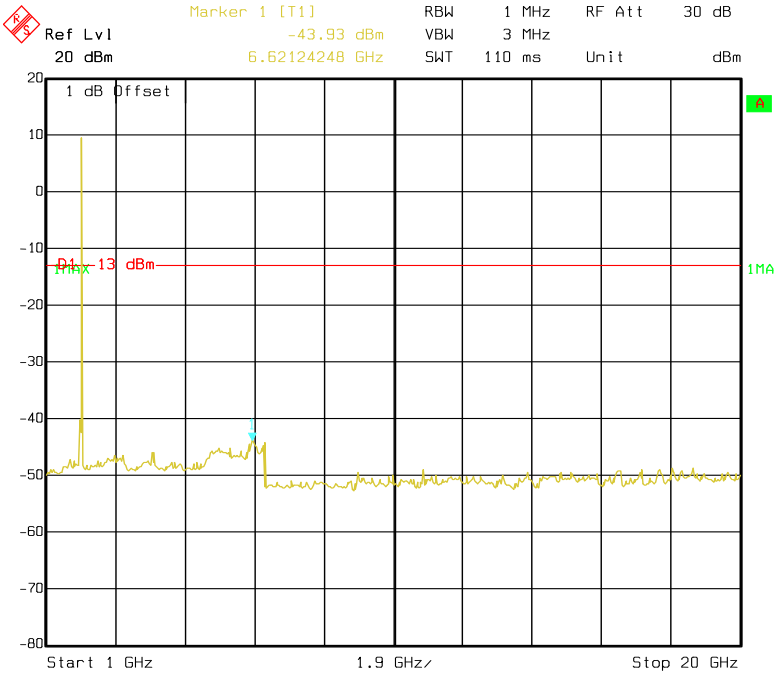
## 150 kHz – 30 MHz - Middle Channel



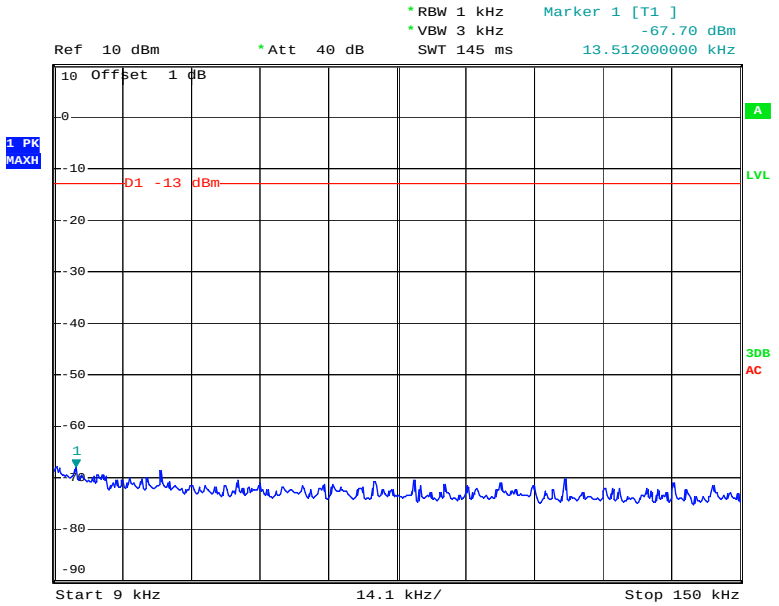

## 30 – 1000 MHz - Middle Channel



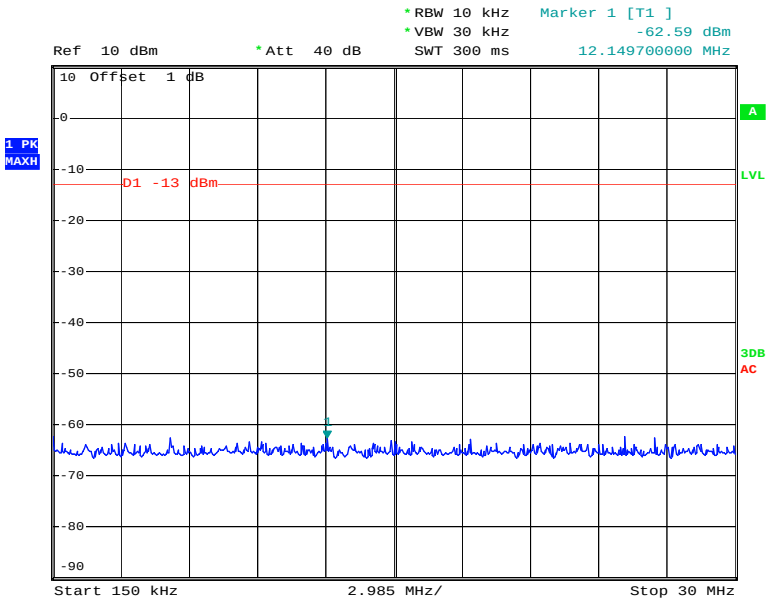
## 1 – 20 GHz - Middle Channel



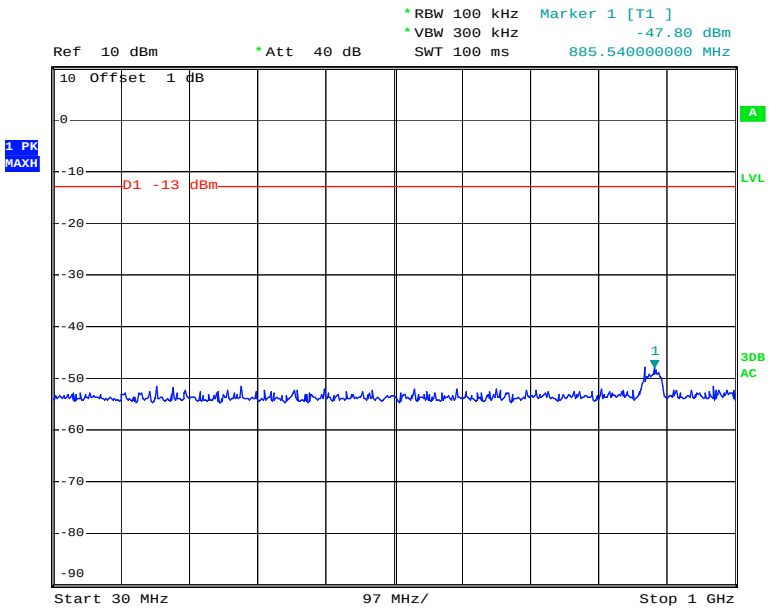

## 9-150 kHz – High Channel



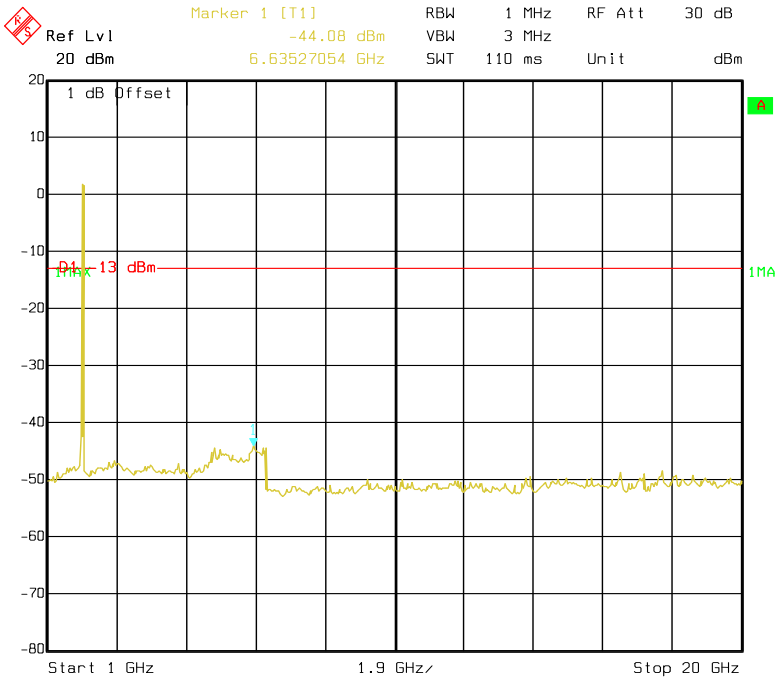
## 150 kHz – 30 MHz - High Channel



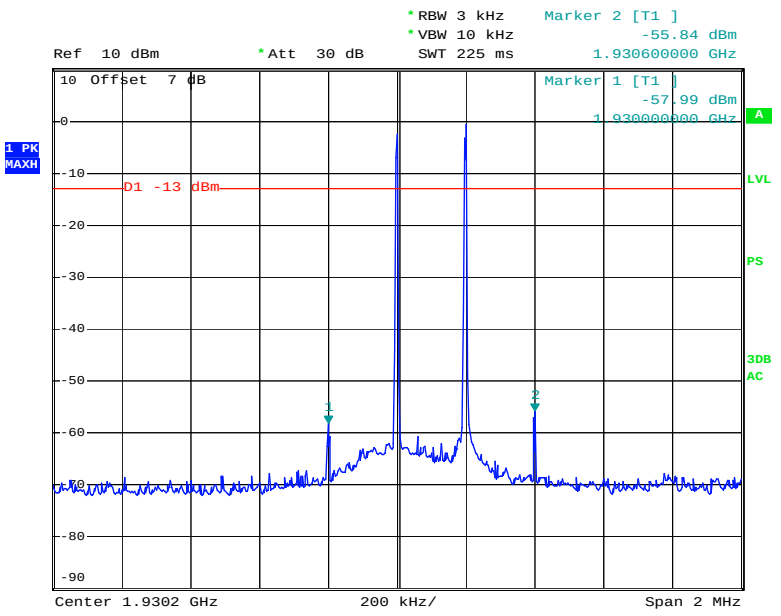

## 30 – 1000 MHz - High Channel



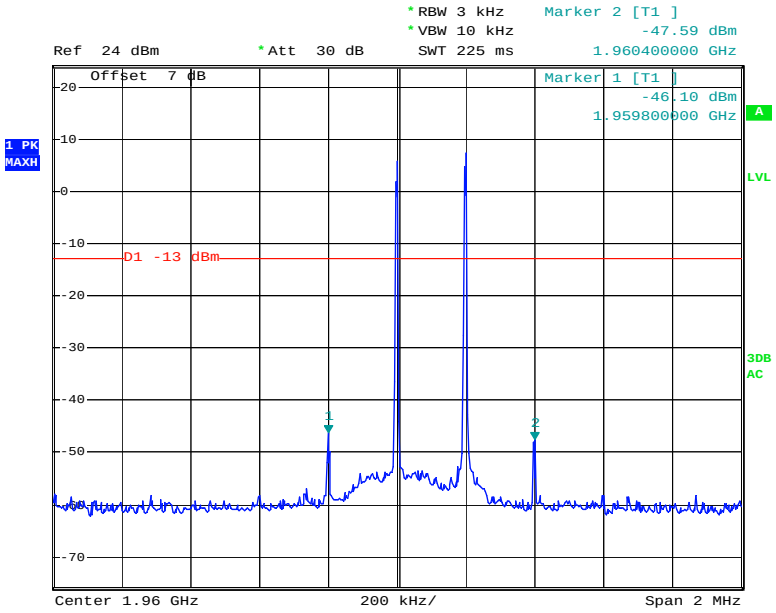
## 1 – 20 GHz - High Channel



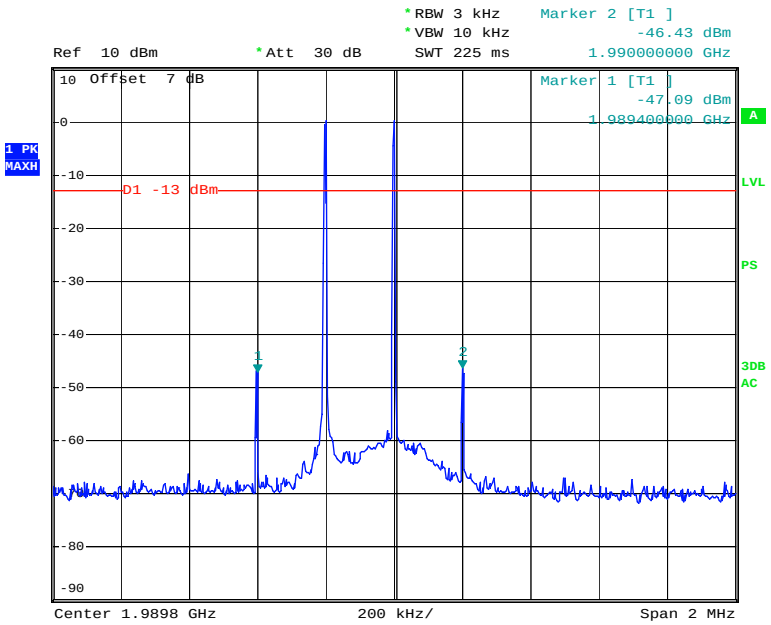

## Two tone Inter modulation (Low Channel)



## Two tone Inter modulation (Middle Channel)

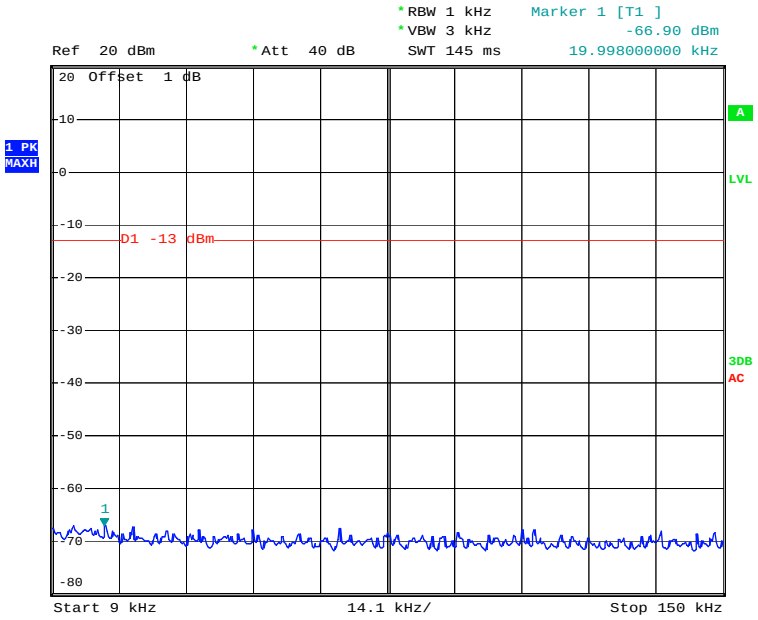



