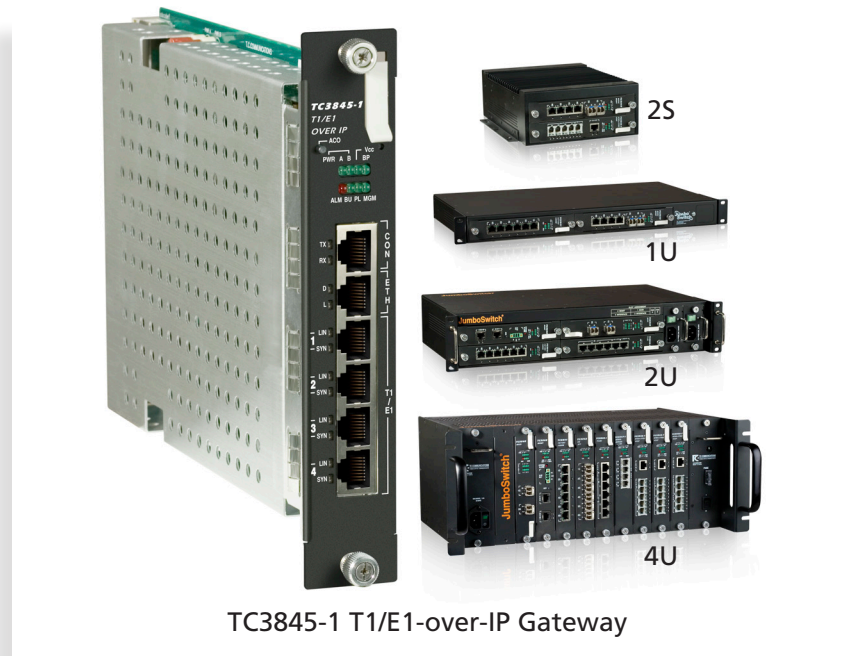


T1/E1-over-IP Gateway

TC3845-1 w/ Security

- 4 Channels of T1 and/or E1
- Supports High-Precision Reference Clock
- Extremely Low Latency
- Temperature & Power Consumption Monitoring
- Extreme Temp (-40°C to +80°C) Optional
- Meets or Exceeds IEC 61850-3, IEC 60834, IEEE1613 & NEMA TS-2 Standards
- Member of JumboSwitch® Product Family



TC3845-1 T1/E1-over-IP Gateway

The TC3845-1 links or extends up to 4 channels of T1/E1 across Layer 2/3 Ethernet/IP, CE, or MPLS networks. It is easy to configure, offers extremely low latency, and supports point-to-point and point-to-multipoint topologies.

A high-precision reference clock is supported for optimal jitter and wander performance that complies with the ITU-T G.823 and G.824 traffic interface standards. This also allows the unit to handle large temperature swings without any bit errors or loss of sync that would otherwise be present when using a less stable clock source.

The TC3845-1 achieves minimal end-to-end processing delay by using high-performance adaptive clock recovery buffering and forwarding technology.

VLAN and QoS for packet prioritization ensure reliable communications. AAA, RADIUS and TACACS+ support, and NTP Authentication are some of the added security features for enhanced protection. Diagnostics include LED indicators, error statistics, and local and remote loop back.

The TC3845-1 is available in industrial hardened versions (-40°C to +80°C) and exceeds all pertinent industry and environmental standards including IEC 61850-3, IEEE 1613 & NEMA TS-2.

Setup, diagnostics, and management are accessed via Web, SNMP, Serial Console, and Telnet/SSH. The TC3845-1 fits any JumboSwitch® chassis option including 2S standalone chassis and 1U/2U/4U card cages. Power supply options are 12VDC, 24VDC, -48VDC, 125VDC (available on 1U/2U/4U card cages only) or 115/230VAC.

