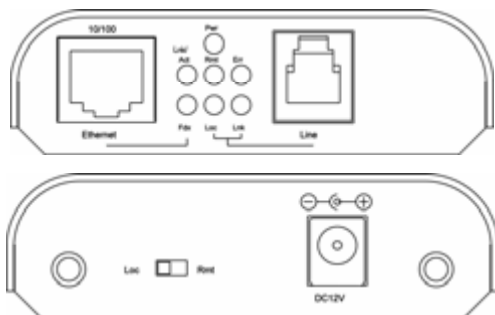# Quick Start Guide

This quick start guide describes how to install and use the Ethernet Extender. The Ethernet Extender introduced here provides one channel for Ethernet over existing voice grade copper wire.

Product Overview

Product Features

- One 10/100BaseTX (TX) Ethernet port with RJ-45 connector
- Auto negotiation of speed and duplex mode on TX port
- Auto MDIX on TX port
- Complies with IEEE 802.3 10BaseT and IEEE 802.3u 100BaseTX standards
- One Ethernet Extender port with RJ-11 connector
- Ethernet Extender port auto senses the speed of 1/3/5/10/15/20/25/30/40/50Mbps
- One DIP switch for configuring Ethernet Extender local or remote mode
- Status LEDs
- External AC to DC power adapter
- Used as a stand-alone device

Ethernet Extender Mode Settings

Ethernet Extender mode settings are made very simple by means of a switch at the rear panel of the Ethernet Extender. The switch has two positions for Ethernet Extender mode settings. Refer to the table below for more details. One device must be set to Loc and the other to Rmt when two devices are connected.

| Loc	Rmt
The device operates in local mode	The device operates in remote mode

Connecting to Power

This Ethernet Extender is a plug-and-play device. Connect the supplied AC to DC power adaptor to the receptacle on the rear panel of the Ethernet Extender, and then attach the plug into a standard AC outlet.

The 10/100Base-TX and Ethernet Extender Connectors

The 10/100Base-TX Connection
The following lists the pinouts of 10/100Base-TX RJ-45 port.
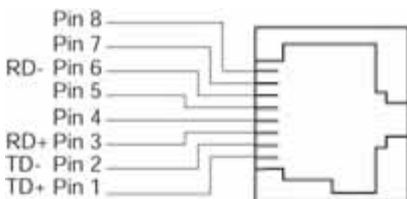
Pin	Regular Ports	Uplink ports
1	Output Transmit Data +	Input Receive Data +
2	Output Transmit Data -	Input Receive Data -
3	Input Receive Data +	Output Transmit Data +
4	NC	NC
5	NC	NC
6	Input Receive Data -	Output Transmit Data -
7	NC	NC
8	NC	NC

The Ethernet Extender Connection
The RJ-11 and Terminal Block port pinouts, Pin 3: Tip, Pin 4: Ring.
Use a telephone line to connect two RJ-11 or Terminal Block ports between two Hardened Ethernet Extenders.
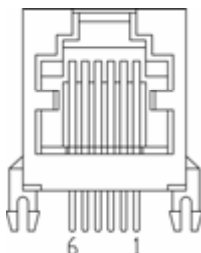
Front Panel & LEDs

The LED indicators give you instant feedback on status of the Ethernet Extender:

LEDs	State	Indication
Pwr	Steady	Power on Pwr stands for POWER
	Off	Power off
Ethernet		
Lnk/Act	Steady	A valid Ethernet connection established Lnk stands for LINK
	Flashing	Transmitting or receiving Ethernet data Act stands for ACTIVITY
	Off	Neither valid Ethernet connection established nor transmitting/receiving Ethernet data
Fdx	Steady	Ethernet Connection in full duplex mode Fdx stands for FULL-DUPLEX
	Off	Ethernet Connection in half-duplex mode
Ethernet Extender		
1	Green	The Ethernet Extender port transmitting/receiving at 1Mbps, up to 1900M
	Amber	The Ethernet Extender port transmitting/receiving at 3Mbps, up to 1800M
2	Green	The Ethernet Extender port transmitting/receiving at 5Mbps, up to 1600M
	Amber	The Ethernet Extender port transmitting/receiving at 10Mbps, up to 1400M
3	Green	The Ethernet Extender port transmitting/receiving at 15Mbps, up to 1200M
	Amber	The Ethernet Extender port transmitting/receiving at 20Mbps, up to 1000M
4	Green	The Ethernet Extender port transmitting/receiving at 25Mbps, up to 800M
	Amber	The Ethernet Extender port transmitting/receiving at 30Mbps, up to 700M
4 + 2	Amber	The Ethernet Extender port transmitting/receiving at 40Mbps, up to 600M
4 + 3	Amber	The Ethernet Extender port transmitting/receiving at 50Mbps, up to 300M
Rmt	Steady	The device operates in remote mode
Loc	Steady	The device operates in local mode
Err	Steady	Error occurred
Lnk	Steady	A valid connection established

