



# Cabinet Solutions

Getting Closer To  
Your Customers

# Conversion to Cabinets

**Cabinet deployments throughout the wire center are becoming more popular than ever before.** The reason is because state-of-the-art communication technologies like VDSL2 operate best over relatively short copper pair loops (less than 4,000 feet). A traditional Carrier Serving Area (CSA) wire center contains loop lengths of 18,000 feet. One way to reduce the effective length of the copper pair within an existing wire center is to divide the CSA into smaller service areas and place electronics in cabinets that are close to the subscriber. With the right mix of cabinets, electronics, and loop plant, service providers can enable ultra broadband services that deliver tomorrow's technology today.

## The Right Blend of Cabinet Design and Broadband Solutions

**ADTRAN® cabinet solutions range from the highly scalable Modular Cabinet (MC) Series to the more rapidly deployable lower line count Smart and Crossover enclosures.** All of these are designed around the next-generation Total Access® 5000 platform and allow service providers to quickly and cost effectively deploy xDSL deeper into their networks. The MC 500/1000 systems come preconfigured and tested with DC power, lightning protection and alarms preterminated for expedient shortening of copper loops in telephone networks.

Additional rack space in the MC500ES and Crossover variants is available to support a variety of other copper- and fiber-based ADTRAN solutions — whether for next-generation or legacy mobile backhaul, business Ethernet or residential service delivery.

## Compliance with Standards

**All ADTRAN enclosures comply with Telcordia GR-487-Core, Issue 3, which identifies compliance standards for outdoor equipment.** Full compliance with industry standards is a hallmark of ADTRAN product design and cabinet configurations are no exception. Service providers require compliance with GR-487 to ensure long-term reliability and complete protection of outside plant communications equipment. Rigorous thermal testing provides optimized equipment positioning to ensure that all products continue service delivery, even in the most challenging environments.

## Broadband Services—Copper or Fiber

**Aggregation Platform (MSAP).** Rear access to all equipment is a design feature. ADTRAN cabinets provide adequate room for both fiber and copper terminations fully supporting simplified migration from FTTH to FTTH service architectures. Initially configured for ADSL2+ or VDSL2 copper-based services, cabinets easily adapt for Fiber-to-the-Home (FTTH) deployments using GPON and/or Active Ethernet.



## Benefits

- Accelerated time to market for premium services delivery
- Game changing FTTH economics
- Well-defined FTTH to FTTH migration path
- VDSL2 vectoring and FTTH readiness
- Industry's most complete service set
- Streamlined maintenance and support programs
- Greater service reliability

## ADTRAN MC Series Cabinets

The ADTRAN Modular Cabinet (MC) 500 product line incorporates the Total Access 5000 into a prepackaged Remote Terminal (RT) solution for delivery of VDSL2 services for up to 504 Lines.

The ADTRAN MC 1000 product line incorporates two Total Access 5000s into a prepackaged RT solution for delivering VDSL2 services for up to 1,008 Lines.

## ADTRAN SmaRT and Crossover Enclosures

The ADTRAN Crossover enclosures incorporate either one or two 2RU Total Access 5004s into a prepackaged Remote Terminal (RT) solution for the delivery of hundreds of VDSL2 or Active Ethernet (AE) customers, or thousands of subscribers using GPON. It uniquely supports rapid time to market, yet robust stake-down mounting.

The ADTRAN SmaRT enclosure incorporates a single Total Access 5000 into a prepackaged RT solution and therefore supporting greater service capacity delivering VDSL2 or AE services to hundreds of customers and over 10,000 customers using GPON.

Product	Modules	Subscribers
Crossover Enclosure 	Up to 8	192
4th Generation SmaRT 	Up to 21	288
MC500ES 	Up to 21	504
MC1000 	Up to 42	1,008