Applications

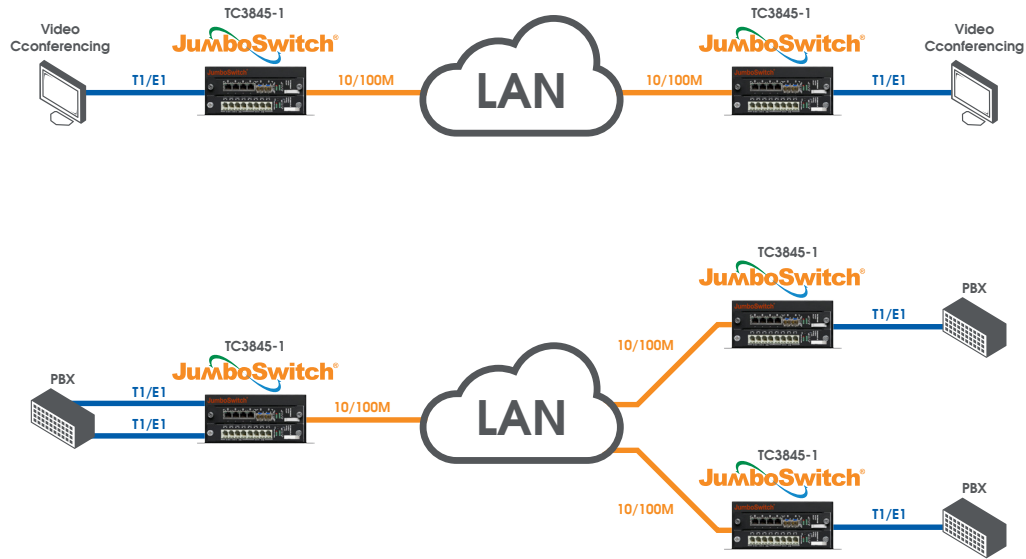
Typical applications include transporting voice, video, and data across Ethernet/IP, CE, or MPLS networks.

For example, the TC3845-1 is often used to T1/E1 links between PBX's, connect video conferencing, or link Cell Towers to Central Offices, all over existing over an Ethernet/IP network

Environmental & EMI Compliance

The JumboSwitch product family meets all pertinent industry-specific standards for environmental, performance and security requirements including IEC 61850-3, IEC 60834, IEEE 1613, NEMA TS-2 and NERC CIP. Furthermore, future JumboSwitch family products will continue to be compliant with both existing and emerging industry standards and requirements, including developing Ethernet standards. Please refer to the charts below for specific standards compliance information.

