

Expansion Connectors

The Odroid-XU4/3 provides one 30-pin dual row expansion header “**CON10**”. The location and pinout of these connectors is illustrated below. All signals on expansion headers are 1.8V except PWRON signal.

CON10 - 2×15 pins

Pin Number	Net Name	GPIO & Export No	Pin Number	Net Name	GPIO & Export No
1	5V0		2	GND	
3	ADC_0.AIN0	XADC0AIN_0	4	UART_0.RTSN	GPA0.2 (#173)
5	UART_0.CTSN	GPA0.3 (#174)	6	UART_0.RXD	GPA0.0 (#171)
7	SPI_1.MOISI	GPA2.7 (#192)	8	UART_0.TXD	GPA0.1 (#172)
9	SPI_1.MISO	GPA2.6 (#191)	10	SPI_1.CLK	GPA2.4 (#189)
11	SPI_1.CSN	GPA2.5 (#190)	12	PWRON	
13	XE.INT13	GPX1.5 (#21)	14	I2C_1.SCL	GPB3.3 (#210)
15	XE.INT10	GPX1.2 (#18)	16	I2_C1.SDA	GPB3.2 (#209)
17	XE.INT14	GPX1.6 (#22)	18	XE.INT11	GPX1.3 (#19)
19	XE.INT22	GPX2.6 (#30)	20	XE.INT20	GPX2.4 (#28)
21	XE.INT21	GPX2.5 (#29)	22	XE.INT23	GPX2.7 (#31)
23	ADC_0.AIN1	XADC0AIN_1	24	XE.INT17	GPX2.1 (#25)
25	XE.INT15	GPX1.7 (Soft I2C SCL) (#23)	26	XE.INT16	GPX2.0 (#24)
27	XE.INT25	GPX3.1 (Soft I2C SDA) (#33)	28	GND	
29	VDD_IO(1.8V)		30	GND	

OS configuration

If you use Ubuntu 14.04 image, you must consider this. Ubuntu 15.04 image has a proper configuration by default.

The IOBOARD [Use the IO Expansion Board](#) modules are loaded automatically when the OS boots. So you will need to add the modules into the blacklist to use more GPIOs.































Open `/etc/modprobe.d/blacklist.conf` file and add drivename using following syntax:

```
blacklist ioboard_bh1780
blacklist ioboard_bmp180
blacklist ioboard_keyled
```

GPIO Map for WiringPi Library (CON10 2 x 15)

Net Name	GPIO & Export No	WiringPi GPIO	Header Pin	Header Pin	WiringPi GPIO	GPIO & Export No	Net Name
5V0	5V0		1	2		GND	GND
ADC_0.AIN0	AIN0(1.8V Max)		3	4	GPIO_01	GPA0.2(#173)	UART_0.RTSN
UART_0.CTSN	GPA0.3(#174)	GPIO_00	5	6	GPIO_16	GPA0.0(#171)	UART_0.RXD
SPI_1.MOSI	GPA2.7(#192)	GPIO_12	7	8	GPIO_15	GPA0.1(#172)	UART_0.TXD
SPI_1.MISO	GPA2.6(#191)	GPIO_13	9	10	GPIO_14	GPA2.4(#189)	SPI_1.CLK
SPI_1.CSN	GPA2.5(#190)	GPIO_10	11	12		PWR_ON(INPUT)	PWR_ON
XE.INT13	GPX1.5(#21)	GPIO_02	13	14	GPIO_09	GPB3.3(#210)	I2C_1.SCL
XE.INT10	GPX1.2(#18)	GPIO_07	15	16	GPIO_08	GPB3.2(#209)	I2C_1.SDA
XE.INT14	GPX1.6(#22)	GPIO_03	17	18	GPIO_19	GPX1.3(#19)	XE.INT11
XE.INT22	GPX2.6(#30)	GPIO_22	19	20	GPIO_21	GPX2.4(#28)	XE.INT20
XE.INT21	GPX2.5(#29)	GPIO_26	21	22	GPIO_23	GPX2.7(#31)	XE.INT23
ADC_0.AIN3	AIN3(1.8V Max)		23	24	GPIO_11	GPX2.1(#25)	XE.INT17
XE.INT15	GPX1.7(#23)	GPIO_05	25	26	GPIO_06	GPX2.0(#24)	XE.INT16
XE.INT25	GPX3.1(#33)	GPIO_27	27	28		GND	GND
VDD_IO	VDD_IO(1.8V)		29	30		GND	GND

ODROID XU4 (CON10 Header)

