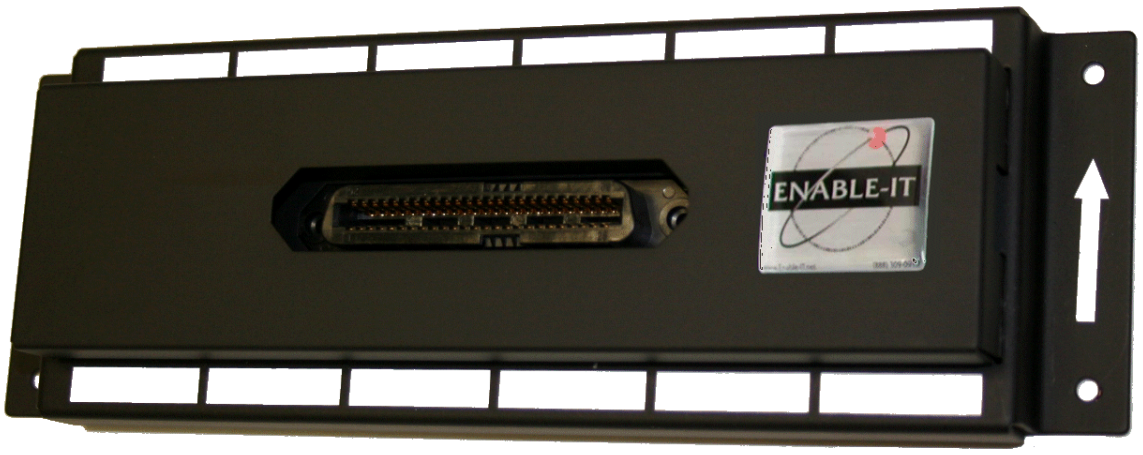
Enable-IT 8212 Single Pair Ethernet Installation Manual



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ABOUT THIS GUIDE

This guide provides all the information needed to install and use the Enable-IT 8212 Single Pair Ethernet Concentrator. 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.

Note – Residential, Hospitality and other commercial installations operate flawlessly with the 8212 series equipment. However 8202 Single pair Wallplate Switch units may not compatible with some PBX systems that use high-frequency digital signaling for control functions to digital handsets in those rooms. It is rare that in Hospitality or Residential to find Digital handsets in rooms.

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

INTRODUCING THE 8212 CONCENTRATOR

Congratulations on purchasing the Enable-IT 8212 Concentrator — a simple solution for delivering multi-service broadband to in-building deployment of commercial office buildings, hotels, and multi-tenant residential units.

The 8212 concentrator offers the Lowest Cost per port and the highest performance in the industry. The low cost of the products and the intelligent design means service providers and property managers can afford to light up more buildings in less time and recover their investments more rapidly compared to any other competitive products.

This chapter contains introductory information about the 8212 Single Pair Ethernet Concentrator and how it can be used in your network. It covers the following topics:

- About the 8212 Concentrator
- Key Benefits
- Summary of Features
- Typical Applications
- 8212 Controller Assembled Detail
- 8212 Controller Wiring Detail

About the 8212 Single Pair Ethernet Concentrator

The 8212 Single Pair Ethernet Concentrator solves the problem of high costs associated with deploying HSIA services and growth in demand for higher density HSIA deployments. The 8212 Concentrator is much more than an Ethernet transport; it combines the wire requirements of Data and Voice into one single pair of wire. The system comprises a complete, integrated architecture of modular parts that are easy to install and use. A simple design methodology would be to think of the 8212 extending a standard managed 10MB Ethernet switch up to 328' (100m) to a powered wall plate Ethernet Switch including 1 voice line.

The 8212 Single Pair Ethernet Concentrator is available in an easy to install 12 port Telco 110 Block design. The 12 port limit per 110 block is a restriction of the 50 pin Amphenol hydra cable as Ethernet requires 4 wires per port connection, thus 12 ports uses 48 pins getting data into the 8212.

To increase the durability and extended use of the product providing maximum future technology protection, the 8212 Single Pair Ethernet Concentrator meets the challenge of modern switched LANs and allows you to add features and capacity as your network expands. The 8212 concentrator has been designed and tested to provide full duplex transport up to 10MB/s over 1-pair CAT2 or better cabling.

Key Benefits

The following list identifies the 8212 Concentrators' key benefits.

- Dramatic cost reduction over any competing technology.
- The Enable-IT 8212 Single Pair Ethernet Concentrator requires No Power, No Firmware, No Maintenance
- Broadband technology that delivers in-building Ethernet access over 1 pair of existing Category 2 wires or better up to 328', 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, dual POTS, VoIP, video, and virtual private networking. It also allows service providers and property managers to deliver high speed bandwidth to their customers independently of the wire speed.
- Rapid installation with small Telco 110 Block profile, no programming and no firmware to upgrade.
- 8202 Single Pair Wallplate Switch - Unique low profile custom wall plate with single POTS line and single 10MB Ethernet port.
- Secured Custom Branded Ethernet Extender – From wall plates to Desktop

Summary of Features

The Enable-IT 8212 Broadband Concentrator has the following hardware features:

- 12 Extended Ethernet lines in a single Telco 100 Block
- Rapid Telco style installation – no programming required
- Supports digital VoD channels or MPEG4 over IP support
- Drives Ethernet 10 Mbps full-duplex service delivery up to 328ft / 100m
- Network Equipment independence – Transparent to protocols/applications/MAC
- Connects to Standard IP Digital Set Top boxes; IGMP compliant
- Maintains lifeline POTS
- Only 1-pair required to run 10MB Ethernet.

