



ETHERNET EXTENSION EXPERTS

Enable-IT 860 PRO Rev D Gigabit Ethernet Extender Kit Quickstart Guide



Professional Grade Networking



INSTALLING THE 860 PRO ETHERNET EXTENDER KIT

The Enable-IT 860 PRO Ethernet Extenders have a distance restriction of 6,000ft (1,829m) over 1-pair of Category 2, up to 4-pair CAT5e / CAT7, wiring from device extension to device extension. Therefore a site survey of the wiring and installation planning are highly recommended. For highest performance use CAT5e rated or higher spec for interlink wiring.



The Overview Diagram: This diagram shows the contents of the product box inside the rectangle. Devices outside the rectangle above are your equipment that can be attached.

We highly recommend that you perform a quick out of the box test to ensure the working order of your Enable-IT 860 PRO Ethernet Extender units prior to installing. This will also serve to familiarize you with how easy the process should be. Follow the steps below to perform the Out Of the Box Test.

Step 1 - Attach the 5V DC power adapter to each 860 PRO unit and power up the units. The Power LED will indicate the unit is receiving power.

Step 2 - Connect the 860 PRO units together using one of the Ethernet LAN Patch cords provided – attach to the RJ-45 Interlink port on each 860 PRO unit as shown by the green line connecting the ports in the diagram above. The LED indicators on the 860 PRO LAN ports will provide visual operational status of the 860 PRO units.

Mode – Yellow Solid LED (LED Off = CO unit, LED On = CPE unit)

Sync – Green slow to fast flicker LED on power up – indicates negotiation of a link
 – Green solid LED indicates link established and rapid pulse is traffic

Act – Yellow LED
 Off = No device attached or detected
 On = Solid, indicates the presence of local LAN
 On = Blinking, indicates the presence of local LAN traffic

Power – Green Solid LED indicates the unit is receiving 5V power

The Green Sync LEDs will start flickering slowly and then fast as the units talk to each other. After a few seconds you should see a solid Green Interlink Sync LED on each unit to confirm a link is established. This confirms basic proper operation of the units.

Step 3 - Next for a more detailed test and to confirm your LAN Equipment works with the 860 PRO, connect your Ethernet LAN to the 860 PRO CO unit LAN ports and the remote device/s to the 860 PRO CPE LAN ports and test connectivity. The Green Interlink Sync LED will pulse rapidly as it detects traffic.

Performing the On-Site Installation

After removing the Enable-IT 860 PRO Ethernet Extender Kit from the box, and performing the Out Of The Box Testing (OOTBT), all that remains to install the unit on-site is to mount the unit, build the interconnect wiring, add voice lines if needed, and attach the LAN device cabling with the provided Ethernet Patch cords.

Mounting the Enable-IT 860 PRO Ethernet Extender Units

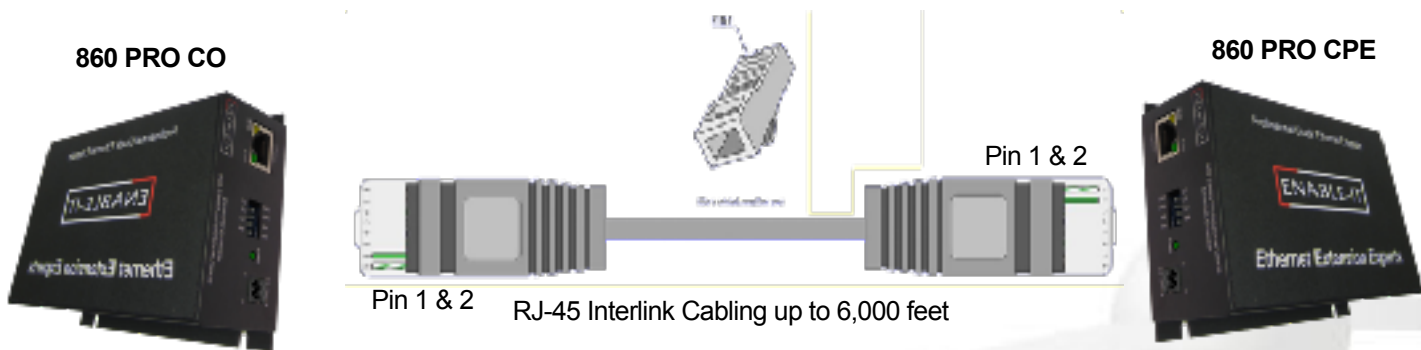
The Enable-IT 860 PRO extended Ethernet solution is designed for quick wall mounting. Choose a location to mount each of the Enable-IT 860 PRO's where the maximum distance does not exceed 6,000ft (1,829m) total between devices to be connected. When wall-mounting the Enable-IT 860 PRO unit it is recommended 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.