Use DIN-Rail Mounting Kit

Fit the DIN-Rail mounting kit onto the bottom of the unit and fasten the screws. The Ethernet Extender can use DIN-Rail mounting kit to fix on the DIN-Rail.
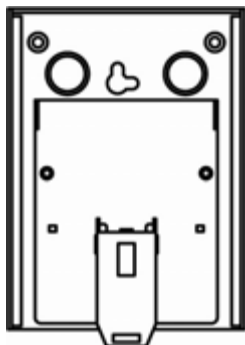
Preface

This manual describes how to install and use the Ethernet Extender. The Ethernet Extender introduced here provides one channel for Ethernet over existing voice grade copper wire.

The Ethernet Extender fully complies with IEEE 802.3 10BaseT and IEEE 802.3u 100BaseTX standards.

In this manual, you will find:

- Product overview
- Features on the Ethernet Extender
- Illustrative LED functions
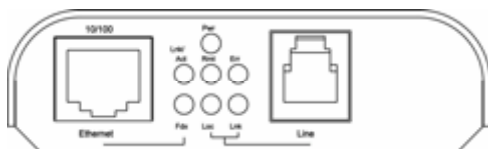- Installation instructions
- Specifications

Table of Contents

Introduction

The Ethernet Extender provides one channel for Ethernet over existing voice grade copper wire. It can be used as a stand-alone device.

Product Overview

Product Features

- One 10/100BaseTX (TX) Ethernet port with RJ-45 connector
- Auto negotiation of speed and duplex mode on TX port
- Auto MDIX on TX port
- Complies with IEEE 802.3 10BaseT and IEEE 802.3u 100BaseTX standards
- One Ethernet Extender port with RJ-11 connector
- Ethernet Extender port auto senses the speed of 1/3/5/10/15/20/25/30/40/50Mbps
- One switch for configuring Ethernet Extender local or remote mode
- Status LEDs
- External AC to DC power adapter
- Used as a stand-alone device

<Note> Please don't connect RJ-11 connector of Ethernet Extender to public switched telephone system.

Packing List

When you unpack this product package, you will find the items listed below. Please inspect the contents, and report any apparent damage or missing items immediately to our authorized reseller.

- The Ethernet Extender
- User's Manual
- AC to DC Power Adaptor

One-Channel Ethernet Extender

Ports

The Ethernet Extender provides one TX port and one Ethernet Extender port.

For the TX port, it uses RJ-45 connector and auto senses the speed of 10/100Mbps.

For the Ethernet Extender port, it uses RJ-11 connector and auto senses the speed of 1/3/5/10/15/20/25/30/40/50Mbps.

Ethernet Extender Mode Settings

Ethernet Extender mode settings are made very simple by means of a 2 position switch at the rear panel of the Ethernet Extender.
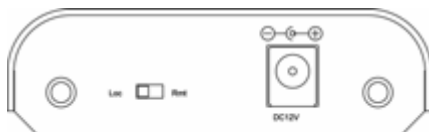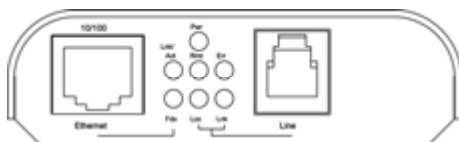

Mode switch

There is one position on the Mode switch for Ethernet Extender mode settings. Refer to the table below for more details. One end must be set to Loc and the other to Rmt when two devices are connected.

