

|                               |                                                                   |
|-------------------------------|-------------------------------------------------------------------|
| <b>KTL Test Report:</b>       | 9L0385RUS                                                         |
| <b>Applicant:</b>             | Allen Telecom, Inc.<br>140 Vista Centre Drive<br>Forest, VA 24551 |
| <b>Equipment Under Test:</b>  | EAC-2000D Digital Cellular Enhancer                               |
| <b>FCC ID:</b>                | BCR9GB2000                                                        |
| <b>In Accordance With:</b>    | <b>FCC Part 22, Subpart H</b><br>Cellular Band Repeaters          |
| <b>Tested By:</b>             | KTL Dallas Inc.<br>802 N. Kealy<br>Lewisville, TX<br>75057-3136   |
| <b>Authorized By:</b>         | Tom Tidwell, RF Group Manager                                     |
| <b>Date:</b>                  |                                                                   |
| <b>Total Number of Pages:</b> | 34                                                                |

*EQUIPMENT: EAC-2000D Digital Cellular Enhancer*  
*FCC ID: BCR9GB2000*

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EQUIPMENT: EAC-2000D Digital Cellular Enhancer  
FCC ID: BCR9GB2000

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## Section 1. Summary of Test Results

Manufacturer: Grayson Wireless

Model No.: EAC-2000D

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 continued compliance with FCC Part 22, Subpart H following design change.

☐

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".



**NVLAP LAB CODE: 100426-0**

TESTED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

Ron Gaytan

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*EQUIPMENT: EAC-2000D Digital Cellular Enhancer*  
*FCC ID: BCR9GB2000*

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**Summary Of Test Data**

| NAME OF TEST                               | PARA. NO. | SPEC.               | MEAS.                          | RESULT   |
|--------------------------------------------|-----------|---------------------|--------------------------------|----------|
| RF Power Output                            | 22.913(a) | 500W ERP            | 15 W/ch. Fwd.<br>.1 W/ch. Rvs. | Complies |
| Occupied Bandwidth (Voice & SAT)           | 22.917(c) | Mask C              | N/A                            | N/A      |
| Occupies Bandwidth (Wideband Data)         | 22.917(d) | Mask D              | N/A                            | N/A      |
| Occupied Bandwidth (ST)                    | 22.917(d) | Mask D              | N/A                            | N/A      |
| Occupied Bandwidth (Digital)               | None      | None                | Plot                           | Complies |
| Spurious Emissions at Antenna<br>Terminals | 22.917    | -13 dBm             | -14.1                          | Complies |
| Field Strength of Spurious Emissions       | 22.917    | -13 dBm<br>E.I.R.P. | N/A                            | N/A      |
| Frequency Stability                        | 22.355    | 1.5 ppm             | N/A                            | N/A      |

**Footnotes:**

(1) Since the 45 watt amplifier module tested is the same form, fit, and function as the previous version with which the EAC2000 was certified, only those parameters that might be expected to change were re-tested.

**Test Conditions:**

**Indoor**                      Temperature: 23 °C  
                                    Humidity: 27 %

*EQUIPMENT: EAC-2000D Digital Cellular Enhancer*  
*FCC ID: BCR9GB2000*

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## Section 2. General Equipment Specification

**Supply Voltage Input:** 230 VAC/60Hz

**Frequency Range:**      **Downlink:**      869 – 894 MHz

**Frequency Range:**      **Uplink:**      824 – 849 MHz

|                                           |                          |                          |                                     |                          |                                     |
|-------------------------------------------|--------------------------|--------------------------|-------------------------------------|--------------------------|-------------------------------------|
| <b>Type of Modulation and Designator:</b> | <b>CDMA (F9W)</b>        | <b>GSM (GXW)</b>         | <b>NADC (DXW)</b>                   | <b>CDPD (F9W)</b>        | <b>AMPS (F8W, F1D)</b>              |
|                                           | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

**Output Impedance:** 50 ohms

**Max Input Power:** -40 dBm

|                           |                  |                                        |
|---------------------------|------------------|----------------------------------------|
| <b>RF Output (Rated):</b> | <b>Downlink:</b> | 15 watts per channel / 150 watts total |
|                           | <b>Uplink:</b>   | .1 watt per channel / 1 watt total     |

|                               |                                     |                                     |                          |
|-------------------------------|-------------------------------------|-------------------------------------|--------------------------|
| <b>Frequency Translation:</b> | <b>F1-F1</b>                        | <b>F1-F2</b>                        | <b>N/A</b>               |
|                               | <input checked="" type="checkbox"/> | <input checked="" 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 checked="" type="checkbox"/> |

*EQUIPMENT: EAC-2000D Digital Cellular Enhancer*  
*FCC ID: BCR9GB2000*

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**Description of Modifications For Class II Permissive Change**

The A002015.G1 45 Watt Power Amplifier in the forward path is a replacement for the earlier 21-117-1 and 21-396-1 PAs used in the EAC-2000 AMPS repeater. The new amplifier is identical in form, fit and function, differing only in new identification labels on the outside of the PA.

*EQUIPMENT: EAC-2000D Digital Cellular Enhancer*  
*FCC ID: BCR9GB2000*

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## Theory of Operation

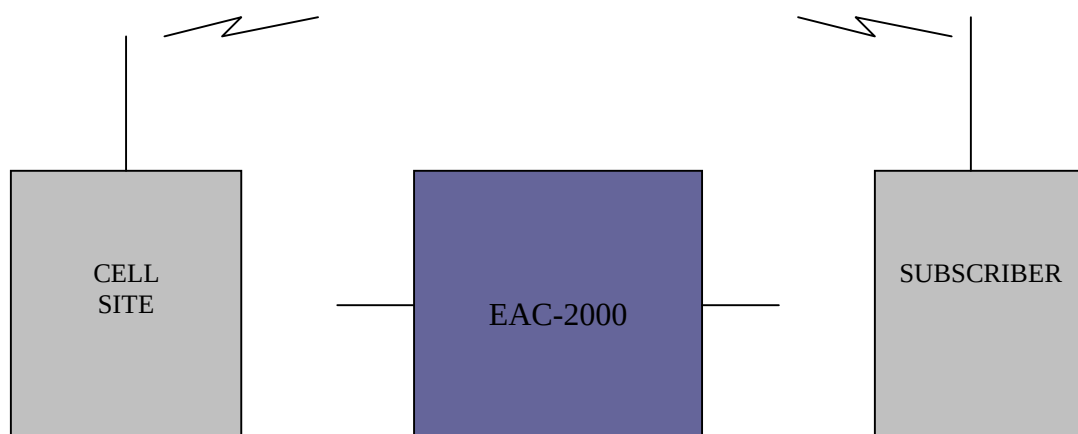
### 45 Watt PA

The input signal (-5 to +5 dBm) passes through variable attenuator U1, gain block U6, to class-A biased bipolar transistor Q3. That signal is further amplified by class-AB biased FETs Q4 and Q5.

The output is passed through a single-junction circulator N1, and the rated 45 Watts is routed to the PA output connector.

A directional coupler on the output feeds closed-loop power control detector D1, with associated temperature compensation U4. The signal is amplified and compared to a reference from U9 by U10 and U11; the resulting agc signal is fed back to attenuator U1. Four power levels can be set by external control through mux U5. Internal PA temperature is reported to the EAC-2000 by U8.