Building the 860 PRO Interlink Wiring

The most important aspect of the installation is the correct wiring of the Interlink cabling.

The 860 PRO Interlink port (RJ-45 interface) carries this 1-pair signaling over the RJ-45 (pins 1 & 2) - used as transport for 240Mbps VDSL2 data. If you use more than 1-pair of wiring, such as a CAT5 segment, the remaining RJ-45 pins can transport native 802.3af PoE, or are unused.

For all wiring you will need to crimp a RJ-45 Male head to each end of the contiguous wire run and using the following (pins 1 & 2) straight through. We recommend using a category rated twisted pair cable as it is optimized for high throughput frequencies isolated from cross-talk noise. Insert the completed RJ-45 ends into the 860 PRO Interlink port on each 860 PRO unit.



Cabling Devices to The Enable-IT 860 PRO Extended Ethernet Kit

Attach your remote LAN device to the 860 PRO CPE unit LAN ports with Ethernet patch cord provided. Attach your local LAN to the 860 PRO CO LAN ports with Ethernet patch cord provided. Attach the power adapters to both 860 PRO units.

Attach your local Interlink cabling end to the 860 PRO CO unit Interlink port – Then do the same for the remote end and plug into the 860 PRO CPE unit Interlink port. The Sync LED's will flicker in a sequence talking to each other until they go solid. Your equipment should now be powered up and functioning. LED indicators will provide visual operational status of the 860 PRO units.

Troubleshooting

First examine the backbone wiring pair and make sure you have solid connections. The Interlink Sync LED will be lit solid Green with rapid pulsing on each 860 PRO unit to show proper connection and pairing. If the Interlink Sync LED Link is flashing slow to fast and never goes solid.... Then follow the steps below:

- 1) Make sure your wiring is straight through and not connected to any Telco punch down blocks; If so remove from the block and use Telco butt clips to bridge wire.
- 2) Check for a firm connection of the RJ-45 connections in each 860 PRO unit, and power is applied to the 860 PRO CO & CPE units.
- 3) **You can easily isolate any issue by performing an Out Of The Box Test (OOTBT). This test will confirm the correct working order of your Enable-IT 860 PRO Ethernet Extender Kit. This will point to a possible issue with your long distance Interlink wiring being affected by possible outside interference.**

Performance Settings (DIP Switch)

If you are experiencing performance issues with your Ethernet connection you may use the following DIP switch settings to adjust your application. For DIP switch 2-4 you must toggle both symmetrically, in other words the CO and CPE must match. If you turn DIP switch 3 Up (Off) on the CO, then you must do so for the CPE and vice-versa.

- Switch 1: CO / CPE Mode

CO Mode – Up / Off Position

CPE Mode – Down / On Position



Central Office Equipment (CO) is generally the equipment residing at the Carrier Telephone office or the head end of a circuit. Customer Premise Equipment (CPE) is generally the equipment residing on the customer side of a circuit. Typically you would place the CO at the local end and the CPE at the remote end for reference only. CO's only communicate with CPE's.

- Switch 2: Error Correction Mode

Interleaved Error Correction Enabled – Up / Off Position – degrades performance

Fast Channel – Down / On Position (Default)

Interleaved Error Correction works better for file transfers, where the delivered data must be error free but latency incurred by the retransmission of error packets is acceptable. Fast channel is preferred for streaming multimedia, where an occasional dropped bit is not noticeable or acceptable.

Performance Settings (DIP Switch) Continued



- Switch 3: 17a (over 1,500ft) / 30a (under 1,500ft) Mode

17a Mode – Up / Off Position

17a mode is only used for Interlink runs over 1,500ft to 6,000ft.

30a Mode – Down / On Position (Default)

30a mode is only enabled for Interlink runs under 1,500ft.

- Switch 4: Signal-to-noise Noise Ratio (SNR)

9dB – Up / Off Position

6dB – Down / On Position (Default)

Signal-to-noise ratio is a measurement that refers to how much noise is in the output of a device, in relation to the signal level. If you experience issues of noise bleeding over the lines, or high interference in your environment, it is suggested that you switch to 6dB SNR. This may help clean up any noise bleeding over your cabling.

TECHNICAL SUPPORT

Enable-IT, Inc.'s Customer Care Team support is available directly to customers and distributors. All support requests are processed through the online support portal. This allows us to provide assigned support ticket numbers in order to bring closure to any technical issues.

Online Technical Services

The Enable-IT Support Portal is available 24/7 to open a ticket or check the status of one. Please use this support website as your first source for help as it contains an on-line knowledge base of articles, documentation, FAQ's and other problem-solving resources. This web-based support resource provides the quickest solution to the most common technical support issues.

