

Ethernet Extension Experts



Enable-IT 865 Rev D 56V PoE+ & Ethernet Extender Quickstart Guide



INSTALLING THE 865 PoE & EXTENDED ETHERNET KIT

The Enable-IT 865 PoE & Extended Ethernet Kit have a distance restriction of 3,500ft or 1,067m over 3-pair of Category 3 up to 4-pair Category 5e / CAT6 wiring from your LAN and power source to the remote PoE device. Therefore quick, simple site surveys and installation planning are highly recommended – This is ideal for installing PoE IP Security cameras or PoE WiFi Access Points.

This chapter describes the recommended installation process for the Enable-IT 865 PoE+ & Extended Ethernet Kit. It covers the following topics:

- Site Plan – Installation Design Considerations
- Unpacking the Enable-IT 865 PoE & Extended Ethernet Kit
- Perform an out of the box Test
- Performing the On-Site Installation

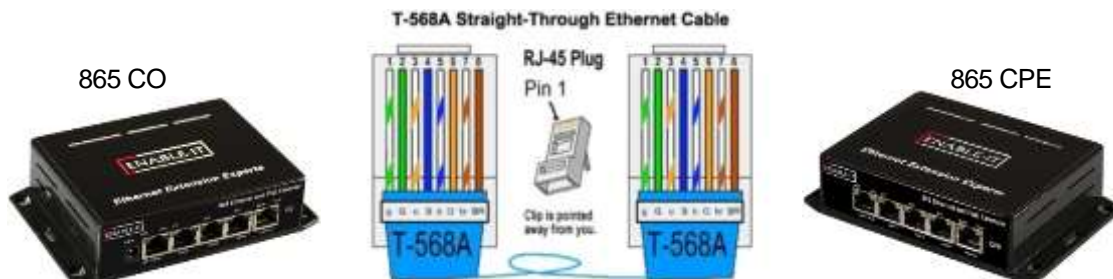
Site Plan - Installation Design Considerations

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 3,500ft / 1.0672m from end to end. - 2,500ft/762m distance if using the PoE power for a PoE device.
- 3 Pair CAT-3 wiring or 4-pair Cat5e .30 Gage or better cabling is required for the 865 Interlink transmission.
- Cisco PoE single line injector support built in. Not compatible with any PoE switches as the PoE switches are not smart enough to understand Extender Ethernet timing mechanisms and fail to set correct output voltage and will subsequently disable the PoE switch port.
- Transparent to single line 802.3af PoE injectors and devices.

For CAT3 wiring (3-pair/6 wires) you will need to crimp a RJ-45 Male Head to each end of the contiguous wire run and using the following pins(1,2,4,5,7 & 8) straight through. This will deliver 1 Voice line, Ethernet Data and PoE.