## System Diagram



*EQUIPMENT: EAC-2000D Digital Cellular Enhancer*  
*FCC ID: BCR9GB2000*

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**Section 3. RF Power Output**

|                               |                    |
|-------------------------------|--------------------|
| NAME OF TEST: RF Power Output | PARA. NO.: 2.985   |
| TESTED BY: Ron Gaytan         | DATE: 11 Oct. 1999 |

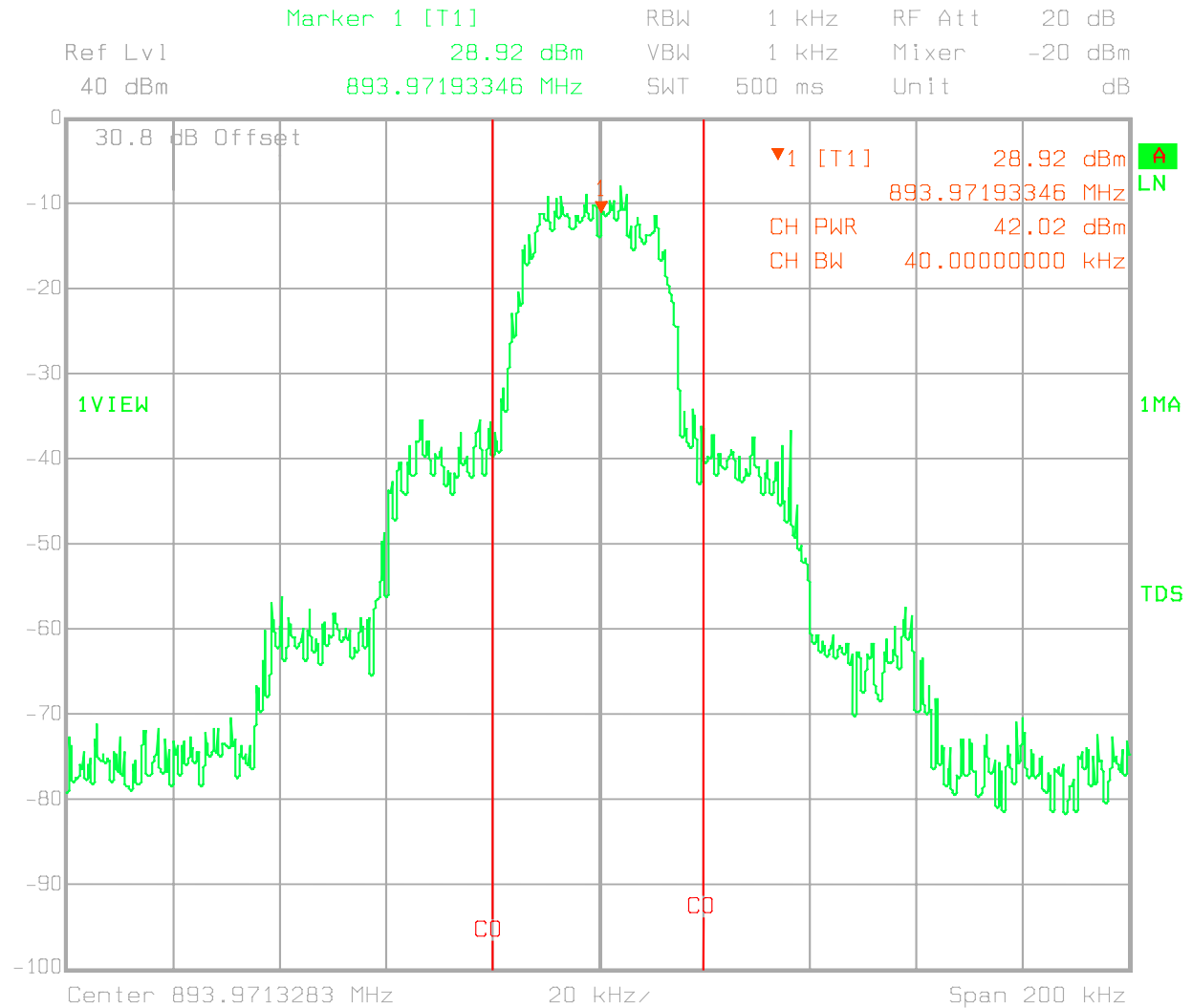
**Test Results:** Complies.**Measurement Data:**

|          | <b>Modulation Type</b> | <b>Per Channel Power Output (dBm)</b> | <b>Composite Power Output (dBm)</b> |
|----------|------------------------|---------------------------------------|-------------------------------------|
| Uplink   | AMPS                   | +20.0                                 | +30.0                               |
| Downlink | AMPS                   | +42.0                                 | +52.0                               |
| Uplink   | CDMA                   | N/A                                   | N/A                                 |
| Downlink | CDMA                   | N/A                                   | N/A                                 |
| Uplink   | GSM                    | N/A                                   | N/A                                 |
| Downlink | GSM                    | N/A                                   | N/A                                 |
| Uplink   | NADC                   | +20.0                                 | +30.0                               |
| Downlink | NADC                   | +41.8                                 | +51.8                               |
| Uplink   | CDPD                   | N/A                                   | N/A                                 |
| Downlink | CDPD                   | N/A                                   | N/A                                 |

**NOTE:** The power output at channel 799 is reduced to 2 watts to comply with the  $43 + 10\log(P)$  limit. At channels 991 – 798 (869.040 to 893.940 MHz), the power output is operated at 15 watts per channel.



*EQUIPMENT: EAC-2000D Digital Cellular Enhancer*  
*FCC ID: BCR9GB2000*



Title: 9L0385R CHANNEL POWER (CHANNEL 799)  
Comment A: CP1.WMF  
Date: 11.OCT.1999 9:30:21

**Plot 1**

*EQUIPMENT: EAC-2000D Digital Cellular Enhancer*  
*FCC ID: BCR9GB2000*

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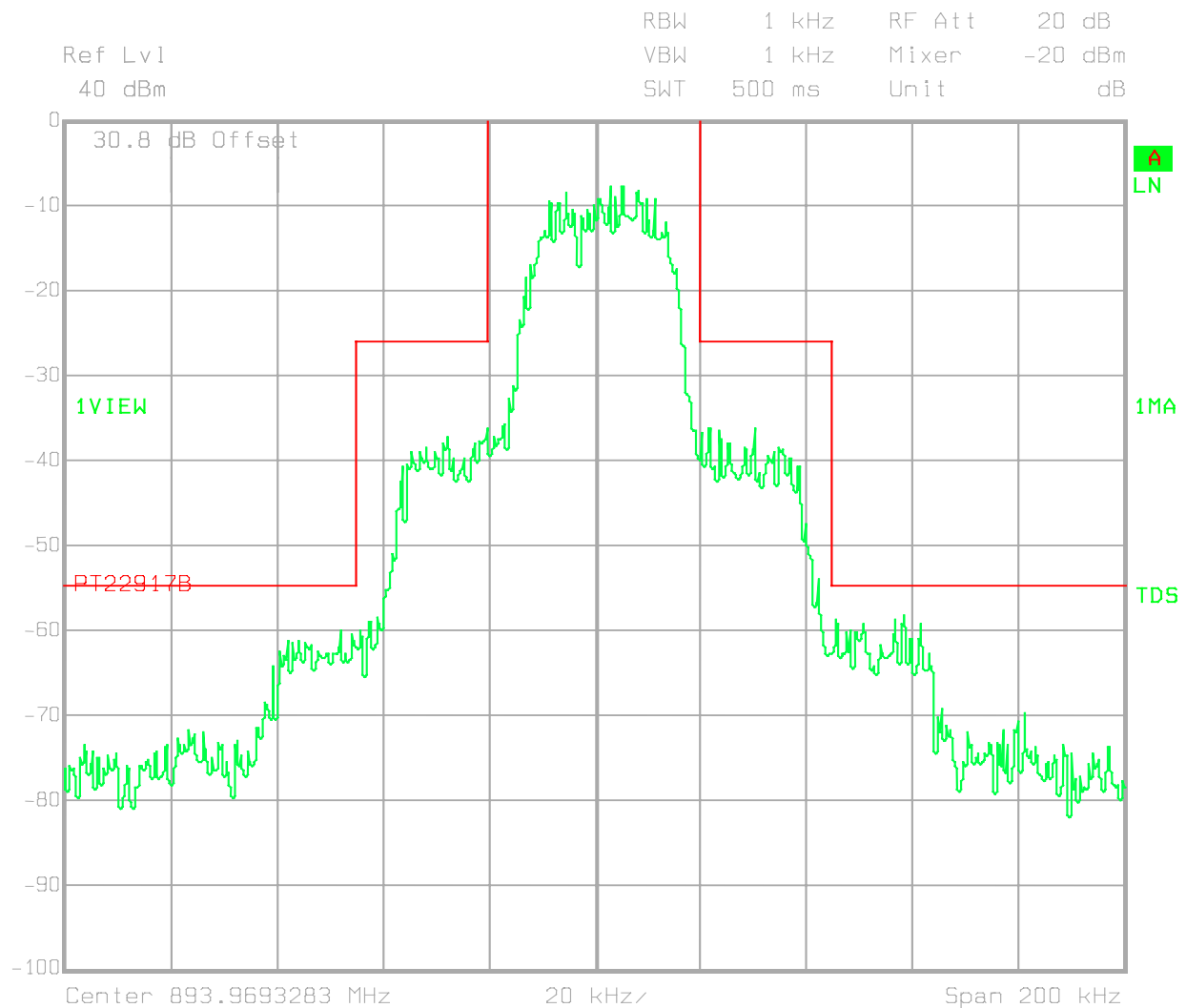
## **Section 4.        Occupied Bandwidth**

|                                                 |                        |
|-------------------------------------------------|------------------------|
| NAME OF TEST: Occupied Bandwidth (Digital Mod.) | PARA. NO.: 2.917(e)    |
| TESTED BY: Ron Gaytan                           | DATE: 11 October, 1999 |

