

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 (NTS), 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

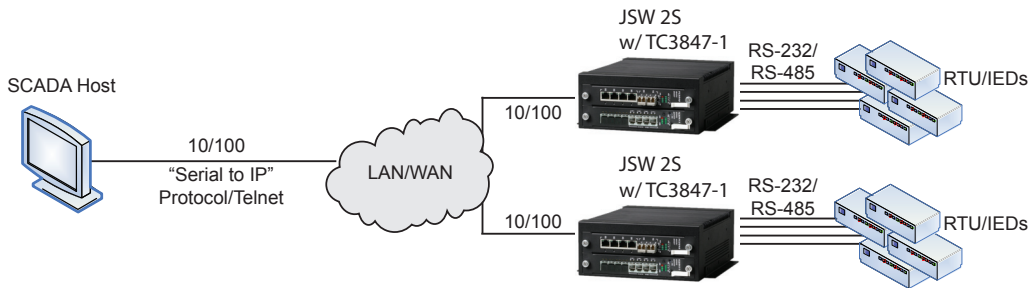
Typical applications centered around transporting serial data over IP networks.

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.

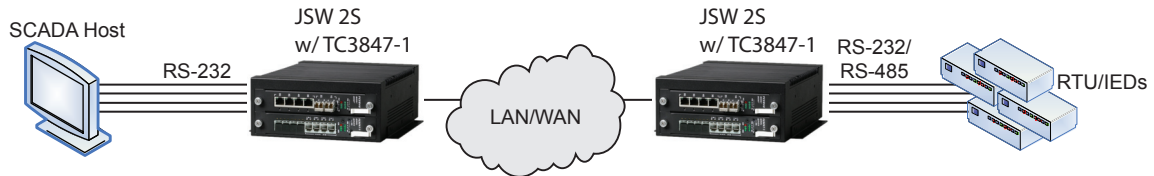
Environmental & EMI Compliance

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, CS, MS
- 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
#1045959

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Note - Information contained in this data sheet is subject to change without prior notice. 010C