Specifications:

8212 Power: No power consumption
Passive Device, No Firmware.

Dimensions:

Height: 3" (76mm)
Depth: 1.5" (38mm)
Width: 9" (230mm)

Interfaces

8212 Block – AMP Hydra (12) RJ-45 switched

Wall Plate – (1) RJ-11 single POTS
(1) RJ-45 10Mb LAN

Functionality:

Data Rates 10Mbps Full Duplex
Ethernet modes supported
10Mbps half duplex
10Mbps full duplex
Max Distance 100m / 328ft

Environment

Temperature 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

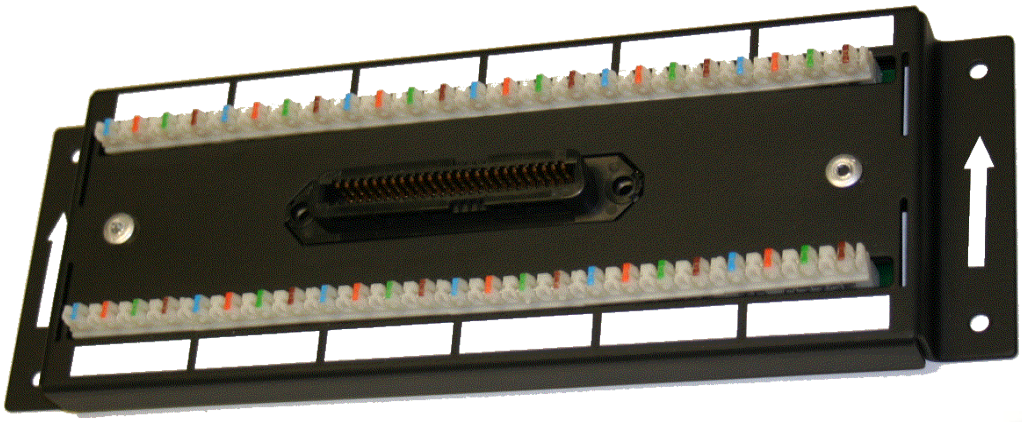
Enable-IT 8212 Single Pair Ethernet Concentrators are usually installed into telephone wiring infrastructures where delivery of Broadband services are required and WAN connectivity is being provisioned to provide Internet Data Access. The 8212 Concentrators allow standard managed Ethernet switches to be deployed quickly over existing 1 pair Telco Copper Wiring in combination with existing POTS voice signal to a custom wall plate. No power is required for the 8212 Concentrators and Ethernet signals can be driven up to 328ft. over a single pair of Category 2 wiring or better. There are no moving parts and no firmware to upgrade, thus providing maintenance free operation.

End users have the convenience of a 10Mbps LAN Ethernet wall plate switch for peace of mind connectivity with 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 8212 Concentrator is a passive device so interruption of Internet service does not affect POTS services. Carriers and Access Providers can came and go, but the 8212 Single Pair Ethernet Concentrator technology continues to provide lasting value such as the other utilities like Water, gas and electricity.

The Enable-IT 8212 Single Pair Ethernet Concentrator 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)**
- **Mining Operations – Quarries, Mine shafts**
- **Nautical Infrastructure – Cruise ships, Marinas, dive operations, subs**
- **Video Surveillance/Security**
- **WiFi Deployment – ISP's, RV Parks, Construction sites**
- **Manufacturing – Foundries, pharmaceutical, aerospace, automotive, petroleum, concrete plants, etc.**
- **Retail POS – Department stores, Bars, restaurants, retail spaces**
- **Government – Naval ships, FEMA, Housing, USGS, National Parks, Forestry, Research stations, NASA, utilities, etc.**
- **Education – outdoor camps, college campuses**
- **Healthcare – Hospitals, elder care, outpatient facilities**
- **Entertainment – Movie theaters, home entertainment, fairs, outdoor venues**

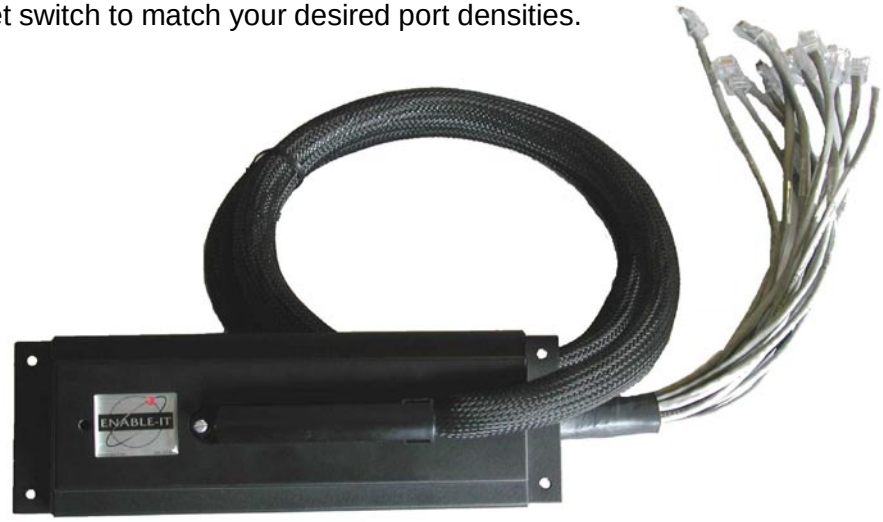
8212 Concentrator — Uncovered Detail



Telco 110 Block Connections
The 8212 Single Pair Ethernet Concentrator supports (12) 10BASE-T ports, and 12 POTS connections through industry standard 110 punch down connectors. We use industry standard color codes for Telco wiring.

