# FCC Test Report

**Product Name: EV-DO Rev.A Rotatable USB Stick**

**Model Number: EC168**

**Report No: SYBH(R) 0302082008-3**
**FCC ID: QISEC168**


**Reliability Laboratory of Huawei Technologies Co., Ltd.**

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| | |
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**REPORT ON** FCC Test of HUAWEI EC168 EV-DO Rev.A Rotatable USB Stick

M/N: EC168

Report No: SYBH(R)0302082008-3

**REGULATION** **FCC CFR47 Part 2: Subpart J;**

**FCC CFR47 Part 24: Subpart E;**

**CONCLUSION** There are 7 items need to be tested, 7 items have been tested. The sample of the model completely meets the requirements

**Final Judgement: Pass**

| | | | |
|---|---|---|---|
| **General Manager** | **2008.9.25** | 张兴海 | |
| | Date | Name | signature |
| **Technical Responsibility For Area of Testing** | **2008.9.25** | 余辉 | |
| | Date | Name | signature |
| **Test Lab Engineer** | **2008.9.25** | 胡俊 | |
| | Date | Name | signature |

# Contents

# 1 Summary

The table below summarizes the measurements and results for the HUAWEI EC168 CDMA EV-DO Rev.A 1900M USB Stick. Detailed results and descriptions are shown in the following pages.

Table 1 Summary of results

| FCC Measurement Specification | FCC Limits Part(s) | Description | Result |
|---|---|---|---|
| 2.1046 | 24.232 | Effective Radiated Power of Transmitter | PASS |
| 2.1047 | | Modulation Characteristics | PASS |
| 2.1049 | | Occupied Bandwidth | PASS |
| 2.1051 | 24.238 | Band Edges Compliance | PASS |
| 2.1051 | 24.238 | Spurious Emission at Antenna Terminal | PASS |
| 2.1053 | 24.238 | Radiated Spurious Emission | PASS |
| 2.1055 | 24.235 | Frequency Stability | PASS |

Note： The Radiated Spurious Emissions' test results are shown in the EMC report.

# 2 Product Description

## 2.1 Production Information

### 2.1.1 General Description

HUAWEI EC168 CDMA EV-DO Rev.A USB Stick is subscriber equipment in the CDMA and CDMA2000 1xEV-DO Rev. A system, Supporting 800 MHz/1900 MHz frequency band. The USB Stick implements such functions as RF signal receiving / Transmitting, CDMA protocol processing, CDMA2000 1xEV-DORev. A protocol processing, high-rate packet data services etc. The USB Stick uses QSC6085 chipset and Zero-IF technologies.

### 2.1.2 Support function and Service

The USB Stick supports the function and service as follows:

Table 2 Service and Test mode List

| Service Name | Characteristic | Corresponding Test Mode | Note |
|---|---|---|---|
| data and SMS | Modulation: QPSK | TM1* | |
| data and SMS | Modulation: HPSK | TM3* | |
| Data(EV-DO) | Default Access Channel MAC | Subtype 0* | Modulation: HPSK |
| data(EV-DO) | Enhanced Access Channel MAC | Subtype 2* | The R-Data packet size determines the modulation format,<br><br>R-Data Packet Size：<br>128, 256, 512, 768 or 1024<br>Modulation: BPSK<br><br>R-Data Packet Size：<br>1536， 2048，3072，<br>4096，6144 or 8192<br>Modulation: QPSK<br><br>R-Data Packet Size：<br>12288<br>Modulation: 8-PSK |

Note: *The test conditions and settings are defined in ANSI/TIA-98-E section 1.3 , 3GPP2C.S0033

## 2.2 Modification Information

For original equipment, following table is not application.

Table 3 Modification Information

| Model Number | Board/Module | Original Version | New Version | Modify Information |
|---|---|---|---|---|
| Not applicable! | | | | |

# 3 Test Site Description

The test site of:
***Huawei Technologies Co. Ltd.***
***P.O. Box 518129***
***Huawei base, bantian,***
***Longgang District, Shenzhen, China***

The test site description has been submitted to FCC and registration granted under the registration number **97456** on March 11. 2003. The test site has been accredited by A2LA and the accredited number is **2174.01** in Jan of 2004.

## 3.1 Testing Period

The test have been performed during the period of

Aug.5, 2007 to Sep. 25, 2008

## 3.2 General Set up Description

The USB Stick can Support PCS Band，and Support the CDMA2000 1x standard and the CDMA2000 1xEV-DO Rev. A standard. During this measurement, the USB Stick works in CDMA / EV-DO mode and PCS Band

.

**CDMA:**
**TM1:** Forward Traffic Channel Radio Configuration 1, Reverse Traffic Channel Radio Configuration 1
**TM3:** Forward Traffic Channel Radio Configuration 3, Reverse Traffic Channel Radio Configuration 3

| Parameter | Units | Value |
|---|---|---|
| $\hat{I}or$ | dBm/1.23 MHz | -104 |
| $\frac{\text{Pilot Ec}}{I_{or}}$ | dB | -7 |
| $\frac{\text{Traffic Ec}}{I_{or}}$ | dB | -7.4 |

**EVDO:**

Current Physical Layer Subtype:

Subtype 0 * indicates that the protocol subtype assigned to the Access Channel MAC protocol is Default Access Channel MAC and its Subtype ID number is 0x0000.

Subtype 2 * indicates that the protocol subtype assigned to the Access Channel MAC protocol is Enhanced Access Channel MAC and its Subtype ID number is 0x0002

Note: *The test settings are defined in 3GPP2C.S0033.

# 4 Product Description

## 4.1 Technical Characteristics

### 4.1.1 Frequency Range

Table 4 Frequency Range

| | |
|---|---|
| Uplink band: | 1850 to 1910 MHz |
| Downlink band: | 1930 to 1990 MHz |

### 4.1.2 Channel Spacing / Separation

Table 5 Channel Spacing / Separation

| | |
|---|---|
| Channel spacing: | 50 kHz |
| Channel separation: | 1.25 MHz |

### 4.1.3 Type of Emission

Table 6 Type of Emission

| | |
|---|---|
| Emission Designation: | **1M25F9W** |

According to CFR 47 (FCC) part 2, subpart C, section 2.201 and 2.202

### 4.1.4 Environmental Requirements

Table 7 Environmental Requirements

| | |
|---|---|
| Minimum temperature: | - 10 °C |
| Maximum temperature: | + 55 °C |
| Relative Humidity: | 5％-95％RH |

### 4.1.5 Power Source

Table 8 Power Source

| | |
|---|---|
| DC voltage nominal: | ⎓ +5V; Supplied by USB port of Notebook |
| DC voltage range | ⎓ +4.75-5.25V |
| DC current maximal: | 500mA |

### 4.1.6 Tune-up Procedure

According to CFR (FCC) part 2, subpart 2, section 2.1033(c) (9).

Please reference the document Tune-up Procedure in TCF.

### 4.1.7 Applied DC Voltages and Currents

According to CFR (FCC) part 2, subpart 2, section 2.1033(c) (8).

The voltage and current in the final RF stage is:

Table 9 Applied RF module DC Voltages and Currents

| | |
|---|---|
| Voltage: | ⎓ +2.8V |
| Current: | 150mA According to CFR (FCC) part 2, subpart 2, section 2.1033(c) (8) |

## 4.2 EUT Identification List

### 4.2.1 Board Information

Table 10 Board Information

| | | |
|---|---|---|
| 1900MHz USB STICK | | |
| EC168 | | |
| Board and Module | | |
| Equipment Designation / Description | Serial Number | Remarks |
| Main board | KW2AC10871400152 | CE35TCPU |

### 4.2.2 Adapter Technical Data

Not Applicable.

### 4.2.3 Battery Technical Data

Not Applicable.

### 4.2.4 FCC Identification

**Grantee Code:** **QIS**
**Product Code:** **EC168**
**FCC Identification:** **QISEC168**

# 5 Main Test Instruments

Table 11 Main Test Equipments

| Equipment Description | Manufacturer | Model | Serial Number | Calibrated until (MM.DD.YYYY) |
|---|---|---|---|---|
| Test Receiver Display Unit | R&S | ESMI 804.8932.52 | 829214/011 | 04.22.2009 |
| Test Receiver RF Unit | R&S | ESMI 1032.5640.53 | 829550/008 | 04.22.2009 |
| Receiver | R&S | ESIB 26 | 100318 | 05.21.2009 |
| Receiver | R&S | ESCS30 | 830245/018 | 05.29.2009 |
| Pre-Amplifier | Agilent | 8447D | 2944A10146 | 05.21.2009 |
| Pre-Amplifier | Agilent | 83017A | 3950M00246 | 05.21.2009 |
| Loop Antenna | Schwarzbeck | FMZB1516 | 1516115 | 05.29.2009 |
| BiLog Antenna | Schaffner | CBL 6112B | 2747 | 02.25.2009 |
| BiLog Antenna | Schaffner | CBL 6112B | 2536 | 06.07.2009 |
| Horn Antenna | ETS-Lindgren | 3117 | 00062549 | 06.05.2009 |
| Horn Antenna | ETS-Lindgren | 3116 | 00031541 | 03.20.2009 |
| Dipole | Schwarzbeck | D69250-UHAP/D69250-VHAP | 979/917 | 08.27.2009 |
| Signal Generator | R&S | SMT06 | 830264/009 | 09.29.2009 |
| Signal Generator | R&S | SMR 40 | 100325 | 08.09.2009 |
| Artificial Mains Network | R&S | ENV4200 | 100001 | 07.20.2009 |
| Power Supply | Keithley | 2306 | 1045337 | 08.14.2009 |
| Climate Chamber | WEISS | WK11-180 | 58226049470010 | 12.09.2009 |
| Universal Radio Communication Tester | R&S | CMU200 | 108522 | 01.01.2009 |
| Universal Radio Communication Tester | Agilent | 8960 | GB46490162 | 6.24.2009 |
| Vector Signal Generator | R&S | SMU200A | 101394 | 9.29.2009 |
| Signal Analyzer | R&S | FSU26 | 1166.1660K26 | 8.21.2009 |
| Power Divider | R&S | 11667B | F048AXH049 | 5.23.2009 |

# 6 Transmitter Measurements

## 6.1 Effective Radiated Power of Transmitter (EIRP)

### 6.1.1 Test Conditions

Table 12 Test Conditions

| | |
|---|---|
| Preconditioning: | 0.5 hour |
| Measured at: | enclosure |
| Ambient temperature: | 22.5℃ |
| Relative humidity: | 55% |
| Test Configurations: | CDMA TM1 and TM3 at frequency B、M、T<br>EVDO Mode Subtype 0 and Subtype 2 at frequency B、M、T |

### 6.1.2 Test Specifications and Limits

#### 6.1.2.1 Specification

CFR 47 (FCC) part 2.1046 and part 24.232

#### 6.1.2.2 Supporting Standards

Table 13 Supporting Standards:

| | |
|---|---|
| ANSI/TIA-603-C:2004 | Land Mobile FM or PM Communications Equipment Measurement and Performance Standards |
| ANSI/TIA-98-E: 2003 | Recommended Minimum Performance Standards for cdma2000 Spread Spectrum Mobile Stations |

#### 6.1.2.3 Limits

Compliance with part 24.232, mobile/portable stations are limited to 2 watts EIRP peak power.
W(dBm)= 10*log ($W_{watts}$).

Table 14 Limits

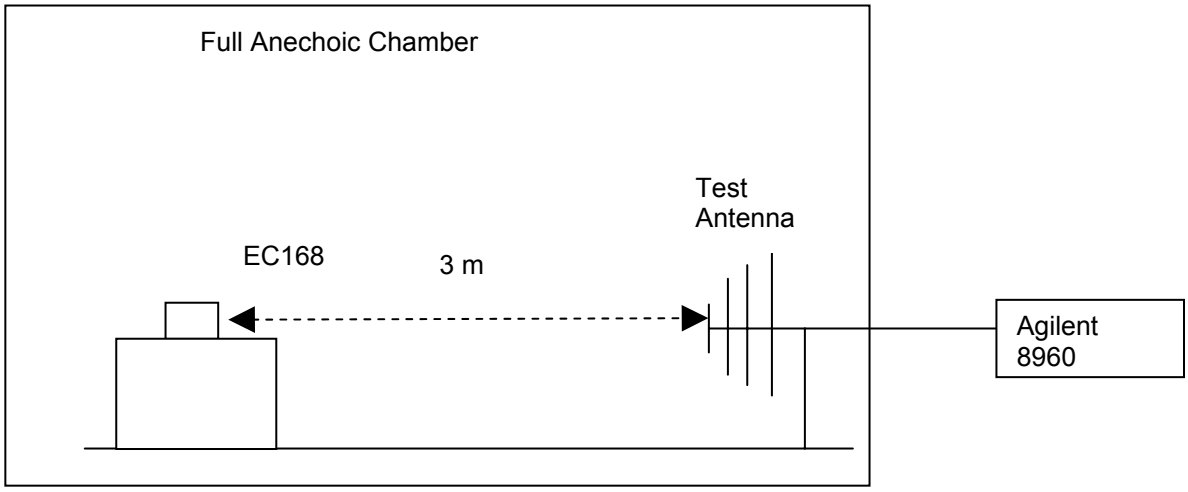
| | |
|---|---|
| Maximum Output Power (Watts) | < 2 Watts |
| Maximum Output Power (dBm) | < 33 dBm |

### 6.1.3 Test Method and Setup

(a) For transmitters other than single sideband, independent sideband and controlled carrier radiotelephone, EIRP shall be measured when the transmitter is adjusted in accordance with the tune-up procedure to give the values of current and voltage on the circuit elements specified in 2.1033(c)(8). Connect the E to the wireless communication tester Agilent 8960 via the air interface. The band class is set as PCS.
(b) Test the Radiated maximum output power by the Agilent 8960 received from test antenna.
(c) Use substitution method to verify the maximum output power. The EUT is substituted by a dipole antenna. The dipole is connected to a signal generator. And then adjust the output level of the signal generator to get the same received power recorded in step (b) on Agilent 8960, and record the power level of Signal Generator. Of course, the cable loss at the test frequency should be compensated.

## Test setup

### Step 1: Pre-test




### Step 2: Substitution method to verify the maximum EIRP

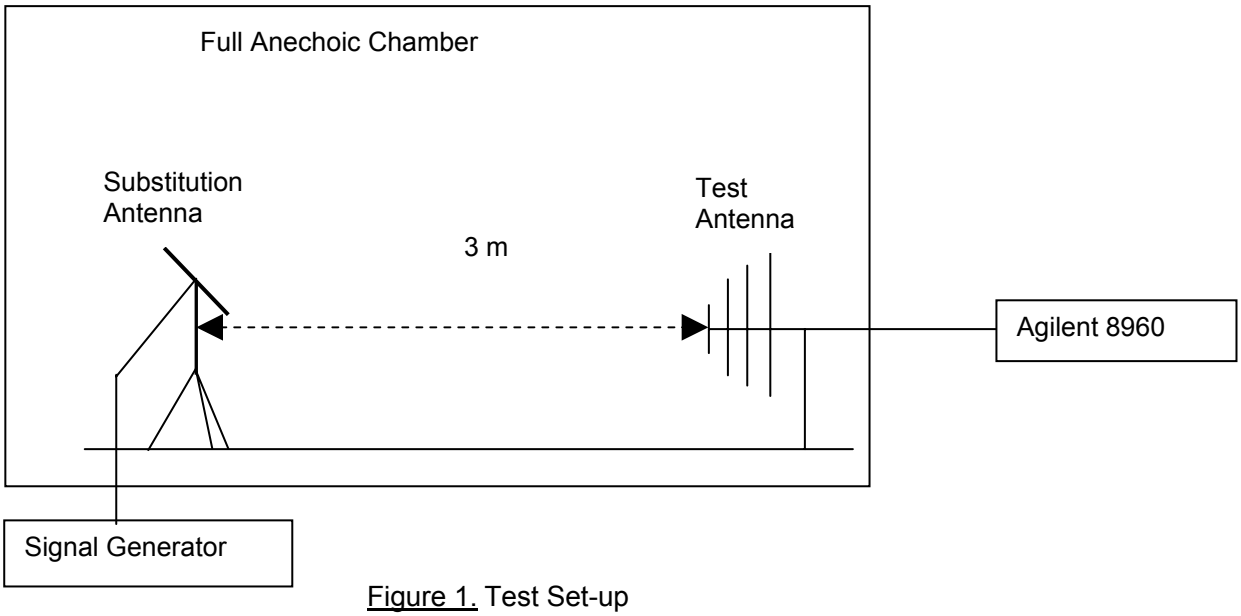



Figure 1. Test Set-up

NOTE: Effective isotropically radiated power (EIRP) refers to the radiation power output of the EUT, assuming all emissions are radiated from omnidirectional antenna.
There is a constant difference of 2.15 dB between EIRP and ERP.
EIRP (dBm) =ERP (dBm) + 2.15 (ITU-R Recommendation SM.329-10).

### 6.1.4 Measurement Results

Table 15 Measurement Results

| TEST CONDITIONS | RF Output Power | | |
|---|---|---|---|
| | Channel25(B)<br>1851.25MHz | Channel600(M)<br>1880.0MHz | Channel1175(T)<br>1908.75MHz |

| | | dBm | | dBm | | dBm | |
|---|---|---|---|---|---|---|---|
| | | Measured | Limit | Measured | Limit | Measured | Limit |
| TM1 | $T_{nom}$ (25 °C) $V_{nom}$ (5.0 V) | 25.62 | 33 | 25.53 | 31.3 | 25.47 | 33 |
| TM3 | $T_{nom}$ (25 °C) $V_{nom}$ (5.0 V) | 25.59 | 33 | 25.36 | 31.3 | 25.69 | 33 |
| Subtype 0 | $T_{nom}$ (25 °C) $V_{nom}$ (5.0 V) | 25.59 | 33 | 25.55 | 31.3 | 25.37 | 33 |
| Subtype 2 | $T_{nom}$ (25 °C) $V_{nom}$ (5.0 V) | 25.49 | 33 | 25.77 | 31.3 | 25.69 | 33 |
| | | | | | | | |

### 6.1.4.1 Substitution Results

Table 16 Substitution Results

| Test Mode | Freq. [MHz] | Meas. Level [dBm] | Substitution Antenna Type | SGP [dBm] | Substitution Gain [dBi] | Cable Loss [dB] | Substitution Level (EIRP) [dBm] | Limit [dBm] | **Result** |
|---|---|---|---|---|---|---|---|---|---|
| TM1 | 1851.25 | 25.62 | Dipole Ant. | 28.02 | -1.93 | 0.6 | 25.49 | 33 | **Pass** |
| TM1 | 1880.00 | 25.53 | Dipole Ant. | 27.84 | -1.73 | 0.6 | 25.51 | 33 | **Pass** |
| TM1 | 1908.75 | 25.47 | Dipole Ant. | 27.86 | -1.93 | 0.6 | 25.33 | 33 | **Pass** |
| TM3 | 1851.25 | 25.59 | Dipole Ant. | 28.09 | -1.93 | 0.6 | 25.56 | 33 | **Pass** |
| TM3 | 1880.00 | 25.36 | Dipole Ant. | 27.65 | -1.73 | 0.6 | 25.32 | 33 | **Pass** |
| TM3 | 1908.75 | 25.69 | Dipole Ant. | 28.20 | -1.93 | 0.6 | 25.67 | 33 | **Pass** |
| Subtype 0 | 1851.25 | 25.59 | Dipole Ant. | 28.10 | -1.93 | 0.6 | 25.57 | 33 | **Pass** |
| Subtype 0 | 1880.00 | 25.55 | Dipole Ant. | 27.84 | -1.73 | 0.6 | 25.51 | 33 | **Pass** |
| Subtype 0 | 1908.75 | 25.37 | Dipole Ant. | 27.85 | -1.93 | 0.6 | 25.32 | 33 | **Pass** |
| Subtype 2 | 1851.25 | 25.49 | Dipole Ant. | 28.00 | -1.93 | 0.6 | 25.47 | 33 | **Pass** |
| Subtype 2 | 1880.00 | 25.77 | Dipole Ant. | 28.04 | -1.73 | 0.6 | 25.71 | 33 | **Pass** |
| Subtype 2 | 1908.75 | 25.69 | Dipole Ant. | 28.19 | -1.93 | 0.6 | 25.66 | 33 | **Pass** |

Note: a, For get the EIRP (Efficient Radiated Power) in substitution method, the following formula should take to calculate it,

EIRP [dBm] = SGP [dBm] – Cable Loss [dB] + Gain [dBi]

NOTE: SGP- Signal Generator Level

b, A CDMA signal with bandwidth of 1.25MHz is created by the vector generator R&S SMU200A..

c, RBW=10kHz, VBW=300kHz, and integrated by the instrument to 1.25Hz.

### 6.1.5 Conclusion

The equipment **PASSED** the requirement of this clause.

## 6.2 Conducted Power of Transmitter

### 6.2.1 Test Conditions

Table 17 Test Conditions

| | |
|---|---|
| Preconditioning: | 0.5 hour |
| Measured at: | antenna connector |
| Ambient temperature: | 23.5℃ |
| Relative humidity: | 55% |
| Test Configurations: | CDMA TM1 and TM3 at frequency B、M、T<br>EVDO Mode Subtype 0 and Subtype 2 at frequency B、M、T |

### 6.2.2 Test Specifications and Limits

#### 6.2.2.1 Specification

CFR 47 (FCC) part 2.1046 and part 24.232

#### 6.2.2.2 Supporting Standards

Table 18 Supporting Standards:

| | |
|---|---|
| ANSI/TIA-603-C:2004 | Land Mobile FM or PM Communications Equipment Measurement and Performance Standards |
| ANSI/TIA-98-E: 2003 | Recommended Minimum Performance Standards for cdma2000 Spread Spectrum Mobile Stations |

#### 6.2.2.3 Limits

Compliance with part 24.232, in no any case may the peak power of a mobile station transmitter exceed 2 W. The calculated longitude EIRP by following formula:

EIRP(dBm)= 10*log ($EIRP_{in\ watts}$).

And for conducted power, we can use Antenna Gain to calculate the limit. So the conducted power:

$P_{cod.}$(dBm)=EIRP(dBm)- Gain(dBi).
and Gain (dBi)= Gain(dBd)+ 2.15dB

Table 19 Limits

| | |
|---|---|
| Maximum Output Power (Watts) | < 2 Watts=33 dBm |
| Antenna Gain(dBi): | 2.11dBi |
| Maximum Conducted Output Power (dBm) | < 30.89dBm |

### 6.2.3 Test Method and Setup

(a)For transmitters other than single sideband, independent sideband and controlled carrier radiotelephone, Conducted maximum power shall be measured when the transmitter is adjusted in

accordance with the tune-up procedure to give the values of current and voltage on the circuit elements specified in 2.1033(c)(8). Connect the USB Stick to the wireless communication tester Agilent 8960 via the antenna connector. The band class is set as US PCS.
(b)Test the Conducted maximum output power by the CMU200.

## Test setup

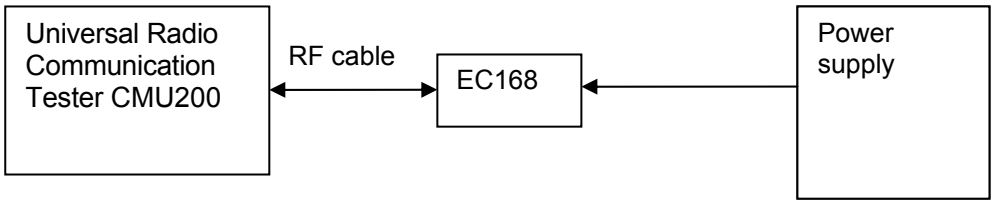



Figure 2. Test Set-up

### 6.2.4 Measurement Results

Table 20 Measurement Results

| TEST CONDITIONS | | RF Output Power | | | | | |
|---|---|---|---|---|---|---|---|
| | | Channel25(B) 1851.25MHz | | Channel600(M) 1880.0MHz | | Channel1175(T) 1908.75MHz | |
| | | dBm | | dBm | | dBm | |
| | | Measured | Limit | Measured | Limit | Measured | Limit |
| TM1 | $T_{nom}$ (25 °C) $V_{nom}$ (5.0 V) | 23.52 | 30.89 | 23.69 | 30.89 | 23.63 | 30.89 |
| TM3 | $T_{nom}$ (25 °C) $V_{nom}$ (5.0 V) | 23.38 | 30.89 | 23.53 | 30.89 | 23.66 | 30.89 |
| Subtype 0 | $T_{nom}$ (25 °C) $V_{nom}$ (5.0 V) | 23.67 | 30.89 | 23.55 | 30.89 | 23.66 | 30.89 |
| Subtype 2 | $T_{nom}$ (25 °C) $V_{nom}$ (5.0 V) | 23.57 | 30.89 | 23.66 | 30.89 | 23.41 | 30.89 |
| | | | | | | | |

### 6.2.5 Conclusion

The equipment **PASSED** the requirement of this clause.

## 6.3 Modulation Characteristics

### 6.3.1 Test Conditions

Table 21 Test Conditions

| | |
|---|---|
| Preconditioning: | 0.5 hour |
| Measured at: | Antenna connector |
| Ambient temperature: | 22.5 °C |
| Relative humidity: | 54 % |
| Test Configurations: | CDMA mode TM1 and TM3 at frequency M<br>EVDO mode Subtype 0 and Subtype 2 at frequency M |

### 6.3.2 Test Specifications and Limits

#### 6.3.2.1 Specification

CFR 47 (FCC) part 2.1047 and part 24 subpart E

#### 6.3.2.2 Supporting Standards

Table 22 Supporting Standards:

| | |
|---|---|
| ANSI/TIA-603-C: 2004 | Land Mobile FM or PM Communications Equipment Measurement and Performance Standards |
| ANSI/TIA-98-E: 2003 | Recommended Minimum Performance Standards for cdma2000 Spread Spectrum Mobile Stations. |

#### 6.3.2.3 Limits

No specific modulation characteristics requirement limits in part 2.1047 and part 24 subpart E.

Table 23 Limits

| | |
|---|---|
| Limits | Not applicable |

### 6.3.3 Test Method and Setup

Connect the USB STICK to Universal Radio Communication Tester CMU200 via the antenna connector. The band class is set as PCS; the USB Stick's output is matched with 50 Ω load, test method was according to ANSI/TIA-98-E and. The waveform quality and constellation of the USB STICK was tested.

**Test setup**

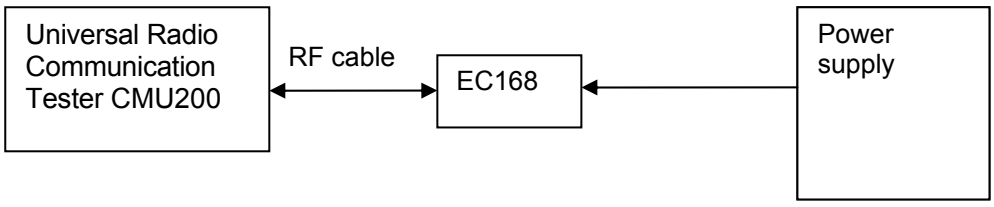


Figure 3. Test Set-up

### 6.3.4 Measurement Results

Table 24 Measurement Results

| TEST CONDITIONS | | Modulation Characteristic | |
|---|---|---|---|
| | | Channel600(M)<br>1880.0MHz | |
| | | Measured | |
| | | CDMA<br>TM1 & TM3 | EVDO Mode<br>Subtype 0 & Subtype2 |
| $T_{nom}$ (25 °C) | $V_{nom}$ (5.0V) | Refer to Appendix A | Refer to Appendix A |
| | | | |

### 6.3.5 Conclusion

The equipment **PASSED** the requirement of this clause.

For the measurement results refer to appendix A.

## 6.4 Occupied Bandwidth

### 6.4.1 Test Conditions

Table 25 Test Conditions

| | |
|---|---|
| Preconditioning: | 0.5 hour |
| Measured at: | Antenna connector |
| Ambient temperature: | 25 °C |
| Relative humidity: | 54 % |
| Test Configurations: | CDMA TM1 and TM3 at frequency B、M、T<br>EVDO Mode Subtype 0 and Subtype 2 at frequency B、M、T |

### 6.4.2 Test Specifications and Limits

#### 6.4.2.1 Specification

CFR 47 (FCC) part 2.1049 and part 24 subpart E

#### 6.4.2.2 Supporting Standards

Table 26 Supporting Standards:

| | |
|---|---|
| ANSI/TIA-603-C: 2004 | Land Mobile FM or PM Communications Equipment Measurement and Performance Standards |
| ANSI/TIA-98-E: 2003 | Recommended Minimum Performance Standards for cdma2000 Spread Spectrum Mobile Stations. |

#### 6.4.2.3 Limits

No specific occupied bandwidth requirement in part 24 subpart E, but the occupied bandwidth was defined in part 2.1049: the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission shall be measured.

Table 27 Limits

| | |
|---|---|
| Upper /lower frequency limits | 0.5% of the mean power |

### 6.4.3 Test Method and Setup

USB Stick was connected to the wireless signal analyzer R&S FSU26 via the one RF connector. The band class is set as PCS; USB Stick was controlled to transmit maximum power. Measure and record the occupied bandwidth of the USB Stick by the R&S FSU26.

The OBW, that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission shall be measured under the following conditions as applicable:

Refer to 47CFR part2.1049 section (g)&(h).
(g) Transmitter in which the modulating base band comprises not more than three independent channels - when modulated by the full complement of signals for which the transmitter is rated. The

level of modulation for each channel should be set to that prescribed in rule parts applicable to the services for which the transmitter is intended. If specific modulation levels are not set forth in the rules, the tests should provide the manufacturer's maximum rated condition.
(h) Transmitters employing digital modulation techniques - when modulated by an input signal such that its amplitude and symbol rate represent the maximum rated conditions under which the equipment will be operated. The signal shall be applied through any filter networks, pseudorandom generators or other devices required in normal service. Additionally, the occupied bandwidth shall be shown for operation with any devices used for modifying the spectrum when such devices are optional at discretion of the user.

Measurement bandwidth (RBW): 30 kHz (Resolution bandwidth)
Video bandwidth (VBW): 300 kHz

## Test Set-up

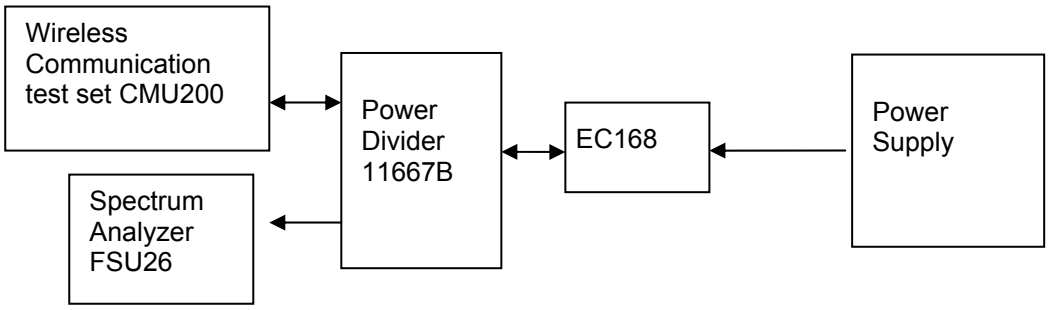



Figure 4. Test Set-up

### 6.4.4 Measurement Results

Table 28 Measurement Results

| TEST CONDITIONS | | Occupied Bandwidth | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Channel25(B) 1851.25MHz | | | | Channel600 (M) 1880Mhz | | | | Channel1175(T) 1908.75MHz | | | |
| | | Measured (MHz) | | | | Measured (MHz) | | | | Measured (MHz) | | | |
| | | CDMA | | EVDO | | CDMA | | EVDO | | CDMA | | EVDO | |
| | | TM1 | TM3 | Subtype 0 | Subtype 2 | TM1 | TM3 | Subtype 0 | Subtype 2 | TM1 | TM3 | Subtype 0 | Subtype 2 |
| $T_{nom}$ (25 °C) | $V_{nom}$ (5.0 V) | 1.28 | 1.28 | 1.28 | 1.29 | 1.28 | 1.28 | 1.28 | 1.29 | 1.28 | 1.28 | 1.29 | 1.29 |

### 6.4.5 Conclusion

The equipment **PASSED** the requirement of this clause.
For the measurement results refer to appendix B.

## 6.5 Band Edges Compliance

### 6.5.1 Test Conditions

Table 29 Test Conditions

| | |
|---|---|
| Preconditioning: | 0.5 hour |
| Measured at: | Antenna connector |
| Ambient temperature: | 25°C |
| Relative humidity: | 55 % |
| Test Configurations: | CDMA TM1 and TM3 at frequency B、T<br>EVDO Mode Subtype 0 and Subtype 2 at frequency B、T |

### 6.5.2 Test Specifications and Limits

#### 6.5.2.1 Specification

CFR 47 (FCC) part 2.1051 and part 24.238

#### 6.5.2.2 Supporting Standards

Table 30 Supporting Standards:

| | |
|---|---|
| ANSI/TIA-603-C: 2004 | Land Mobile FM or PM Communications Equipment Measurement and Performance Standards |
| ANSI/TIA-98-E: 2003 | Recommended Minimum Performance Standards for cdma2000 Spread Spectrum Mobile Stations. |

#### 6.5.2.3 Limits

Compliance with part 24.238, all spurious emission must be attenuated below the transmitter power by at least 43 +10 $\log_{10}$ P. (Whereas P is the rated power of the EUT).

Table 31 Limits

| | |
|---|---|
| Rated Power: | 24 dBm |
| Required attenuation: | 43+10log (0.25) = 37 , 24 dBm – 37 dB |
| Absolute level | - 13 dBm |

### 6.5.3 Test Method and Setup

USB Stick was connected to the wireless signal analyzer R&S FSU26 via the one RF connector, the band class is set as PCS. USB Stick was controlled to transmit maximum power. Measure and record band edges compliance of the USB Stick by the R&S FSU26.

RBW of 20 kHz (1% of 2MHz) was used up to 5MHz away from the band edge. So the FCC rules specify that RBW of 1MHz for measurements of emissions >1MHz away from the band edges ,the limit was adjusted with -13dBm to -30dBm to compensate for the reduced measurement bandwidth.

**Test Set-up**

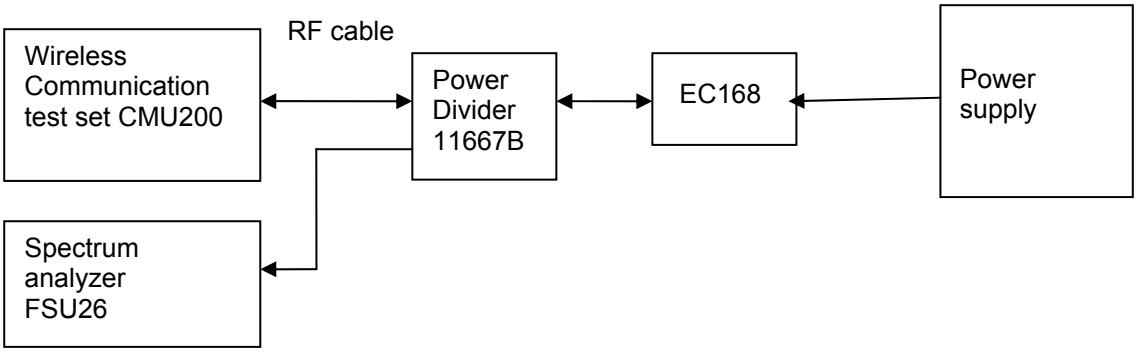



Figure 5. Test Set-up

### 6.5.4 Measurement Results

Table 32 Measurement Results outside Band Edges-- Single Carrier

| Band | Frequency of Band edges [MHz] | Channel Number | Test Mode | Power [dBm] | Spurious Level measured [dBm] | FCC limit | Result |
|---|---|---|---|---|---|---|---|
| US PCS | $T_{nom}$ (25 °C), $V_{nom}$ (5.0 V) | | | | | | |
| | 1850 | 25 (B) | TM1 & TM3 | 24 | <-13(See appendix C) | - 13 dBm | Pass |
| | 1910 | 1175 (T) | TM1 & TM3 | 24 | <-13(See appendix C) | - 13 dBm | Pass |

| Band | Frequency of Band edges [MHz] | Channel Number | Test Mode | Power [dBm] | Spurious Level measured [dBm] | FCC limit | Result |
|---|---|---|---|---|---|---|---|
| US PCS | $T_{nom}$ (25 °C), $V_{nom}$ (5.0 V) | | | | | | |
| | 1850 | 25 (B) | Subtype 0 and Subtype 2 | 24 | <-13(See appendix C) | - 13 dBm | Pass |
| | 1910 | 1175 (T) | Subtype 0 and Subtype 2 | 24 | <-13(See appendix C) | - 13 dBm | Pass |

### 6.5.5 Conclusion

The equipment **PASSED** the requirement of this clause.
For the measurement results refer to appendix C.

## 6.6 Spurious Emission at Antenna Terminal

### 6.6.1 Test Conditions

Table 33 Test Conditions

| | |
|---|---|
| Preconditioning: | 0.5 hour |
| Measured at: | Antenna connector |
| Ambient temperature: | 20°C |
| Relative humidity: | 50 % |
| Test Configurations: | TM1 and TM3 at frequency B、M、T<br>EVDO Mode Subtype 0 and Subtype 2 at frequency B、M、T |

### 6.6.2 Test Specifications and Limits

#### 6.6.2.1 Specification

CFR 47 (FCC) part 2.1051 and part 24.238

#### 6.6.2.2 Supporting Standards

Table 34 Supporting Standards:

| | |
|---|---|
| ANSI/TIA-603-C: 2004 | Land Mobile FM or PM Communications Equipment Measurement and Performance Standards |
| ANSI/TIA-98-E: 2003 | Recommended Minimum Performance Standards for cdma2000 Spread Spectrum Mobile Stations. |

#### 6.6.2.3 Limits

Compliance with part 24.238, all spurious emission must be attenuated below the transmitter power by at least 43 +10 $\log_{10}$ P. (Whereas P is the rated power of the EUT).

Table 35 Limits

| | |
|---|---|
| Rated Power: | 24 dBm |
| Required attenuation: | 43+10log (0.25) = 37 , 24 dBm – 37 dB |
| Absolute level | - 13 dBm |

### 6.6.3 Test Method and Setup

USB Stick was connected to the wireless signal analyzer R&S FSU26 via the one RF connector, the band class is set as PCS. USB Stick was controlled to transmit maximum power.
Measure and record the Conducted Spurious Emission of the USB Stick by the R&S FSU26.

According to part 24.238, the defined measurement bandwidth as following:

24.238 (b) Measurement procedure: Compliance with these provisions is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or greater.

