

4-Ch. RS-232, RS-422/RS-485 Serial Server

TC3847-1

- **Transports 4 Ch. RS-232 or RS-422/ RS-485 over Ethernet/IP**
- **Supports RS-232 Handshaking (CTS/RTS)**
- **128 bit SSL Encryption for Management and Serial Data**
- **Port Password Protection**
- **Manage Via Web, SNMP or Telnet**
- **Temperature and 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**



TC3847-1 4-Port RS-232 or RS-422/RS-485 Serial Server

Compact and simple to configure, the TC3847-1 Serial Server transports four channels of RS-232 or RS-422/RS-485 data over existing Layer 2/Layer 3 networks. Each channel is independent, so it is possible to mix RS-232 and RS-422/RS-485.

The TC3847-1 supports point-to-point serial tunneling and serial server configurations on a per port basis. For serial tunneling configurations, RS-232 or RS-422/RS-485 signals are transparently extended over IP networks. For serial server configurations, individual or multiple users can access their serial devices through the TC3847-1 over their network.

Key features include Traffic Monitoring, RFC2217, Serial Activity Watchdogs, Port Password Protection, SSH Port Access, Network Time Server (NTP Server), Remote Firmware Upgrade and Temperature and Power Consumption Monitoring.

Setup, diagnostics, and management are accessed via Web, SNMP, and Telnet. Diagnostics include LED indicators and local and remote loop back to assist with troubleshooting and maintenance.

The TC3847-1 interface card can fit into any available JumboSwitch housing options including 2S and 1U Standalone chassis and 2U/4U card cages. Power supply options are 12VDC, 24VDC, -48VDC or 115/230 VAC. Standard operating temperature is -20°C to +70°C and the extreme temperature version is -40°C to + 80°C.

Applications

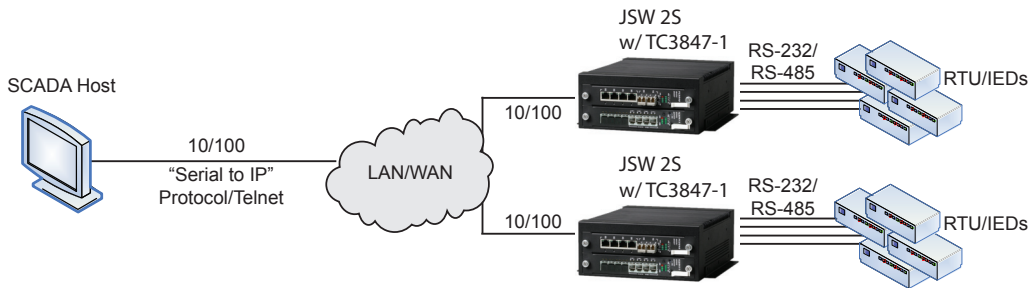
Typical applications centered around transporting serial data over IP networks.

For example the TC3847-1 is often used in Utility, SCADA, Traffic Control and Process Control Networks to link RS-232 or RS-485 RTUs and PLCs to a Host CPU.

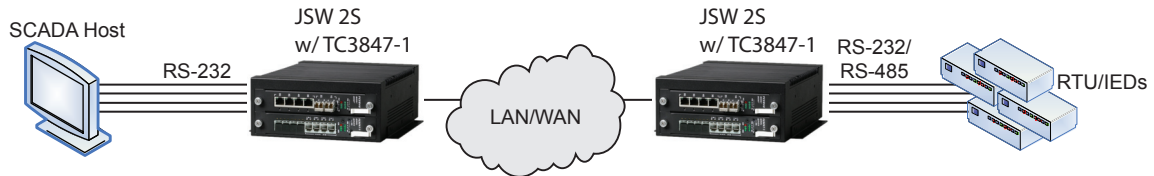
Environmental & EMI Compliance

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.

	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 Telnet Application Using TC3847-1 Serial Servers.



Typical "Serial Tunneling" Application Using TC3847-1 Serial Servers

Data Rates

- RS-232.....Up to 115Kbps
- RS-422/RS-485.....Up to 115Kbps
- Ethernet.....10/100Mbps Full
.....Duplex/Auto negotiation

Connection Capacity

- RS-232 or RS-422/RS-485.....4 Ports
- Ethernet.....1 Port

Electrical

- RS-232 Interface
 - ESD Protection.....+/-15KV HBM
 - Connector.....RJ11F
- RS-422 Interface
 - Termination (optional)....100 Ohm
 - ESD Protection.....+/-15KV HBM
 - Connector.....RJ11F
- RS-485 Interface
 - Termination (optional)....100 Ohm
 - ESD Protection.....+/-15KV HBM
 - Connector.....RJ11F
- Ethernet Interface
 - Standards.....IEEE 802.3
.....802.3u, 802.1p&Q

Regulatory Approval

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

System

- Bit Error Rate.....1 in 10¹⁰ or Better

Diagnostic Functions

- Local and Remote Loopback for
Serial Data

LEDs

- Unit Status.....PWR (A, B), Alarm
.....Vcc, BP, MGM
- Channel.....Rx/Tx/Status
- Ethernet.....Link/Act

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 (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



ISO 9001
QMI-SAI Global
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Note - Information contained in this data sheet is subject to change without prior notice. 010C