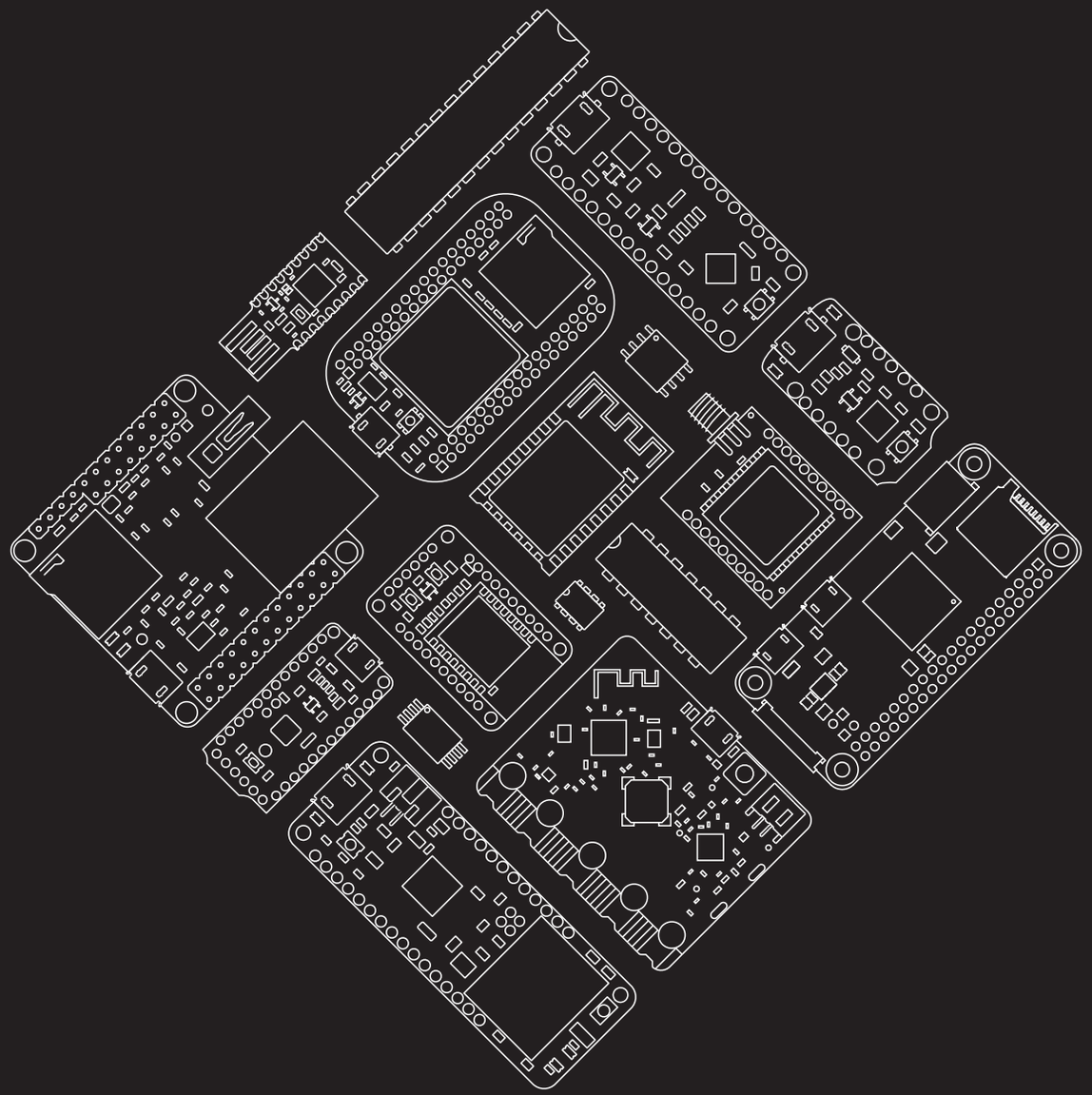

BY
SA

The Pinouts Book was created for designers and engineers as a quick reference for remembering the functions of all the different pinouts in your electronics projects.

The book covers a range of commonly used components, such as connectors, single board computers, dev boards, microcontroller chips, modules and more.

More technical information for each component is available by going to the "**pinouts.org/XXX**" URLs on every page. These each redirect to in-depth datasheets or specifications.

For more info, visit **pinouts.org**

Happy building :)
NODE & Baptiste

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CONNECTORS / AUDIO VIDEO

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HDMI TYPE A 009
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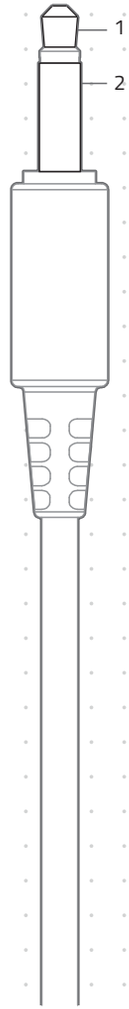
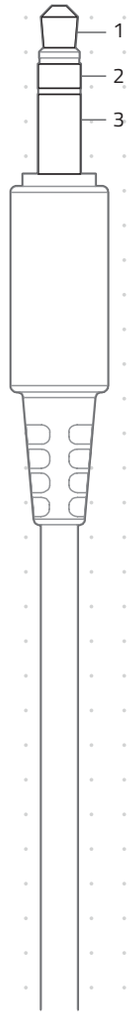


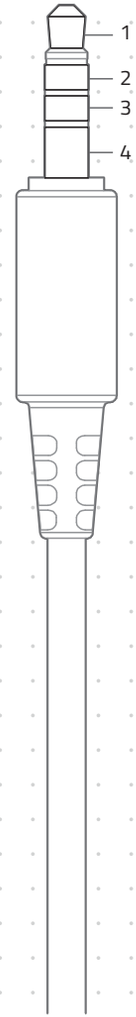
#	NAME	TYPICAL FUNCTION*
1	TIP	MONO SIGNAL (+)
2	SLEEVE	GROUND (-)

**May vary depending on application*



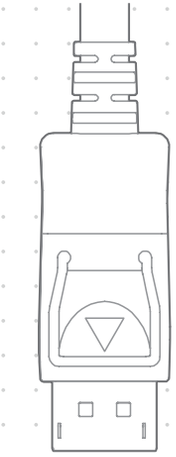
#	NAME	TYPICAL FUNCTION*
1	TIP	LEFT CHANNEL
2	RING	RIGHT CHANNEL
3	SLEEVE	GROUND

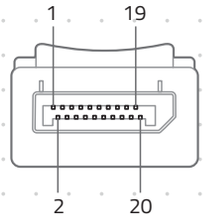
**May vary depending on application*

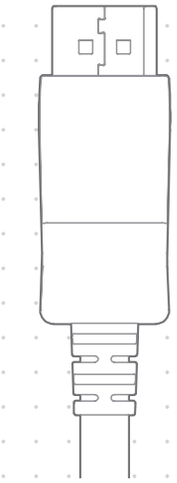


#	NAME	TYPICAL FUNCTION*
1	TIP	LEFT CHANNEL
2	RING	RIGHT CHANNEL
3	RING	GROUND
4	SLEEVE	MICROPHONE

**May vary depending on application*



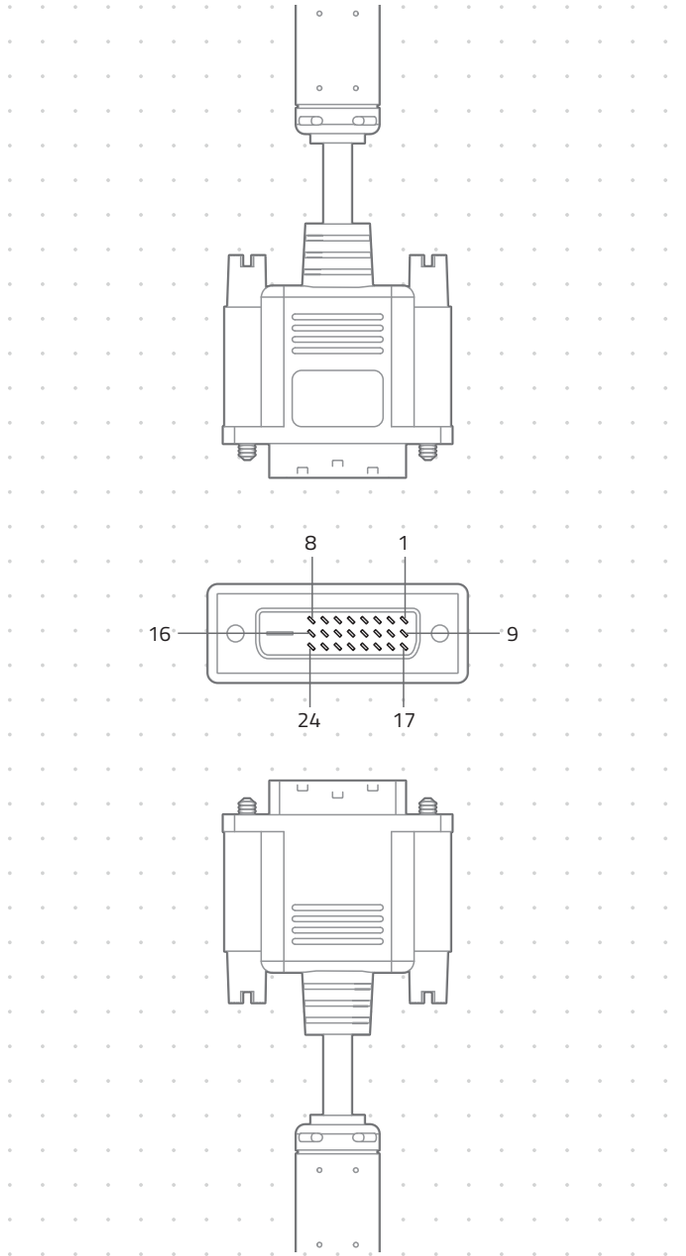




SOURCE / DOWNSTREAM SIDE		
#	NAME	NOTES
1	OUT	ML_LANE 0 (+)
2	GND	GROUND
3	OUT	ML_LANE 0 (-)
4	OUT	ML_LANE 1 (+)
5	GND	GROUND
6	OUT	ML_LANE 1 (-)
7	OUT	ML_LANE 2 (+)
8	GND	GROUND
9	OUT	ML_LANE 2 (-)
10	OUT	ML_LANE 3 (+)
11	GND	GROUND
12	OUT	ML_LANE 3 (-)
13	CONFIG*	CONFIG1
14	CONFIG*	CONFIG2
15	I/O	AUX CH (+)
16	GND	GROUND
17	I/O	AUX CH (-)
18	IN	HOT PLUG DETECT
19	RTN	RETURN
20	PWR OUT**	DP_PWR

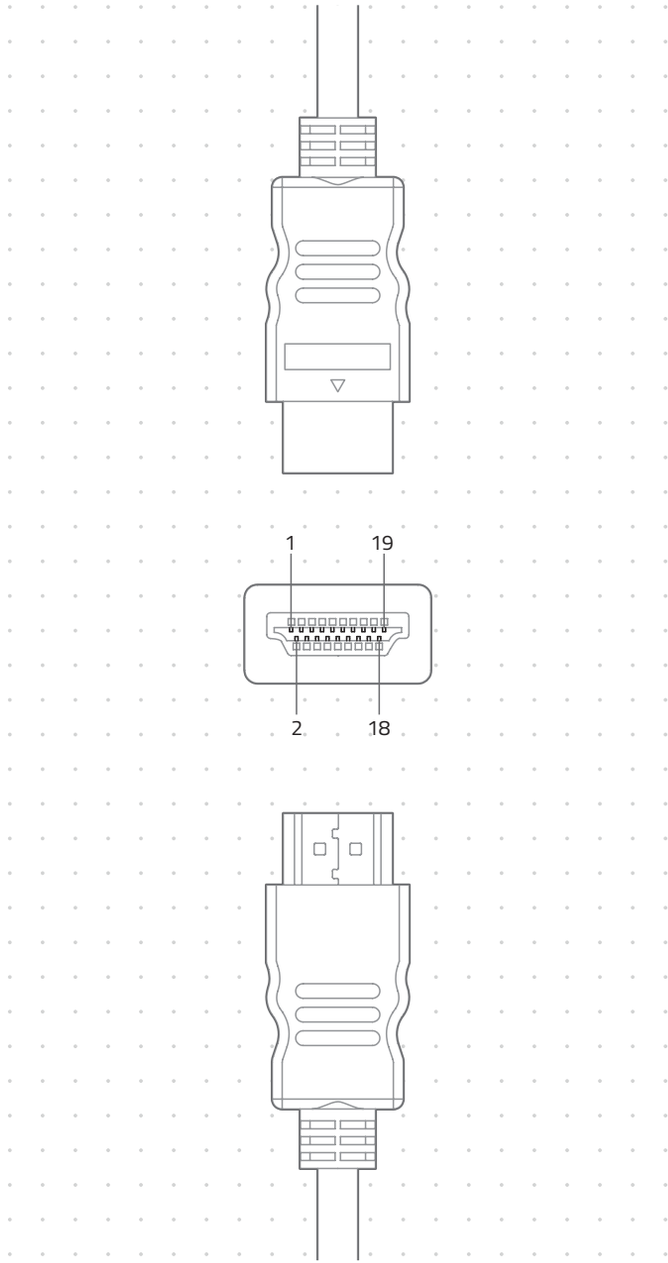
RECEIVING / UPSTREAM SIDE		
#	NAME	NOTES
1	IN	ML_LANE 3 (-)
2	GND	GROUND
3	IN	ML_LANE 3 (+)
4	IN	ML_LANE 2 (-)
5	GND	GROUND
6	IN	ML_LANE 2 (+)
7	IN	ML_LANE 1 (-)
8	GND	GROUND
9	IN	ML_LANE 1 (+)
10	IN	ML_LANE 0 (-)
11	GND	GROUND
12	IN	ML_LANE 0 (+)
13	CONFIG*	CONFIG1
14	CONFIG*	CONFIG2
15	I/O	AUX CH (+)
16	GND	GROUND
17	I/O	AUX CH (-)
18	OUT	HOT PLUG DETECT
19	RTN	RETURN
20	PWR OUT**	DP_PWR

** 13 & 14 must be connected to ground through a pull-down device. ** Must provide +3.3V ± 10% with a max current of 500mA and a min capability of 1.5 watts*

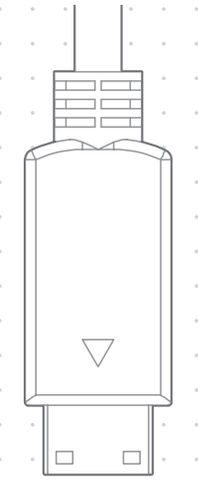


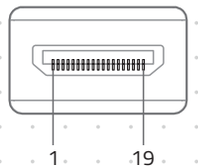
#	NAME
1	TMDS DATA2-
2	TMDS DATA2+
3	TMDS DATA2/4 SHIELD
4	TMDS DATA4-
5	TMDS DATA4+
6	DDC CLOCK
7	DDC DATA
8	NO CONNECT
9	TMDS DATA1-
10	TMDS DATA1+
11	TMDS DATA1/3 SHIELD
12	TMDS DATA3-

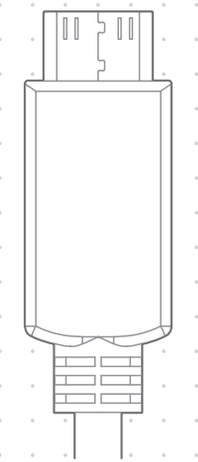
#	NAME
13	TMDS DATA3+
14	+5V POWER
15	GROUND (FOR +5V)
16	HOT PLUG DETECT
17	TMDS DATA0-
18	TMDS DATA0+
19	TMDS DATA0/5 SHIELD
20	TMDS DATA5-
21	TMDS DATA5+
22	TMDS CLOCK SHIELD
23	TMDS CLOCK+
24	TMDS CLOCK-



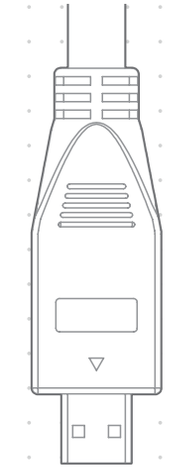
#	NAME
1	TMDS DATA2+
2	TMDS DATA2 SHIELD
3	TMDS DATA2-
4	TMDS DATA1+
5	TMDS DATA1 SHIELD
6	TMDS DATA1-
7	TMDS DATA0+
8	TMDS DATA0 SHIELD
9	TMDS DATA0-
10	TMDS CLOCK+
11	TMDS CLOCK SHIELD
12	TMDS CLOCK-
13	CEC
14	UTILITY
15	SCL
16	SDA
17	DDC/CEC GROUND
18	+5V POWER (MIN 55MA)
19	HOT PLUG DETECT

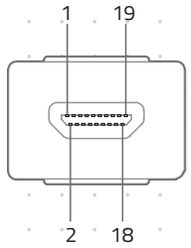


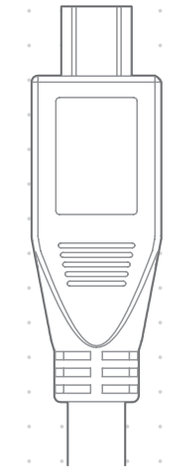




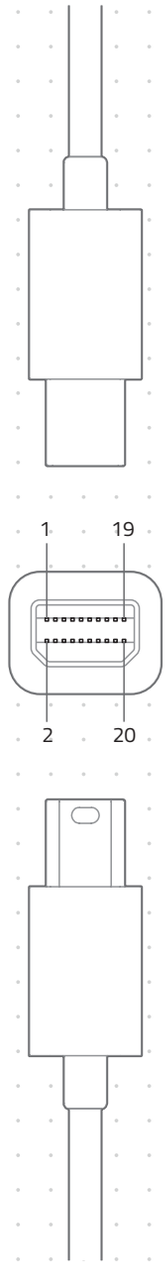
#	NAME
1	TMDS DATA2 SHIELD
2	TMDS DATA2+
3	TMDS DATA2-
4	TMDS DATA1 SHIELD
5	TMDS DATA1+
6	TMDS DATA1-
7	TMDS DATA0 SHIELD
8	TMDS DATA0+
9	TMDS DATA0-
10	TMDS CLOCK SHIELD
11	TMDS CLOCK+
12	TMDS CLOCK-
13	DDC/CEC GROUND
14	CEC
15	SCL
16	SDA
17	UTILITY
18	+5V POWER (MIN 55MA)
19	HOT PLUG DETECT







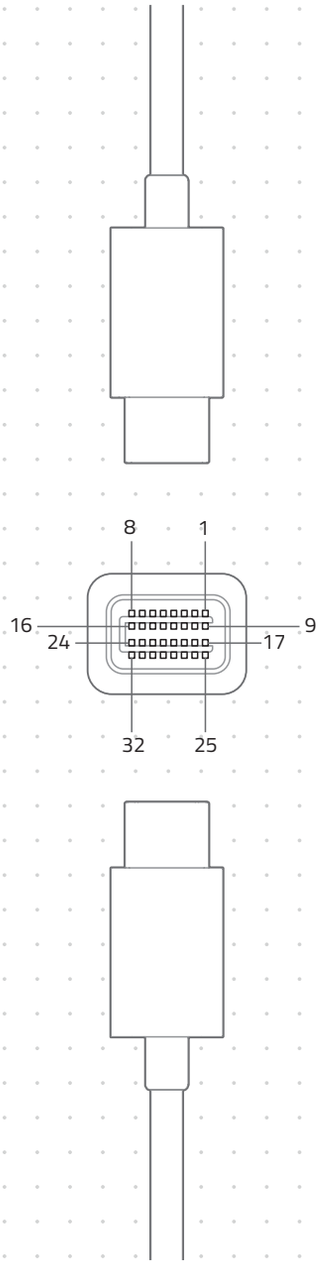
#	NAME
1	HOT PLUG DETECT
2	UTILITY
3	TMDS DATA2+
4	TMDS DATA2 SHIELD
5	TMDS DATA2-
6	TMDS DATA1+
7	TMDS DATA1 SHIELD
8	TMDS DATA1-
9	TMDS DATA0+
10	TMDS DATA0 SHIELD
11	TMDS DATA0-
12	TMDS CLOCK+
13	TMDS CLOCK SHIELD
14	TMDS CLOCK-
15	CEC
16	DDC/CEC GROUND
17	SCL
18	SDA
19	+5V POWER (MIN 55MA)



SOURCE / DOWNSTREAM SIDE		
#	NAME	NOTES
1	GND	GROUND
2	IN	HOT PLUG DETECT
3	OUT	ML_LANE 0 (+)
4	CONFIG*	CONFIG1
5	OUT	ML_LANE 0 (-)
6	CONFIG*	CONFIG2
7	GND	GROUND
8	GND	GROUND
9	OUT	ML_LANE 1 (+)
10	OUT	ML_LANE 3 (+)
11	OUT	ML_LANE 1 (-)
12	OUT	ML_LANE 3 (-)
13	GND	GROUND
14	GND	GROUND
15	OUT	ML_LANE 2 (+)
16	I/O	AUX_CH (+)
17	OUT	ML_LANE 2 (-)
18	I/O	AUX_CH (-)
19	GND	GROUND
20	PWR OUT**	DP_PWR

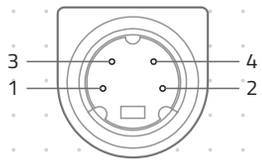
RECEIVING / UPSTREAM SIDE		
#	NAME	NOTES
1	GND	GROUND
2	OUT	HOT PLUG DETECT
3	IN	ML_LANE 3 (-)
4	CONFIG*	CONFIG1
5	IN	ML_LANE 3 (+)
6	CONFIG*	CONFIG2
7	GND	GROUND
8	GND	GROUND
9	IN	ML_LANE 2 (-)
10	IN	ML_LANE 0 (-)
11	IN	ML_LANE 2 (+)
12	IN	ML_LANE 0 (+)
13	GND	GROUND
14	GND	GROUND
15	IN	ML_LANE 1 (-)
16	I/O	AUX_CH (+)
17	IN	ML_LANE 1 (+)
18	I/O	AUX_CH (-)
19	GND	GROUND
20	PWR OUT**	DP_PWR

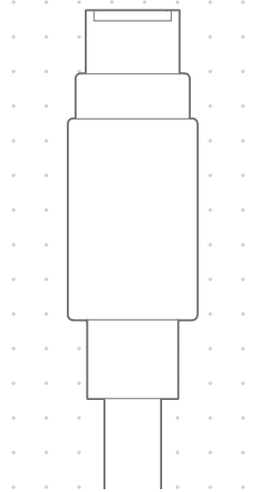
** 4 & 6 must be connected to ground through a pull-down device ** Must provide +3.3V ± 10% with a max current of 500mA and a min capability of 1.5 watts*



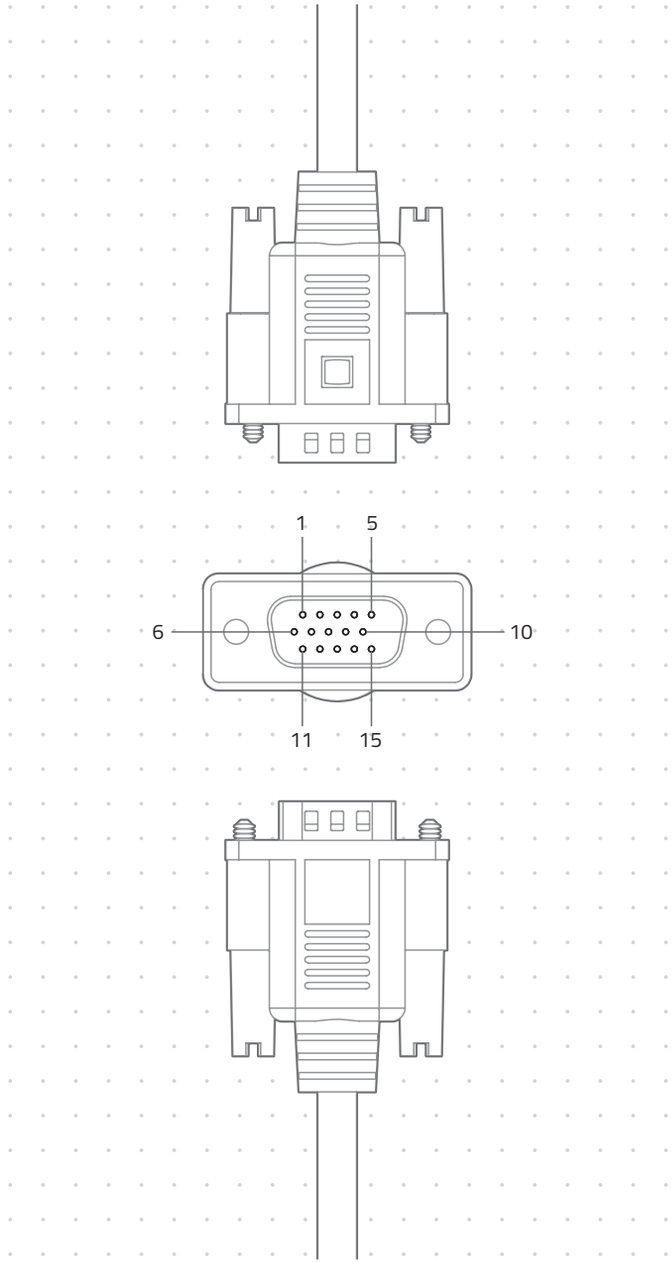
#	NAME
1	DATA2 +
2	DATA2 -
3	DATA1 +
4	DATA1 -
5	DATA0 +
6	DATA0 -
7	CLOCK +
8	CLOCK -
9	DGND
10	DGND
11	DGND
12	DGND
13	DGND
14	DGND
15	DGND
16	DGND

#	NAME
17	+5V POWER
18	DDC_DATA
19	SPARE
20	BLUE
21	NOT INSTALLED
22	GREEN
23	NOT INSTALLED
24	RED
25	DETECT
26	DDC_CLOCK
27	SPACE
28	DGND
29	HSYNC
30	DGND
31	VSYNC
32	DGND

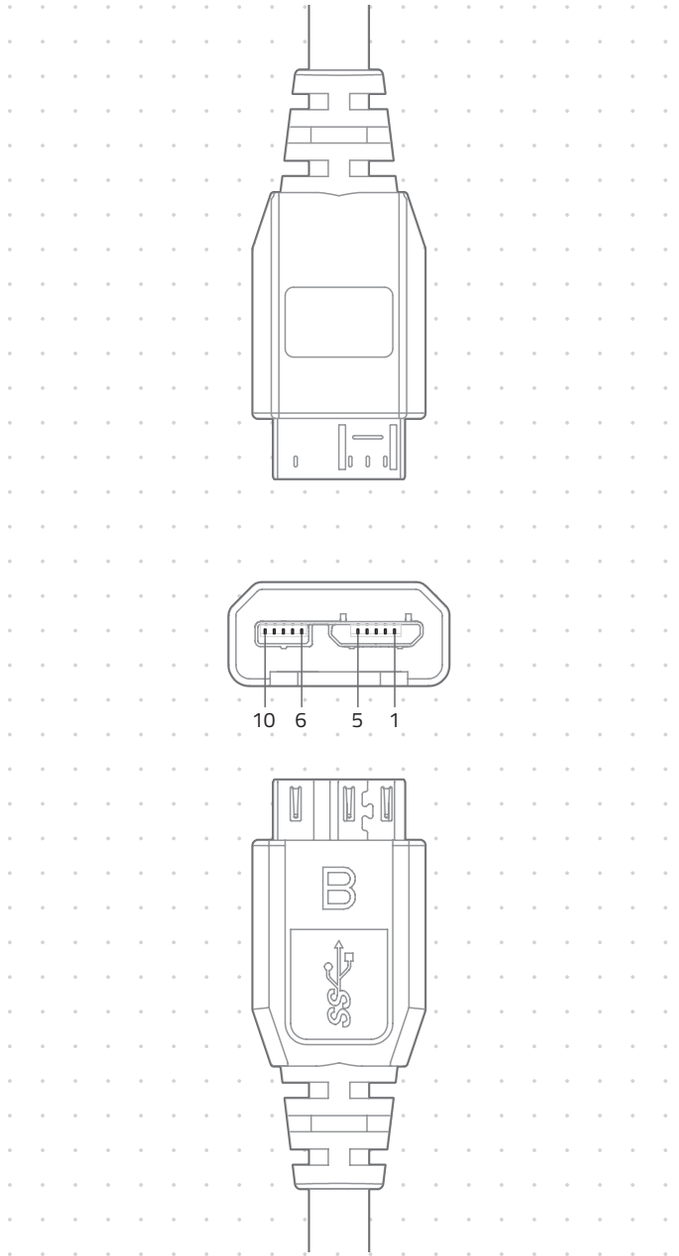




#	NAME	NOTES
1	GND	GROUND (Y)
2	GND	GROUND (C)
3	Y	INTENSITY (LUMINANCE)
4	C	COLOR (CHROMINANCE)

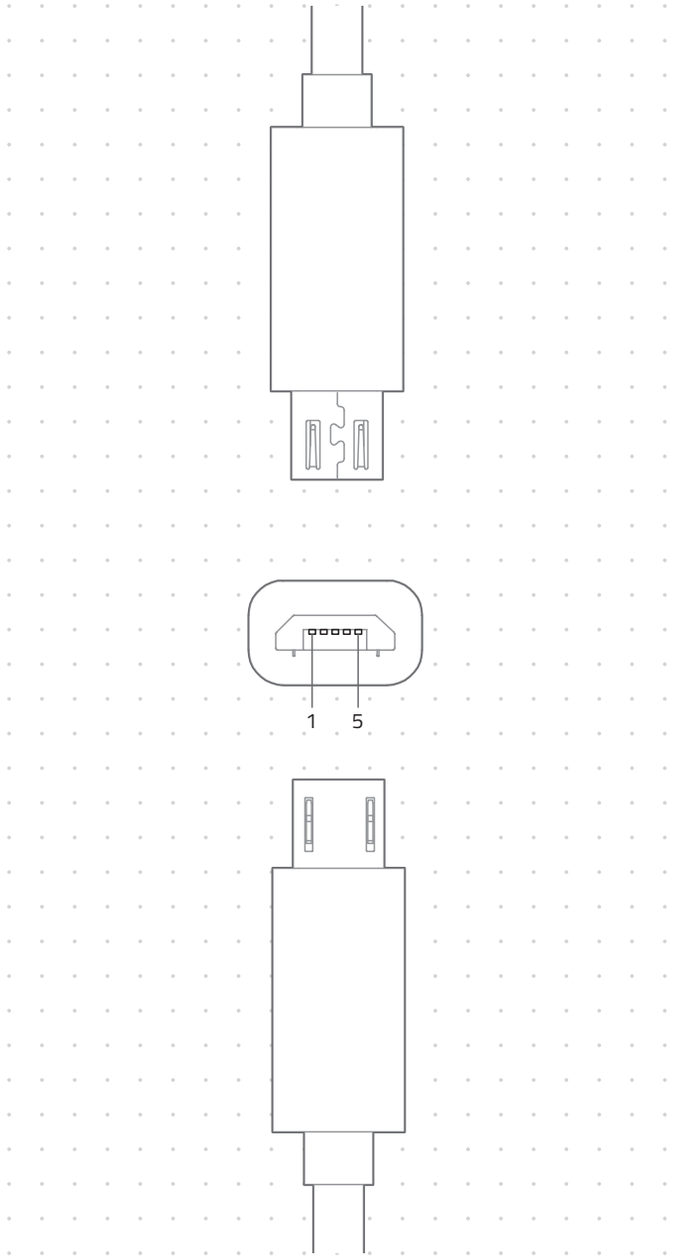


#	NAME	NOTES
1	RED	RED VIDEO
2	GREEN	GREEN VIDEO
3	BLUE	BLUE VIDEO
4	RES	RESERVED
5	GND	GROUND (HSYNC)
6	RED_RTN	RED RETURN
7	GREEN_RTN	GREEN RETURN
8	BLUE_RTN	BLUE RETURN
9	KEY/PWR	+5V POWER (50MA - 1A)
10	GND	GROUND (VSYNC)
11	RES	RESERVED
12	SDA	I2C DATA
13	HSYNC	HORIZONTAL SYNC
14	VSYNC	VERTICAL SYNC
15	SCL	I2C CLOCK



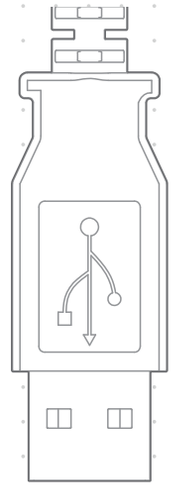
#	NAME	NOTES	WIRE COLOR
1	VBUS	5V POWER	RED
2	D-	USB 2.0 DIFFERENTIAL PAIR	WHITE
3	D+	USB 2.0 DIFFERENTIAL PAIR	GREEN
4	ID	OTG IDENTIFICATION	-
5	GND	GROUND FOR POWER RETURN	BLACK
6	MICB_SSTX-	SUPERSPEED TX DIFFERENTIAL PAIR	BLUE
7	MICB_SSTX+	SUPERSPEED TX DIFFERENTIAL PAIR	YELLOW
8	GND_DRAIN	GROUND FOR SUPERSPEED SIGNAL RETURN	GREY
9	MICB_SSRX-	SUPERSPEED RX DIFFERENTIAL PAIR	PURPLE
10	MICB_SSRX+	SUPERSPEED RX DIFFERENTIAL PAIR	ORANGE

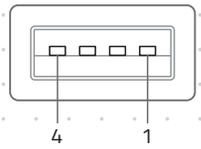
Note: TX and RX are defined from the device perspective

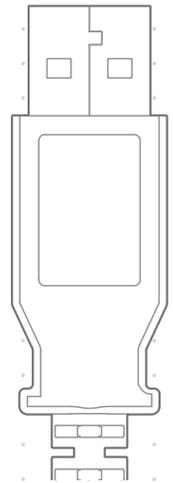


#	NAME	NOTES	WIRE COLOR
1	VBUS	5V POWER	RED
2	D-	DATA-	WHITE
3	D+	DATA+	GREEN
4	ID	OTG IDENTIFICATION	-
5	GND	GROUND	BLACK

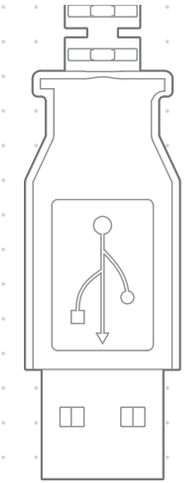
Note: The less common Micro-A 2.0 has the same pinout config

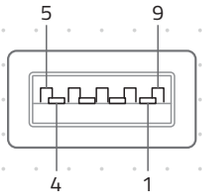


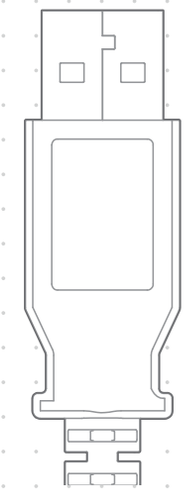




#	NAME	NOTES	WIRE COLOR
1	VBUS	5V POWER	RED
2	D-	DATA-	WHITE
3	D+	DATA+	GREEN
4	GND	GROUND	BLACK

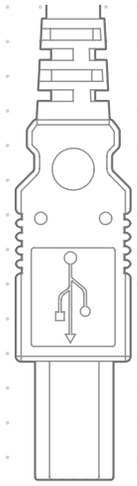


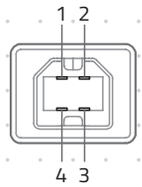


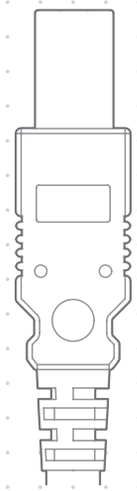


#	NAME	NOTES	WIRE COLOR
1	VBUS	5V POWER	RED
2	D-	USB 2.0 DIFFERENTIAL PAIR	WHITE
3	D+	USB 2.0 DIFFERENTIAL PAIR	GREEN
4	GND	GROUND FOR POWER RETURN	BLACK
5	STDA_SSRX-	SUPERSPEED RX DIFFERENTIAL PAIR	BLUE
6	STDA_SSRX+	SUPERSPEED RX DIFFERENTIAL PAIR	YELLOW
7	GND_DRAIN	GROUND FOR SUPERSPEED SIGNAL RETURN	GREY
8	STDA_SSTX-	SUPERSPEED TX DIFFERENTIAL PAIR	PURPLE
9	STDA_SSTX+	SUPERSPEED TX DIFFERENTIAL PAIR	ORANGE

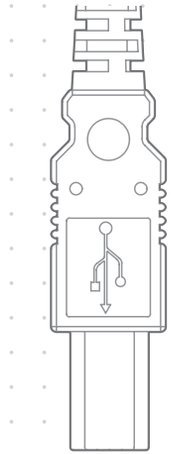
Note: TX and RX are defined from the host perspective

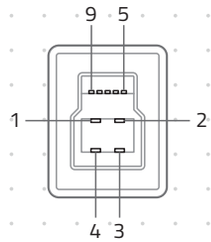


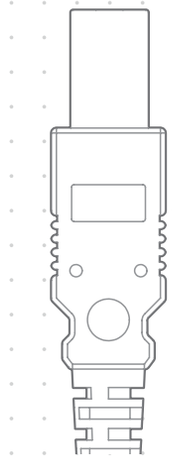




#	NAME	NOTES	WIRE COLOR
1	VBUS	5V POWER	RED
2	D-	DATA-	WHITE
3	D+	DATA+	GREEN
4	GND	GROUND	BLACK

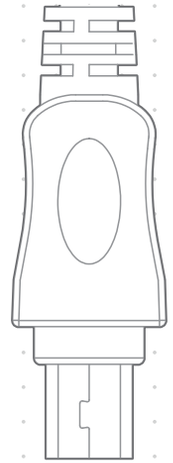


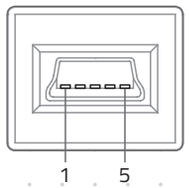


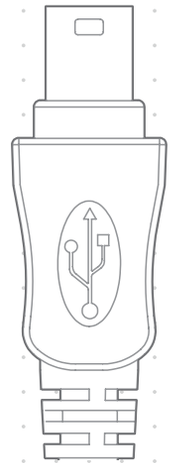


#	NAME	NOTES	WIRE COLOR
1	VBUS	5V POWER	RED
2	D-	USB 2.0 DIFFERENTIAL PAIR	WHITE
3	D+	USB 2.0 DIFFERENTIAL PAIR	GREEN
4	GND	GROUND FOR POWER RETURN	BLACK
5	STDB_SSTX-	SUPERSPEED TX DIFFERENTIAL PAIR	BLUE
6	STDB_SSTX+	SUPERSPEED TX DIFFERENTIAL PAIR	YELLOW
7	GND_DRAIN	GROUND FOR SUPERSPEED SIGNAL RETURN	GREY
8	STDB_SSRX-	SUPERSPEED RX DIFFERENTIAL PAIR	PURPLE
9	STDB_SSRX+	SUPERSPEED RX DIFFERENTIAL PAIR	ORANGE

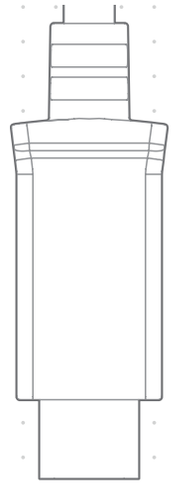
Note: TX and RX are defined from the device perspective

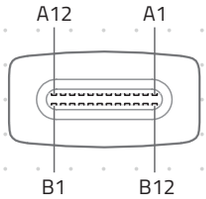


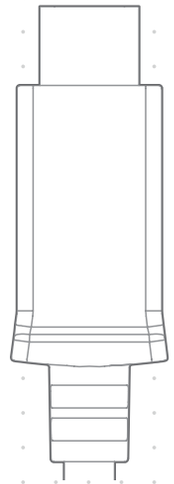




#	NAME	NOTES	WIRE COLOR
1	VBUS	5V POWER	RED
2	D-	DATA-	WHITE
3	D+	DATA+	GREEN
4	ID	OTG IDENTIFICATION	-
5	GND	GROUND	BLACK



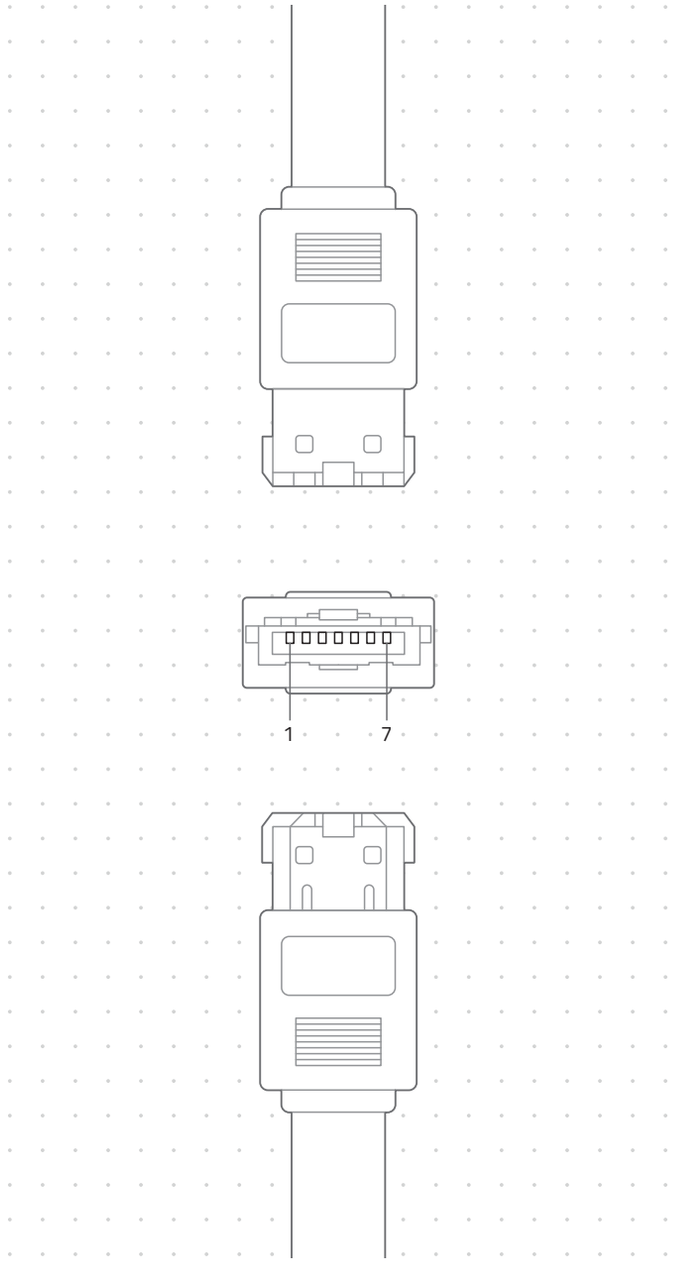




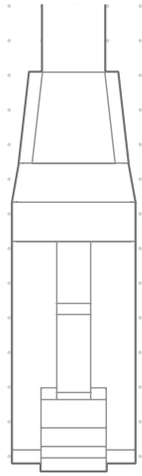
#	NAME	NOTES
A1	GND	GROUND*
A2	TX1+	USB3.1 OR ALTERNATE MODE
A3	TX1-	USB3.1 OR ALTERNATE MODE
A4	VBUS	POWER*
A5	CC1	CC OR VCONN
A6	D+	DATA+ (USB 2.0)
A7	D-	DATA- (USB 2.0)
A8	SBU1	ALTERNATE MODE
A9	VBUS	POWER*
A10	RX2-	USB3.1 OR ALTERNATE MODE
A11	RX2+	USB3.1 OR ALTERNATE MODE
A12	GND	GROUND*

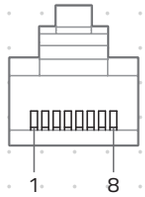
#	NAME	NOTES
B1	GND	GROUND*
B2	TX2+	USB3.1 OR ALTERNATE MODE
B3	TX2-	USB3.1 OR ALTERNATE MODE
B4	VBUS	POWER*
B5	CC2	CC OR VCONN
B6	D+	DATA+ (USB 2.0)
B7	D-	DATA- (USB 2.0)
B8	SBU2	ALTERNATE MODE
B9	VBUS	POWER*
B10	RX1-	USB3.1 OR ALTERNATE MODE
B11	RX1+	USB3.1 OR ALTERNATE MODE
B12	GND	GROUND*

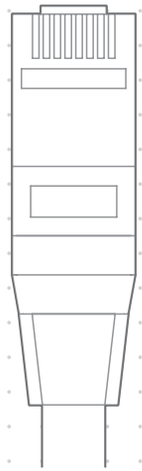
**Support for 60W minimum (combined with all VBUS pins)*
Power Supply Options: USB 2.0 Nom Voltage 5V, Max 500mA | USB 3.0 / 3.1 Nom Voltage 5V, Max 900mA
USB BC1.2 Nom Voltage 5V, Max1.5A | USB Type-C Current @ 1.5A Nom Voltage 5V, Max1.5A
USB Type-C Current @ 2.0A Nom Voltage 5V, Max 3.0A | USB Power Delivery Nom Voltage Up to 20V, Up to 5A



#	NAME	NOTES
1	GND	GROUND
2	A +	TRANSMIT +
3	A -	TRANSMIT -
4	GND	GROUND
5	B -	RECEIVE -
6	B +	RECEIVE +
7	GND	GROUND

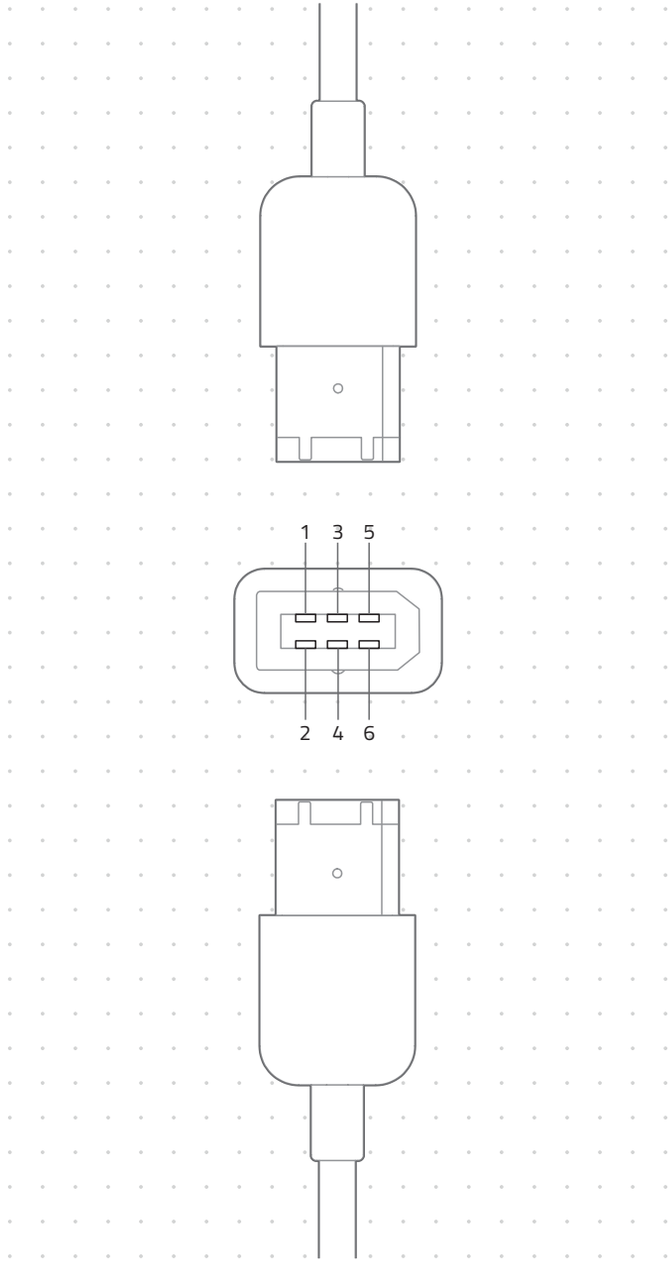




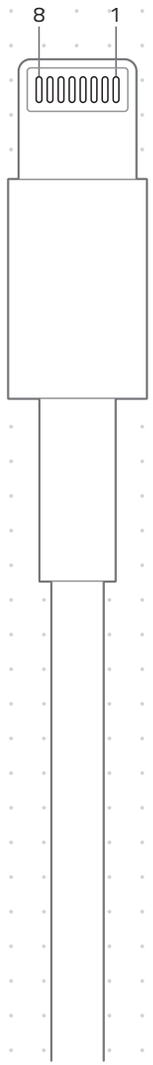


T568A STANDARD				
#	10BASE-T	100BASE-T	1000BASE-T	WIRE COLOR
1	TX+	TX+	BI_DA+	WHITE W/ GREEN STRIPE
2	TX-	TX-	BI_DA-	SOLID GREEN
3	RX+	RX+	BI_DB+	WHITE W/ ORANGE STRIPE
4	UNUSED	UNUSED	BI_DC+	SOLID BLUE
5	UNUSED	UNUSED	BI_DC-	WHITE W/ BLUE STRIPE
6	RX-	RX-	BI_DB-	SOLID ORANGE
7	UNUSED	UNUSED	BI_DD+	WHITE W/ BROWN STRIPE
8	UNUSED	UNUSED	BI_DD-	SOLID BROWN

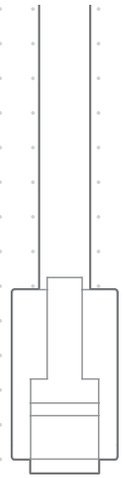
T568B STANDARD				
#	10BASE-T	100BASE-T	1000BASE-T	WIRE COLOR
1	TX+	TX+	BI_DA+	WHITE W/ ORANGE STRIPE
2	TX-	TX-	BI_DA-	SOLID ORANGE
3	RX+	RX+	BI_DB+	WHITE W/ GREEN STRIPE
4	UNUSED	UNUSED	BI_DC+	SOLID BLUE
5	UNUSED	UNUSED	BI_DC-	WHITE W/ BLUE STRIPE
6	RX-	RX-	BI_DB-	SOLID GREEN
7	UNUSED	UNUSED	BI_DD+	WHITE W/ BROWN STRIPE
8	UNUSED	UNUSED	BI_DD-	SOLID BROWN

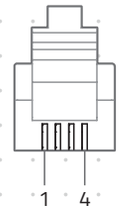


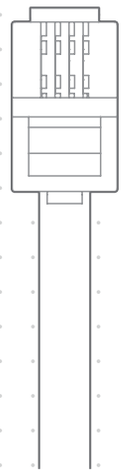
#	NAME	NOTES	WIRE COLOR
1	PWR	30V POWER	WHITE
2	GND	GROUND	BLACK
3	TPB-	TWISTED PAIR B	ORANGE
4	TPB+	TWISTED PAIR B	BLUE
5	TPA-	TWISTED PAIR A	RED
6	TPA+	TWISTED PAIR A	GREEN



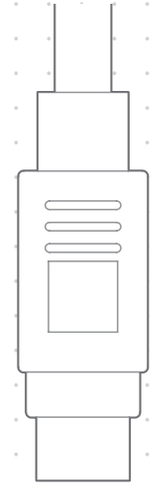
#	NAME	NOTES
1	GND	GROUND
2	L0P	LANE 0 +
3	L0N	LANE 0 -
4	ID0	IDENTIFICATION/CONTROL 0
5	PWR	POWER (CHARGER OR BATTERY)
6	L1N	LANE 1 -
7	L1P	LANE 1 +
8	ID1	IDENFITICATION/CONTROL 1

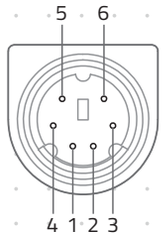


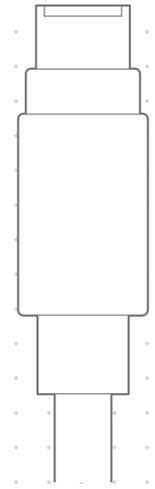




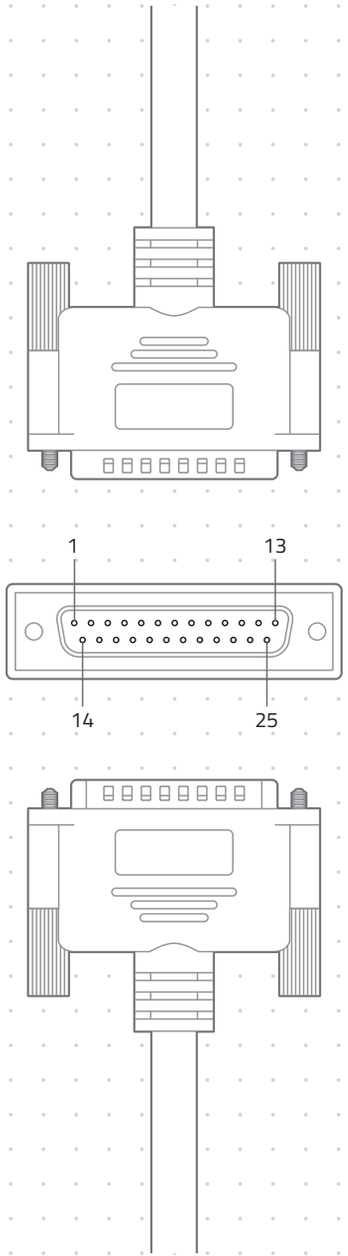
#	PAIR	RJ11	RJ14	WIRE COLOR	WIRE COLOR (OLD)
1	B		TX+	WHITE W/ ORANGE STRIPE	BLACK
2	A	RX-	RX-	BLUE W/ WHITE STRIPE	RED
3	A	TX+	TX+	WHITE W/ BLUE STRIPE	GREEN
4	B		RX-	ORANGE W/ WHITE STRIPE	YELLOW





