

## Work Area Media Conversion



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### Ethernet Network Interface Unit

Create an intelligent Ethernet management platform with ADC KRONE's Ethernet Network Interface Unit (ENIU). Installed at the remote premises, the ENIU provides the demarcation point between the customer and carrier network. By providing the ability to demarcate the network at the customer interface, the ENIU enables the carrier to remotely assess whether trouble conditions reside within the carrier or customer network.



#### Features

- Supports in-band remote signal loopback for troubleshooting and testing as well as remote failure indications and link monitoring for checking service performance
- Features UTP (RJ45) or SFP based optical connections for customer and carrier interface
- Loss of power “cut through” ensures that electrical signal integrity is maintained on RJ45 interfaces if power to the unit is lost
- Configurable to 10Mbps or 100Mbps Ethernet or Gigabit Ethernet (GigE) on carrier and customer demarcation sides
- Bandwidth can be port limited in 1Mb increments
- Includes enclosed carrier-side interfaces with LED performance indicators on the front of the unit
- Fully compliant with IEEE 802.3ah First Mile standards for OAM
- Accepts -48Vdc or AC power
- Saves operations time by limiting technician despatch for troubleshooting and turn-up
- Reduces network downtime through proactive network management via remote access for testing and performance monitoring
- Enables quicker service restoration through single end testing of signal
- Increases network availability by accelerating network trouble repair cycle
- Easily integrates Ethernet network management into existing operations by mirroring current maintenance practices for DS1/DS3 architectures
- Standards-based solution allows interoperability with switches, routers and test equipment

#### Ordering Information

Description	Catalogue Number
<b>Ethernet Network Interface Unit</b>	
E/E ENIU, SET TOP 10/100/1000 MB UTP to 10/100/1000 MB UTP	ENI-EGXXEGXX1B
E/E ENIU, AC, SET TOP 10/100/1000 MB UTP to 10/100/1000 MB UTP	ENI-EGXXEGXX1B-AC
E/O ENIU, SET TOP 10/100/1000 MB UTP to GigE Optical (requires SFP)	ENI-OGXXEGXX1B
E/O ENIU, AC, SET TOP 10/100/1000 MB UTP to GigE Optical (requires SFP)	ENI-OGXXEGXX1B-AC
O/O ENIU, SET TOP GigE Optical to GigE Optical (requires 2 SFPs)	ENI-OGXXOGXX1B
O/O ENIU, AC, SET TOP GigE Optical to GigE Optical (requires 2 SFPs)	ENI-OGXXOGXX1B-AC

# Work Area

## Media Conversion – Intelligent Ethernet Management Platform

### Ethernet Network Interface Unit

#### Specifications

##### Power

Voltage	-48VDC, or 110 to 240VAC
Input current	250 mA maximum
Fuse size	1 Amp

##### Environmental

Operating conditions	+23°F to +122°F (-5°C to +50°C) 5% to 90% relative humidity
Storage conditions	-40°F to +185°F (-40°C to +85°C) 10% to 95% relative humidity

##### Mechanical

Dimensions (DxWxH)	1.55" x 4.25" x 9.09" (394 x 108 x 231 mm)
Weight	1.8 lb. (0.81 kg)

##### Electrical

Network interface	RJ45
Network data rates	Configurable to 10Mbps, 100Mbps or 1000Mbps
Customer interface	RJ45
Customer data rates	Configurable to 10Mbps, 100Mbps or 1000Mbps
Media requirements:	10Mbps UTP Category 3, 4, 5 100Mbps UTP Category 5 1000Mbps UTP Category 5e
Distance	328 feet (100 metres)

##### Optical

Network interface	LX, SX, ZX SFP-based
Network data rates	Gigabit Ethernet
Customer interface	LX, SX, ZX SFP-based
Customer data rates	Gigabit Ethernet

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## Media Conversion – OptEnet™ Optical Extension Platform

### Optical Extension Platform

The ADC KRONE OptEnet™ optical extension platform is an intelligent, scalable platform capable of handling any network's Ethernet or SONET media transitions. Bridging the gap between legacy copper infrastructures and fibre growth, the OptEnet platform provides the most economical evolution path. Integrated intelligence allows the user to remotely monitor system performance and transmit alarm conditions to upstream operational support systems. Increasing ADC KRONE's leadership in connectivity solutions, the OptEnet platform provides the ideal solution for Ethernet extensions in support of transparent LAN services or switch router interconnect requirements. A variety of solutions are supported ranging from 10Mb/s Ethernet, OC-12 and Gigabit Ethernet (GigE).



