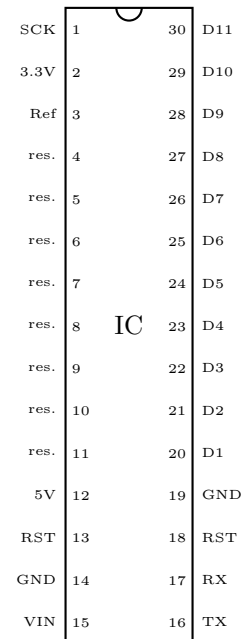# Δ Expansion Ltd.

IO Expander Datashheet

Features

- Easy to use and easy to understand I/O Interfacing for any demands

- Powerful plattform for the simplest of requirements

- Giant footprint to improve weight distribution in YOUR product

- Simple UART interfacing for near instant IO operations

Applications

- Super secure systems in family businesses

- Highly specialized Linux systems doing ethernet stuff

- Usage in Hackathons because you can

Figure 1: Pinout and internal circuit

General Description

This **datasheet** enables you to understand the basic concepts of this sophisticated and utterly overdimensioned I/O Expander.

Pin Description

Pin description is done using the table below. (Pinout should really be sufficient though...)

Table 1: Pin Description

Pin	Name	Function
1	SCK	Clock
2	3.3V	3.3 V Power supply
3	Ref	Reference
4 - 11	Res	Reserved - Nothing to see here
12	5V	5V Power supply
13	RST	Reset on high
14	GND	Ground
15	VIN	Voltage In
16	TX	UART Transmit - Connect to RX of given controller
17	RX	Uart Receive - Connect to TX of given controller
18	RST	Reset on high
19	GND	Ground
20	D1	Digital I/O Pin
21	D2	Digital I/O Pin
22	D3	Digital I/O Pin
23	D4	Digital I/O Pin
24	D5	Digital I/O Pin
25	D6	Digital I/O Pin
26	D7	Digital I/O Pin
27	D8	Digital I/O Pin
28	D9	Digital I/O Pin
29	D10	Digital I/O Pin
30	D11	Digital I/O Pin

[1] Errors in pin assignment are users fault.

Detailed Description asdasdasdsad

asdasdasdasd

Table 2: Pin Address Map

Pin	bit8	bit7	bit6	bit5	bit4	bit3	bit2	bit1	Hex
D1	x	x	x	x	0	0	0	1	0xX1
D2	x	x	x	x	0	0	1	0	0xX2
D3	x	x	x	x	0	0	1	1	0xX3
D4	x	x	x	x	0	1	0	0	0xX4
D5	x	x	x	x	0	1	0	1	0xX5
D6	x	x	x	x	0	1	1	0	0xX6
D7	x	x	x	x	0	1	1	1	0xX7
D8	x	x	x	x	1	0	0	0	0xX8
D9	x	x	x	x	1	0	0	1	0xX9
D10	x	x	x	x	1	0	1	0	0xXA
D11	x	x	x	x	1	0	1	1	0xXB

[1] x means dont care. Those Bits are reserved to set high or low, see next table.

Table 3: Setting I/O's to high

Pin	bit8	bit7	bit6	bit5	bit4	bit3	bit2	bit1	Hex
D1	0	0	0	1	x	x	x	x	0x1X
D2	0	0	1	0	x	x	x	x	0x2X
D3	0	0	1	1	x	x	x	x	0x3X
D4	0	1	0	0	x	x	x	x	0x4X
D5	0	1	0	1	x	x	x	x	0x5X
D6	0	1	1	0	x	x	x	x	0x6X
D7	0	1	1	1	x	x	x	x	0x7X
D8	1	0	0	0	x	x	x	x	0x8X
D9	1	0	0	1	x	x	x	x	0x9X
D10	1	0	1	0	x	x	x	x	0xAX
D11	1	0	1	1	x	x	x	x	0xBX

[1] The high nibble sets addressed pins to high (1) or low (0)
[2] Multiple Pins can be set to high or low at the same time by addressing them using the low nibble