**Test Results:**                Complies.

**Test Data:**                See attached plots.

EQUIPMENT: EAC-2000D Digital Cellular Enhancer  
FCC ID: BCR9GB2000



Title: 9L0385R OCCUPIED BANDWIDTH (CHANNEL 799)  
Comment A: MOR801B  
Date: 11.OCT.1999 9:16:31

**Plot 2**

*EQUIPMENT: EAC-2000D Digital Cellular Enhancer*  
*FCC ID: BCR9GB2000*

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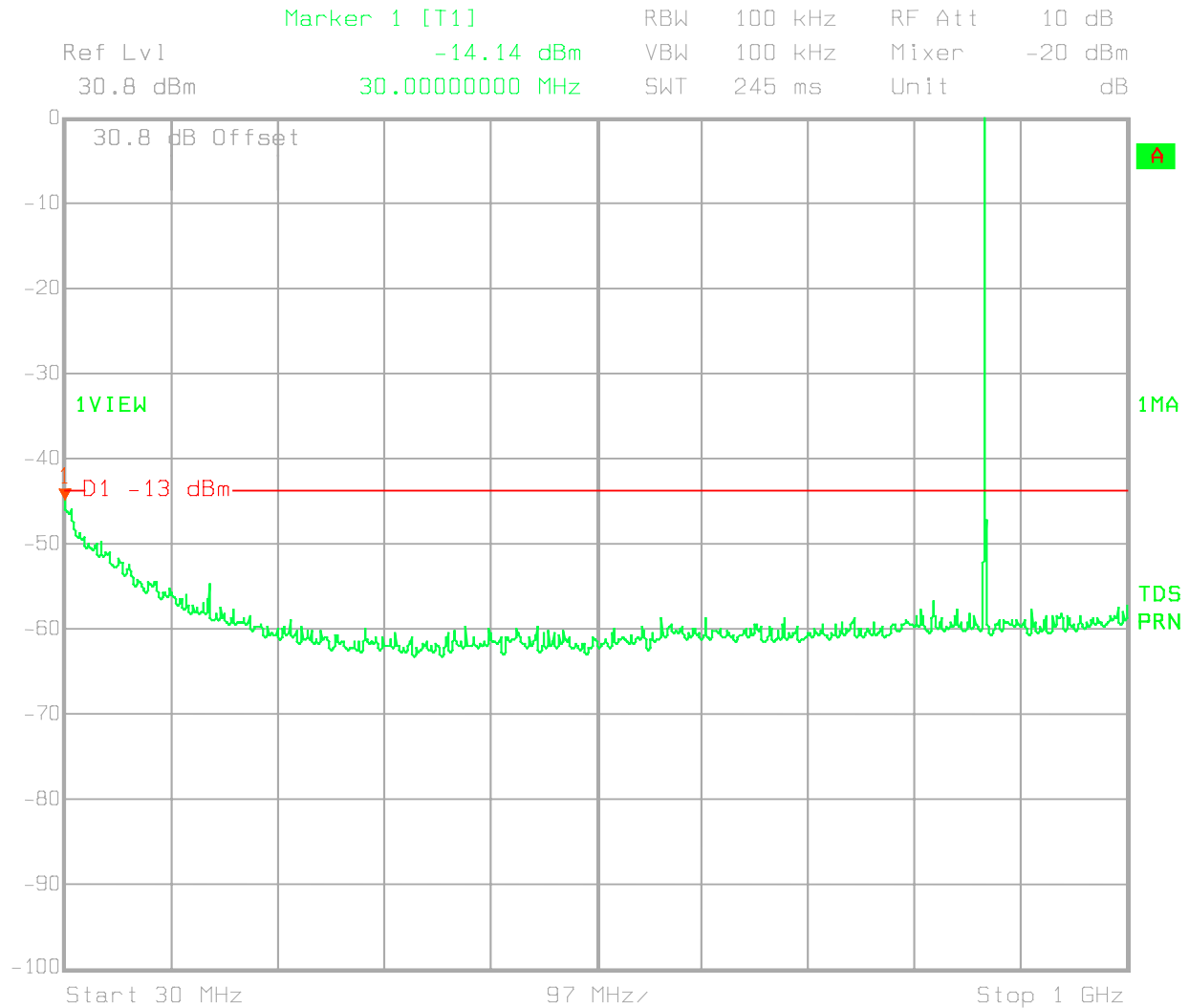
**Section 5.            Spurious Emissions at Antenna Terminals**

|                                                      |                        |
|------------------------------------------------------|------------------------|
| NAME OF TEST: Spurious Emissions @ Antenna Terminals | PARA. NO.: 2.917(e)    |
| TESTED BY: Ron Gaytan                                | DATE: 11 October, 1999 |

**Test Results:**                      Complies.

**Test Data:**                        See attached plots

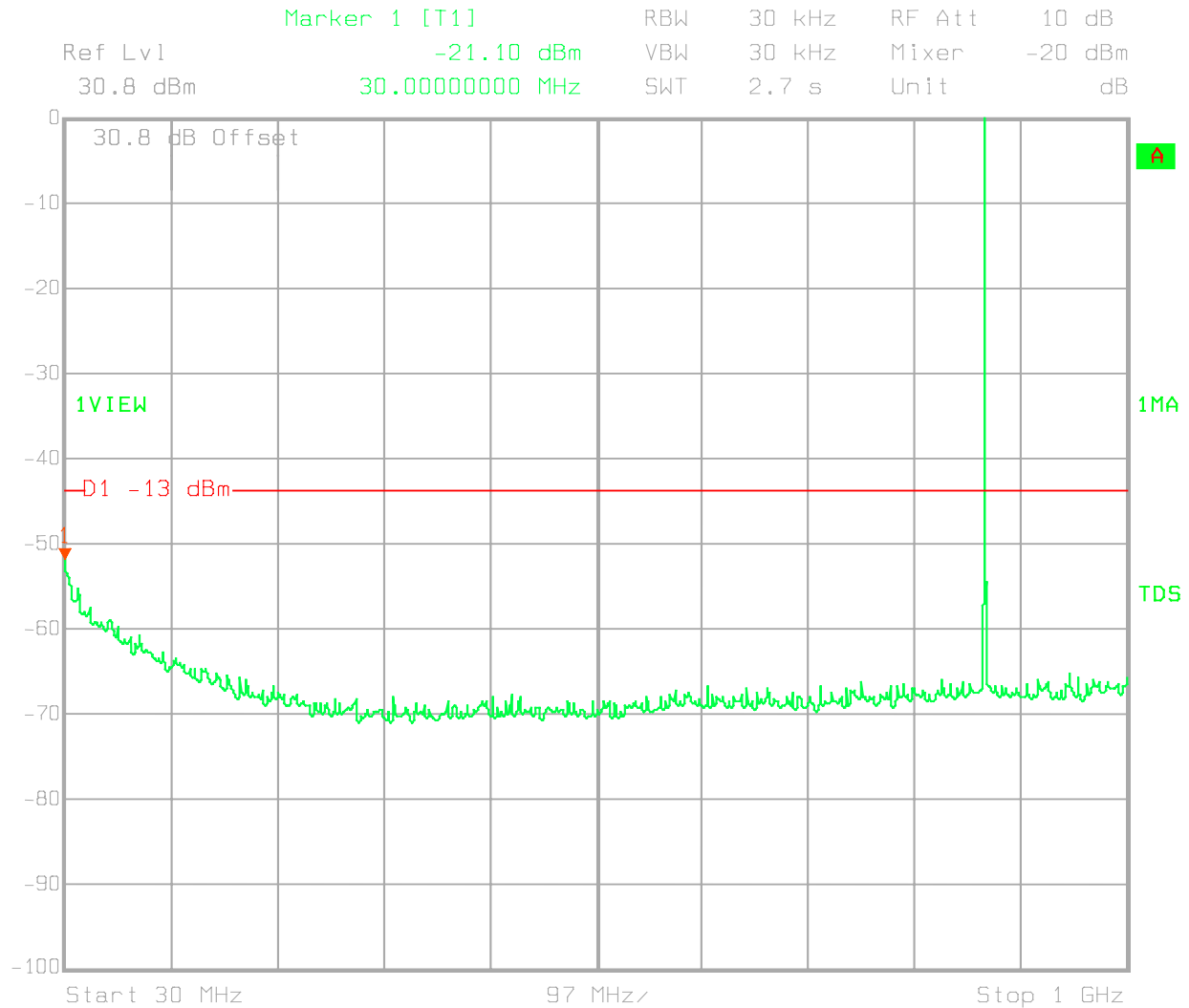
EQUIPMENT: EAC-2000D Digital Cellular Enhancer  
FCC ID: BCR9GB2000



