



# Seamless Industrial Communication

35 Years  
25,000 Installation  
3,00,000+ Devices Sold

# NETWORKING & SURVEILLANCE SOLUTIONS

## MEDIA CONVERTER

### Ethernet to Fiber Optic Converters

- ◆ Fast Ethernet, Gigabit, 10G, PoE & SFP versions
- ◆ Auto-Negotiation, Auto MDI / MDIX, Store and Forward Switching, Half and Full Duplex
- ◆ Link Fault Pass Through
- ◆ Built in 110 / 230V AC SMPS / 24 / 48 / 110 / 220V DC operated
- ◆ DIN Rail / 2U Rack
- ◆ IP20
- ◆ -10° to 65° C



Fiber Optic to Ethernet Media Converter



Media Converter 230V AC Powered



Media Converter with 1G and 10G SFP Port



1G / 10G Media Converter



14/16 Channel Media Converter Racks

## INDUSTRIAL GRADE MEDIA & POE CONVERTERS

- ◆ Fast Ethernet, Gigabit, 10G, PoE & SFP Converters
- ◆ Auto-Negotiation, Auto MDI / MDIX, Store and Forward Switching, Half and Full Duplex
- ◆ Link Fault Pass Through
- ◆ Reverse Power Polarity, Overload Current, EFT, ESD protection
- ◆ 9 to 48V DC
- ◆ DIN Rail
- ◆ IP30
- ◆ -40° to 85° C



Industrial Grade Media Converter



Dual Port Industrial Grade Media Converter



Industrial Grade PoE-at / PoE-bt af Media Converter



## INDUSTRIAL ETHERNET SWITCHES

- ◆ L2, L3 Unmanaged, Managed & PoE Switches
- ◆ High & Low density ports
- ◆ Combination of 10/100 Base-TX, 100 Base FX, 1000 Base TX/SX/LX and 10G Uplink ports
- ◆ Fixed & SFP Fiber Ports
- ◆ DC, AC & Dual Supplies
- ◆ DIN Rail, Rack type & Modular Switches
- ◆ IP40
- ◆ -40° to 85° C



5 and 8 Port Compact Industrial Ethernet Switch



4 Port Giga PoE Industrial Ethernet Switch



6 Port Giga Industrial Ethernet and PoE Switch



10 Port Industrial Ethernet Switch with 100X or 1000X SFP Ports



L2 and L3 Modular Switches



16 Port Industrial Ethernet Switch



16 Port Giga Industrial Ethernet Switch with 4 Giga Combo ports



24 Port Giga Industrial Ethernet Switch



L2 and L3, 28 Port Rack type Industrial Ethernet Switch

## POE INJECTOR / SURGE PROTECTOR

### PoE Injector

- ◆ Supply Power to PD's like IP Camera's etc
- ◆ IEEE802.3af/at/bt, UpoE standards ( PoE, PoE+, PoE ++, 90W)
- ◆ 2\*10/100/1000 RJ45 Ports
- ◆ AC or DC Power input
- ◆ Commercial / Industrial Grade, Indoor / Outdoor application
- ◆ Power input port with lightning protection



PoE Injector

### PoE Surge Protector

- ◆ Support 100/1000Mbps
- ◆ IEEE802.3af/at/bt standards (PoE, PoE+, PoE++)
- ◆ Differential mode Surge voltage (8/20us) 4KV
- ◆ Common mode Surge voltage(8/20us) 6KV
- ◆ 8 lines Surge protection
- ◆ Response Time : 5nsec



PoE Surge Protector



## CELLULAR MODEMS

### 4G Modems and Intelligent Modems

- ◆ Low cost solution offering RS232/RS485 or USB Communication port
- ◆ Supports AT command set with TCP / IP protocol stack
- ◆ Supports the AT command enabling SMS sending and receiving.
- ◆ AT commands through an Ethernet, Serial (RS232/RS485) & USB Port.
- ◆ Battery backed RTC, Watchdog Timer
- ◆ USB Port for Configuration
- ◆ Transparent mode allows remote Serial devices to connect to Central SCADA
- ◆ IP20



