



INNOVATIVE COMMUNICATION SOLUTIONS



BDA-VHF-33/33-80-20U18

## BDA Tune Up Procedure:



**WARNING.** This is **NOT** a **CONSUMER** device. It is designed for installation by **FCC LICENSEES** and **QUALIFIED INSTALLERS**. You **MUST** have an **FCC LICENSE** or express consent of an FCC Licensee to operate this device. Unauthorized use may result in significant forfeiture penalties, including penalties in excess of \$100,000 for each continuing violation.

**DO NOT APPLY A.C. POWER TO THE BDA UNTIL CABLES ARE CONNECTED TO BOTH PORTS OF THE BDA AND THE ANTENNAS.**

1. Set the BDA Rack on the floor or mount on a wall (where applicable). Using appropriate screws and anchors, attach the BDA to the wall at the four mounting holes on the side flanges. (*Special version not shown in this manual*).
2. Ensure that the isolation between the donor antenna and the service antenna is at least 12 dB greater than the BDA gain. (Use the higher of the Uplink and Downlink gains reported on the BDA test data sheet).
3. Connect the cable from the donor antenna to the BDA connector labeled "BASE" and the cable from the service antennas to the BDA connector labeled "MOBILE".
4. See main Panel of the BDA and verify that both of the Uplink and Downlink attenuation is set to 31 dB via dial Attenuator.
5. Connect the AC power cord to the BDA and then to the power source. Verify that the "Power ON" lamp is illuminated.

Installation of the BDA is now complete. To adjust the gain controls to suit the specific signal environment, refer to the next section of the manual.

***Note: For repeat installations of existing equipment, make sure the attenuation is positioned to its maximum setting (31 dB). After verification attenuation, follow the above steps starting with step 1.***

**BDA Operation:****Variable Step Attenuator**

BDA gain can be attenuated, for Uplink and Downlink separately, up to 31 dB in 1 dB steps using the variable step attenuator, see Figure 1. To adjust the attenuation up to 11 dB, use the dialer on the front panel. To adjust the attenuation up to 31 dB, set the thumbnail switch to +10 dB, and then dial in the remaining attenuation via the dialer. BDA gain may be determined by subtracting the attenuation value from the gain reported on the BDA Test Data Sheet for that side of the unit. The attenuators are labeled for Uplink and Downlink.

Attenuation	System Gain	Attenuator Position
0	80	Both thumbnail switches down and the dialer on zero
5	75	Both thumbnail switches down and the dialer on five
10	70	Both thumbnail switches down and the dialer on ten
15	65	One thumbnail switch up and the dialer on five
20	60	One thumbnail switch up and the dialer on ten
25	55	Two thumbnail switches up and the dialer on five
31	49	Two thumbnail switches up and the dialer on eleven

**Table 1****ALC (Automatic Level Control)**

To minimize intermodulation products, each amplifier in the BDA contains an ALC feedback loop. The ALC circuit senses the output power and limits it to the factory preset level of +33 dBm.

The ALC function is integrated in each amplifier. A red indicator lamp located on each amplifier illuminates when output power exceeds the ALC set point.

To establish proper operating gain on the Uplink and Downlink sides, start with the Downlink. Verify that the attenuation is set for 31 dB (minimum system gain). Observe the red indicator lamp on the Downlink amplifier. Units are shipped with maximum attenuation. Decrease attenuation one step at a time until the lamp is lit. Then, increase the attenuation until the lamp goes off. Repeat the process for the Uplink. The level indicator is accurate to +/- 0.4 dB of the ALC set point.



**Operation of the BDA at minimum attenuation with greater than -45 dBm average power incident on either BASE or MOBILE port can cause damage to the BDA.**

**WARNING:**  
Input Signal Level  
above +10 dBm may cause  
damage to system

**Figure 1:**  
Variable Gain Adjustment Access



**Figure 2**  
Visual Alarms