WiringPi GPIO#	NAME(GPIO#)				NAME(GPIO#)	WiringPi GPIO#
	5.0 V Power	1			2	Ground
AIN0	ADC_0.AIN0 (ADC#0)	3			4	UART_0.CTSN (#173) 1
0	UART_0.RTSN (#174)	5			6	UART_0.RXD (#171) 16
12	SPI_1.MOSI (#192)	7			8	UART_0.TXD (#172) 15
13	SPI_1.MISO (#191)	9			10	SPI_1.CLK (#189) 14
10	SPI_1.CSN (#190)	11			12	PWRON(Input 1.8V ~ 5V)
2	GPIO (#21)	13			14	I2C_1.SCL (#210) 9
7	GPIO (#18)	15			16	I2C_1.SDA (#209) 8
3	GPIO (#22)	17			18	GPIO (#19) 4
22	GPIO (#30)	19			20	GPIO (#28) 21
26	GPIO (#29)	21			22	GPIO (#31) 23
AIN3	ADC_0.AIN3 (ADC#3)	23			24	GPIO (#25) 11
5	GPIO (#23)	25			26	GPIO (#24) 6
27	GPIO (#33)	27			28	Ground
	1.8 V Power	29			30	Ground

Attention! The WiringPi GPIO pin numbering used in this diagram is intended for use with WiringPi. The raw chipset GPIO pin numbering is "(#number)"
WARNING : All GPIO and AIN pins use 1.8VDC for signaling. Do not attempt to connect 3.3VDC or 5VDC to these header pins.

[Http://www.hardkernel.com](http://www.hardkernel.com)









































GPIO Map for WiringPi Library (Shifter-Shield 40 Pin)

GPIO	WiringPi	Name	Mode	Initial Level	Header Pin	Header Pin	Initial Level	Mode	Name	WiringPi	GPIO
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GPIO	WiringPi	Name	Mode	Initial Level	Header Pin	Header Pin	Initial Level	Mode	Name	WiringPi	GPIO
		3.3V			1	2			5v		
209	8	I2C1.SDA	ALT5	1	3	4			5v		
210	9	I2C1.SCL	ALT5	1	5	6			0v		
18	7	GPIO. 18	IN	0	7	8	1	ALT5	UART0.TX	15	172
		0v			9	10	0	ALT5	UART0.RX	16	171
174	0	GPIO.174	ALT5	1	11	12	0	ALT5	GPIO.173	1	173
21	2	GPIO. 21	IN	0	13	14			0v		
22	3	GPIO. 22	IN	0	15	16	0	IN	GPIO. 19	4	19
		3.3v			17	18	0	IN	GPIO. 23	5	23
192	12	MOSI	ALT5	1	19	20			0v		
191	13	MISO	ALT5	1	21	22	0	IN	GPIO. 24	6	24
189		SCLK	ALT5	0	23	24	0	IN	CE0	10	190
		0v			25	26	0	IN	GPIO. 25	11	25
187	30	I2C5.SDA	ALT5	1	27	28	1	ALT5	I2C_5.SCL	31	188
28	21	GPIO. 28	IN	0	29	30			0v		
30	22	GPIO. 30	IN	0	31	32	0	IN	GPIO. 29	26	29
31	23	GPIO. 31	IN	0	33	34			0v		
		POWER ON	ALT5	0	35	36	0	IN	GPIO. 33	27	33
		AIN.0	ALT5	0	37	38	0	ALT5	1v8		
		0v			39	40	0	ALT5	AIN.3		

The “gpio readall” shows the pin-map of 40-pin-Shifter-Shield not 30-Pin-header.

Shifter-Shield (CON3 Header)

WiringPi GPIO#	NAME(GPIO#)				NAME(GPIO#)	WiringPi GPIO#
	3.3 V Power	1			2	5.0 V Power
8	I2C_1.SDA (#209)	3			4	5,0 V Power
9	I2C_1.SCL (#210)	5			6	Ground
7	GPIO (#18)	7			8	UART_0.TXD (#172) 15
	Ground	9			10	UART_0.RXD (#171) 16
0	UART_0.RTSN (#174)	11			12	UART_0.CTSN (#173) 1
2	GPIO (#21)	13			14	Ground
3	GPIO (#22)	15			16	GPIO (#19) 4
	3.3V Power	17			18	GPIO (#23) 5
12	SPI_1.MOSI (#192)	19			20	Ground
13	SPI_1.MISO (#191)	21			22	GPIO (#24) 6
14	SPI_1.CLK (#189)	23			24	SPI_1.CSN (#190) 10
	Ground	25			26	GPIO (#25) 11
30	I2C_5.SDA (#187)	27			28	I2C_5.SCL (#188) 31
21	GPIO (#28)	29			30	Ground
22	GPIO (#30)	31			32	GPIO (#29) 26
23	GPIO (#31)	33			34	Ground
	PWRON	35			36	GPIO (#33) 27
AIN0	ADC_0.AIN0 (ADC#0)	37			38	1.8 V Power
	Ground	39			40	ADC_0.AIN3 (ADC#3) AIN3

Attention! The WiringPi GPIO pin numbering used in this diagram is intended for use with WiringPi. The raw chipset GPIO pin numbering is "(#number)"

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