



SYNC 2100

Feeder RTU bringing the best of performance, interoperability and scalability

- Flexible and Expandable IO count.
- VPN Connection over GPRS /CDMA and 3G
- Inbuilt protocol conversion capabilities
- IEC 61850-3 Compliant Interfaces
- Conforming to APDRP requirements
- World-class support and service

Overview

SYNC 2100 FRTUs are versatile communication system for Smart Grid applications suited for rugged applications and customizable for different DI/DO/AI combinations. The controller comes with real-time embedded Linux OS, Modbus, IEC-101, 104 protocols, and supports secure VPN connections over dynamic IP, with support for GPRS / CDMA and 3G.

Models:

SYNC 2100:

-16DI 16 DO

-16DI 16DO 8AI

-16DI 12DO 4AI

-32DI 24DO 8AI

-48DI 40DO 8AI

Related Products

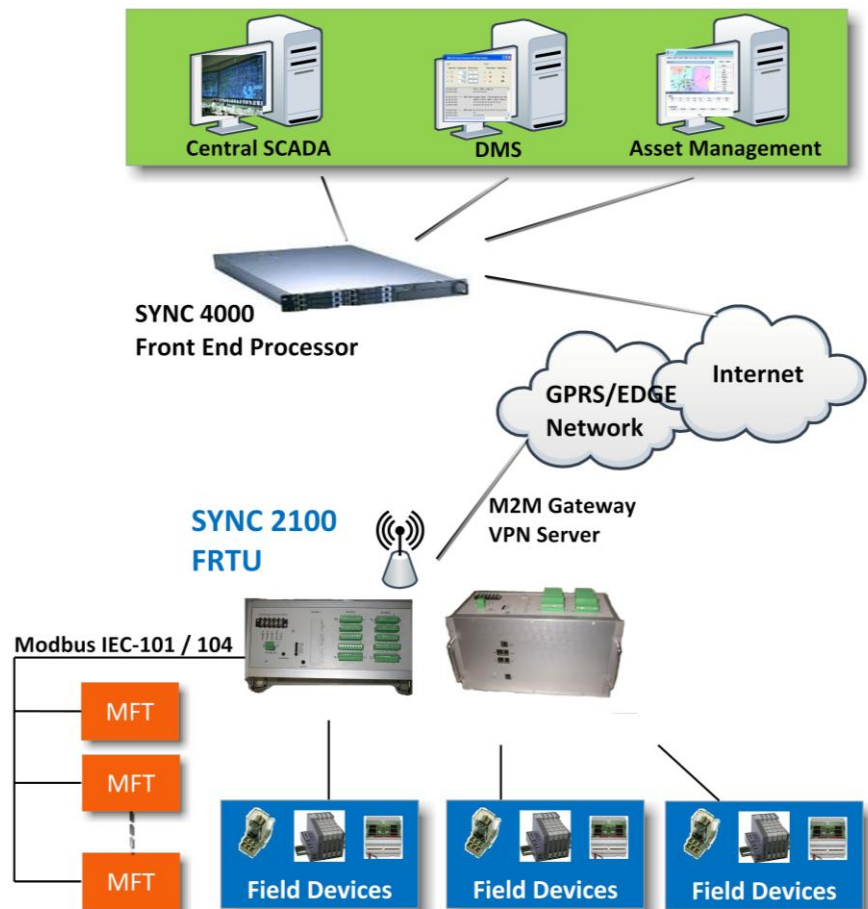
SYNC 4000 Head End

Gateways-

SYNC 1000

SYNC 2000

SYNC 3000



Features

- Modbus RTU / TCP, IEC-101, IEC-104 enabled
- TCP/IP, UDP, SMTP, POP, FTP, HTTP, SNMP Support
- SSL VPN with AES, DES, or 3DES encryption over WAN
- 256 MB Non Volatile Memory and 32 / 64 MB Memory
- Scalable from 16DI 16 DO to 48DI 40DO 8AI/AO - and above
- Remote firmware and configuration upgrade
- IEC 61850-3 Compliant Interfaces
- 2 x RS232, 1 x RS485, 2 x RS232/485 Configurable ports
- Transparent Channel / Tunneling support
- Automatic start-up and initialization following restoration of power.
- Master station to FRTU remote database download possible
- Multi master communication capability