Measurement bandwidth (RBW) for 9 kHz up to 150 kHz: 1 kHz;

Measurement bandwidth (RBW) for 150kHz up to 30MHz: 10kHz;
Measurement bandwidth (RBW) for 30MHz up to 1GHz: 100kHz;
Measurement bandwidth (RBW) for 1GHz up to 12.75GHz: 1MHz;

## Test Set-up

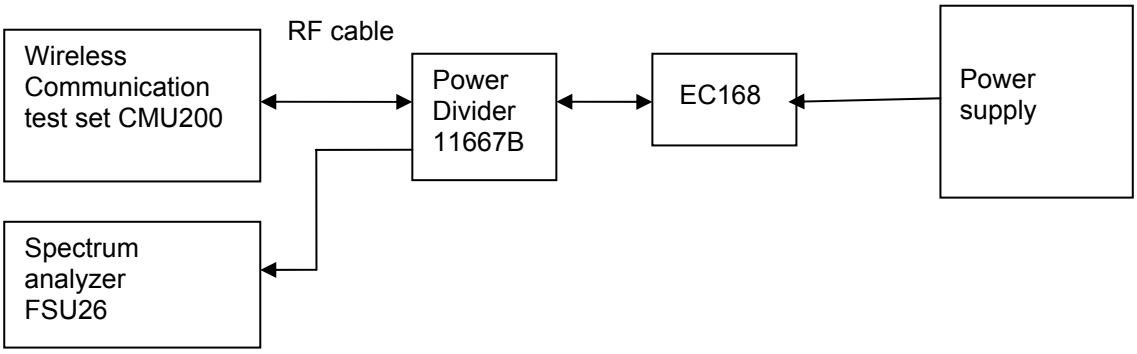



Figure 6. Test Set-up

### 6.6.4 Measurement Results

Table 36 Measurement Results

| Channel Number | Test Mode | Test Range (Frequency) | Output Power [dBm] | Spurious Level measured [dBm] | FCC limit | Result |
|---|---|---|---|---|---|---|
| Channel 25(B) | TM1 | 9 kHz ~20GHz | 24 | <- 13 dBm (See appendix D) | - 13 dBm | Pass |
| | TM3 | 9 kHz ~20GHz | 24 | <- 13 dBm (See appendix D) | - 13 dBm | Pass |
| | Subtype 0 | 9 kHz ~20GHz | 24 | <- 13 dBm (See appendix D) | - 13 dBm | Pass |
| | Subtype 2 | 9 kHz ~20GHz | 24 | <- 13 dBm (See appendix D) | - 13 dBm | Pass |
| Channel 600(M) | TM1 | 9 kHz ~20GHz | 24 | <- 13 dBm (See appendix D) | - 13 dBm | Pass |
| | TM3 | 9 kHz ~20GHz | 24 | <- 13 dBm (See appendix D) | - 13 dBm | Pass |
| | Subtype 0 | 9 kHz ~20GHz | 24 | <- 13 dBm (See appendix D) | - 13 dBm | Pass |
| | Subtype 2 | 9 kHz ~20GHz | 24 | <- 13 dBm (See appendix D) | - 13 dBm | Pass |
| Channel 1175(T) | TM1 | 9 kHz ~20GHz | 24 | <- 13 dBm (See appendix D) | - 13 dBm | Pass |
| | TM3 | 9 kHz ~20GHz | 24 | <- 13 dBm (See appendix D) | - 13 dBm | Pass |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Subtype 0 | 9 kHz ~20GHz | 24 | <- 13 dBm (See appendix D) | - 13 dBm | Pass |
| | Subtype 2 | 9 kHz ~20GHz | 24 | <- 13 dBm (See appendix D) | - 13 dBm | Pass |

### 6.6.5 Conclusion

The equipment **PASSED** the requirement of this clause.
For the measurement results refer to appendix D.

## 6.7 Frequency Stability

### 6.7.1 Test Conditions

Table 37 Test Conditions

| | |
|---|---|
| Preconditioning: | 0.5 hour |
| Measured at: | Antenna connector |
| Ambient temperature: | See below |
| Relative humidity: | 56 % at 25 °C |
| Test Configurations: | TM1 and TM3 at frequency M<br>EVDO Mode Subtype 0 and Subtype 2 at frequency M |

### 6.7.2 Test Specifications and Limits

#### 6.7.2.1 Specification

CFR 47 (FCC) part 2.1055 and part 24.235

#### 6.7.2.2 Supporting Standards

Table 38 Supporting Standards:

| | |
|---|---|
| ANSI/TIA-603-C: 2004 | Land Mobile FM or PM Communications Equipment Measurement and Performance Standards |
| ANSI/TIA-98E: 2003 | Recommended Minimum Performance Standards for cdma2000 Spread Spectrum Mobile Stations. |

#### 6.7.2.3 Limits

No specific frequency stability requirement in part 2.1055 and part 24.235.

### 6.7.3 Test Method and Setup

The frequency stability shall be measured with variation of ambient temperature as follows:
(1) From –30 ° to +50 ° centigrade for all equipment except that specified in subparagraphs
(2) and (3) of paragraph 2.1055

(b) Frequency measurements shall be made at the extremes of the specified temperature range and at intervals of not more than $10^{o}$ centigrade through the range. A period of time sufficient to stabilize all of the components of the oscillator circuit at each temperature level shall be allowed prior to frequency measurement. The short-term transient effects on the frequency of the transmitter due to keying (except for broadcast transmitters) and any heating element cycling normally occurring at each ambient temperature level also shall be shown. Only the portion or portions of the transmitter containing the frequency determining and stabilizing circuitry need be subjected to the temperature variation test.

(d) The frequency stability shall be measured with variation of primary supply voltage as follows:
(1) Vary primary supply voltage from 85 to 115 percent of the nominal value for other than hand carried battery equipment.
(2) For hand carried, battery powered equipment, reduce primary supply voltage to the battery operating end point, which shall be specified by the manufacturer.
(3) The supply voltage shall be measured at the input to the cable normally provided with the equipment, or at the power supply terminals if cables are not normally provided. Effects on frequency of transmitter keying (except for broadcast transmitters) and any heating element cycling at the nominal supply voltage and at each extreme also shall be shown.

(e) When deemed necessary, the Commission may require tests of frequency stability under conditions in addition to those specifically set out in paragraphs (a), (b), (c) and (d) of this section. (For example, measurements showing the effect of proximity to large metal objects, or of various types of antennas, may be required for portable equipment.)
The EUT can only work in such extreme voltage 4.75V and 5.25V，so here the EUT is tested in the 4.75V and 5.25V.

## Test Set up

Connect the EC168 to the Wireless Communication test set CMU200 via the connector. Then measure the frequency error by the Wireless Communication test set CMU200. The EC168's output is matched with a 50 Ω load.

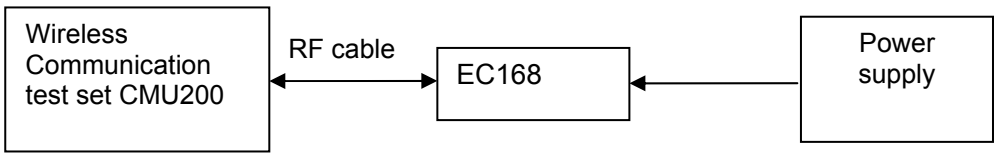



Figure 7. Test Set up

### 6.7.4 Measurement Results

#### 6.7.4.1 Measurement Results vs. Variation of Temperature

- TM1, 5.0 V DC Channel No.**600(1880.0MHz)**

Table 39 Measurement Results vs. Variation of Temperature—TM1

| Temperature | Power (dBm) | Nominal Frequency (MHz) | Measured Frequency Error(Hz) | Result |
|---|---|---|---|---|
| -30 °C | 23.41 | 1880.0 | 10 | Pass |
| -20 °C | 23.51 | 1880.0 | 8 | Pass |
| -10 °C | 23.52 | 1880.0 | -5 | Pass |
| 0 °C | 23.62 | 1880.0 | 6 | Pass |
| +10 °C | 23.54 | 1880.0 | -3 | Pass |
| +20 °C | 23.58 | 1880.0 | 2 | Pass |
| +30 °C | 23.73 | 1880.0 | -4 | Pass |
| +40 °C | 23.55 | 1880.0 | 7 | Pass |
| +50 °C | 23.57 | 1880.0 | -11 | Pass |

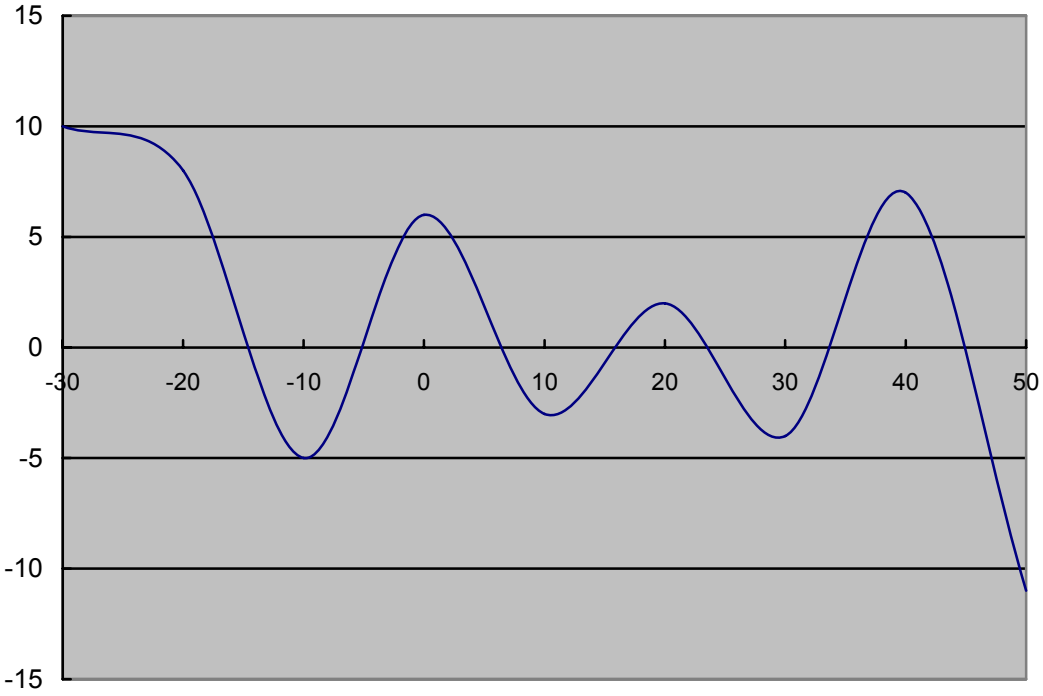



Figure 8. TM1 Test Graph

- TM3, 5.0V DC Channel No.**600(1880.0MHz)**

Table 40 Measurement Results vs. Variation of Temperature—TM3

| Temperature | Power (dBm) | Nominal Frequency (MHz) | Measured Frequency Error(Hz) | Result |
|---|---|---|---|---|
| -30 °C | 23.46 | 1880.0 | 13 | Pass |
| -20 °C | 23.52 | 1880.0 | 8 | Pass |
| -10 °C | 23.49 | 1880.0 | -6 | Pass |
| 0 °C | 23.73 | 1880.0 | 8 | Pass |
| +10 °C | 23.58 | 1880.0 | 5 | Pass |
| +20 °C | 23.65 | 1880.0 | -1 | Pass |
| +30 °C | 23.45 | 1880.0 | 6 | Pass |
| +40 °C | 23.75 | 1880.0 | 7 | Pass |
| +50 °C | 23.67 | 1880.0 | 9 | Pass |

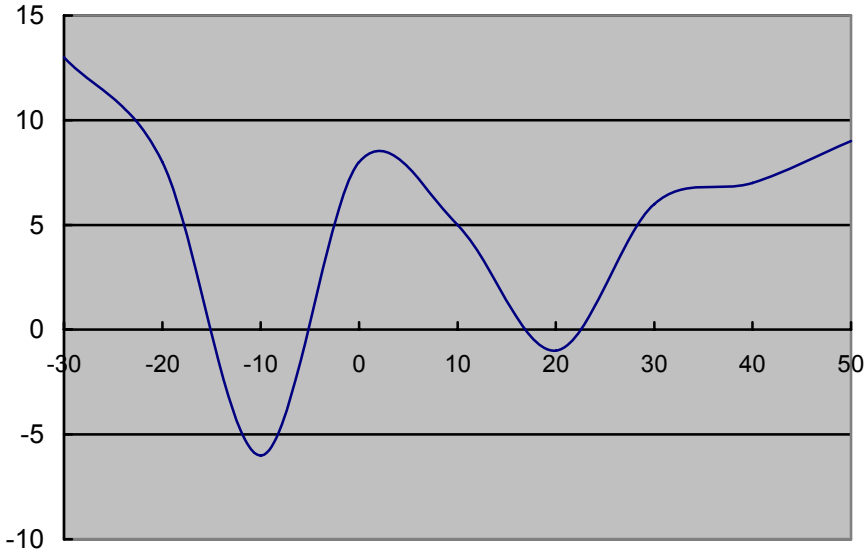
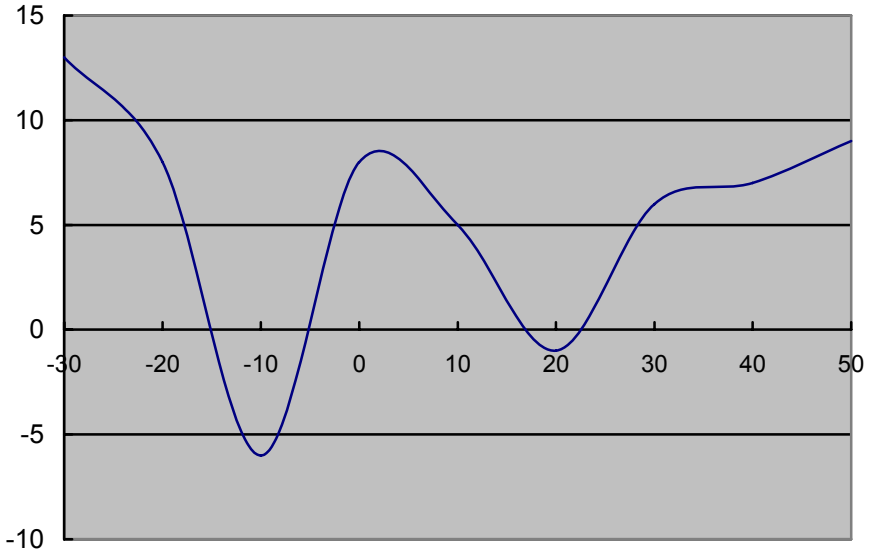



Figure 9. TM3 Test Graph

- **Subtype 0**, 5.0V DC Channel No.**600(1880.0MHz)**

Table 41 Measurement Results vs. Variation of Temperature—Subtype 0

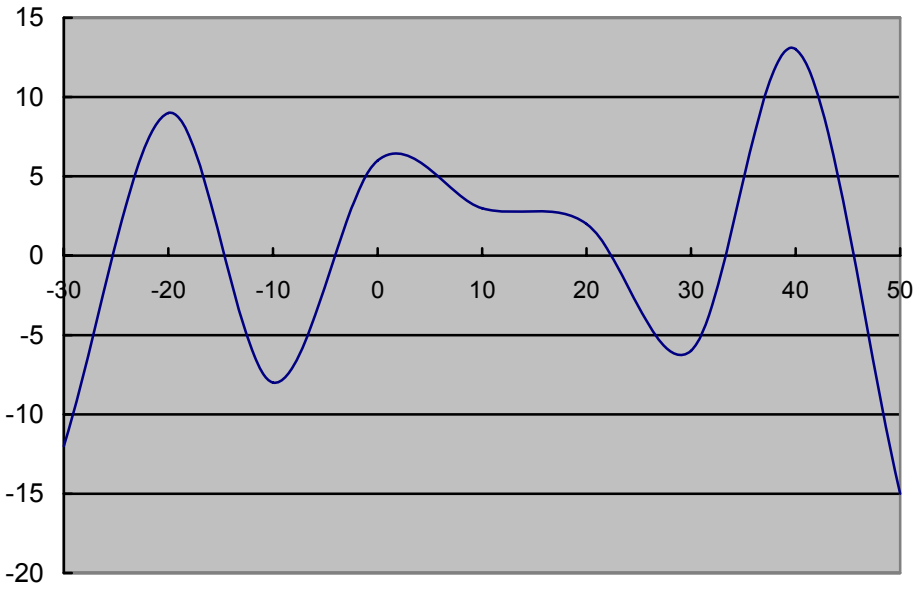
| Temperature | Power (dBm) | Nominal Frequency (MHz) | Measured Frequency Error(Hz) | Result |
|---|---|---|---|---|
| -30 °C | 23.42 | 1880.0 | 13 | Pass |
| -20 °C | 23.41 | 1880.0 | -9 | Pass |
| -10 °C | 23.49 | 1880.0 | 10 | Pass |
| 0 °C | 23.58 | 1880.0 | 9 | Pass |
| +10 °C | 23.74 | 1880.0 | 7 | Pass |
| +20 °C | 23.87 | 1880.0 | -2 | Pass |
| +30 °C | 23.45 | 1880.0 | 5 | Pass |
| +40 °C | 23.77 | 1880.0 | 8 | Pass |
| +50 °C | 23.59 | 1880.0 | -10 | Pass |




- **Subtype 2**, 5.0V DC Channel No.**600(1880.0MHz)**

Table 42 Measurement Results vs. Variation of Temperature—Subtype 2

| Temperature | Power (dBm) | Nominal Frequency (MHz) | Measured Frequency Error(Hz) | Result |
|---|---|---|---|---|
| -30 °C | 23.62 | 1880.0 | -12 | Pass |
| -20 °C | 23.65 | 1880.0 | 9 | Pass |
| -10 °C | 23.70 | 1880.0 | -8 | Pass |
| 0 °C | 23.48 | 1880.0 | 6 | Pass |
| +10 °C | 23.88 | 1880.0 | 3 | Pass |
| +20 °C | 23.85 | 1880.0 | 2 | Pass |
| +30 °C | 23.47 | 1880.0 | - 6 | Pass |
| +40 °C | 23.66 | 1880.0 | 13 | Pass |
| +50 °C | 23.60 | 1880.0 | -15 | Pass |




### 6.7.4.2 Measurement Results vs. Variation of Voltage

- TM1, 25 °C ,Channel No. **600(1880.0MHz)**

Table 43 Measurement Results vs. Variation of Voltage—TM1

| Voltage | Power (dBm) | Nominal Frequency (MHz) | Measured Frequency Error(Hz) | Result |
|---|---|---|---|---|
| 4.75 | 23.45 | 1880.0 | 8 | Pass |
| 5.0 | 23.51 | 1880.0 | 12 | Pass |
| 5.25 | 23.48 | 1880.0 | -7 | Pass |

- TM3, 25 °C ,Channel No. **600(1880.0MHz)**

Table 44 Measurement Results vs. Variation of Voltage—TM3

| Voltage | Power (dBm) | Nominal Frequency (MHz) | Measured Frequency Error(Hz) | Result |
|---|---|---|---|---|
| 4.75 | 23.11 | 1880.0 | 12 | Pass |
| 5.0 | 23.39 | 1880.0 | 9 | Pass |
| 5.25 | 23.42 | 1880.0 | -9 | Pass |

- **Subtype 0**, 25 °C ,Channel No. **600(1880.0MHz)**

Table 45 Measurement Results vs. Variation of Voltage—Subtype 0

| Voltage | Power (dBm) | Nominal Frequency | Measured Frequency | Result |
|---|---|---|---|---|

| | | (MHz) | Error(Hz) | |
|---|---|---|---|---|
| 4.75 | 23.40 | 1880.0 | 15 | Pass |
| 5.0 | 23.46 | 1880.0 | 12 | Pass |
| 5.25 | 23.35 | 1880.0 | -8 | Pass |

- **Subtype 2**, 25 °C ,Channel No. **600(1880.0MHz)**

Table 46 Measurement Results vs. Variation of Voltage—Subtype 2

| Voltage | Power (dBm) | Nominal Frequency (MHz) | Measured Frequency Error(Hz) | Result |
|---|---|---|---|---|
| 4.75 | 23.17 | 1880.0 | 9 | Pass |
| 5.0 | 23.32 | 1880.0 | 5 | Pass |
| 5.25 | 23.27 | 1880.0 | -15 | Pass |

### 6.7.5 Conclusion

The equipment **PASSED** the requirement of this clause.

# 7 Appendixes

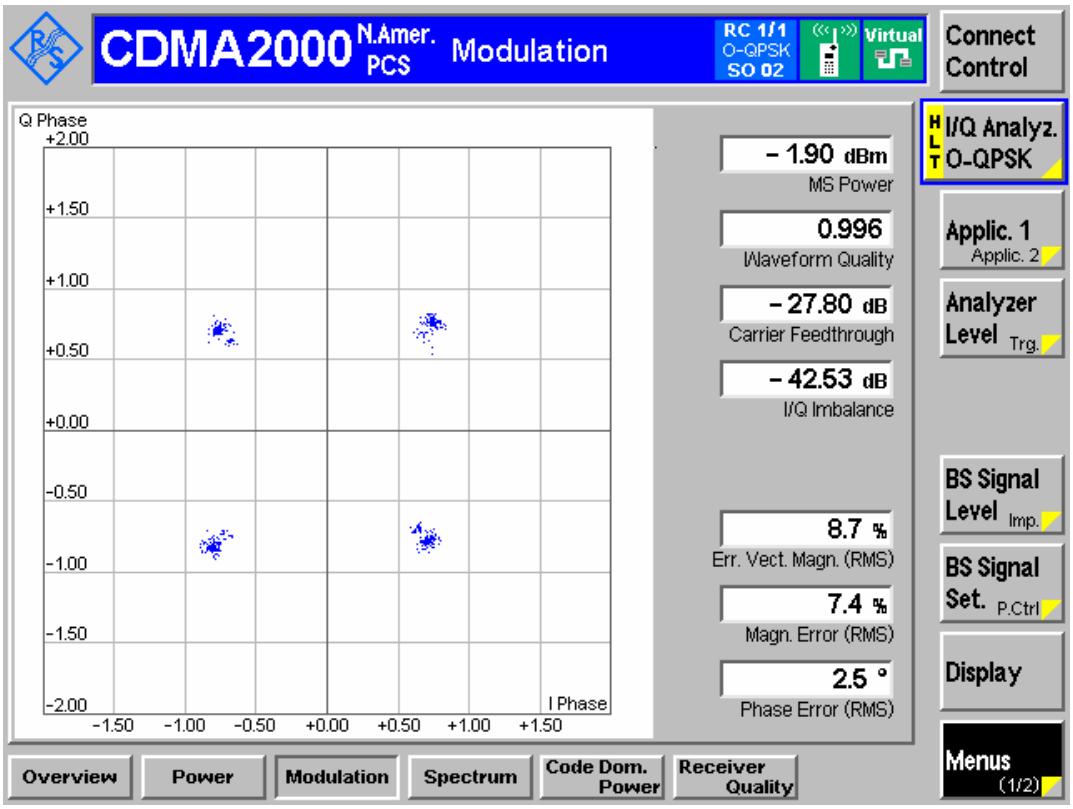
| | | |
|---|---|---|
| Appendix A | Measurement Results Modulation Characteristics | 7 pages |
| Appendix B | Measurement Results Occupied Bandwidth | 13 pages |
| Appendix C | Measurement Results Band Edges | 13 pages |
| Appendix D | Measurement Results Spurious Emission at Antenna Terminal | 55 pages |

# Appendix A

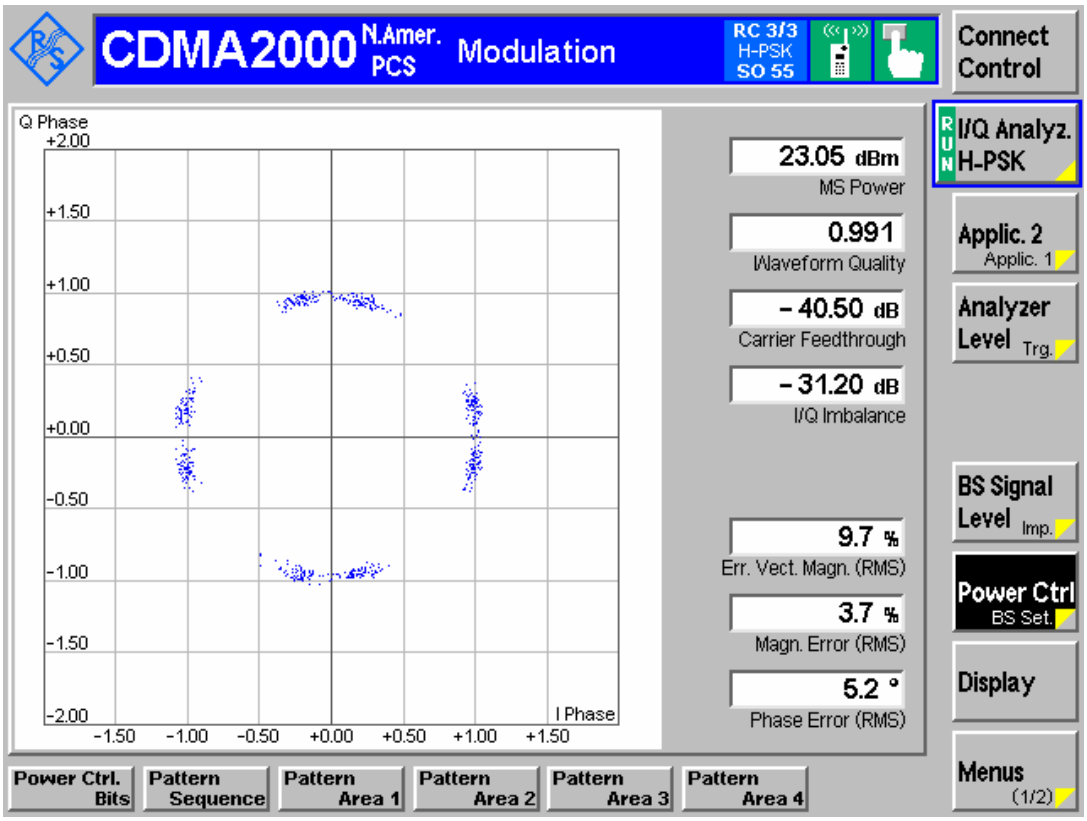
## Modulation Characteristics

According to FCC Part 2.1047& Part 24 Subpart E

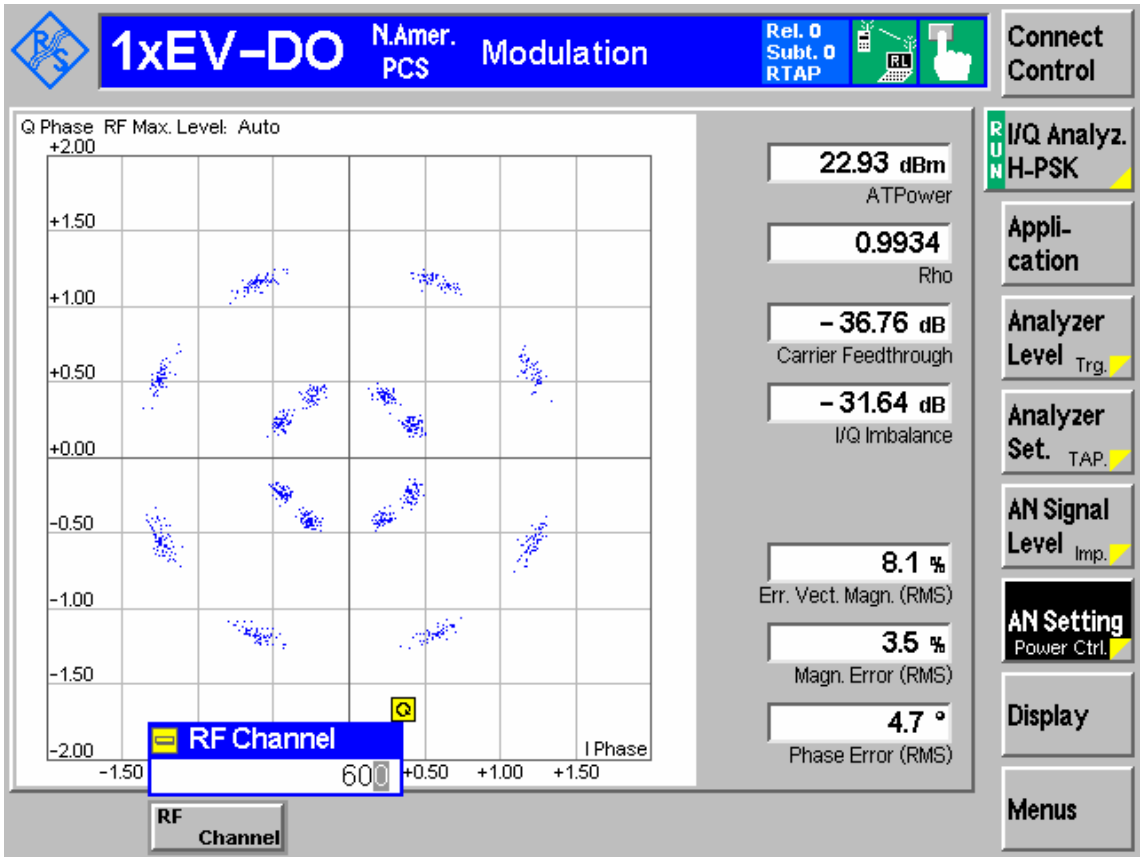
# Channel 600（TM1）



# Channel 600（TM3）



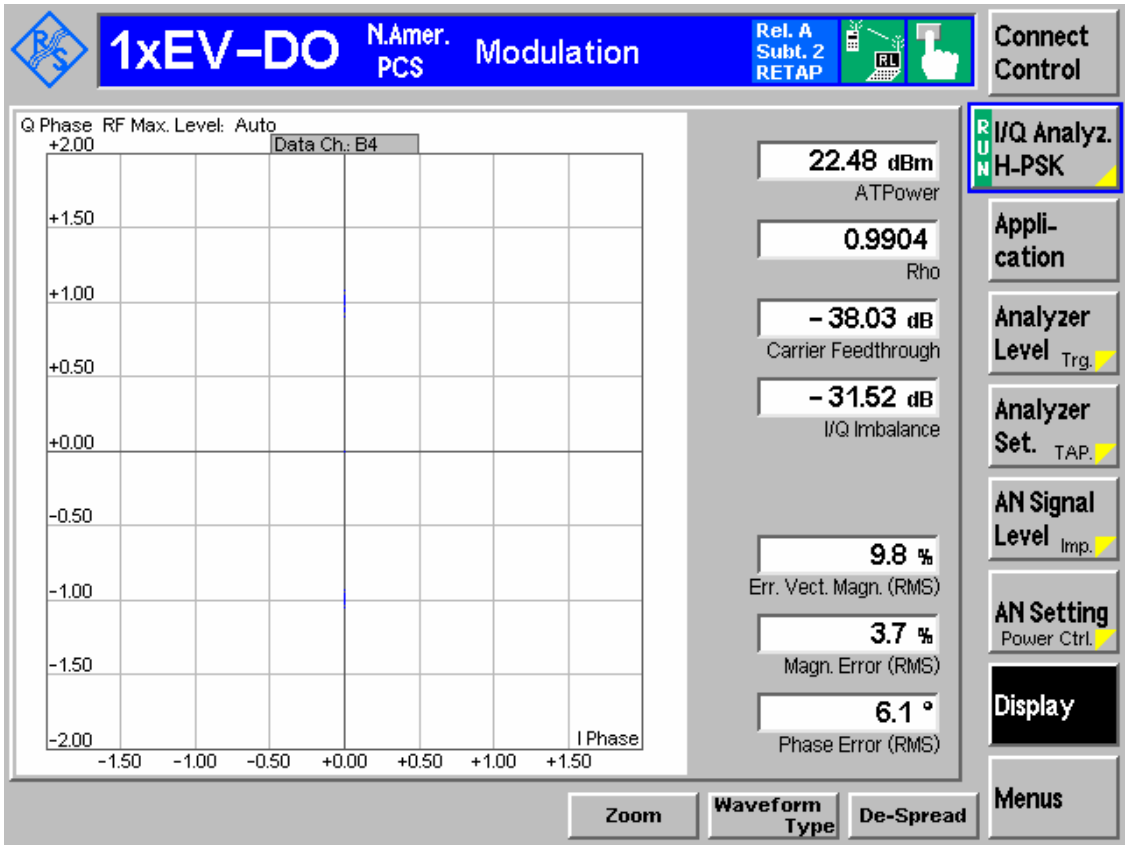
# Channel600（Subtype 0）
# （HPSK）



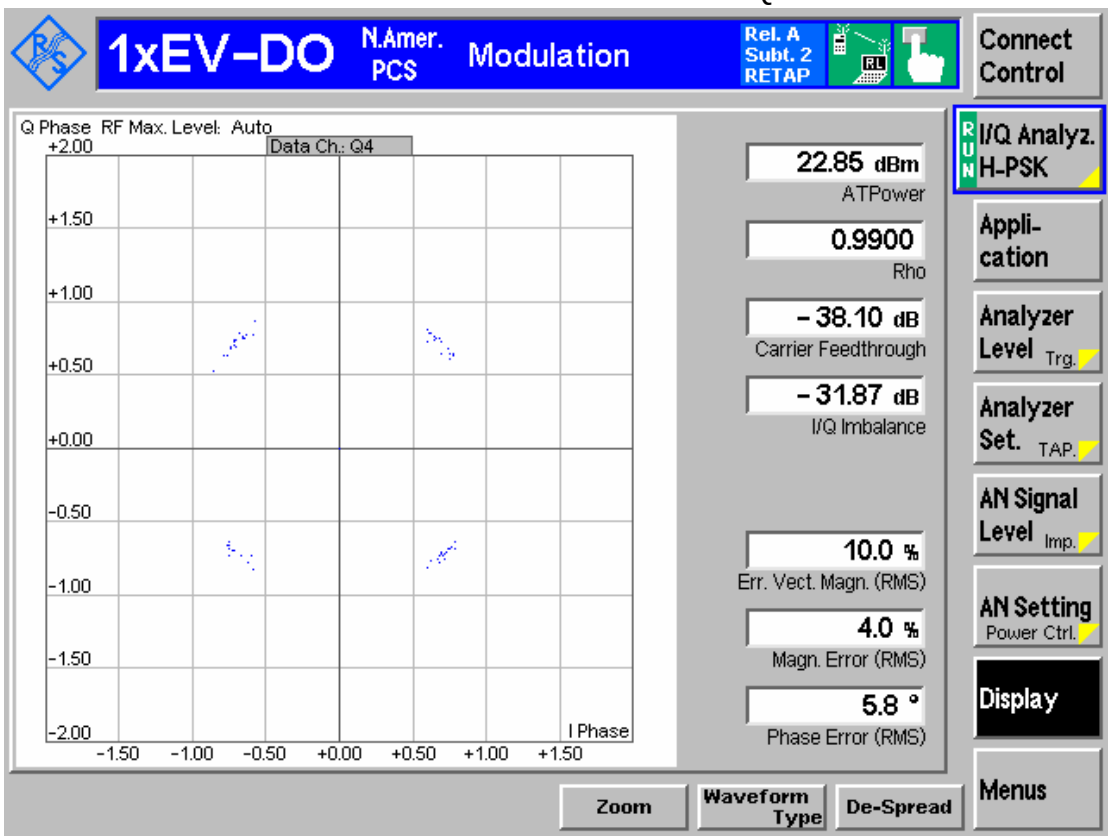
# Channel600（Subtype 2）

The R-Data packet size determines the modulation format：

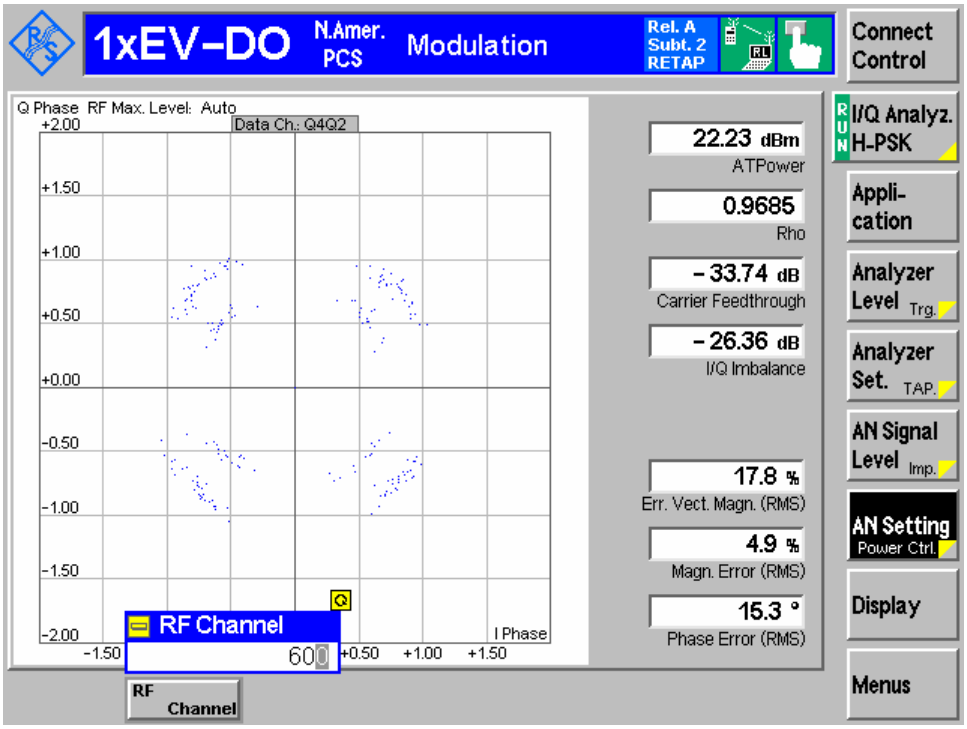
R-Data Pkt Size （256 bits）（BPSK）



R-Data Pkt Size （4096 bits）（QPSK）



R-Data Pkt Size （12288 bits）（8PSK）

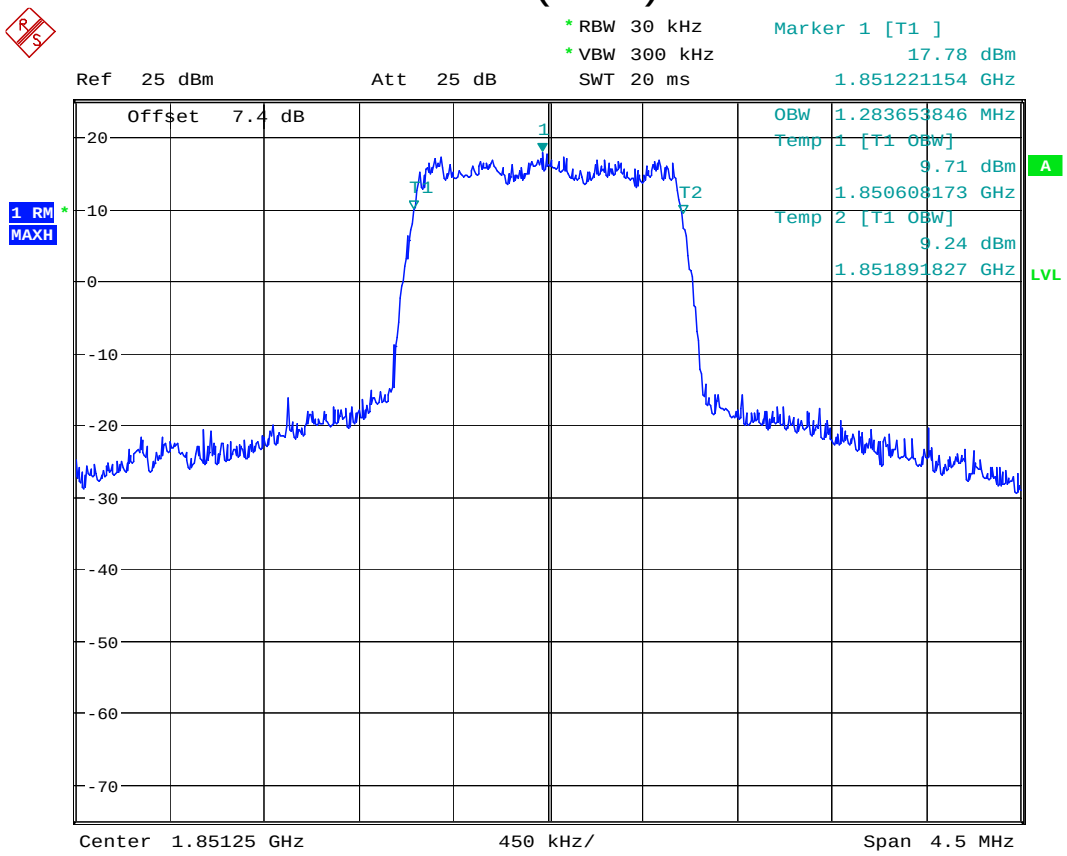


# Appendix B

## Occupied Bandwidth

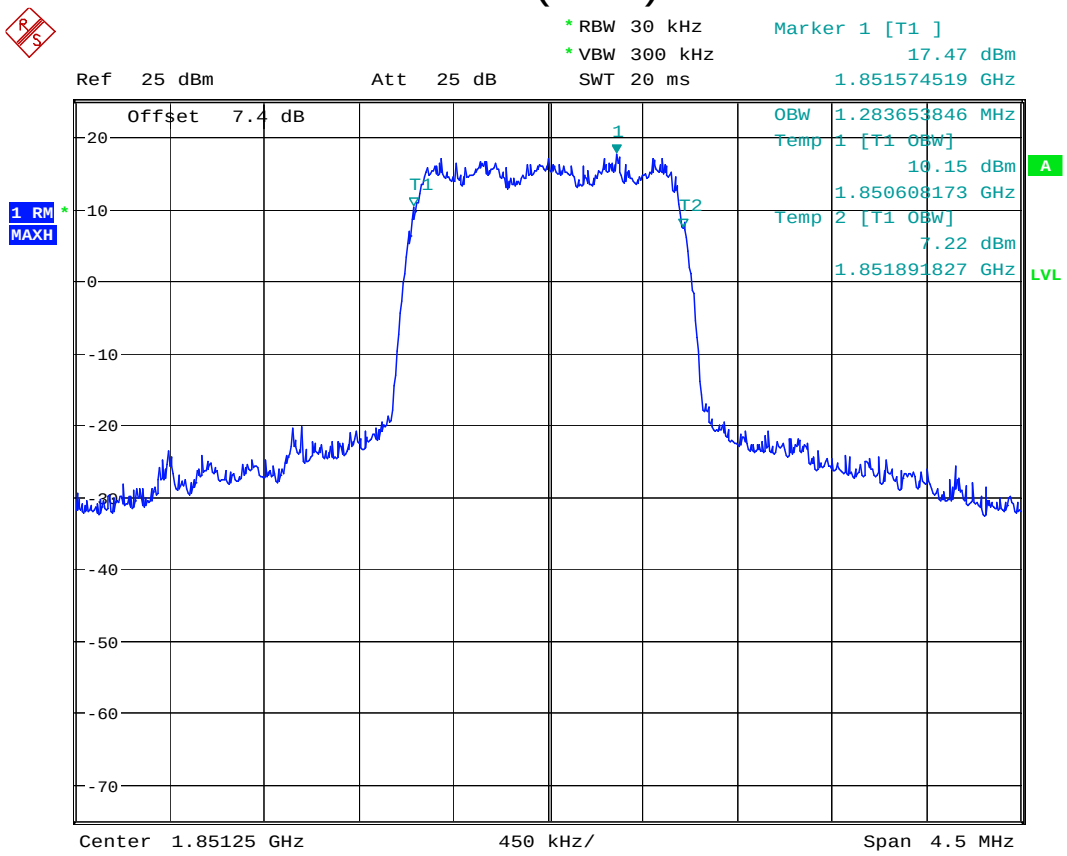
According to FCC part 2.1049 & Part 24 Subpart E