4G Cellular Modem



4G Cellular Intelligent Modem

### Cellular 4G/5G Router with VPN, WAN & WiFi

- ◆ Low-consumption sleep mode
- ◆ Auto recovery mechanism, including online detect, auto redial when offline to make router always online
- ◆ 1 or 2 Serial Ports, 1xWAN / LAN, 4xLAN & 1xWiFi Ports
- ◆ Single / Dual SIM with Passive / Active & Active / Active mode
- ◆ Standard WAN port & PPPoE protocol that can connect to ADSL directly
- ◆ Enter into communication state automatically when powered
- ◆ Double link back up between WCDMA & WAN
- ◆ VPN Server & Client (PPTP, L2TP, OPENVPN, IPSEC & GRE)
- ◆ Support multiple DDNS providers
- ◆ Support link disconnection when timeout
- ◆ DHCP server and client, Firewall, SNAT, DNAT, DMZ host, URL block, QoS, Loopback Traffic statistics, Real time link speed statistics etc
- ◆ Full protocol support, TCP/IP, UDP, ICMP, SMTP, HTTP, POP3, OICQ, FTP, SNMP, SSHD, Telnet, HTTPS, etc
- ◆ SMS by Telnet using AT commands.
- ◆ Modbus RTU / Modbus TCP / DNP3 / MQTT / Post HTTP
- ◆ Support Manual Band Locking
- ◆ Support APN / VPN / M2M SIM
- ◆ Support Router Management Platform (RMP)
- ◆ IP30



Router with 2 SIM Cards



Cellular VPN Routers with Dual SIM, Active/Active, Active/Passive, WiFi & 5 Ethernet Ports

### Cellular Routers with Multiple Serial Ports & IO's

- ◆ Upto 5 of Fast or Giga Ethernet ports
- ◆ Upto 6 Serial ports, RS232 or RS485 Port
- ◆ 2 DI / Pulse 1 DO, 1 Relay
- ◆ 802.11n/802.11ac and global 2.5G/3G/HSPA+/LTE options
- ◆ Supports Multiple Internet interfaces (Cellular, WAN, WiFi, Dual-SIM)
- ◆ Modbus RTU, ModbusTCP, DNP, IEC101, IEC104
- ◆ Wide operating temperature range
- ◆ Supports DIN Rail mounting
- ◆ IP30



Cellular VPN Router with 5 LAN, 1 WAN, 1 Serial Port and IO's



Cellular VPN Router with 2 LAN and WAN Ports and 4 Serial Ports



4 AI+4DI+4DO+ ModbusTCP

# IoT SOLUTIONS

## SMART ALERT GATEWAYS

- ◆ Transfer the status of Alarms via SMS / pre recorded Voice message and Emails
- ◆ 10 Landline or Cellular numbers
- ◆ Upto 8 DI's, 8 AI's, 4 DO's & Modbus RTU Inputs



4 Digital Input  
2 Digital Output



4 Digital Output,  
8 Analog, 8 Digital  
and Modbus Inputs



Alerts over Voice calls  
and Emails from only  
Modbus Input

## IIOT GATEWAYS

- ◆ 4G Cellular, Ethernet/WiFi Interface Gateways
- ◆ Support Modbus RTU Master interface
- ◆ RS232/RS485 ports
- ◆ Connects by itself to the cloud
- ◆ IoT Protocols : HTTP, MQTT, FTP
- ◆ Support upto 8 AI, 8DI & 4 DO with IO Read / Write
- ◆ Battery backed RTC, Watchdog timer
- ◆ Embedded Web Server can host Web pages to display Data & Charts



Ethernet /  
Wi-Fi IoT Gateway with  
embedded Webserver"



