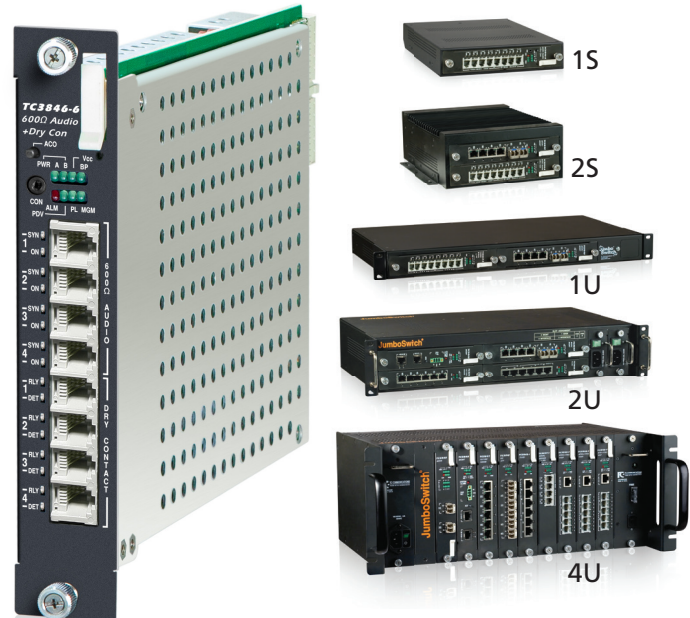


2W/4W E&M 600 Ohm over IP Gateway

TC3846-6

- 1, 2, 4 channels (expandable) of 2W/4W E&M 600 ohm over IP
- Uncompressed audio ensures flat audio response allowing crystal clear audio and 100% passing of in-band audio signaling
- Extremely low latency ensures compatibility with all voting and simulcast systems
- Compatible with all dispatch consoles
- FSK, FFSK modem capability
- Meets or exceeds IEC 61850-3, IEEE 1613 & NEMA TS-2 standards
- Extreme temp (-40°C to +80°C) optional
- Member of the JumboSwitch® product family



2W/4W E&M 600 Ohm over IP Gateway

The TC3846-6 links or extends up to 4 channels of 600 ohm 2/4-wire analog and dry contacts across Layer 2/3 Ethernet/IP, CE, or MPLS networks. For cost savings and scalability, units can be ordered with only 1 or 2 channels of analog and dry contacts and later expanded in the field to 2 or 4 channels. It is easy to configure, offers extremely low latency, and supports point-to-point and point-to-multipoint topologies.

Technical

The TC3846-6 supports frequencies from 300Hz to 3.4kHz and achieves minimal end-to-end processing delay (latency) by using high performance buffering and forwarding technology. This allows various tones such as continuous pilot tones and EIA control tones to run without interruption or quality degradation. This is possible because of proprietary technology that, unlike VoIP, uses a common clock for both ends. Analog signals are transported on a 64Kbps channel without compression. Another key feature is support for PTT/COR.

Security

VLAN and QoS for packet prioritization ensure reliable communications. AAA (RADIUS and TACACS+) and NTP Authentication are some of the added security features for enhanced protection.

Access and diagnostics

Setup, diagnostics, and management are accessed via Web, SNMP, Serial Console, and Telnet/SSH. Diagnostics include LED indicators and local/remote loopback.

Applications

Voted radio systems

- Low latency and uncompressed audio ensures reliable operations and crystal clear audio
- Compatible with all voted solutions

Simulcast systems

- Low latency and signal distortion allows seamless integration with existing analog simulcast networks

600 ohm analog audio devices

- Compatible with FSK, FFSK modems

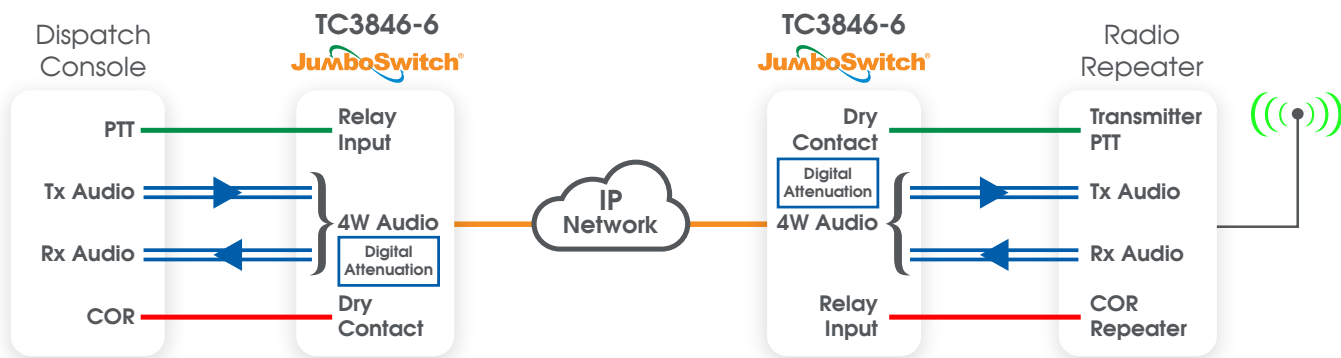
Leased line replacement

- 100% compatible with existing 4W or 2W leased lines, improving reliability, network flexibility and allowing for significant cost reductions

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 Application using the JumboSwitch TC3846-6, 2W/4W E&M 600 Ohm over IP Gateway

Connection capacity

Analog (2/4-Wire) 1, 2, or 4 Ports
 Dry Contact 1, 2, or 4 Ports
 GigabitEthernet 1 Port

Electrical

Analog Interface
 Impedance600Ω
 Signal range.....-36.5 to +4.5 dBm
 Frequency band..... 300 to 3400Hz
 Connector RJ11

Dry Contact Interface
 Normal Open standard
 Normal Close..... optional
 Max Load Voltage60V
 Continuous load current..... 0.55A
 Peak load current 1.2A
 Detector max input voltage.....9V

Ethernet Interface
 Standards IEEE 802.3, 802.3u
 Connector RJ45

Serial Console Interface
 Connector2.5mm Audio Jack

Regulatory approval

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

Diagnostic functions

Local and Remote Loopback for
 Analog and Dry Contact

LEDs

Unit Status.... PWR (A, B), Vcc, Alarm
PDV, PL, BP, MGM
 AnalogOn, Sync
 Dry ContactDetector, Relay

Power

Standard..... 12VDC
 Optional.... 24VDC, -48VDC,125VDC,
or 100-240VAC 50-60Hz
 Power Consumption..... <10W

Operating temperature

Standard Temp -20°C to 70°C
 Extreme Temp..... -40°C to 80°C

Storage

Temperature -40°C to 90°C
 Humidity95% 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



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



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