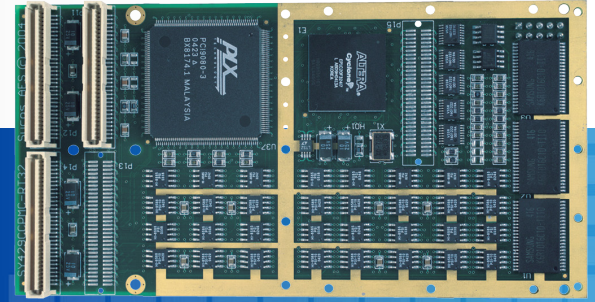


BuiltSAFE™ ARINC-8429

ARINC 429 PMC Mezzanine

- Up to 32x ARINC 429 interface channels
- Safety-Certifiable driver (DO-178B) DAL-A (consult factory)
- Rugged conduction-cooled and Commercial Air-Cooled packages



HIGHEST DAL

Mercury's BuiltSAFE™ products bring the highest level of flight safety assurance to aerospace and defense applications. Our proven, reusable Design Assurance Level (DAL) certified artifacts for mission computing, avionics, networking and datalink comms processing save time and cost while decreasing risk.

The BuiltSAFE ARINC-8429 is an ARINC 429 mezzanine that is available as either a commercial air-cooled or rugged conduction-cooled solution. It is specifically designed for ARINC 429 connection requirements in mission systems.

The ARINC-8429 can be mounted on most air or conduction-cooled processor or carrier boards. It offers up to thirty-two channels, which can be independently programmed to operate at either high or low speed. Each channel is supported with a Cyclic-Data-Buffer, 1 k deep/32 bits wide. Additionally, each receive channel is supported by a high-resolution time-stamp, which is stored in a separate cyclic buffer, one for each channel, in parallel with the received data. Optionally, the receive data and time-stamp data can be stored in the form of a Current Value Table (CVT), addressed by channel/sdi/label.

ARINC input/output is via either the front-panel SCSI 68-pin female connector or PMC-P4.

BuiltSAFE for Avionics

Mercury's expertise and experience in safety certifiable solutions has been built on successful execution of dozens of programs over three decades. This domain knowledge is the foundation of our BuiltSAFE portfolio of open architecture modules, systems and software for avionics, communications, video servers, and mission computing.

Technical Specifications

Compliance

General purpose air-cooled PMC ^{(D)(E)(F)(G)}

Rugged conduction-cooled PMC ^(X)

ARINC 429 Specification (part 1 - 16)

(D) Applies to "D" model

(E) Applies to "E" model

(F) Applies to "F" model

(G) Applies to "G" model

(X) Applies to "X" model

Power Consumption

Minimum	typical	maximum	units
-	11	18	Watts

Mercury Systems is a leading commercial provider of secure sensor and mission processing subsystems. Optimized for customer and mission success, Mercury's solutions power a wide variety of critical defense and intelligence programs.



ACQUIRE



DIGITIZE



PROCESS



STORAGE



EXPLOIT



DISSEMINATE

Interface

Up to 32x ARINC 429 interface channels
 ARINC 429 input/output either to front-panel SCSI connector or PMC-P4
 Each channel is supported by a 1 k deep/32 bits wide Cyclic-Data-Buffer
 Direct access to Cyclic-Data-Buffer read/write pointers
 Direct access to board registers and data memory
 PCI interrupts on board events
 Receiver Current Value Table
 Error detection
 Time-stamping logic with 1 μ s precision
 Bit rate selectable by software on a per channel basis

Buses

One 32-bit PCI 2.1 bus at 33 MHz on PMC-P1/P2

Connectors

One SCSI 68-pin female connector on front-panel ^{(D) (E) (F) (G)}
* The required air-flow is defined separately for each product
 (D) Applies to "D" model
 (E) Applies to "E" model
 (F) Applies to "F" model
 (G) Applies to "G" model

Ruggedization Levels

Level	Description	Cooling Type	Operating Temperature	Vibration (1 hour per axis)	Operating Shocks
A1	Commercial AC	Forced air*	0°C to 55°C [AC1]	5-100 Hz: increase at 3 dB/octave, 100-1000 Hz: 0.04 g ² /Hz, 1000-2000Hz: decrease at 6 dB/octave [V2]	20g, 11ms saw-tooth, three axes [OS1]
C3	Rugged CC	Conduction	-40°C to 70°C [CC3]	5-100 Hz: increase at 3 dB/octave, 100-1000 Hz: 0.1 g ² /Hz, 1000-2000Hz: decrease at 6 dB/octave	40g, 11ms saw-tooth, three axes

Environmental Specifications

Condition	Limits, standards	Comments
Non-operating temperature	-55°C to 105°C [C4]	
Humidity	95%	
Altitude	-1,500 to 60,000 feet	May require conformal coating
Fungus resistance	No nutrient materials	
Workmanship	IPC-A-160 class 3	
Soldering	IPC J-STD-001 class 3	
PCB Manufacturing	IPC-A-600 class 3	
Conformal coating	IPC-CC-830	Optional
Materials	REACH compliant	ROHS variants as an option
Flammability	UL 94 Class V-0	
Quality	EN 9100:2008	

Product Ordering

ARINC-8429XA Conduction-Cooled ARINC 429 PMC (16 Rx/6 Tx)
 DXW-31290C VxWorks®653 Driver for ARINC-8429
 DXW-31290D VxWorks Driver for ARINC-8429
 CERT-8429S ARINC-8429 DO-178B certification kit (consult factory)

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