Cellular IoT Gateway with  
2AI, 4DI, 1DO

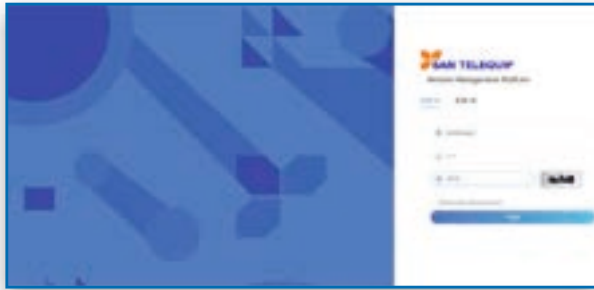


Cellular IoT Gateway



Cellular IoT Gateway  
with 8AI, 8DI, 4DO





## Remote Management Platform (RMP)

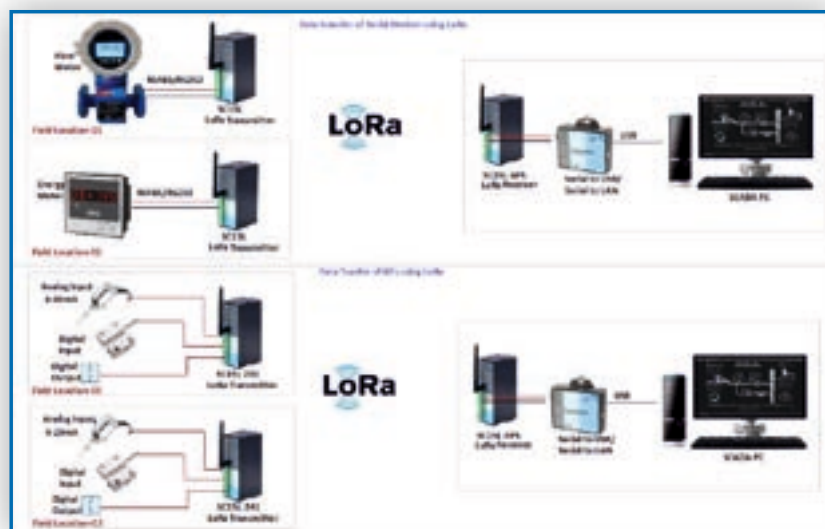
- ◆ Router management platform is used for monitoring and configuration of routers installed in the field & Field Devices Which is connected to Router.
- ◆ Platform monitors router Online/Offline status, data consumption and signal strength of routers.
- ◆ Supports configuration settings of the router like LAN IP, APN name, DHCP, Wireless settings, VPN settings.
- ◆ Supports firmware upgrade of routers through platform.
- ◆ User Can Access field device (PLC/RTU) by virtual VPN IP.

## LoRa GATEWAYS

- ◆ Packet & Transparent mode
- ◆ Supports LoRa interface using 433/867 MHZ frequency
- ◆ Range upto 4 Km with Line of Sight
- ◆ Support RS232/RS485 port
- ◆ Upto 2AI, 4 DI / Pulse & 1 DO
- ◆ Transparent mode to connect multiple locations to central location wirelessly
- ◆ Access point supports Modbus RTU slave interface
- ◆ LoRa to MQTT, LoRa to VPN, LoRa to Modbus TCP



LoRa IoT Gateway



Application Schematic

# INDUSTRIAL GRADE SECURE TERMINAL SERVERS

- ◆ 4, 8, 16, 32, 48 Serial port Terminal Servers
- ◆ Secured, SSL, SSH, HTTPS, IP address filtering, MAC address filtering, VPN-OpenVPN, IPsec, PPTP
- ◆ Isolated / Non Isolated Serial Ports
- ◆ 2 Ethernet Ports: Redundant & Dual Subnet mode
- ◆ 10 / 100 TX & 100 FX SFP Options
- ◆ Support TCP server / TCP client / UDP / Virtual COM
- ◆ Built-in Web server, Serial Console for Configuration
- ◆ Built-in 15KV ESD protection for all serial signals
- ◆ Redundant and Wide input voltage range, 48V DC / 230V AC / Mix of both
- ◆ IP30 / IP40
- ◆ DIN Rail / Standard 19 - inch Rack mount



4 Port Isolated / Non Isolated Terminal Server



16 Port Isolated / Non Isolated Terminal Server



32 Port Isolated / Non Isolated Terminal Server



48 Port Terminal Server

## PROTOCOL GATEWAYS

Protocol translation between Serial to Serial, Serial to Ethernet & Ethernet to Ethernet Devices

Modbus RTU / TCP, BACnet MSTP / IP, LonWorks, Metasys N2, SNMP, XML, MBus, IEC 101/104, DNP3 etc



Modbus RTU to Modbus TCP

### MODBUS TCP GATEWAYS

- ◆ Support 4 Modbus modes, Modbus RTU/ASCII Master / Slave, Modbus TCP Master / Slave
- ◆ Support 8 TCP Masters & 32 TCP Slaves simultaneously
- ◆ Upto 2 of RS232/RS485/422 ports
- ◆ Isolated / Non Isolated
- ◆ Modbus TCP over WiFi



Dual Port Modbus RTU/ASCII to Modbus TCP Converter



Serial to WiFi, Modbus RTU to Modbus TCP over WiFi

### Secured Multiport Modbus TCP Gateways

- ◆ Convert Modbus RTU to Modbus TCP and support 16 simultaneous TCP master & 32 simultaneous requests for each TCP master
- ◆ Isolated and Non Isolated
- ◆ Secured, SSL, SSH, HTTPS, VPN OpenVPN, IPsec, PPTP
- ◆ 2 Ethernet ports operates as Dual Subnet & Redundancy Mode
- ◆ Each RS232/485/422 serial port can be individually configured for Modbus RTU or Modbus ASCII, Master or Slave or even different baud rate
- ◆ CE approved



Isolated & Non Isolated 4 Port Modbus TCP Gateway



Isolated & Non Isolated 8 / 16 Port Modbus TCP Gateway, Data Concentrator

## Master / Master and Slave / Slave Gateways

- ◆ For communication between 2 Masters or between 2 Slaves

### Modbus Data Concentrator

- ◆ To collect and keep data ready from various Modbus Slaves, organise it sequentially and efficiently reply to ModbusTCP Master

### Modbus Data Logger

- ◆ The data Logger is capable of operating in both Modbus TCP to RTU and RTU to TCP modes.
- ◆ The Logger's dedicated web page provides real-time data for the Serial port. Recordings are stored either on a USB Flash drive or a 16GB SD card, with a capacity to accommodate approximately 16,000 to 20,000 records.
- ◆ Users can easily access and download the Logger's data from a web page.

