RuggedNet® 10GMGPoE+/Mi and 10GMGPoEBT/Mi

Managed Industrial Multi-Gigabit/Multi-Rate 100M, 1G, 2.5G, 5G, 10G PoE Ethernet Switch

The RuggedNet 10GMGPoE+/Mi and 10GMGPoEBT/Mi are managed industrial multi-gigabit Ethernet switches featuring one 1/10G SFP/SFP+ or multi-gigabit/multi-rate RJ-45 uplink port with two multi-gigabit/multi-rate RJ-45 and two 10/100/1000 RJ-45 Power-over-Ethernet downlink/access ports. They support PoE, PoE+ and PoEBT up to 100 watts depending on the model.

The RJ-45 user ports support multi-gigabit/multi-rate speeds of 100Mbps, 1Gbps, 2.5Gbps, 5Gbps and 10Gbps. The 10GMGPoE+/Mi supports IEEE 802.3at (15 and 30W) and the 10GMGPoEBT/Mi supports IEEE 802.3bt (60 and 100W) per user port depending on the model.

The RuggedNet switches feature a Small Form Pluggable (SFP) transceiver receptacle port supporting a variety of copper and fiber transceivers. It supports 10/100/1000BASE-T, 1000BASE-T, 2.5GBASE-T, 5GBASE-T and 10GBASE-T copper transceivers and 1G and 10G multimode or single-mode fiber, dual or single-fiber transceivers in standard, CWDM and DWDM wavelengths.

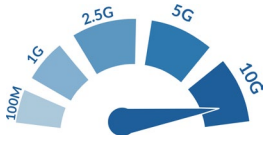
All models support Directed Switch mode, which directs multicast traffic (such as video) only to the appropriate uplink port, preventing multicast traffic from flooding other network ports.

The mode of operation can be configured using easily accessible DIP-switches or using Web, Telnet, SSH, SNMPv1/v2c/v3 or Serial Console management interfaces. IPv4 and IPv6 are supported on the switches. These management interfaces provide access to filtering and security options, such as, broadcast storm prevention, IGMP, IEEE 802.1x, RADIUS, TACACS+ and Access Control Lists. Email notification and alarm reporting is provided.

The switches feature a Remote PoE Power Reset function that enables the user to remotely power-cycle and reset each PD. They also feature a configurable Heartbeat Reset function that automatically pings the attached PDs and automatically power cycles and resets the PDs when detecting a heartbeat loss.

An alarm relay is available to detect user configured events. The relay contact can be configured for normally open or normally closed operation. One alarm input is available for detecting external events such as door open or closed.

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 dual DC input power.



SFPs not included

KEY FEATURES

- Managed Industrial 10G multi-gigabit/multi-rate PoE Ethernet Switch
- One SFP/SFP+ transceiver uplink port or multi-gigabit/multi-rate copper port
- SFP/SFP+ uplink port supports copper and fiber transceivers
- Multi-gigabit/multi-rate ports supports speeds of 100Mbps, 1Gbps, 2.5Gbps, 5Gbps and 10Gbps
- Two multi-gigabit/multi-rate RJ-45 PoE and two 10/100/1000 RJ-45 PoE downlink/access ports
- Models support IEEE 802.3af, IEEE 802.3at and IEEE 802.3bt (60W and 100W)
- Supports jumbo frames up to 10,240 bytes
- Heartbeat signal to verify connectivity to the PD
- Configurable PoE Power Reset
- PoE power management with LLDP MED and MDI TLV, and PoE Power Multi-Day Scheduler
- Management via IPv4, IPv6, Web, Telnet, SSH, SNMPv1/v2c/v3 and serial interfaces
- Easy to use Hierarchical Command Line Interface
- SNMP management via Omnitron's NetOutlook® management software, or third-party SNMP software
- AC to DC Power Adapter or 2-Pin DC terminal
- Wall, Rack and DIN-rail mountable
- Industrial (-40 to 75º C) operating temperature
- TAA, BAA and NDAA compliant, and Made in the USA
- Free 24/7/365 Technical Support

ADDITIONAL FEATURES

- IEEE 802.1x, RADIUS, TACACS+ and ACL
- Email Notification
- Directed Switch mode AKA Camera mode to prevent port flooding
- IPv4 Internet Group Management (IGMP) and IPv6 Multicast Listener Discovery (MLD) snooping
- DHCP Relay Option 82, DHCPv6 and DHCPv6 Relay
- IEEE 802.1ab Link Layer Discovery Protocol
- Rate Limiting, Queue prioritization and Class of Service
- IEEE 802.1Q VLAN tagging and IEEE 802.1ad Q-in-Q
- Broadcast / Multicast / Unicast Storm Prevention
- Static MAC configuration and blocking of unknown Unicast/Multicast addresses
- SNTP / NTP and time of day

