

OmniConverter GPoE+/Sx

Unmanaged 10/100/1000 Power Source Equipment (PSE) PoE/PoE+ Ethernet Fiber Switch

The OmniConverter GPoE+/Sx is a unmanaged Ethernet switch that features one or two 1000BASE-X Gigabit fiber ports and four or eight 10/100/1000BASE-T RJ-45 Power Sourcing Power-over-Ethernet (PoE and PoE+) ports. The OmniConverter switch enables network distance extension with fiber cabling and provides full PoE+ power simultaneously to all RJ-45 ports.

The OmniConverter GPoE+/Sx is a Layer 2 Ethernet switch that can be configured in Directed Switch mode. As a Layer 2 Ethernet switch, frames are forwarded to any port based on their MAC address. In Directed Switch mode, multicast traffic (such as video) is directed only to the appropriate fiber port, preventing the flooding of copper ports.

The 4-Port GPoE+/Sx supports MUX Mode, which allows the data traffic to be tunneled between two GPoE+/Sx switches. Data traffic on the RJ-45 ports on one switch are mirrored to the corresponding RJ-45 ports on the other switch.

Models with two fiber ports support Dual Device Mode that enables the GPoE+/Sx to operate as two independent and isolated switches. Models with two fiber ports also support redundant fiber uplinks for critical applications that require protection and sub 50ms restoration in the event of a fiber failure. The second fiber port may also be used to daisy-chain multiple Ethernet switches, or it may be used as another switch port.

The OmniConverter GPoE+/Sx is available with fixed ST, SC, and LC connectors or Small Form Pluggable (SFP) transceivers. Fiber ports support multimode or single-mode and dual fiber or single-fiber with distances up to 140 km. SFPs support a variety of distances in standard and CWDM wavelengths. The 4 Port RJ-45 models support 1000BASE-X and 100BASE-X SFP fiber transceivers.

The GPoE+/Sx automatically negotiates and delivers the power level required by its Powered Device (PD) partner. When negotiating to PoE (IEEE 802.3af) it delivers up to 15.4 Watts per RJ-45 port. When negotiating to PoE+ (IEEE 802.3at) it delivers up to 30 Watts per RJ-45 port.

PoE power reset enables a PD to be re-initialized remotely. When a problem with a PD is identified, the fiber port on a managed switch can be shut down or disconnected, enabling the PoE power reset function on the OmniConverter. The PoE power to the PD is disabled for 2 seconds when a loss of receive fiber link is detected by the OmniConverter, eliminating the need for costly truck rolls to remote PD sites.



SFPs not included

KEY FEATURES

- Unmanaged Ethernet Power Sourcing Equipment (PSE) PoE/PoE+ fiber switch
- Multiple port configurations:
 - 1 Fiber + 4 RJ-45
 - 2 Fiber + 4 RJ-45
 - 1 Fiber + 8 RJ-45
 - 2 Fiber + 8 RJ-45
- Provides full PoE/PoE+ power simultaneously to all Ethernet RJ-45 ports
- Configurable PoE Power Reset
- Supports ST, SC and LC fiber ports or SFP transceivers
- Fiber redundancy on models with two fiber ports
- Dual Device mode for operating as two separate switches
- MUX mode for traffic routing
- Directed Switch mode to prevent port flooding
- Supports jumbo frames up to 10,240 bytes
- Power input AC or DC (4 Port RJ-45 model only)
- Integrated wall mount bracket
- Commercial (0 to 50°C) operating temperature range
- Free 24/7/365 Technical Support

The compact OmniConverter switches can be wall mounted or DIN-rail mounted using an optional mounting clip. The 4-Port models are available with DC input power via terminal

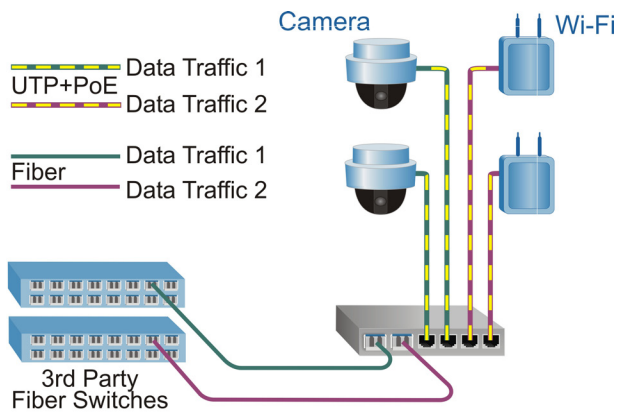
connectors or external 100 to 240V AC power adapters. The 8-Port models are available with 100 to 240V AC power adapters.