Managed Switch Connectivity
If integrating with billing system, we recommend using switches that support either RFC 1492 SNMP or 802.1q VLAN or both protocols. We highly recommend our certified Enable-IT Gateway Firewall Server series Appliances support all managed switches, PMS billing systems, wireless RADIUS and credit card billing needs.

The 8212 Single Pair Ethernet Concentrator operates in conjunction with any Managed Ethernet Switches that support auto-negotiating 10BASE-T ports. These ports must be set to 10BASE-T half duplex or 10BASE-T full duplex. Auto-negotiation of 100BASE-TX will not work with the 8212 Single Pair Ethernet Concentrator.
The 8212 Single Pair Ethernet Concentrator connects to Managed Ethernet Switches with the provided Enable-IT Hydra cable. It is recommended to place the Managed Ethernet Switch within 5ft (1.52m) of the 8212 concentrator. Enable-IT can provide longer Hydra cables on request. Multiple 8212 concentrators may be connected to a single Ethernet switch to match your desired port densities.



TECHNICAL REFERENCE FOR THE 8212 CONCENTRATOR

There are few issues that can effect the proper operation and installation of Enable-IT 8212 concentrator. These technical notes address the proper installation and the most common, troubleshooting challenges that may arise.

Assuming the equipment is installed correctly; troubleshooting challenges fall into two (2) categories: Equipment Defects - DOA; in-Room wiring issues – shorts, cable quality, and or wiring configuration.

To test questionable 8212 ports and/or any suspect 8202 Single Pair Wallplate Switch simply punch down a known good 8202 Single Pair Wallplate Switch directly onto the 8212 port at the MDF/IDF. Connect your PC and verify Ethernet connectivity to the switch. Make sure the hydra cable is connecting the 8212 concentrator to your switch. If no connectivity is detected, try another 8212 port, hydra-cable, or swap the 8202 Single Pair Wallplate Switch. If you still do not get a connection, plug your PC directly into the switch to verify your PC is operating correctly.

If connectivity is established with the tested 8212 port and Enable-IT 8202 Single Pair Wallplate Switch, then your troubleshooting focus is the in-room wiring or the Home run wiring from the room to the 8212 controller.

Equipment Defects - DOA

Enable-IT, Inc. certifies all of our equipment prior to shipping and takes protective precautions when shipping orders; however, there are possibilities of shipping damage during transit.

In order to save time in your installation process, we recommend that your installation engineers carry several Enable-IT 8202 Single Pair Wallplate Switch and Desktop Ethernet Extenders with them when installing rooms. This way they can focus on getting rooms up and running and set aside any suspect CPE to be tested for DOA.
When DOA equipment is discovered, please contact your Enable-IT sales representative immediately so that we can RMA and replace your units in a timely manner for your project.

In-Room Wiring

In-Room wiring and the home run wiring scheme are where connectivity issues are often found. We highly recommend looking at the segments of the cabling to quickly pinpoint the issue and move on to the next room or troubleshooting challenge. To understand the segments involved for room wiring and troubleshooting, please refer to the following descriptions and sample diagram:

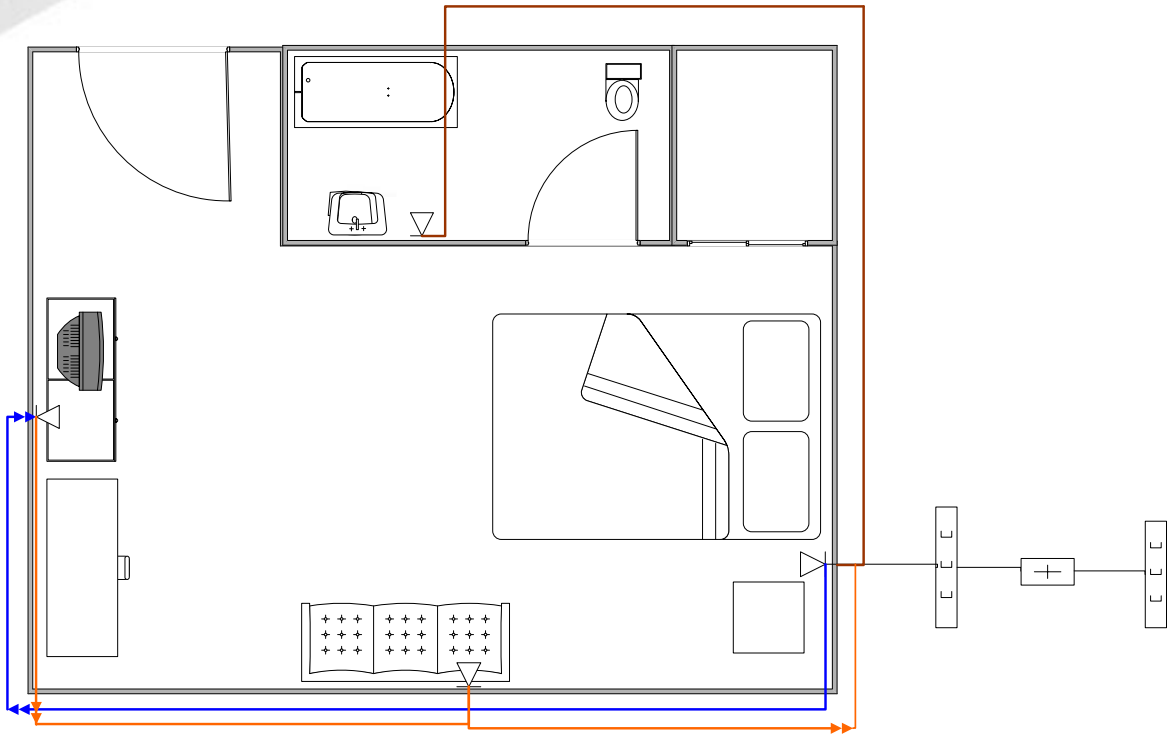
(1) Home run wire (Wiring segment from the IDF or MDF to the main point of entry jack for a given room). This segment should is under 328 feet /100 meters long and can be easily tested following the Steps as listed in the installation guide.