Returning Products for Warranty Repair

Enable-IT, Inc. warrants to the original purchaser of the Product ("you" or the "End User") that, for the four (4) 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. **Electrical or water damage is not covered under this warranty, extended warranties or Advanced Replacement Program (AREP).**



In order to obtain an authorized RMA approval, the End User must complete the required information online. If you have questions or difficulty completing this information you may contact the Customer Care Team at 888-309-0910 between the hours of 8:00 a.m. and 5:00 p.m. PT.

Please ship Authorized RMAs to:

RMA Warranty Repair Processing Facility
16027 Brookhurst Street, Suite G272
Fountain Valley, CA 92708

Returning Products for Refund

Enable-IT, Inc. offers a generous 45-Day refund on a single Ethernet Extender Kit only, and is subject to a 15% Restocking Fee. Shipments without a valid or authorized RMA number, or sent to our corporate Las Vegas address, can be refused and / or billed for additional shipping.

ENABLE-IT, INC. LIMITED WARRANTY

Enable-IT, Inc. warrants the Enable-IT 860 PRO kit solely pursuant to the following terms and conditions.

1.ENABLE-IT PRODUCT WARRANTY.

a. Express Warranty.

Enable-IT warrants to the original purchaser of the Product ("you" or the "End User") that, for the four (4) 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. **Electrical or water damage are not covered under this warranty, extended warranties or Advanced Replacement Program (AREP).**

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b. Remedies for Breach of Warranty.

In the event of a breach of the foregoing warranty, Enable-IT will, in its sole discretion and at its cost, and subject to the terms of the following paragraph, repair the non-conforming Product, replace the non-conforming Product with a new or reconditioned Product or refund the purchase price for the Product. Any new or reconditioned Product provided pursuant to this paragraph is warranted as provided herein for the remainder of the original Warranty Period. **THE REMEDY SET FORTH IN THIS PARAGRAPH SHALL BE THE END USER'S SOLE AND EXCLUSIVE REMEDY FOR BREACH OF THE FOREGOING WARRANTY.**

c. Conditions for Warranty Qualification.

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 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. Products returned to Enable-IT without an RMA number will be returned to the End User. Enable-IT shall not be responsible for damage or loss during shipment of the returned Product to Enable-IT.

d. Voiding of Warranty.

The express warranty set forth above shall not apply to failure of the Product if the Product has been subjected to: (i) physical abuse, misuse, improper installation, abnormal use, power failure or surge, or use not consistent with the operating instructions provided by Enable-IT; (ii) modification (including but not limited to opening the Product housing) or repair by any party in any manner other than as approved by Enable-IT in writing; (iii) fraud, tampering, unusual physical or electrical stress, unsuitable operating or physical conditions, negligence or accidents; (iv) removal or alteration of the Product serial number tag; (v) improper packaging of Product returns; or (vi) damage during shipment (other than during the original shipment of the Product to the End User from Enable-IT, if applicable).

e. Warranty Disclaimers.

THE EXPRESS WARRANTY SET FORTH ABOVE IS IN LIEU OF ALL OTHER WARRANTIES, WHETHER WRITTEN, ORAL, EXPRESS OR IMPLIED. ENABLE-IT DISCLAIMS, TO THE MAXIMUM EXTENT PERMITTED BY LAW, THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NONINFRINGEMENT OF THIRD PARTY RIGHTS. NO PERSON (INCLUDING WITHOUT LIMITATION, ENABLE-IT'S EMPLOYEES, AGENTS, RESELLERS, OEMS OR DISTRIBUTORS) IS AUTHORIZED TO MAKE ANY OTHER WARRANTY OR REPRESENTATION CONCERNING THE PRODUCT. IF THE DISCLAIMER OF ANY IMPLIED WARRANTY IS NOT PERMITTED BY LAW, THE DURATION OF ANY SUCH IMPLIED WARRANTY IS LIMITED TO ONE (1) YEAR FROM THE DATE OF PURCHASE. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OF IMPLIED WARRANTIES OR LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY MAY LAST, SO SUCH LIMITATIONS OR EXCLUSIONS MAY NOT APPLY. THIS WARRANTY GIVES THE END USER SPECIFIC LEGAL RIGHTS AND THE END USER MAY ALSO HAVE OTHER RIGHTS, WHICH VARY FROM JURISDICTION TO JURISDICTION. ENABLE-IT DOES NOT WARRANT THAT THE OPERATION OF THE PRODUCT WILL BE UNINTERRUPTED OR ERROR FREE. ENABLE-IT IS NOT RESPONSIBLE FOR ANY DAMAGE TO OR LOSS OF ANY PROGRAMS, DATA, OR OTHER INFORMATION STORED ON OR TRANSMITTED USING THE PRODUCT.

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