

# Enable-IT 890 Series Extended Ethernet User Manual



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## ABOUT THIS GUIDE

This guide provides all the information needed to install and use the Enable-IT 890 Extended Ethernet Unit. This guide is intended for use by technicians who are responsible for installing and setting up network equipment. Consequently, it is assumed that the installer has a basic working knowledge of LANs (Local Area Networks) and voice telecom wiring.

*If the information in the release notes that are shipped with your product differs from the information in this guide, follow the instructions in the release notes.*

Most user guides and release notes are available in Adobe Acrobat

Reader Portable Document Format (PDF) or HTML on the Enable-IT World Wide Web site:

**<http://www.enable-it.net/products/890/manual.pdf>**



# INTRODUCING THE 890 EXTENDED ETHERNET UNIT

Congratulations on purchasing the Enable-IT's 890 Extended Ethernet Unit — the simplest method to stretch your broadband solutions for in-building deployment in commercial office buildings, hotels, and multi-tenant residential units.

The 890 Extended Ethernet Unit offers the Lowest Cost Solution in a simple design for rapid install using existing 1 pair Telco wiring.

This chapter contains introductory information about The 890 Extended Ethernet Unit and how it can be used in your network. It covers the following topics:

- About the 890 Extended Ethernet Unit
- Key Benefits
- Summary of Features
- Typical Applications

## About the 890 Extended Ethernet Unit

The 890 Extended Ethernet Unit solves the problem of high costs associated with stretching your backbone with traditional fiber or a series of hubs/repeaters.

In many office buildings, preferred network access is a dedicated Ethernet line, however Ethernet over twisted pair wiring has its distance limitations of just 325 ft. In order to drive Ethernet signal further, one would have to add repeaters to each segment of 325ft twisted pair cabling; this is often insufficient and too costly in multi-story buildings. Fortunately, the Enable-IT 890 Series Extended Ethernet can push the reach of Ethernet to more than (15) fifteen times the typical Ethernet distance over a 1-pair Telco wiring infrastructure.

A simple design methodology would be to think of the 890 extending a standard Ethernet line up to 6,000' (1,829m) and can also include a PABX voice line simultaneously.

To increase the durability and extended use of the product providing maximum future technology protection, 890 Extended Ethernet Unit meets the challenge of modern switched LANs and allows you to add features and capacity as your network expands. The Enable-IT 890 Extended Ethernet has been tested to provide full duplex transport up to 13MB/s over CAT2, and up to 50MB/s over CAT3 and up to 80MB/s over CAT5e cabling.

Unit Model	Wiring	Min Data Rate	Max. Distance
890	(1) pair CAT 2 up to CAT5e	13Mbps FD	4,000ft / 1,220m
	(1) pair CAT 2 up to CAT5e	1.5Mbps FD	7,500ft / 2,286m

## Key Benefits

The following list identifies the 890 Extended Ethernet Unit key benefits.

- Dramatic cost reduction over any competing technology.
- Broadband technology that delivers in-building Ethernet access over 1 pair of existing Category 2 up to Category 5e wiring up to 7,500', whether spare or actively in use for analog or digital voice. This means no new wiring is required.
- Provides one scalable infrastructure for Internet access, POTS, VoIP, video, and virtual private networking.
- Rapid installation with small box profile, no programming and no firmware to upgrade.
- Low profile box with POTS line and single 10/100MB Ethernet port.