(2) In-Room phone extensions (Wiring segments from the Main point of entry jack to all other in-room phone jacks). These segments can be daisy-chained, a star configuration, or a combination of both. In all cases you must document the wire color and wire number order on the main point of entry jack in relation to all the other in-room attached wiring segments. Connect only the jack needed for the location of the Enable-IT 8202 Single Pair Wallplate Switch and test for both data and voice. If the Enable-IT 8202 Single Pair Wallplate Switch is to be located past the main point of entry jack, we recommend using butt splices for the voice wiring to bridge the extension wiring directly to the main point of entry wiring. If the extension wiring has a spare pair, connect that spare pair to the main point of entry standard wall plate for voice only and insert that spare pair into the out port on the 8202 Single Pair Wallplate Switch.
This way the combined signal coming from the IDF/MDF 8212 is wired directly to the 8202 Single Pair Wallplate Switch and use the in-room extension wiring to continue the voice signal back to the Main point of entry telephone jack.

(3) Enable-IT 8202 Single Pair Wallplate Switch wiring. At the location for the 8202 Single Pair Wallplate Switch use the same color of spare pair that was used for the voice to the main point of entry jack and insert into the position labeled OUT.

It is key to remember that the initial voice pair will need to run all the way to the 8202 Single pair Wallplate Switch first, and then use spare extension pairs from the OUT of the 8202 Single pair Wallplate Switch to wire voice back to all remaining in-room jacks.

To best illustrate some trouble-shooting techniques, please refer to the following diagram.



Scenario 1

The first scenario consists of a single telephone jack in the room. There are only 2 choices here for wiring color. Attach your laptop to the Enable-IT 8202 Single Pair Wallplate, remove the existing wallplate and insert the 1-pair wiring into the IN connector of the 8202 jack. Pin 2 is the left most connector under IN. If no connectivity, try reversing the pair of wiring. If still no connectivity, test another 8202 Single Pair Wallplate Switch and also use a multimeter TDM device to measure the length of the home run cable. We recommend using a Fluke Networks MicroScanner Pro tool or similar. Maximum operating distance should be within 328ft or 100m.

Scenario 2

The second scenario consists of two telephone jacks in the room. One located at position C (main point of entry) and one at the desk position A – per the following diagram. Open and remove the first wallplate in position C (main point of entry), examine the wiring. Use 2 butt splices to bridge the voice directly to 1 pair of the extension wiring (**Blue**). Connect a free pair of the extension wiring (**Orange**) back to the voice of the original wall jack at position C.

Remove the wallplate at the desk, position A. Replace with an Enable-IT 8202 CPE jack. Insert the extension wiring (**Blue**) that you bridged the voice into PIN 1 & 2 (IN) on the back of the 8202 Single Pair Wallplate Switch. Attach your laptop to the Enable-IT 8202 Single Pair Wallplate. Pin 2 is the left most connector under IN. If no connectivity, try reversing the pair of wiring. If still no connectivity, test another 8202 Single Pair Wallplate Switch and also use a multimeter TDM device to measure the length of the home run cable. We recommend using a Fluke Networks MicroScanner Pro tool or similar. Connect the pair of extension wiring (**Orange**) that was connected to the voice of the first wallplate in position C to the OUT PINS 3 & 4 on the back of the 8202 Single Pair Wallplate Switch. Test voice on the wallplate in position C.

Scenario 3

The third scenario consists of three or more telephone jacks in the room. One located at position C (main point of entry), one at the desk position A (Where data is needed) and the others located through the room – per the following diagram. Open and remove the first wallplate in position C (main point of entry), examine the wiring. Use 2 butt splices to bridge the voice directly to 1 pair of the extension wiring (**Blue**). Connect a free pair of the extension wiring (**Orange**) back to the voice of the original wall jack at position C. If a daisy chain wallplate is connected to the wallplate at position C just as the one located at position D, then leave the extension wiring (**Brown**) in-place for position D on the position C wallplate. Remove the wallplate at the desk, position B. Use 2 butt splices to bridge the voice directly to 1 pair of the extension wiring (**Blue**). Connect the free pair of the extension wiring (**Orange**) back to the voice of the original wall jack at position C. There will be (2) sets of (**Orange**) wiring tied together on wallplate in position B.

Remove the wallplate at the desk, position A. Replace with an Enable-IT 8202 Single Pair Wallplate Switch. Insert the extension wiring (**Blue**) that you bridged the voice into PIN 1 & 2 (IN) on the back of the 8202 CPE. Attach your laptop to the Enable-IT 8202 Single Pair Wallplate. Pin 2 is the left most connector under IN. If no connectivity, try reversing the pair of wiring. If still no connectivity, test another 8202 Universal Wallplate Switch and also use a multimeter TDM device to measure the length of the home run cable. We recommend using a Fluke Networks MicroScanner Pro tool or similar. Connect the pair of extension wiring (**Orange**) that was connected to the voice of the first wallplate in position C to the OUT PINS 3 & 4 on the back of the 8202 CPE. Test voice on the wallplate in position C, B and D.

INSTALLING THE 8212 SINGLE PAIR CONCENTRATOR

The 8212 Single Pair Ethernet Concentrator has a distance restriction of 328ft or 100m over Category 2 or better Telco wiring from concentrator 110 punchdown to 8202 Single Pair Wallplate Switch. Therefore site surveys and installation planning are highly recommended.

