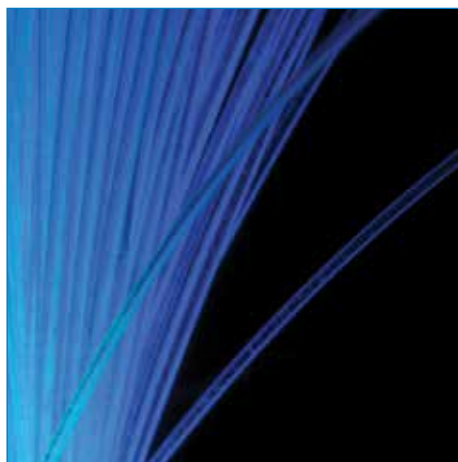


Total DAS Portfolio
Intelligent Design =
Maximum Flexibility



CORNING

MobileAccess
Wireless Solutions

Total DAS Portfolio

Cutting-edge DAS design meets cabling innovation with operator-grade, enterprise-ready solutions

The comprehensive Corning MobileAccess Total Distributed Antenna System (DAS) – Total DAS portfolio offers in-building wireless infrastructure with built-in RF intelligence and flexible architectures to fit every facility, large or small. Total DAS enables a wide variety of technologies and offerings, including advanced 4G LTE network architecture for the newest breed of mobile devices. The result is intelligent coverage and capacity solutions that are widely recommended, adopted and installed in thousands of deployments, worldwide.

Intelligent design = Maximum flexibility

Leverage common headend architecture

Leverage a single DAS equipment headend (point-to-multipoint RF distribution) that supports a combination of remotes, for scalable and cost-effective coverage and capacity.

Optimize designs with efficient remote power

Preconfigured, modular DAS remotes simplify commissioning and minimize upgrade costs. Get the most out of DAS designs and performance with: standard, medium and high RF power, indoor and outdoor remotes.

Take advantage of advanced cabling solutions

Take advantage of intelligent cabling solutions and reduce installation time with plug-and-play, composite and stubbed hardware options for DAS.



Distributed Antenna Systems (DAS) provide a wired path for delivering mobile frequencies closer to user devices. Cabling connects macro-networks outdoors to operator RF signal sources indoors (BTS, BDA), inside a common equipment headend in the main equipment room (MER/MDF). Radio frequency signals are 'distributed' into the building core vertically over SMF/MMF fiber links that terminate at multiple remote ends on each floor (in IDF closets). Structured cabling including coaxial cabling (copper) distributes RF signals from remotes to a common antenna grid.

Leverage Common Headend Architecture

A single equipment headend delivers scalable and cost-effective RF coverage and capacity

The Corning MobileAccess common equipment headend leverages point-to-multipoint DAS architecture, connecting to one or more operator capacity sources such as BTSs (Base Transceiver Stations) and BDAs (Bi-Directional Amplifiers). At the common headend, radio frequency (RF) signals are converted from RF electrical to RF optical for distribution to multiple remote locations or 'remote ends' using low-loss, broadband fiber cabling (SMF/MMF).

Modular Corning MobileAccess headend architecture enables phased system commissioning, operator on-boarding and sectorization planning for future capacity upgrades, while allowing separate visibility and control of RF spectrum for each operator in multi-operator deployments. Intelligent signal handling and low-loss elements ensure operator-grade performance. Customers can leverage a single headend with any number and types of Corning MobileAccess remotes (standard, medium, high power) for full design flexibility that fits virtually any venue's topology.

The common headend also offers dedicated, plug and play RF conditioning modules and optional cost savings with amplifier sharing for multiple operators.

Common Headend

- Wide range of RF bands covered: 400 MHz to 6 GHz covered including: CELL, PCS, Public Safety, AWS, 700 MHz LTE, Paging, WMTS
- Operates with all technologies: GSM, LTE, UMTS, DCS, CDMA and optional Wi-Fi RF support
- Device and application-agnostic
- Ideal for mobile voice or data with scalable upgrade 4G MIMO and SISO options
- Common equipment elements reduce equipment footprint
- Enables amplifier sharing and non-scenarios for added cost savings and smaller equipment footprints
- Scalable for 10,000 to 5M+ square foot campus footprints
- Full monitoring and visibility with proactive Element Management System from RF sources to antennas

End-to-end element management system (SC-450)

The SC-450 enables remote and local management and offers centralized monitoring via an integrated Web GUI and SNMP. The SC-450 maximizes system uptime by locating faults in realtime and allowing users to change individual RF parameters including modulation.

