

**Nemko Test Report:** 6L0642RUS5

**Applicant:** Andrew Corporation  
108 Rand Park Drive  
Garner, NC 27529  
USA

**Equipment Under Test:  
(E.U.T.)** AMR85125

**In Accordance With:** **CFR 47, Part 22, Subpart H**  
Cellular Band Repeaters

**Tested By:** Nemko USA Inc.  
802 N. Kealy  
Lewisville, TX  
75057-3136

**TESTED BY:**

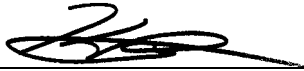
A handwritten signature in black ink, appearing to read 'David Light'.

David Light Wireless Engineer

**DATE:**

25 September 2006

**APPROVED BY:**

A handwritten signature in black ink, appearing to read 'Kevin Rose'.

Kevin Rose Wireless Engineer

**DATE:**

29 September 2006

**Number of Pages: 70**

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## Section 1. Summary of Test Results

Manufacturer: Andrew Corporation

Model No.: AMR85125

Serial No.: None

General: **All measurements are traceable to national standards.**

These tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with CFR 47, Part 22, Subpart H.



New Submission



Production Unit



Class II Permissive Change



Pre-Production Unit

THIS TEST REPORT RELATES ONLY TO THE ITEM(S) TESTED.

THE FOLLOWING DEVIATIONS FROM, ADDITIONS TO, OR EXCLUSIONS FROM THE TEST SPECIFICATIONS HAVE BEEN MADE.

See "Summary of Test Data".



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**Summary Of Test Data**

| NAME OF TEST                            | PARA. NO.   | SPEC.               | RESULT   |
|-----------------------------------------|-------------|---------------------|----------|
| RF Power Output                         | 22.913(a)   | 500W ERP            | Complies |
| Occupied Bandwidth                      | Not defined | Input/Output        | Complies |
| Spurious Emissions at Antenna Terminals | 22.917      | -13 dBm             | Complies |
| Field Strength of Spurious Emissions    | 22.917      | -13 dBm<br>E.I.R.P. | Complies |
| Frequency Stability                     | 22.355      | 1.5 ppm             | NA       |

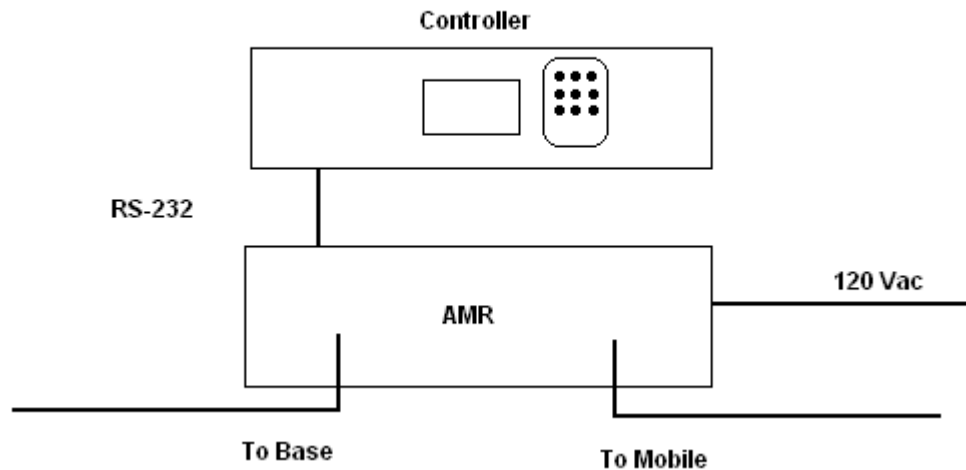
**Footnotes:** (1) Modulation characteristics were not tested since the E.U.T. processes but does not produce a modulated waveform.

**Section 2. General Equipment Specification**

|                                           |                                     |                                     |                                     |                                     |                                     |
|-------------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| <b>Supply Voltage Input:</b>              | 120 Vac                             |                                     |                                     |                                     |                                     |
| <b>Frequency Range:</b>                   | <b>Downlink:</b>                    | 869-894 MHz                         |                                     |                                     |                                     |
| <b>Frequency Range:</b>                   | <b>Uplink:</b>                      | 824-849 MHz                         |                                     |                                     |                                     |
| <b>Type of Modulation and Designator:</b> | <b>CDMA (F9W)</b>                   | <b>GSM (GXW)</b>                    | <b>TDMA (DXW)</b>                   | <b>EDGE (G7W)</b>                   | <b>W-CDMA (F9W)</b>                 |
|                                           | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| <b>Output Impedance:</b>                  | 50 ohms                             |                                     |                                     |                                     |                                     |
| <b>RF Output (Rated):</b>                 | <b>Downlink:</b>                    | 0.50 W<br>27 dBm                    |                                     |                                     |                                     |
|                                           | <b>Uplink:</b>                      | 0.32 W<br>25 dBm                    |                                     |                                     |                                     |
| <b>Frequency Translation:</b>             | <b>F1-F1</b>                        | <b>F1-F2</b>                        | <b>N/A</b>                          |                                     |                                     |
|                                           | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            |                                     |                                     |
| <b>Band Selection:</b>                    | <b>Software</b>                     | <b>Duplexer Change</b>              | <b>Fullband Coverage</b>            |                                     |                                     |
|                                           | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            |                                     |                                     |

**Description of EUT**

Bi-directional amplifier used to enhance signals between a mobile and a base station in a wireless network. Typical applications are coverage improvement in small and medium sized environments such as offices, store fronts, underground floors, and small manufacturing facilities. The AMR family will automatically set its gain to maximize performance. However, an alphanumeric interface allows the user to manually set the gain if desired. ALC, Automatic Level Control, is incorporated to prevent overdriving the amplifier.

**System Diagram**

**Section 3. RF Power Output**

|                               |                         |
|-------------------------------|-------------------------|
| NAME OF TEST: RF Power Output | PARA. NO.: 22.913       |
| TESTED BY: David Light        | DATE: 08 September 2006 |

**Test Results:** Complies.**Test Data:**

| Direction | Modulation | Output per Channel (dBm) | Composite Power (dBm) | Composite Power (W) |
|-----------|------------|--------------------------|-----------------------|---------------------|
| Uplink    | CDMA       | 24.03                    | 27.03                 | 0.50                |
| Downlink  | CDMA       | 22.01                    | 25.01                 | 0.32                |
| Uplink    | TDMA       | 24.06                    | 27.06                 | 0.50                |
| Downlink  | TDMA       | 22.02                    | 25.02                 | 0.32                |
| Uplink    | EDGE       | 24.02                    | 27.02                 | 0.50                |
| Downlink  | EDGE       | 22.00                    | 25.00                 | 0.32                |
| Uplink    | GSM        | 24.04                    | 27.04                 | 0.50                |
| Downlink  | GSM        | 22.01                    | 25.01                 | 0.32                |
| Uplink    | W-CDMA     | 22.03                    | 25.03                 | 0.50                |
| Downlink  | W-CDMA     | 20.00                    | 23.00                 | 0.32                |

**Equipment Used:** 1469-1472-1082-1659**Measurement Uncertainty:** +/- 1.7 dB**Temperature:** 25 °C**Relative Humidity:** 40 %

## Section 4. Occupied Bandwidth

|                                  |                         |
|----------------------------------|-------------------------|
| NAME OF TEST: Occupied Bandwidth | PARA. NO.: 2.1049       |
| TESTED BY: David Light           | DATE: 08 September 2006 |