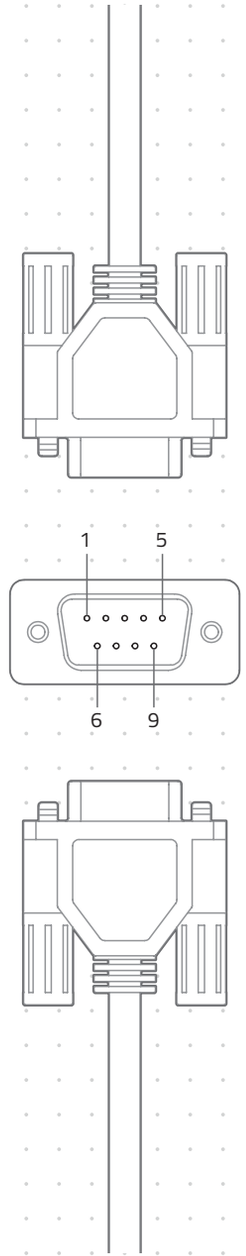


#	NAME	NOTES
1	DATA	KEY DATA
2	NC	NOT CONNECTED
3	GND	GROUND
4	VCC	+5V POWER
5	CLK	CLOCK
6	NC	NOT CONNECTED

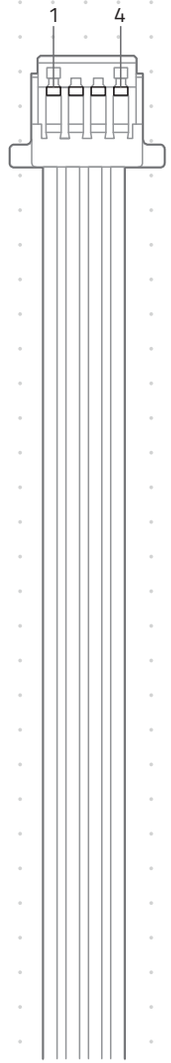


#	NAME	NOTES
1	GND	SHIELD GROUND
2	TXD	TRANSMIT DATA
3	RXD	RECEIVE DATA
4	RTS	REQUEST TO SEND
5	CTS	CLEAR TO SEND
6	DSR	DATA SET READY
7	GND	SYSTEM GROUND
8	CD	CARRIER DETECT
9	-	RESERVED
10	-	RESERVED
11	STF	SELECT TRANSMIT CHANNEL
12	S.CD	SECONDARY CARRIER DETECT
13	S.CTS	SECONDARY CLEAR TO SEND

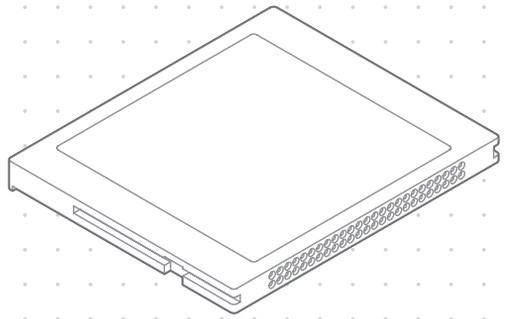
#	NAME	NOTES
14	S.TXD	SECONDARY TRANSMIT DATA
15	TCK	TX SIGNAL ELEMENT TIMING
16	S.RXD	SECONDARY RECEIVE DATA
17	RCK	RX SIGNAL ELEMENT TIMING
18	LL	LOCAL LOOP CONTROL
19	S.RTS	SECONDARY REQUEST TO SEND
20	DTR	DATA TERMINAL READY
21	RL	REMOTE LOOP CONTROL
22	RI	RING INDICATOR
23	DSR	DATA SIGNAL RATE SELECTOR
24	XCK	TRANSMIT SIGNAL ELEMENT TIMING
25	TI	TEST INDICATOR

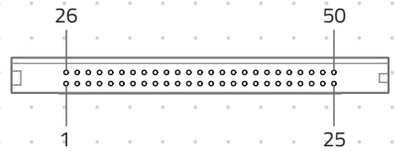


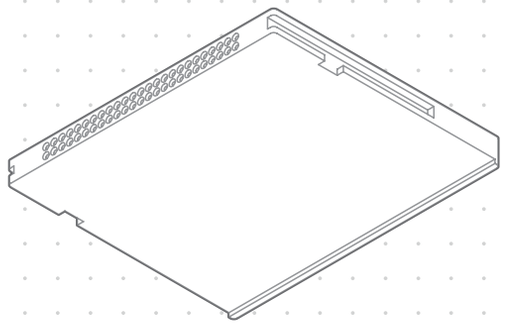
#	NAME	I/O	NOTES
1	DCD	IN	DATA CARRIER DETECT
2	RXD	IN	RECEIVE DATA
3	TXD	OUT	TRANSMIT DATA
4	DTR	OUT	DATA TERMINAL READY
5	GND	-	GROUND
6	DSR	IN	DATA SET READY
7	RTS	OUT	READY TO SEND
8	CTS	IN	CLEAR TO SEND
9	RI	IN	RING INDICATOR



#	FUNCTION	WIRE COLOR
1	I2C SCL CLOCK	YELLOW
2	I2C SDA DATA	BLUE
3	3.3VDC POWER	RED
4	GROUND	BLACK

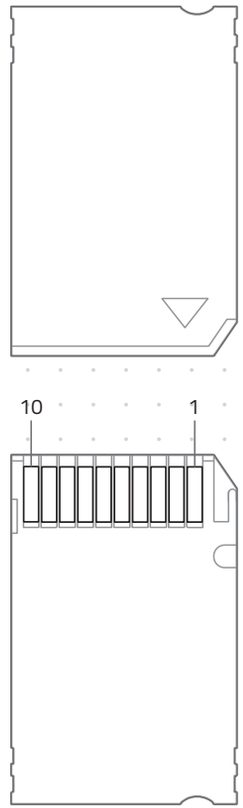






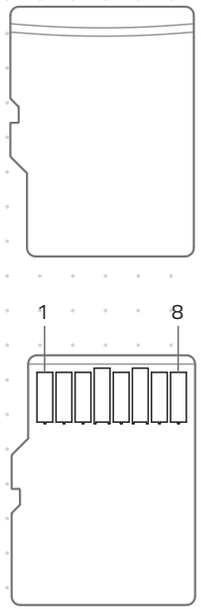
#	NAME	PIN TYPE	I/O TYPE
1	GND	-	GROUND
2	D03	I/O	I1Z, OZ3
3	D04	I/O	I1Z, OZ3
4	D05	I/O	I1Z, OZ3
5	D06	I/O	I1Z, OZ3
6	D07	I/O	I1Z, OZ3
7	-CS0	I	I3U
8	A10	I	I1Z
9	-ATA SEL	I	I3U
10	A09	I	I1Z
11	A08	I	I1Z
12	A07	I	I1Z
13	VCC	I	POWER
14	A06	I	I1Z
15	A05	I	I1Z
16	A04	I	I1Z
17	A03	I	I1Z
18	A02	I	I1Z
19	A01	I	I1Z
20	A00	I	I1Z
21	D00	I/O	I1Z, OZ3
22	D01	I/O	I1Z, OZ3
23	D02	I/O	I1Z, OZ3
24	WP	O	OT3
25	-CD2	O	GROUND

#	NAME	PIN TYPE	I/O TYPE
26	-CD1	O	GROUND
27	D11	I/O	I1Z, OZ3
28	D12	I/O	I1Z, OZ3
29	D13	I/O	I1Z, OZ3
30	D14	I/O	I1Z, OZ3
31	D15	I/O	I1Z, OZ3
32	-CE2	I	I3U
33	-VS1	O	GROUND
34	-IORD	I	I3U
35	-IOWR	I	I3U
36	-WE	I	I3U
37	READY	O	OT1
38	VCC	-	POWER
39	-CSEL	I	I2Z
40	-VS2	O	OPEN
41	RESET	I	I2Z
42	-WAIT	O	OT1
43	-INPACK	O	OT1
44	-REG	I	I3U
45	BVD2	O	OT1
46	BVD1	O	OT1
47	D08	I/O	I1Z, OZ3
48	D09	I/O	I1Z, OZ3
49	D10	I/O	I1Z, OZ3
50	GND	-	GROUND



#	NAME	NOTES	TYPE
1	VSS	GROUND	-
2	BS	BUS STATE SIGNAL	I
3	DATA1	DATA1 PARALLEL / NC SERIAL	I/O
4	SDIO/DATA0	DATA0 PARALLEL / DATA SERIAL	I/O
5	DATA2	DATA2 PARALLEL / NC SERIAL	I/O
6	INS	STICK DETECT (CONNECTED TO VSS)	O
7	DATA3	DATA3 PARALLEL / NC SERIAL	I/O
8	SCLK	CLOCK SIGNAL	I
9	VCC	POWER SUPPLY (2.7V - 3.6V)	-
10	VSS	GROUND	-

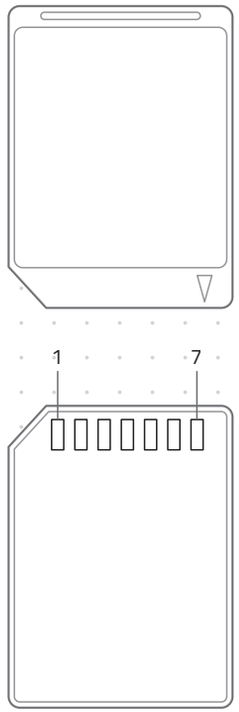
I: Input to Card, O: Output from Card, I/O: Bi-directional



SD MODE		
#	NAME	NOTES
1	DAT2	DATA LINE (BIT 2)
2	DAT3	CARD DETECT
3	CMD	COMMAND/RESPONSE
4	VDD	POWER SUPPLY (3.3V*)
5	CLK	CLOCK
6	VSS	GROUND
7	DAT0	DATA LINE (BIT 0)
8	DAT1	DATA LINE (BIT 1)

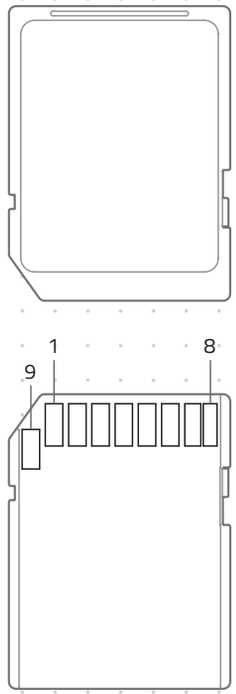
SPI MODE		
#	NAME	NOTES
1	NC	NOT CONNECTED
2	CS	CHIP SELECT
3	DI	DATA INPUT
4	VDD	POWER SUPPLY (3.3V*)
5	SCLK	SERIAL CLOCK
6	VSS	GROUND
7	DO	DATA OUT
8	RSV	RESERVED

** Some cards have an operating voltage range of 2.7V - 3.6V*



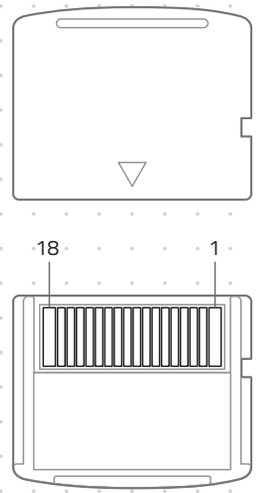
MULTIMEDIACARD MODE		
#	NAME	NOTES
1	RSV	RESERVED
2	CMD	COMMAND/RESPONSE
3	VSS1	GROUND
4	VCC	POWER SUPPLY
5	CLK	CLOCK
6	VSS2	GROUND
7	DAT	DATA LINE

SPI MODE		
#	NAME	NOTES
1	CS	CHIP SELECT
2	DI	DATA IN
3	VSS1	DATA INPUT
4	VCC	POWER SUPPLY
5	SCLK	SERIAL CLOCK
6	VSS2	GROUND
7	DO	DATA OUT



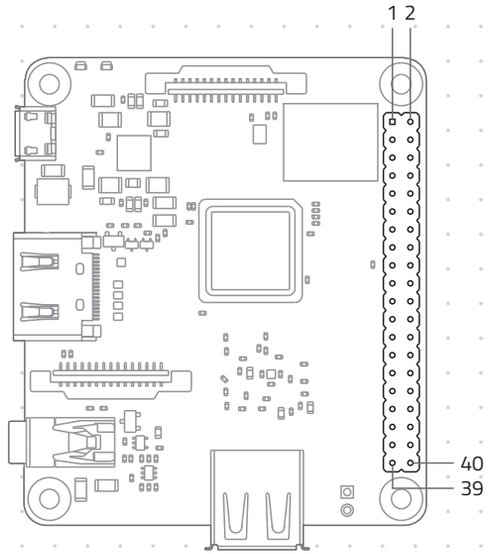
SD MODE		
#	NAME	NOTES
1	DAT3	DATA LINE (BIT 3)
2	CMD	COMMAND/RESPONSE
3	VSS1	GROUND
4	VDD	POWER SUPPLY (3.3V)
5	CLK	CLOCK
6	VSS	GROUND
7	DAT0	DATA LINE (BIT 0)
8	DAT1	DATA LINE (BIT 1)
9	DAT2	DATA LINE (BIT 2)

SPI MODE		
#	NAME	NOTES
1	CS	CHIP SELECT
2	DI	DATA IN
3	VSS1	GROUND
4	VDD	POWER SUPPLY (3.3V)
5	CLK	CLOCK
6	VSS	GROUND
7	DO	DATA OUT
8	NC	NOT CONNECTED
9	NC	NOT CONNECTED



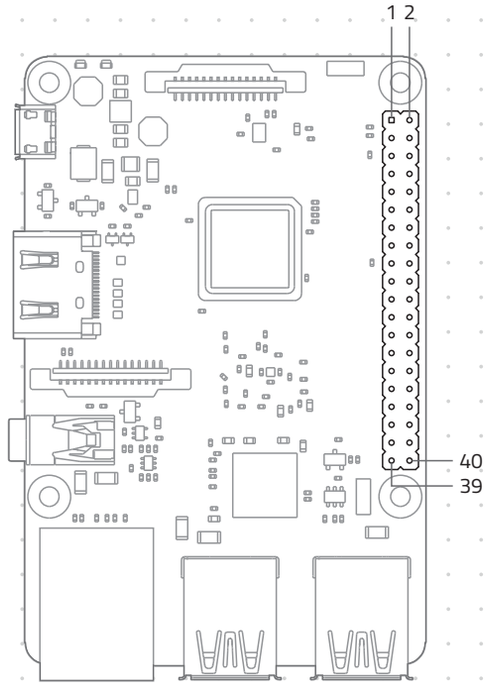
#	NAME	NOTES	TYPE	PULL UP/DOWN
1	GND	GROUND/(CARD DETECT)	(O)	-
2	R/-B	READY/BUSY	O (OD)	-
3	-RE	READ ENABLE	I	UP
4	-CE	CARD ENABLE	I	UP
5	CLE	COMMAND LATCH ENABLE	I	DOWN
6	ALE	ADDRESS LATCH ENABLE	I	DOWN
7	-WE	WRITE ENABLE	I	UP
8	-WP	WRITE PROTECT	I	DOWN
9	GND	GROUND	-	-
10	D0	DATA0	I/O	DOWN
11	D1	DATA1	I/O	DOWN
12	D2	DATA2	I/O	DOWN
13	D3	DATA3	I/O	DOWN
14	D4	DATA4	I/O	DOWN
15	D5	DATA5	I/O	DOWN
16	D6	DATA6	I/O	DOWN
17	D7	DATA7	I/O	DOWN
18	VCC	POWER SUPPLY	-	-

I: Input to Card, O: Output from Card, I/O: Bi-directional, OD: Open drain



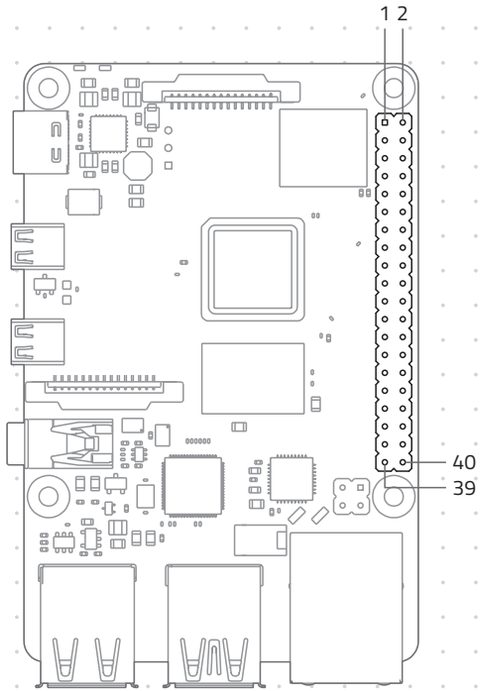
WIRING PI	MAIN FUNCTIONS	#			#	MAIN FUNCTIONS	WIRING PI
	3V3 POWER	1	□	○	2	5V POWER	
8	GPIO 2 (I2C1 SDA)	3	○	○	4	5V POWER	
9	GPIO 3 (I2C1 SCL)	5	○	○	6	GROUND	
7	GPIO 4 (GPCLK0)	7	○	○	8	GPIO 14 (UART TX)	15
	GROUND	9	○	○	10	GPIO 15 (UART RX)	16
0	GPIO 17	11	○	○	12	GPIO 18 (PCM CLK)	1
2	GPIO 27	13	○	○	14	GROUND	
3	GPIO 22	15	○	○	16	GPIO 23	4
	3V3 POWER	17	○	○	18	GPIO 24	5
12	GPIO 10 (SPI0 MOSI)	19	○	○	20	GROUND	
13	GPIO 9 (SPI0 MISO)	21	○	○	22	GPIO 25	6
14	GPIO 11 (SPI0 SCLK)	23	○	○	24	GPIO 8 (SPI0 CE0)	10
	GROUND	25	○	○	26	GPIO 7 (SPI0 CE1)	11
30	GPIO 0 (ID_SD)	27	○	○	28	GPIO 1 (ID_SC)	31
21	GPIO 5	29	○	○	30	GROUND	
22	GPIO 6	31	○	○	32	GPIO 12 (PWM0)	26
23	GPIO 13 (PWM1)	33	○	○	34	GROUND	
24	GPIO 19 (PCM FS)	35	○	○	36	GPIO 16	27
25	GPIO 26	37	○	○	38	GPIO 20 (PCM DIN)	28
	GROUND	39	○	○	40	GPIO 21 (PCM DOUT)	29

NOTE: Alternate pin functions are also available. Check the datasheet for more information.



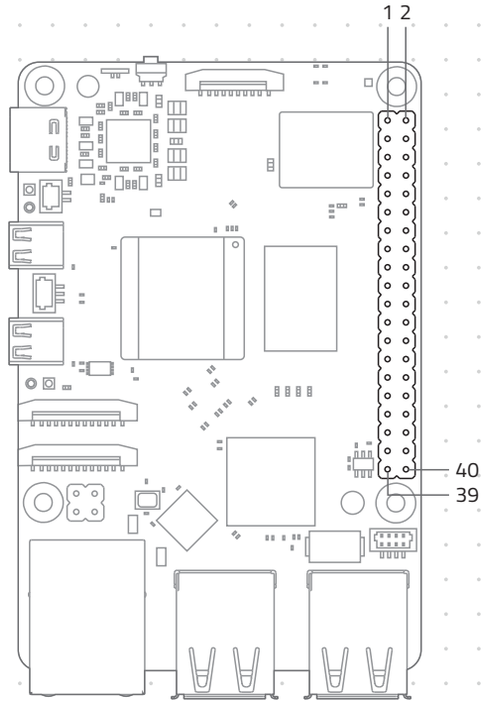
WIRING PI	MAIN FUNCTIONS	#			#	MAIN FUNCTIONS	WIRING PI
	3V3 POWER	1	□	○	2	5V POWER	
8	GPIO 2 (I2C1 SDA)	3	○	○	4	5V POWER	
9	GPIO 3 (I2C1 SCL)	5	○	○	6	GROUND	
7	GPIO 4 (GPCLK0)	7	○	○	8	GPIO 14 (UART TX)	15
	GROUND	9	○	○	10	GPIO 15 (UART RX)	16
0	GPIO 17	11	○	○	12	GPIO 18 (PCM CLK)	1
2	GPIO 27	13	○	○	14	GROUND	
3	GPIO 22	15	○	○	16	GPIO 23	4
	3V3 POWER	17	○	○	18	GPIO 24	5
12	GPIO 10 (SPI0 MOSI)	19	○	○	20	GROUND	
13	GPIO 9 (SPI0 MISO)	21	○	○	22	GPIO 25	6
14	GPIO 11 (SPI0 SCLK)	23	○	○	24	GPIO 8 (SPI0 CE0)	10
	GROUND	25	○	○	26	GPIO 7 (SPI0 CE1)	11
30	GPIO 0 (ID_SD)	27	○	○	28	GPIO 1 (ID_SC)	31
21	GPIO 5	29	○	○	30	GROUND	
22	GPIO 6	31	○	○	32	GPIO 12 (PWM0)	26
23	GPIO 13 (PWM1)	33	○	○	34	GROUND	
24	GPIO 19 (PCM FS)	35	○	○	36	GPIO 16	27
25	GPIO 26	37	○	○	38	GPIO 20 (PCM DIN)	28
	GROUND	39	○	○	40	GPIO 21 (PCM DOUT)	29

NOTE: Alternate pin functions are also available. Check the datasheet for more information.



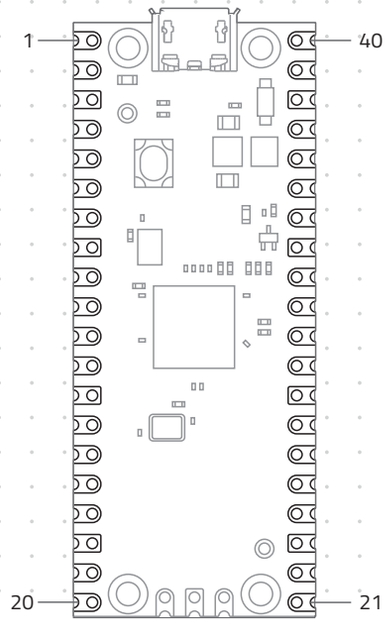
WIRING PI	MAIN FUNCTIONS	#			#	MAIN FUNCTIONS	WIRING PI
	3V3 POWER	1	□	○	2	5V POWER	
8	GPIO 2 (I2C1 SDA)	3	○	○	4	5V POWER	
9	GPIO 3 (I2C1 SCL)	5	○	○	6	GROUND	
7	GPIO 4 (GPCLK0)	7	○	○	8	GPIO 14 (UART TX)	15
	GROUND	9	○	○	10	GPIO 15 (UART RX)	16
0	GPIO 17	11	○	○	12	GPIO 18 (PCM CLK)	1
2	GPIO 27	13	○	○	14	GROUND	
3	GPIO 22	15	○	○	16	GPIO 23	4
	3V3 POWER	17	○	○	18	GPIO 24	5
12	GPIO 10 (SPI0 MOSI)	19	○	○	20	GROUND	
13	GPIO 9 (SPI0 MISO)	21	○	○	22	GPIO 25	6
14	GPIO 11 (SPI0 SCLK)	23	○	○	24	GPIO 8 (SPI0 CE0)	10
	GROUND	25	○	○	26	GPIO 7 (SPI0 CE1)	11
30	GPIO 0 (ID_SD)	27	○	○	28	GPIO 1 (ID_SC)	31
21	GPIO 5	29	○	○	30	GROUND	
22	GPIO 6	31	○	○	32	GPIO 12 (PWM0)	26
23	GPIO 13 (PWM1)	33	○	○	34	GROUND	
24	GPIO 19 (PCM FS)	35	○	○	36	GPIO 16	27
25	GPIO 26	37	○	○	38	GPIO 20 (PCM DIN)	28
	GROUND	39	○	○	40	GPIO 21 (PCM DOUT)	29

NOTE: Alternate pin functions are also available. Check the datasheet for more information.

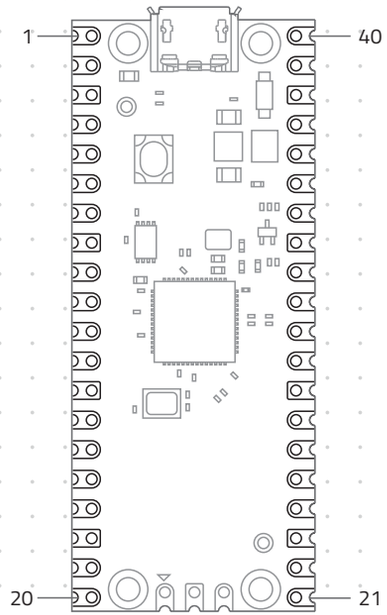


WIRING PI	MAIN FUNCTIONS	#			#	MAIN FUNCTIONS	WIRING PI
	3V3 POWER	1	□	○	2	5V POWER	
8	GPIO 2 (SDA)	3	○	○	4	5V POWER	
9	GPIO 3 (SCL)	5	○	○	6	GROUND	
7	GPIO 4 (GPCLK0)	7	○	○	8	GPIO 14 (UART TX)	15
	GROUND	9	○	○	10	GPIO 15 (UART RX)	16
0	GPIO 17	11	○	○	12	GPIO 18 (PCM CLK)	1
2	GPIO 27	13	○	○	14	GROUND	
3	GPIO 22	15	○	○	16	GPIO 23	4
	3V3 POWER	17	○	○	18	GPIO 24	5
12	GPIO 10 (SPI0 MOSI)	19	○	○	20	GROUND	
13	GPIO 9 (SPI0 MISO)	21	○	○	22	GPIO 25	6
14	GPIO 11 (SPI0 SCLK)	23	○	○	24	GPIO 8 (SPI0 CE0)	10
	GROUND	25	○	○	26	GPIO 7 (SPI0 CE1)	11
30	GPIO 0 (ID_SD)	27	○	○	28	GPIO 1 (ID_SC)	31
21	GPIO 5	29	○	○	30	GROUND	
22	GPIO 6	31	○	○	32	GPIO 12 (PWM0)	26
23	GPIO 13 (PWM1)	33	○	○	34	GROUND	
24	GPIO 19 (PCM FS)	35	○	○	36	GPIO 16	27
25	GPIO 26	37	○	○	38	GPIO 20 (PCM DIN)	28
	GROUND	39	○	○	40	GPIO 21 (PCM DOUT)	29

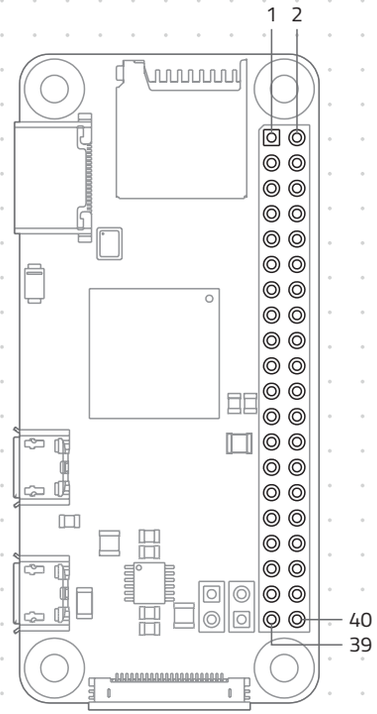
NOTE: Alternate pin functions are also available. Check the datasheet for more information.



#	MAIN	SPI	I2C	UART	#	MAIN	SPI/ADC	I2C	UART
1	GP0	SPI0 RX	I2C0 SDA	UART0 TX	21	GP16	SPI0 RX	I2C0 SDA	UART0 TX
2	GP1	SPI0 CSN	I2C0 SCL	UART0 RX	22	GP17	SPI0 CSN	I2C0 SCL	UART0 RX
3	GROUND				23	GROUND			
4	GP2	SPI0 SCK	I2C1 SDA		24	GP18	SPI0 SCK	I2C1 SDA	
5	GP3	SPI0 TX	I2C1 SCL		25	GP19	SPI0 TX	I2C1 SCL	
6	GP4	SPI0 RX	I2C0 SDA	UART1 TX	26	GP20		I2C0 SDA	
7	GP5	SPI0 CSN	I2C0 SCL	UART1 RX	27	GP21		I2C0 SCL	
8	GROUND				28	GROUND			
9	GP6	SPI0 SCK	I2C1 SDA		29	GP22			
10	GP7	SPI0 TX	I2C1 SCL		30	RUN			
11	GP8	SPI1 RX	I2C0 SDA	UART1 TX	31	GP26	ADC0	I2C1 SDA	
12	GP9	SPI1 CSN	I2C0 SCL	UART1 RX	32	GP27	ADC1	I2C1 SCL	
13	GROUND				33	GROUND	AGROUND		
14	GP10	SPI1 SCK	I2C1 SDA		34	GP28	ADC2		
15	GP11	SPI1 TX	I2C1 SCL		35		ADC_VREF		
16	GP12	SPI1 RX	I2C0 SDA	UART0 TX	36	3V3 OUT			
17	GP13	SPI1 CSN	I2C0 SCL	UART0 RX	37	3V3_EN			
18	GROUND				38	GROUND			
19	GP14	SPI1 SCK	I2C1 SDA		39	VSYS			
20	GP15	SPI1 TX	I2C1 SCL		40	VBUS			

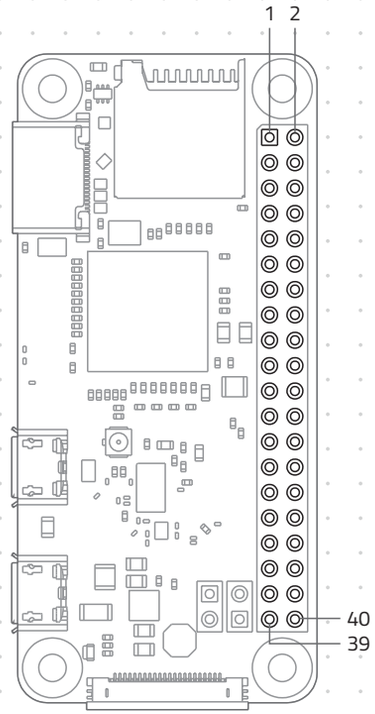


#	MAIN	SPI	I2C	UART	#	MAIN	SPI/ADC	I2C	UART
1	GP0	SPI0 RX	I2C0 SDA	UART0 TX	21	GP16	SPI0 RX	I2C0 SDA	UART0 TX
2	GP1	SPI0 CSN	I2C0 SCL	UART0 RX	22	GP17	SPI0 CSN	I2C0 SCL	UART0 RX
3	GROUND				23	GROUND			
4	GP2	SPI0 SCK	I2C1 SDA		24	GP18	SPI0 SCK	I2C1 SDA	
5	GP3	SPI0 TX	I2C1 SCL		25	GP19	SPI0 TX	I2C1 SCL	
6	GP4	SPI0 RX	I2C0 SDA	UART1 TX	26	GP20		I2C0 SDA	
7	GP5	SPI0 CSN	I2C0 SCL	UART1 RX	27	GP21		I2C0 SCL	
8	GROUND				28	GROUND			
9	GP6	SPI0 SCK	I2C1 SDA		29	GP22			
10	GP7	SPI0 TX	I2C1 SCL		30	RUN			
11	GP8	SPI1 RX	I2C0 SDA	UART1 TX	31	GP26	ADC0	I2C1 SDA	
12	GP9	SPI1 CSN	I2C0 SCL	UART1 RX	32	GP27	ADC1	I2C1 SCL	
13	GROUND				33	GROUND	AGROUND		
14	GP10	SPI1 SCK	I2C1 SDA		34	GP28	ADC2		
15	GP11	SPI1 TX	I2C1 SCL		35		ADC_VREF		
16	GP12	SPI1 RX	I2C0 SDA	UART0 TX	36	3V3 OUT			
17	GP13	SPI1 CSN	I2C0 SCL	UART0 RX	37	3V3_EN			
18	GROUND				38	GROUND			
19	GP14	SPI1 SCK	I2C1 SDA		39	VSYS			
20	GP15	SPI1 TX	I2C1 SCL		40	VBUS			



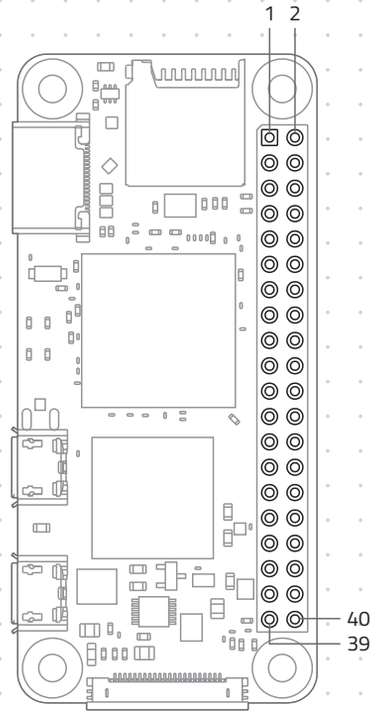
WIRING PI	MAIN FUNCTIONS	#			#	MAIN FUNCTIONS	WIRING PI
	3V3 POWER	1	□	○	2	5V POWER	
8	GPIO 2 (I2C1 SDA)	3	○	○	4	5V POWER	
9	GPIO 3 (I2C1 SCL)	5	○	○	6	GROUND	
7	GPIO 4 (GPCLK0)	7	○	○	8	GPIO 14 (UART TX)	15
	GROUND	9	○	○	10	GPIO 15 (UART RX)	16
0	GPIO 17	11	○	○	12	GPIO 18 (PCM CLK)	1
2	GPIO 27	13	○	○	14	GROUND	
3	GPIO 22	15	○	○	16	GPIO 23	4
	3V3 POWER	17	○	○	18	GPIO 24	5
12	GPIO 10 (SPI0 MOSI)	19	○	○	20	GROUND	
13	GPIO 9 (SPI0 MISO)	21	○	○	22	GPIO 25	6
14	GPIO 11 (SPI0 SCLK)	23	○	○	24	GPIO 8 (SPI0 CE0)	10
	GROUND	25	○	○	26	GPIO 7 (SPI0 CE1)	11
30	GPIO 0 (ID_SD)	27	○	○	28	GPIO 1 (ID_SC)	31
21	GPIO 5	29	○	○	30	GROUND	
22	GPIO 6	31	○	○	32	GPIO 12 (PWM0)	26
23	GPIO 13 (PWM1)	33	○	○	34	GROUND	
24	GPIO 19 (PCM FS)	35	○	○	36	GPIO 16	27
25	GPIO 26	37	○	○	38	GPIO 20 (PCM DIN)	28
	GROUND	39	○	○	40	GPIO 21 (PCM DOUT)	29

NOTE: Alternate pin functions are also available. Check the datasheet for more information.



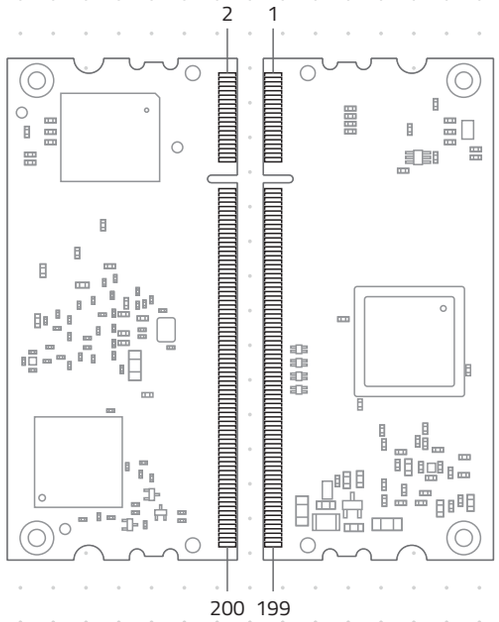
WIRING PI	MAIN FUNCTIONS	#			#	MAIN FUNCTIONS	WIRING PI
	3V3 POWER	1	□	○	2	5V POWER	
8	GPIO 2 (I2C1 SDA)	3	○	○	4	5V POWER	
9	GPIO 3 (I2C1 SCL)	5	○	○	6	GROUND	
7	GPIO 4 (GPCLK0)	7	○	○	8	GPIO 14 (UART TX)	15
	GROUND	9	○	○	10	GPIO 15 (UART RX)	16
0	GPIO 17	11	○	○	12	GPIO 18 (PCM CLK)	1
2	GPIO 27	13	○	○	14	GROUND	
3	GPIO 22	15	○	○	16	GPIO 23	4
	3V3 POWER	17	○	○	18	GPIO 24	5
12	GPIO 10 (SPI0 MOSI)	19	○	○	20	GROUND	
13	GPIO 9 (SPI0 MISO)	21	○	○	22	GPIO 25	6
14	GPIO 11 (SPI0 SCLK)	23	○	○	24	GPIO 8 (SPI0 CE0)	10
	GROUND	25	○	○	26	GPIO 7 (SPI0 CE1)	11
30	GPIO 0 (ID_SD)	27	○	○	28	GPIO 1 (ID_SC)	31
21	GPIO 5	29	○	○	30	GROUND	
22	GPIO 6	31	○	○	32	GPIO 12 (PWM0)	26
23	GPIO 13 (PWM1)	33	○	○	34	GROUND	
24	GPIO 19 (PCM FS)	35	○	○	36	GPIO 16	27
25	GPIO 26	37	○	○	38	GPIO 20 (PCM DIN)	28
	GROUND	39	○	○	40	GPIO 21 (PCM DOUT)	29

NOTE: Alternate pin functions are also available. Check the datasheet for more information.

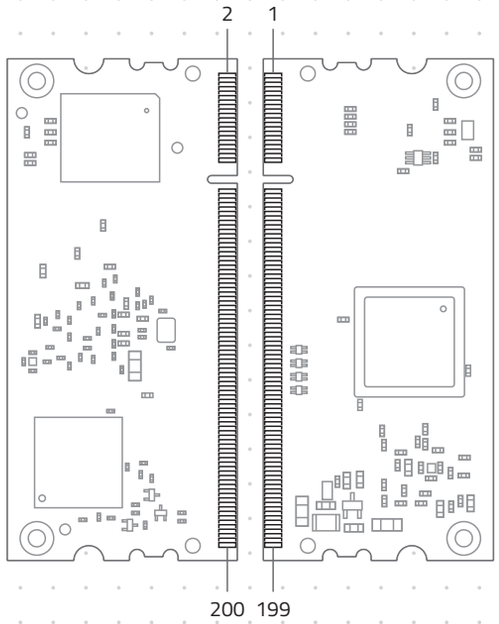


WIRING PI	MAIN FUNCTIONS	#			#	MAIN FUNCTIONS	WIRING PI
	3V3 POWER	1	□	○	2	5V POWER	
8	GPIO 2 (I2C1 SDA)	3	○	○	4	5V POWER	
9	GPIO 3 (I2C1 SCL)	5	○	○	6	GROUND	
7	GPIO 4 (GPCLK0)	7	○	○	8	GPIO 14 (UART TX)	15
	GROUND	9	○	○	10	GPIO 15 (UART RX)	16
0	GPIO 17	11	○	○	12	GPIO 18 (PCM CLK)	1
2	GPIO 27	13	○	○	14	GROUND	
3	GPIO 22	15	○	○	16	GPIO 23	4
	3V3 POWER	17	○	○	18	GPIO 24	5
12	GPIO 10 (SPI0 MOSI)	19	○	○	20	GROUND	
13	GPIO 9 (SPI0 MISO)	21	○	○	22	GPIO 25	6
14	GPIO 11 (SPI0 SCLK)	23	○	○	24	GPIO 8 (SPI0 CE0)	10
	GROUND	25	○	○	26	GPIO 7 (SPI0 CE1)	11
30	GPIO 0 (ID_SD)	27	○	○	28	GPIO 1 (ID_SC)	31
21	GPIO 5	29	○	○	30	GROUND	
22	GPIO 6	31	○	○	32	GPIO 12 (PWM0)	26
23	GPIO 13 (PWM1)	33	○	○	34	GROUND	
24	GPIO 19 (PCM FS)	35	○	○	36	GPIO 16	27
25	GPIO 26	37	○	○	38	GPIO 20 (PCM DIN)	28
	GROUND	39	○	○	40	GPIO 21 (PCM DOUT)	29

NOTE: Alternate pin functions are also available. Check the datasheet for more information.

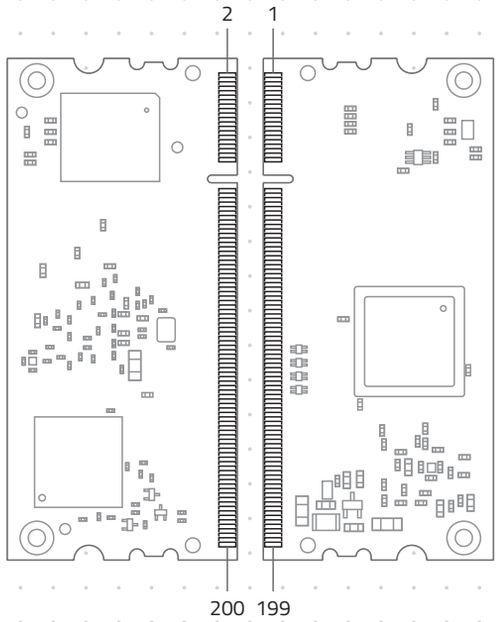


#	NAME	#	NAME	#	NAME	#	NAME
1	GND	26	GND	51	GPIO14	76	GPIO42
2	EMMC_DISABLE_N	27	GPIO8	52	GPIO34	77	GPIO23
3	GPIO0	28	GPIO28	53	GPIO15	78	GPIO43
4	NC	29	GPIO9	54	GPIO35	79	GND
5	GPIO1	30	GPIO29	55	GND	80	GND
6	NC	31	GND	56	GND	81	GPIO24
7	GND	32	GND	57	GPIO16	82	GPIO44
8	GND	33	GPIO10	58	GPIO36	83	GPIO25
9	GPIO2	34	GPIO30	59	GPIO17	84	GPIO45
10	NC	35	GPIO11	60	GPIO37	85	GND
11	GPIO3	36	GPIO31	61	GND	86	GND
12	NC	37	GND	62	GND	87	GPIO26
13	GND	38	GND	63	GPIO18	88	HDMI_HPD_N_1V8
14	GND	39	GPIO0-27_VDD	64	GPIO38	89	GPIO27
15	GPIO4	40	GPIO0-27_VDD	65	GPIO19	90	EMMC_EN_N_1V8
16	NC	41	GPIO28-45_VDD	66	GPIO39	91	GND
17	GPIO5	42	GPIO28-45_VDD	67	GND	92	GND
18	NC	43	GND	68	GND	93	DSI0_DN1
19	GND	44	GND	69	GPIO20	94	DSI1_DP0
20	GND	45	GPIO12	70	GPIO40	95	DSI0_DP1
21	GPIO6	46	GPIO32	71	GPIO21	96	DSI1_DN0
22	NC	47	GPIO13	72	GPIO41	97	GND
23	GPIO7	48	GPIO33	73	GND	98	GND
24	NC	49	GND	74	GND	99	DSI0_DN0
25	GND	50	GND	75	GPIO22	100	DSI1_CP

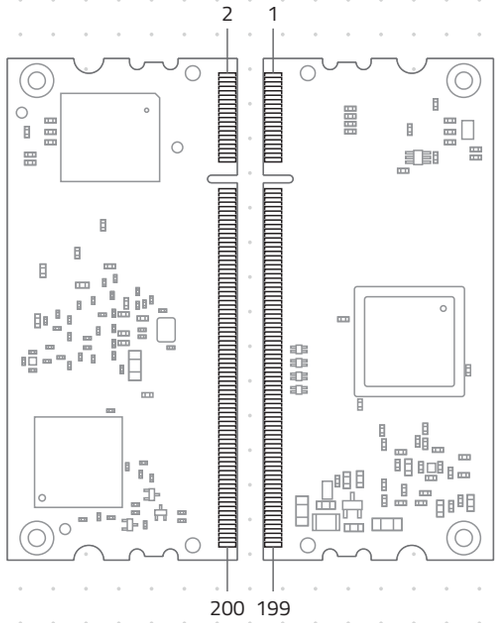


#	NAME	#	NAME	#	NAME	#	NAME
101	DSI0_DP0	126	NC	151	GND	176	VC_TMS
102	DSI1_CN	127	GND	152	GND	177	RUN
103	GND	128	NC	153	CAM1_DP1	178	VC_TDO
104	GND	129	HDMI_D2_N	154	NC	179	VDD_CORE*
105	DSI0_CN	130	NC	155	CAM1_DN1	180	VC_TCK
106	DSI1_DP3	131	HDMI_D2_P	156	NC	181	GND
107	DSI0_CP	132	NC	157	GND	182	GND
108	DSI1_DN3	133	GND	158	NC	183	1V8
109	GND	134	GND	159	CAM1_DP0	184	1V8
110	GND	135	CAM1_DP3	160	NC	185	1V8
111	HDMI_CLK_N	136	CAM0_DP0	161	CAM1_DN0	186	1V8
112	DSI1_DP2	137	CAM1_DN3	162	NC	187	GND
113	HDMI_CLK_P	138	CAM0_DN0	163	GND	188	GND
114	DSI1_DN2	139	GND	164	GND	189	VDAC
115	GND	140	GND	165	USB_DP	190	VDAC
116	GND	141	CAM1_DP2	166	TVDAC	191	3V3
117	HDMI_D0_N	142	CAM0_CP	167	USB_DM	192	3V3
118	DSI1_DP1	143	CAM1_DN2	168	USB_OTGID	193	3V3
119	HDMI_D0_P	144	CAM0_CN	169	GND	194	3V3
120	DSI1_DN1	145	GND	170	GND	195	GND
121	GND	146	GND	171	HDMI_CEC	196	GND
122	GND	47	CAM1_CP	172	VC_TRST_N	197	VBAT
123	HDMI_D1_N	148	CAM0_DP1	173	HDMI_SDA	198	VBAT
124	NC	149	CAM1_CN	174	VC_TDI	199	VBAT
125	HDMI_D1_P	150	CAM0_DN1	175	HDMI_SCL	200	VBAT

** Do not connect*

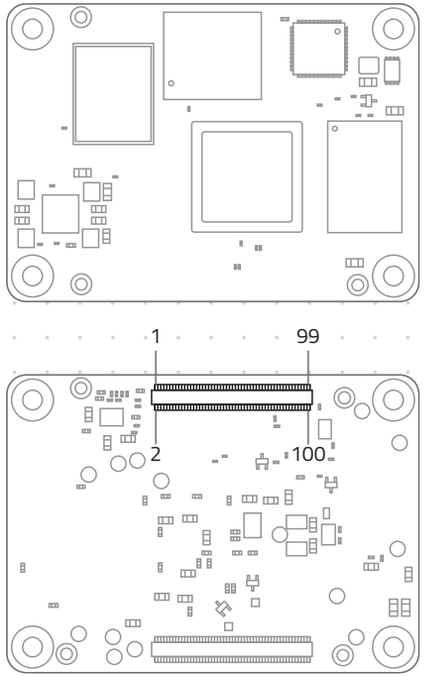


#	NAME	#	NAME	#	NAME	#	NAME
1	GND	26	GND	51	GPIO14	76	GPIO42
2	EMMC_DISABLE_N	27	GPIO8	52	GPIO34	77	GPIO23
3	GPIO0	28	GPIO28	53	GPIO15	78	GPIO43
4	SDX_VDD	29	GPIO9	54	GPIO35	79	GND
5	GPIO1	30	GPIO29	55	GND	80	GND
6	SDX_VDD	31	GND	56	GND	81	GPIO24
7	GND	32	GND	57	GPIO16	82	GPIO44
8	GND	33	GPIO10	58	GPIO36	83	GPIO25
9	GPIO2	34	GPIO30	59	GPIO17	84	GPIO45
10	SDX_CLK	35	GPIO11	60	GPIO37	85	GND
11	GPIO3	36	GPIO31	61	GND	86	GND
12	SDX_CMD	37	GND	62	GND	87	GPIO26
13	GND	38	GND	63	GPIO18	88	HDMI_HPD_N_1V8
14	GND	39	GPIO0-27_VDD	64	GPIO38	89	GPIO27
15	GPIO4	40	GPIO0-27_VDD	65	GPIO19	90	EMMC_EN_N_1V8
16	SDX_D0	41	GPIO28-45_VDD	66	GPIO39	91	GND
17	GPIO5	42	GPIO28-45_VDD	67	GND	92	GND
18	SDX_D1	43	GND	68	GND	93	DSI0_DN1
19	GND	44	GND	69	GPIO20	94	DSI1_DP0
20	GND	45	GPIO12	70	GPIO40	95	DSI0_DP1
21	GPIO6	46	GPIO32	71	GPIO21	96	DSI1_DN0
22	SDX_D2	47	GPIO13	72	GPIO41	97	GND
23	GPIO7	48	GPIO33	73	GND	98	GND
24	SDX_D3	49	GND	74	GND	99	DSI0_DN0
25	GND	50	GND	75	GPIO22	100	DSI1_CP

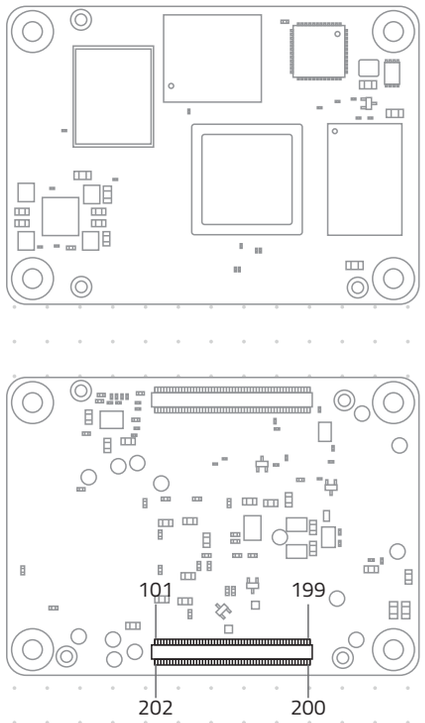


#	NAME	#	NAME	#	NAME	#	NAME
101	DSI0_DP0	126	NC	151	GND	176	VC_TMS
102	DSI1_CN	127	GND	152	GND	177	RUN
103	GND	128	NC	153	CAM1_DP1	178	VC_TDO
104	GND	129	HDMI_D2_N	154	NC	179	VDD_CORE*
105	DSI0_CN	130	NC	155	CAM1_DN1	180	VC_TCK
106	DSI1_DP3	131	HDMI_D2_P	156	NC	181	GND
107	DSI0_CP	132	NC	157	GND	182	GND
108	DSI1_DN3	133	GND	158	NC	183	1V8
109	GND	134	GND	159	CAM1_DP0	184	1V8
110	GND	135	CAM1_DP3	160	NC	185	1V8
111	HDMI_CLK_N	136	CAM0_DP0	161	CAM1_DN0	186	1V8
112	DSI1_DP2	137	CAM1_DN3	162	NC	187	GND
113	HDMI_CLK_P	138	CAM0_DN0	163	GND	188	GND
114	DSI1_DN2	139	GND	164	GND	189	VDAC
115	GND	140	GND	165	USB_DP	190	VDAC
116	GND	141	CAM1_DP2	166	TVDAC	191	3V3
117	HDMI_D0_N	142	CAM0_CP	167	USB_DM	192	3V3
118	DSI1_DP1	143	CAM1_DN2	168	USB_OTGID	193	3V3
119	HDMI_D0_P	144	CAM0_CN	169	GND	194	3V3
120	DSI1_DN1	145	GND	170	GND	195	GND
121	GND	146	GND	171	HDMI_CEC	196	GND
122	GND	147	CAM1_CP	172	VC_TRST_N	197	VBAT
123	HDMI_D1_N	148	CAM0_DP1	173	HDMI_SDA	198	VBAT
124	NC	149	CAM1_CN	174	VC_TDI	199	VBAT
125	HDMI_D1_P	150	CAM0_DN1	175	HDMI_SCL	200	VBAT

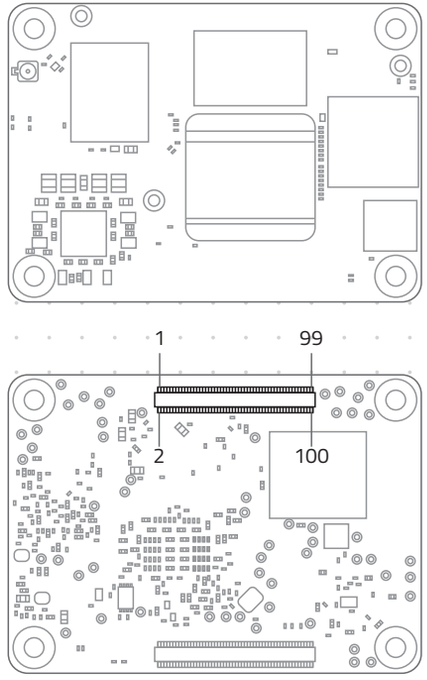
** Do not connect*



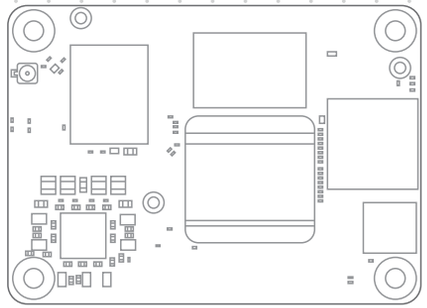
#	NAME	#	NAME	#	NAME	#	NAME
1	GND	26	GPIO19	51	GPIO15	76	RESERVED
2	GND	27	GPIO20	52	GND	77	+5V (INPUT)
3	ETHERNET_PAIR3_P	28	GPIO13	53	GND	78	GPIO_VREF
4	ETHERNET_PAIR1_P	29	GPIO16	54	GPIO4	79	+5V (INPUT)
5	ETHERNET_PAIR3_N	30	GPIO6	55	GPIO14	80	SCL0
6	ETHERNET_PAIR1_N	31	GPIO12	56	GPIO3	81	+5V (INPUT)
7	GND	32	GND	57	SD_CLK	82	SDA0
8	GND	33	GND	58	GPIO2	83	+5V (INPUT)
9	ETHERNET_PAIR2_N	34	GPIO5	59	GND	84	CM4_3.3V (OUTPUT)
10	ETHERNET_PAIR0_N	35	ID_SC	60	GND	85	+5V (INPUT)
11	ETHERNET_PAIR2_P	36	ID_SD	61	SD_DAT3	86	CM4_3.3V (OUTPUT)
12	ETHERNET_PAIR0_P	37	GPIO7	62	SD_CMD	87	+5V (INPUT)
13	GND	38	GPIO11	63	SD_DAT0	88	CM4_1.8V (OUTPUT)
14	GND	39	GPIO8	64	SD_DAT5	89	WL_NDISABLE
15	ETHERNET_NLED3	40	GPIO9	65	GND	90	CM4_1.8V (OUTPUT)
16	ETHERNET_SYNC_IN	41	GPIO25	66	GND	91	BT_NDISABLE
17	ETHERNET_NLED2	42	GND	67	SD_DAT1	92	RUN_PG
18	ETHERNET_SYNC_OUT	43	GND	68	SD_DAT4	93	NRPIBOOT
19	ETHERNET_NLED1	44	GPIO10	69	SD_DAT2	94	ANALOGIP1
20	EEPROM_NWP	45	GPIO24	70	SD_DAT7	95	PI_LED_NPWR
21	PI_NLED_ACTIVITY	46	GPIO22	71	GND	96	ANALOGIP0
22	GND	47	GPIO23	72	SD_DAT6	97	CAMERA_GPIO
23	GND	48	GPIO27	73	SD_VDD_OVERRIDE	98	GND
24	GPIO26	49	GND	74	GND	99	GLOBAL_EN
25	GPIO21	50	GPIO17	75	SD_PWR_ON	100	NEXTRST

