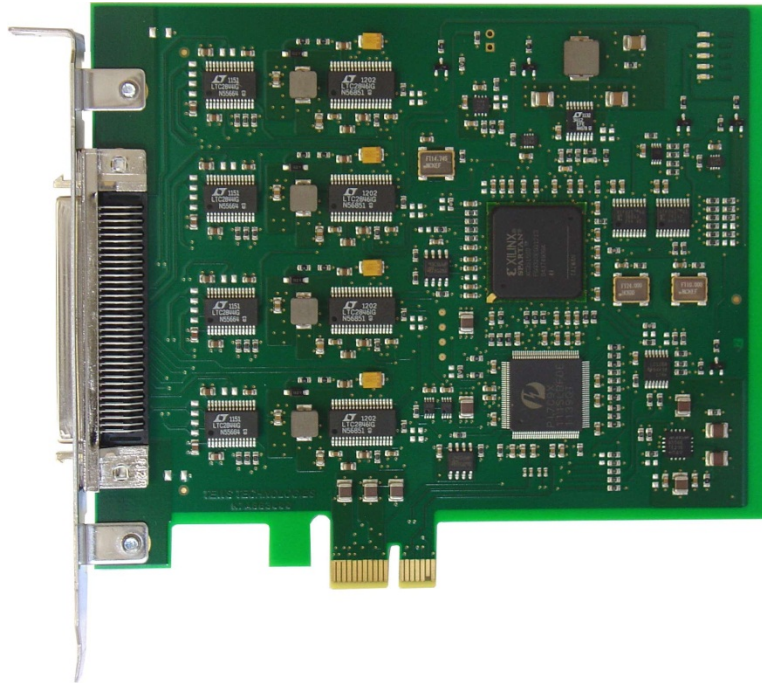


**TPCE863 4 Channel High Speed Synch/Asynch Serial Interface****Application Information**

The TPCE863 is a standard height, half-length PCI Express 1.1 compliant module with four high speed serial data communication channels.

The serial communication controller is implemented in FPGA logic, along with a bus master capable PCI interface, guaranteeing long term availability with the option to implement additional functions in the future. The FPGA is connected to the PCI Express interface via a transparent PCI Express to PCI bridge.

Each channel has a receive and a transmit FIFO of 512 long words (32 bit) per channel for high data throughput.

Data transfer on the PCI Express bus is handled via TPCE863 initiated DMA cycles with minimum host/CPU intervention.

Several serial communication protocols are supported by each channel, such as asynchronous, isochronous, synchronous and HDLC mode.

A 14.7456 MHz oscillator provides standard asynchronous baud rates. A 24 MHz and a 10 MHz oscillator are provided for other (synchronous) baud rates.

Additionally each channel provides various interrupt sources, generated on INTA. The interrupt sources can be enabled or disabled individually.

Multiprotocol transceivers are used for the line interface. The physical interface is selectable by software, individually for each channel as EIA-232, EIA-422, EIA-449, EIA-530, EIA-530A, V.35, V.36 or X.21.

A HD68 SCSI-3 type connector at the front panel provides access to the I/O lines.

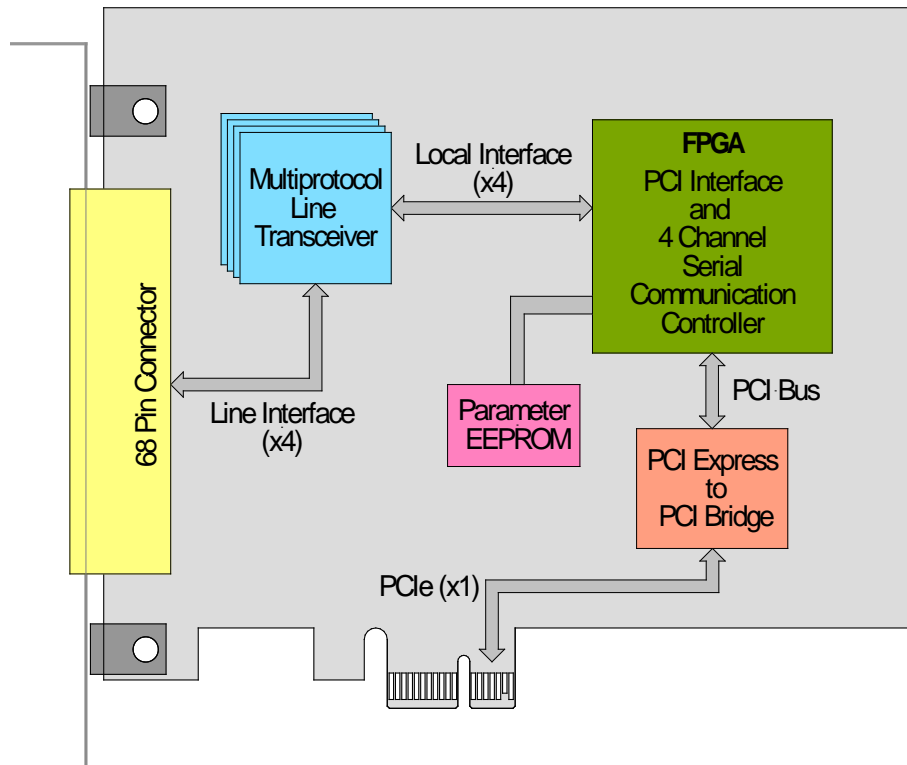
The following signals are provided by the TPCE863 for each channel at the front I/O connector:

Receive Data (RxD +/-), Transmit Data (TxD +/-), Receive Clock (RxC +/-), Transmit Clock (TxC +/-), Ready-To-Send (RTS +/-), Clear-To-Send (CTS +/-), Carrier-Detect (CD +/-) and GND. Additionally, serial channel 3 provides Data-Set-Ready (DSR3 +/-) and Data-Terminal-Ready (DTR3 +/-).

A serial EEPROM is used to store detailed board information and special configuration parameters.

### Technical Information

- Form Factor: PCISIG PCI Express Revision 1.1
  - Board size: 129.4 mm x 106.7 mm
  - Standard height, half length
- Four high speed synchronous/asynchronous serial interfaces
- Support of Rx/D, Tx/D, Rx/C, Tx/C, RTS, CTS, CD and GND on front connector, DTR3 and DSR3 on channel 3 only
- Physical interface (individually programmable per channel):  
EIA-232, EIA-422, EIA-449, EIA-530, EIA-530A, V.35, V.36 and X.21
- Maximum data rate: 10 Mbit/s (synchronous), 2 Mbit/s (asynchronous), internal or external provided clock
- EIA-232: up to 115.2 kbit/s
- Operating temperature: -40°C to +85°C



## The Embedded I/O Company

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### Order Information

#### RoHS Compliant

**TPCE863-10R** 4 Channel High Speed Synch/Asynch Serial Interface, HD68

For the availability of non-RoHS compliant (lead solder) products please contact TEWS.

#### Documentation

**TPCE863-DOC** User Manual

#### Software

**TDRV009-SW-25** Integrity Software Support

**TDRV009-SW-42** VxWorks Software Support (Legacy and VxBus-Enabled Software Support)

**TDRV009-SW-65** Windows Software Support

**TDRV009-SW-82** Linux Software Support

**TDRV009-SW-95** QNX Software Support

For other operating systems please contact TEWS.

#### Related Products

**TA304** Cable Kit for modules with HD68 connector