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IP-Unidig-T

IndustryPack Module With Four 16-bit Timers with Buffered TTL-Level I/O Lines

Application Information

The IP-Unidig-T, a timer IndustryPack, provides four general purpose 16-bit count-down timers with high current output drivers and wide voltage range inputs. Outputs will sink up to 64 mA of continuous load current. Inputs will handle up to +15/-5 V with a 1.25 V logic threshold for direct CMOS/TTL compatibility. Two sets of timers may be cascaded to provide two 32-bit timers. The timers have two modes of operation, one-time (count down and stop) and continuous (reload on zero and continue counting). A programmable interrupt may be generated upon reaching zero in either mode.

Each timer's clock source is either a 1 MHz internal clock or up to a 10 MHz external clock (5 MHz in 32-bit mode). The internal clock provides one microsecond resolution while the external clock provides up to 100 nanosecond resolution.

Two signals control each timer's operation, providing simple yet versatile programming options. An enable bit in the control register enables and disables each timer's counting. Strobing a gate input starts the timers. The source for each timer's gate may be either internal or external. The external gate has programmable polarity for maximum flexibility. Each timer's count may be read reliably at any time without affecting the timer's operation by the use of a dedicated read register.

A divide-by-two option may be programmed to generate either a square wave if the timer is in continuous mode, or an alternating high and low if the timer is in one-time mode.

Reset stops and resets the timers and clears any interrupt for a consistent software interface.

A subroutine library and Windows NT drivers are available.

Features

- Four 16-bit timers with buffered TTL digital I/O on a single-wide IndustryPack
- 64 mA +15/-5 V operation
- Trigger, clock and output lines for each timer
- Timers cascable in pairs for 32-bit operation
- Internal or external clocks

Specifications

Form Factor	Single-wide Type I IndustryPack
IndustryPack Interface	Complies with ANSI/VITA-4
Interface Speed	8 MHz
Wait States	None
Number of Timers	Four
Timer Resolution	16 bits May be cascaded in pairs for 32-bit operation
Timer Inputs	Clock and trigger
Timer Outputs	Zero count May be used in fixed or divide by two modes
Clocking	Internal 1 MHz External up to 10 MHz (5 MHz if 32-bit counter used)
Input Drivers	+15/-5 V range Logic threshold of 1.25 V with 50 mV hysteresis
Output Drivers	Open collector transistor with 1 kOhm pullup 64 mA I_c for $V_{ol}=0.80$ V
ESD Protection	None
Interrupts	On counter = zero
Dimensions	1.8 inches x 3.9 inches
Weight	0.06 kg (0.1 lb)
Power Requirements (no load)	+5 VDC, 170 mA typ
Environmental	Operating temperature: -0 to +70°C Extended temperature: -40 to +85°C Humidity: 5 to 95% non-condensing Storage: -40 to +85°C



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Ordering Information

IP-UNIDIG-T	IndustryPack with four 16-bit timers
IP-UNIDIG-T-ET	IndustryPack with four 16-bit timers, extended temperature
EKIP50-UNIDIG09	Engineering kit for IP-Unidig-T if mounted on a carrier with 50-pin ribbon cable header front panel I/O connectors. Contains: Six foot 50 conductor ribbon cable (C-IP50F-IP50F-6) Fifty screw terminal block with ribbon header (IP-TERM) <i>(More items as below)</i>
EKHD50-UNIDIG09	Engineering kit for IP-Unidig-T if mounted on a carrier with HD50 front panel I/O connectors. Contains: Six foot cable HD50 male to HD50 male (C-HD50M-HD50M) Fifty screw terminal block with HD50 female (IP-TERM-HD50) <i>(More items as below)</i>
EKCM50-UNIDIG09	Engineering kit for IP-Unidig-T if mounted on a carrier with Champ50 front panel I/O connectors. Contains: Six foot Champ50 male to HD50 male cable (C-HD50M-CM50M) Fifty screw terminal block with HD50 female (IP-TERM-HD50) <i>(More items as below)</i>
All IP-UNIDIG-T engineering kits include:	Printed hardware user manual Bill of materials Board schematics Assembly diagram Motorola: MMPQ2369 data sheet AMD: AM26LS33SC data sheet
QP-UNIDIG-TIM	QuickPack subroutine library for IP-Unidig-T. Contains: Printed software user manual Floppy Disk containing: C source code Release notes
ND-SDPACK	Windows NT 4.0 SDpacK IndustryPack driver CDROM

Associated Products

IP-UNIDIG-T-D	IndustryPack with four 16-bit timers with differential I/O
C-IP50M-IP50M-3	Three foot 50 conductor ribbon cable
C-IP50M-IP50M-6	Six foot 50 conductor ribbon cable
C-CM50M-IP50M	Three foot Champ50 male to ribbon cable
C-HD50M-HD50M	Six foot HD50 male to HD50 male cable
C-HD50M-CM50M	Six foot Champ50 male to HD50 male cable
IP-TERM	50 screw terminal block with ribbon cable connector
IP-TERM-HD50	50 screw terminal block with HD50 female connector



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