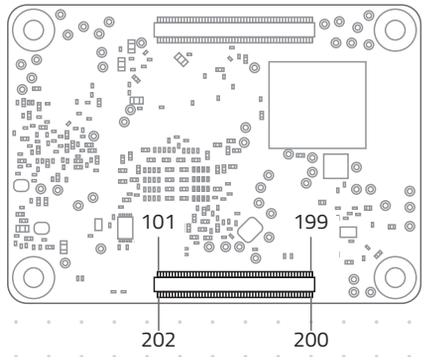


#	NAME	#	NAME	#	NAME	#	NAME
101	USB_OTG_ID	126	GND	151	HDMI0_CEC	176	HDMI0_TX1_P
102	PCIE_CLK_NREQ	127	CAM1_C_N	152	HDMI1_TX1_P	177	DSI1_D0_P
103	USB_N	128	CAM0_D0_N	153	HDMI0_HOTPLUG	178	HDMI0_TX1_N
104	RESERVED	129	CAM1_C_P	154	HDMI1_TX1_N	179	GND
105	USB_P	130	CAM0_D0_P	155	GND	180	GND
106	RESERVED	131	GND	156	GND	181	DSI1_D1_N
107	GND	132	GND	157	DSI0_D0_N	182	HDMI0_TX0_P
108	GND	133	CAM1_D2_N	158	HDMI1_TX0_P	183	DSI_D1_P
109	PCIE_NRST	134	CAM0_D1_N	159	DSI0_D0_P	184	HDMI0_TX0_N
110	PCIE_CLK_P	135	CAM1_D2_P	160	HDMI1_TX0_N	185	GND
111	VDAC_COMP	136	CAM0_D1_P	161	GND	186	GND
112	PCIE_CLK_N	137	GND	162	GND	187	DSI1_C_N
113	GND	138	GND	163	DSI0_D1_N	188	HDMI0_CLK_P
114	GND	139	CAM1_D3_N	164	HDMI1_CLK_P	189	DSI1_C_P
115	CAM1_D0_N	140	CAM0_C_N	165	DSI0_D1_P	190	HDMI0_CLK_N
116	PCIE_RX_P	141	CAM1_D3_P	166	HDMI1_CLK_N	191	GND
117	CAM1_D0_P	142	CAM0_C_P	167	GND	192	GND
118	PCIE_RX_N	143	HDMI1_HOTPLUT	168	GND	193	DSI1_D2_N
119	GND	144	GND	169	DSI0_C_N	194	DSI1_D3_N
120	GND	145	HDMI1_SDA	170	HDMI0_TX2_P	195	DSI1_D2_P
121	CAM1_D1_N	146	HDMI1_TX2_P	171	DSI0_C_P	196	DSI1_D3_P
122	PCIE_TX_P	147	HDMI1_SCL	172	HDMI0_TX2_N	197	GND
123	CAM1_D1_P	148	HDMI1_TX2_N	173	GND	198	GND
124	PCIE_TX_N	149	HDMI1_CEC	174	GND	199	HDMI0_SDA
125	GND	150	GND	175	DSI1_D0_N	200	HDMI0_SCL

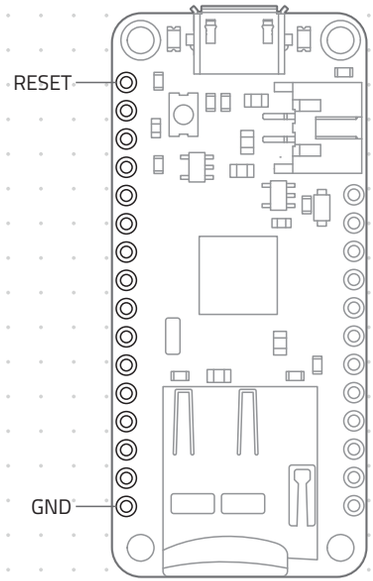


#	NAME	#	NAME	#	NAME	#	NAME
1	GND	26	GPIO19	51	GPIO15	76	VBAT
2	GND	27	GPIO20	52	GND	77	+5V (INPUT)
3	ETHERNET_PAIR3_P	28	GPIO13	53	GND	78	GPIO_VREF
4	ETHERNET_PAIR1_P	29	GPIO16	54	GPIO4	79	+5V (INPUT)
5	ETHERNET_PAIR3_N	30	GPIO6	55	GPIO14	80	SCL0
6	ETHERNET_PAIR1_N	31	GPIO12	56	GPIO3	81	+5V (INPUT)
7	GND	32	GND	57	SD_CLK	82	SDA0
8	GND	33	GND	58	GPIO2	83	+5V (INPUT)
9	ETHERNET_PAIR2_N	34	GPIO5	59	GND	84	CM5_3.3V (OUTPUT)
10	ETHERNET_PAIR0_N	35	ID_SC	60	GND	85	+5V (INPUT)
11	ETHERNET_PAIR2_P	36	ID_SD	61	SD_DAT3	86	CM5_3.3V (OUTPUT)
12	ETHERNET_PAIR0_P	37	GPIO7	62	SD_CMD	87	+5V (INPUT)
13	GND	38	GPIO11	63	SD_DAT0	88	CM5_1.8V (OUTPUT)
14	GND	39	GPIO8	64	SD_DAT5	89	WL_NDISABLE
15	ETHERNET_NLED3	40	GPIO9	65	GND	90	CM5_1.8V (OUTPUT)
16	FAN_TACHO	41	GPIO25	66	GND	91	BT_NDISABLE
17	ETHERNET_NLED2	42	GND	67	SD_DAT1	92	PWR_BUTTON
18	ETHERNET_SYNC_OUT	43	GND	68	SD_DAT4	93	NRPIBOOT
19	FAN_PWM	44	GPIO10	69	SD_DAT2	94	CC1
20	EEPROM_NWP	45	GPIO24	70	SD_DAT7	95	LED_NPWR
21	LED_NACT	46	GPIO22	71	GND	96	CC2
22	GND	47	GPIO23	72	SD_DAT6	97	CAM_GPIO0
23	GND	48	GPIO27	73	SD_VDD_OVERRIDE	98	GND
24	GPIO26	49	GPIO18	74	GND	99	PMIC_ENABLE
25	GPIO21	50	GPIO17	75	SD_PWR_ON	100	CAM_GPIO1



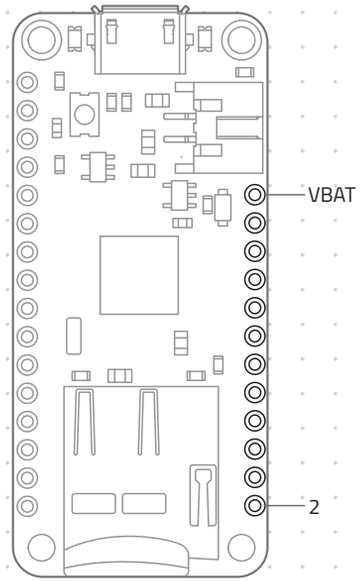


#	NAME	#	NAME	#	NAME	#	NAME
101	USB_OTG_ID	126	GND	151	HDMI0_CEC	176	HDMI0_TX1_P
102	PCIE_CLK_NREQ	127	MIPI0_C_N	152	HDMI1_TX1_P	177	MIPI1_D0_P
103	USB_N	128	USB3-0-RX_N	153	HDMI0_HOTPLUG	178	HDMI0_TX1_N
104	PCIE_NWAKE	129	MIPI0_C_P	154	HDMI1_TX1_N	179	GND
105	USB_P	130	USB3-0-RX_P	155	GND	180	GND
106	PCIE_PWR_EN	131	GND	156	GND	181	MIPI1_D1_N
107	GND	132	GND	157	USB3-1-RX_N	182	HDMI0_TX0_P
108	GND	133	MIPI0_D2_N	158	HDMI1_TX0_P	183	MIPI1_D1_P
109	PCIE_NRST	134	USB3-0-DP	159	USB3-1-RX_P	184	HDMI0_TX0_N
110	PCIE_CLK_P	135	MIPI0_D2_P	160	HDMI1_TX0_N	185	GND
111	VBUS_EN	136	USB3-0-DM	161	GND	186	GND
112	PCIE_CLK_N	137	GND	162	GND	187	MIPI1_C_N
113	GND	138	GND	163	USB3-1-DP	188	HDMI0_CLK_P
114	GND	139	MIPI0_D3_N	164	HDMI1_CLK_P	189	MIPI1_C_P
115	CAM1_D0_N	140	USB3-0-TX_N	165	USB3-1-DM	190	HDMI0_CLK_N
116	PCIE_RX_P	141	MIPI0_D3_P	166	HDMI1_CLK_N	191	GND
117	CAM1_D0_P	142	USB3-0-TX_P	167	GND	192	GND
118	PCIE_RX_N	143	HDMI1_HOTPLUG	168	GND	193	MIPI1_D2_N
119	GND	144	GND	169	USB3-1-TX_N	194	MIPI1_D3_N
120	GND	145	HDMI1_SDA	170	HDMI0_TX2_P	195	MIPI1_D2_P
121	MIPI0_D1_N	146	HDMI1_TX2_P	171	USB3-1-TX_P	196	MIPI1_D3_P
122	PCIE_TX_P	147	HDMI1_SCL	172	HDMI0_TX2_N	197	GND
123	MIPI0_D1_P	148	HDMI1_TX2_N	173	GND	198	GND
124	PCIE_TX_N	149	HDMI1_CEC	174	GND	199	HDMI0_SDA
125	GND	150	GND	175	MIPI1_D0_N	200	HDMI0_SCL



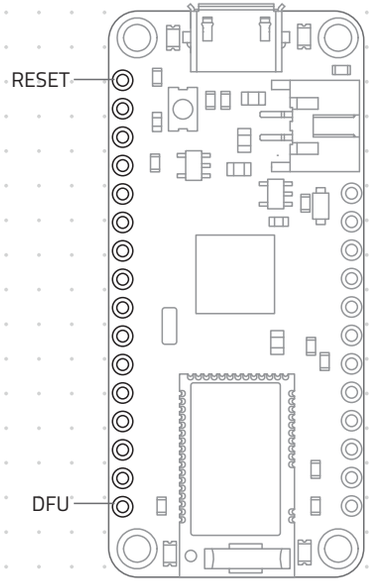
NAME	PHYSICAL	PORT	SERIAL	ANALOG	INTERRUPT	IDE	SD CARD
RESET	13						
3.3V							
AREF*	42						
GND							
A0	36	PF7	TDI	ADC7		18 / A0	
A1	37	PF6	TDO	ADC6		19 / A1	
A2	38	PF5	TMS	ADC5		20 / A2	
A3	39	PF4	TCK	ADC4		21 / A3	
A4	40	PF1		ADC1		22 / A4	
A5	41	PF0		ADC0		23 / A5	
SCK	9	PB1	SCLK		PCINT1	15	YES**
MOSI	10	PB2	MOSI/PDI		PCINT2	16	YES**
MISO	11	PB3	MISO/PDO		PCINT3	14	YES**
RX0	20	PD2	RXD1		INT2	0	
TX1	21	PD3	TXD1		INT3	1	
GND							

Power: The total current of each port power group should not exceed 100mA. Absolute max per pin 20mA, 10mA recommended. Absolute max 200mA for the entire package.
**AREF can't go higher than 3.3V. **Pins also used by the SD Card. Refer to the datasheet for more information.*



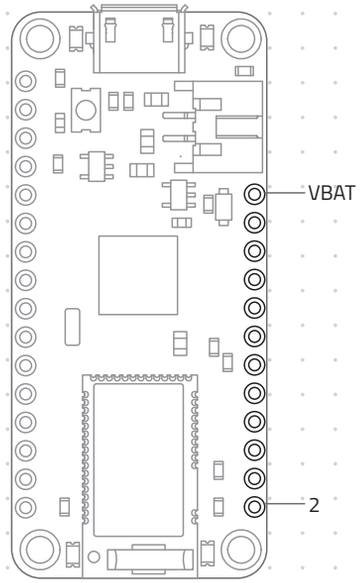
NAME	PHYSICAL	PORT	SERIAL	ANALOG	INTERRUPT	IDE	PIN FUNCTION
VBAT*							
EN							
VBUS**							
13	32	PC7				13	CKL0 / OC4A / ICP3
12	26	PD6		ADC9		12 / A11	T1 / OC4D
11	12	PB7	RTS		PCINT7	11	OC1C / OC0A
10	30	PB6		ADC13	PCINT6	10 / A10	OC1B / OC4B
9	29	PB5		ADC12	PCINT5	9 / A9	OC1A / OC4B
6	27	PD7		ADC10		6 / A7	T0 / OC4D
5	31	PC6				5	OC3A / OC4A
3	18	PD0	SCL		INT0	3	OC0B
2	19	PD1	SDA		INT1	2	

*Power: *VBAT is the positive voltage from JST battery jack. **VBUS connected to 5V USB port. Absolute max 500mA.*
The total current of each port power group should not exceed 100mA. Absolute max per pin 20mA, 10mA recommended.
Absolute max 200mA for the entire package. 3V3 output from regulator max 400mA.



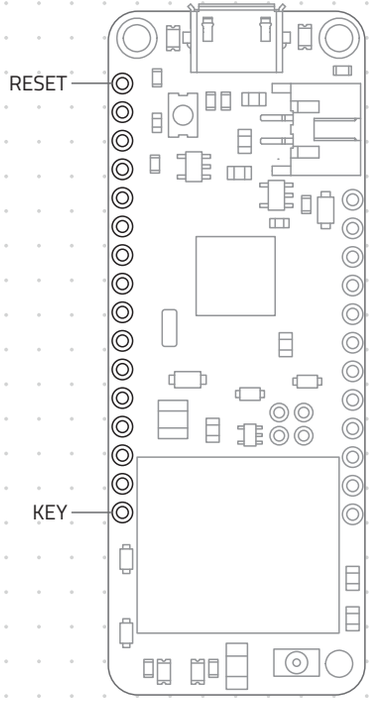
NAME	PHYSICAL	PORT	SERIAL	ANALOG	INTERRUPT	IDE	BLE
RESET	13						
3.3V							
AREF*	42						
GND							
A0	36	PF7	TDI	ADC7		18 / A0	
A1	37	PF6	TDO	ADC6		19 / A1	
A2	38	PF5	TMS	ADC5		20 / A2	
A3	39	PF4	TCK	ADC4		21 / A3	
A4	40	PF1		ADC1		22 / A4	
A5	41	PF0		ADC0		23 / A5	
SCK	9	PB1	SCLK		PCINT1	15	YES**
MOSI	10	PB2	MOSI/PDI		PCINT2	16	YES**
MISO	11	PB3	MISO/PDO		PCINT3	14	YES**
RX0	20	PD2	RXD1		INT2	0	
TX1	21	PD3	TXD1		INT3	1	
DFU**							

Power: The total current of each port power group should not exceed 100mA. Absolute max per pin 20mA, 10mA recommended. Absolute max 200mA for the entire package.
**AREF can't go higher than 3.3V. **Used for BLE firmware update. Usually keep it disconnected. ***Pins also used by the BLE module. For more information refer to the datasheet.*



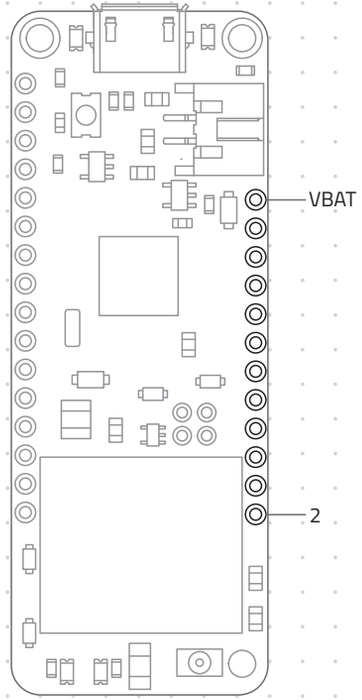
NAME	PHYSICAL	PORT	SERIAL	ANALOG	INTERRUPT	IDE	PIN FUNCTION
VBAT*							
EN							
VBUS**							
13	32	PC7				13	CKL0 / OC4A / ICP3
12	26	PD6		ADC9		12 / A11	T1 / OC4D
11	12	PB7	RTS		PCINT7	11	OC1C / OC0A
10	30	PB6		ADC13	PCINT6	10 / A10	OC1B / OC4B
9	29	PB5		ADC12	PCINT5	9 / A9	OC1A / OC4B
6	27	PD7		ADC10		6 / A7	T0 / OC4D
5	31	PC6				5	OC3A / OC4A
3	18	PD0	SCL		INT0	3	OC0B
2	19	PD1	SDA		INT1	2	

*Power: *VBAT is the positive voltage from JST battery jack. **VBUS connected to 5V USB port. Absolute max 500mA.*
The total current of each port power group should not exceed 100mA. Absolute max per pin 20mA, 10mA recommended. Absolute max 200mA for the entire package. 3V3 output from regulator max 400mA.



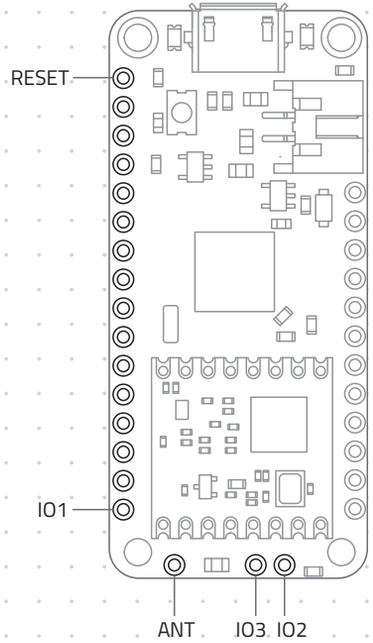
NAME	PHYSICAL	PORT	SERIAL	ANALOG	INTERRUPT	IDE
RESET	13					
3.3V						
AREF*	42					
GND						
A0	36	PF7	TDI	ADC7		18 / A0
A1	37	PF6	TDO	ADC6		19 / A1
A2	38	PF5	TMS	ADC5		20 / A2
A3	39	PF4	TCK	ADC4		21 / A3
A4	40	PF1		ADC1		22 / A4
A5	41	PF0		ADC0		23 / A5
SCK	9	PB1	SCLK		PCINT1	15
MOSI	10	PB2	MOSI/PDI		PCINT2	16
MISO	11	PB3	MISO/PDO		PCINT3	14
RX0	20	PD2	RXD1		INT2	0
TX1	21	PD3	TXD1		INT3	1
KEY**						

Power: The total current of each port power group should not exceed 100mA. Absolute max per pin 20mA, 10mA recommended. Absolute max 200mA for the entire package.
**AREF can't go higher than 3.3V. **Manual module power control (cut the trace on bottom before).*



NAME	PHYSICAL	PORT	SERIAL	ANALOG	INTERRUPT	IDE	PIN FUNCTION
VBAT*							
EN							
VBUS**							
13	32	PC7				13	CKL0 / OC4A / ICP3
12	26	PD6		ADC9		12 / A11	T1 / OC4D
11	12	PB7	RTS		PCINT7	11	OC1C / OC0A
10	30	PB6		ADC13	PCINT6	10 / A10	OC1B / OC4B
9	29	PB5		ADC12	PCINT5	9 / A9	OC1A / OC4B
6	27	PD7		ADC10		6 / A7	T0 / OC4D
5	31	PC6				5	OC3A / OC4A
3	18	PD0	SCL		INT0	3	OC0B
2	19	PD1	SDA		INT1	2	

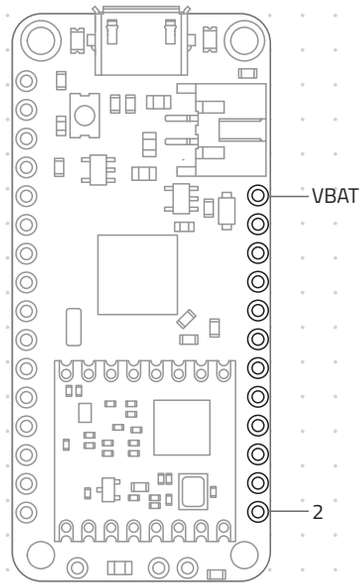
*Power: *VBAT is the positive voltage from JST battery jack. **VBUS connected to 5V USB port. Absolute max 500mA.*
The total current of each port power group should not exceed 100mA. Absolute max per pin 20mA, 10mA recommended. Absolute max 200mA for the entire package. 3V3 output from regulator max 400mA.



NAME	PHYSICAL	PORT	SERIAL	ANALOG	INTERRUPT	IDE	RFM RADIO
RESET	13						
3.3V							
AREF*	42						
GND							
A0	36	PF7	TDI	ADC7		18 / A0	
A1	37	PF6	TDO	ADC6		19 / A1	
A2	38	PF5	TMS	ADC5		20 / A2	
A3	39	PF4	TCK	ADC4		21 / A3	
A4	40	PF1		ADC1		22 / A4	
A5	41	PF0		ADC0		23 / A5	
SCK	9	PB1	SCLK		PCINT1	15	YES**
MOSI	10	PB2	MOSI/PDI		PCINT2	16	YES**
MISO	11	PB3	MISO/PDO		PCINT3	14	YES**
RX0	20	PD2	RXD1		INT2	0	
TX1	21	PD3	TXD1		INT3	1	
IO1							

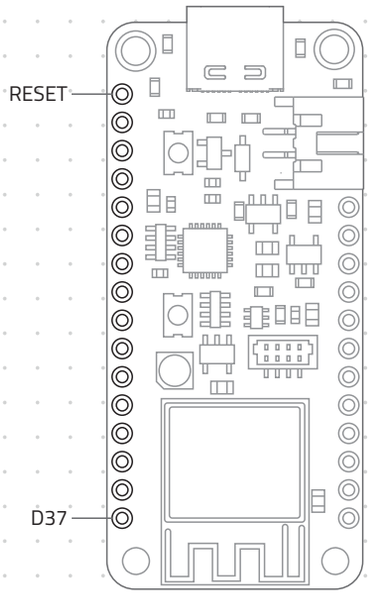
NAME	PHYSICAL	PORT	SERIAL	ANALOG	INTERRUPT	IDE	RFM RADIO
ANT							
IO3							
IO2							

Power: The total current of each port power group should not exceed 100mA. Absolute max per pin 20mA, 10mA recommended. Absolute max 200mA for the entire package.
**AREF can't go higher than 3.3V. **These pins are also used by the radio module. Refer to the datasheet for more information.*

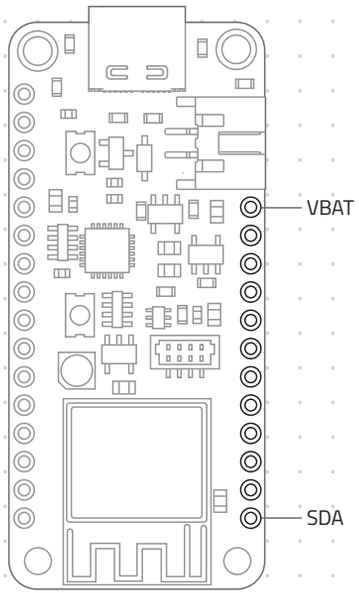


NAME	PHYSICAL	PORT	SERIAL	ANALOG	INTERRUPT	IDE	PIN FUNCTION
VBAT*							
EN							
VBUS**							
13	32	PC7				13	CKLO / OC4A / ICP3
12	26	PD6		ADC9		12 / A11	T1 / OC4D
11	12	PB7	RTS		PCINT7	11	OC1C / OC0A
10	30	PB6		ADC13	PCINT6	10 / A10	OC1B / OC4B
9	29	PB5		ADC12	PCINT5	9 / A9	OC1A / OC4B
6	27	PD7		ADC10		6 / A7	T0 / OC4D
5	31	PC6				5	OC3A / OC4A
3	18	PD0	SCL		INT0	3	OC0B
2	19	PD1	SDA		INT1	2	

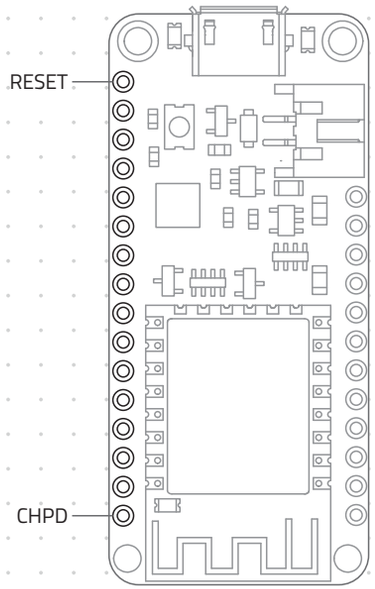
Power: The total current of each port power group should not exceed 100mA. Absolute max per pin 20mA, 10mA recommended. Absolute max 200mA for the entire package. 3V3 output from regulator max 400mA.
**VBAT is the positive voltage from JST battery jack. **VBUS connected to 5V USB port. Absolute max 500mA.*



NAME	GPIO	ADC	HS/QSPI	SDMMC	TOUCH	RTC	UART
RESET							
3.3V							
NC							
GND							
A0	GPIO26	ADC2_CH9				RTC7	
A1	GPIO25	ADC2_CH8				RTC6	
A2	GPIO34	ADC1_CH6				RTC4	
A3	GPIO39	ADC1_CH3				RTC3	
A4	GPIO36	ADC1_CH0				RTC0	
A5	GPIO4	ADC2_CH0	HSPIHD	HS2_DATA1	T0	RTC10	
SCK	GPIO5		VSPICS0	HS1_DATA6			
MOSI	GPIO19		VSPIQ				U0CTS
MISO	GPIO21		VSPIHD				
RX	GPIO7		SPIQ	HS1_DATA0			U2RTS
TX	GPIO8		SPID	HS1_DATA1			U2CTS
D37	GPIO37	ADC1_CH1				RTC1	

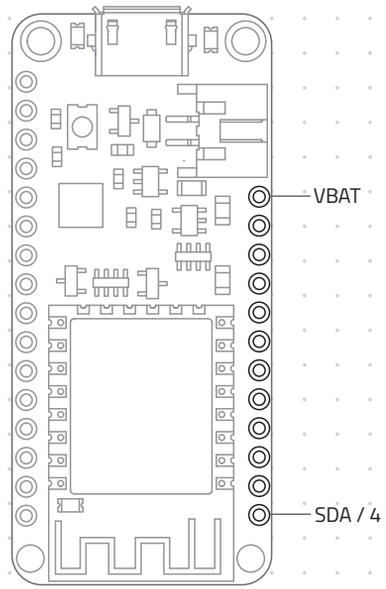


NAME	GPIO	ADC	HS/QSPI	SDMMC	TOUCH	RTC	UART
VBAT							
EN							
VBUS							
LED	GPIO13	ADC2_CH4	HSPID	HS2_DATA3	T4		
D12	GPIO12	ADC2_CH5	HSPIQ	HS2_DATA2	T5	RTC14	
D27	GPIO27	ADC2_CH7			T7	RTC15	
D33	GPIO33	ADC1_CH5			T8	RTC4	
D15	GPIO15	ADC2_CH3	HSPICS0	HS2_CMD	T3	RTC3	
D32	GPIO32	ADC1_CH4			T9	RTC0	
D14	GPIO14	ADC2_CH6	HSPICLK	HS2_CLK	T6	RTC10	
SCL	GPIO20						
SDA	GPIO22		VSPIWP				U0RTS



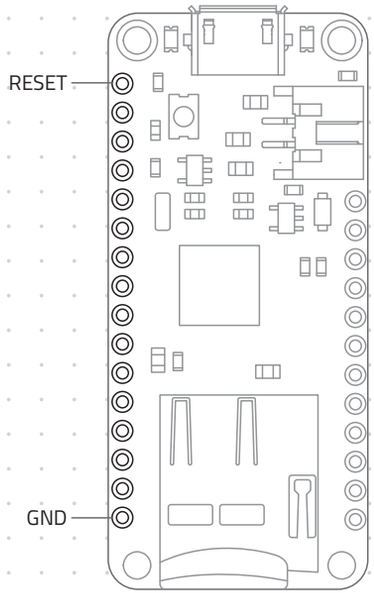
NAME	PHYSICAL	PORT	SERIAL	ANALOG	PIN	IDE
RESET	1					
3.3V						
NC						
GND						
ADC	2	ADC		ADC	TOUT	17 / A0
NC						
NC						
NC						
NC						
NC						
SCK	5	IO14	SCLK / HSPI (CLK)		PCINT1	14
MOSI	7	IO13	MOSI / CTS0 / HSPI (D) / RXD2		PCINT2	13
MISO	6	IO12	MISO / HSPI(Q)		PCINT3	12
RX	15	IO3	RX / RXD0		INT2	3
TX	16	IO1	TX / CS1 / TXD0		INT3	1
CHPD	3					

Power: Absolute maximum current per pin 12mA, 6mA recommended. Absolute maximum 85mA for the entire package



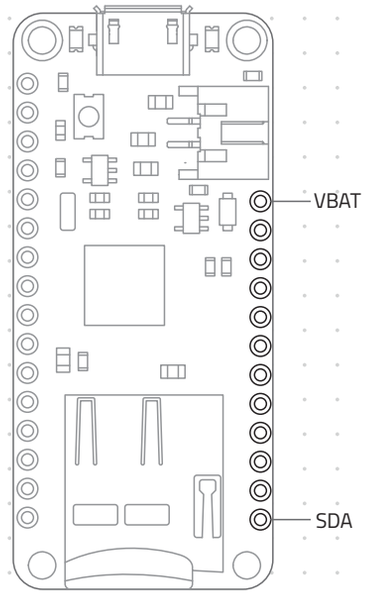
NAME	PHYSICAL	PORT	PIN	SERIAL	IDE
VBAT*					
EN					
VBUS**					
14	5	IO14		HSPI (CLK) / SCK	14
13	6	IO12		HSPI (Q) / MISO	12
12	7	IO13		RXD2 / HSPI (D) / MOSI	13
15	10	IO15		TXD2 / HSPI (CS) / RTS0	15
0	12	IO0		CS2	0
16	4	IO16	WAKE		16
2	11	IO2		TXD1	2
SCL / 5	14	IO5		SCL	5
SDA / 4	13	IO4		SDA	4

Power: Absolute maximum current per pin 12mA, 6mA recommended. Absolute maximum 85mA for the entire package. 3V3 output from regulator (max 400mA).
**VBAT is the positive voltage from the JST battery jack. **VBUS is connected to the 5V USB port. Absolute maximum current 500mA.*



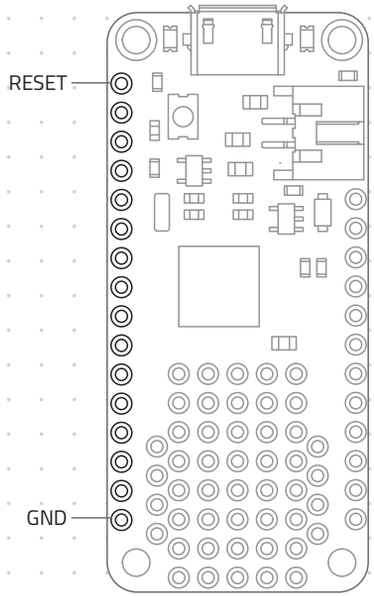
NAME	PHYSICAL	PORT	SERIAL	ANALOG	INT	IDE	SD CARD
RESET	40						
3.3V							
AREF*	4	PA03		AIN1 / VREF A	EINT3		
GND							
A0	3	PA02		AIN0 / DAC	EINT2	14 / A0	
A1	7	PB08	S 4:0	AIN2	EINT8	15 / A1	
A2	8	PB09	S 4:1	AIN3	EINT9	16 / A2	
A3	9	PA04	S 0:0	AIN4 / VREF B	EINT4	17 / A3	
A4	10	PA05	S 0:1	AIN5	EINT5	18 / A4	
A5	47	PB02	S 5:0	AIN10	EINT2	19 / A5	
SCK	20	PB11	SCK / S 4:3 / I2SCL		EINT11	24	YES**
MOSI	19	PB10	MOSI / S 4:2 / I2SMC		EINT10	23	YES**
MISO	21	PA12	MISO / S2 4:0 / I2C			22	YES**
RX0	16	PA11	RX / S 02:3 / I2SF0		EINT11	0	
TX1	15	PA10	TX / S 02:2 / I2SCK		EINT10	1	
GND							

Power: The total current of each port power group should not exceed 65mA. Absolute maximum current per pin 10mA, 7mA recommended. Absolute maximum 130mA for the entire package.
**AREF can't go higher than 3.3V **Pins also used by SD card module. Refer to datasheet for more information.*



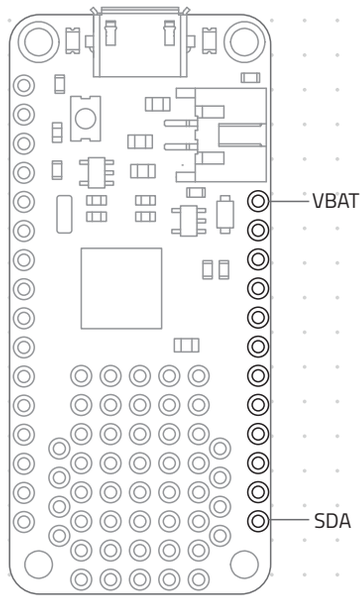
NAME	PHYSICAL	PORT	SERIAL	ANALOG	INTERRUPT	IDE
VBAT*						
EN						
VBUS**						
13	26	PA17	I2C / S1 3:1		EINT1	13
12	28	PA19	I2SD0 / S1 3:3		EINT3	12
11	25	PA16	12C / S1 3:0		EINT0	11
10	27	PA18	S1 3:2		EINT2	10
9	12	PA07	I2SD0 / S 0:3	AIN7	EINT7	9 / A7
6	29	PA20	I2SSC / S3 5:2		EINT4	6
5	24	PA15	S2 4:3		EINT15	5
SCL	32	PA23	I2C / S3 5:1 / SCL		EINT7	21
SDA	31	PA22	I2C / S3 5:0 / SDA		EINT6	20

Power: The total current of each port power group should not exceed 65mA. Absolute maximum current per pin 10mA, 7mA recommended. Absolute maximum 130mA for the entire package.
**VBAT is the positive voltage from the JST battery jack. **VBUS is connected to the 5V USB port. Absolute maximum current 500mA.*



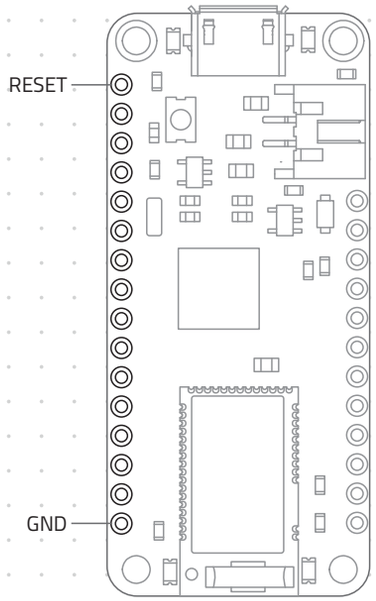
NAME	PHYSICAL	PORT	SERIAL	ANALOG	INT	IDE
RESET	40					
3.3V						
AREF*	4	PA03		AIN1 / VREF A	EINT3	
GND						
A0	3	PA02		AIN0 / DAC	EINT2	14 / A0
A1	7	PB08	S 4:0	AIN2	EINT8	15 / A1
A2	8	PB09	S 4:1	AIN3	EINT9	16 / A2
A3	9	PA04	S 0:0	AIN4 / VREF B	EINT4	17 / A3
A4	10	PA05	S 0:1	AIN5	EINT5	18 / A4
A5	47	PB02	S 5:0	AIN10	EINT2	19 / A5
SCK	20	PB11	SCK / S 4:3 / I2SCL		EINT11	24
MOSI	19	PB10	MOSI / S 4:2 / I2SMC		EINT10	23
MISO	21	PA12	MISO / S2 4:0 / I2C			22
RX0	16	PA11	RX / S 02:3 / I2SF0		EINT11	0
TX1	15	PA10	TX / S 02:2 / I2SCK		EINT10	1
GND						

Power: The total current of each port power group should not exceed 65mA. Absolute maximum current per pin 10mA, 7mA recommended. Absolute maximum 130mA for the entire package.
**AREF can't go higher than 3.3V*



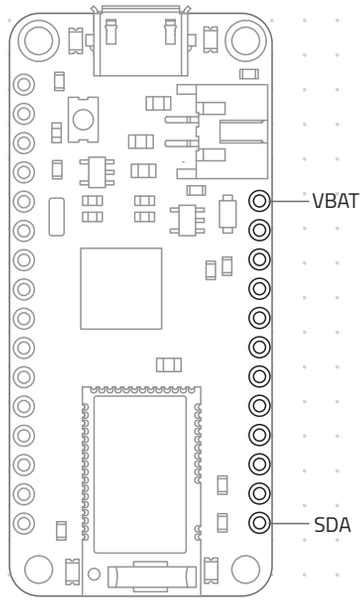
NAME	PHYSICAL	PORT	SERIAL	ANALOG	INTERRUPT	IDE
VBAT*						
EN						
VBUS**						
13	26	PA17	I2C / S1 3:1		EINT1	13
12	28	PA19	I2SD0 / S1 3:3		EINT3	12
11	25	PA16	12C / S1 3:0		EINT0	11
10	27	PA18	S1 3:2		EINT2	10
9	12	PA07	I2SD0 / S 0:3	AIN7	EINT7	9 / A7
6	29	PA20	I2SSC / S3 5:2		EINT4	6
5	24	PA15	S2 4:3		EINT15	5
SCL	32	PA23	I2C / S3 5:1 / SCL		EINT7	21
SDA	31	PA22	I2C / S3 5:0 / SDA		EINT6	20

Power: The total current of each port power group should not exceed 65mA. Absolute maximum current per pin 10mA, 7mA recommended. Absolute maximum 130mA for the entire package.
**VBAT is the positive voltage from the JST battery jack. **VBUS is connected to the 5V USB port. Absolute maximum current 500mA.*



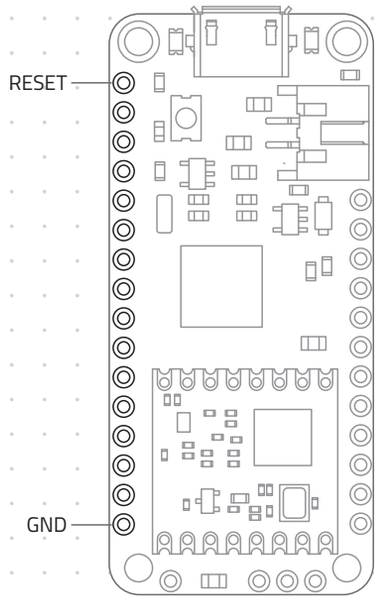
NAME	PHYSICAL	PORT	SERIAL	ANALOG	INT	IDE	BLE
RESET	40						
3.3V							
AREF*	4	PA03		AIN1 / VREF A	EINT3		
GND							
A0	3	PA02		AIN0 / DAC	EINT2	14 / A0	
A1	7	PB08	S 4:0	AIN2	EINT8	15 / A1	
A2	8	PB09	S 4:1	AIN3	EINT9	16 / A2	
A3	9	PA04	S 0:0	AIN4 / VREF B	EINT4	17 / A3	
A4	10	PA05	S 0:1	AIN5	EINT5	18 / A4	
A5	47	PB02	S 5:0	AIN10	EINT2	19 / A5	
SCK	20	PB11	SCK / S 4:3 / I2SCL		EINT11	24	YES**
MOSI	19	PB10	MOSI / S 4:2 / I2SMC		EINT10	23	YES**
MISO	21	PA12	MISO / S2 4:0 / I2C			22	YES**
RX0	16	PA11	RX / S 02:3 / I2SF0		EINT11	0	
TX1	15	PA10	TX / S 02:2 / I2SCK		EINT10	1	
GND							

Power: The total current of each port power group should not exceed 65mA. Absolute maximum current per pin 10mA, 7mA recommended. Absolute maximum 130mA for the entire package.
**AREF can't go higher than 3.3V **Pins also used by BLE radio module. Refer to datasheet for more information.*



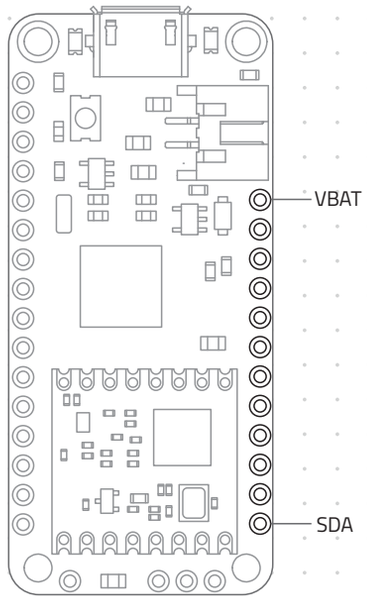
NAME	PHYSICAL	PORT	SERIAL	ANALOG	INTERRUPT	IDE
VBAT*						
EN						
VBUS**						
13	26	PA17	I2C / S1 3:1		EINT1	13
12	28	PA19	I2SD0 / S1 3:3		EINT3	12
11	25	PA16	12C / S1 3:0		EINT0	11
10	27	PA18	S1 3:2		EINT2	10
9	12	PA07	I2SD0 / S 0:3	AIN7	EINT7	9 / A7
6	29	PA20	I2SSC / S3 5:2		EINT4	6
5	24	PA15	S2 4:3		EINT15	5
SCL	32	PA23	I2C / S3 5:1 / SCL		EINT7	21
SDA	31	PA22	I2C / S3 5:0 / SDA		EINT6	20

Power: The total current of each port power group should not exceed 65mA. Absolute maximum current per pin 10mA, 7mA recommended. Absolute maximum 130mA for the entire package.
**VBAT is the positive voltage from the JST battery jack. **VBUS is connected to the 5V USB port. Absolute maximum current 500mA.*



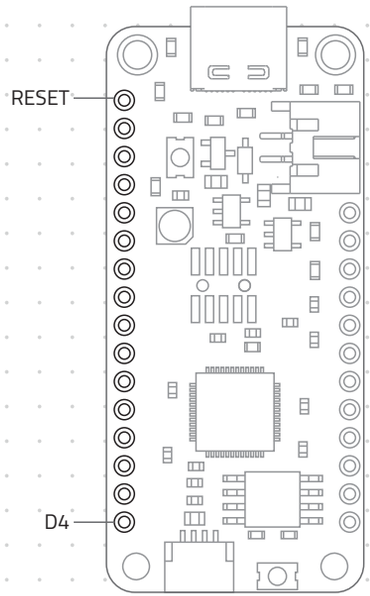
NAME	PHYSICAL	PORT	SERIAL	ANALOG	INT	IDE	RFM
RESET	40						
3.3V							
AREF*	4	PA03		AIN1 / VREF A	EINT3		
GND							
A0	3	PA02		AIN0 / DAC	EINT2	14 / A0	
A1	7	PB08	S 4:0	AIN2	EINT8	15 / A1	
A2	8	PB09	S 4:1	AIN3	EINT9	16 / A2	
A3	9	PA04	S 0:0	AIN4 / VREF B	EINT4	17 / A3	
A4	10	PA05	S 0:1	AIN5	EINT5	18 / A4	
A5	47	PB02	S 5:0	AIN10	EINT2	19 / A5	
SCK	20	PB11	SCK / S 4:3 / I2SCL		EINT11	24	YES**
MOSI	19	PB10	MOSI / S 4:2 / I2SMC		EINT10	23	YES**
MISO	21	PA12	MISO / S2 4:0 / I2C			22	YES**
RX0	16	PA11	RX / S 02:3 / I2SF0		EINT11	0	
TX1	15	PA10	TX / S 02:2 / I2SCK		EINT10	1	
GND							

Power: The total current of each port power group should not exceed 65mA. Absolute maximum current per pin 10mA, 7mA recommended. Absolute maximum 130mA for the entire package.
**AREF can't go higher than 3.3V **Pins also used by RFM radio module. Refer to datasheet for more information.*

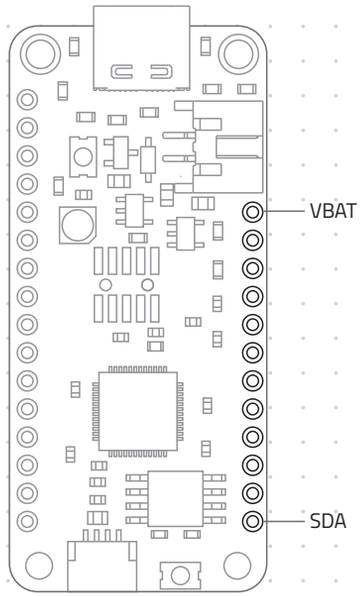


NAME	PHYSICAL	PORT	SERIAL	ANALOG	INTERRUPT	IDE
VBAT*						
EN						
VBUS**						
13	26	PA17	I2C / S1 3:1		EINT1	13
12	28	PA19	I2SD0 / S1 3:3		EINT3	12
11	25	PA16	12C / S1 3:0		EINT0	11
10	27	PA18	S1 3:2		EINT2	10
9	12	PA07	I2SD0 / S 0:3	AIN7	EINT7	9 / A7
6	29	PA20	I2SSC / S3 5:2		EINT4	6
5	24	PA15	S2 4:3		EINT15	5
SCL	32	PA23	I2C / S3 5:1 / SCL		EINT7	21
SDA	31	PA22	I2C / S3 5:0 / SDA		EINT6	20

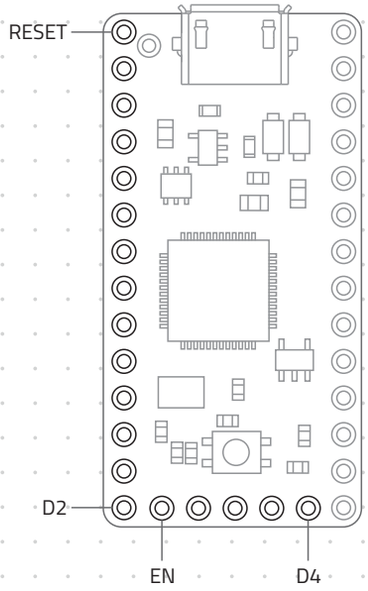
Power: The total current of each port power group should not exceed 65mA. Absolute maximum current per pin 10mA, 7mA recommended. Absolute maximum 130mA for the entire package.
**VBAT is the positive voltage from the JST battery jack. **VBUS is connected to the 5V USB port. Absolute maximum current 500mA.*



NAME	GPIO	SPI	UART	I2C	PWM	ANALOG
RESET						
3.3V						
3.3V						
GND						
A0	GPIO26	SCK1	CTS1	SDA1	PWM5A	ADC0
A1	GPIO27	TX1	RTS1	SCL1	PWM5B	ADC1
A2	GPIO28	RX1	TX0	SDA0	PWM6A	ADC2
A3	GPIO29	CSN1	RX0	SCL0	PWM6B	ADC3
D24	GPIO24	RX1	TX1	SDA0	PWM4A	
D25	GPIO25	CSN1	RX1	SCL0	PWM4B	
SCK	GPIO18	SCK0	CTS0	SDA1	PWM1A	
MOSI	GPIO19	TX0	RTS0	SCL1	PWM1B	
MISO	GPIO20	RX0	TX1	SDA0	PWM2A	
RX	GPIO1	CSN0	RX0	SCL0	PWM0B	
TX	GPIO0	RX0	TX0	SDA0	PWM0A	
D4	GPIO6	SCK0	CTS1	SDA1	PWM3A	



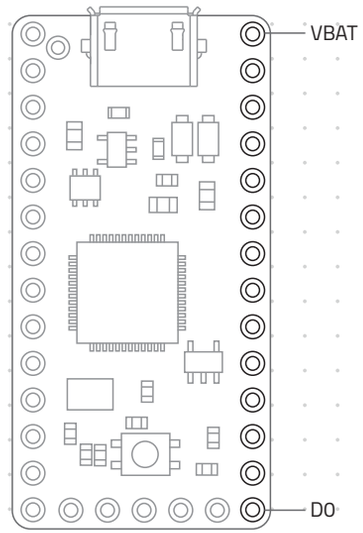
NAME	GPIO	SPI	UART	I2C	PWM
VBAT					
EN					
VBUS					
D13	GPIO13	CSN1	RX0	SCL0	PWM6B
D12	GPIO12	RX1	TX0	SDA0	PWM6A
D11	GPIO11	TX1	RTS1	SCL1	PWM5B
D10	GPIO10	SCK1	CTS1	SDA1	PWM5A
D9	GPIO9	CSN1	RX1	SCL0	PWM4B
D6	GPIO8	RX1	TX1	SDA0	PWM4A
D5	GPIO7	TX0	RTS1	SCL1	PWM3B
SCL	GPIO3	TX0	RTS0	SCL1	PWM1B
SDA	GPIO2	SCK0	CTS0	SDA1	PWM1A



NAME	ARD	GPIO	INT	ADC	SERIAL	SERIAL2	TIMER	SPECIAL
RESET								
3.3V								
AREF								
VHI								
A0	14/A0	PA02	2	A0[0]				
A1	15/A1	PA05	5	A0[5]		S0.1	TC0[1]	
A2	16/A2	PB08	8	A0[2]/A1[0]		S4.0	TC4[0]	
A3	17/A3	PB09	9	A0[3]A1[1]		S4.1	TC4[1]	
A4	18/A4	PA04	4	A0[4]		S0.0	TC0[0]	
A5	19/A5	PA06	6	A0[6]		S0.2	TC1[0]	SDCD
SCK	24	PA01	1			S1.1	TC2[1]	
MOSI	25	PA00	0			S1.0	TC2[0]	
MISO	23	PB23	7		S1.2	S5.3	TC7[1]	
D2	2/A6	PA07	7	A0[7]		S0.3	TC1[1]	SDWP

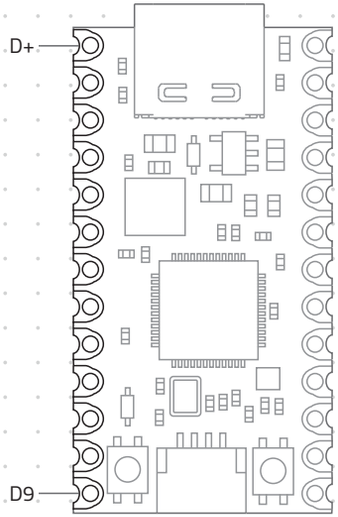
NAME	ARD	GPIO	INT	ADC	SERIAL	SERIAL2	TIMER	SPECIAL
EN								
SWDIO								
SWCLK								
D3	3	PB22	6		S1.2	S5.2	TC3[0]	
D4	4	PA14	14		S2.2	S4.2	TC7[0]	SOF 1KHZ

NOTE: Alternate functions are available on some pins. Refer to datasheet for more information

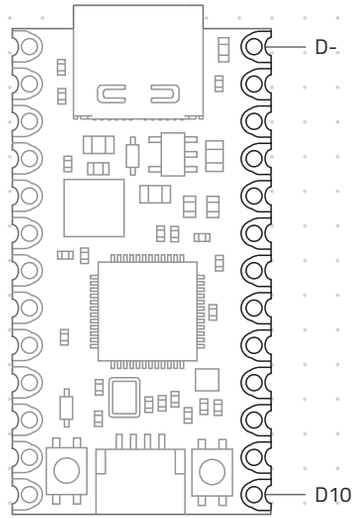


NAME	ARD	GPIO	INT	SERIAL	SERIAL2	TIMER	SPECIAL
VBAT							
GND							
VBUS							
D13	13	PA22	6	S3.0	S5.1	TC4[0]	
D12	12	PA23	7	S3.1	S5.0	TC4[1]	SOF 1KHZ
D11	11	PA21	5	S5.3	S3.3	TC7[1]	SDCK
D10	10	PA20	4	S5.2	S3.2	TC7[0]	SDCMD
D9	9	PA19	3	S1.3	S3.3	TC3[1]	
D7	7	PA18	2	S1.2	S3.2	TC3[0]	
D5	5	PA15	15	S2.3	S4.3	TC3[1]	
SCL	22	PA13	13	S2.1	S4.0	TC2[1]	SDWP
SDA	21	PA12	12	S2.0	S4.1	TC2[0]	SDCD
D1	1	PA17	1	S1.1	S3.0	TC2[1]	
D0	0	PA16	0	S1.0	S3.1	TC2[0]	

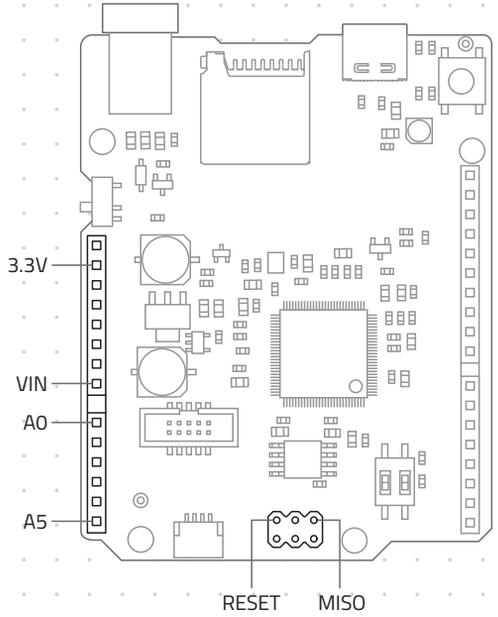
NOTE: Alternate functions are available on some pins. Refer to datasheet for more information



NAME	GPIO	SPI	UART	I2C	PWM
D+					
D0	GPIO0	RX0	TX0	SDA0	PWM0A
D1	GPIO1	CSN0	RX0	SCL0	PWM0B
GND					
GND					
D2	GPIO2	SCK0	CST0	SDA1	PWM1A
D3	GPIO3	TX0	RTS0	SCL1	PWM1B
D4	GPIO4	RX0	TX1	SDA0	PWM2A
D5	GPIO5	CSN0	RX1	SCL0	PWM2B
D6	GPIO6	SCK0	CTS1	SDA1	PWM3A
D7	GPIO7	TX0	RTS1	SCL1	PWM3B
D8	GPIO8	RX1	TX1	SDA0	PWM4A
D9	GPIO9	CSN1	RX1	SCL0	PWM4B



NAME	GPIO	SPI	UART	I2C	PWM
D-					
RAW					
GND					
RESET					
3.3V					
A3	GPIO29	CSN1	RX0	SCL0	PWM6B
A2	GPIO28	RX1	TX0	SDA0	PWM6A
A1	GPIO27	TX1	RST1	SCL1	PWM5B
A0	GPIO26	SCK1	CTS1	SDA1	PWM5A
SCK	GPIO18	SCK0	CTS0	SDA1	PWM1A
MISO	GPIO20	RX0	TX1	SDA0	PWM2A
MOSI	GPIO19	TX0	RTS0	SCL1	PWM1B
D10	GPIO10	SCK1	CTS1	SDA1	PWM5A

