

RuggedNet® GHPoEBT/Si

Unmanaged Industrial 6-Port 60/100W IEEE 802.3bt Gigabit Switches

The RuggedNet GHPoEBT/Si replaces the GHPoE/Si and is recommended for all new designs.

The RuggedNet GHPoEBT/Si are industrial ruggedized unmanaged Ethernet switches that feature fiber or copper uplink ports and four 10/100/1000 RJ-45 copper Power-over-Ethernet user ports.

The GHPoEBT/Si is an IEEE 802.3bt switch featuring 60W and 100W per user port models.

The RuggedNet PoE switches are standard Layer 2 Ethernet switches that forward frames to any port based on their MAC address.

All models support Directed Switch mode, which directs multicast traffic (such as video) only to the appropriate uplink port, preventing multicast traffic from flooding other network ports.

Models with two fiber or two copper uplink ports support daisy-chain configurations or redundant uplinks for critical applications that require protection and sub 50ms restoration in the event of an uplink failure.

Models with two fiber or two copper uplink ports also support Dual Device mode that enables the switches to operate as two independent and isolated Ethernet switches. In Dual Device mode, the switches provide separate and independent data traffic paths between each uplink and a pair of user ports.

Models are available with fixed ST, SC, and LC fiber connectors or Small Form Pluggable (SFP) transceiver receptacles. Fiber ports support multimode or single-mode and dual fiber or single-fiber with distances up to 140km. SFP models support a variety of distances in standard, CWDM and DWDM wavelengths.

The switches automatically negotiate and deliver the power level required by a Powered Device (PD) partner. Depending on the model of the RuggedNet PoE switch, the switch can deliver up to 60 or 100 Watts of power per user port.

The RuggedNet switches feature a remote PoE power reset function that can be configured with a DIP-switch. This feature allows all PDs to be power-cycled and reset remotely.

All models can be wall or rack mounted using a wall mount bracket and shelf or DIN-rail mounted using the included DIN-rail mounting clip. They are available with single or dual DC input power options.



SFPs not included

KEY FEATURES

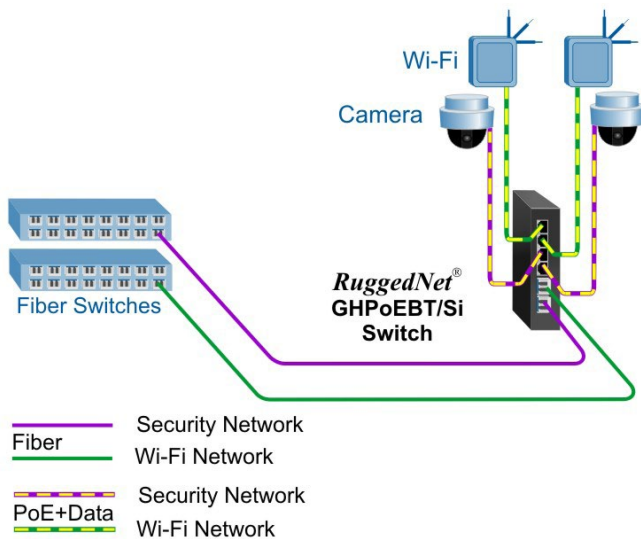
- Unmanaged High-Power 60W/100W PoE Gigabit Ethernet Switches
- Supports the IEEE 802.3bt 60W or 100W
- Two 10/100/1000 copper or Gigabit fiber uplink ports
- Four 10/100/1000 copper PoE user ports
- ST, SC and LC fixed fiber ports or standard, CWDM or DWDM Gigabit SFP transceivers
- Supports jumbo frames up to 10,240 bytes
- Configurable PoE Power Reset
- Uplink redundancy on models with two uplink ports
- Dual Device mode for operating as two separate switches
- Directed Switch mode AKA Camera mode to prevent port flooding
- Single or dual DC power for redundancy
- Wall, Rack and DIN-rail mountable
- Fan-less design for long life
- Industrial (-40 to 75°C) operating temperature
- TAA, BAA and NDAA compliant, and Made in the USA
- Free 24/7/365 Technical Support

APPLICATIONS

Dual Device Mode Application

This Dual Device feature is extremely useful when two isolated network domains share a single network distribution location.

