PCM-CAN-1-ISO
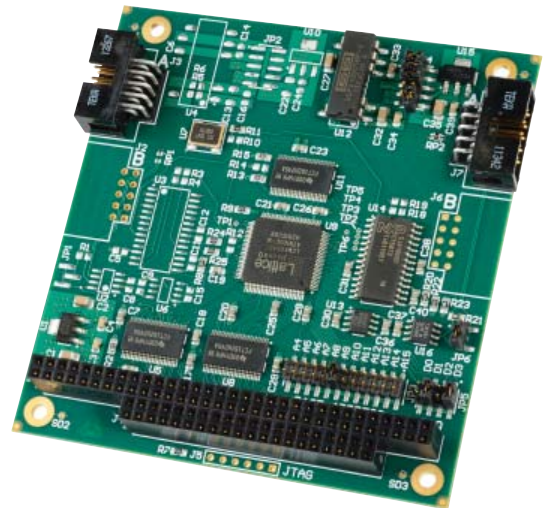## Isolated Control Area Network
PC/104 Module

Features

- PC/104-compatible Control Area Network (CAN) card
- NXP SJA-1000 CAN controller
- Transfer rates to 1 Megabits per second
- Compliant with CAN specifications 2.0A (11-bit ID) and 2.0B (29-bit ID)
- Channel-to-channel and channel-to-system isolation
- Isolation on the CAN data connection up to 1000V
- Onboard isolated 1W power supply for interface
- Jumper selectable termination resistors
- Jumper selectable IRQ and I/O base address
- Software drivers available for Linux and Windows®
- -40° to +85°C operating temperature
- +5V only operation
- Small size: 3.6 x 3.8 inches (90 x 96mm)
- Non-isolated version is also available
- Custom configurations for OEMs
- RoHS compliant

Product Description

WinSystems' PCM-CAN-1-ISO is a PC/104-compliant, isolated Controller Area Network (CAN) peripheral module. This board uses a NXP SJA-1000 CAN controller IC with advanced features for use in automotive and industrial applications. This board is also available in a dual channel version, called the PCM-CAN-2-ISO.

The PCM-CAN-1-ISO card employs high-speed isolated couplers, transformer isolated power supplies, combinatorial logic, and bus interfaces for the CAN controller.

CAN is a serial, asynchronous, multi-master communication protocol for connecting electronic control modules, sensors and actuators in automotive and industrial applications. The signal is encoded in a non-return-to-zero (NRZ) pattern and is sensed by all nodes. The CAN bus physical interface is similar to RS-485 two-wire, half-duplex communications.

On CAN bus systems, signal integrity is achieved by matching the impedance of the transmission line and thereby minimizing reflections. A jumper selectable, onboard 120 ohm resistor is provided for this purpose.
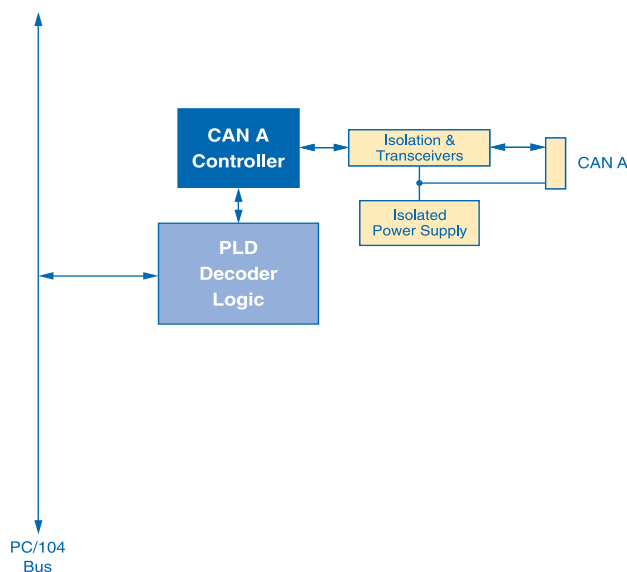
PCM-CAN-1-ISO Block Diagram

PCM-CAN-1-ISO: Isolated Dual CAN PC/104 Module

I/O Connectors - The CAN channel has its signal and power wired to two 10-pin 0.100 inch right angle headers, which allow endpoint or daisy chain connection. The optional WinSystems' cable, CBL-123-G-1-1.0, extends and converts it to a 9-pin D-sub type male connector to connect to the control area network.

Isolated Power Supply - The PCM-CAN-1-ISO has an independent on-board isolated +5VDC power supply and jumper connections for providing power to or receiving power from the CAN interface connectors. The PCM-CAN-1-ISO's channel can provide up to 150mA of 5VDC power to the CAN interface or alternately accept power in the range of 5 - 12VDC from the interface. The power supply has over-voltage, overcurrent, and short circuit protection.

PC/104 Interface - The PCM-CAN-1-ISO is I/O mapped and each CAN controller occupies either 32 or 128 adjacent I/O registers depending on CAN 2.0A (BasicCAN) or CAN 2.0B (PeliCAN) mode selection. The base address and mode is jumper selectable. The CAN controller has a single user configurable interrupt, which is also jumper selectable for IRQ 3-7, 9-12, 14, or 15.

Software - The PCM-CAN-1-ISO supports Linux, Windows XPe, and WES7. Drivers are available on our website.

Other Product Configurations - The PCM-CAN products are available with one or two channels supporting CAN 2.0A (11-bit ID) or CAN 2.0B (29-bit ID) specifications. Isolated and non-isolated versions are available for both the single and dual channel modules. All can operate over the temperature range of -40° to +85°C without a fan or heatsink.

Non-isolated Configuration: PCM-CAN-1

Custom Configurations - WinSystems offers additional custom configurations for OEMs. Please contact an Applications Engineer to discuss your specific requirements.
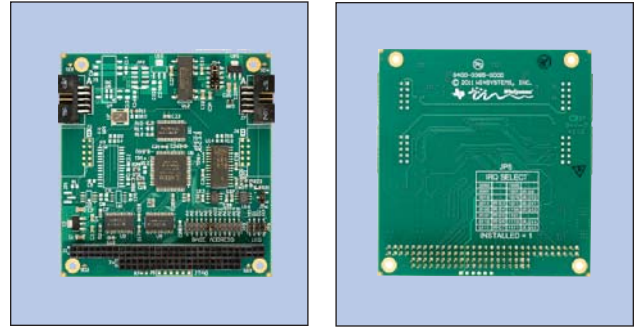
Front and Back Picture of PCM-CAN-1-ISO

Technical Specifications

Electrical
CAN Controller	NXP SJA-1000
CAN Data Rate	1 Mbps
Isolation	1 KV rms

Power
Transceiver	Isolated +5VDC onboard or 5 – 12VDC from loop
Vcc	±5% @ 250mA

Connectors
PC/104	16-bit stackthrough (feed through only)
CAN	10-pin right angle 0.100" headers

Environmental
Operational from -40°C to +85°C
RoHS compliant

Mechanical
Dimensions	3.6 x 3.8 inches (90 x 96mm)
Weight	2.2 oz. (62 gm)
PC board	0.078 inches, four layer FR4

Ordering Information
(See website for complete ordering information and accessories.)

PCM-CAN-1-ISO	PC/104 single channel isolated CAN card
PCM-CAN-2-ISO	PC/104 dual channel isolated CAN card
PCM-CAN-1	PC/104 single channel non-isolated CAN card
PCM-CAN-2	PC/104 dual channel non-isolated CAN card

Accessories
CBL-123-G-1-1.0	10-pin header to 9-pin male D-sub cable

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