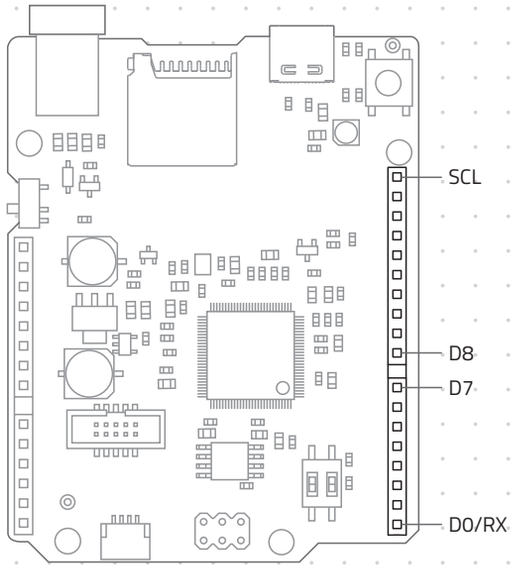


	NAME	GPIO	ADC	PWM	I2C	SPI	UART	DEBUG
□								
□	3.3V							
□	RESET							
□	3.3V							
□	5V							
□	GND							
□	GND							
□	VIN							
□	A0	GPIO_AD_02	ADC2		SCL	PCS1	TXD	TRACE_CLK
□	A1	GPIO_AD_01	ADC1		SDA	PCS1	RXD	TRACE_SWO
□	A2	GPIO_AD_00	ADC0			PCS2	TXD	TRACE0
□	A3	GPIO_AD_05	ADC5	PWM3 B		PCS0		
□	A4	GPIO_AD_10	ADC10	PWM2 X		SDO		JTAG_TDI
□	A5	GPIO_AD_08	ADC8		SCL		CTS_B/TXD	CM7_TXEV/JTAG_TRSTB

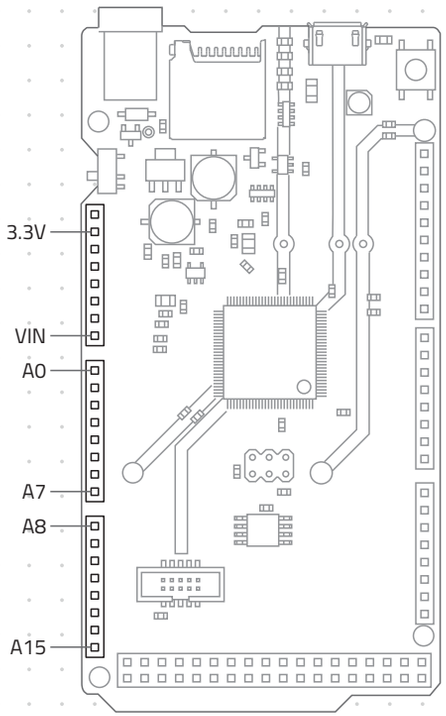
PWM	ADC	GPIO	NAME
PWM2 B	ADC3	GPIO_AD_03	MISO
PWM3 A	ADC6	GPIO_AD_06	SCK
			RESET

NAME	GPIO	ADC	PWM
5V			
MOSI	GPIO_AD_04	ADC4	PWM2 A
GND			

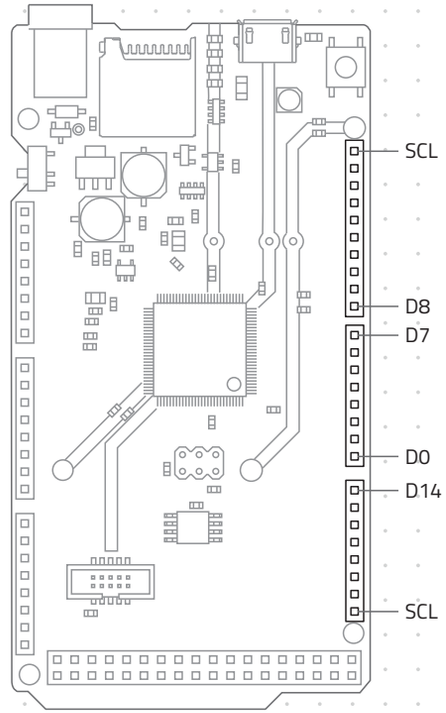
NOTE: Alternate functions are available on some pins. Refer to datasheet for more information



	NAME	GPIO	PWM	I2C	SPI	UART	I2S	DEBUG
□	SCL	GPIO_02	PWM0 A	SCL			RX_SYNC	
□	SDA	GPIO_01	PWM0 B	SDA			RX_BCLK	
□	3.3V							
□	GND							
□	D13	GPIO_03	PWM1 B				RX_DATA0	
□	D12	GPIO_04	PWM1 A				TX_DATA0	
□	D11	GPIO_05	PWM2 B			RXD	TX_DATA1/RX_DATA1	
□	D10	GPIO_06	PWM2 A			TXD	TX_BCLK	
□	D9	GPIO_07	PWM3 B			RTS_B/RXD	TX_SYNC	
□	D8	GPIO_08	PWM3 A			CTS_B/TXD	MCLK	
□	D7	GPIO_11		SDA	SS1_B	RXD		TRACE3
□	D6	GPIO_SD_02	PWM0 A		DATA2		TX_DATA	
□	D5	GPIO_SD_01	PWM0 B		DATA1		TX_BCLK	
□	D4	GPIO_SD_00			SS0_B		TX_SYNC	CM7_RXEV
□	D3	GPIO_12		SCL		TXD		TRACE2
□	D2	GPIO_13			PCS2	RXD		TRACE1
□	D1/TX	GPIO_10		HREQ/SCL		TXD		
□	D0/RX	GPIO_09		SDA	SS1_B	RXD		

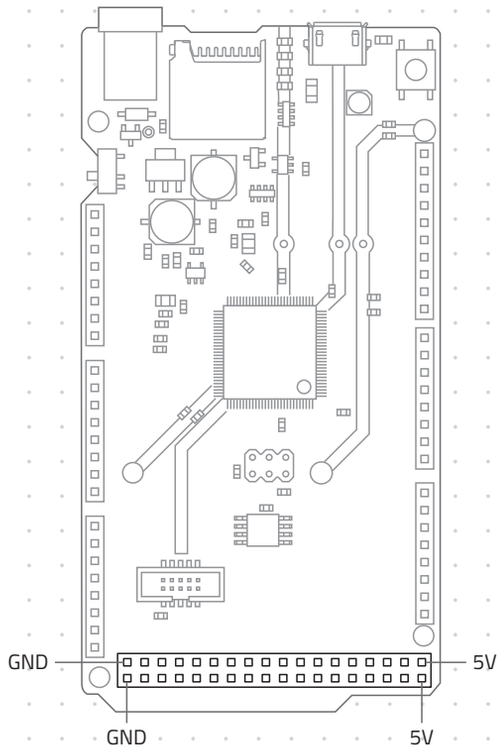


NAME	ARDUINO	GPIO	INT	AREF	ADC	SERCOM ALT	TIMER	SPECIAL
3.3V								
RESET								
3.3V								
5V								
GND								
GND								
VIN								
A0	67/A0	PA02	2	VOUT0	A0 [0]			
A1	68/A1	PA05	5	VOUT1	A0 [5]	S0.1	TC0[1]	
A2	69/A2	PB03	3		A0 [15]	S5.1	TC6[1]	
A3	70/A3	PC00	0		A1 [10]			
A4	71/A4	PC01	1		A1 [11]			
A5	72/A5	PC02	2		A1 [4]			
A6	73/A6	PC03	3		A1 [5]			
A7	74/A7	PB04	4		A1 [6]			
A8	54/A8	PB05	5		A1 [7]			
A9	55/A9	PB06	6		A1 [8]			
A10	56/A10	PB07	7		A1 [9]			
A11	57/A11	PB08	8		A0 [2] / A1 [0]	S4.0	TC4[0]	
A12	58/A12	PB09	9		A0 [3] / A1 [1]	S4.1	TC4[1]	
A13	59/A13	PA04	4	VREFB	A0 [4]	S0.0	TC0[0]	
A14	60/A14	PA06	6	VREFC	A0 [6]	S0.2	TC1[0]	SDCD
A15	61/A15	PA07	7		A0 [7]	S0.3	TC1[1]	SDWP



	NAME	ARD	GPIO	INT	ADC	SER	SER ALT	TIME	TIME ALT	SPECIAL
□	SCL	21	PB21	5		S3.1	S7.0		TCC1[3]	SDDAT3
□	SDA	20	PB20	4		S3.0	S7.1		TCC1[2]	SDDAT2
□	AREF	84	PA03	3	A0[1]					
□	GND									
□	D13	13	PB01	1	A0[13]		S5.3	TC7[1]		
□	D12	12	PB00	0	A0[12]		S5.2	TC7[0]		
□	D11	11	PB23	7		S1.2	S5.3	TC7[1]		
□	D10	10	PB22	6		S1.2	S5.2	TC7[0]		SOF 1KHZ
□	D9	9	PB02	2	A0[14]		S5.0	TC6[0]	TCC2[2]	
□	D8	8	PB18	2		S5.2	S7.2		TCC1[0]	SDDAT0
□	D7	7	PD21	11		S1.3	S3.3		TCC1[1]	SDWP
□	D6	6	PD20	10		S1.2	S3.2		TCC1[0]	SDCD
□	D5	5	PC21	5					TCC0[5]	SDWP
□	D4	4	PC20	4					TCC0[4]	SDCD
□	D3	3	PC19	3		S6.3	S0.3		TCC0[3]	
□	D2	2	PC18	2		S6.2	S0.2		TCC0[2]	
□	D1	1	PB24	8		S0.0	S2.1			
□	D0	0	PB25	9		S0.1	S2.0			
□	D14	14	PB16	0		S5.0		TC6[0]	TCC3[0]	SDCD
□	D15	15	PB17	1		S5.1		TC6[1]	TCC3[1]	SDWP
□	D16	16	PC22	6		S1.0	S3.1		TCC0[6]	
□	D17	17	PC23	7		S1.1	S3.0		TCC0[7]	
□	D18	18	PB12	12		S4.0		TC4[0]	TCC3[0]	SDCD
□	D19	19	PB13	13		S4.1		TC4[0]	TCC3[1]	SDWP
□	SDA	20	PB20	4		S3.0	S7.1		TCC1[2]	SDDAT2
□	SCL	21	PB21	5		S3.1	S7.0		TCC1[3]	SDDAT3

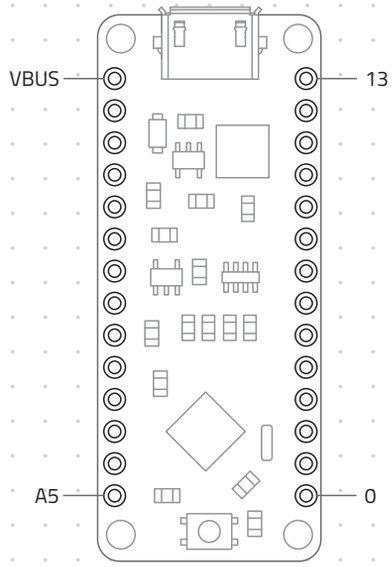
NOTE: Alternate functions are available on some pins. Refer to datasheet for more information



SERCOM	INT	GPIO	ARD	NAME
				5V
	7	PD12	22	D22
S6.1	1	PC17	24	SCL1
S2.0	12	PA12	26	D26
S2.2	14	PA14	28	D28
S3.1	7	PA23	30	D30
S5.3	5	PA21	32	D32
S1.3	3	PA19	34	D34
S1.1	1	PA17	36	D36
S4.3	15	PB15	38	D38
S7.1	13	PC13	40	D40
S7.3	15	PC15	42	D42
S6.3	11	PC11	44	D44
S6.2	6	PC06	46	D46
S6.0	4	PC04	48	D48
S7.3	6	PD11	50	MISO
S7.1	4	PD09	52	SCK
				GND

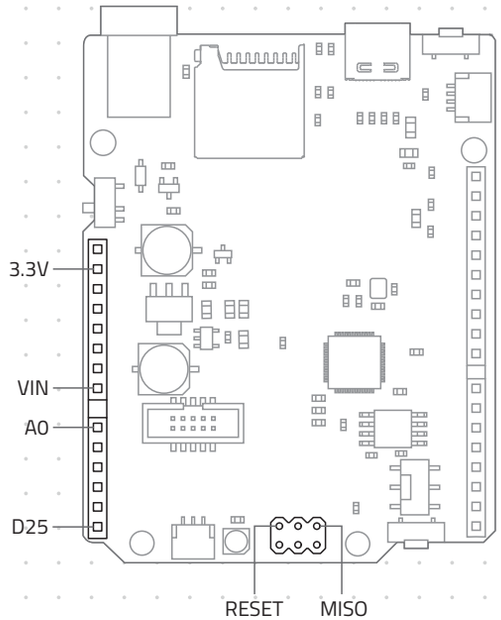
NAME	ARD	GPIO	INT	SERCOM
5V				
D23	23	PA15	15	S2.3
SDA1	25	PC16	0	S6.0
D27	27	PA13	13	S2.1
D29	29	PB19	3	S5.3
D31	31	PA22	6	S3.0
D33	33	PA20	4	S5.2
D35	35	PA18	2	S1.2
D37	37	PA16	0	S1.0
D39	39	PB14	14	S4.2
D41	41	PC12	12	S7.0
D43	43	PC14	14	S7.2
D45	45	PC10	10	S6.2
D47	47	PC07	9	S6.3
D49	49	PC05	5	S6.1
MOSI	51	PD08	3	S7.0
SS	53	PD10	5	S7.2
GND				

NOTE: Alternate functions are available on some pins. Refer to datasheet for more information



NAME	ARDUINO	GPIO	OTHER
VBUS			
RESET			
3.3V			
5V			
GND			
GND			
VIN			
AREF			
A0	14	PC0	
A1	15	PC1	
A2	16	PC2	
A3	17	PC3	
A4	18	PC4	SDA
A5	19	PC5	SCL

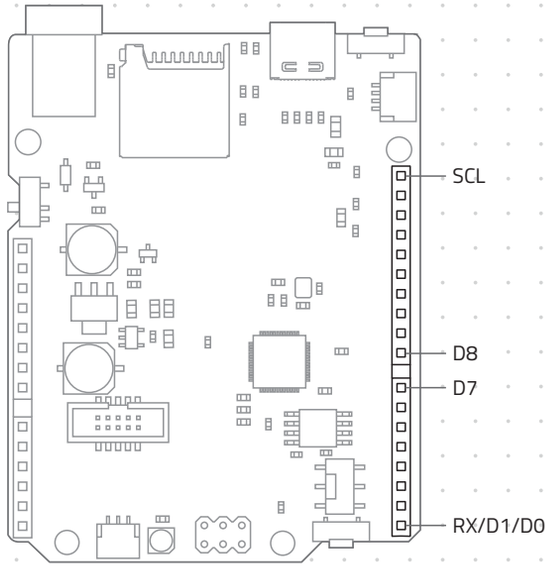
OTHER	GPIO	ARDUINO	NAME
SCK	PB5	13	13
MISO	PB4	12	12
MOSI / OC2A	PB3	11	11
SS / OC1B	PB2	10	10
OC1A	PB1	9	9
	PB0	8	8
	PD7	7	7
OC0A	PD6	6	6
OC0B	PD5	5	5
	PD4	4	4
INT1 / OC2B	PD3	3	3
INT0	PD2	2	2
TX	PD1	1	1
RX	PD0	0	0



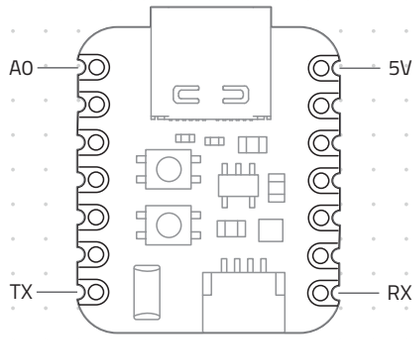
NAME	GPIO	SPI	UART	I2C	PWM	ADC
3.3V						
RESET						
3.3V						
5V						
GND						
GND						
VIN						
A0	GPIO26	SCK1	CTS1	SDA1	PWM5A	ADC0
A1	GPIO27	TX1	RTS1	SCL1	PWM5B	ADC1
A2	GPIO28	RX1	TX0	SDA0	PWM6A	ADC2
A3	GPIO29	CSN1	RX0	SCL0	PWM6B	ADC3
D24	GPIO24	RX1	TX1	SDA0	PWM4A	
D25	GPIO25	CSN1	RX1	SCL0	PWM4B	

ALT FUNCTIONS	NAME
GPIO20, RX0, TX1, SDA0, PWM2A	MISO/SDIO_DAT0
GPIO18, SCK0, CTS0, SDA1, PWM1A	SCK/SDIO_CLK
	RESET

NAME	ALT FUNCTIONS
5V	
MOSI/SDIO_CMD	GPIO19, TX0, RTS0, SCL1, PWM1B
GND	



	NAME	GPIO	SPI	UART	I2C	PWM
□	SCL	GPIO17	CSN0	RX0	SCL0	PWM0B
□	SDA	GPIO16	RX0	TX0	SDA0	PWM0A
□	3.3V					
□	GND					
□	D13	GPIO13	CSN1	RX0	SCL0	PWM6B
□	D12	GPIO12	RX1	TX0	SDA0	PWM6A
□	D11	GPIO11	TX1	RTS1	SCL1	PWM5B
□	D10	GPIO10	SCK1	CTS1	SDA1	PWM5A
□	D9	GPIO9	CSN1	RX1	SCL0	PWM4B
□	D8	GPIO8	RX1	TX1	SDA0	PWM4A
□	D7	GPIO7	TX0	RTS1	SCL1	PWM3B
□	D6	GPIO6	SCK0	CTS1	SDA1	PWM3A
□	D5	GPIO5	CSN0	RX1	SCL0	PWM2B
□	D4	GPIO4	RX0	TX1	SDA0	PWM2A
□	D3	GPIO3	TX0	RTS0	SCL1	PWM1B
□	D2	GPIO2	SCK0	CTS0	SDA1	PWM1A
□	TX/D0/D1	GPIO0	RX0	TX0	SDA0	PWM0A
□	RX/D1/D0	GPIO1	CSN0	RX0	SCL0	PWM0B

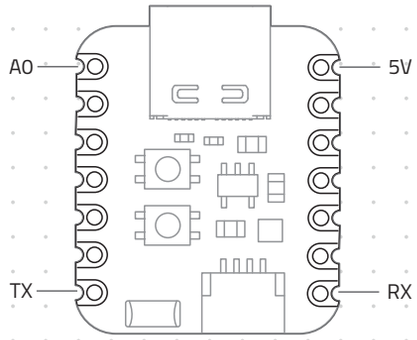


RIGHT

NAME	GPIO	POWER	ADC	DEBUG	HS/QSPI	TOUCH	OTHER
A0	GPIO18	RTC	ADC2 CH7	U1RXD			DAC_2
A1	GPIO17	RTC	ADC2 CH6	U1TXD			DAC_1
A2	GPIO9	RTC	ADC1 CH8		FSPIHD	T9	
A3	GPIO8	RTC	ADC1 CH7			T8	
SDA	GPIO7	RTC	ADC1 CH6			T7	
SCL	GPIO6	RTC	ADC1 CH5			T6	
TX	GPIO5	RTC	ADC1 CH4			T5	

LEFT

NAME	GPIO	POWER	ADC	DEBUG	HS/QSPI	TOUCH	OTHER
5V							
GND							
3.3V							
MOSI	GPIO35	SPI/CPU			FSPID		
MISO	GPIO37	SPI/CPU			FSPIQ		
SCK	GPIO36	SPI/CPU			FSPICLK		
RX	GPIO16	RTC	ADC2 CH5	U0CTS			XTAL_32K_N

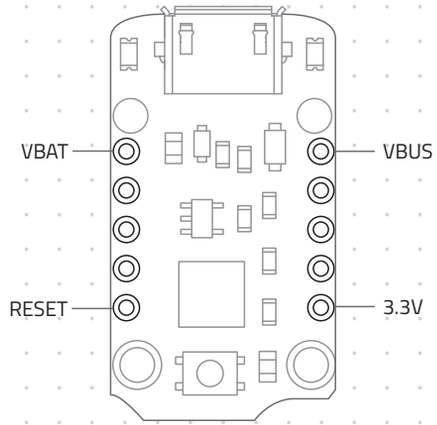


RIGHT

NAME	GPIO	POWER	ADC	DEBUG	HS/QSPI	TOUCH	OTHER
A0	GPIO18	RTC	ADC2 CH7	U1RXD			DAC_2
A1	GPIO17	RTC	ADC2 CH6	U1TXD			DAC_1
A2	GPIO9	RTC	ADC1 CH8		FSPIHD	T9	
A3	GPIO8	RTC	ADC1 CH7			T8	
SDA	GPIO7	RTC	ADC1 CH6			T7	
SCL	GPIO6	RTC	ADC1 CH5			T6	
TX	GPIO5	RTC	ADC1 CH4			T5	

LEFT

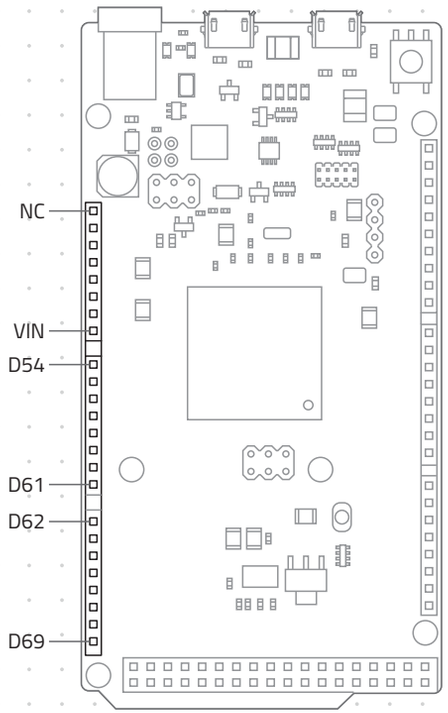
NAME	GPIO	POWER	ADC	DEBUG	HS/QSPI	TOUCH	OTHER
5V							
GND							
3.3V							
MOSI	GPIO35	SPI/CPU			FSPID		
MISO	GPIO37	SPI/CPU			FSPIQ		
SCK	GPIO36	SPI/CPU			FSPICLK		
RX	GPIO16	RTC	ADC2 CH5	U0CTS			XTAL_32K_N



NAME	GPIO	INT	PWM	SPI	ADC	SPECIAL
VBAT*						
GND						
4	PB4	PCINT4	OC1B		A2	USB
3	PB3	PCINT3	!OC1B		!A3	USB
RESET						

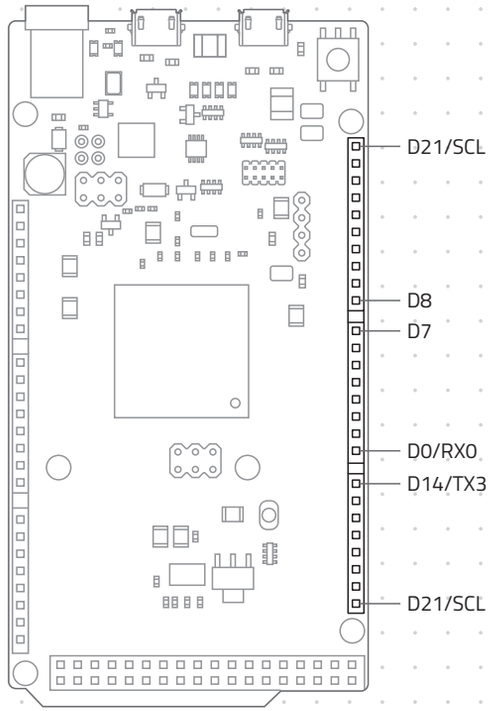
NAME	GPIO	INT	PWM	SPI	ADC	SPECIAL
VBUS**						
0	PB0	PCINT0	OC0A / !OC1A	MOSI		
1	PB1	PCINT1	OC0B / OC1A	MISO		LED
2	PB2	INTO / PCINT2		SCK	A1	
3.3V***						

VBAT 4.3-16V Battery **VBUS +USB (+5V 500mA) *+3.3V (150mA) regulated from BAT*



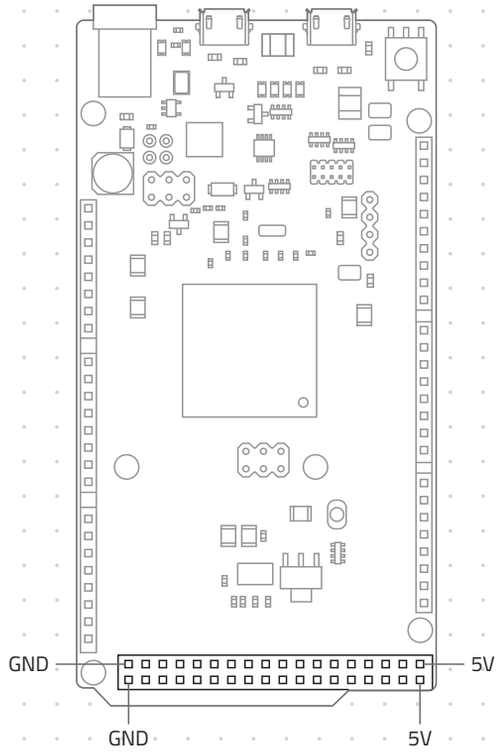
	NAME	MAIN FUNCTIONS	ANALOG	PWM	CAN	TIMER	INTERRUPT
□	NC						
□	IOREF						
□	RESET						
□	3.3V						
□	5V						
□	GND						
□	GND						
□	VIN						
□	D54 / A0	PA16	ADC[0]	AD[7]			
□	D55 / A1	PA24	ADC[1]	AD[6]		PCK1	
□	D56 / A2	PA23	ADC[2]	AD[5]		TCLK4	
□	D57 / A3	PA22	ADC[3]	AD[4]		TCLK3	
□	D58 / A4	PA6	ADC[4]	AD[3]		TIOB2	
□	D59 / A5	PA4	ADC[5]	AD[2]		TCLK1	
□	D60 / A6	PA3	ADC[6]	AD[1]	PWMFI1		TIOB1	WKUP[1]
□	D61 / A7	PA2	ADC[7]	AD[0]			TIOA1	
□	D62 / A8	PB17	ADC[8]	AD[10]	PWML1			
□	D63 / A9	PB18	ADC[9]	AD[11]	PWML2			
□	D64 / A10	PB19	ADC[10]	AD[12]	PWML3			
□	D65 / A11	PB20	ADC[11]	AD[13]				
□	D66 / DAC2	PB15	DAC[0]		PWMH3	CANRX1		WKUP[12]
□	D67 / DAC1	PB16	DAC[1]		PWML0		TCLK5	
□	D68 / CANRX	PA1	CANRX0			CANRX0	PCK0	WKUP[0]
□	D69 / CANTX	PA0	CANTX0		PWML3	CANTX0		

Power: VIN 6-20V input to the board. Total DC output current per I/O lines is 130mA. Extra functions are available in the documentation.



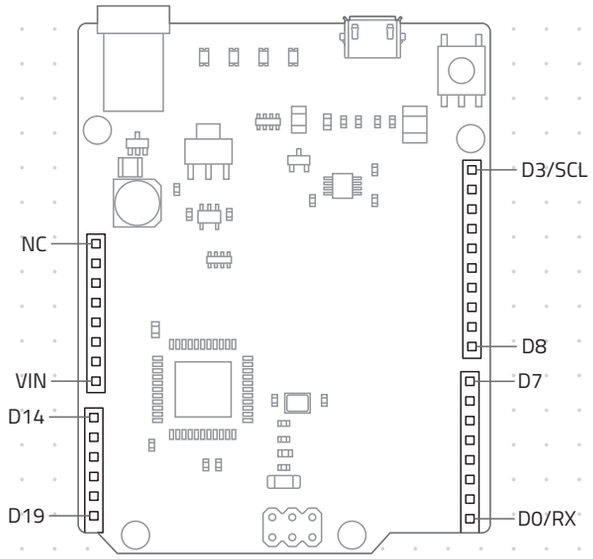
NAME	MAIN		ANALOG	PWM	COMM	TIMER	INTERRUPT
D21/SCL	PA18	SCL			TWCK0		WKUP[9]
D20/SDA	PA17	SDA			SPCK0/TWD0		
AREF	AREF				AREF		
GND							
D13	PB27		AD[10]	PWML1			
D12	PD8					TIOB8	
D11	PD7					TIOA8	
D10	PA28				SPI0_NPCS0	PCK2	WKUP[11]
D9	PC21			PWML4			
D8	PC22			PWML5			
D7	PC23			PWML6			
D6	PC24			PWML7			
D5	PC25					TIOA6	
D4	PA29				SPI0_NPCS1		
D3	PC28					TIOA7	
D2	PB25				RTS0	TIOA0	
D1/TX0	PA9			PWMH3	UTXD		
D0/RX0	PA8			PWMH0	URXD		WKUP[4]
D14/TX3	PD4				TXD3		
D15/RX3	PD5				RXD3		
D16/TX2	PA13			PWMH2	TXD1		
D17/TX2	PA12			PWML1	RXD1		WKUP[7]
D18/TX1	PA11				TXD0		ADTRG / WKUP[6]
D19/RX1	PA10				RXD0		DATRG / WKUP[5]
D20/SDA	PB12		AD[8]	PWMH0	TWD1		
D21/SCL	PB13		AD[9]	PWMH1	TWCK1		

Power: VIN 6-20V input to the board. Total DC output current per I/O lines is 130mA. Extra pinout functions are available in the official documentation.



COMM	ETH	PWM	NAME			NAME	PWM	ETH	COMM
CTS0			5V	□	□	5V			RTS1
CTS1			PB26 / D22	□	□	D23 / PA14		MCDA4	
	MCDA5		PA15 / D24	□	□	D25 / PD0		MCDA6	
	MCDA7		PD1 / D26	□	□	D27 /PD2			
			PD3 / D28	□	□	D29 / PD6	PWMF12		
			PD9 / D30	□	□	D31 / PA7			
			PD10 / D32	□	□	D33 / PC1			
		PWML0	PC2 / D34	□	□	D35 / PC3	PWMH0		
		PWML1	PC4 / D36	□	□	D37 / PC5	PWMH1		
		PWML2	PC6 / D38	□	□	D39 / PC7	PWMH2		
		PWML3	PC8 / D40	□	□	D41 / PC9	PWMH3		
		PWMH1	PA19 / D42	□	□	D43 / PA20	PWML2		
		PWMH5	PC19 / D44	□	□	D45 / PC18	PWMH6		
	ETXER		PC17 / D46	□	□	D47 / PC16		ETX3	
	EXT2		PC15 / D48	□	□	D49 / PC14		ERXCK	
	ECOL		PC13 / D50	□	□	D51 / PC12		ERX3	
			PB21 / D52	□	□	D53 / PB14	PWMH2		
			GND	□	□	GND			

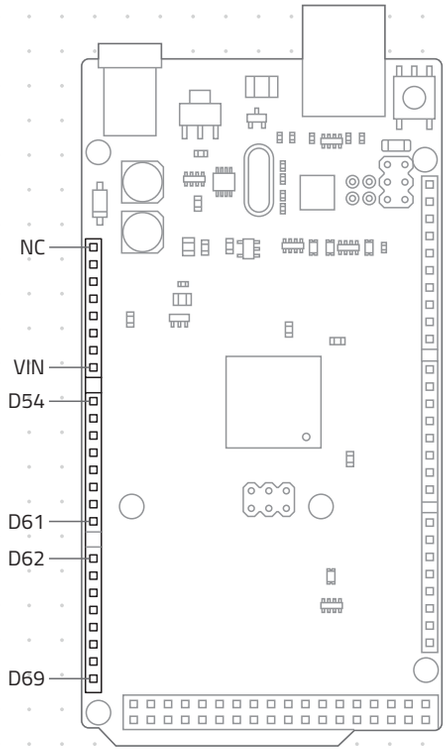
Power: VIN 6-20V input to the board. Total DC output current per I/O lines is 130mA. Extra pinout functions are available in the official documentation.



FUNCTIONS			
NC			
IOREF			
RESET			
3.3V			
5V			
GND			
GND			
VIN			
D14/A0	PF7	ADC[7]	TDI JTAG INPUT
D15/A1	PF6	ADC[6]	TDO JTAG OUTPUT
D16/A2	PF5	ADC[5]	TMS JTAG TEST
D17/A3	PF4	ADC[4]	TCK JTAG CLOCK
D18/A4	PF1	ADC[1]	
D19/A5	PF0	ADC[0]	

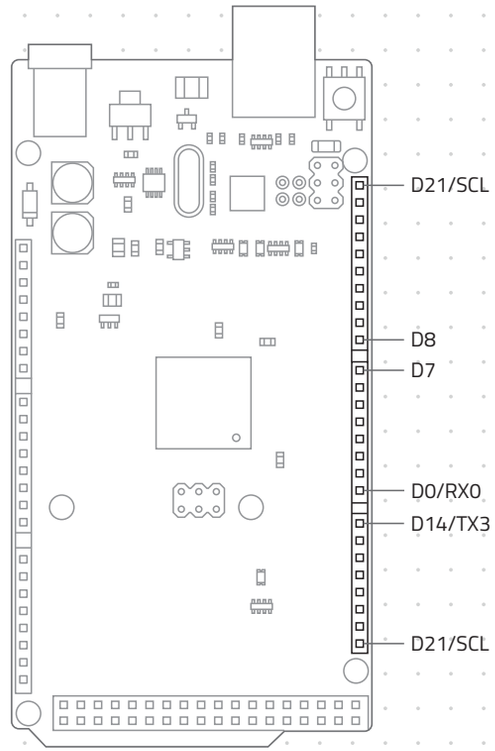
FUNCTIONS			
		SCL	D3/SCL
		SDA	D2/SDA
		AREF	AREF
			GND
CLK0/OC4A		PC7	D13
T1/OC4D	ADC[9]	PD6	D12
OC1C/0C0A		PB7	D11
0C4B/OC1B	ADC[13]	PB6	D10
OC1A/OC4B	ADC[12]	PB5	D9
	ADC[11]	PB4	D8
	AIN[0]	PE6	D7
T0/OC4D	ADC[10]	PD7	D6
ICP3/OC3A/OC4A		PC6	D5
ICP1	ADC[8]	PD4	D4
OC0B		PD0	D3
		PD1	D2
		PD3	D1/TX
		PD2	D0/RX

Power: VIN is 6-20V input to the board. Maximum current per I/O pin is 20mA. Maximum current per +3.3V pin is 50mA.



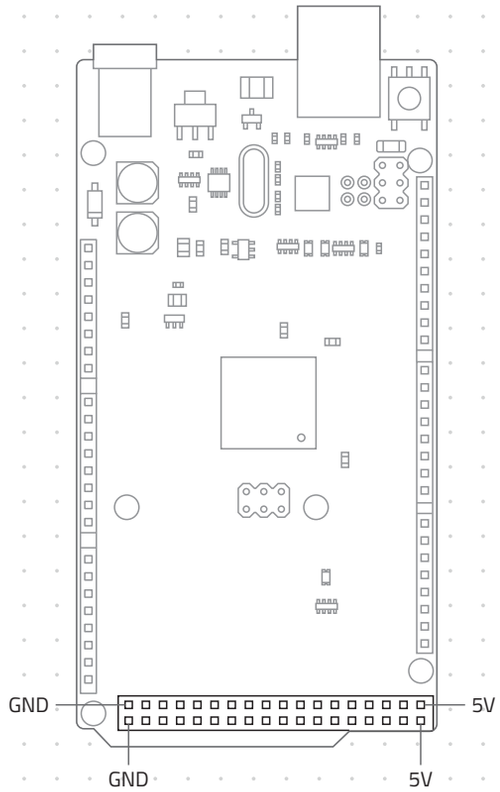
	NAME	FUNCTIONS			
□	NC				
□	IOREF				
□	RESET				
□	3.3V				
□	5V				
□	GND				
□	GND				
□	VIN				
□	D54 / A0	PF0	ADC[0]		
□	D55 / A1	PF1	ADC[1]		
□	D56 / A2	PF2	ADC[2]		
□	D57 / A3	PF3	ADC[3]		
□	D58 / A4	PF4	ADC[4]	TCK JTAG TEST CLOCK	
□	D59 / A5	PF5	ADC[5]	TMS JTAG TEST MODE SLECT	
□	D60 / A6	PF6	ADC[6]	TDO JTAG DATA OUTPUT	
□	D61 / A7	PF7	ADC[7]	TDI JTAG DATA INPUT	
□	D62 / A8	PK0	ADC[8]		PCINT[16]
□	D63 / A9	PK1	ADC[9]		PCINT[17]
□	D64 / A10	PK2	ADC[10]		PCINT[18]
□	D65 / A11	PK3	ADC[11]		PCINT[19]
□	D66 / A12	PK4	ADC[12]		PCINT[20]
□	D67 / A13	PK5	ADC[13]		PCINT[21]
□	D68 / A14	PK6	ADC[14]		PCINT[22]
□	D69 / A15	PK7	ADC[15]		PCINT[23]

Power: VIN 6-20V input to the board. Maximum current per I/O pin is 20mA. Maximum current per +3.3V pin is 50mA. Extended pinout functions are available in the official documentation.



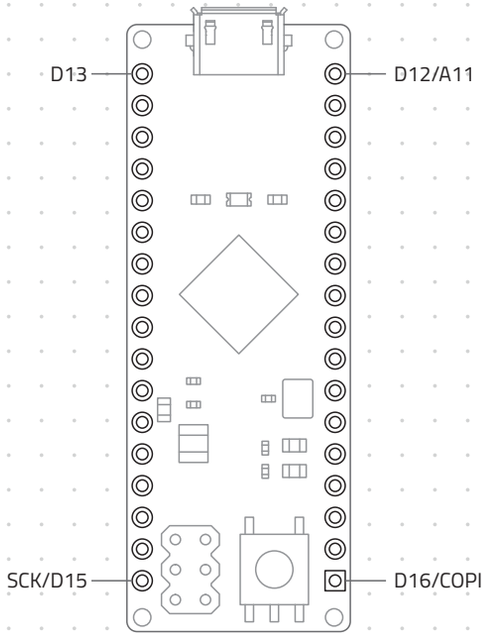
	NAME	FUNCTIONS				
□	D21/SCL	PD0		SCL		INT[0]
□	D20/SDA	PD1		SDA		INT[1]
□	AREF	AREF				
□	GND					
□	D13	PB7			OC0A/OC1C	PCINT[7]
□	D12	PB6			OC1B	PCINT[6]
□	D11	PB5			OC1A	PCINT[5]
□	D10	PB4			OC2A	PCINT[4]
□	D9	PH6			OC2B	
□	D8	PH5			OC4C	
□	D7	PH4			OC4B	
□	D6	PH3			OC4A	
□	D5	PE3	AIN[1]		OC3A	
□	D4	PG5			OC0B	
□	D3	PE5			OC3C	INT[5]
□	D2	PE4			OC3B	INT[4]
□	D1/TX0	PE1		TXD0		
□	D0/RX0	PE0		RXD0		PCINT[8]
□	D14/TX3	PJ1		TXD3		PCINT[10]
□	D15/RX3	PJ0		RXD3		PCINT[9]
□	D16/TX2	PH1		TXD2		
□	D17/TX2	PH0		RXD3		
□	D18/TX1	PD3		TXD1		INT[3]
□	D19/RX1	PD2		RXD1		INT[2]
□	D20/SDA	PD1		SDA		INT[1]
□	D21/SCL	PD0		SCL		INT[0]

Power: VIN 6-20V input to the board. Maximum current per I/O pin is 20mA. Maximum current per +3.3V pin is 50mA. Extended pinout functions are available in the official documentation.



		FUNCTIONS	NAME		NAME	FUNCTIONS		
			5V	□ □	5V			
	AD0	PA0	D22	□ □	D23	PA1	AD1	
	AD2	PA2	D24	□ □	D25	PA3	AD3	
	AD4	PA4	D26	□ □	D27	PC5	AD5	
	AD6	PA6	D28	□ □	D29	PC7	AD7	
	A15	PC7	D30	□ □	D31	PC6	A14	
	A13	PC5	D32	□ □	D33	PC4	A12	
	A11	PC3	D34	□ □	D35	PC2	A10	
		PC1	D36	□ □	D37	PC0	A8	
	RD	PD7	D38	□ □	D39	PG2	ALE	
		PG1	D40	□ □	D41	PG0	WR	
		PL7	D42	□ □	D43	PL6		
		PL5	D44	□ □	D45	PL4		
		PL3	D46	□ □	D47	PL2		
		PL1	D48	□ □	D49	PL0		
PCINT[3]	CPIO (SPI)	PB3	D50	□ □	D51	PB2	COPI (SPI)	PCINT[2]
PCINT[1]	SCL (SPI)	PB1	D52	□ □	D53	PB0	SS (SPI)	PCINT[0]
			GND	□ □	GND			

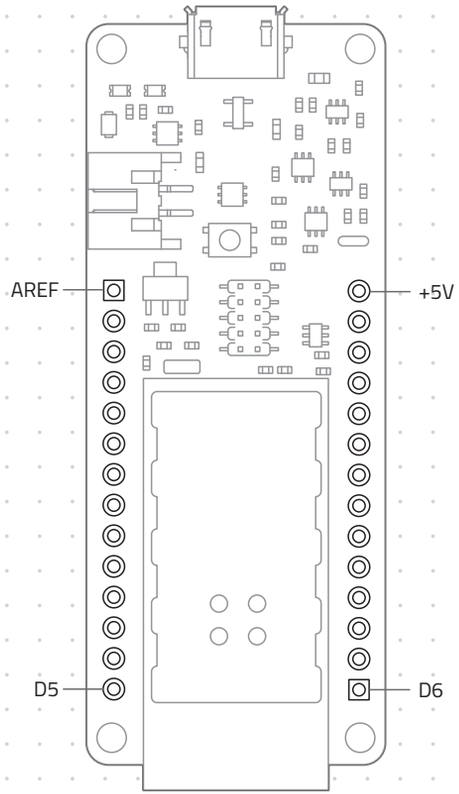
Power: VIN 6-20V input to the board. Maximum current per I/O pin is 20mA. Maximum current per +3.3V pin is 50mA. Extended pinout functions are available in the official documentation.



NAME	FUNCTIONS	
D13	PC7	
+3V3		
AREF	AREF	
A0 / D18	PF7	ADC[7]
A1 / D19	PF6	ADC[6]
A2 / D20	PF5	ADC[5]
A3 / D21	PF4	ADC[4]
A4 / D22	PF1	ADC[1]
A5 / D23	PF0	ADC[0]
NC		
NC		
+5V		
RESET		
GND		
VIN		
CIPO / D14	PB3	CIPO
SCK / D15	PB1	SCK

FUNCTIONS		NAME
	PD6	A11 / D12
	PB7	D11
	PB6	A10 / D10
	PB5	A9 / D9
	PB4	A8 / D8
	PE6	D7
	PD7	A7 D6
	PC6	D5
	PD4	A6 / D4
	PD0	SCL / D3
	PD1	SDA / D2
		GND
		RESET
	PD2	RX / D0
	PD3	TX / D1
SS	PB0	SS / D17
COPI	PB2	COPI / D16

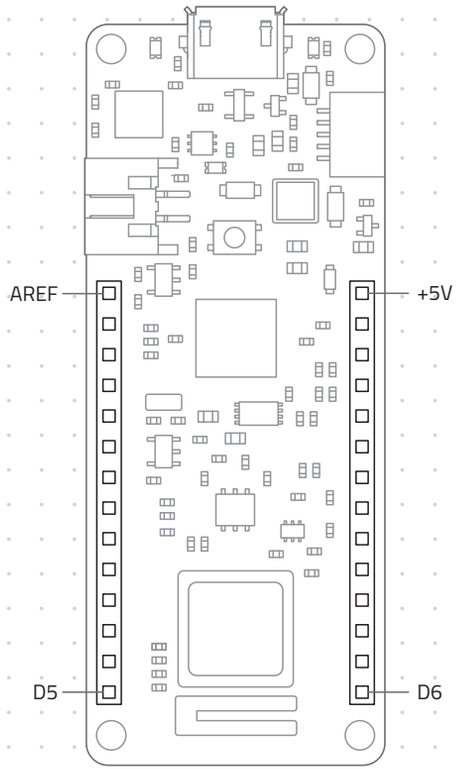
Power: VIN 6-9V input to the board. Maximum current per I/O pin is 40mA. Maximum current per +3.3V pin is 50mA



NAME	FUNCTIONS	
AREF	PA03	AREF / AIN[1]
D15 / A0	PA02	DAC0 / AIN[0]
D16 / A1	PB02	AIN[10]
D17 / A2	PB03	AIN[11]
D18 / A3	PA04	AIN[4]
D19 / A4	PA05	AIN[5]
D20 / A5	PA06	AIN[6]
D21 / A6	PA07	AIN[7]
D0	PA22	
D1	PA23	
D2	PA10	
D3	PA11	
D4	PB10	
D5	PB11	

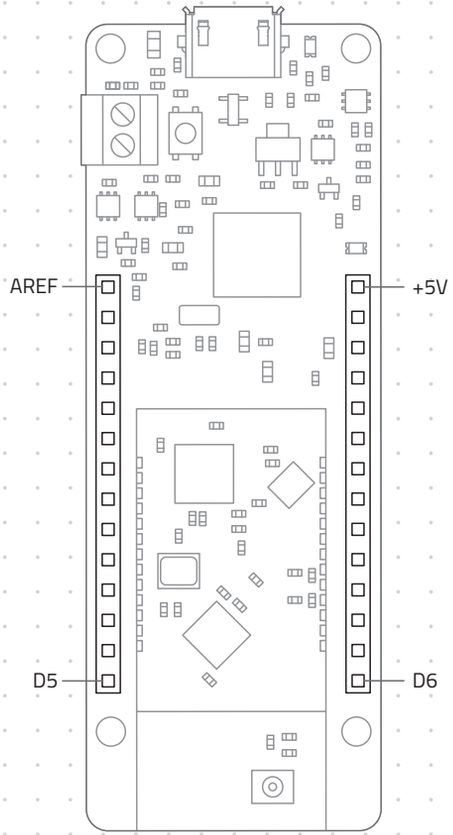
FUNCTIONS		NAME
		+5V
		VIN
		+3V3
		GND
		RESET
TX (SC5)	PB22	D14
RX (SC5)	PB23	D13
SCL (SC2)	PA09	D12
SDA (SC2)	PA08	D11
CIPO (SC1)	PA19	D10
SCK (SC1)	PA17	D9
COPI (SC1)	PA16	D8
	PA21	D7
	PA20	D6

Power: Maximum current per pin is 7mA. Maximum source current is 46mA. Maximum sink current is 65mA per pin group.
Further pinout functions are also available in official datasheet.



NAME	FUNCTIONS				NAME
AREF	PA03	AREF / AIN[1]			+5V
D15 / A0	PA02	DAC0 / AIN[0]			VIN
D16 / A1	PB02	AIN[10]			+3V3
D17 / A2	PB03	AIN[11]			GND
D18 / A3	PA04	AIN[4]			RESET
D19 / A4	PA05	AIN[5]	TX (SC5)	PB22	D14
D20 / A5	PA06	AIN[6]	RX (SC5)	PB23	D13
D21 / A6	PA07	AIN[7]	SCL (SC2)	PA09	D12
D0	PA22		SDA (SC2)	PA08	D11
D1	PA23		CIPO (SC1)	PA19	D10
D2	PA10		SCK (SC1)	PA17	D9
D3	PA11		COPI (SC1)	PA16	D8
D4	PB10			PA21	D7
D5	PB11			PA20	D6

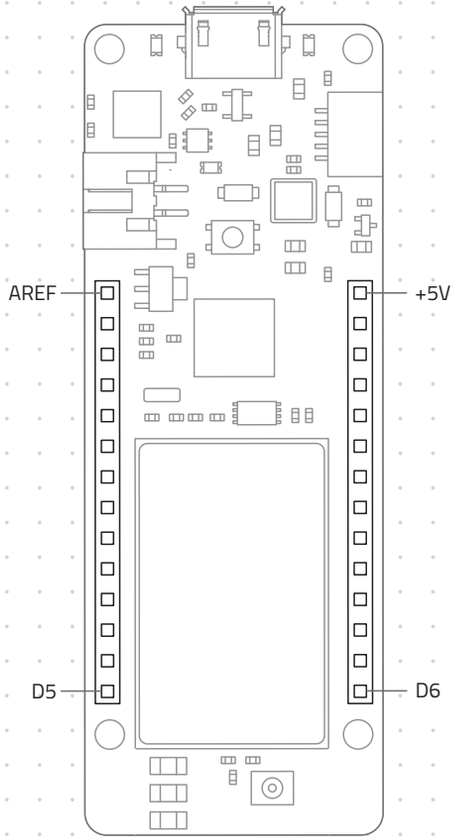
Power: Maximum current per pin is 7mA. Maximum source current is 46mA. Maximum sink current is 65mA per pin group.
Further pinout functions are also available in official datasheet.



NAME	FUNCTIONS	
AREF	PA03	AREF / AIN[1]
D15 / A0	PA02	DAC0 / AIN[0]
D16 / A1	PB02	AIN[10]
D17 / A2	PB03	AIN[11]
D18 / A3	PA04	AIN[4]
D19 / A4	PA05	AIN[5]
D20 / A5	PA06	AIN[6]
D21 / A6	PA07	AIN[7]
D0	PA22	
D1	PA23	
D2	PA10	
D3	PA11	
D4	PB10	
D5	PB11	

FUNCTIONS		NAME
		+5V
		VIN
		+3V3
		GND
		RESET
TX (SC5)	PB22	D14
RX (SC5)	PB23	D13
SCL (SC2)	PA09	D12
SDA (SC2)	PA08	D11
CIPO (SC1)	PA19	D10
SCK (SC1)	PA17	D9
COPI (SC1)	PA16	D8
	PA21	D7
	PA20	D6

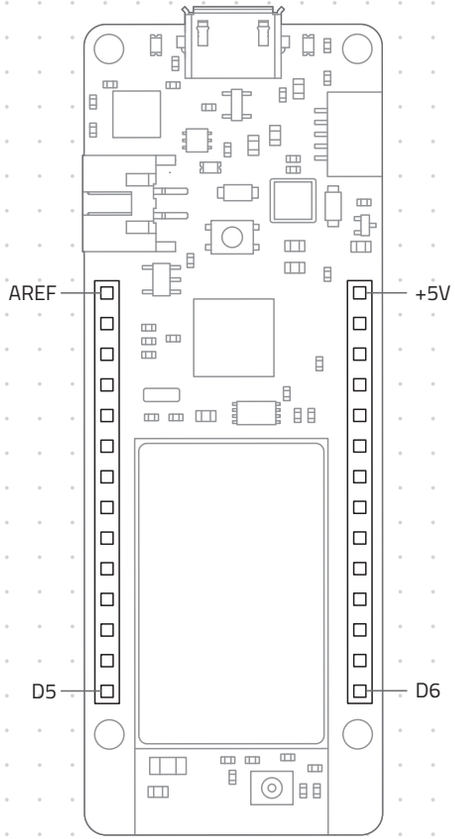
Power: Maximum current per pin is 7mA. Maximum source current is 46mA. Maximum sink current is 65mA per pin group.
Further pinout functions are also available in official datasheet.



NAME	FUNCTIONS	
AREF	PA03	AREF / AIN[1]
D15 / A0	PA02	DAC0 / AIN[0]
D16 / A1	PB02	AIN[10]
D17 / A2	PB03	AIN[11]
D18 / A3	PA04	AIN[4]
D19 / A4	PA05	AIN[5]
D20 / A5	PA06	AIN[6]
D21 / A6	PA07	AIN[7]
D0	PA22	
D1	PA23	
D2	PA10	
D3	PA11	
D4	PB10	
D5	PB11	

FUNCTIONS		NAME
		+5V
		VIN
		+3V3
		GND
		RESET
TX (SC5)	PB22	D14
RX (SC5)	PB23	D13
SCL (SC2)	PA09	D12
SDA (SC2)	PA08	D11
CIPO (SC1)	PA19	D10
SCK (SC1)	PA17	D9
COPI (SC1)	PA16	D8
	PA21	D7
	PA20	D6

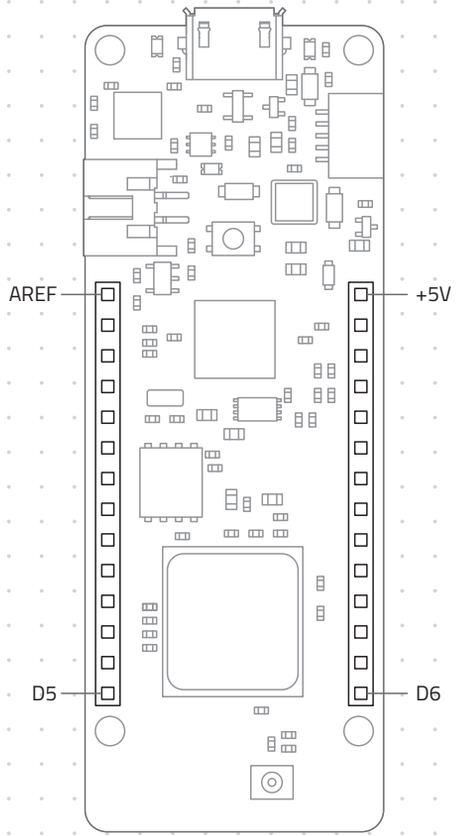
Power: Maximum current per pin is 7mA. Maximum source current is 46mA. Maximum sink current is 65mA per pin group.
Further pinout functions are also available in official datasheet.



NAME	FUNCTIONS	
AREF	PA03	AREF / AIN[1]
D15 / A0	PA02	DAC0 / AIN[0]
D16 / A1	PB02	AIN[10]
D17 / A2	PB03	AIN[11]
D18 / A3	PA04	AIN[4]
D19 / A4	PA05	AIN[5]
D20 / A5	PA06	AIN[6]
D21 / A6	PA07	AIN[7]
D0	PA22	
D1	PA23	
D2	PA10	
D3	PA11	
D4	PB10	
D5	PB11	

FUNCTIONS		NAME
		+5V
		VIN
		+3V3
		GND
		RESET
TX (SC5)	PB22	D14
RX (SC5)	PB23	D13
SCL (SC2)	PA09	D12
SDA (SC2)	PA08	D11
CIPO (SC1)	PA19	D10
SCK (SC1)	PA17	D9
COPI (SC1)	PA16	D8
	PA21	D7
	PA20	D6

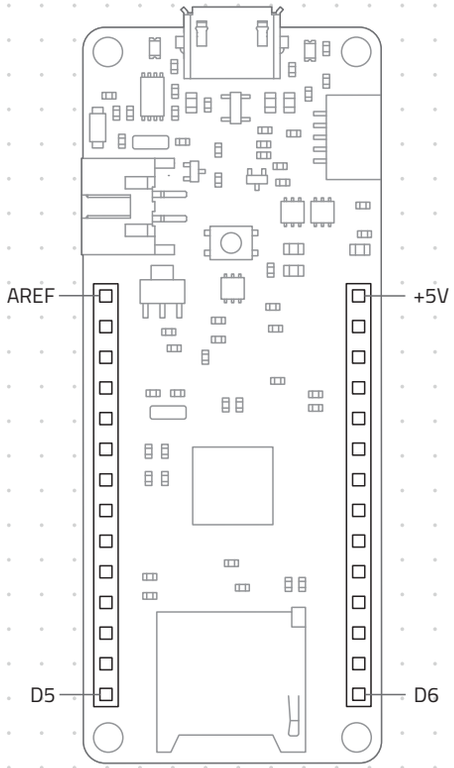
Power: Maximum current per pin is 7mA. Maximum source current is 46mA. Maximum sink current is 65mA per pin group.
Further pinout functions are also available in official datasheet.



