Data Sheet

EDSwitch 10G

12- or 20-Port High-Bandwidth
Industrial Managed Gigabit PoE Switch

Designed to be adaptive, with outstanding throughput

The high flexible EDSwitch 10G series offers different versions with or without PoE support to match your specific needs. The 12 or 20 port versions of the device provide 4x 1/10 Gigabit Ethernet SFP+ uplinks and result in a cost-effective and reliable industrial solution where high-throughput and high-reliability is fundamental.

Designed with optional PoE, in wide temperature range

EDSwitch 10G supports up to 20 Gigabit ports in different configurations, either Copper, PoE or Fiber. Specifically designed for bringing power through Ethernet cable virtually anywhere, a maximum output Power over Ethernet of 240 W over a maximum of 8 PoE/PoE+ ports is available (802.3af/at).

Rugged, wide-temperature, well protected design

EDSwitch 10G is CE and FCC compliant and designed to withstand the harshest surroundings and the most demanding EMC environments. Its fanless and EMC optimized design ensures reliable operations within -40 and +70 °C. This includes that no packet is lost with all ports running full power and makes it suitable for almost every application.

Highlights

- Up to 16 10/100/1000 RJ45 ports or 100/1000 BASE-X SFP slots plus 4 dedicated 1/10G uplink SFP+ slots
- Up to 8x 802.3af/ 802.3at PoE/PoE+ Power over Ethernet ports, with maximum 30 W PoE power per port and up to 240 W power budget
- 128 Gbps high-performance non-blocking switching fabric
- IEEE 1588v2 Precision Time Protocol HW-based E2E transparent clock
- Wide temperature operations, from -40 °C–70 °C
- Security features based on IEC62443-4-2
- Redundancy through ITU-T G.8032 ERPS Ring, RSTP, STP, MRP (Client)
- CE/FCC compliant

Use Cases

Timesync

EDSwitch 10G offers the possibility to have "ptp-enabled" devices like GigE-Vision cameras synchronized to a grandmaster clock like b-plus BRICK2 or DATALynx ATX4 with XTSS service. EDSwitch 10G can combine data streams from multiple Gigabit devices to a single 10G upstream port to save Ethernet ports on the recording unit.

Moreover, EDSwitch 10G has restricted 802.1AS support. Contact b-plus support if you require 802.1AS time synchronization for your devices.
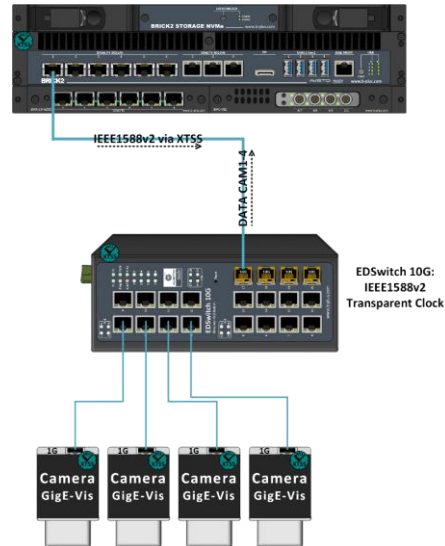

Port Mirroring

Besides to the timesync feature, EDSwitch 10G offers the possibility to forward Ethernet data simultaneously to existing ECU(s) and a recorder unit like b-plus BRICK2 and AVETO.app.

With the option to create two independent mirroring sessions in the switch firmware, you can send two separate 10G connections to an ECU and also to a recorder unit.
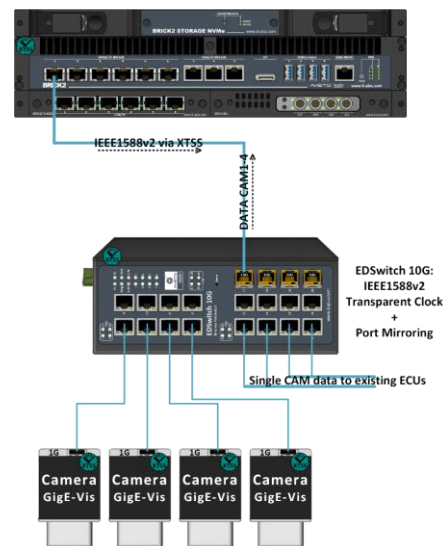
Selective VLAN