**Test Results:** Complies.

**Test Data:** See attached plot(s).

**Equipment Used:** 1469-1472-1082-1659-1036

**Measurement Uncertainty:** 1X10<sup>-7</sup> ppm

**Temperature:** 25 °C

**Relative Humidity:** 40 %

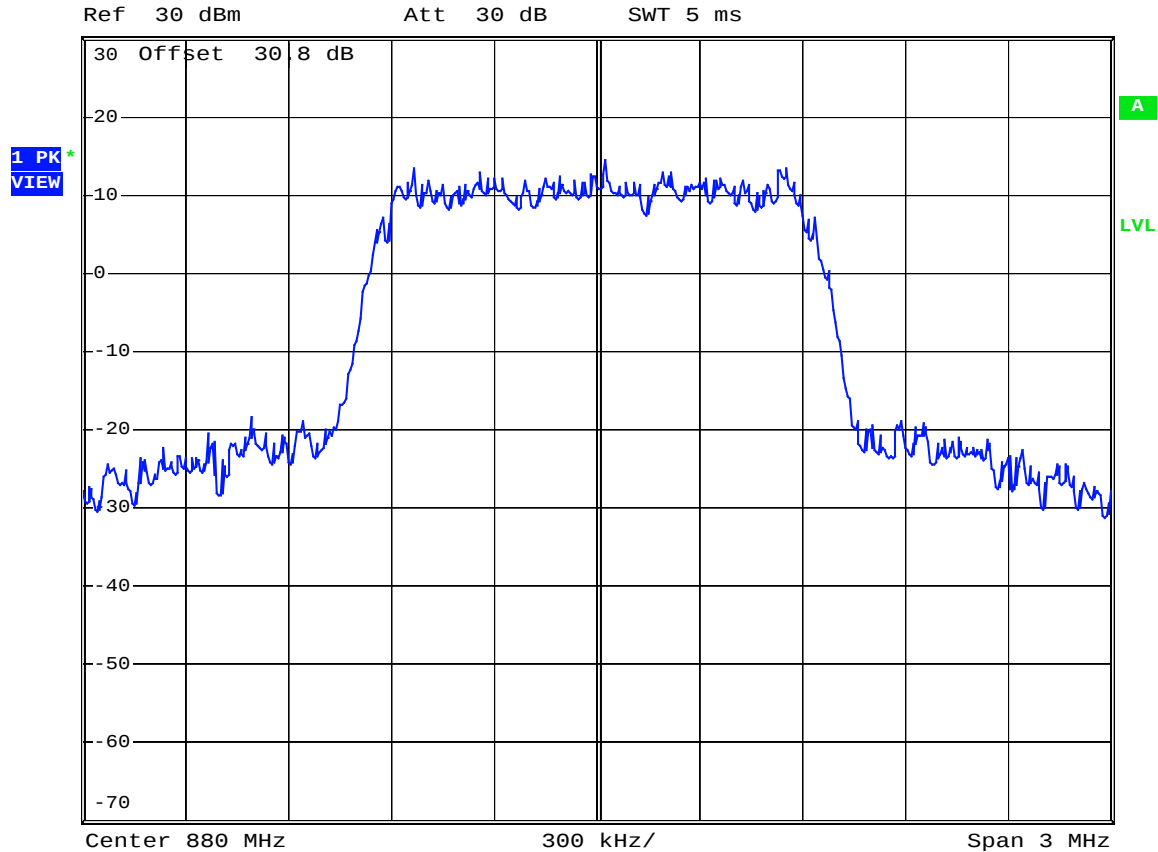
EQUIPMENT: AMR85125

# Test Data – Occupied Bandwidth

CDMA - Output  
Downlink



\* RBW 30 kHz  
VBW 100 kHz  
SWT 5 ms



Date: 11.SEP.2006 13:58:14

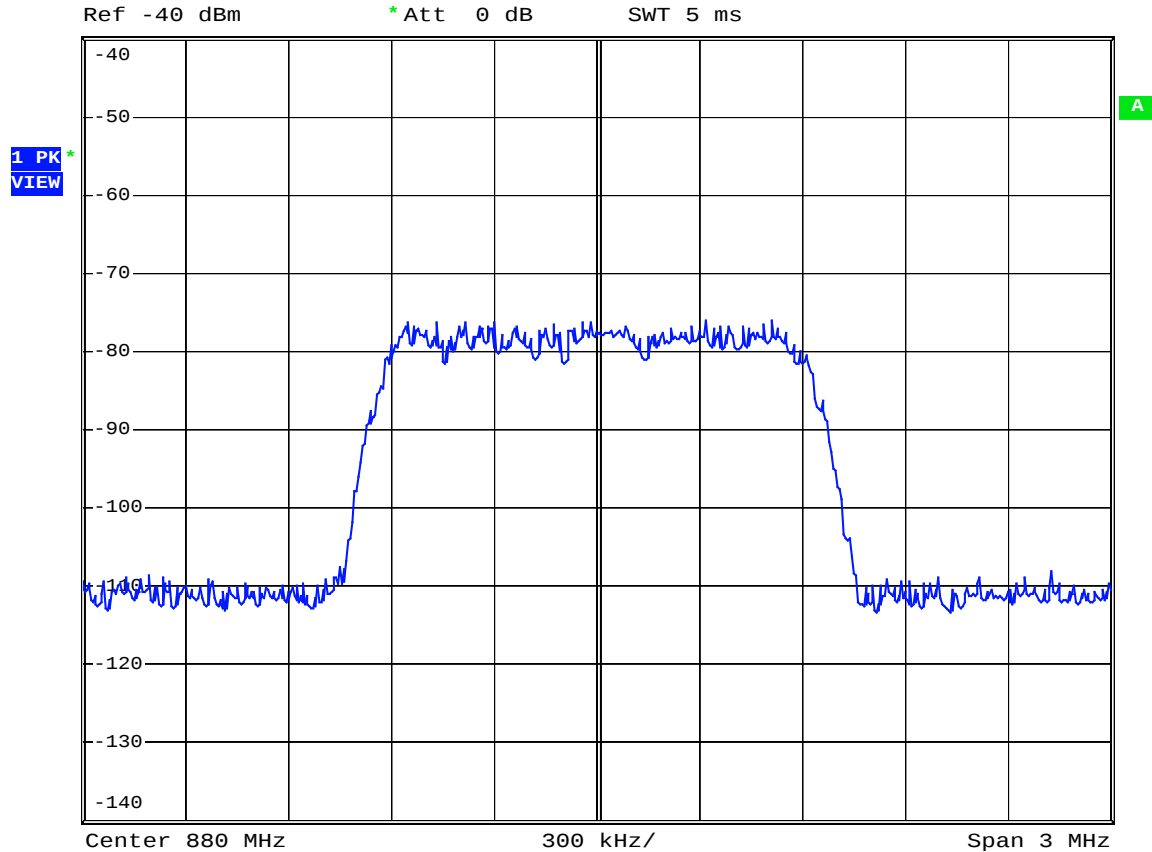
EQUIPMENT: AMR85125

# Test Data – Occupied Bandwidth

CDMA - Input  
Downlink



\* RBW 30 kHz  
VBW 100 kHz  
SWT 5 ms

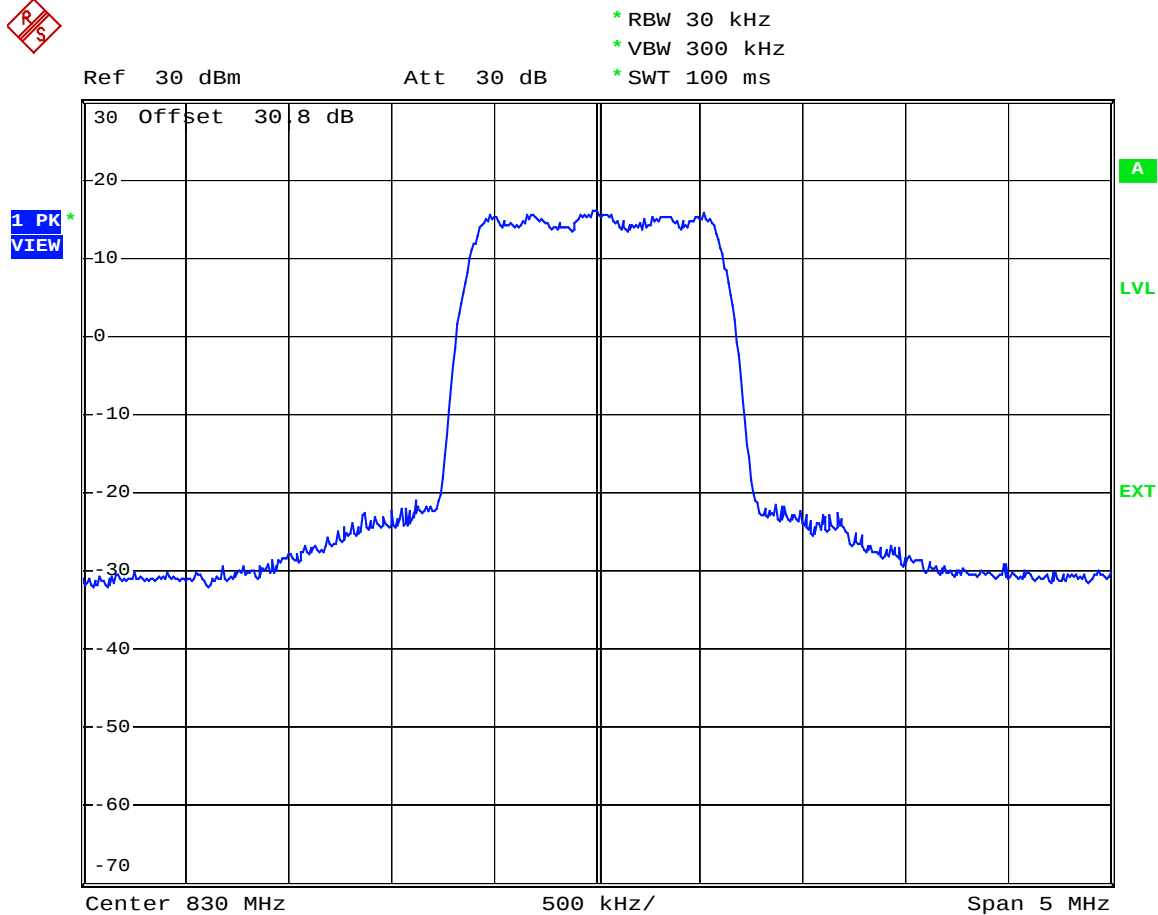


Date: 11.SEP.2006 13:56:54

EQUIPMENT: AMR85125

# Test Data – Occupied Bandwidth

CDMA - Output  
Uplink



Date: 8.SEP.2006 10:34:46

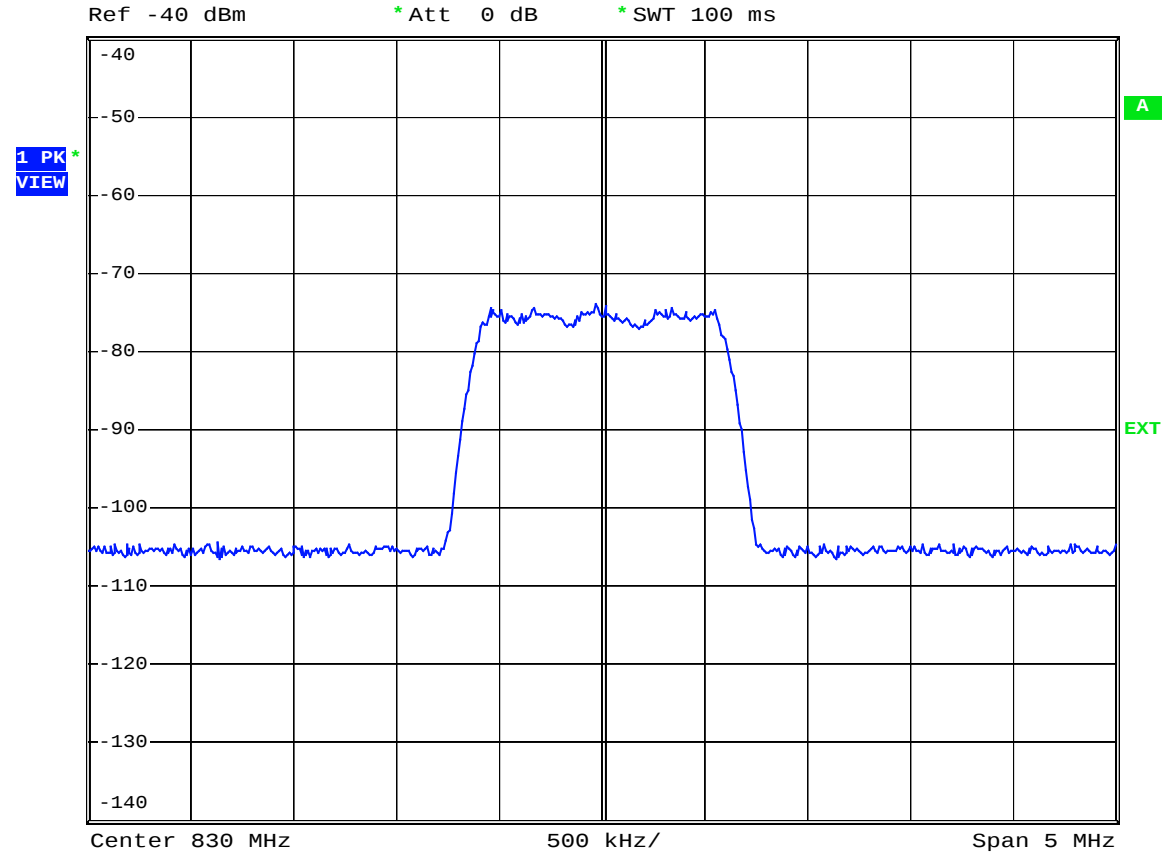
EQUIPMENT: AMR85125

# Test Data – Occupied Bandwidth

CDMA - Input  
Uplink



\* RBW 30 kHz  
\* VBW 300 kHz  
\* SWT 100 ms



Date: 8.SEP.2006 10:37:01

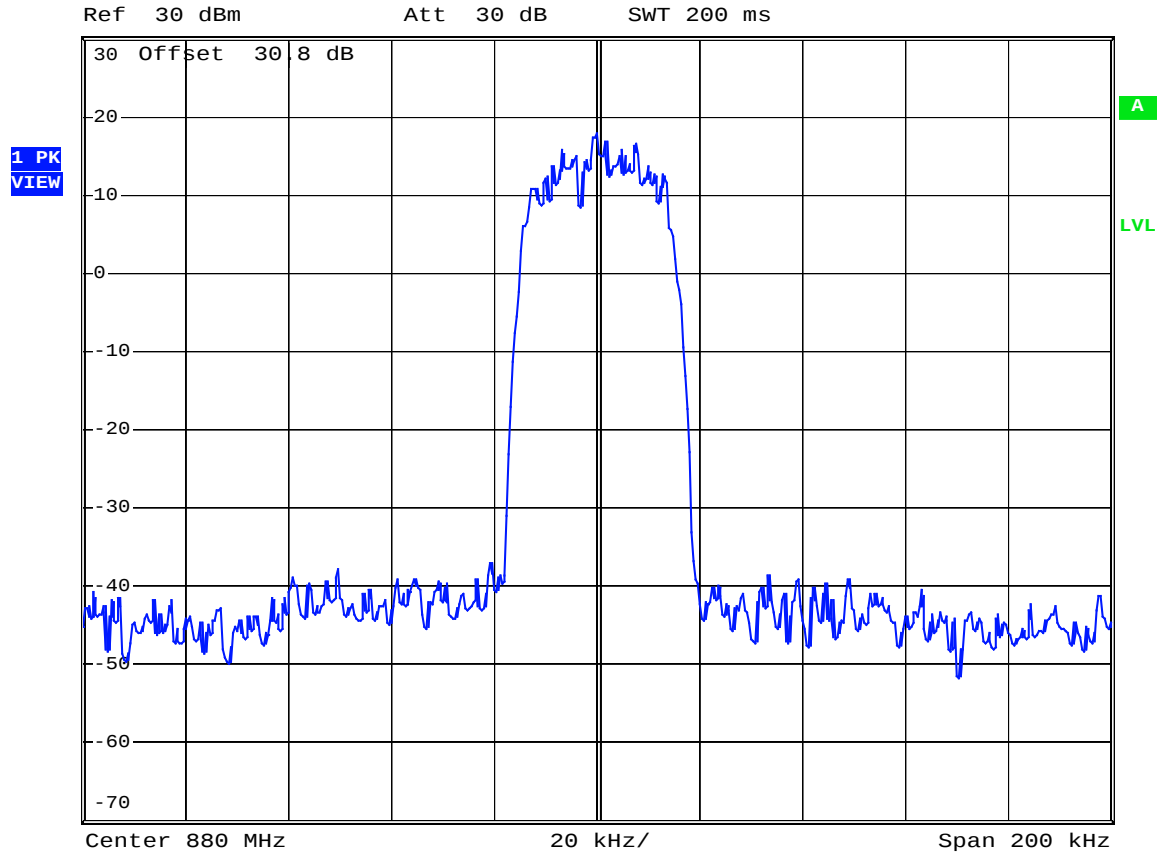
EQUIPMENT: AMR85125

# Test Data – Occupied Bandwidth

TDMA - Output  
Downlink



\* RBW 1 kHz  
VBW 3 kHz  
SWT 200 ms



Date: 11.SEP.2006 15:14:50

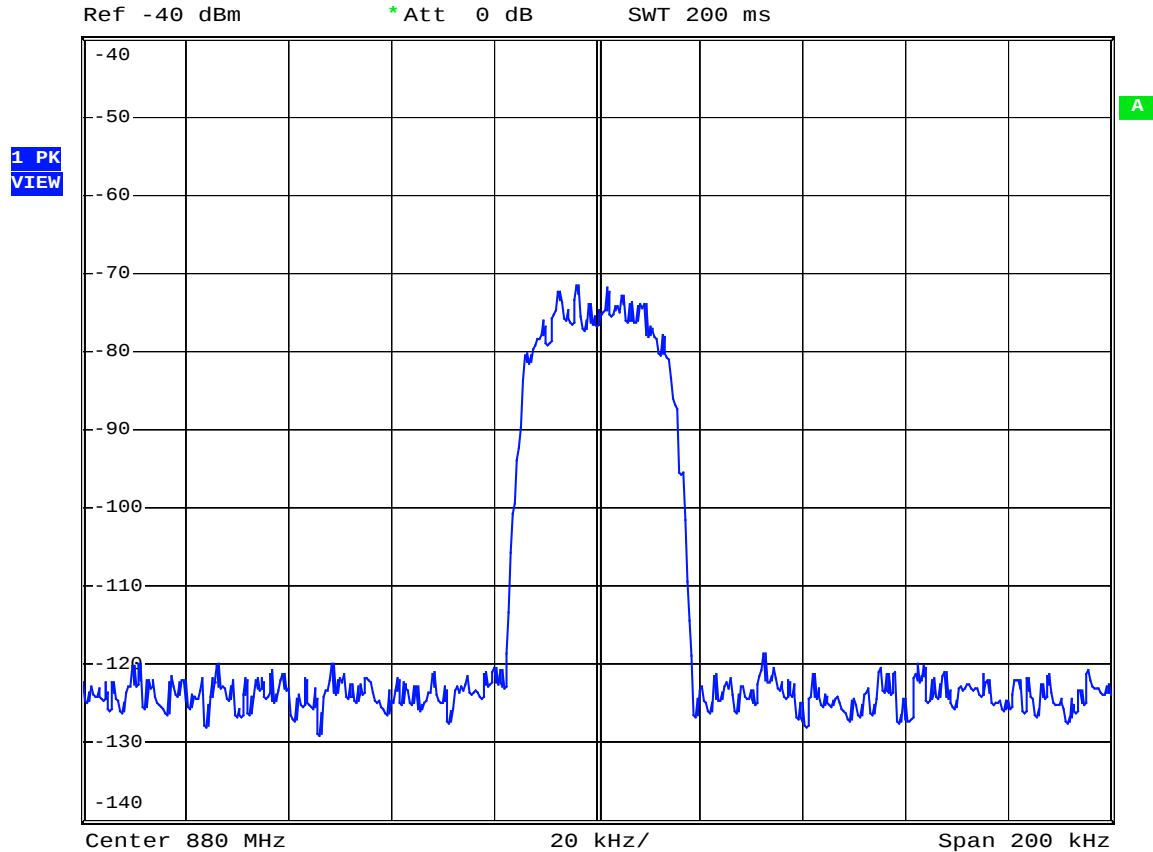
EQUIPMENT: AMR85125

# Test Data – Occupied Bandwidth

TDMA - Input  
Downlink



\* RBW 1 kHz  
VBW 3 kHz  
SWT 200 ms



Date: 11.SEP.2006 15:15:43

EQUIPMENT: AMR85125

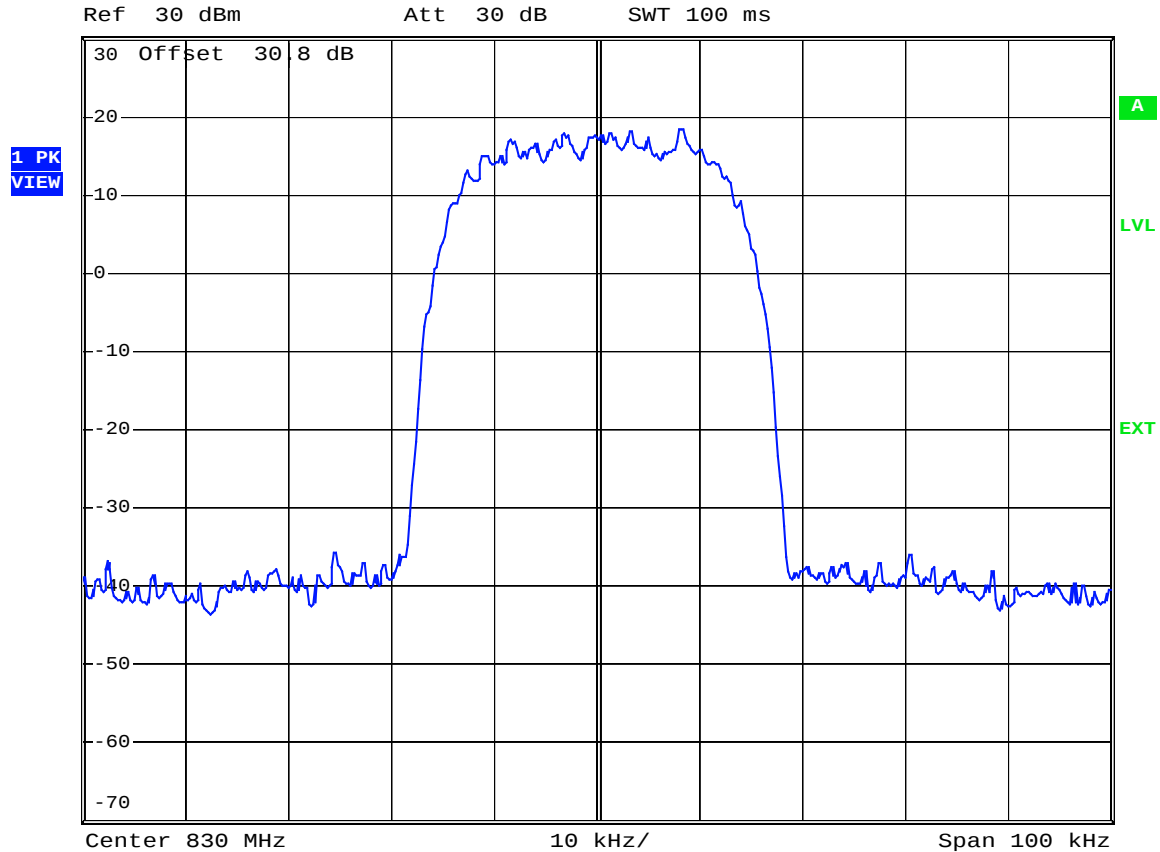
# Test Data – Occupied Bandwidth

TDMA - Output

Uplink



\* RBW 1 kHz  
VBW 3 kHz  
SWT 100 ms



Date: 8.SEP.2006 11:20:29

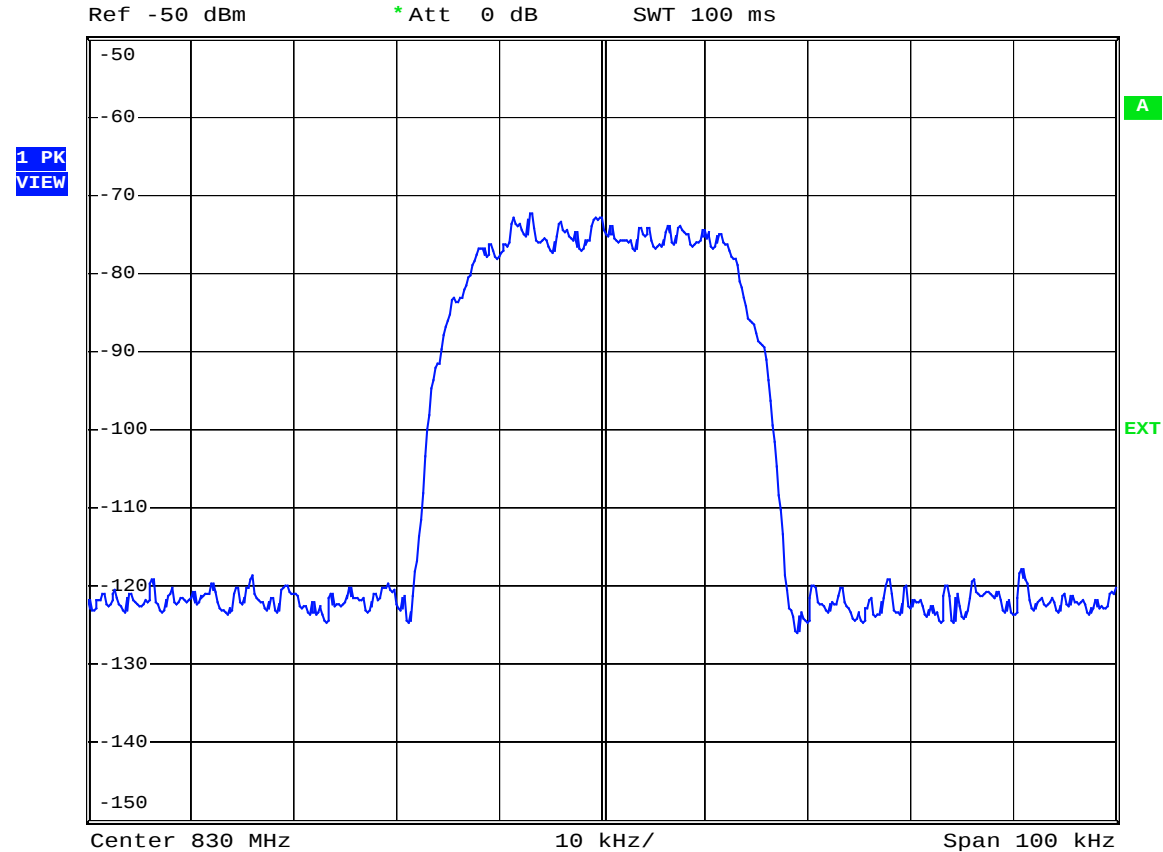
EQUIPMENT: AMR85125

# Test Data – Occupied Bandwidth

TDMA - Input  
Uplink



\* RBW 1 kHz  
VBW 3 kHz  
SWT 100 ms



Date: 8.SEP.2006 11:21:55

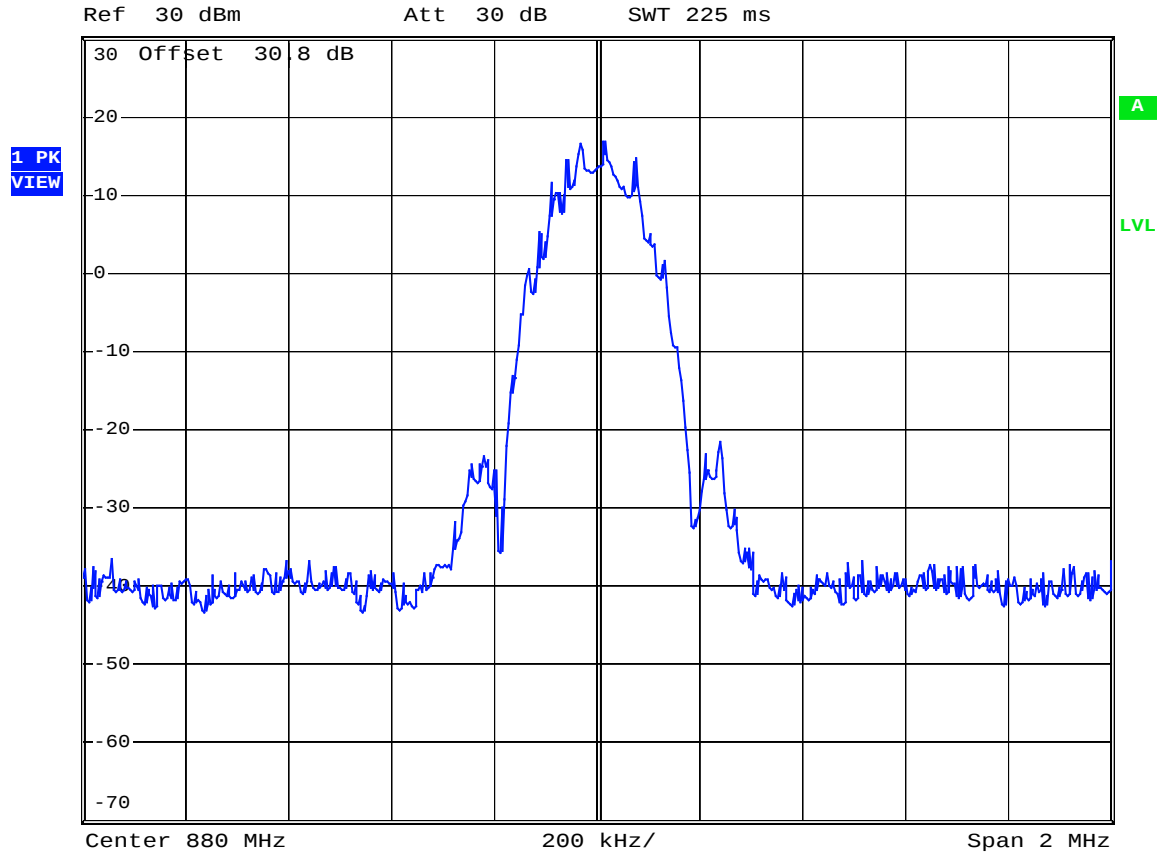
# Test Data – Occupied Bandwidth

EDGE - Output

