DAS Solutions

Delivering coverage and capacity in today’s challenging environments
Wireless subscribers expect clear coverage

Partner with an industry leader

With a diverse offering of communications sites, including Distributed Antenna Systems (DAS), towers and managed sites and a suite of professional services, American Tower helps wireless service providers expand their coverage—even in today’s most challenging environments.

As a neutral-host provider in the in-building and outdoor DAS spaces, American Tower has completed and now owns and operates more multitenant installations than anyone else in the country. DAS solutions require a customized approach, and American Tower manages every step of the process to provide complete solutions from start to finish. We work with wireless carriers and property owners to deploy DAS networks that provide expanded service and capacity. With exclusive rights to more than 1,000 properties, including malls, casinos, hotels, hospitals and arenas, you can count on our expertise to deliver superior coverage solutions to your customers.

American Tower DAS Portfolio
Indoors, outdoors and everywhere in between

Flexible solutions to meet your needs

American Tower designs, builds and operates complete DAS solutions that allow wireless service providers to deliver the coverage they need, while balancing community aesthetic demands and zoning requirements. With in-building and outdoor system solutions, American Tower provides access to coverage where traditional systems have been unsuccessful due to difficult zoning, cost constraints or other barriers to entry.

Built upon the same Radio Frequency (RF) technology that drives Wi-Fi networks, our DAS solutions deliver safe, flexible coverage within your venue or throughout your community and can be tailored to fit your individual wireless needs.

Depending on your coverage and capacity challenges and deployment philosophy, American Tower’s DAS solutions are flexible and may include outdoor nodes, in-building nodes or a combination of site locations, including tower structures.

Hybrid Approach

› In venues with in-building DAS, outdoor DAS and outdoor coverage challenges
› Tower assets are utilized as part of the coverage solution

In-Building DAS

› Venues with poor wireless penetration
› High subscriber traffic

Outdoor DAS

› Capacity or coverage needs
› Tough permitting environments
› Densely populated areas
An in-building DAS is a network of antennas placed indoors that are connected with cabling to a “hub.” The hub allows multiple wireless service providers to connect radios that transmit at various frequencies. The DAS serves as an indoor antenna system, which is owned and managed by American Tower. The system is neutral host, which enables multiple wireless service providers to use the network at the same time. Utilizing a DAS minimizes build-out costs for service providers and eliminates their role in negotiations with building owners.

**Floor-level equipment**
A neutral-host DAS includes remote units placed in telecommunications closets or utility corridors on each level of the building. The remote units connect to main units housed at the hub location. Each remote unit connects to two antennas. The remote unit/antenna combinations are placed throughout each floor to provide a consistent wireless signal throughout the building.
Outdoor DAS

An outdoor DAS transmits a wireless signal in a similar way as an in-building system. The network includes nodes that are strategically placed on existing utility poles, street lights, traffic signals and other structures every half to three-quarters of a mile within the coverage area. The nodes connect to a hub via fiber optic cable. The hub contains American Tower’s head-end equipment and the service provider’s Base Transceiver Station (BTS).

**Typical Outdoor DAS Installation**

1) The RF signal of a mobile device is received by the antenna on the node.  
2) The signal is transmitted via the coaxial cable to the node’s equipment box, which contains the amplifier and RF to light converter.  
3) The fiber optic cable connects from the equipment box (either underground or aerial) to the hub.  
4) The head-end equipment at the hub site converts optical back to RF and sends the RF signal through the coaxial cable to the service provider’s BTS.  
5) Calls are then routed through the service provider’s Public Switched Telephone Network (PSTN) and transmitted via the landline network or back out through the DAS equipment.

Hub

**In-Building & Outdoor Systems**

This diagram illustrates the components associated with an American Tower DAS hub. It shows equipment for three wireless service providers, as well as the American Tower neutral-host cabinet, HVAC unit, telecommunications panel and electrical transformer. You can see the coaxial cable connecting the service provider equipment to the neutral-host cabinet, as well as the fiber optic cable that flows from the neutral-host cabinet to transmit wireless signal throughout the coverage area.
Since 2001, American Tower has been designing and deploying DAS solutions to meet the needs of our customers. We have diverse experience working closely with wireless service providers in planning, designing and updating their networks for optimal coverage and capacity.

DAS solutions require a customized approach, and American Tower manages every step of the process—scaling our solutions for any technology, number of service providers, frequency or traffic volume. We provide complete solutions from start to finish including:

**Project Management**
We provide a dedicated Project Manager to serve as your engineering partner and facilitate system design, installation and maintenance. Your Project Manager will coordinate and manage all drive testing, site acquisition, planning and permitting, environmental compliance, construction and engineering.

**Site Design & Construction**
Our team of experienced engineers will design the network to accommodate each service provider’s coverage needs. We provide all hardware, perform the installations, hire and manage all required labor and optimize and test the system before it goes live.

**Network Operations & Monitoring**
We provide complete maintenance, repair and network monitoring services through our 24/7, 365-days a year Network Operations Center (NOC). We have a three-tiered safety net of local vendor partners, dedicated American Tower DAS specialists and our team of 300+ site operations professionals in markets nationwide.

**Property Management**
Our Property Managers provide best-in-class relationship service for property owners and tenant partners throughout the operation of a DAS network. From ensuring access arrangements are followed to making sure billings are correct and timely, your Property Manager will provide any assistance you may need for the life of the system.
Benefits of working with American Tower

› Exclusive DAS rights to more than 1,000 malls, campuses, hospitals, airports, resorts and casinos

› 10+ years of experience facilitating agreements with property owners

› The nation’s leading operator of in-building, neutral-host, multitenant DAS

› Agreements with every major wireless service provider and most regional wireless service providers

› Public utility status in most states and access rights across most of the U.S. allow use of public right-of-ways (ROW) to install wireless communications equipment

How to get started

Contact your American Tower leasing representative to discuss your wireless network needs. We will work with you to create a customized solution that provides the voice and data services your subscribers demand—whether through towers, rooftops, in-building or outdoor DAS or a hybrid approach.