## Key Features

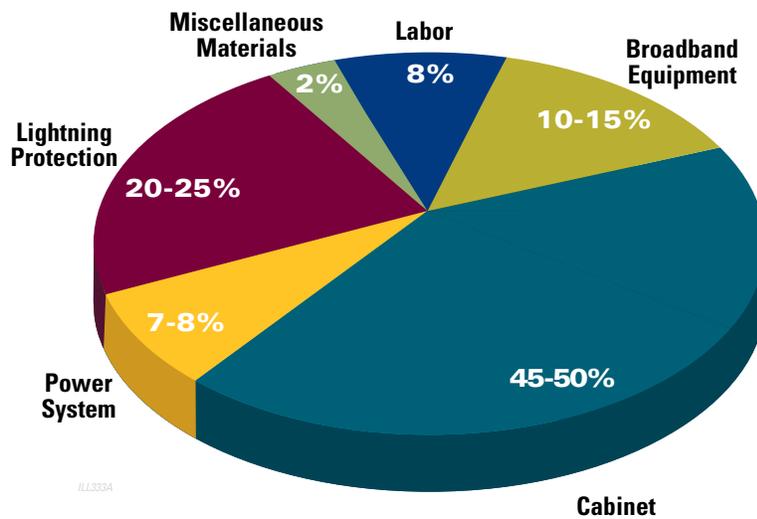
- GR-487-CORE tested and certified
- Zone 4 earthquake compliant
- Stake-down, pad, pole, or H-frame mounting options (Crossover Only)
- Copper wiring and fiber management
- Lightning protection
- Internal splitter storage
- Built-in heat exchanger
- High-capacity battery strings available
- Temperature hardened to full outdoor ambient range (-40° to 46° C)
- Rear access to all equipment
- Generator connection, battery warmer and CAT5 cabling are standard



## ADTRAN Cabinets — A Better Alternative

**Cabinet installations are nothing new to experienced service providers.** Many service providers have elected to purchase and configure their own cabinets in the past. However, today's service providers can no longer afford to operate with any inefficiency. Purchasing a completely engineered solution from ADTRAN for broadband deployment can save from 10-15%. In addition to the capital savings, an ADTRAN cabinet solution also improves overall customer logistics for delivering a cabinet solution, due to pre-engineering/testing.

The following pie chart illustrates estimated costs for configuring a typical cabinet installation for broadband deployment.



## Bridging the Gap Between a Pedestal and a Traditional Cabinet

**Cost-effective and rapid time to revenue Fiber-to-the-Node (FTTN), Fiber-to-the-Curb (FTTC) and Fiber-to-the-Building (FTTB) solutions are becoming more in demand.** This is due to perfect combination of more fiber being pushed closer to the customer and the emergence of shorter loop copper technologies that are enabling 100Mbps and Gigabit services.

Environmentally sealed or Outside Plant (OSP) DSLAMs have provided an excellent option for delivering the lowest total cost of ownership for FTTN/FTTC solutions, but they have lacked a solid migration path to full FTTH. ADTRAN offers Crossover cabinet solutions that are bridging the gap between an OSP DSLAM in a pedestal and a full-scale MSAP in a traditional cabinet. ADTRAN has uniquely merged the economics and rapid deployment of a pedestal with the durability of a cabinet and the flexibility of a full MSAP.

### Economics of a Pedestal

- Stake-Down Mounting w/Gravel Bed (No Pad Required)
- No Boom Truck Required – Two men and a pickup
- Compact Design Eases Placement in Right of Way

### Durability of a Cabinet

- Hermetically Sealed Equipment Chamber
- Heat Exchanger Conditioned Equipment Chamber
- Fully Secure To Protect Investment
- GR-487 Issue 4 Compliant

### Flexibility of an MSAP

- Capture Customers With VDSL2 Today
- Migrate To GPON Or Active Ethernet Tomorrow
- Be Ready For Next-Gen PON In the Future



## The Crossover Difference

- Integrated DC Rectifier with Battery Backup
- Feed Total Access 5004 directly with bonded copper + LPU backpowering
- Cross connect integrated into the Crossover enclosure
- Provide subscribers with fully redundant lifeline POTS service
- Flexible migration to GPON
- Unique placement options transform economics of site preparation

## Crossover Product Specifications and Ordering Guide

### Dimensions

- Height: 40"
- Width: 24"
- Depth: 24"

### AC Power

- Main Feed: 30A, 120/240V
- Generator Connector: Nema L14-30P

### DC Power

- Power Shelf: GE Power SPS
- Controller: SPS Pulsar Edge w/ Ethernet

### Battery Capacity

- 100 Ah (Front Terminal)

