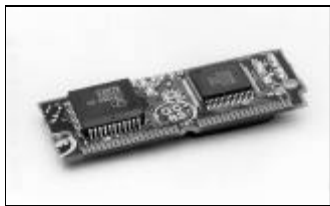


PSG-10 SERIAL GATEWAY CORE MODULE

MODEL 65200-200



FEATURES

- Compact single in-line module (SIM) form factor
- Transceiver-independent design connects to any LONWORKS channel with a transceiver interface rate from 9.8kbps to 1.25Mbps
- 1200 to 115,200bps serial bit rate
- 4Kbyte RAM and up to 42KByte application PROM
- 10MHz input clock
- 18 general purpose input and output pins
- Buffered 16550-compatible UART allows asynchronous processing between the external device and the Neuron Chip on the gateway using a 16-character FIFO in the UART
- Compatible with the LonBuilder[®] and NodeBuilder[®] PSG access library

DESCRIPTION

The PSG-10 Serial Gateway Core Module is a compact module used by OEMs to build gateways between LONWORKS[®] networks and devices or systems with serial EIA-232C (formerly RS-232C) interfaces.

Typical applications for the PSG-10 module include LONWORKS gateways for programmable logic controllers, servo controllers, smart sensors, keypads, displays, and serial gateways to other control networks.

The PSG-10 consists of the core electronics and firmware required to implement a serial gateway. Its compact single in-line module (SIM) form factor minimizes the board space required to implement a serial gateway. Vertical SIM sockets are available to minimize footprint; right-angle SIM sockets are also available to minimize component height.

The PSG-10 module has a fixed input clock rate of 10MHz. The module can be used with transceivers with bit rates from 9.8kbps to 1.25Mbps.

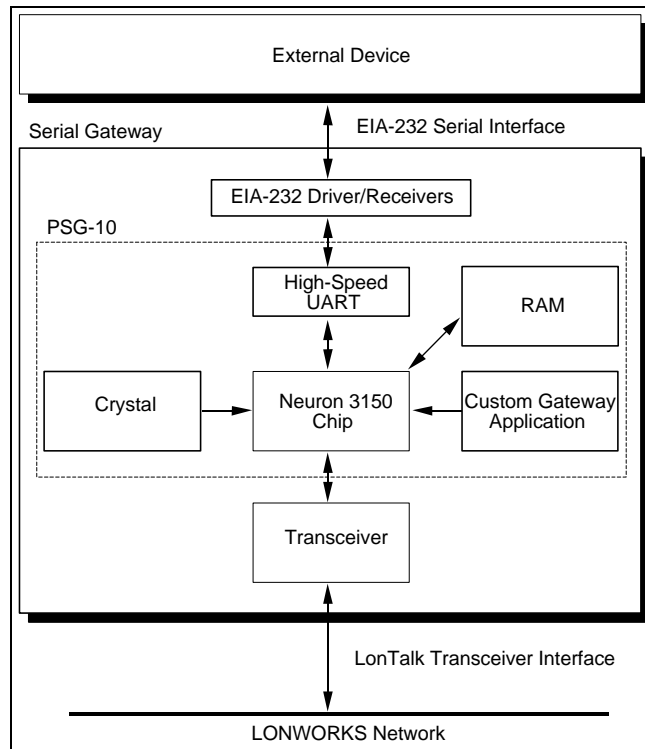
The PSG-10 module includes a Neuron[®] 3150[®] Chip, high-speed 16550-compatible UART, and a 4KByte RAM using a 2KByte external RAM and 2KByte of the Neuron Chip RAM. The following figures illustrate the PCB hole pattern for the vertical and horizontal mount sockets.

USAGE

The gateway developer uses the PSG firmware library included with the LonBuilder and NodeBuilder Development Tools to create a custom serial gateway application written in Neuron C. This library provides functions to initialize the UART, read the general purpose input bits, send and receive characters, and send strings. The LonBuilder or NodeBuilder Tool is used to create a ROM image that is programmed into a WaferScale Integration PSD312-90 PROM using a special programmer available from WaferScale Integration.

A complete serial gateway includes a PSG-10 Serial Gateway Core Module with custom gateway firmware programmed into a PSD312-90, a LONWORKS transceiver, EIA-232 driver/receivers, and a motherboard with power supply. The PSG-10 module is compatible with all LONWORKS transceivers with interface rates of 9.8kbps or higher including standard transceivers for twisted pair, free topology, link power, and power line.

A block diagram of a gateway based on a PSG-10 module is shown below.



MODULE SPECIFICATIONS

PSG Firmware Library Functions	Initialize UART Read General Purpose Inputs Transmit a Character Transmit a String Test for Input Character Receive a Character
Processor	Neuron 3150 Chip
Processor Input Clock	10 MHz
Serial Communications Type	EIA-232, TTL signal levels
Serial Bit Rate	1200, 2400, 9600, 14.4k, 19.2k, 38.4k, 57.6k, or 115.2kbps
Serial Modem Control	Optional RTS, CTS, DSR, DCD, DTR, and RI
SIM Connector	40-position SIMM or SIMM II 0.050" centerline single row connector, vertical or right angle
Operating Input Voltage	+5VDC \pm 10%
Operating Input Current	150mA max
SIM Connector	40-position SIMM or SIMM II 0.050" centerline single row connector, vertical or right angle
Temperature	
Operating	-40 to +85°C (Revision C or higher)
Non-operating (12 hour)	-45 to +85°C
Humidity (non-condensing)	
Operating	10 to 95%RH @85°C (Revision C or higher)
Non-operating (12 hour)	95%RH max @85°C
Dimensions	67mm x 27mm x 7mm (2.65" x 1.06" x 0.3")
EMI Compliance	
FCC	Designed to comply with Part 15 Level B
VDE	Designed to comply with 0871 Level B

MODULE SOCKET SUPPLIERS

Connector	Supplier	Part Number
<hr/>		
SIMM Socket:		
40-position vertical 50mil pitch	Molex	15-82-1175 or 15-82-0793
40-position right angle 50mil pitch	Molex	15-82-1390

DOCUMENTATION

The *Serial LonTalk Adapter and Serial Gateway User's Guide* is included with the Connectivity Starter Kit. The guide describes how to create a PSG-10 application and how to integrate the application and PSG-10 module into a serial gateway. The *Building a LonTalk-to-PLC Gateway* engineering bulletin describes a sample gateway application for an Omron PLC; the sample can be adapted to other PLCs and devices.

Document & Echelon Model Number

<hr/> Serial LonTalk Adapter and Serial Gateway User's Guide	79300/078-0108-01
<hr/> Building a LonTalk-to-PLC Gateway engineering bulletin	005-0044-01A

ORDERING INFORMATION

The Connectivity Starter Kit should be ordered with the initial PSG-10. This kit includes the PSG-10 firmware library, the documentation, and a SIM socket for prototyping.

Product & Echelon Model Number

<hr/> PSG-10 Serial Gateway Core Module	65200-200
<hr/> Connectivity Starter Kit	58030-01

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