



## CV10x SERIES

### Converteon™ Series Line Card

#### AT-CV101

100TX, 100FX (ST)  
media converter line card

#### AT-CV102

100TX, 100FX (SC)  
media converter line card

#### AT-CV102/1

100TX, 100FX (SC, 15km)  
media converter line card

#### AT-CV102/2

100TX, 100FX (SC, 40km)  
media converter line card

#### Overview

The CV10x series Ethernet media converters include the following models:

- AT-CV101
- AT-CV102
- AT-CV102/1
- AT-CV102/2

The CV10x series Ethernet media converter line cards are designed to extend the distance of your network by interconnecting LAN devices that are physically separated by large distances. The range of line cards support both multi-mode and single-mode fiber pairs, at distances up to 40km. Compliant with IEEE standards, these converters will inter-operate with other standards-based media converters, switches, fiber interface cards, etc over the fiber optic cable.

#### Extend the Distance of Ethernet

Each CV10x series media converter line card features a 100TX twisted pair port and a 100FX optical port. The twisted pair port has an RJ-45 connector and a maximum operating distance of 100 meters (328 feet). Depending on the model, the media converter card can operate in multi-mode or single-mode fiber over various distances up to 40km. These cards can operate at half and full-duplex.

The AT-CV101 fiber optic port has a multi-mode fiber ST connector and a maximum operating distance of 2km (1.24 miles).

The AT-CV102 fiber optic port has a multi-mode fiber SC connector and a maximum operating distance of 2km (1.24 miles).

The AT-CV102/1 fiber optic port has a single-mode fiber SC connector and a maximum operating distance of 15km (9.32 miles).

The AT-CV102/2 fiber optic port has a single-mode fiber SC connector and a maximum operating distance of 40km (24.85 miles).

#### Flexible Deployment

The CV10x series of line cards can be installed in the complete range of Converteon chassis, allowing them to be deployed in a stand-alone fashion (AT-CV1000), or in a multi-slot chassis (AT-CV5000). When deployed in a multi-slot chassis, the line cards can be unmanaged, or managed with the inclusion of at least one management card in the chassis. In unmanaged mode, the line cards can be easily configured using DIP switches, whereas in a managed chassis, all the configuration can be performed remotely.

Whatever the chassis, the line cards can be hot swapped providing the network manager with a mechanism to simply perform moves/adds/changes without having to power down other parts of the network.

#### MissingLink™ and Smart MissingLink™ (SML)

The MissingLink (ML) feature allows the ports on the media converter blade to pass the 'Link' status of their connections to each other. When the media converter detects a problem with one of the ports, such as the loss of connection to a node, it shuts down the connection to the other port, thus notifying the node that the connection has been lost. Smart MissingLink (SML) is when a link is lost on a port, the Link LED of the port which still has a valid connection to its end node starts to blink. These features allow network administrators to quickly troubleshoot network problems.

#### Hassle Free Support

All Allied Telesis Ethernet Media Converter line cards offer free technical support, ensuring trouble-free installation.

#### Key Features

- Extends Fast Ethernet networks
- Auto MDI/MDI-X
- Auto-negotiation (IEEE 802.3u-compliant)
- Support MissingLink and Smart MissingLink
- Transparent to IEEE 802.1Q VLAN packets
- Managed or unmanaged operation
- System and port LEDs
- Line card for all Converteon series chassis'

## Link Test, MissingLink, and Smart MissingLink Functions

### Link Test

The link test is a fast and easy way for you to test the connections between the media converter ports and the end-nodes that are connected to the ports. If a network problem occurs, you can perform a link test to determine which port is experiencing a problem, and so be able to focus your troubleshooting efforts on the cable or end-node where the problem resides.

### MissingLink

The MissingLink feature enables the two ports on the media converter to pass the 'Link' status of their connections to each other. When the media converter detects a loss of connection to an end-node, the media converter shuts down the connection to the other port, thus notifying the end-node that the connection has been lost.

### Smart MissingLink

The Smart MissingLink feature performs exactly the same function as MissingLink with one additional feature. When a link is lost on a port, the LINK LED of the port which still has a valid connection to its end-node starts to blink. This allows you to quickly determine which port still has a valid connection (LINK LED blinking) and which port has lost its connection (LINK LED off).