This chapter describes the recommended installation process for the 8212 Single Pair Ethernet Concentrator. It covers the following topics:

- Site Plan – Installation Design Considerations
- Unpacking the 8212 Single Pair Ethernet Concentrator Kit
- 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.

- Wall plate distance limitation of 328ft over CAT 2 or better Telco wiring from the Concentrator.
- IDF Location or MDF location for inserting 8212 Concentrators.
- Riser locations for backbone network cabling or use an 8212 Concentrator as a Backbone switch and leverage existing Telco wiring.
- 1 Pair Telco wiring or greater at wall plate locations.

Unpacking the 8212 Single Pair Ethernet Concentrator Kit

Carefully remove the 8212 Single Pair Ethernet Concentrator, Hydra cable and 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.

- (1) The 8212 Single Pair Ethernet Concentrator
- (1) 5’ Enable-IT Hydra Cable
- (12) 8202 Single Pair Wallplate Switch
- (12) Desktop Ethernet Extenders
- Enable-IT 8212 Single Pair Ethernet Concentrator Installation Manual (this manual)

Performing the On-Site Installation

After removing the 8212 Single Pair Ethernet Concentrator Kit from the box, all that remains to install the unit on-site is to mount the unit, punch-down the subscriber wiring, cross connect voice lines and attach the hydra cabling to your managed switch.

Mounting the 8212 Concentrator

8212 Single Pair Ethernet Concentrators are designed for quick wall mounting and stacking of multiple units to match Telco port numbers.

When wall-mounting the 8212 Concentrator 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.

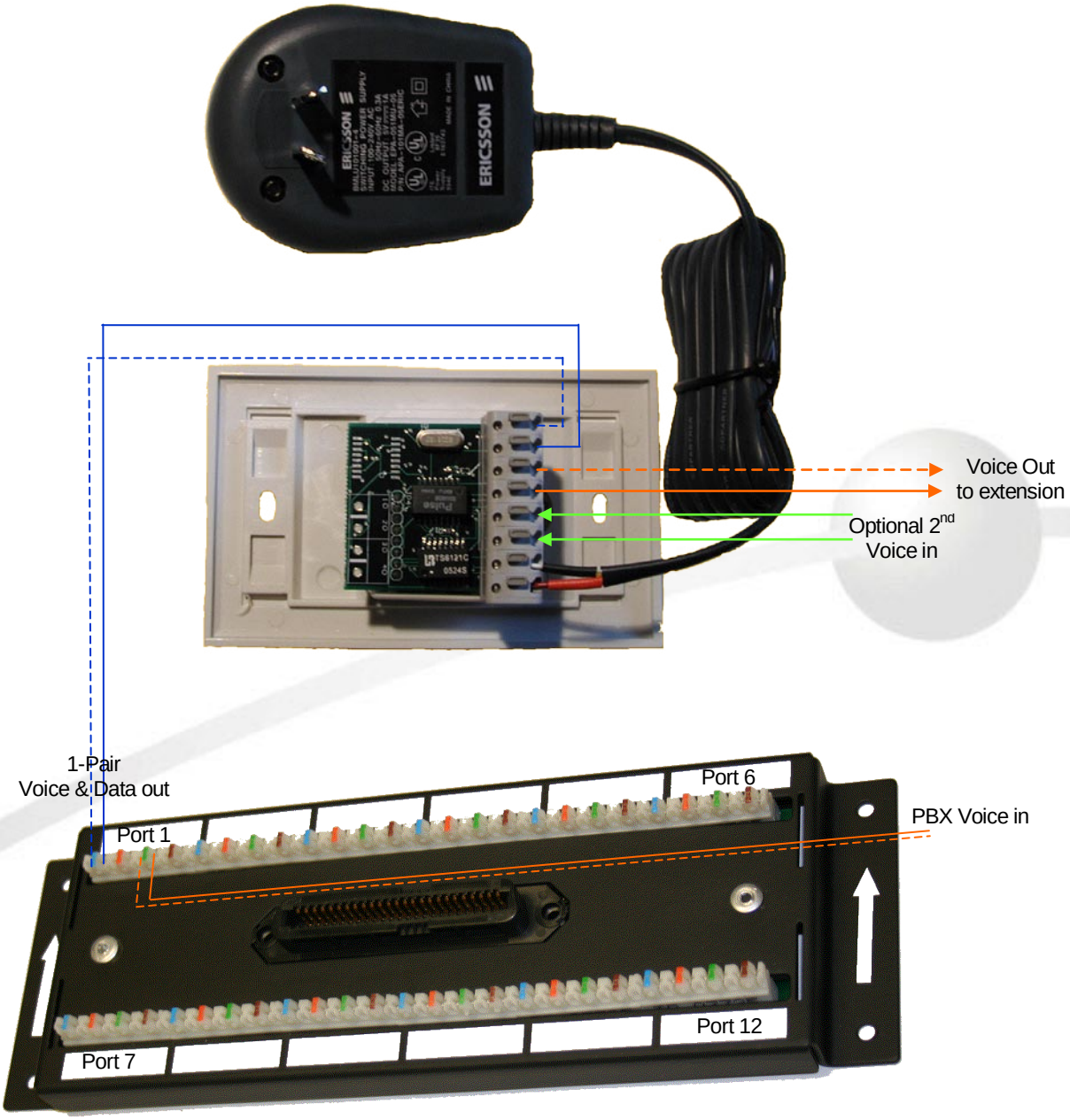
1. Mark drill holes in the wall for the 8212 Concentrator bracket by holding the concentrator in a suitable mounting location against the wall.
2. Drill the holes in the wall. Four holes are required for each concentrator.
3. Use the appropriate anchor hardware (not supplied) for the wall material, mount the 8212 Concentrator with the widest part of the Amphenol connector facing up. (When mounted properly, the attached Hydra cable trunk should protrude to the left of the controller.)
4. Mount your Ethernet Managed switch in a similar fashion within 5' of the 8212 concentrator. (Custom hydra cable lengths are available on request)
5. Attach the provided 8212 hydra cable to the Ethernet switch ports. Hydra cable heads are labeled 1 through 12 for easy reference to the 8212 ports. Leave the Amphenol head of the hydra cable unattached to the 8212 until you punchdown room wiring and telephone line wiring.