## Summary of Features

The Enable-890 Extended Ethernet Unit has the following hardware features:

- 1 Extended Ethernet line over existing CAT 2 (Telco) up to CAT5e wiring
- Rapid Telco style installation – no programming required
- Supports digital VoD channels
- Drives Ethernet 10/100 Mbps full-duplex service delivery up to 6,000ft / 1,829m
- Network Equipment independence – Transparent to protocols/applications/MAC
- Maintains lifeline POTS

### Specifications:

Power Indicator  
10/100Mbps Link status/Activity  
Full Duplex/Half Duplex status/Collisions  
VDSL Link Status/Activity

### Dimensions:

Height: 1" (25mm)  
Depth: 3" (76mm)  
Width: 6" (152mm)

### Interfaces

(1) 5v DC power Adapter  
(1) RJ-11 POTS  
(1) RJ-45 10/100MB LAN Auto negotiate

### Functionality:

Data Rates 10/100Mbps Full Duplex  
13Mbps throughput up to 4,000ft  
1.5Mbps throughput up to 7,500ft  
Protocol independent

### Environment

Operating temp: 0° to 50°C/32° - 122°F  
Storage temp: -25° to 60°C/-13° - 140°F  
Humidity 5% to 95%, non-condensing

## Typical Applications

Enable-IT 890 Extended Ethernet Units are usually installed into telephone wiring infrastructures where extension of backbone services is required and expensive fiber options are prohibitive. The 890 Extended Ethernet Units allow a standard Ethernet segment to be deployed quickly over existing 1 pair Telco Copper Wiring in combination with existing POTS voice signals.

Installers have the convenience of a 10/100Mbps LAN Ethernet unit for peace of mind connectivity and no CPE maintenance. Rapid installation allows for minimal interruption and the Broadband technology allows for investment protection up to 10 -15 years with no firmware or replacement issues. Bandwidth can be scaled according to the Broadband Access Provider needs. The 890 Extended Ethernet Unit is a passive device so interruption of Internet service does not affect POTS services. Carriers and Access Providers can come and go, but the 890 Extended Ethernet Unit technologies continue to provide lasting value such as the other utilities like Water, gas and electricity.

The Enable-890 Extended Ethernet Unit is suited for the following key environments:

- **Commercial Buildings (Multi-Tenant Units)**
- **Business Parks (Multi-Tenant Units)**
- **Apartments (Multi-Residential Units)**
- **Hotels (Multi-Hospitality Units)**
- **Business Suites (Multi-Hospitality Units)**
- **School Campuses (University, K-12)**
- **College Housing (Multi-Residential Units)**

# INSTALLING THE 890 EXTENDED ETHERNET UNITS

The Enable-IT 890 Extended Ethernet Units have a distance restriction of 6,000ft or 1,829m over 1-pair of Category 2 up to Category 5e wiring from device extension to device extension. Therefore quick, simple site surveys and installation planning are highly recommended.

This chapter describes the recommended installation process for the Enable-IT 890 Extended Ethernet Unit. It covers the following topics:

- Site Plan – Installation Design Considerations
- Unpacking the Enable-IT 890 Extended Ethernet Units
- Performing the On-Site Installation

## Site Plan - Installation Design Considerations

The planning process should involve a site walkthrough and discovery survey. Electrical Cable measurement tools are the most reliable method to determine the longest run of hidden wiring. Estimate the best locations to position the Broadband Concentrators to adequately reach desired connectivity on each floor. Document your findings to use in designing a network topology to support the Ethernet Switches and backbone connectivity. Key points to remember in the Site Survey.

- Total distance limitation of 6,000ft over CAT2 up to CAT5e wiring from end to end.
- 1 Pair Telco wiring or greater for the Enable-IT 890 Extended Ethernet Units.

## Unpacking the Enable-IT 890 Extended Ethernet Unit Kit

Carefully remove the Enable-IT 890 Extended Ethernet Units all packing materials from the box. Verify that the items listed below are present. Make sure that the equipment supplied matches what you ordered. If any items are missing or damaged, please contact your Enable-IT or your distributor for assistance.

- (2) The Enable-IT 890 Extended Ethernet Units
  - 5v DC Power adapter
  - 5' Telephone patch cable
  - 5' LAN patch cable
- Enable-IT 890 Extended Ethernet Unit User Manual (this manual)

## Performing the On-Site Installation

After removing the Enable-IT 890 Extended Ethernet Units from the box all that remains to install the unit on-site is to mount the unit, connect the wiring, cross connect voice lines if needed and attach the end device patch cord cabling.