APPLICATIONS

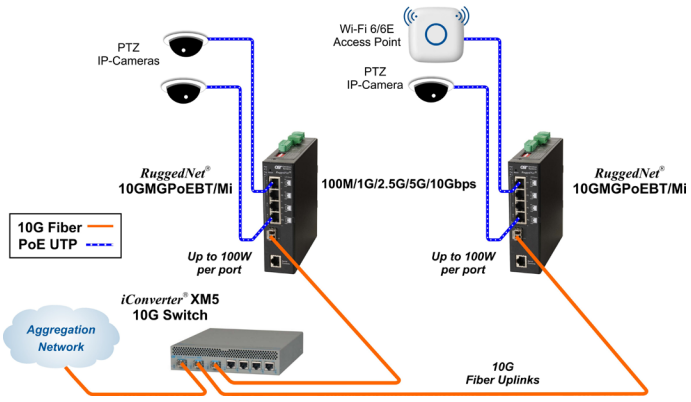
Security and Wireless

In this application example, outdoor IP surveillance cameras and Wi-Fi 6/6E Access Points are installed throughout a large facility. An iConverter® XM5 aggregation fiber switch is used to distribute a fiber link from a control room to RuggedNet switches with a fiber SFP port.

The RuggedNet 10GMGPoEBT/Mi provides a managed solution with up to 100W of Power-over-Ethernet (PoE) to an IP camera and Wireless Access Point at each location, each of which can be located up to 100 meters from the switches.

When less power is required the RuggedNet 10GMGPoE+/Mi can be used to deliver 30 watt of power per port.

The camera and access point have full bandwidth capability utilizing the 10G fiber uplink port on each 10GMGPoEBT/Mi switch.

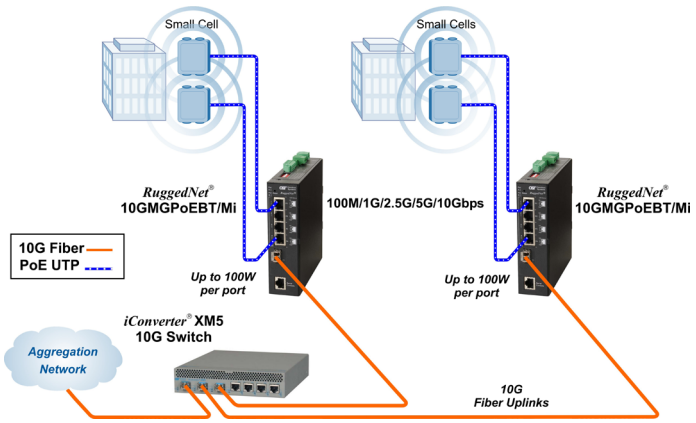


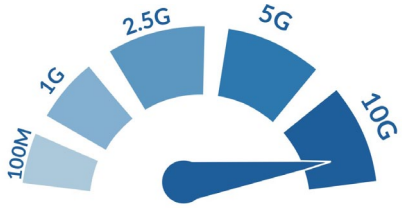
Small Cell

Small cell devices are increasing their demand on both power and bandwidth requirements. Speeds of 10Gbps and 100W is common with today's small cell devices.

In this application example, high-speed small cell devices requiring up to 10Gbps bandwidth are deployed inside several buildings. An iConverter® XM5 aggregation fiber switch is used to distribute a fiber link to each RuggedNet switch.

The RuggedNet 10GMGPoEBT/Mi switches provides a managed solution with up to 100 watts and speeds up to 10Gbps on the RJ-45 user ports.