## Two tone Inter modulation (High Channel)

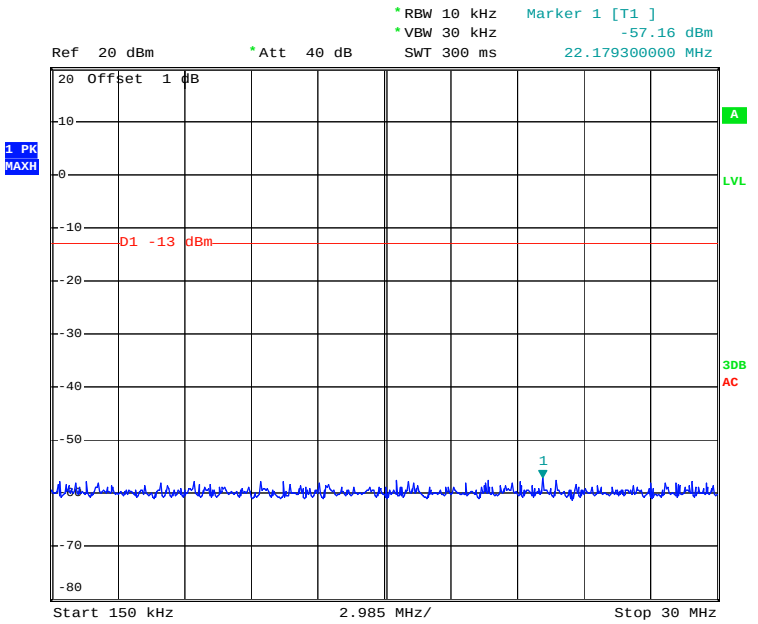


**GSM, Cellular Band, Uplink:**

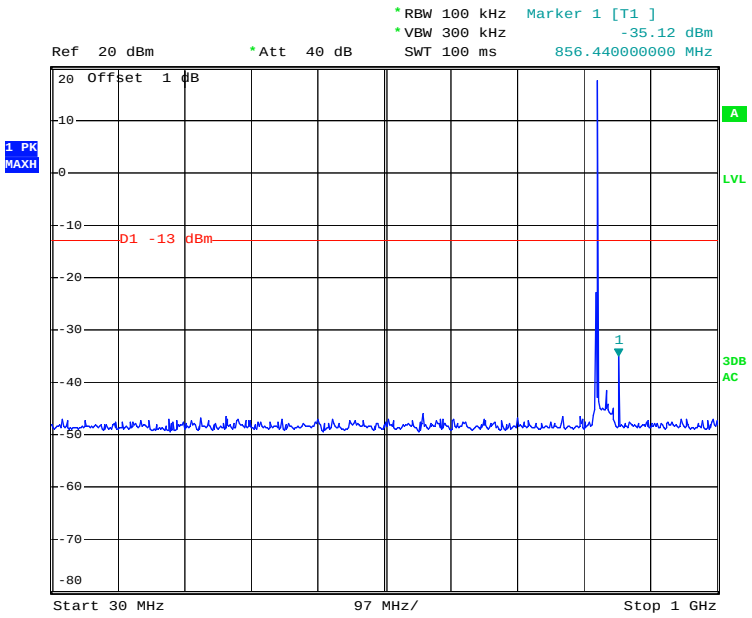
9-150 kHz – Low Channel



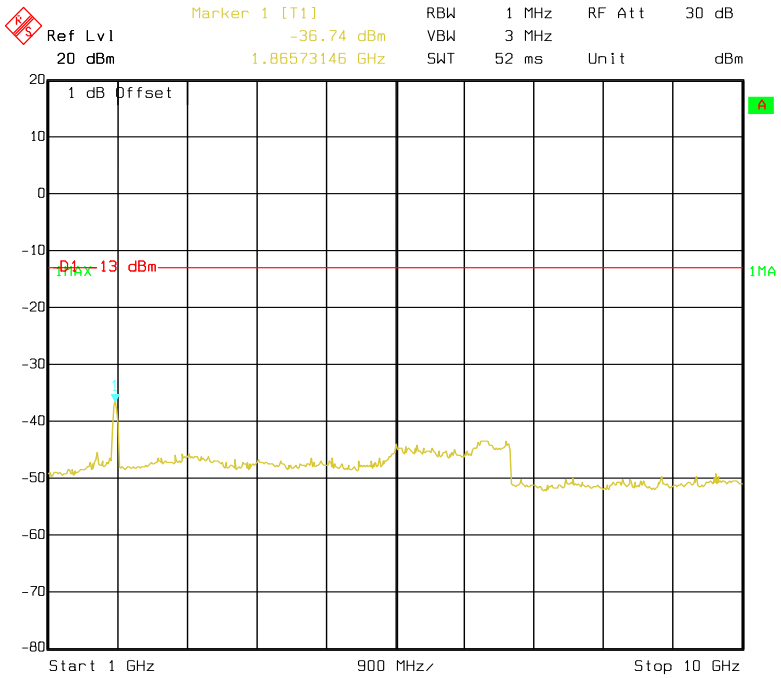

150 kHz – 30 MHz - Low Channel



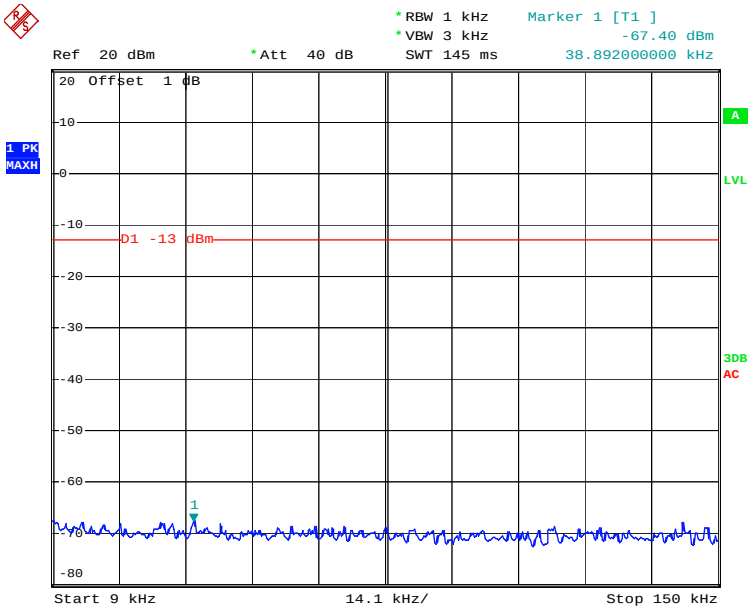
## 30 – 1000 MHz - Low Channel



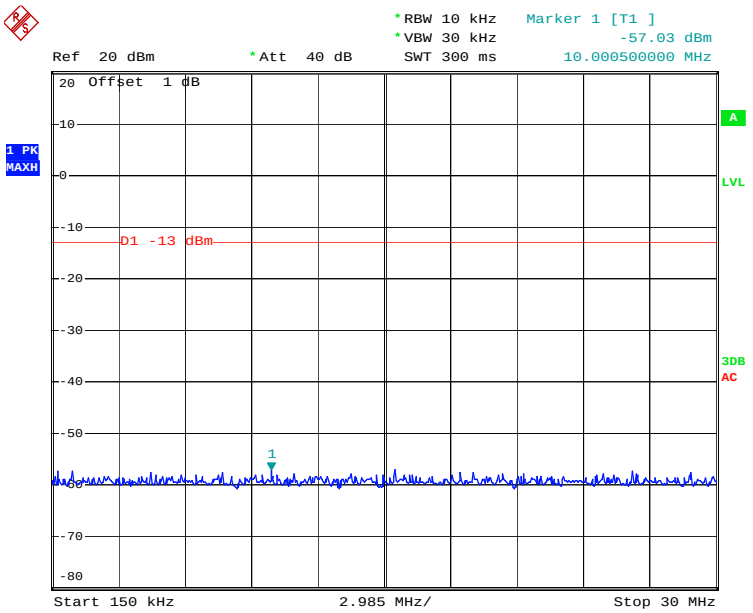

## 1 – 10 GHz - Low Channel



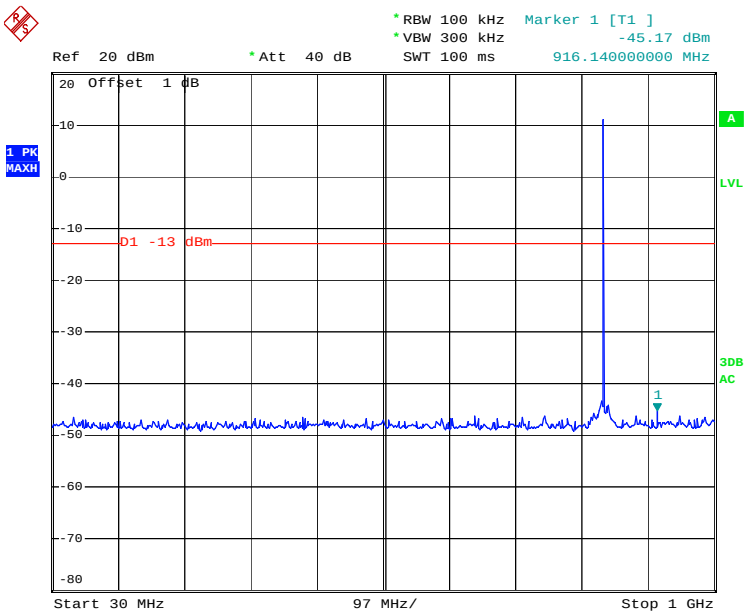
## 9-150 kHz - Middle Channel



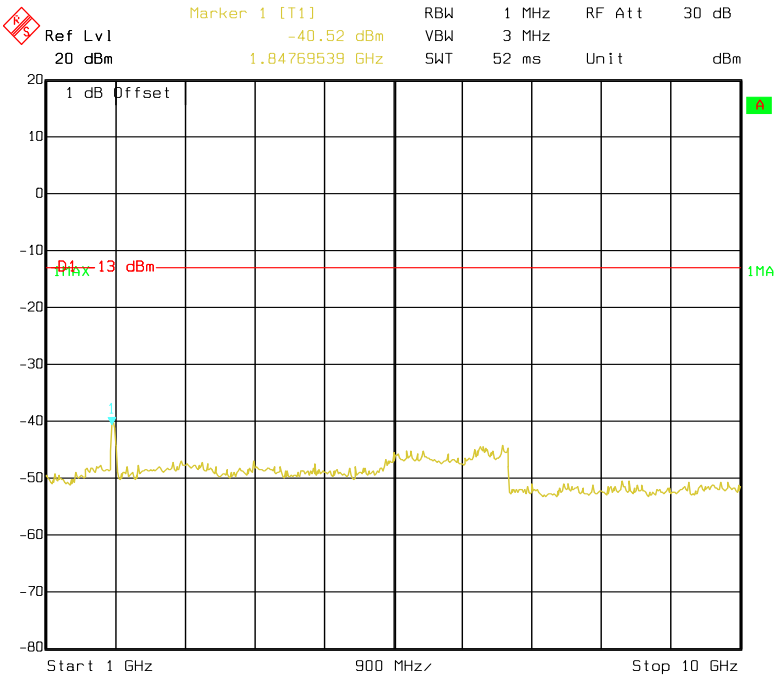

## 150 kHz – 30 MHz - Middle Channel



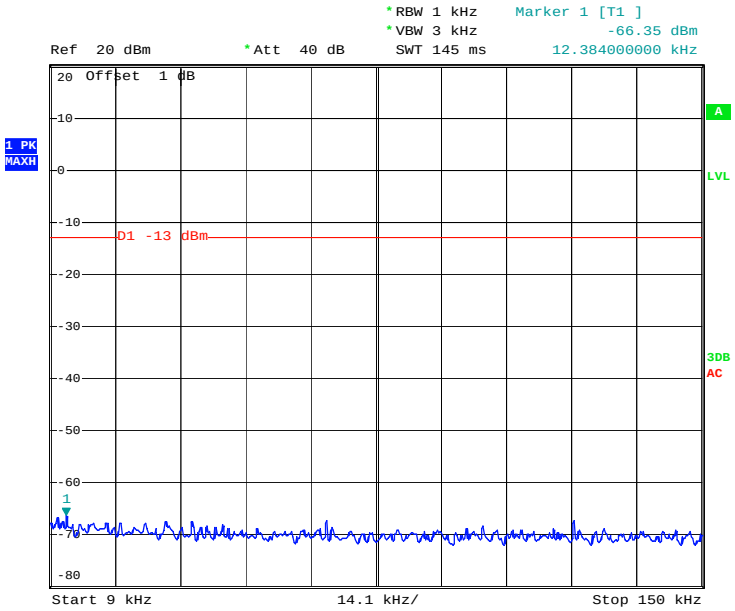