Telco Wiring the 8212 Concentrator

After mounting the 8212 Series Concentrator and Managed Ethernet switch the next step is to bridge the existing Telephone wiring onto the 8212 110 Telco connector blocks. We highly recommend using twisted or Shielded & twisted 1-pair cross connect wiring for connecting room wiring blocks into the 8212 controller to maximize signal strength and reduce any EMF interference.

The sequence of ports and wiring on the 8212 follows a sequential order starting from the upper left as port 1 through the bottom right is port 12. The 110 telco connectors are color coded in the following sequence (Blue, Orange, Green & Brown). Room wiring is to be punched down on the Blue pair as pins 1 and 2 respectively. PBX voice is to be punched down on the Green pair and pins 5 and 6 respectively. The Orange pair (pins 3 & 4) are alternate or spare 110 punch downs for room wiring. Likewise the Brown pair (pins 7 & 8) are alternate or spare 110 punch downs for PBX wiring. It is important to note that the 8212 controller will only support one 8202 Universal Wallplate Switch CPE per port so only one Blue pair or the Orange pair can be used the same time. The same goes for the Voice on either Green pair or the Brown pair.

For details see the diagram on the next page.



Establishing Initial Test Connectivity

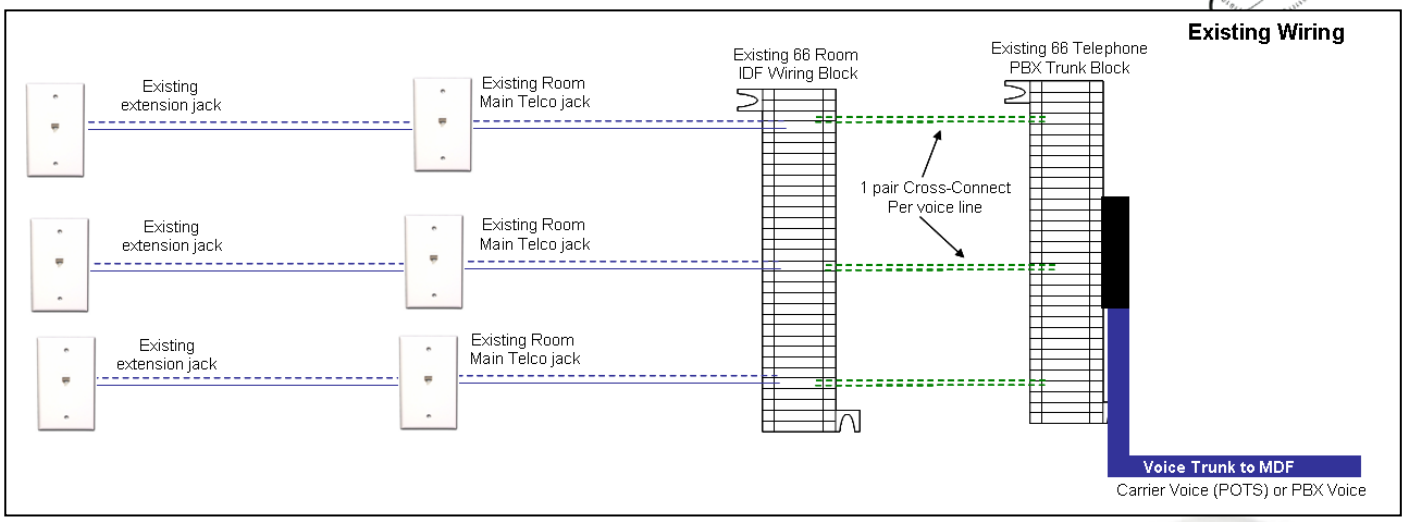
We highly recommend testing a few ports/rooms to clearly understand the process and hotel specific wiring. First replace Wall plates at the individual end run locations (rooms) and then punch down a few room wiring terminations onto the 8212 concentrator and lastly connect the 8212 hydra cable into the 8212 and only the legs currently connected to rooms into the managed 10MB switch or 10MB unmanaged hub.