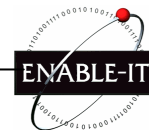
### Mounting the Enable-IT 890 Extended Ethernet Units

The Enable-IT 890 Extended Ethernet Units are designed for quick wall mounting. Choose a location to mount each of the Enable-IT 890's where the maximum distance does not exceed 6,000ft or 1,829m total between devices to be connected.

When wall-mounting the Enable-IT 890 Extended Ethernet Unit it is recommended that you use the appropriate screw anchors for your mounting surface. If mounting on existing plywood use wood screws; if mounting onto drywall or sheetrock, use plastic drywall anchors to secure your installation.



- ❶ Prior to performing a remote link install, test your setup and equipment. Connect your LAN to the Ethernet port of the primary 890 unit and power adapter. Using the provided telephone patch cord, connect each end of the cord into the Line port on both 890 units. Connect your remote end device to the Ethernet port of the remote 890 unit and power adapter. Power on all equipment and test your connectivity and throughput.
- ❷ Once testing is completed, the remote 890 unit can be located to its permanent location. Insert the telephone patch cord into the Line port Insert into the back of the remote 890 unit and the other end into the wallplate connected to your remote pair of backbone wiring. You can also cut the head off the telephone patch cord and punch down the one pair on the Telco block for the remote pair of backbone wiring. Connect your remote end device to the Ethernet port of the remote 890 unit and power adapter. Perform the same operation on the primary 890 unit for connecting cabling and power to the unit. Make sure the backbone wiring pair (1-pair) match each other on each end of your connection. Power on all equipment and test your connectivity and throughput.
- ❸ For troubleshooting, first examine the backbone wiring pair and make sure you have solid connections. The Sync LED will be lit on each 890 unit to show proper connection and pairing. If the Sync LED is not lit, try swapping the order of the 1-pair backbone wiring at one end. If using a telephone wallplate jack, swap the pairs.



## Technical Support

Enable-IT OEM Technical Support is available directly to registered distributors and prospective customers.

### Online Technical Services

Enable-IT, Inc. Technical Support is available via e-mail at [support@enable-it.net](mailto:support@enable-it.net)

### World Wide Web Site

Enable-IT, Inc. Technical Support is available via the Internet at [www.enable-it.net/support](http://www.enable-it.net/support)

### Returning Products for Repair

Enable-IT, Inc. warrants to the original purchaser of the Product ("you" or the "End User") that, for the three (3) year period commencing on the date the Product was purchased (the "Warranty Period"), the Product will be substantially free from defects in materials and workmanship under normal use and conditions.

If authorized by Enable-IT to return a Product which does not conform to the warranty set forth above, the End User must: (1) obtain a return materials authorization (RMA) number from Enable-IT by contacting the Customer Service Dept. at 888-309-0910 between the hours of 8:00 a.m. and 5:00 p.m. PST and otherwise fully comply with Enable-IT's then-current RMA policy; (2) return the Product to Enable-IT, Inc. in its original packaging freight pre-paid; and (3) provide to Enable-IT the original receipt or bill of sale establishing the date on which the Product was purchased.

## Enable-IT Limited Warranty

Enable-IT warrants the Enable-IT 890 Extended Ethernet Units solely pursuant to the following terms and conditions.

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a. Express Warranty Enable-IT warrants to the original purchaser of the Product ("you" or the "End User") that, for the three (3) year period commencing on the date the Product was purchased (the "Warranty Period"), the Product will be substantially free from defects in materials and workmanship under normal use and conditions. This warranty does not apply to Products which are resold as used, repaired or reconditioned or consumables (such as batteries) supplied with the Product. Enable-IT does not make any warranty with respect to any third party product, software or accessory supplied with or used in connection with the Product and such third party products, software and accessories, if any, are provided "AS IS." Warranty claims related to such third party products, software and accessories must be made to the applicable third party manufacturer.

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