## 30 – 1000 MHz - Middle Channel



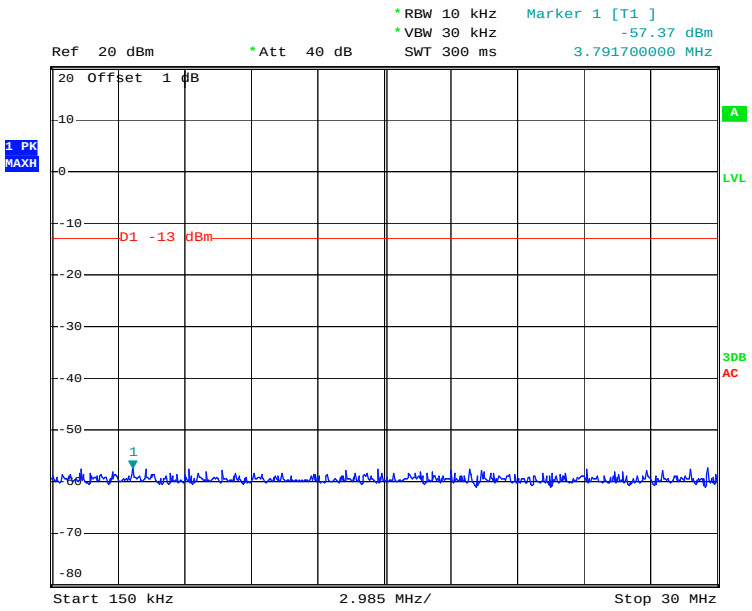

## 1 – 10 GHz - Middle Channel



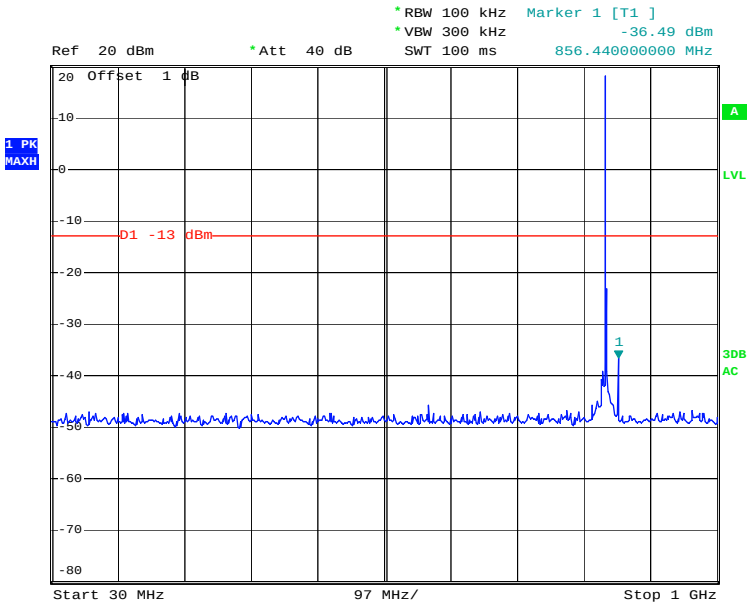
## 9-150 kHz – High Channel



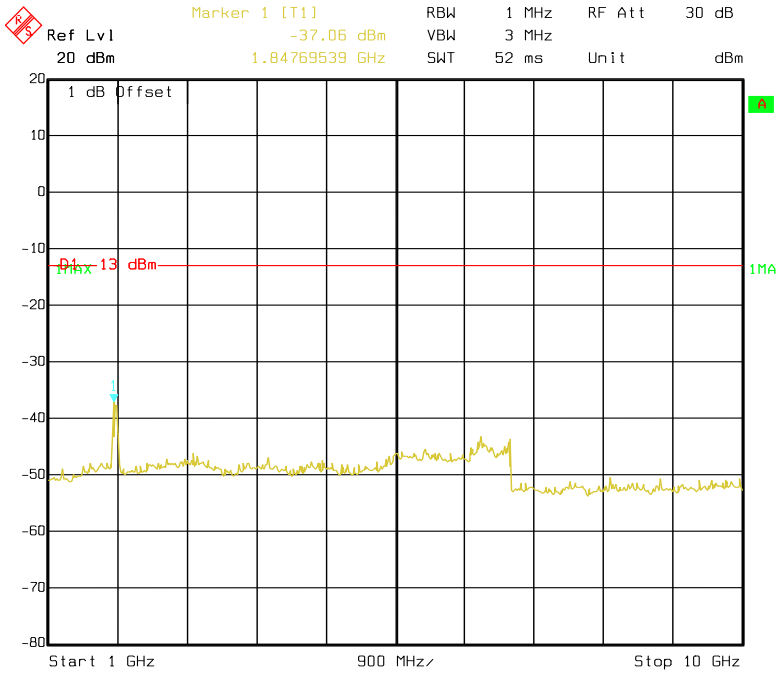

## 150 kHz – 30 MHz - High Channel



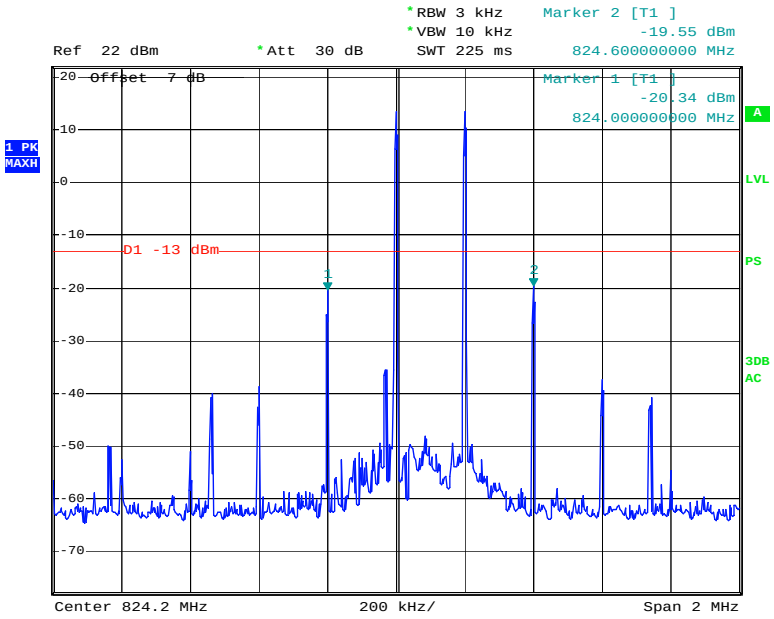
## 30 – 1000 MHz - High Channel



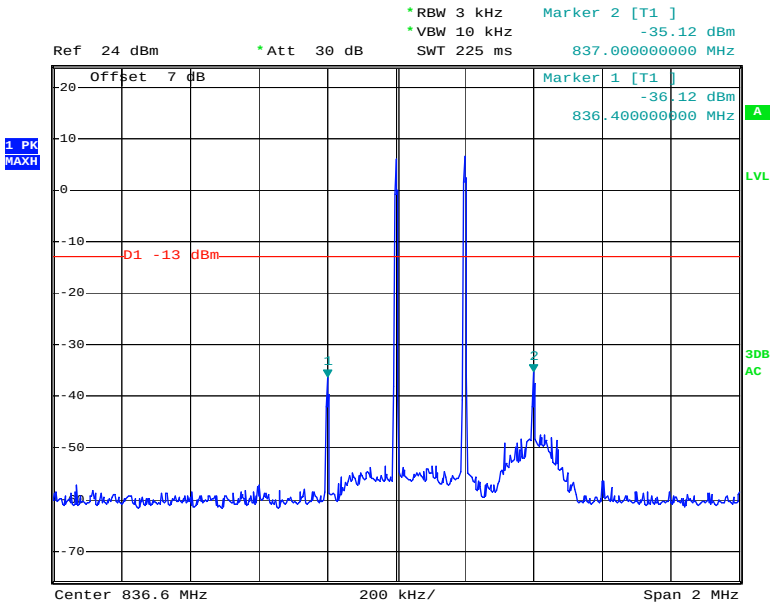

## 1 – 10 GHz - High Channel



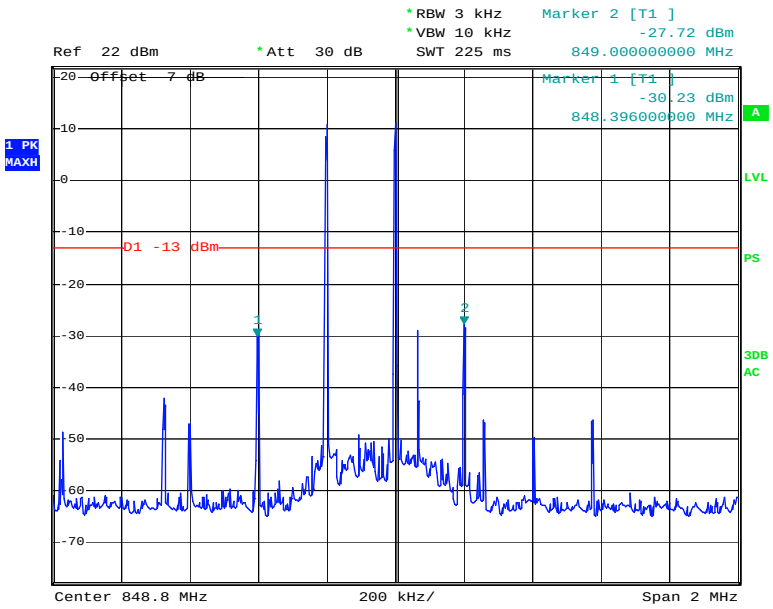
## Two tone Inter modulation (Low Channel)




## Two tone Inter modulation (Middle Channel)

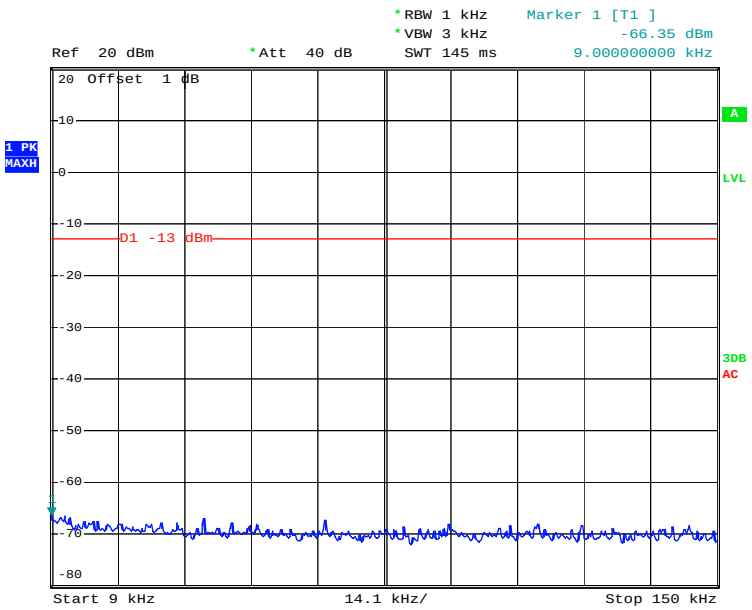


Two tone Inter modulation (High Channel)

