Distributed Antenna System (DAS) Solutions.

madison
Connectivity Solutions

Innovation for industries.

Madison Technologies is an Australian owned and operated business that innovates, distributes and supports a range of high-quality products from globally recognised brands.

We bring together detailed knowledge of local network practices and innovative products from global technology partners.

Our experience supporting viable connectivity solutions across key market sectors is underpinned by over 30 years of insights and customer understanding.

People.

Our team is dedicated to finding the best possible solution for every project.

Our dedicated sales and support representatives, local engineering capabilities and Australian and New Zealand distribution framework provides a successful formula for delivering innovation, agility and practicality to our customers' complex connectivity challenges.
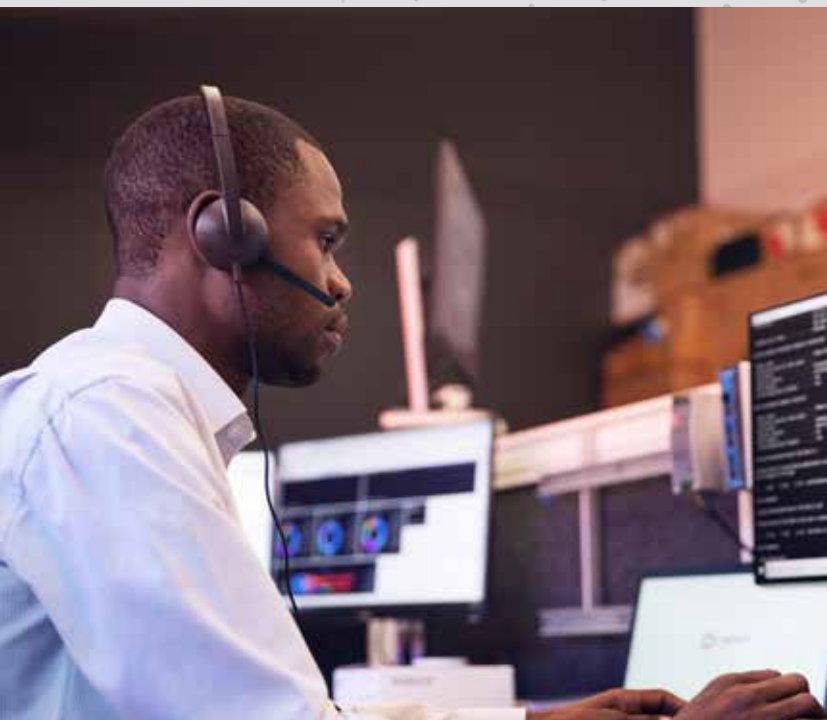
Distribution.

Connecting you to world-leading brands.

We efficiently connect customers with leading, state of the art solutions through our sales, warehouse and distribution networks across Australia and New Zealand.

Contents.

Contact Us.

View more of our extensive range:
www.madisonconnect.au

Introduction to Enterprise DAS.

Communication networks across our commercial buildings are constantly evolving. Integrated cabling systems across copper and fibre technologies combined with Wi-Fi / Bluetooth access points enable building services such as lighting, energy management, security, access control and supervisory management to meet the demands of these environments.

In today's fast pace lifestyle, mobile devices have become an integral part of our lives, and we rely on them as a constant source of information – as a result, mobile phone coverage within a building is now seen as an essential service and it is expected everywhere, at any time, just as we expect utilities such as water, gas and electricity.

Why is there a need for Distributed Antenna Systems?
With nearly 80% of all mobile communications performed in an in-building environment, it's important to ensure that commercial buildings have reliable and resilient internal mobile coverage via a Distributed Antenna System (DAS).

A DAS solution extends a Telecommunications carrier's network throughout the building through a series of nodes connected to in-building infrastructure to ensure network coverage is not interrupted and signal strength is maintained.

Where is a DAS solution required?

When a building owner, manager or tenant identifies poor mobile signal coverage and capacity within a building a Distributed Antenna System is required to be deployed in order to resolve the issue. This solution often a necessity in locations such as:

- Hospitals and health care facilities,
- Large office buildings,
- Hotels and residential apartments,
- Stadiums and convention centres,
- University campuses, and
- Transport hubs such as railway stations and airports.

Enterprise DAS Solution Overview.

GPS ANTENNA

COAX SPLITTER

COVERAGE ANTENNA

COAX CABLE

DAS HEADEND & BASE STATION

Implementing a DAS solution.

We connect customers with reliable and robust communication systems and have the experience to take ownership of managing the end to end process for deploying a DAS solution. Our capabiliites include:

- Network engineering and system design
- Installation and commissioning
- Project management
- Telecommunications carrier liaison & signoff
- Component supply and warehousing
- Technical support

DAS Development Phases.

When deploying a DAS solution Madison's program delivery follows six key phases. Experts are engaged at each stage of the process to ensure best in class delivery.

