

- **PCI bus compatible**
- **Improved Architecture to enhance performance**
- **Performance Improvement and accurate timing control by means of On-board FPGA**
- **Available in a combination of 2Tx / 4Rx Channels per Arinc429 controller**
- **Supports up to 24 Channels per card**
 - > 8 Transmit Channels
 - > 16 Receive Channels
- **Configurable for High Speed/Low Speed**
- **Software Control of Output Voltage Amplitude**
 - > +DELTA with $\pm 13V$
 - > NOMINAL with $\pm 10V$
 - > -DELTA with $\pm 6.5V$
- **Software Control of Output Frequency**
 - > -Delta 96kHz in High Speed & 11.8kHz in Low Speed
 - > Nominal 100kHz in High Speed & 13kHz in Low Speed
 - > +Delta 114kHz in High Speed & 14.5kHz in Low Speed
- **128 x 32 bit Static RAM Interface on each Arinc429 controller**
- **Programmable interrupts**
- **Two 32 x 32 Transmit FIFO on each Arinc429 controller**
- **Can perform simulation of up to 32 Arinc Messages each of 32 words with variable refresh rates**
- **Programmable Refresh rates of 20ms min to 200ms max**
- **Built-in Fault Detection Circuitry**
- **Software Driver support for a host of Operating Systems / Environments**

OVERVIEW

The AT-PCI-429-Simulator card provides a flexible, powerful ARINC429 avionics data bus interface card for the development and maintenance of commercial avionics. The card is designed to transmit and receive messages up to 24 channels. Each channel is software configurable for high or low speed (12.5k or 100k bits per second) and ARINC429 protocol requirements. The ARINC data word can be decoded and sorted based on the Label and SDI bits and stored in RAM and/or FIFO's. The card is integrated with powerful software that reduces development time. All data bus functionality is supported from our advanced API (Application Programming Interface) and VIP (Virtual Instrument Panel).

HARDWARE

The AT-PCI-429-Simulator card can be configured up to 4 ARINC429 Controllers from DDC, each containing 2 Transmit and 4 Receive channels, providing a maximum of 24 channels. Each controller has a 128 x 32 bit static RAM, four 32 (words deep) x 32 (bit) Receive FIFO's and two 32 (words deep) x 32 (bit) transmit FIFO's. Look-up tables loaded into RAM enable the modules receive circuitry to filter and sort incoming data by label and destination bit as well as provide multilevel data specific interrupts or hardware triggers. Under Reset conditions PCI-A429-V2.0 Card will be set to its Nominal frequency and nominal voltage levels. The user can select the required voltage and frequencies by writing to a specific control registers in read write control logic.

SOFTWARE

The AT-PCI-429-Simulator card comes with a powerful set of library functions to access the entire ARINC429 functionality. The drivers are designed in a modular fashion consisting of component functions and application functions. The user's test program can be developed with few calls to the driver, by using the set of Application functions provided. Driver and high-level API libraries for Windows XP, Linux and RT-Linux are available. LabVIEW support is also available optionally. Sample applications are included.

Additional features of AT-PCI-429-Simulator

The transmission data rate and voltage level of each transmit channel can be changed in high and low rate data transmission by writing to appropriate registers in read write control logic (FPGA). The voltage and frequency that could be set using the registers for respective channels are as shown in table.

Output Voltage

-Delta	Nom	+Delta
$\pm 6.5V$	$\pm 10V$	$\pm 13V$

Frequency

Transmission Rate	-Delta	Nom	+Delta
Low	11.8 kHz	13 kHz	14.5 kHz
High	96 kHz	100 kHz	114 kHz

AT-PCI-429-Simulator

Arinc429 Simulator Card

PRODUCT SPECIFICATIONS

ARINC429 Interface

- Supports up to 24 ARINC429 channels
 - > 8 Transmit Channels
 - > 16 Receive Channels
- 128 x 32 shared RAM interface on each ARINC controller
- Programmable Interrupts
- Configurable Bit Format Control
- Built-in Fault Detection Circuitry

Transmit Interface

- Programmable 12.5/100kHz bit rate
- Two 32 (words deep) x 32 (bit) Transmit FIFO's on each ARINC429 controller
- Independent data transmit by each channel
- Programmable data transmit rate for each channel
- Transmit FIFO Status Indicators

Receive Interface

- Four 32 (words deep) x 32 (bit) Receive FIFO's on each ARINC429 controller
- Receive data rates can be programmed for channel 0 and 1 independent of channel 2 and 3 in each ARINC429 controller
- Reducing Receive Data Latency
- Filtering & Sorting of data
- Storage of data
- Parity Error Checking & Reporting
- Receive FIFO status indicator

Diagnostics

- Testing of Memory Elements
- Testing Transmit/Receive functions
- Wraparound Test for each channel
- Interrupt Function Testing

Error Conditions

- Sequence Error
- Address Error
- FIFO Overflow Error
- Receive Data Parity Error
- ARINC Clock Error

Software Support

- Driver and high-level API libraries for Windows XP, Linux and RT-Linux
- LabVIEW support optional
- Sample applications provided

Physical

- Standard PCI card size (7.4" X 3.8")

Environmental

- Operating temperature: 0° C to +50° C
- Storage temperature: -20° C to +70° C

Power

- Maximum Power consumption for each ARINC controller is
 - > + 5 VDC @ 500mA
 - > +12 VDC @ 300mA
 - > -12 VDC @ 300mA

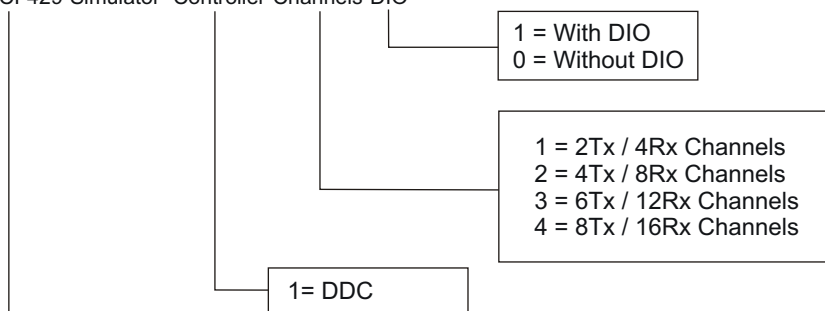
Warranty

- 1 year limited warranty

ORDERING INFORMATION

Hardware Selection

AT-PCI-429-Simulator- Controller-Channels-DIO



Base Product

AT-PCI-429-Simulator = ARINC429 PCI Card

- Contact sales for support for other Operating Systems
- Contact sales for configuration of front and rear I/O configuration
- Contact sales for environmental options



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