APPLICATIONS

Dual Device Mode

For secure applications requiring two separate network domains over fiber runs to the same location and independent connectivity to the Powered Devices, the GPoE+/Sx can be configured in Dual Device Mode.

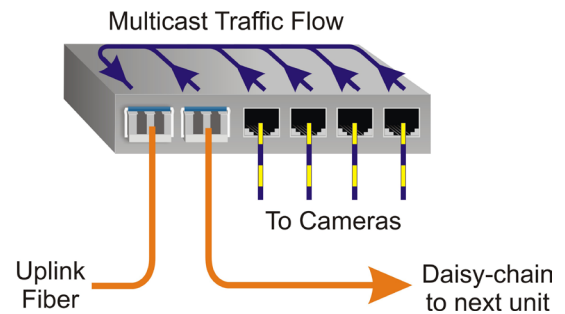
The GPoE+/Sx provides separate and independent data traffic paths between the two fiber links and four or eight RJ-45 ports. In the example below, the green lines represent one independent domain and the purple lines represent the other independent domain.



Directed Switch Mode

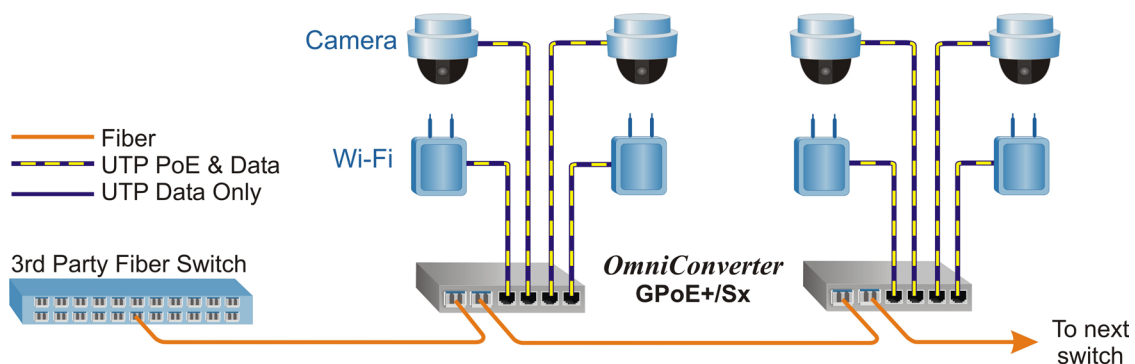
In some networks, video cameras broadcast a single multicast video stream to the entire network, and the video stream is received by all of the destinations. This multicast video can cause port flooding on other network devices (including other cameras, printers and workstations). To avoid this, multicast traffic is routed only to ports where the destination devices are connected.

The GPoE+/Sx can be configured to operate in Directed Switch Mode, which directs video traffic only to the uplink fiber port, as shown in the diagram below, preventing the multicast video traffic from flooding other network ports.



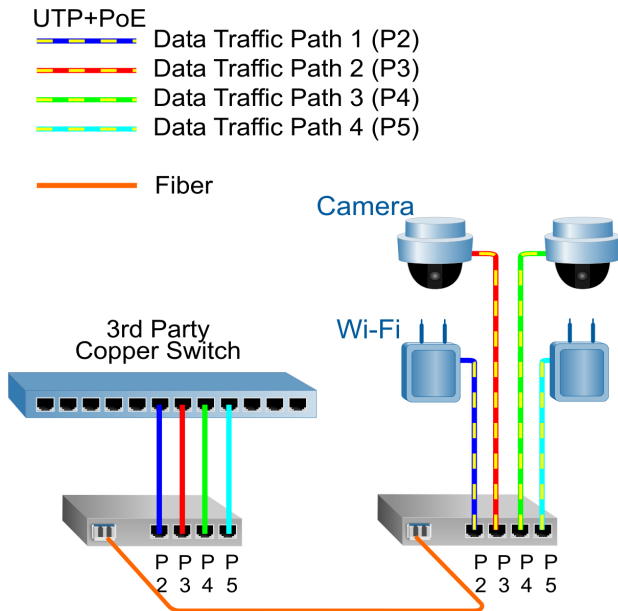
Daisy Chain Application

In this application example, OmniConverter GPoE+/Sx PoE fiber switches are deployed along a fiber daisy chain. Gigabit fiber is distributed from a fiber switch at a network hub location to OmniConverter GPoE+/Sx PoE fiber switches with dual fiber ports that enable a fiber daisy chain with multiple locations. Each OmniConverter GPoE+/Sx provides fiber data connectivity and PoE+ power for IP cameras and Wi-Fi access points at each location.