Another option which EDSwitch 10G offers is the possibility to configure VLANs on the switch.
This enables the management of the data flow from different Ethernet sources over separated 10G upstream ports to the recorder unit.
The port mirroring feature can run in parallel to keep the data forwarding to existing ECU(s).
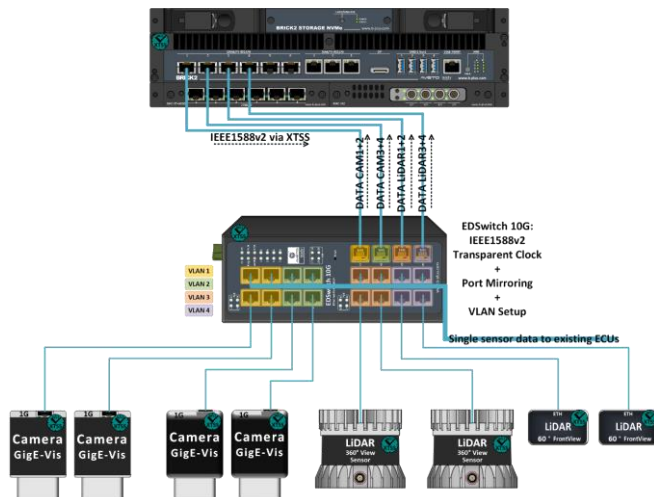
Specifications and Approvals

Switch Properties

Priority Queues	8
VLAN Table	4096
MAC-Based VLAN	512
VLAN ID Range	VID 1 to 4094
Trunk Group	4
Static IGMP Groups	128
Dynamic IGMP Groups	256
MAC Table Size	16K
Packet Buffer Size	1.5 MB
Jumbo Frame	9216 Byte

Ethernet

Standards	IEEE 802.3 for 10BaseT
	IEEE 802.3u for 100BaseT(X)
	IEEE 802.3ab for 1000BaseT(X)
	IEEE 802.3z for 1000BaseX
	IEEE 802.3ae for 10 Gigabit Ethernet Fiber
	IEEE 802.3x for Flow Control, back pressure flow control
	IEEE 802.1D-2004 for Spanning Tree Protocol
	IEEE 802.1w for Rapid Spanning Tree Protocol
	IEEE 802.1s for Multiple Spanning Tree Protocol
	IEEE 802.1Q for VLAN Tagging
	IEEE 802.1p for Class of Service
	IEEE 802.1X for Authentication
	IEEE 802.3ad for Port Trunk with LACP
	IEEE 802.3az for Energy Efficient Ethernet
Protocols	IPv4, IPv6, IGMPv1/v2/v3, IGMP Snooping, GARP, GMRP, GVRP, SNMPv1/v2c/v3, SNMP Inform, ICMP, Telnet, SSH, DHCP Relay/Client, BootP, TFTP, SMTP, SMTP (Gmail), RMON, HTTP, HTTPS, Syslog, MRP (Client), LLDP, 802.1x, EAP, RADIUS, TACACS+, Mirror port, QoS, ACL, ITU-T G.8032 ERPS Ring, STP, RSTP, MSTP, Compatible Ring/Chain, U-Ring, NTP Server/Client, Serial Console, Modbus/TCP, IEEE 1588 PTP V1/V2, UDLD, Security, Trunk, LACP, MLD, 802.1Q VLAN, Port-Based VLAN, MAC-Based VLAN, IP-Subnet-Based VLAN, Protocol-Based VLAN, QinQ, 802.1x, ARP spoof Prevention, DHCP snooping, IP source Guard, Dynamic ARP Inspection, DHCP relay Agent TU-T G.8032 ERPS Ring, STP, RSTP, MSTP, Compatible Ring/Chain, U-Ring
Redundancy	Network Synchronization: NTP Server/Client, SNTP
Time Synchronization	Precision Network Synchronization:
	Default setting with active: IEEE1588v2 E2E TC (Hardware) - ns accuracy
	Optional alternatively selectable via software: IEEE1588v1 and IEEE1588v2 OC/BC (Software)
	Optional selectable 802.1AS protocol forwarding which is hosted on the HW based transparent clock
	Contact b-plus support for more information about this feature.
Automation Profiles	Modbus/TCP device status registers provided