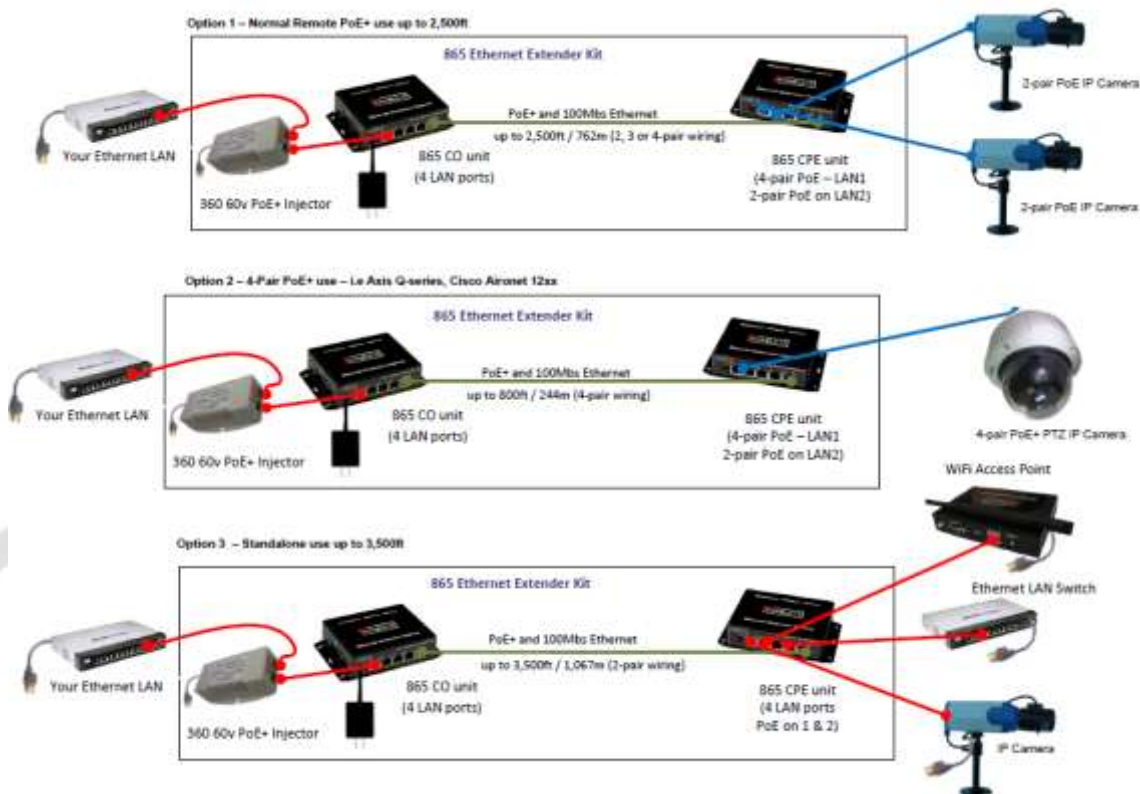
For CAT5e or better wiring (4-pair/8 wires) you will need to crimp a RJ-45 Male Head to each end of the contiguous wire run and using the following pins(1,2,3,4,5,6,7 & 8) straight through. This will deliver Dual Voice lines, Ethernet Data and PoE. This can be either T-568A or T-568B spec.



Perform an out of the box Test

We highly recommend a quick test to ensure the working order of your 865 units. To do this, please use one of the Ethernet patch cords provided and attach to the 865 Interlink port of each 865 unit. Using the 5v power adapter, power up the 865 CO Unit and attach the 360 PoE Injector (P+Data Out port) to the 865 CO LAN1/PoE port. After a few seconds you should see a solid Green Interlink Sync LED on each unit to confirm a link is established. The Green Interlink Sync LED will pulse rapidly as it detects traffic. This confirms basic proper operation of the units. Next for a more detailed test and to confirm your PoE LAN Equipment works with the 865, connect your Ethernet LAN and PoE remote device to the 865 LAN ports and test connectivity.

WARNING: Output LAN ports 1 & 2 on the 865 CPE are PoE enabled and not for use with non-PoE equipment as it may damage any non-PoE equipment.



LED indicators will provide visual operational status of the 865 units.

- Sync** - Slow to fast flicker on power up – indicates negotiation of a link.
Solid Green LED indicates link established and rapid pulse is traffic.
- Pwr** - Solid Green LED indicates that unit is receiving 5v power.
- Mode** - Solid Yellow LED on CPE unit only – No LED lit on CO
- ACT** - Yellow LEDs – Lit solid indicates the presence of local LAN
– Blinking indicates the presence of local LAN traffic

Next for a more detailed test and to confirm your PoE Equipment works with the 865, connect your PoE device to any of the 865 CPE LAN/PoE ports and your LAN to the 360 PoE Injector Data IN port. For use with a Cisco PoE device such as Aironet WiFi AP – Use the provided Cisco PoE patch cord or build one using it as a guide.

Performing the On-Site Installation

After removing the Enable-IT 865 PoE+ & Extended Ethernet Kit from the box and performing the out of the box testing 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.