#### Features

- Modular design enables line card diversity within the same chassis
- Extend central office interconnect between network elements when distances are greater than 100 metres
- Ethernet delivery solution from central office to customer premises
- Reduce capital expenses associated with expensive optical line cards in network elements
- Auto-negotiation features eliminate the need for optical line card upgrade in network elements
- Redundant -48VDC and +24VDC power supplies
- Supports SNMP, TL1 and Telnet communication protocols
- Daisy-chain communication interfaces
- Supports 10BASE-T, 100BASE-TX and 1000BASE-T UTP conversion to fibre
- Multimode fibre to singlemode fibre conversions
- Medium Dependent Interface Cross-over (MDI-X) eliminates network collisions
- NEBS Level 3, CE, UL and FCC standards compliant

#### Ordering Information

Description	Catalogue Number
<b>Ethernet Network Interface Unit</b>	
E/E ENIU, SET TOP 10/100/1000 MB UTP to 10/100/1000 MB UTP	ENI-EGXXEGXX1B
E/E ENIU, AC, SET TOP 10/100/1000 MB UTP to 10/100/1000 MB UTP	ENI-EGXXEGXX1B-AC
E/O ENIU, SET TOP 10/100/1000 MB UTP to GigE Optical (requires SFP)	ENI-OGXXEGXX1B
E/O ENIU, AC, SET TOP 10/100/1000 MB UTP to GigE Optical (requires SFP)	ENI-OGXXEGXX1B-AC
O/O ENIU, SET TOP GigE Optical to GigE Optical (requires 2 SFPs)	ENI-OGXXOGXX1B
O/O ENIU, AC, SET TOP GigE Optical to GigE Optical (requires 2 SFPs)	ENI-OGXXOGXX1B-AC

# Work Area

## Media Conversion – OptEnet™ Optical Extension Platform

### OptEnet™ Modular Chassis

The OptEnet chassis is a modular chassis, which enables multiple types of line cards deployed simultaneously within the same chassis.

#### Features

- Supports up to 12 OptEnet line cards in two rack units
- Supports up to 4 OptEnet line cards in one rack unit
- Accepts dual redundant power supplies
- 19 inches wide with 23-inch reverse mounting ears
- Optional SNMP, TL1 and/or alarm functionality



OptEnet 12-Port Modular Chassis



OptEnet 4-Port Modular Chassis

#### Ordering Information

Description	Catalogue Number
OptEnet Modular Chassis, 12-Port	ADCCE1100A
OptEnet Modular Chassis, 4-Port	ADCCE1000A

#### Specifications

##### Physical: 12-Port Chassis

Dimensions (HxWxD): 3.5" x 17.5" x 5.75" (889 x 444 x 120 mm)  
 Weight (empty): 8.5 lbs (3.86 kg)

##### Physical: 4-Port Chassis

Dimensions (HxWxD): 1.72" x 17.08" x 9.67" (44 x 434 x 302 mm)  
 Weight (empty): 5.7 lbs (2.6 kg)

##### Environmental

Operating conditions: 5°C to 40°C at 5% to 85% relative humidity  
 Short term conditions: -5°C to 50°C at 5% to 90% relative humidity  
 Storage conditions: -40°C to 70°C at 10% to 95% relative humidity (no condensation)

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## Media Conversion – OptEnet™ Optical Extension Platform

### Power Supply Modules

The OptEnet chassis accepts power from DC sources. Dual power supplies are deployed within the chassis to provide redundant power to all line cards along the back plane.



OptEnet DC Power Supply Module

#### Features

- -48Vdc (50 W and 100 W) power supply versions
- +24Vdc (100 W) power supply
- Extended temperature versions available
- Power connection on the front panel
- Power and temperature status LEDs

#### Ordering Information

Description	Catalogue Number
OptEnet +24Vdc Power Supply Module	ADCCE2200A
OptEnet -48Vdc Power Supply Module (100 W) – extended temperature	ADCCE2400A
OptEnet -48Vdc Power Supply Module (100 W) – standard temperature	ADCCE2410A
OptEnet -48Vdc Power Supply Module (50 W) – extended temperature	ADCCE2450A

#### Specifications

DC input voltage: -48Vdc, +24Vdc

### Communications Modules

If remote monitoring is required, a central processor unit (CPU) can be deployed within the OptEnet™ platform. An alarm card is available if only local alarm indications are required. The CPU and alarm card are optional. Only one of the two modules can be deployed in the chassis, so the network administrator must determine which alarm notification method is preferable.