Remote interface unit and base unit

The quad-band Radio Interface Unit (RIU-3, RIU-4) adjusts RF signal source inputs, with service-specific conditioning cards and sends signals to a wideband Base Unit (BU-4, BU-8) where RF-electrical-to/from-optical conversion is performed before RF signals are transported to multiple remotes (up to 8 per BU) using low-loss fiber (SMF/MMF). Each RIU includes a frequency combiner which supports optional amplifier sharing for each capacity source and RIUs support 4x BU-4s and 2x BU-8s (expansion kit available).

Fiber cabling

Fiber cabling terminates at service-specific Remote Hub Units (modules) within the building's telco closets. RHUs automatically groom and adjust RF services and the chassis combines services for distribution over a single coaxial cabling and broadband antenna infrastructure.

MA330 campus fiber links

MA330 campus fiber link units enable campus connectivity with scalable point-to-multipoint RF distribution of centralized capacity sources over WDM using low-loss fiber connections for up to a 20 km radius.

SC-450 System Controller | Photo CMA053



Base Unit (top), Optical Central Hub (OCH) (center)
and Remote Interface Unit (bottom)
| Photos CMA057, CMA129, CMA254,



Cable | Photo CAR317



Optical Central Hub (OCH) | Photo CMA129



Optimize Deployments with Advanced Cabling Solutions

Leverage advanced cabling where and when you need it to reduce DAS installation time by up to 70%*

Corning MobileAccess offers complete end-to-end solutions for DAS, meeting current and future requirements with the flexibility of fiber. Corning Advanced Cabling Solutions provide industry-leading, bendable fiber optics as well as a variety of connection options, including plug-and-play and stubbed hardware.

Splicer Box –
Wall-mount
Hardware
for Corning
MobileAccess
Remotes
| Photo LAN763



Fusion splicing

Flexible fit for any facility with bulk cable for fusion splicing

Stubbed hardware

Eliminates splicing costs and labor at remotes with factory-tested stubbing

Plug-and-play fiber

Eliminates all splicing and installation time; factory tested from end to end

Line powering

Offers performance assurance with cost-effective power redundancy



Efficient DAS Remotes

- Optimizes RF performance and costs with dynamic standard, medium and high power remotes indoors or outdoors to meet any requirement
- Automatic RF grooming, interference mitigation ensure operator-grade performance
- Shared electronics reduces equipment footprint and lowers cost
- Flexible cabling options to maximize use of the existing cabling plant to meet unique requirements (i.e. no new cabling, short deployment timelines, special procedures in healthcare)
- Compatible with WiFi - Integrated WLAN and Ethernet coexistence (VE) options

*When compared to standard bulk fiber deployments.

Design with Efficient Remote Power

Optimize designs and save 45%* on equipment requirements with flexible options

Common headend works with any combination of remotes. Broadband or narrowband cabling options are available for remote connections to/from antennas.

Standard power remotes

Preconfigured MA1000/MA2000 remote modules offer 400 MHz to 6 GHz band coverage with 20 dBm power (TSX, QSX). Remote units support for RF services over a common fiber/coax antenna infrastructure, reduce equipment footprint, minimize antennas required and eliminates power-waste. These low power remotes also prevent capacity drain in multi-sector designs, resulting from soft hand-over (SHO) issues.

Medium power remotes

Higher power 2W HX remotes are designed to economize antenna grids and cover larger floor plans, facilities with limited IDF space, and topologies requiring longer horizontal cabling runs from remotes to antennas.

High power remotes

High power 20 W and 40 W remotes cover large open, outdoor topologies adjacent to indoor spaces. These remotes are designed to cost effectively extend operator macro-networks outdoors, add capacity to complement indoor RF traffic offload, and avoid costly macro builds where possible.

MA2000 TSX/QSX Remotes | Photo CMA206



HX 2 W Remote (SISO/MIMO) | Photo CMA157



GX Remote (20 W/40 W) | Photo CMA253



*Higher power options reduce the number of antennas required and overall footprint in some deployments.

Our Commitment to Quality

Corning MobileAccess is committed to providing our customers with an in-building solution designed to specifically meet their needs—both now, and in the future. It is this dedication to providing high-quality, innovative solutions that has made Corning MobileAccess the choice for enterprise customers. For more information on Corning MobileAccess' full portfolio of solutions, www.corning.com/mobileaccess.

About Corning MobileAccess

Corning MobileAccess is a Corning Incorporated (www.corning.com) company. Corning is a world leader in specialty glass and ceramics. Drawing on more than 150 years of materials science and process engineering knowledge, Corning creates and makes keystone components that enable high-technology systems for consumer electronics, mobile emissions control, telecommunications and life sciences. Our products include glass substrates for LCD televisions, computer monitors and laptops; ceramic substrates and filters for mobile emission control systems; optical fiber, cable, hardware and equipment for telecommunications networks; optical biosensors for drug discovery; and other advanced optics and specialty glass solutions for a number of industries including semiconductor, aerospace, defense, astronomy and metrology.