NAME	FUNCTIONS	
AREF	PA03	AREF / AIN[1]
D15 / A0	PA02	DAC0 / AIN[0]
D16 / A1	PB02	AIN[10]
D17 / A2	PB03	AIN[11]
D18 / A3	PA04	AIN[4]
D19 / A4	PA05	AIN[5]
D20 / A5	PA06	AIN[6]
D21 / A6	PA07	AIN[7]
D0	PA22	
D1	PA23	
D2	PA10	
D3	PA11	
D4	PB10	
D5	PB11	

FUNCTIONS		NAME
		+5V
		VIN
		+3V3
		GND
		RESET
TX (SC5)	PB22	D14
RX (SC5)	PB23	D13
SCL (SC2)	PA09	D12
SDA (SC2)	PA08	D11
CIPO (SC1)	PA19	D10
SCK (SC1)	PA17	D9
COPI (SC1)	PA16	D8
	PA21	D7
	PA20	D6

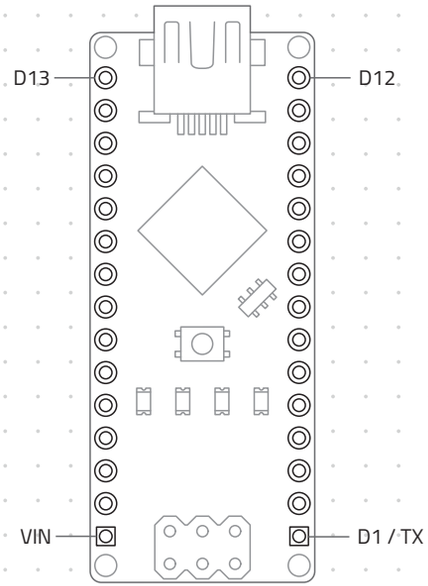
Power: Maximum current per pin is 7mA. Maximum source current is 46mA. Maximum sink current is 65mA per pin group.
Further pinout functions are also available in official datasheet.



NAME	FUNCTIONS	
AREF	PA03	AREF / AIN[1]
D15 / A0	PA02	DAC0 / AIN[0]
D16 / A1	PB02	AIN[10]
D17 / A2	PB03	AIN[11]
D18 / A3	PA04	AIN[4]
D19 / A4	PA05	AIN[5]
D20 / A5	PA06	AIN[6]
D21 / A6	PA07	AIN[7]
D0	PA22	
D1	PA23	
D2	PA10	
D3	PA11	
D4	PB10	
D5	PB11	

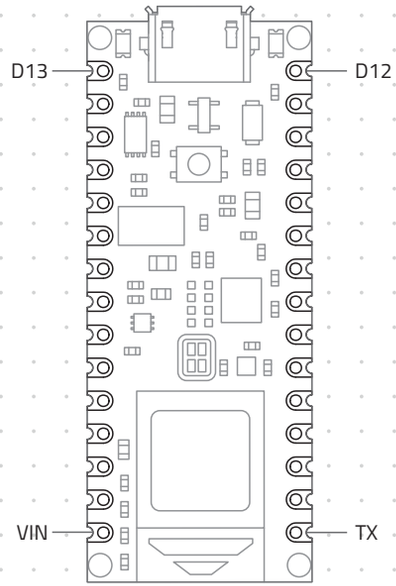
FUNCTIONS		NAME
		+5V
		VIN
		+3V3
		GND
		RESET
TX (SC5)	PB22	D14
RX (SC5)	PB23	D13
SCL (SC2)	PA09	D12
SDA (SC2)	PA08	D11
CIPO (SC1)	PA19	D10
SCK (SC1)	PA17	D9
COPI (SC1)	PA16	D8
	PA21	D7
	PA20	D6

Power: Maximum current per pin is 7mA. Maximum source current is 46mA. Maximum sink current is 65mA per pin group.
Further pinout functions are also available in official datasheet.



NAME	FUNCTIONS			FUNCTIONS	NAME
D13	PB5		CPIO	PB4	D12
+3V3			COPI	PB3	D11
AREF				PB2	D10
D14 / A0	PC0	ADC[0]		PB1	D9
D15 / A1	PC1	ADC[1]		PB0	D8
D16 / A2	PC2	ADC[2]		PD7	D7
D17 / A3	PC3	ADC[3]		PD6	D6
D18 / A4	PC4	ADC[4]		PD5	D5
D19 / A5	PC5	ADC[5]		PD4	D4
A6	ADC[6]	ADC[6]		PD3	D3
A7	ADC[7]	ADC[7]		PD2	D2
+5V					GND
RESET	PC6			PC6	RESET
GND				PD0	RX
VIN				PD1	D1 / TX

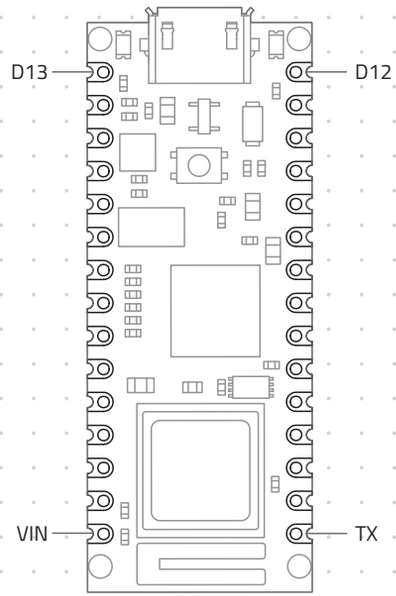
Power: 7-12V input to the board. Maximum current per I/O pin is 20mA. Maximum current per +3.3V pin is 50mA.
Extra pin functions are listed in the official datasheet.



NAME	FUNCTIONS	
D13	P0.13	SCK
+3V3		
AREF		
A0	P0.04	
A1	P0.05	
A2	P0.30	
A3	P0.29	
A4	P0.31	SDA
A5	P0.02	SCL
A6	P0.28	
A7	P0.03	
+5V		
RESET		
GND		
VIN		

FUNCTIONS		NAME
CIPO	P1.08	D12
COPI	P1.01	D11
	P1.02	D10
	P0.27	D9
	P0.21	D8
	P0.23	D7
	P1.14	D6
	P1.13	D5
	P1.15	D4
	P1.12	D3
	P1.11	D2
		GND
		RESET
	P1.10	RX
	P1.03	TX

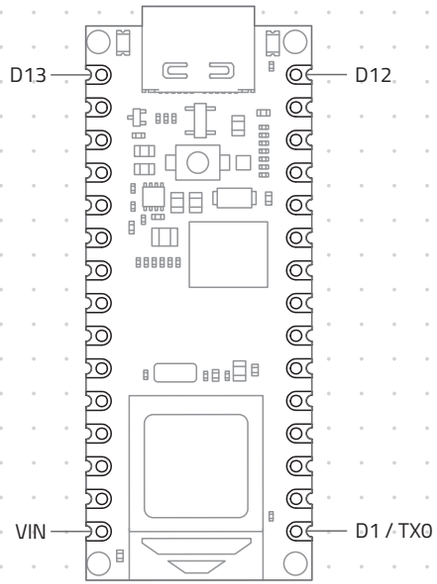
Power: 5-21V input to the board. Maximum output current per pin is 15mA. Maximum input current per pin is 5mA. Maximum external current is 25mA for the sum of all GPIO current and the current being drawn from VDD.
Extra pin functions are listed in the official datasheet.



NAME	FUNCTIONS	
D13	PA17	SCK (SC1)
+3V3		
AREF	PA03	
D14 / A0	PA02	DAC0 / AIN[0]
D15 / A1	PB02	AIN[10]
D16 / A2	PA11	AIN[19]
D17 / A3	PA10	AIN[18]
D18 / A4	PB08	SDA (SC4)
D19 / A5	PB09	SCL (SC4)
D20 / A6	PA09	AIN[17]
D21 / A7	PB03	AIN[11]
+5V		
RESET		
GND		
VIN		

FUNCTIONS		NAME
CIPO (SC1)	PA19	D12
COPI (SC1)	PA16	D11
	PA21	D10
	PA20	D9
	PA18	D8
	PA06	D7
	PA04	D6
	PA05	D5
	PA07	D4
	PB11	D3
	PB10	D2
		GND
		RESET
	PB23	RX
	PB22	TX

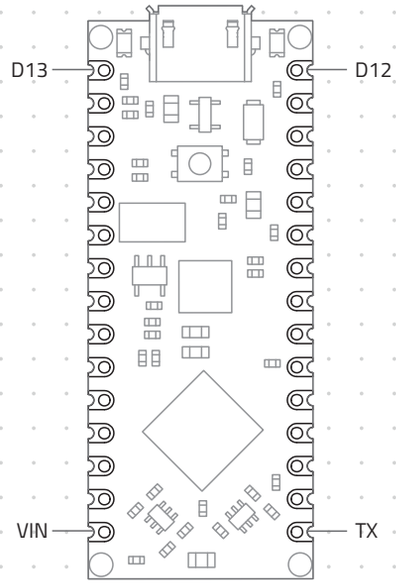
Power: 5-21V input to the board. Maximum current per pin is 7mA. Maximum source current is 46mA. Maximum sink current is 65mA per pin group. Extra pin functions are listed in the official datasheet.



NAME	FUNCTIONS	
D13	GPIO48	SCK
3V3 OUT		
B0	GPIO46	
A0 / D17	GPIO1	ADC1_CH0
A1 / D18	GPIO2	ADC1_CH1
A2 / D19	GPIO3	ADC1_CH2
A3 / D20	GPIO4	ADC1_CH3
A4 / D21	GPIO11	ADC2_CH0
A5 / D22	GPIO12	ADC2_CH1
A6 / D23	GPIO13	ADC2_CH2
A7 / D24	GPIO14	ADC2_CH3
VUSB OUT		
B1	GPIO0	
GND		
VIN		

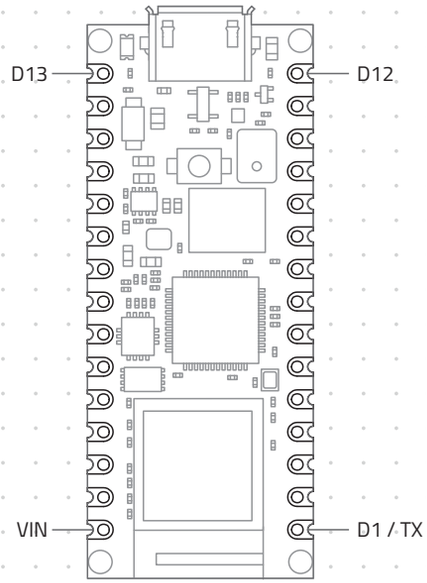
FUNCTIONS		NAME
CIPO	GPIO47	D12
COPI	GPIO38	D11
	GPIO21	D10
	GPIO18	D9
	GPIO17	D8
	GPIO10	D7
	GPIO9	D6
	GPIO8	D5
	GPIO7	D4
	GPIO6	D3
	GPIO5	D2
		GND
		RESET
RX0	GPIO44	D0 / RX0
TX0	GPIO43	D1 / TX0

Power: 6-21V input to the board. Maximum GPIO pin source current is 40mA. Maximum GPIO pin sink current is 28mA.



NAME	FUNCTIONS		FUNCTIONS		NAME
D13	PE2	SCK	CIPO (SC1)	PE1	D12
+3V3			COPI (SC1)	PE0	D11
AREF	PD7			PB1	D10
D14 / A0	PD3	AIN[3]		PB0	D9
D15 / A1	PD2	AIN[2]		PE3	D8
D16 / A2	PD1	AIN[1]		PA1	D7
D17 / A3	PD0	AIN[0]		PF4	D6
D18 / A4	PA2	SDA		PB2	D5
D19 / A5	PA3	SCL		PC6	D4
D20 / A6	PD4	AIN[4]		PF5	D3
D21 / A7	PD5	AIN[5]		PA0	D2
+5V					GND
RESET					RESET
GND				PC5	RX
VIN				PC4	TX

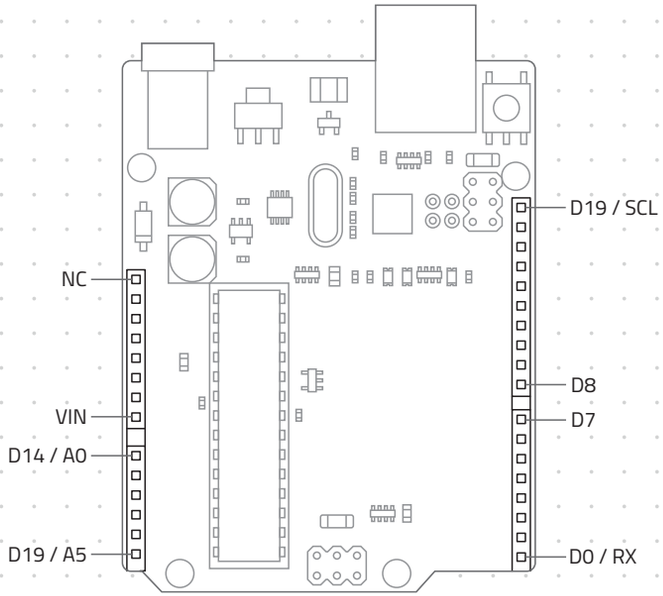
Power: 7-21V input to the board. Max current per pin 40mA, 20mA recommended. Max current 200mA for the entire package. The total current of each port power group should not exceed 100mA. Extra pin functions are listed in the official datasheet.



NAME	FUNCTIONS	
D13	GPIO6	SCK
+3V3		
AREF	PA03	
A0 / D14	GPIO26	A0
A1 / D15	GPIO27	A1
A2 / D16	GPIO28	A2
A3 / D17	GPIO29	A3
A4 / D18	GPIO12	A4 / SDA
A5 / D19	GPIO13	A5 / SCL
A6 / D20		A6
A7 / D21		A7
+5V		
REC	QSPI_CSN	
GND		
VIN		

FUNCTIONS		NAME
CIPO	GPIO4	D12
COPI	GPIO7	D11
	GPIO5	D10
	GPIO21	D9
	GPIO20	D8
	GPIO19	D7
	GPIO18	D6
	GPIO17	D5
	GPIO16	D4
	GPIO15	D3
	GPIO25	D2
		GND
	RESET	RESET
	GPIO1	RX
	GPIO0	D1 / TX

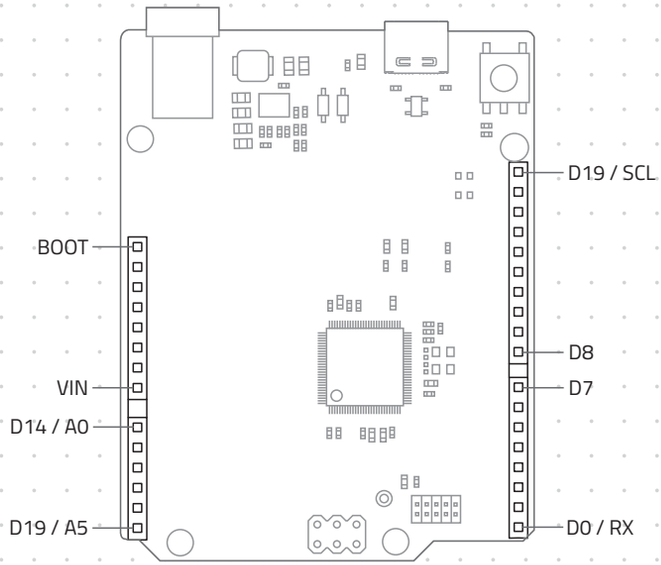
Power: 4-20V input to the board. DC Current per I/O pin is 8mA. More details in the datasheet.



FUNCTIONS		
NC		
IOREF		
RESET	PC6	
+3.3V		
+5V		
GND		
GND		
VIN		
D14 / A0	PC0	ADC[0]
D15 / A1	PC1	ADC[1]
D16 / A2	PC2	ADC[2]
D17 / A3	PC3	ADC[3]
D18 / A4	PC4	ADC[4]
D19 / A5	PC5	ADC[5]

FUNCTIONS		
SCL	PC5	D19 / SCL
SDA	PC4	D18 / SDA
		AREF
		GND
SCK	PB5	D13
CIPO	PB4	D12
COPI	PB3	D11
SS	PB2	D10
	PB1	D9
	PB0	D8
	PD7	D7
	PD6	D6
	PD5	D5
	PD4	D4
	PD3	D3
	PD2	D2
	PD1	D1 / TX
	PD0	D0 / RX

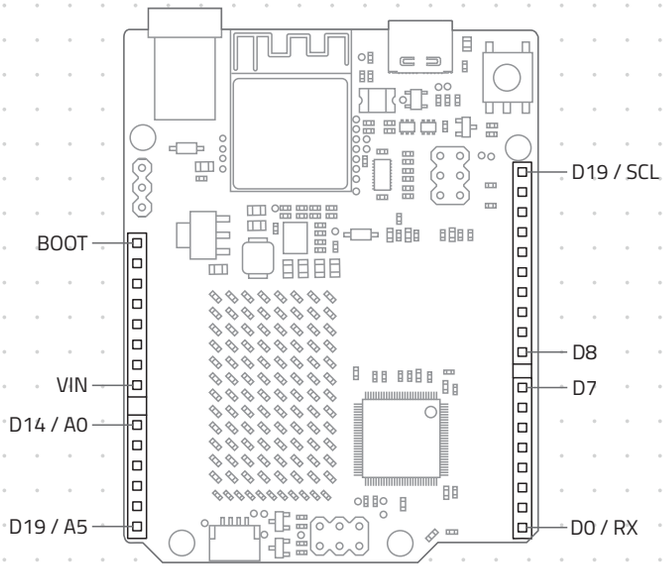
Power: 6-20V input to the board. Max current per I/O pin is 20mA. Max current per +3.3V pin is 50mA.
Extra pin functions are listed in the official datasheet.



FUNCTIONS		
BOOT		
IOREF		
RESET		
+3V3 (OUT)		
+5V (OUT)		
GND		
GND		
VIN (IN)		
D14 / A0	P014	AN009
D15 / A1	P000	AN000
D16 / A2	P001	AN001
D17 / A3	P002	AN002
D18 / A4	P101	AN021
D19 / A5	P100	AN022

FUNCTIONS		
IIC_SCL1	P100	D19 / SCL
IIC_SDA1	P101	D18 / SDA
		AREF
		GND
RSPCKB	P111	D13
CIPOB	P110	D12
COPIB	P109	D11
SSLB0	P112	D10
	P303	D9
	P304	D8
	P107	D7
	P106	D6
	P102	D5
	P103	D4
	P104	D3
	P105	D2
SCI_TXD2	P302	D1 / TX
SCI_RXD2	P301	D0 / RX

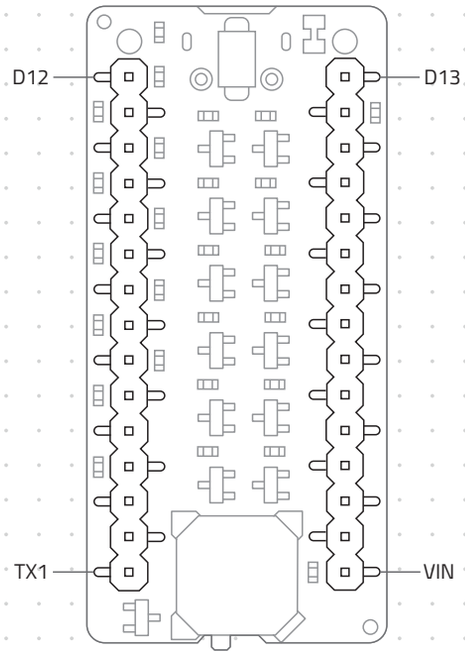
Power: 6-24V input to the board. 5V operating voltage. The GPIO microcontroller can handle up to 8 mA per pin. More info in the datasheet.



FUNCTIONS			
BOOT			
IOREF			
RESET			
+3V3 (OUT)			
+5V (OUT)			
GND			
GND			
VIN (IN)			
D14 / A0	P014	AN009	DA0
D15 / A1	P000	AN000	
D16 / A2	P001	AN001	
D17 / A3	P002	AN002	
D18 / A4	P101	AN021	IIC_SDA1
D19 / A5	P100	AN022	IIC_SCL1

FUNCTIONS		
IIC_SCL1	P100	D19 / SCL
IIC_SDA1	P101	D18 / SDA
		AREF
		GND
RSPCKA	P102	D13
CIPOA	P410	D12
COPIA	P411	D11
SSLA0	P103	D10
	P303	D9
	P304	D8
	P112	D7
	P111	D6
	P107	D5
	P106	D4
	P105	D3
	P104	D2
SCI_TXD2	P302	D1 / TX
SCI_RXD2	P301	D0 / RX

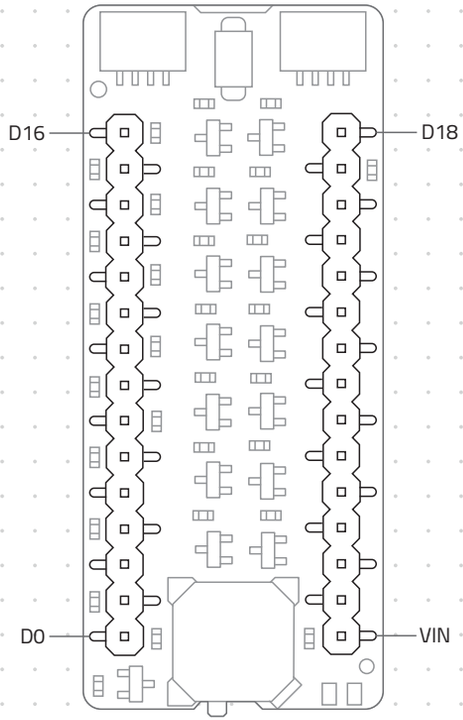
Power: 6-24V input to the board. 5V operating voltage. The GPIO microcontroller can handle up to 8 mA per pin. More info in the datasheet.



Bottom View

	NAME	FUNCTIONS				
□	D12	DIGITAL IO		MISO	LED	
□	D11	DIGITAL IO	PWM	MOSI	LED	
□	D10	DIGITAL IO	PWM	SS	LED	
□	D9	DIGITAL IO	PWM		LED	
□	D8	DIGITAL IO			LED	PIEZO BUZZER
□	D7	DIGITAL IO			LED	
□	D6	DIGITAL IO	PWM		LED	
□	D5	DIGITAL IO	PWM		LED	
□	D4	DIGITAL IO			LED	
□	D3	DIGITAL IO	PWM	INT1	LED	
□	D2	DIGITAL IO		INT0	LED	USER BUTTON
□	GND					
□	RST					RESET BUTTON
□	RX0	DIGITAL IO		RX		USB COM TX
□	TX1	DIGITAL IO		TX		USB COM RX

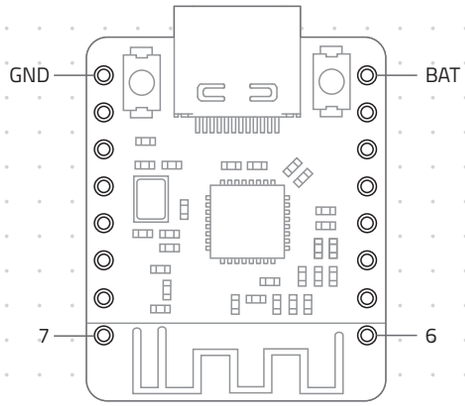
	NAME	FUNCTIONS			
□	D13	DIGITAL IO		SCK	LED
□	3V3				LED
□	AREF				
□	A0	DIGITAL IO	ANALOG IN		
□	A1	DIGITAL IO	ANALOG IN		
□	A2	DIGITAL IO	ANALOG IN		
□	A3	DIGITAL IO	ANALOG IN		
□	A4	DIGITAL IO	ANALOG IN	SDA	
□	A5	DIGITAL IO	ANALOG IN	SCL	
□	A6		ANALOG IN		
□	A7		ANALOG IN		
□	5V				LED
□	RST				
□	GND				
□	VIN				



Bottom View

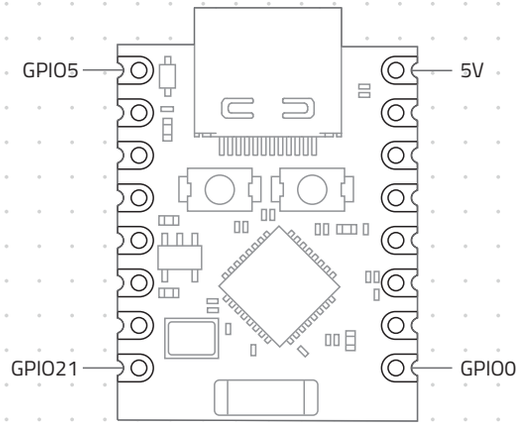
NAME	FUNCTIONS					
D16	GP16	PWM0A	SDI0	SDA0	TX0	LED
D19	GP19	PWM1B	SDO0	SCL1		LED
D17	GP17	PWM0B	CSN0	SCL0	RX0	LED
D9	GP9	PWM4B	CSN1	SCL0	RX1	LED
D8	GP8	PWM4A	SDI1	SDA0	TX1	LED
D7	GP7	PWM3B	SDO0	SCL1		LED
D6	GP6	PWM3A	SCK0	SDA1		LED
D5	GP5	PWM2B	CSN0	SCL0	RX1	LED
D4	GP4	PWM2A	SDI0	SDA0	TX1	LED
D3	GP3	PWM1B	SDO0	SCL1		LED
D2	GP2	PWM1A	SCK0	SDA1		LED
GND						
RST						
D1	GP1	PWM0B	CSN0	SCL0	RX0	LED
D0	GP0	PWM0A	SDI0	SDA0	TX0	LED

NAME	FUNCTIONS				
D18	GP18	PWM1A	SCK0	SDA1	LED
3V3					LED
NC					
D26	GP26	PWM5A	A0	SDA1	
D27	GP27	PWM5B	A1	SCL1	
D28	GP28	PWM6A	A2		
D29	GP29	PWM6B	A3		
D12	GP12	PWM6A	SDI1	SDA0	TX0
D13	GP13	PWM6B	CSN1	SCL0	RX0
D14	GP14	PWM7A	SCK1	SDA1	
D15	GP15	PWM7B	SDO1	SCL1	
5V					
RST					
GND					LED
VIN					



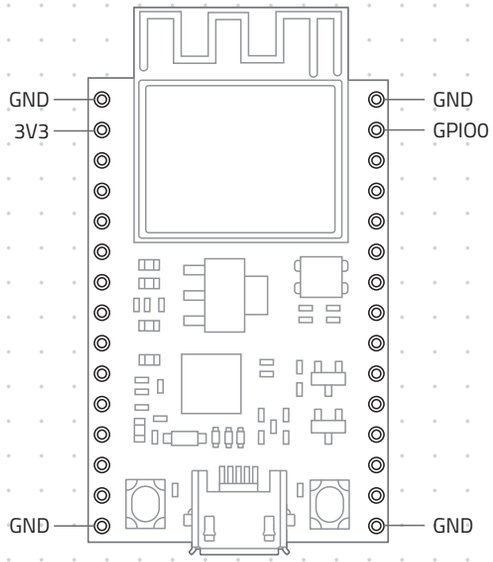
MAIN	ALT		
GND			
3V3			
4	A3	LP_RX	ADC1_4
5	A4	LP_TX	ADC1_5
23	SCK	DAT3	
22	MOSI	DAT2	
21	MISO	DAT1	
7	D11	LP_SCL	MTDO

		ALT	MAIN
			BAT
			GND
			VIN
		RX	17
		TX	16
	CLK	SDA	19
	DAT0	SCL	20
ADC1_6	LP_SDA	D12	6



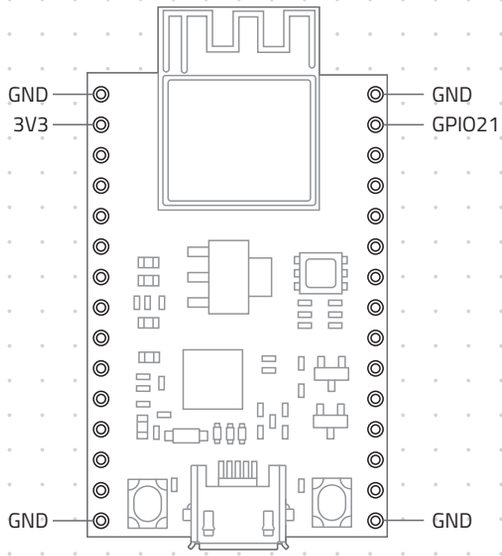
MAIN	ALT	
GPIO5	A5	MISO
GPIO6		MOSI
GPIO7		SS
GPIO8		SDA
GPIO9		SCL
GPIO10		
GPIO20		RX
GPIO21		TX

	ALT	MAIN
		5V
		GND
		3V3
SCK	A4	GPIO4
	A3	GPIO3
	A2	GPIO2
	A1	GPIO1
	A0	GPIO0



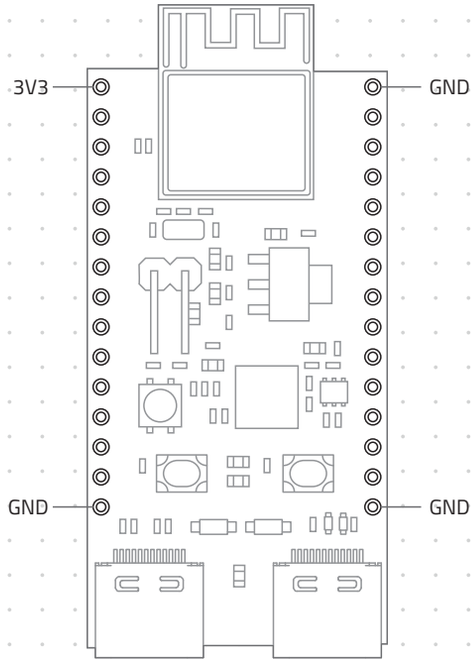
NAME	FUNCTIONS	
GND		
3V3		
3V3		
RST		
GND		
GPIO4	MTMS	ADC1_CH4
GPIO5	MTDI	ADC2_CH0
GPIO6	MTCK	
GPIO7	MTDO	
GND		
GPIO8	LOG	RGB_LED
GPIO9	BOOT	
5V0		
5V0		
GND		

FUNCTIONS		NAME
		GND
XTAL_32K_P	ADC1_CH0	GPIO0
XTAL_32K_N	ADC1_CH1	GPIO1
BOOT	ADC1_CH2	GPIO2
	ADC1_CH3	GPIO3
		GND
	JTAG	GPIO10
		GND
	U0RXD	GPIO20
	U0TXD	GPIO21
		GND
	USB_D-	GPIO18
	USB_D+	GPIO19
		GND
		GND



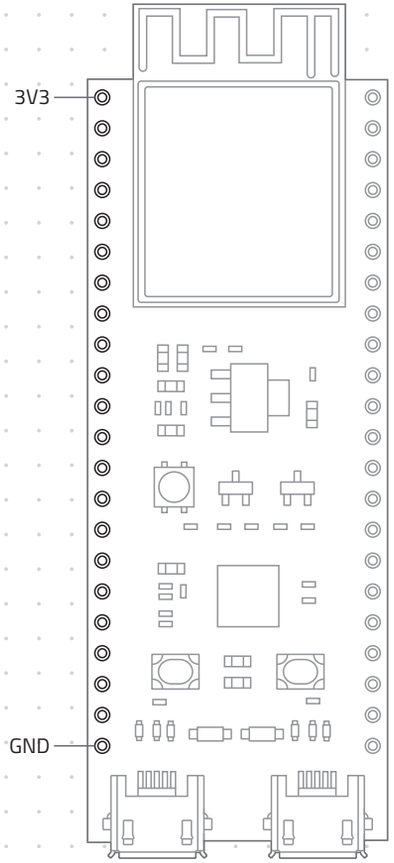
NAME	FUNCTIONS		
GND		GND	
3V3		3V3	
3V3		3V3	
GPIO2	RTC	ADC1_2	FSPIQ
GPIO3	RTC	ADC1_3	
GND			
RST	PU		
GND			
GPIO0	RTC	ADC1_0	XTAL32KP
GPIO1	RTC	ADC1_1	XTAL32KN
GPIO10	FSPISCO		
GND			
5V0			
5V0			
GND			

FUNCTIONS			NAME
			GND
		U0TXD	GPIO21
		U0RXD	GPIO20
			GND
		BOOT	GPIO9
	RGB_LED	LOG	GPIO8
			GND
	MTDO	FSPID	GPIO7
	MTCK	FSPICLK	GPIO6
MTDI	ADC2_0	RTC	GPIO5
MTMS	ADC1_4	RTC	GPIO4
			GND
	ID	USB_D-	GPIO18
	ID/UPU	USB_D+	GPIO19
			GND

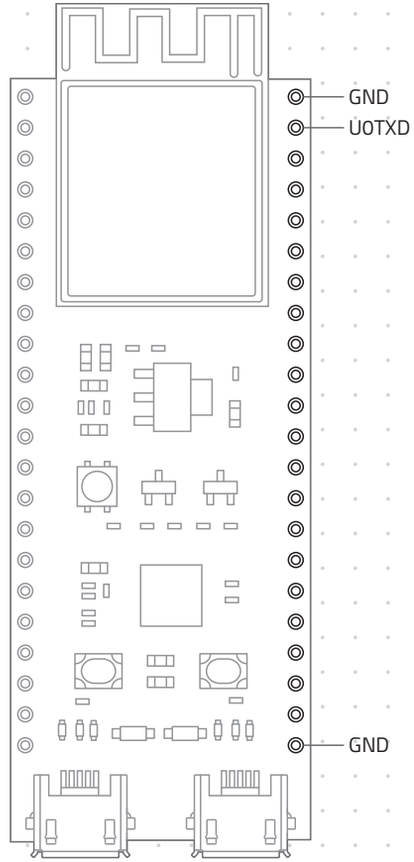


NAME	FUNCTIONS		
3V3			
RST			
GPIO0	FSPIQ		
GPIO1	FSPICS0	ADC1_CH0	
GPIO2	FSPIWP	ADC1_CH1	MTMS
GPIO3	FSPIHD	ADC1_CH2	MTD0
GPIO13	XTAL_32K_P		
GPIO14	XTAL_32K_N		
GPIO4	FSPICLK	ADC1_CH3	MTCK
GPIO5	FSPID	ADC1_CH4	MTDI
NC			
3V3	BATTERY		
GND			
5V0			
GND			

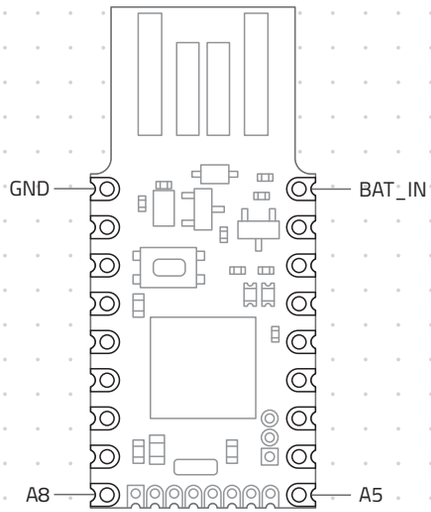
FUNCTIONS		NAME
		GND
U0TXD	FSPICS2	GPIO24
U0RXD	FSPICS1	GPIO23
	ZCD0	GPIO10
	ZCD1	GPIO11
	FSPICS3	GPIO25
		GPIO12
	LOG	GPIO8
		GPIO22
		GND
	BOOT	GPIO9
		GND
USB_D+	FSPICS5	GPIO27
USB_D-	FSPICS4	GPIO26
		GND



NAME	OTHER FUNCTIONS					
3V3						
3V3						
RST						
GPIO4	RTC	TOUCH4	ADC1_3			
GPIO5	RTC	TOUCH5	ADC1_4			
GPIO6	RTC	TOUCH6	ADC1_5			
GPIO7	RTC	TOUCH7	ADC1_6			
GPIO15	RTC	U0RTS	ADC2_4	XTAL_32K_P		
GPIO16	RTC	U0CTS	ADC2_5	XTAL_32K_N		
GPIO17	RTC	U1TXD	ADC2_6			
GPIO18	RTC	U1RXD	ADC2_7	CLK_OUT3		
GPIO8	RTC	TOUCH8	ADC1_7			
GPIO3	RTC	TOUCH3	ADC1_2	JTAG		
GPIO46	LOG					
GPIO9	RTC	TOUCH9	ADC1_8	SUBSPIHD	FSPIHD	
GPIO10	RTC	TOUCH10	ADC1_9	FSPII04	SUBSPICS0	FSPICS0
GPIO11	RTC	TOUCH11	ADC2_0	FSPII05	SUBSPID	FSPID
GPIO12	RTC	TOUCH12	ADC2_1	FSPII06	SUBSPICLK	FSPICLK
GPIO13	RTC	TOUCH13	ADC2_2	FSPII07	SUBSPIQ	FSPIQ
GPIO14	RTC	TOUCH14	ADC2_3	FSPIDQS	SUBSPIWP	FSPIWP
5V0						
GND						



NAME	OTHER FUNCTIONS				
GND					
U0TXD	GPIO43	CLK_OUT1			
U0RXD	GPIO44	CLK_OUT2			
GPIO1	RTC	TOUCH1	ADC1_0		
GPIO2	RTC	TOUCH2	ADC1_1		
MTMS	GPIO42				
MTDI	GPIO41	CLK_OUT1			
MTDO	GPIO40	CLK_OUT2			
MTCK	GPIO39	CLK_OUT3	SUBSPICS1		
GPIO38	FSPIWP	SUBSPIWP	RGB_LED		
GPIO37	SPIDQS	FSPIQ	SUBSPIQ		
GPIO36	SPII07	FSPICLK	SUBSPICLK		
GPIO35	SPII06	FSPID	SUBSPID		
GPIO0	BOOT				
GPIO45	VSPI				
GPIO48	SPICLK_N				
GPIO47	SPICLK_P				
GPIO21	RTC				
USB_D+	GPIO20	RTC	U1CTS	ADC2_9	CLK_OUT1
USB_D-	GPIO19	RTC	U1RTS	ADC2_8	CLK_OUT2
GND					
GND					

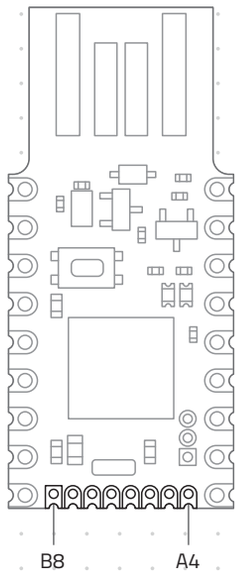


RIGHT

MAIN	ALTERNATE FUNCTIONS			
GND				
VBAT				
3.3				
B3	I2C2_SDA	PWM (TIM2_CH2)	SPI3_SCK	SPI1_SCK
B4	I2C3_SDA	PWM (TIM3_CH1)	SPI1_MISO	SPI3_MISO
B5	PWM (TIM3_CH2)	SPI1_MOSI	SPI3_MOSI	
B6	I2C1_SCL	PWM (TIM4_CH1)	USART1_TX	
B7	I2C1_SDA	PWM (TIM4_CH2)	USART1_RX	
A8	I2C3_SCL	PWM (TIM1_CH1)	USART1_CK	

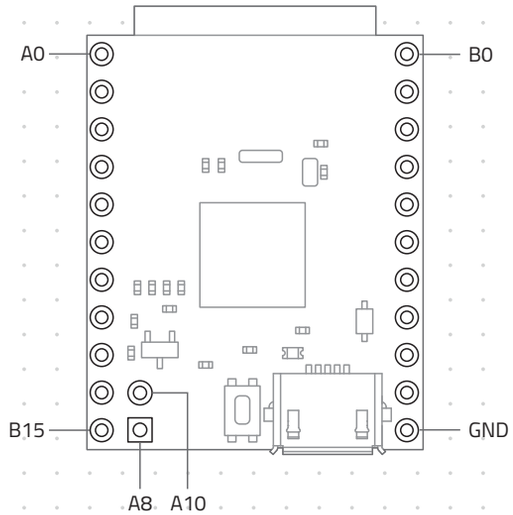
LEFT

MAIN	ALTERNATE FUNCTIONS		
BAT_IN			
B15	PWM (TIM1_CH3N)	SPI2_MOSI	
B14	PWM (TIM1_CH2N)	SPI2_MISO	
B13	PWM (TIM1_CH1N)	SPI2_SCK	
B10	I2C2_SCL	PWM (TIM2_CH3)	SPI2_SCK
B1	ADC1_IN9	PWM (TIM1_CH3N, TIM3_CH4)	
A7	ADC1_IN7	PWM (TIM1_CH1N, TIM3_CH2)	SPI1_MOSI
A6	ADC1_IN6	PWM (TIM3_CH1)	SPI1_MISO
A5	ADC1_IN5	PWM (TIM2_CH1)	SPI1_SCK



RIGHT

MAIN	ALTERNATE FUNCTIONS		
B8	I2C1_SCL	PWM (TIM10_CH1, TIM4_CH3)	
B9	I2C1_SDA	PWM (TIM11_CH1, TIM4_CH4)	
A10	PWM (TIM1_CH3)	USART1_RX	
A0	ADC1_IN0	PWM (TIM2_CH1)	
A1	ADC1_IN1	PWM (TIM2_CH2)	
A2	ADC1_IN2	PWM (TIM2_CH3, TIM9_CH1)	USART2_TX
A3	ADC1_IN3	PWM (TIM2_CH4, TIM9_CH2)	USART2_RXV
A4	ADC1_IN4	USART2_CK	

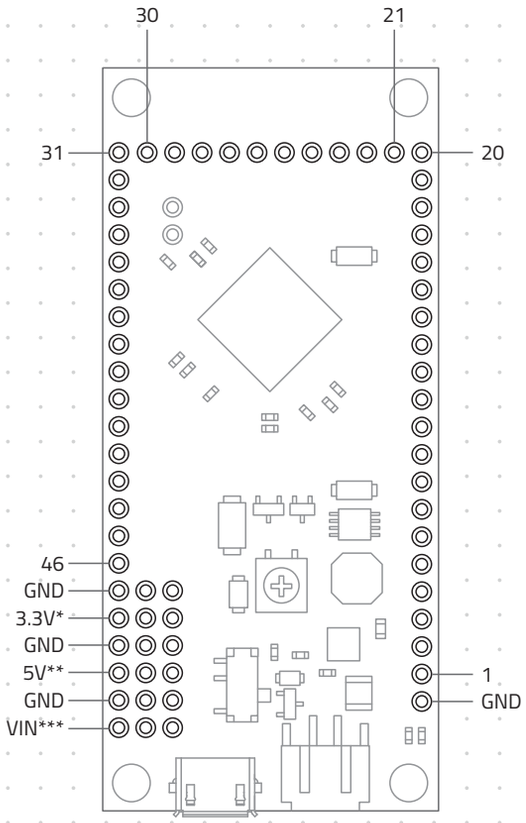


MAIN	ALTERNATE FUNCTIONS		
A0	PWM (TIM2_CH1)	ADC1_IN0	
A1	PWM (TIM2_CH2)	ADC1_IN1	
A4	USART2_CK	ADC1_IN4	
A5	SPI1_SCK	PWM (TIM2_CH1)	ADC1_IN5
A6	SPI1_MISO	PWM (TIM3_CH1)	ADC1_IN6
A7	SPI1_MOSI	PWM (TIM1_CH1N, TIM3_CH2)	ADC1_IN7
B1	PWM (TIM1_CH3N, TIM3_CH4)	ADC1_IN9	
B10	SPI2_SCK	PWM (TIM2_CH3)	I2C2_SCL
B13	SPI2_SCK	PWM (TIM1_CH1N)	
B14	SPI2_MISO	PWM (TIM1_CH2N)	
B15	SPI2_MOSI	PWM (TIM1_CH3N)	

MAIN	ALTERNATE FUNCTIONS		
B0	ADC1_IN8	PWM (TIM1_CH2N, TIM3_CH3)	
B9	I2C1_SDA	PWM (TIM11_CH1, TIM4_CH4)	
B8	I2C1_SCL	PWM (TIM10_CH1, TIM4_CH3)	
B7	I2C1_SDA	PWM (TIM4_CH2)	USART1_RX
B6	I2C1_SCL	PWM (TIM4_CH1)	USART1_TX
B5	PWM (TIM3_CH2)	SPI1_MOSI	SPI3_MOSI
B4	I2C3_SDA	PWM (TIM3_CH1)	SPI1_MISO
B3	I2C2_SDA	PWM (TIM2_CH2)	SPI3_SCK
3.3**			
VUSB*			
GND			

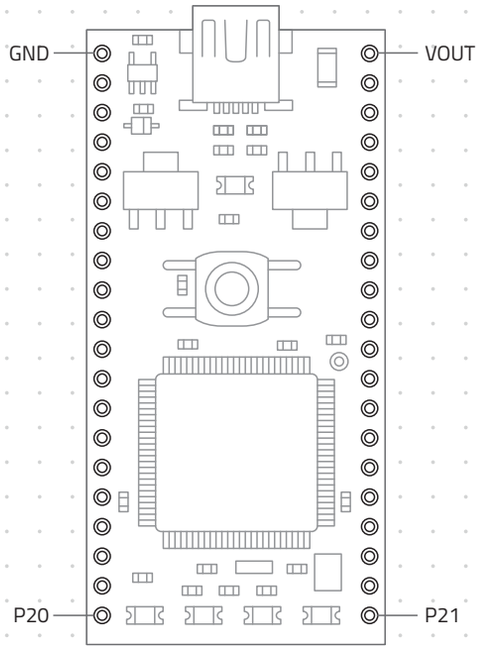
MAIN	ALTERNATE FUNCTIONS		
A10	PWN (TIM1_CH3)	USART1_RX	
A8	I2C3_SCL	PWM (TIM1_CH1)	USART1_CK

**This pin is connected directly to USB 5V. Only use to power the Espruino if micro USB is unplugged. **3.3v output from the on-board voltage regulator)*

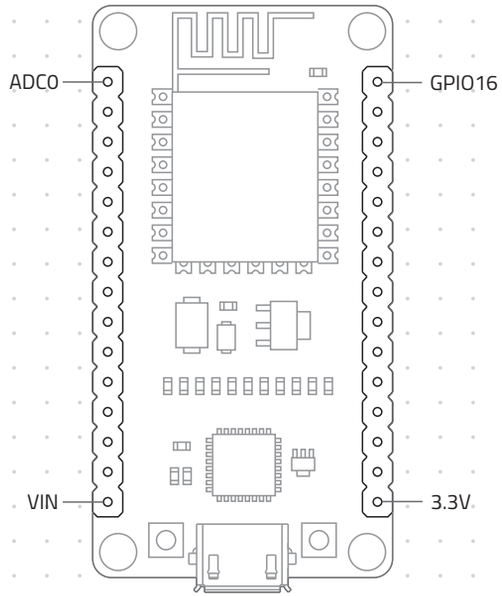


#	PIC	FUNCTIONS	#	PIC	FUNCTIONS
1	31	SDA2/RP10/GD4/CN17/RF4	24	1	VSYNC/CN63/RE5
2	32	SCL2/RP17/GD5/CN18/RF5	25	2	GD12/SCL3/CN64/RE6
3	42	RTCC/DMLN/RP2/CN53/RD8	26	3	GD13/SDA3/CN65/RE7
4	43	DPLN/SDA1/RP4/GD8/CN54/RD9	27	4	C1IND/RP21/CN8/RG6
5	44	SCL1/RP3/GD6/CN55/RD10	28	5	C1INC/RP26/CN9/RG7
6	45	RP12/GD7/CN56/RD11	29	6	C2IND/RP19/GD14/CN10/RG8
7	46	DMH/RP11/INT0/CN49/RD0	30	8	C2INC/RP27/GD15/CN11/RG9
8	47	SOSCI/C3IND/CN1/RC13	31	11	PGEC3/AN5/C1INA/VBUSON/RP18/CN7/RB5
9	48	SOSCO/SCLKI/T1CK/C3INC/RPI37/CN0/RC14	32	12	PGED3/AN4/C1INB/USBOEN/RP28/CN6/RB4
10	49	VCPCON/RP24/GD9/VBUSCHG/CN50/RD1	33	13	AN3/C2INA/VPIO/CN5/RB3
11	50	DPH/RP23/CN51/RD2	34	14	AN2/C2INB/VMIO/RP13/CN4/RB2
12	51	RP22/GEN/CN52/RD3	35	15	PGEC1/AN1/VREF-/RP1/CN3/RB1
13	52	RP25/GCLK/CN13/RD4	36	16	PGED1/AN0/VREF+/RP0/CN2/RB0
14	53	RP20/GPWR/CN14/RD5	37	17	PGEC2/AN6/RP6/CN24/RB6
15	54	C3INB/CN15/RD6	38	18	PGED2/AN7/RP7/RCV/CN25/RB7
16	55	C3INA/SESSEND/CN16/RD7	39	21	AN8/RP8/CN26/RB8
17	58	GD10/VBUSST/VCMPST1/VBUSVLD/CN68/RF0	40	22	AN9/RP9/CN27/RB9
18	59	GD11/VCMPST2/SESSVLD/CN69/RF1	41	23	TMS/CVREF/AN10/CN28/RB10
19	60	GD0/CN58/RE0	42	24	TDO/AN11/CN29/RB11
20	61	GD1/CN59/RE1	43	27	TCK/AN12/CTEDG2/CN30/RB12
21	62	GD2/CN60/RE2	44	28	TDI/AN13/CTEDG1/CN31/RB13
22	63	GD3/CN61/RE3	45	29	AN14/CTPLS/RP14/CN32/RB14
23	64	HSYNC/CN62/RE4	46	30	AN15/RP29/REFO/CN12/RB15

**3.3V output from the on-board regulator. **5V output from the on-board regulator. ***Used for outputting the supply voltage to your circuit, or as an alternative input to the power jack.*

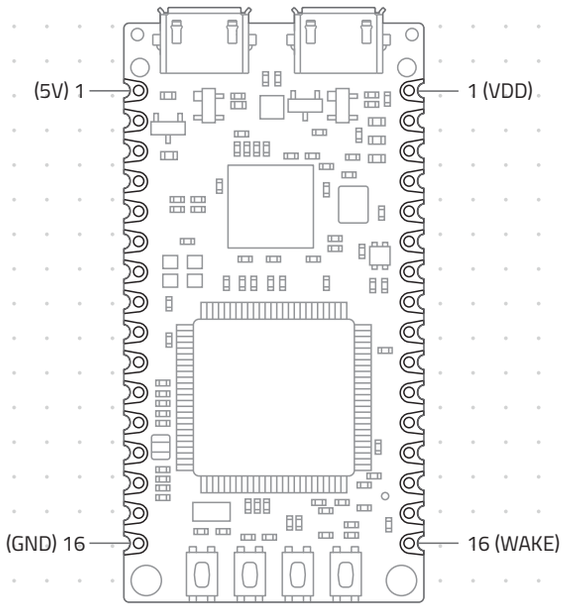


NAME	FUNCTIONS				FUNCTIONS	NAME
GND	0V				3.3V REGULATED OUT	VOUT
VIN	4.5V - 9.0V IN				5.0V USB OUT	VU
VB						IF-
NR						IF+
P5	SPI (MOSI)				ETHERNET	RD-
P6	SPI (MISO)				ETHERNET	RD+
P7	SPI (SCK)				ETHERNET	TD-
P8					ETHERNET	TD+
P9	SERIAL (TX)	I2C (SDA)			USB	D-
P10	SERIAL (RX)	I2C (SCL)			USB	D+
P11		SPI (MOSI)			CAN (RD)	P30
P12		SPI (MISO)			CAN (TD)	P29
P13	SERIAL (TX)	SPI (SCK)		I2C (SDA)	SERIAL (TX)	P28
P14	SERIAL (RX)			I2C (SCL)	SERIAL (RX)	P27
P15	ANALOGIN				PWMOUT	P26
P16	ANALOGIN				PWMOUT	P25
P17	ANALOGIN				PWMOUT	P24
P18	ANALOGIN	ANALOGOUT			PWMOUT	P23
P19	ANALOGIN				PWMOUT	P22
P20	ANALOGIN				PWMOUT	P21



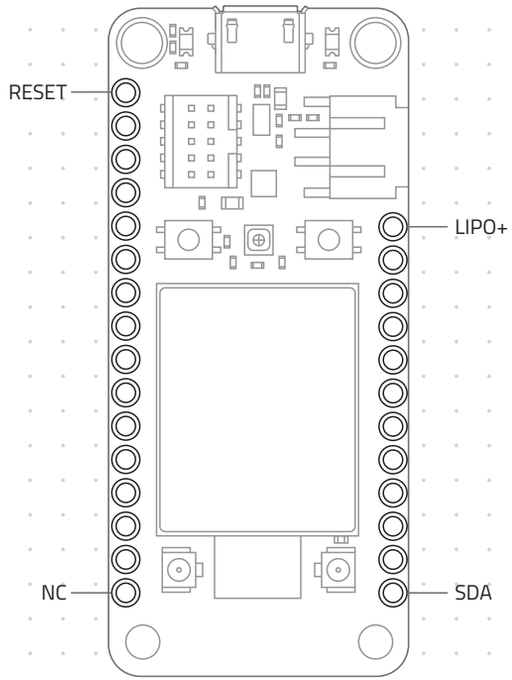
NAME	FUNCTIONS
ADC0	TOUT
RESERVED	
RESERVED	
GPIO10	SDD3
GPIO9	SDD2
MOSI	SDD1
CS	SDCMD
MISO	SDD0
SCLK	SDCLK
GND	
3.3V	
EN	
RST	
GND	
VIN	

FUNCTIONS		NAME
WAKE	USER	GPIO16
		GPIO5
		GPIO4
	FLASH	GPIO0
	TXD1	GPIO2
		3.3V
		GND
HSCLK		GPIO14
HMISO		GPIO12
HMOSI	RXD2	GPIO13
HCS	TXD2	GPIO15
	RXD0	GPIO3
	TXD0	GPIO1
		GND
		3.3V



#	MAIN	ALT
1	5V	
2	ADC0_N	PIO0_16
3	ADC0_P	PIO0_23
4	GPIO	PIO0_15
5	GPIO	PIO1_5
6	GPIO	PIO1_8
7	GPIO	PIO1_9
8	GPIO	PIO1_10
9	FC1_SCL	PIO0_14
10	FC1_SDA	PIO0_13
11	FC2_TXD	PIO0_27
12	FC2_RXD	PIO1_24
13	PLU_INO	PIO1_31
14	COMP	PIO0_0
15	RESET ULP	
16	GND	

