Alta Data Technologies’ CPCIC-A429 interface modules (PMC on 3U/6U CompactPCI Carrier) offer a variety of ARINC-419/429/575/573/717 channel configurations with software selectable Rx/Tx channels, baud rates, bit encoding and word configurations (Start/Sync/Stop length, Parity, bits/word, MSB/LSB). Encode or decode almost any ARINC-429 physical layer signal.

The CPCIC-A429 card is based on the industry’s most advanced 32-bit ARINC FPGA protocol engine, AltaCore™, and a feature-rich application programming interface, AltaAPI™, which is a multi-layer ANSI C and Windows .NET 2.0 (MSVS 2005/08/10 C++, C#, VB .NET) architecture. This hardware and software package provides increased system performance and flexibility while reducing integration time.

**AltaCore** is guaranteed ARINC-419/429/575/573/717 compliant and all cards are manufactured to the highest IPC-Class 3 standards and ISO 9001:2008 processes. Alta is committed to provide each customer with a risk free integration and will help with any level of your system development.

**Key Features:**

- **ARINC-419/429/575/573/717 Configurations:**
  - 4 RX/TX Shared Channels
  - 8 RX/TX Shared Channels
  - 16 Channels: 8 RX/TX Shared – 8 RX
  - 30 Channels: 16 RX/TX Shared – 14 RX
  - Rear Panel only 12 RX
  - For Shared Channels, RX Function is Always Available and TX is Software Selectable.
  - Channels Can Be Fixed on Request

- **3U or 6U Configurations. PXI Compatible**

- **8-bit, 1 uSec A/D Signal Capture on First Two RX Channels!**

- **Dual or Quad ARINC-717 RX/TX Selectable**
  - Replaces Corresponding 429 Channels

- **Fully Programmable Label/Word Encoding and Decoding**

- **Commercial, Industrial (Extended) Temp Conduction Cooled, Conformal Coated, Rear Panel Configurations**

- **One Mbyte of Memory per 16 Channel Bank for RX/TX Buffering**

- **Channel Independent TX Label/Word Frequency Control**

- **Dual RX Buffering at Channel and Multi-Channel Level with 64-bit, 20 nsec Time Tags**

- **Advanced, Multi-layer AltaAPI Provided at No Cost with Source Code**
  - Windows, Linux, RTOS, LabVIEW & RT
  - .NET Managed DLLs
  - Contact Factory for Latest RTOS Support

- **True HW Playback**

- **Industry First: 1 uSec Signal Generation**
  - Bit Construction
  - Supports Advanced Validation Testing

- **IRIG-B RX PAM or RX/TX PPS Ext Clock**

- **2 Avionics/ One RS-485 Discrete**

- **Advanced BIT Features and Temp Sensors**

- **Full HW Interrupt Features**

- **PCI 32 Bit, 33/66MHz & PCI-X Compatible**

**Alta’s Advanced Software Architecture**
Multi-Channel (4-30)
CPCIC-A429 Specifications

General
• 32-Bit PCI 33/66MHz/PCI-X Compatible
  o PCI-SIG PCI 2.1 Compliant
  o ANSI/VITA 20-2001 Compliant
• 8-bit, 1 uSec A/D Signal Capture on First Two RX Channels!
• Full Word/Label Encoding/Decoding
  o Bit Rates 500 to 200K
    (12.5, 50K & 100K Compliant)
  o Bit Types, Length, Start/Stop and Parity Settings
    (most advanced in industry
• PMC on 3U or 6U cPCI Carrier
• One Megabyte Per 16 Channel Bank
• Weight: 4oz/120grams
• Power (Estimated @ Max Bandwidth)
  o 4CH@4.5W, 8CH@5.0W, 16CH@6.0W, 30CH@7.0W
• Parts Temp (C) : -55 to +120 Storage, 0 to +70
  Commercial; -40 to +85 Industrial Extended
• SCSI 3 Connector with “Flying Leads” 36” Cable Provided (Front Panel). Rear Panel
  Options.
• Parts Temp (C) : -55 to +120 Storage, 0 to +70
  Commercial, -40 to + 85 Extended
• Flying Lead Cable Provided (User Configured)
• 2 Avionics, 2 RS-485, One TTL In and Out
• Power-Up, Loop-Back and User BIT
• IRIG-B RX PAM and RX/TX PPS Time Sync
• IPC Level 3 and ISO 9001:2008 Processes

TX Features
• Simple or Detailed Frequency (Hz) Control Per Label/Word List
• ARINC-717 Frame Support
• Interrupts, External Trigger
• Full Error Injection

RX Features – Three Buffering Modes
• Channel Level Label/Word Tables
• Channel Level Current Value Tables
• Multi Channel Data Tables for All Channels
• ARINC 717 Frame Support
• 64-Bit, 20 nsec Time Tags
• Interrupts, External Trigger
• Full Error Detection

Playback/Signal Generator (TX)
• Real Hardware Playback from Archive Files
• H/W Playback Timing to 10 usec.
• Signal Vector Generation at 1 uSec
  **INDUSTRY FIRST**
  o Construct Bit Encoding
  o Ideal for Test Validation

Software: AltaAPI & AltaView
• Multi-Layer AltaAPI Architecture to Support Windows and C Linux, VxWorks, LabVIEW, etc..
  o Contact Factory For RTOS Platforms
• Optional AltaView is Based on the Latest Windows MS Office 2007 User Interface Style with
  Ribbon-Bar
  o Full Analyzer Integration Tool
  o Multi Language Support

Part Numbers
CPCIC3/6-A429-4-T (1 Mbyte RAM)
• 4 Shared RX/TX Channels – Software Selectable
• 2 TX ARINC-717 Selectable Channels
  o (Each 717 RX or TX Replaces Two 429 Channels)

CPCIC3/6-A429-8-T (1 Mbyte RAM)
• 8 Shared RX/TX Channels – Software Selectable
• 2 RX/2TX ARINC-717 Selectable Channels
  o (Each 717 RX or TX Replaces Two 429 Channels)

CPCIC3/6-A429-16-T (1 Mbyte RAM)
• 8 Shared RX/TX Channels – Software Selectable
• 8 RX Channels
• 2 RX/2TX ARINC-717 Selectable Channels
  o (Each 717 RX or TX Replaces Two 429 Channels)

CPCIC3/6-A429-30-T (2 Mbyte RAM)
• 16 Shared RX/TX Channels – Software Selectable
• 14 RX Channels (Rear Panel Only 12 RX Channels)
• 4 RX/4TX ARINC-717 Selectable Channels
  o (Each 717 RX or TX Replaces Two 429 Channels)

Please note 3U or 6U card configurations available (3 or 6 in “3/6” part number) Options: -E for Ext Temp Parts (-40 to +85C), -C for
Ext Temp, Conduction Cooled/Conformal Coated/Rear Panel, -R for Rear Panel P4 Commercial and -A for AltaView.

NOTE: On shared channels: TX lines have an extra RX load; when powered-off, RX channels can have severe voltage drain – use only
dedicated RX channels for critical systems.

5 Year Limited Warranty!
EU and China RoHS Compliant
Contact Alta for Special Lead Build Configurations
AltaAPI Software with ANSI C Source,.Net and LabVIEW & RT provided at No Cost.

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