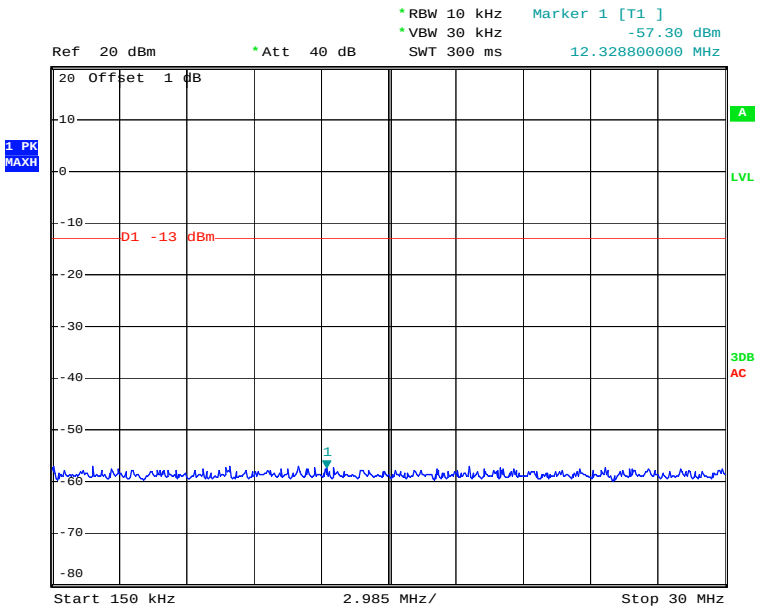



**GSM, PCS Band, Uplink:**

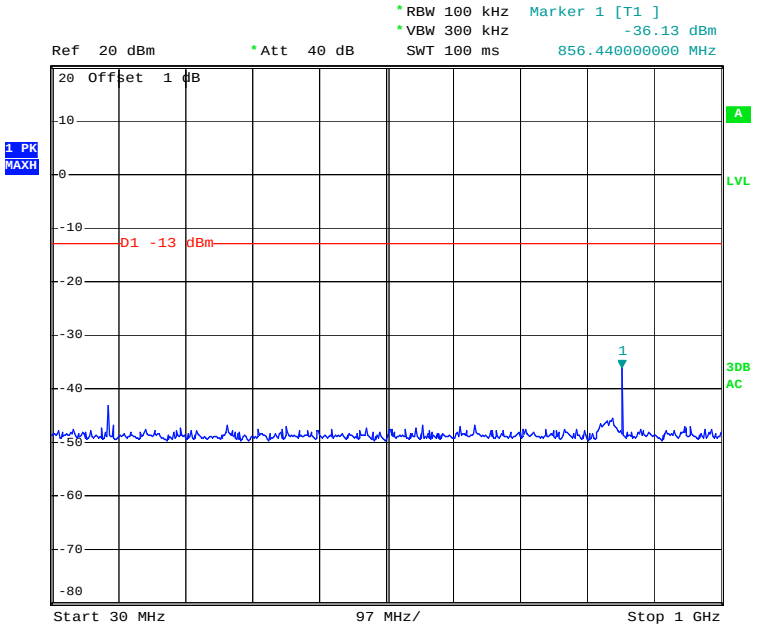
9-150 kHz – Low Channel



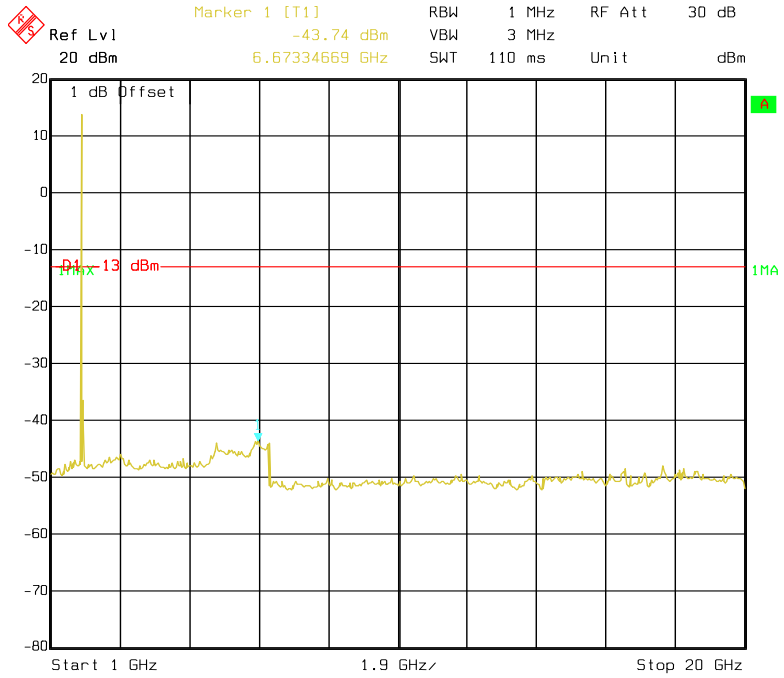
## 150 kHz – 30 MHz - Low Channel



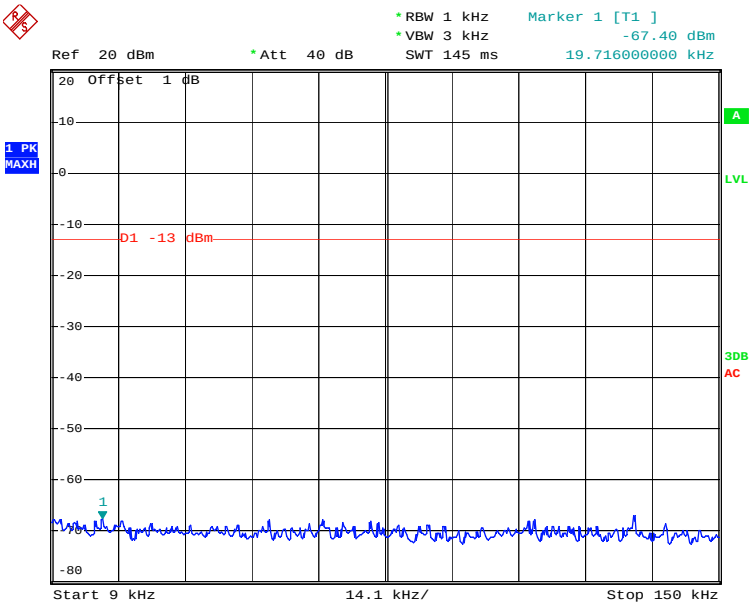

## 30 – 1000 MHz - Low Channel



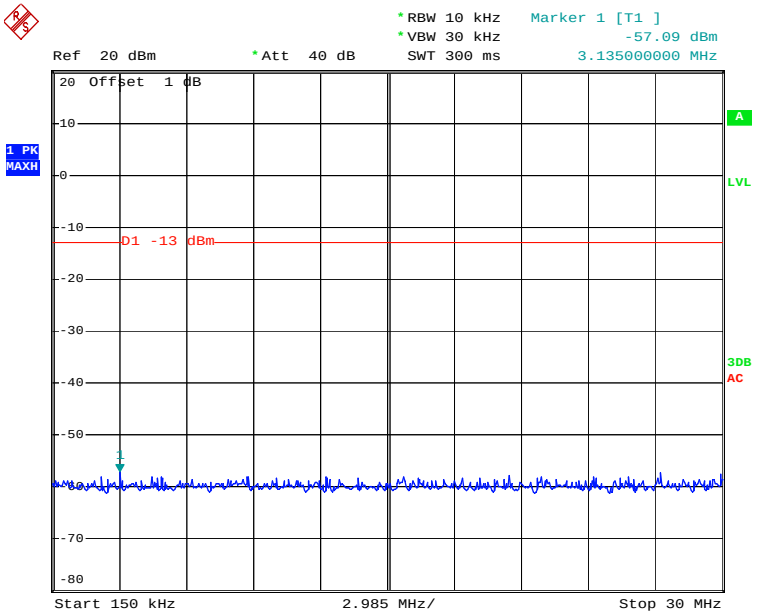
## 1 – 20 GHz - Low Channel



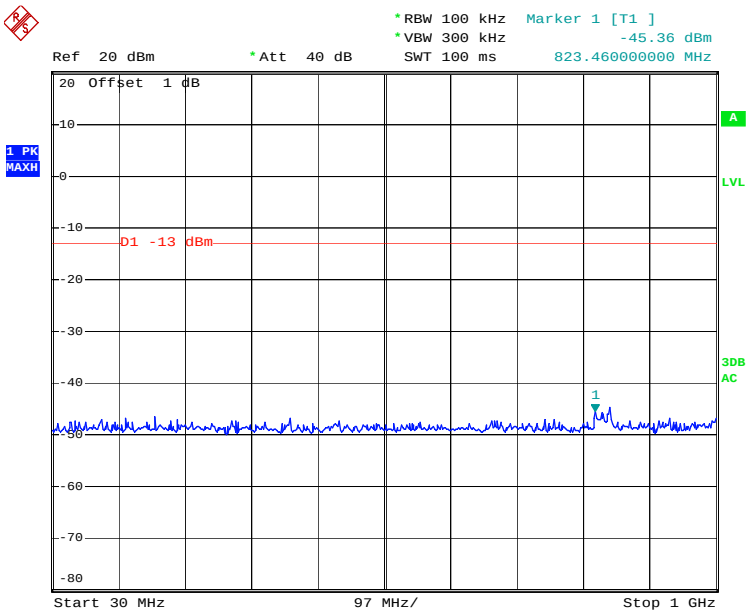

## 9-150 kHz - Middle Channel



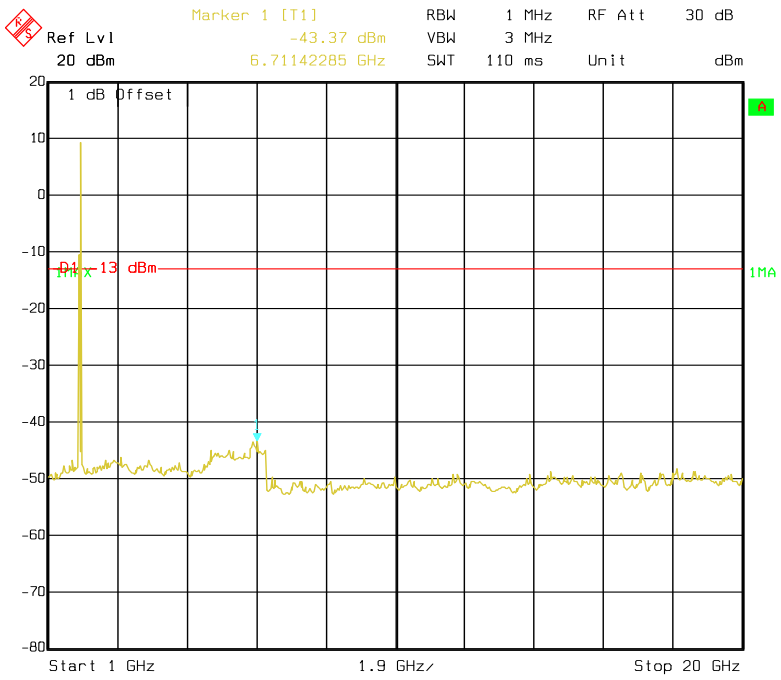
## 150 kHz – 30 MHz - Middle Channel



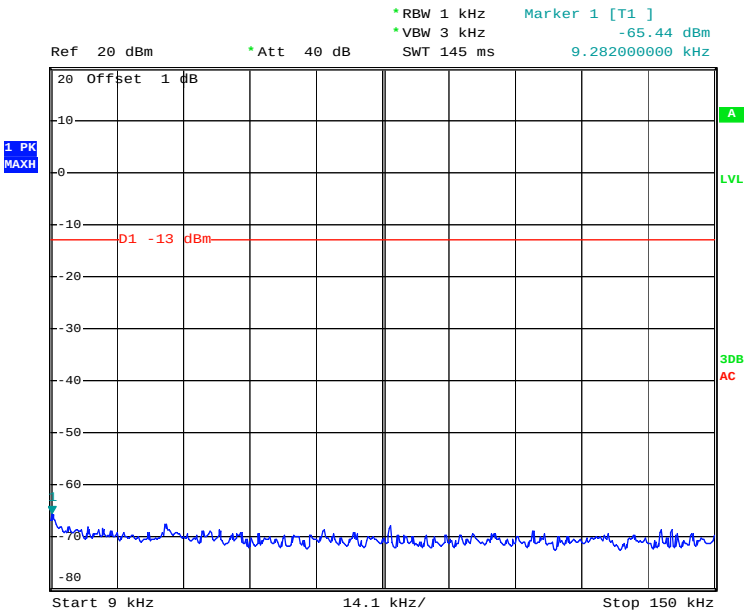

## 30 – 1000 MHz - Middle Channel



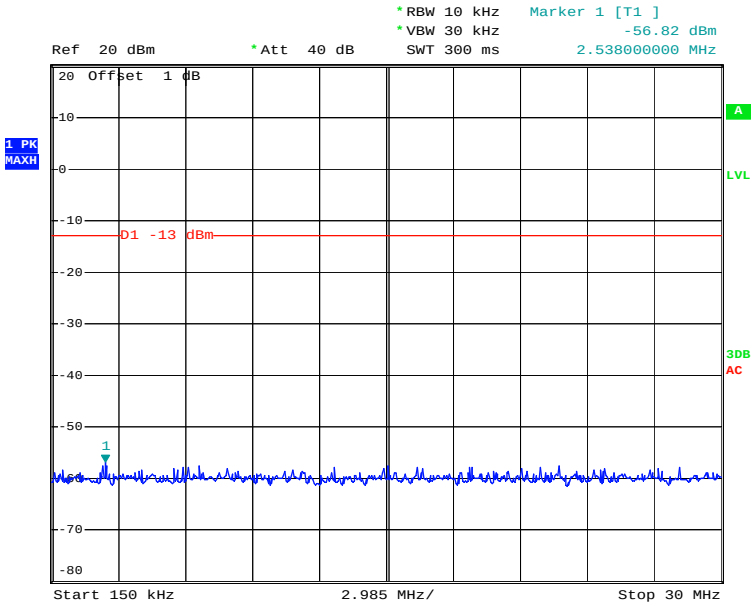
## 1 – 20 GHz - Middle Channel



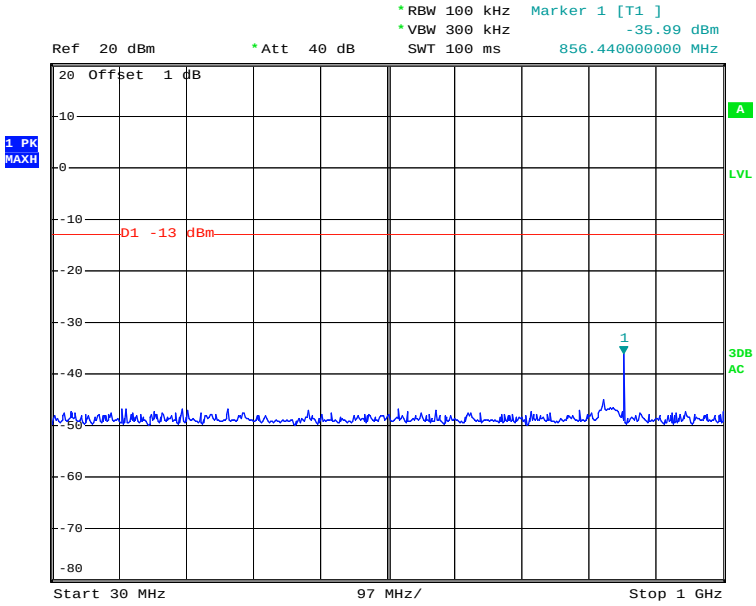

## 9-150 kHz – High Channel



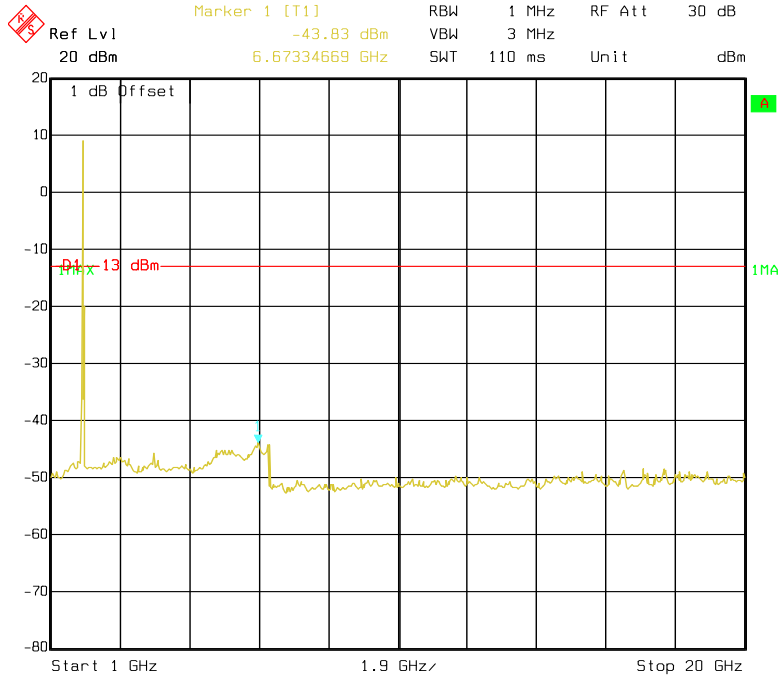
## 150 kHz – 30 MHz - High Channel



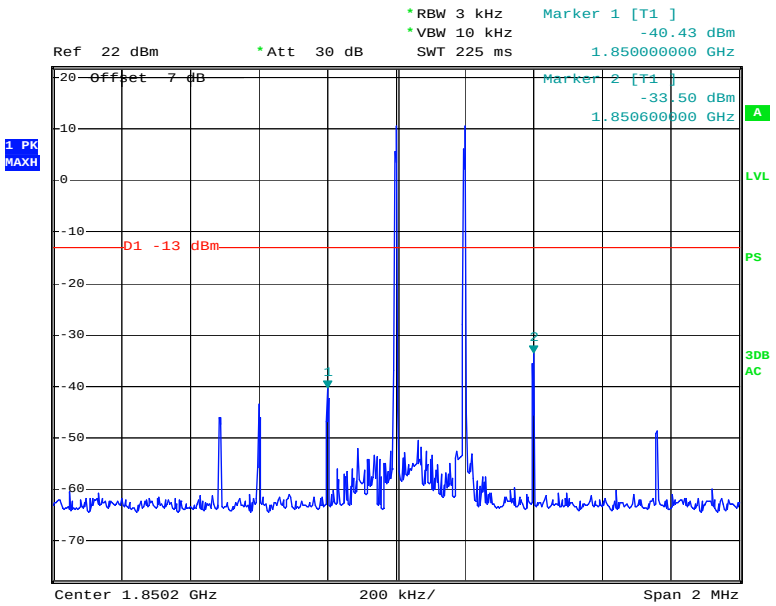

## 30 – 1000 MHz - High Channel



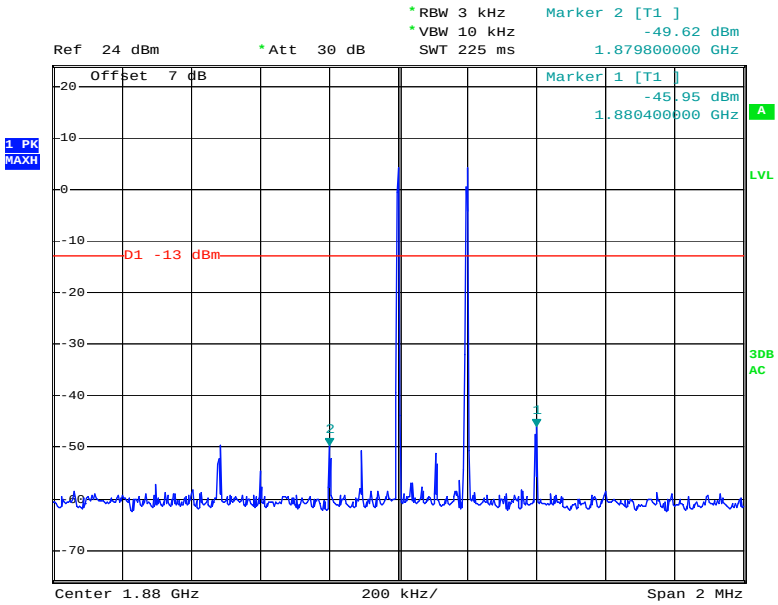
## 1 – 20 GHz - High Channel



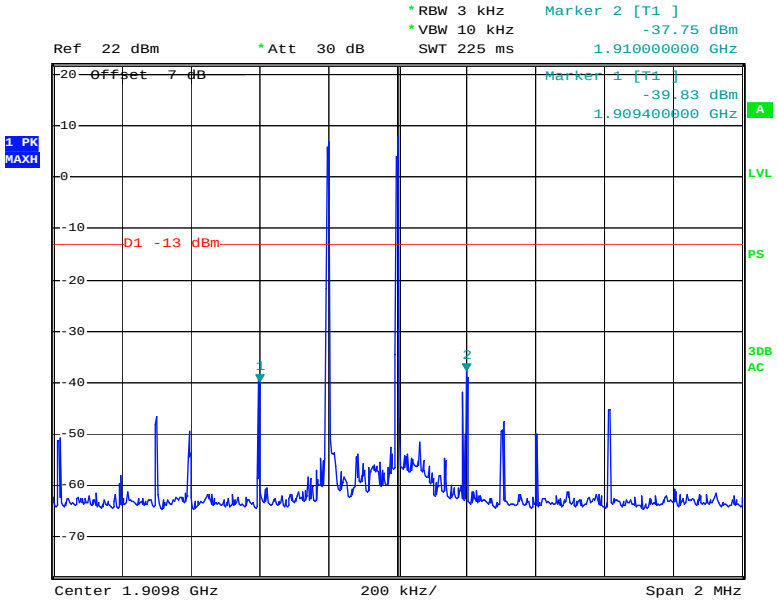

## Two tone Inter modulation (Low Channel)



## Two tone Inter modulation (Middle Channel)




## Two tone Inter modulation (High Channel)



# FCC §2.1053, §22.917 & §24.238 - SPURIOUS RADIATED EMISSIONS

## Applicable Standards

FCC §2.1053, §22.917 and §24.238.

## Test Procedure

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

The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and polarization as well as EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. The test was performed by placing the EUT on 3-orthogonal axis.

The frequency range up to tenth harmonic of the fundamental frequency was investigated.

Remove the EUT and replace it with substitution antenna. A signal generator was connected to the substitution antenna by a non-radiating cable. The absolute levels of the spurious emissions were measured by the substitution.

Spurious emissions in dB = 10 lg (TXpwr in Watts/0.001) – the absolute level

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

## Test Equipment List and Details

| Manufacturer | Description | Model | Serial Number | Calibration Date | Calibration Due Date |
|---|---|---|---|---|---|
| Sunol Sciences | Horn Antenna | DRH-118 | A052604 | 2010-05-05 | 2011-05-04 |
| Sunol Sciences | Broadband Antenna | JB1 | A040904-1 | 2010-03-11 | 2011-03-11 |
| Rohde & Schwarz | Spectrum Analyzer | FSEM30 | 849720/019 | 2010-07-08 | 2011-07-07 |
| HP | Amplifier | 2VA-213+ | T-E27H | 2010-03-08 | 2011-03-07 |
| HP | Signal Generator | HP8657A | 2849U00982 | 2009-10-28 | 2010-10-27 |