Title: 9L0385R ANTENNA PORT SPURIOUS EMISSIONS (CHANNEL 991)  
Comment A: APSE1A.WMF  
Date: 11.OCT.1999 11:10:54

**Plot 3**

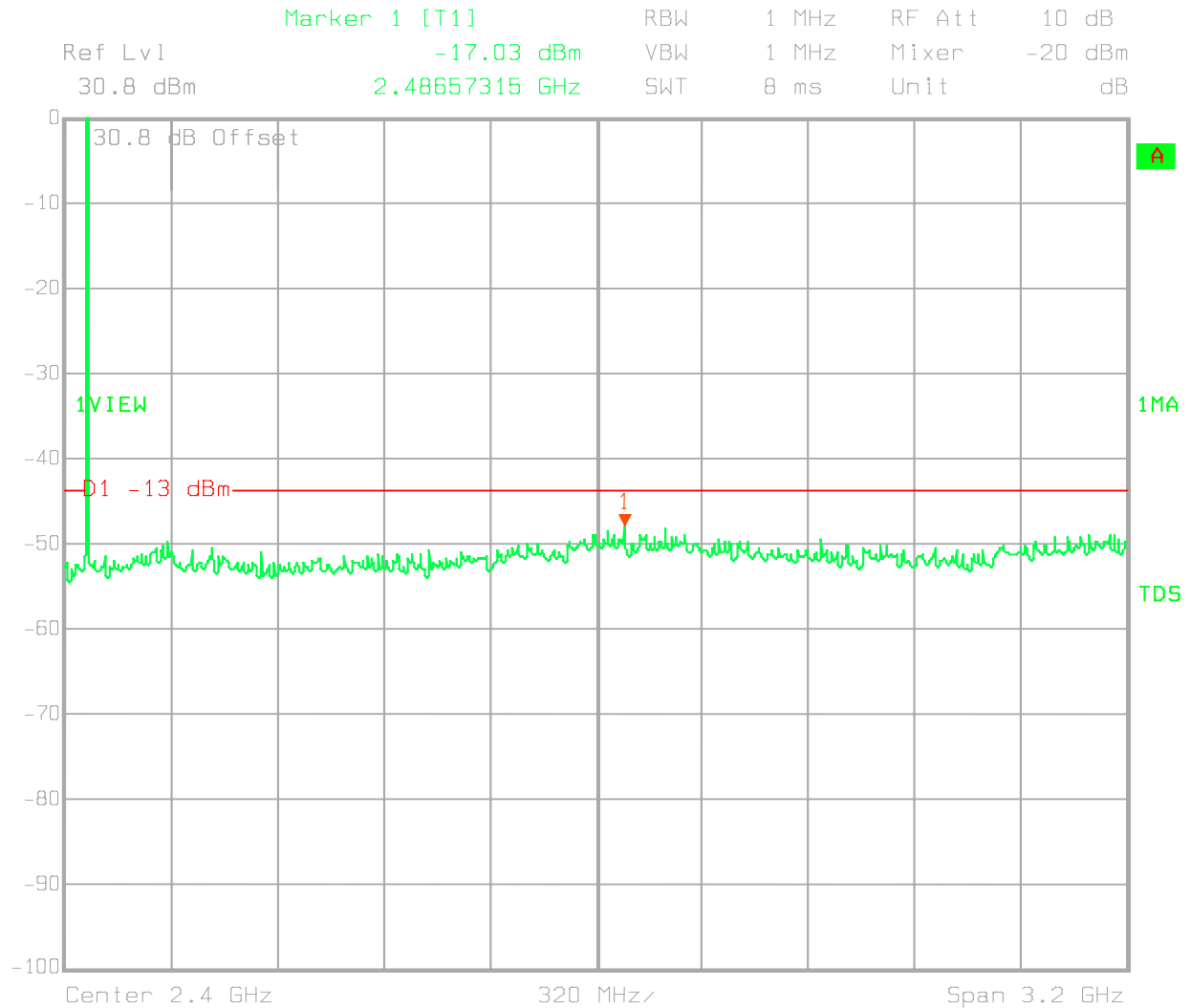
*EQUIPMENT: EAC-2000D Digital Cellular Enhancer*  
*FCC ID: BCR9GB2000*



Title: 9L0385R ANTENNA PORT SPURIOUS EMISSIONS (CHANNEL 991)  
Comment A: APSE1B.WMF  
Date: 11.OCT.1999 11:09:38

**Plot 4**

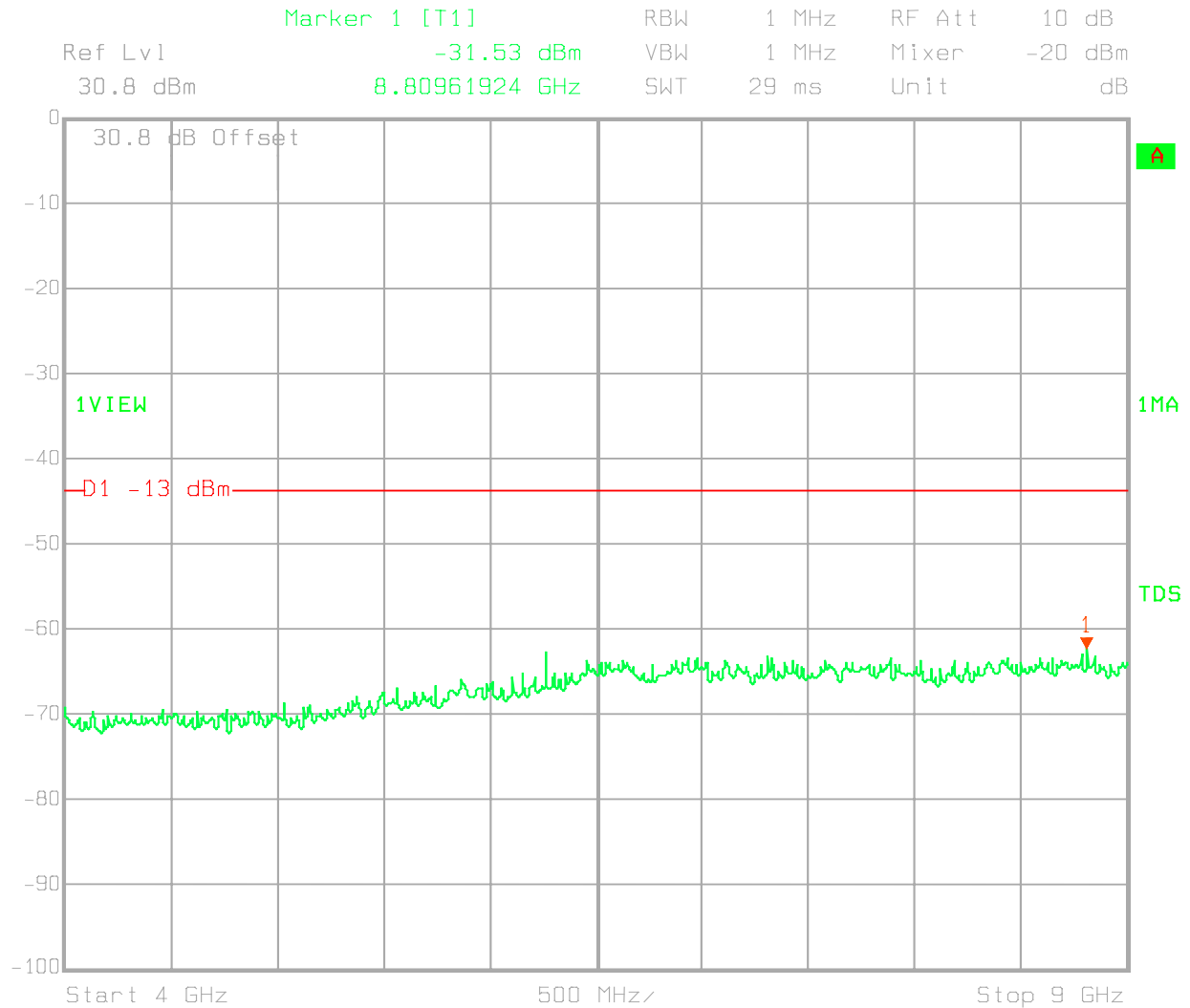
EQUIPMENT: EAC-2000D Digital Cellular Enhancer  
FCC ID: BCR9GB2000



