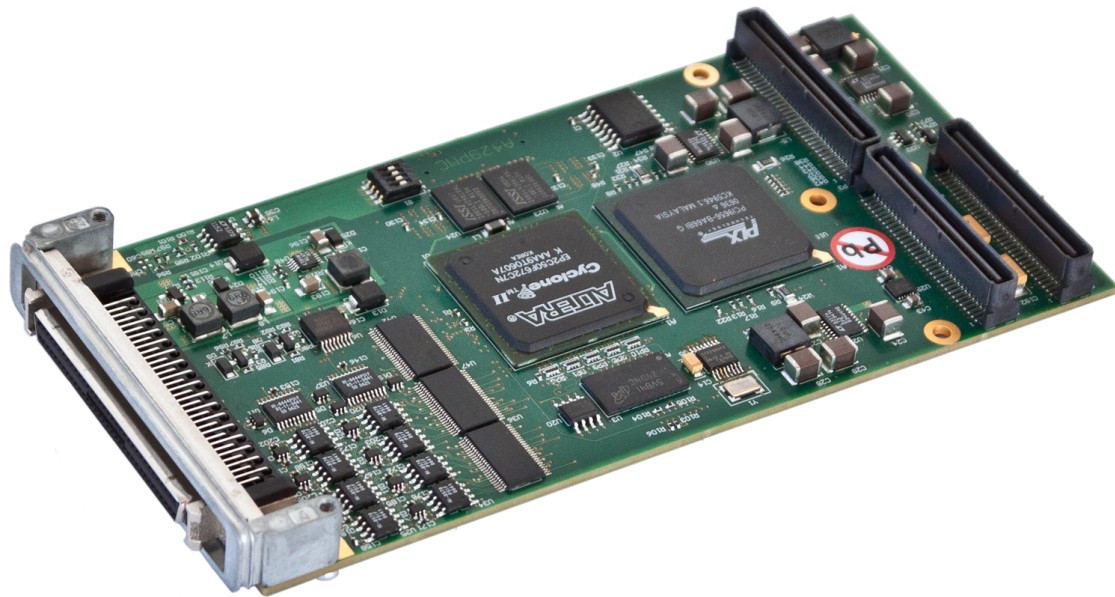


A429-PMC-NI

Multichannel/High-Performance Non-Isolated ARINC 429 PMC Module



- Highly integrated, multichannel card with up to 16 Tx and 16 Rx channels
- High-performance FPGA-only design – no firmware
- Low host CPU load through FIFOs
- Bidirectional discrete I/O and IRIG-B (optional)
- Discrete I/O user interface (optional)
- Integration for PCI, cPCI, PCIe, and PXI systems available
- Error injection and detection
- Programmable bus load
- Driver and API support for Windows 10 and Linux



A429-PMC-NI

Multichannel/High-Performance Non-Isolated ARINC 429 PMC Module

Overview

TechSAT's **A429-PMC** is a powerful, multichannel ARINC 429 interface implemented on a PCI mezzanine card (PMC) form factor module. It has been specially designed to comply with high-performance test and simulation requirements where the ARINC 429 bus is used.

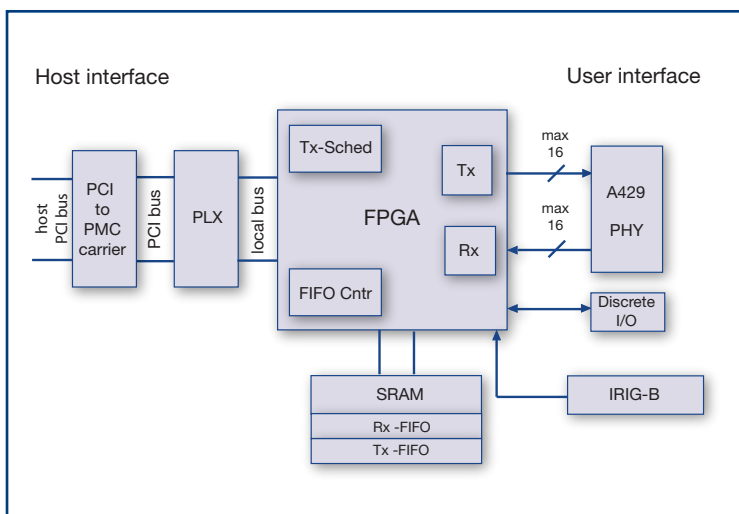
The A429-PMC features a fully parallel hardware design with strictly independent Tx-/Rx-channel state-machines. The dual global FIFO host interface allows for extremely simplified and accelerated board access. The fully autonomous hardware-implemented transmit scheduler and the receive FIFO handler relieve any host platform from realtime tasks. Receive time stamping and error detection are also implemented in hardware.

The A429-PMC is equipped with comprehensive test features, such as error injection and error detection. Bidirectional discrete I/O lines, IRIG-B input, and conformal coating are available as options.

The A429-PMC is supported by TechSAT's **Avionics Development System 2G (ADS2)**, which is used as a software platform in numerous test and integration environments. In addition, the A429-PMC is based on the unified **TechSAT Software Environment Interface** architecture, which can be found on various other TechSAT interface products.

Drivers and interface libraries are available for Windows 10 and Linux.

A429-PMC-NI block diagram



Technical Data

ARINC 429 Interface

- 68-pin female SCSI-III connector (Harting type 60 01 068 5140)
- Up to 16 Tx and 16 Rx channels
- High speed and low speed selectable per channel
- Transmit schedule resolution: 100 μ s
- Receive timestamp resolution: 1 μ s
- Error injection/detection:
 - Word gaps: 0-15 bit times
 - Short word (31 bit) or long word (33 bit)
 - Parity
- 32 K receive FIFO entries (A429 word + channel + timestamp + error information)
- 16 K transmit FIFO entries (A429 word + channel + port + error injection)
- Receive speed autodetection
- On-board temperature sensor for overheat detection
- Bidirectional discrete I/O-lines (GND/open) (optional)
- 2 MB dual-bank SRAM

Host Interface

- PCI 2.2 standard, 33/66 MHz, 32/64-bit interface
- 5 V and 3.3 V supported

Software

- TechSAT unified API compatible with ADS2
- DLL and drivers for Windows 10 and Linux

Physical Dimensions

- Single-size PMC: 74 mm x 149 mm

Operating Environment

- Operating temperature:
 - Standard: 0 °C to 60 °C
 - Extended (on request): -20 °C to 75 °C
- Storage temperature: -10 °C to 85 °C

Power Consumption

- max. 12 W

Configurations

- A429-PMC-16T16RNI3DIO
 - 16 Tx/16 Rx channels, non-isolated, 3 discrete I/O lines
- A429-PMC-8T8RNI3DIO
 - 8 Tx/8 Rx channels, non-isolated, 3 discrete I/O lines
- IRIG-B time synchronization (on request)
- Conformal coating (on request)

Part Numbers

- 702122-03 / A429-PMC-16T16RNI3DIO
- 702122-04 / A429-PMC-8T8RNI3DIO