



# TELEMETRY PROTOCOL GATEWAY

## Overview

Kalki Technologies Protocol Converters and Gateway solutions address the expanding requirements of utility customers for scaleable, cost-effective and rugged converters and gateways for their sub-station modernization requirements.

Kalki Protocol Converter and Gateway Solutions are available in the following Models:

Model Name	Key Features
Kalki Sub-Station Gateway Lite / 3P/1E	2 RS-232 Port / 1 RS-485 Port / 1 – 10-Base T Ethernet Port / 5000 Point Support
Kalki Sub-Station Gateway Lite / 4P/1E	4 RS-232/RS-485 Ports / 1 – 10/100-Base T Ethernet Port / 50000 Point Support
Kalki Sub-Station Gateway Lite / 4P/2E	4 RS-232/RS-485 Ports / 2 – 10/100-Base T Ethernet Port / 50000 Point Support
Kalki Protocol Gateway / 8P/2E	8 RS-232 Ports / 2 – 10/100-Base T Ethernet Port / 250000 Point Support
Kalki Protocol Gateway / 16P/2E	16 RS-232 Ports / 2 – 10/100-Base T Ethernet Port / 250000 Point Support
Kalki Protocol Gateway / 32P/2E	32 RS-232 Ports / 2 – 10/100-Base T Ethernet Port / 250000 Point Support
Kalki Protocol Gateway / 64P/4E	64 RS-232 Ports / 4 – 10/100-Base T Ethernet Port / 500000 Point Support
<b>Optional Modules</b>	
4 RS-232 Port Expander Card for KPG	Provides extra 4 Ports, goes into the rack-mount chassis
8 RS-232 Port Expander Card for KPG	Provides extra 8 Ports, goes into the rack-mount chassis
16 RS-232 Port Expander Card for KPG	Provides extra 16 Ports, goes into the rack-mount chassis

The standard version supports one network channel, three serial channels, and a large software library of RTU/IED communication protocols. It provides cost-effective support for a wide array of protocol and data transport applications common in the SCADA industry. These include operating as a data concentrator, SCADA Front End Processor (FEP), translating Protocol “A” to Protocol “B”, adding dual-port capability to an otherwise single-ported device, providing network



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access to serial-only equipment, and transporting legacy bit-protocols over an Ethernet Network etc.,

Designed for operation in a substation environment, the device does not contain disk drives. It operates on input power of 24 to 160 VDC or 110/120 VAC. The serial communication interface supports speeds up to 115.2 KB for byte protocols. The Ethernet port supports 10 Base-T for the Lite / 3P/1E model and 10/100 Base-T for the other Models. Support is available for a large number of serial protocols, including present-day ones such as DNP3 and IEC 870-5-101, as well as legacy "bit" protocols such as Conitel and CDC. The Ethernet channel can be configured for DNP 3 LAN/WAN, Modbus/TCP, and IEC 870-5-104. Support of both master/host and remote/slave operations are available for all protocols. Each communication port, serial or network, can be configured for a different protocol as well as for master or remote operations.

Kalki's software protocol translation "engine" is a high speed conversion environment which support many-to-many translations at the same time in a real-time environment. The IEC/DNP stacks are based on TMW's protocol library product, a set of field-proven routines that process the protocol unique aspects of data communication messages as well as Kalki's translation architectures. The hardware design is based on Industry proven industrial grade hardware platforms and real-time operating systems.

The Kalki Technologies protocol gateway, comes with a set of configurable board offerings to suite various custom protocol conversion requirements. The Custom gateways and converters can support upto 4 Ethernet ports as well as support optional 64 RS-232 channels.

## **Configuration**

The Kalki Protocol Gateway Configuration Editor is a graphical based tool for easy and convenient generation of configuration files used by the converter application. Device, and point configuration information is specified through this Windows based utility program and downloaded through the configuration and maintenance port, or through a network connection. The configuration editor employs standard Windows procedures. An entire data base configuration can be entered and running within a few minutes. Changes to an active database can be downloaded and activated in seconds to minimize the entire configuration test and development During on-line operation of the converter application, the configuration utility can be used to view diagnostic and program status information. This is a valuable diagnostic tool during initial installation and for on-going maintenance.



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## Features

Topic	Feature	Description
Communication	Serial	4 RS-232 (Configurable for RS-485/RS-422 Operation) Ports. Expandable up-to 64 ports.
	Network	Up-to 3 Triple Ethernet 10/100 Base-T Controller on Board.
	Maintenance	1 RS-232 / Ethernet Port can be reserved for maintenance and diagnostics.
Software Configuration	Database	Off-line creation via Windows utility, loaded through network or configuration and maintenance port
	Protocol	Selectable By Channel
	Master/Slave Mode	Selectable By Channel
	RTU/ Point Counts	Capacity for over 60,000 points and multiple devices
	Diagnostics	Online Diagnostics over Ethernet/Serial Interface
Applications	Network Management	SNMP V2.0 Support for Network Management
	Protocol Translator	Add new protocol capabilities to existing devices
	Multi-Port Gateway	Allow multi-host access on different protocols to a single-ported RTU/IED/PLC
	Data Concentrator	Concentrate Data from Serial channels and send through Ethernet LAN/WAN circuit or One Serial Channel
	Network Transport	Enables Ethernet Access to your RTU/PLC/IED. Supports DNP3, IEC 60870-5-104, Modbus TCP and custom Ethernet Protocols. Supports maximum of 3 Ethernet channels
Hardware	Byte Transport	Supports Legacy Serial Protocols
	Processor	PIV / Pentium III 850 MHz/ Celeron 600 MHz / AMD Elan
	Power	5 V DC or 230 V AC
	Temperature	0°-60° Operating -20° to 80° Storage
	Time Synchronization	Optional IRIG-B Pulse Support
	Humidity	95° NC
	Vibration	Non-operation: 1.88Grms, 5-500Hz, each axis Operation: 0.5Grms, 5-500Hz, each axis
	Shock	15G peak-to-peak, 11 ms duration, non-operation
	Watch-dog timer	1~255 sec or 1~255 min software programmable, can generate NMI or system reset
	Activity LED's	Activity LED's for all communication and Ethernet Channels are provided
	Dimensions	1U 19" Rack-mountable Chassis
	RAM	Upto 512 MB SDRAM
	FLASH	16 MB to 2 GB Flash



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## Protocol Support

In the following tables, Category “S” protocols are those that are already supported in the Kalki Converter. Category “C” protocols are those which must be custom implemented on Kalki Converter.

Category “S” Protocols					
Protocol	Master	Slave	Protocol	Master	Slave
DNP3 Serial	Y	Y	IEC 60870-5-104	Y	Y
DNP3 Network	Y	Y	Modbus RTU/ASCII	Y	Y
IEC 60870-5-101	Y	Y	Modbus TCP	Y	Y
ABB SPA	Y	Y			

Category “C” Protocols	
ABB RP570/571	IEC 61850 / UCA2.0
ABB Indactive 33/41	GE SRTP
IEC 60870-5-102	Harris 5000/6000
IEC 60870-5-103	Conitel 300/2020
DLMS	Yaskawa Memobus
IEC 62056	MMS
Alstom Courier	Custom / Proprietary Protocols on Request

## Pricing Information

Contact [sales@kalkitech.com](mailto:sales@kalkitech.com), for pricing information