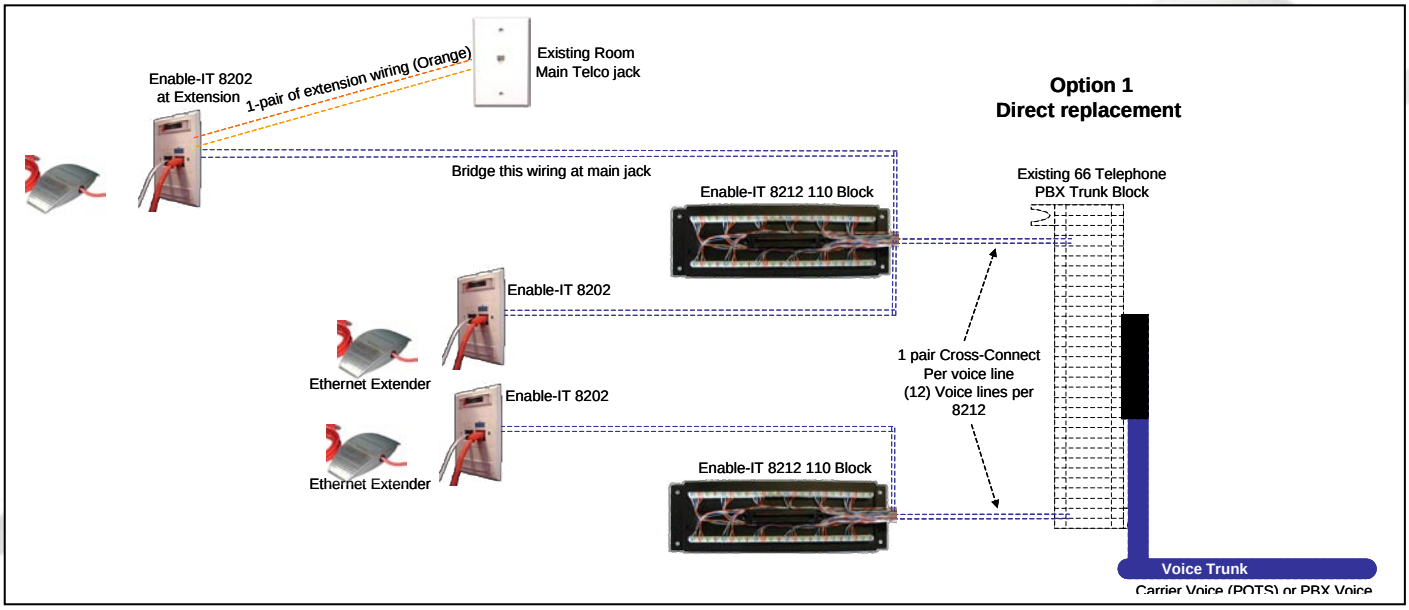
It is key to remember that only the hydra cable legs to rooms that have the 8202 Single Pair Wallplate Switch installed are to be connected to the 10MB Ethernet device, otherwise you will receive false connectivity signals from the 8212 controller and after a few minutes the 10MB Ethernet device will hang due to excessive packet collisions.

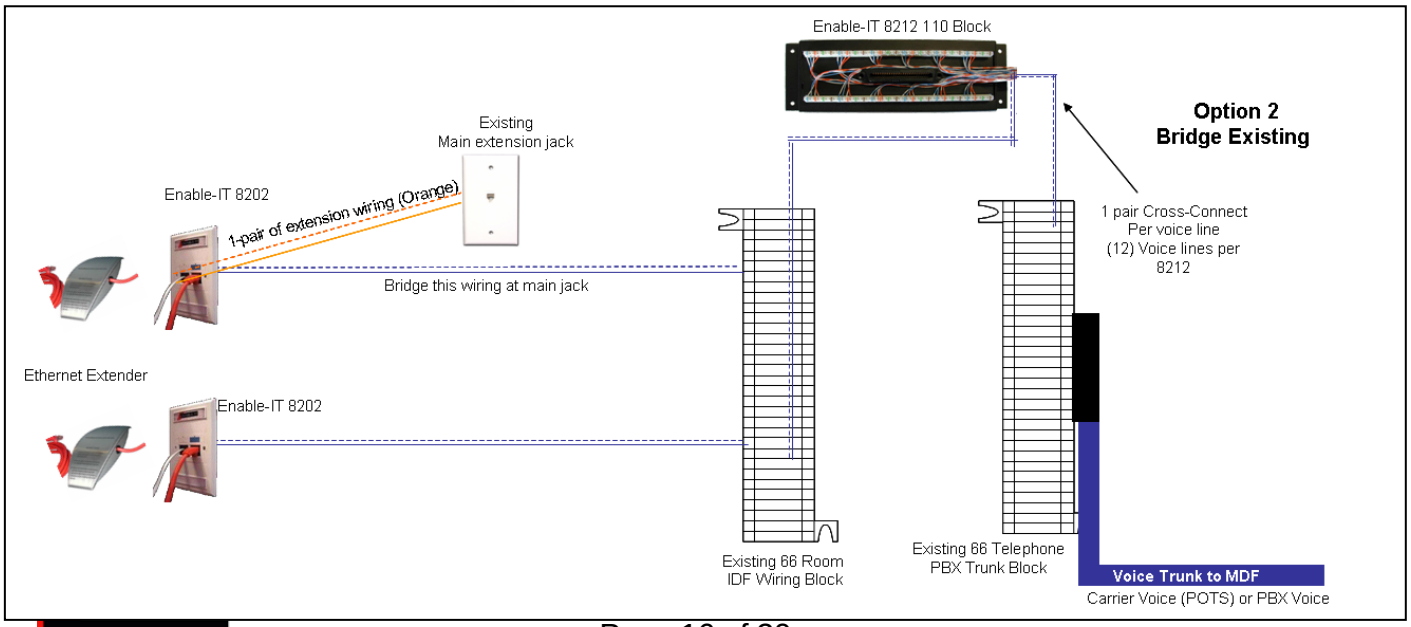
When inserting the Hydra cable leg into the 10MB Ethernet device the LED activity light should not stay on if a room has been connected properly. If installed correctly LED's will only light up and show activity when a guest laptop is connected and active.