APPLICATIONS

MUX Mode (4-Port RJ-45 Models Only)



Configuring the GPoE+/Sx switches in MUX Mode provides point-to-point connectivity of Powered Devices to a head end switch over a fiber. MUX Mode tunnels the data traffic between two GPoE+/Sx switches, so data traffic from the RJ-45 ports on one GPoE+/Sx is routed to the matching RJ-45 ports on the other GPoE+/Sx. This is illustrated by the colored lines. Port 2 on the GPoE+/Sx on the left is associated with Port 2 on the GPoE+/Sx on the right, shown with the purple line. The same port associations are illustrated with the red, green and blue lines.

SPECIFICATIONS

OmniConverter GPoE+/Sx	
Description	10/100/1000BASE-T to 1000BASE-X Fiber Unmanaged Ethernet Switch with PoE+
Standard Compliances	IEEE 802.3, IEEE 802.3af (15.40 watts max), IEEE 802.3at (30 watts max)
PoE Supported Modes	4 RJ-45 Ports: IEEE Alternate B (Alt B) 8 RJ-45 Ports: IEEE Alternate A (Alt A)
Regulatory Compliances*	UL, CE, FCC Class A
Environmental	REACH, RoHS2 and WEEE
Frame Size	Up to 10,240 bytes
Port Types	Copper: 10/100/1000BASE-T (RJ-45) Fiber: 1000BASE-X (SFP) (4 RJ-45 Ports) 1000BASE-X (ST, SC, LC, SFP) Fiber: 1000BASE-X (ST, SC, LC, SFP) (8 RJ-45 Ports)
Cable Types	Copper: EIA/TIA 568A/B, Cat 5 UTP and higher Fiber: Multimode: 50/125, 62.5/125µm Single-mode: 9/125µm
AC Power Requirements	AC Adapter: 100 - 240VAC/50 - 60Hz (4 RJ-45 Ports) 1.43A @ 120VAC (typical) AC Adapter: 100 - 240VAC/50 - 60Hz (8 RJ-45 Ports) 2.4A @ 120VAC (typical)
DC Power Requirements	DC Input: +/-46 to +/-57VDC ¹ ; (4 RJ-45 Ports) 2.72A @ 48VDC 3 Pin Terminal (isolated)
Dimensions	4 RJ-45 Ports: W: 5.76" x D: 6.0" x H: 1.4" L: 146.3 mm x B: 152.4 mm x H: 35.6 mm 8 RJ-45 Ports: W: 6.28" x D: 5.2" x H: 1.5" L: 159.5 mm x B: 132.1 mm x H: 38.1 mm
Weight	4 RJ-45 Ports: w/o Adapter: 1.1 lbs.; 499 grams w/ Adapter: 1.6 lbs.; 726 grams 8 RJ-45 Ports: w/ Adapter: TBD lbs.; TBD grams w/ Adapter: TBD lbs.; TBD grams
Operating Temperature	Commercial: 0 to 50°C (For -40 to +75°C, consult Omnitron)
Humidity	5 to 95% (non-condensing)
Altitude	-100m to 4,000m (operational)
MTBF (hours)	4 RJ-45 Ports: AC Adapter: TBD DC Power: TBD 8 RJ-45 Ports: AC Adapter: TBD
Warranty	5 year product warranty with 24/7/365 free Technical Support 2 year AC power adapter warranty

¹ A minimum of 52VDC is required to guarantee 25.5 watts at 100 meters on Cat 5 or better cable.

* Pending

ORDERING INFORMATION

OmniConverter GPoE+/Sx 4 Port - IEEE 802.3at PoE+

9 4 x x - x - x x - x

1	External AC Adapter, 100-240VAC, with US Power Cord
2	External AC Adapter, 100-240VAC, with no Power Cord
8	External AC Adapter, 100-240 VAC (JET/PSE), with JPN Power Cord
9	Direct DC input, with 3 pin terminal connector