# Channel 25
# (TM1)



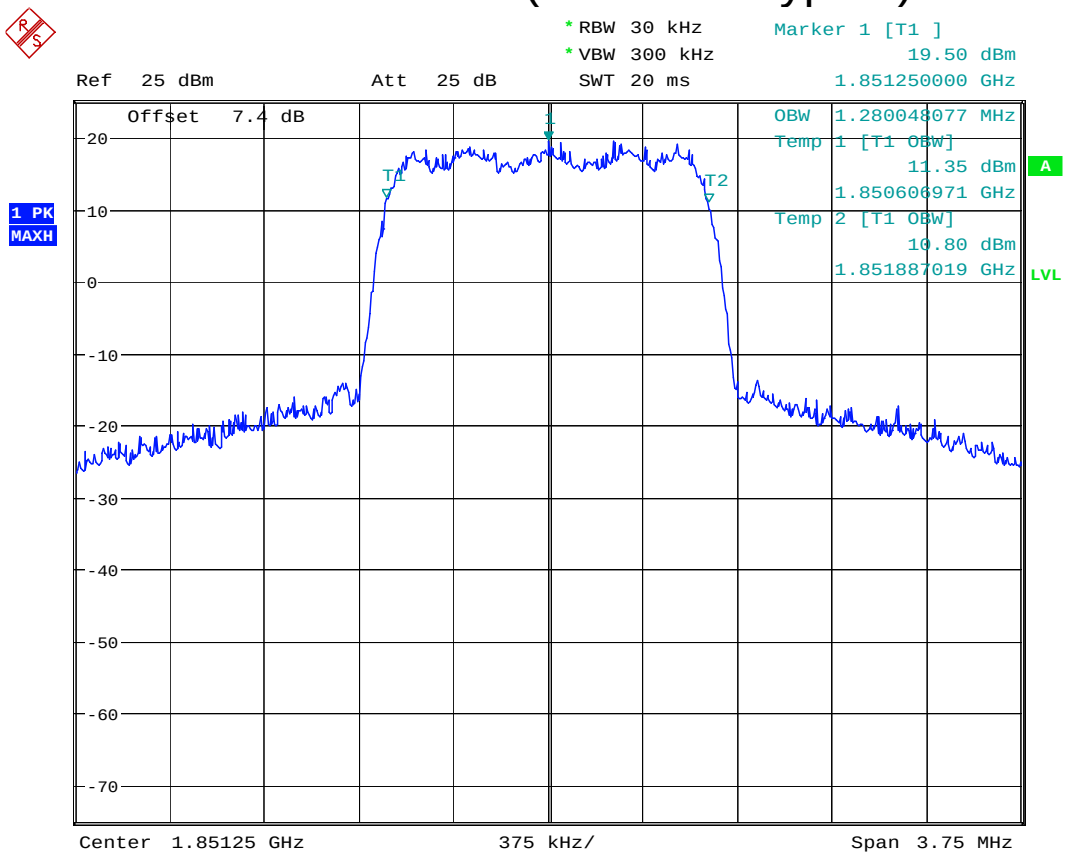

Date: 20.AUG.2008 10:28:57

# Channel 25
# (TM3)



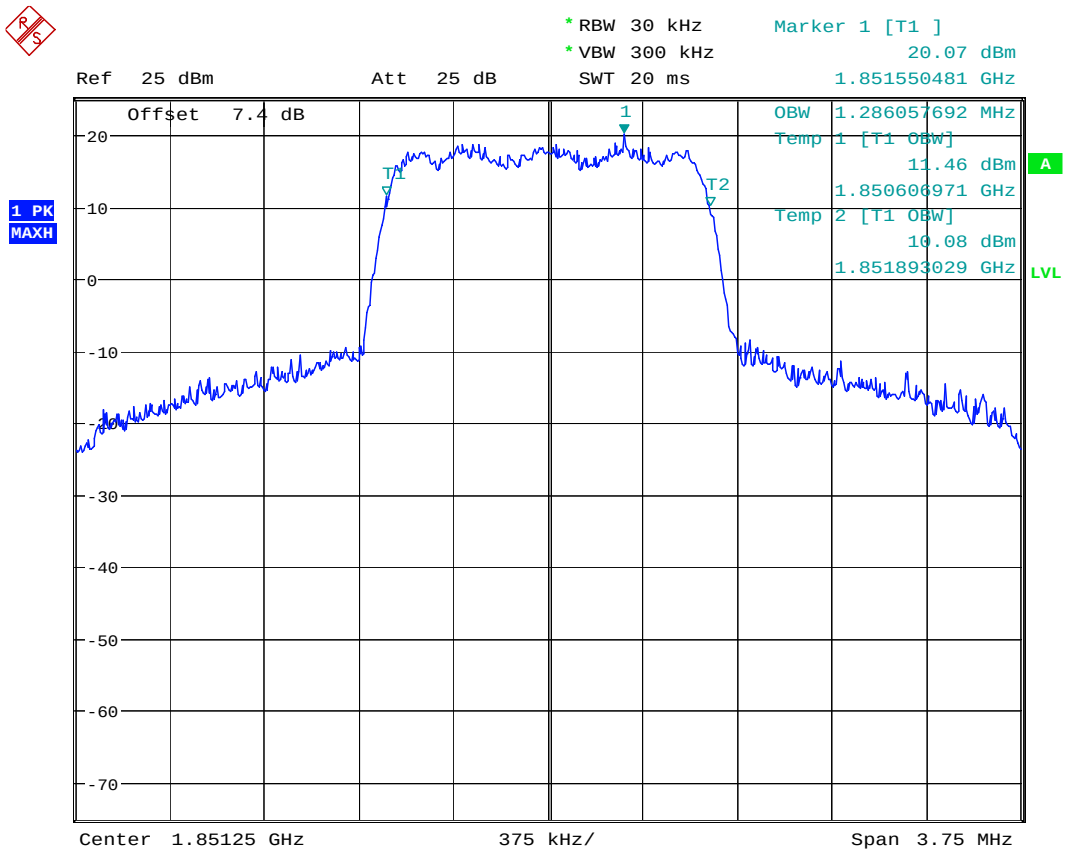

Date: 20.AUG.2008 10:29:40

# Channel 25(EVDO subtype 0)



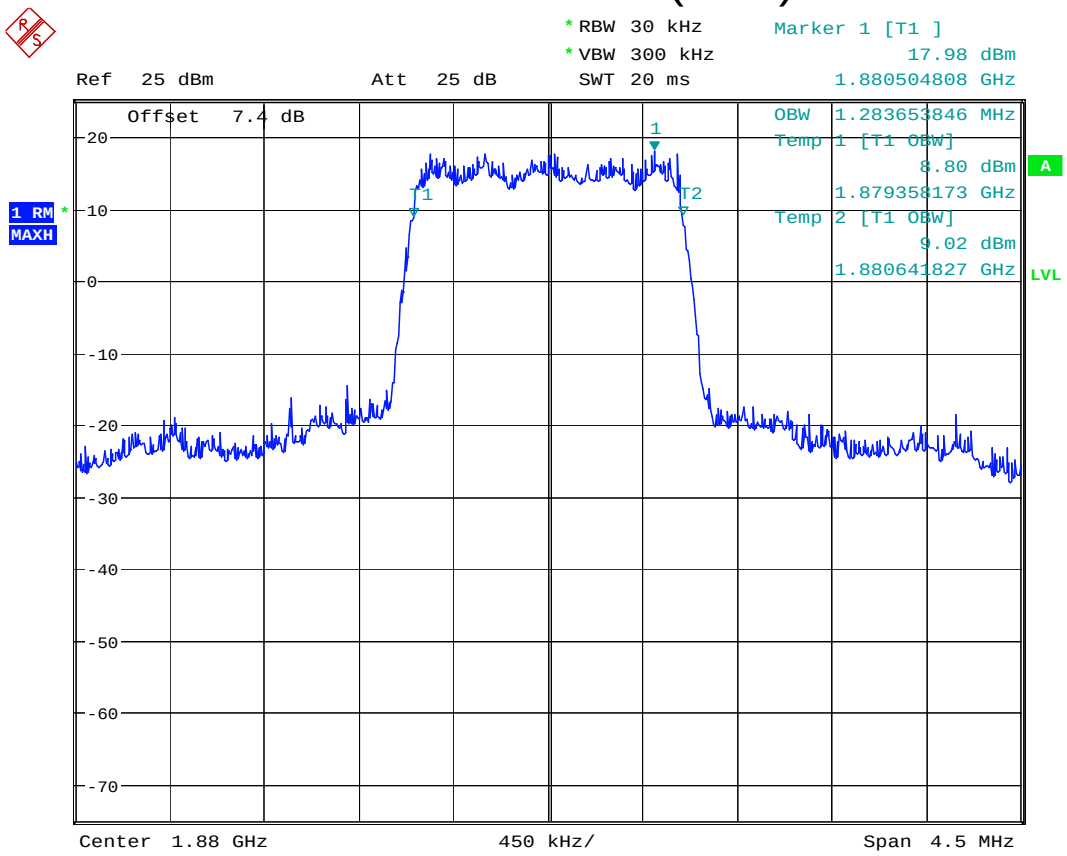

Date: 20.AUG.2008 10:48:30

# Channel 25
# (EVDO Subtype 2)



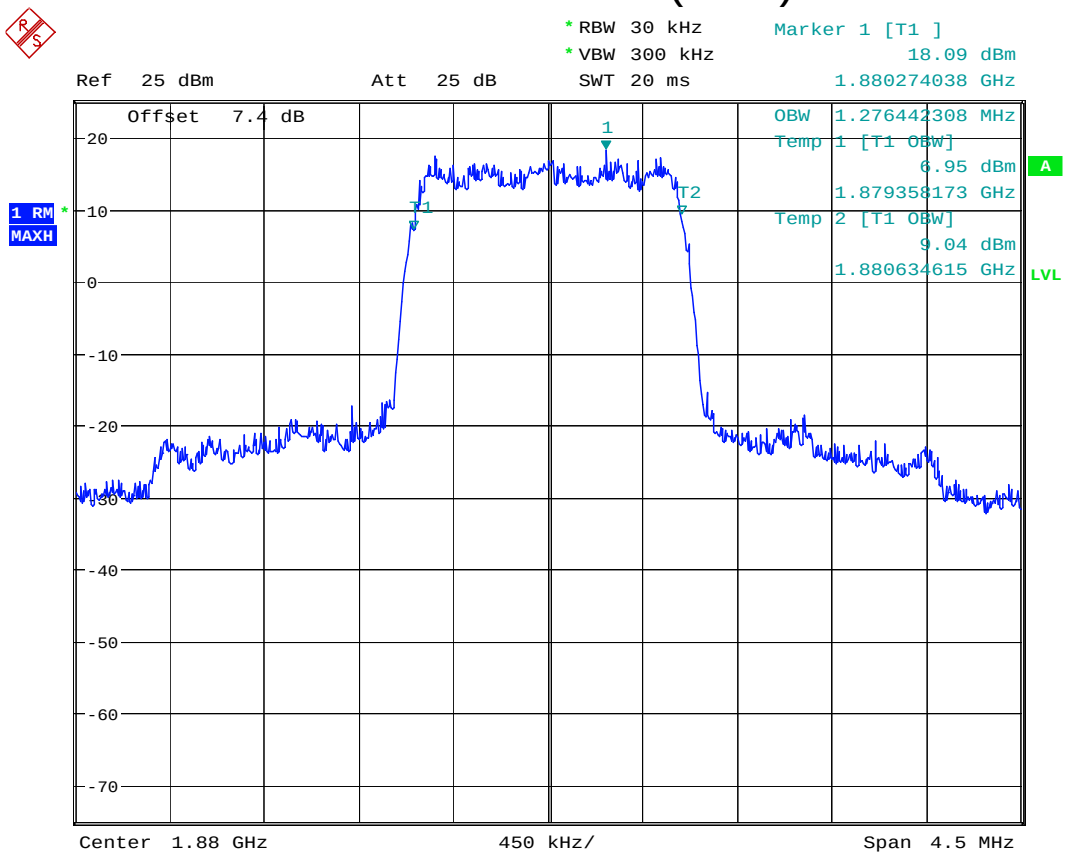

Date: 23.AUG.2008 10:53:47

# Channel 600(TM1)



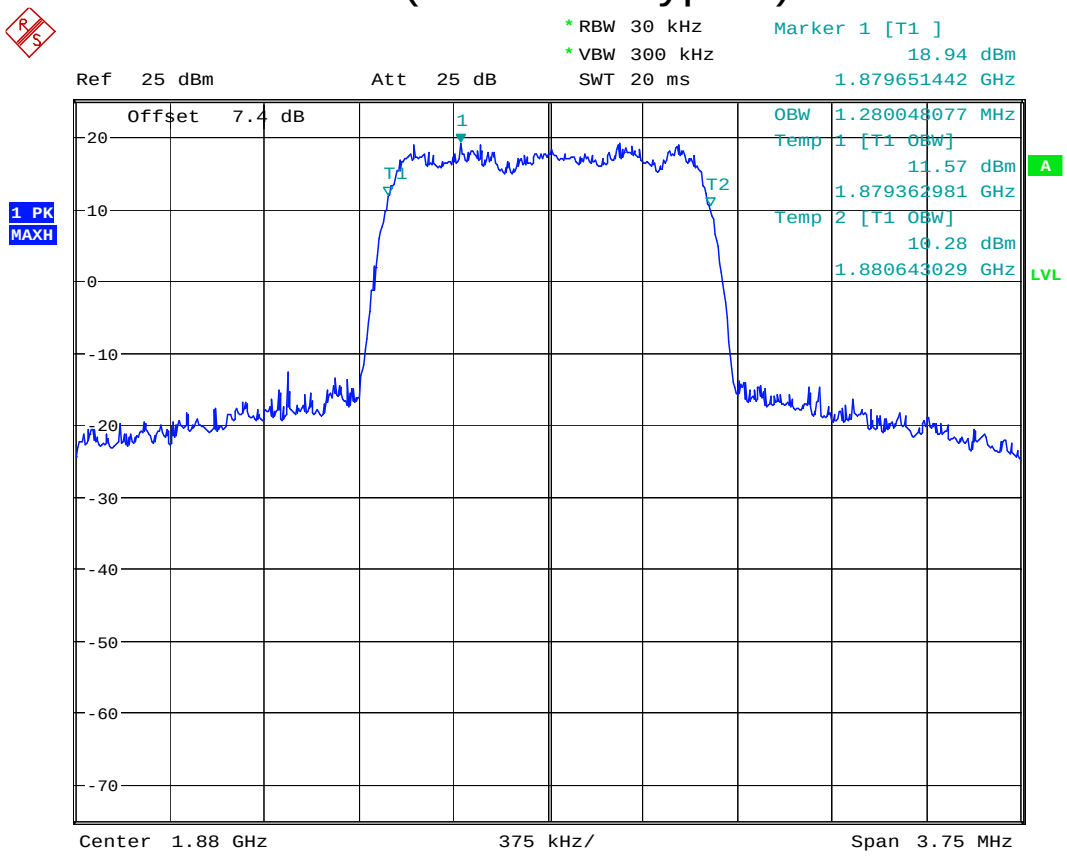

Date: 20.AUG.2008 10:29:11

# Channel 600(TM3)



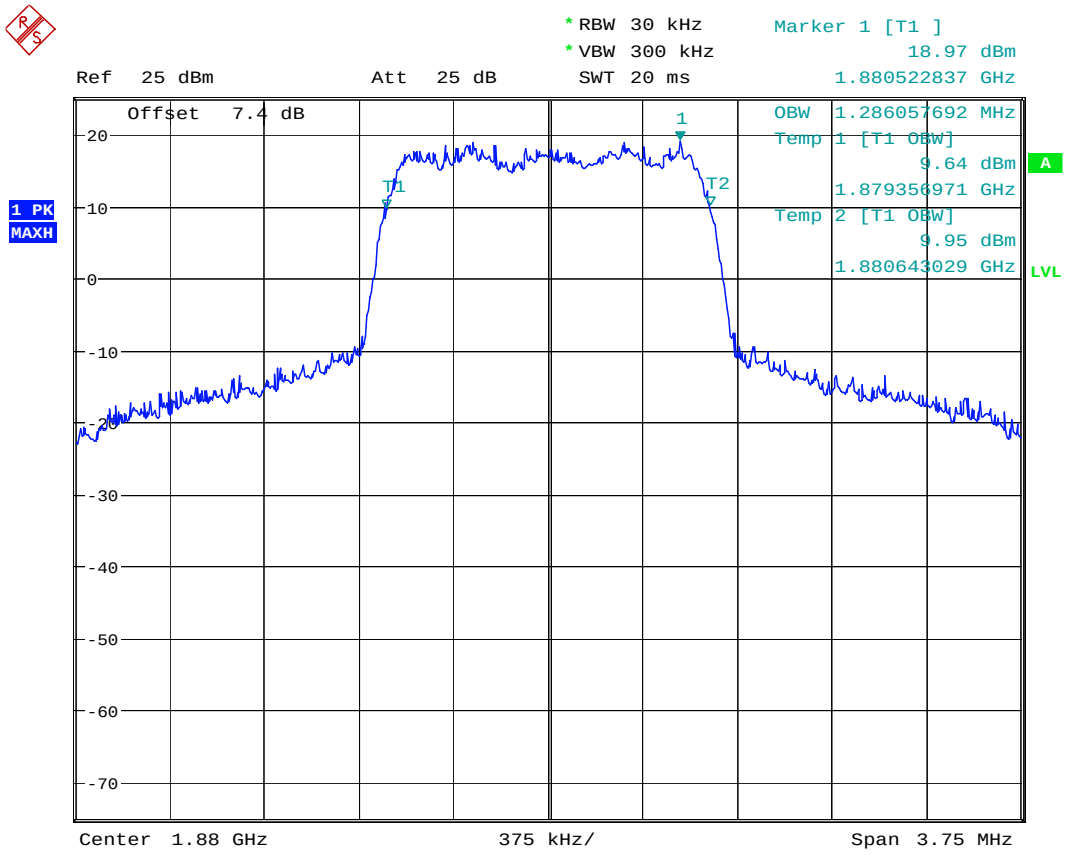

Date: 20.AUG.2008 10:29:54

# Channel 600
# (EVDO subtype 0)



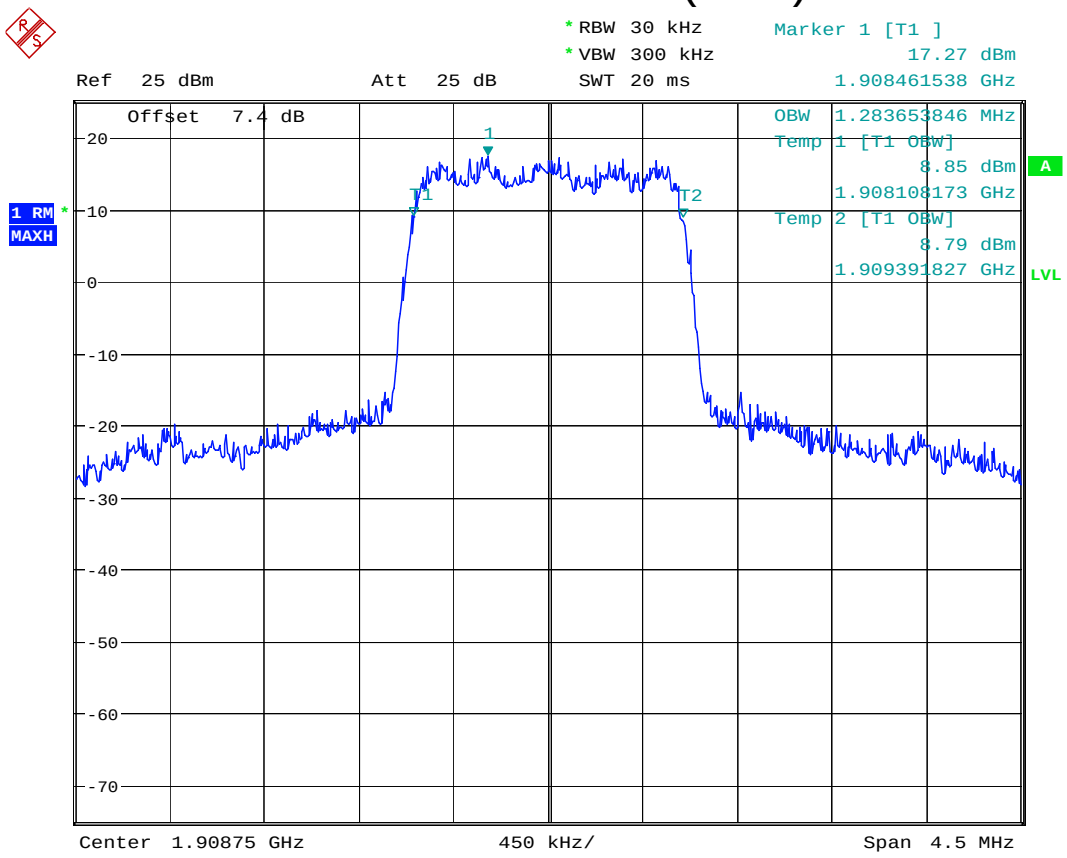

Date: 20.AUG.2008 10:48:43

# Channel 600(EVDO subtype 2 )



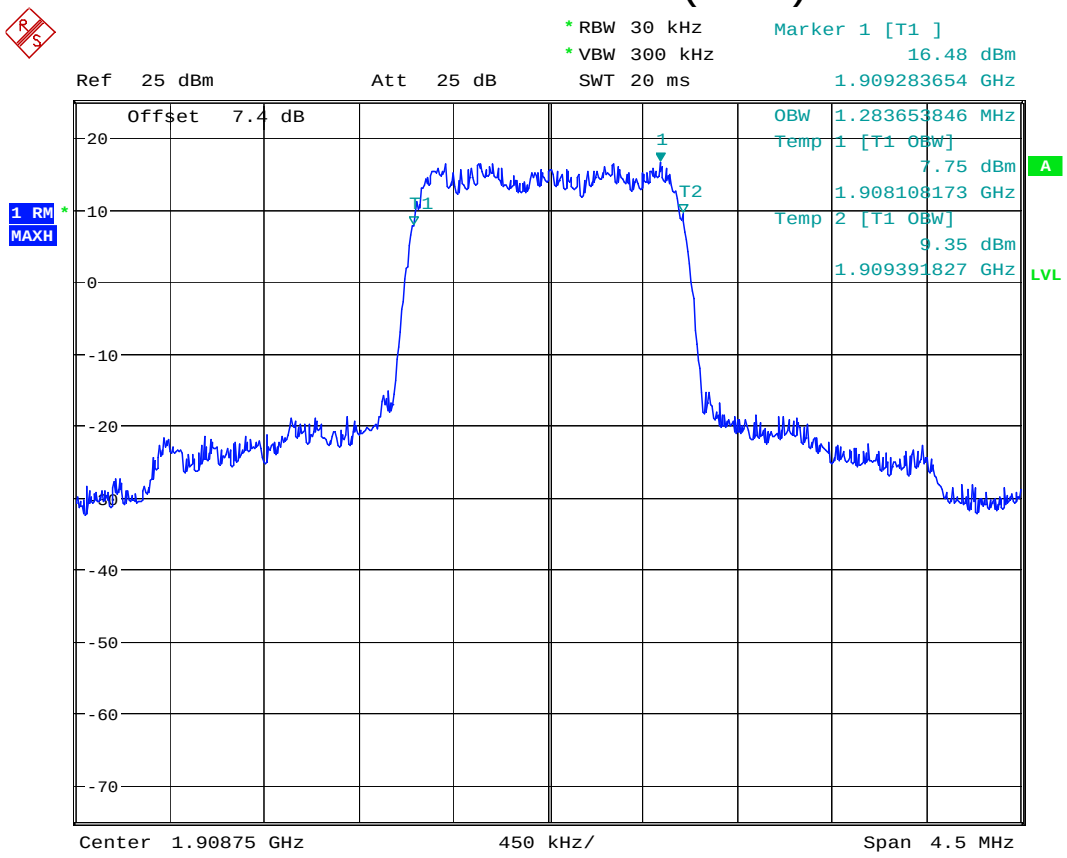

Date: 23.AUG.2008 10:53:59

# Channel 1175(TM1)



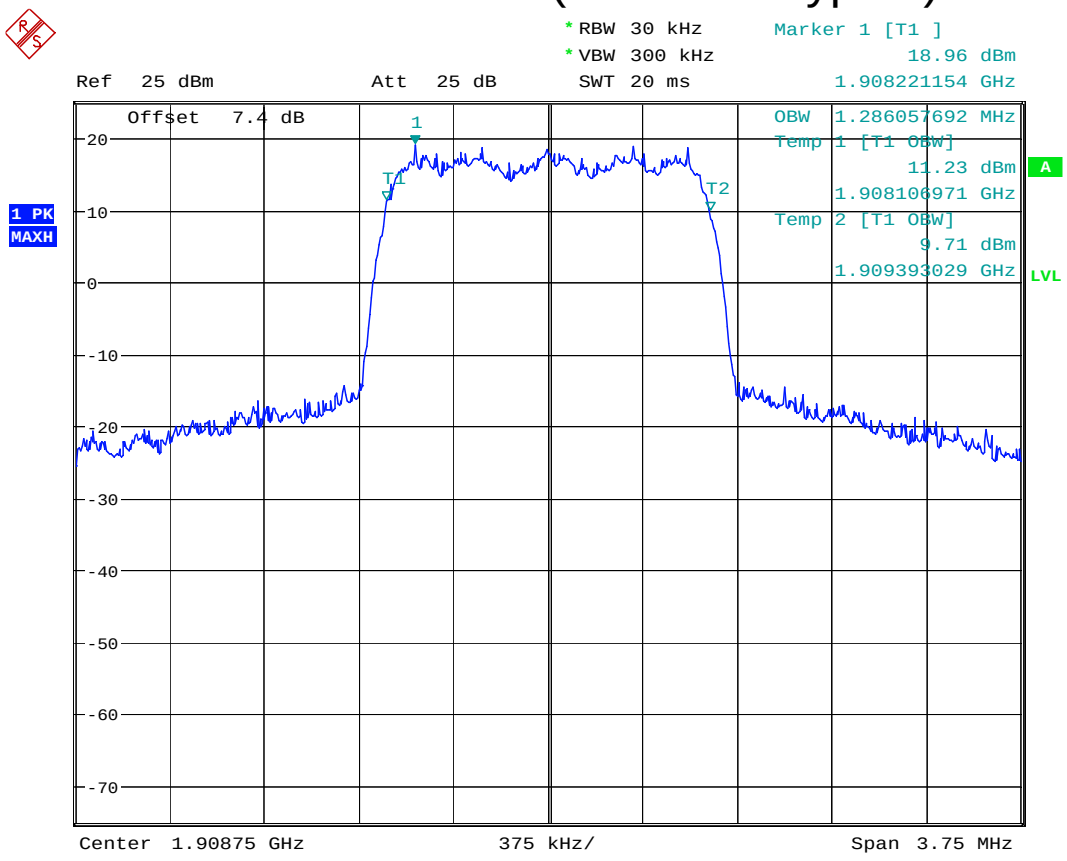

Date: 20.AUG.2008 10:29:24

# Channel 1175(TM3)



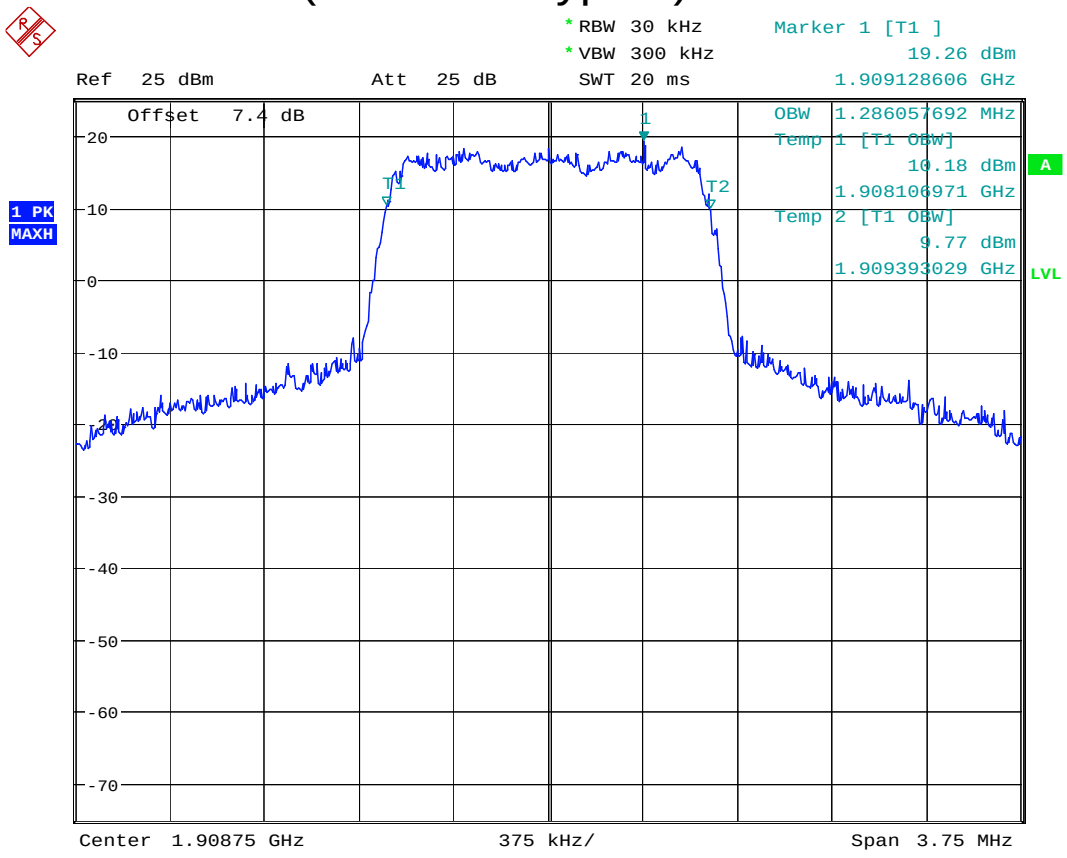

Date: 20.AUG.2008 10:30:07

# Channel 1175(EVDO subtype 0)




Date: 20.AUG.2008 10:48:57

# Channel 1175(EVDO subtype 2)




Date: 23.AUG.2008 10:54:11

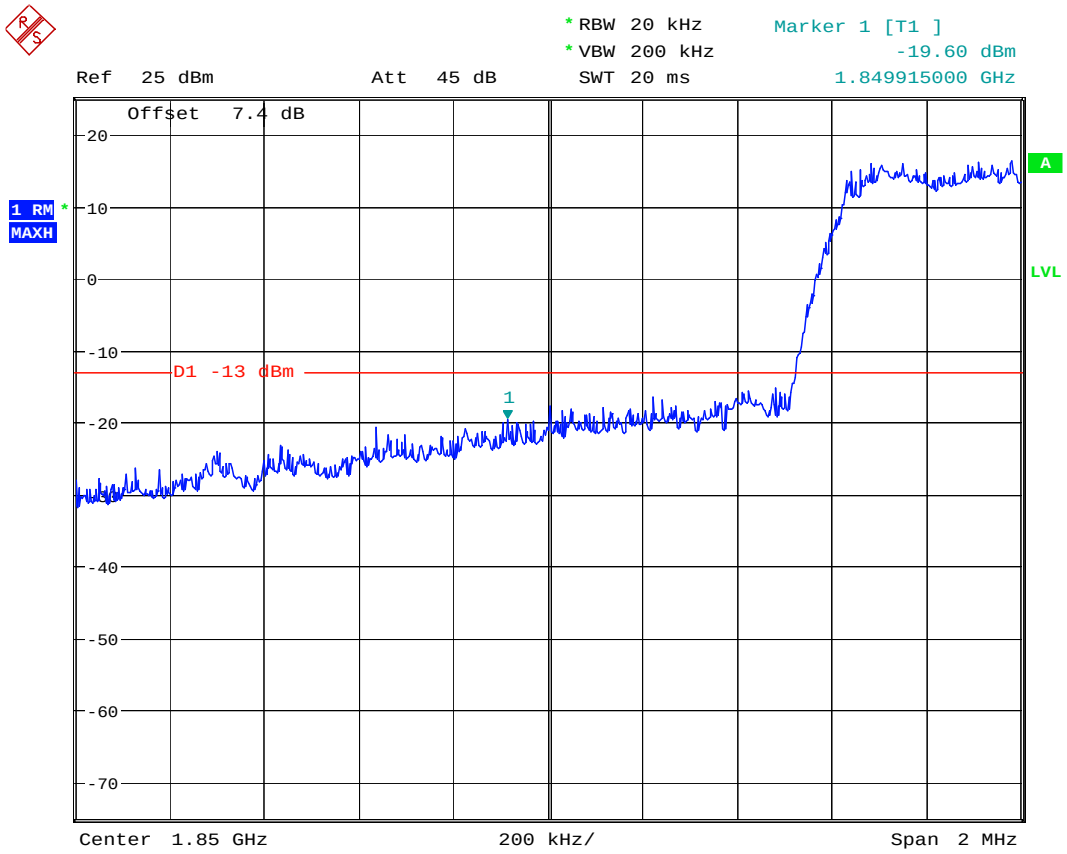
# Appendix C

## Band Edges Compliance

According to FCC Part 2.1051 & 24.238