| HP | Amplifier | HP8447D | 2944A09795 | 2010-08-02 | 2011-08-02 |
| HP | Synthesized Sweeper | 8341B | 2624A00116 | 2009-11-07 | 2010-11-06 |
| COM POWER | Dipole Antenna | AD-100 | 041000 | 2009-09-25 | 2010-09-25 |
| A.H. System | Horn Antenna | SAS-200/571 | 135 | 2010-05-17 | 2011-05-17 |
| Rohde & Schwarz | Universal Radio Communication Tester | CMU200 | 109038 | 2010-06-11 | 2011-06-10 |

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

## Test Data

### Environmental Conditions

| | |
|---|---|
| **Temperature:** | 25 °C |
| **Relative Humidity:** | 56 % |
| **ATM Pressure:** | 100.0kPa |

*The testing was performed by Wayne Cheng on 2010-08-27.*

*Test mode: Transmitting*

### GSM:

Cellular Band (Part 22H)

| Indicated | | Table Angle Degree | Test Antenna | | Substituted | | | | Absolute Level (dBm) | Limit (dBm) | Margin (dB) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Frequency (MHz) | S.A. Reading (dBµV) | | Height (m) | Polar (H/V) | Frequency (MHz) | Level (dBm) | Ant. Gain (dBi) | Cable Loss (dB) | | | |
| 30 MHz-10 GHz Middle Channel (Downlink) | | | | | | | | | | | |
| 1258.73 | 48.16 | 198 | 1.80 | H | 1258.73 | -48.84 | 6.0 | 2.05 | -52.79 | -13 | 39.79 |
| 1594.58 | 46.28 | 198 | 2.05 | V | 1594.58 | -50.72 | 6.2 | 2.29 | -54.63 | -13 | 41.63 |
| 1262.53 | 42.95 | 168 | 150 | V | 1262.53 | -54.05 | 6.0 | 2.05 | -58 | -13 | 45 |
| 453.39 | 38.36 | 187 | 1.85 | V | 453.39 | -58.64 | 0 | 0.3 | -58.34 | -13 | 45.34 |
| 449.54 | 38.10 | 185 | 1.86 | V | 449.54 | -58.9 3 | 0 | 0.3 | -58.6 | -13 | 45.6 |
| 622.20 | 37.06 | 190 | 2.05 | H | 622.20 | -59.94 | 0 | 1.0 | -58.94 | -13 | 45.94 |
| 630.18 | 36.75 | 176 | 2.01 | H | 630.18 | -60.25 | 0 | 1.0 | -59.25 | -13 | 46.25 |
| 1557.64 | 40.81 | 196 | 190 | H | 1557.64 | -56.19 | 6.2 | 2.29 | -60.1 | -13 | 47.1 |
| 30 MHz-10 GHz Middle Channel (Uplink) | | | | | | | | | | | |
| 1258.58 | 48.38 | 193 | 1.80 | H | 1258.58 | -48.62 | 6.0 | 2.05 | -52.57 | -13 | 39.57 |
| 1594.39 | 46.45 | 193 | 2.05 | V | 1594.39 | -50.55 | 6.2 | 2.29 | -54.46 | -13 | 41.46 |
| 1262.90 | 42.89 | 165 | 150 | V | 1262.90 | -54.11 | 6.0 | 2.05 | -58.06 | -13 | 45.06 |
| 453.76 | 38.16 | 180 | 2.10 | V | 453.76 | -58.84 | 0 | 0.3 | -58.54 | -13 | 45.54 |
| 449.86 | 38.07 | 185 | 1.86 | V | 449.86 | -58.93 | 0 | 0.3 | -58.63 | -13 | 45.63 |
| 622.88 | 37.15 | 190 | 2.05 | H | 622.88 | -59.85 | 0 | 1.0 | -58.85 | -13 | 45.85 |
| 630.59 | 36.70 | 192 | 1.95 | H | 630.59 | -60.3 | 0 | 1.0 | -59.3 | -13 | 46.3 |
| 1557.75 | 40.55 | 196 | 190 | H | 1557.75 | -56.45 | 6.2 | 2.29 | -60.36 | -13 | 47.36 |

