



# CopperLink™-T T1/E1 Extender

## Models 2113 & 2115

*The CopperLink™-T is a transparent, plug-and-play T1/E1 Extender that solves the distance and wire limitations of TDM technology by tripling the reach and halving the number of required wire pairs.*

### Triple the Distance

Extend T1s to over 3 miles and E1s to almost 5 km over one pair of wires.

### Half the Wires

The T1/E1 extenders only require one pair of wires to operate.

### Voice and Data Extension

The T1/E1 Extenders operate in clear channel mode allowing the transparent passing of both voice and data.

### Plug and Play

Plug them in and the link comes up in seconds. The line interface is even polarity insensitive, making it easier to get running.

### Line Tests

V.52 511/511E Pattern Generator with Remote Digital Loopback (RDL); Local Analogue Loopback (LAL).

### Front Panel Status Indicators

Front Panel LED's provide users with quick feedback on unit operation

Patton's Model 2113 & 2115 T1/E1 Extenders are the perfect choice for enterprises, integrators, and service providers needing to extend T1 and E1 circuits beyond their typical reach while conserving the number of wire pairs used.

With the CopperLink™-T extenders, **zero** configuration is required. They operate in clear-channel mode, thereby facilitating the transparent extension of data and voice bearing circuits—including the F-bit on T1 circuits. The two active pins on the RJ connector are polarity insensitive, so you don't even need to worry about which wire you connect on the line interface. Simply take them out of the box, put them on either side of the dry copper pair, connect your T1 or E1 device and the circuit will light up

immediately!

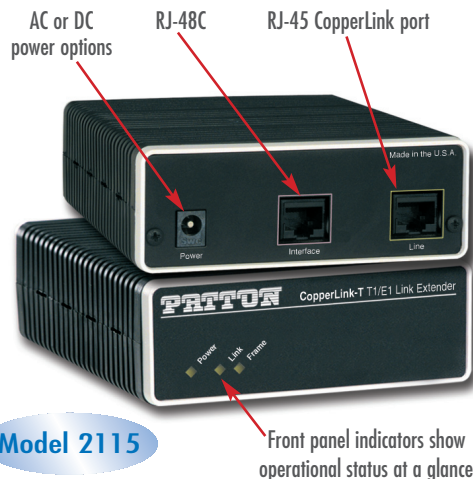
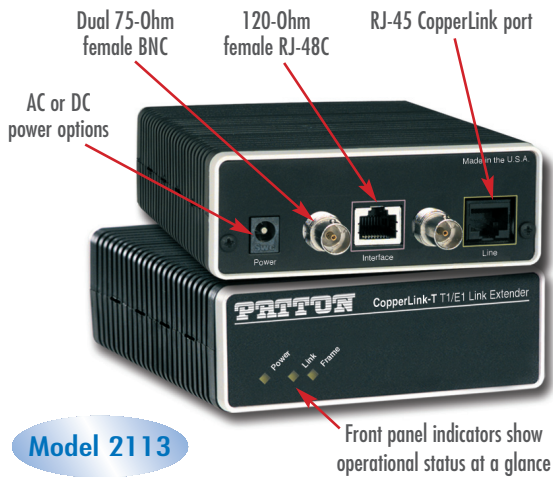
The Model 2113 extends E1 circuits to 16,100 feet (4,900 meters, nearly 5 km) while the Model 2115 extends T1 circuits to more than 3.5 miles (18,500 feet or 5,600 meters). Both models require only two wires (one pair) to extend the TDM circuits, thereby conserving and minimizing the copper plant resources used.

For these reasons, the CopperLink™-T extenders are the ideal solution for most popular applications such as T1/E1 backhaul from a remote site, T1/E1 relocation, T1/E1 extension across a campus or between buildings, and last-mile TDM delivery.

Visit [www.patton.com](http://www.patton.com) for more information.