Downlink



\* RBW 3 kHz  
VBW 10 kHz  
SWT 225 ms



Date: 11.SEP.2006 15:03:05

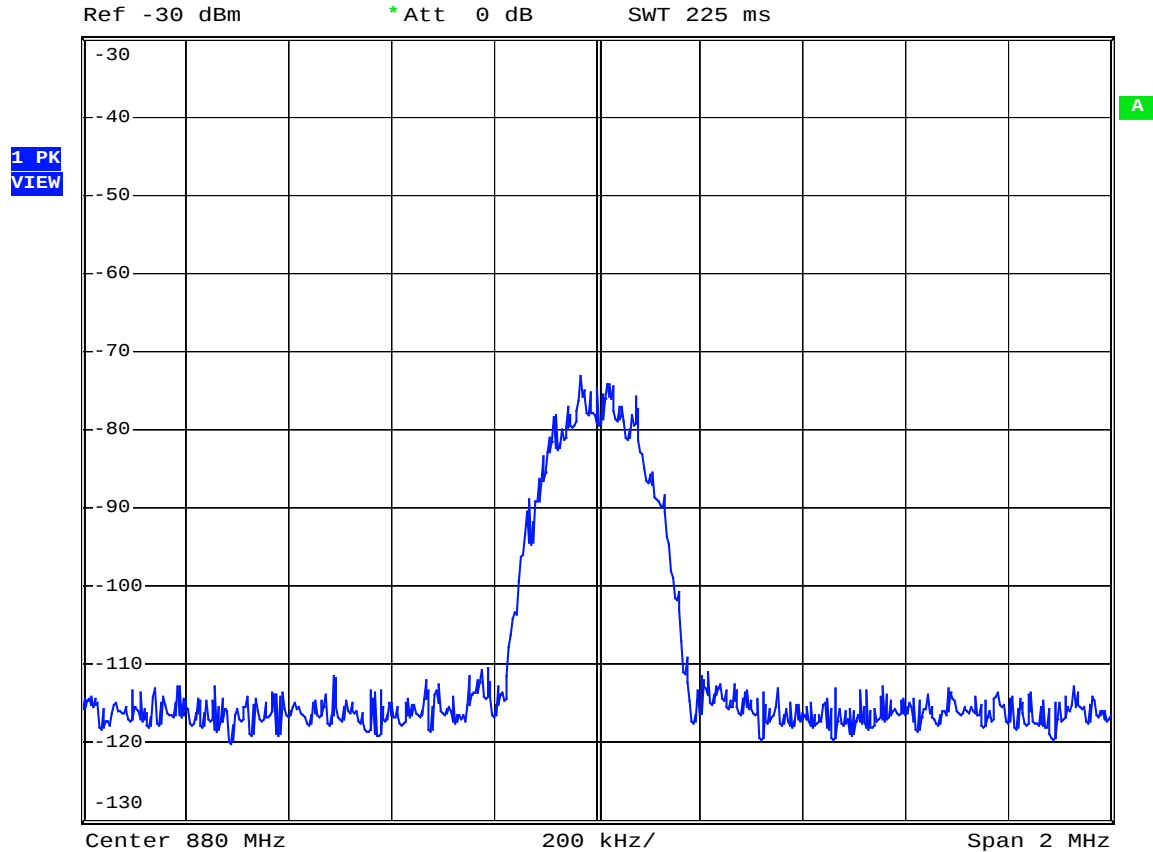
EQUIPMENT: AMR85125

# Test Data – Occupied Bandwidth

EDGE - Input  
Downlink



\* RBW 3 kHz  
VBW 10 kHz  
SWT 225 ms



Date: 11.SEP.2006 15:04:21

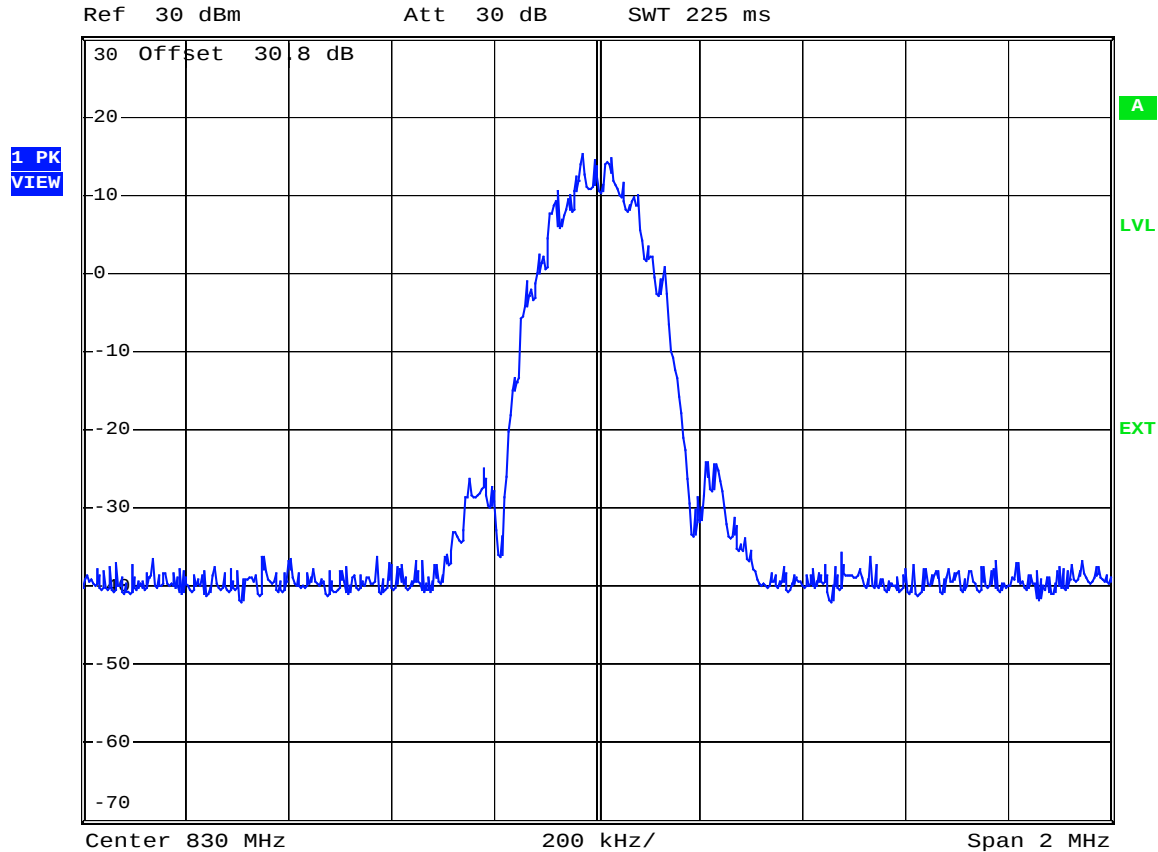
EQUIPMENT: AMR85125

# Test Data – Occupied Bandwidth

EDGE - Output  
Uplink



\* RBW 3 kHz  
VBW 10 kHz  
SWT 225 ms



Date: 8.SEP.2006 11:11:46

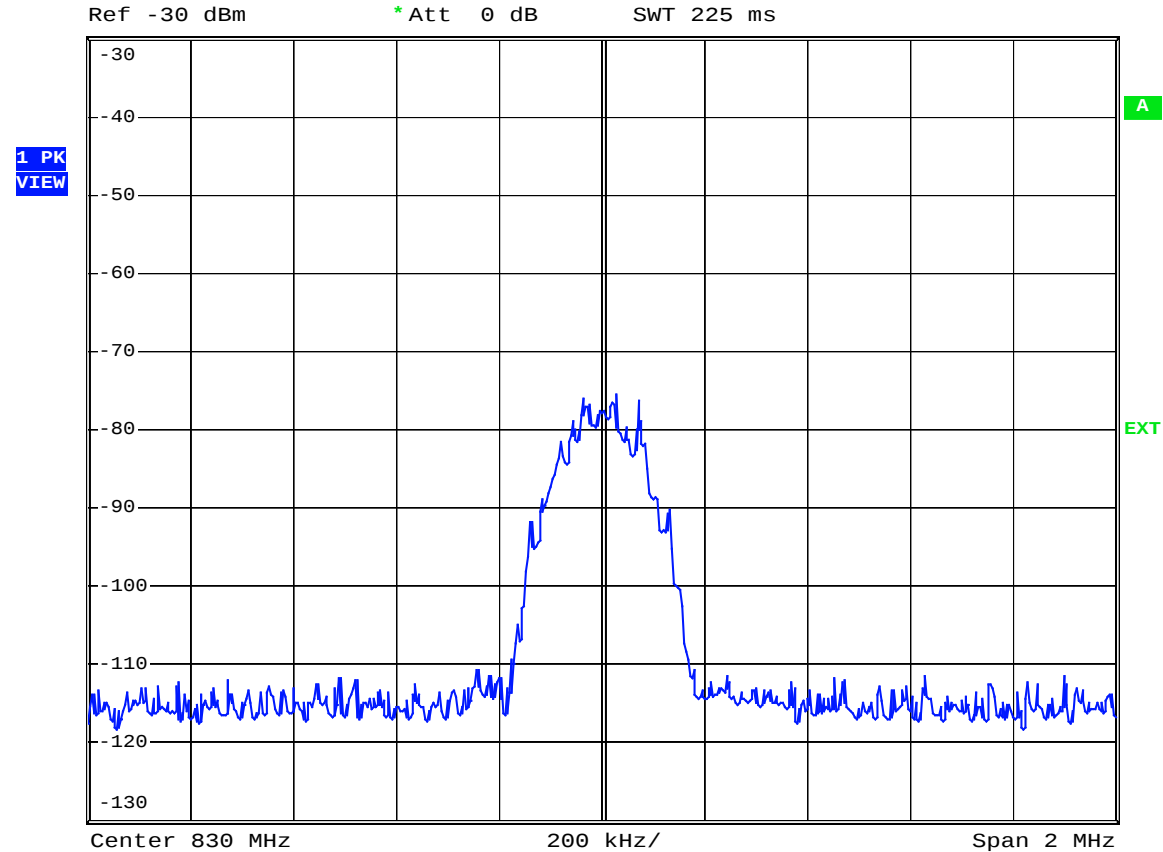
EQUIPMENT: AMR85125

# Test Data – Occupied Bandwidth

EDGE - Input  
Uplink



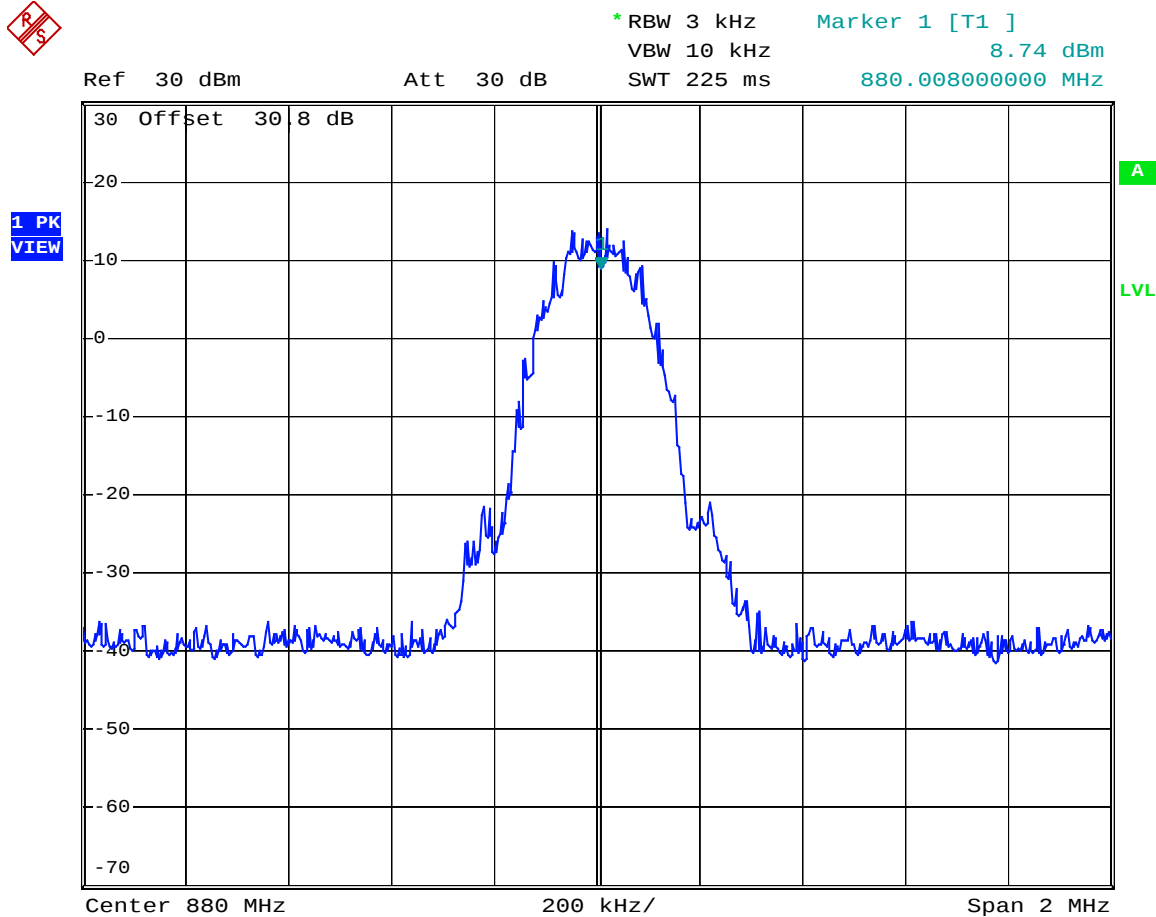
\* RBW 3 kHz  
VBW 10 kHz  
SWT 225 ms



Date: 8.SEP.2006 11:12:59

EQUIPMENT: AMR85125

## Test Data – Occupied Bandwidth

GSM - Output  
Downlink

Date: 11.SEP.2006 15:07:29

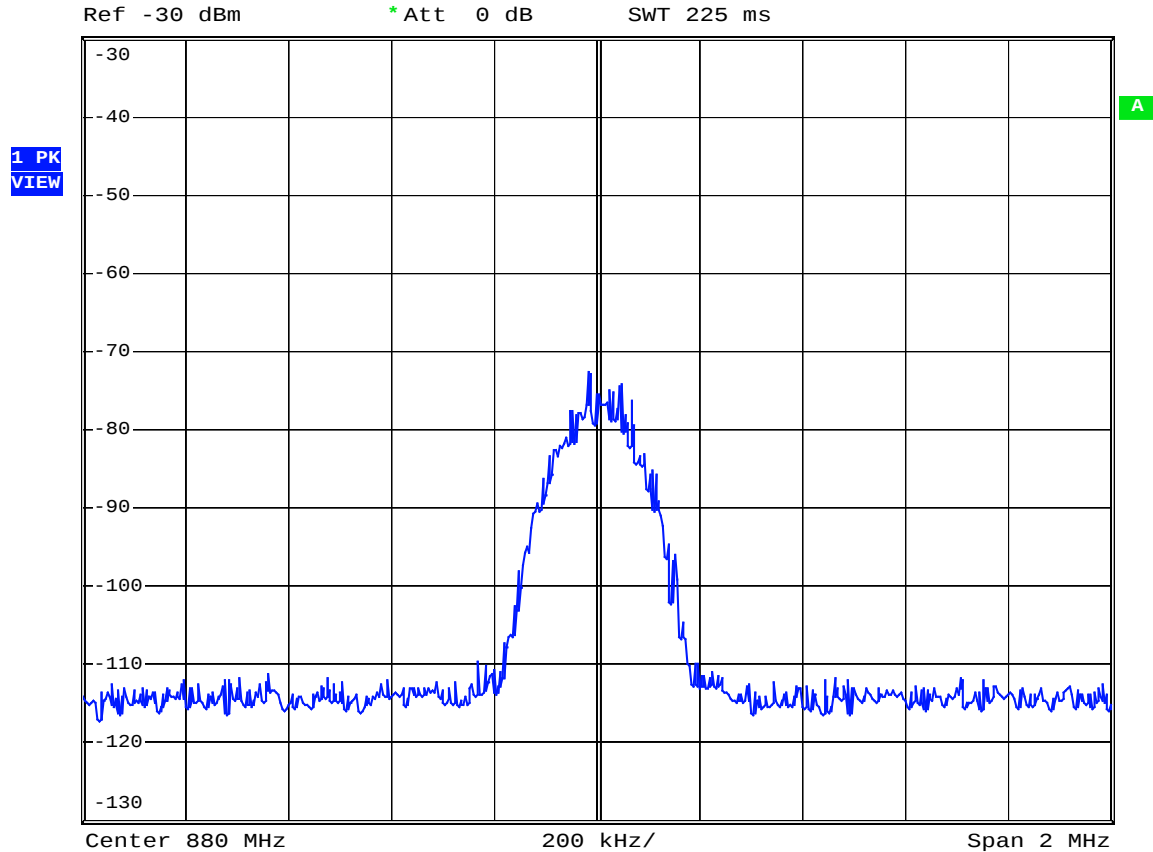
EQUIPMENT: AMR85125

# Test Data – Occupied Bandwidth

GSM - Input  
Downlink



\* RBW 3 kHz  
VBW 10 kHz  
SWT 225 ms



Date: 11.SEP.2006 15:05:27

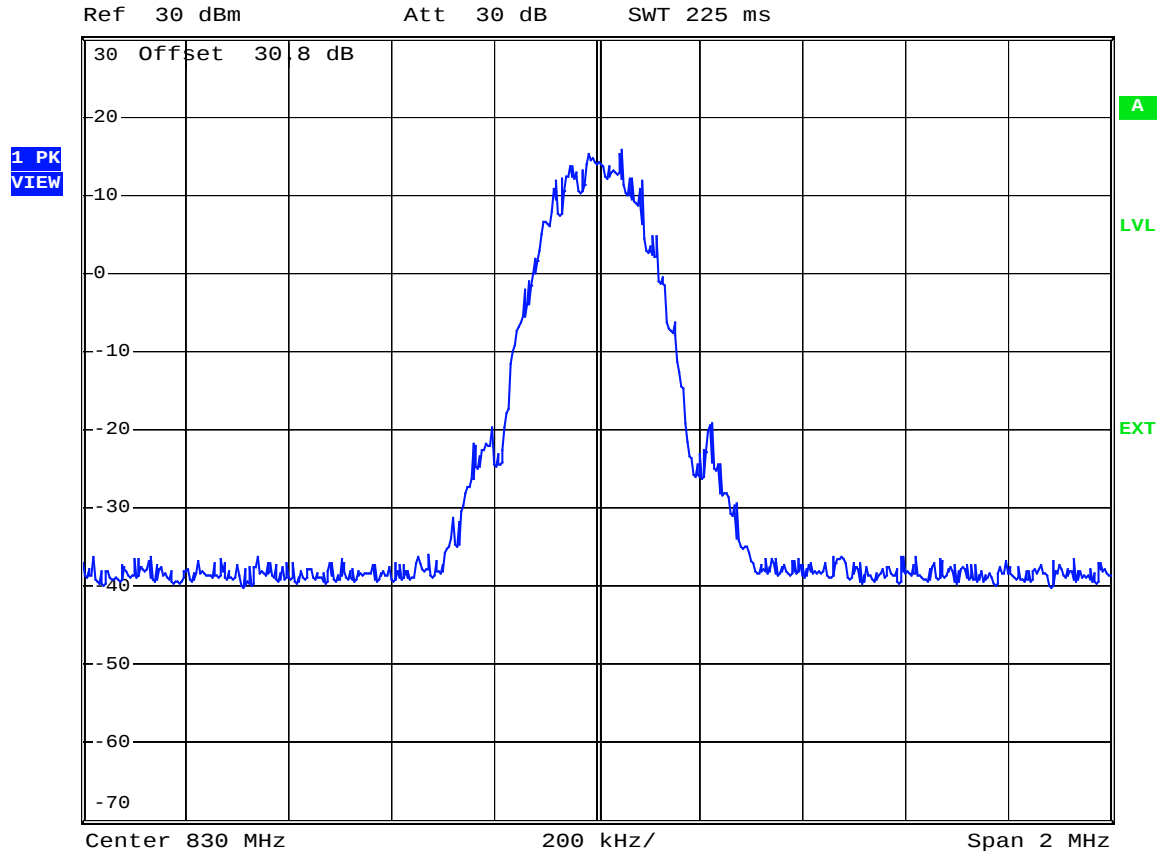
EQUIPMENT: AMR85125

# Test Data – Occupied Bandwidth

GSM - Output  
Uplink



\* RBW 3 kHz  
VBW 10 kHz  
SWT 225 ms



Date: 8.SEP.2006 10:54:15

EQUIPMENT: AMR85125

# Test Data – Occupied Bandwidth

GSM - Input  
Uplink



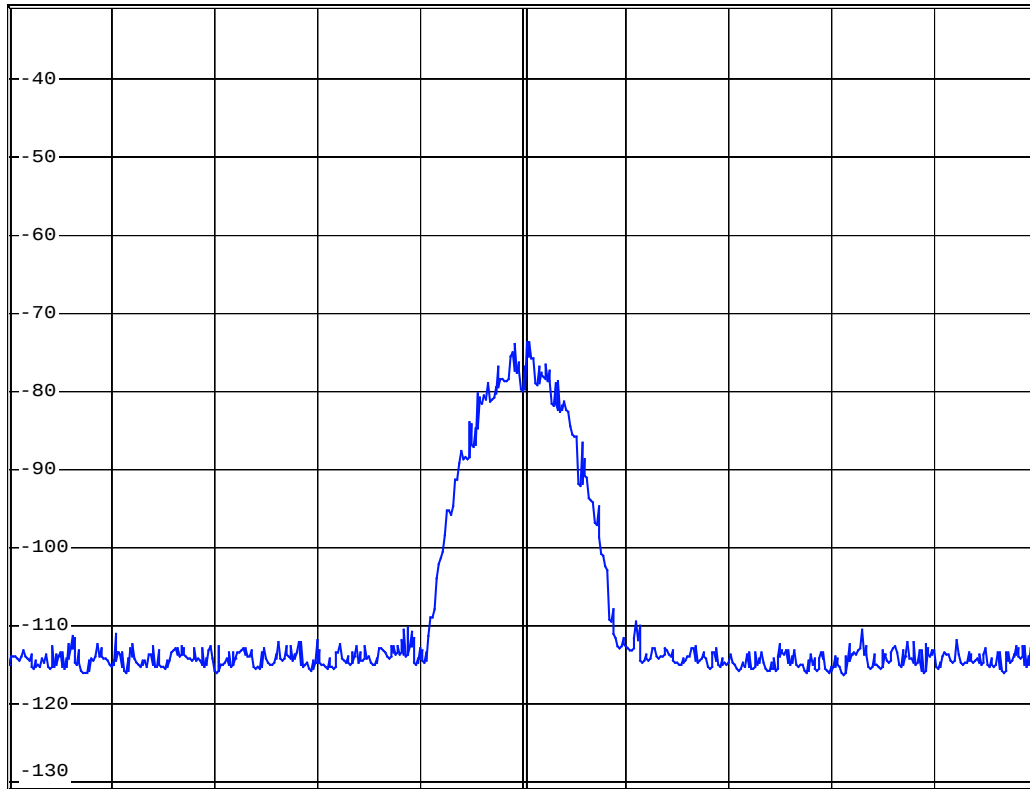
\* RBW 3 kHz  
VBW 10 kHz  
SWT 225 ms

Ref -30.8 dBm

\* Att 0 dB

SWT 225 ms

1 PK  
VIEW



Date: 8.SEP.2006 10:56:44

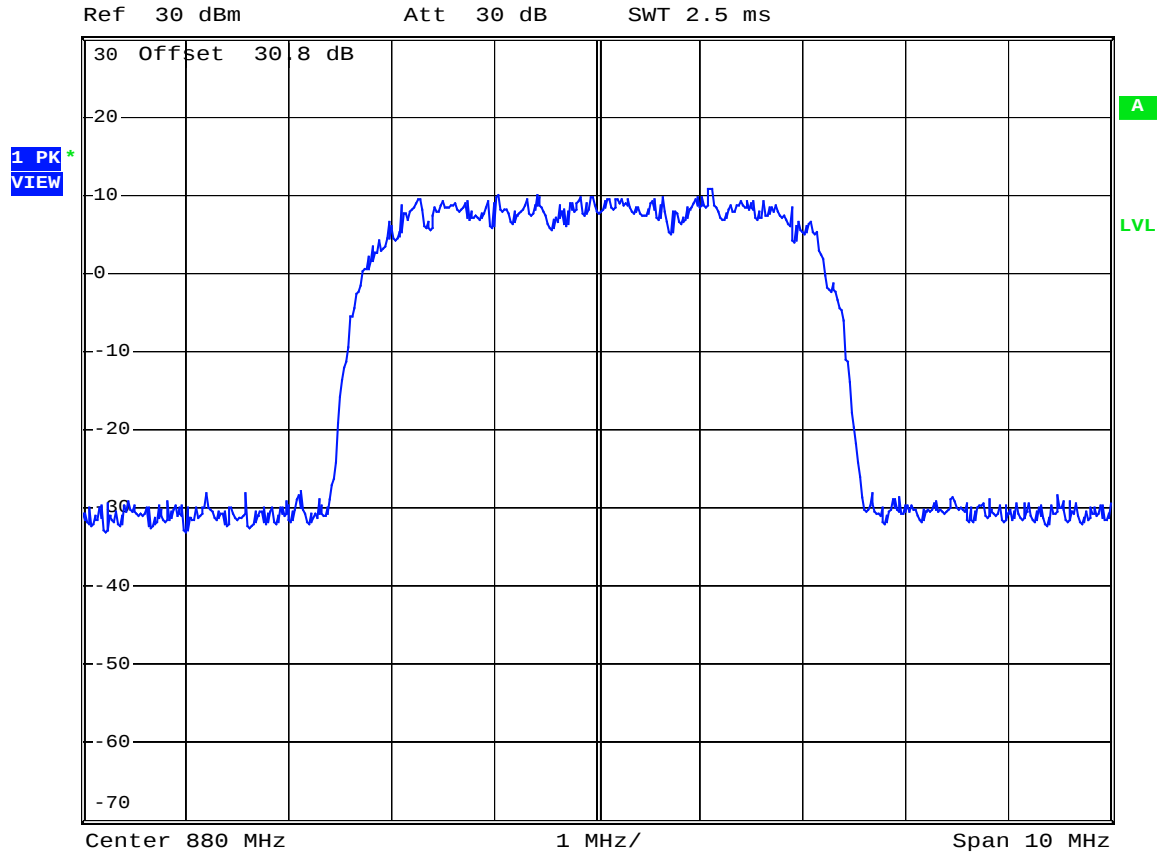
EQUIPMENT: AMR85125

# Test Data – Occupied Bandwidth

W-CDMA - Output  
Downlink



\* RBW 100 kHz  
VBW 300 kHz  
SWT 2.5 ms



Date: 11.SEP.2006 14:25:59

EQUIPMENT: AMR85125

# Test Data – Occupied Bandwidth

W-CDMA - Input  
Downlink



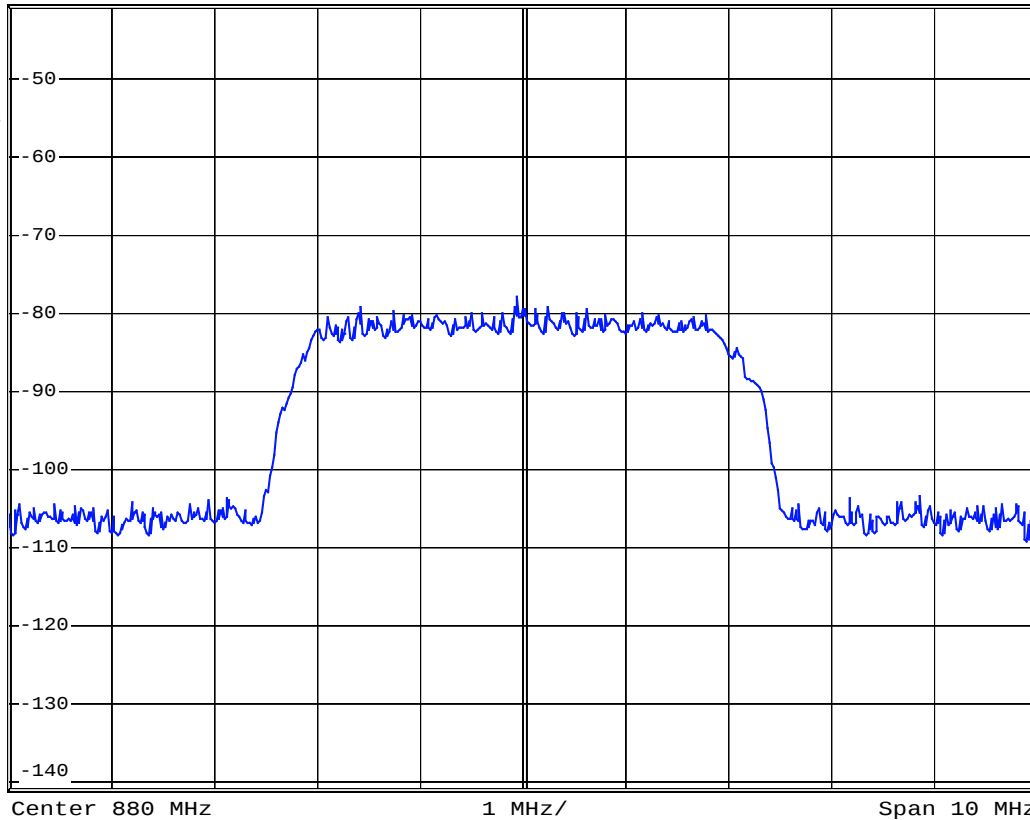
\* RBW 100 kHz  
VBW 300 kHz  
SWT 2.5 ms

