

# USHR-1900 Ultra Slim Bi-Directional Amplifier (BDA) Technical Description

ACE Antenna

*Oct-07-2002*

## FCC Part 2.983(d) Technical Description

### (d)(1) Type or types of emission

- (a) CDMA : F9W
- (b) TDMA : DXW
- (c) GSM : GXW

### (d)(2) Frequency Range

- (a) CDMA : Block A-F
  - Forward : 1930 - 1990 MHz
  - Reverse : 1850 - 1910 MHz
- (b) TDMA : Block A-F
  - Forward : 1930 - 1990 MHz
  - Reverse : 1850 - 1910 MHz
- (c) GSM : Block A-F
  - Forward : 1930 - 1990 MHz
  - Reverse : 1850 - 1910 MHz

### (d)(3) Range of Operating Power Levels, and description of any means provided for variation of operating power

- 43 dBm to + 7 ± 1 dBm (Gain : 50 ± 1 dB)

**(d)(4) Maximum power rating as defined in the applicable parts of the FCC rules**

24.232(a) : Maximum Peak output power for base station transmitters should not exceed 100 Watts.

24.232(b) : Mobile/Portable stations are limited to 2 Watts EIRP peak power.

**(d)(5) The dc voltages applied to and dc currents into the several elements of the final radio frequency amplifying device for normal operation over the power range**

4.0 VDC at 60 mA on A1,A5,A8 and A12

**(d) (6) Function of each electron tube or semiconductor or other active circuit device**

Refer to Attachment : Data Sheet

**(d)(7) Complete circuit diagram**

Refer to Attachment : Circuit Diagram

**(d)(8) Instruction books or installation manual**

Refer to Attachment : Installation and Operations Manual

**(d) (9) Tune-up procedure over the power range, or at specific operating power levels**

Refer to Attachment : Installation and Operations Manual

**(d)(10) A description of all circuitry and devices provided for determining and stabilizing frequency**

N/A

**(d)(11) A description of any circuits or devices employed for suppression of spurious radiation**

Duplexer : A4, A9

Band Pass Filters : A3,A10,F1,F3

SAW Filters : AH7,H13

**(d)(11) A description of any circuits or devices employed for limiting modulation**

N/A

**(d)(11) A description of any circuits or devices employed for limiting power**

If the output power level of reverse path(=Up Link) exceeds prescribed limit, then reverse path is disconnected and the FAIL LED (RED) is on. BDA automatically checks output power level every one minute of a 5 minute cycle when reverse path has over power . If reverse path still exceeds level then shut down mode continues for another 10 minutes. After 10 minutes, reverse path is switched on again and it checks output power level again. (Repeats the process)

**(d)(12) For equipment employing digital modulation techniques, a detailed description of the modulation of the modulation system to be used, including the response characteristics (Frequency, phase, and amplitude) of any filters provided, and a description of the modulating wavetrain, shall be submitted for the maximum rated conditions under which the equipment will be operated.**

N/A

**(e) The data required by 2.985 through 2.997, inclusive, measured in accordance with the procedures set out in 2.999**

\*\*\*\* Provided by FCC Approval Company after the tests. \*\*\*\*

**(f) A photograph or drawing of the equipment identification plate or label showing the information to be placed thereon.**

\*\*\*\* Provided by FCC Approval Company after the tests. \*\*\*\*

**(g) E.U.T 8 x 10 photographs**

\*\*\*\* Provided by FCC Approval Company after the tests. \*\*\*\*