Fiber Type	Distance	Connector Type				Tx Lambda (nm)	Rx Lambda (nm)	Min. Tx Power (dBm)	Max. Tx Power (dBm)	Min. Rx Power (dBm)	Max. Rx Power (dBm)	Min Attenuation (dB)	Link Budget (dB)
		ST	SC	LC	SFP								
MM/DF	220/550m ¹	9440-0-14	9442-0-14	9446-0-14	-	850	850	-10	-4	-17	-3	-	7
MM/DF (x2)	220/550m ¹	-	-	9446-0-24	-	850	850	-10	-4	-17	-3	-	7
MM/DF	2km	-	9442-6-14	-	-	1310	1310	-9.5	-3	-19.5	-3	-	10
SM/DF	12km	9441-1-14	9443-1-14	9447-1-14	-	1310	1310	-9.5	-3	-19.5	-3	-	10
SM/DF (x2)	12km	-	-	9447-1-24	-	1310	1310	-9.5	-3	-19.5	-3	-	10
SM/DF	34km	-	9443-2-14	-	-	1310	1310	-5	0	-23	-3	3	18
SM/DF	80km	-	9443-3-14	-	-	1550	1550	-5	0	-23	-3	3	18
SM/DF	110km	-	9443-4-14	-	-	1550	1550	0	5	-24	-3	8	24
SM/DF	140km	-	9443-5-14	-	-	1550	1550	2	5	-28	-8	13	30
MM/SF	220/550m ¹	-	9450-0-14	-	-	1310	1550	-9	-3	-18	-3	-	9
MM/SF	220/550m ¹	-	9451-0-14	-	-	1550	1310	-9	-3	-18	-3	-	9
SM/SF	20km	-	9450-1-14	-	-	1310	1550	-9.5	-3	-20	-3	-	10.5
SM/SF	20km	-	9451-1-14	-	-	1550	1310	-9.5	-3	-20	-3	-	10.5
SM/SF	40km	-	9450-2-14	-	-	1310	1550	-3	0	-20	-3	3	17
SM/SF	40km	-	9451-2-14	-	-	1550	1310	-3	0	-20	-3	3	17
SFP (x1)	-	-	-	-	9459-0-14								
SFP (x2)	-	-	-	-	9459-0-24								

¹ 62.5/125µm, 100/140µm multimode fiber up to 220m. 50/125µm multimode fiber up to 550m. Refer to the fiber cable manufacturer for multimode distance specifications.

Accessories	
Model Number	Description
8251-0	DIN-Rail Mounting Clip

ORDERING INFORMATION

OmniConverter GPoE+/Sx 8 Port - IEEE 802.3at PoE+

9 4 x x - x - x x - x

1	External AC Adapter, 100-240VAC, with US Power Cord
2	External AC Adapter, 100-240VAC, with no Power Cord
8	External AC Adapter, 100-240 VAC (JET/PSE), with JPN Power Cord

Fiber Type	Distance	Connector Type					Tx Lambda (nm)	Rx Lambda (nm)	Min. Tx Power (dBm)	Max. Tx Power (dBm)	Min. Rx Power (dBm)	Max. Rx Power (dBm)	Min Attenuation (dB)	Link Budget (dB)
		ST	ST Metal	SC	LC	SFP								
MM/DF	220/550m ¹	9440-0-18	9440-7-18	9442-0-18	9446-0-18	-	850	850	-10	-4	-17	-3	-	7
MM/DF (x2)	220/550m ¹	-	-	-	9446-0-28	-	850	850	-10	-4	-17	-3	-	7
MM/DF	2km	-	-	9442-6-18	-	-	1310	1310	-9.5	-3	-19.5	-3	-	10
SM/DF	12km	9441-1-18	9441-8-18	9443-1-18	9447-1-18	-	1310	1310	-9.5	-3	-19.5	-3	-	10
SM/DF (x2)	12km	-	-	-	9447-1-28	-	1310	1310	-9.5	-3	-19.5	-3	-	10
SM/DF	34km	-	-	9443-2-18	-	-	1310	1310	-5	0	-23	-3	3	18
SM/DF	80km	-	-	9443-3-18	-	-	1550	1550	-5	0	-23	-3	3	18
SM/DF	110km	-	-	9443-4-18	-	-	1550	1550	0	5	-24	-3	8	24
SM/DF	140km	-	-	9443-5-18	-	-	1550	1550	2	5	-28	-8	13	30
MM/SF	220/550m ¹	-	-	9450-0-18	-	-	1310	1550	-9	-3	-18	-3	-	9
MM/SF	220/550m ¹	-	-	9451-0-18	-	-	1550	1310	-9	-3	-18	-3	-	9
SM/SF	20km	-	-	9450-1-18	-	-	1310	1550	-9.5	-3	-20	-3	-	10.5
SM/SF	20km	-	-	9451-1-18	-	-	1550	1310	-9.5	-3	-20	-3	-	10.5
SM/SF	40km	-	-	9450-2-18	-	-	1310	1550	-3	0	-20	-3	3	17
SM/SF	40km	-	-	9451-2-18	-	-	1550	1310	-3	0	-20	-3	3	17
SFP (x1)	-	-	-	-	-	9459-0-18								
SFP (x2)	-	-	-	-	-	9459-0-28								

¹ 62.5/125µm, 100/140µm multimode fiber up to 220m. 50/125µm multimode fiber up to 550m. Refer to the fiber cable manufacturer for multimode distance specifications.

Accessories	
Model Number	Description
8251-0	DIN-Rail Mounting Clip