Ref -40.8 dBm

\* Att 0 dB

SWT 2.5 ms

1 PK  
VIEW



Date: 11.SEP.2006 14:28:39

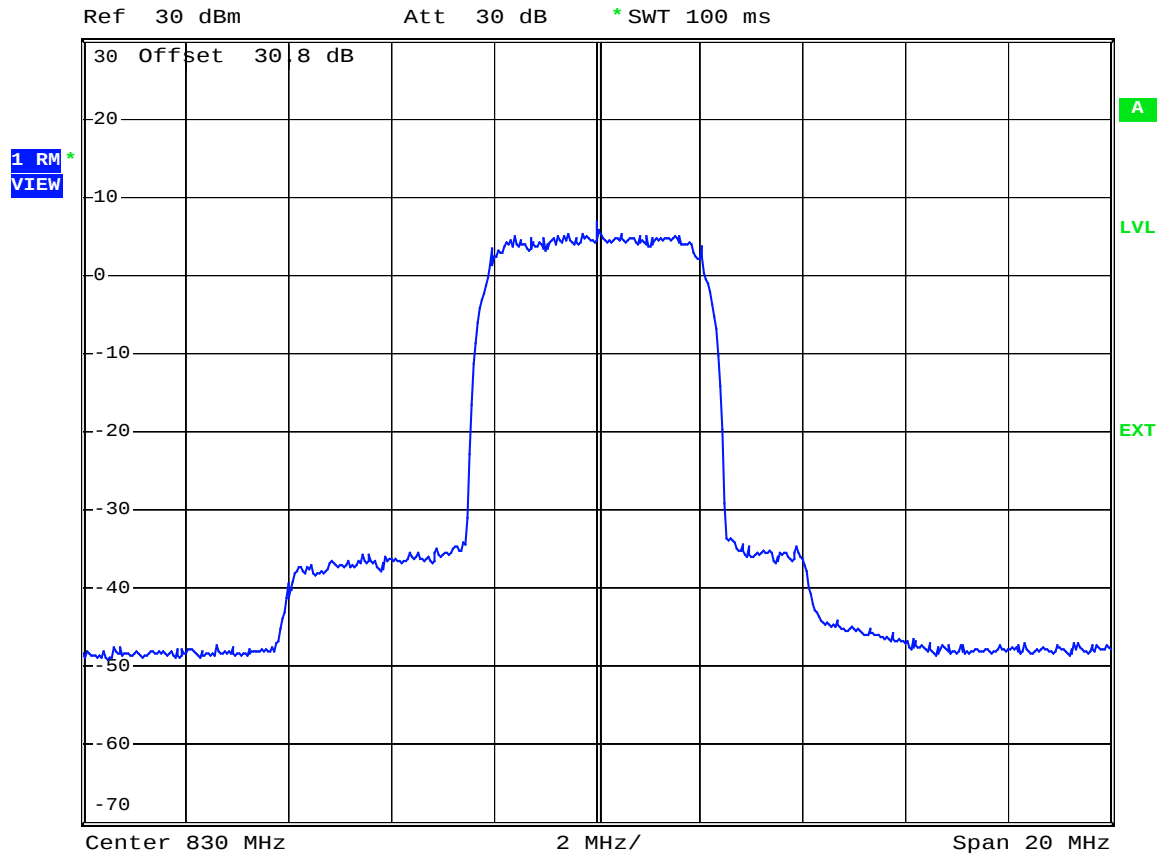
EQUIPMENT: AMR85125

# Test Data – Occupied Bandwidth

W-CDMA - Output  
Uplink



\* RBW 30 kHz  
\* VBW 300 kHz  
\* SWT 100 ms

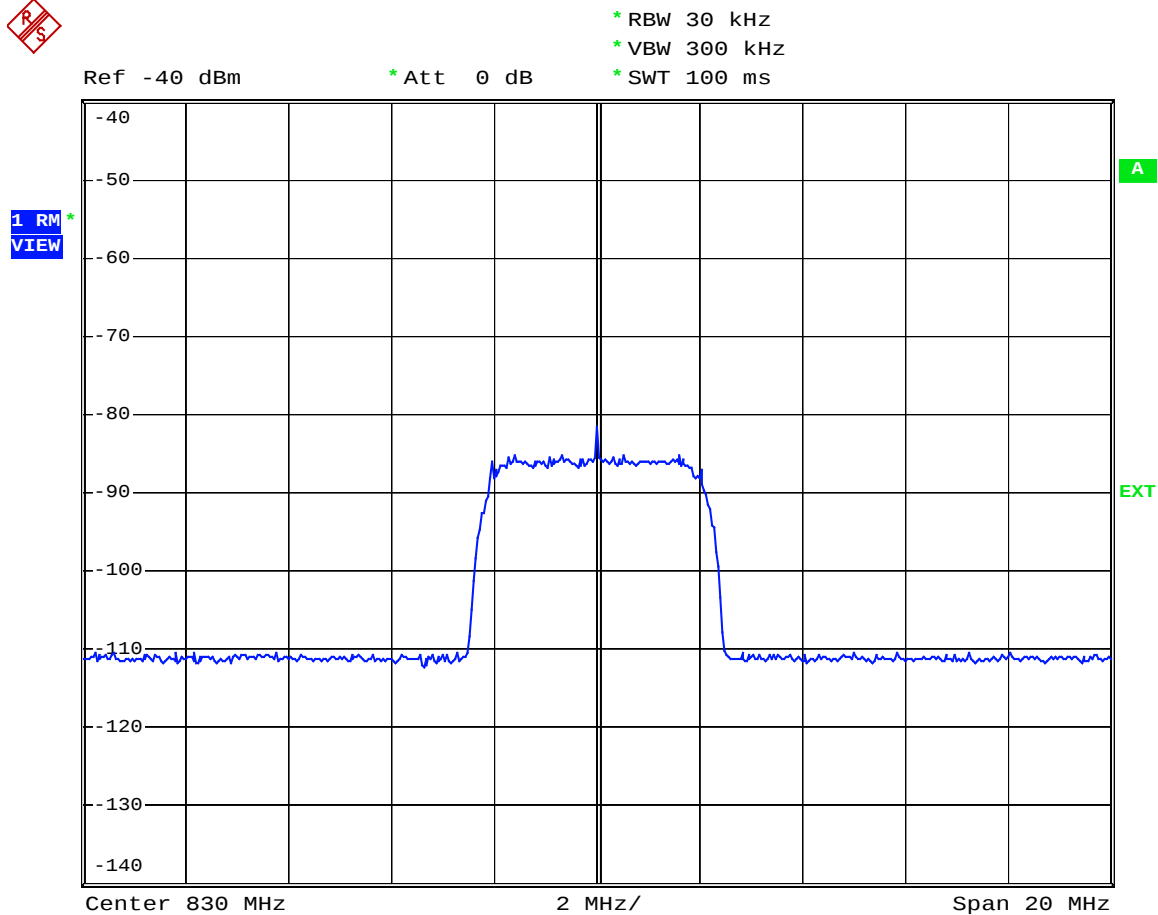


Date: 8.SEP.2006 11:37:39

EQUIPMENT: AMR85125

# Test Data – Occupied Bandwidth

W-CDMA - Input  
Uplink



Date: 8.SEP.2006 11:38:45

## Section 5. Spurious Emissions at Antenna Terminals

NAME OF TEST: Spurious Emissions @ Antenna Terminals PARA. NO.: 22.917

TESTED BY: David Light

DATE: 08 September 06

**Test Results:** Complies.

**Test Data:** See attached plot(s).

**Equipment Used:** 1472-1469-1082-1659-1464

**Measurement Uncertainty:** +/- 1.7 dB

**Temperature:** 25 °C

**Relative Humidity:** 40 %

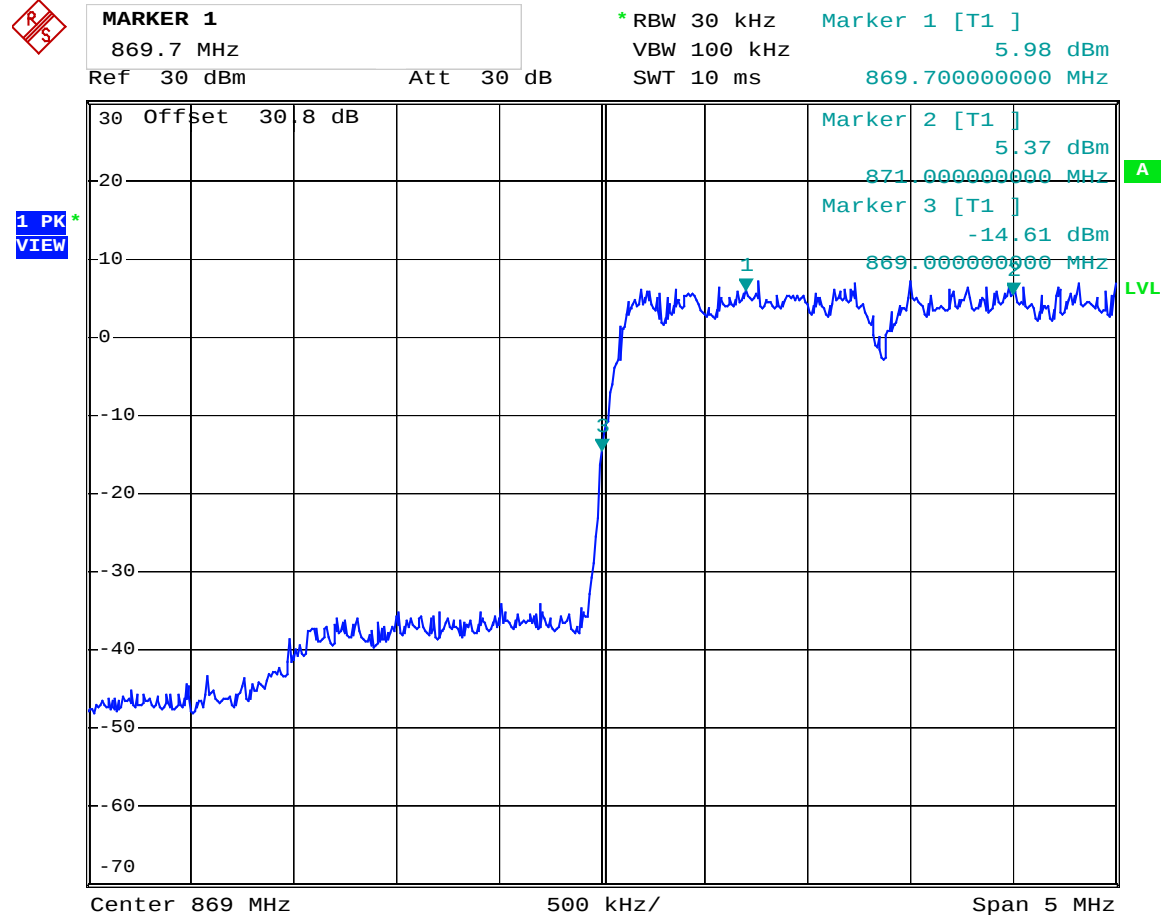
EQUIPMENT: AMR85125

## Test Data – Spurious Emissions at Antenna Terminals

Lower Bandedge Intermodulation

CDMA

Downlink



Date: 11.SEP.2006 13:43:18

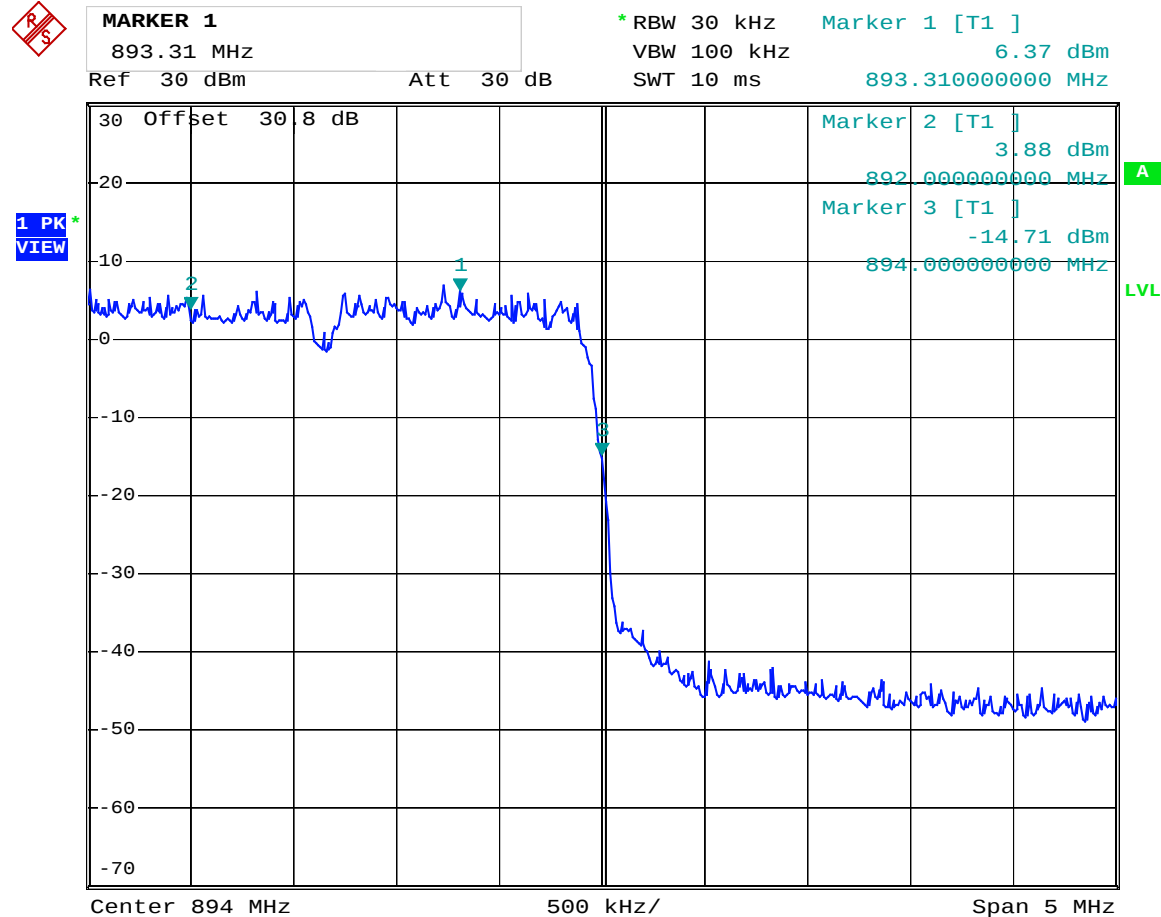
EQUIPMENT: AMR85125

## Test Data – Spurious Emissions at Antenna Terminals

Upper Bandedge Intermodulation

CDMA

Downlink



Date: 11.SEP.2006 13:46:49

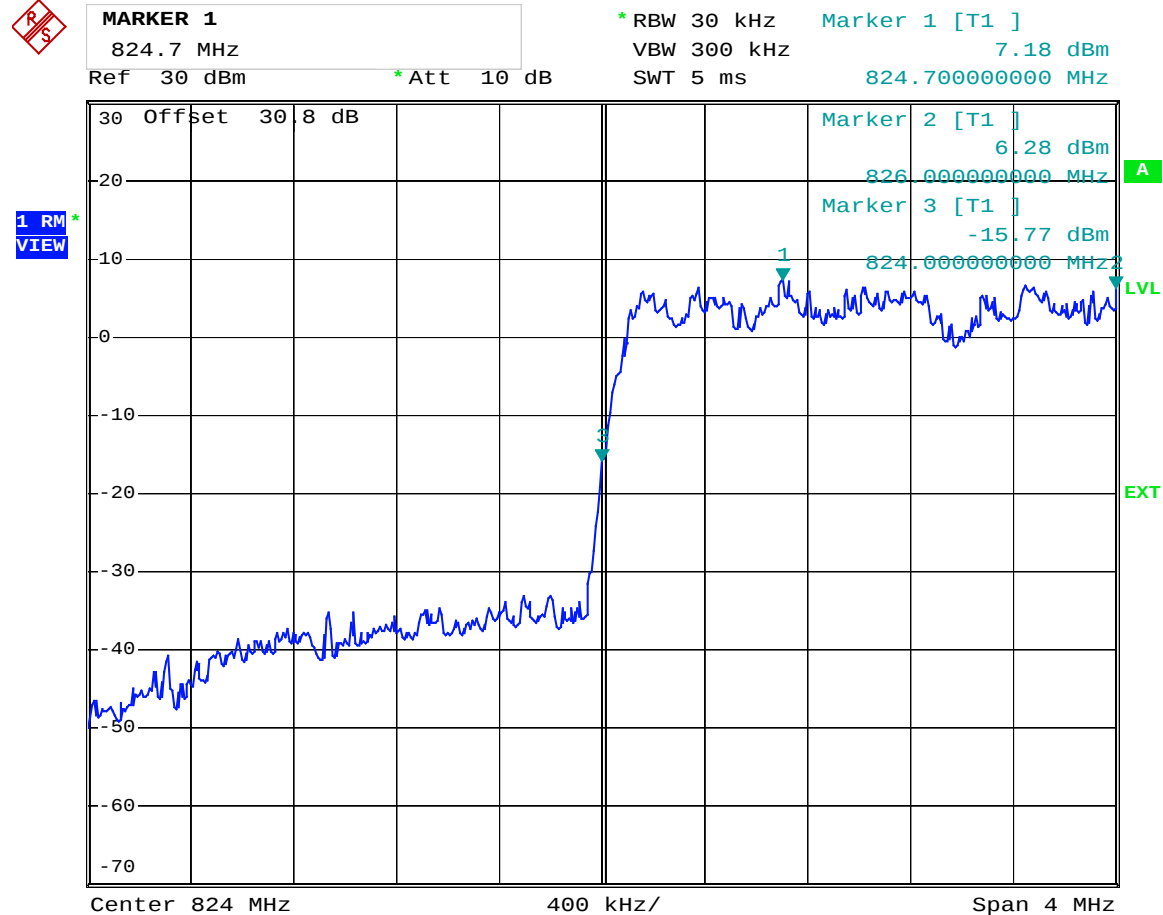
EQUIPMENT: AMR85125

## Test Data – Spurious Emissions at Antenna Terminals

Lower Bandedge Intermodulation

CDMA

Uplink



Date: 8.SEP.2006 14:18:32

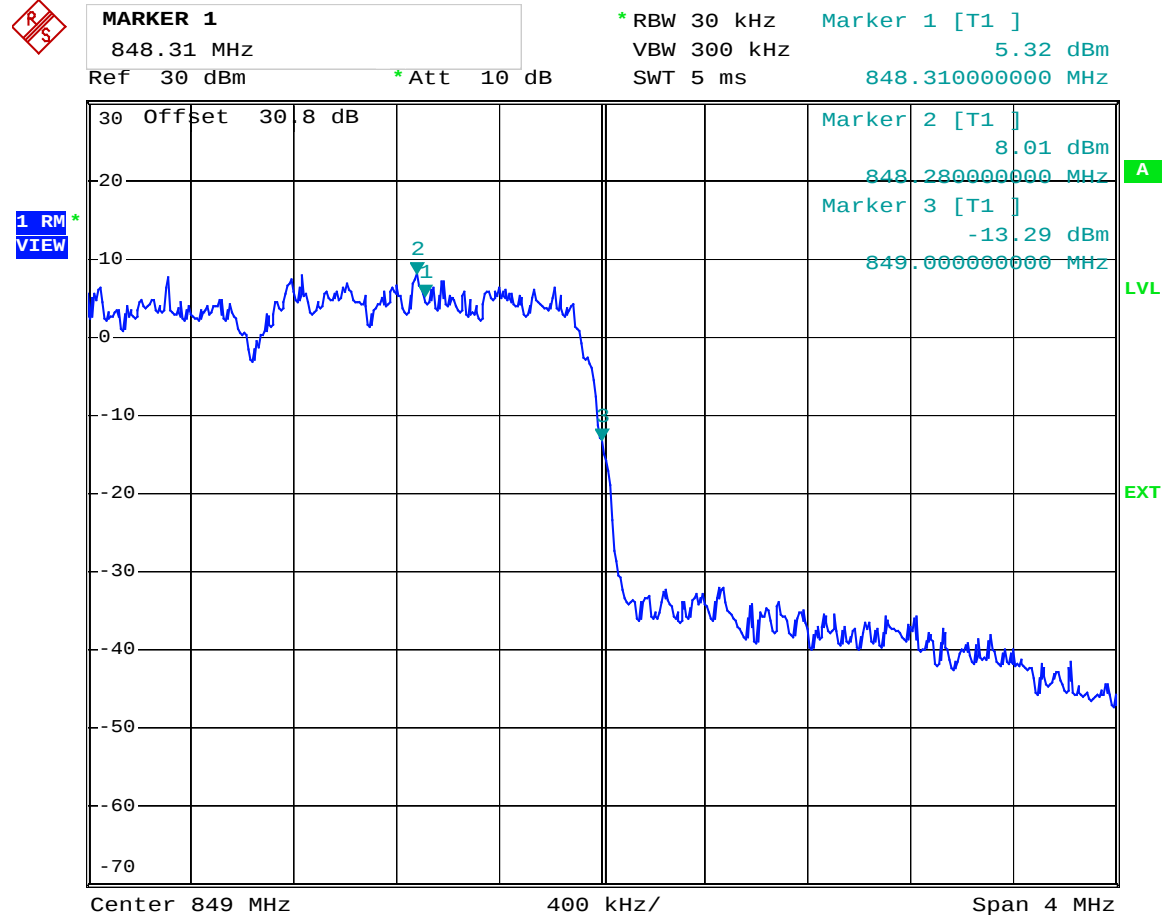
EQUIPMENT: AMR85125

## Test Data – Spurious Emissions at Antenna Terminals

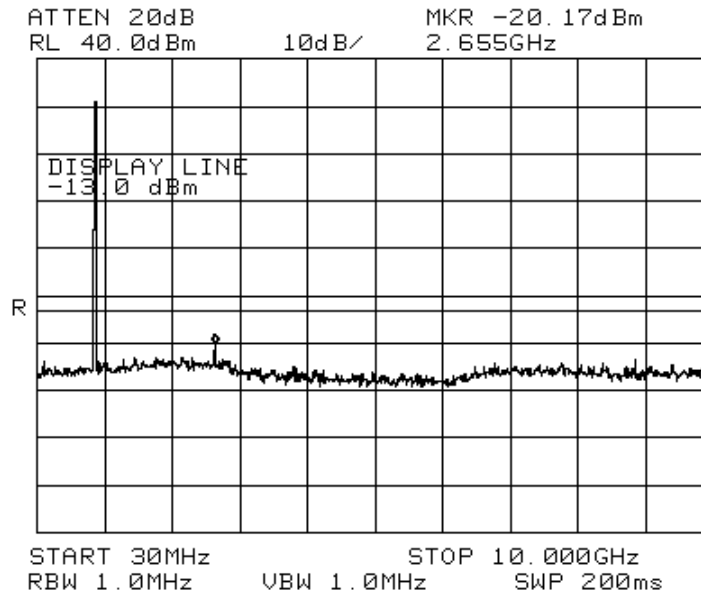
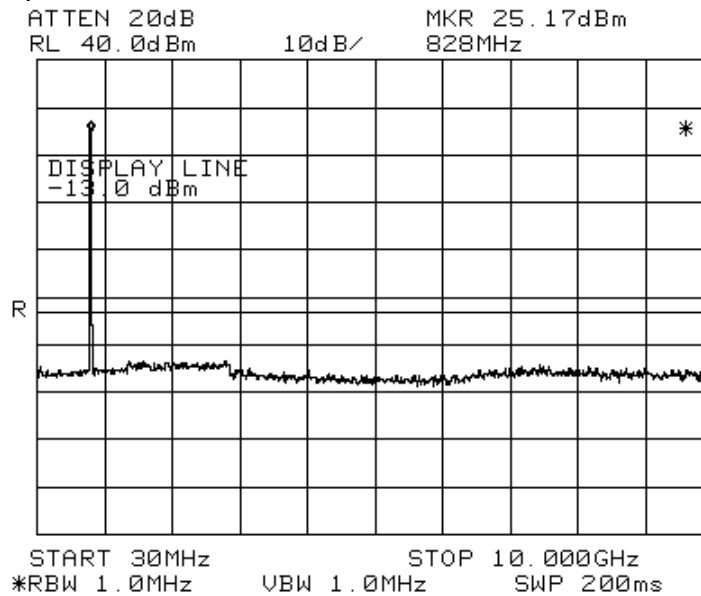
Upper Bandedge Intermodulation