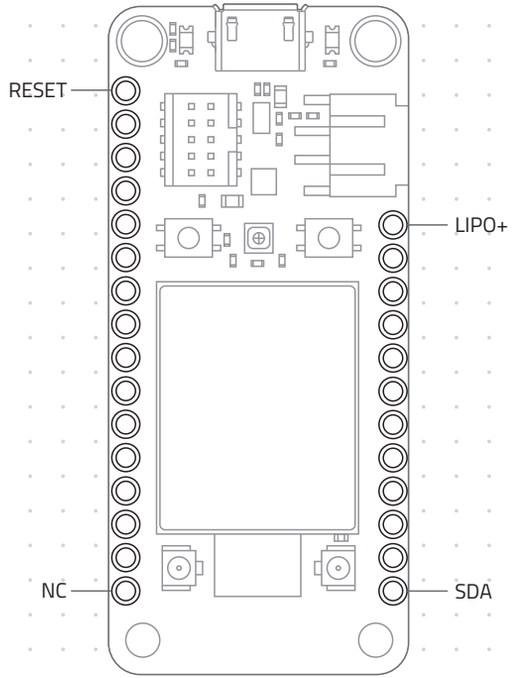
ALT	MAIN	#
	VDD	1
PIO_4	LED R	2
PIO1_7	LED G	3
PIO1_6	LED B	4
PIO1_20	FC4_SCL	5
PIO1_21	FC4_SDA	6
PIO1_7	GPIO	7
PIO1_0	GPIO	8
PIO0_31	GPIO	9
PIO1_1	SSEL1	10
PIO1_2	SCK	11
PIO1_3	MISO	12
PIO0_26	MOSI	13
PIO1_27	GPIO	14
PIO1_26	GPIO	15
	WAKE/GPIO	16



MAIN	FUNCTIONS			
RESET				P0.18
3.3V*				
MODE				P0.11
GND				
ADC0			PWM 2	P0.03
ADC1			PWM 2	P0.04
ADC2			PWM 2	P0.28
ADC3			PWM 2	P0.29
ADC4			PWM 3	P0.30
ADC5		SPI_SS	PWM 3	P0.31
		SPI_SCK		P1.15
		SPI_MOSI		P1.13
		SPI_MISO		P1.14
	UART1_RX			P0.08
	UART1_TX			P0.06
NC				

MAIN	FUNCTIONS			
LIPO+**				
ENABLE***				
VBUS****				
			PWM 1	P1.03
			PWM 0	P1.12
			PWM 1	P1.11
			PWM 1	P1.10
		SPI1_MISO	PWM 1	P1.08
SCL1	UART1_CTS	SPI1_MOSI	PWM 3	P1.02
SDA1	UART1_RTS	SPI1_SCK	PWM 3	P1.01
SCL				P0.27
SDA				P0.26

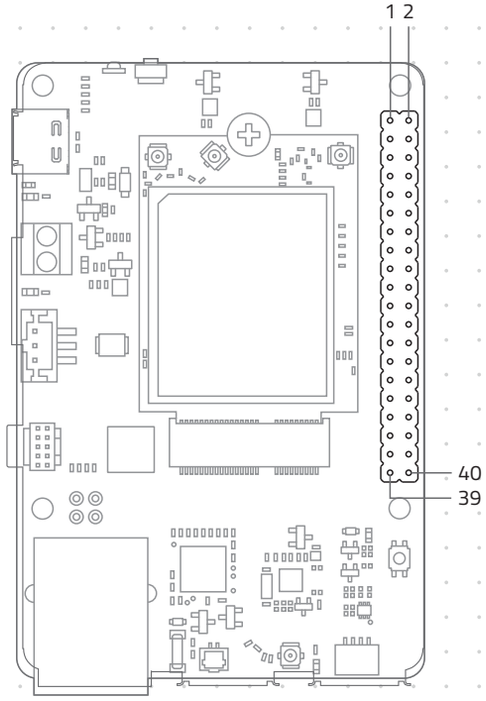
**3.3VDC / 1000mA Max Output. **Connected to + pin of LiPo connector. ***Connect to GND to disable device. ****Connected to USB power pin (5VDC typical)*



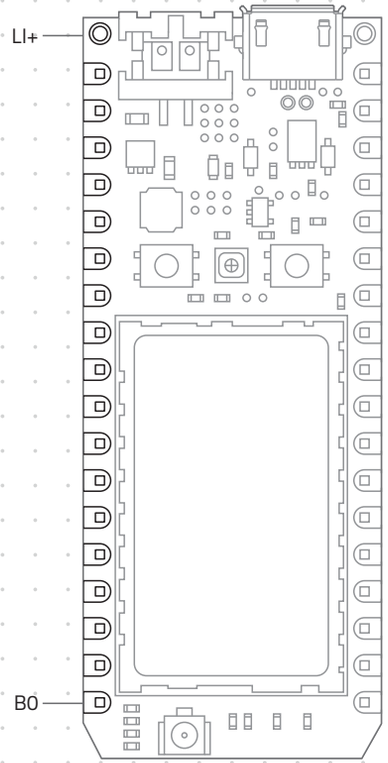
MAIN	FUNCTIONS			
RESET				P0.18
3.3V*				
MODE				P0.11
GND				
ADC0			PWM 2	P0.03
ADC1			PWM 2	P0.04
ADC2			PWM 2	P0.28
ADC3			PWM 2	P0.29
ADC4			PWM 3	P0.30
ADC5		SPI_SS	PWM 3	P0.31
		SPI_SCK		P1.15
		SPI_MOSI		P1.13
		SPI_MISO		P1.14
	UART1_RX			P0.08
	UART1_TX			P0.06
NC				

MAIN	FUNCTIONS			
LIPO+**				
ENABLE***				
VBUS****				
			PWM 1	P1.03
			PWM 0	P1.12
			PWM 1	P1.11
			PWM 1	P1.10
		SPI1_MISO	PWM 1	P1.08
SCL1	UART1_CTS	SPI1_MOSI	PWM 3	P1.02
SDA1	UART1_RTS	SPI1_SCK	PWM 3	P1.01
SCL				P0.27
SDA				P0.26

**3.3VDC / 1000mA Max Output. **Connected to + pin of LiPo connector. ***Connect to GND to disable device. ****Connected to USB power pin (5VDC typical)*

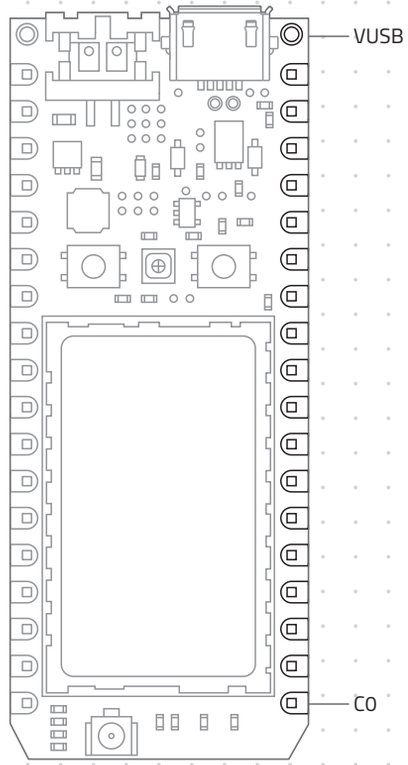


RPI EQUIVALENT	NAME	#		#	NAME	RPI EQUIVALENT
3V3 POWER	3V3	1		2	5V	5V POWER
GPIO 2 (SDA)	D0	3		4	5V	5V POWER
GPIO 3 (SCL)	D1	5		6	GND	GROUND
GPIO 4 (GPCLK0)	IOEX_PA0	7		8	TX	GPIO 14 (TXD)
GROUND	GND	9		10	RX	GPIO 15 (RXD)
GPIO 17	D2	11		12	D6	GPIO 18 (PCM_CLK)
GPIO 27	A5	13		14	GND	GROUND
GPIO 22	D27	15		16	D24	GPIO 23
3V3 POWER	3V3	17		18	D25	GPIO 24
GPIO 10 (MOSI)	MOSI	19		20	GND	GROUND
GPIO 9 (MISO)	MISO	21		22	D22	GPIO 25
GPIO 11 (SCLK)	SCK	23		24	A6	GPIO 8 (CE0)
GROUND	GND	25		26	A2	GPIO 7 (CE1)
GPIO 0 (ID_SD)	NC27	27		28	NC28	GPIO 1 (ID_SC)
GPIO 5	A0	29		30	GND	GROUND
GPIO 6	A1	31		32	D5	GPIO 12 (PWM0)
GPIO 13 (PWM1)	D4	33		34	GND	GROUND
GPIO 19 (PCM_FS)	D26	35		36	D3	GPIO 16
GPIO 26	IOEX_PB7	37		38	D21	GPIO 20 (PCM_DIN)
GROUND	GND	39		40	D20	GPIO 21 (PCM_DOUT)



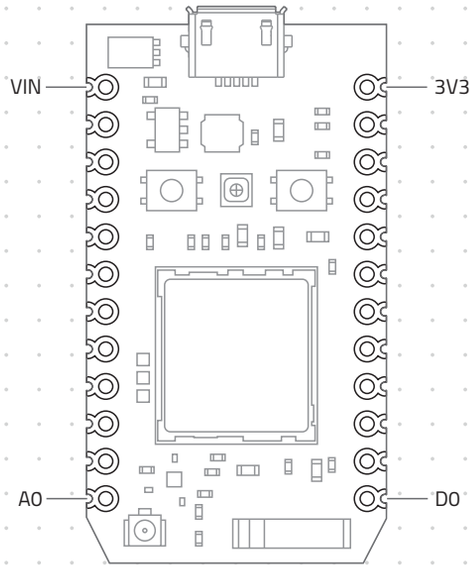
NAME	FUNCTIONS			
LI+	LIPO+*			
VIN	VIN**			
GND				
TX	USART1_TX		PWM (TIM1_CH2)	PA9
RX	USART1_RX		PWM (TIM1_CH3)	PA10
A7	ADC0		PWM (TIM5_CH1)	PA0
A6	ADC4		DAC1	PA4
A5	ADC7	SPI (MOSI)	PWM (TIM3_CH2)	PA7
A4	ADC6	SPI (MISO)	PWM (TIM3_CH1)	PA6
A3	ADC5	SPI (SCK)	DAC2	PA5
A2	ADC12	SPI (SS)		PC2
A1	ADC13			PC3
A0	ADC15			PC5
B5	ADC11			PC1
B4	ADC10			PC0
B3	ADC9		PWM (TIM3_CH4)	PB1
B2	ADC8		PWM (TIM3_CH3)	PB0
B1			PWM (TIM8_CH1)	PC6
B0			PWM (TIM8_CH3)	PC8

**Connected to the positive terminal of the LiPo battery **3.9VDC to 12VDC Input*



NAME	FUNCTIONS					
VUSB	VUSB*					
3V3	3V3**					
RST	RESET					NRST
VBAT	VBAT***					VBAT
GND						
D7	JTAG_TMS					PA13
D6	JTAG_TCK					PA14
D5	JTAG_TDI	SPI1 / SPI2 (SS)			I2S3_WS	PA15
D4	JTAG_TDO	SPI1 (SCK)			I2S3_SCK	PB3
D3	JTAG_TRST	SPI1 (MISO)		PWM (TIM3_CH1)		PB4
D2		SPI1 (MOSI)	CAN2_RX	PWM (TIM3_CH2)	I2S3_SD	PB5
D1	SCL		CAN2_TX	PWM (TIM4_CH1)		PB6
D0	SDA			PWM (TIM4_CH2)		PB7
C5	SCL		CAN1_RX	PWM (TIM4_CH3)		PB8
C4	SDA		CAN1_TX	PWM (TIM4_CH4)		PB9
C3	UART4_TX	SPI2 (SCK)				PC10
C2	UART4_RX	SPI2 (MISO)				PC11
C1	UART5_TX	SPI2 (MOSI)				PC12
C0	UART5_RX					PD2

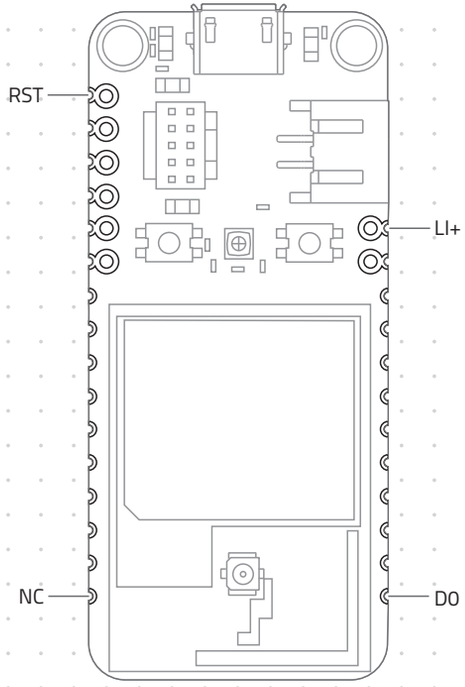
**Connected to USB VCC (+5v Typical) **3v3DC/800mA max output ***Internally jumpered to 3V3*



NAME	FUNCTIONS					STM32
VIN	VIN*					
GND	GND					
TX			USART1_TX	PWM (TIM1_CH2)		PA9
RX			USART1_RX	PWM (TIM1_CH3)		PA10
WKP	ADC0			PWM (TIM5_CH1)		PA0
DAC	ADC4				DAC1	PA4
A5	ADC7	SPI (MOSI)		PWM (TIM3_CH2)		PA7
A4	ADC6	SPI (MISO)		PWM (TIM3_CH1)		PA6
A3	ADC5	SPI (SCK)			DAC2	PA5
A2	ADC12	SPI (SS)				PC2
A1	ADC13					PC3
A0	ADC15					PC5

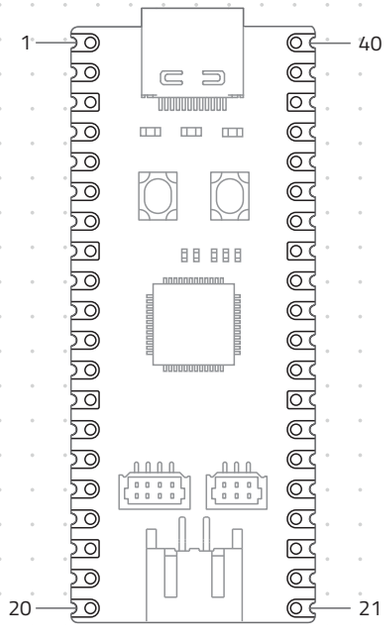
NAME	FUNCTIONS					STM32
3V3	3V3**					
RST	RESET					E8
VBAT	VBAT***					A9
GND	GND					
D7	JTAG_TMS					PA13
D6	JTAG_TCK					PA14
D5	JTAG_TDI	SPI1 (SS)			I2S3_WS	PA15
D4	JTAG_TDO	SPI1 (SCK)			I2S3_SCK	PB3
D3	JTAG_TRST	SPI1 (MISO)		PWM (TIM3_CH1)		PB4
D2		SPI1 (MOSI)	CAN2_RX	PWM (TIM3_CH2)	I2S3_SD	PB5
D1	SCL		CAN2_TX	PWM (TIM4_CH1)		PB6
D0	SDA			PWM (TIM4_CH2)		PB7

**Pin can be used as input or output. As input, supply 3.6 - 5.5VDC. When the Photon is powered by USB, this pin outputs ~4.8VDC at max 1A load. **3.3VDC regulated output at max 100mA load. Can also be used to power the Photon instead of VIN / USB. ***Supply to the internal RTC, backup registers and SRAM when 3V3 is not present (1.65 to 3.6VDC).*

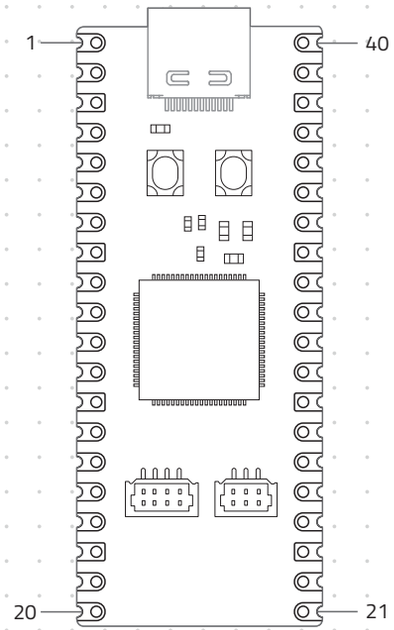


NAME	FUNCTIONS					
RST						CHIP_EN
3V3						
MODE						PA[4]
GND						
A0	D11	ADC_4				PB[1]
A1	D12	ADC_5				PB[2]
A2	D13	ADC_3			PWM	PB[7]
A5	D14	ADC_0			PWM	PB[4]
S4	D19					PA[0]
S3	D18			SPI (SS)		PB[26]
SCK	D17		SERIAL3 (RTS)	SPI (SCK)		PA[14]
MOSI	D15		SERIAL3 (TX)	SPI (MOSI)	PWM	PA[12]
MISO	D16		SERIAL3 (RX)	SPI (MISO)	PWM	PA[13]
RX	D9		SERIAL1 (RX)			PA[8]
TX	D8		SERIAL1 (TX)			PA[7]
NC						

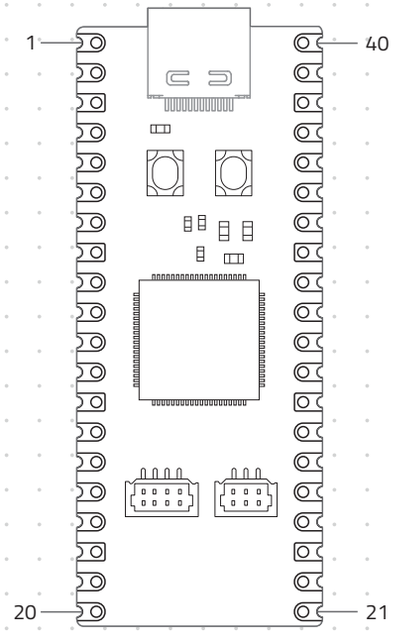
NAME	FUNCTIONS					
LI+		LI+				
EN		EN				
VUSB		VUSB				
D10	WKP		SERIAL3 (CTS)			PA[15]
D7		SWDIO				PA[27]
D6		SWCLK				PB[3]
D5			SERIAL2 (RX)	SPI1 (SS)		PA[19]
D4			SERIAL2 (TX)	SPI1 (SCK)		PA[18]
D3			SERIAL2 (CTS)	SPI1 (MISO)		PA[17]
D2			SERIAL2 (RTS)	SPI1 (MOSI)		PA[16]
D1	A4	WIRE (SCL)		ADC_1	PWM	PB[5]
D0	A3	WIRE (SDA)		ADC_2		PB[6]



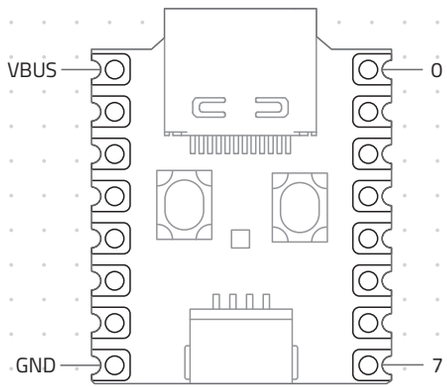
#	MAIN	SPI	I2C	UART	#	MAIN	SPI/ADC	I2C	UART
1	GP0	SPI0 RX	I2C0 SDA	UART0 TX	21	GP16	SPI0 RX	I2C0 SDA	UART0 TX
2	GP1	SPI0 CSN	I2C0 SCL	UART0 RX	22	GP17	SPI0 CSN	I2C0 SCL	UART0 RX
3	GROUND				23	GROUND			
4	GP2	SPI0 SCK	I2C1 SDA		24	GP18	SPI0 SCK	I2C1 SDA	
5	GP3	SPI0 TX	I2C1 SCL		25	GP19	SPI0 TX	I2C1 SCL	
6	GP4	SPI0 RX	I2C0 SDA	UART1 TX	26	GP20		I2C0 SDA	
7	GP5	SPI0 CSN	I2C0 SCL	UART1 RX	27	GP21		I2C0 SCL	
8	GROUND				28	GROUND			
9	GP6	SPI0 SCK	I2C1 SDA		29	GP22			
10	GP7	SPI0 TX	I2C1 SCL		30	RUN			
11	GP8	SPI1 RX	I2C0 SDA	UART1 TX	31	GP26	ADC0	I2C1 SDA	
12	GP9	SPI1 CSN	I2C0 SCL	UART1 RX	32	GP27	ADC1	I2C1 SCL	
13	GROUND				33	GROUND	AGROUND		
14	GP10	SPI1 SCK	I2C1 SDA		34	GP28	ADC2		
15	GP11	SPI1 TX	I2C1 SCL		35		ADC_VREF		
16	GP12	SPI1 RX	I2C0 SDA	UART0 TX	36	3V3 OUT			
17	GP13	SPI1 CSN	I2C0 SCL	UART0 RX	37	3V3_EN			
18	GROUND				38	GROUND			
19	GP14	SPI1 SCK	I2C1 SDA		39	VSYS			
20	GP15	SPI1 TX	I2C1 SCL		40	VBUS			



#	MAIN	SPI	I2C	UART	#	MAIN	SPI/ADC	I2C	UART
1	GP0	SPI0 RX	I2C0 SDA	UART0 TX	21	GP16	SPI0 RX	I2C0 SDA	UART0 TX
2	GP1	SPI0 CSN	I2C0 SCL	UART0 RX	22	GP17	SPI0 CSN	I2C0 SCL	UART0 RX
3	GROUND				23	GROUND			
4	GP2	SPI0 SCK	I2C1 SDA		24	GP18	SPI0 SCK	I2C1 SDA	
5	GP3	SPI0 TX	I2C1 SCL		25	GP19	SPI0 TX	I2C1 SCL	
6	GP4	SPI0 RX	I2C0 SDA	UART1 TX	26	GP20		I2C0 SDA	
7	GP5	SPI0 CSN	I2C0 SCL	UART1 RX	27	GP21		I2C0 SCL	
8	GROUND				28	GROUND			
9	GP6	SPI0 SCK	I2C1 SDA		29	GP22			
10	GP7	SPI0 TX	I2C1 SCL		30	RUN			
11	GP8	SPI1 RX	I2C0 SDA	UART1 TX	31	GP26	ADC0	I2C1 SDA	
12	GP9	SPI1 CSN	I2C0 SCL	UART1 RX	32	GP27	ADC1	I2C1 SCL	
13	GROUND				33	GROUND	AGROUND		
14	GP10	SPI1 SCK	I2C1 SDA		34	GP28	ADC2		
15	GP11	SPI1 TX	I2C1 SCL		35		ADC_VREF		
16	GP12	SPI1 RX	I2C0 SDA	UART0 TX	36	3V3 OUT			
17	GP13	SPI1 CSN	I2C0 SCL	UART0 RX	37	3V3_EN			
18	GROUND				38	GROUND			
19	GP14	SPI1 SCK	I2C1 SDA		39	VSYS			
20	GP15	SPI1 TX	I2C1 SCL		40	VBUS			

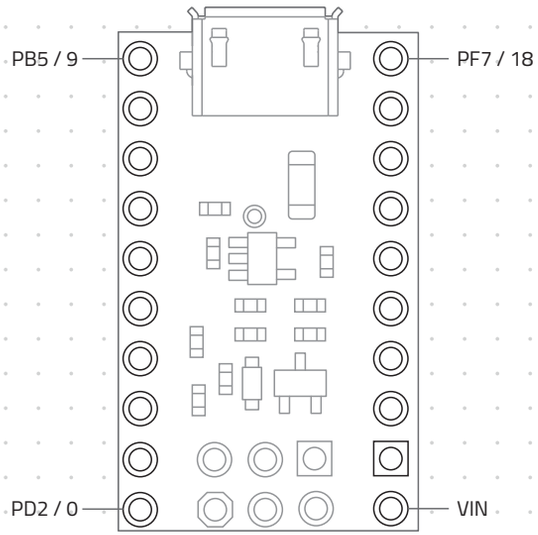


#	MAIN	SPI	I2C	UART	#	MAIN	SPI/ADC	I2C	UART
1	GP0	SPI0 RX	I2C0 SDA	UART0 TX	21	GP16	SPI0 RX	I2C0 SDA	UART0 TX
2	GP1	SPI0 CSN	I2C0 SCL	UART0 RX	22	GP17	SPI0 CSN	I2C0 SCL	UART0 RX
3	GROUND				23	GROUND			
4	GP2	SPI0 SCK	I2C1 SDA		24	GP18	SPI0 SCK	I2C1 SDA	
5	GP3	SPI0 TX	I2C1 SCL		25	GP19	SPI0 TX	I2C1 SCL	
6	GP4	SPI0 RX	I2C0 SDA	UART1 TX	26	GP20		I2C0 SDA	
7	GP5	SPI0 CSN	I2C0 SCL	UART1 RX	27	GP21		I2C0 SCL	
8	GROUND				28	GROUND			
9	GP6	SPI0 SCK	I2C1 SDA		29	GP22			
10	GP7	SPI0 TX	I2C1 SCL		30	RUN			
11	GP8	SPI1 RX	I2C0 SDA	UART1 TX	31	GP26	ADC0	I2C1 SDA	
12	GP9	SPI1 CSN	I2C0 SCL	UART1 RX	32	GP27	ADC1	I2C1 SCL	
13	GROUND				33	GROUND	AGROUND		
14	GP10	SPI1 SCK	I2C1 SDA		34	GP28	ADC2		
15	GP11	SPI1 TX	I2C1 SCL		35		ADC_VREF		
16	GP12	SPI1 RX	I2C0 SDA	UART0 TX	36	3V3 OUT			
17	GP13	SPI1 CSN	I2C0 SCL	UART0 RX	37	3V3_EN			
18	GROUND				38	GROUND			
19	GP14	SPI1 SCK	I2C1 SDA		39	VSYS			
20	GP15	SPI1 TX	I2C1 SCL		40	VBUS			



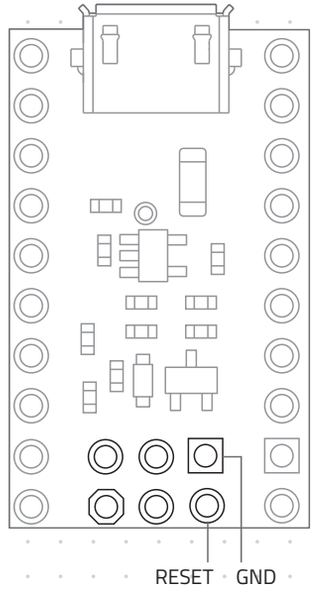
NAME	FUNCTIONS					
VBUS						
GND						
3V3						
A3	GP29	SPI1_CSN	I2C0_SCL	UART0_RX	PWM6_B	ADC3
A2	GP28	SPI1_RX	I2C0_SDA	UART0_TX	PWM6_A	ADC2
A1	GP27	SPI1_TX	I2C1_SCL	UART1_RX	PWM5_B	ADC1
A0	GP26	SPI1_SCK	I2C1_SDA	UART1_TX	PWM5_A	ADC0
GND						

NAME	FUNCTIONS				
0	GP0	SPI0_RX	I2C0_SDA	UART0_TX	PWM0_A
1	GP1	SPI0_CSN	I2C0_SCL	UART0_RX	PWM0_B
2	GP2	SPI0_SCK	I2C1_SDA	UART0_TX	PWM1_A
3	GP3	SPI0_TX	I2C1_SCL	UART0_RX	PWM1_B
4	GP4	SPI0_RX	I2C0_SDA	UART1_TX	PWM2_A
5	GP5	SPI0_CSN	I2C0_SCL	UART1_RX	PWM2_B
6	GP6	SPI0_SCK	I2C1_SDA	UART1_TX	PWM3_A
7	GP7	SPI0_TX	I2C1_SCL	UART1_RX	PWM3_B

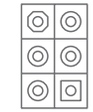


NAME	FUNCTIONS				
9	PB5 / 9	ADC12 / A9	OC1A / OC4B	PCINT5	
8	PB4 / 8	ADC11 / A8		PCINT4	
7	PE6 / 7			INT6	AIN0
6	PD7 / 6	ADC10 / A7	OC4D		T0
5	PC6 / 5		OC3A / OC4A		
4	PD4 / 4	ADC8 / A6			ICP1
3	PD0 / 3	SCL	OC0B	INT0	
2	PD1 / 2	SDA		INT1	
1	PD3 / 1	TXD1		INT3	
0	PD2 / 0	RXD1		INT2	

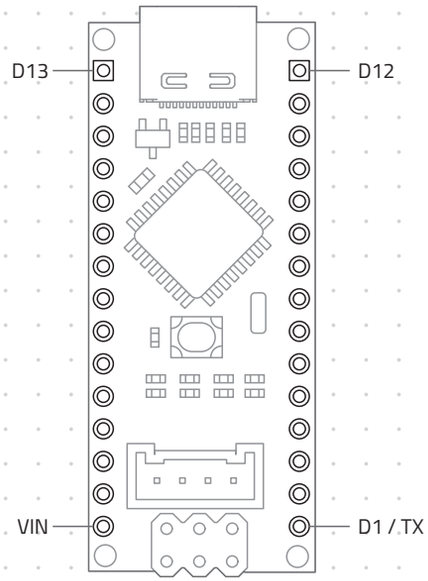
NAME	FUNCTIONS				
A0	PF7 / 18	ADC7 / A0			
A1	PF6 / 19	ADC6 / A1			
10	PB6 / 10	ADC13 / A10	OC1B / OC4B	PCINT6	
11	PB7 / 11	RTS	OC0A / OC1C	PCINT7	
12	PD6 / 12	ADC9/ A11	OC4D	Y1	
RST	RESET				
3V3					
5V					
GND					
VIN					



	FUNCTIONS	NAME
PCINT3	MISO / PDO	PB3 / 14
PCINT1	SCK	PB1 / 15
		RESET

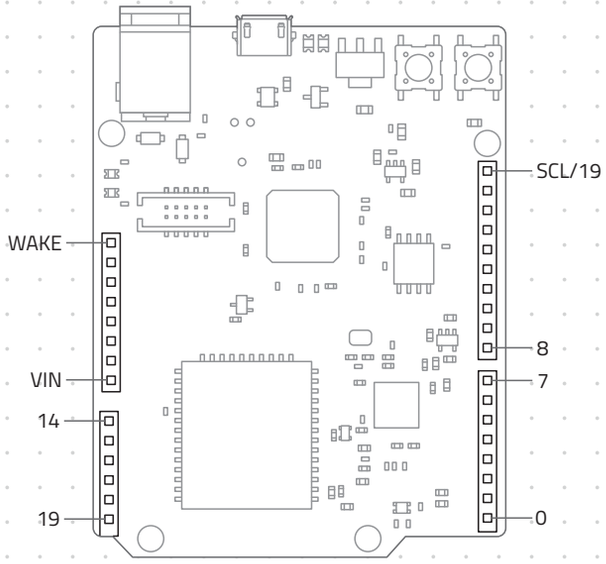


NAME	FUNCTIONS	
5V		
PB2 / 16	MOSI / PDI	PCINT2
GND		



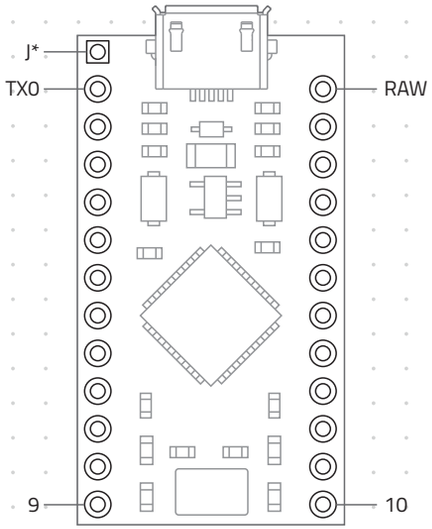
NAME	FUNCTIONS	
D13	PB5	
+3V3		
AREF		
D14 / A0	PC0	ADC[0]
D15 / A1	PC1	ADC[1]
D16 / A2	PC2	ADC[2]
D17 / A3	PC3	ADC[3]
D18 / A4	PC4	ADC[4]
D19 / A5	PC5	ADC[5]
A6	ADC[6]	ADC[6]
A7	ADC[7]	ADC[7]
+5V		
RESET	PC6	
GND		
VIN		

FUNCTIONS		NAME
CPIO	PB4	D12
COPI	PB3	D11
	PB2	D10
	PB1	D9
	PB0	D8
	PD7	D7
	PD6	D6
	PD5	D5
	PD4	D4
	PD3	D3
	PD2	D2
		GND
	PC6	RESET
	PD0	RX
	PD1	D1 / TX



FUNCTIONS			
DIGITAL WAKE			
IOREF = 3.3V			
RESET			
+3V3 (OUT)			
+5V (OUT)			
GND			
GND			
VIN (7-12V)			
14	NO CONNECT		
15	GPIO9	INT 9	SPI
16	GPIO10	INT 10	PWM / SPI
17	GPIO11	INT 11	PWM
18	GPIO12	INT 12	PWM / I2C
19	GPIO13	INT 13	PWM / I2C

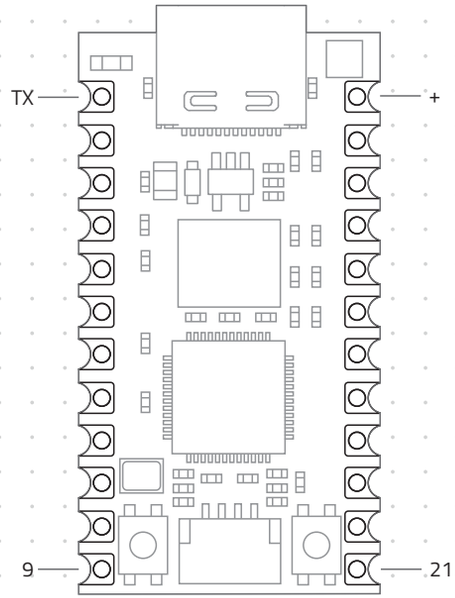
FUNCTIONS			
PWM / I2C	INT 21	GPIO13	SCL/19
PWM / I2C	INT 20	GPIO12	SDA/18
		NO CONNECT	AREF
		GROUND	GND
SPI	INT 13	GPIO5	13
SPI	INT 12	GPIO4	12
PWM / SPI	INT 11	GPIO3	11
PWM / SPI	INT 10	GPIO2	10
PWM	INT 9	GPIO1	9
			8
SERIAL	INT 31	GPIO23	7
PWM	INT 30	GPIO22	6
PWM	INT 29	GPIO21	5
PWM	INT 28	GPIO20	4
PWM	INT 27	GPIO19	3
SERIAL	INT 26	GPIO18	2
SERIAL	INT 25	GPIO17	TX0>1
SERIAL	INT 24	GPIO16	RX<0



MAIN	FUNCTIONS					
TX0	D1	PD3	TX1	INT3		
RXI	D0	PD2	RX1	INT2		
GND	GND					
GND	GND					
2	D2	PD1	SDA	INT1		
3	D3	PD0	8-BIT	SCL	INT0	OC0B
4	D4/A6	PD4	ADC8	ICP1		
5	D5	PC6	10-BIT	0C3A	OCA4	
6	D6/A7	PD7	ADC10	10-BIT	OC4D	T0
7	D7	PE6	INT6	AIN0		
8	D8/A8	PB4	ADC11	PCINT4		
9	D9/A9	PB5	ADC12	16-BIT	PCINT5	OC4B

MAIN	FUNCTIONS					
RAW	RAW					
GND	GND					
RST	RESET					
VCC	VCC					
A3	A3	PF4	ADC4	TCK		
A2	A2	PF5	ADC5	TMS		
A1	A1	PF6	ADC6	TDO		
	A0	PF6	ADC7	TDI		
15 A0	D15	PB1	SCK	PCINT1		
14	D14	PB3	MISO	PCINT3	PD0	
16	D16	PB2	MOSI	PCINT2	PDI	
10	D10/A10	PB6	ADC13	16-BIT	PCINT6	OC1B

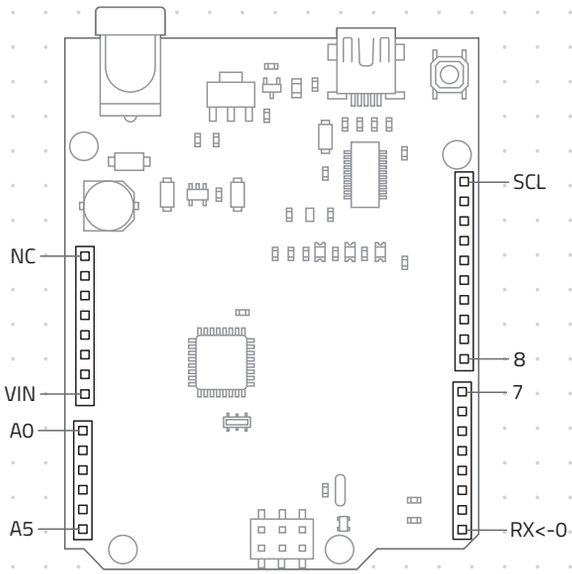
**J1 Connects to VCC to USB (bypassing the regulator)*
Power: Raw: 6-16V. VCC: 5V at 500mA



NAME	ALT	
TX	GPIO0	TX0
RX	GPIO1	RX0
GND	GND	
GND	GND	
2	GPIO2	
3	GPIO3	
4	GPIO4	
5	GPIO5	
6	GPIO6	
7	GPIO	
8	GPIO8	TX1
9	GPIO9	RX1

	ALT	NAME
	RAW*	+
	GND	GND
	RESET	RST
	VCC	3V3
ADC3	GPIO29	A3
ADC2	GPIO28	A2
ADC1	GPIO27	A1
ADC0	GPIO26	A0
SCK	GPIO22	SCK
CIPO	GPIO20	CI
COPI	GPIO23	CO
CS	GPIO21	21

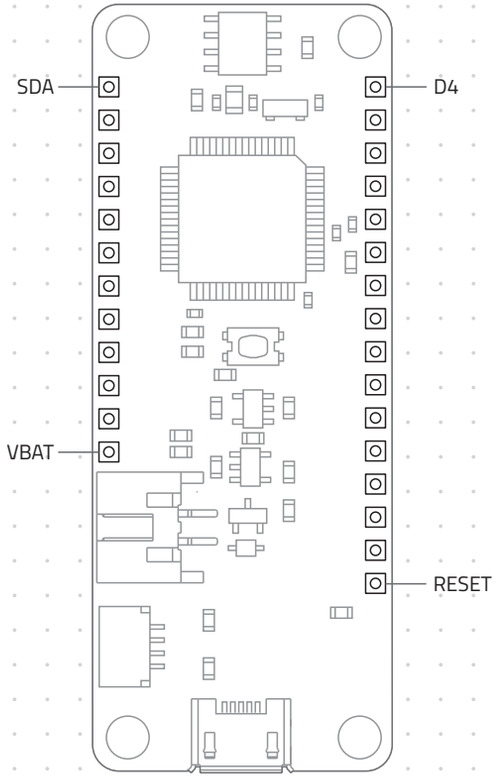
**RAW Pin: 5V Max at ~600mA. USB 5V at ~500mA (default), dependent on USB port.*



MAIN	FUNCTIONS			
NC	NC			
IOREF	IOREF			
RST	RST	PC6	PCINT14	
3.3V	3.3V			
5V	5V			
GND	GND			
GND	GND			
VIN	VIN			
A0	D14	PC0	ADC0	PCINT8
A1	D15	PC1	ADC1	PCINT9
A2	D16	PC2	ADC2	PCINT10
A3	D17	PC3	ADC3	PCINT11
A4	D18	PC4	ADC4	SDA
A5	D19	PC5	ADC5	SCL

FUNCTIONS				MAIN
SCL	ADC5	PC5	D19	SCL
SDA	ADC4	PC4	D18	SDA
			AREF	AREF
			GND	GND
PCINT5	SCK	PB5	D13	13
PCINT4	MISO	PB4	D12	12
MOSI	8-BIT	PB3	D11	11
SS	8-BIT	PB2	D10	10
PCINT1	8-BIT	PB1	D9	9
ICP1	PCINT0	PB0	D8	8
IN1	PCINT23	PD7	D7	7
PCINT22	8-BIT	PD6	D6	6
PCINT21	8-BIT	PD5	D5	5
PCINT20	PCINT20	PD4	D4	4
INT1	8-BIT	PD3	D3	3
PCINT18	INT0	PD2	D2	2
PCINT17	TXD	PD1	D1	TX0>1
PCINT16	RXD	PD0	D0	RX<0

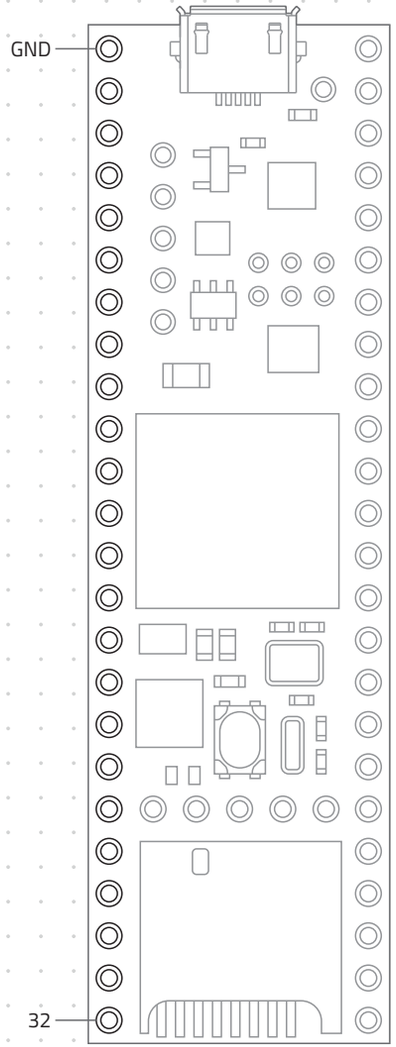
Power: VIN: 7-15V. VCC: 5V. Max Current: 800mA on 5V, 150mA on 3.3v. Extra pin functions are available. Refer to the datasheet



NAME	FUNCTIONS			
SDA	D20	PA22	INT6	SDA
SCL	D21	PA23	INT7	SCL
D5	D5	PA15	INT15	2:3/4:3
D6	D6	PA20	INT4	5:2/3:2
D9	D9	PA07	AIN7	INT7
D10	D10	PA18	INT2	1:2/3:2
D11	D11	PA16	INT0	1:0/3:1
D12	D12	PA19	INT3	1:3/3:3
D13	D13	PA17	INT1	1:1/3:0
VUSB	VUSB			
EN	VREG			
VBAT	VBAT			

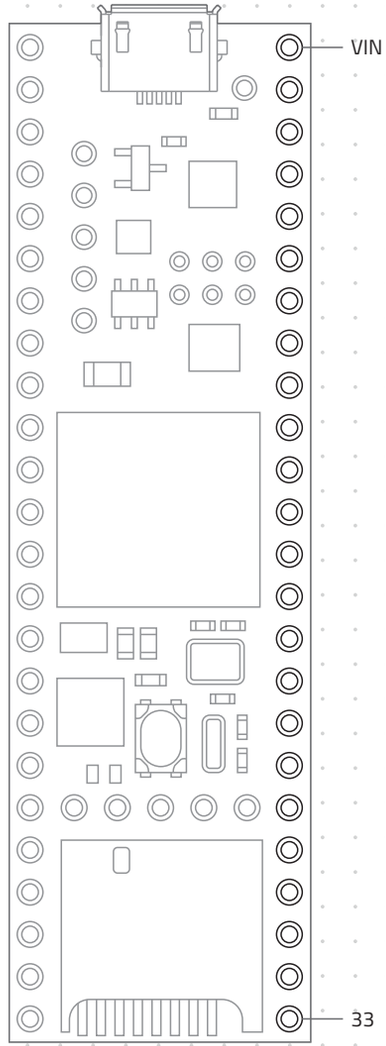
Power. Vin: 2.5 - 6V. VCC: 3.3V @ 600mA. JST: Single Cell LiPo Battery charging via USB.

			FUNCTIONS	NAME
INT6	AIN6	PA06	D4	D4
RX	INT12	PA12	D1	D1
TX	INT13	PA13	D0	D0
MISO	INT11	PA11	D22	MISO
MOSI	INT12	PB12	D23	MOSI
SCK	INT13	PB13	D24	SCK
INT2	AIN14	PB02	A5	A5
INT5	AIN5	PA05	A4	A4
INT4	AIN4	PA04	A3	A3
INT9	AIN3	PB09	A2	A2
INT8	AIN2	PB08	A1	A1
INT2	AIN0	PA02	A0	A0
			GND	GND
			NC	NC
			3.3V	3.3V
			RESET	RESET



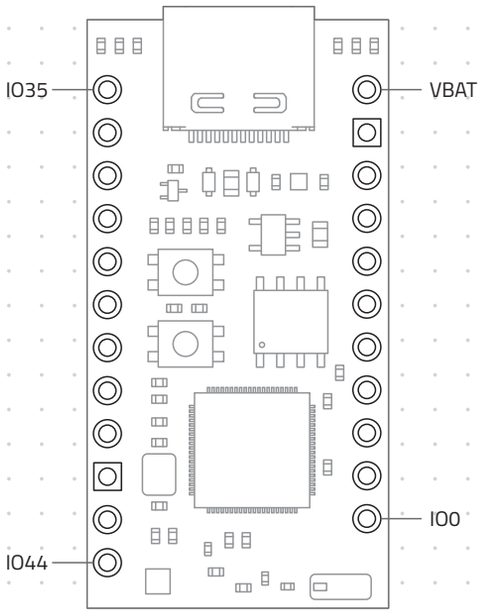
NAME	FUNCTIONS						
GND							
0		RX1	CS1	CRX2			PWM
1		TX1	MISO1	CTX2			PWM
2					OUT2		PWM
3					LRCLK2		PWM
4					BCLK2		PWM
5					IN2		PWM
6					OUT1D		PWM
7		RX2			OUT1A		PWM
8		TX2			IN1		PWM
9					OUT1C		PWM
10			CS		MSQR		PWM
11			MOSI	CTX1			PWM
12			MISO		MQSL		PWM
3.3V							
24	A10	TX6				SCL2	PWM
25	A11	RX6				SDA2	PWM
26	A12		MOSI1				
27	A13		SCK1				
28		RX7					PWM
29		TX7					PWM
30				CRX3			
31				CTX3			
32					OUT1B		

NOTE: All digital pins have interrupt capability.



NAME	FUNCTIONS						
VIN*							
GND							
3.3V**							
23	A9			CRX1	MCLK1		PWM
22	A8			CTX1			PWM
21	A7	RX5			BCLK1		
20	A6	TX5			LRCLK1		
19	A5					SCL	PWM
18	A4					SDA	PWM
17	A3	TX4				SDA1	
16	A2	RX4				SCL1	
15	A1	RX3			S/PDIF IN		PWM
14	A0	TX3			S/PDIF OUT		PWM
13			SCK				PWM
GND							
41	A17						
40	A16						
39	A15		MISO1		OUT1A		
38	A14		CS1		IN1		
37			CS				PWM
36			CS				PWM
35		TX8					
34		RX8					
33					MCLK2		PWM

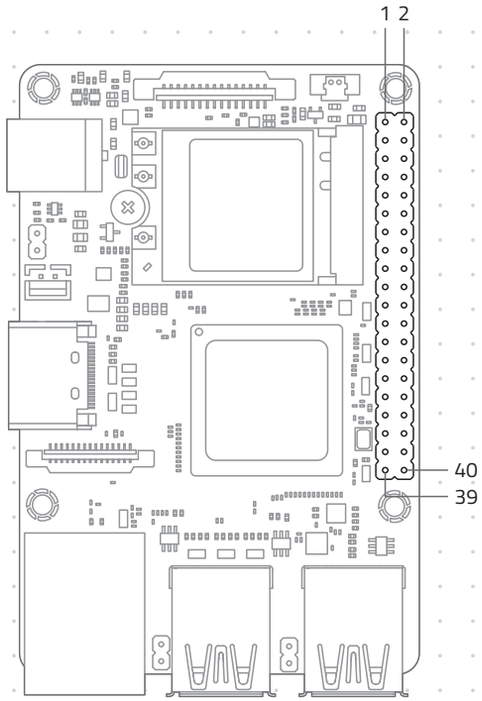
*NOTE: All digital pins have interrupt capability. *3.6V to 5.5V **250mA max*



NAME	FUNCTIONS
IO35	D35 / SPI MO
IO37	D37 / SPI MI
IO36	D36 / SPI SCK
IO34	D34
IO9	D9 / A8 / SCL / TCH9 / ADC1 CH8 / RTC-IO9
IO8	D8 / A7 / SDA / TCH8 / ADC1 CH7 / RTC-IO8
IO7	D7 / A6 / TCH7 / ADC1 CH6 / RTC-IO7
IO6	D6 / A5 / TCH6 / ADC1 CH5 / RTC-IO6
RESET	
GND	
IO43	D43 / TX
IO44	D44 / RX

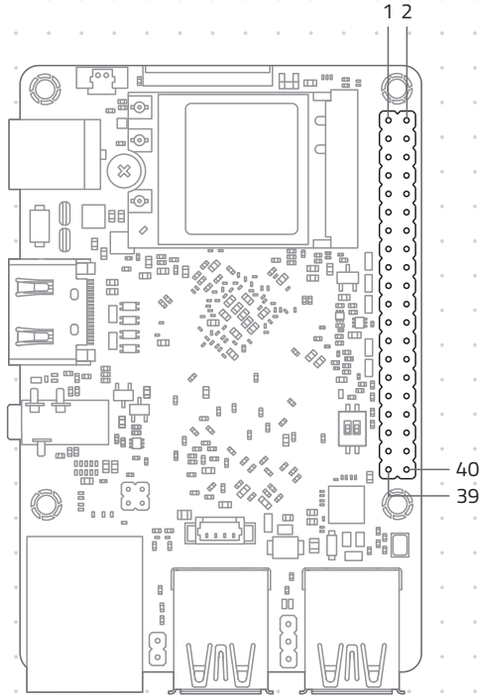
FUNCTIONS	NAME
	VBAT*
	GND
	5V**
	3V3***
RCT-IO1 / ADC CH0 / TCH1 / A0 / D1	IO1
RTC-IO2 / ADC1 CH1 / TCH2 / A1 / D2	IO2
RTC-IO3 / ADC1 CH2 / TCH3 / A2 / D3	IO3
RTC-IO4 / ADC1 CH3 / TCH4 / A3 / D4	IO4
RTC-IO5 / ADC CH4 / TCH5 / A4 / D5	IO5
RTC-IO21 / D21	IO21
RTC-IO0 / D0	IO0

**1S LiPo Max 4.2V. **Max 5V in. ***Max 3V3 in.*



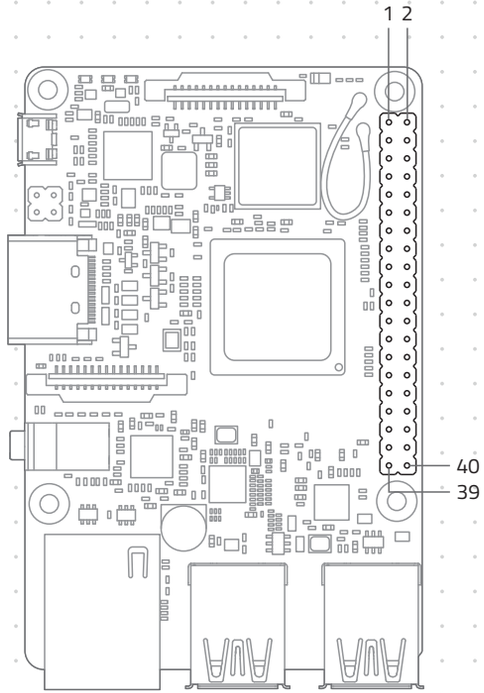
MAIN FUNCTIONS	#			#	MAIN FUNCTIONS
VCC3.3_IO	1	□	○	2	VCC5V
GPIO2_B1/I2C6_SDA	3	○	○	4	VCC5V
GPIO2_B2/I2C6/SCL	5	○	○	6	GND
GPIO0_B0/CLKOUT	7	○	○	8	GPIO2_C1/UART0_TX
GND	9	○	○	10	GPIO2_C0/UART0_RX
GPIO2_C3/UART0_RTSN	11	○	○	12	GPIO3_D1/I2S0/SCLK
GPIO2_C5/SPI5_TXD	13	○	○	14	GND
GPIO2_C4/SPI5_RXD	15	○	○	16	GPIO2_C6/SPI5_CLK
VCC3.3_IO	17	○	○	18	GPIO2_C7/SPI5_CSN0
GPIO1_B0/SPI1_TXD/UART4_TX	19	○	○	20	GND
GPIO1_A7/SPI1_RXD/UART4_RX	21	○	○	22	GPIO3_D4/I2S0_SDI1SDO3
GPIO1_B1/SPI1_CLK	23	○	○	24	GPIO1_B2/SPI1_CSN0
GND	25	○	○	26	GPIO0_A6/PWM3A_IR
GPIO2_A7/I2C7_SDA	27	○	○	28	GPIO2_B0/I2C7_SCL
GPIO3_D6/I2S0_SDI1SDO1	29	○	○	30	GND
GPIO3_D5/I2S0_SDI1SDO2	31	○	○	32	GPIO4_C2/PWM0
GPIO4_C6/PWM1	33	○	○	34	GND
GPIO3_D1/I2S0_LRCK	35	○	○	36	GPIO2_C2/UART0_CTSN
GPIO4_C5/SPDIF_TX	37	○	○	38	GPIO3_D3/I2S0/SDI0
GND	39	○	○	40	GPIO3_D7/I2S0_SDO0

NOTE: Do not use both the system DC power-in jack and the 40-pin GPIO +5V pins (pin 2 and 4) for power input at the same time. Refer to the datasheet for more info.