Title: 9L0385R ANTENNA PORT SPURIOUS EMISSIONS (CHANNEL 991)  
Comment A: APSE2.WMF  
Date: 11.OCT.1999 10:47:35

Plot 5

*EQUIPMENT: EAC-2000D Digital Cellular Enhancer*  
*FCC ID: BCR9GB2000*

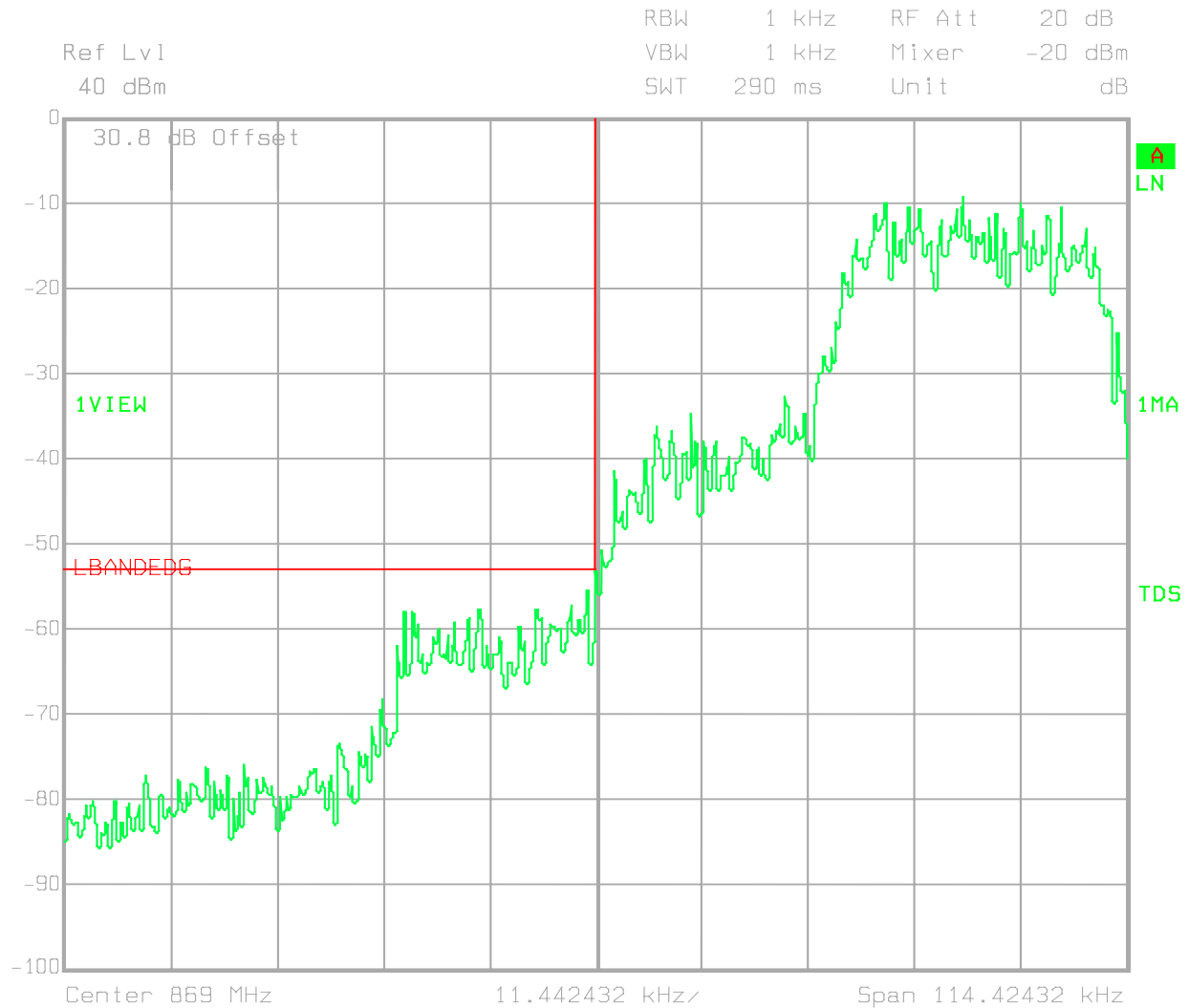


Title: 9L0385R ANTENNA PORT SPURIOUS EMISSIONS (CHANNEL 991)  
Comment A: APSE3.WMF  
Date: 11.OCT.1999 11:18:02

**Plot 6**



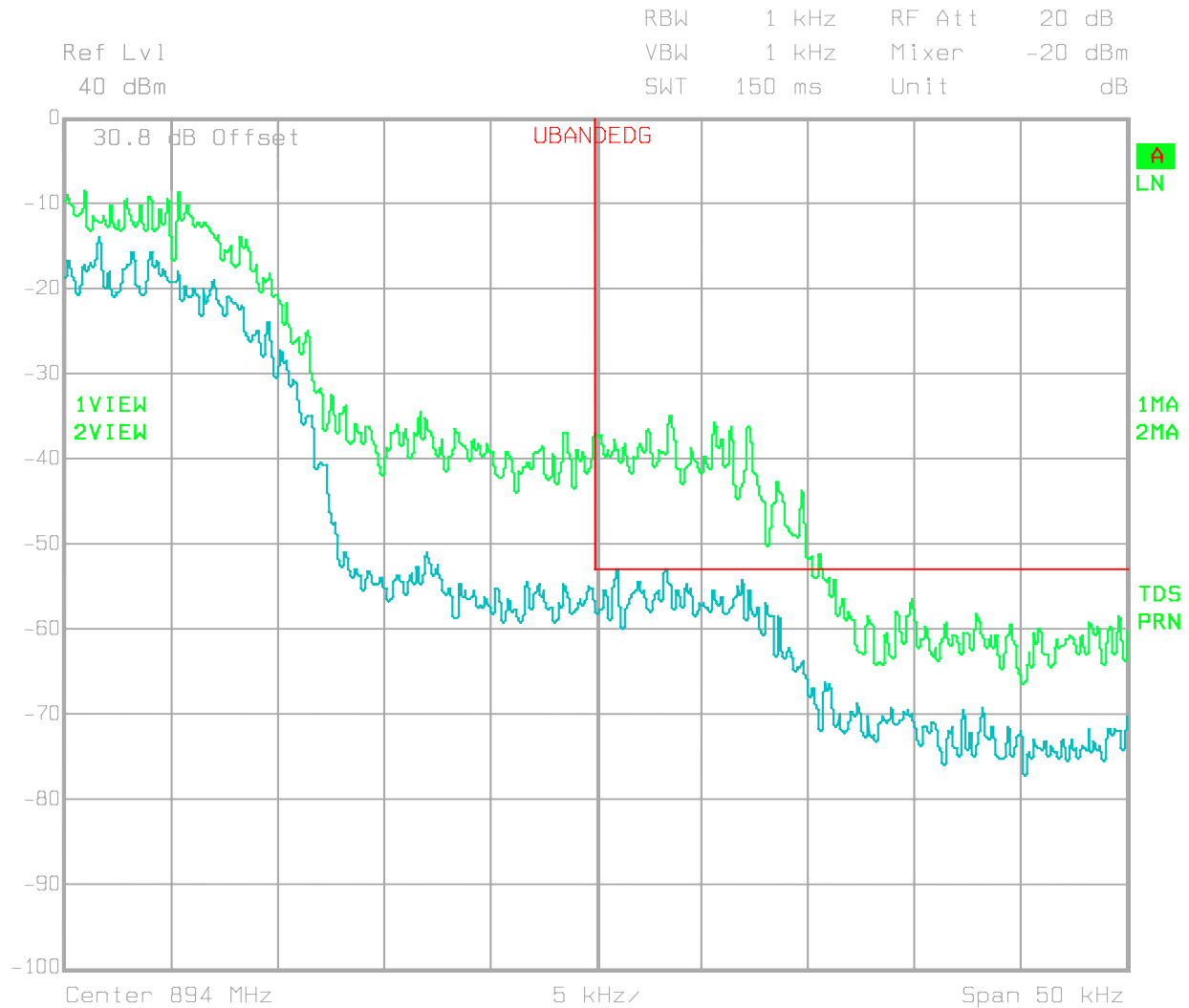
*EQUIPMENT: EAC-2000D Digital Cellular Enhancer*  
*FCC ID: BCR9GB2000*