CDMA

Uplink



Date: 8.SEP.2006 14:21:05

EQUIPMENT: AMR85125**Test Data – Spurious Emissions at Antenna Terminals****Spurs – CDMA - Downlink****Spurs – CDMA - Uplink**

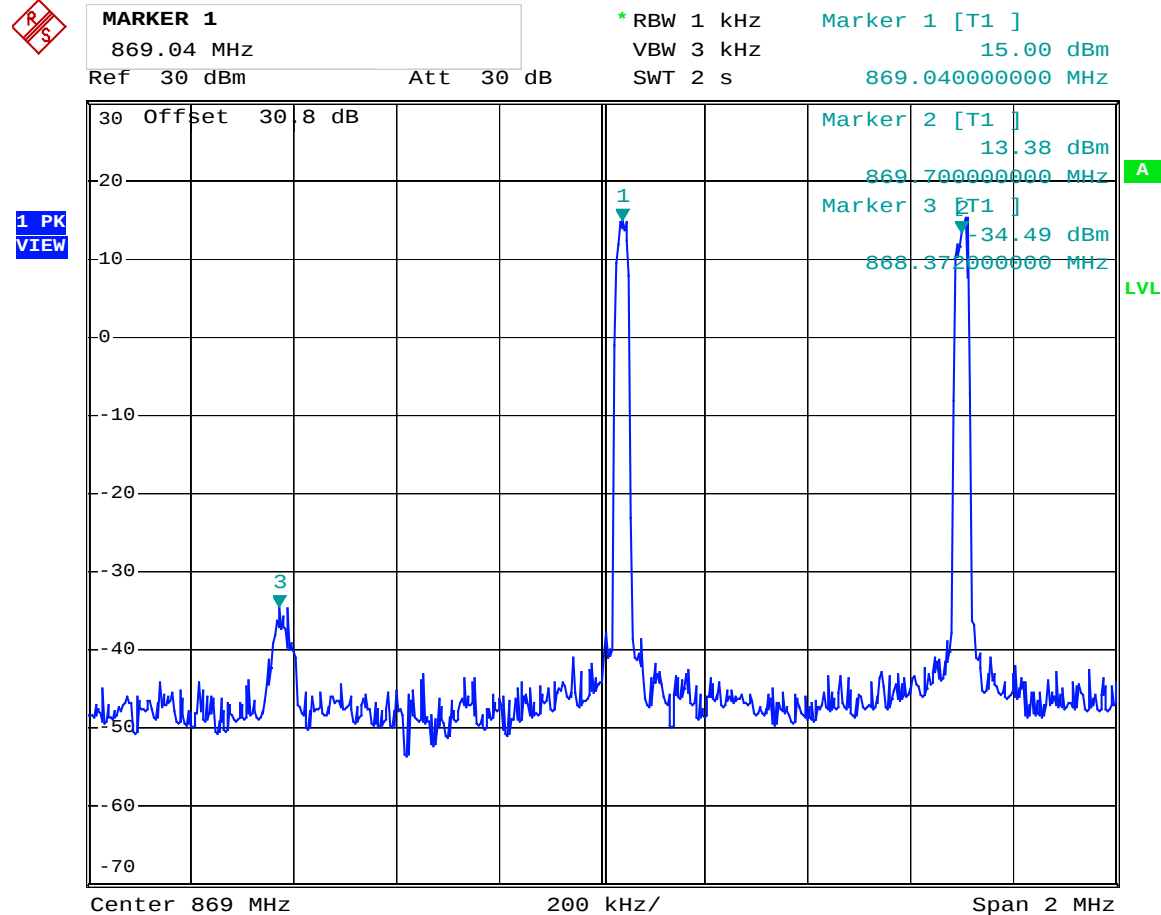
EQUIPMENT: AMR85125

## Test Data – Spurious Emissions at Antenna Terminals

Lower Bandedge Intermodulation

TDMA

Downlink



Date: 11.SEP.2006 13:39:22

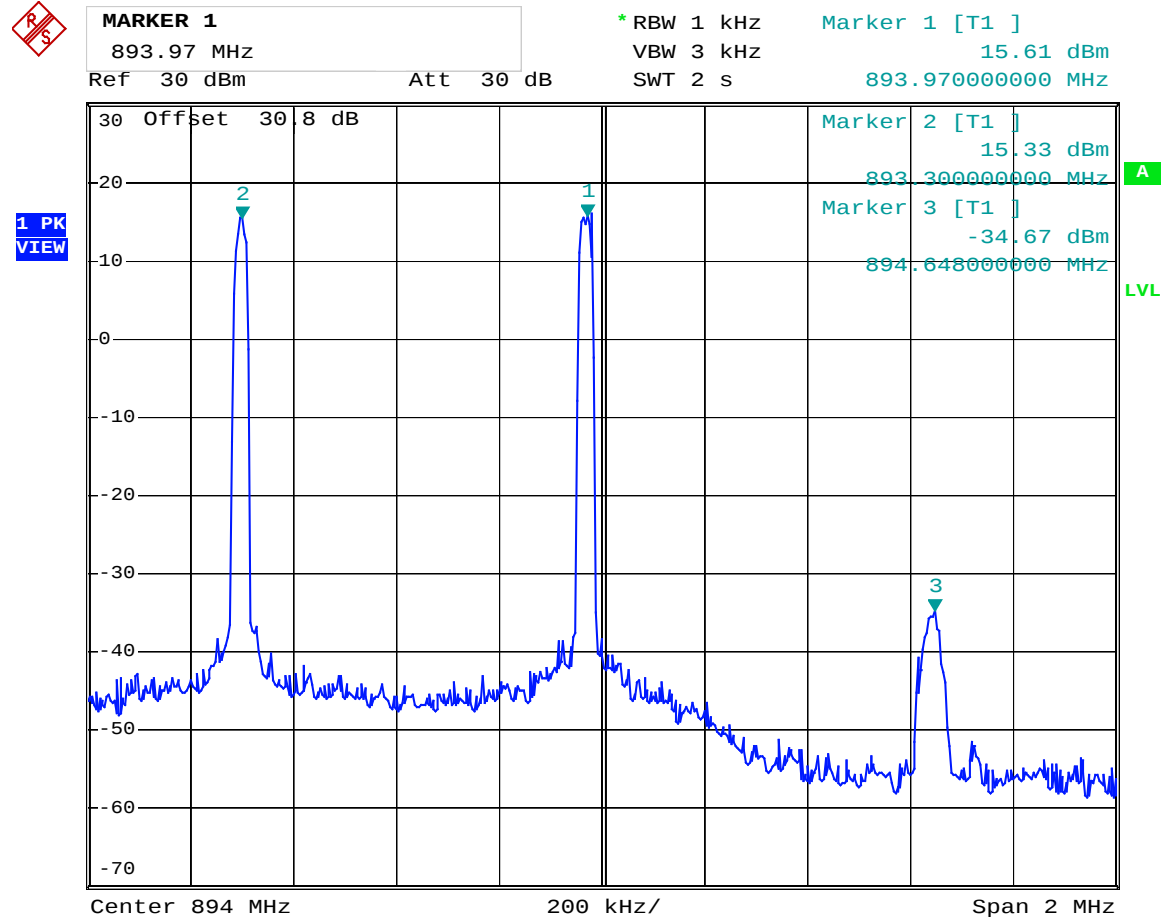
EQUIPMENT: AMR85125

## Test Data – Spurious Emissions at Antenna Terminals

Upper Bandedge Intermodulation

TDMA

Downlink



Date: 11.SEP.2006 13:37:34

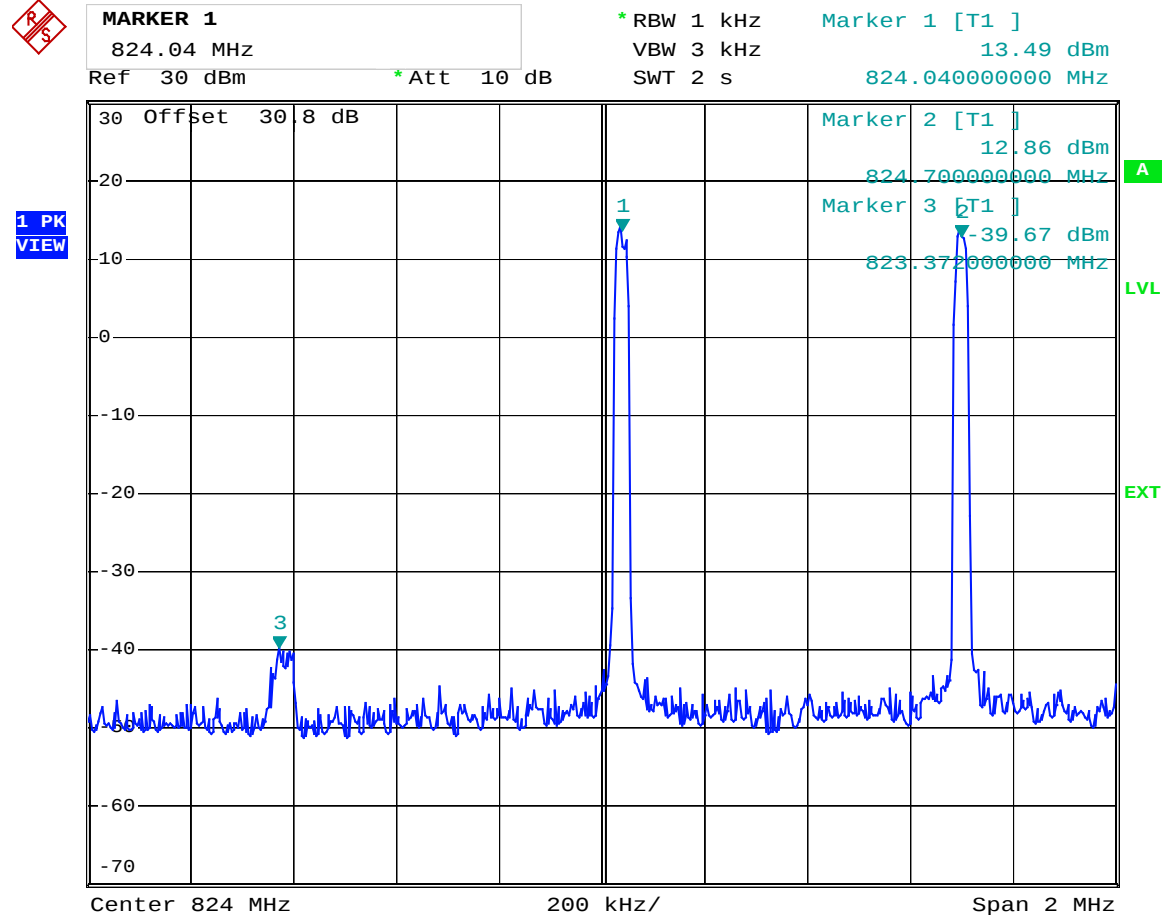
EQUIPMENT: AMR85125

## Test Data – Spurious Emissions at Antenna Terminals

Lower Bandedge Intermodulation

TDMA

Uplink



Date: 8.SEP.2006 14:13:27

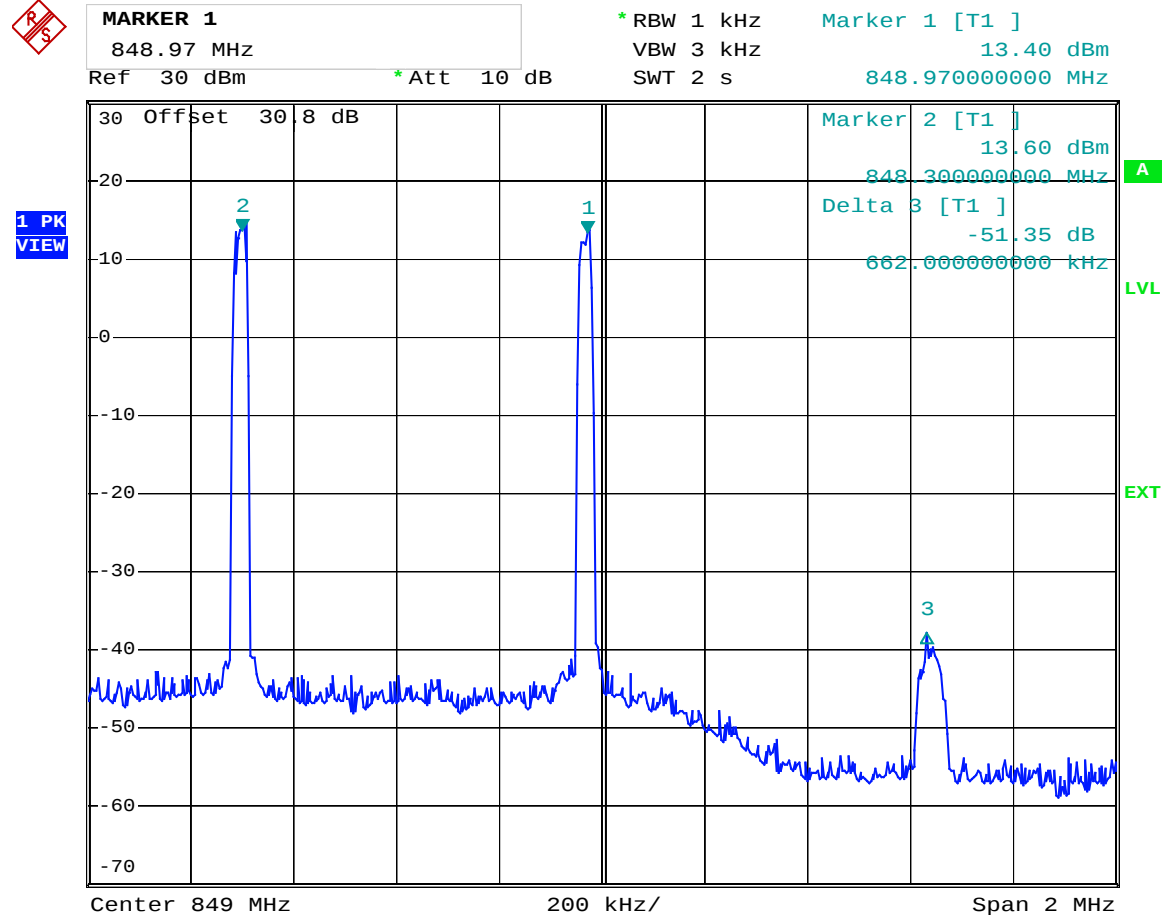
EQUIPMENT: AMR85125

## Test Data – Spurious Emissions at Antenna Terminals

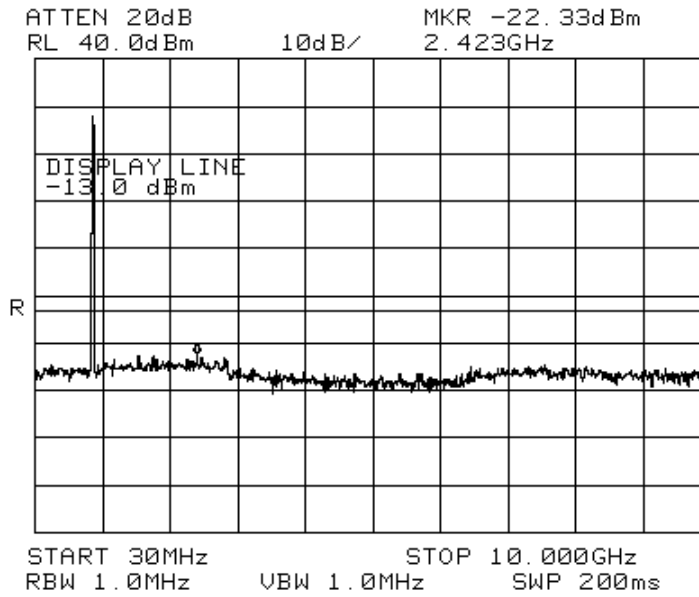
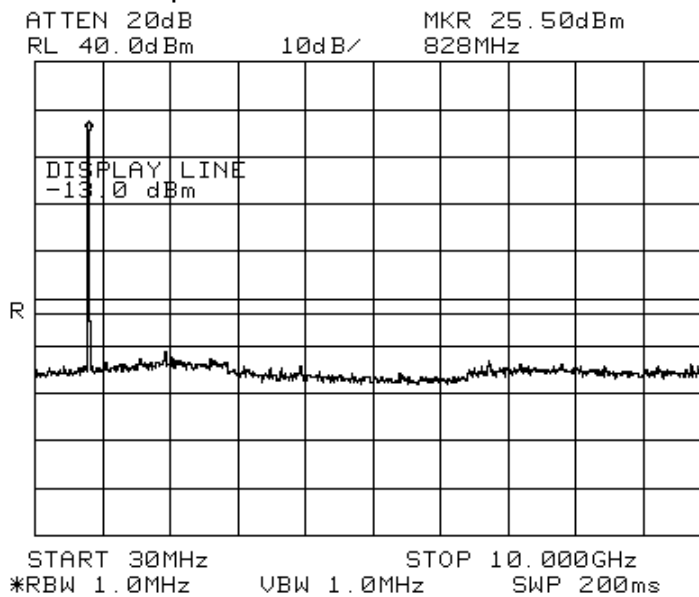
Upper Bandedge Intermodulation

TDMA

Uplink



Date: 8.SEP.2006 14:10:59

EQUIPMENT: AMR85125**Test Data – Spurious Emissions at Antenna Terminals****Spurs – TDMA - Downlink****Spurs – TDMA - Uplink**