PCS Band (Part 24E)

| Indicated | | Table Angle Degree | Test Antenna | | Substituted | | | | Absolute Level (dBm) | Limit (dBm) | Margin (dB) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Frequency (MHz) | S.A. Reading (dBµV) | | Height (m) | Polar (H/V) | Frequency (MHz) | Level (dBm) | Ant. Gain (dBi) | Cable Loss (dB) | | | |
| 30 MHz-20 GHz Middle Channel(Downlink) | | | | | | | | | | | |
| 1251.63 | 48.46 | 198 | 1.80 | H | 1251.63 | -44.84 | 6.0 | 2.05 | -52.79 | -13 | 39.56 |
| 1584.50 | 46.58 | 198 | 2.05 | V | 1584.50 | -51.72 | 6.2 | 2.29 | -54.63 | -13 | 41.23 |
| 1242.58 | 42.55 | 168 | 150 | V | 1242.58 | -56.05 | 6.0 | 2.05 | -58 | -13 | 45.23 |
| 623.25 | 37.05 | 190 | 2.05 | H | 623.25 | -59.4 | 0 | 1.0 | -58.94 | -13 | 45.34 |
| 447.54 | 38.20 | 185 | 1.86 | V | 447.54 | -58.0 3 | 0 | 0.3 | -58.6 | -13 | 45.5 |
| 459.40 | 38.46 | 187 | 1.85 | V | 459.40 | -58.2 | 0 | 0.3 | -58.34 | -13 | 45.64 |
| 620.19 | 36.65 | 176 | 2.01 | H | 620.19 | -60.5 | 0 | 1.0 | -59.25 | -13 | 46.55 |
| 1567.24 | 40.61 | 196 | 190 | H | 1567.24 | -56.59 | 6.2 | 2.29 | -60.1 | -13 | 47.54 |
| 30 MHz-20 GHz Middle Channel (Uplink) | | | | | | | | | | | |
| 1254.02 | 48.81 | 198 | 1.80 | H | 1254.02 | -44.84 | 6.0 | 2.05 | -53.14 | -13 | 40.14 |
| 1583.48 | 46.93 | 198 | 2.05 | V | 1583.48 | -51.72 | 6.2 | 2.29 | -54.98 | -13 | 41.98 |
| 1250.61 | 42.9 | 168 | 150 | V | 1250.61 | -56.05 | 6.0 | 2.05 | -58.35 | -13 | 45.35 |
| 458.38 | 38.81 | 187 | 1.85 | V | 458.38 | -58.2 | 0 | 0.3 | -58.69 | -13 | 45.69 |
| 456.12 | 38.55 | 185 | 1.86 | V | 456.12 | -58.0 3 | 0 | 0.3 | -58.95 | -13 | 45.95 |
| 622.23 | 37.4 | 190 | 2.05 | H | 622.23 | -59.4 | 0 | 1.0 | -59.29 | -13 | 46.29 |
| 619.17 | 37 | 176 | 2.01 | H | 619.17 | -60.5 | 0 | 1.0 | -59.6 | -13 | 46.6 |
| 1241.56 | 40.96 | 196 | 190 | H | 1241.56 | -56.59 | 6.2 | 2.29 | -60.45 | -13 | 47.45 |

**CDMA:**

Cellular Band (Part 22H)

| Indicated | | Table Angle Degree | Test Antenna | | Substituted | | | | Absolute Level (dBm) | Limit (dBm) | Margin (dB) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Frequency (MHz) | S.A. Reading (dBµV) | | Height (m) | Polar (H/V) | Frequency (MHz) | Level (dBm) | Ant. Gain (dBi) | Cable Loss (dB) | | | |
| 30 MHz-10 GHz Middle Channel (Downlink) | | | | | | | | | | | |
| 1257.35 | 48.16 | 198 | 1.80 | H | 1257.35 | -48.32 | 6.0 | 2.05 | -52.27 | -13 | 39.79 |
| 1594.23 | 46.28 | 198 | 2.05 | V | 1594.23 | -50.2 | 6.2 | 2.29 | -54.11 | -13 | 41.63 |
| 1258.38 | 42.95 | 168 | 150 | V | 1258.38 | -53.53 | 6.0 | 2.05 | -57.48 | -13 | 45 |
| 453.04 | 38.36 | 187 | 1.85 | V | 453.04 | -58.12 | 0 | 0.3 | -57.82 | -13 | 45.34 |
| 449.19 | 38.10 | 185 | 1.86 | V | 449.19 | -58.41 | 0 | 0.3 | -58.08 | -13 | 45.6 |
| 621.85 | 37.06 | 190 | 2.05 | H | 621.85 | -59.42 | 0 | 1.0 | -58.42 | -13 | 45.94 |
| 629.83 | 36.75 | 176 | 2.01 | H | 629.83 | -59.73 | 0 | 1.0 | -58.73 | -13 | 46.25 |
| 1262.18 | 40.81 | 196 | 190 | H | 1262.18 | -55.67 | 6.2 | 2.29 | -59.58 | -13 | 47.1 |
| 30 MHz-10 GHz Middle Channel (Uplink) | | | | | | | | | | | |
| 1258.58 | 48.38 | 193 | 1.80 | H | 1258.58 | -48.62 | 6.0 | 2.05 | -52.57 | -13 | 39.57 |
| 1594.39 | 46.45 | 193 | 2.05 | V | 1594.39 | -50.55 | 6.2 | 2.29 | -54.46 | -13 | 41.46 |
| 1262.90 | 42.89 | 165 | 150 | V | 1262.90 | -54.11 | 6.0 | 2.05 | -58.06 | -13 | 45.06 |
| 453.76 | 38.16 | 180 | 2.10 | V | 453.76 | -58.84 | 0 | 0.3 | -58.54 | -13 | 45.54 |
| 459.81 | 38.07 | 185 | 1.86 | V | 459.81 | -58.93 | 0 | 0.3 | -58.63 | -13 | 45.63 |
| 623.85 | 37.15 | 190 | 2.05 | H | 623.85 | -59.85 | 0 | 1.0 | -58.85 | -13 | 45.85 |
| 630.59 | 36.70 | 192 | 1.95 | H | 630.59 | -60.3 | 0 | 1.0 | -59.3 | -13 | 46.3 |
| 1557.75 | 40.55 | 196 | 190 | H | 1557.75 | -56.45 | 6.2 | 2.29 | -60.36 | -13 | 47.36 |

PCS Band (Part 24E)

| Indicated | | Table Angle Degree | Test Antenna | | Substituted | | | | Absolute Level (dBm) | Limit (dBm) | Margin (dB) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Frequency (MHz) | S.A. Reading (dBµV) | | Height (m) | Polar (H/V) | Frequency (MHz) | Level (dBm) | Ant. Gain (dBi) | Cable Loss (dB) | | | |
| 30 MHz-10 GHz Middle Channel (Downlink) | | | | | | | | | | | |
| 1251.63 | 48.46 | 198 | 1.80 | H | 1251.63 | -44.84 | 6.0 | 2.05 | -52.79 | -13 | 39.56 |
| 1584.50 | 46.58 | 198 | 2.05 | V | 1584.50 | -51.72 | 6.2 | 2.29 | -54.63 | -13 | 41.23 |
| 1242.58 | 42.55 | 168 | 150 | V | 1242.58 | -56.05 | 6.0 | 2.05 | -58 | -13 | 45.23 |
| 623.25 | 37.05 | 190 | 2.05 | H | 623.25 | -59.4 | 0 | 1.0 | -58.94 | -13 | 45.34 |
| 447.54 | 38.20 | 185 | 1.86 | V | 447.54 | -58.0 3 | 0 | 0.3 | -58.6 | -13 | 45.5 |
| 459.40 | 38.46 | 187 | 1.85 | V | 459.40 | -58.2 | 0 | 0.3 | -58.34 | -13 | 45.64 |
| 620.19 | 36.65 | 176 | 2.01 | H | 620.19 | -60.5 | 0 | 1.0 | -59.25 | -13 | 46.55 |
| 1567.24 | 40.61 | 196 | 190 | H | 1567.24 | -56.59 | 6.2 | 2.29 | -60.1 | -13 | 47.54 |
| 30 MHz-10 GHz Middle Channel (Uplink) | | | | | | | | | | | |
| 1254.02 | 48.75 | 198 | 1.80 | H | 1254.02 | -44.4 | 6.0 | 2.05 | -52.73 | -13 | 40.25 |
| 1583.48 | 46.93 | 198 | 2.05 | V | 1583.48 | -51.2 | 6.2 | 2.29 | -54.26 | -13 | 41.78 |
| 1250.61 | 42.86 | 168 | 150 | V | 1250.61 | -56.5 | 6.0 | 2.05 | -57.68 | -13 | 45.2 |
| 456.12 | 38.50 | 185 | 1.86 | V | 456.12 | -58.1 3 | 0 | 0.3 | -57.93 | -13 | 45.45 |
| 458.38 | 38.56 | 187 | 1.85 | V | 458.38 | -58.54 | 0 | 0.3 | -57.96 | -13 | 45.48 |
| 622.23 | 37.49 | 190 | 2.05 | H | 622.23 | -59.3 | 0 | 1.0 | -58.73 | -13 | 46.25 |
| 619.17 | 37.35 | 176 | 2.01 | H | 619.17 | -60.5 | 0 | 1.0 | -59 | -13 | 46.52 |
| 1241.56 | 40.66 | 196 | 190 | H | 1241.56 | -56.9 | 6.2 | 2.29 | -59.89 | -13 | 47.41 |

# FCC §22.917(a) & §24.238(a) - BAND EDGES

## Applicable Standards

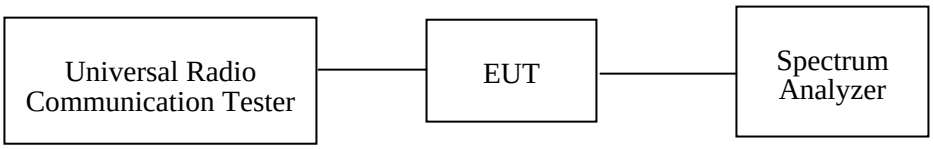
According to FCC §22.917(a), the power of any emissions outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB.

According to FCC §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.

## Test Procedure

The RF output of the transmitter was connected to the input of the spectrum analyzer through sufficient attenuation.

The center of the spectrum analyzer was set to block edge frequency, RBW set to 10 kHz.




## Test Equipment List and Details

| Manufacturer | Description | Model | Serial Number | Calibration Date | Calibration Due Date |
|---|---|---|---|---|---|
| Rohde & Schwarz | EMI Test Receiver | ESCI | 100224 | 2009-11-24 | 2010-11-23 |
| Rohde & Schwarz | Universal Radio Communication Tester | CMU200 | 109038 | 2010-06-11 | 2011-06-10 |

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

## Test Data

### Environmental Conditions

| | |
|---|---|
| **Temperature:** | 25 °C |
| **Relative Humidity:** | 56 % |
| **ATM Pressure:** | 100.0kPa |

*The testing was performed by Wayne Cheng on 2010-08-27.*

Please refer to the following tables and plots.