01 Design & RF Site Survey
- RF Engineer undertakes site survey
- Idenification of DAS room to meet Carrier requirements
- Development of MCF2018 compliant design
- DAS design submission for lead carrier approval

02 Installation & Validation
- DAS system installation
- RF Engineer conducts site assessment to ensure design specifcations have been delivered
- PIM testing carried out
- Carrier system testing is complete

03 Commissioning & Integration
- Carrier connects signal source into the DAS
- Active DAS commissioned and integrated into the Carrier network

04 Optimisation Testing
- Final testing undertaken by RF Engineer
- MCF2018 audit is completed to ensure design specifications and system performance is optimised

05 As-Built Drawing Development
- Updated design drawings, test results, photos, system configuration, and general site information is provided to building management and third parties (where required).

06 Ongoing Support
- Madison's technical support team are available to assist with remote troubleshooting.
- System enhancement and technology refresh to leverage 5G network upgrades.

DAS Solution Design.

Cost effective, turn-key solutions designed by industry experts.

The Madison Experience.

An in-building DAS solution has become a critical part of both carrier cellular networks and enterprise infrastructure. But as the technology has evolved over the last 20 years it has become increasingly complex. At Madison, we understand the delivery journey for our clients is as critical as the final product, that's why our in-building coverage (IBC) team is committed to delivering our clients' projects to the highest standard.

Madison employs industry leaders who have a proven telecommunications track record. Our core team specialise in key areas such as planning, network design and construction, RF engineering, and project management.

All Madison projects are designed to the mobile carrier forum (MCF) specification, ensuring your DAS solution will:
- **Provide enhanced coverage and a consistent user experience,**
- **Will not adversely interfere with the adjacent network,**
- **Has sufficient capacity for the size of the building and expected occupancy,**
- **Is engineered to allow interference-free operation between carriers.**

Frequently Asked Questions.

A Distributed Antenna System integrates a range of specialist technologies. The experienced Madison team are available to answer any questions you have and ensure your DAS system provides optimal network coverage.

Do I need an Active, Passive or Hybrid Solution?

The most common type of DAS solutions that would typically be installed across commercial environments is a passive solution. Passive solutions are cost effective and widely used for covering small and medium size buildings. An active DAS solution indicates there is extra equipment within the DAS environment that acts as a power booster. Active systems are generally used for much larger buildings and sites where the DAS does not have adequate power and the signal strength becomes weaker as the distance increases. A hybrid DAS is where you have a combination of active and passive equipment.

Who pays for a DAS Solution?

For greenfield projects a DAS solution is typically included in the electrical and communication package. In this instance, Telecommunications carriers such as Telstra, Optus and Vodafone expect the building owner to pay for the DAS, just as they would for other essential services such as water or electricity. The Telecommunications carrier simply provides connectivity by injecting the signal source into the DAS solution via the carrier base station. Once the equipment is ready to be connected, the Telecommunications carrier will charge a connection fee to extend the network into the building.

Who appoints a lead telecommunications carrier?

Before a telecommunications carrier will agree to connect to a DAS solution, the MCF specification requires a lead carrier to be appointed. This appointment can be made through identifying who the anchor tenant will be in the building, or whether a particular Telecommunications carrier wishes to become the lead carrier for the building based on attributing factors such as location, link to additional infrastructure (e.g. shopping centres) as well as expected density of user activity.

The lead telecommunications carrier is then responsible for supervision and ultimate sign off of the DAS design to ensure it meets MCF design requirements, along with verification of the installation quality and ongoing maintenance and operation of the DAS solution once the system has been handed over.

21 Harris Street, Pyrmont

Madison provided design and installation assistance and support through the Harris Street project.

- **High speed, reliable integrated network infrastructure**
- **Immediate use of whole building coverage once connected**
- **Building is more attractive to potential tenants**
- **Scalable communications**

Macquarie Park, Building C

Madison worked with electrical contractors, carriers, and the client to design and assist installation in a large-scale high-rise building.

- **High speed, reliable integrated network infrastructure**
- **Improved in-building connectivity amongst smart devices such as lighting and security**
- **Cost-effective large-scale communications solution**
- **Scalable and secure communications**

Here for you.

We're here to support our customers' ambitions. Your most complex connectivity challenges inspire us to design cost-effective, innovative solutions that are engineered to perform. Our proven telecommunications relationships span more than 28 years, and when combined with our industry partnerships, you are assured of a best-in-class solution.

We look forward to working with you to solve your in-building connectivity challenges.

Connect
with us.

Contact us at one of our locations
for help or more information.

Call 1800 12 22 23

Brisbane Head Office
Building 1
Level 2, 61 Metroplex Ave
Murarrie QLD 4172

Melbourne
51 Barclay Road
Derrimut VIC 3026

Sydney
149 Beaconsfield Street
Silverwater NSW 2128

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