



BelAir200 General Availability

BelAir200

Installation Guide

Document Date:	February 19, 2004
Document Number:	BDTK20001-A02
Document Status:	Standard
Security Status:	Confidential
Customer Support:	613-254-7070 support@belairnetworks.com

© Copyright 2004 by BelAir Networks.

The information contained in this document is confidential and proprietary to BelAir Networks. Errors and Omissions Excepted.
Specifications may be subject to change.

Contents

About this Document.....	2
Introduction	3
Mounting the BelAir200.....	8
Regulatory Statements	13
Detailed Table of Contents.....	15

About this Document

This guide provides the information you need to physically install the BelAir200.

Related Documentation

The following titles are BelAir reference documents:

- *BelAir200 Building Coverage Deployment Guidelines*
- *BelAir200 User Guide*

Introduction

BelAir Networks recommends that you prepare for the installation of your Belair200 as follows:

1. Verify the contents of your shipping container. Be sure to note any external carton damage with your shipper to facilitate any future warranty claims. See the section “Shipping Contents” on page 4.
2. Fill out the included *Configuration Worksheet* to record the important installation and network configuration settings.
3. Analyze your site to determine the optimum mounting location. To assist you, refer to:
 - the section “Site Survey” on page 6
 - the *BelAir200 Building Coverage Deployment Guidelines*
 - your authorized reseller
4. Mount the Belair200 by following the steps in the procedure the section “Mounting the BelAir200” on page 8.
5. Configure the BelAir200 for operation. Refer to the *BelAir200 User Guide*.
6. Verify proper operation of the Belair200.

WARNING! Only personnel qualified by BelAir Networks or by one of its authorized resellers or channel partners should install the BelAir200.

WARNING! This entire document, including the regulatory statements section, should be read before attempting to install or operate the BelAir200.

Shipping Contents

Table 1 describes how the standard BelAir200 items are packaged for shipping.