Specifications and Approvals

Power	
Input Voltage	9-57 VDC for Non-PoE mode
	45-57 VDC for 802.3af mode
	51-57 VDC for 802.3at mode
Input Current (System)	Max. 2.2 A @ 12 VDC (without PoE)
	Max. 3.3 A @ 45 VDC (support up to 8 ports at 15.4 W per PoE port)
	Max. 5.2 A @ 51 VDC (support up to 8 ports at 30 W per PoE port)
Power Consumption (System)	Max. 26.4 W @ 12 VDC (without PoE)
	Max. 148.5 W @ 45 VDC (support up to 8 ports at 15.4 W per PoE port)
	Max. 265.2 W @ 51 VDC (support up to 8 ports at 30 W per PoE port)
Connector	5-Pin 5.08 mm lockable terminal block
Reverse Polarity Protection	Yes
Interfaces	
RJ45 Ports	Up to 16 10/100/1000BASE-T(X) auto negotiation speed
Fiber Optics Ports	Up to 4 100/1000BASE-X SFP slots plus dedicated 4x 1000BASE-X or 10GBASE-X SFP+ slots
LED Indicators	PWR1, PWR2, Alarm, Run, Ring, Ring Master, RJ-45 Link/Speed, SFP Link, PoE on selected variants
Console	RS232 (RJ45 connector), optional: cross over console cable
Relay Output	2 Relay outputs with current carrying capacity of 1A @ 24 VDC
DIP Switches	Ring control
Button	Reset button
Housing	SPCC metal housing, ruggedized heat-sink
Protection Class	IP30
Dimension (W x H x D)	EDSwitch 10G 12 Port: 76 x 200 x 160 mm
	EDSwitch 10G 20 Port: 95 x 200 x 160 mm
Weight	2,500 g
Installation	DIN-rail, wallmount kit (optional)
Operating Temperature	-40 °C–70 °C (-40 °F–158 °F)
Storage Temperature	-40 °C–85 °C (-40 °F–185 °F)
Ambient Relative Humidity	5 %–95 %, 55 °C (non-condensing)
Approvals	CE, FCC, RoHS, REACH~
Shock	MIL-STD-810G Method 516.5
Drop	MIL-STD-810F Method 516.5
Vibration	MIL-STD-810F Method 514.5 C-1 & C-2
MTBF	20 Years

Order Information

Name	Part Number	Description
EDSwitch 10G 12 Port: 8x RJ45, 4x SFP+	B24008-EDS-124-0800	Industrial Managed Ethernet-Switch IEEE1588v2 HW-Based E2E Transparent Clock 12 ports in total ·4 ports 10G ETH (SFP+ slot) ·8 ports 1G ETH (RJ45)
EDSwitch 10G 20 Port: 16x RJ45, 4x SFP+	B24008-EDS-204-0G00	Industrial Managed Ethernet-Switch IEEE1588v2 HW-Based E2E Transparent Clock 20 ports in total ·4 ports 10G ETH (SFP+ slot) ·16 ports 1G ETH (RJ45)
EDSwitch 10G 20 Port: 12x RJ45, 4x SFP, 4x SFP+	B24008-EDS-204-0C04	Industrial Managed Ethernet-Switch IEEE1588v2 HW-Based E2E Transparent Clock 20 ports in total ·4 ports 10G ETH (SFP+ slot) ·12 ports 1G ETH (RJ45) ·4 ports 1G ETH (SFP slot)
EDSwitch 10G 12 Port: 8x PoE, 4x SFP+	B24008-EDS-124-8000	Industrial Managed Ethernet-PoE-Switch IEEE1588v2 HW-Based E2E Transparent Clock 802.3af/802.3at PoE/PoE+ ports 12 ports in total ·4 ports 10G ETH (SFP+ slot) ·8 ports 1G ETH w PoE (RJ45)
EDSwitch 10G 20 Port: 8x PoE, 8x RJ45, 4x SFP+	B24008-EDS-204-8800	Industrial Managed Ethernet-PoE-Switch IEEE1588v2 HW-Based E2E Transparent Clock 802.3af/802.3at PoE/PoE+ ports 20 ports in total ·4 ports 10G ETH (SFP+ slot) ·8 ports 1G ETH w PoE (RJ45) ·8 ports 1G ETH (RJ45)
EDSwitch 10G 20 Port: 8x PoE, 4x RJ45, 4x SFP, 4x SFP+	B24008-EDS-204-8404	Industrial Managed Ethernet-PoE-Switch IEEE1588v2 HW-Based E2E Transparent Clock 802.3af/802.3at PoE/PoE+ ports 20 ports in total ·4 ports 10G ETH (SFP+ slot) ·8 ports 1G ETH w PoE (RJ45) ·4 ports 1G ETH (RJ45) ·4 ports 1G ETH (SFP slot)

Order Information Accessories

Name	Part Number	Description
EDSwitch 10G Wallmount Kit	B24008-EDS-002-0004	Wallmount Kit Suitable for 12- and 20-port device
EDSwitch 10G RJ45 to CB9 cable	A1005489	RJ45 to DB9 Female cross over console cable, 90 cm For serial connection to switch CLI
10GBASE-T SFP+ 30M IND SFP-10G-T-I	B24004-ICO-001-0112	SFP+ Copper RJ45 30m Transceiver, 10GBASE-T standard as specified in IEEE Std 802.3. Compatible: EDSwitch 10G