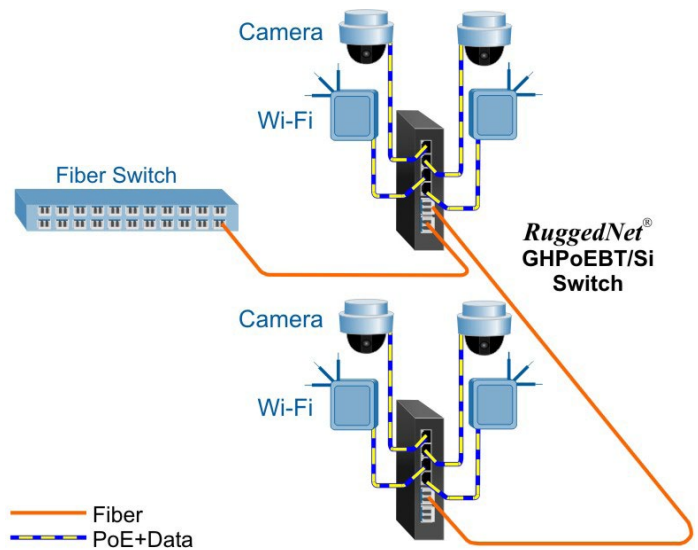
The example below depicts a scenario where a surveillance security (purple) network and a Wi-Fi (green) network are sharing a single hub distribution location. Using the two uplinks and the Dual Switch mode facilitates using a single PoE switch driving both the Cameras and the Wi-Fi Access Points while maintaining isolation between the networks.



Daisy Chain Application

This example demonstrates the daisy chain capabilities of the RuggedNet PoE switches. In this application each RuggedNet switch connects to its neighboring switch via its uplink ports. The daisy chain can continue to additional switches using this method of connectivity.

Each RuggedNet switch provides connectivity to the fiber links, and power to IP cameras and Wi-Fi access points at each location along the daisy chain.



Power / Voltage Requirements and Specifications per IEEE

Description	IEEE 802.3af 15W PoE	IEEE 802.3at 30W PoE+	IEEE 802.3bt 60W PoE (Type 3)	IEEE 802.3bt 100W PoE (Type 4)
Power Supply Voltage Range	46.0 to 57.0 VDC	51.0 to 57.0 VDC	51.0 to 57.0 VDC	53.0 to 57.0 VDC
Voltage Range at PSE port Output	44.0 to 56.0 VDC	50.0 to 56.0 VDC	50.0 to 56.0 VDC	52.0 to 56.0 VDC
Maximum Power from PoE/PSE port	15.4 watts	30 watts	60 watts	100 watts
Minimum Voltage at PoE/PD port input*	37.0 VDC	42.5 VDC	42.5 VDC	41.1 VDC
Minimum Power at PoE/PD port*	12.95 watts	25.5 watts	51 watts	71 watts

* at 100 meters using Cat5

SPECIFICATIONS

Description	RuggedNet® GHPoEBT/Si (60/100W BT) 10/100/1000BASE-T with Gigabit Fiber or Copper Uplinks Ruggedized Unmanaged IEEE 802.3bt PoE Ethernet Switch	
Standard Compliances	IEEE 802.3, IEEE 802.3af (15.40 watts max), IEEE 802.3at (30 watts max), IEEE 802.3bt (60 and 100 watts max)	
Regulatory Compliances	<p>Safety: UL 62368-1, UL 60950-1, IEC 62368-1, IEC 60950-1, EN 62368-1, EN 60950-1, CAN/CSA C22.2 No. 62368-1-14, CAN/CSA C22.2 No. 60950-1, CE Mark, UKCA</p> <p>EMC: EN 55032/24 CE Emissions/Immunity, IEC 61000-6-4 Industrial Emissions, IEC 61000-6-2 Industrial Immunity</p> <p>EMI: CISPR 32, FCC 47 Part 15 Subpart B Class A</p> <p>EMS: IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m (on UTP cabling) and 20 V/m (on STP cabling) IEC 61000-4-4 EFT: Power: 2 kV; Signal: 1 kV, IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV, IEC 61000-4-6 CS: Signal: 10 V, IEC 61000-4-8 (Magnetic Field), 30A/m, IEC 61000-4-11 (General Immunity in Industrial Environments)</p> <p>IP Rating: IP40 Protection ACT: TAA, BAA, NDAA</p>	
Environmental	REACH, RoHS and WEEE	
PoE Modes	IEEE Alternate A (Alt A) and 4-Pair	
Frame Size	Up to 10,240 bytes	
Port Types	Copper: 10/100/1000BASE-T (RJ-45) Fiber: 1000BASE-X (ST, SC, LC, SFP) 10/100/1000BASE-T SGMII (SFP)	
Cable Types	Copper: EIA/TIA 568A/B, Cat 5 UTP and higher Fiber: Multimode: 50/125, 62.5/125µm Single-mode: 9/125µm	
DC Power Requirements	60W BT Models: +46 to +57VDC; 4.46A @ 56VDC 2 Pin Terminal (isolated)	100W BT Models: +46 to +57VDC; 7.31A @ 56VDC 2 Pin Terminal (isolated)
Dimensions (W x D x H)	1.5" x 5.5" x 5.5" (38.1 mm x 139.7 mm x 139.7 mm)	
Weight	1.70 lb. (772 grams)	
Operating Temperature	Extended: -40 to 75°C Storage: -40 to 80°C	
Humidity	5 to 95% (non-condensing)	
Altitude	-100m to 4,000m (operational)	
MTBF (hours)	273,000	
Warranty	5 year product warranty with 24/7/365 free Technical Support	