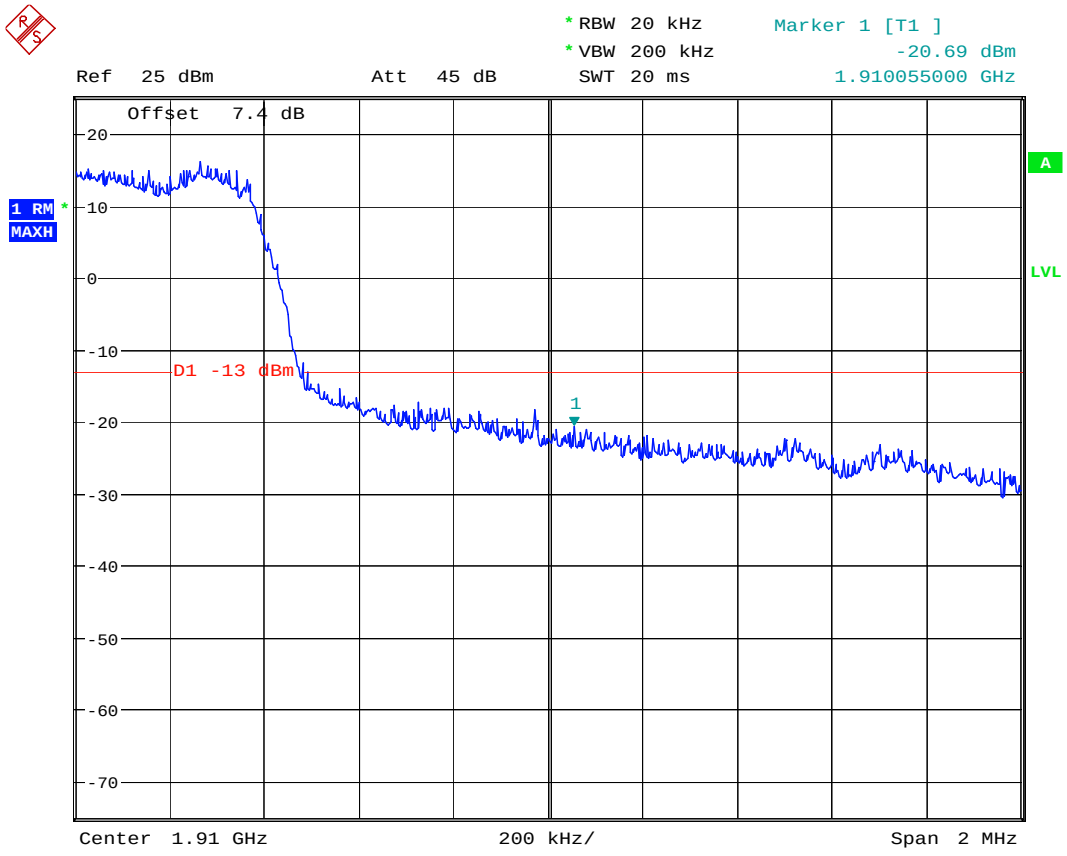
## TM1

Left Edge (1850 MHz)
Channel 25




Date: 20.AUG.2008 10:35:40

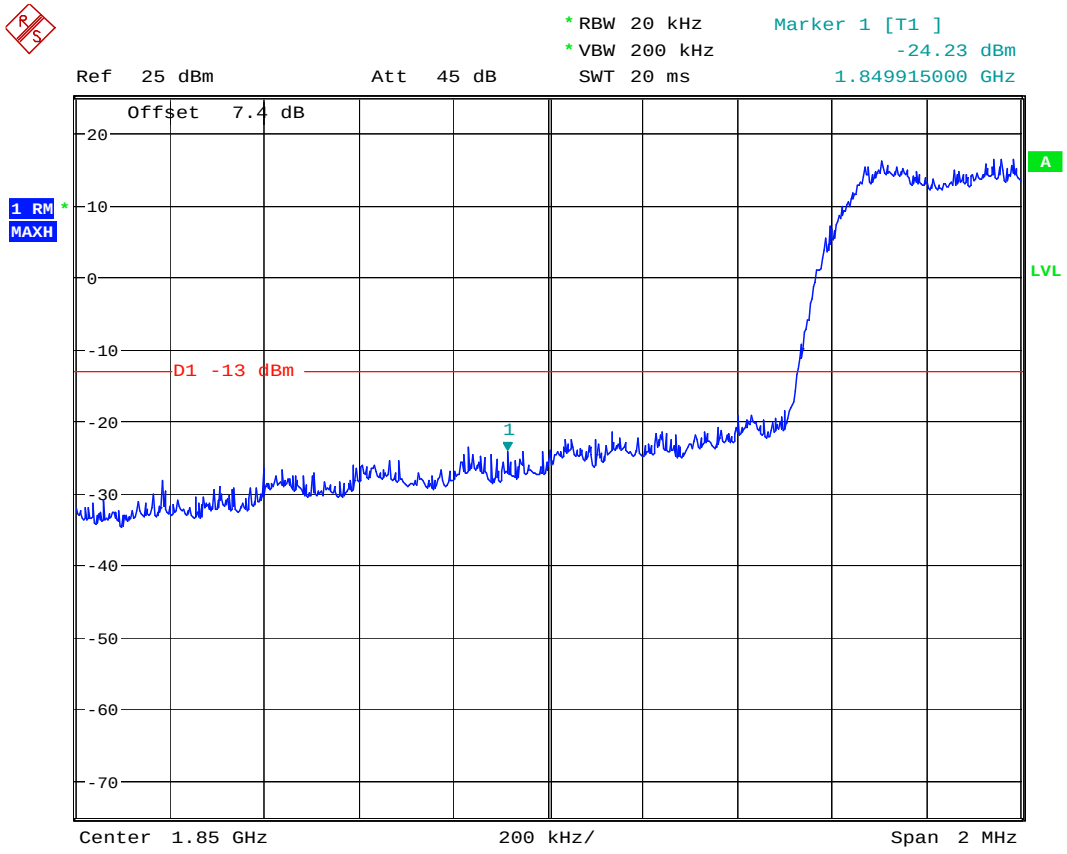
## Right Edge (1910MHz)
## Channel 1175




Date: 20.AUG.2008 10:35:54

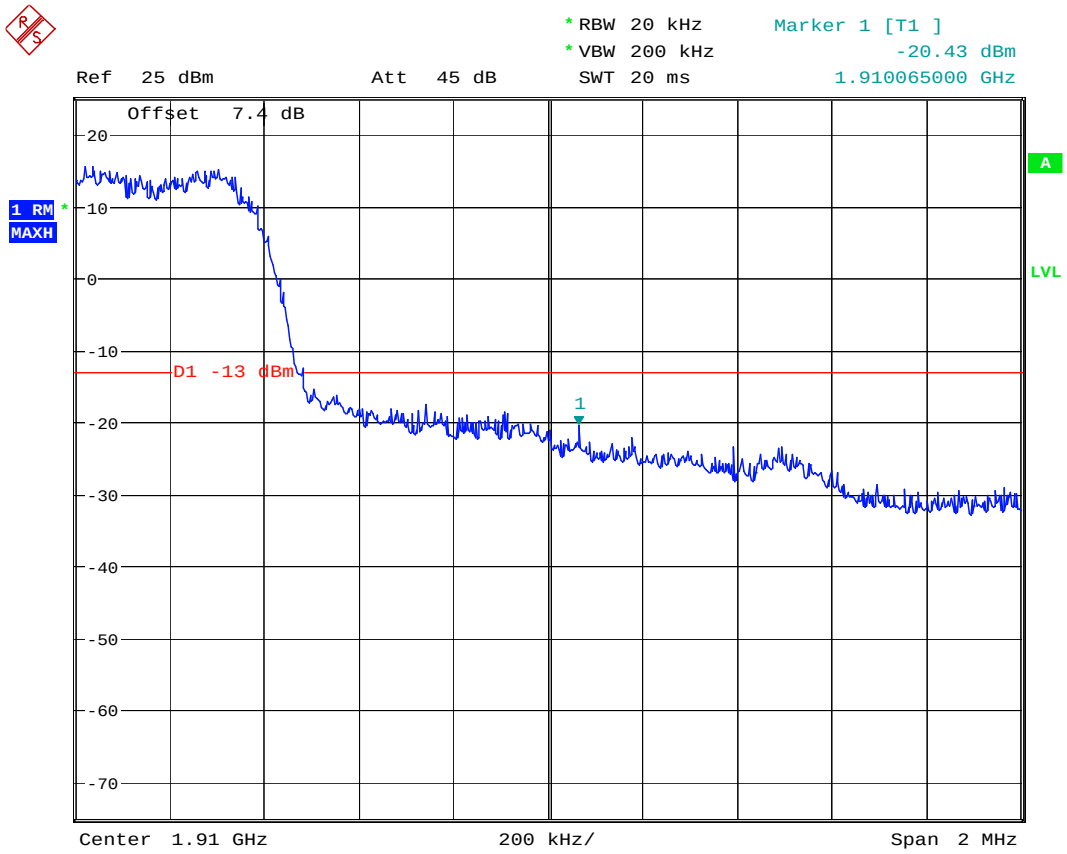
## TM3

Left Edge (1850 MHz)
Channel
25




Date: 20.AUG.2008 10:36:10

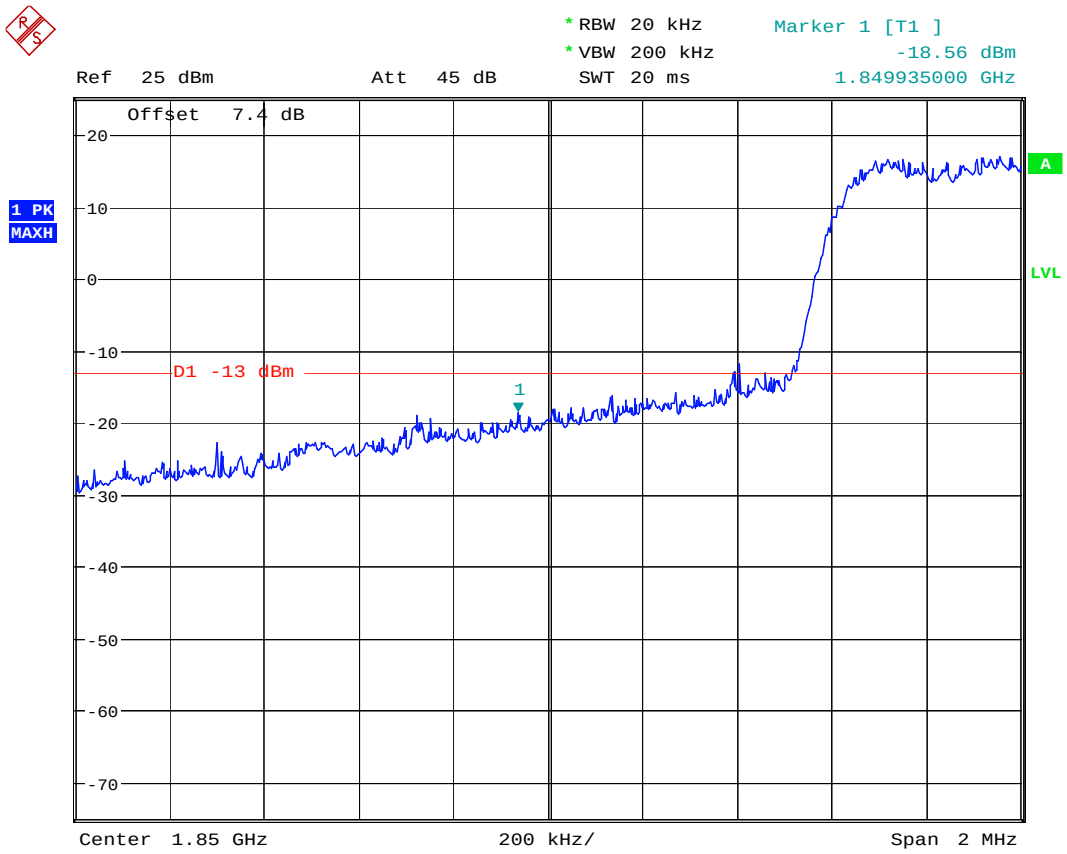
Right Edge (1910MHz)
Channel
1175




Date: 20.AUG.2008 10:36:24

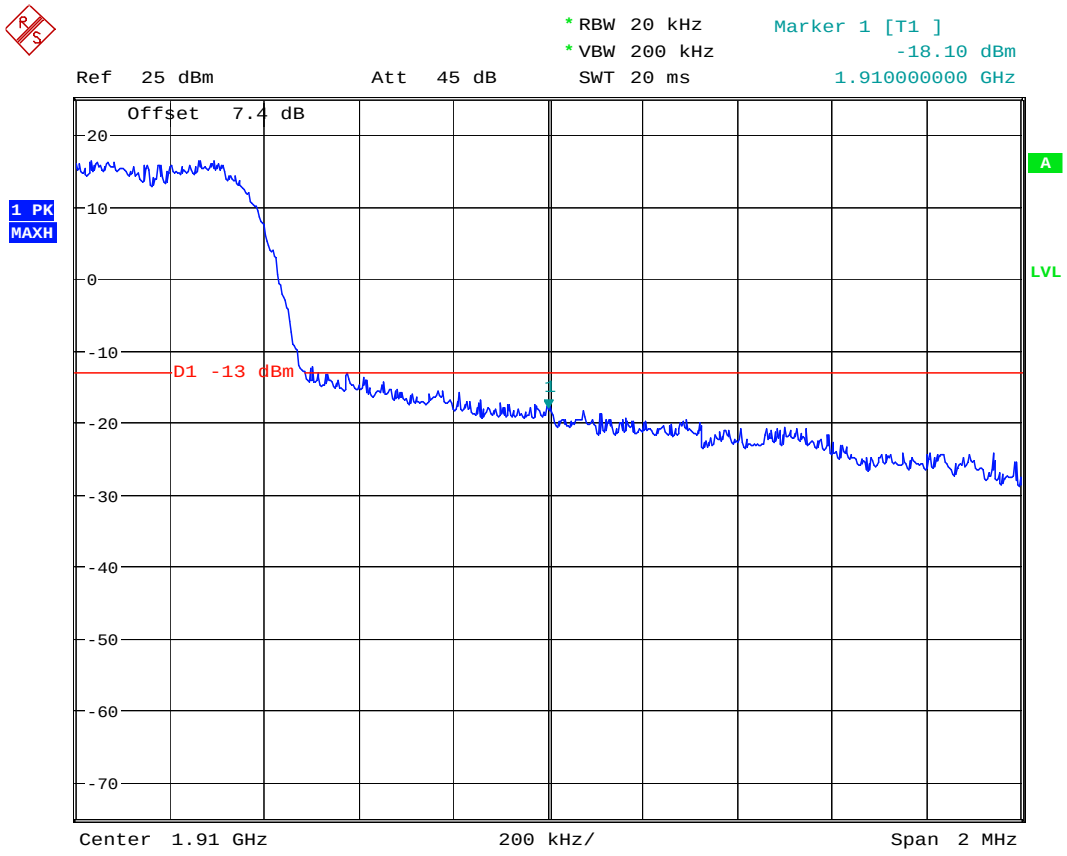
# EVDO subtype 0

Left Edge (1850 MHz)
Channel 25




Date: 23.AUG.2008 15:05:44

Right Edge (1910MHz)
Channel 1175

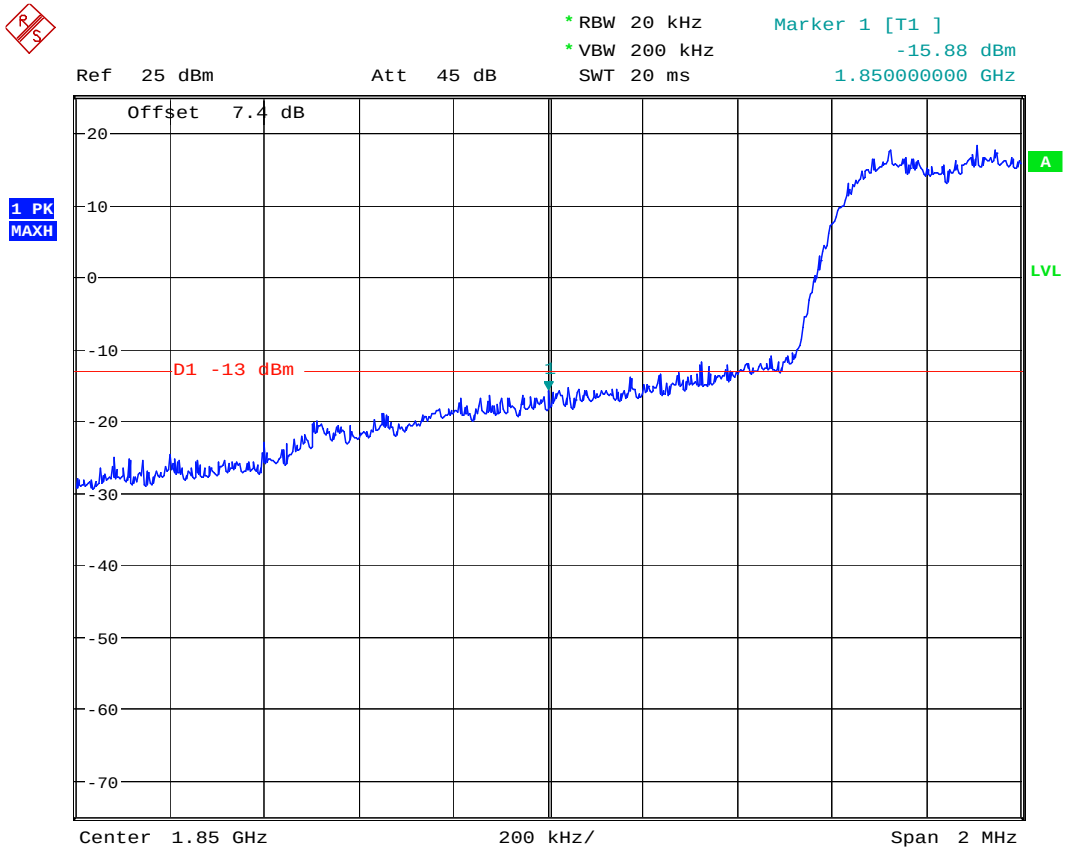



Date: 23.AUG.2008 15:05:59

# EVDO subtype 2

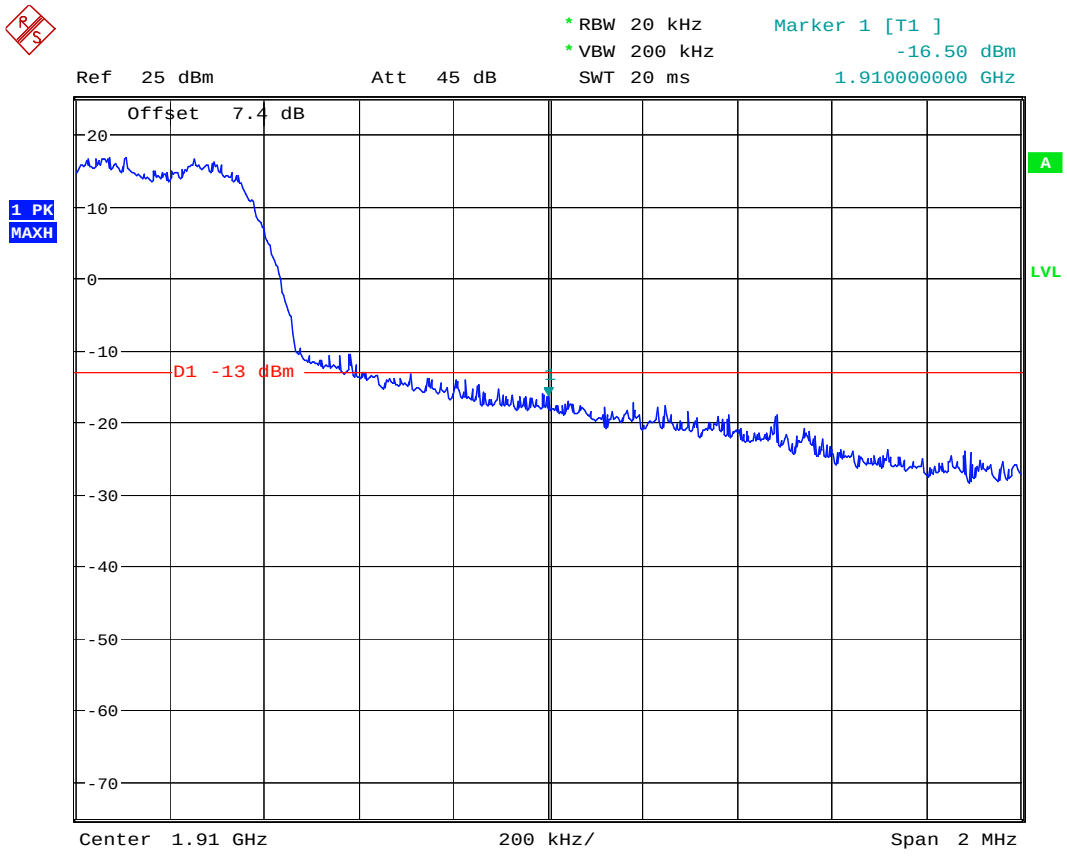
**Modulation：BPSK**

Left Edge (1850 MHz)
Channel 25



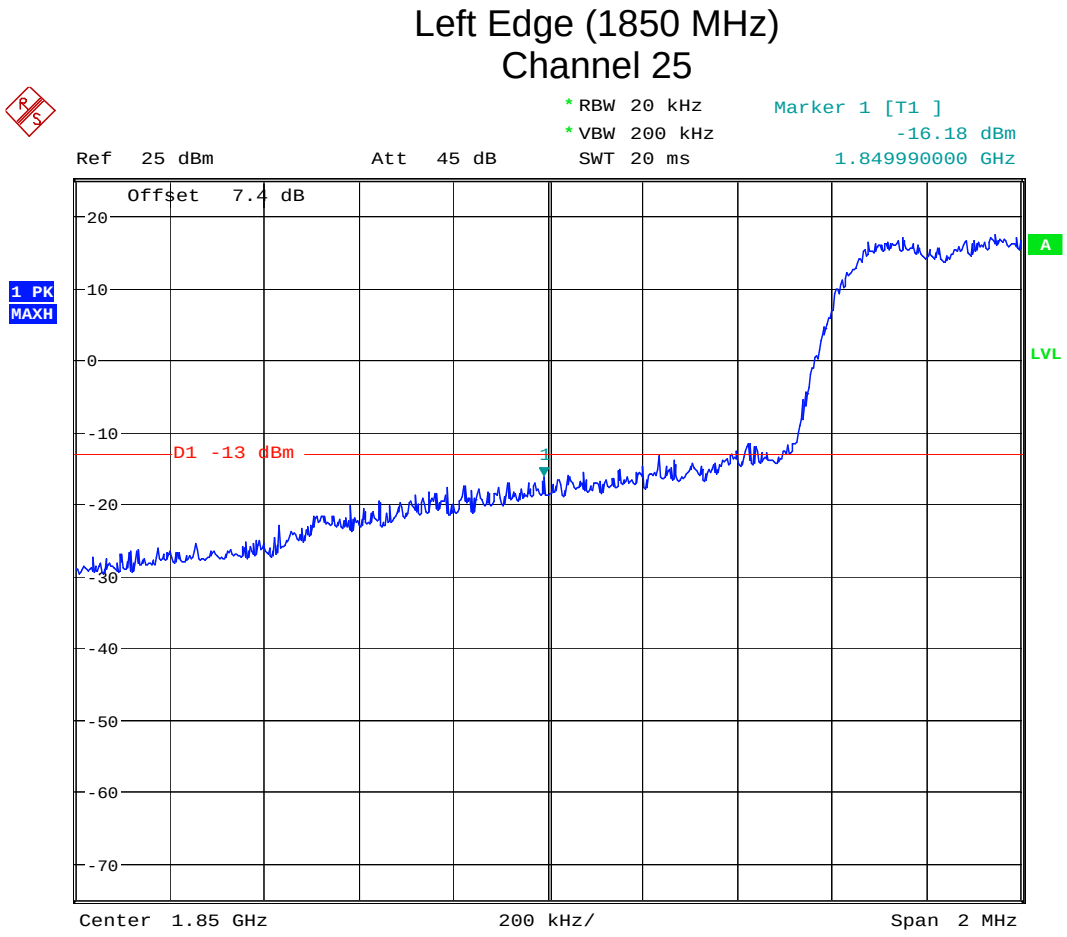

Date: 20.AUG.2008 09:20:25

Right Edge (1910MHz)
Channel 1175



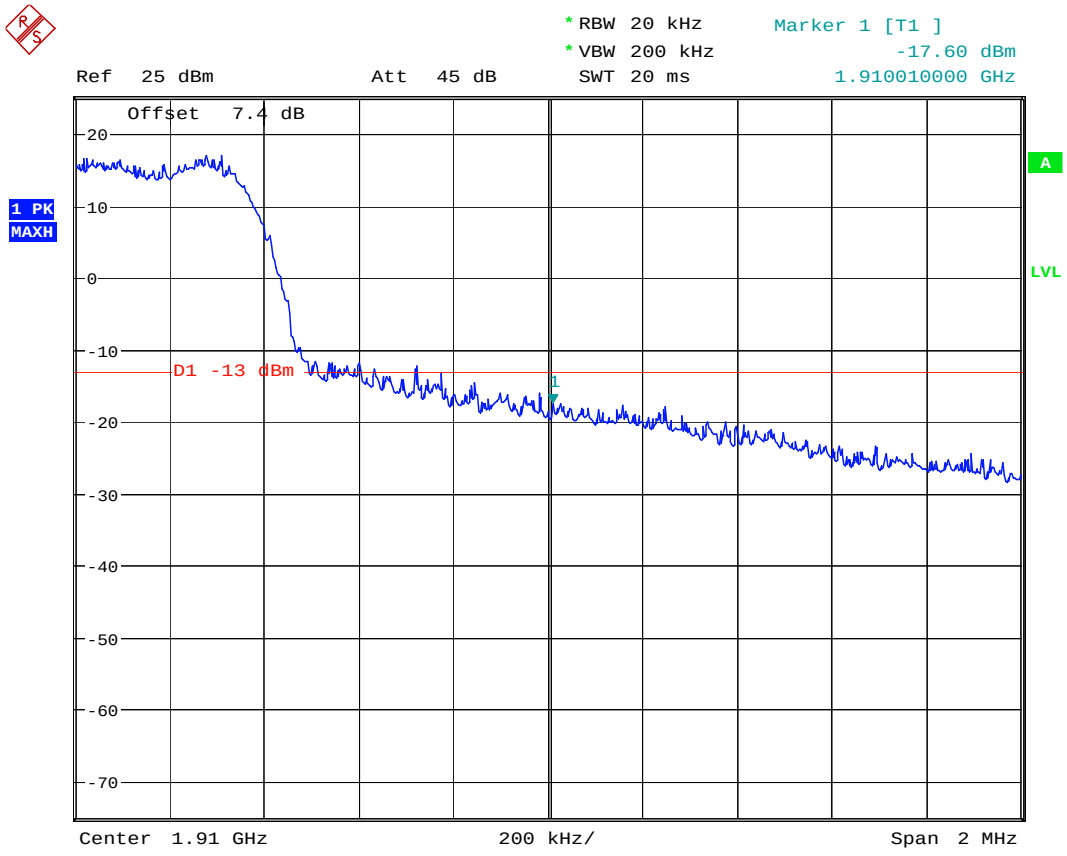

Date: 20.AUG.2008 09:20:39

**Modulation：QPSK**




Date: 20.AUG.2008 09:20:52

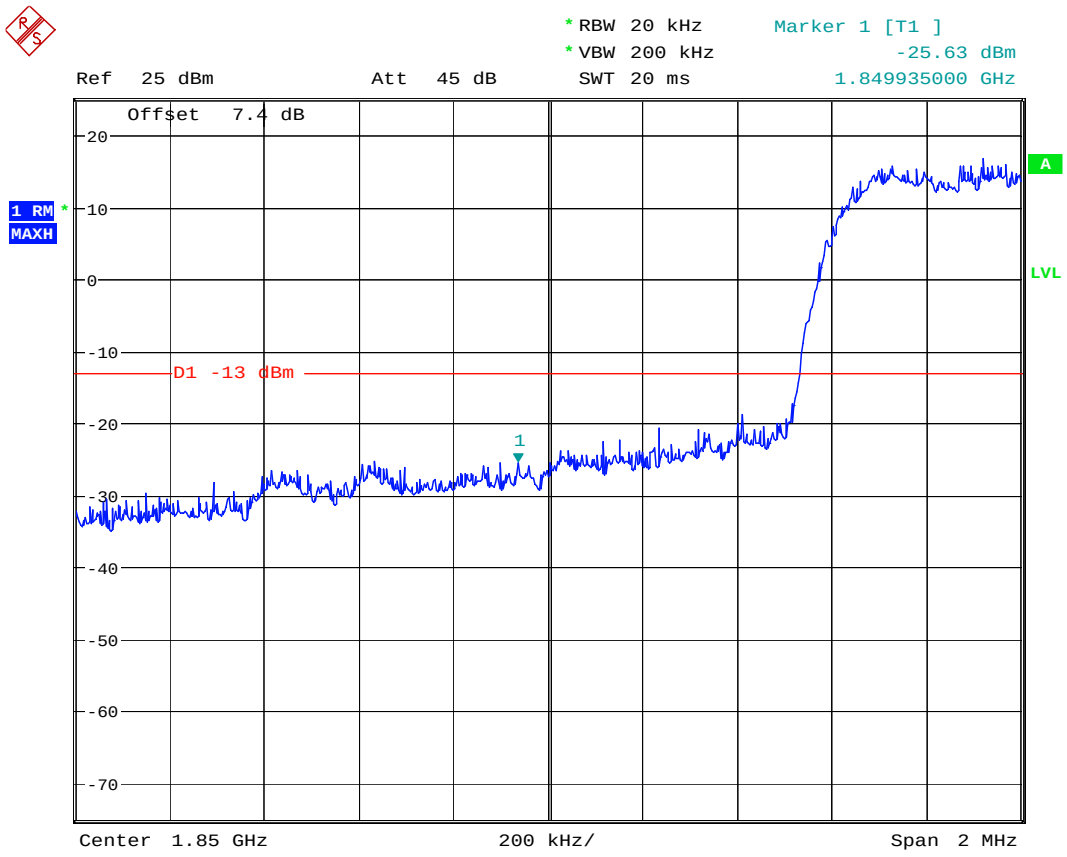
## Right Edge (1910MHz)
## Channel 1175




Date: 20.AUG.2008 09:21:06