**CDMA, Cellular Band, Downlink:**

| Frequency (MHz) | Emission (dBm) | Limit (dBm) |
|---|---|---|
| 869.0 | -27.53 | -13 |
| 894.0 | -22.85 | -13 |

**CDMA, PCS Band, Downlink:**

| Frequency (MHz) | Emission (dBm) | Limit (dBm) |
|---|---|---|
| 1930.0 | -51.42 | -13 |
| 1990.0 | -52.00 | -13 |

**CDMA, Cellular Band, Uplink:**

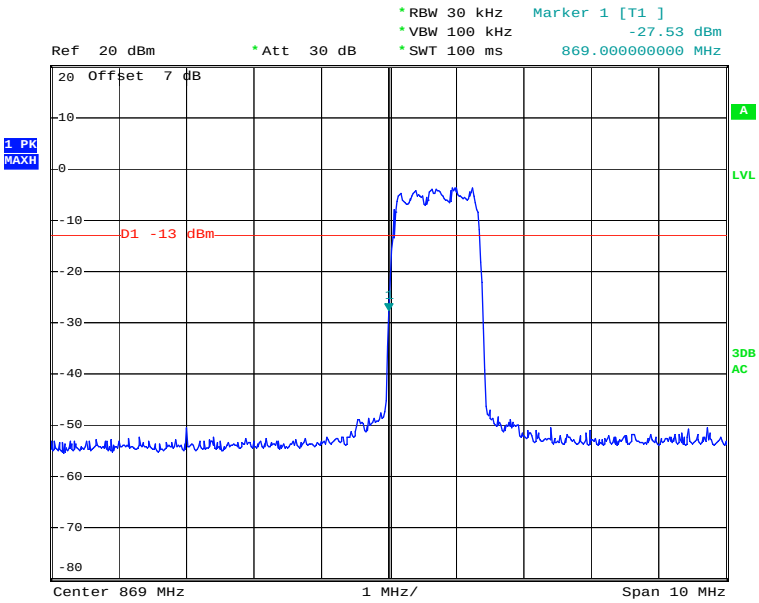
| Frequency (MHz) | Emission (dBm) | Limit (dBm) |
|---|---|---|
| 824.0 | -13.78 | -13 |
| 849.0 | -14.34 | -13 |

**CDMA, PCS Band, Uplink:**

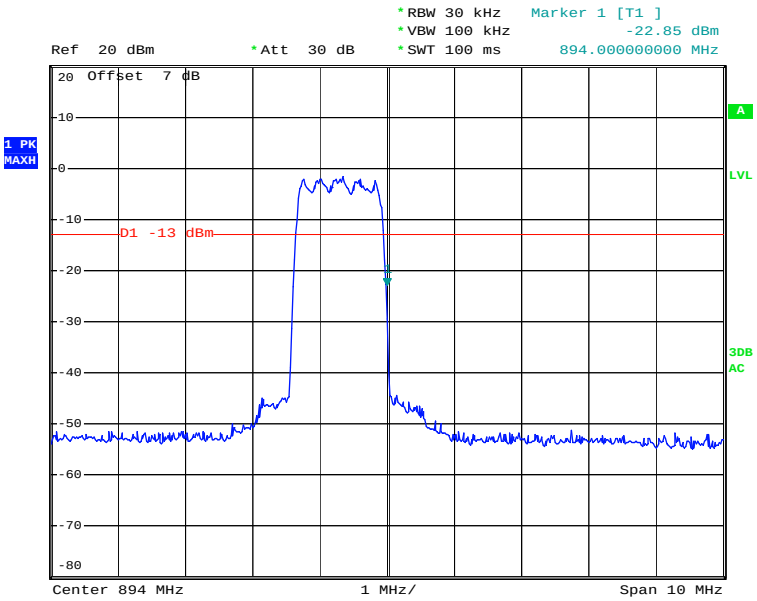
| Frequency (MHz) | Emission (dBm) | Limit (dBm) |
|---|---|---|
| 1850.0 | -29.23 | -13 |
| 1910.0 | -33.61 | -13 |

**CDMA, Cellular Band, Downlink:**

## Cellular Band, Lowest Channel

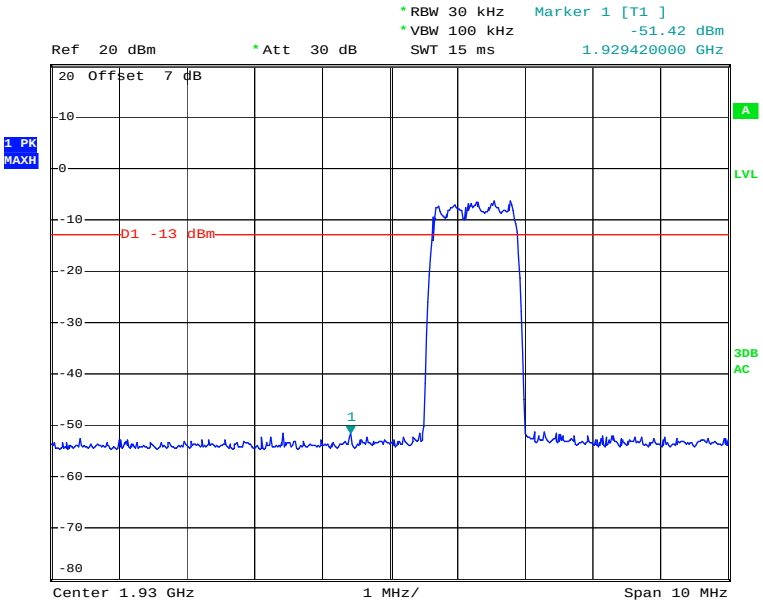



## Cellular Band, Highest Channel

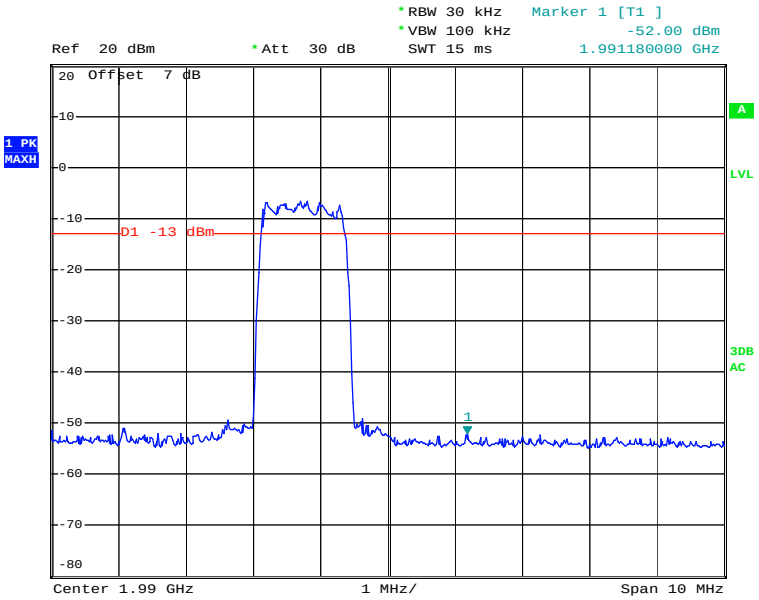


**CDMA, PCS Band, Downlink:**

## PCS Band, Lowest Channel

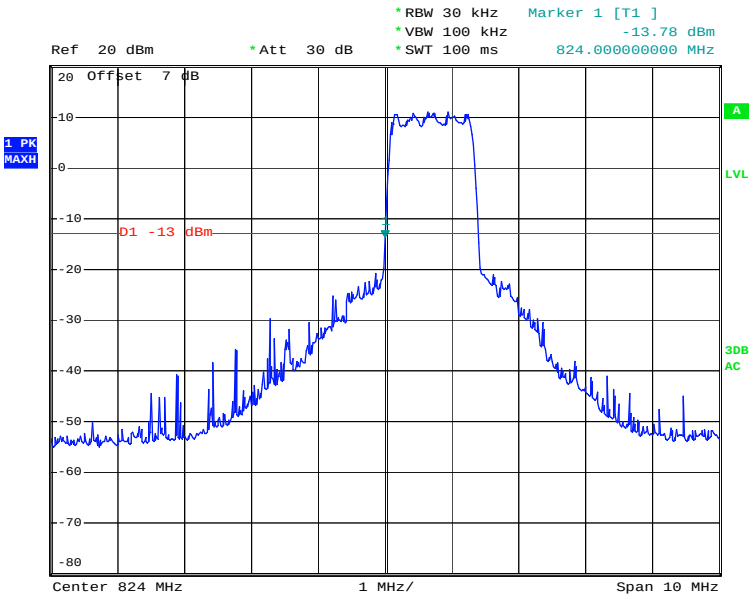



## PCS Band, Highest Channel

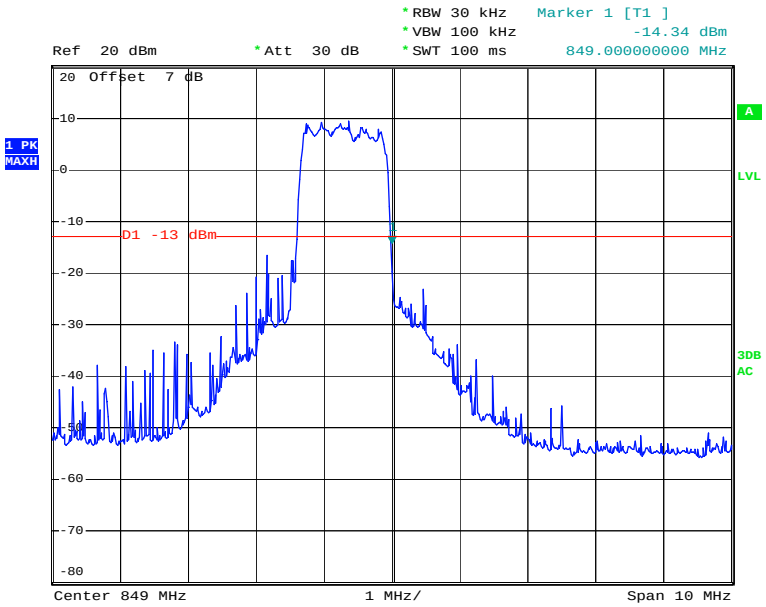


**CDMA, Cellular Band, Uplink:**

## Cellular Band, Lowest Channel

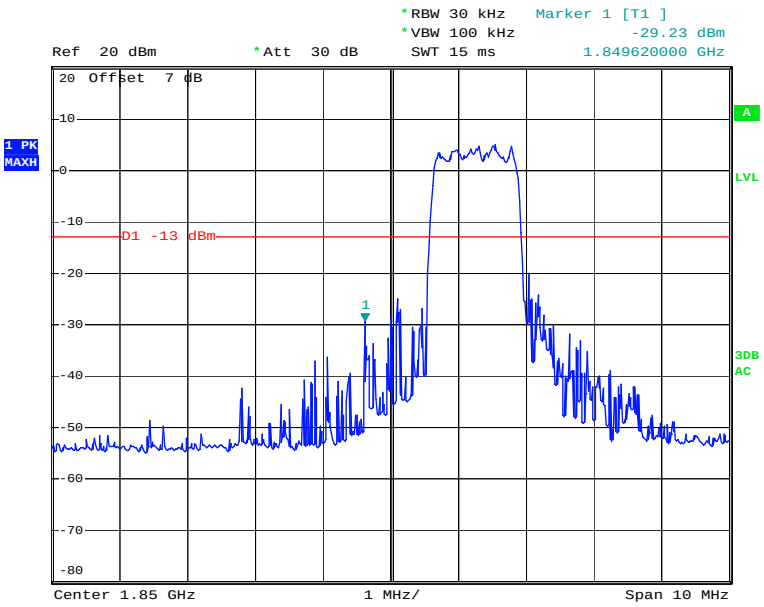



## Cellular Band, Highest Channel

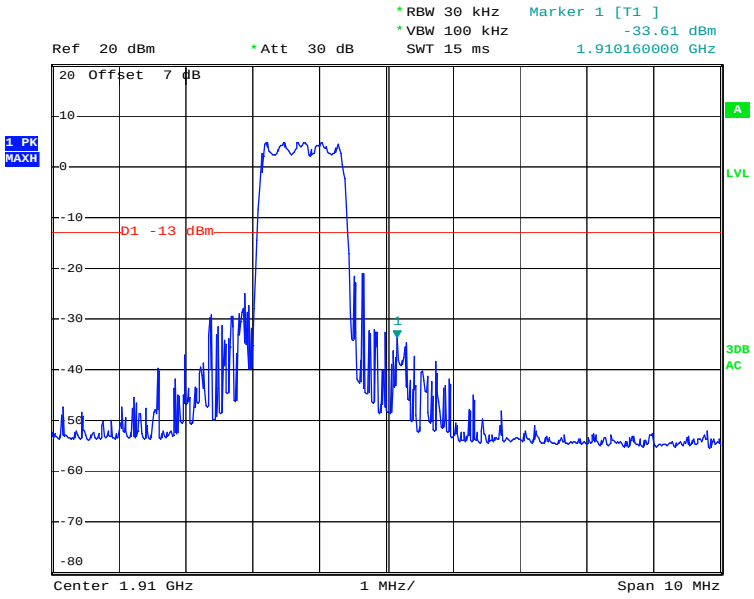


**CDMA, PCS Band, Uplink:**

## PCS Band, Lowest Channel




## PCS Band, Highest Channel



**GSM, Cellular Band, Downlink:**

| Frequency (MHz) | Emission (dBm) | Limit (dBm) |
|---|---|---|
| 869 | -42.67 | -13 |
| 894 | -40.46 | -13 |