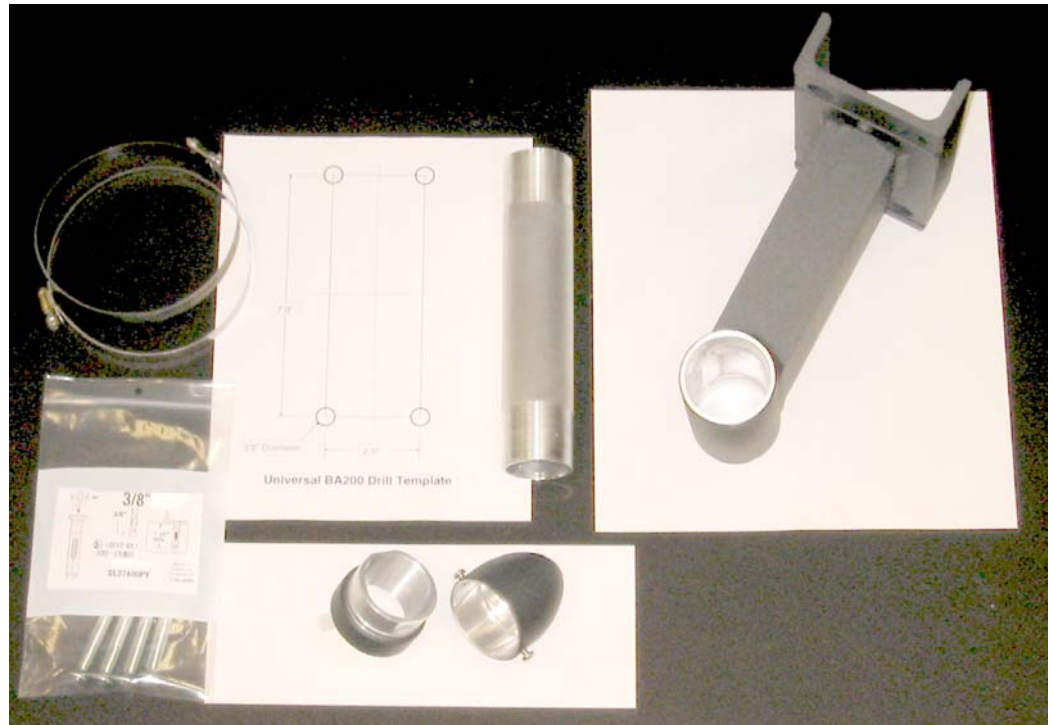
Table 1: BelAir200 Shipping

Box	Contents
1 (of 2) See Figure 1 on page 5.	BelAir200 AC mains power pigtail Quick Configuration Guide Card User Guide on CD-ROM battery unit (if ordered)
2 (of 2) See Figure 2 on page 6.	universal mounting bracket threaded nipple lock nut decorative finial hardwall anchors (quantity of 4) 8-inch worm drive (jubilee) clamp (quantity of 2) drill template

Figure 1: Contents of Box I, without BelAir200 Unit



Figure 2: Contents of Box 2, BelAir200 Mounting Kit



Site Survey

Due to differences in component configurations, physical placement and environmental considerations, every application is unique. BelAir Networks recommends that a site survey be completed to best determine your coverage needs, installation limitations and optimal node configurations. Contact an authorized reseller to help you with this planning.

Antenna Type and Placement

Proper antenna placement, orientation and selection are critical factors in maximizing network performance. The antennas are typically placed between 5 m and 10 m above ground level; although alternate installations can be used. Additionally, the antennas should be located with clear lines of site to adjacent equipment in the system and free from obstruction by buildings, foliage and passing traffic.

WARNING! Only antennas approved by BelAir Networks may be used in conjunction with the BelAir200. Contact BelAir Networks for an up-to-date list of available approved antennas. Use of any other antenna may exceed FCC or Industry

BelAir200 Installation Guide

Canada regulatory requirements and void the operator's right to operate the radio equipment.

WARNING! Installers must ensure the BelAir200 is mounted in such a manner and in such a location that access to the antennas by the general population is minimized. Access to the antennas by the general population should be limited to greater than 20 cm (8 inches) during normal operation.

Mounting the BelAir200

Only qualified personnel should mount the Belair200.



The BelAir200 is designed to be mounted on a surface or structure that is capable of supporting its weight (28 pounds). It is the responsibility of the customer to ensure the strength of the structure to be mounted to.

The Belair200 is supplied with a standard mounting kit in Box 2 that accommodates pole or wall mounting in either an upright or upside-down orientation. If your mounting requires a custom solution, contact BelAir Networks.

