



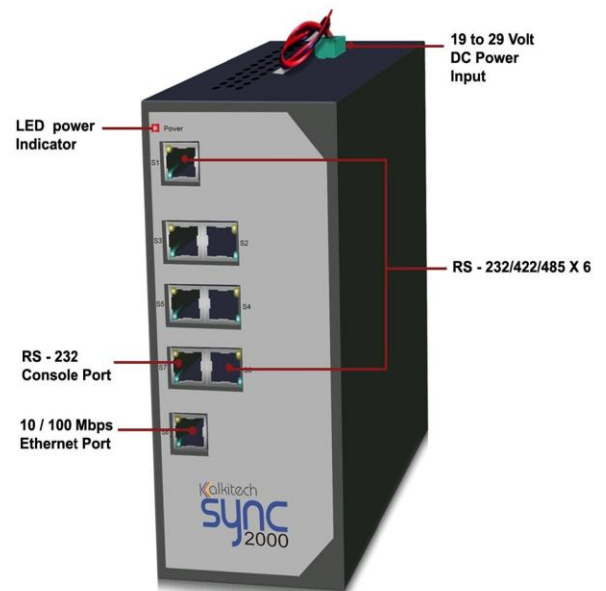
SYNC 2000

- Provides the widest range of substation, metering and industrial protocols : Can support IEC 61850, IEC 60870-5-101/104, DNP3, DLMS/COSEM, Modbus and many more
- More flexibility: 6 Serial, 1 Ethernet / 1 Fibre Optic ports
- Integrated GPRS / CDMA support. External modem support
- Rugged and IEC 61850-3 compliant
- Low capital costs, and even lower maintenance / support costs - Superior technical support provided by industry renowned experts
- New protocol support and customization possible
- Used in more than 300 companies and sold more than 4000 in over 50 countries



Overview

SYNC 2000 IO and Protocol Gateways are versatile communication controllers for Smart Grid, M2M, AMI, FRTU applications. This controller comes with real-time embedded linux operating system, IEC 61850, IEC 60870-5-101/104, DNP3, DLMS, Modbus and a host of other smart grid protocols, and supports secure VPN connections over dynamic IP, with support for GPRS/CDMA technologies.



The SYNC 2000 hardware platform provides extensive security and is flexible for future upgrade to 3G networks without any change in the existing infrastructure, except for the communication module. This device also comes with Analog and Digital I/O's with maximum of 6 Serial and 1 Ethernet port, in a rugged package that is tested for IEC61850-3 compliance including strict EMI/EMC requirements and Surge requirements on all ports and power supply. It can also supports Expansion IO's as well as Push / Pull and last mile data concentration for meter data.

Product Variants

- SYNC 2000 S6R1
(6 Serial 1 Ethernet)
- SYNC 2000 S6F1
(6 Serial 1 Fiber Optic)

Related Products

- SYNC 4000 Head End, M2M VPN
- CIM Adapters / ICCP Gateway
- SYNC IO Expansion Modules

Features

- IEC 61850-3 Compliant Hardware
- KEMA Certified IEC 61850 Server
- IEC 60870-5-101/104, DNP3, IEC 61850, Modbus RTU / TCP and DLMS COSEM enabled
- TCP/IP, UDP, SMTP, POP, FTP, HTTP, SNMP Support
- File Upload / Download Support and Remote configuration
- SSL VPN with AES, DES or 3DES encryption over WAN
- 256 MB Non Volatile Memory and 32/64 MB Memory
- IO and Modbus IO Expansion Support
- MFT Support on Modbus and DLMS
- 4 RS232/485 port, 2 RS232 port and 1 10/100 Ethernet port(FO and RJ45)
- Transparent Channel / Tunneling support for the communication module
- Integrated GPRS / CDMA Support, External Modem Support
- Fiber optic Ethernet port with ST connector option available.
- Time synchronization using SNTP, NMEA
- Remote Configuration and firmware updating possible
- New Protocol and customization - Flexible design for adding new protocol and customization possible.

Application

Substation

- Protocol Converters and Gateways for IEC 61850, IEC 60870-5-10X, DNP3, Modbus, DLMS, Courier, SPA, SEL etc.,
- Sub-station to control center gateway
- IEC61850 Substation Data Concentrator
- Sub-Station PDC and Converter

AMI / Smart Grid / Metering

- AMI/Demand Side Controller Gateways
- Smart Grid Protocol Converter
- Sub-Station Metering Data Concentrator
- DLMS - COSEM / Modbus / ANSI Gateway

SCADA/DMS

- FRTU / Pole Top RTU
- Communication Gateway for FRTU / FPI with M2M node
- Substation Gateway and Protocol Converter

General

- Serial Pass-Through
- Security Adapter
- Device Server



Company Overview

Kalki Communication Technologies Limited (Kalkitech) is a technology based company founded in 1998, with the vision of becoming the leading provider of Standard based Control, Communication and Computing solutions to OEMs, System Integrators and End-Users in the energy industry.

Kalkitech is the preferred partner for a wide base of multi national clients, known for high quality engineering, automation and communication products, solutions and services. Today, Kalkitech's solutions are successfully deployed in over 30 countries, across the full spectrum of the energy value chain.

Kalkitech offers Design, Consulting, Engineering Analysis and Optimization, Automation Engineering, Communication Protocol solutions and Application Software development.