	Tests	Industrial Standards	TC Communications - JumboSwitch Type Test and Levels	
			Power Supply Unit (PSU)	RJ-45 & Signal
Temperature/Humidity	Low Temperature Use	IEC 61850-3, IEEE 1613, NEMA TS-2	IEC 60068-2-1; Ae; -40°C; 16 hour	
	Low Temperature Storage	IEC 61850-3, IEEE 1613, NEMA TS-2		
	High Temperature Use	IEC 61850-3, IEEE 1613, NEMA TS-2	IEC 60068-2-2; Be; +80°C; 16 hour	
	High Temperature Storage	IEC 61850-3, IEEE 1613, NEMA TS-2	IEC 60068-2-2; Bd; +85°C; 16 hour	
	Damp Heat	IEC 61850-3, IEEE 1613, NEMA TS-2	IEC 60068-2-30; Db; +55°C; 95%; 96 hours	
Mechanical	Vibration	IEC 61850-3, IEEE 1613, NEMA TS-2	IEC 60068-2-6; Fc; 3 - 150 Hz; 7.5 mm; 2 g; 10 sweeps per axis	
	Shock	IEC 61850-3, IEEE 1613, NEMA TS-2	IEC 60068-2-27; Ea; 30g; 11ms	
ElectroMagnetic Compatibility	Electrostatic Discharge Immunity	IEEE 1613	IEC 61000-4-2; 8kV contact; 15 kV air	
	Radiated RF Immunity	IEC 61850-3, IEEE 1613	IEC 61000-4-3; 80 MHz - 1000 MHz; 20 V/m; AM 80% 1 kHz	
	EFT/Burst Immunity	IEC 61850-3, IEEE 1613	IEC 61000-4-4; 4 kV CM	IEC 61000-4-4; 4 kV CM
	Surge Immunity	IEC 61850-3	IEC 61000-4-5; 4 kV LG; 2 kV LL	IEC 61000-4-5; 4 kV LG; 2 kV LL
	Conducted RF immunity	IEC 61850-3	IEC 61000-4-6; 150 kHz - 80 MHz; 10 V; AM 80% 1 kHz	IEC 61000-4-6; 150 kHz - 80 MHz; 10 V; AM 80% 1 kHz
	Magnetic Field Immunity	IEC 61850-3	IEC 61000-4-8; 50 Hz; 100 A/m cont.; 1000 A/m 1 s	
	Damped Oscillatory Magnetic Field Immunity	IEC 61850-3	IEC 61000-4-10; 100 kHz; 30 A/m	
	Damped Oscillatory Magnetic Field Immunity	IEC 61850-3	IEC 61000-4-10; 1 MHz; 30 A/m	
Power Supply Unit (PSU) Variations	AC Voltage Dips	IEC 61850-3	IEC 61000-4-11; 30% & 100%, 0.5s	NA
	DC Voltage Dips	IEC 61850-3	IEC 61000-4-29; 40% & 70%, 0.1s	NA
	Damped Oscillatory Wave	IEC 61850-3	IEC 61000-4-12; 2.5 kV CM, 1.0 kV DM @1MHz	IEC 61000-4-12; 2.5 kV CM, 1.0 kV DM @ 1MHz
	Conducted PF CM Voltage	IEC 61850-3	IEC 61000-4-16; 50 Hz; 30 V cont.; 300 V 1s	IEC 61000-4-16; 50 Hz; 30 V cont.; 300 V 1s
	Conducted Emission	IEC 61850-3	CE/FCC/CISPR22 class A	CE/FCC/CISPR22 class A
	Conducted emission	IEC 61850-3	CE/FCC/CISPR22 class A	CE/FCC/CISPR22 class A
	Radiated emission	IEC 61850-3	CE/FCC/CISPR22 class A	
Dielectric	Dielectric 50 Hz Test	IEEE 1613	IEC 60255-5; 2 kV	IEC 60255-5; 0.5 kV
	Impulse Voltage Test	IEEE 1613	IEC60255-5; 5 kV	IEC 60255-5; 5 kV



Typical Point-to-Point and Multi-Point Applications Using TC3845-1 to Extend T1/E1 over an Ethernet Network

Connection Capacity

T1/E1 1, 2, or 4 Ports
 Ethernet..... 1 Ports

Electrical

T1 Interface
 Line Code AMI, B8ZS
 Standards ... AT&T TR-62411, G.703,
 G.704, G.824, ANSI T1.403
 Connector RJ48
 Impedance 100 Ohm

E1 Interface
 Line CodeAMI, HDB3
 Standards G.703, G.704, G.706
 G.732, G.823
 Connector RJ48, BNC
 Impedance 120, 75 Ohm

Ethernet Interface
 Standards IEEE 802.3, 802.3u
 Connector RJ45

Console Interface
 Connector RJ45

Standard Compliance

CE, FCC Part 15, CISPR (EN55022)
 CLASS A, IEC 61850-3, IEEE 1613,
 NEMA TS-2, IEC 60834

Diagnostic Functions

Local and Remote Loopback for
 T1/E1

LEDs

Unit Status.... PWR (A, B), Alarm, BU,
PL, Vcc, BP, MGM
 T1/E1Line, Sync
 Ethernet..... Link, Duplex

Power

Standard 12VDC
 Optional 24, -48 VDC
 90-260 VAC, 50/60Hz
 Power Consumption <10W

Operating Temperature

High Temp -20°C to 70°C
 Extreme Temp -40°C to 80°C

Storage

Temperature.....-40°C to 90°C
 Humidity.....95% non-condensing

Physical (Standalone Unit)

Height.....(3.89 cm) 1.53"
 Width.....(18.54 cm) 7.3"
 Depth.....(24.87 cm) 9.79"
 Weight.....(0.4 kg) 1.0 lbs



SAI GLOBAL
 ISO 9001
 Quality

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Note: Information contained in this data sheet is subject to change without prior notice.



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