HOW DAS & BDA SYSTEMS BENEFIT DAY-TO-DAY OPERATIONS
Chances are, your building has lots of staff members working every day trying hard to keep things running smoothly. To keep everyone connected, productive, and safe, it is important to have the right lines of communication in place. To improve wireless communications, Distributed Antenna Systems and Bi-Directional Amplifiers boost signal strength. Let’s discuss how these systems can improve your two-way radio system coverage and benefit day-to-day operations for your teams. Read through the information, and contact BearCom with questions or to request a FREE consultation.

**Importance of DAS & BDA Systems**

A Distributed Antenna System (DAS) is a network of separate antenna nodes connected to a common transport medium that provides wireless service within a geographic area or structure. It distributes wireless signals throughout facilities such as hospitals, hotels, office buildings, stadiums, malls, and school campuses where signal coverage may be lacking. As part of the DAS, a Bi-Directional Amplifier (BDA) is an amplifier/repeater that boosts and distributes signals covering various frequencies.

So that first responders can stay in contact with each other in any part of a building during an emergency situation, many localities require public safety DAS/BDA installations within new buildings or as part of major renovations. The right combination of DAS and BDA solutions ensure that there is adequate radio signal coverage everywhere inside and around a facility. The system can also be designed with components added to boost cellular signals.
While public safety compliance is a major driver for signal booster installations, DAS and BDA systems are also needed for facility work teams. This is so maintenance, engineering, security, production, service, and other workers can improve collaboration and enhance safety during normal day-to-day operations.

It is important to note that if a facility is constructed of concrete, metal, or glass, radio signals will have a tough time penetrating throughout the structure. Dead zones cause broken or total loss of coverage as mobile teams move throughout the building. By installing a proper DAS/BDA system, you can prevent coverage issues and keep your work teams operating at peak efficiency.

**Benefiting Day-to-Day Operations**

Reliable two-way radio communication systems throughout a facility add enormous value for facility managers to keep operations, maintenance, engineering, security, and other workers connected, productive, and safe. Better communications for your mobile workforce allows them to be more responsive, and with mobile radios, they can enhance coverage from fleet vehicles to the facility.

One result of having enhanced communications is that building owners and operators can quickly respond to tenant calls. Facility safety and security also improve by extending wireless coverage into parking garages, stairwells, and isolated equipment rooms. Plus, the customer experience improves because staff can get questions answered and provide service more effectively.

In addition to a building’s operations team staying connected, public safety first responders also need to use their two-way radios to stay in contact throughout any facility. Therefore, many states and municipalities mandate wireless in-building coverage (which are oftentimes BDAs) for first responders.
Achieving Sufficient In-Building Coverage

There are three approaches to achieve better in-building two-way radio coverage:
1. You can increase the signal level by deploying additional antenna sites within a specific area.
2. You can supplement in-building coverage with permanent signal boosters. These can be BDAs, or they can be standard two-way radio repeaters that extend two-way radio strength—even into hard-to-reach areas such as stairwells, underground floors, equipment rooms, and parking garages.
3. You can temporarily supplement an existing two-way radio system for a specific event or project using rental communication equipment.

In some cases, a combination of all three approaches works best. Improving cellular signals can also be part of your wireless communications coverage enhancement plans.

When it comes to providing in-building coverage, regular two-way radio repeaters are sometimes used. However, these units are best used in facilities where signal levels are relatively consistent and there are no permanent obstacles or major building material challenges to overcome.

In many locations, the signal level both inside and outside the facility fluctuates. Or, there may be building materials or other structural challenges that create signal issues. In these instances, a traditional two-way radio repeater will not be enough. That is why installing a BDA ensures that your facility always has the coverage you need.

Installing a DAS/BDA System for Team Communications

Before you can install DAS and BDA systems, you will need to:
- Determine the VHF or UHF two-way radio bands your team uses.
- Determine if your existing system meets FCC licensing requirements.
- Determine if enhancing cellular coverage is part of the project plans.
- Use wireless signal analyzer equipment and software to identify dead spots in signal coverage.

Schools Get New BDA Systems to Meet Coverage Requirements

In two recent new school projects near Houston, BearCom helped spec in BDA systems early in the design process, and then deployed the solutions during construction. We proactively met with decision-makers, project managers, and fire marshals to help contractors meet signal strength coverage requirements for public safety frequency bands.
To meet code requirement, you then need to ensure that equipment is resistant to high heat, high humidity, water splash from a fire hose, dust, and dirt; and is installed in enclosures that are NEMA 4 rated. Plus, the signal boosters need to include backup power that support systems for 12 hours, or up to 24 hours (as required in your area).

Signal booster equipment must meet FCC requirements for R56 installation standards and industry DMR protocols for digital communications. The FCC can and will require that your communications shut down and come into compliance if:

- The signal booster equipment is poorly designed, improperly installed, or malfunctioning, so as to cause interference to public safety wireless networks.
- Your two-way radio system produces adjacent channel interference or oscillation, which can cause interference to other users.

Furthermore, the BDA unit needs to be programmed appropriately to cover the frequencies needed with gain settings that do not interfere with other wireless signals.

**How BearCom Can Help with DAS & BDA Systems**

BearCom is a one-stop shop, and we work with multiple manufacturers to provide whatever solution is necessary to fit the needs and budgets of each customer.

We work with all parties responsible for building compliance standards, such as:

- Developers
- Architectural and engineering firms
- General contractors
- Electrical, fire alarm, and low-voltage contractors
- Building owners and facility managers

**Adding BDAs Improves Manufacturing Operations**

After installing MOTOTRBO™ two-radio systems across multiple production plants, BearCom continues to design and install BDA units as environments evolve. The new BDAs maintain strong two-way radio coverage to keep plants more efficient and productive while increasing safety for maintenance teams, security personnel, and other workers.
Discover How DAS/BDA Systems Help Daily Communications

DAS and BDA systems can greatly assist day-to-day operations by keeping workers connected, however, they need to be installed correctly to comply with code and effectively do their job. That is where BearCom comes in.

We are a wireless solutions provider who knows your industry. We design, deploy, and service hundreds of DAS and BDA solutions every year to enhance your day-to-day business operations.

We are Motorola Solutions’ largest two-way radio dealer and integrator, and we have extensive experience deploying DAS/BDA in-building solutions in just about any type of facility. Plus, with over 50 branch offices across North America, you can count on regional and national resources in just about any locality to get the job done right.

BearCom can help with all your DAS and BDA needs, or any wireless push-to-talk voice and data solutions you need to be successful. We offer free consultations and evaluations, along with custom design services. We also offer infrastructure and installation assistance, and will make sure everything is set up to code.

For a FREE consultation on how we can solve your DAS/BDA solutions to stay safe, call our BearCompliance Hotline today at 844-883-8904. Or, request a site walk.

Boost Signal, Boost Safety

Two-way radios aren’t just for first responders. Many organizations know the value of these powerful communication tools and use them for their own staff.

The same theory of improving radio coverage to increase security for public safety professionals extends to protecting your own staff. Investing in more robust Distributed Antennas and adding BDAs (or repeaters) for hard-to-reach areas, can significantly increase each worker’s ability to transmit and receive messages.

If your radios are equipped with personal safety features such as Lone Worker, Man Down, GPS location tracking, and Emergency Alerts, better signal coverage means more connectivity and greater worker safety.