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DCE 2178EE  
User Manual



Quality Communications Products  
Made in the U.S.A.

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## Preface

This manual describes how to install and use the DCE 2178EE. The DCE 2178EE introduced here provides one channel for Ethernet over VDSL.

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 DCE 2178EE
- Illustrative LED functions
- Installation instructions
- Specifications

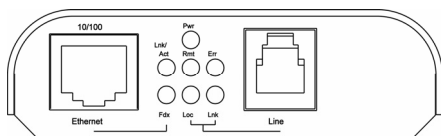
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## Introduction

The DCE 2178EE provides one channel for Ethernet over VDSL. It can be used as a stand-alone device or with a standard 19" chassis.

## 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 over VDSL port with RJ-11 connector
- Ethernet over VDSL port auto senses the speed of 1/3/5/10/15/20/25/30Mbps
- One switch for configuring VDSL local or remote mode
- STATUS LEDs
- External AC to DC power adapter
- Used as a stand-alone device or with a chassis
- Hot-swappable when used with a chassis

## 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 DCE 2178EE
- USER'S MANUAL
- AC to DC Power Adaptor

## One-Channel Ethernet Extender

### Ports

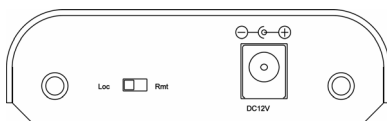
The DCE 2178EE provides one TX port and one VDSL port.

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

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

### VDSL Mode Settings

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



### Mode switch

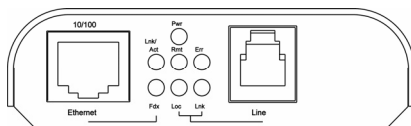
There is one position on the Mode switch for VDSL mode settings. Refer to the table below for more details. One end must be set to Loc and the other to Rmt when two devices are connected.

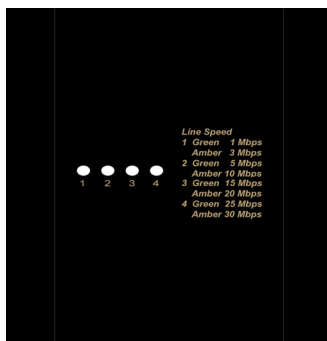
Loc	Rmt
The device operates in local mode	The device operates in remote mode

### Front Panel & LEDs

#### LED Indicators

The LED indicators give you instant feedback on status of the DCE 2178EE:





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 over VDSL		
1	Green	The VDSL port transmitting/receiving at 1Mbps, up to 1900M
	Amber	The VDSL port transmitting/receiving at 3Mbps, up to 1700M
2	Green	The VDSL port transmitting/receiving at 5Mbps, up to 1600M
	Amber	The VDSL port transmitting/receiving at 10Mbps, up to 1500M
3	Green	The VDSL port transmitting/receiving at 15Mbps, up to 1400M
	Amber	The VDSL port transmitting/receiving at 20Mbps, up to 1000M
4	Green	The VDSL port transmitting/receiving at 25Mbps, up to 800M
	Amber	The VDSL port transmitting/receiving at 30Mbps, up to 600M
Rmt	Steady	The device operates in remote mode
Loc	Steady	The device operates in local mode
Err	Steady	Error occurred
Lnk	Steady	A valid VDSL connection established

## Installation

This chapter gives step-by-step installation instructions for the DCE 2178EE.

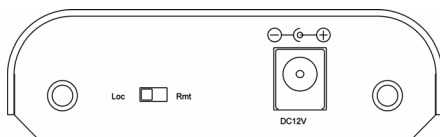
### Selecting a Site for the Equipment

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 0 to 60 °C.
- The relative humidity should be less than 90%, non-condensing.
- Surrounding electrical devices should not exceed the electromagnetic field (RFC) standards for IEC 801-3, Level 2 (3V/M) field strength.
- 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 DCE 2178EE 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 with a voltage range from 100 to 240VAC.



## Installing in a Chassis

The DCE 2178EE can be fit into any of the expansion slots on a special designed chassis.

- First, install the DCE 2178EE onto a carrier supplied with the chassis:

Step 1- Unscrew the carrier from the desired expansion slot on the chassis.



Step 2- Fit the DCE 2178EE onto the carrier.



- When the DCE 2178EE is completely seated onto the carrier, insert the carrier to the guide rails of the expansion slot.





- Carefully slide in the carrier until it is fully and firmly fit the chassis. Fasten the screws onto the carrier.

