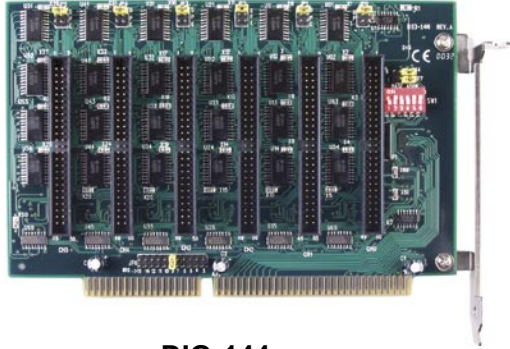


# DIO-144/96/48/24

144/96/48/24-bit OPTO-22 compatible DIO board



DIO-144

### Features

- 144/96/48/24 digital TTL/DTL I/O channels
- All I/O lines are buffered on the board
- Emulate 6/4/2/1 industry standard 8255 PPI Mode 0
- Direct interface with OPTO-22 compatible I/O modules
- High output driving capability
- Programmable interrupt source
- On-board 8254 timer/counter chip (DIO-48)
- Interrupt source: timer, event, direct trigger (DIO-48)

### Functional Description

The DIO-144/96/48/24 are high density parallel digital I/O Board with 144/96/48/24 bi-direction I/O channels. The header connectors are fully compatible with industry OPTO-22 standard. The DIO-144/96/48/24 emulate mode 0 of the industry standard 8255 programmable peripheral interface (PPI) chips. Each PPI offers three 8-bit ports, Port A, Port B and Port C. The Port C is divided into 2 nibble-wide (4-bit) ports. All groups are configured as inputs upon power-up or reset.

The DIO-48 has one 8254 Timer/Counter chip, one 16-bit counter accept event signal (P2C0) and it will generate trigger signal of interrupt. The other 32-bit counter is used to generate pacer time trigger of interrupt. The clock source is 32.768KHz, 2MHz, 4MHz or 8MHz.

### Applications

- Test automation
- Digital I/O control
- Alarm monitoring
- Factory Automation
- Product Test

### Specifications

#### Logic inputs and outputs

- Input logic high voltage: 2.0V min / 5.0V max
- Input logic low voltage: -0.5V min / 0.8V max
- Input load current: -0.45 mA min / +70  $\mu$  A
- Output sink current: +24 mA max
- Output source current: -15 mA
- All outputs and inputs are TTL compatible
- Programmable interrupt source:
  - P2C0, P5C0, P8C0, P11C0, P14C0, P17C0 (DIO-144)
  - P2C0, P5C0, P8C0, P11C0 (DIO-96)
  - P2C3, P2C7, P5C3, P5C7 (DIO-48)
  - P2C0 (DIO-24)

#### General Specifications

- I/O connector: six 50-pin ribbon male (DIO-144)  
four 50-pin ribbon male (DIO-96)  
two 50-pin ribbon male (DIO-48)  
one 50-pin ribbon male (DIO-24)
- Power requirements:

Device	DIO-144	DIO-96	DIO-48	DIO-24
+5V	2680 mA	1860 mA	880 mA	580 mA

- Operating temperature: 0 ~ 60°C
- Operating humidity: 0 ~ 90% non-condensing
- Storage temperature: -20 ~ 80°C
- Dimensions:
  - 182 mm x 110 mm (DIO-144, DIO-96, DIO-48)
  - 107 mm x 106 mm (DIO-24)

# DIO-144/96/48/24

144/96/48/24-bit OPTO-22 compatible DIO board



DIO-96



DIO-48



DIO-24

## Pin Assignment

GND	50	○ ○	49	Vcc
GND	48	○ ○ ○	47	PA_0
GND	46	○ ○ ○ ○	45	PA_1
GND	44	○ ○ ○ ○ ○	43	PA_2
GND	42	○ ○ ○ ○ ○ ○	41	PA_3
GND	40	○ ○ ○ ○ ○ ○ ○	39	PA_4
GND	38	○ ○ ○ ○ ○ ○ ○ ○	37	PA_5
GND	36	○ ○ ○ ○ ○ ○ ○ ○ ○	35	PA_6
GND	34	○ ○ ○ ○ ○ ○ ○ ○ ○ ○	33	PA_7
GND	32	○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○	31	PB_0
GND	30	○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○	29	PB_1
GND	28	○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○	27	PB_2
GND	26	○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○	25	PB_3
GND	24	○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○	23	PB_4
GND	22	○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○	21	PB_5
GND	20	○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○	19	PB_6
GND	18	○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○	17	PB_7
GND	16	○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○	15	PC_0
GND	14	○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○	13	PC_1
GND	12	○ ○	11	PC_2
GND	10	○ ○	9	PC_3
GND	8	○ ○	7	PC_4
GND	6	○ ○	5	PC_5
GND	4	○ ○	3	PC_6
GND	2	○ ○	1	PC_7

## Ordering Information

### Standard

- DIO-24:** 24-bit OPTO-22 DIO board
- DIO-48:** 48-bit OPTO-22 DIO board
- DIO-96:** 96-bit OPTO-22 DIO board
- DIO-144:** 144-bit OPTO-22 DIO board

### Optional

- DB-24P:** 24-channel OPTO-isolated input terminal board
- DB-24R:** 24-channel relay terminal board
- DB-24PR:** 24-channel power relay terminal board
- DB-24C:** 24-channel open-collector output board
- DB-24OD:** 24-channel open-drain output board
- DB-24POR:** 24-channel PhotoMos relay board
- DB-24SSR:** 24-channel solid state relay board
- DB-16P8R:** 16-channel OPTO-isolated digital input & 8-channel relay output board
- DN-50:** DIN-rail mounting terminal board
- ADP-37:** 50-pin OPTO-22 ports to DB-37 adaptor
- ADP-50:** 50-pin extender