### Ring Redundancy Converter

- ◆ Create Data & Cable Redundancy in a Non Redundant Modbus Slaves loop



Master-Master, Slave-Slave,  
Data Concentrator



Modbus Data Logger

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## BMS Protocol Converter

- ◆ BTL approved Module
- ◆ Upto 10,000 points and more
- ◆ Support https://



Modbus RTU, Modbus TCP, BACnet MSTP,  
BACnet IP, N2, SNMP, XML



Secured BMS Gateways



M Bus to Modbus RTU/TCP,  
BacNet MSTP/IP



BACnet/Modbus/N2 to LON

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## Protocol Converters - Others



Ethernet IP to Modbus/BACnet



Modbus/BACnet/IEC101/IEC104/DNP3



HART to Modbus

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# INTERFACE CONVERTERS

## RS232 TO RS485 CONVERTERS

- ◆ Truly 3 way Isolated
- ◆ 3KV Opto Isolation, 3 KV Galvanic Isolation, 15 KV ESD protection, 4KV Surge & 4 KV EFT protection
- ◆ 230V AC. 24 / 48 / 110 / 220V DC operated
- ◆ DIN Rail mounted



Universal AC / DC Powered



RS485 2 wire, 24V DC Powered



## ISOLATOR / REPEATER

- ◆ Truly 3 way Isolated
- ◆ 3KV Opto Isolation, 3 KV Galvanic Isolation, 15 KV ESD protection
- ◆ 4 KV Surge & 4 KV EFT protection
- ◆ 230V AC. 24 / 48 / 110 / 220V DC operated
- ◆ DIN Rail mounted



RS232 Isolator, RS485 / RS422 Isolator / Repeater

## SERIAL TO FIBER CONVERTOR

- ◆ Need to be used in Pair / Ring
- ◆ RS232 / RS485 / RS422 Auto selectable
- ◆ Upto 500 kbps
- ◆ Multi mode and Single mode
- ◆ 15KV ESD and 600W Surge Protection
- ◆ Built in 110 / 230V AC SMPS. 24 / 48 / 110 / 220V DC operated
- ◆ 4KV EFT Protection, 2KV Surge Protection
- ◆ DIN Rail / 2U Rack
- ◆ IP20
- ◆ -10° to 65° C



Serial to Fiber Converter DC Powered



Serial to Fiber Converter, 230V AC Powered



14 Channel Serial to Fiber Converter Rack



Self Healing Serial to Fiber Converter

## PROFIBUS TO FIBER CONVERTERS / REPEATERS

- ◆ 1 & 2 Fiber ports for Daisy Chaining & Redundant Ring
- ◆ Data rate up to 12M, Data latency rate as low as 120 nsec.
- ◆ Redundant power 9-30V DC, Relay output alarm
- ◆ Profibus HUB / Repeater support 3 independent channels of Profibus DP
- ◆ DIN rail mounting
- ◆ IP30



Profibus to Fiber



Profibus Redundant Ring Converter



## SERIAL TO ETHERNET CONVERTERS

- ◆ 10 / 100M Auto negotiable speed
- ◆ 1/2/4 Serial Port Device Server, Supports High Speed CPU
- ◆ Support Virtual Com Ports
- ◆ Secure : IP Filter and MAC Binding
- ◆ Serial Port with 600W Surge, Over current and 15KV ESD protection
- ◆ 230V AC, 24 / 48 / 110 / 220V DC operated



Serial to Ethernet Converter, AC Powered



Dual RS485 Device Server, AC Powered



Four Port Isolated / Non Isolated Device Server

## SERIAL TO USB CONVERTER

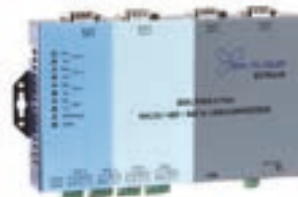
- ◆ Supports 1 & 4 Serial Ports, 3KV Isolated versions
- ◆ USB 1.0, 1.1, 2.0, Full speed 12 Mbps
- ◆ Full signal RS232 & RS485/422
- ◆ Surge Protection on RS422 and RS485 lines
- ◆ ESD Protection on all lines
- ◆ Support Uninterrupted large data transfers
- ◆ Self Powered



