Data Sheet

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integration
complexity

A429-USB-NT 2Tx/4Rx
Intelligent ARINC 429 USB Device

- 2 Tx and 4 Rx channels
- Avionics Discretes 6 In/6 Out
- Automatic receive data time-stamping and transmit data scheduling
- Software support for all Windows® operating systems (including Windows 7 64-bit)
- General purpose ARINC 429 Bus Analyzer & Simulator available

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Intelligent ARINC 429 USB Device

Application Area

Avionics maintenance, testing, integration, and troubleshooting in both mobile and stationary environments require handy and easy-to-use equipment, which offers highest performance as well as large-scale flexibility in very small dimensions.
Combined with a comprehensive ARINC 429 interface, the widespread USB standard establishes the most efficient platform for standard analyzing and simulation tools as well as specific ARINC 429 applications. By utilizing standard notebook PCs maximum mobility and flexibility can be reached. The demanding real-time requirements of ARINC 429 protocol communications and the handling of the increasing amount of information and data exchanged via ARINC 429 must be supported by local on-card processing power.

Features

The A429-USB NT is an intelligent ARINC 429 USB card with an onboard FPGA. It is based on USB standard 2.0 and supports USB high speed operation. It is in fact a complete computing engine in USB form factor, equipped with 2 Tx channels and 4 Rx channels. Each of the Tx channels is connected to a dedicated loopback receiver.
Additionally, Discrete I/O lines (6x GND/OPEN In and 6x 28V/OPEN or GND/OPEN Out) are available.

A429-USB Firmware / Software

The firmware can be upgraded in-system through the USB interface. The software interface is available for Microsoft Windows beginning with WIN XP (driver and DLL). Windows plug&play is supported.

Mechanical Outline

The A429-USB NT device is embedded in an aluminum case with a high retention high speed USB-B connector and a D-sub 50 connector for the I/O.

Technical Data

ARINC 429 Interface

- 2 Tx and 4 Rx channels
- Dedicated loopback receivers
- Speed (HS/LS) individually programmable
- Standard ARINC 429 transceivers and line drivers
- 50-pol D-sub I/O interface
- Dynamic update of Tx data (Tx functions Sine, Ramp, Step)
- Data Replay and Data Manipulation
- 256 definable ARINC 429 transmit labels per transmitter each with independent update rate support
- Autonomous cyclic transmit scheduling, combinable with block transfer
- Label data update sustains transmit schedule

USB/Power Interface

- USB (Universal Serial Bus) 2.0 High Speed
- Bus-powered

Resources

- Discrete I/O channels (6x GND/OPEN In, 6x 28V/OPEN or GND/OPEN Out)
- IRIG-B input (optional)

Software

- Compatible with TechSAT's A429-PCC (PCMCIA) libraries
- Driver and API for Microsoft Windows XP 32-bit and Windows 7 64-bit or 32-bit

Available Applications

- A429-BAST Bus Analyzer & Simulation Tool (Discretes not supported)
- A615-3 PDL software
- Aircraft-specific simulations available on request

Available Variants

- 2 Tx / 4 Rx / 6 Discretes In/Out
- Other variants on request

Physical Dimensions

- Device box: 125 mm x 105 mm x 30 mm
- Weight: TBD

Operating Environment

- Temp. operating: 0 °C to 55 °C
- Temp. storage: -40 °C to 85 °C
- Humidity: < 95% non-condensing

Power Consumption

- +5 V: max. 500 mA

Part Numbers

- 403557 / A429-USB-NT 2Tx/4Rx

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