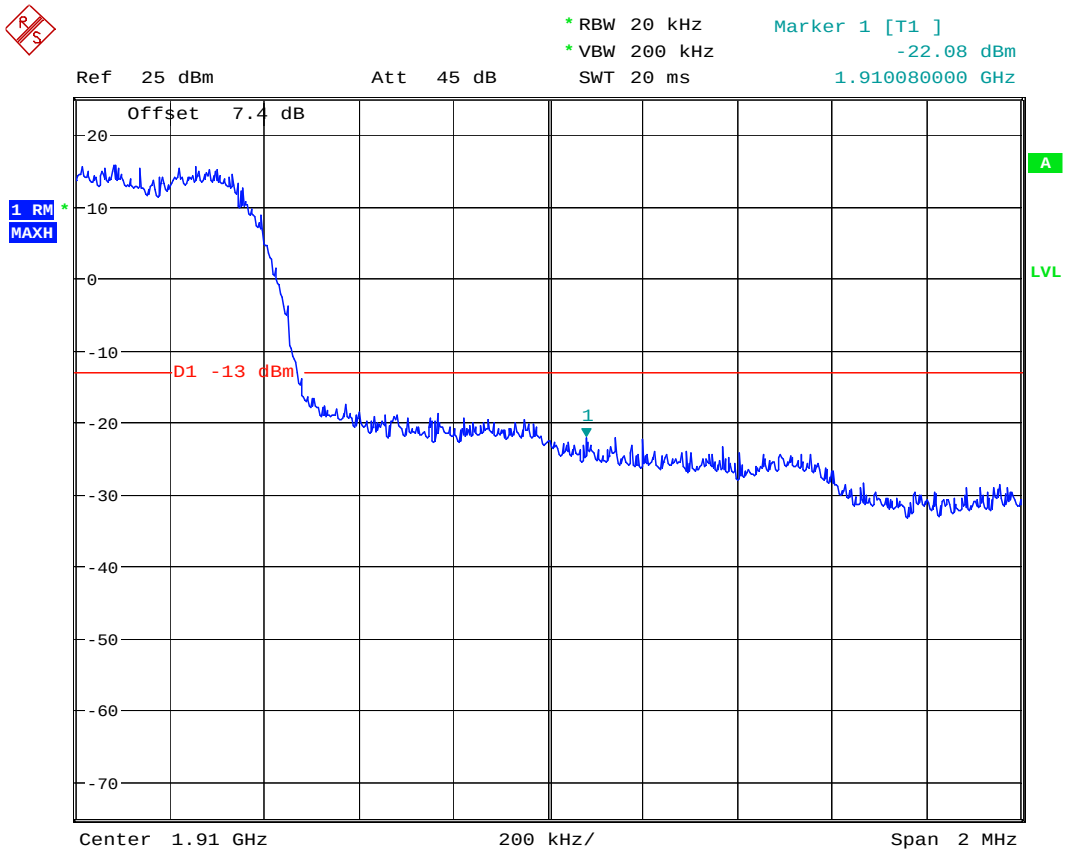
**Modulation：8PSK**

Left Edge (1850 MHz)
Channel 25




Date: 23.AUG.2008 15:02:26

Right Edge (1910MHz)
Channel 1175




Date: 23.AUG.2008 15:02:41

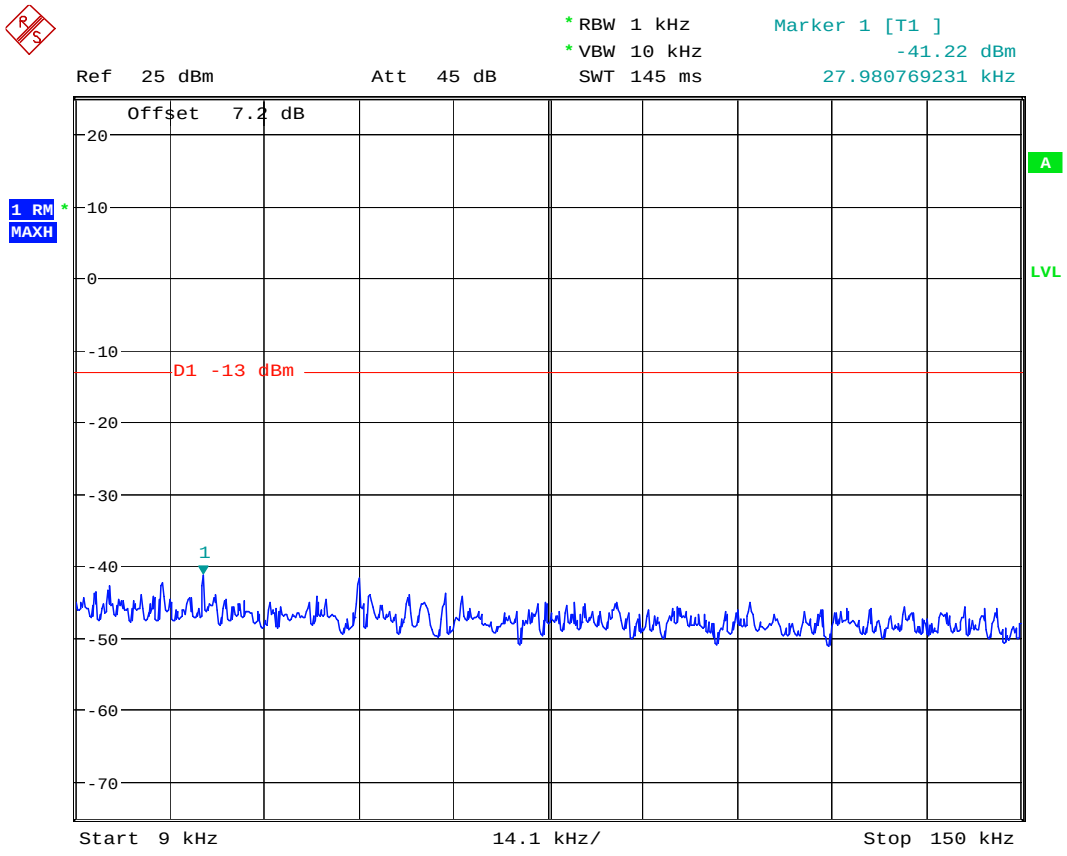
# Appendix D

## Spurious Emission at Antenna Terminal

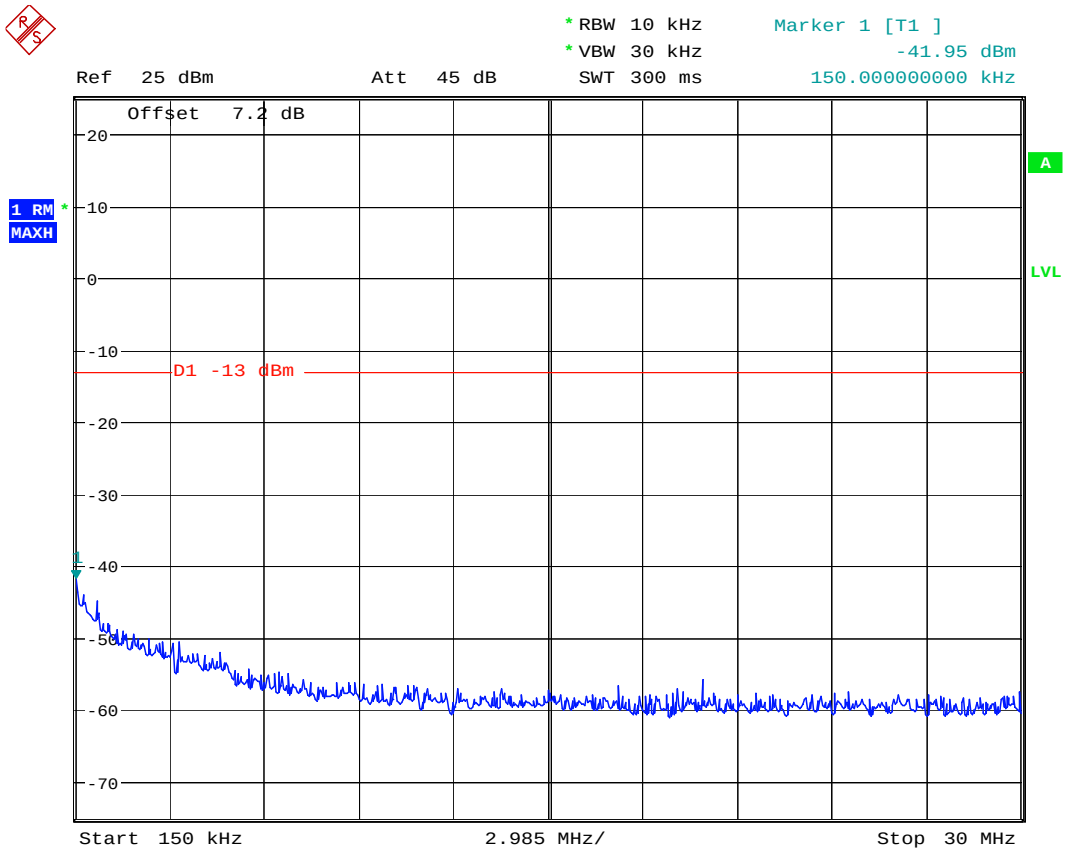
According to FCC Part 2.1051 & 24.238

# TM1

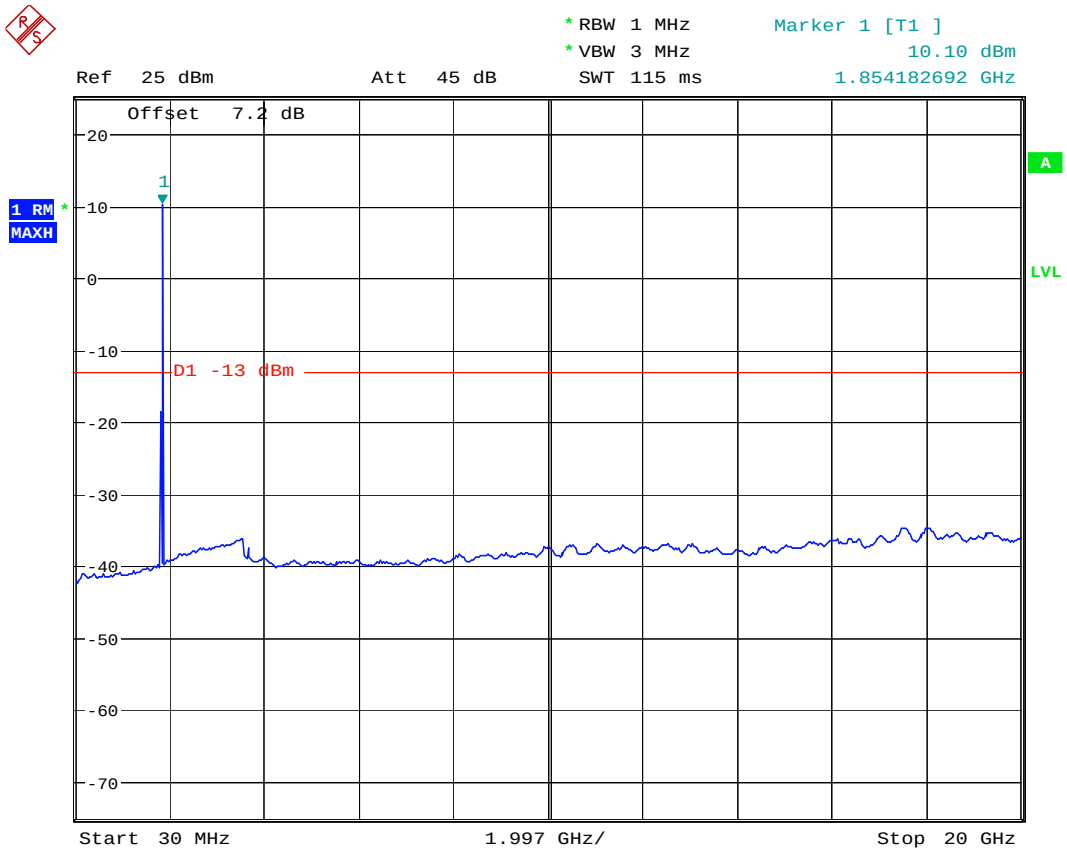
## Channel 25




Date: 20.AUG.2008 10:32:56

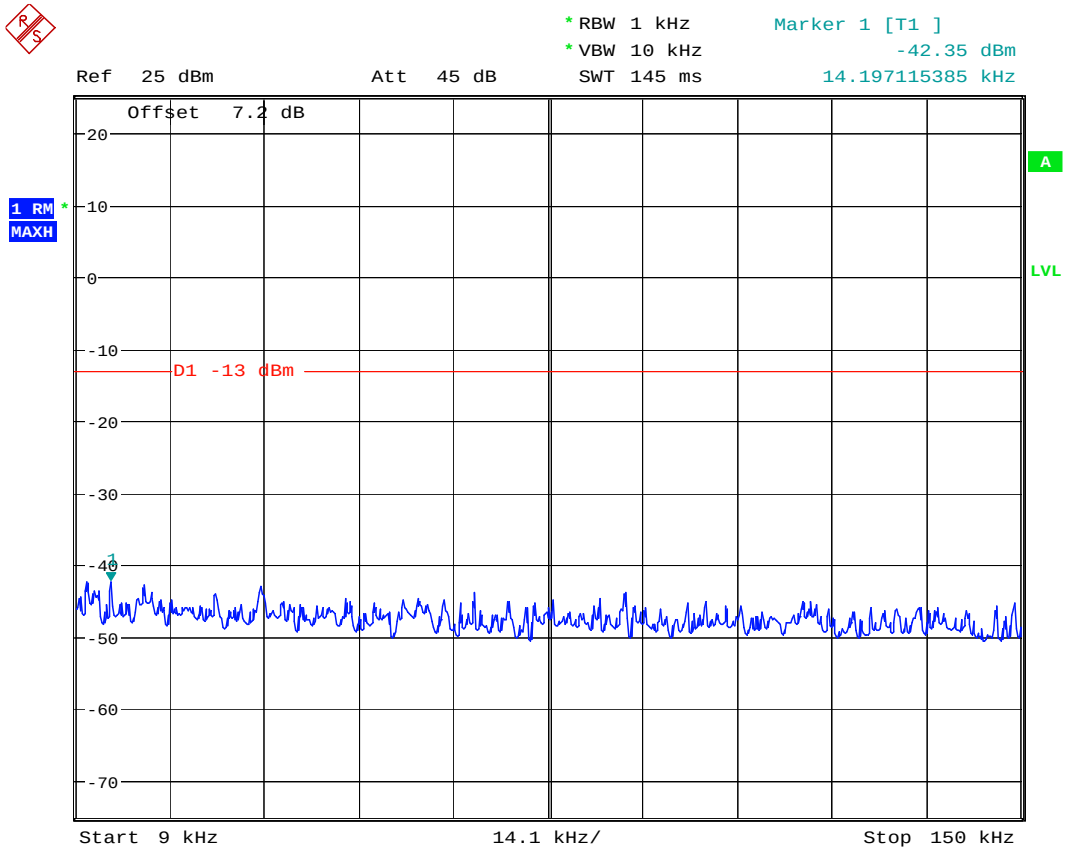



Date: 20.AUG.2008 10:33:21

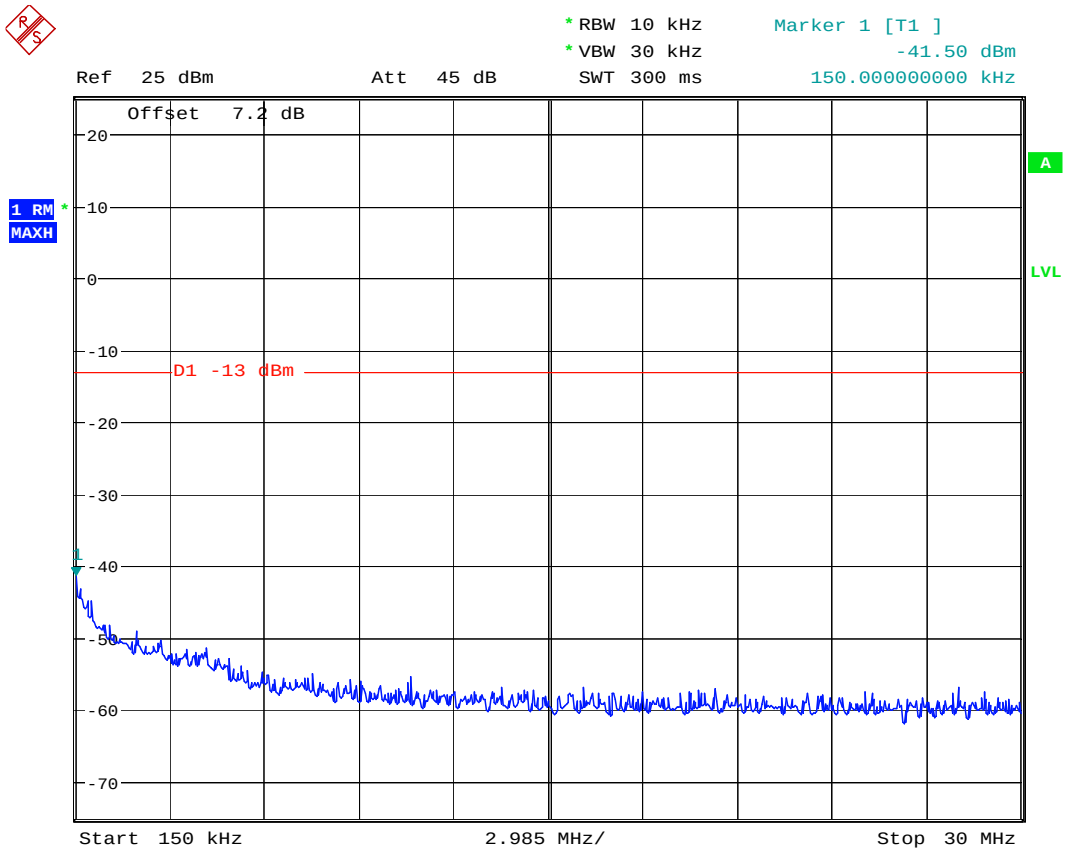



Date: 20.AUG.2008 10:33:47

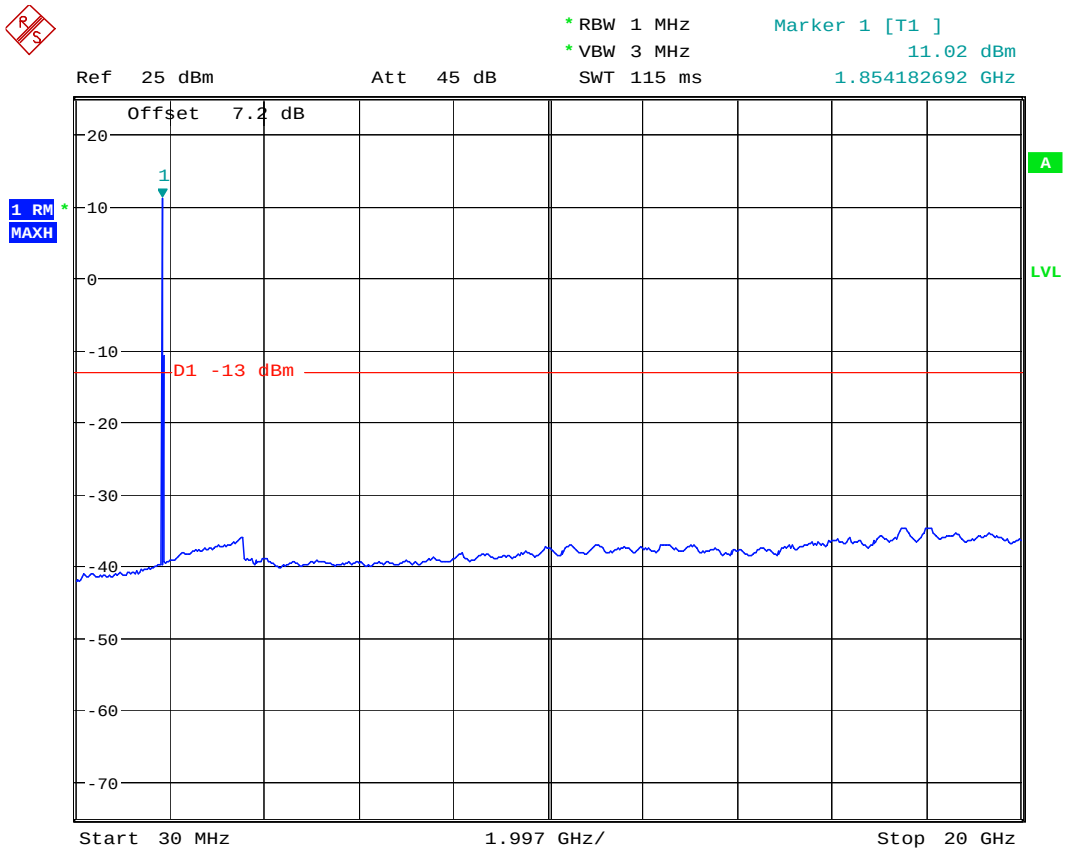
## Channel 600




Date: 20.AUG.2008 10:33:04

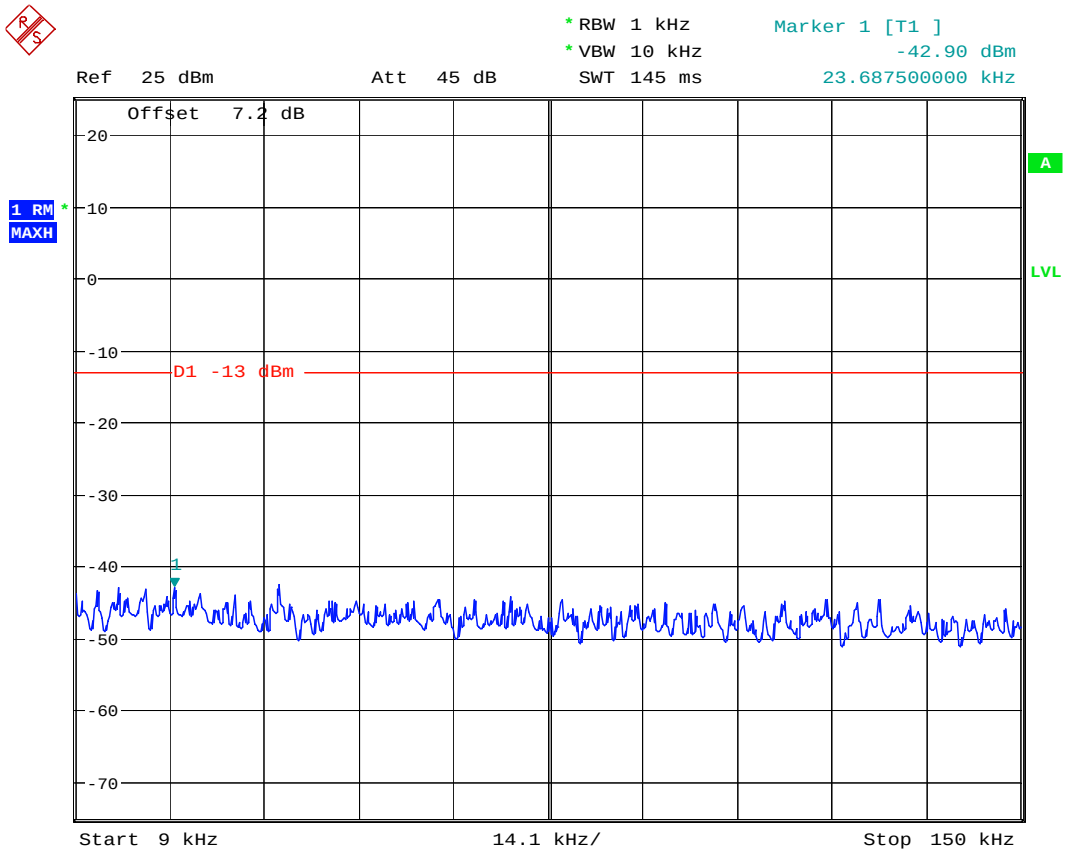



Date: 20.AUG.2008 10:33:30

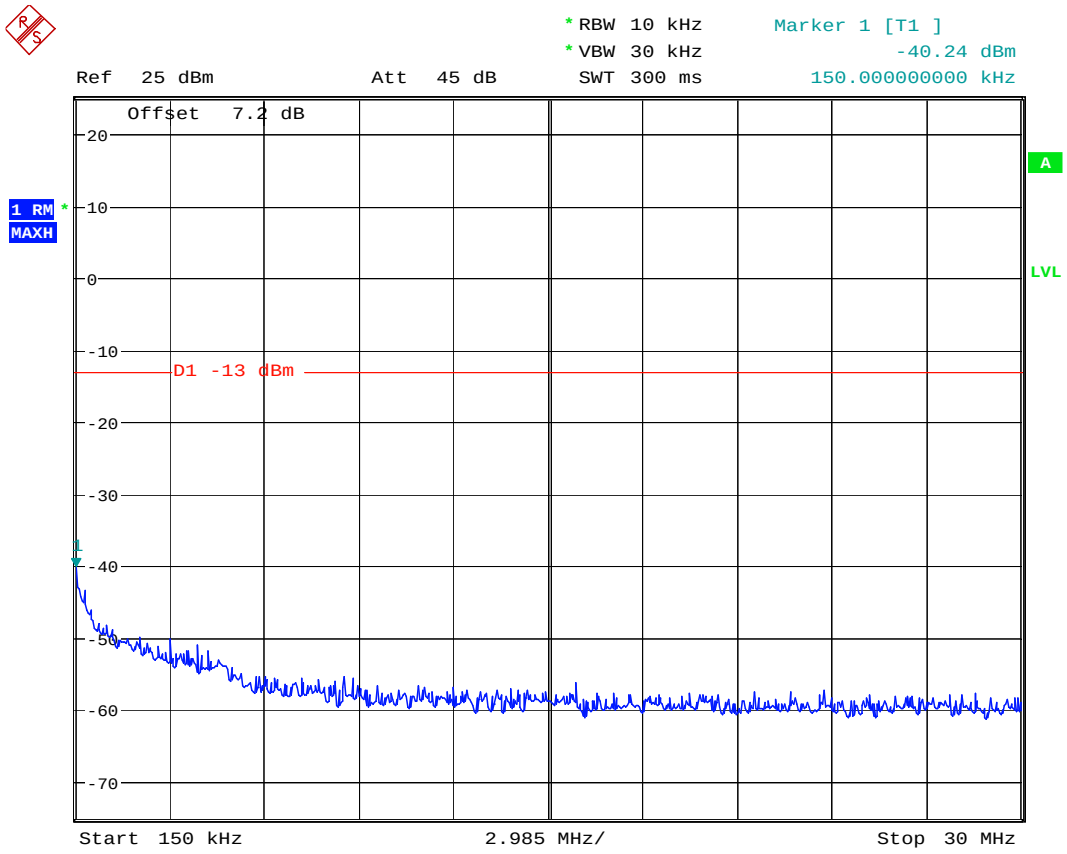



Date: 20.AUG.2008 10:33:56

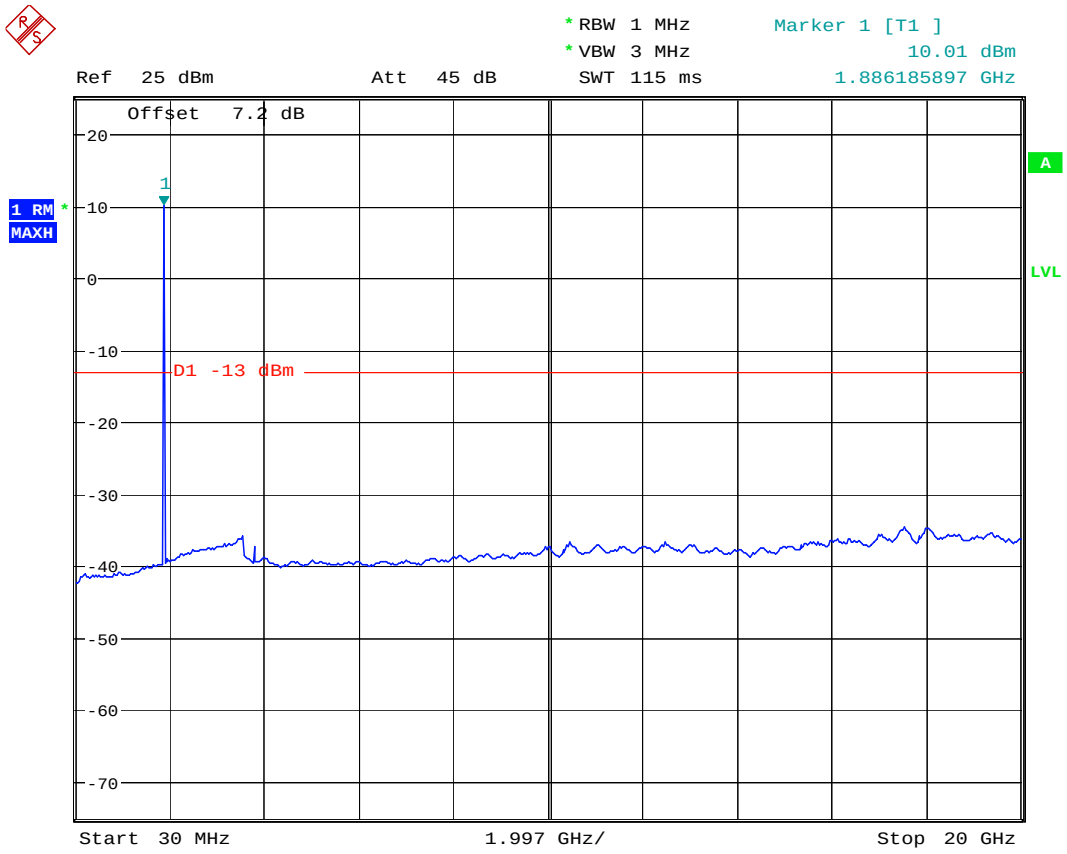
## Channel 1175




Date: 20.AUG.2008 10:33:13



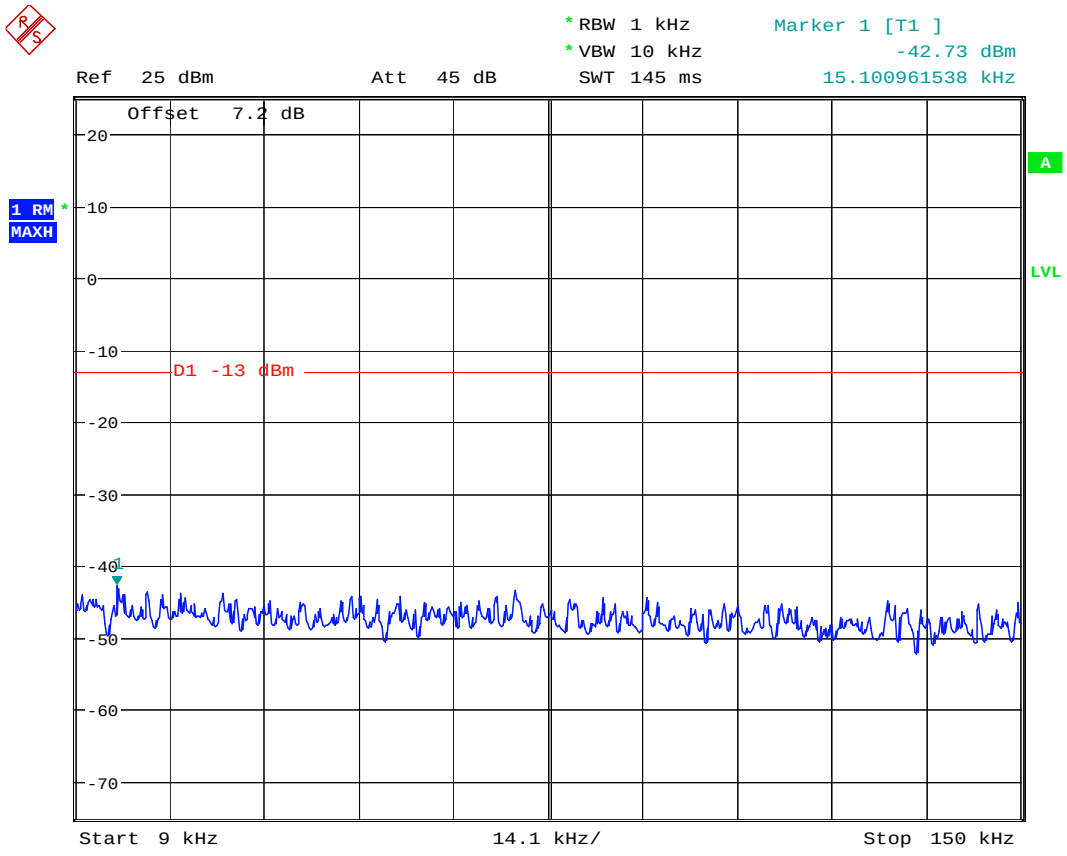

Date: 20.AUG.2008 10:33:38



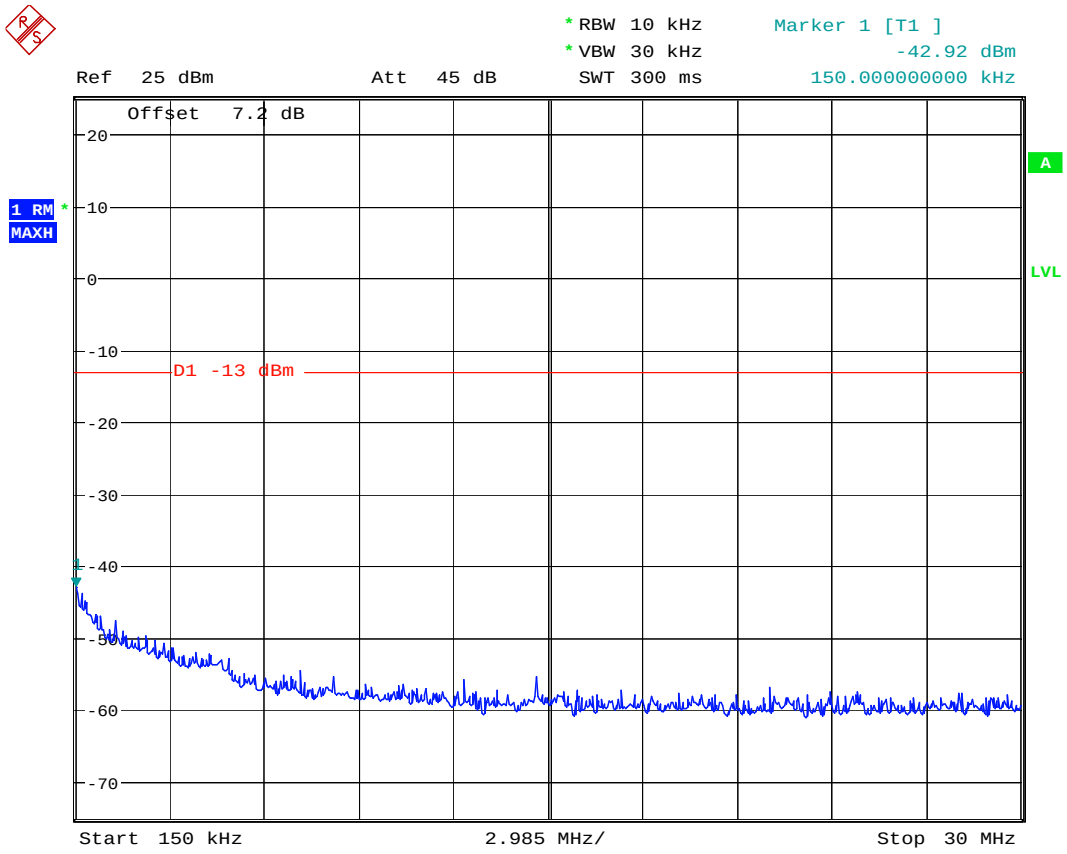

Date: 20.AUG.2008 10:34:04

# TM3

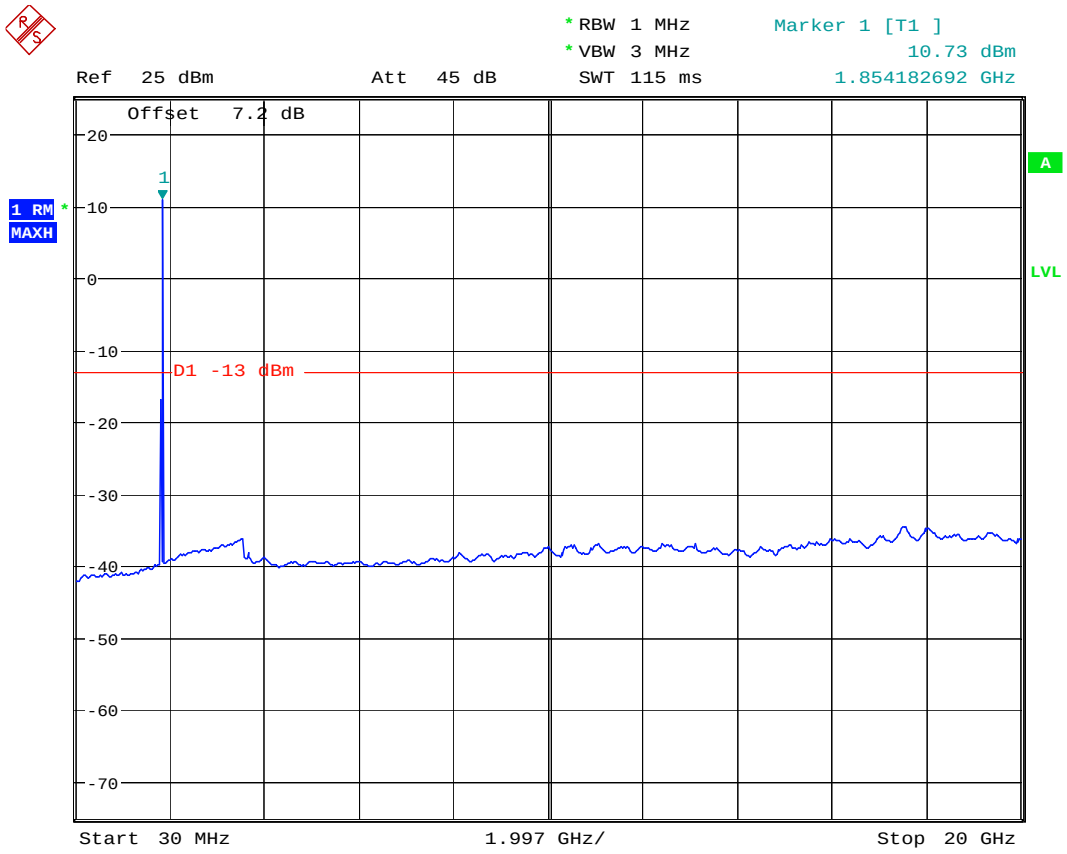
Channel
25




Date: 20.AUG.2008 10:34:14

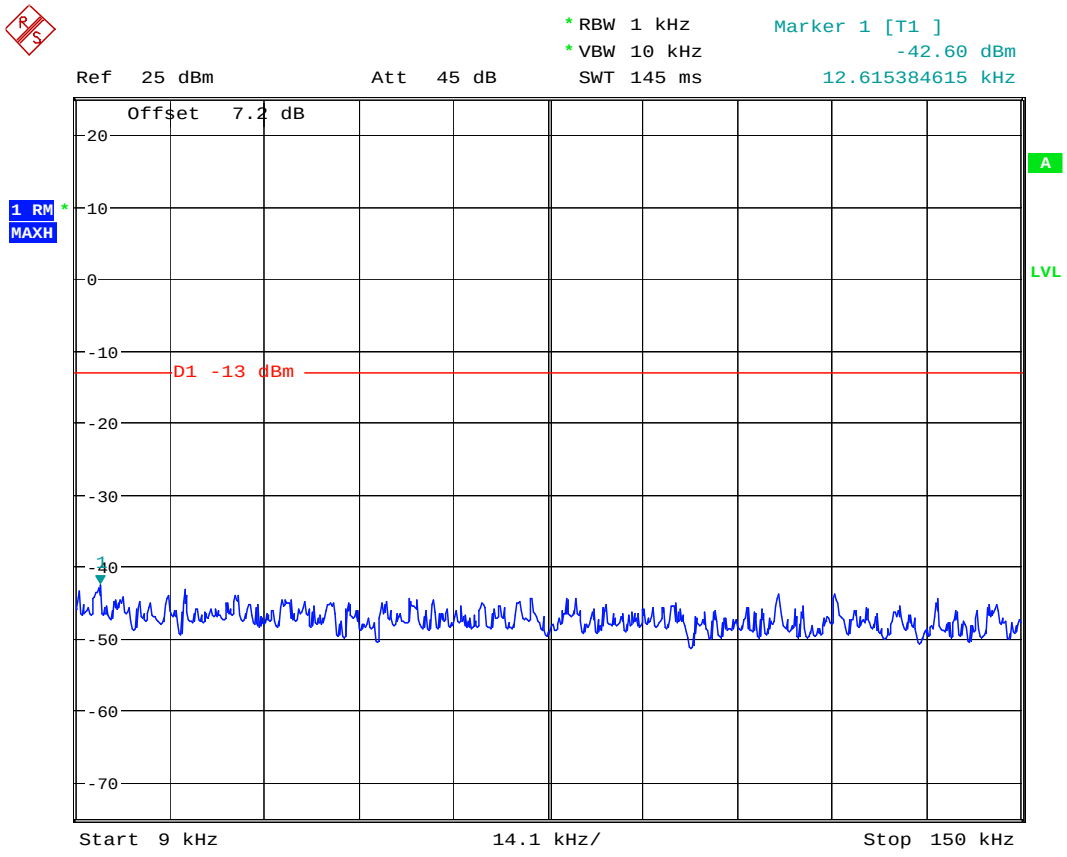