Installation Procedure

- I. Remove the Belair200 from its packaging in Box 1. See Figure 3

Figure 3: BelAir200 in its Packaging



BelAir200 Installation Guide

2. With a Philips screwdriver, remove the two lower plastic covers.

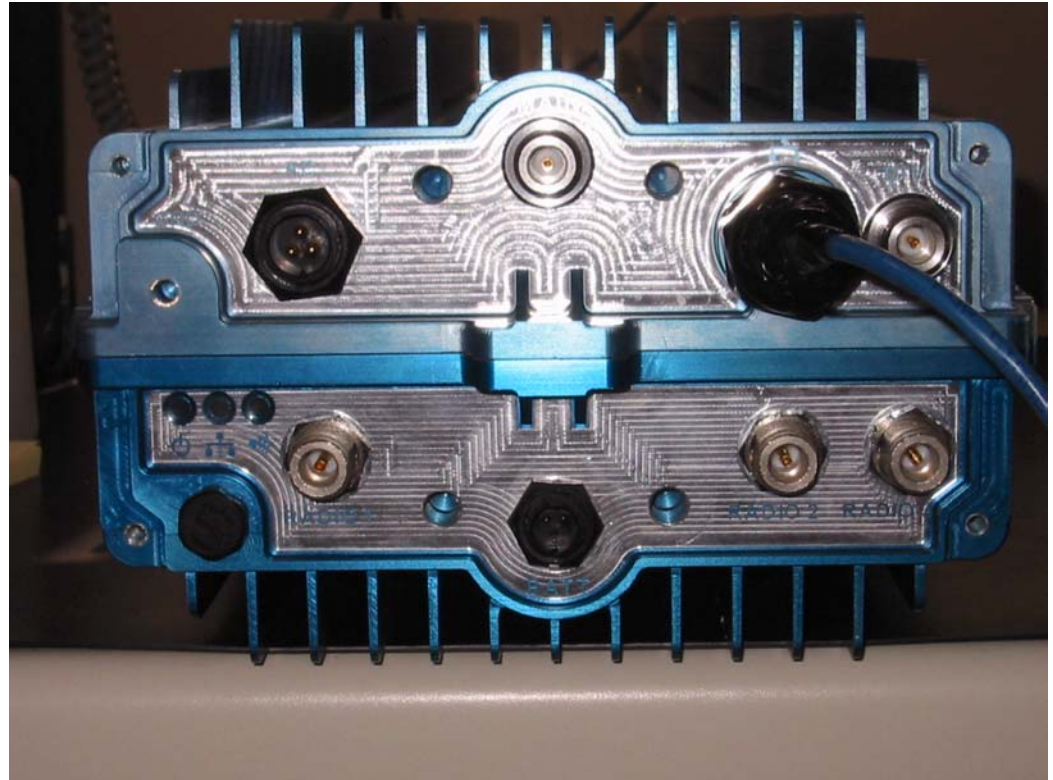
There are two screws per cover. Keep these screws because you will use them later.

Figure 4: Removing Lower Covers from BelAir200



3. Familiarize yourself with the connector field. See Figure 5 on page 10, If you are making external backhaul antenna connections, this is a good time to decide which radio port to use. Be sure to record this information on the *Configuration Worksheet*.

Figure 5: Connection Field



4. If you are using the optional battery pack, remove the battery access door and insert the battery into its compartment. Install the battery door and plug in the battery connector.

Note: Do not force the battery connector; it is “keyed”.

5. Remove the mounting kit from Box 2 and familiarize yourself with the components.
6. If you are mounting to an aluminium, concrete or wood pole, skip to step 9.
7. Locate the drill template and using an appropriate ladder or elevating device, mark and drill the four mounting holes for the hardwall anchors.

Follow the instructions found in the bag of anchors.



Caution must be observed when working around high voltage lines. Be sure to “Check Overhead” before ascending pole or wall. Depending on your location, you may need the services of a Certified Contractor to obtain access to utility poles.

BelAir200 Installation Guide

8. Following the instructions included in the bag of anchors to mount the universal bracket. Skip to step 10.
9. Using the supplied jubilee clamps, securely fasten the mounting bracket to the utility pole.

Note: Certain jurisdictions may require the use of a certified contractor for utility pole access. When mounting to wooden poles, you may be required to install a bolt through the pole. These are not supplied with the basic installation kit. Consult your reseller or local utility operator for specific requirements.

10. Once the bracket has been securely mounted in its desired location, you are ready to install the Belair200 Unit. See Figure 6.

Figure 6: BelAir200 Mounted on a Typical Pole, Ready for Pointing



BelAir200 Installation Guide

- I 1. Locate the threaded nipple, and screw this securely into the bottom of the Belair200. A pipe wrench or similar tool can be used for this step.
- I 2. Lift the unit to the desired mounting location and pass the threaded nipple through the tube on the end of the mounting bracket.
 - For an upside-down installation, be sure to screw the locking nut into place. It is not important to tighten it fully at this point. The unit now hangs from the mount.

Note: The Belair200 weighs 28 pounds, including battery. BelAir Networks recommends using a safety tether while lifting the unit until the locking nut is secured. A ring is supplied to attach the tether.

- I 3. Rotate the Belair200 so the backhaul and access antennas point in the desired direction. Consult you site survey or the installation diagram supplied by your Reseller. Features are provided to provide a visual indication of antenna direction.
- I 4. Once the unit is pointed, firmly tighten the locking nut and install the decorative finial.
- I 5. Tighten the setscrews located on the mounting bracket.
- I 6. Locate and install the AC power cable.

The cable is supplied as a pigtail that must be terminated at the front end by a qualified electrician.