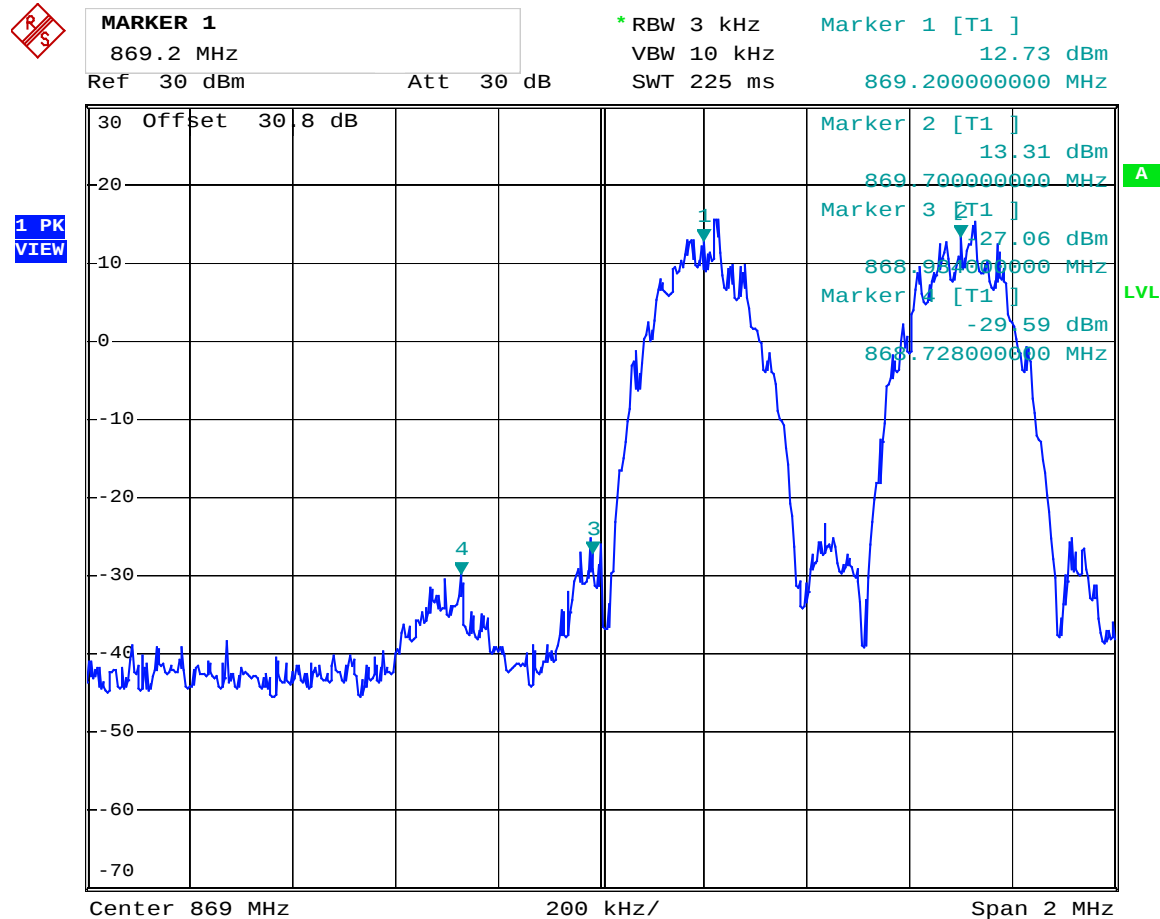
EQUIPMENT: AMR85125

## Test Data – Spurious Emissions at Antenna Terminals

Lower Bandedge Intermodulation

EDGE

Downlink



Date: 11.SEP.2006 13:29:54

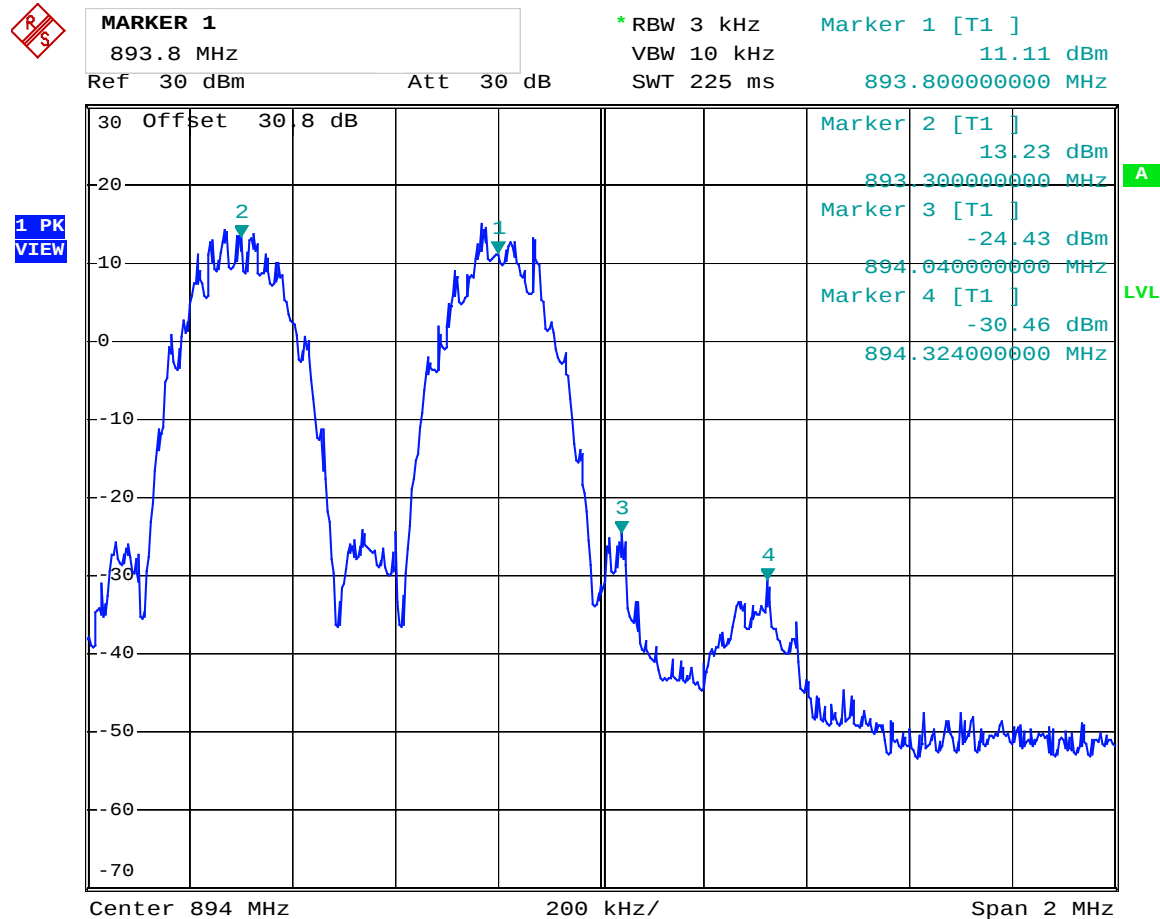
EQUIPMENT: AMR85125

## Test Data – Spurious Emissions at Antenna Terminals

Upper Bandedge Intermodulation

EDGE

Downlink



Date: 11.SEP.2006 13:27:13

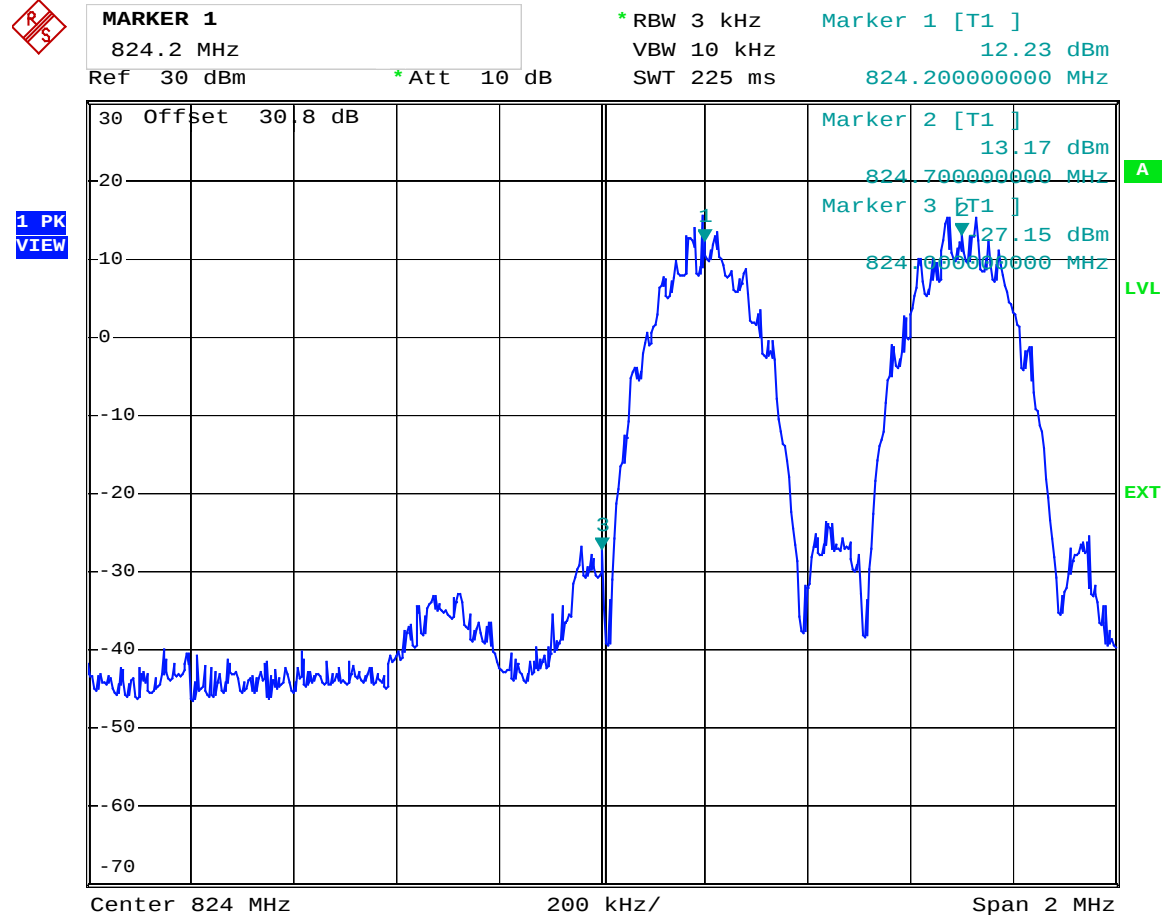
EQUIPMENT: AMR85125

## Test Data – Spurious Emissions at Antenna Terminals

Lower Bandedge Intermodulation

EDGE

Uplink



Date: 8.SEP.2006 14:04:24

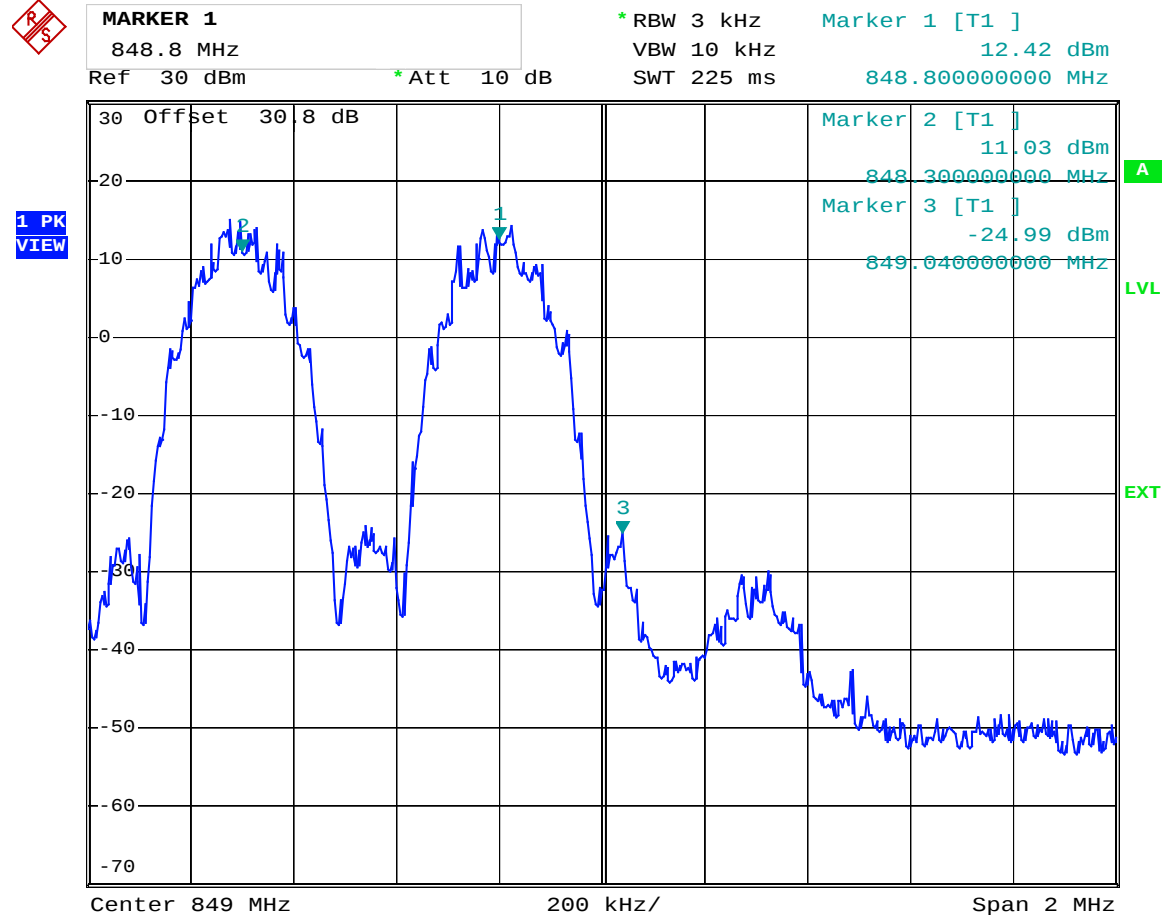
EQUIPMENT: AMR85125

## Test Data – Spurious Emissions at Antenna Terminals

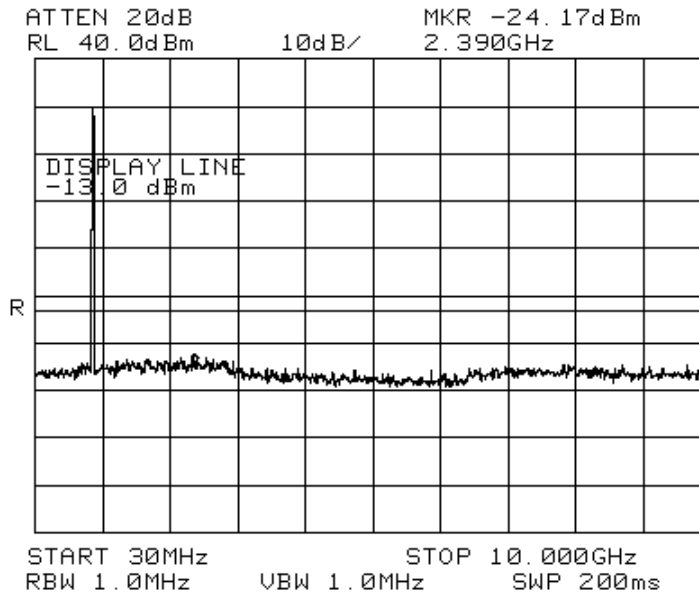
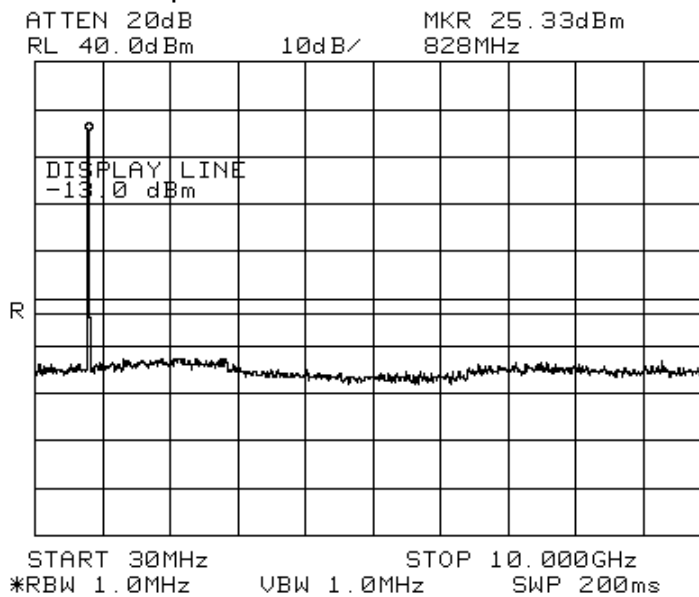
Upper Bandedge Intermodulation

EDGE

Uplink



Date: 8.SEP.2006 14:03:07

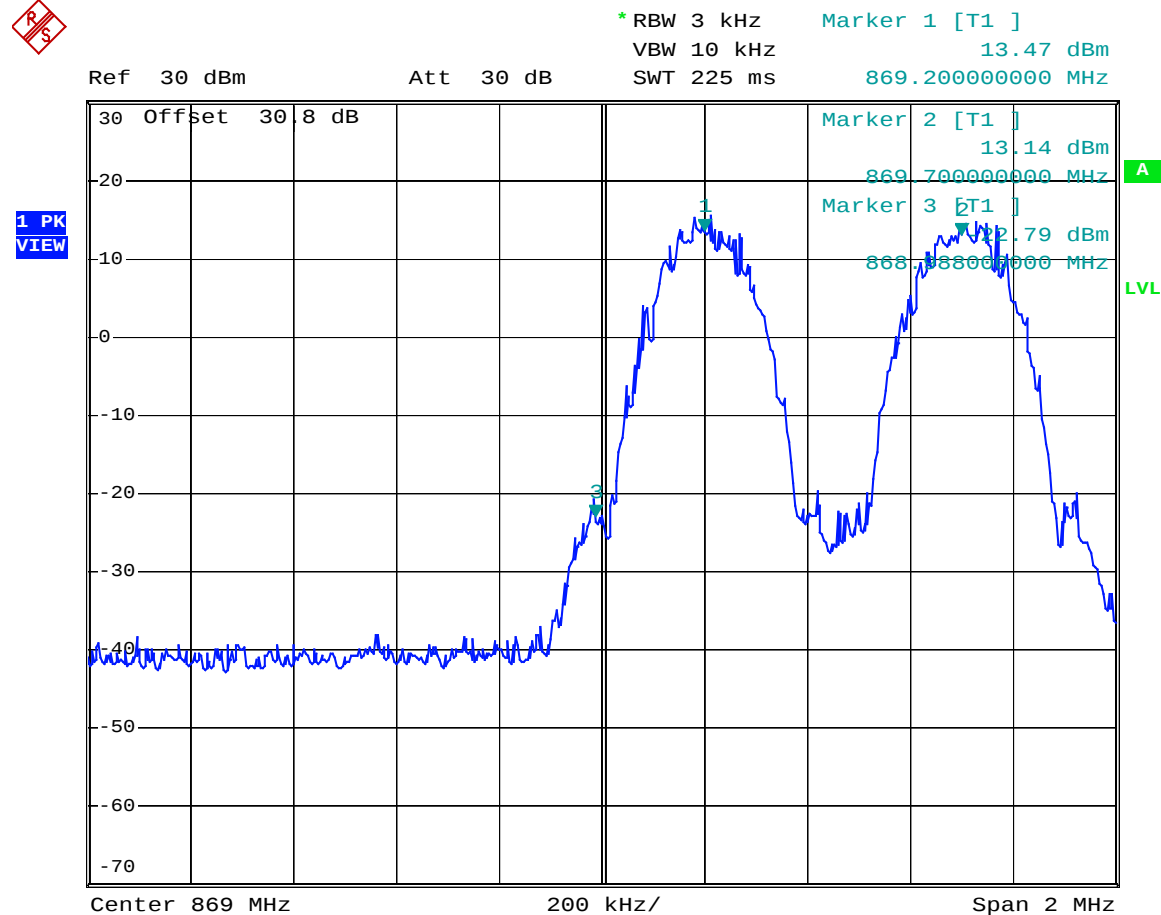
EQUIPMENT: AMR85125**Test Data – Spurious Emissions at Antenna Terminals****Spurs – EDGE - Downlink****Spurs – EDGE - Uplink**