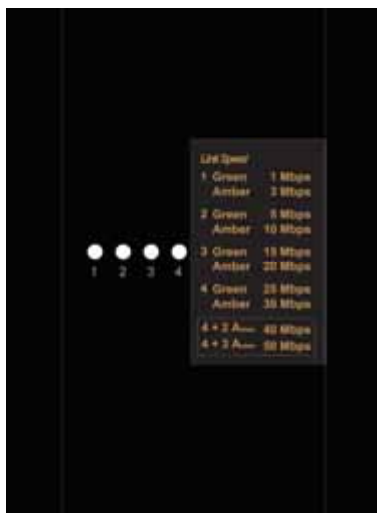| Loc	Rmt
The device operates in local mode	The device operates in remote mode

Front Panel & LEDs

LED Indicators

The LED indicators give you instant feedback on status of the Ethernet Extender:

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Pwr	Steady	Power on Pwr stands for POWER
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4 + 2	Amber	The Ethernet Extender port transmitting/receiving at 40Mbps, up to 600M
4 + 3	Amber	The Ethernet Extender port transmitting/receiving at 50Mbps, up to 300M
Rmt	Steady	The device operates in remote mode
Loc	Steady	The device operates in local mode
Err	Steady	Error occurred
Lnk	Steady	A valid connection established

Installation

This chapter gives step-by-step installation instructions for the Ethernet Extender.

Selecting a Site for the Equipment

As with any electric device, you should place the equipment where it will not be subjected to extreme temperatures, humidity, or electromagnetic interference. Specifically, the site you select should meet the following requirements:

- The ambient temperature should be between -20 to 60 degrees Celsius.
- The relative humidity should be less than 90 percent, non-condensing.
- Surrounding electrical devices should not exceed the electromagnetic field (RFC) standards.
- Make sure that the equipment receives adequate ventilation. Do not block the ventilation holes on each side of the equipment.
- The power outlet should be within 1.8 meters of the product.

Connecting to Power

- This Ethernet Extender is a plug-and-play device.
- Connect the supplied AC to DC power adaptor to the receptacle on the rear panel of the Ethernet Extender, and then attach the plug into a standard AC outlet.
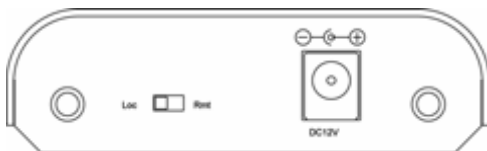
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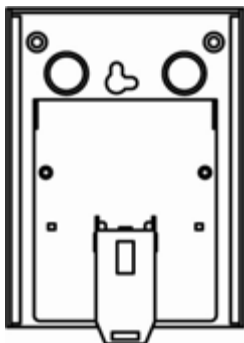
Specifications

Applicable Standards	IEEE 802.3 10BaseT IEEE 802.3u 100BaseTX Ethernet over VDSL
Fixed Ports	1 x 10/100Mbps Ethernet port with RJ-45 connector 1 x Ethernet Extender port with RJ-11 connector
Speed 10BaseT 100BaseTX Ethernet Extender	 10/20Mbps for half/full-duplex 100/200Mbps for half/full-duplex 1, 3, 5, 10, 15, 20, 25, 30, 40, 50Mbps
Cable 10BaseT 100BaseTX Ethernet Extender	 2-pair UTP/STP Cat. 3, 4, 5 2-pair UTP/STP Cat. 5 Telephone wires
Switching Method	Store-and-Forward
Forwarding rate	14,880/148,810pps for 10/100Mbps
LED Indicators	Per Unit- (7 LEDs): Pwr; Rmt, Loc, 1, 2, 3, 4
	Per Port- RJ-45 (2 LEDs): Lnk/Act; Fdx RJ-11 (2 LEDs): Err, Lnk
Dimensions	80.3mm (W) x 109.2mm (D) x 23.8mm (H) (3.16" (W) x 4.30" (D) x 0.94" (H)
Weight	150g (0.33lb.)
Power	External power adaptor 12VDC, 0.2A
Power Consumption	2.4W Max.
Operating Temperature	-20°C ~ 60°C
Storage Temperature	-20°C ~ 70°C
Humidity	5 ~ 95%, non-condensing
Safety	UL60950-1
Emissions	FCC part 15 Class A, CE Mark Class A