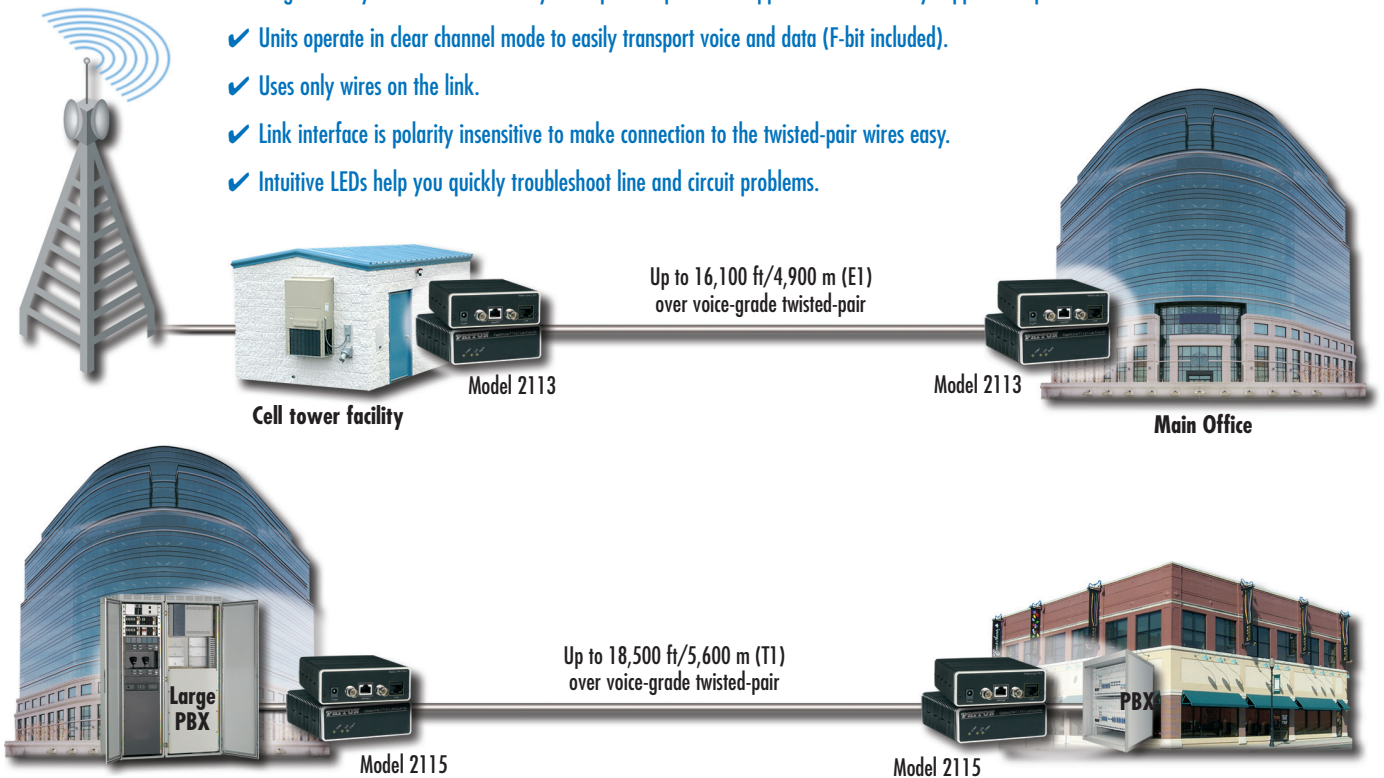


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## Typical Applications

- ✓ The CopperLink™-T simplifies transparent T1/E1 extension.
- ✓ Plug-and-Play—units automatically link up when placed on opposite sides of a dry copper wire pair.
- ✓ Units operate in clear channel mode to easily transport voice and data (F-bit included).
- ✓ Uses only wires on the link.
- ✓ Link interface is polarity insensitive to make connection to the twisted-pair wires easy.
- ✓ Intuitive LEDs help you quickly troubleshoot line and circuit problems.



## Specifications

### Circuit Connector

**Model 2113 E1 Extender:** Dual 75-Ohm female BNC and single 120-Ohm female RJ-48C • **Model 2115 T1 Extender:** Single female RJ-48C

### Supported Line Tests

V.52 511/511E Pattern Generator with RDL • LAL

### Clocking

CO unit preset for Network Clock • CPE unit preset for Receive Recover

### Line Coding

16-constellation TC-PAM

### Line Interface

Female RJ-11 using pins 2 & 3 • Two wires (single twisted-pair)

### Front Panel Indicators

**Power**—Solid green indicates unit is powered up. Slow blinking indicates unit is in POST. Fast blinking indicates unit failed POST. Dark indicates unit does not have power.

**Link**—Solid green indicates end-to-end link. Flashing indicates unit is training. Dark indicates link is down.

**Frame**—Solid green indicates valid framing. Flashing indicates signal being received, but no link established.

### Power Supply

External power supply options: Universal 90–260 VAC operating from 50–60 Hz • 120 VAC/60 Hz • 240 VAC/60Hz • -48 VDC

### Compliance

FCC Part 15A • CE Mark • EMC Directive 89/336/EEC • Low-Voltage Directive 73/23/EEC

### Environment

Operating Temp.: 32–122°F (0–50°C)  
Humidity: 5–90% non-condensing

### Dimensions

4.7 x 1.52 x 5.0 in. (10.6 x 3.9 x 12.7 cm)

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