Title:        9L0385R LOWER BANDEDGE (CHANNEL 991)  
 Comment A: LBE1.WMF  
 Date:        11.OCT.1999   10:11:23

**Plot 7**

*EQUIPMENT: EAC-2000D Digital Cellular Enhancer*  
*FCC ID: BCR9GB2000*



Title:        9L0385R UPPER BANDEDGE (CHANNEL 799)  
 Comment A: UBE1.WMF  
 Date:        11.OCT.1999    9:48:55

**Plot 8**

**NOTE:** The power output at channel 799 is reduced to 2 watts to comply with the  $43 + 10\log(P)$  limit. At channels 991 – 798 (869.040 to 893.940 MHz), the power output is operated at 15 watts per channel.

*EQUIPMENT: EAC-2000D Digital Cellular Enhancer*  
*FCC ID: BCR9GB2000*

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**Section 6. Field Strength of Spurious**

|                                          |                     |
|------------------------------------------|---------------------|
| NAME OF TEST: Field Strength of Spurious | PARA. NO.: 2.917(e) |
| TESTED BY:                               | DATE:               |

**Test Results:**

The maximum field strength is \_\_\_\_\_  $\mu\text{V/m}$  @ \_\_\_\_\_ @ 3m.

**Test Data:**

Not Applicable

*EQUIPMENT: EAC-2000D Digital Cellular Enhancer*  
*FCC ID: BCR9GB2000*

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**Section 7. Frequency Stability**

|                                   |                   |
|-----------------------------------|-------------------|
| NAME OF TEST: Frequency Stability | PARA. NO.: 22.355 |
| TESTED BY:                        | DATE:             |

**Test Results:**

**Measurement Data:** Standard Test Frequency: \_\_\_\_\_ MHz  
Standard Test Voltage: \_\_\_\_\_ Vdc

**Not Applicable**

*EQUIPMENT: EAC-2000D Digital Cellular Enhancer*  
*FCC ID: BCR9GB2000*

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**Section 8. Test Equipment List**

|    | KTL ID | Description              | Manufacturer<br>Model Number   | Serial Number | Calibration<br>Date |
|----|--------|--------------------------|--------------------------------|---------------|---------------------|
| 1  | G2632  | SPECTRUM ANALYZER        | ROHDE & SCHWARZ<br>FSEK30      | 830844/006    | 06/14/99            |
| 2  | G2736  | SIGNAL GENERATOR         | ROHDE & SCHWARZ<br>SMIQ 03     | DE22081       | 05/03/99            |
| 3  | G1366  | 50 OHM LOAD              | NARDA<br>27470                 | 254           | 02/25/99            |
| 4  | G1017  | ATTENUATOR               | NARDA<br>776B-20               | NONE          | 09/30/99            |
| 5  | G1018  | ATTENUATOR               | NARDA<br>776B-10               | NONE          | 09/30/99            |
| 6  | G3725  | DUAL DIRECTIONAL COUPLER | NARDA<br>3020A                 | 34366         | 05/19/99            |
| 7  | G3726  | DUAL DIRECTIONAL COUPLER | NARDA<br>3022                  | 73393         | 05/19/99            |
| 8  | G3727  | DUAL DIRECTIONAL COUPLER | HEWLETT PACKARD<br>11692D      | 1212A03366    | 05/07/99            |
| 9  | CF40   | CABLE 2m                 | Astrolab<br>32027-2-29094-72TC | N/A           | 08/31/99            |
| 10 | C111   | CABLE, 3m                | KTL<br>Suhner                  | N/A           | 06/15/99            |

**KTL Dallas**

FCC PART 22, SUBPART H  
CELLULAR BAND REPEATERS  
PROJECT NO.: 9L0385RUS

*EQUIPMENT: EAC-2000D Digital Cellular Enhancer*  
*FCC ID: BCR9GB2000*

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## **ANNEX A - TEST DETAILS**

EQUIPMENT: EAC-2000D Digital Cellular Enhancer  
FCC ID: BCR9GB2000

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|                                      |                          |
|--------------------------------------|--------------------------|
| <b>NAME OF TEST: RF Power Output</b> | <b>PARA. NO.: 2.1046</b> |
|--------------------------------------|--------------------------|

**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:

If the antenna is not detachable from the circuit then the Peak Power Output is derived from the peak radiated field strength of the fundamental emission by using the plane wave relation  $GP/4\pi R^2 = E^2/120\pi$  and proceeding as follows:

$$P = \frac{E^2 R^2}{30G} = \frac{E^2 3^2}{30G}$$

where,

P = the equivalent isotropic radiated power in watts

E = the maximum measured field strength in V/m

R = the measurement range (3 meters)

G = the numeric gain of the transmit antenna in relation to an isotropic radiator

*EQUIPMENT: EAC-2000D Digital Cellular Enhancer*  
*FCC ID: BCR9GB2000*

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|                                                           |                          |
|-----------------------------------------------------------|--------------------------|
| <b>NAME OF TEST: Occupied Bandwidth (Voice &amp; SAT)</b> | <b>PARA. NO.: 2.1049</b> |
|-----------------------------------------------------------|--------------------------|

**Minimum Standard:** 22.917(c) The mean power of any emission removed from the carrier frequency by a displacement frequency ( $f_d$  in kHz) must be attenuated below the mean power of the unmodulated carrier (P) as follows:

- (i) On any frequency removed from the carrier frequency by more than 12 kHz but not more than 20 kHz:

at least  $117 \log (f_d/12)$

- (ii) On any frequency removed from the carrier frequency by more than 20 kHz, up to the first multiple of the carrier frequency:

at least  $100 \log (f_d/11)$  dB or  $43 + 10 \log (P)$  dB, whichever is the lesser attenuation.

**Method Of Measurement:**

Spectrum Analyzer Settings:

RBW: 300 Hz  
VBW:  $\geq$  RBW  
Span: 100 kHz  
Sweep: Auto  
Mask: CELLF3E

Input Signal Characteristics (F3E/F3D):

RF level: Maximum recommended by manufacturer  
AF1 frequency: 6 kHz  
AF1 level: sufficient to produce 2 kHz deviation  
AF2 frequency: 2.5 kHz  
AF2 level: sufficient to produce 12 kHz deviation.