### Cable Management

- 192 Position Internal Splitter Storage

### Cable Type

- CAT5



ADTRAN Crossover Enclosure

## Ordering Information

Part Number	Description
41925496L1/L2	ADTRAN Crossover-96 Total Access 5004 Cabinet
41925496L3/L4	ADTRAN Crossover-96 Overlay Total Access 5004 Cabinet
41925496SL1/L2	ADTRAN Crossover-96 Span Powered Total Access 5004 Cabinet
*For the above items L1/L3=MS2 Splice modules, L2/L4=710 type	
1190908L1	Crossover Enclosure Pad Mount Kit
1190808L1	Crossover Enclosure Pole/H-Frame Kit
1353PWR085	20A Power Module
1353BAT100	100Ah Battery String
1179805G1	100 Pack 5-Pin Gas Tube Modules

The ADTRAN Crossover enclosure represents the most cost-effective way to deploy the Total Access 5004 at a remote location. It is specifically designed to support the effective migration from DSL to FTTH services with a 192 position fiber management and internal or integrated splitter storage. It offers a compact size of less than 40 inches in height and less than 15 cubic feet in volume. In addition to a stake-down deployment option, the Crossover can be installed in just a few hours with two men and a pickup truck.



The solution's cable/fiber management is designed to support a total DSL, mixed DSL or PON and total PON solution.

## SmaRT Product Specifications and Ordering Guide

### Dimensions

- Height: 42"
- Width: 28"
- Depth: 28"

### AC Power

- Main Feed: 30A, 120/240VAC
- Generator Connector: Nema L14-30P

### DC Power

- Power Shelf: Valere C Series
- Controller: BC 2000 with Ethernet

### Battery Capacity

- 100 Ah (Front Terminal)

### Fiber Terminations

- 24 Position SC-UPC with Fusion Splice Storage

### Additional Vacant Rack Space

- 12 RU

### Cable Type

- CAT5



ADTRAN SmaRT Cabinets

## Ordering Information

Part Number	Description
4192S5K192L1/L2*	ADTRAN SmaRT-192 Total Access 5000 Cabinet
4192S5K192L3/L4*	ADTRAN SmaRT-192 Overlay Total Access 5000 Cabinet
*For the above items L1/L3=MS2 Splice modules, L2/L4=710 type	
1190901L1	SmaRT Cabinet Pad Mount Template
1353PLH001	SmaRT Cabinet Pole/H-Frame Mount Kit
1353PWR003	20A Power Module
1353BAT100	100Ah Battery String
1179805G1	100 Pack 5-Pin Gas Tube Modules
1353BAT190	100Ah Battery String
1179805G1	100 Pack 5-Pin Gas Tube Modules

The ADTRAN SmaRT enclosure represents the most cost effective way to deploy a single Total Access 5000 at a remote location. It is specifically designed to support the effective migration from DSL to FTTH with simultaneous support for 288 VDSL2 and 288 FTTH subscribers. Even with its compact size of less than 42" in height and less than 28 cubic feet in volume, it offers room for optional expansion services such as support for a Total Access 1500 shelf for delivery of DSO special circuits.



## MC500 Product Specifications and Ordering Guide

### Dimensions

- Height: 54"
- Width: 30"
- Depth: 36"

### AC Power

- Main Feed: 60A, 120/240VAC
- Generator Connector: NEMA L14-30P

### DC Power

- Power Shelf: Eltek-Valere CD10D-ANL-VC
- Controller: BC 2000 with Ethernet

### Battery Capacity

- 190 Ah (Front Terminal)

### Fiber Terminations

- 24 Position SC-UPC with Fusion Splice Storage

### Additional Vacant Rack Space

- 6 RU

### Cable Type

- CAT5



ADTRAN MC500 Cabinets



## Ordering Information

Part Number	Description
4192A5K288L1/L2*	ADTRAN MC500-288 Total Access 5000 Cabinet
4192A5K504L1/L2*	ADTRAN MC500-504 Total Access 5000 Cabinet
4192RKPP504L1/L2*	288-504 Line Upgrade Kit
*For the above items L1=MS2 Splice modules, L2=710 type.	
4192RK5K5L1	Total Access 1500 Upgrade Kit
1190902L1	MC500 Pad Mount Template
1190802L1	MC500 Pole Mount Kit
1353PWR003	20A Power Module
1353BAT190	190Ah Battery String
1179805G1	100 Pack 5-Pin Gas Tube Modules

The ADTRAN MC500 represents the most cost effective way to deploy the Total Access 5000 at a remote location. With a small package of less than 54" in height and less than 36 cubic feet in volume the MC 500 is perfect for areas with limited growth potential and reduced need for business services. Even with this compact size there is still 5 RUs of available space for the addition of a Total Access 1500 or other equipment.