## Technical Specifications

### Status Indicators

#### System LEDs

LED	Color	Description
RDY	Green	The line card has passed diagnostics
	Off	The line card has not passed diagnostics
ML	Green	MissingLink mode is enabled
	Off	MissingLink mode is disabled
SML	Green	Smart MissingLink mode is enabled
	Off	Smart MissingLink mode is disabled

#### Fiber Port LEDs

LED	Color	Description
LK	Green	Link established on the port
	Off	No link established on the port
AT	Green	TX/RX activity detected on the port
	Off	No activity detected on the port

#### Copper Port LEDs

LED	Color	Description
LK	Green	Link established on the port
	Off	No link established on the port
AT	Green	TX/RX activity detected on the port
	Off	No activity detected on the port
FD	Green	Port operating in full-duplex mode
	Off	Port operating in half-duplex mode

## DIP Switches

The AT-CV102 line card features both the Diagnostic Mode (Table 1) and Port Configuration (Table 2) DIP switches. The tables below list the positions of the DIP switches.

**Table 1. Diagnostic Mode DIP Switches Positions**

Operating Mode	DIP 1	DIP 2	DIP 3	DIP 4
Link Test (default)	Off	Off	X	X
Smart MissingLink (SML)	Off	On	X	X
MissingLink (ML)	On	Off	X	X
Manufacturing Settings	Off	Off	Off	Off

'X' means the DIP switch position could be either On or Off.

Table 2 lists the Port Configuration DIP switches positions.

**Table 2. Port Configuration DIP Switches Positions**

Operating Mode	DIP 1	DIP 2	DIP 3	DIP 4
Auto MDI-X Enabled (default)	X	Off	X	X
Auto MDI-X Disabled	X	Off	X	X
Manufacturing Settings	Off	Off	Off	Off

'X' means the DIP switch position could be either On or Off.

## Physical Specifications

Dimensions	2.2cm x 7.3cm x 13cm
(W x D x H)	(0.855" x 2.89" x 5.1")
Weight	0.27kg (0.60lbs)

## Optical Characteristics

Connector type	Dual SC or dual ST
Fiber type	Single-mode or multi-mode
Operating distance	2km (1.24 miles) to 40km (24.8 miles)

### Optical Output Power (dBm)

Product	Minimum	Maximum	Wavelength	Connector
AT-CV101	-20dBm to	-14dBm	1310nm	Dual ST
AT-CV102	-20dBm to	-14dBm	1310nm	Dual SC
AT-CV102/1	-15dBm to	-5dBm	1310nm	Dual SC
AT-CV102/2	-15dBm to	0dBm	1310nm	Dual SC

### Receiver Power Sensitivity (dBm)

Product	Minimum	Maximum
AT-CV101	-31dBm to	-11dBm
AT-CV102	-31dBm to	-11dBm
AT-CV102/1	-34dBm to	-3dBm
AT-CV102/2	-34dBm to	-3dBm

## Power Characteristics

Power consumption	5.7W
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## Environmental Specifications

Maximum operating temperature:	0°C to 40°C (32°F to 104°F)
Maximum storage temperature:	-25°C to 70°C (-13°F to 158°F)
Operating and storage altitude:	Up to 3,048 meters (10,000 feet)
Relative humidity operating and storage (non-condensing):	5% to 95%
Predicted MTBF (Telcordia SR332):	
AT-CV101	1,020,000 hrs
AT-CV102	890,000 hrs
AT-CV102/1	1,020,000 hrs
AT-CV102/2	1,020,000 hrs

## Standards

EMI part 15:  
FCC class A, EN55022 class A, VCCI class A, C-Tick, CE

### Immunity:

EN55024

### Safety:

UL60950-1 (cULUS), EN60950-1 (TUV)  
EN60825

## Ordering Information

### AT-CV101

Fast Ethernet Converteon media converter line card, 100TX to 100FX, MMF, ST, 2km

### AT-CV102

Fast Ethernet Converteon media converter line card, 100TX to 100FX, MMF, SC, 2km

### AT-CV102/1

Fast Ethernet Converteon media converter line card, 100TX to 100FX, SMF, SC, 15km

### AT-CV102/2

Fast Ethernet Converteon media converter line card, 100TX to 100FX, SMF, SC, 40km

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