*EQUIPMENT: EAC-2000D Digital Cellular Enhancer*  
*FCC ID: BCR9GB2000*

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|                                                   |                          |
|---------------------------------------------------|--------------------------|
| <b>NAME OF TEST: Occupied Bandwidth (WB Data)</b> | <b>PARA. NO.: 2.1049</b> |
|---------------------------------------------------|--------------------------|

**Minimum Standard:** 22.917(c) The mean power of any emission removed from the carrier frequency by a displacement frequency ( $f_d$  in kHz) must be attenuated below the mean power of the unmodulated carrier (P) as follows:

(1) On any frequency removed from the carrier frequency by more than 20 kHz but not more than 45 kHz:

at least 26 dB

(2) On any frequency removed from the carrier frequency by more than 45 kHz but not more than 90 kHz:

at least 45 dB

(3) On any frequency removed from the carrier frequency by more than 90 kHz, up to the first multiple of the carrier frequency:

at least 60 dB or  $43 + 10 \log (P)$  dB, whichever is the lesser attenuation.

**Method Of Measurement:**

Spectrum Analyzer Settings:

RBW: 300 Hz

VBW:  $\geq$  RBW

Span: 200 kHz

Sweep: Auto

Mask: CELLF1D

Input Signal Characteristics:

RF level: Maximum recommended by manufacturer

AF1 frequency: 10 kHz, random bit sequence

AF1 level: sufficient to produce 8 kHz deviation

*EQUIPMENT: EAC-2000D Digital Cellular Enhancer*  
*FCC ID: BCR9GB2000*

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|                                              |                          |
|----------------------------------------------|--------------------------|
| <b>NAME OF TEST: Occupied Bandwidth (ST)</b> | <b>PARA. NO.: 2.1049</b> |
|----------------------------------------------|--------------------------|

**Minimum Standard:** 22.917(c) The mean power of any emission removed from the carrier frequency by a displacement frequency ( $f_d$  in kHz) must be attenuated below the mean power of the unmodulated carrier (P) as follows:

(1) On any frequency removed from the carrier frequency by more than 20 kHz but not more than 45 kHz:

at least 26 dB

(2) On any frequency removed from the carrier frequency by more than 45 kHz but not more than 90 kHz:

at least 45 dB

(3) On any frequency removed from the carrier frequency by more than 90 kHz, up to the first multiple of the carrier frequency:

at least 60 dB or  $43 + 10 \log (P)$  dB, whichever is the lesser attenuation.

**Method Of Measurement:**

Spectrum Analyzer Settings:

RBW: 300 Hz

VBW:  $\geq$  RBW

Span: 200 kHz

Sweep: Auto

Mask: CELLF1D

Input Signal Characteristics:

RF level: Maximum recommended by manufacturer

AF1 frequency: 10 kHz tone

AF1 level: sufficient to produce 8 kHz deviation

*EQUIPMENT: EAC-2000D Digital Cellular Enhancer*  
*FCC ID: BCR9GB2000*

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|                                                                                   |
|-----------------------------------------------------------------------------------|
| <b>NAME OF TEST: Occupied Bandwidth (Digital Modulation)    PARA. NO.: 2.1049</b> |
|-----------------------------------------------------------------------------------|

**Minimum Standard:**            Not defined by FCC. Input vs. Output.

**Method Of Measurement:**

Spectrum Analyzer Settings:

RBW: CDMA (30 kHz), GSM (30 kHz), NADC (1 kHz) and CDPD (1 kHz)

VBW:  $\geq$  RBW

Span: As required

Sweep: Auto

Mask:

Input Signal Characteristics:

RF level: Maximum recommended by manufacturer

*EQUIPMENT: EAC-2000D Digital Cellular Enhancer*  
*FCC ID: BCR9GB2000*

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|                                                             |                          |
|-------------------------------------------------------------|--------------------------|
| <b>NAME OF TEST: Spurious Emission at Antenna Terminals</b> | <b>PARA. NO.: 2.1051</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:**

Spectrum Analyzer Settings:

RBW: 30 kHz (AMPS). As required for digital modulations.

VBW:  $\geq$  RBW

Start Frequency: 0 MHz

Stop Frequency: 10 GHz

Sweep: Auto

EQUIPMENT: EAC-2000D Digital Cellular Enhancer  
FCC ID: BCR9GB2000

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|                                                    |                   |
|----------------------------------------------------|-------------------|
| NAME OF TEST: Field Strength of Spurious Radiation | PARA. NO.: 2.1053 |
|----------------------------------------------------|-------------------|

**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.

**Calculation Of Field Strength Limit:**

An example of attenuation requirement of  $43 + 10 \log P$  is equivalent to -13 dBm ( $5 \times 10^{-5}$  Watts) at the antenna terminal. We determine the field strength limit by using the plane wave relation.

$$GP/4\pi R^2 = E^2/120\pi$$

For emissions  $\leq 1$  GHz:

$G = 1.64$  (Dipole Gain)

$P = 10^{-5}$  Watts (Maximum spurious output power)

$R = 3\text{m}$  (Measurement Distance)

$$E = \frac{\sqrt{30GP}}{R}$$

$$E = \frac{\sqrt{30 \times 1.64 \times 5 \times 10^{-5}}}{3} = 0.016533 \text{ V / m} = 84.4 \text{ dB}\mu\text{V / m}$$

For emissions  $> 1$  GHz:

$G = 1$  (Isotropic Gain)

$P = 1 \times 10^{-5}$  Watts (Maximum spurious output power)

$R = 3\text{m}$  (Measurement Distance)

$$E = 84.4 - 20 \log \sqrt{1.64} = 82.3 \text{ dB}\mu\text{V / m@3m}$$

**The spectrum is searched to 10 GHz.**

EQUIPMENT: EAC-2000D Digital Cellular Enhancer  
FCC ID: BCR9GB2000

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**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.

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

Table C-1

**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.

**KTL Dallas**

FCC PART 22, SUBPART H  
CELLULAR BAND REPEATERS  
PROJECT NO.: 9L0385RUS

*EQUIPMENT: EAC-2000D Digital Cellular Enhancer*  
*FCC ID: BCR9GB2000*

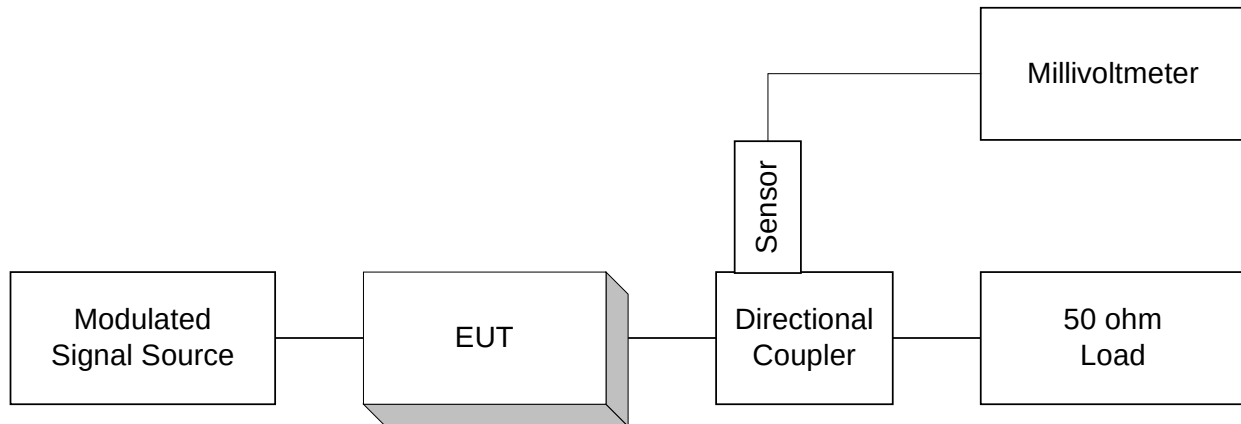
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## **ANNEX B - TEST DIAGRAMS**

