

# CIO-DIO24/CTR3

## Specifications



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# Specifications

Typical for 25 °C unless otherwise specified.

Specifications in *italic text* are guaranteed by design.

## Digital Input / Output

Table 1. Digital input/output specifications

<i>Digital type</i>	82C55
<i>Configuration</i>	2 banks of 8, 2 banks of 4, programmable by bank as input or output
<i>Number of channels</i>	24 I/O
<i>Output high</i>	3.0 volts min @ -2.5 mA
<i>Output low</i>	0.4 volts max @ 2.5 mA
<i>Input high</i>	2.0 volts min, 5.5 volts absolute max
<i>Input low</i>	0.8 volts max, -0.5 volts absolute min
<i>Power-up / reset state</i>	Input mode (high impedance)
Interrupts	2 through 7, jumper selectable
Interrupt enable	External (IR Enable), logic low enabled (disabled by default via internal 10k resistor to +5V)
Interrupt sources	External (IR Input), rising edge
Miscellaneous	Locations provided for installation of pull-up or pull-down resistors.

## Counters

Table 2. Power consumption specifications

Counter type	82C54
Configuration	3 down counters, 16-bits each
Counter 0 - independent, user configurable	Source: User connector (CLK0) and optionally, 10MHz on-board xtal oscillator, selectable by jumper Gate: User connector (GATE0) Output: User connector (OUT0) and optionally, counter 1 clock input, selectable by jumper
Counter 1 - independent, user configurable	Source: User connector (CLK1) and optionally, counter 0 output, selectable by jumper Gate: User connector (GATE1) Output: User connector (OUT1) and optionally, counter 2 clock input, selectable by jumper
Counter 2 - independent, user configurable	Source: User connector (CLK2) and optionally, counter 1 output, selectable by jumper Gate: User connector (GATE2) Output: User connector (OUT2)
Clock input frequency	10 MHz max
High pulse width (clock input)	30 ns min
Low pulse width (clock input)	50 ns min
Gate width high	50 ns min
Gate width low	50 ns min
Input low voltage	0.8 V max
Input high voltage	2.0 V min
Output low voltage	0.4 V max
Output high voltage	3.0 V min

## Power consumption

Table 3. Power consumption specifications

Parameter	Specification
+5V	190 mA typical, 300 mA max

## Environmental

Table 4. Environmental specifications

<i>Operating temperature range</i>	<i>0 to 70 °C</i>
<i>Storage temperature range</i>	<i>-40 to +100 °C</i>
<i>Humidity</i>	<i>0 to 90% non-condensing</i>

## Main connector and pin out

Table 5. Connector specifications

Connector type	37-pin male "D" connector
Compatible cables	C37FF-x C37-FFS-x DFCON-37 (D-connector, D-shell, and termination pins to construct your own cable)
Compatible accessory products with the C37FF-x cable and C37FFS-x cable	CIO-MINI37 CIO-SPADE50 SSR-RACK08 SSR-RACK24 CIO-ERB08 CIO-ERB24

Table 6. Connector pin out

Pin	Signal Name	Pin	Signal Name
1	IR Input	20	+5V
2	IR Enable	21	GND
3	FIRSPORTB Bit 7	22	FIRSPORTC Bit 7
4	FIRSPORTB Bit 6	23	FIRSPORTC Bit 6
5	FIRSPORTB Bit 5	24	FIRSPORTC Bit 5
6	FIRSPORTB Bit 4	25	FIRSPORTC Bit 4
7	FIRSPORTB Bit 3	26	FIRSPORTC Bit 3
8	FIRSPORTB Bit 2	27	FIRSPORTC Bit 2
9	FIRSPORTB Bit 1	28	FIRSPORTC Bit 1
10	FIRSPORTB Bit 0	29	FIRSPORTC Bit 0
11	GND	30	FIRSPORTA Bit 7
12	GATE 2	31	FIRSPORTA Bit 6
13	CLK 2	32	FIRSPORTA Bit 5
14	OUT 1	33	FIRSPORTA Bit 4
15	GATE 1	34	FIRSPORTA Bit 3
16	CLK 1	35	FIRSPORTA Bit 2
17	OUT 0	36	FIRSPORTA Bit 1
18	GATE 0	37	FIRSPORTA Bit 0
19	CLK 0		

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