

IP482/483/484 Counter/Timers

- IP482: Ten 16-bit counters – TTL
- IP483: Five 16-bit counters – TTL, and
Two 16-bit counters – RS422
- IP484: Five 16-bit counters – RS422

Several models with a variety of configurations provide up to ten counter/timer channels for counting events, generating waveform control signals, measuring pulse-widths or periodic rates, and monitoring operations.

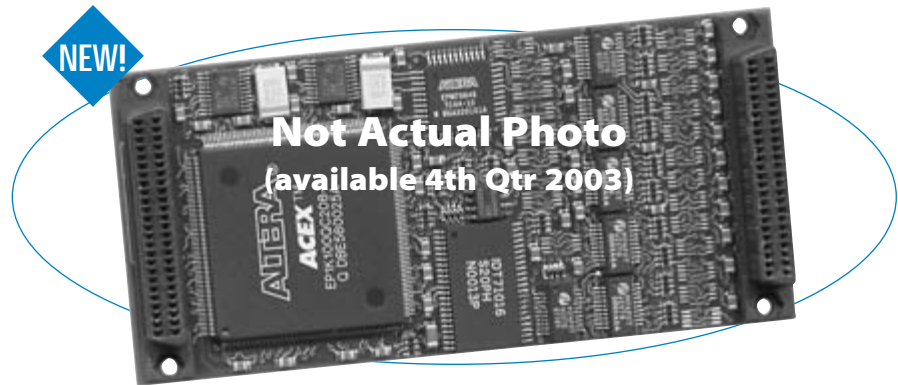
Support for internal or external triggering simplifies the synchronization of operations to specific events. Counter functions can use internally generated clocks or an externally supplied clock.

Features

- Up to ten 16-bit counter/timers (IP482)
- Available with both TTL and RS422 driver interface (IP483 only)
- 8 or 32MHz clock time base
- Single counter/timer modes:
 - Event counting
 - Frequency measurement
 - Period/pulse-width measurement
 - Quadrature position measurement
 - Square wave/pulse train generation
 - Time/period interrupter
 - Pulse width generation
- Extended temperature option (-40 to 85°C)

Benefits

- Most configuration is handled by a single register which minimizes programming.
- Pullups are socketed for easy adjustment.



These modules are very flexible and available in several varieties to accommodate a broad range of counter/timer applications.

Specifications

Counter/Timers

Counter/timer configuration:

- IP482: Ten 16-bit counters – TTL
- IP483: Five 16-bit counters – TTL
Two 16-bit counters – RS422
- IP484: Five 16-bit counters – RS422

Clock frequency: 8 or 32 MHz.

Field I/O: Front panel SCSI-3 connector.

8MHz carrier operation:

- Selectable internal clock frequency: 0.5, 1, 2, 4, or 8 MHz.
- External clock: 2MHz maximum frequency.
- Minimum input event: 125nS.
- Minimum pulse measurement: 125nS.
- Minimum period measurement: 300nS.
- Minimum gate/trigger pulse: 125nS.

32MHz carrier operation:

- Selectable internal clock frequency: 2, 4, 8, 16, or 32 MHz.
- External clock: 8MHz maximum frequency.
- Minimum input event: 31.25nS.
- Minimum pulse measurement: 31.25nS.
- Minimum period measurement: 150nS.
- Minimum gate/trigger pulse: 31.25nS.

Mode accuracy (with external clocking):

- Waveform generation: Period is $\pm 62nS$.
- Watchdog: Timeout occurs within ± 1 clock cycle.
- Pulse/period measurement: ± 1 clock cycle.

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 125nS. Line may be used for gating of counter.

Counter trigger: Interface for triggering counter functions. Input level is TTL or RS422 differential digital.

Counter input: Interface for events and pulse/period measurements. Also triggers load of watchdog timer register. Level is TTL or RS422 differential digital.

TTL compatibility: $V_{IH} = 2.0V$ and $V_{IL} = 0.8V$. Inputs are buffered and include 4.7K pull-ups to +5V.

Counter output: Level is TTL or RS422 differential digital.

IP Compliance (ANSI/VITA 4)

Meets IP specifications per ANSI/VITA 4-1995.

IP data transfer cycle types supported: Input/output (IOSel*), ID read (IDSel*), Interrupt select (INTSel*).

Access times (8MHz or 32MHz clock):

- ID space read: 0 wait states (250ns cycle).
- Registers read/write: 1 wait states (500ns cycle).
- Interrupt read/write: 0 wait states (250ns cycle).

Environmental

Operating temp.: 0 to 70°C or -40 to 85°C (E versions)

Storage temperature: -55 to 125°C.

Relative humidity: 5 to 95% non-condensing.

Power: Consult factory.

MTBF: Consult factory.

Ordering Information

IP Modules

IP482: Ten 16-bit counters – TTL

IP482E: Same as IP482 plus extended temperature range

IP483: Five 16-bit counters – TTL,
Two 16-bit counters – RS422

IP483E: Same as IP483 plus extended temperature range

IP484: Five 16-bit counters – RS422

IP484E: Same as IP484 plus extended temperature range

For Industry Pack Carrier Cards, see Page 5.

Software (see Page 81)

IPSW-API-VXW

VxWorks® software support package

IPSW-API-QNX

QNX® software support package

IPSW-ATX-PCI

ActiveX®/OLE Controls 2.0 software package

IPSW-LINUX

Linux™ support (website download only)

For accessories information, see Page 87.