Date: 20.AUG.2008 10:34:40

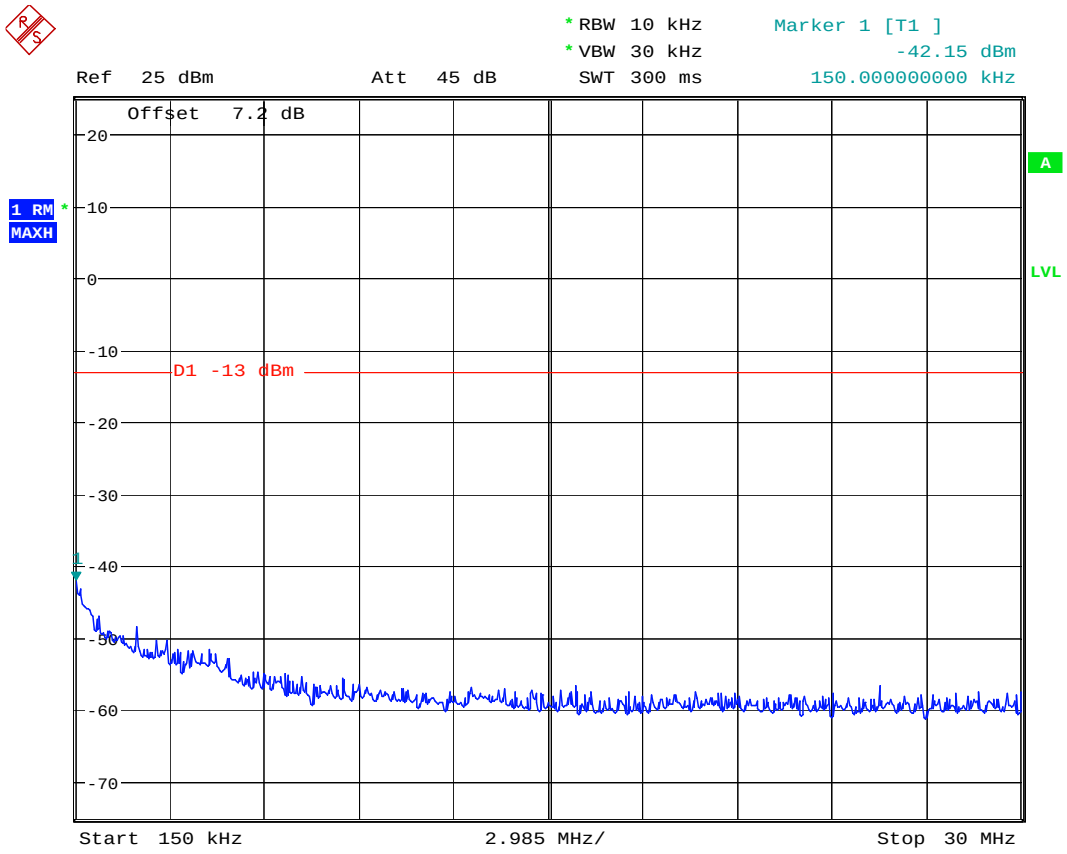



Date: 20.AUG.2008 10:35:06

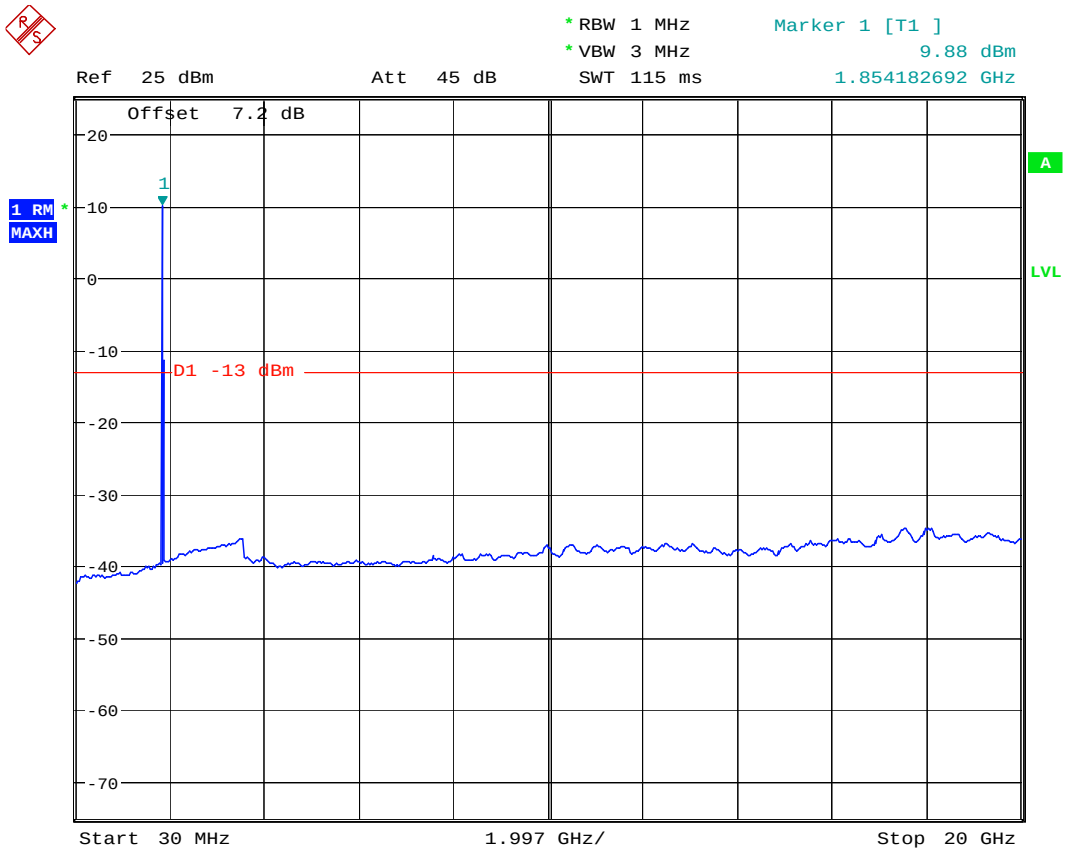
## Channel 600




Date: 20.AUG.2008 10:34:23

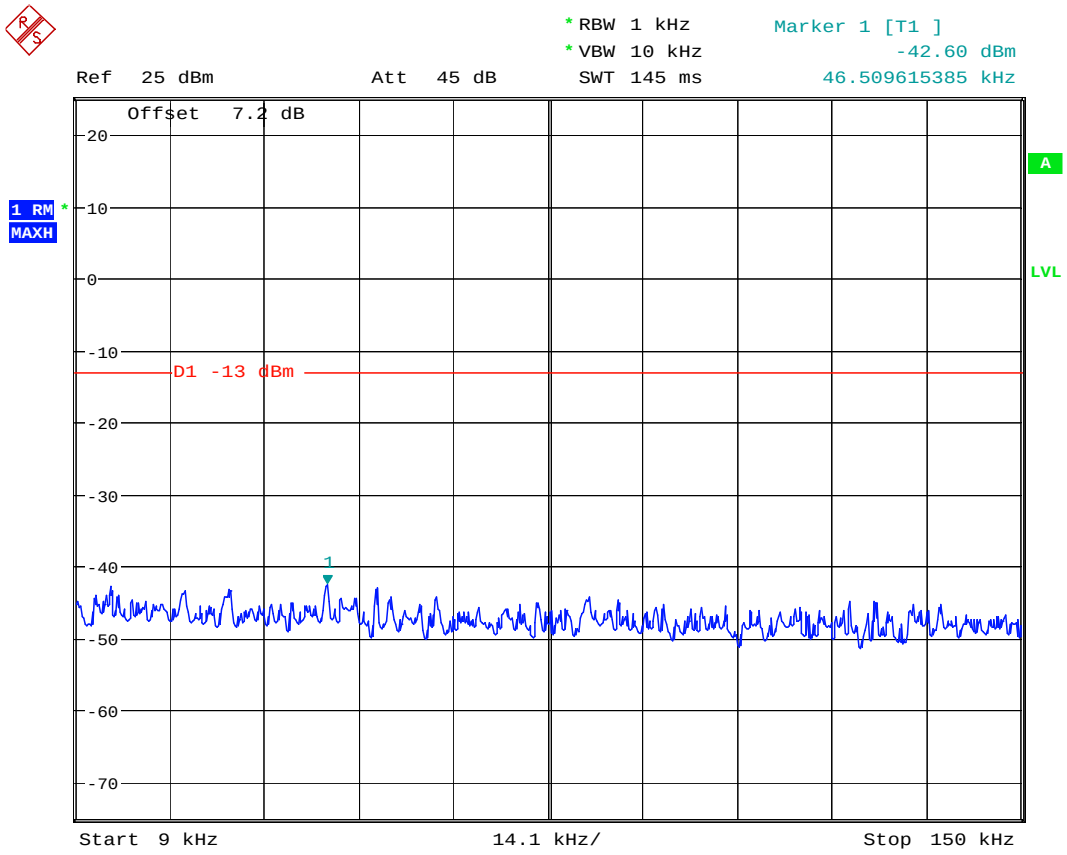



Date: 20.AUG.2008 10:34:49

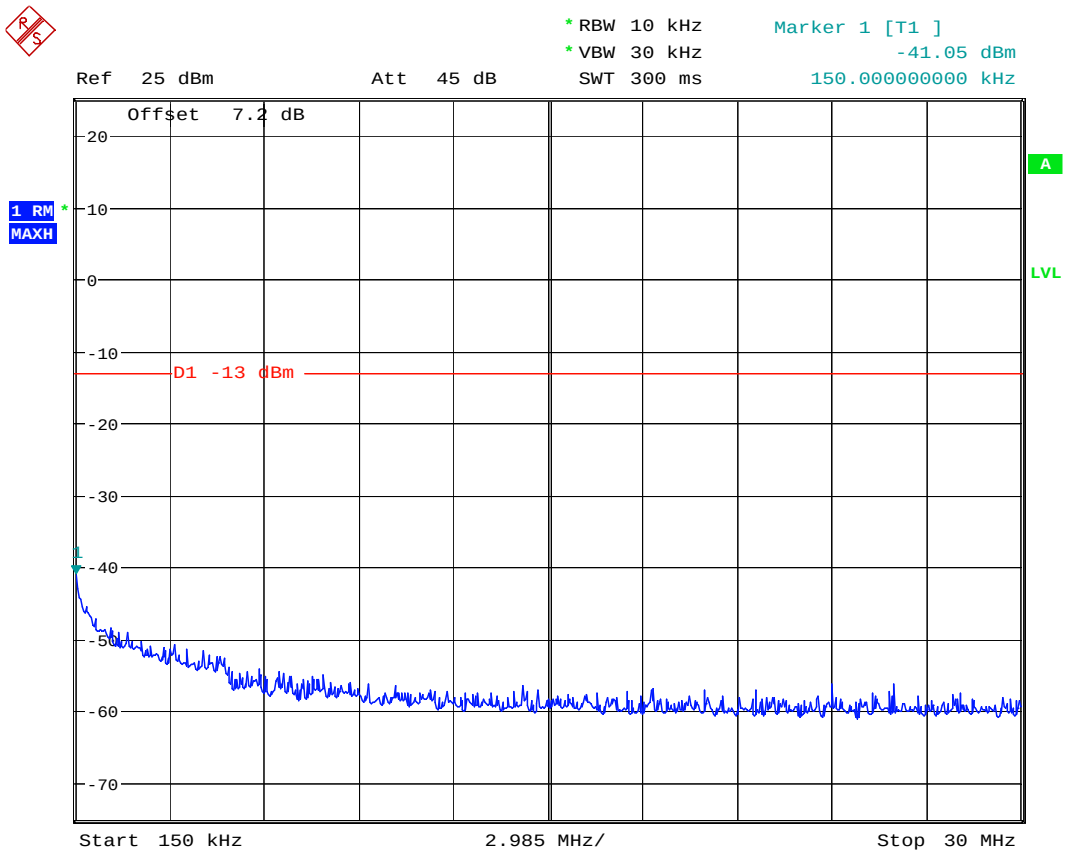



Date: 20.AUG.2008 10:35:14

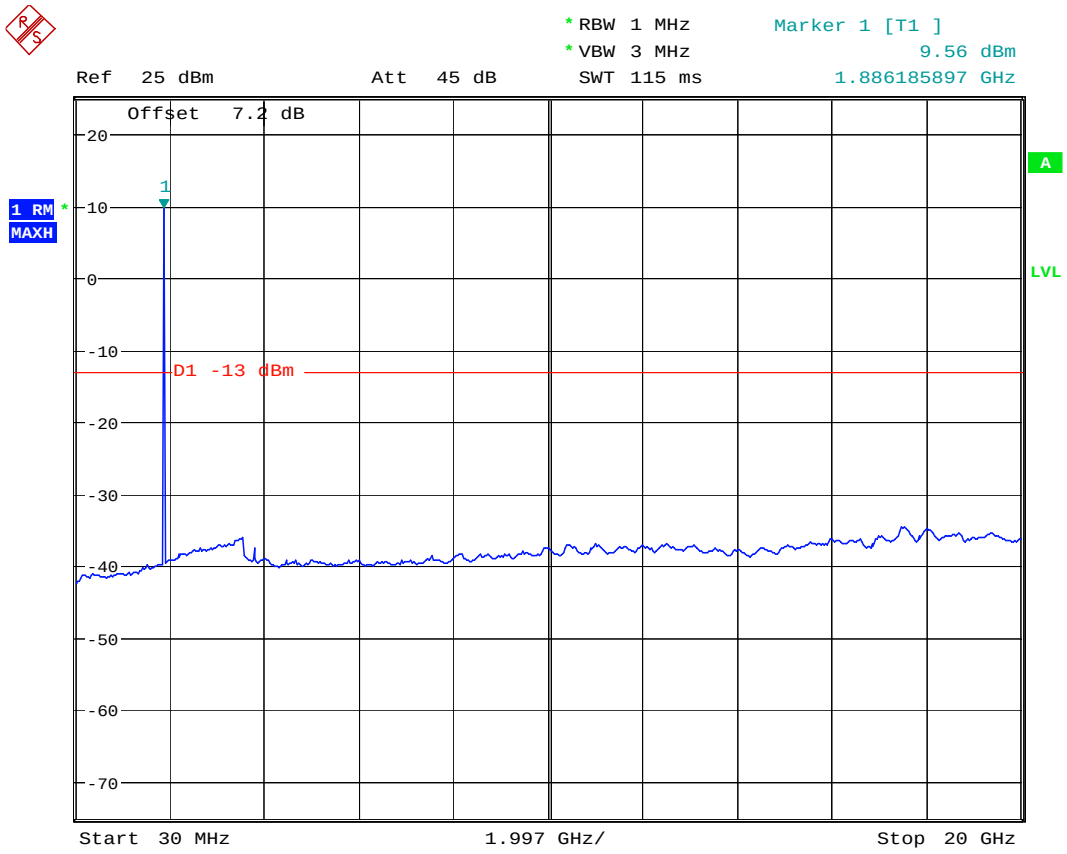
## Channel 1175




Date: 20.AUG.2008 10:34:31



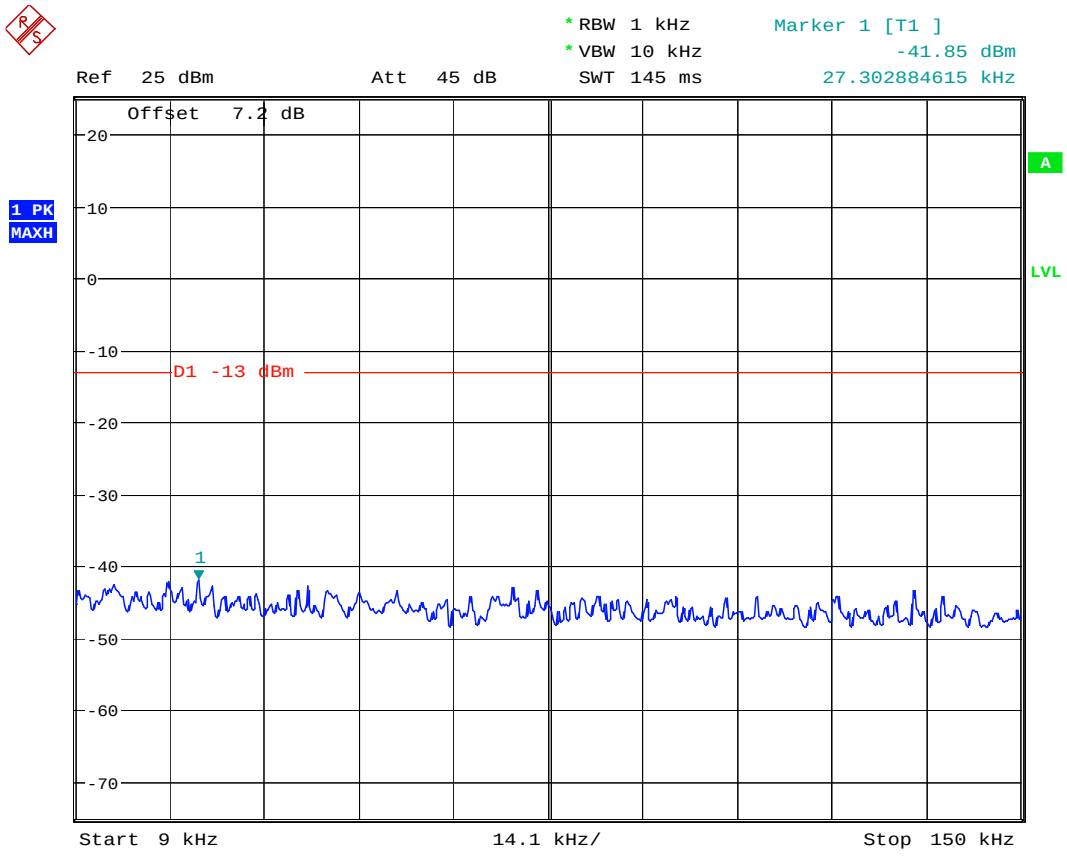

Date: 20.AUG.2008 10:34:57

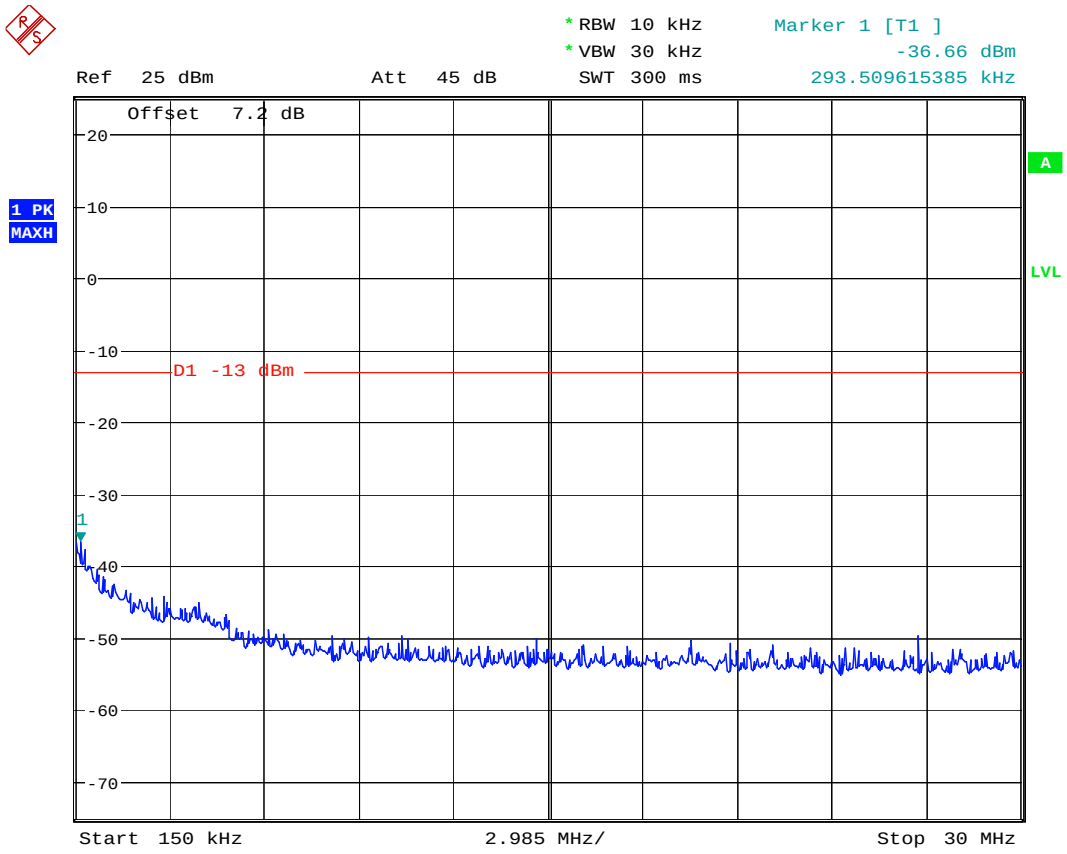



Date: 20.AUG.2008 10:35:23

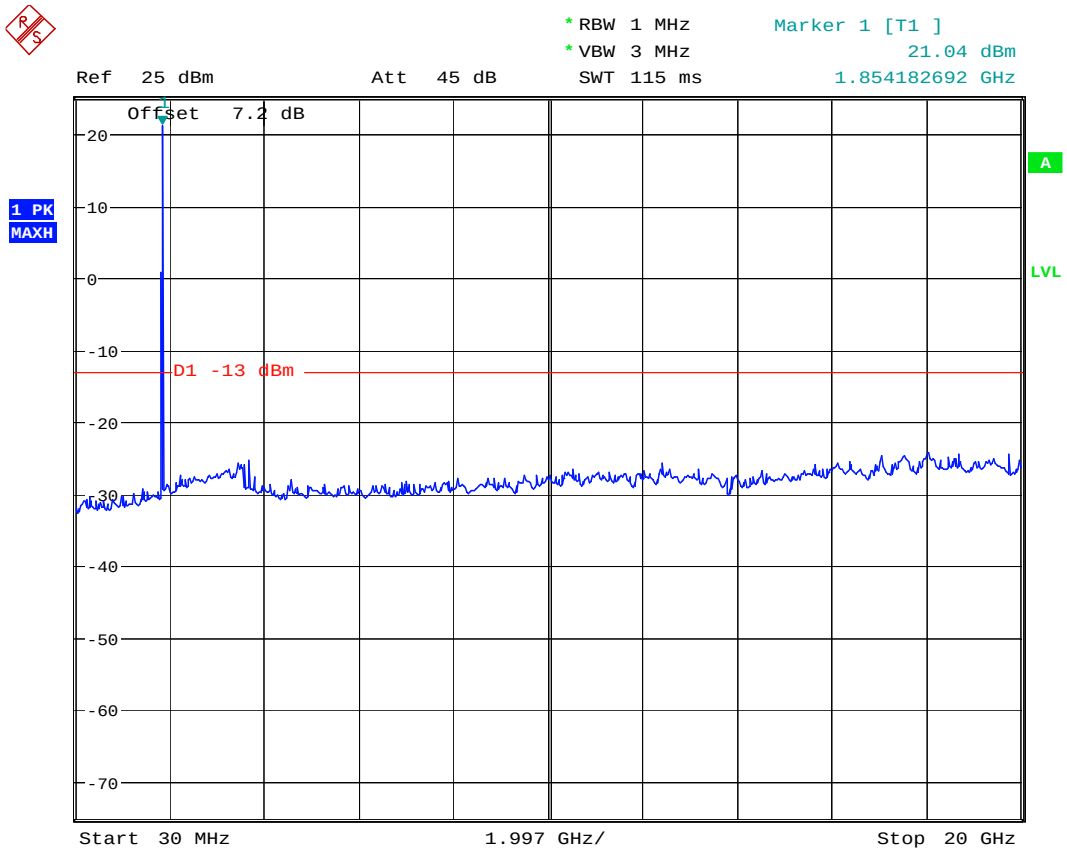
# EVDO subtype 0

## Channel 25



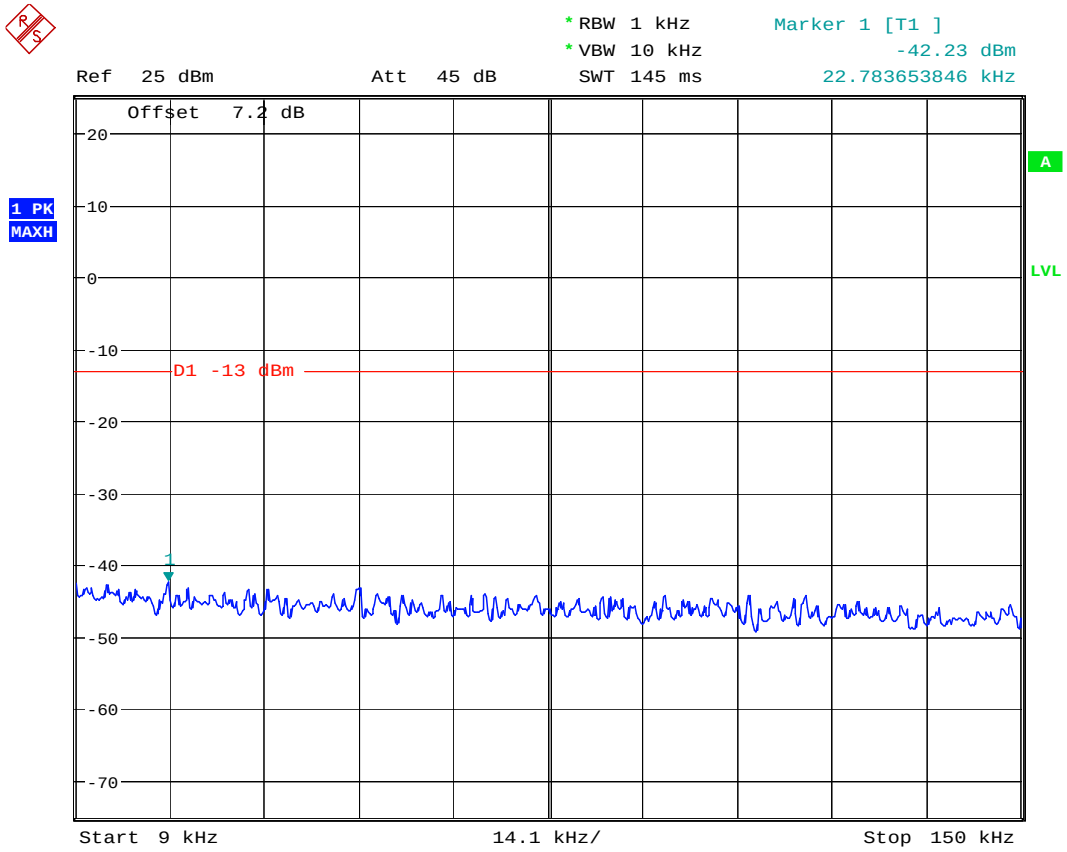



Date: 25.AUG.2008 11:09:00

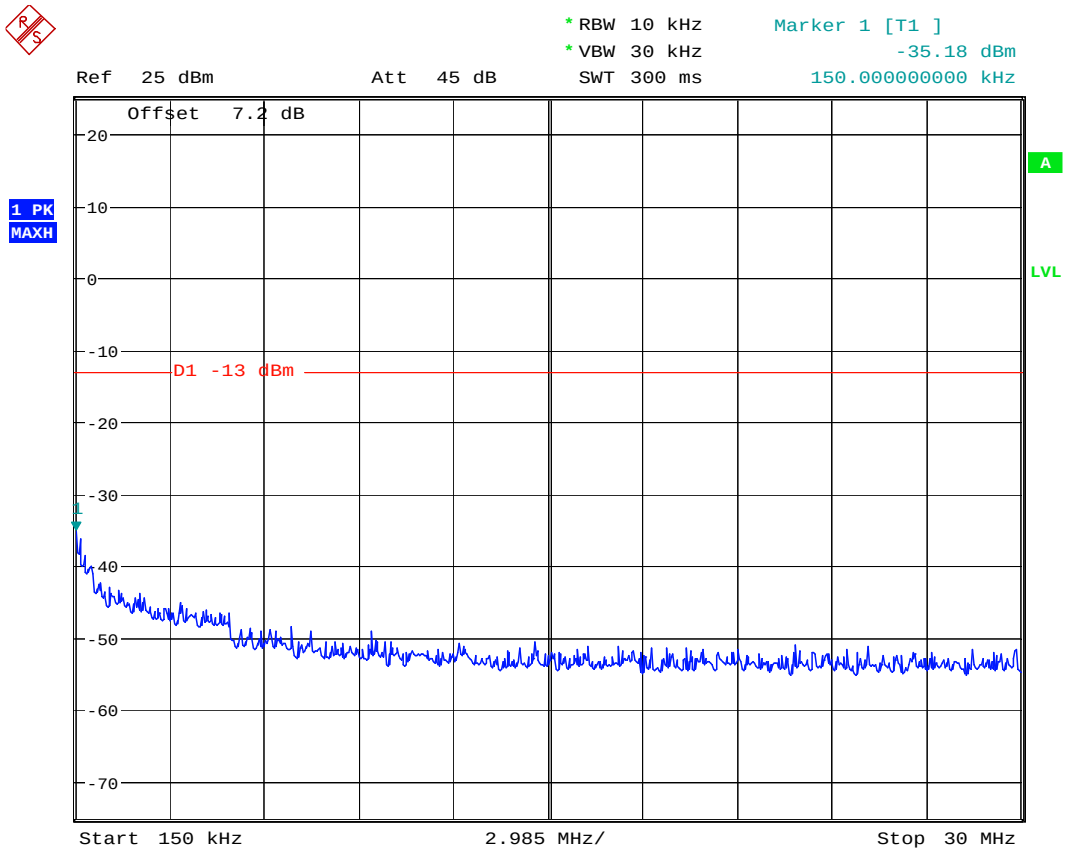



Date: 25.AUG.2008 11:09:44

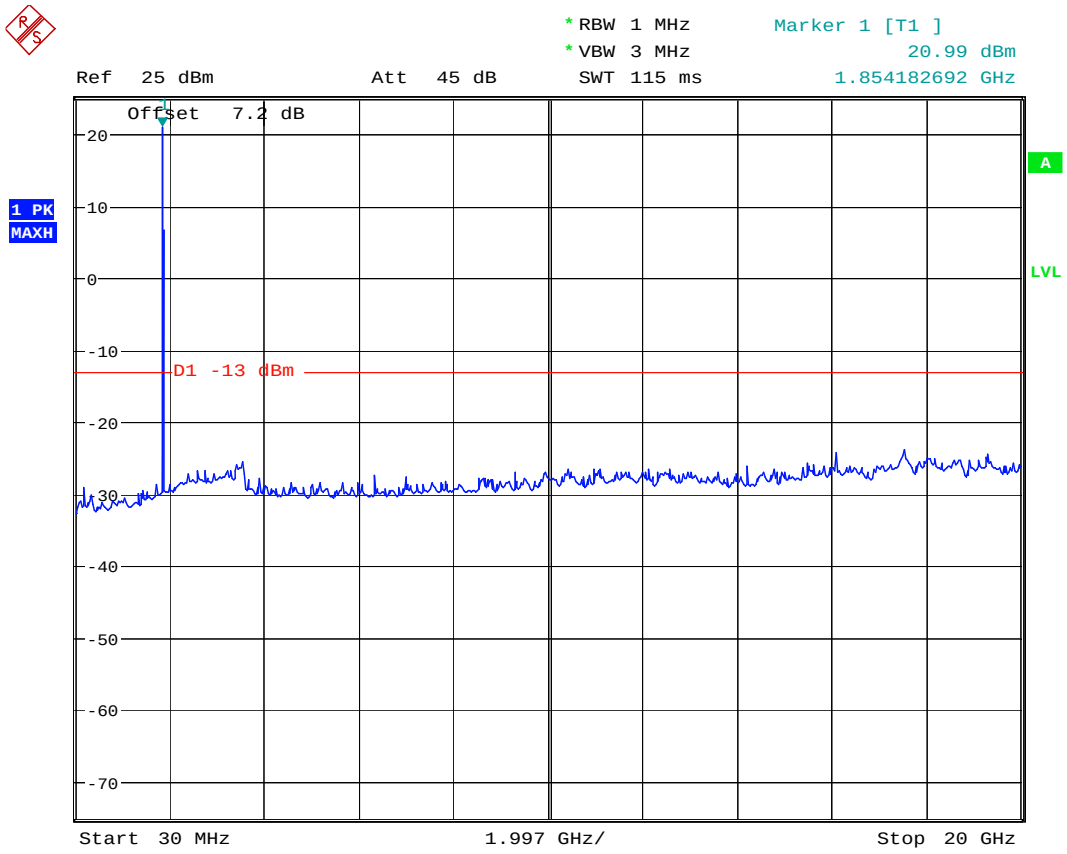
## Channel 600




Date: 25.AUG.2008 11:08:30

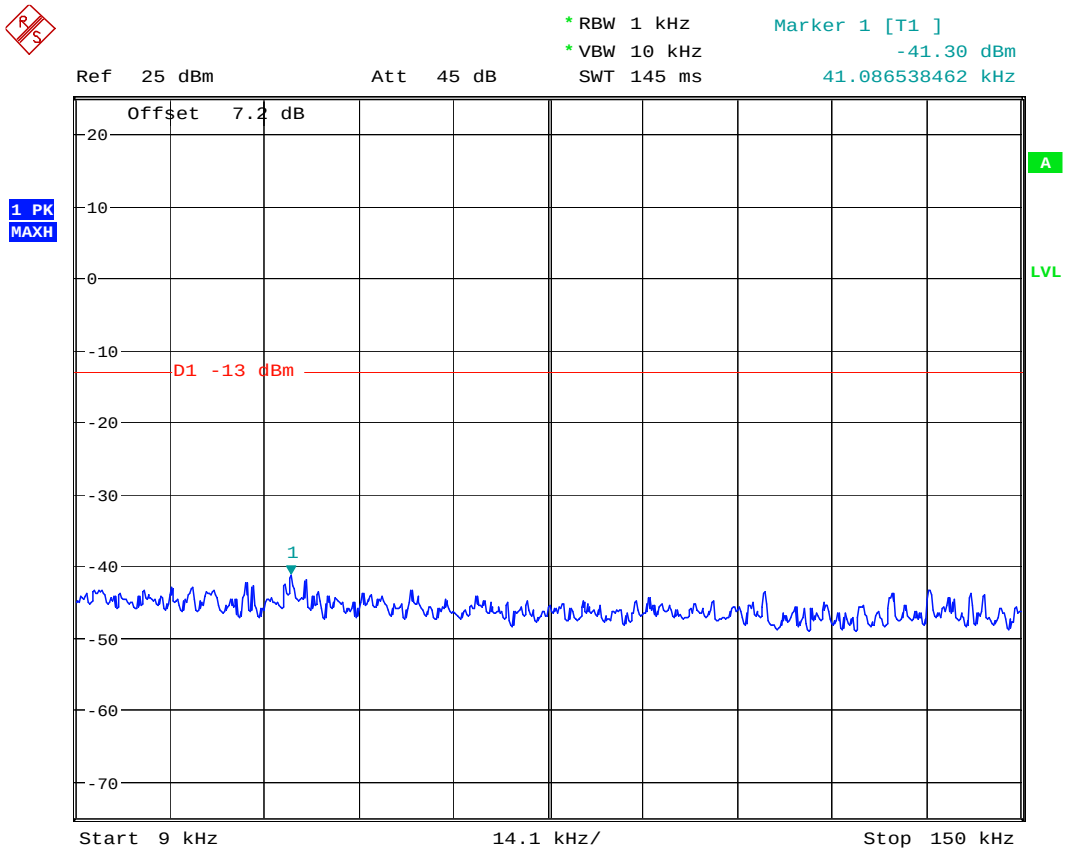



Date: 25.AUG.2008 11:09:14

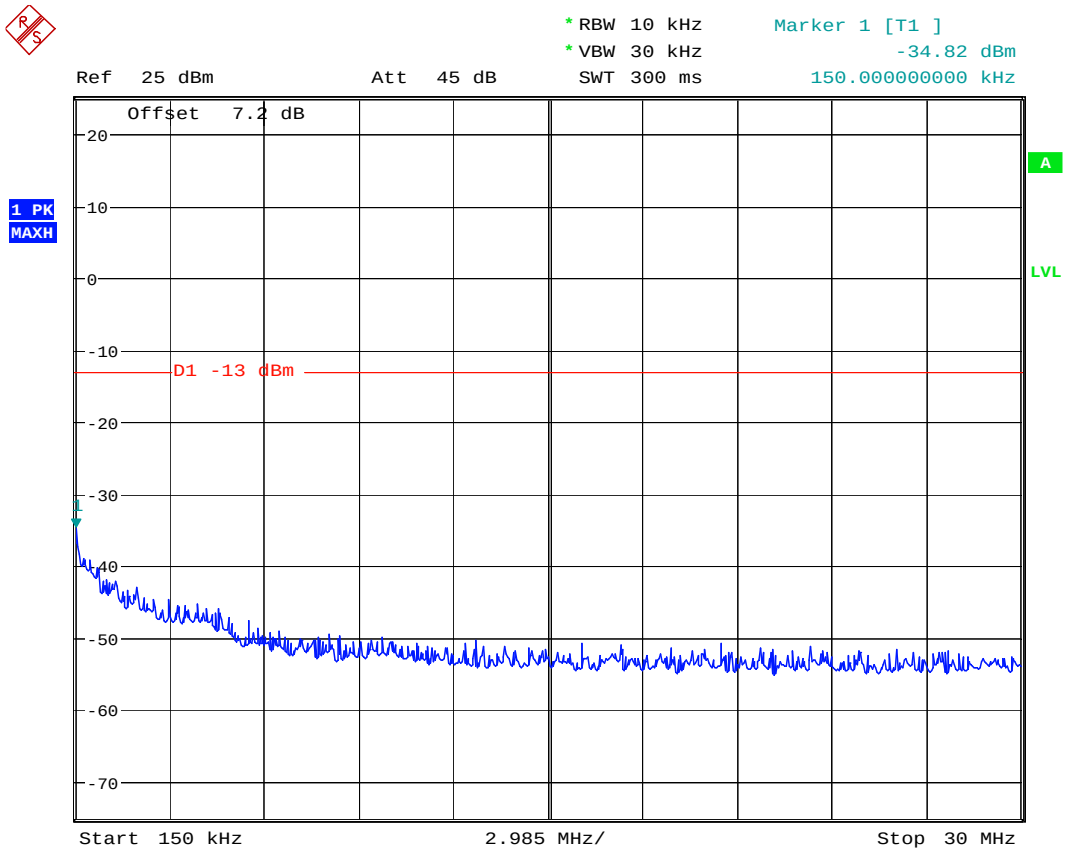



Date: 25.AUG.2008 11:09:59

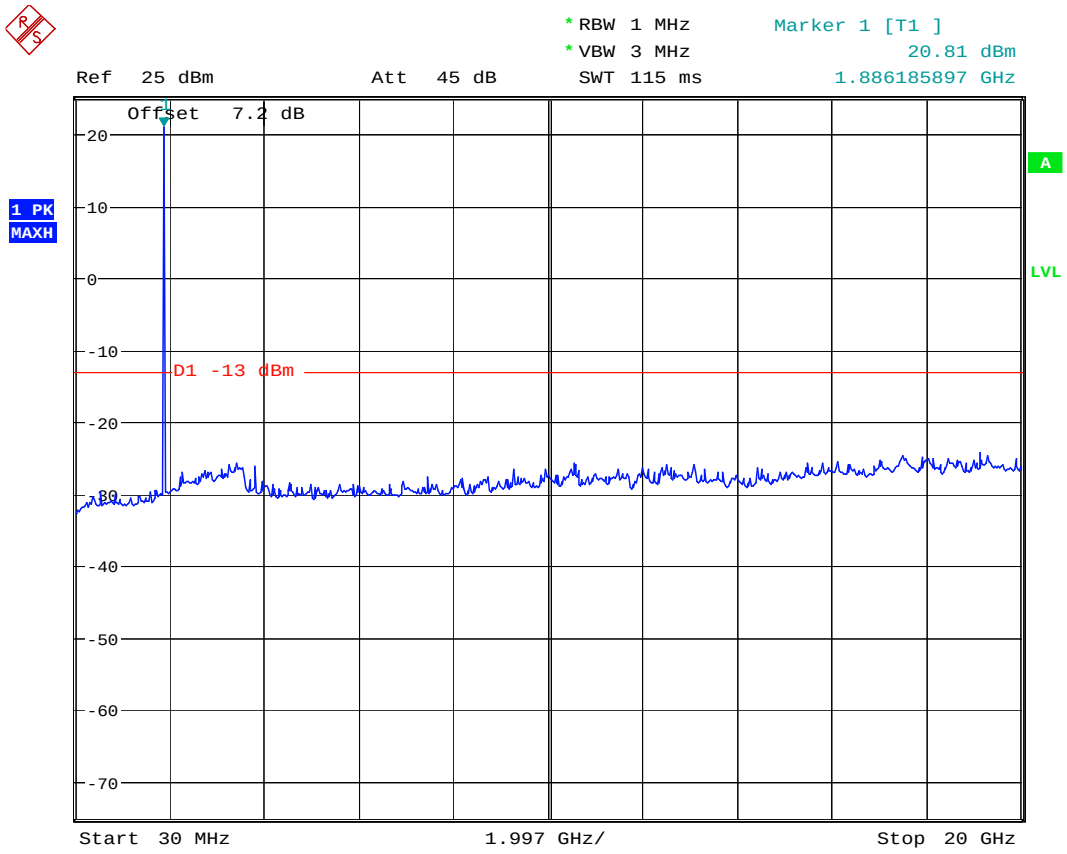
## Channel 1175




Date: 25.AUG.2008 11:08:45




Date: 25.AUG.2008 11:09:29

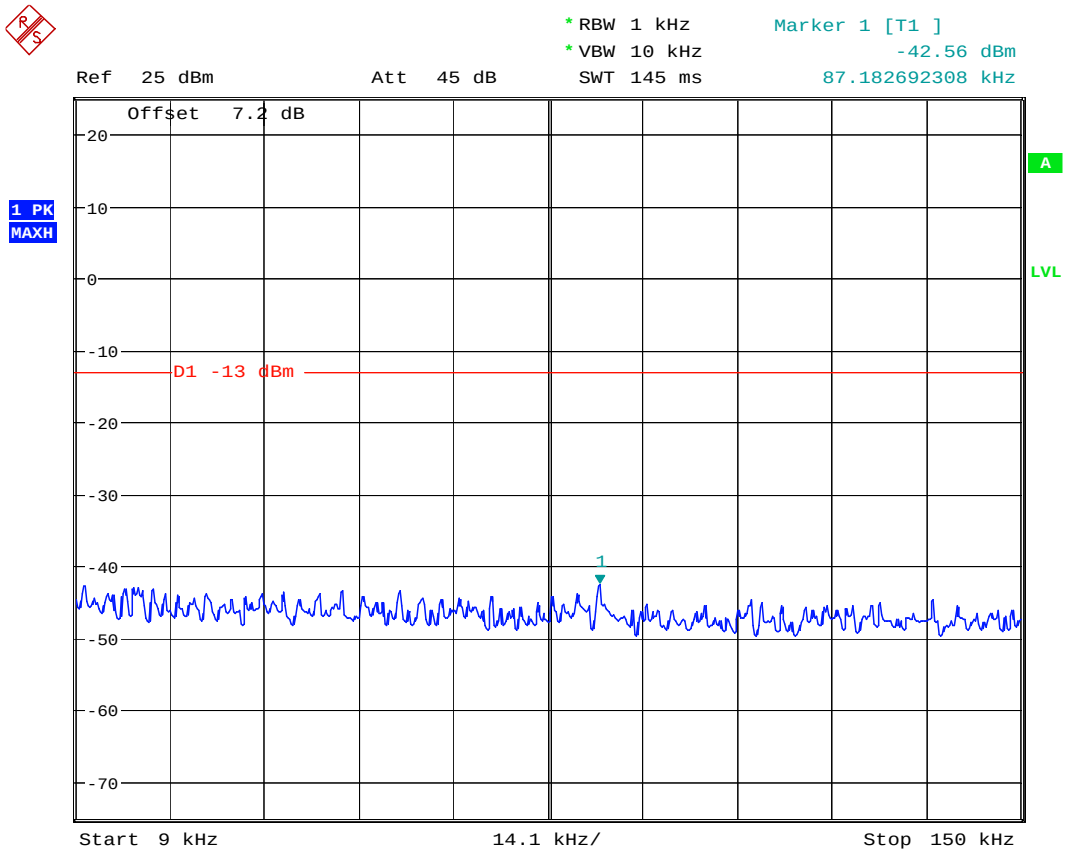