❶ Mounting the Enable-IT 865 PoE+ & Extended Ethernet Units

The Enable-IT 865 PoE+ & Extended Ethernet Kit is designed for quick wall mounting. Choose a location to mount each of the Enable-IT 865's where the maximum distance does not exceed 3,500ft or 1,067m total between devices to be connected. When mounting the Enable-IT 865 PoE+ & Extended Ethernet Kit it is recommended that you use the appropriate anchors for your mounting surface. If mounting on plywood use wood screws; if mounting onto drywall or sheetrock, use plastic drywall anchors or Velcro can also be used as the units are very lightweight.

❷ Building the 865 Interlink wiring

The most important aspect of the install is the correct wiring of the Interlink cabling. For CAT3 wiring (3-pair/6 wires) you will need to crimp a RJ-45 Male Head to each end of the contiguous wire run and using the following pins(1,2,4,5,7 & 8) straight through. This will deliver 1 Voice line, Ethernet Data and PoE+. Insert into the Interlink Port on each 865 unit.

For CAT5e or better wiring (4-pair/8 wires) you will need to crimp a RJ-45 Male Head to each end of the contiguous wire run and using the following pins(1,2,3,4,5,6,7 & 8) straight through. This will deliver Dual Voice lines, Ethernet Data and PoE. Insert into the Interlink Port on each 865 unit. This can be either T-568A or T-568B spec.

❸ Attaching cabling and devices to the Enable-IT 865 Extended Ethernet Kit.

Attach your remote PoE device to the 865 CPE unit LAN/PoE ports with Ethernet patch cord provided. Attach your local LAN to the 360 PoE injector Data IN port. Attach the power adapter to the 865 CO unit. Attach the 360 PoE+ injector to the 865 CO LAN1/PoE port with Ethernet patch cord provided. Apply power to the 360 PoE injector with the country power cord provided.

If you plan on using voice service as well, insert your dial tone voice line to the 865 CO unit dangle RJ-11 phone port and telephone handset to the 865 CPE unit dangle RJ-11 phone port. Your equipment should now be powered up and functioning properly.

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❹ For troubleshooting, first examine the backbone wiring pair and make sure you have solid connections. The Interlink Sync LED will be lit on each 865 unit to show proper connection and pairing. If the Interlink Sync LED Link is flashing – (Not pulsing)

- 1) Make sure your wiring is straight through and not connected to any Telco punch down blocks or a few as possible – they add interference. If your wiring is spliced, use Telco butt clips or gel filled caps to bridge wire into a solid connection. A flashing Interlink Sync LED indicated the units are trying to connect to each other and are looking to synchronize frequencies.
- 2) Check for a firm connection of the RJ-45 connections in each 865 unit, check any splice points in the Interlink wiring and that the 5v power adapter is applied to the 865 CO and the 360 PoE+ injector is powered up.
- 3) You can always perform another out of the box test to prove out the equipment and then focus on your interlink wiring.

Performance Settings

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 3 up on the CO you must do so for the CPE and vice-versa.

- Dip Switch 1: Toggles the 865 for either CO or CPE mode. (CO mode Up, CPE mode Down)
- Dip Switch 2: This toggles your 865 for either Interleave or Fast mode – Default setting is set to Fast (Down) which is preferred for streaming multimedia, where an occasional dropped bit is acceptable, but lags are less so. Interleave (Up) channel works better for file transfers, where the delivered data must be error free but latency incurred by the retransmission of errored packets is acceptable.
- Dip Switch 3: This toggles synchronous/asynchronous mode for dsl transmissions. Synchronous mode will deliver better performance on distances up to 1,700ft. (Down) Asynchronous mode is required for all distances past 1,700ft. (Up)
- Dip Switch 4: This toggles the Signal Noise Ratio (SNR). Default is set to 6dB (Down) which is excellent for long distance communications whereas flipping the switch (Up) toggles 9dB mode. If you experience issues of noise bleeding over the lines or high interference in your environment it is suggested that you switch to 9dB mode and change to interleave mode. This will help clean up any noise bleeding over your cabling.



Default DIP settings

- 865 CPE – All down set in the ON position
- 865 CO – DIP position 1 up (OFF)
DIPs 2-4 down (ON)