PMC-AR429

16 CHANNELS ARINC429

The **PMC-AR429** interface board supports a full implementation of the communication bus ARINC 429.

It fully complies with the ARINC 429 specification Part 1-17, published May 17, 2004.

The **PMC-AR429** board implements 16 independent channels, high and low speed. Each channel is configured by software with Tx or Rx mode.

The **PMC-AR429** board can be used in ground application such as test benches and maintenance tools or involved in embedded airborne systems plugged on support (PCI, PCIe, CPCI,…).

- ♦ **Format PCI Mezzanine Card (PMC) standard**

- ♦ **32 bits Interface 33 MHz, conforms to standard PCI 2.1**

- ♦ **66 MHz 64-bit PCI slot but with restrictions of the bus 33MHz, 32-bit**

- ♦ **IRIG-B122 Datation with 1µs resolution**

- ♦ **Synchronisation on specific label reception**

- ♦ **SDI Code management**

- ♦ **Cyclic or random emission**

- ♦ **Real time FIFO for each channel with filtering**

- ♦ **Softwares: C Library for Linux , Windows, Vx Works (on demand)**

- ♦ **"A429lib" library for complet board operation**

APPLICATIONS

Aircraft embedded application

Test benches

Description:

The PMC AR429 is very well suitable for embedded application and test benches conception.

⇒ High density of channels.

⇒ Software configuration of direction (Tx or Rx) of each channel.

⇒ Generation of synchronization signals upon recognition of a label for a channel in reception, or at a predetermined time in a transmission frame.

⇒ Trigger the emission on an external signal

⇒ Transmit data update at software predefined time

⇒ Random transmit message wuthout disrupting the cyclic timing

Main functions:

The board provides for each channel the three functions of an ARINC bus :

⇒ Transmission clocked on an external or internal signal.

⇒ Reception with recognition and filtering of labels.

⇒ Data monitor : All bus traffic can be transmitted to the application: parity or coding errors are reported, each message is dated.

⇒ In reception, the board can be configured to recognize specific labels running on a specified channel. The recognition of a label generates of a pulse on a logic output (trigger out TTL).

⇒ In transmission, it is possible to generate a pulse at a pre-determined location of the transmission frame.

⇒ The words transmission pace can be clocked with an internal clock (0.1 to 2000 Hz) or with an external IO (clock in TTL).

⇒ The board has a downloadable firmware in its FPGA. Specific versions can be developped without modification of the hardware.

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SPECIFICATIONS*

SPECIFICATION

Channel number	16 channels user software configurable and independent Rx or Tx.
Cyclic transmission	Predetermined deterministic frame. Frame built with short cycles, whose timing is ensured by an internal clock or an external synchro signal.
Random transmission	Transmission of messages at the end of the short cycle, without disturbing the timing of the cyclic messages.
Spying	Integral spying and multi channel spying within a FIFO. The content of this FIFO can be transferred by DMA.
SDI flied	SDI filed can be generated for each label, for transmission and reception.
Bit frequency	100Hz to 200kHz..
Protection	Inputs : DO160D Set A, Level 3, waveform 3 & 4 lightning protection requirement. Output : Short circuit

OTHERS CHARACTERISTICS

IRIG-B	AM (IRIG-B 122), Transmission, reception
Trigger	2 TTL. Sent to every selected transmitter by software
Synchro	2 TTL. Coming from selected transmitter or selected receiver by software.

FORMAT

	PCI interface conforms to PCI standard 2.1 (32 bits, 33 MHz with 3.3 or 5 V signalling).

POWER SUPPLY

	+5 V, 1.5A over temperature range

CONNECTORS

	PMC/Pn4 : 16 ARINC429 channels, IRIG B In & Out, Clock IN, Trig OUT Front panel : Nicomatics 321V057M45 supports 16 ARINC429 channels, Clock IN, Trig OUT Lemo support IRIG B In Lemo support IRIG B Out

SOFTWARE

Driver	Windows 7 and 10, 32/64 bits, LINUX 2.6, 3.x, 4.x, 32/64 bits), VxWorks on demand (VxWorks driver may need user adaptations depending on target system.
User support library	Application interface in C and sample user applications in C source code are provided.
Other operating systems	Contact us

ENVIRONMENT

Operating Temperature	- 20°C to + 70°C
Non operating	- 40°C to + 85°C
Humidity	90% without condensation

STANDARDS

	UE Compliance, RoHS2 - 2011/65/UE

ORDERING INFORMATION

PMC-AR429	16 channels ARINC429 PMC board

ACCESSORIES

PMC-PORT-PCI	Carrier PCI/PMC.
PMC-PORT-CPCI	Carrier cPCI/PMC.
PCI-PORT-PCIE	Carrier PCI Express/PMC

Specifications are subject to change. Please, verify the latest specifications prior order.
Non-contractual pictures

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