**<NOTE>** Never insert any DCE 2178EE into the chassis directly without using the supplied carriers. The carriers allow secure and consistent placement of the DCE 2178EE into the chassis backplane without causing any damage.

## Use panel mount kit

The DCE 2178EE can use panel mount kit to fix on the panel.



Step 1- Loosen the screws by the side of the unit.



Step 2- Fit the panel mount kit onto the unit and fasten the screws.

## 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 over VDSL port with RJ-11 connector
Speed 10BaseT 100BaseTX  ETHERNET OVER VDSL	10/20Mbps for half/full-duplex 100/200Mbps for half/full-duplex  1, 3, 5, 10, 15, 20, 25, 30Mbps
Cable 10BaseT 100BaseTX  ETHERNET OVER VDSL	2-pair UTP/STP Cat. 3, 4, 5  2-PAIR UTP/STP CAT. 5  Cross-over telephone wires
Switching Method	Store-and-Forward
Forwarding rate	14,880/148,800pps 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	W80.3 × D109.2 × H23.8 mm  (3.2 x 4.3 x 0.94 IN.)
Weight	0.15kg (5.3 oz.)
Power	External power adaptor 12VDC, 0.2A
Power Consumption	2.4W Max.
Operating Temperature	0°C ~ 60°C
Storage Temperature	-25°C ~ 70°C
Humidity	10 ~ 90%, non-condensing
Emissions	FCC part 15 Class A, CE Mark

## Limited Product Warranty

DCE warrants that the Product sold will be free from defects in material and workmanship and perform to DCE' applicable published specifications for a period of 24 months from the date of delivery to Customer. The liability of DCE hereunder shall be limited to replacing or repairing, at its option, any defective Products that are returned F.O.B. to DCE's Olney, Maryland facility (or, at DCE's option, refunding the purchase price of such products). In no case are Products to be returned without first obtaining permission and a customer return order number from DCE. In no event shall DCE be liable for any consequential or incidental damages.

Products that have been subject to abuse, misuse, accident, alteration, neglect, unauthorized repair or installation are not covered by the warranty. DCE shall make the final determination as to the existence and cause of any alleged defect. No liability is assumed for expendable items such as lamps and fuses. No warranty is made with respect to custom products or Products produced to Customer's specifications except as specifically stated in writing by DCE in the agreement for such custom products.

Warranty is voided if the serial number label on the printed circuit assembly of the returned modems is removed, defaced, or destroyed. This label contains the serial number that will provide proof of the date of manufacturing.

This warranty is the only warranty made by DCE with respect to the goods delivered hereunder, and may be modified or amended only by a written instrument signed by a duly authorized officer or DCE and accepted by Customer.

This warranty and limitation extends to customer and to users of the product and is in lieu of all warranties with respect to the product whether express, implied, or statutory, including without limitation the implied warranties of merchantability and fitness for a particular purpose.

## RMA Procedure

Before returning any DCE product, an RMA number must be obtained. Before asking for an RMA number, ascertain that the product was purchased from DCE. If you bought the product from a Distributor or Systems Integrator, the product should be returned to that vendor.

The most convenient method to obtain an RMA authorization for a product purchased from DCE is to submit a request by fill in the form from [www.data-connect/returns.htm](http://www.data-connect/returns.htm). Information required must include

- Company name
- Address (including any Mail Stop or specific delivery information)
- Name, contact information, and e-mail address for the technical contact(s) at your company

If the above information is on your letterhead, that format is acceptable.

For each item you wish to return, please include:

- The product model number (usually found on the serial number tag)
- The serial number for each item you wish to return
- A description of the problem you are encountering
- The cause of the problem (if known)

A product support specialist may call to verify that the product is properly installed or may ask you to perform tests to insure that the product has actually failed. After reviewing the problem, DCE will assign an RMA number and you will be notified by email or FAX.

The product must be properly packed and returned to:

Data Connect Enterprise.  
3405 Olandwood Court,  
Olney, MD 20832  
Attn: RMA Technical Support

The RMA number must be legibly displayed on the shipping carton. No RMAs will be issued without a product review. DCE will not be responsible for any product returned without an RMA number.

If you believe the product may be out of warranty, include a method of payment for repairs (either a Purchase Order number or credit card number), card holder name, date of expiration on the RMA request. Repairs currently require 5 working days and are returned UPS second day air.

Contact us by e-mail [mspellerberg@data-connect.com](mailto:mspellerberg@data-connect.com) or call 301.924.7400 x25 if you should have any questions.