WARNING! Only use the AC cable supplied by BelAir Networks to attach to the unit. Use of any other non-standard power cable may void regulatory requirements and is strictly prohibited.

- I 7. If this unit is to be directly connected with an Ethernet cable, connect the Ethernet cable as follows:
 - a. Locate the sealing bland on the bottom of the unit.
 - b. Unscrew the gland and feed it over the Ethernet cable.
 - c. Plug the Ethernet connector into the port on the bottom of the unit.
 - d. Re-tighten the sealing gland.
- I 8. Re-install the lower covers removed in step 2 using the appropriate screws.

Your Belair200 is now ready to be configured. Refer to the *BelAir200 User Guide*.

Regulatory Statements

Regulatory Information and Disclaimers

Installation and use of this device must be in strict accordance with the instructions included in the user documentation provided with the product. Any changes or modifications to this product not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

The manufacturer is not responsible for any interference to radio or television equipment caused by unauthorized modification of this device, or attachment of any antennas or equipment other than those specified by the manufacturer. The manufacturer or its authorized resellers or distributors will assume no liability for any damage or violation of government regulations arising from failing to comply with these guidelines.

Manufacturer's FCC Conformity Statement

This device complies with Part 15 of the FCC Rules.

Operation is subject to the following two conditions (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.

BelAir200 Installation Guide

- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Manufacturer's Industry Canada Conformity Statement

This device has been designed to operate with an antenna having a maximum gain of 15 dBi. Antenna having a higher gain is strictly prohibited per regulations of Industry Canada. The required antenna impedance is 50 ohms.

Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (EIRP) is not more than that required for successful communication.

This Class B Digital apparatus meets all the requirements of the Canadian Interference-Causing Equipment Regulations.

RF Exposure Statement

This Wireless LAN radio device has been evaluated under FCC Bulletin OET 65C and Health Canada Safety Code 6 and found to be compliant to the requirements set forth in CFR 47 Sections 2.1091, 2.1093, and 15.247 (b) (4) addressing RF exposure from radio frequency devices.

This device complies with FCC RF radiation exposure limits for an uncontrolled environment. The radiated output power of this Wireless LAN device is below the FCC radio frequency exposure limits. However, this device should still be installed and used in such a manner that the potential for human contact during normal operation is minimized. In order to comply with RF exposure limits established in the ANSI C95.1 standard, this equipment should be installed and operated at a minimum distance of 20 centimeters (8 inches) between the radiator and a human body.

Detailed Table of Contents

About this Document.....	2
Related Documentation	2
Introduction	3
Shipping Contents.....	4
Site Survey	6
Antenna Type and Placement.....	6
Mounting the BelAir200.....	8
Installation Procedure.....	8
Regulatory Statements	13
Regulatory Information and Disclaimers	13
Manufacturer's FCC Conformity Statement.....	13
FCC Interference Statement.....	13
Manufacturer's Industry Canada Conformity Statement	14
RF Exposure Statement.....	14
Detailed Table of Contents.....	15
List of Tables.....	15
List of Figures.....	15

List of Tables

Table 1: BelAir200 Shipping	4
-----------------------------------	---

List of Figures

Figure 1: Contents of Box 1, without BelAir200 Unit	5
Figure 2: Contents of Box 2, BelAir200 Mounting Kit.....	6

BelAir200 Installation Guide

Figure 3: BelAir200 in its Packaging.....	8
Figure 4: Removing Lower Covers from BelAir200	9
Figure 5: Connection Field	10
Figure 6: BelAir200 Mounted on a Typical Pole, Ready for Pointing.....	11



BelAir Networks U.S. East
11921 Freedom Drive
Suite 550
Reston, VA
USA
20190

703-736-8306

BelAir Networks U.S. West
1902 Wright Place
Suite 200
Carlsbad, CA
USA
92008

760-918-5544

BelAir Networks Inc.
603 March Road
Kanata, Ontario
Canada
K2K 2M5

613-254-7070

Sales
sales@belairnetworks.com

General Information
Info@belairnetworks.com