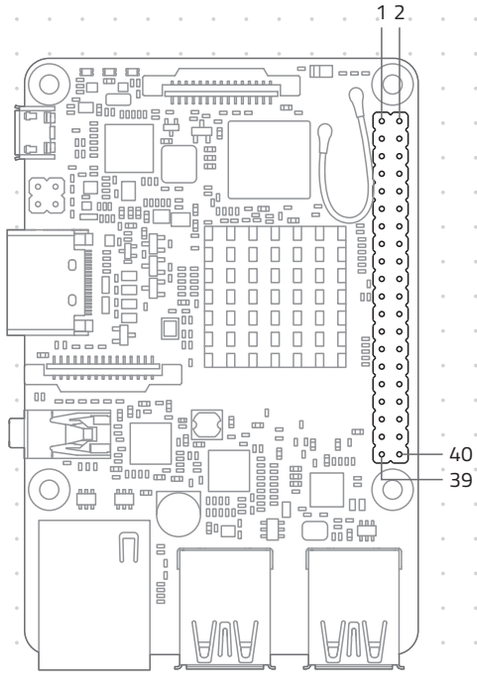
MAIN FUNCTIONS	#			#	MAIN FUNCTIONS
VCC_3V3	1	□	○	2	VCC_5V
GPIO0_D3/I2C1_SDA	3	○	○	4	VCC_5V
GPIO0_B4/I2C1_SCL	5	○	○	6	GND
GPIO_B0/CLK32K_OUT0	7	○	○	8	GPIO0_C1/UART0_TX/PWM2_M0
GND	9	○	○	10	GPIO0_C0/UART0_RX/PWM1_M0
GPIO4_C2/SPI3_CLK_M1/PWM14_M1	11	○	○	12	GPIO3_A3/I2S3_SCLK_M0
GPIO4_C3/SPI3_MOSI_M1/PWM15_IR_M1	13	○	○	14	GND
GPIO4_C5/SPI3_MISO_M1/PWM12_M1/UART9_TX_M1	15	○	○	16	GPIO0_C7/UART0_CTSN/PWM0_M1
VCC_3V3	17	○	○	18	GPIO0_C4/UART0_RTSN/PWM5
GPIO2_C3/SPI2_MOSI_M0	19	○	○	20	GND
GPIO2_C2/SPI2_MISO_M0	21	○	○	22	GPIO3_C5/SPDIF_TX_M1/PWM15_IR_M0
GPIO2_C1/SPI2_CLK_M0	23	○	○	24	GPIO2_C4/SPI2_CS0_M0
GND	25	○	○	26	GPIO2_C5/SPI2_CS1_M0
GPIO3_B4/I2C5_SDA_M0	27	○	○	28	GPIO3_B3/I2C5_SCL_M0
GPIO4_C6/SPI3_CS0_M1/PWM13_M1/UART9_RX_M1	29	○	○	30	GND
GPIO0_C6/PWM7_IR	31	○	○	32	GPIO3_B2/PWM9_M0/UART4_TX_M1
GPIO3_B1/PWM8_M0/UART4_RX_M1	33	○	○	34	GND
GPIO3_A4/I2S3_LRCK_M0	35	○	○	36	GPIO2_B3/UART1_RX_M0
GPIO2_B4/UART1_TX_M0	37	○	○	38	GPIO3_A6/I2S3_SDI_M0
GND	39	○	○	40	GPIO3_A5/I2S3_SDO_M0

NOTE: This GPIO header supports 5V / 2A power output.



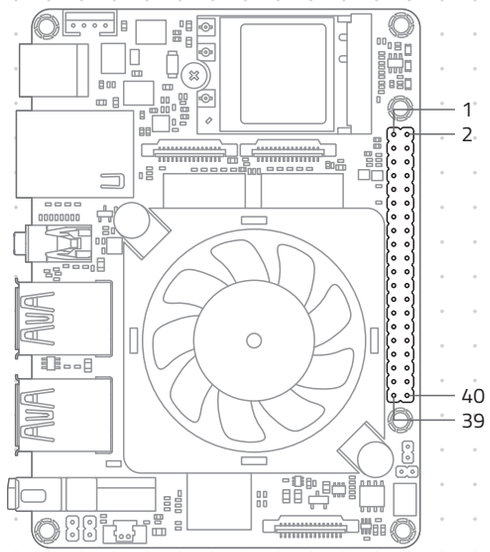
MAIN FUNCTIONS	#			#	MAIN FUNCTIONS
VCC3.3V_IO	1	□	○	2	VCC5V_SYS
GP8A4_I2C1_SDA	3	○	○	4	VCC5V_SYS
GP8A5_I2C1_SCL	5	○	○	6	GND
GP0C1_CLKOUT	7	○	○	8	GP5B1_UART1TX
GND	9	○	○	10	GP5B0_UART1RX
GP5B4_SPI0CLK_UART4CTSN	11	○	○	12	GP6A0_PCM/I2S_CLK
GP5B6_SPI0_TXD_UART4TX	13	○	○	14	GND
GP5B7_SPI0_RXD_UART4RX	15	○	○	16	GP5B2_UART1CTSN
VCC33_IO	17	○	○	18	GP5B3_UART1RTSN
GP8B1_SPI2TXD	19	○	○	20	GND
GP8B0_SPI2RXD	21	○	○	22	GP5C3
GP8A6_SPI2CLK	23	○	○	24	GP8A7_SPI2SCN0
GND	25	○	○	26	GP8A3_SPI2CSN1
GP7C1_I2C4_SDA	27	○	○	28	GP7C2_I2C4_SCL
GP5B5_SPI0CSN0_UART4RTSN	29	○	○	30	GND
GP5C0_SPI0CSN1	31	○	○	32	GP7C7_UART2TX_PWM3
GP7C6_UART2RX_PWM2	33	○	○	34	GND
GP6A1_PCM/I2S_FS	35	○	○	36	GP7A7_UART3RX
GP7B0_UART3TX	37	○	○	38	GP6A3_PCM/I2S_SDI
GND	39	○	○	40	GP6A4_PCM/I2S_SDO

NOTE: Do not use both the system Micro USB power-in jack and the 40-pin GPIO +5V pins (pin 2 & 4) for power input at the same time. Refer to the datasheet for more info.



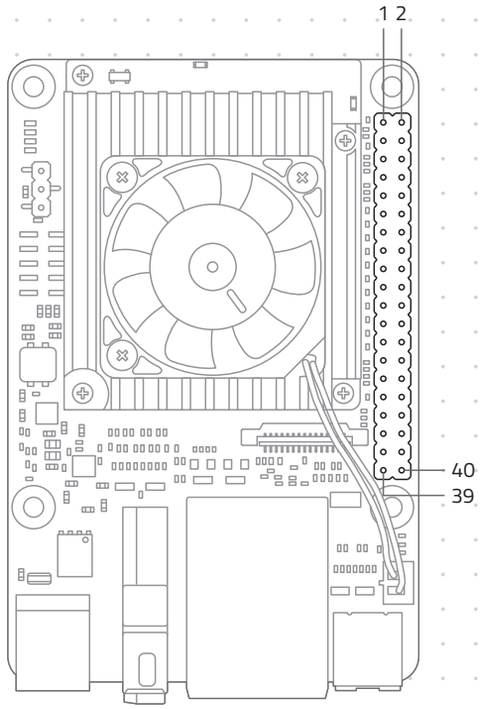
WPI	ASUS	NAME	#
		VCC3.3V_IO	1
8	252	GP8A4_I2C1_SDA	3
9	253	GP8A5_I2C1_SCL	5
7	17	GP0C1_CLKOUT	7
		GROUND	9
0	164	GP5B4_SPI0_TXD_UART4TX	11
2	166	GP5B6_SPI0_TXD_UART4TX	13
3	167	GP5B7_SPI0_RXD_UART4RX	15
		VCC33_IO	17
12	257	GP8B1_SPI2TXD	19
13	256	GP8B0_SPI2RXD	21
14	254	GP8A6_SPI2CLK	23
		GROUND	25
30	233	GP7C1_I2C4_SDA	27
21	165	GP5B5_SPI0CSN0+UART4RTSN	29
22	168	GP5C0_SPI0CSN1	31
23	238	GP7C6_UART2RX_PWM2	33
24	185	GP6A1_PCM/I2S_FS	35
25	224	GP7B0_UART3TX	37
		GROUND	39

#	NAME	ASUS	WPI
2	VCC5V_SYS		
4	VCC5V_SYS		
6	GROUND		
8	GP5B1_UART1TX	161	15
10	GP5B0_UART1RX	160	16
12	GP6A0_PCM/I2S_CLK	184	1
14	GROUND		
16	GP5B2_UART1CTSN	162	4
18	GP5B3_UART1RTSN	163	5
20	GROUND		
22	GP5C3	171	6
24	GP8A7_SPI2CSN0	255	10
26	GP8AS_SPI2CSN1	251	11
28	GP7C2_I2C4_SCL	234	31
30	GROUND		
32	GP7C7_UART2TX_PWM3	239	26
34	GROUND		
36	GP7A7_UART3RX	223	27
38	GP6A3_PCM/I2S_SDI	187	28
40	GP6A4_PCM/I2S_SDO	188	29



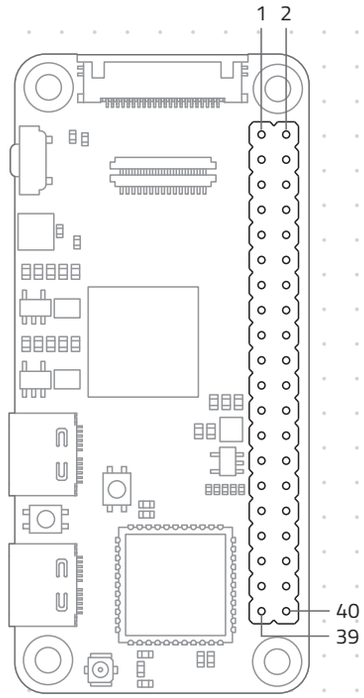
NAME	#			#	NAME
VCC3.3V_IO	1	□	○	2	VCC5V
GPIO2_B1_I2C6_SDA	3	○	○	4	VCC5V
GPIO2_B2/I2C6_SCL	5	○	○	6	GROUND
GPIO2_D1_CLKOUT	7	○	○	8	GPIO2_C1/UART0_TX
GROUND	9	○	○	10	GPIO2_C0/UART0_RX
GPIO2_C3/UART0_RTSN	11	○	○	12	GPIO3_D0/I2S0_SCLK
GPIO2_C5/SPI5_TXD	13	○	○	14	GROUND
GPIO2_C4/SPI5_RXD	15	○	○	16	GPIO2_C6/SPI5_CLK
VCC3.3_IO	17	○	○	18	GPIO2_C7/SPI5_CSN0
GPIO1_B0/SPI1_TXD/UART4_TX	19	○	○	20	GROUND
GPIO1_A7/SPI1_RXD/UART4_RX	21	○	○	22	GPIO3_D4/I2S0_SDISDO3
GPIO1_B1/SPI1_CLK	23	○	○	24	GPIO1_B2/SPI1_CSN0
GROUND	25	○	○	26	GPIO0_A6/PWM3A_IR
GPIO2_A7/I2C7_SDA	27	○	○	28	GPIO2_B0/I2C7_SCL
GPIO3_D6/I2S0_SDI3SDO1	29	○	○	30	GROUND
GPIO3_D5/I2S0_SDI2SDO2	31	○	○	32	GPIO4_C2/PWM0
GPIO4_C6/PWM1	33	○	○	34	GROUND
GPIO3_D1/1S20_LRCK	35	○	○	36	GPIO2_C2/UART0_CTSN
GPIO4_C5/SPDIF_TX	37	○	○	38	GPIO3_D3/I2S0_SDI0
GROUND	39	○	○	40	GPIO3_D7/I2S0_SDO0

NOTE: In addition to no. 32, 33, 37 pins, all the others are +3.3V level, 5K~10K Ohm internal pull-up resistors, 50mA drive current capacity.



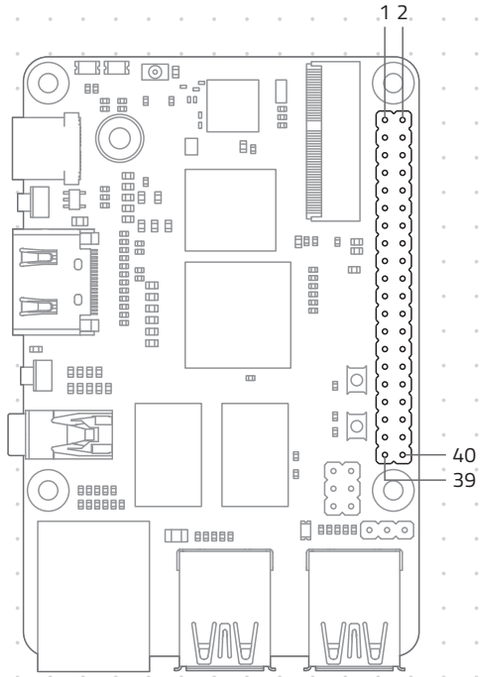
NAME	#			#	NAME
VCC3.3V_IO	1	□	○	2	VCC5V
GPIO145_I2C2_SDA	3	○	○	4	VCC5V
GPIO144_I2C2_SCL	5	○	○	6	GROUND
GPIO155_UART3_TXD	7	○	○	8	GPIO151_UART1_TXD
GROUND	9	○	○	10	GPIO150_UART1_RXD
GPIO154_UART3_RXD	11	○	○	12	GPIO107_SAI1_TXC
GPIO6	13	○	○	14	GROUND
GPIO130_PWM4	15	○	○	16	GPIO73
VCC3.3V_IO	17	○	○	18	GPIO138
GPIO135_ECSPI1_MOSI	19	○	○	20	GROUND
GPIO136_ECSPI1_MISO	21	○	○	22	GPIO140
GPIO134_ECSPI1_SCLK	23	○	○	24	GPIO137_ECSPI1_SS0
GROUND	25	○	○	26	GPIO66_ECSPI1_SS1
GPIO147_I2C3_SDA	27	○	○	28	GPIO146_I2C3_SCL
GPIO7	29	○	○	30	GROUND
GPIO8	31	○	○	32	GPIO1_PWM1
GPIO13_PWM2	33	○	○	34	GROUND
GPIO106_SAI1_TXFS	35	○	○	36	GPIO141
GPIO77	37	○	○	38	GPIO98_SAI1_RXD0
GROUND	39	○	○	40	GPIO108_SAI_TXD0

NOTE: All I/O pins have a 90k pull-down resistor inside the iMX8M SoC that is used by default during bootup, except for the I2C pins, which instead have a pull-up to 3.3V on the SoM. Do not connect a device that draws more than ~ 82 mA of power or you will brownout the system.



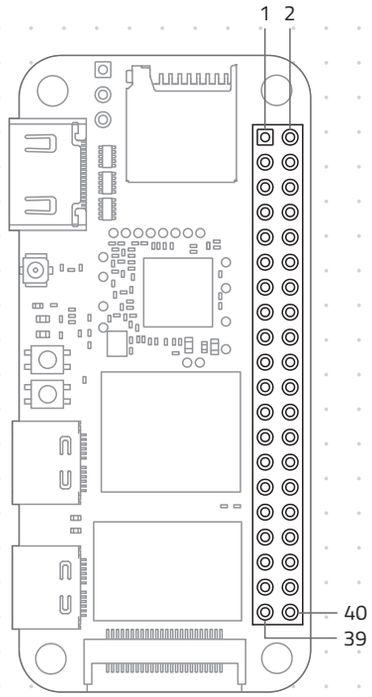
GPIO	FUNCTIONS	#
	3.3V	1
12	3D_CTRL_OUT2 / UART2_RXD / IIC2_SDA	3
11	3D_CTRL_OUT1 / UART2_TXD / IIC2_SCL	5
7	JTAG_TMS / PULSE_CNTR3 / UART2_TXD	7
	GND	9
19	OSPI_D3 / QSPI1_CS1 / QSPI0_D3	11
6	JTAG_RST / PULSE_CNTR4 / UART2_RXD	13
2	JTAG_TCK / PULSE_CNTR0	15
	3.3V	17
16	OSPI_D0 / QSPI1_CS4 / QSPI0_D0	19
17	OSPI_D1 / QSPI1_CS3 / QSPI0_D1	21
15	OSPI_CLK / QSPI0_CLK	23
	GND	25
33	IIC0_SDA / IIS_WS / UART3_RXD	27
25	CONPWM5 / QSPI1_D3	29
24	OSPI_DQS / QSPI1_D2 / PULSE_CNTR4	31
60	PWM0 / IIC0_SCL / QSPI0_CS2 / HSYNC1	33
23	OSPI_D7 / QSPI1_D1 / PULSE_CNTR3	35
63	M_CLK3 / UART3_RE	37
	GND	39

#	FUNCTIONS	GPIO
2	5V	
4	5V	
6	GND	
8	JTAG_TDI / PULSE_CNTR1 / UART1_TXD	3
10	JTAG_TDO / PULSE_CNTR2 / UART1_RXD	4
12	OSPI_D4 / QSPI1_CS0 / PULSE_CNTR0	20
14	GND	
16	IIC1_SDA / IIS_D_OUT0 / PDM_IN1	
18	3D_CTRL_IN / UART1_RXD / IIC1_SDA	10
20	GND	
22	IIC1_SCL / IIS_D_I0 / PDM_IN3	34
24	OSPI_CS / QSPI0_CS0	14
26	M_CLK2 / UART3_DE	62
28	IIC0_SCL / IIS_CLK / UART3_TXD	32
30	GND	
32	PWM1 / IIC0_SDA / QSPI0_CS1 / VSYNC1	61
34	GND	
36	OSPI_D2 / QSPI1_CS2 / QSPI0_D2	18
38	OSPI_D6 / QSPI1_D0 / PULSE_CNTR2	22
40	OSPI_D5 / QSPI1_CLK / PULSE_CNTR1	21



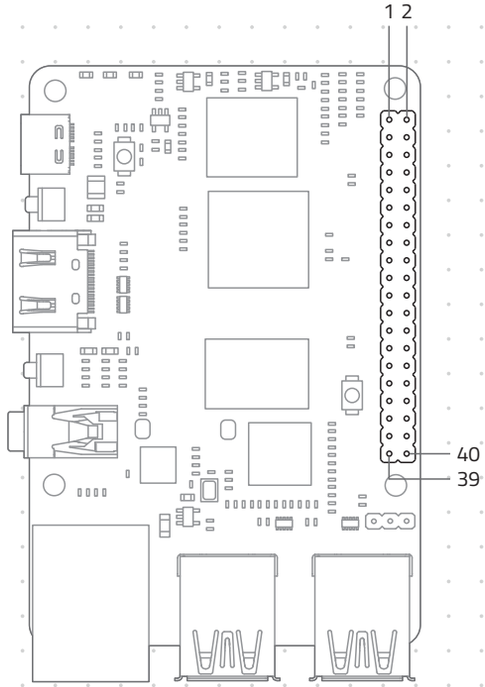
ALT	FUNCTION	NAME	#
	VCC-3V3	CON1-P01	1
GPIO17	I2C1_SDA	CON1-P03	3
GPIO16	I2C1_SCL	CON1-P05	5
GPIO21	PWM1	CON1-P07	7
	GND	CON1-P09	9
GPIO42	SDIO-D0	CON1-P11	11
GPIO43	SDIO-D1	CON1-P13	13
GPIO44	SDIO-D2	CON1-P15	15
	VCC-3V3	CON1-P17	17
GPIO31	GSPI-MOSI	CON1-P19	19
GPIO18	GSPI-MISO	CON1-P21	21
GPIO19	GSPI-SCK	CON1-P23	23
	GND	CON1-P25	25
GPIO45	SDIO-D3	CON1-P27	27
GPIO41	SDIO-CLK	CON1-P29	29
GPIO40	SDIO-CMD	CON1-P31	31
GPIO4	AIO_CK	CON1-P33	33
GPIO2	AIO_LRCK	CON1-P35	35
GPIO34	GPIO34	CON1-P37	37
	GND	CON1-P39	39

#	NAME	FUNCTION	ALT
2	CON1-P02	DCIN	
4	CON1-P04	DCIN	
6	CON1-P06	GND	
8	CON1-P08	UR1_TX	GPIO9
10	CON1-P10	UR1_RX	GPIO8
12	CON1-P12	AIO_BCK	GPIO3
14	CON1-P14	GND	
16	CON1-P16	UR1_RTS	GPIO11
18	CON1-P18	UR1_CTS	GPIO10
20	CON1-P20	GND	
22	CON1-P22	GPIO47	GPIO47
24	CON1-P24	GSPI-CS	GPIO20
26	CON1-P26	PWM2	GPIO22
28	CON1-P28	PWM3	GPIO23
30	CON1-P30	GND	
32	CON1-P32	SPDIF	GPIO50
34	CON1-P34	GND	
36	CON1-P36	GPIO53	GPIO53
38	CON1-P38	AI_SD	GPIO5
40	CON1-P40	AO_SD	GPIO6



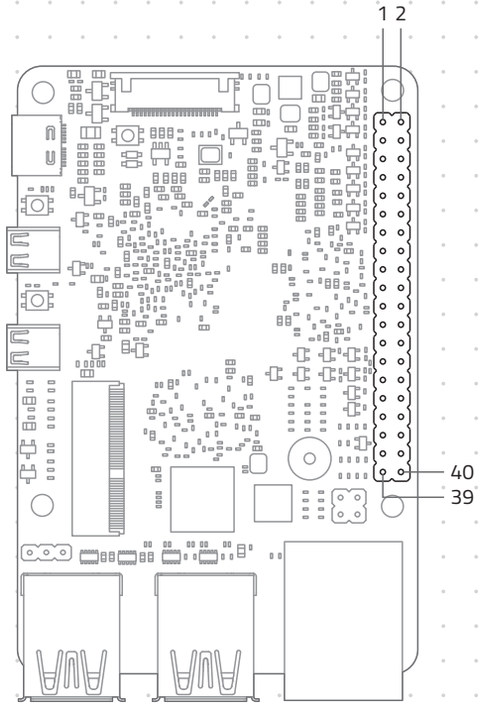
ALT	FUNCTION	NAME	#
		3.3V	1
	PI6_ENT6	TWI0_SDA	3
	PI5_ENT5	TWI0_SCL	5
	PI12_EINT12	PWM2	7
		GND	9
	UART5_TX	PH2	11
	UART5_RX	PH3	13
		PH11	15
		3.3V	17
	SPI_MOSI	PH7	19
	SPI_MISO	PH8	21
	SPI_CLK	PH6	23
		GND	25
	PI8_ENT8	TWI1_SDA	27
		PI10	29
		PI9	31
		IR_RX	33
DMIC_D1	PI2	H_IIS0_LRCLK	35
DMIC_CLK	PI0	H_IIS0_MCLK	37
		GND	39

#	NAME	FUNCTION	ALT
2	5V		
4	5V		
6	GND		
8	UART4_TX	PI13_EINT13	
10	UART4_RX	PI14_EINT14	
12	H_IIS0_BCLK	PI1	DMIC_D0
14	GND		
16	UART4_RTS	PI15_EINT15	
18	UART4_CTS	PI16_EINT16	
20	GND		
22	3.3V		
24	PH5	SPI_CS0	
26	PH9	SPI_CS1	
28	TE1_SLC	PI7_ENT7	
30	GND		
32	SPDIF_OUT		
34	GND		
36	3.3V		
38	H_IIS0_DIN0	PI4	DMIC_D3
40	H_IIS0_DOUT0	PI3	DMIC_D2

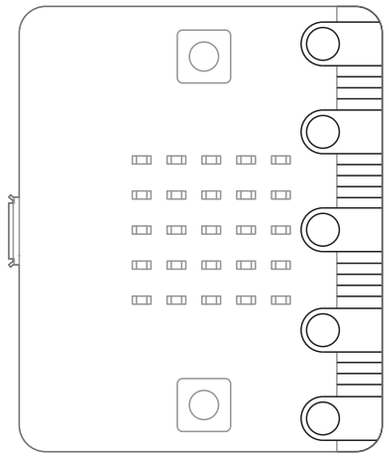


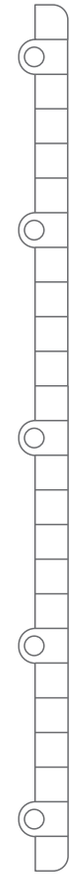
GPIO	FUNCTION	NAME	#
	VCC-3V3	CON1-P01	1
I2C_M2_SDA	GPIOX_17	CON1-P03	3
I2C_M2_SCL	GPIOX_18	CON1-P05	5
SDIO_CMD	GPIOX_5	CON1-P07	7
	GND	CON1-P09	9
SDIO_D3	GPIOX_3	CON1-P11	11
SDIO_CLK	GPIOX_4	CON1-P13	13
PWM_F	GPIOX_7	CON1-P15	15
	VCC-3V3	CON1-P17	17
PCM_DIN	GPIOX_8	CON1-P19	19
PCM_DOUT	GPIOX_9	CON1-P21	21
PCM_CLK	GPIOX_11	CON1-P23	23
	GND	CON1-P25	25
I2C_M3_SDA	GPIOA_14	CON1-P27	27
UART_A_CTS	GPIOX_14	CON1-P29	29
UART_A_RTS	GPIOX_15	CON1-P31	31
PWM_A	GPIOX_6	CON1-P33	33
TDMB_FS	GPIOAO_7	CON1-P35	35
I2S_MCLK	GPIOAO_9	CON1-P37	37
	GND	CON1-P39	39

#	NAME	FUNCTION	GPIO
2	CON1-P02	VCC5V	
4	CON1-P04	VCC5V	
6	CON1-P06	GND	
8	CON1-P08	GPIOX_12	UART_A_TX
10	CON1-P10	GPIOX_13	UART_A_RX
12	CON1-P12	GPIOAO_8	TDMB_SCLK
14	CON1-P14	GND	
16	CON1-P16	GPIOX_0	SDIO_D0
18	CON1-P18	GPIOX_1	SDIO_D1
20	CON1-P20	GND	
22	CON1-P22	GPIOX_2	SDIO_D2
24	CON1-P24	GPIOX_10	PCM_SYNC
26	CON1-P26	GPIOX_16	PWM_E
28	CON1-P28	GPIOA_15	I2C_M3_SCL
30	CON1-P30	GND	
32	CON1-P32	GPIOX_19	PWM_B
34	CON1-P34	GND	
36	CON1-P36	GPIOH_5	SPDIF_IN
38	CON1-P38	GPIOAO_10	TDMB_DIN
40	CON1-P40	GPIOAO_4	TDMB_DOUT

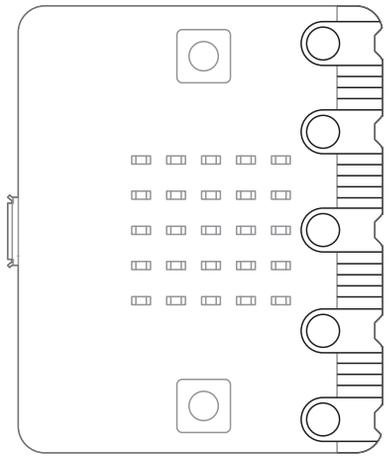


NAME	#			#	NAME
PWR_3V3_CTL	1	□	○	2	PWR_5V
GPIO46/TW0_SDA	3	○	○	4	PWR_5V
GPIO47/TW0_SCL	5	○	○	6	GND
GPIO53/PWM1	7	○	○	8	SM_GPIO15/UART2_TXD
GND	9	○	○	10	SM_GPIO14/UART2_RXD
GPIO36/PWM3	11	○	○	12	GPIO20/I2S1_BCLK
GPIO37/PWM2	13	○	○	14	GNDT
EXPANDER_TW3_GPIO1_4	15	○	○	16	EXPANDER_TW3_GPIO1_0
PWR_3V3_CTL	17	○	○	18	EXPANDER_TW3_GPIO1_1
SM_GPIO13/SPI2_SDO/URT2_RTS/SM_STRAP1	19	○	○	20	GND
SM_GPIO12/SPI2_SDI/URT2_CTS	21	○	○	22	GPIO4/SPDIF
SM_GPIO11/SPI2_SCK	23	○	○	24	SM_GPIO17/SPI2_SS0/SM_STRAP2
GND	25	○	○	26	SM_GPIO16/SPI2_SS1/SM_STRAP3
GPIO15/I2S1_DO3	27	○	○	28	GPIO16/I2S1_DO2
EXPANDER_TW3_GPIO1_7	29	○	○	30	GND
EXPANDER_TW3_GPIO1_6	31	○	○	32	EXPANDER_TW3_GPIO1_3
EXPANDER_TW3_GPIO1_5	33	○	○	34	GND
GPIO21/I2S1_LRCK	35	○	○	36	EXPANDER_TW3_GPIO1_2
GPIO18/I2S1_MCLK	37	○	○	38	GPIO17/I2S1_DO1
GND	39	○	○	40	GPIO19/I2S1_DO0

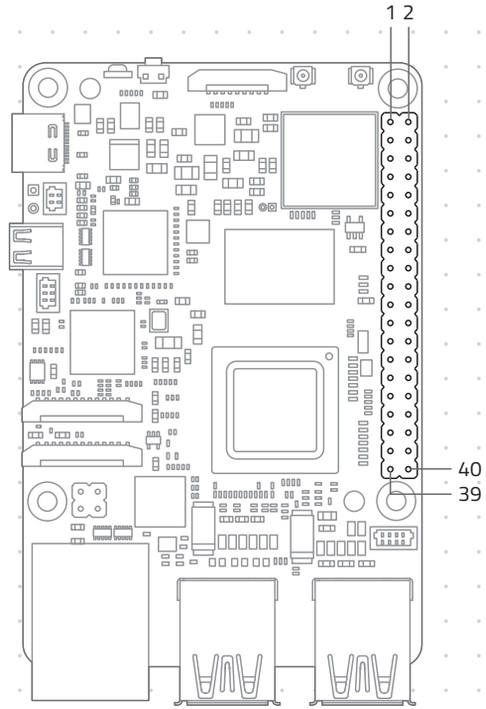




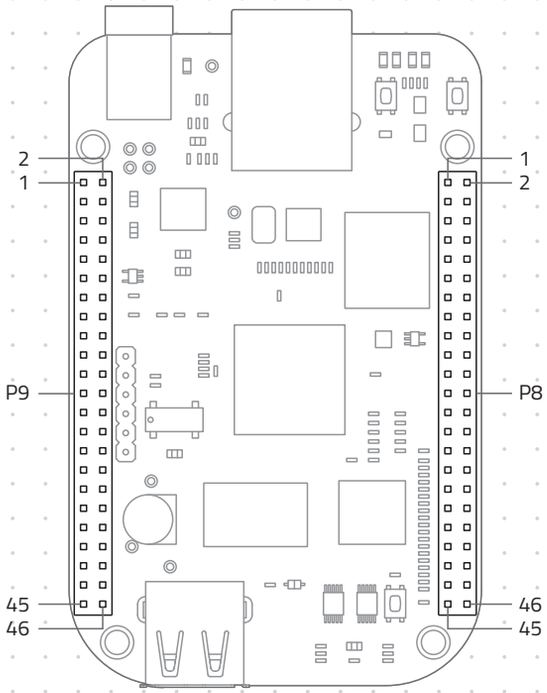
NAME	MAIN FUNCTION	ALT FUNCTIONS
GND	GROUND	
GND	GROUND	
GND	GROUND	
P20	I2C (SDA)	GPIO, PWM, UART
P19	I2C (SCL)	GPIO, PWM, UART
+3V3	3V POWER SUPPLY (MAX 90mA).	
+3V3	3V POWER SUPPLY (MAX 90mA).	
+3V3	3V POWER SUPPLY (MAX 90mA).	
P16	GPIO	PWM, UART
P15	GPIO	SPI (MOSI), PWM, UART
P14	GPIO	SPI (MISO), PWM, UART
P13	GPIO	SPI (SCLK), PWM, UART
P2	GPIO	ANALOG, TOUCH, PWM, UART
P12	RESERVED FOR ACCESSIBILITY	GPIO, PWM, UART
P11	BUTTON (B)	GPIO, PWM, UART
P10	LED MATRIX COLUMN 3	GPIO, ANALOG, PWM, UART
P9	LED MATRIX COLUMN 7	GPIO, PWM, UART
P8	GPIO	PWM, UART
P1	GPIO	ANALOG, TOUCH, PWM, UART
P7	LED MATRIX COLUMN 8	GPIO, PWM, UART
P6	LED MATRIX COLUMN 9	GPIO, PWM, UART
P5	BUTTON (A)	GPIO, PWM, UART
P4	LED MATRIX COLUMN 2	GPIO, ANALOG, PWM, UART
P0	GPIO	ANALOG, TOUCH, PWM, UART
P3	LED MATRIX COLUMN 1	GPIO, ANALOG, PWM, UART



NAME	MAIN FUNCTION	ALT FUNCTIONS
GND	GROUND	
GND	GROUND	
GND	GROUND	
P20	I2C (SDA)	GPIO, PWM, UART
P19	I2C (SCL)	GPIO, PWM, UART
+3V3	3V POWER SUPPLY (MAX 90mA).	
+3V3	3V POWER SUPPLY (MAX 90mA).	
+3V3	3V POWER SUPPLY (MAX 90mA).	
P16	GPIO	PWM, UART
P15	GPIO	SPI (MOSI), PWM, UART
P14	GPIO	SPI (MISO), PWM, UART
P13	GPIO	SPI (SCLK), PWM, UART
P2	GPIO	ANALOG, TOUCH, PWM, UART
P12	RESERVED FOR ACCESSIBILITY	GPIO, PWM, UART
P11	BUTTON (B)	GPIO, PWM, UART
P10	LED MATRIX COLUMN 5	GPIO, ANALOG, PWM, UART
P9		GPIO, PWM, UART, NFC1
P8	GPIO	PWM, UART, NFC2
P1	GPIO	ANALOG, TOUCH, PWM, UART
P7	LED MATRIX COLUMN 2	GPIO, PWM, UART
P6	LED MATRIX COLUMN 4	GPIO, PWM, UART
P5	BUTTON (A)	GPIO, PWM, UART
P4	LED MATRIX COLUMN 1	GPIO, ANALOG, PWM, UART
P0	GPIO	ANALOG, TOUCH, PWM, UART
P3	LED MATRIX COLUMN 3	GPIO, ANALOG, PWM, UART



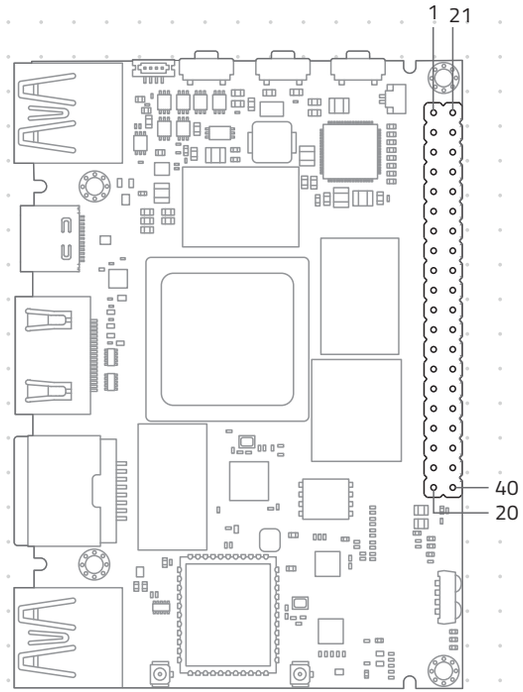
ALT	MAIN	#			#	MAIN	ALT
	3V3 POWER	1	□	○	2	5V POWER	
I2C1 SDA	GPIO 2	3	○	○	4	5V POWER	
I2C1 SCL	GPIO 3	5	○	○	6	GROUND	
	GPIO 4	7	○	○	8	GPIO 14	UART TX
	GROUND	9	○	○	10	GPIO 15	UART RX
	GPIO 17	11	○	○	12	GPIO 18	PCM CLK
	GPIO 27	13	○	○	14	GROUND	
	GPIO 22	15	○	○	16	GPIO 23	
	3V3 POWER	17	○	○	18	GPIO 24	
SPI0 MOSI	GPIO 10	19	○	○	20	GROUND	
SPI0 MISO	GPIO 9	21	○	○	22	GPIO 25	
SPI0 SCLK	GPIO 11	23	○	○	24	GPIO 8	SPI0 CE0
	GROUND	25	○	○	26	GPIO 7	SPI0 CE1
EEPROM SDA	GPIO 0	27	○	○	28	GPIO 1	EEPROM SCL
	GPIO 5	29	○	○	30	GROUND	
	GPIO 6	31	○	○	32	GPIO 12	PWM0
PWM1	GPIO 13	33	○	○	34	GROUND	
PCM FS	GPIO 19	35	○	○	36	GPIO 16	
	GPIO 26	37	○	○	38	GPIO 20	PCM DIN
	GROUND	39	○	○	40	GPIO 21	PCM DOUT



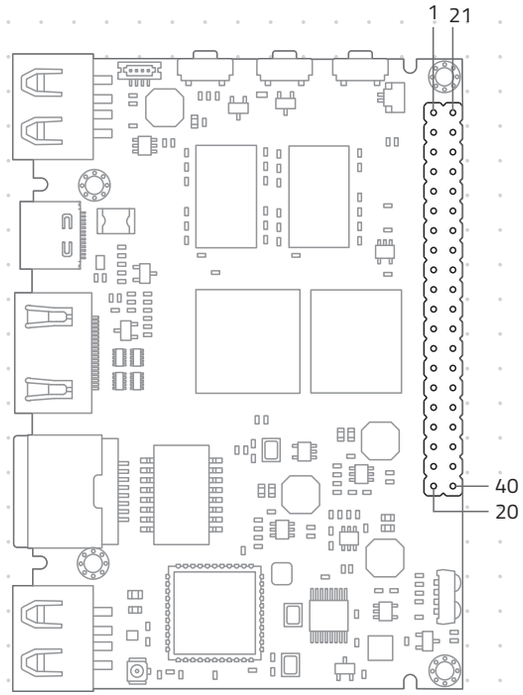
NAME	#	P9		#	NAME
GND	1	□	□	2	GND
DC_3.3V	3	□	□	4	DC_3.3V
VDD_5V	5	□	□	6	VDD_5V
SYS_5V	7	□	□	8	SYS_5V
PWR_BUT	9	□	□	10	SYS_RESETN
UART4_RXD	11	□	□	12	GPIO1_28
UART4_TXD	13	□	□	14	EHRPWM1A
GPIO1_16	15	□	□	16	EHRPWM1B
I2C1_SCL	17	□	□	18	I2C1_SDA
I2C2_SCL	19	□	□	20	I2C2_SDA
UART2_TXD	21	□	□	22	UART2_RXD
GPIO1_17	23	□	□	24	UART1_TXD
GPIO3_21	25	□	□	26	UART1_RXD
GPIO3_19	27	□	□	28	SPI1_CS0
SPI1_D0	29	□	□	30	SPI1_D1
SPI1_SCLK	31	□	□	32	VADC
AIN4	33	□	□	34	AGND
AIN6	35	□	□	36	AIN5
AIN2	37	□	□	38	AIN3
AIN0	39	□	□	40	AIN1
CLKOUT2	41	□	□	42	GPIO0_7
GND	43	□	□	44	GND
GND	45	□	□	46	GND

NAME	#	P8		#	NAME
GND	1	□	□	2	GND
GPIO1_6	3	□	□	4	GPIO1_7
GPIO1_2	5	□	□	6	GPIO1_3
TIMER4	7	□	□	8	TIMER7
TIMER5	9	□	□	10	TIMER6
GPIO1_13	11	□	□	12	GPIO1_12
EHRPWM2B	13	□	□	14	GPIO0_26
GPIO1_15	15	□	□	16	GPIO1_14
GPIO0_27	17	□	□	18	GPIO2_1
EHRPWM2A	19	□	□	20	GPIO1_31
GPIO1_30	21	□	□	22	GPIO1_5
GPIO1_4	23	□	□	24	GPIO1_1
GPIO1_0	25	□	□	26	GPIO1_29
GPIO2_22	27	□	□	28	GPIO2_24
GPIO2_23	29	□	□	30	GPIO2_25
UART5_CTSN	31	□	□	32	UART5_RTSN
UART4_RTSN	33	□	□	34	UART3_RTSN
UART4_CTSN	35	□	□	36	UART3_CTSN
UART5_TXD	37	□	□	38	UART5_RXD
GPIO2_12	39	□	□	40	GPIO2_13
GPIO2_10	41	□	□	42	GPIO2_11
GPIO2_8	43	□	□	44	GPIO2_9
GPIO2_6	45	□	□	46	GPIO2_7

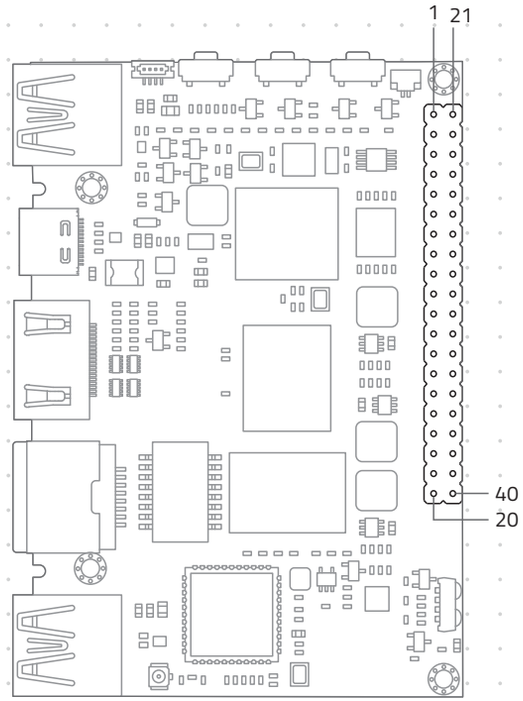
NOTE: Extra pin modes are available in the datasheet



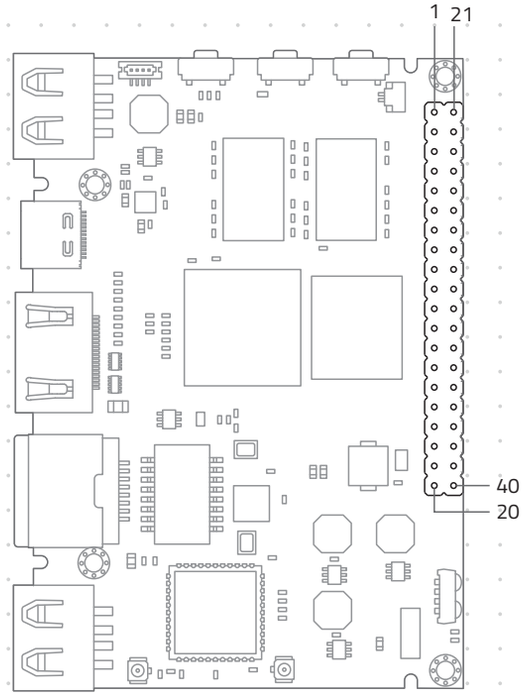
MAIN FUNCTIONS	#			#	MAIN FUNCTIONS
5V	1	□	○	21	GND
5V	2	○	○	22	SPI3_RXD/I2C0_SCK/GPIO1_C0
HOST1_DM	3	○	○	23	SPI3_TXD/I2C0_SDA/GPIO1_B7
HOST1_DP	4	○	○	24	GND
GND	5	○	○	25	I2C2_SCL/GPIO2_A1
MCU_TX	6	○	○	26	I2C2_SDA/GPIO2_A0
MCU_NRST	7	○	○	27	3.3V
MCU_SWIM	8	○	○	28	GND
GND	9	○	○	29	I2S0_SCLK/GPIO3_D0
ADC_IN2	10	○	○	30	I2S_CLK/GPIO4_A0
1.8V	11	○	○	31	I2S0_SDO0/GPIO3_D7
ADC_IN3	12	○	○	32	2S0_LRCK_TX/GPIO3_D2
SPDIF/GPIO3_C0	13	○	○	33	I2S0_SDI0/GPIO3_D3
GND	14	○	○	34	GND
SPI3_CS/GPIO1_C2	15	○	○	35	I2S0_SDI3SDO1/GPIO3_D6
SPI3_CLK/GPIO1_C1	16	○	○	36	2S0_SDI2SDO2/GPIO3_D5
GND	17	○	○	37	I2S0_SDI1SDO3/GPIO3_D4
LINUX_RX	18	○	○	38	I2S0_LRCK_RX/GPIO3_D1
LINUX_TX	19	○	○	39	MCU_PA1
3.3V	20	○	○	40	GND



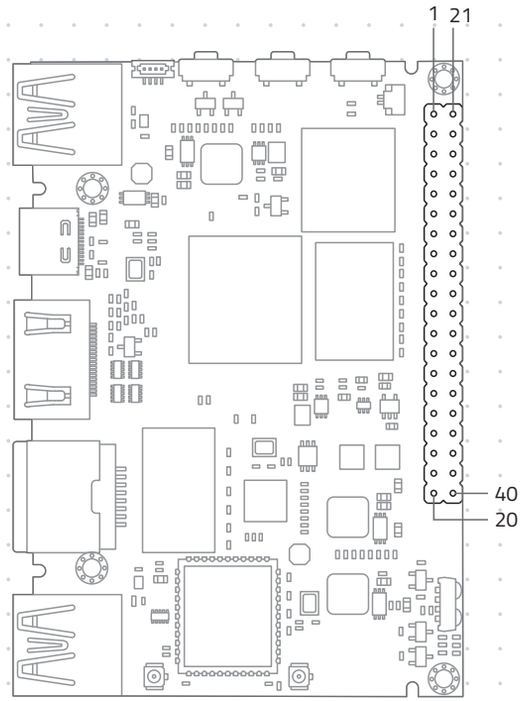
MAIN FUNCTIONS	#			#	MAIN FUNCTIONS
5V	1	□	○	21	GND
5V	2	○	○	22	I2C_SCK_A
HUB_DM1	3	○	○	23	I2C_SDA_A
HUB_DP1	4	○	○	24	GND
GND	5	○	○	25	I2C_SCK_B
5V	6	○	○	26	I2C_SDA_B
HUB_DM2	7	○	○	27	3V3
HUB_DP2	8	○	○	28	GND
GND	9	○	○	29	GPIOH_7
ADC_CH0	10	○	○	30	GPIOH_6
GND	11	○	○	31	GPIOH_9
ADC_CH2	12	○	○	32	GPIOH_8
SPDIF	13	○	○	33	GPIOAO_6
GND	14	○	○	34	GND
UART_RX_AO_B	15	○	○	35	PWM_AO_A
UART_TX_AO_B	16	○	○	36	RTC_CLK
GND	17	○	○	37	GPIOH_5
LINUX_RX	18	○	○	38	PWR_EN
LINUX_TX	19	○	○	39	PWM_F
3V3	20	○	○	40	GND



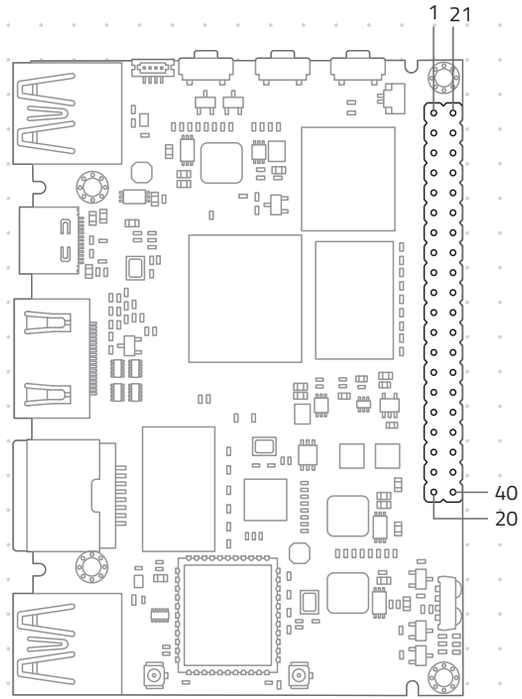
MAIN FUNCTIONS	#			#	MAIN FUNCTIONS
5V	1	□	○	21	GND
5V	2	○	○	22	I2CM_B_SCL
USB_DM	3	○	○	23	I2CM_B_SDA
USB_DP	4	○	○	24	GND
GND	5	○	○	25	I2CM_E_SCL
VCC_MCU	6	○	○	26	I2CM_E_SDA
MCU_NRST	7	○	○	27	3.3V
MCU_SWIM	8	○	○	28	GND
GND	9	○	○	29	I2SB_SCLK
ADC_CH0	10	○	○	30	I2S_MCLK
1.8V	11	○	○	31	I2SB_SDO
ADC_CH2	12	○	○	32	I2SB_LRCK
SPDIF_OUT	13	○	○	33	I2SC_SDI
GND	14	○	○	34	GND
UART_C_RX	15	○	○	35	PWM_F
UART_C_TX	16	○	○	36	GPIOZ_8
GND	17	○	○	37	GPIOZ_10
LINUX_RX	18	○	○	38	EXP_INT
LINUX_TX	19	○	○	39	GPIOH_9
3.3V	20	○	○	40	GND



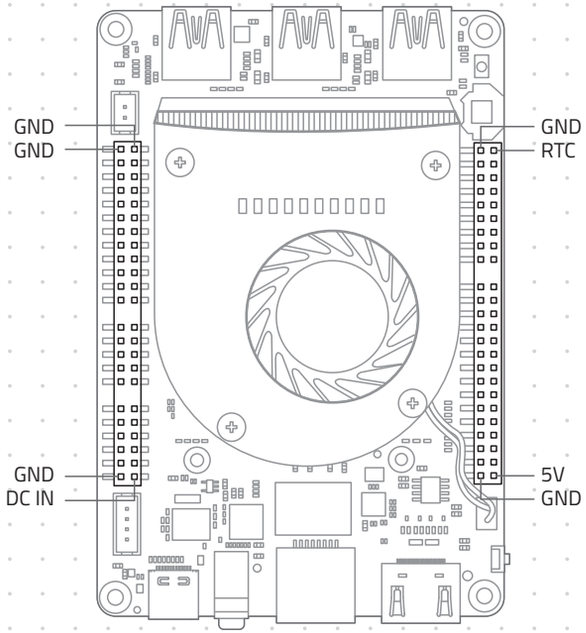
MAIN FUNCTIONS	#			#	MAIN FUNCTIONS
5V	1	□	○	21	GND
5V	2	○	○	22	I2C_SCK_A
HUB_DM1	3	○	○	23	I2C_SDA_A
HUB_DP1	4	○	○	24	GND
GND	5	○	○	25	I2C_SCK_B
GPIODV_21	6	○	○	26	I2C_SDA_B
GPIODV_22	7	○	○	27	3.3V
GPIODV_23	8	○	○	28	GND
GND	9	○	○	29	I2S_SCLK
ADC_CH0	10	○	○	30	I2S_MCLK
1.8V	11	○	○	31	I2S_SDO
ADC_CH2	12	○	○	32	I2S_LRCK
SPDIF	13	○	○	33	I2S_SDI
GND	14	○	○	34	GND
UART_RX_AO_B	15	○	○	35	PWM_D
UART_TX_AO_B	16	○	○	36	RTC_CLK
GND	17	○	○	37	GPIOH_5
LINUX_RX	18	○	○	38	EXP_INT
LINUX_TX	19	○	○	39	GPIODV_13
3.3V	20	○	○	40	GND



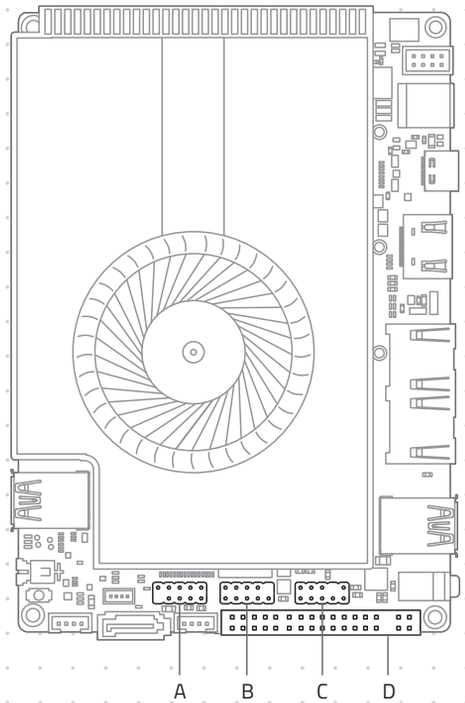
MAIN FUNCTIONS	#			#	MAIN FUNCTIONS
5V	1	□	○	21	GND
5V	2	○	○	22	I2C_M3_SCL
USB_DM	3	○	○	23	I2C_M3_SDA
USB_DP	4	○	○	24	GND
GND	5	○	○	25	I2C_AO_SCK
VCC_MCU	6	○	○	26	I2C_AO_SDA
MCU_NRST	7	○	○	27	3.3V
MCU_SWIM	8	○	○	28	GND
GND	9	○	○	29	I2SB_SCLK
ADC_CH0	10	○	○	30	I2S_MCLK0
1.8V	11	○	○	31	I2SB_SDO
ADC_CH3	12	○	○	32	I2SB_LRCK
SPDIF_OUT	13	○	○	33	I2SC_SDI
GND	14	○	○	34	GND
UARTC_RX	15	○	○	35	PWM_F
UARTC_TX	16	○	○	36	RTC_CLK
GND	17	○	○	37	GPIOH_4
LINUX_RX	18	○	○	38	MCU_PA1
LINUX_TX	19	○	○	39	GPIODZ_15
3.3V	20	○	○	40	GND



MAIN FUNCTIONS	#			#	MAIN FUNCTIONS
5V	1	□	○	21	GND
5V	2	○	○	22	I2CM_F_SCL
USB_DM	3	○	○	23	I2DC_F_SDA
USB_DP	4	○	○	24	GND
GND	5	○	○	25	I2CM_A_SCL
VCC_MCU	6	○	○	26	I2CM_A_SDA
MCU_SWCLK	7	○	○	27	3.3V
MCU_SWDIO	8	○	○	28	GND
GND	9	○	○	29	I2S_SCLK1
ADC_CH6	10	○	○	30	I2S_MCLK1
1.8V	11	○	○	31	I2S_SDO1
ADC_CH3	12	○	○	32	I2S_LRCLK1
SPDIFOUT	13	○	○	33	I2S_SDI1
GND	14	○	○	34	GND
UART_E_RX	15	○	○	35	PWM_F
UART_E_TX	16	○	○	36	GPIOT_18
GND	17	○	○	37	GPIOT_19
LINUX_RX	18	○	○	38	PWR_HOLD_EXT
LINUX_TX	19	○	○	39	GPIOD_15/IR_IN
3.3V	20	○	○	40	GND



NAME			NAME	ALT	NAME			NAME	ALT
GND	□	□	GND		GND	□	□	RTC	
RST	□	□	SW		GND	□	□	3.3V	
S5	□	□	S4		GND	□	□	3.3V	
S3	□	□	S0		GND	□	□	5V	
GND	□	□	TXD		GND	□	□	5V	
RXD	□	□	SCLK		MOSI	□	□	GND	
SFRM	□	□	3.3V		CLK	□	□	WP	
MCLK	□	□	3.3V		HOLD	□	□	MISO	
GND	□	□	GND		VCC	□	□	CS#	
GND	□	□	SCL						
GND	□	□	SDA		MISO	□	□	5V	
GND	□	□	1.8V		SCK	□	□	MOSI	
					RESET	□	□	GND	
GND	□	□	SGND		D7	□	□	D0	RXD1
RI	□	□	DTR	A8	D8	□	□	D1	TXD1
CTS	□	□	TXD	A9	D9~	□	□	D2	SDA
RTS	□	□	RXD	A10	D10~	□	□	D3~	SCL
DSR	□	□	DCD		D11~	□	□	D4	A6
				A11	D12	□	□	D5~	
GND	□	□	GND	D13 LED	D13~	□	□	D6~	A7
GND	□	□	D-	A3	D21	□	□	D18	A0
GND	□	□	D+	A4	D22	□	□	D19	A1
GND	□	□	5V	A5	D23	□	□	D20	A2
GND	□	□	DC_IN		GND	□	□	5V	
GND	□	□	DC_IN		GND	□	□	5V	