Product Specification

Specification		SYNC 2000			
General					
Management	Kalkitech EasyConnect Configuration utility / Web Server & SSH Interface over Secure Network				
System Protocols	TCP/IP, UDP/IP, SMTP, POP, HTTP, FTP, SNMP				
Power System / Metering Protocols	IEC 60870-5-101/104, DNP3, Modbus RTU, Modbus TCP, DLMS, IEC 61850 Full List of Protocols available at - http://www.kalkitech.com/offerings/sync-field_protocol_io_gateways/				
LEDs	LAN Ready (orange: link status, green: read/write), Data Transfer; Serial Port RX/TX, Power				
Security	NERC/CIP Compliant, SSL Tunnel, SSHv2				
VPN	SSL based VPN with Blowfish / AES/3DES				
Logic	AND/OR/NOT/Bit SHIFT/Split/Index support for digital and analog data, Delay operations				
Dimensions	165 (length) x 135 (width) x 70 (Height)				
Weight (Controller)	600 Grams				
Datapoints	Devices (IEC61850/ICCP)	Data-points (IEC61850/ICCP)	Data-points (Other)		
CPU	20	800	3000		
Non Volatile Storage	ARM926EJ-S™ ARM core 190Mhz				
Volatile Storage	256 MB Flash				
Operating System	32MB/64MB SDRAM				
Maintenance	Embedded Linux Kernel Version 2.6				
Alarms	Direct over Debug Port or Console Port / Remotely Over TCP/IP over GPRS/CDMA				
Certifications	Configurable SMS Alarms for key events within Sub-Station				
	CE / IEC 61850-3 / IEC 61850 - KEMA				
Interfaces		Serial	Ethernet		Environment
Cellular	GPRS / CDMA with internal Modem	Ports	4 RS232/485 and 2 RS232	Ports	1 RJ45 / FO Port (Multi Mode Fiber with ST Connector)
Digital IO Interfaces	16 DI / 8 DO	Throughput	115.2 KBPS	Physical Layer	10/100 Base-T / 10/100 Base-F
Analog IO Interfaces	Via Expansion Modules	Signal Support	S1 Full Modem, S2-S4 TXD, RXD, RTS, CTS, S5-S6 TXD, RXD	Data Rate	10/100 Mbps (auto-sensing)
IO Expansion	AI/DI/DO/AO Expansion up to 512 IO's	Pass-Through Channel	Pass-Through / Transparent Channel support	Mode	Full or Half-Duplex (auto-sensing)
Operating Temperature	-10 to 70 °C (14 to 158 °F)				
Storage Temperature	-20 to 80 °C (-4 to 176 °F)				
Relative Humidity	5% – 95% RH non condensing				
Ethernet Isolation	1500VAC min per IEEE802.3/ANSI X3.263				
Power Requirements					
Power Input	19-58VDC				
Power Supply	Optional adapters for 85-330VAC, 12/110/220VDC				
Power Consumption (Main CPU)	4 W				
Emission					
Conducted Emission	EN 55022:2006+A 1:2007 Class A				
Radiated Emission	EN 55022:2006+A 1:2007 Class A				
Immunity					
Electrostatic Discharge	IEC 61000-4-2:2001 – +/-8 kV Contact Discharge, +/-15 kV Air Discharge				
Radiated Susceptibility	IEC 61000-4-3: 2006 - 20 V/m				
Electrical Fast Transient / Burst	IEC 61000-4-4:2004 - +/- 4 kV Signal Ports @ 2.5kHz, +/-4kV DC Power Ports, +/- 4 kV Earth ground ports 3				
Surge Protection	IEC 61000-4-5:- 2005 +/- 2kV line-to-earth, +/- 1 kV line-to-line				
Induced (Conducted) RFI	IEC 61000-4-6: 2004– 10V Signal Ports, 10V DC Power Ports, 10 V Earth Ground Ports 3				
Magnetic Field	IEC 61000-4-8: 2001 – 40A/m continuous, 1000 A/m for 1s Enclosure Ports				
Voltage Dips & Interruptions	IEC 61000-4-29: 2000 – 30% for 0.1s, 60% for 0.1s, 100% for 0.05s				
Damped Oscillatory	IEC 61000-4-12: 2001 – 2.5kV common, 1kV diff. Mode @ 1 MHz Signal Ports and DC Power Ports				

SCL Manager

Smart Grid Protocol Convertor

OPC Adapters

Front End Processor

ICCP Bridge

Source Code Libraries



Protocol Gateway

Phasor Data Concentrator

AMI / Demand Side Controller Gateway

Data Concentration Unit

Head End Data Acquisition System



Our Offerings:



ELTRIX - Optimization Solutions



Services - Consulting for Energy Sector



SYNC - Communication Solutions



www.kalkitech.com

Tel: +91-80-4052 7900

Fax: +91-80-2572 5473

Email:
sales@kalkitech.com
support@kalkitech.com
info@kalkitech.com

Corporate Office

KALKI COMMUNICATION TECHNOLOGIES LTD.
 #147, 2nd Floor, Ananta Pushpa Building, 5th Main Road HSR Layout - 7, Bangalore - 560 102, India

North America

KALKITECH INC.
 9900 Westpark Dr, Suite 283, Houston, TX, 77063
 Telephone: 1-832-922-8910
 Email: sales_us@kalkitech.com

Middle East

KALKITECH FZE
 Hamariyah Free Zone Sharjah, U.A.E.
 Email: sales_me@kalkitech.com
 Telephone: +971-6-5626856
 +971-50-4832890

Cochin (India)

KALKI COMMUNICATION TECHNOLOGIES LTD.
 1/153B, Puthuvankunnu, Chowara P.O., Cochin
 Email: sales_cok@kalkitech.com