**GSM, PCS Band, Downlink:**

| Frequency (MHz) | Emission (dBm) | Limit (dBm) |
|---|---|---|
| 1930 | -42.62 | -13 |
| 1990 | -41.24 | -13 |

**GSM, Cellular Band, Uplink:**

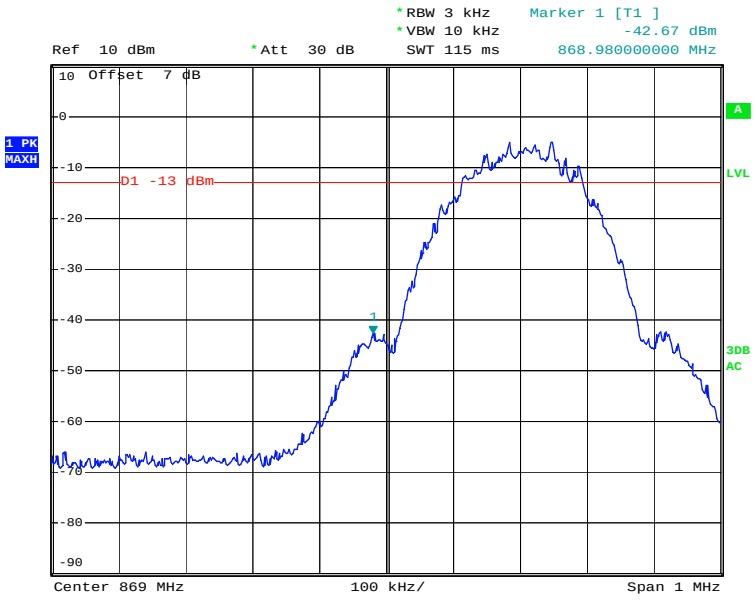
| Frequency (MHz) | Emission (dBm) | Limit (dBm) |
|---|---|---|
| 824 | -26.3 | -13 |
| 849 | -28.48 | -13 |

**GSM, PCS Band, Uplink:**

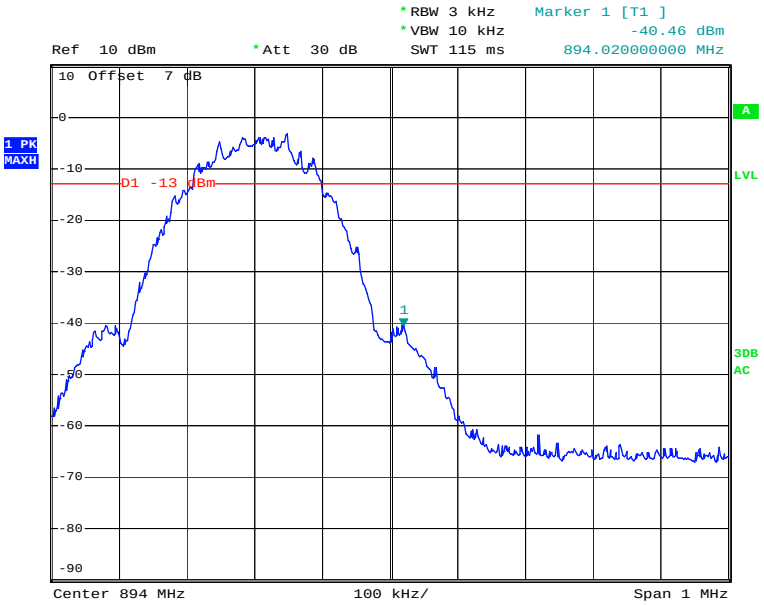
| Frequency (MHz) | Emission (dBm) | Limit (dBm) |
|---|---|---|
| 1850 | -25.86 | -13 |
| 1910 | -29.07 | -13 |

**GSM, Cellular Band, Downlink:**

## Cellular Band, Lowest Channel

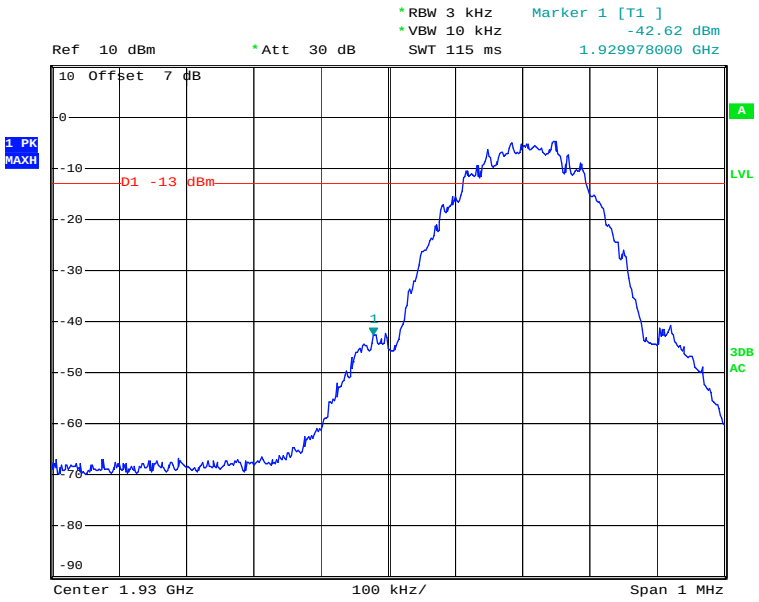



## Cellular Band, Highest Channel

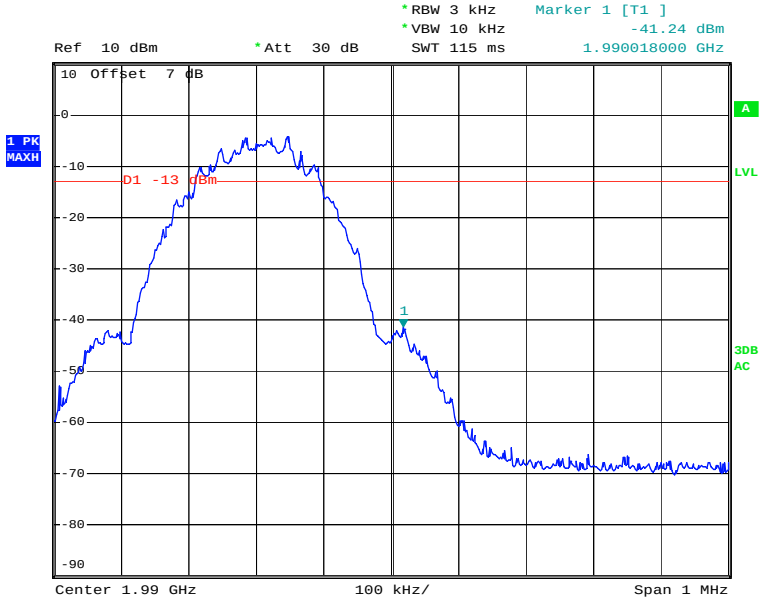


**GSM, PCS Band, Downlink:**

## PCS Band, Lowest Channel

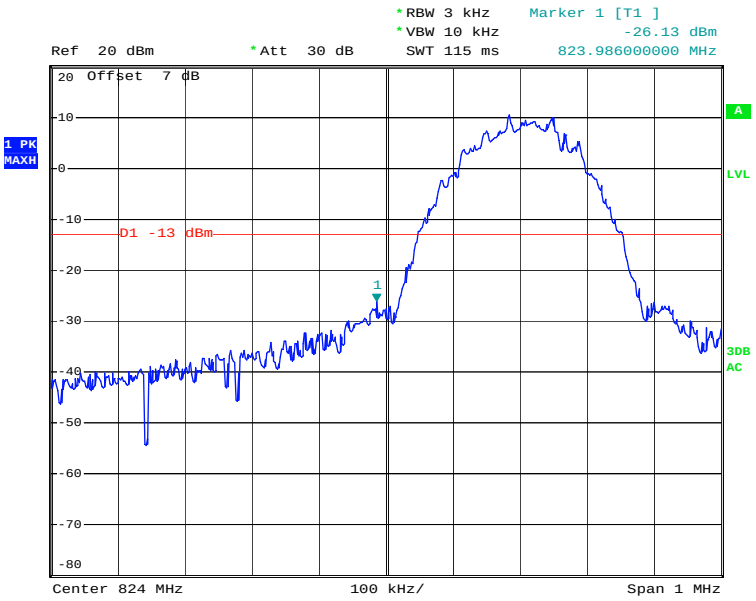



## PCS Band, Highest Channel

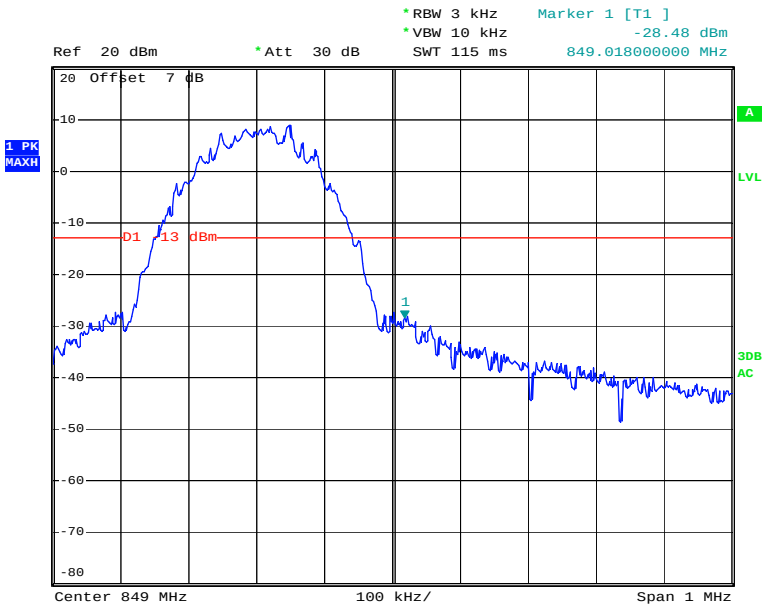


**GSM, Cellular Band, Uplink:**

## Cellular Band, Lowest Channel

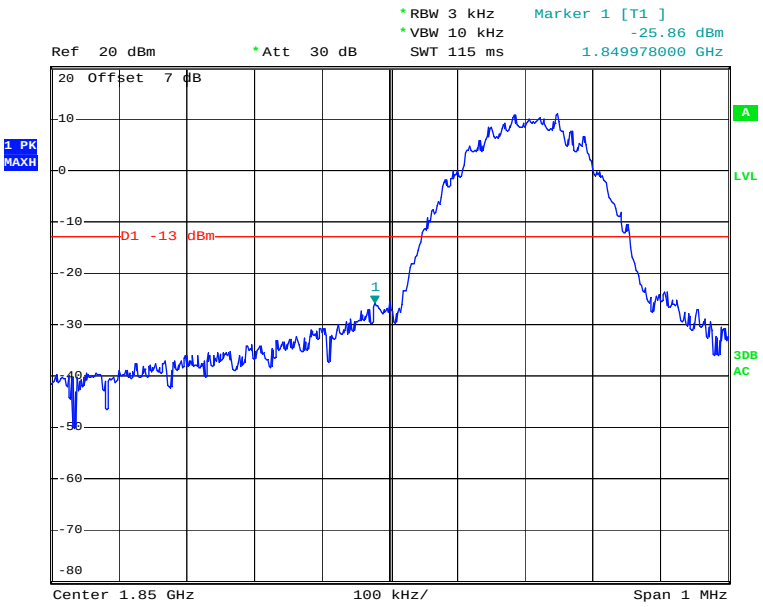



## Cellular Band, Highest Channel

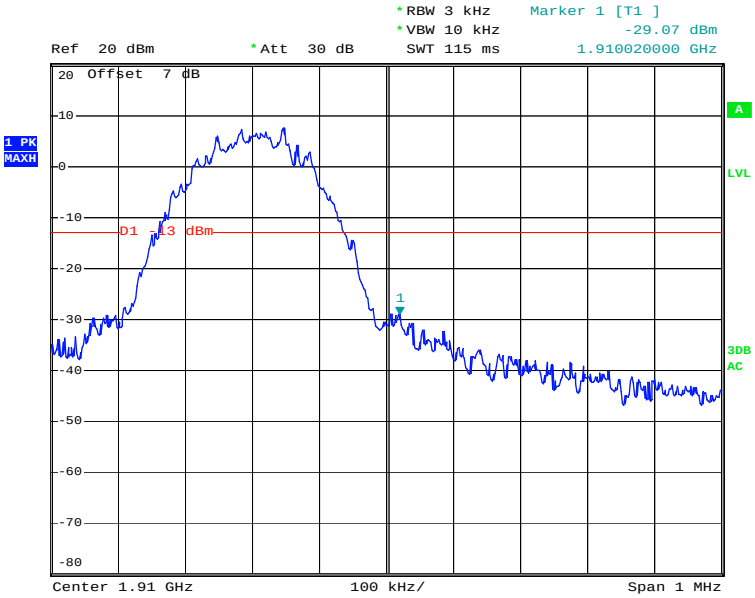


**GSM, PCS Band, Uplink:**

## PCS Band, Lowest Channel




## PCS Band, Highest Channel




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