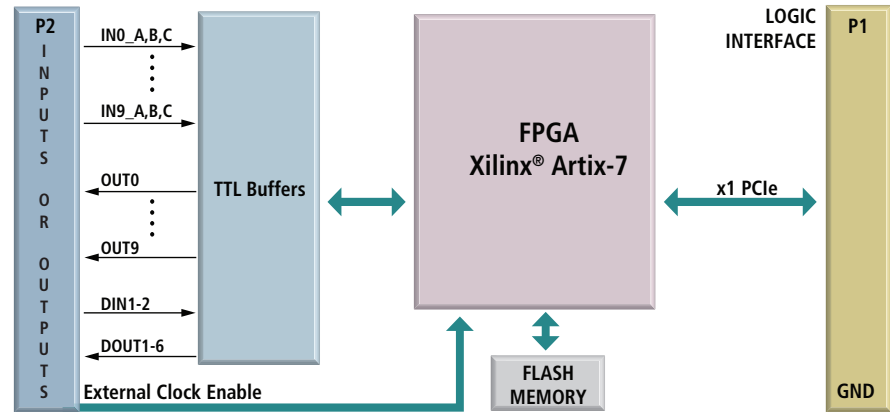
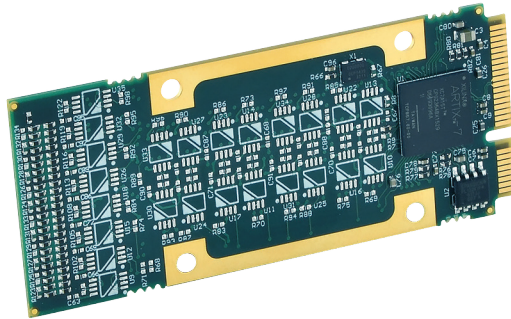


AcroPack® Modules

AP480 Series Counter/Timers



Ten 32-bit Multi-Function Counters ♦ TTL I/O ♦ Wide Temperature Range ♦ PCIe Bus Interface

Description

Model: AP482E-LF

The AcroPack® product line updates our popular Industry Pack I/O modules with a PCIe interface format. This tech-refresh design offers a compact size, low-cost I/O, the same functionality and memory map of the existing IP modules and a rugged form factor. Combine different AcroPack modules on one carrier for a simplified modular approach to system assembly.

Support for internal or external triggering simplifies the synchronization of operations to specific events.

Designed for COTS applications these general purpose I/O modules deliver high-speed and high resolution TTL communication.

AcroPack modules are RoHS compliant and ideal for military, defense, automation, aerospace, scientific, and development labs industries.

The AP482 module is 70mm long, this is 19.05mm longer than the full length mini PCIe card at 50.95mm. The board's width is the same as mPCIe board of 30mm and they use the same mPCIe standard board hold down standoff and screw keep out areas.

A down facing 100 pin Samtec connector will mate with the carrier card. Fifty of these signals are available as field I/O signals.

The AP482 maintains the same functionality and memory map of the existing Industry Pack modules providing a smooth transition to the AcroPack I/O modules.

Key Features & Benefits

- PCI Express Generation 1 interface
- Ten 32-bit counter/timers
- Mix and match countless I/O combinations in a single slot.
- Sample software and diagnostics
- 62.5MHz clock time base
- Single counter/timer modes:
 - Event counting
 - Frequency measurement
 - Period/pulse-width measurement
 - Quadrature position measurement
 - Pulse width modulated output
 - Watchdog timer
 - One shot pulse output
- Configuration is handled by a single register which minimizes programming.
- Solid-down connector I/O interface
- Wide temperature range
- PCIe, VPX and XMC carriers
- Linux®, Windows®, and VxWorks® support



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Performance Specifications

■ Counter/timers

Counter/timer configuration:
AP482: Ten 32-bit counters – TTL I/O

Counter Input:

Each counter has an InA, InB, and InC input port. These TTL or RS485 input ports are used to control Start/Stop, Reload, Event Input, External Clock, Trigger, and Up/Down operations.

Clock frequency

Selectable internal clock frequencies: 1.95MHz, 3.9MHz, 7.81MHz, 15.62MHz, or 62.5MHz.

Minimum input event

32nS.

Minimum pulse measurement

32nS.

Minimum period measurement

64nS.

Minimum gate/trigger pulse

32nS.

Interrupts

Supported for watchdog timer time-out, event count complete, pulse width or periodic rate measurement complete, pulse wave complete (one-shot mode), successive waveform generation (continuous).

Triggering/gate

Programmable via register write or external trigger.

Minimum pulse width 32nS. Line may be used for gating of counter.

Counter trigger

Interface for triggering counter functions. Input level is TTL digital.

Counter input

Interface for events and pulse/period measurements.

Also triggers load of watchdog timer register. Level is TTL digital.

TTL compatibility

V_{IH} = 2.0V and V_{IL} = 0.8V. inputs are buffered and include 4.7K pull-ups to +3.3V.

Counter output

Each counter has an output port. These TTL or RS485 output ports are used for waveform output, watchdog active indicator, or 1.73 μs pulse upon counter function completion. Counter output is programmable as active high or low.

■ PCI Express Base Specification

Conforms to revision 2.1

Lanes

1 lane in each direction.

Bus Speed

2.5 Gbps (Generation 1).

Memory

4k space required.

1 base address register.

■ Environmental

Operating temperature

-40 to 70°C.

-40 to 85°C.

(requires an AcroPack heatsink conduction-cool kit)

Storage temperature

-55 to 150°C.

Relative humidity

5 to 95% non-condensing.

Power

3.3V DC ± 5.

1.6A typical, 2.0A maxium.

■ Physical

Length

70mm.

Width

30mm.

Ordering Information

AcroPack[®] Modules

[AP482E-LF](#)

Ten 32-bit TTL counters

(Note: Acropack modules are compatible only with the carriers listed below)

Accessories

[AP-CC-01](#)

Conduction-cool kit

Carrier Cards

See Acromag.com/AcroPack-Carriers for a full list of AcroPack carrier cards.

Software (see software documentation for details)

[APSW-API-VXW](#)

VxWorks[®] software support package.

[APSW-API-WIN](#)

Windows[®] DLL driver software support package.

[APSW-API-LNX](#)

Linux[®] support (website download only).



AP-CC-01 Conduction-Cool Kit