## MC500ES Product Specifications and Ordering Guide

### Dimensions

- Height: 54"
- Width: 43"
- Depth: 36"

### AC Power

- Main Feed: 60A, 120/240VAC
- Generator Connector: NEMA L14-30P

### DC Power

- Power Shelf: Eltek-Valere CD10D-ANL-VC
- Controller: BC 2000 with Ethernet

### Battery Capacity

- 190 Ah (Front Terminal)

### Fiber Terminations

- 24 Position SC-UPC with Fusion Splice Storage

### Additional Vacant Rack Space

- 6 RU (front)
- 15 RU (back)

### Cable Type

- CAT5



ADTRAN MC500ES Cabinets



## Ordering Information

Part Number	Description
4192A5K288L3/L4*	ADTRAN MC500ES-288 Total Access 5000 Cabinet
4192A5K504L3/L4*	ADTRAN MC500ES-504 Total Access 5000 Cabinet
4192RKPP504L1/L2*	288-504 Line Upgrade Kit (ES Version)
*For the above items L1/L3=MS2 Splice modules, L2/L4=710 type.	
4192RK5K5L1	Total Access 1500 Upgrade Kit
4192RK5K3L1	Total Access 3000 Upgrade Kit
1190903L1	MC500ES/1000 Pad Mount Template
1190803L1	MC500ES/1000 Pole Mount Kit
1353PWR003	20A Power Module
1353BAT190	190Ah Battery String
1179805G1	100 Pack 5-Pin Gas Tube Modules

The ADTRAN MC500ES offers all of the same features as the MC500 with the addition of an end bay which gives the cabinet plenty of room for business service growth and any other necessary equipment.

The end bay allows for the addition of more lightning protection so business service needs do not reduce the potential number of broadband subscribers. The MC500ES is perfect for the customer who wants to be prepared for whatever tomorrow may bring.

## MC1000 Product Specifications and Ordering Guide

### Dimensions

- Height: 68"
- Width: 43"
- Depth: 36"

### AC Power

- Main Feed: 80A, 120/240VAC
- Generator Connector: Hubbell 60A Pin and Sleeve

### DC Power

- Power Shelf: Eltek-Valere CD10D-ANL-VC
- Controller: BC 2000 with Ethernet

### Battery Capacity

- 380 Ah (Front Terminal)

### Fiber Terminations

- 24 Position SC-UPC with Fusion Splice Storage

### Additional Vacant Rack Space

- 12 RU

### Cable Type

- CAT5



ADTRAN MC1000 Cabinets



## Ordering Information

Part Number	Description
4192A5K108L1/L2*	ADTRAN MC1000-504 Total Access 5000 Cabinet
4192A5K108L3/L4*	ADTRAN MC1000-1008 Total Access 5000 Cabinet
4192RKPP108L1/L2*	504-1008 Line Upgrade Kit
*For the above items L1/L3=MS2 Splice modules, L2/L4=710 type.	
4192RK5K5L1	Total Access 1500 Upgrade Kit
4192RK5K3L1	Total Access 3000 Upgrade Kit
1190903L1	MC500ES/1000 Pad Mount Template
1190803L1	MC500ES/1000 Pole Mount Kit
1353PWR007	30A Power Module
1353BAT190	190Ah Battery String
1179805G1	100 Pack 5-Pin Gas Tube Modules

The ADTRAN MC1000 features an additional heat exchanger and battery base to support a second Total Access 5000 system increasing the subscriber count to 1,008. It is perfect for densely populated areas where there is the potential for growth past what can be handled in a single Total Access 5000 system. ADTRAN offers a model with only a single Total Access 5000 system to keep CapEx down initially but allowing network planners to be prepared to grow with tomorrow's demand. The MC1000 offers all of the features found in the other members of the MC product line including: rear access to all equipment, CAT5 cabling, and the satisfaction of having a GR-487 tested and certified solution.

## ADTRAN Cabinets

### ADTRAN MC500 Cabinets



### ADTRAN MC500ES Cabinets



### ADTRAN MC1000 Cabinets



### ADTRAN Crossover Enclosure



### ADTRAN SmaRT Cabinets



A fully-engineered cabinet from ADTRAN is simple to order and easy to install providing years of reliable service in the wire center, laying the foundation for service providers to roll out a variety of services in the future.



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