Date: 25.AUG.2008 11:10:13

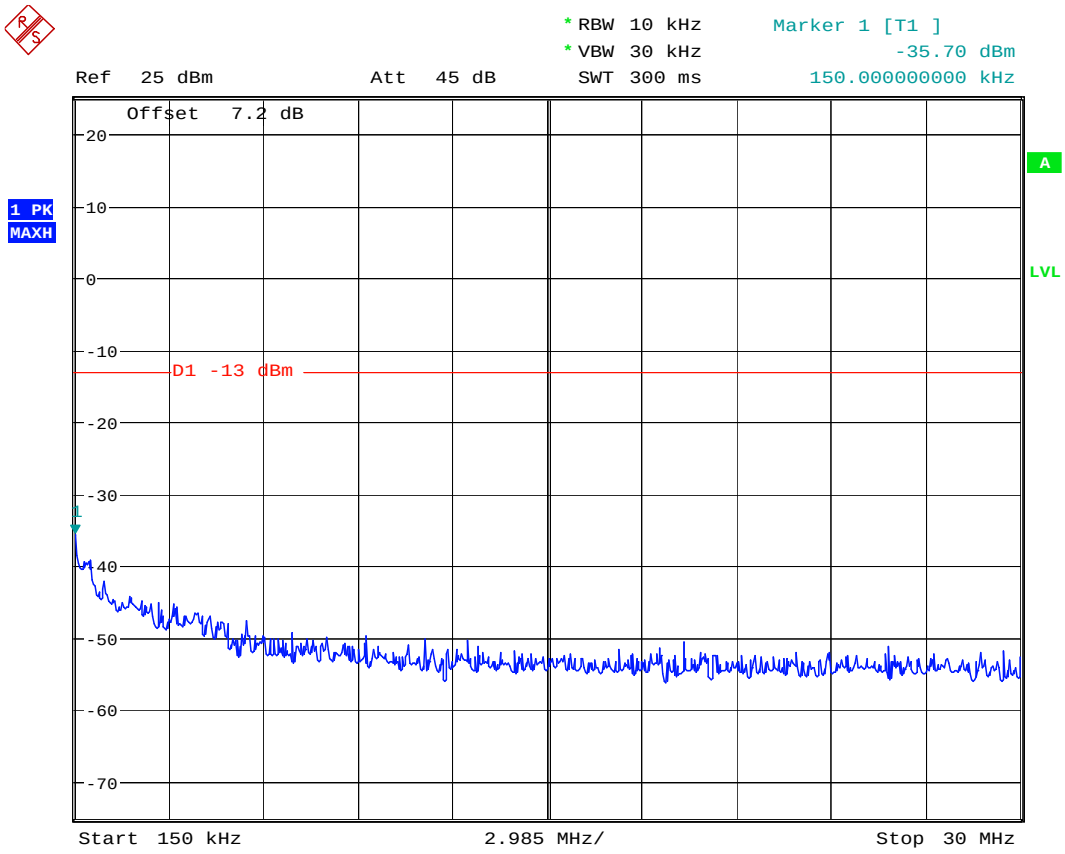
# EVDO subtype 2

**Modulation：BPSK**

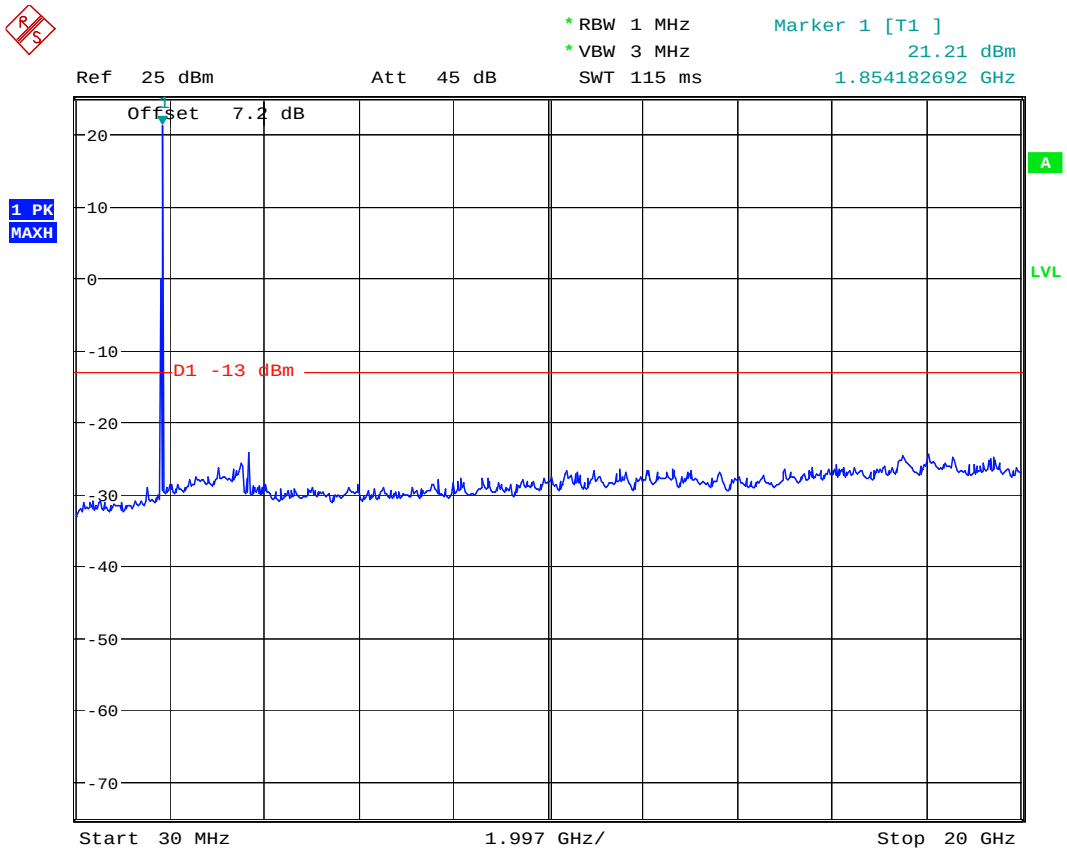
**Channel 25**




Date: 25.AUG.2008 11:01:20

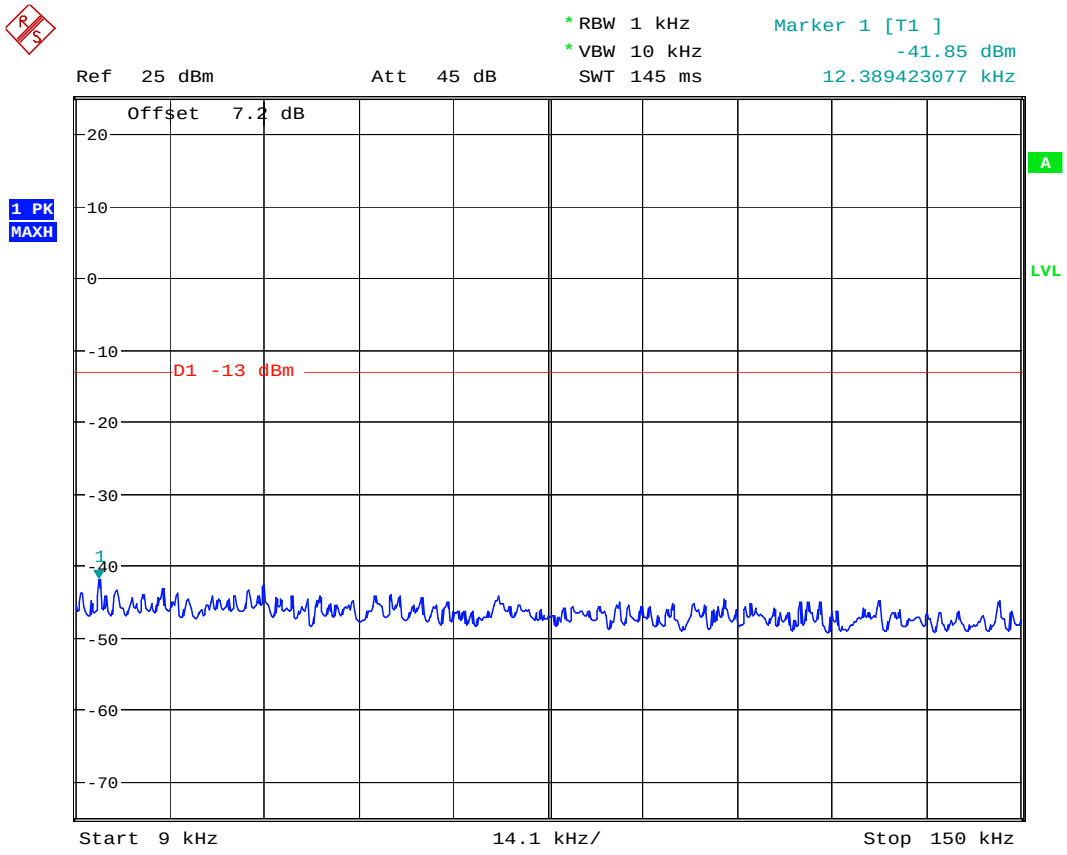



Date: 25.AUG.2008 11:01:47

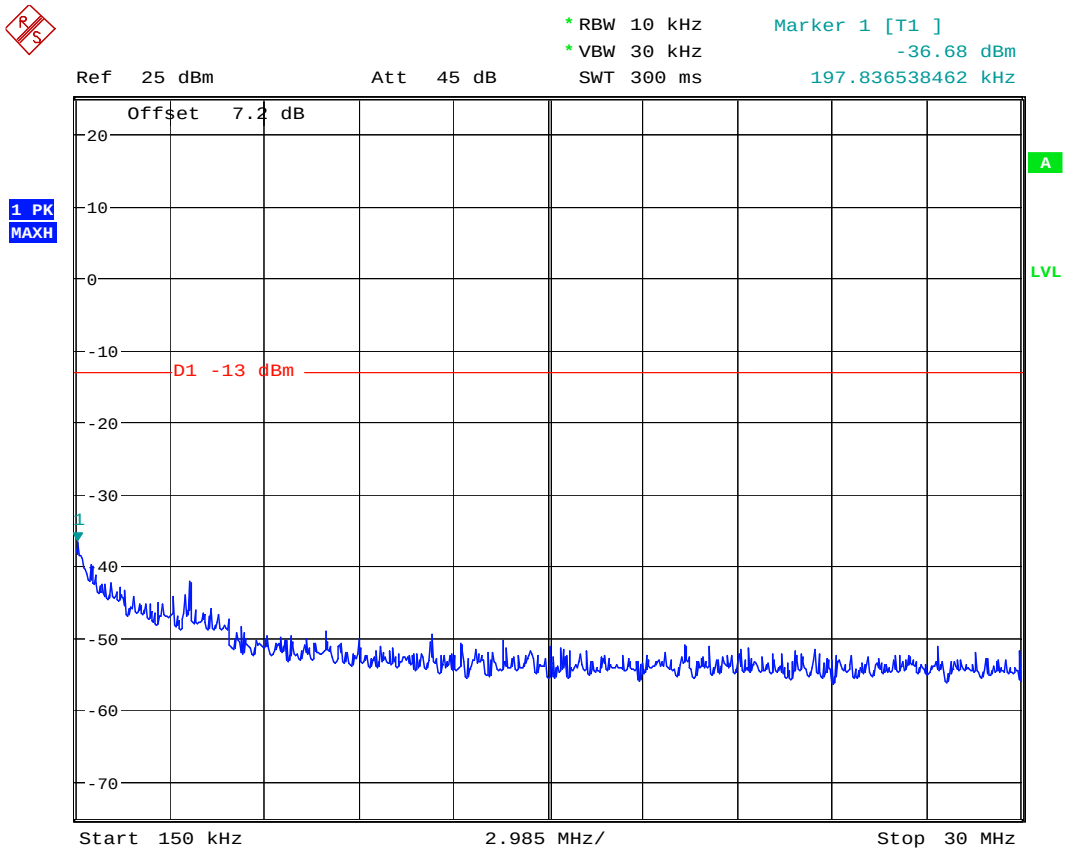



Date: 25.AUG.2008 11:02:13

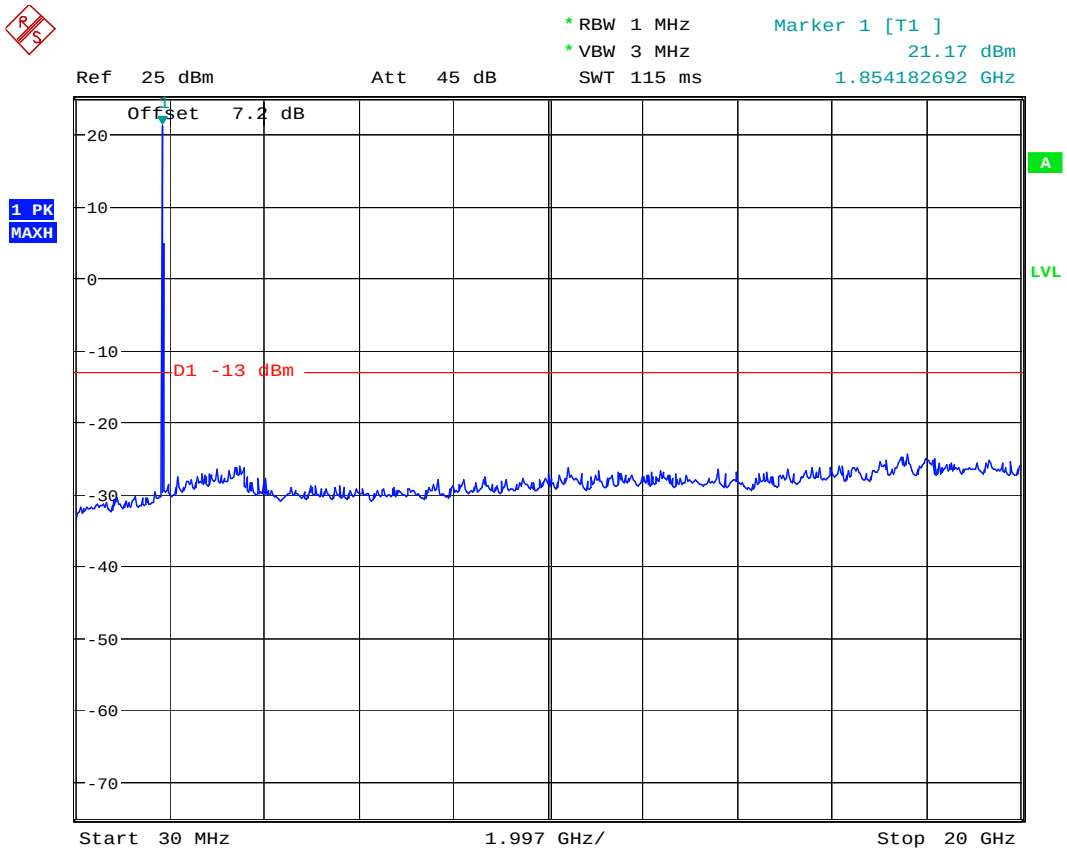
## Channel 600




Date: 25.AUG.2008 11:01:29

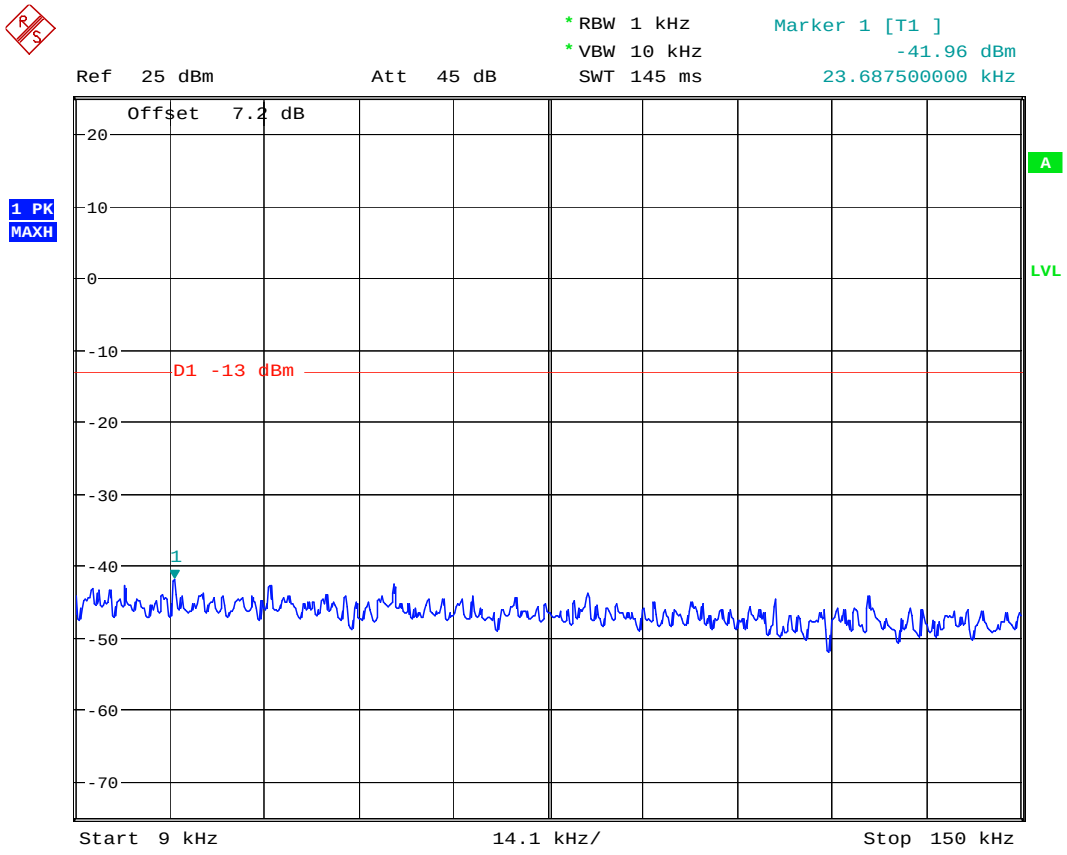



Date: 25.AUG.2008 11:01:55

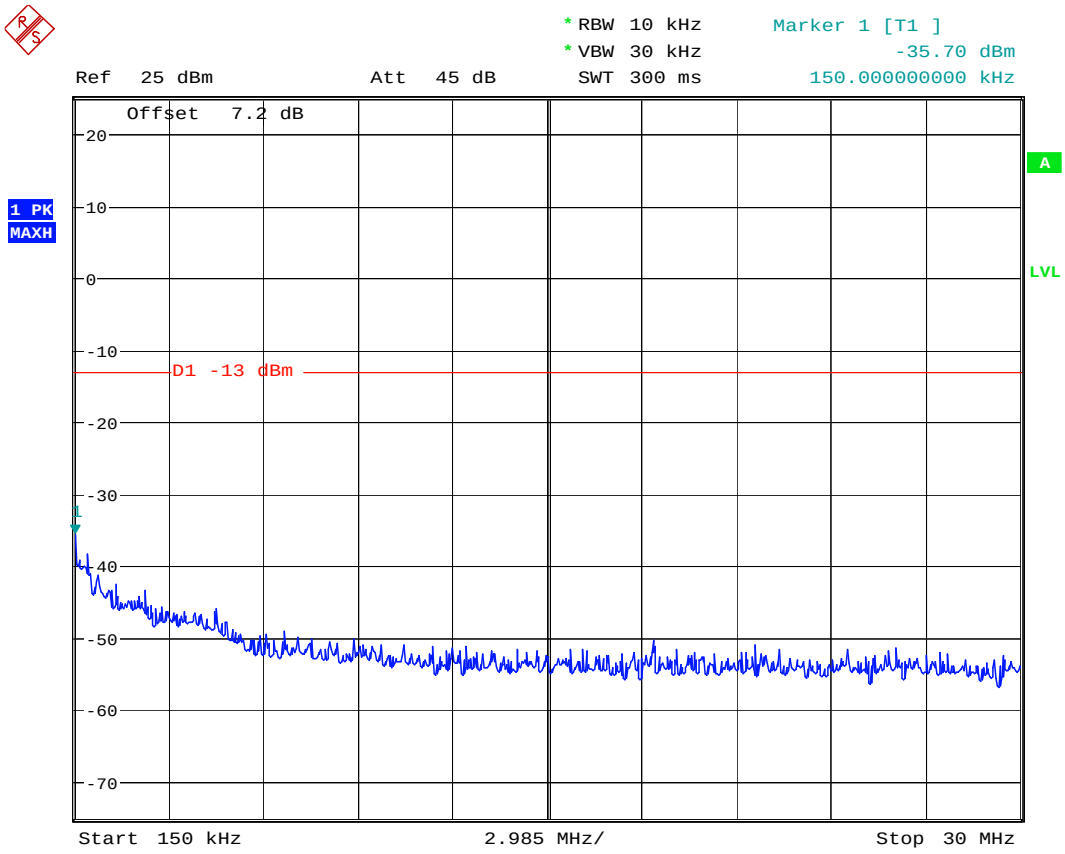



Date: 25.AUG.2008 11:02:22

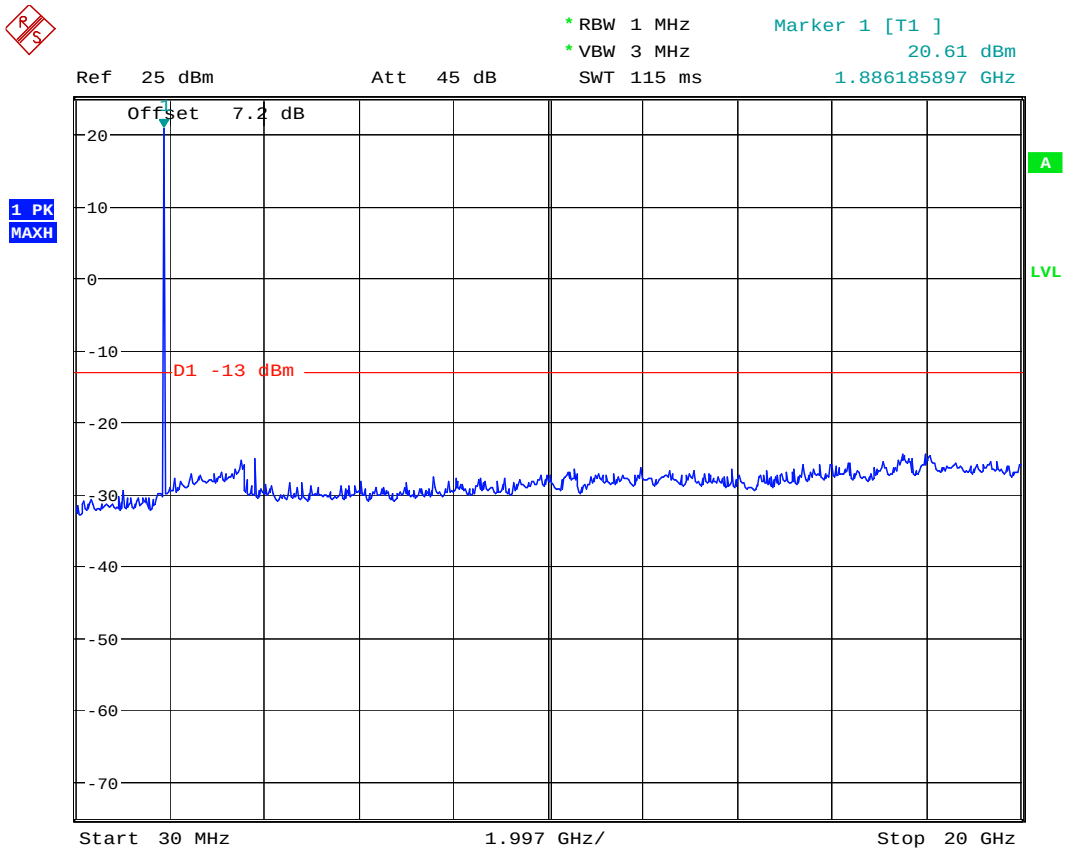
## Channel 1175




Date: 25.AUG.2008 11:01:38

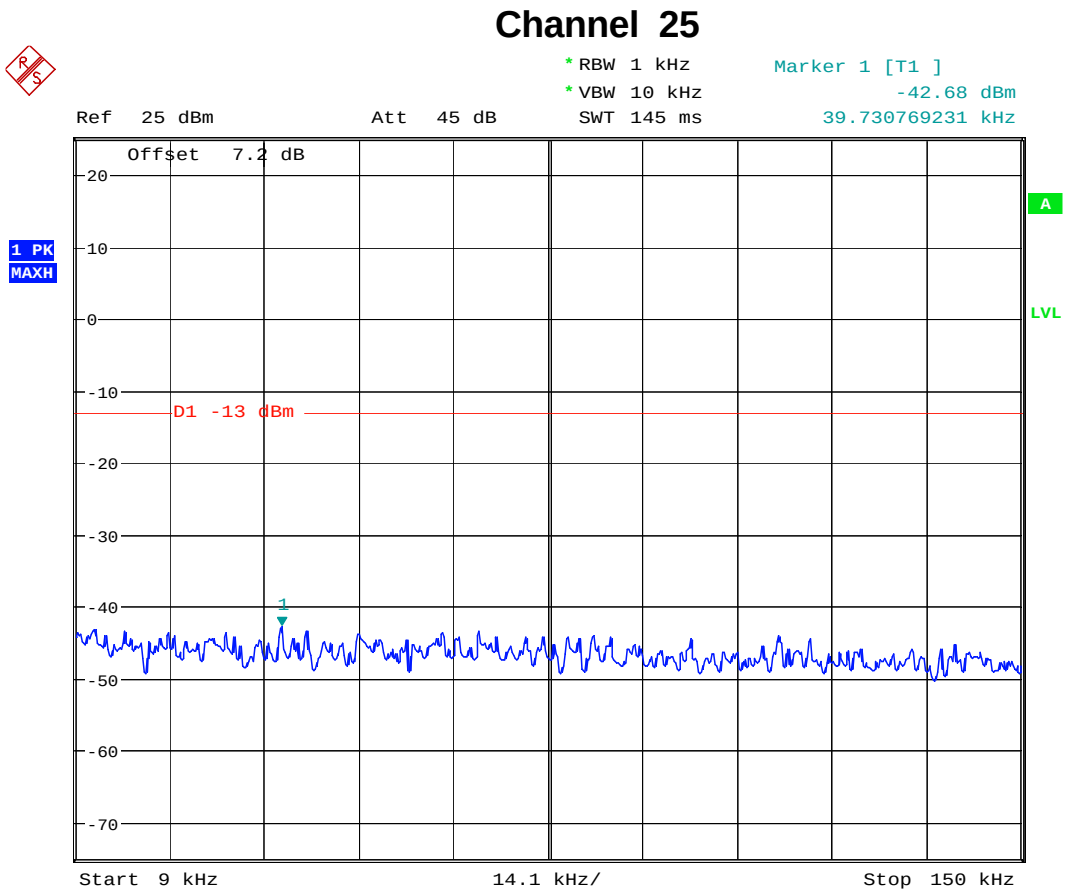



Date: 25.AUG.2008 11:02:04

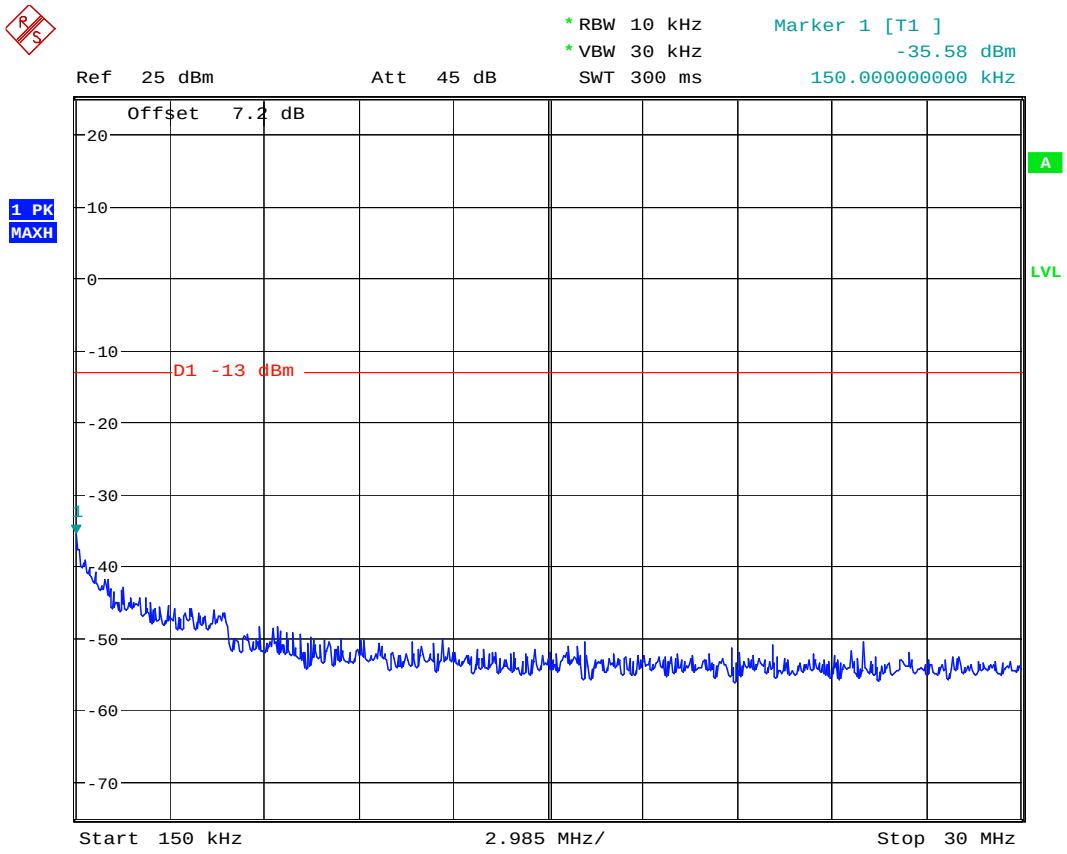



Date: 25.AUG.2008 11:02:30

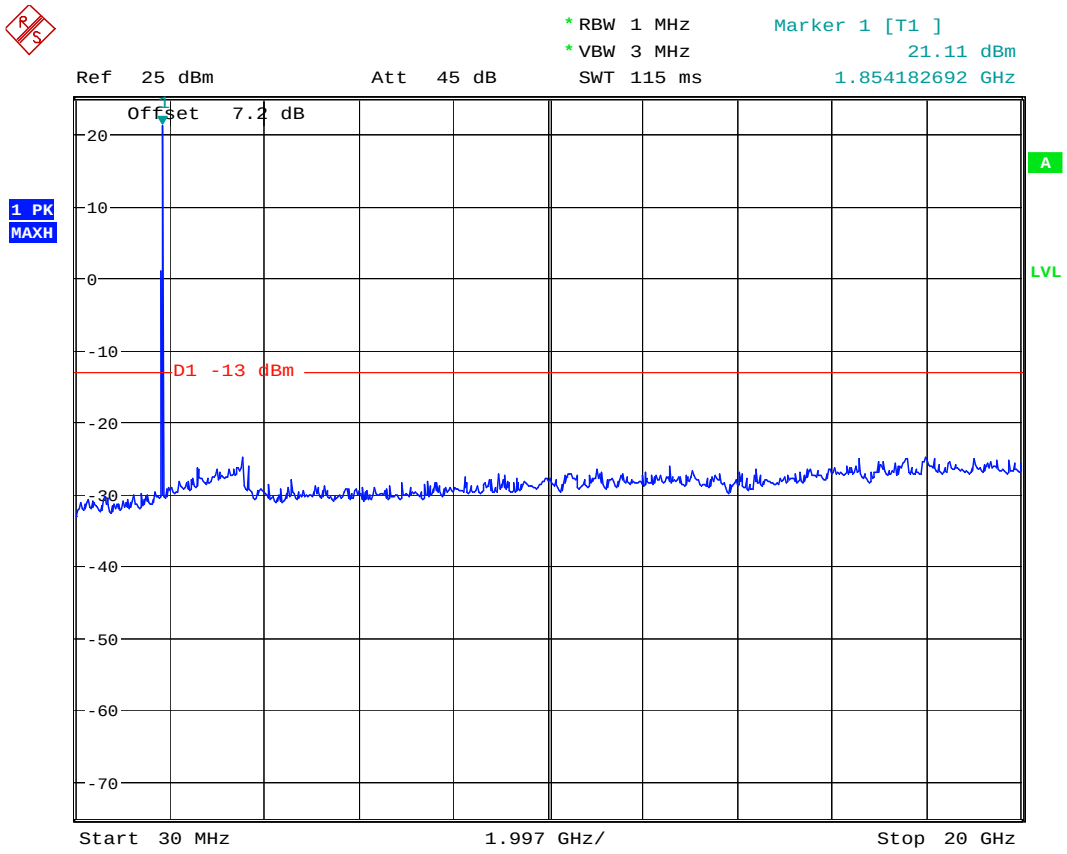
**Modulation：QPSK**




Date: 25.AUG.2008 11:02:39

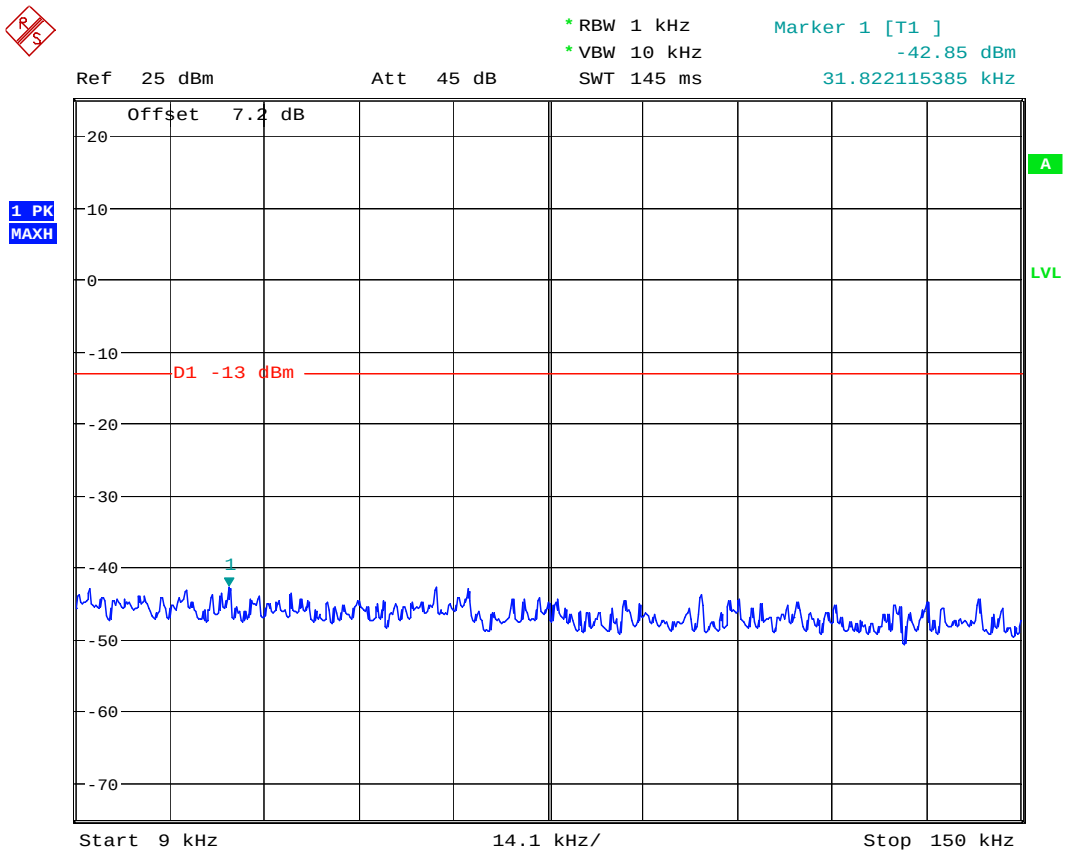



Date: 25.AUG.2008 11:03:06

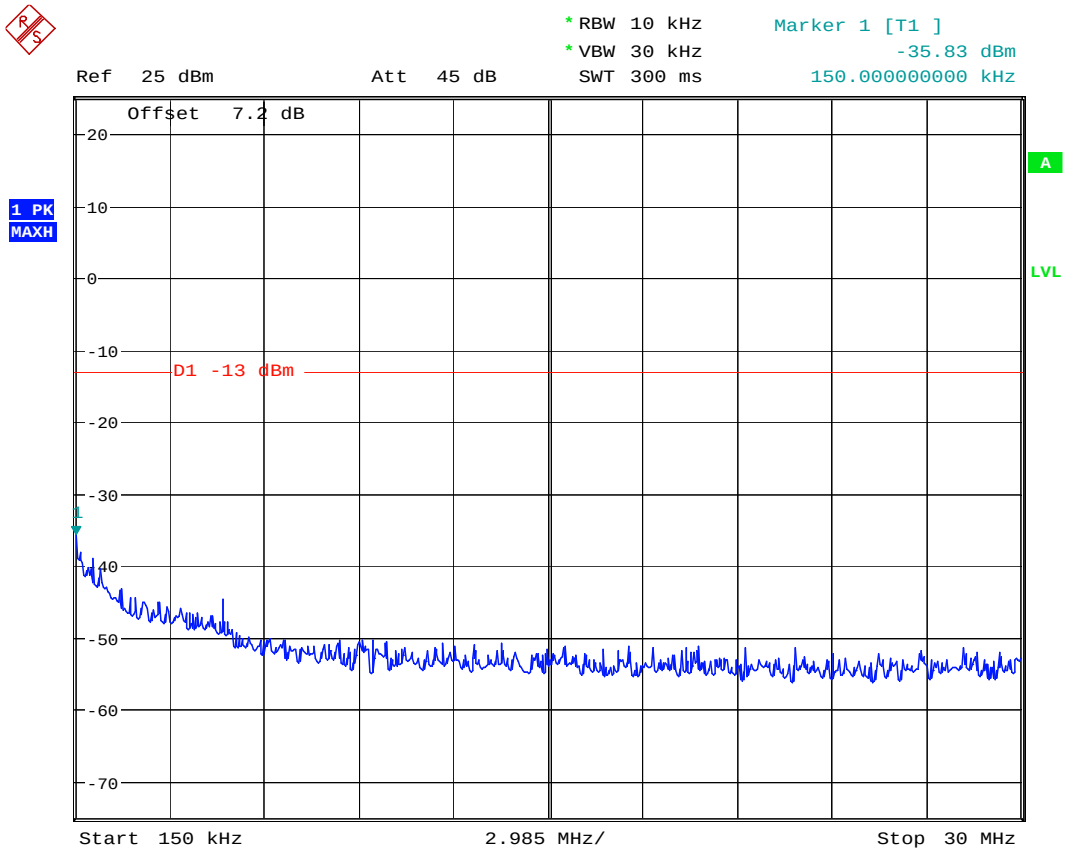



Date: 25.AUG.2008 11:03:32

## Channel 600




Date: 25.AUG.2008 11:02:48

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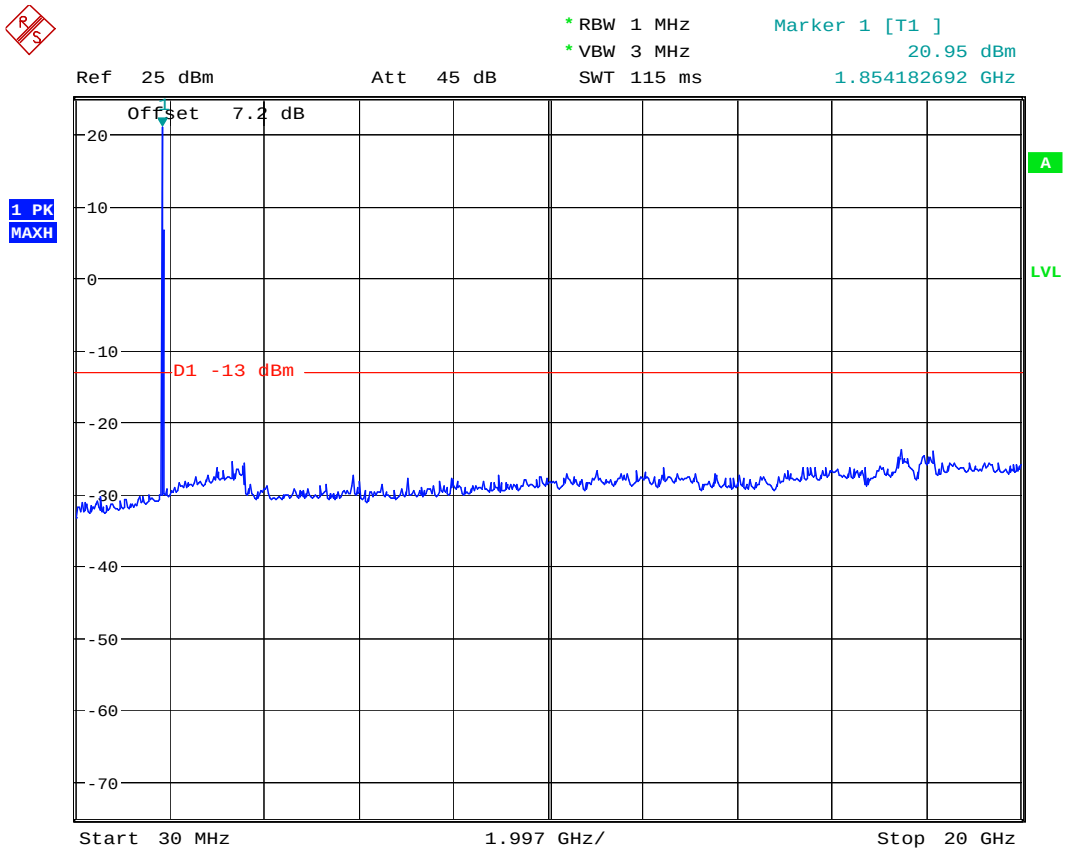