ORDERING INFORMATION

Step 1: Choose the Base Part Number (xxxx-x-xx-pZ)

RuggedNet GHPoEBT/Si IEEE 802.3bt 60W Models													
Fiber Type	Distance	Connector Type					Tx / Rx Lambda (nm)	Min. Tx Power (dBm)	Max. Tx Power (dBm)	Min. Rx Power (dBm)	Max. Rx Power (dBm)	Min Atten (dB)	Link Budget (dB)
		ST	SC	LC	SFP	RJ-45							
MM/DF	220/550m ¹	3200B-0-14-pZ	3202B-0-14-pZ	3206B-0-14-pZ	-	-	850 / 850	-10	-4	-17	-3	-	7
MM/DF (x2)	220/550m ¹	-	-	3206B-0-24-pZ	-	-	850 / 850	-10	-4	-17	-3	-	7
MM/DF	2km	-	3202B-6-14-pZ	-	-	-	1310 / 1310	-9.5	-3	-19.5	-3	-	10
SM/DF	12km	3201B-1-14-pZ	3203B-1-14-pZ	3207B-1-14-pZ	-	-	1310 / 1310	-9.5	-3	-19.5	-3	-	10
SM/DF (x2)	12km	-	-	3207B-1-24-pZ	-	-	1310 / 1310	-9.5	-3	-19.5	-3	-	10
SM/DF	34km	-	3203B-2-14-pZ	-	-	-	1310 / 1310	-5	0	-23	-3	3	18
SM/DF	80km	-	3203B-3-14-pZ	-	-	-	1550 / 1550	-5	0	-23	-3	3	18
SM/DF	110km	-	3203B-4-14-pZ	-	-	-	1550 / 1550	0	5	-24	-3	8	24
SM/DF	140km	-	3203B-5-14-pZ	-	-	-	1550 / 1550	2	5	-28	-8	13	30
MM/SF ²	220/550m ¹	-	3210B-0-14-pZ	-	-	-	1310 / 1550	-9	-3	-18	-3	-	9
MM/SF ²	220/550m ¹	-	3211B-0-14-pZ	-	-	-	1550 / 1310	-9	-3	-18	-3	-	9
SM/SF ²	20km	-	3210B-1-14-pZ	-	-	-	1310 / 1550	-9.5	-3	-20	-3	-	10.5
SM/SF ²	20km	-	3211B-1-14-pZ	-	-	-	1550 / 1310	-9.5	-3	-20	-3	-	10.5
SM/SF ²	40km	-	3210B-2-14-pZ	-	-	-	1310 / 1550	-3	0	-20	-3	3	17
SM/SF ²	40km	-	3211B-2-14-pZ	-	-	-	1550 / 1310	-3	0	-20	-3	3	17
SFP (x1)	-	-	-	-	3219B-0-14-pZ	-	-	-	-	-	-	-	-
SFP (x2)	-	-	-	-	3219B-0-24-pZ	-	-	-	-	-	-	-	-
RJ-45 (x2)	100m	-	-	-	-	3259B-1-24-pZ	-	-	-	-	-	-	-

