Asynchronous I/O PMC

"Tech Refresh" 8-Port RS422 Asynchronous Communication Adapter

The Technobox RS232/422/485 Asynchronous Communication Adapter PMC is a tech refresh of our popular 8- and 16- port Async PMCs, such as P/N 5284 (8xRS232), 5288 (8xRS422), and 5436 (16xRS232) products to remove EOL parts as well as enhance longevity of the product family.

By incorporating the PCI interface (PCI9030/9052 bridges) and UARTs (16C554 chips) in an FPGA, dependence on risky or EOL parts is eliminated. Longevity is better assured. Even if the FPGA itself becomes obsolete, a newer FPGA can be designed in, and the original FPGA code and I/O interface devices can be reused.

This tech refresh product is designed to be a customer-transparent, 100% replacement, of the original boards. Key changes are highlighted in the Technical Comparison Table, below. Although moving from 5V to 3.3V powered I/O devices, the newer 3.3V devices are compliant with the RS232, RS422, and RS485 electrical standards.

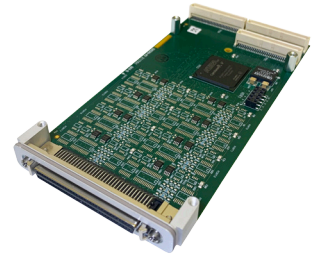Like the previous PCI9030 bridge-based products, both +3.3V and +5V PCI bus signaling levels are supported. This is done through voltage-limiting, zero-delay FETs; this is a common methodology in interfacing elevated voltages to a 3.3V FPGA. The FPGA parallel-PCI specific pins are implemented for PCI compliance. Note that some older Technobox Async PMCs, such as P/Ns 2316 and 2229, used the 5V only PCI9052 bridge.

This design is exceptionally versatile and is partitioned into eight "sections," each to support any of the following:

- RS232 – standard 8 COM port signals (RXD,TXD,RTS,CTS,RI,DTR,DSR,DCD)
- RS422 – standard 4 COM port signals (RXD,TXD,RTS,CTS)
- "Split partitioning" of the section into two independent functions.
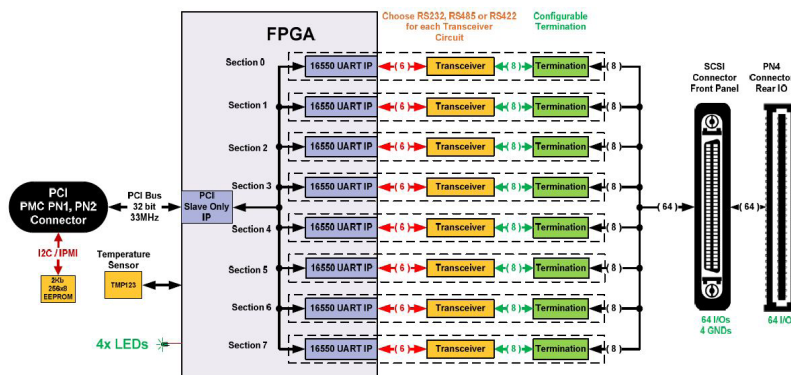
When a section is configured for "Split partitioning," each half of the section is designed to support any of the following:

- RS232 – standard 4 COM port signals (RXD,TXD,RTS,CTS)
- RS422 – standard 2 COM port signals (RXD, TXD)
- RS485 – bidirectional RS485 data on one differential pair (TXRXD)
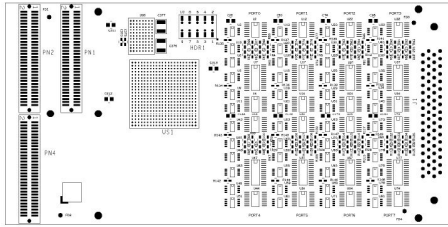
9502

- **Migration from P/N 5288**
- **8 Port RS422 Configuration**
- **FPGA IP UARTs**
- **Standard Baud Rates up to 115KBaud**
- **Migration Path from this PMC to a Similar XMC**
- **Implemented without Jumpers/ Mezzanines**
- **Parallel PCI, 32 Bit, 33 MHz**
- **Works w/ +5V or 3.3V PCI Signaling**
- **68-pin Front-Panel Connector**
- **Ports Accessible via PN4 Rear I/O**
- **Breakout Transition Panels Available**
- **Air-cooled PMC**
- **Powered only by PMC 5.0V Rail**
- **Industrial Temperature Design**
- **RoHS-compatible**

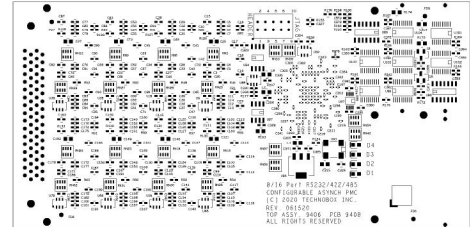Technobox, inc.

COMPONENT PLACEMENT VIEW - SIDE #1

COMPONENT PLACEMENT VIEW - SIDE #2

As a result of the adapter's architecture, many combinations of I/O signaling levels can be quickly realized. Furthermore, customer-specific applications requiring a mix of various interfaces -- e.g. RS232, RS422, and RS485 -- is easily achieved.

To facilitate quick-turn delivery to customers, a ready inventory of partially assembled boards is kept in stock. The secondary side is populated the same way for all configurations, consisting of mostly bypass capacitors and common elements. When a customer

order is received, the primary side is then populated appropriately, resulting in the customer-required configuration. For example, changes in termination resistances, which are variations on the primary side population, can be easily and quickly accomplished to meet customer requirements.

Employing this unique method of selective population results in highly reliable, highly configurable Async boards without using any switches, jumpers, plug-on sub-mezzanines, and so forth.

Various breakout panels and cable accessories are available to convert the 68-pin front-panel connector to other standard connectors. For example, P/N 4988 transition panel converts from 68-pin to eight DB9 connectors.

This product is built with industrial temperature range parts (-40 to +85 C) and is RoHS compliant.

SPECIFICATIONS

Temperature (Operating): -40 to +85 degrees C

Temperature (Storage): -40 to +105 degrees C

Altitude: Not specified or characterized. Typ. similar equip. is at 15,000 ft.

Humidity: 5% to 95% non-condensing

Vibration: Not specified or characterized

Shock: Not specified or characterized

MTBF: Available on request

Weight: 79 grams

Power: TBD, mostly dependent on configuration type

PCI Interface: 33Mhz, 32 bit, VIO +3.3V or +5.0V

Voltages Required: +5.0V only

Size: 74 mm x 149 mm

PCB Thickness: 1.57 mm / 0.062 +/-10% as per standard PCBs

ORDERING INFORMATION

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