# Test Data – Spurious Emissions at Antenna Terminals

Lower Bandedge Intermodulation

GSM

Downlink



Date: 11.SEP.2006 13:32:17

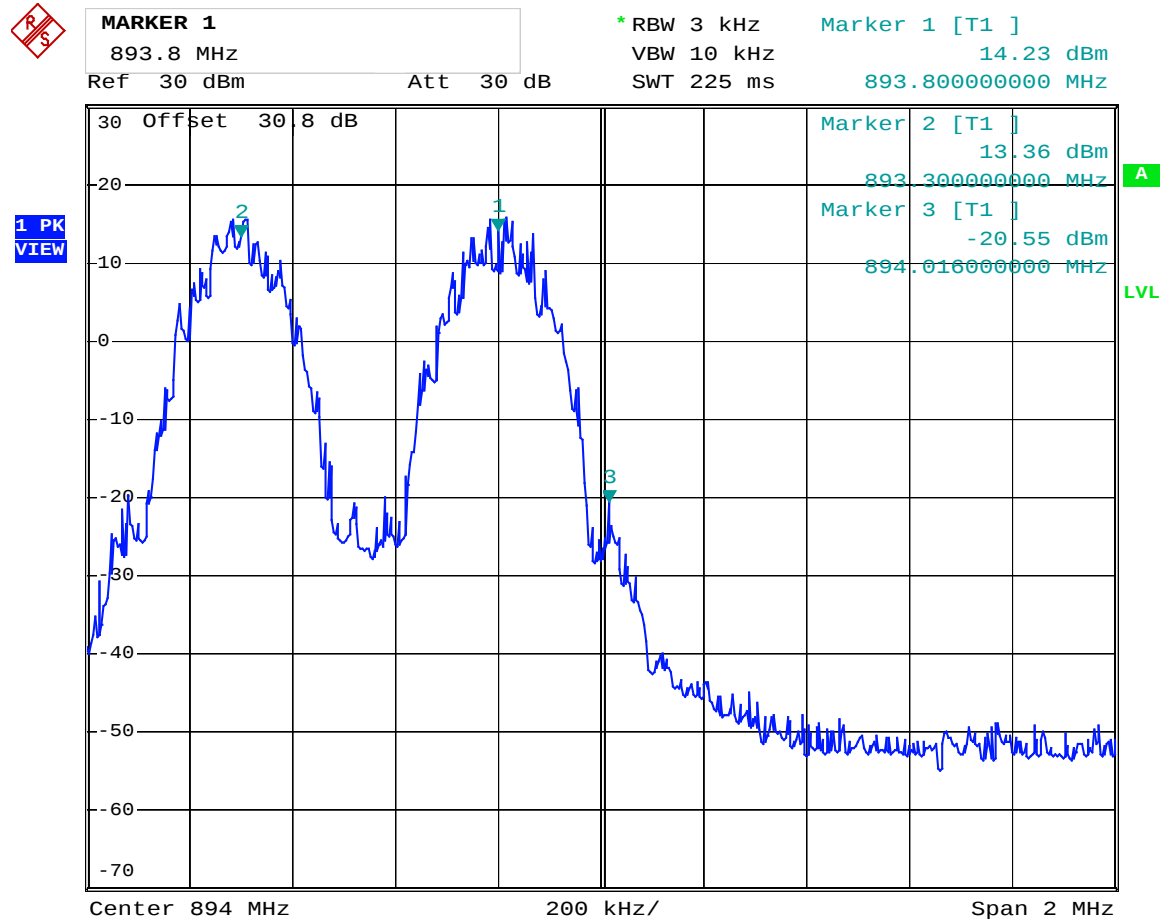
EQUIPMENT: AMR85125

## Test Data – Spurious Emissions at Antenna Terminals

Upper Bandedge Intermodulation

GSM

Downlink



Date: 11.SEP.2006 13:34:04

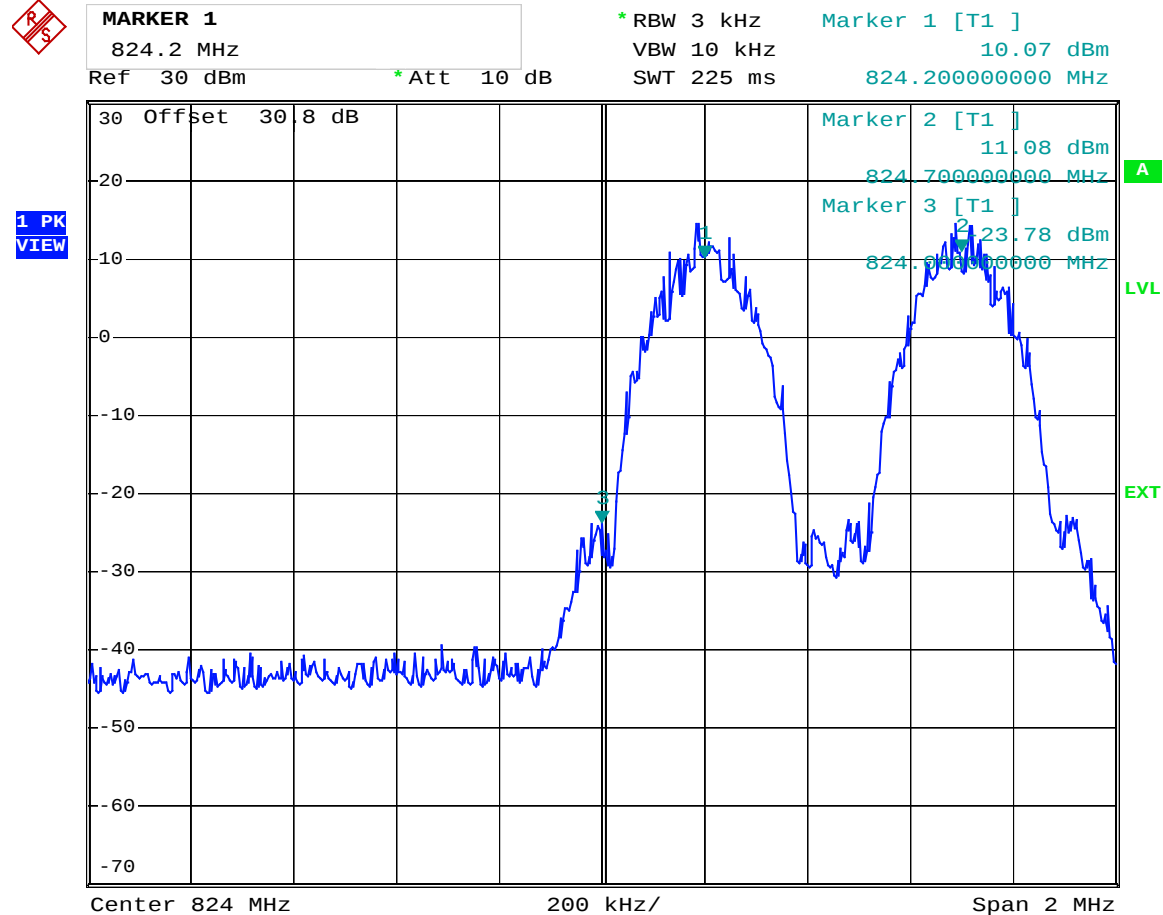
EQUIPMENT: AMR85125

## Test Data – Spurious Emissions at Antenna Terminals

Lower Bandedge Intermodulation

GSM

Uplink



Date: 8.SEP.2006 14:06:45

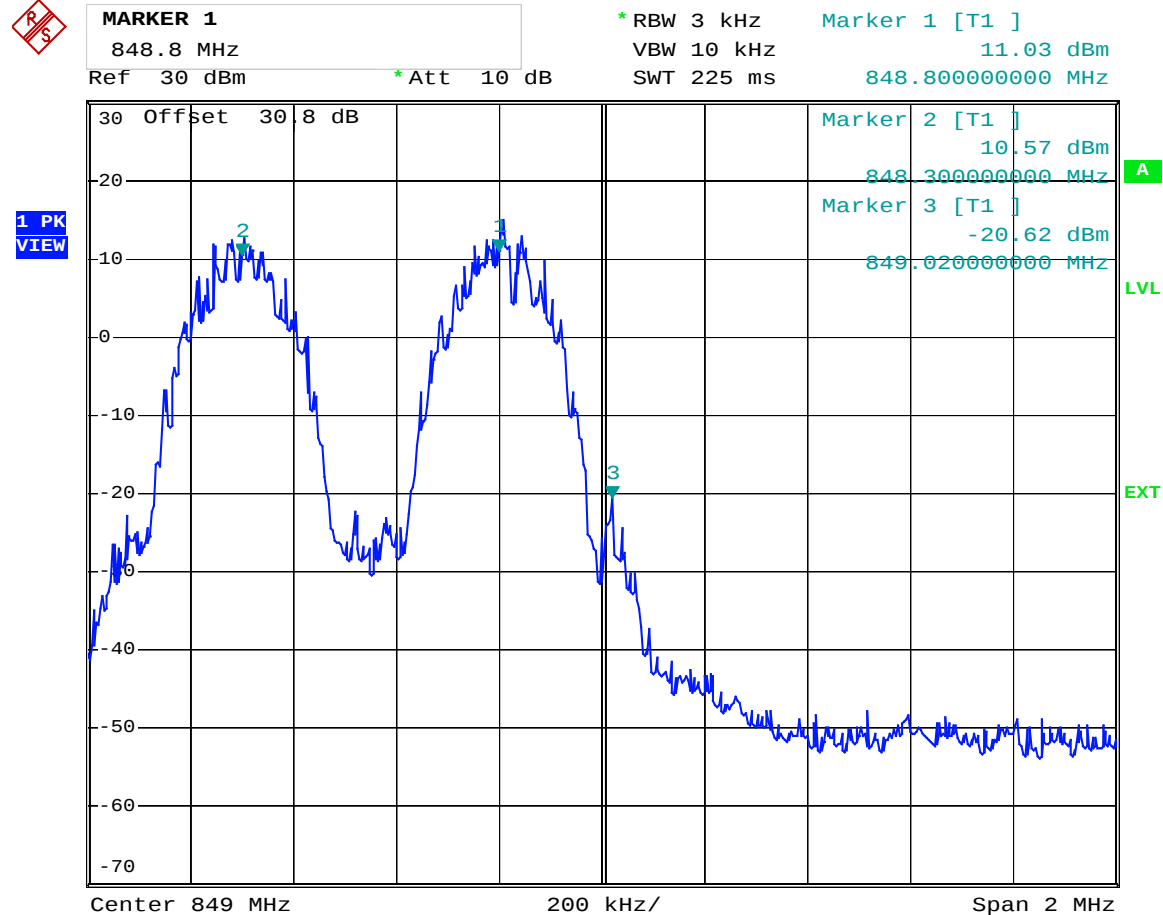
EQUIPMENT: AMR85125

## Test Data – Spurious Emissions at Antenna Terminals

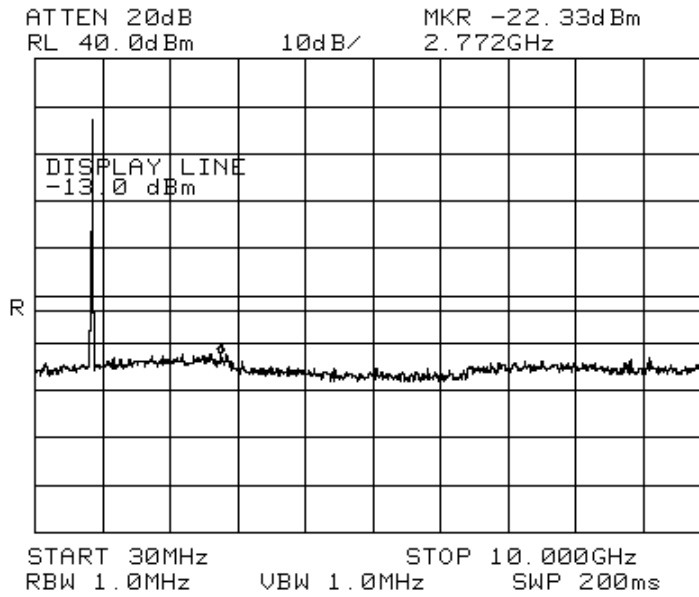
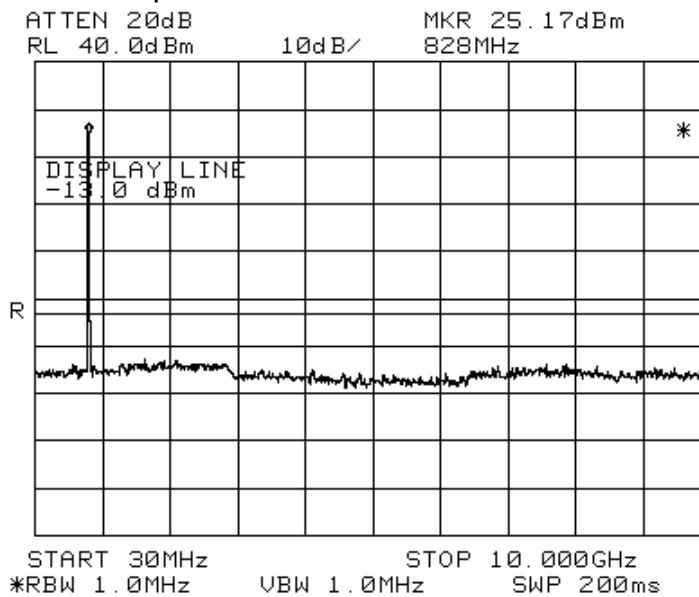
Upper Bandedge Intermodulation

GSM

Uplink



Date: 8.SEP.2006 14:08:09

EQUIPMENT: AMR85125**Test Data – Spurious Emissions at Antenna Terminals****Spurs – GSM - Downlink****Spurs – GSM - Uplink**

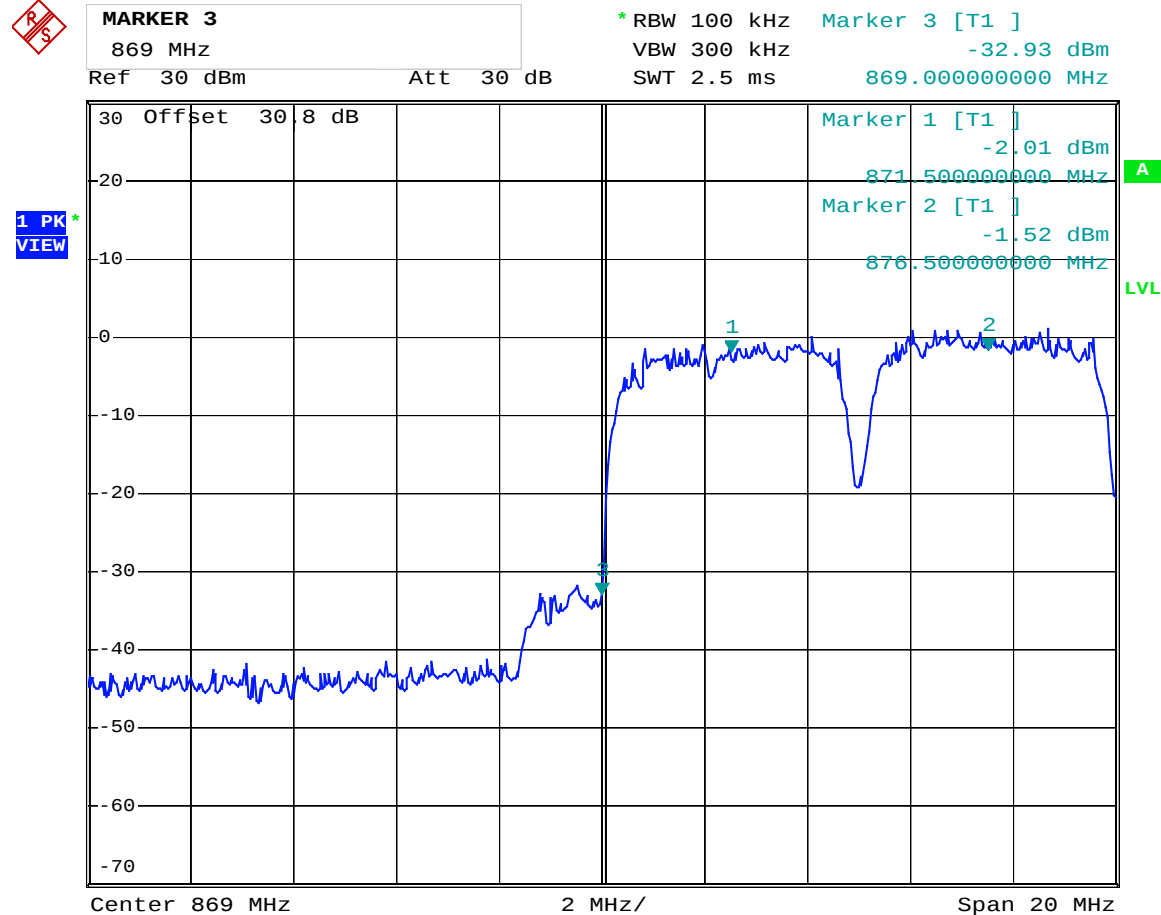
EQUIPMENT: AMR85125

## Test Data – Spurious Emissions at Antenna Terminals

Lower Bandedge Intermodulation

W-CDMA

Downlink



Date: 11.SEP.2006 13:20:23

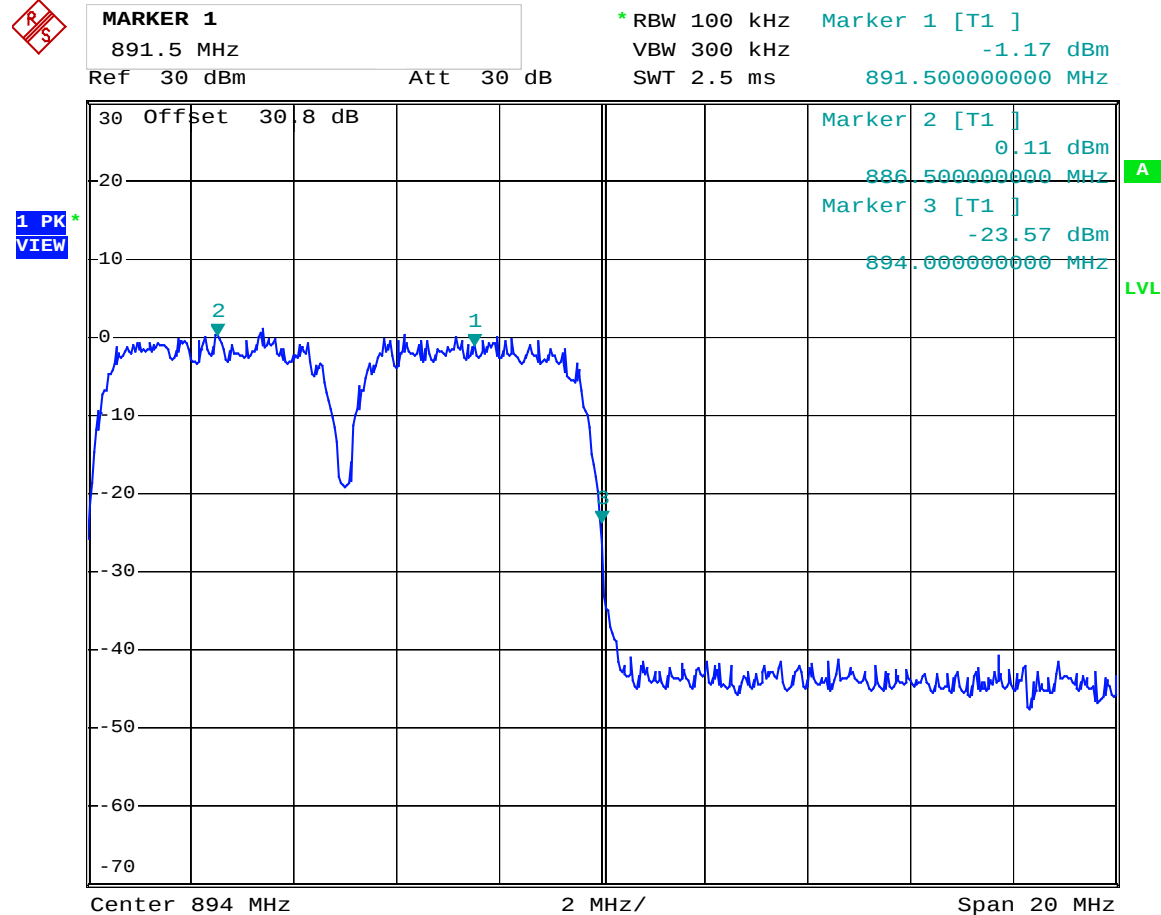
EQUIPMENT: AMR85125

## Test Data – Spurious Emissions at Antenna Terminals

Upper Bandedge Intermodulation

W-CDMA

Downlink



Date: 11.SEP.2006 13:23:28

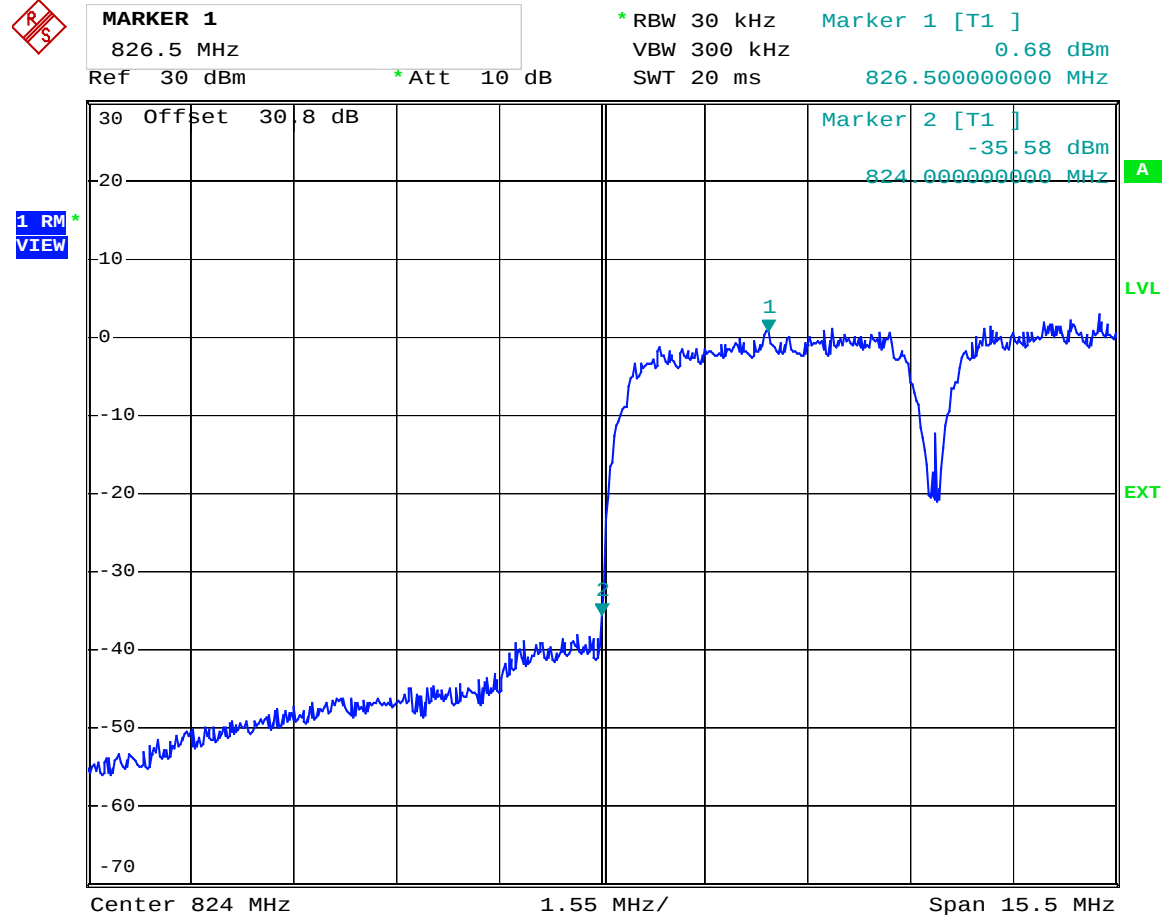
EQUIPMENT: AMR85125

## Test Data – Spurious Emissions at Antenna Terminals

Lower Bandedge Intermodulation

W-CDMA

Uplink



Date: 8.SEP.2006 13:55:38

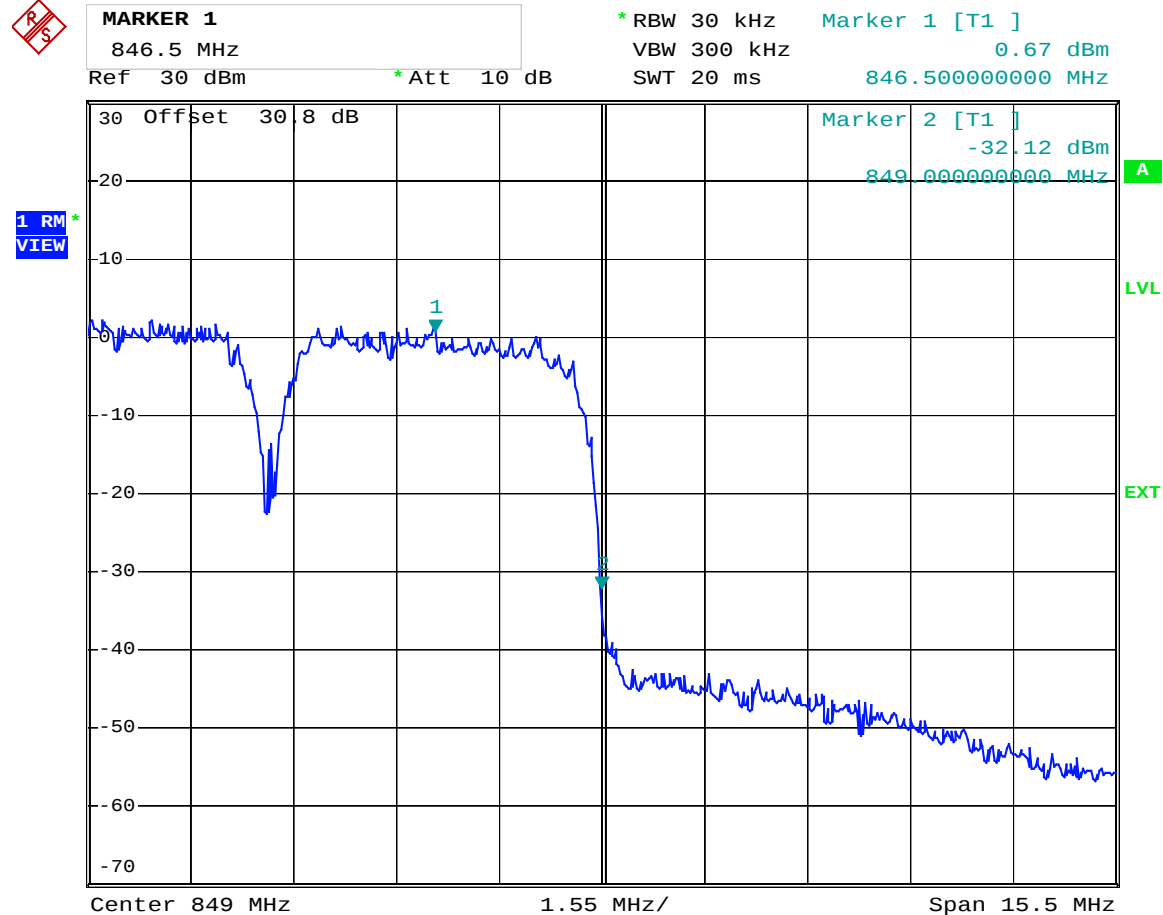
EQUIPMENT: AMR85125

## Test Data – Spurious Emissions at Antenna Terminals

Upper Bandedge Intermodulation

W-CDMA

Uplink

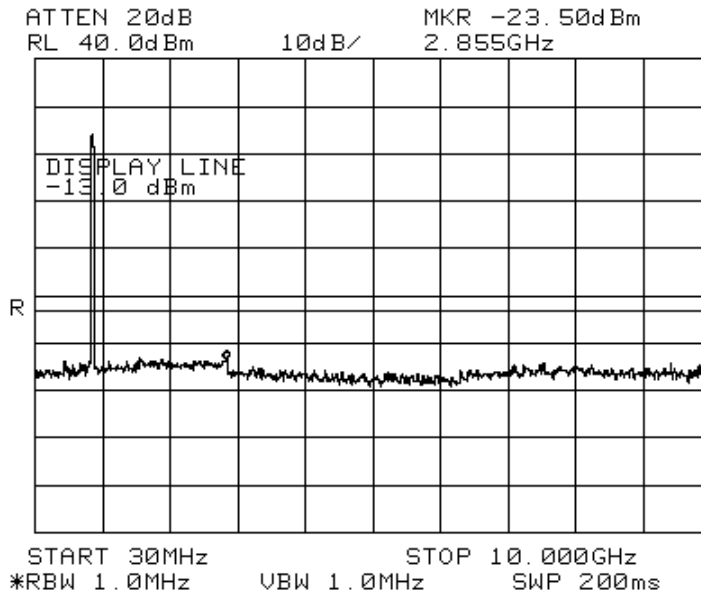


Date: 8.SEP.2006 13:57:31

EQUIPMENT: AMR85125

# Test Data – Spurious Emissions at Antenna Terminals

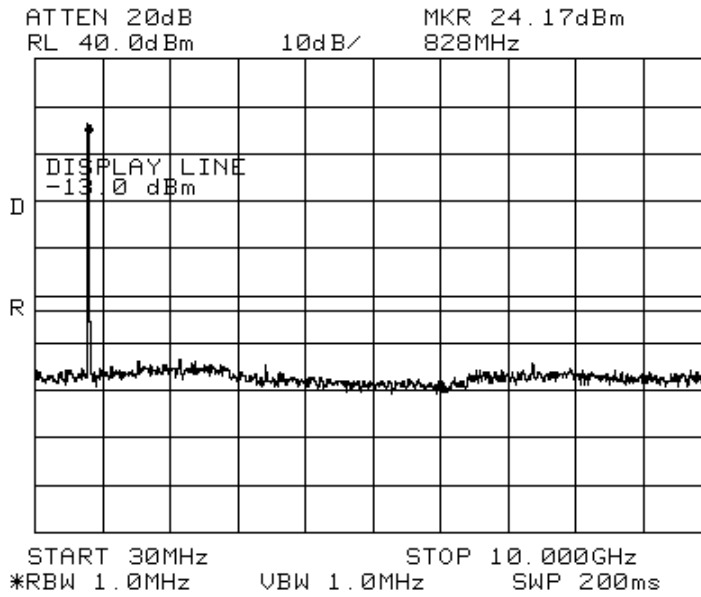
Spurs – W-CDMA - Downlink



EQUIPMENT: AMR85125

# Test Data – Spurious Emissions at Antenna Terminals

## Spurs – W-CDMA - Uplink



**Section 6. Field Strength of Spurious**

|                                          |                     |
|------------------------------------------|---------------------|
| NAME OF TEST: Field Strength of Spurious | PARA. NO.: 22.917   |
| TESTED BY: David Light                   | DATE:31 August 2006 |