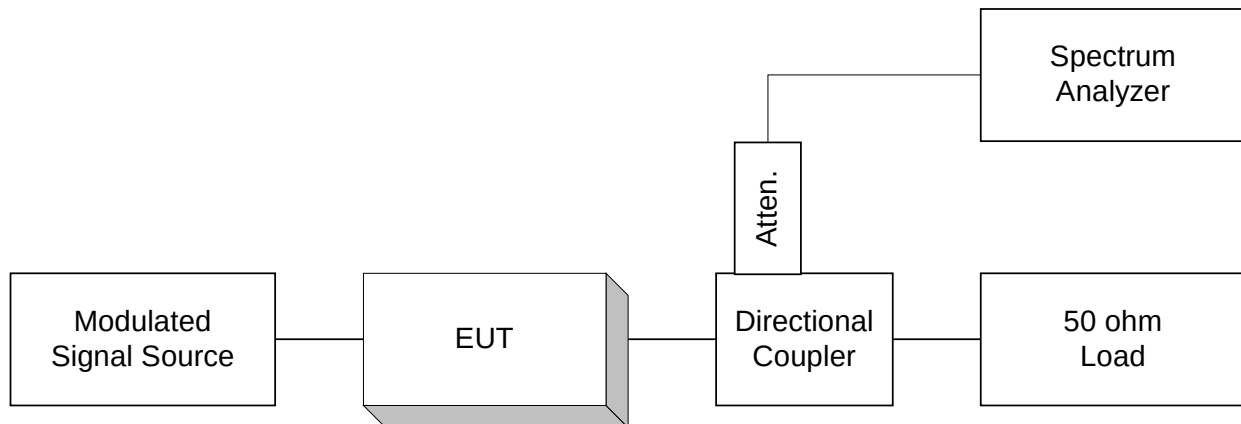
*EQUIPMENT: EAC-2000D Digital Cellular Enhancer*  
*FCC ID: BCR9GB2000*

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**Para. No. 2.985 - R.F. Power Output**



**Para. No. 2.989 - Occupied Bandwidth**

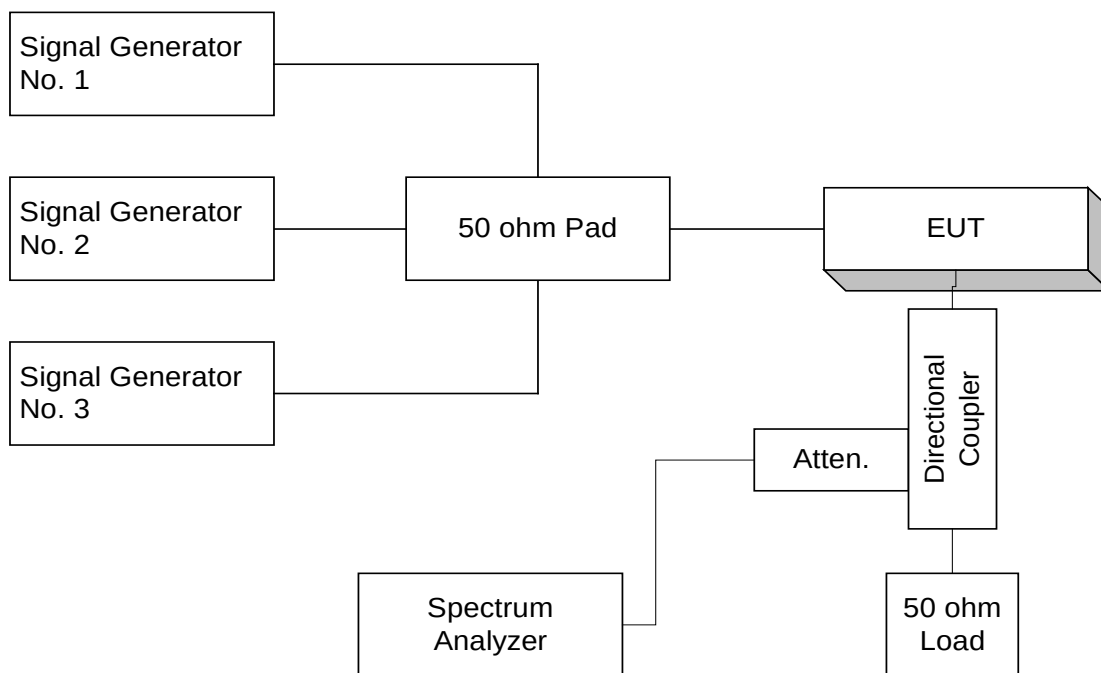
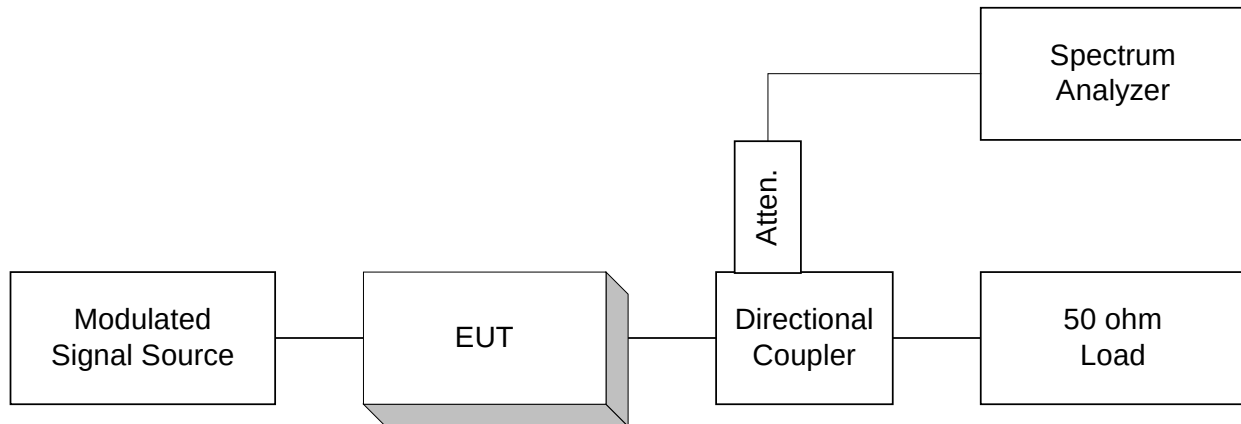




*EQUIPMENT: EAC-2000D Digital Cellular Enhancer*  
*FCC ID: BCR9GB2000*

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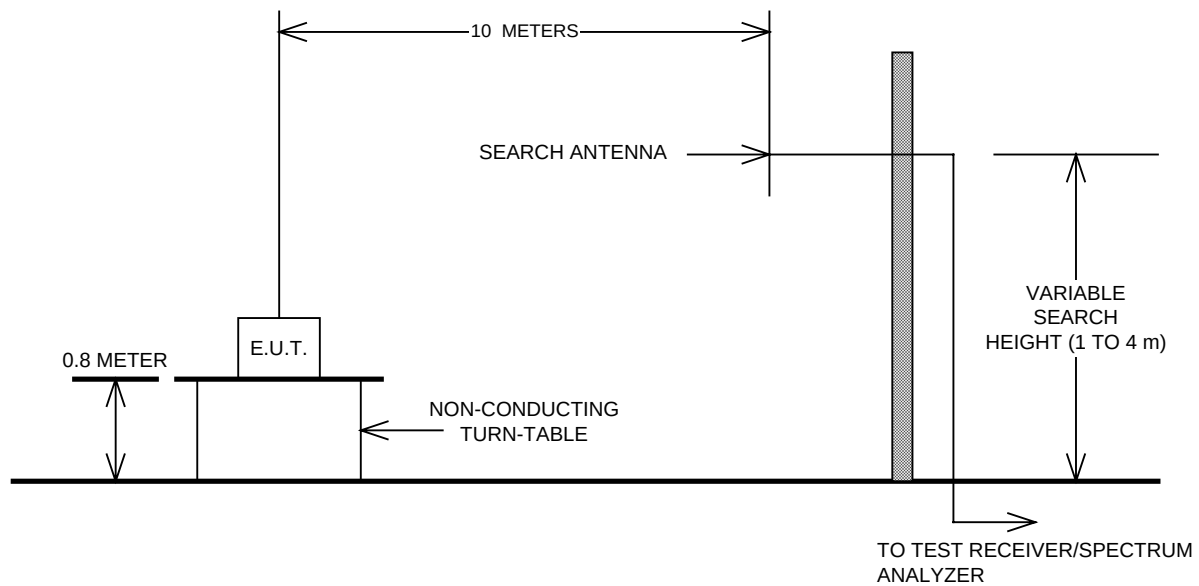
**Para. No. 2.991 Spurious Emissions at Antenna Terminals**



*EQUIPMENT: EAC-2000D Digital Cellular Enhancer*  
*FCC ID: BCR9GB2000*

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**Para. No. 2.993 - Field Strength of Spurious Radiation**



**Para. No. 2.995 - Frequency Stability**