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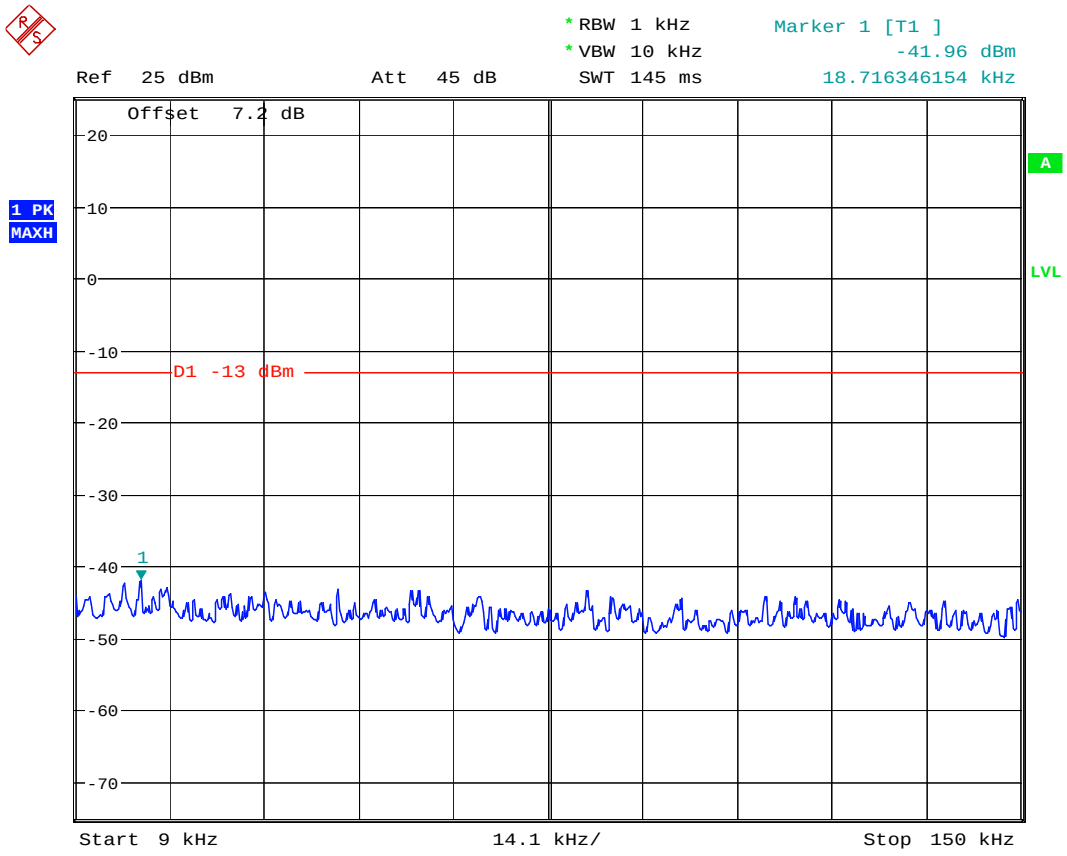
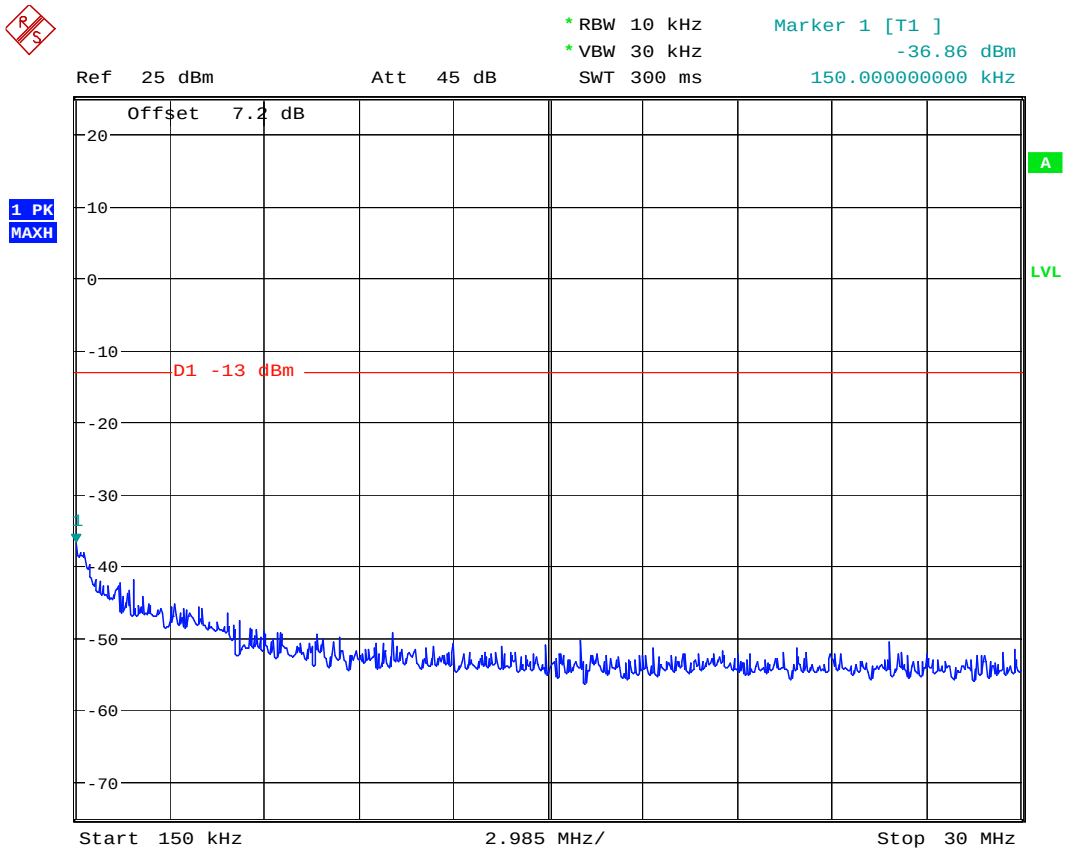
## Channel 1175




Date: 25.AUG.2008 11:02:56

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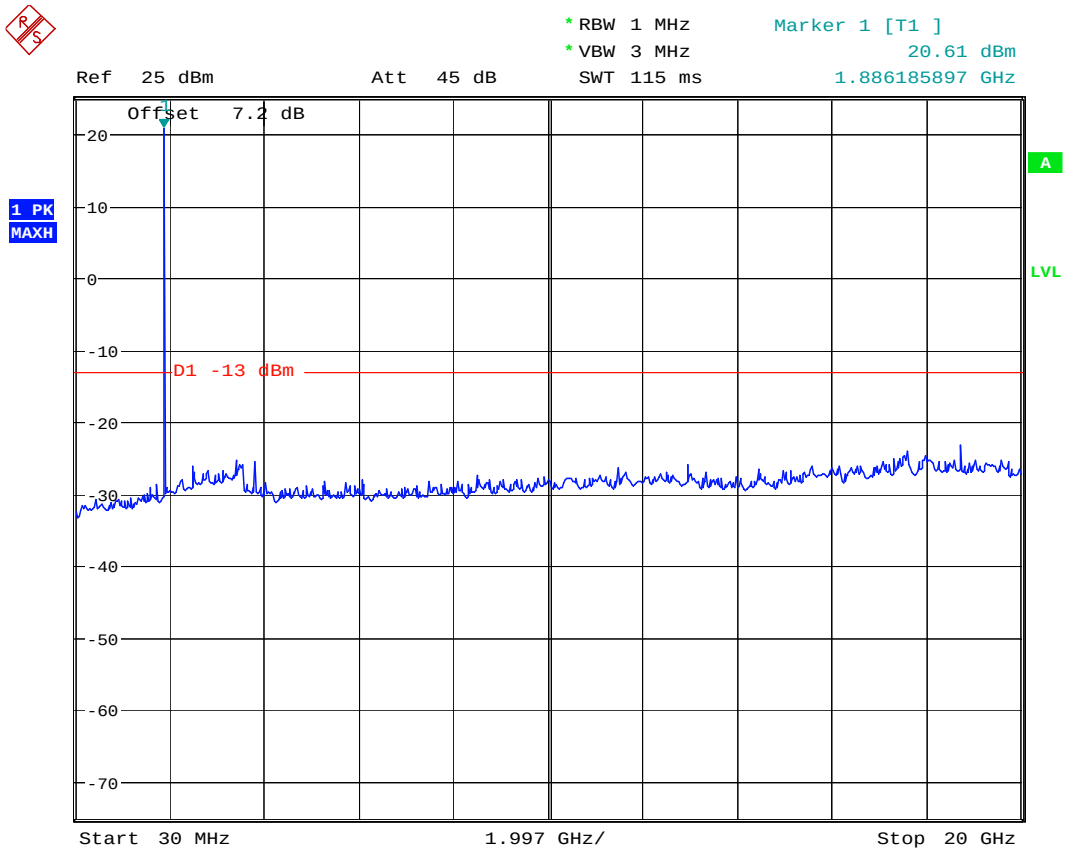
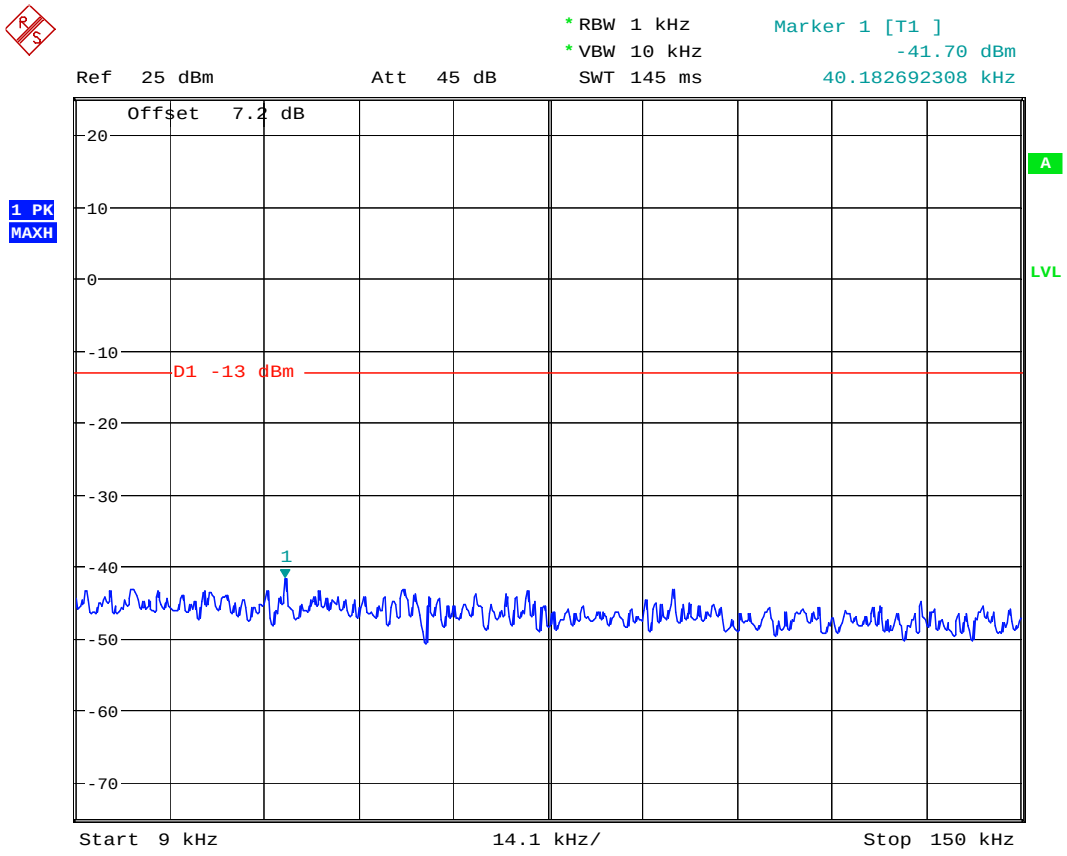
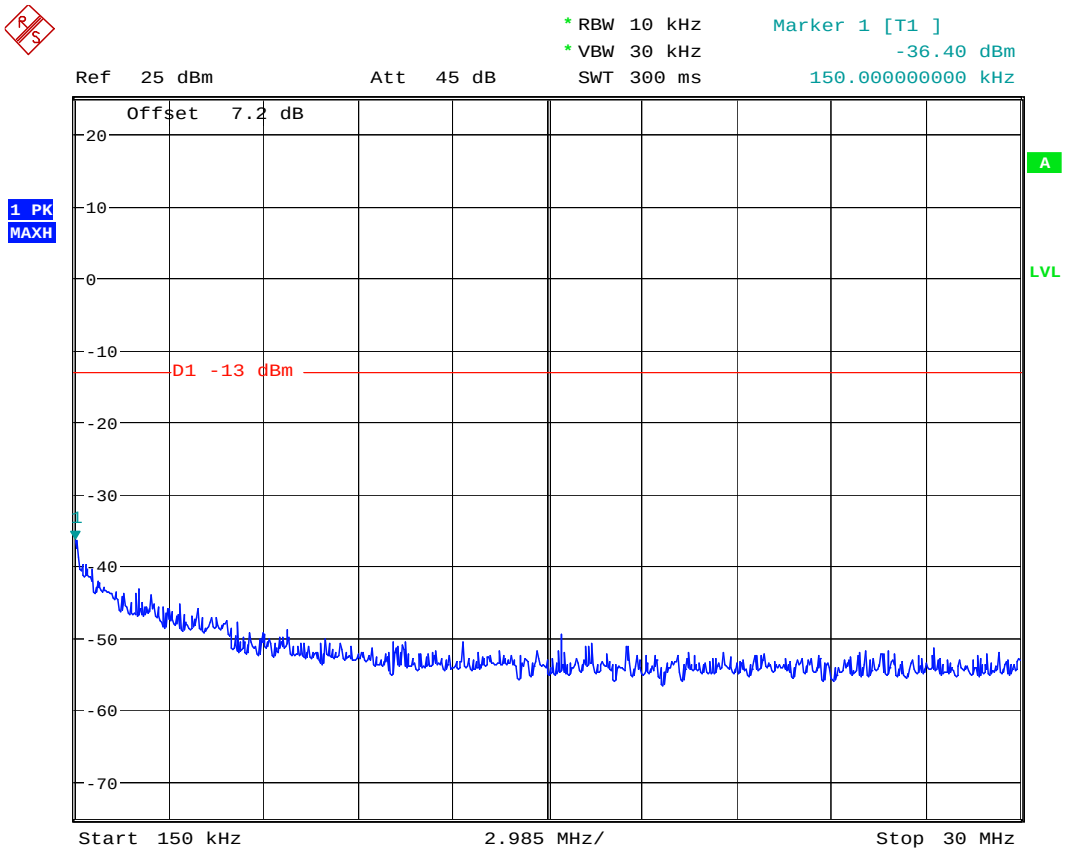



Date: 25.AUG.2008 11:03:49

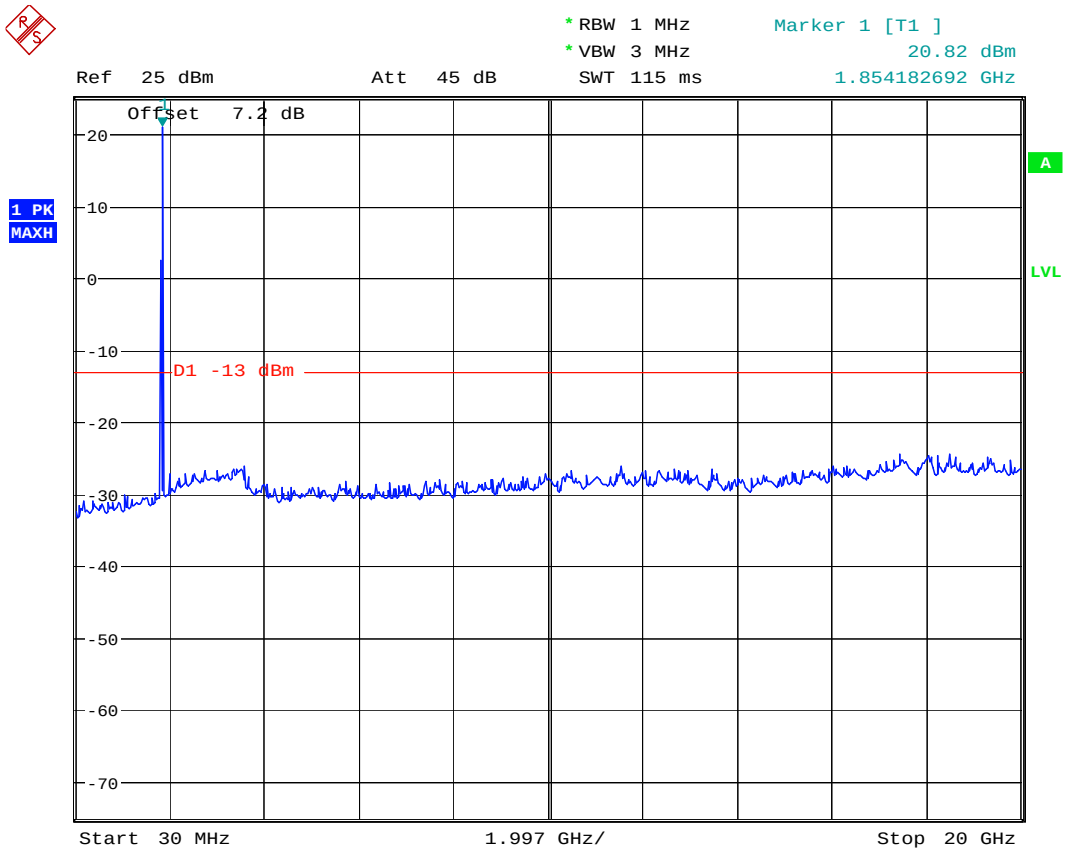
**Modulation：8PSK**

## Channel 25



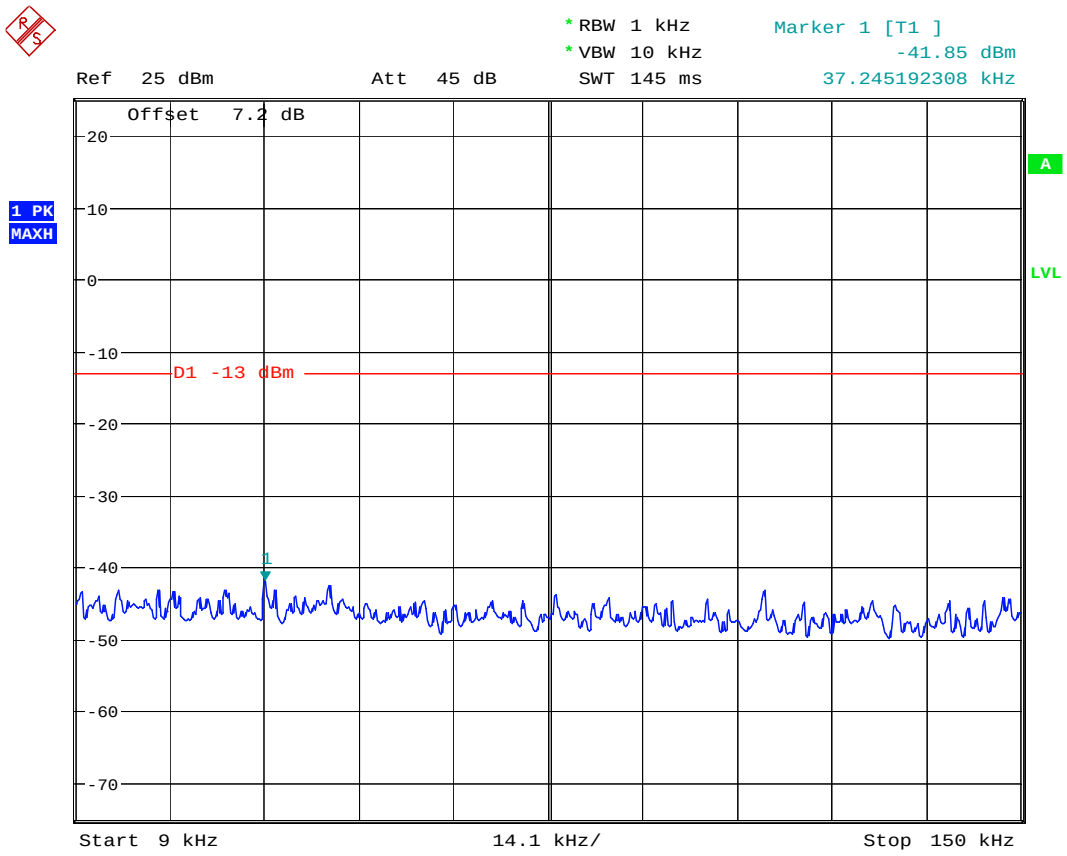



Date: 25.AUG.2008 11:04:24

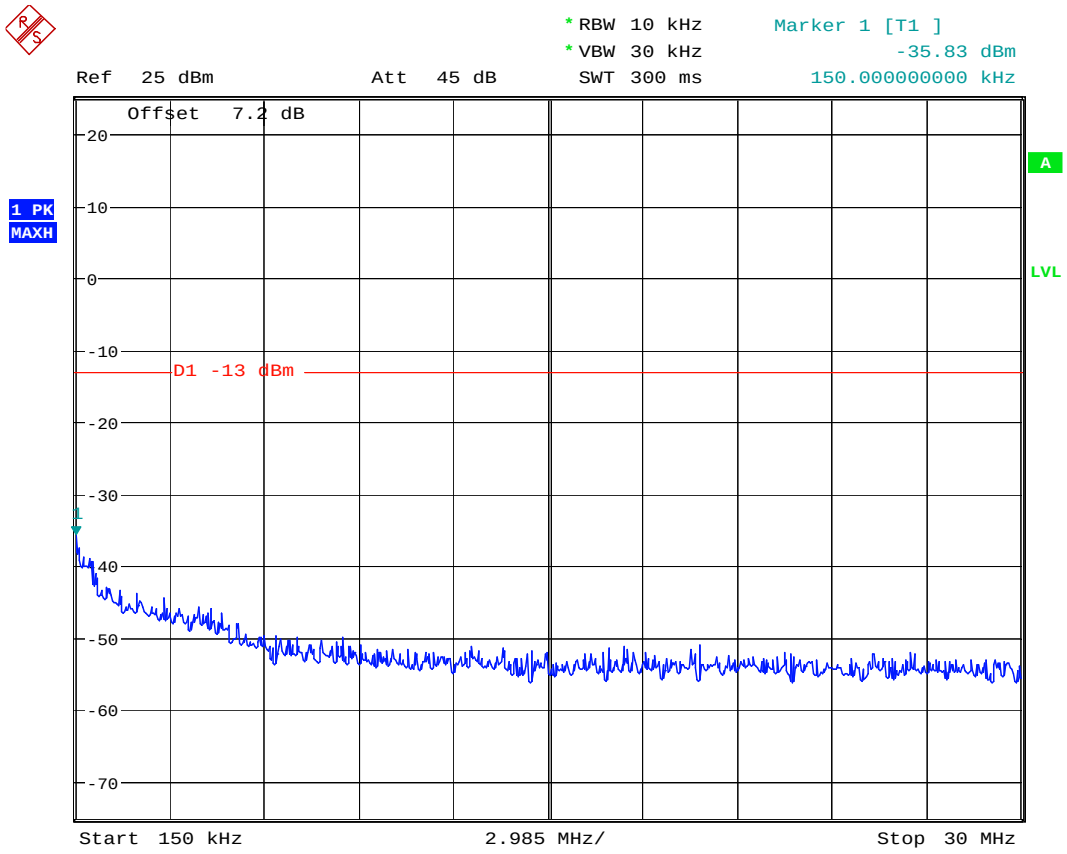



Date: 25.AUG.2008 11:04:51

## Channel 600




Date: 25.AUG.2008 11:04:07

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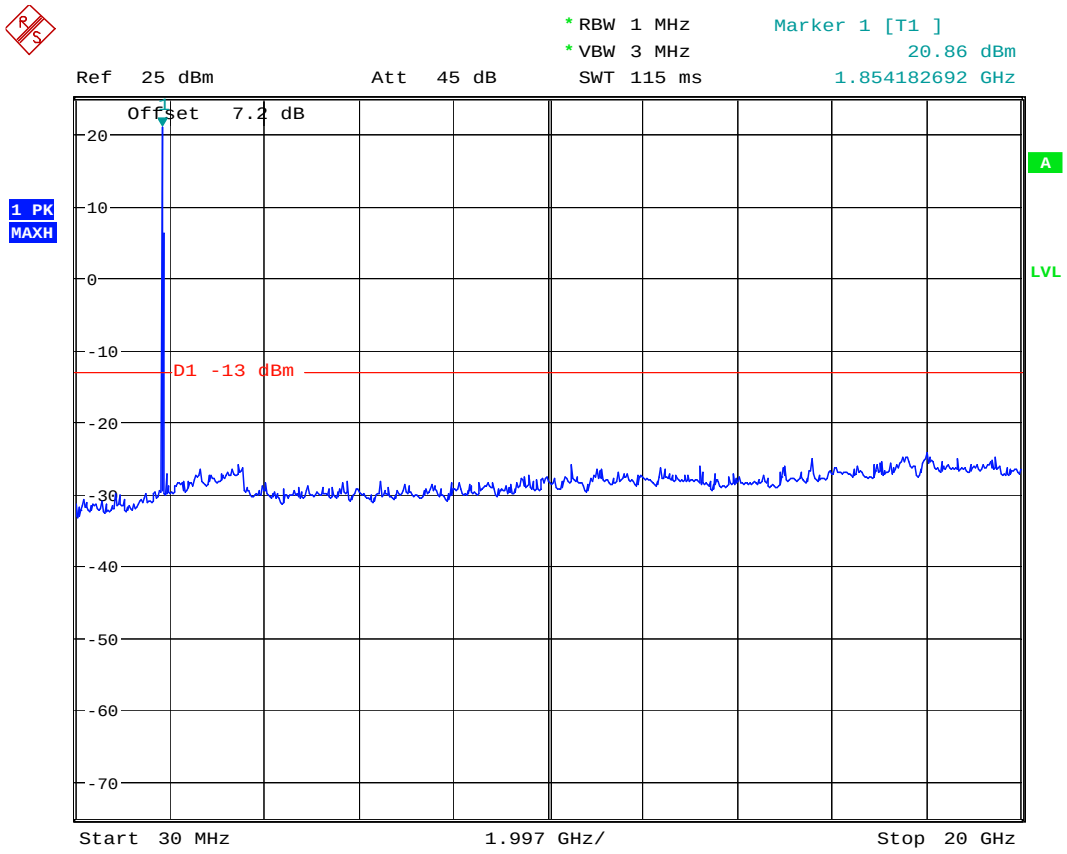
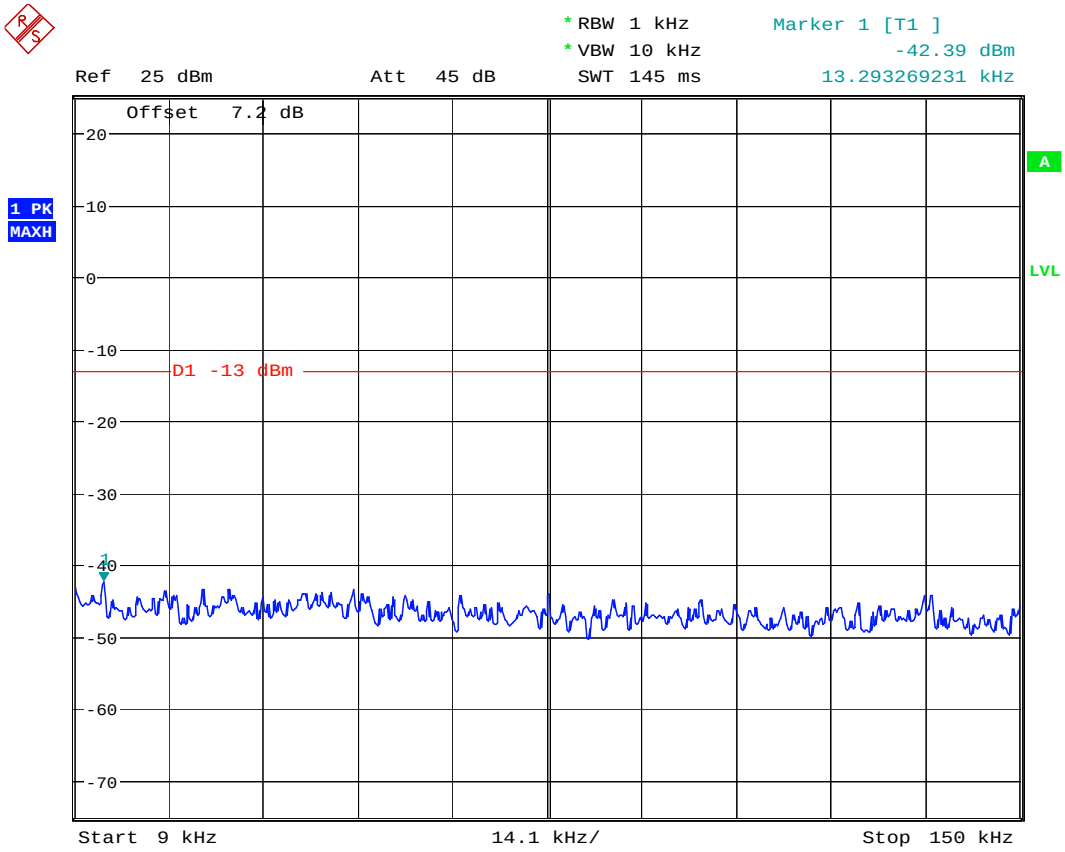



Date: 25.AUG.2008 11:04:59

## Channel 1175

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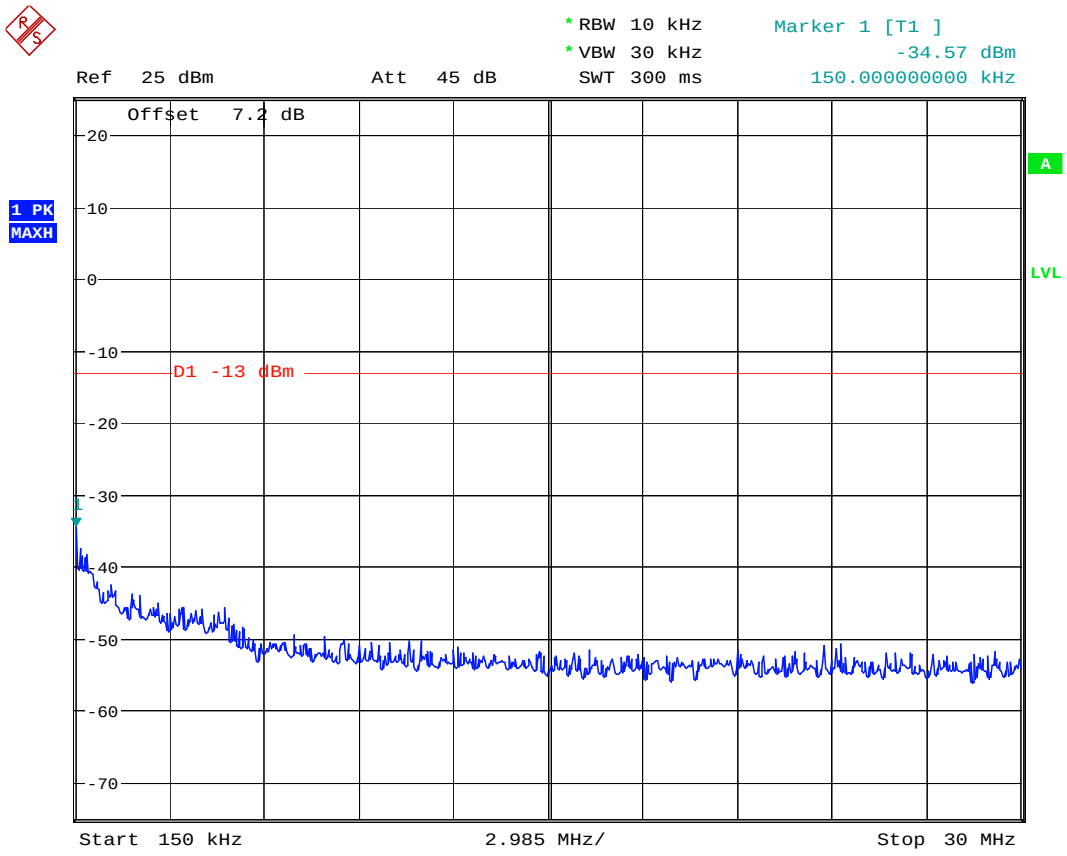
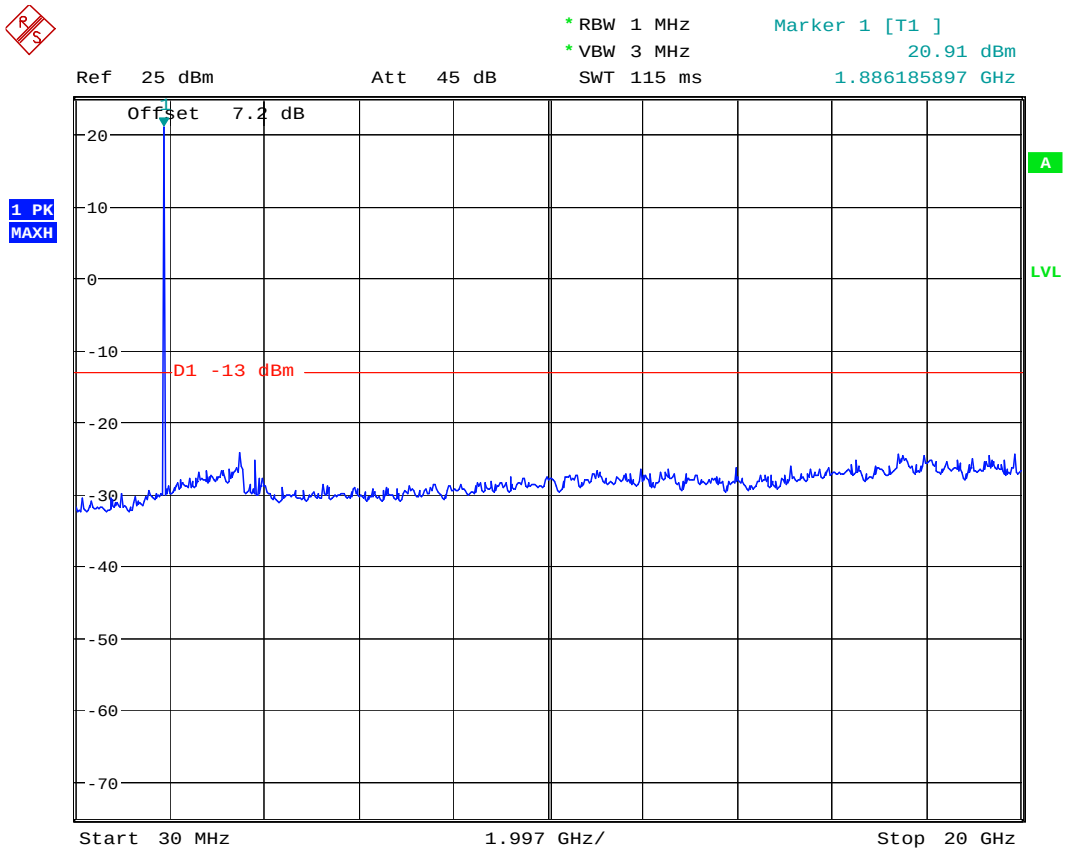



Date: 25.AUG.2008 11:04:42




Date: 25.AUG.2008 11:05:08