OptEnet CPU



OptEnet Alarm Module

#### Features

##### CPU:

- Serial and Ethernet interface
- SNMP, TL1 and Telnet communications protocols
- Compatible with all SNMP management platforms
- Daisy-chain up to four units, via one IP address
- Firmware upgrade via TFTP or serial
- Five simultaneous Telnet sessions

##### Alarm Card:

- Normally open and normally closed alarm contacts

#### Ordering Information

Description	Catalogue Number
OptEnet Central Processor Unit	ADCCE3000A
OptEnet Alarm Module	ADCCE3100A

#### Specifications

##### CPU Specifications

Ethernet interface:	10BASE-T, RJ45 connector
COM IN interface:	RS-232 DCE, RJ45 connector
COM OUT interface:	RS-232 DTE, RJ45 connector
Communications protocol:	SNMP, TL1 and ASCII

##### Alarm Module Specifications

Power ON indicator:	Green
Alarm indicator:	Red
Contact closures:	Normally open and normally closed

# Work Area

## Media Conversion – OptEnet™ Optical Extension Platform

### Singlemode to Multimode Optical Conversion Line Cards

The OptEnet™ singlemode to multimode optical conversion line card is one of a family of line cards that can be deployed in the OptEnet modular chassis. The card is designed to convert optical signals transported on a singlemode link to an optical signal that can be transported on a multimode link. The card supports any protocol and data rates from 10Mb/s to 622Mb/s (OC-12).



#### Features

- Single circuit line card
- Duplex transmission
- Link status and power LED indications
- Optical connections on front panel
- Protocol independent
- Supports data rates 10Mb/s up to OC-12

#### Ordering Information

Description	Catalogue Number
<b>OptEnet Singlemode to Multimode</b>	
10-622 Mb/s Line Card – standard temperature	ADCPE6000A
10-622 Mb/s Line Card – extended temperature	ADCPE6001A

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## Media Conversion – OptEnet™ Optical Extension Platform

### Singlemode to Multimode Optical Conversion Line Cards

#### Supported Data Rates

Signal Type/ Protocol	Data Rate	Comments
Ethernet	10Mb/s	10BASE-FL
Fast Ethernet	100Mb/s	100BASE-FX
ATM/SONET/SDH	155Mb/s	OC-3
	622Mb/s	OC-12

#### Specifications

##### Electrical

Input power: 2.7 Watts maximum; normal operation

##### Mechanical

Chassis compatibility: OptEnet modular chassis  
 Fibre optic connectors: SC  
 Dimensions (HxWxD): 1.14" x 8.07" x 7.4" (29 x 205 x 188 mm)  
 Weight: 0.27 lbs (0.122 kg)

##### Optical

###### Singlemode

Wavelength: 1274 to 1356 nm range  
 Output optical power (XMT): -15dBm minimum, -8dBm maximum  
 Input optical power (RCV): -8dBm minimum, -32dBm maximum

###### Multimode

Wavelength: 1270 to 1380 nm range  
 Output optical power (XMT)  
 62.5/125µm: -20dBm minimum, -14dBm maximum  
 50/125µm: -24dBm minimum, -14dBm maximum  
 Input optical power (RCV): -26dBm minimum, -14 dBm maximum

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## Media Conversion – OptEnet™ Optical Extension Platform

### OptEnet™ 10/100Mb/s Optical Ethernet Conversion Line Card

The OptEnet 10/100Mb/s optical Ethernet conversion line cards are designed to convert optical signals to electrical signals. The line cards have an auto negotiation feature allowing them to detect and synchronise with either a 10BASE-T or 100BASE-TX signal. The cards support 10BASE-T and 100BASE-T data rates over UTP and singlemode or multimode fibre.