**Test Results:** Complies.

**Test Data:** There were no emissions detected above the noise floor which was at least 20 dB below the specification limit of -13 dBm.

**Equipment Used:** 1484-1485-1464-1016-791-1306-759

**Measurement Uncertainty:** +/-1.7 dB

**Temperature:** 23 °C

**Relative Humidity:** 40 %

**Photographs of Test Setup**



**Section 7. Test Equipment List**

| Nemko ID | Description                | Manufacturer<br>Model Number   | Serial Number | Calibration<br>Date | Calibration<br>Due |
|----------|----------------------------|--------------------------------|---------------|---------------------|--------------------|
| 1082     | CABLE 2m                   | Astrolab<br>32027-2-29094-72TC | N/A           | CBU                 | N/A                |
| 1469     | 10 db Attenuator DC 18 Ghz | MCL Inc.<br>BW-S10W2 10db-2WDC | NONE          | CBU                 | N/A                |
| 1472     | 20db Attenuator DC 18 Ghz  | Omni Spectra<br>20600-20db     | NONE          | CBU                 | N/A                |
| 1659     | Spectrum Analyzer          | Rhode & Schwarz<br>FSP         | 973353        | 01/10/06            | 01/10/07           |
| 1036     | SPECTRUM ANALYZER          | ROHDE & SCHWARZ<br>FSEK30      | 830844/006    | 05/26/06            | 05/26/08           |
| 1464     | Spectrum analyzer          | Hewlett Packard<br>8563E       | 3551A04428    | 01/14/05            | 01/15/07           |
| 1484     | Cable                      | Storm<br>PR90-010-072          | N/A           | 08/26/05            | 08/26/06           |
| 1485     | Cable                      | Storm<br>PR90-010-216          | N/A           | 08/26/05            | 08/26/06           |
| 791      | PREAMP, 25dB               | Nemko USA, Inc.<br>LNA25       | 398           | 04/20/06            | 04/20/07           |
| 1016     | Pre-Amp                    | HEWLETT PACKARD<br>8449A       | 2749A00159    | 04/20/06            | 04/20/07           |
| 759      | ANTENNA, LOG PERIODIC      | A.H. SYSTEMS<br>SAS-200/510    | 556           | 02/13/06            | 02/13/07           |
| 1306     | Antenna biconical          | Nemko USA, Inc.<br>BCON 30300  | 212           | 02/10/06            | 02/10/07           |

## **ANNEX A - TEST DETAILS**

NAME OF TEST: RF Power Output

PARA. NO.: 2.1046

**Minimum Standard:** Para. No. 22.913(a). The maximum effective radiated power (ERP) of base transmitters and cellular repeaters must not exceed 500 watts.

**Method Of Measurement:**

Detachable Antenna:

The peak power at antenna terminals is measured using an in-line peak power meter. Power output is measured with the maximum rated input level.

Integral Antenna:

The antenna substitution method is used to determine the equivalent radiated power at spurious frequencies. The spurious emissions are measured at a distance of 3 meters. The EUT is then replaced with a reference substitution antenna with a known gain referenced to a dipole. This antenna is fed with a signal at the spurious frequency. The level of the signal is adjusted to repeat the previously measured level. The resulting erp is the signal level fed to the reference antenna corrected for gain referenced to a dipole.

**NAME OF TEST: Occupied Bandwidth**

**PARA. NO.: 2.1049**

**Minimum Standard:** Not defined (Input/Output)

**Method Of Measurement:**

CDMA

Spectrum analyzer settings:

RBW=VBW=30 kHz

Span: 5 MHz

Sweep: Auto

GSM / EDGE

RBW=VBW= 3 kHz

Span: 1 MHz

Sweep: Auto

TDMA

RBW=VBW= 1 kHz

Span: 1 MHz

Sweep: Auto

W-CDMA

RBW=VBW= 100 kHz

Span: 10 MHz

Sweep: Auto

**NAME OF TEST: Spurious Emission at Antenna  
Terminals****PARA. NO.: 2.1051****Minimum Standard:**

Para. No. 22.917(e). The mean power of emissions must be attenuated below the mean power of the unmodulated carrier on any frequency twice or more than twice the fundamental emission by at least  $43 + 10 \log P$ . This is equivalent to -13 dBm absolute power.

**Method Of Measurement:****Method Of Measurement:**

Spectrum analyzer settings:

CDMA

RBW: 1 MHz (> 1 MHz from Band Edge)  
RBW: 30 kHz (< 1MHz from Band Edge)  
VBW:  $\geq$  RBW  
Sweep: Auto  
Video Avg: 6 Sweeps

GSM / EDGE

RBW: 1 MHz (> 1 MHz from Band Edge)  
RBW: 3 kHz (< 1 MHz from Band Edge)  
VBW:  $\geq$  RBW  
Sweep: Auto  
Video Avg: Disabled

TDMA

RBW: 1 MHz (> 1 MHz from Band Edge)  
RBW: 3 kHz (< 1 MHz from Band Edge)  
VBW:  $\geq$  RBW  
Sweep: Auto  
Video Avg: Disabled

W-CDMA

RBW: 1 MHz (> 1 MHz from Band Edge)  
RBW: 100 kHz (< 1MHz from Band Edge)  
VBW:  $\geq$  RBW  
Sweep: Auto  
Video Avg: 6 Sweeps

|                                                           |                          |
|-----------------------------------------------------------|--------------------------|
| <b>NAME OF TEST: Field Strength of Spurious Radiation</b> | <b>PARA. NO.: 2.1053</b> |
|-----------------------------------------------------------|--------------------------|

**Minimum Standard:**

Para. No. 22.917(e). The mean power of emissions must be attenuated below the mean power of the unmodulated carrier on any frequency twice or more than twice the fundamental emission by at least  $43 + 10 \log P$ . This is equivalent to -13 dBm absolute power.

**Method of Measurement**

TIA/EIA-603-1992

The antenna substitution method is used to determine the equivalent radiated power at spurious frequencies. The spurious emissions are measured at a distance of 3 meters. The EUT is then replaced with a reference substitution antenna with a known gain referenced to a dipole. This antenna is fed with a signal at the spurious frequency. The level of the signal is adjusted to repeat the previously measured level. The resulting erp is the signal level fed to the reference antenna corrected for gain referenced to a dipole.

**NAME OF TEST: Frequency Stability****PARA. NO.: 2.1055****Minimum Standard:**

Para. No. 22.355. The transmitter carrier frequency shall remain within the tolerances given in Table C-1.

Table C-1

| Freq. Range (MHz) | Base, fixed | Mobile > 3 W | Mobile $\leq$ 3 W |
|-------------------|-------------|--------------|-------------------|
| 821 to 896        | 1.5         | 2.5          | 2.5               |

**Method Of Measurement:**Frequency Stability With Voltage Variation:

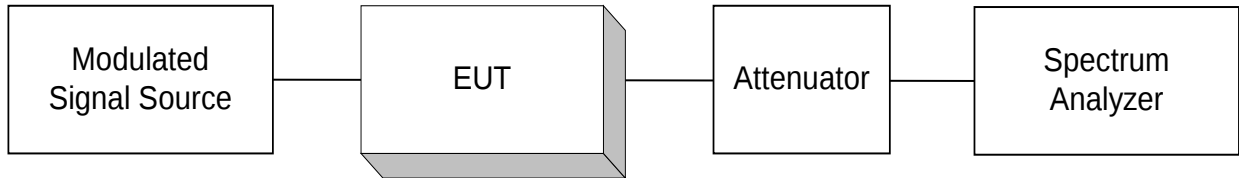
The E.U.T. is placed in an environmental chamber and allowed to stabilize at +20 degrees Celsius for at least 15 minutes. The frequency counter and signal generator are phase locked with the same 10 MHz reference frequency by connecting the 10 MHz ref. out of the counter to the 10 MHz ref, in of the signal generator. With the voltage input to the E.U.T. set to 85% S.T.V., the frequency is measured in 30 second intervals for a period of 5 minutes. This procedure is repeated at 100% S.T.V. and 115% S.T.V.

Frequency Stability With Temperature Variation:

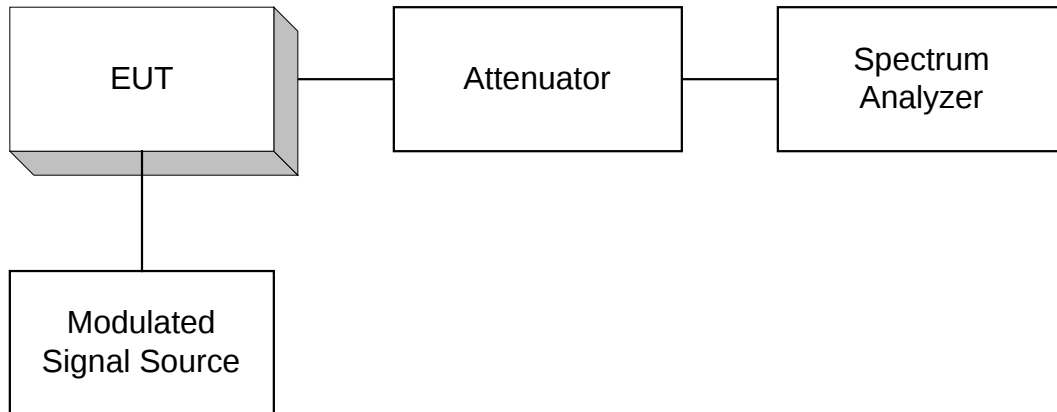
The input voltage to the E.U.T. is set to S.T.V. and the temperature of the environmental chamber is varied in 10 degree steps from -30 degrees C to +50 degrees C. The E.U.T. is allowed to stabilize at each temperature and the frequency is measured in 30 second intervals for a period of 5 minutes.

## **ANNEX B - TEST DIAGRAMS**

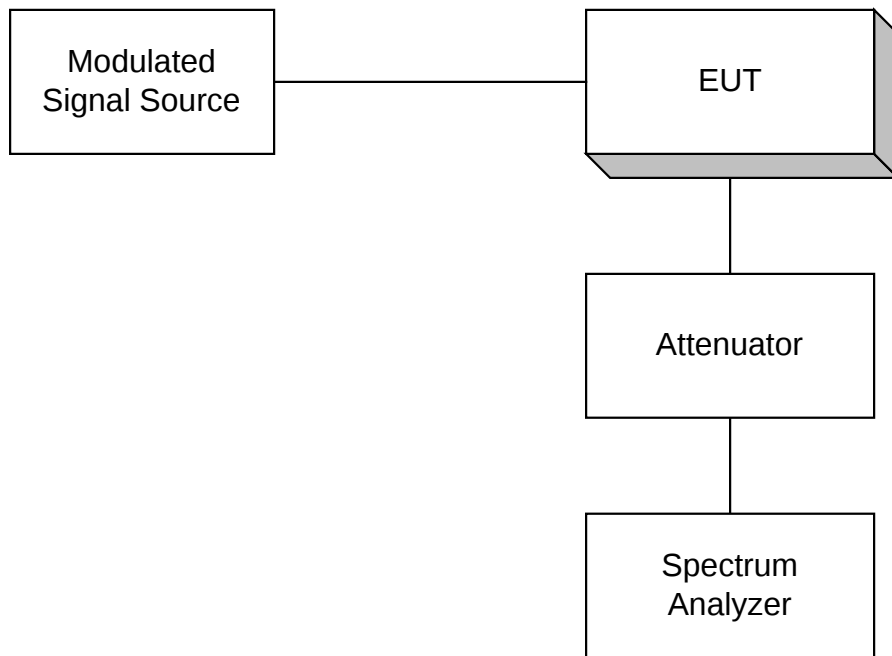
**Para. No. 2.1046 - R.F. Power Output**



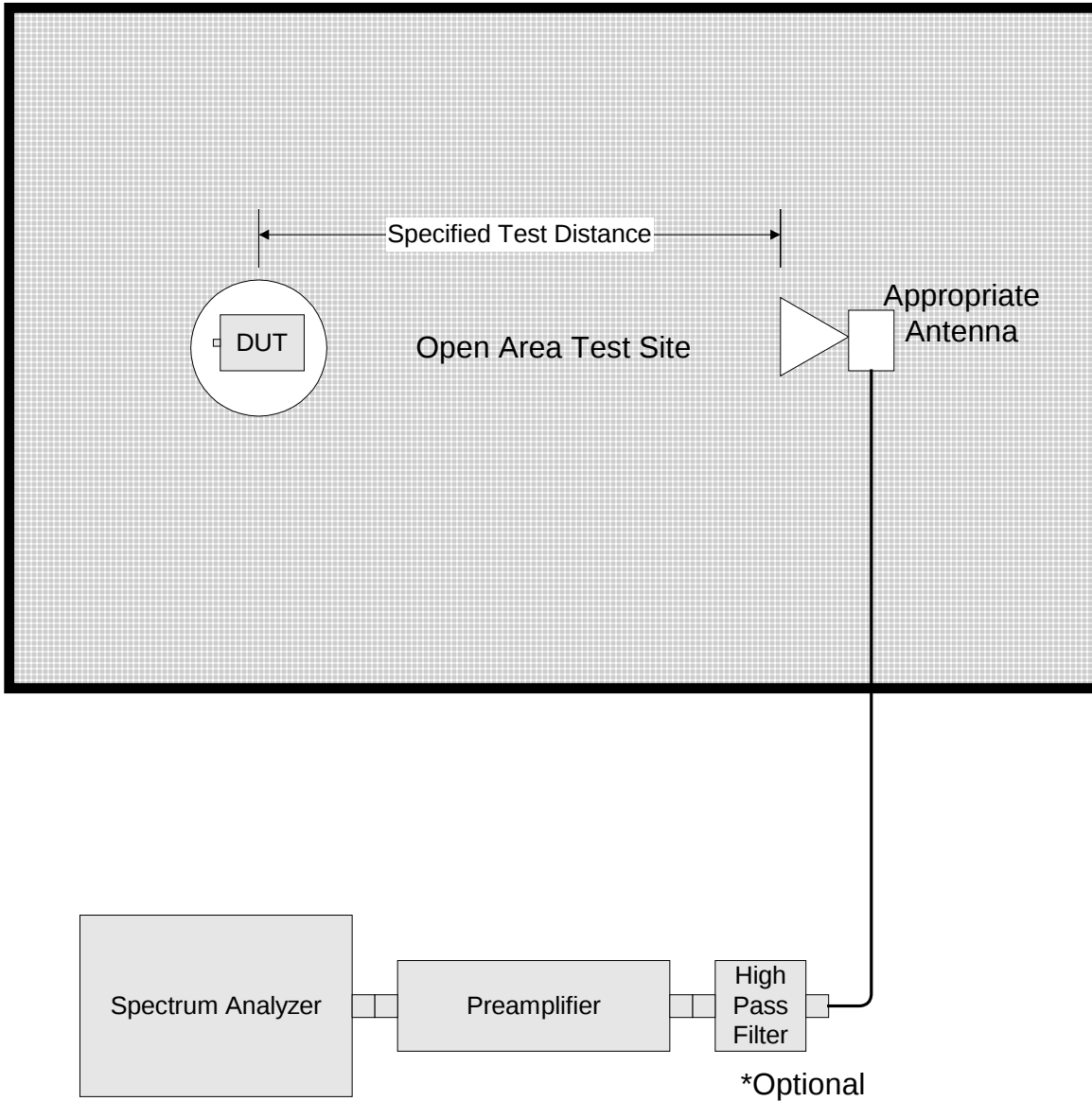
**Para. No. 2.1049 - Occupied Bandwidth**

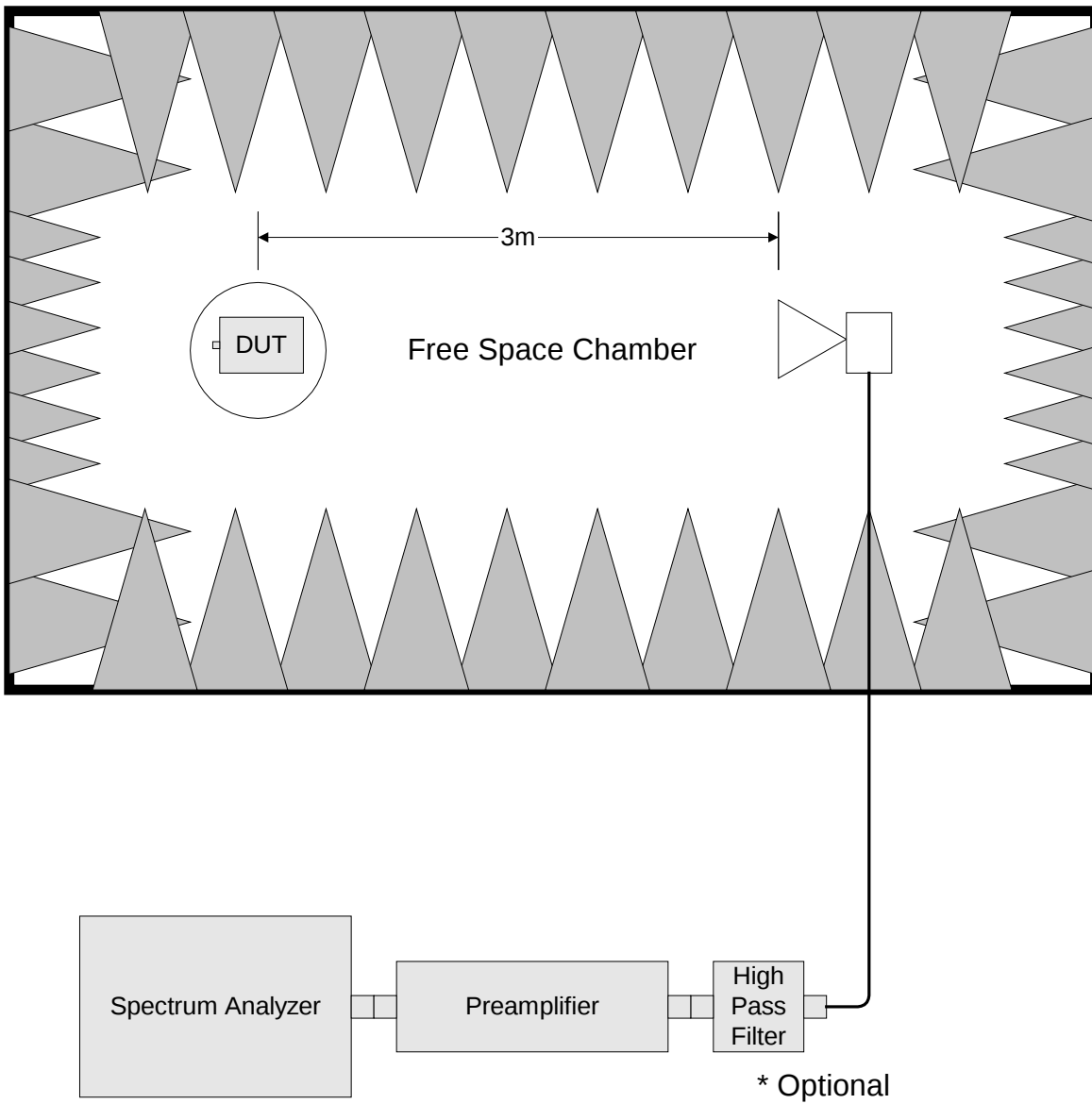


**Para. No. 2.1051 Spurious Emissions at Antenna Terminals**



Para. No. 2.1053 - Field Strength of Spurious Radiation





Para. No. 2.1055 - Frequency Stability

