ARINC

CSDB IP Module

FEATURES

› Up to 4 receive / 4 transmit channels

› Intelligent module with large buffers

› PCI, CompactPCI, PC/AT, VME and VXI solutions available

› Full featured API for Windows XP, 2000, Me, NT, 98, 95 and LabVIEW included

› Programmable bit rates

› 32-bit time-tagging

› Extended temperature range available

› Circular and dedicated receive modes

› Programmable receive thresholds and transmit output voltages
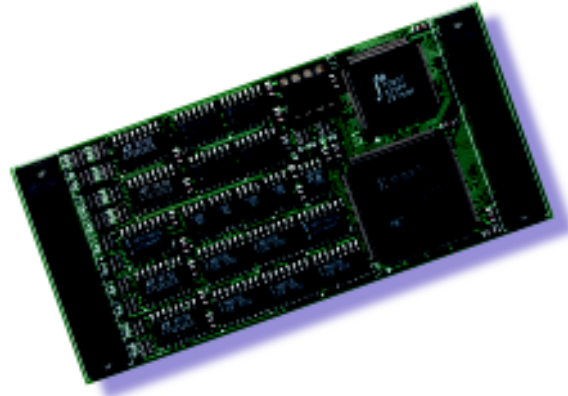
The Condor IP-CSDB is an intelligent IP Module (IndustryPack-compatible) interface for the Commercial Standard Digital Bus avionics protocol and RS-422 applications. Up to 4 pairs of fully independent CSDB channels are supported. Standard features include on-board buffering, internal wrap, time-tagging, along with programmable selection of bus speeds parity and gap time.

IP Modules are industry standard I/O mezzanine boards (about the size of a business card), that are designed for mounting on a variety of host carrier boards to enable cross-platform portability. Up to 5 IP-CSDB modules, providing up to 20 receive and 20 transmit channels are supported on a single board. Carrier boards are available for PCI, CompactPCI, PC/AT, VME and VXI platforms.

Included with the IP-CSDB is our flexible, high-level CSDB API support. This API provides CSDB application functionality on Windows XP, 2000, Me, NT, 98 and 95. Features include logic for assembling receive data streams into message blocks, circular or dedicated receive buffering modes, message block scheduling and programmable sync byte counts. LabVIEW support is available.

The IP-CSDB can be integrated on the same board with other avionics databus protocols on platforms such as Condor's VME/VXI-AIC, CEI-500 and CEI-600. IP Modules are available from Condor for a wide variety of avionics databus protocols including ARINC 429, 561 (6-wire), 571, 573, 575, 582, 708, 717, MIL-STD-1553, RS-232, RS-422, RS-485 and more.

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SPECIFICATIONS

IP-CSDB Receive Channels

- Number of receive channels: 2 or 4
- Rx bit rates:
  - High speed bit rate: 50 Kbps
  - Low speed bit rate: 12.5 Kbps
  - Programmable bit rates: from 4800 bps to 100 Kbps
- Rx buffer size:
  - 256 CSDB frames/channel
  (frame = 1 data byte + 1 status byte + 4 timetag bytes)
- API supports the following receive modes:
  - Dedicated: contains a snapshot of the latest label data
  - Circular: FIFO buffer of all channel data
- Parity: Odd, even or none (per channel)
- Individual channel control: On/off
- Programmable receive voltage thresholds on 2 Rx channels
- Polled or interrupt driven
- 32-bit time tagging
- Supports RS-422 applications

Environmental

- Standard operating temperature: 0°C to +70°C
- -40°C to +85°C operating temperature available
- Relative humidity: 5 to 90% (non-condensing)

Physical

- Single-wide IP module (1.8" x 3.9")

IP-CSDB Transmit Channels

- Number of transmit channels: 2 or 4
- Tx bit rates:
  - High speed bit rate: 50 Kbps
  - Low speed bit rate: 12.5 Kbps
  - Programmable bit rates: from 4800 bps to 100 Kbps
- Tx buffer size: 512 CSDB frames/channel
  (frame =1 data byte + 1 control byte)
- Tx inter-byte gap: 1 to 65526 bit times
- Individual channel control: On/off
- Parity: odd, even or none
- Variable output voltage on 2 Tx channels
- Error injection:
  - Parity or word length on a per word basis
- Additional programmable features:
  - Number of stop bits
  - Polled or Interrupt driven
  - Supports RS-422 applications

Power (typical)

- +5 VDC: 83 mA
- +12 VDC: 39 mA
- -12 VDC: 39 mA

Warranty: 3 year limited hardware warranty

CSDB API SUPPORT

Condor provides high-level CSDB API support with the IP-CSDB. Message block transmission provides the capability to define periodic message frames consisting of six- or eight-byte message blocks at bus speeds of 12.5 Kbps or 50 Kbps, programmable on an individual channel basis. Internal storage supports up to 63 application-defined transmit message blocks for each transmit channel/frame. The data content for each individual message block can be modified with no impact to other message blocks defined for the same channel/frame. A programmable refresh rate for individual message blocks is supported ranging from 10 ms to 32768 ms. Message block reception is supported via three different receive buffer modes: CIRCULAR, where message blocks are stored in a circular buffer in the order they are received; DEDICATED, where message blocks are stored in individual buffers based on the value of the address byte (label); and DEDICATED_SRC, where message blocks are stored in individual buffers based on the combined values of the address byte (label) and the source ident field in the status byte.

AVAILABLE CONFIGURATIONS

IP-CSDB-22	IP Module with 2 Rx, 2 Tx CSDB channels, parametric voltages
IP-CSDB-44	IP Module with 4 Rx, 4 Tx CSDB channels, parametric voltages

EXAMPLE PACKAGED CONFIGURATIONS

VME-AIC-XXXX-4	Intelligent 6U VME carrier, 68LC040, 4 MB RAM, 16 Rx, 16 Tx CSDB channels
VXI-AIC-W000-4	Intelligent C-size VXI carrier, 68LC040, 4 MB RAM, 2 Rx, 2 Tx CSDB channels
CEI-500-DW000-9	PCI carrier with 8 Rx, 8 Tx ARINC 429 channels and 2 Rx, 2 Tx CSDB channels
CEI-600-X000-3	3U CompactPCI carrier with 4 Rx, 4 Tx CSDB channels

Contact factory about ruggedized, extended operating temperature.
See our on-line Commercial Products Configuration Guide for available configurations.
http://www.condoreng.com

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