Data Sheet



Specification		SYNC 2100					
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, Modbus RTU, Modbus TCP, DLMS, IEC 61850 Full List of Protocols available at - http://www.kalkitech.com/protocolsupport.htm					
LEDs		LAN Ready, Data Transfer, Serial Port RX/TX, Status, Power					
Security		NERC/CIP Compliant, SSL Tunnel, SSHv2					
VPN		SSL based VPN with Blowfish /AES/3DES					
Logic		AND/OR/NOT Logic Support					
Dimensions		170 X 200 X 370 mm					
Weight (Controller)		1600 Grams					
CPU		RISC based 200 / 400 MHz ARM 9 CPU					
Non Volatile Storage		256 MB					
Volatile Storage		32MB/64MB					
Operating System		Embedded Linux Kernel Version 2.6					
Maintenance		Direct over Debug Port or Console Port / Remotely Over TCP/IP over GPRS/CDMA					
Alarms		Configurable SMS Alarms for key events within Sub-Station					
Certifications		CE / IEC 61850-3 / IEC 61850 - KEMA					
Interfaces		Serial		Ethernet		Environment	
Cellular	GPRS / CDMA With external Modem	Ports	1 RS485, 2 RS232/485, 2 RS 232	Ports	1 RJ45 / FO Port (Multi Mode Fiber with ST Connector)	Operating Temperature	-20 to 70 °C (-4 to 158 °F)
Digital IO Interfaces	16 DI / 8 DO	Throughput	115.2 KBPS	Physical Layer	10/100 Base-T / 10/100 Base-F	Storage Temperature	-20 to 80 °C (-4 to 176 °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)	Relative Humidity	5% – 95% RH non condensing
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)	Ethernet Isolation	1500VAC min per IEEE802.3/ANSI X3.263
Power Requirements							
Power Input		9-30 VDC / 40-56 VDC* / 90-260 VAC					
Power Supply		Optional adapters for 85-330 VAC and 12/24/48/110/220 VDC					
Power Consumption (Main CPU)		4 W					
Emission							
Conducted Emission		EN 55022:1998+A1:2000+A2:2003 Class A					
Radiated Emission		EN 55022:1998+A1:2000+A2:2003 Class A					
Immunity							
Electrostatic Discharge		IEC 61000-4-2:2001 – 8 kV Contact Discharge, 15 kV Air Discharge					
Radiated Susceptibility		IEC 61000-4-3:2002 - 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 61000-4-5:2001- +/- 2kV line-to-earth, +/- 1 kV line-to-line					
Induced (Conducted) RFI		IEC 61000-4-6:2003 – 10V Signal Ports, 10V DC Power Ports, 10 V Earth Ground Ports 3					
Magnetic Field		IEC 61000-4-8:2004 – 40A/m continuous, 1000 A/m for 1s Enclosure Ports					
Voltage Dips & Interrupts		IEC 61000-4-29:2004 – 30% for 0.1s, 60% for 0.1s, 100% for 0.05s					
Damped Oscillatory		IEC 61000-4-12:2004 – 2.5kV common, 1kV diff. Mode @ 1 MHz Signal Ports and DC Power Ports					

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.

SCL Manager



Smart Grid Protocol Converter



Source Code Libraries



Data Concentration Unit



OEM Modules



Kalkitech sync



Head End Data Acquisition System



OPC Adapters



FRTU



Front End Processor



ICCP Bridge



Protocol Gateway



Phasor Data Concentrator



AMI / Demand Side Controller Gateway



Our Offerings:



ELTRIX - Optimization Solutions



Services - Consulting for Energy Sector



SYNC - Communication Solutions



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