The most challenging part of this installation is the correct positioning of the end user wiring and existing POTS wiring. The principal methodology is to insert the Enable-IT 8212 concentrator as a bridge between the existing POTS wiring and the end user wiring run. To accomplish this task we first examine the end user wiring and determine the best practical way to re-terminate (move and punch-down onto the Enable-IT 8212 110 Telco Block) or to install a cross-connect wire (1-pair) between the existing termination 66 block and the Enable-IT 8212.

The following Figures detail a sample wiring installation and options for installing the Enable-IT 8212 concentrators.

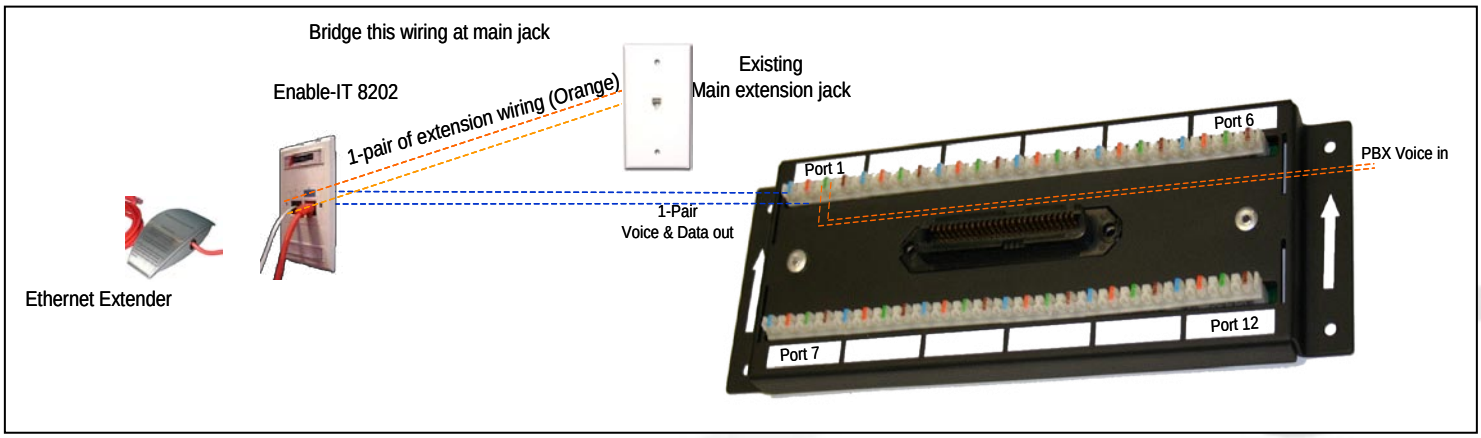

Existing Wiring
Existing extension jack
Existing Room Main Telco jack
Existing 66 Room IDF Wiring Block
Existing 66 Telephone PBX Trunk Block
1 pair Cross-Connect Per voice line
Voice Trunk to MDF
Carrier Voice (POTS) or PBX Voice


Option 1
Direct replacement
Enable-IT 8202 at Extension
1-pair of extension wiring (Orange)
Existing Room Main Telco jack
Bridge this wiring at main jack
Enable-IT 8212 110 Block
Existing 66 Telephone PBX Trunk Block
Enable-IT 8202
Ethernet Extender
1 pair Cross-Connect Per voice line (12) Voice lines per 8212
Voice Trunk


Enable-IT 8212 110 Block
Option 2
Bridge Existing
Existing Main extension jack
Enable-IT 8202
1-pair of extension wiring (Orange)
Bridge this wiring at main jack
1 pair Cross-Connect Per voice line (12) Voice lines per 8212
Ethernet Extender
Enable-IT 8202
Existing 66 Room IDF Wiring Block
Existing 66 Telephone PBX Trunk Block
Voice Trunk to MDF
Carrier Voice (POTS) or PBX Voice

Single Pair Wall Plate Switch Installation

The final stage of the installation is to replace a single existing Telco Wall plate with the Enable-IT 8202 Single pair Wallplate Switch. This procedure requires the removal of the selected Telco wall plate and installation using the existing 1 pair (2 wires) in the correct sequence 1 & 2 as labeled IN on the 8202 Single Pair Wallplate Switch. If the location of the Strip and connect the existing Telco wiring to the self crimping posts on the back of the 8202 Wall plate as shown. For daisy-chained multiple jacks, bind the extension wiring together and insert into the crimping posts.



Connectivity testing can be performed by attaching an Ethernet patch cord to a network device and connection of a telephone.

1St level of connectivity is the physical handshaking with the Ethernet Switch and dial tone on the Telephone.

Check to see if your network device has a Physical link light and that you can hear a clear dial tone in the telephone handset receiver.

2nd level of connectivity is the transmission of data packets and outbound dialing.

Using your network device and appropriate application, test 2-way connectivity to your Ethernet Switch and beyond if backbone is established. Use the Telephone to place a call and confirm proper voice communications.

Congratulations, you have now successfully completed installation of the Enable-IT 8212 Broadband Concentrator.

Technical Support

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

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.

Please ship Authorized RMAs to:

Enable-IT Processing Facility
16600 Harbor Boulevard
Suite G
Fountain Valley, CA 92708

Returning Products for Refund

30-Day refund applies to Ethernet Extenders only and is subject to a 25% Restocking Fee. Shipments without valid / authorized RMA number or sent to our corporate Las Vegas Address can be refused and or billed for additional shipping.

Enable-IT Limited Warranty

Enable-IT warrants the Enable-IT 8212 Broadband Concentrator solely pursuant to the following terms and conditions.

1. PRODUCT WARRANTY

a. Express Warranty Enable-IT warrants to the original purchaser of the Product ("you" or the "End User") that, for the one (1) 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.

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 of 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' 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' 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 NINETY (90) DAYS 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.