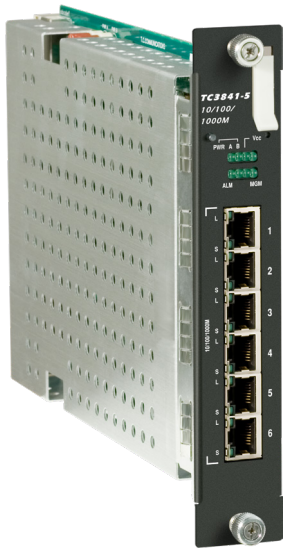
6-Port Gigabit Copper Ethernet Expansion

TC3841-5

- **6-Port 10/100/1000M Copper Ethernet**
- **Expands JumboSwitch® Ethernet Features**
- **Remote Manageable with JumboSwitch® MGMT Card**
- **Temperature & Power Consumption Monitoring**
- **Extreme Temp (-40°C to +80°C) Optional**
- **Meets or Exceeds IEC 61850-3, IEEE 1613, & NEMA TS-2 Standards**
- **Member of the JumboSwitch® Product Family**



TC3841-5 for the JumboSwitch® Chassis

Featuring a wide range of advanced networking features, the TC3841-5 is a 6-Port Gigabit (10/100/1000M) Copper Ethernet Expansion card. As member of the JumboSwitch® family, this card increases the number of Ethernet ports of the chassis and expands the advanced network features which include:

- **Carrier Ethernet 2.0** including IEEE 802.3ah MAC Layer OAM, IEEE802.1ag Ethernet CFM and ITU-T Y.1731 Ethernet OAM.
- **Network Redundancy** using IEEE 802.1D Spanning Tree, ITU-T G.8031 Ethernet Linear Protection Switching and ITU-T G.8032v2 Ethernet Ring Protection Switching (ERPS)
- **Time Synchronization** with Network Time Protocol (NTP) and IEEE 1588v2 PTP.
- **VLAN, QoS and Rate Control** which allows network segregation, isolation, prioritization and bandwidth control.
- **Diagnostics** include Temperature and Power Monitoring, and RMON.
- **Management** via Web, SNMP, or Command Line Interfaces.
- **Security** features such as 802.1X, RADIUS/TACACS+, AAA, SNMPv3 and SSL provide both network and management security.
- **Durable and reliable operation**. The TC3841-5 is designed with extended temperature, shock/vibration, and surge ratings. And fits into available JumboSwitch® housing options which include the 1U, 2U, and 4U card cages. Standard operating temperature is -20°C to +70°C and extreme temperature version is -40°C to +80°C.

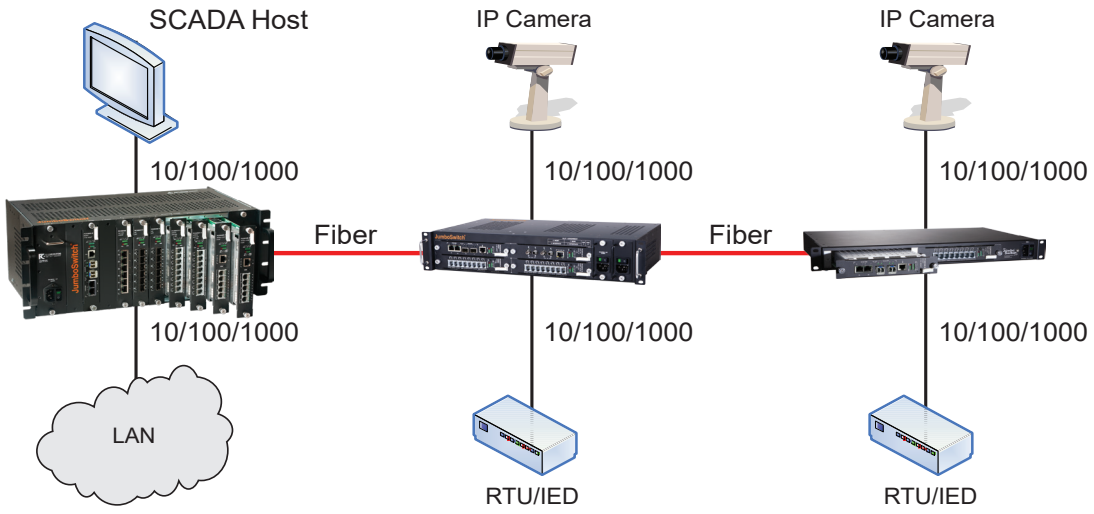
Applications

With its ability to operate in the harshest environments and its advanced networking features, the TC3841-5 is the perfect solution for virtually all Ethernet Switch applications encountered in the Industrial Automation, Utility and Transportation industries. It is also used by Data Service Providers to control the bandwidths they offer to their customers

Environmental & EMC Compliance

The JumboSwitch® product family meets all pertinent industry-specific standards for environmental, performance and security requirements including IEC 61850-3, 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.

	Test	Industrial Standards	JumboSwitch TC3850 Series 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	
	Free Fall	IEC 61850-3, IEEE 1613	25 cm	
ElectroMagnetic Compatibility	Electrostatic Discharge Immunity	IEC 61850-3, IEEE 1613 (C37.90.3)	IEC 61000-4-2; 8kV contact; 15 kV air	
	Radiated RF Immunity	IEC 61850-3, IEEE 1613 (C37.90.2)	IEC 61000-4-3; 80 MHz - 1000 MHz; 35 V/m (Peak); AM 80% at 1 kHz	
	EFT/Burst Immunity	IEC 61850-3, IEEE 1613 (C37.90.1)	IEC 61000-4-4; 4 kV CM; TM	IEC 61000-4-4; 4 kV CM; TM
	Surge Immunity	IEC 61850-3, IEEE 1613	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, IEEE 1613	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, IEEE 1613	IEC 61000-4-8; 50 Hz; 100 A/m cont.; 1000 A/m 1 second	
	Damped Oscillatory Magnetic Field Immunity	IEEE 1613	IEC 61000-4-10; 100 kHz; 30 A/m	
	Damped Oscillatory Magnetic Field Immunity	IEEE 1613	IEC 61000-4-10; 1 MHz; 30 A/m	
Power Supply Unit (PSU) Variations & Emissions	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
	Ripple on DC Power Supply	IEC 61850-3	IEC 61000-4-17; 10% Un	NA
	Conducted PF CM Voltage	IEC 61850-3, IEEE 1613	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/CISPR32 class A	CE/FCC/CISPR32 class A
	Radiated Emission	IEC 61850-3	CE/FCC/CISPR32 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



Application Using TC3841-5 to Provide 10/100/1000 Ethernet Connections to an Existing Local Area Network

Data Rates

RJ45 ..... 10/100/1000Mbps

Electrical

Ethernet

- Connector RJ45
- Port 6
- Interface ..... 1000 Base-T

Regulatory Approval

CE, FCC Part 15, CISPR32 (EN55032) CLASS A, IEC 61850-3, IEEE 1613, NEMA TS-2 , EN50155, AREMA

LEDs

PWR A, PWR B, VCC, MGM, ALARM, LINK, SPEED

Power

- Standard 12VDC
- Optional .....24VDC, -48VDC, 125VDC ..... or 100-240VAC 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 (rack mount card)

- Height..... (3.15 cm) 1.24”
- Width..... (17.78 cm) 7.0”
- Depth..... (22.86 cm) 9.0”
- Weight..... (0.3 kg) 0.75 lbs

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

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TAA Compliant

TC Communications Quality Management System is certified as being in conformity with ISO 9001:2015 by Intertek

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