100M/1G/2.5G/5G/10Gbps

SPECIFICATIONS

Description	**RuggedNet® 10GMGPoE+/Mi** Managed Industrial IEEE 802.3at 10Gigabit Multi-Gigabit/Multi-Rate Ethernet Switch	**RuggedNet® 10GMGPoEBT/Mi** Managed Industrial IEEE 802.3bt 10Gigabit Multi-Gigabit/Multi-Rate Ethernet Switch	
Standard Compliances	IEEE 802.3, 802.3bz, IEEE 802.3af (15.4 watts max) IEEE 802.3at (30 watts max)	IEEE 802.3, 802.3bz, IEEE 802.3af (15.4 watts max), IEEE 802.3at (30 watts max) IEEE 802.3bt (60 watts or 100 watts max)	
	IEEE 802.3, IEEE 802.1Q, IEEE 802.1ad, IEEE 802.1ab, RFC 5424, RFC 4541, RFC 2710, IEC 624339-2, SMTP, SNTP, RADIUS, TACACS+, IEEE 802.1x,		
Regulatory Compliances (Pending)	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 EMC: EN 55032/24 CE Emissions/Immunity, IEC 61000-6-4 Industrial Emissions, IEC 61000-6-2 Industrial Immunity EMI: CISPR 32, FCC 47 Part 15 Subpart B Class A 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) IP Rating: IP40 Protection ACT: TAA, BAA, NDAA		
Environmental	REACH, RoHS and WEEE		
Management	IPv4 and IPv6 address Web, Telnet, SSH, SNMPv1/v2c/v3 In-Band management via Ethernet port, Out-of-band management via serial port		
PoE Modes	IEEE Alternate A (Alt A)		
Frame Size	Up to 10,240 bytes		
Port Types	Copper: 100/1000BASE-T, 2.5GBASE-T/5GBASE-T/10GBASE-T (RJ-45) 10/100/1000BASE-T (RJ-45) SFP/SFP+: 10GBASE-X Fiber Transceivers, 10GBASE-T Copper Transceivers 1000BASE-X Fiber Transceivers, 1000BASE-T Copper Transceivers 10/100/1000BASE-T SGMII Copper Transceivers 100/1000/2.5G/5G/10GBASE-T Multi-rate Copper Transceivers Serial: RS-232 (RJ-45)		
Cable Types	Copper: Twisted-pair cable up to 100 meters 10BASE-T: 4-pair UTP Cat 3, 4, 5, 5e, 6, 6A 100BASE-TX: 4-pair UTP Cat 5, 5e, 6, 6A 1G/2.5G: 4-pair UTP Cat 5e, 6, 6A, 7 5G: 4-pair UTP Cat 6, 6A, 7 10G: 4-pair UTP Cat 6A, 7 Fiber: Multimode: 50/125, 62.5/125µm Single-mode: 9/125µm		
DC Power Requirements	+46 to +57VDC; 2.37A @ 56VDC 2 Pin Terminal (isolated)	60 watt Models: +46 to +57VDC; 4.52A @ 56VDC 2 Pin Terminal (isolated)	100 watt Models: +46 to +57VDC; 7.40A @ 56VDC 2 Pin Terminal (isolated)
Alarm Contact (Output)	2 form C Relay for Normally Open and Normally Closed Operation 110VDC/125VAC Maximum Voltage 2A Maximum Current		
Alarm Sensor (Input)	2.0ma @ 3.3VDC Closure Detection		
Dimensions (W x D x H)	1.5” x 5.2” x 5.5” (38.1 mm x 132.1 mm x 139.7 mm)		
Weight	1.5 lbs. (680 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)	247,000		
Warranty	5 year product warranty with 24/7/365 free Technical Support		

Power / Voltage Requirements and Specifications per IEEE

Description	IEEE 802.3af 15W PoE	IEEE 802.3at 30W PoE+	IEEE 802.3.bt 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				

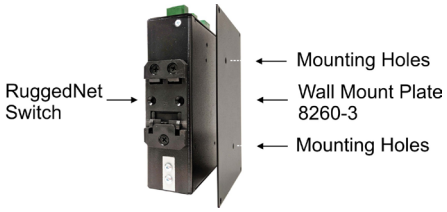
ORDERING INFORMATION

RuggedNet 10GMGPoE+/Mi Models	
Model Number	**Description**
9666-0-14-2Z	10GMGPoE+/Mi - 1 x SFP+ + 2 x 100/1G/2.5G/5G/10G RJ-45 30W per port + 2 x 10/100/1000 RJ-45 30W per port, dual power inputs (2-pin terminal block), industrial temperature range -40 to 75°C
9666-1-14-2Z	10GMGPoE+/Mi - 1 x 100/1G/2.5G/5G/10G RJ-45 + 2 x 100/1G/2.5G/5G/10G RJ-45 30W per port + 2 x 10/100/1000 RJ-45 30W per port, dual power inputs (2-pin terminal block), industrial temperature range -40 to 75°C
Contact Omnitron for other fiber options. Order the appropriate SFPs separately. Visit the Omnitron Optical Transceivers web page.	

RuggedNet 10GMGPoEBT/Mi Models	
Model Number	**Description**
9667-0-14-2Z	10GMGPoEBT/Mi - 1 x SFP+ + 2 x 100/1G/2.5G/5G/10G RJ-45 60W per port + 2 x 10/100/1000 RJ-45 60W per port, dual power inputs (2-pin terminal block), industrial temperature range -40 to 75°C
9667-1-14-2Z	10GMGPoEBT/Mi - 1 x 100/1G/2.5G/5G/10G RJ-45 + 2 x 100/1G/2.5G/5G/10G RJ-45 60W per port + 2 x 10/100/1000 RJ-45 60W per port, dual power inputs (2-pin terminal block), industrial temperature range -40 to 75°C
9668-0-14-2Z	10GMGPoEBT/Mi - 1 x SFP+ + 2 x 100/1G/2.5G/5G/10G RJ-45 100W per port + 2 x 10/100/1000 RJ-45 100W per port, dual power inputs (2-pin terminal block), industrial temperature range -40 to 75°C
9668-1-14-2Z	10GMGPoEBT/Mi - 1 x 100/1G/2.5G/5G/10G RJ-45 + 2 x 100/1G/2.5G/5G/10G RJ-45 100W per port + 2 x 10/100/1000 RJ-45 100W per port, dual power inputs (2-pin terminal block), industrial temperature range -40 to 75°C
Contact Omnitron for other fiber options. Order the appropriate SFPs separately. Visit the Omnitron Optical Transceivers web page.	

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