#### Features

- Supports 10BASE-T, and 100BASE-TX
- Full and half duplex transmission (transmit and receive)
- Ethernet and fibre optic link indicators
- Auto negotiation over fibre and copper (ANSI/TIA 785)
- MDI-X – auto-detects and corrects cross-over

#### Ordering Information

Description	Catalogue Number
<b>OptEnet Optical Ethernet Conversion Line Cards</b>	
100BASE-SX (SC) Line Card	ADCPE4000A
100BASE-LX (SC) Line Card	ADCPE4200A
100BASE-FX (SC) Line Card	ADCPE4400A

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## Media Conversion – OptEnet™ Optical Extension Platform

### OptEnet™ 10/100Mb/s Optical Ethernet Conversion Line Card

#### Supported Protocols

Application	Data Rate	Media	Distance	Interface
10BASE-T	10Mb/s	UTP Category 3, 4 or 5 (2-pair)	328 feet (100 m)	RJ45
100BASE-TX	100Mb/s	UTP Category 5 (2-pair)	328 feet (100 m)	RJ45
100BASE-LX	10/100Mb/s	1300 nm singlemode fibre	9.3 miles (15 km)	SC
100BASE-SX	10/100Mb/s	850 nm multimode fibre	984 feet (300 m)	SC
100BASE-FX	10/100Mb/s	1310 nm multimode fibre	2562 feet (2 km)	SC

#### Specifications

##### Electrical

Input power: 1.75 Watts maximum; normal operation

##### Mechanical

Chassis compatibility: OptEnet modular chassis  
 Fibre optic connectors: SC  
 Dimensions (HxWxD): 1.14" x 8.07" x 7.4" (29 x 205 x 188 mm)  
 Weight: 0.27 lbs (0.122 kg)  
 Electrical interface: RJ45  
 Optical interface: SC

##### Optical

	100BASE-LX (singlemode)	100BASE-SX (multimode)	100BASE-FX (multimode)
Wavelength:	1270 to 1380 nm range	830 to 870 nm range	1270 to 1380 nm range
Output optical power (XMT) 8/125µm:	-15dBm minimum -8dBm maximum	-17dBm minimum -12dBm maximum	-19dBm minimum -14dBm maximum
Input optical power (RCV):	-31dBm minimum -7dBm maximum	-26dBm minimum -12dBm maximum	-32dBm minimum -11dBm maximum

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## Media Conversion – OptEnet™ Optical Extension Platform

### OptEnet™ Gigabit Ethernet Line Card

The OptEnet 1000Mb/s media converter line card is designed to convert optical signals to electrical signals. The card supports 1000BASE-T data rates over UTP and singlemode or multimode fibre.



#### Features

- Supports Gigabit Ethernet
- Full duplex transmission (transmit and receive)
- Ethernet and fibre optic link indicators
- MDI-X – auto-detects and corrects cross-over

#### Ordering Information

Description	Catalogue Number
<b>OptEnet Media Conversion</b>	
1000BASE-SX (SC) Line Card	ADCPE5000A
1000BASE-LX (SC) Line Card	ADCPE5100A

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## Media Conversion – OptEnet™ Optical Extension Platform

### OptEnet™ 10/100Mb/s Optical Ethernet Conversion Line Card

#### Supported Protocols

Application	Data Rate	Media	Distance	Interface
10BASE-T	1000Mb/s	UTP Category 5e (4-pair)	328 feet (100 m)	RJ45
100BASE-LX	1000Mb/s	1300 nm singlemode fibre	6.2 miles (10 km) (8/125µm)	SC
100BASE-SX	1000Mb/s	850 nm multimode fibre	1804 feet (550 m)	SC

#### Specifications

##### Electrical

Input power: 2.2 Watts maximum; normal operation

##### Mechanical

Chassis compatibility: OptEnet modular chassis  
 Fibre optic connectors: SC  
 Dimensions (HxWxD): 1.14" x 8.07" x 7.4" (29 x 205 x 188 mm)  
 Weight: 0.27 lbs (0.122 kg)  
 Electrical interface: RJ45  
 Optical interface: SC

##### Optical

	1000BASE-LX	1000BASE-SX
Wavelength:	1270 to 1355 nm range	830 to 870 nm range
Output optical power (XMT):	-11dBm minimum -3dBm maximum	-9.5dBm minimum -4dBm maximum
Input optical power (RCV):	-22dBm minimum -20dBm maximum	-17dBm minimum -3dBm maximum

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# TrueNet® Structured Cabling