



Statewide Interoperability Radio Network (SIRN)



Standards, Protocols, Procedures

Document Section	Management of System	Status: SIEC Sub-Committee Date: 6/22/2026
SIEC Standard Number	2.19.0	
Standard Title	Distributed Antenna System (DAS) & Bi-Directional Antenna System (BDA)	
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1. Purpose and Objective

The purpose of this standard is to establish policy and procedures for the design, permitting and maintenance of Distributed Antenna Systems (DAS) / Bi-directional Antenna (BDA) systems that rebroadcast SIRN licensed frequencies.

2. Operational Context

DAS/BDA systems may be necessary to enhance the coverage of the SIRN system. These systems are generally used to boost SIRN signals within buildings but may be used in outdoor settings under specific situations. While DAS/BDA systems enhance first responder communications, a poorly designed or maintained DAS/BDA system may not assist incoming first responders, and may cause interference to the surrounding area, well outside the intended footprint of the DAS/BDA system.

3. Recommended Procedures

Any vendor or party interested in installing a DAS/BDA will do the following:

Contact SIRN System Administrator at itpssirn@nd.gov with the following information:

- Location (address and latitude/longitude) of the building(s) that are requesting a DAS/BDA.
- Name, address, email and phone number of the DAS/BDA vendor.
- Name, address, email and phone number of the system owner (usually the building owner).
- If the DAS/BDA vendor has been chosen, and has a design or partial design of the system, they will provide:
 - The requested SIRN donor site.
 - The type of DAS/BDA:
 - Class "A" DAS/BDA (channelized)
 - Frequencies to rebroadcast

- Class “B” DAS/BDA (wideband)
 - Frequency range to rebroadcast.

The SIRN System Administrator will review the information and forward it to any local system administrator(s) that may be affected by the DAS/BDA. The SIRN System Administrator may provide a fillable form to complete for the above requested information.

The appropriate system administrator(s) (statewide and/or local) will determine:

- If a DAS/BDA is necessary at the location(s) requested.
- Determine whether a Class A or Class B system is appropriate.
- Review the choice of donor site and external antenna for the DAS/BDA.

The requesting party will complete the following to commission a DAS/BDA rebroadcasting SIRN frequencies:

- If it is an existing building, get baseline signal strengths throughout the building.
- Comply with [FCC] CFR 90.219 “Use of signal boosters.”
- Receive a rebroadcast agreement from the licensees.
- Register their DAS/BDA system in the “FCC signal booster database.”
 - Class “B” systems - This is a requirement in CFR 90.219.
 - Class “A” systems - This is a requirement from the licensees and necessary to receive a rebroadcast agreement for SIRN frequencies. Class “A” systems are preferred.
- Ensure that the SIRN DAS/BDA is not aggregated with any other DAS/BDA systems (e.g. cellular).
- Measure SIRN signal strengths after the DAS/BDA is brought online.
- Provide “as-built” documents, including system settings and parameters. A full set of these will be provided to/stored at:
 - The SIRN System Administrator, local system administrator(s), and local PSAP(s).
 - The central DAS/BDA location.
 - The DAS/BDA system owner (generally the building owner)
 - The “Authority having Jurisdiction” (AHJ) - this is usually the local Fire Marshall or local fire department.

4. Management

The SIRN System Administrator is responsible for first contact with DAS/BDA vendors or other parties requesting a DAS/BDA that covers any licensed SIRN frequencies. The SIRN System Administrator will forward these requests to any applicable local system administrator(s). Issues that may arise from use of DAS/BDA will be the collaborative responsibility of the SIRN System Administrator, local system administrator(s), and PSAP(s).