RS232 or RS485 to USB Converter



Isolated RS232/RS485/RS422 to USB Converter



Isolated 4 port RS232/RS485/RS422 to USB Converter

## RS485 HUB

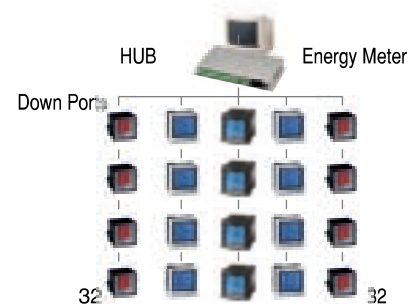
- ◆ 4 and 8 Port RS485 Hub
- ◆ Connect as many as 256 no's of RS485 devices
- ◆ Optically Isolated, Short Circuit, Surge & ESD protected
- ◆ Dual power input : 230 V AC / External Adaptor



4 Port RS485 Hub



8 Port RS485/RS422 Hub



## SERIAL REDUNDANCY SWITCHES

- ◆ Protocol Independent
- ◆ Connect 2 Masters to 1 Slave or Redundant Slaves to 1 Master
- ◆ RS485 Ports
- ◆ AC & DC Supplies



Serial Sharing Switch



Serial Redundancy Switch

## SURGE SUPPRESSORS

- ◆ Protect Serial ports from lightening & transients
- ◆ Transient Voltage Suppression : 600W
- ◆ DC Spark Over Voltage: 72 to 102V DC
- ◆ Impulse Spark Over Voltage: <math><450V</math> at 100V /  $\mu\text{sec}</math>, <math><800V</math> at 1 KV /  $\mu\text{sec}</math>$$



RS485 / RS422  
Surge Suppressor



Multiport Ethernet  
Surge Suppressor

## ANALOG/DIGITAL TO MODBUS RTU CONVERTER

- ◆ Sensors are used to continuously monitor and control various process parameters
- ◆ These measurements help improving processes for adhering to product specifications & improve product
- ◆ Monitoring and controlling Temperature, Pressure, Level, Flow etc are common occurrences for any process
- ◆ IO Converters convert the Analog & Digital Inputs data from Sensors to Modbus to be taken to SCADA for further processing



4 Channel Analog to Modbus



Upto 20 Channel Analog / Digital Input Output to Modbus



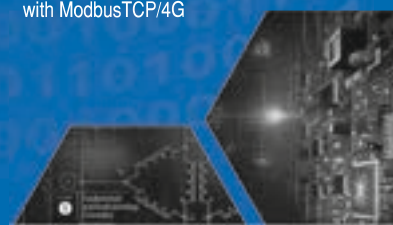
Modbus to 2 - Channel AO's

## RIO MTCP

- ◆ 6 slots for IO Boards. Can use any combination of 6 IO boards.
- ◆ DI Board with 12 inputs, DO board with 12 Outputs, AI board with 8 Inputs & AO board with 4 outputs.
- ◆ ModbusTCP/ Modbus RTU Slave interface for SCADA
- ◆ Cellular 4G enabled
- ◆ Support MQTT Protocol for Cloud communication.
- ◆ PWM & RTD inputs also available on request
- ◆ Internal Web Server for Monitoring & Control of IO's



Upto 72 Remote IO's  
with ModbusTCP/4G



# PROFILE

## CONNECTING. CONVERTING. LEADING!

We are actively addressing the growing market trends & needs for Communication & Data Connectivity solutions. Critical connectivity in industrial automation is about reliability and performance while ensuring data security. We design and build robust devices to Connect, Communicate and Collaborate with systems, processes and people. Our product range includes all the physical layer conversions like RS232, RS485, Fiber, Ethernet, USB & Wireless.

**India's Largest  
manufacturer of  
Interface Converters**

**35 Years**

**25,000 Installation**

**3,00,000+ Devices Sold**

**SAN Telequip** has more than 25,000 installations across a spectrum of industries including Building Automation, Security and Surveillance, Oil and Gas, Telecom, Power, Renewable Energy and others. One of the reasons why customers trust us is because of our high level service and support commitment.

### Why San Telequip?

- Cutting edge technology but competitively priced
- Excellent Post Sales Services
- Tailor-made solutions
- Large installation base across India
- Products and systems for all your data needs



**CUSTOMER  
SERVICE ON  
PRIORITY!**



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