- **INSTALLATION**

  - Upon receiving the BDA shipment, examine the packaging and the Cabinet for damage.
  - Each BDA is carefully packaged for air shipment. Any damage incurred during the transportation must be claimed from the shipper.
  - The BDA is fully contained in a single Nema-style wall mountable cabinet.
  - Prior to installing the Roof Top Antenna and the Distribution Antenna System make sure that enough Antenna Isolation. If there is insufficient Isolation between the antennas, the amplifier gain must be set to a minimum of 12dB lower than the available Antenna Isolation. As a rule, this is easily achievable with in-building installation.
  - Check for and remove all packing materials prior to installing this unit.
  - The physical installation is accomplished by mounting the enclosure onto a vertical wall. Ensure that the unit is mounted in the upright position, as indicated by the upright Kaval logo and the door hinge on the left side of the housing. Four mounting lugs on the enclosure provided for this purpose. The cabinet is equipped on the left and right sides with an intake ventilation air at the bottom and exhaust fan at the top. Ensure that free air flow is available on both sides of the cabinet.
  - The AC electrical wiring is accessible via an opening at the bottom left hand side of the cabinet. The AC Terminal Strip is provided at the bottom of the cabinet:

Connection	North American Standard Color Code
Hot Line	BLACK
Neutral Line	WHITE
Ground connection	BARE

    It is highly recommended that AC Power Wiring be performed by a qualified Electrician so as to ensure compliance with all National and Local Electrical Wiring Regulations.
  - AC Power and RF Connections should be installed with all standard installation practices for lightning protection. This includes the grounding and electrical bonding together of all equipment racks and cabinets in the room. It also includes a grounding of the primary antenna cable and the installation of proper surge suppression (lightning arrestor) equipment at the entrance to the equipment room.
  - Connect the Roof Top Antenna feeder cable to the “Donor Cell Site” Antenna.
  - Connect the Distribution Antenna System feeder cable to the “In-building Antenna” port.
  - Make sure that the BDA Controller Power On/Off Switch is **“Off”**. Activate the circuit breaker or plug in the AC. The BDA Controller should light up momentarily then shut off. Turn the BDA Controller Power On/Off Switch to **“On”**. The BDA Controller screen should become active, and Cooling Fans should be running. Check the BDA Controller for any reported Fault conditions.

- **ANTENNA INSTALLATION**

  - **All Antenna Installation is to be performed by Qualified Technical Personnel only.**
  - Typically the ***Roof Top Antenna*** for linking to the *Donor Site* is a directional (high gain) Antenna fixed-mounted physically on the side or top of a building, or on a tower. Depending upon the application and the gain of the Antenna, the total composite power (for multiple carriers) could reach 20 to 50 Watts EIRP. As such the *Roof Top Antenna* location should be such that only Qualified Technical Personnel can access it, and that under normal operating conditions no other person can touch the Antenna, or approach within two meters of the Antenna.
  - The ***In-Building Antenna*** connection is usually connected via a coaxial cable distribution system with Signal Taps at various points connected to the fixed-mounted ***Indoor Antennae***. The *Indoor Antennae* are to be installed such that no person can touch the Antenna, or approach within....

    0.2 Meters for EIRP of up to 1 Watt (multiple carrier composite power) on a particular Indoor Antenna
    1.0 Meters for EIRP of up to 20 Watts (multiple carrier composite power) on a particular Indoor Antenna
    2.0 Meters for EIRP of up to 50 Watts (multiple carrier composite power) on a particular Indoor Antenna

    ... where the EIRP on a particular Indoor Antenna is determined by the Installation Application.

    If the application has the *In-Building Antenna* connection going directly a single Antenna, then the same rules as for the *Roof Top Antenna* will apply.

FIELD ADJUSTMENTS

The proper operation of the BDA in providing RF coverage extension is a function of not only the BDA, but also of proper systems engineering including isolation measurements and in building RF distribution design. The most critical requirement for the BDA installation is that the isolation between the “Roof-Top” Antenna and the in-building Antenna distribution system exceed the overall BDA System Gain by at least 12dB. The actual gain requirement for each Installation must be determined by the available antenna isolation and the operational requirements determined by local Systems Engineering.

Each BDA has a Factory determined minimum gain both for the Uplink and Downlink Paths. The final Path Gain from Antenna Port in to Antenna Port out, is set by the BDA Controller.

Follow through the BDA Controller Menus to set all configurable items as are appropriate for the installation.