¹ 62.5/125µm, 100/140µm multimode fiber up to 220m. 50/125µm multimode fiber up to 550m.
² When using single-fiber (SF) models, the Tx wavelength on one end has to match the Rx wavelength on the other.
 MM = Multimode, SM = Single-mode, DF = Dual Fiber, SF = Single-fiber
 Contact Omnitron for other fiber options. Order the appropriate SFPs separately. [Visit the Omnitron Optical Transceivers web page.](#)

Step 2: Choose the Power Option (xxxx-x-xx-pZ)

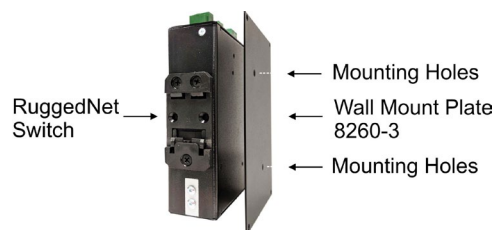
1 = Single DC 2-Pin Terminal Power Connector
2 = Dual DC 2-Pin Terminal Power Connectors

Operating Temperature Range

Z = Extended temperature (-40 to 75°C)
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ACCESSORIES

Model Number	Description
8260-3	Wall Mounting Plate
8260-0	19" rack mount shelf (up to 2 modules with wall mounting plate installed)



Wall Mount Plate used to wall or rack mount the RuggedNet switch

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		ST	SC	LC	SFP	RJ-45							
MM/DF	220/550m ¹	3240B-0-14-pZ	3242B-0-14-pZ	3246B-0-14-pZ	-	-	850 / 850	-10	-4	-17	-3	-	7
MM/DF (x2)	220/550m ¹	-	-	3246B-0-24-pZ	-	-	850/850	-10	-4	-17	-3	-	7
MM/DF	2km	-	3242B-6-14-pZ	-	-	-	1310 / 1310	-9.5	-3	-19.5	-3	-	10
SM/DF	12km	3241B-1-14-pZ	3243B-1-14-pZ	3247B-1-14-pZ	-	-	1310 / 1310	-9.5	-3	-19.5	-3	-	10
SM/D (x2)	12km	-	-	3247B-1-24-pZ	-	-	1310 / 1310	-9.5	-3	-19.5	-3	-	10
SM/DF	34km	-	3243B-2-14-pZ	-	-	-	1310 / 1310	-5	0	-23	-3	3	18
SM/DF	80km	-	3243B-3-14-pZ	-	-	-	1550 / 1550	-5	0	-23	-3	3	18
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SM/DF	140km	-	3243B-5-14-pZ	-	-	-	1550 / 1550	2	5	-28	-8	13	30
MM/SF ²	220/550m ¹	-	3250B-0-14-pZ	-	-	-	1310 / 1550	-9	-3	-18	-3	-	9
MM/SF ²	220/550m ¹	-	3251B-0-14-pZ	-	-	-	1550 / 1310	-9	-3	-18	-3	-	9
SM/SF ²	20km	-	3250B-1-14-pZ	-	-	-	1310 / 1550	-9.5	-3	-20	-3	-	10.5
SM/SF ²	20km	-	3251B-1-14-pZ	-	-	-	1550 / 1310	-9.5	-3	-20	-3	-	10.5
SM/SF ²	40km	-	3250B-2-14-pZ	-	-	-	1310 / 1550	-3	0	-20	-3	3	17
SM/SF ²	40km	-	3251B-2-14-pZ	-	-	-	1550 / 1310	-3	0	-20	-3	3	17
SFP (x1)	-	-	-	-	3259B-0-14-pZ	-	-	-	-	-	-	-	-
SFP (x2)	-	-	-	-	3259B-0-24-pZ	-	-	-	-	-	-	-	-
RJ-45 (x2)	100m	-	-	-	-	3259B-1-24-pZ	-	-	-	-	-	-	-

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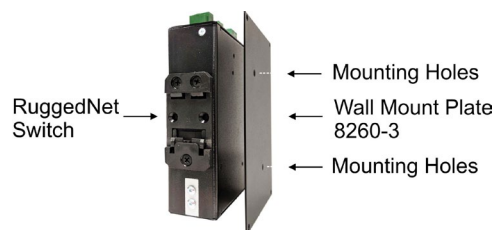
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