NAME
CTS
DSR
DTR
232_RX/485_A

A	
	□
□	□
□	□
□	□
□	□

NAME
RI
RTS
GND
232_TX/485_B
DCD

NAME
HDD_LED+
HDD_LED-
GND
RST_BTN
NC

B	
□	□
□	□
□	□
□	□
□	

NAME
PWR_LED+
PWR_LED-
PWR_BTN
GND

NAME
MIC_L
MIC_R
HPOUT_R
FAUDIO_JD
HPOUT_L

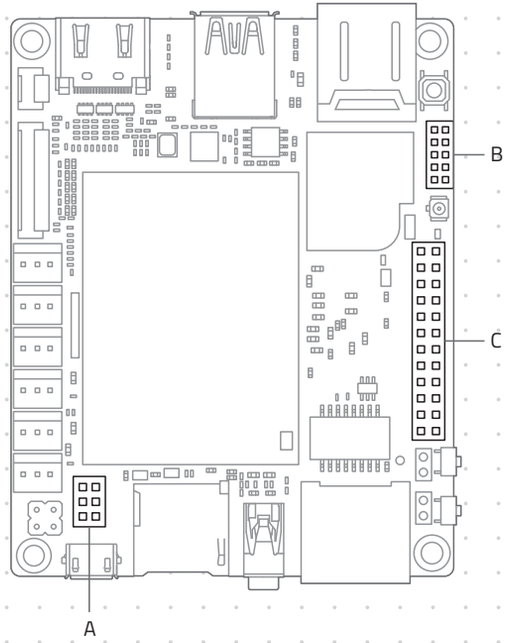
C	
□	□
□	□
□	□
□	
□	□

NAME
GND
-ACZ_DET
MIC_JD
HPOUT_JD

NAME
MISO
SCK
RST
D7
D8
D9
D10
D11
D12
D13
A3
A4
A5
GND
GND
GND
S3

D	
□	□
□	□
□	□
□	□
□	□
□	□
□	□
□	□
□	□
□	□
□	□
□	□
□	□
□	□
□	□
□	□
□	□

NAME
MUC5V
MOSI
GND
D0
D1
D2
D3
D4
D5
D6
A0
A1
A2
5V
5V
S4
S0



FUNCTION	#
MISO	1
SCK	3
RESET	5

A	
□	□
□	□
□	□

#	FUNCTION
2	5V
4	MOSI
6	GND

ALT	FUNCTION	#
	I2C_2 SDA	1
	I2C_2 SCL	3
DDIO SDA	UART0_RXD	5
DDIO SCL	UART0_TXD	7
	GND	9

B*	
□	□
□	□
□	□
□	□
□	□

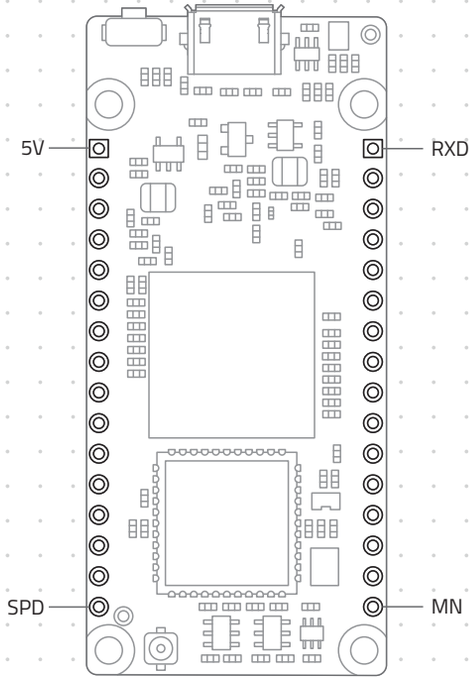
#	FUNCTION
2	I2C_0 SDA
4	I2C_0 SCL
6	UART_GNSS_TXD
8	UART_GNSS_RXD
10	1.8V

** Operating voltage: 0~1.8V*

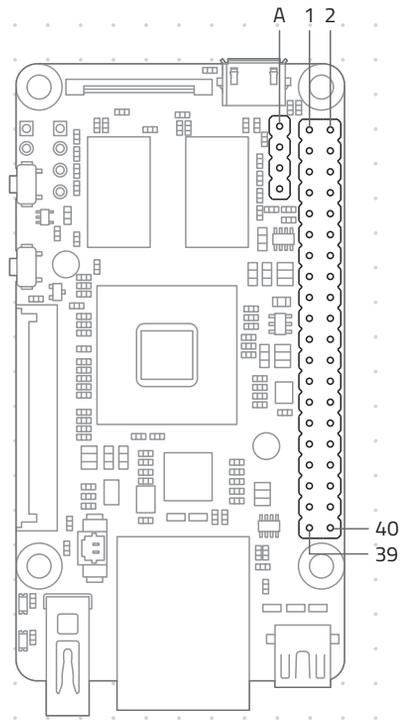
OTHER	ANALOG	DIGITAL	#
		D7	1
	A8	D8	3
PWM	A9	D9	5
PWM	A10	D10	7
PWM		D11	9
	A11	D12	11
D13 LED / PWM		D13	13
	A3	D21	15
	A4	D22	17
	A5	D23	19
		GND	21
		GND	23

C	
□	□
□	□
□	□
□	□
□	□
□	□
□	□
□	□
□	□
□	□
□	□
□	□

#	DIGITAL	ANALOG	SERIAL	OTHER
2	D0		RXD1	
4	D1		TXD1	
6	D2		SDA	
8	D3		SCL	PWM
10	D4	A6		
12	D5			PWM
14	D6	A7		PWM
16	D18	A0		
18	D19	A1		
20	D20	A2		
22	5V			
24	5V			

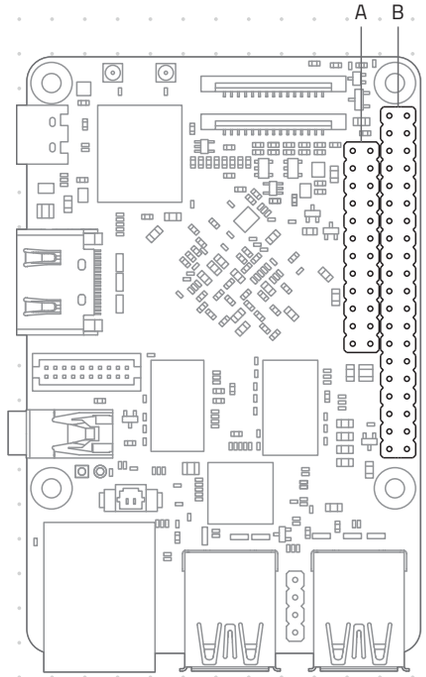


NAME	FUNCTIONS		FUNCTIONS		NAME
5V		IN/OUT	PA5	DEBUG	RXD
5V		IN/OUT	PA4	UART0	TXD
3V3		OUT			GND
GND		GND	PA11	I2C0	SCL
IRRX		PL11	PA12	I2C0	SDA
PG11		PG11	PA13	SPI1	CS
DM3	USB3	D-	PA14	SPI1	CLK
DP3	USB3	D+	PA16	SPI1	MISO
DM2	USB2	D-	PA15	SPI1	MOSI
DP2	USB2	D+	PG7	UART1	RX1
RD-	EPHY	RXN	PG6	UART1	TX1
RD+	EPHY	RXP	CVBS	CVBS	CVBS
TD-	EPHY	TXN	L	LINEOUT	LL
TD+	EPHY	TXP	R	LINEOUT	LR
LNK	EPHY	LED-LINK	P	MIC	MP
SPD	EPHY	LED-SPD	N	MIC	MN



MAIN FUNCTIONS	#			#	MAIN FUNCTIONS
SYS_3.3V	1	□	○	2	VDD_5V
I2C0_SDA	3	○	○	4	VDD_5V
I2C0_SCL	5	○	○	6	DGND
GPIOD8/PPM	7	○	○	8	UART3_TXD/GPIOD21
DGND	9	○	○	10	UART3_RXD/GPIOD17
UART4_TX/GPIOB29	11	○	○	12	GPIOD1/PWM0
GPIOB30	13	○	○	14	DGND
GPIOB31	15	○	○	16	GPIOC14/PWM2
SYS_3.3V	17	○	○	18	GPIOB27
SPI0_MOSI/GPIOC31	19	○	○	20	DGND
SPI0_MISO/GPIOD0	21	○	○	22	UART4_RX/GPIOB28
SPI0_CLK/GPIOC29	23	○	○	24	SPI0_CS/GPIOC30
DGND	25	○	○	26	GPIOB26
I2C1_SDA	27	○	○	28	I2C1_SCL
GPIOC8	29	○	○	30	DGND
GPIOC7	31	○	○	32	GPIOC28
GPIOC13/PWM1	33	○	○	34	DGND
SPI2_MISO/GPIOC11	35	○	○	36	SPI2_CS/GPIOC10
ALIVEGPIO3	37	○	○	38	SPI2_MOSI/GPIOC12
DGND	39	○	○	40	SPI2_CLK/GPIOC9

A	#	MAIN FUNCTIONS
□	1	DGND
○	2	VDD_5V
○	3	UART_TXD0
○	4	UART_RXD0

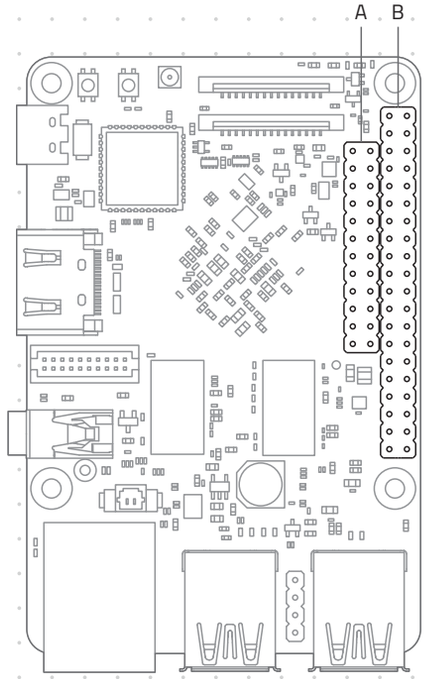


NAME	A		NAME
VCC5V0_SYS	□	□	VCC5V0_SYS
PCIE_RX1_P	□	□	PCIE_TX1P
PCIE_RX1_N	□	□	PCIE_TX1N
GND	□	□	GND
PCIE_RX0_P	□	□	PCIE_TX0P
PCIE_RX0_N	□	□	PCIE_TX0N
GND	□	□	GND
PCIE_REF_CLKP	□	□	HOST0_DM
PCIE_REF_CLKN	□	□	HOST0_DP
GND	□	□	GND
PWR_KEY	□	□	HOST1_DM
GPIO4_C6/PWM1*	□	□	HOST1_DP

**3V*

NAME	B		NAME
VCC3V3_SYS	□	□	VDD_5V
I2C2_SDA*	□	□	VDD_5V
I2C2_SCL*	□	□	GND
GPIO1_A0*	□	□	GPIO4_C1/I2C3_SCL*
GND	□	□	GPIO4_C0/I2C3_SDA*
GPIO1_A1*	□	□	GPIO1_C2*
GPIO1_A3*	□	□	GND
GPIO1_A4*	□	□	GPIO1_C6*
VCC3V3_SYS	□	□	GPIO1_C7*
SPI1_TXD/UART4_TX*	□	□	GND
SPI1_RXD/UART4_RX*	□	□	GPIO1_D0*
SPI1_CLK*	□	□	SPI1_CSN0*
GND	□	□	GPIO4_C5/SPDIF_TX*
I2C2_SDA**	□	□	I2C2_SCL**
I2S0_LRCK_RX**	□	□	GND
I2S0_LRCK_TX**	□	□	I2S_CLK**
I2S0_SCLK**	□	□	GND
I2S0_SDI0**	□	□	I2S0_SDO0**
I2S0_SDI1SDO3**	□	□	I2S0_SDI2SDO2**
GND	□	□	I2S0_SDI3SDO1**

**3V **1.8V*

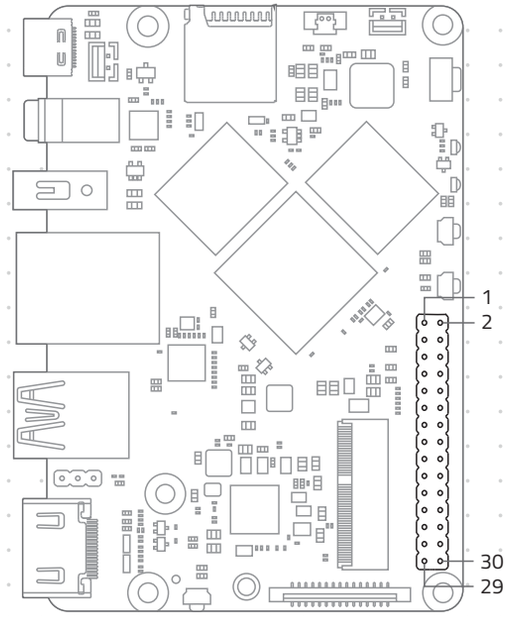


NAME	A		NAME
VCC5V0_SYS	□	□	VCC5V0_SYS
PCIE_RX1_P	□	□	PCIE_TX1P
PCIE_RX1_N	□	□	PCIE_TX1N
GND	□	□	GND
PCIE_RX0_P	□	□	PCIE_TX0P
PCIE_RX0_N	□	□	PCIE_TX0N
GND	□	□	GND
PCIE_REF_CLKP	□	□	
PCIE_REF_CLKN	□	□	
GND	□	□	GND
PWR_KEY	□	□	
GPIO4_C6/PWM1*	□	□	IR_RX

**3V*

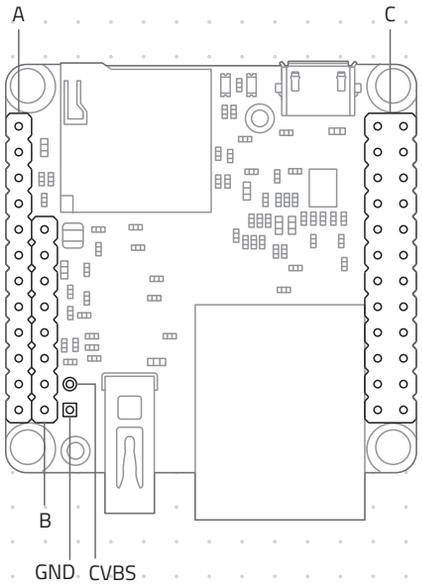
NAME	B		NAME
VCC3V3_SYS	□	□	VDD_5V
I2C2_SDA*	□	□	VDD_5V
I2C2_SCL*	□	□	GND
GPIO1_A0*	□	□	GPIO4_C1/I2C3_SCL*
GND	□	□	GPIO4_C0/I2C3_SDA*
GPIO1_A1*	□	□	GPIO1_C2*
GPIO1_A3*	□	□	GND
GPIO1_A4*	□	□	GPIO1_C6*
VCC3V3_SYS	□	□	GPIO1_C7*
SPI1_TXD/UART4_TX*	□	□	GND
SPI1_RXD/UART4_RX*	□	□	GPIO1_D0*
SPI1_CLK*	□	□	SPI1_CSN0*
GND	□	□	GPIO4_C5/SPDIF_TX*
I2C2_SDA**	□	□	I2C2_SCL**
I2S0_LRCK_RX**	□	□	GND
I2S0_LRCK_TX**	□	□	I2S_CLK**
I2S0_SCLK**	□	□	GND
I2S0_SDI0**	□	□	I2S0_SDO0**
I2S0_SDI1SDO3**	□	□	I2S0_SDI2SDO2**
GND	□	□	I2S0_SDI3SDO1**

**3V **1.8V*



NAME	#			#	NAME
VCC_3V3_S3	1	□	○	2	VCC_5V0
I2C8_SDA_M2	3	○	○	4	VCC_5V0
I2C8_SCL_M2	5	○	○	6	GND
GPIO4_B0/UART8_TX_M0	7	○	○	8	GPIO3_C4/UART5_TX_M1
GND	9	○	○	10	GPIO3_C5/UART5_RX_M1
GPIO4_B1/UART8_RX_M0	11	○	○	12	GPIO4_B3/UART8_CTSN_M0_PWM15_M1
GPIO4_A3/UART0_RX_M0	13	○	○	14	GND
GPIO4_A4/UART0_TX_M0	15	○	○	16	GPIO0_D4/I2C1_SCL_M2/PWM3_IR_M0
VCC_3V3_S3	17	○	○	18	GPIO0_D5/I2C1_SDA_M2
GPIO1_B2/SPI0_MOSI_M2/UART4_RX_M2	19	○	○	20	GND
GPIO1_B1/SPI0_MISO_M2	21	○	○	22	GPIO4_B2/UART8_RTSN_M0_PWM14_M1
GPIO1_B3/SPI0_CLK_M2/UART4_TX_M2	23	○	○	24	GPIO1_B4/SPI0_CS0_M2/UART7_RX_M2
GND	25	○	○	26	GPIO1_B5/SPI0_CS1_M2/UART7_TX_M2
GPIO0_C4/PWM2_M0	27	○	○	28	GPIO1_A0/UART6_RX_M1
GPIO1_A1/UART6_TX_M1	29	○	○	30	GND

NOTE: The logic level of all signals is 3.3V. VCC_3V3_S3 is 3.3V output with a max output of 500mA. VCC_5V0 is 5V output with a max output of 1A.

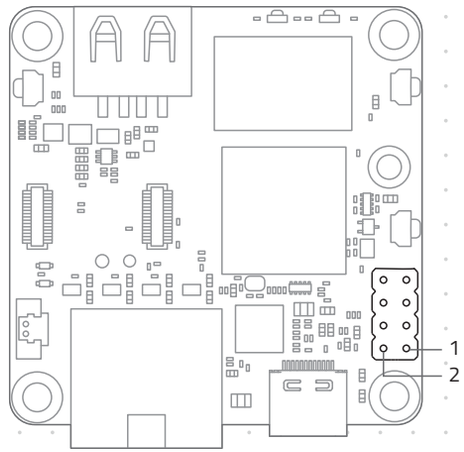


A	FUNCTIONS		
□	5V (OUT)		
○	USB1		D+
○	USB1		D-
○	USB2		D+
○	USB2		D-
○	IR	RX	PL11
○	SPDIF	OUT	PA17
○	12S0		LRCK
○	12S0		BCK
○	12S0		DOUT
○	12S0		DIN
○	GND		

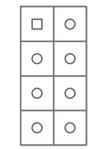
B	FUNCTIONS	
□	GND	
○	5V (OUT)	
○	UART0	TX
○	UART0	RX
○	LINEOUT	LL
○	LINEOUT	LR
○	LINEIN	MN
○	LINEIN	MP

		FUNCTIONS
		3.3V (OUT)
SDA		I2C0
SCL		I2C0
		PG11
		GND
PA0	TX	UART2
PA2	RTS	UART2
PA3	CTS	UART2
		3.3V (OUT)
PC0	MOSI	SPI0
PC1	MISO	SPI0
PC2	CLK	SPI0

C		FUNCTIONS		
□	○	5V (IN/OUT)		
○	○	5V (IN/OUT)		
○	○	GND		
○	○	UART1	TX	PG6
○	○	UART1	RX	PG7
○	○	PA6		
○	○	GND		
○	○	UART1	RTS	PG8
○	○	UART1	CTS	PG9
○	○	GND		
○	○	UART2	RX	PA1
○	○	SPI0	CS	PC3

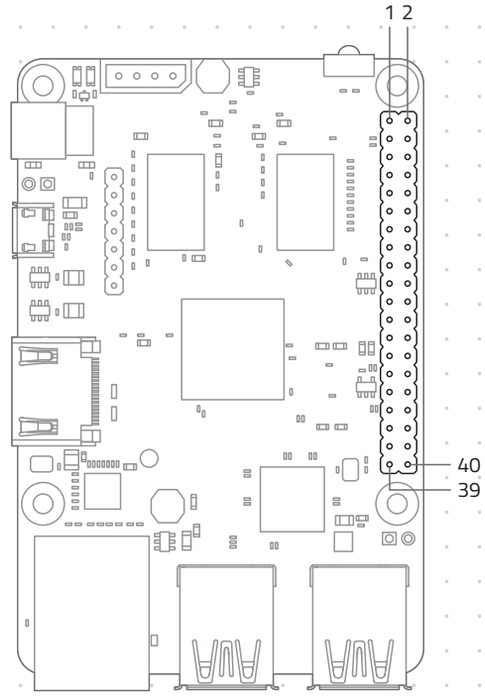


FUNCTIONS	#
GND	1
UART2DBG_TX	3
UART2DBG_RX	5
VCC_3V3	7



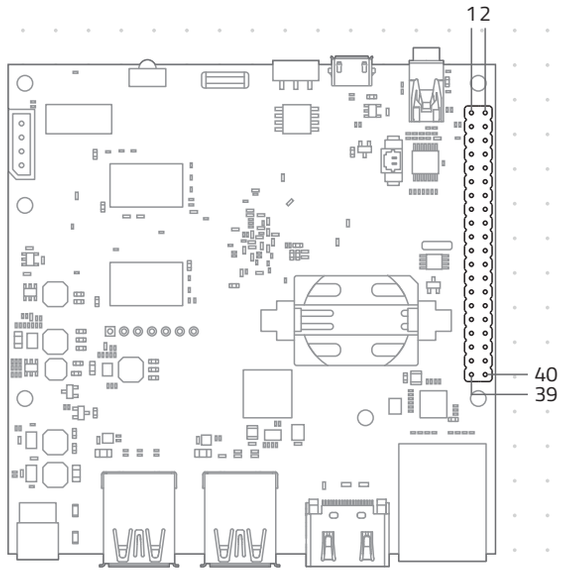
#	FUNCTIONS
2	VCC5V0_SYS
4	VCC5V0_SYS
6	GND
8	GND

NOTE: VCC5V0_SYS is connected to USB-C 5V directly. VCC_3V3 is system 3.3V power, and shared with M.2 Key-E, eMMC, SD, 30-pin GPIO, Ethernet etc. Max output of this pin is 300mA.

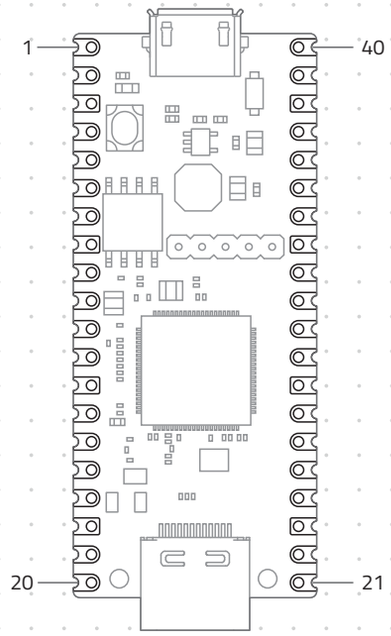


GPIO	MAIN FUNCTIONS	#
	3.3V POWER	1
493	I2C_EE_M2_SDA/GPIOX_17	3
494	I2C_EE_M2_SCL_GPIOX_18	5
481	PWM_C/GPIOX_5	7
	GROUND	9
479	PWM_D/GPIOX_3	11
480	GPIOX_4	13
483	GPIOX_7/PWM_F	15
	3.3V POWER	17
484	SPI_A_MOSI/GPIOX_8	19
485	SPI_A_MISO/GPIOX_9	21
487	SPI_A_SCLK/GPIOX_11	23
	GROUND	25
474	I2C_EE_M3_SDA/GPIOA_14	27
490	UART_EE_A_CTS/GPIOX_14	29
491	UART_EE_A_RTS/GPIOX_15	31
482	PWM_A/GPIOX_6	33
492	PWM_B/GPIOX_19	35
	ADC.AIN2	37
	GROUND	39

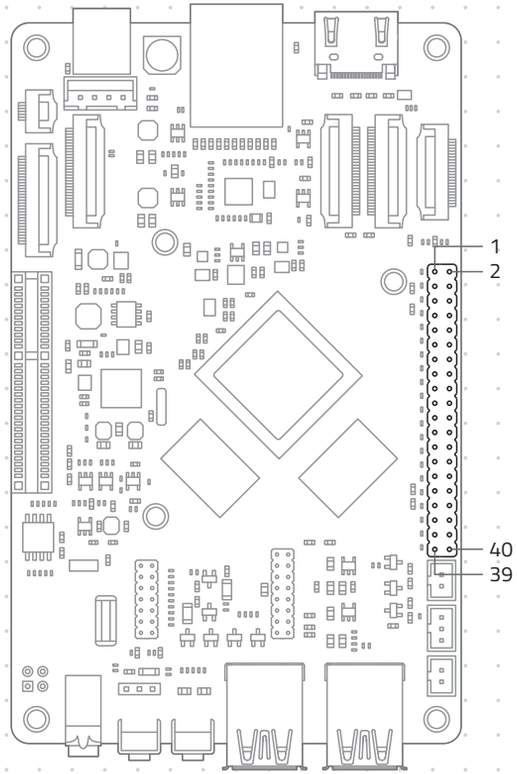
#	MAIN FUNCTIONS	GPIO
2	5.0V POWER	
4	5.0V POWER	
6	GROUND	
8	GPXIO_12/UART_EE_A_TX	488
10	GPIOX_13/UART_EE_A_RX	489
12	GPXIO_16/PWM_E	492
14	GROUND	
16	GPIOX_0	476
18	GPIOX_1	477
20	GROUND	
22	GPIOX_2	478
24	GPIOX_10/SPI_A_SS0	486
26	GPIOH_6	433
28	GPIOA_15/I2C_EE_M3_SCL	475
30	GROUND	
32	GPIOH_7	434
34	GROUND	
36	GPIOH_5/PWM_F	432
38	VDDIO_AO1V8	
40	ADC.AIN0	



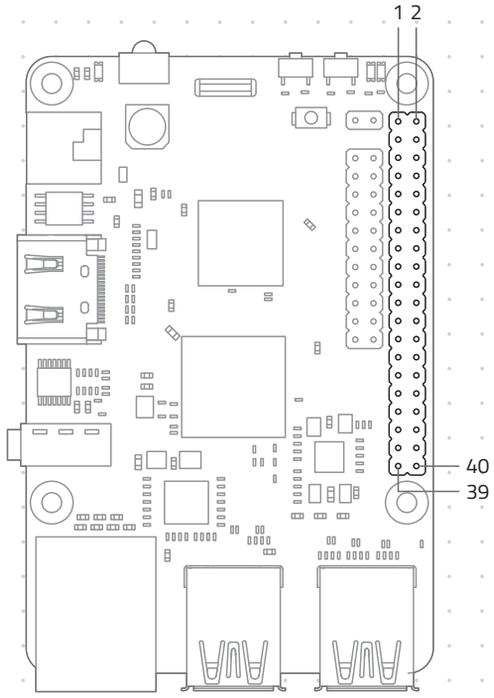
GPIO	MAIN FUNCTIONS	#			#	MAIN FUNCTIONS	GPIO
	3.3V POWER	1	□	○	2	5.0V POWER	
493	I2C_EE_M2_SDA/GPIOX_17	3	○	○	4	5.0V POWER	
494	I2C_EE_M2_SCL_GPIOX_18	5	○	○	6	GROUND	
473	SPDIF_OUT_GPIOA_13	7	○	○	8	GPXIO_12/UART_EE_A_TX	488
	GROUND	9	○	○	10	GPIOX_13/UART_EE_A_RX	489
479	PWM_D/GPIOX_3	11	○	○	12	GPXIO_16/PWM_E	492
480	GPIOX_4	13	○	○	14	GROUND	
483	PWM_B/PWM_F/GPIOX_7	15	○	○	16	GPIOX_0	476
	3.3V POWER	17	○	○	18	GPIOX_1	477
484	SPI_A_MOSI/GPIOX_8	19	○	○	20	GROUND	
485	SPI_A_MISO/GPIOX_9	21	○	○	22	GPIOX_2	478
487	SPI_A_SCLK/GPIOX_11	23	○	○	24	GPIOX_10/SPI_A_SS0	486
	GROUND	25	○	○	26	GPIOH_4	464
474	I2C_EE_M3_SDA/GPIOA_14	27	○	○	28	GPIOA_15/I2C_EE_M3_SCL	475
490	UART_EE_A_CTS/GPIOX_14	29	○	○	30	GROUND	
491	UART_EE_A_RTS/GPIOX_15	31	○	○	32	GPIOH_12	472
481	PWM_C/GPIOX_6	33	○	○	34	GROUND	
482	PWM_D/GPIOX_19	35	○	○	36	PWM_B/GPIOX_19	495
	ADC.AIN2	37	○	○	38	VDDIO_AO1V8	
	GROUND	39	○	○	40	ADC.AIN2	



#	MAIN	ALT1	AL2	#	MAIN	ALT1	AL2
1	GPIO14	I2S_DI	UART0_TX	21	GPIO29	MISO	MOSI
2	GPIO15	I2S_DO	UART0_RX	22	GPIO28	SS	
3	GND			23	GND		
4	GPIO12	TXD	TCK	24	GPIO31	SCLK	
5	GPIO13	RXD	TDI	25	GPIO30	MOSI	MISO
6	GPIO41	XTAK32K_OUT		26	GPIO7	SDA	TDO
7	GPIO40	XTAK32K_IN		27	GPIO6	SCL	TMS
8	GND			28	GND		
9	GPIO33	RXD		29	GPIO11	ADC3	
10	GPIO32	TXD		30	PU_CHIP		
11	GPIO21	MISO	MOSI	31	GPIO17	ADC0	RXD
12	GPIO20	SS		32	GPIO16	ADC8	TXD
13	GND			33	GND	AGND	
14	GPIO23	SCL		34	GPIO18	A9C2	
15	GPIO22	MOSI	MISO	35	VREF	ADC_VREF	
16	GPIO25	MISO	MOSI	36	3V3 OUT	VDD33	
17	GPIO24	SS		37	3V3_EN		
18	GND			38	GND		
19	GPIO27	SCLK		39	VSYS		
20	GPIO26	MOSI	MISO	40	VBUS		

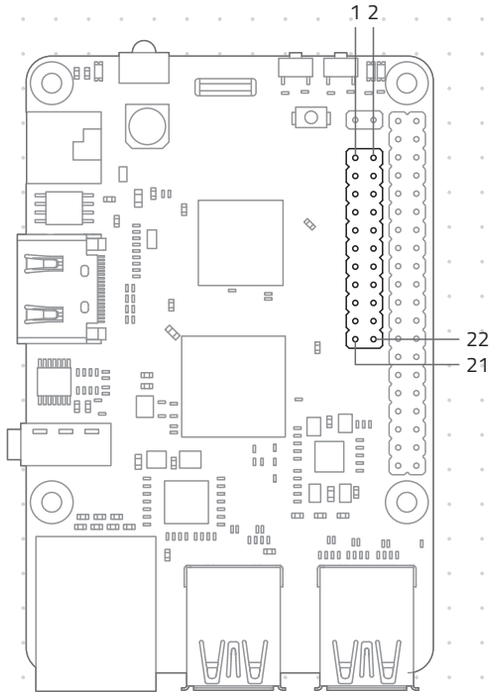


MAIN FUNCTIONS	#			#	MAIN FUNCTIONS
3.3V	1	□	○	2	5V
GPIO1_C4 (I2C8_SDA)	3	○	○	4	5V
GPIO1_C5 (I2C8_SCL)	5	○	○	6	GROUND
GPIO4_D0 (CPU_GPCLK)	7	○	○	8	GPIO4_C4 (UART2_TX)
GROUND	9	○	○	10	GPIO4_C3 (UART2_RX)
GPIO1_C6	11	○	○	12	GPIO3_D0 (I2S0_CLK)
GPIO1_C2	13	○	○	14	GROUND
GPIO1_A1	15	○	○	16	GPIO1_A4
3.3V	17	○	○	18	GPIO4_C5 [SPDIF]
[UART4_TX] GPIO1_B0 (SPI1_TXD)	19	○	○	20	GROUND
[UART4_RX] GPIO1_A7 (SPI1_RXD)	21	○	○	22	GPIO4_D1
GPIO1_B1 (SPI1_CLK)	23	○	○	24	GPIO1_B2 (SPI1_CSN0)
GROUND	25	○	○	26	GPIO1_B5
GPIO1_B3 (I2C4_SDA)	27	○	○	28	GPIO1_B4 (I2C4_SCL)
GPIO4_D3	29	○	○	30	GROUND
GPIO4_D4	31	○	○	32	GPIO3_D4 (I2S0_SDI1SDO3)
GPIO3_D5 (I2S0_SDI2SDO2)	33	○	○	34	GROUND
GPIO3_D2 (I2S0_LRCKTX)	35	○	○	36	GPIO3_D6 (I2S0_SDI3SDO1)
GPIO3_D1 (I2S0_LRCKRX)	37	○	○	38	GPIO3_D3 (I2S0_SDI0)
GROUND	39	○	○	40	GPIO3_D7 (I2S0_SDO0)



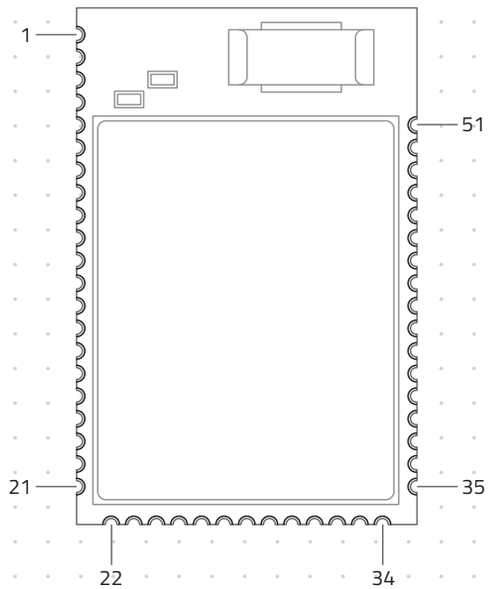
GPIO	MAIN FUNCTIONS	#
	3.3V	1
89	GPIO2_D1 (I2C0_SDA)	3
88	GPIO2_D0 (I2C0_SCL)	5
	GPIO1_D4 (CLK32KOUT_M1)	7
	GROUND	9
	NC	11
	GPIO0_A0	13
100	GPIO3_A4	15
	3.3V	17
97	GPIO3_A1 (SPI_TXD_M2)	19
98	GPIO3_A2 (SPI_RXD_M2)	21
96	GPIO3_A0 (SPI_CLK_M2)	23
	GROUND	25
68	GPIO2_A4 (I2C1_SDA)	27
	NC	29
	NC	31
32	GPIO1_A0	33
33	GPIO1_A1	35
34	GPIO1_A2	37
	GROUND	39

#	MAIN FUNCTIONS	GPIO
2	5V	
4	5V	
6	GROUND	
8	GPIO2_A0 (UART2_TX_M1)	64
10	GPIO2_A1 (UART2_RX_M1)	65
12	GPIO2_A3	67
14	GROUND	
16	GPIO3_A5	101
18	GPIO3_A6	102
20	GROUND	
22	GPIO3_A7	103
24	GPIO3_B0 (SPI_CSN0_M2)	104
26	GPIO2_B4 (SPI_CSN1_M0)	76
28	GPIO2_A5 (I2C1_SCL)	69
30	GROUND	
32	GPIO1_A6	38
34	GROUND	
36	GPIO1_A5	37
38	GPIO1_A4	36
40	GPIO1_A3V	35



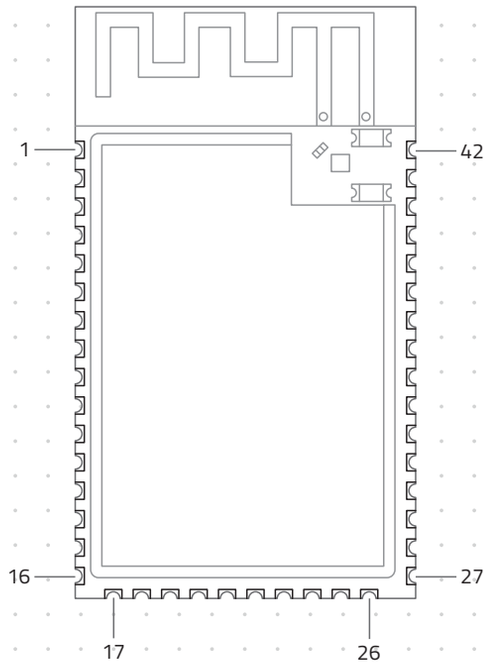
GPIO	MAIN FUNCTIONS	#
	3.3V	1
81	GPIO2_C1 (I2S1_LRCKTX)	3
87	GPIO2_C7 (I2S1_SDO)	5
	GROUND	7
80	GPIO2_C0 (I2S1_LRCKRX)	9
85	GPIO2_C5 (I2S1_SDIO2)	11
27	GPIO0_D3 (SPDIF_TX_M0)	13
	GROUND	15
	ETHERNET RD+	17
	ETHERNET TX+	19
89	GPIO2_D1 (ETHERNET SPEED)	21

#	MAIN FUNCTIONS	GPIO
2	5V	
4	GPIO2_C2 (I2S1_SCLK)	82
6	GPIO2_C3 (I2S1_SDI)	83
8	GROUND	
10	GPIO2_B7 (I2S1_MCLK)	79
12	GPIO2_C4 (I2S1_SDIO1)	84
14	GPIO2_C6 (I2S1_SDIO3)	86
16	GROUND	
18	ETHERNET RD-	
20	ETHERNET TX-	
22	GPIO2_D0 (ETHERNET LINK)	88



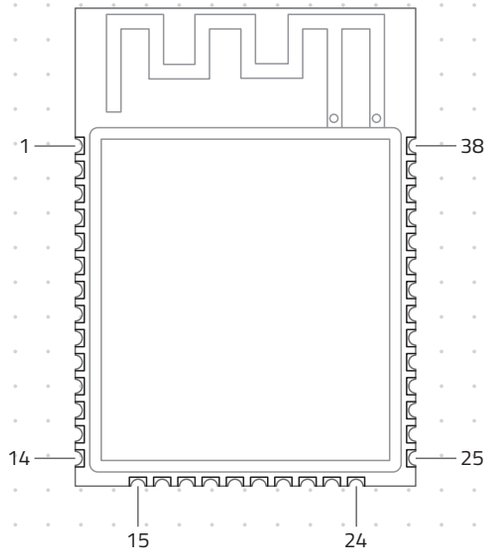
#	NAME	NOTES	#	NAME	NOTES
1	GND	COMMON GROUND	26	PIO_4	PROGRAMMABLE I/O
2	GND	COMMON GROUND	27	GND	COMMON GROUND
3	GND	COMMON GROUND	28	VREGEN	SEE NOTE*
4	GND	COMMON GROUND	29	CHG_EXT	BATTERY CHARGER CTRL
5	PIO_6	PROGRAMMABLE I/O	30	VCHG	BATTERY INPUT
6	PIO_7	PROGRAMMABLE I/O	31	VBAT_SENSE	BATTERY SENSE
7	CAP_SENSE_1	TOUCH SENSE INPUT (ANALOG)	32	VBAT	BATTERY (+)
8	CAP_SENSE_4	TOUCH SENSE INPUT (ANALOG)	33	VDD_PADS	POSITIVE SUPPLY INPUT (3.3V-4.7V)**
9	CAP_SENSE_3SEL	TOUCH SENSE INPUT (ANALOG)	34	3V3_USB	POSITIVE SUPPLY INPUT (3.3V-4.7V)**
10	CAP_SENSE_2	TOUCH SENSE INPUT (ANALOG)	35	USB_N	USB DATA (-)
11	GND	COMMON GROUND	36	USB_P	USB DATA (+)
12	AIO_1	ANALOG PROGRAMMABLE I/O	37	LED_0	LED DRIVER (OPEN DRAIN OUTPUT)
13	SPKR_LN	SPEAKER OUTPUT (-) LEFT	38	LED_1	LED DRIVER (OPEN DRAIN OUTPUT)
14	SPKR_LP	SPEAKER OUTPUT (+) LEFT	39	LED_3	LED DRIVER (OPEN DRAIN OUTPUT)
15	SPKR_RN	SPEAKER OUTPUT (-) RIGHT	40	UART_CTS	UART CLEAR TO SEND
16	SPKR_RP	SPEAKER OUTPUT (+) RIGHT	41	UART_TX	UART TX DATA
17	MIC_BIAS_A	MIC BIAS	42	UART_RX	UART RX DATA
18	MIC_RN	MIC INPUT (-) RIGHT (ANALOG)	43	UART_RTS	UART REQUEST TO SEND
19	MIC_RP	MIC INPUT (+) RIGHT (ANALOG)	44	RST#	RESET INPUT
20	MIC_LN	MIC INPUT (-) LEFT (ANALOG)	45	SPI_PCM#	SELECT PCM/SPI
21	MIC_LP	MIC INPUT (+) LEFT (ANALOG)	46	PCM_SYNC	SYNCHRONOUS DATA SYNC
22	GND	COMMON GROUND	47	PCM_CLK	SYNCHRONOUS DATA CLOCK
23	PIO_0	PROGRAMMABLE I/O	48	PCM_OUT	SYNCHRONOUS DATA OUTPUT (CMOS)
24	PIO_1	PROGRAMMABLE I/O	49	PCM_IN	SYNCHRONOUS DATA INPUT (CMOS)
25	PIO_5	PROGRAMMABLE I/O	50	PIO_2	PROGRAMMABLE I/O
			51	PIO_3	PROGRAMMABLE I/O

**Take High to Enable Switch-Mode Regulator **Typical Current 15mA (Music Streaming). Typical Current Idle < 1mA (Connectable)*



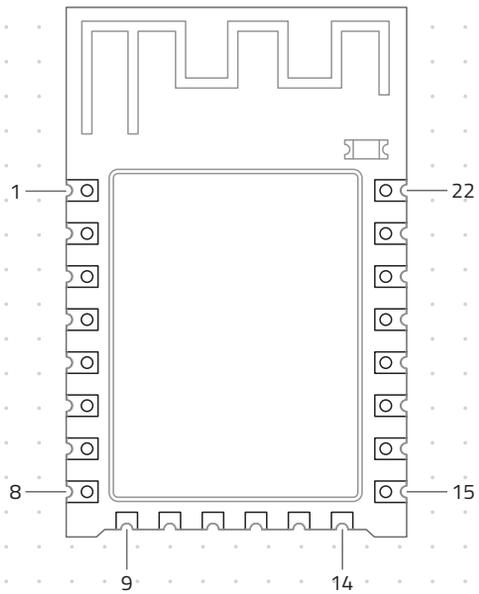
#	NAME	NOTES	#	NAME	NOTES
1	GND	GROUND	22	IO19	RTC19, U1RTS, ADC2_CH8, CLK_OUT2, USB_D-
2	3V3	POWER SUPPLY (3.0V ~ 3.6V)	23	IO20	RTC20, U1CTS, ADC2_CH9, CLK_OUT1, USB_D+
3	IO0	RTC0, IO0	24	IO21	RTC21
4	IO1	RTC1, TOUCH1, ADC1_CH0	25	IO26	SPICS1, IO26*
5	IO2	RTC2, TOUCH2, ADC1_CH1	26	GND	GROUND
6	IO3	RTC3, TOUCH3, ADC1_CH2	27	IO33	SPII04, FSPIHD
7	IO4	RTC4, TOUCH4, ADC1_CH3	28	IO34	SPII05, FSPICS0
8	IO5	RTC5, TOUCH5, ADC1_CH4	29	IO35	SPII06, FSPID
9	IO6	RTC6, TOUCH6, ADC1_CH5	30	IO36	SPII07, FSPICLK
10	IO7	RTC7, TOUCH7, ADC1_CH6	31	IO37	SPIDQS, FSPIQ
11	IO8	RTC8, TOUCH8, ADC1_CH7	32	IO38	FSPIWP
12	IO9	RTC9, TOUCH9, ADC1_CH8, FSPIHD	33	IO39	MTCK, CLK_OUT3
13	IO10	RTC10, TOUCH10, ADC1_CH9, FSPICS0, FSPII04	34	IO40	MTDO, CLK_OUT2
14	IO11	RTC11, TOUCH11, ADC2_CH0, FSPID, FSPII05	35	IO41	MTDI, CLK_OUT1
15	IO12	RTC12, TOUCH12, ADC2_CH1, FSPICLK, FSPII06	36	IO42	MTMS
16	IO13	RTC13, TOUCH13, ADC2_CH2, FSPIQ, FSPII07	37	TXD0	U0TXD, CLK_OUT1
17	IO14	RTC14, TOUCH14, ADC2_CH3, FSPIWP, FSPIDQS	38	RXD0	U0RXD, CLK_OUT2
18	IO15	RTC15, U0RTS, ADC2_CH4, XTAL_32K_P	39	IO45	
19	IO16	RTC16, U0CTS, ADC2_CH5, XTAL_32K_N	40	IO46	
20	IO17	RTC17, U1TXD, ADC2_CH6, DAC_1	41	EN	SEE NOTE**
21	IO18	RTC18, U1RXD, ADC2_CH7, DAC_2, CLK_OUT3	42	GND	GROUND

**By default, IO26 is connected to the CS pin of the PSRAM and cannot be used for other functions*
***High: on, enables the chip. Low: off, the chip powers off. Note: Do not leave the EN pin floating.*

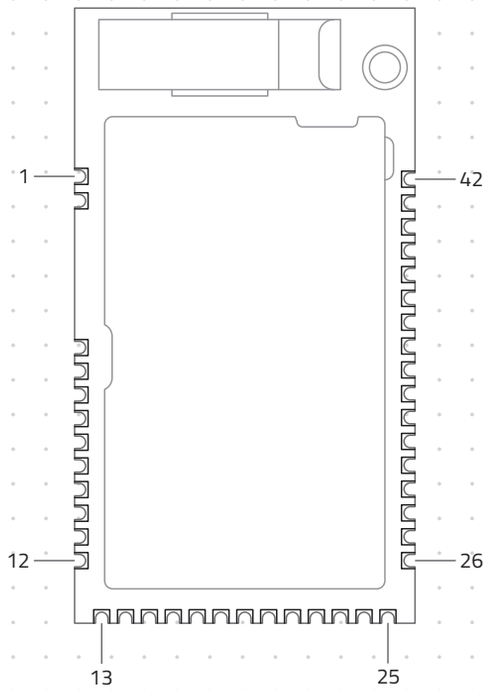


#	NAME	NOTES	#	NAME	NOTES
1	GND	GROUND	20	SCK/CLK*	IO6, SD_CLK, SPICLK, HS1_CLK, U1CTS
2	3V3	POWER SUPPLY (3.0V ~ 3.6V)	21	SDO/SD0*	IO7, SD_DATA0, SPIQ, HS1_DATA0, U2RTS
3	EN	MODULE-ENABLE SIGNAL. ACTIVE HIGH	22	SDI/SD1*	IO8, SD_DATA1, SPID, HS1_DATA1, U2CTS
4	SENSOR_VP	IO36, ADC1_CH0, RTC0	23	IO15	IO15, ADC2_CH3, TOUCH3, MTDO, HSPICS0, RTC13, HS2_CMD, SD_CMD, EMAC_RXD3
5	SENSOR_VN	IO39, ADC1_CH3, RTC3			
6	IO34	IO34, ADC1_CH6, RTC4	24	IO2	IO2, ADC2_CH2, TOUCH2, RTC12, HSPIWP, HS2_DATA0, SD_DATA0
7	IO35	IO35, ADC1_CH7, RTC5			
8	IO32	IO32, XTAL_32K_P, ADC1_CH4, TOUCH9, RTC9	25	IO0	IO0, ADC2_CH1, TOUCH1, RTC11, CLK_OUT1, EMAC_TX_CLK
9	IO33	IO33, XTAL_32K_N, ADC1_CH5, TOUCH8, RTC8	26	IO4	IO4, ADC2_CH0, TOUCH0, RTC10, HSPIHD, HS2_DATA1, SD_DATA1, EMAC_TX_ER
10	IO25	IO25, DAC_1, ADC2_CH8, RTC6, EMAC_RXD0	27	IO16	IO16, HS1_DATA4, U2RXD, EMAC_CLK_OUT
11	IO26	IO26, DAC_2, ADC2_CH9, RTC7, EMAC_RXD1	28	IO17	IO17, HS1_DATA5, U2TXD, EMAC_CLK_OUT_180
12	IO27	IO27, ADC2_CH7, TOUCH7, RTC17, EMAC_RX_DV			
			29	IO5	IO5, VSPICS0, HS1_DATA6, EMAC_RX_CLK
13	IO14	IO14, ADC2_CH6, TOUCH6, RTC16, MTMS, HSPICLK, HS2_CLK, SD_CLK, EMAC_TXD2	30	IO18	IO18, VSPICLK, HS1_DATA7
			31	IO19	IO19, VSPIQ, U0CTS, EMAC_TXD0
14	IO12	IO12, ADC2_CH5, TOUCH5, RTC15, MTDI, HSPIQ, HS2_DATA2, SD_DATA2, EMAC_TXD3	32	NC	-
			33	IO21	IO21, VSPIHD, EMAC_TX_EN
15	GND	GROUND	34	RXD0	IO3, U0RXD, CLK_OUT2
16	IO13	IO13, ADC2_CH4, TOUCH4, RTC14, MTCK, HSPID, HS2_DATA3, SD_DATA3, EMAC_RX_ER	35	TXD0	IO1, U0TXD, CLK_OUT3, EMAC_RXD2
			36	IO22	IO22, VSPIWP, U0RTS, EMAC_TXD1
17	SHD/SD2*	IO9, SD_DATA2, SPIHD, HS1_DATA2, U1RXD	37	IO23	IO23, VSPID, HS1_STROBE
18	SWP/SD3*	IO10, SD_DATA3, SPIWP, HS1_DATA3, U1TXD	38	GND	GROUND
19	SCS/CMD*	IO11, SD_CMD, SPICS0, HS1_CMD, U1RTS			

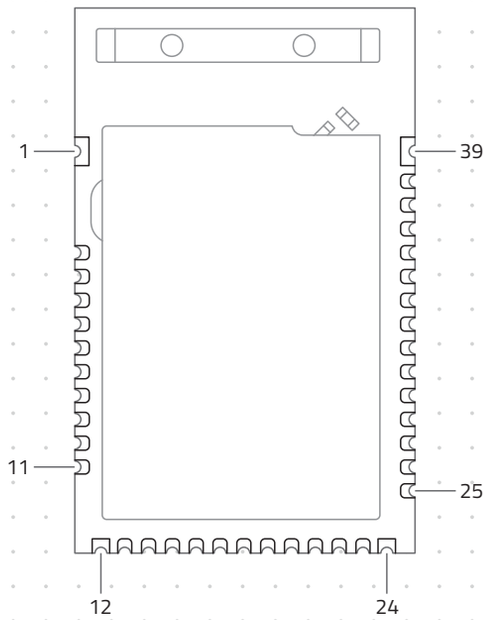
** Pins SCK/CLK, SDO/SD0, SDI/SD1, SHD/SD2, SWP/SD3 and SCS/CMD, namely, GPIO6 to GPIO11 are connected to the integrated SPI flash integrated on the module and are not recommended for other uses.*



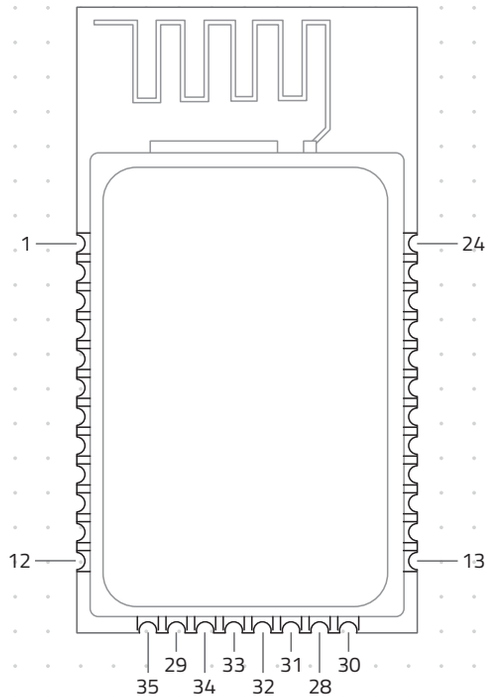
#	NAME	NOTES
1	RST	EXTERNAL RESET SIGNAL (LOW VOLTAGE LEVEL: ACTIVE)
2	ADC	ANALOG-TO-DIGITAL CONVERTER
3	EN	CHIP ENABLE. HIGH: ON, CHIP WORKS PROPERLY; LOW: OFF, SMALL CURRENT
4	IO16	GPIO16; DEEP-SLEEP WAKEUP
5	IO14	GPIO14; HSPI_CLK
6	IO12	GPIO12; HSPI_MISO
7	IO13	GPIO13; HSPI_MOSI; UART0_CTS
8	VCC	POWER SUPPLY 3.0 ~3.6V
9	CS0	GPIO11; CONNECT TO SD_CMD (SERIES R: 200Ω); SPI_CS0
10	MISO	GPIO7; CONNECT TO SD_D0 (SERIES R: 200Ω); SPI_MSIO
11	IO9	GPIO9; CONNECT TO SD_D2 (SERIES R: 200Ω); SPIHD; HSPIHD
12	IO10	GPIO10; CONNECT TO SD_D3 (SERIES R: 200Ω); SPIWP; HSPIWP
13	MOSI	GPIO8; CONNECT TO SD_D1 (SERIES R: 200Ω); SPI_MOSI
14	SCLK	GPIO6; CONNECT TO SD_CLK (SERIES R: 200Ω); SPI_CLK
15	GND	GROUND
16	IO15	GPIO15; HSPI_CS; UART0_RTS
17	IO2	GPIO2; UART TX DURING FLASH PROGRAMMING
18	IO0	GPIO0; SPI_CS2
19	IO4	GPIO4
20	IO5	GPIO5
21	RXD0	GPIO3; UART RX DURING FLASH PROGRAMMING
22	TXD0	GPIO1; UART TX DURING FLASH PROGAMMING; SPI_CS1



#	NAME	NOTES	#	NAME	NOTES
1	GND	GROUND	22	P0.05	GENERAL-PURPOSE DIGITAL I/O; ADC INPUT 6
2	GND	GROUND	23	P0.06	GENERAL-PURPOSE DIGITAL I/O; ADC INPUT 7
3	AVDD	ANALOG POWER SUPPPLY	24	P0.07	GENERAL-PURPOSE DIGITAL I/O
4	P0.21	GENERAL-PURPOSE DIGITAL I/O	25	GND	GROUND
5	P0.22		26	P0.08	GENERAL-PURPOSE DIGITAL I/O
6	P0.23		27	P0.09	
7	P0.24		28	P0.10	
8	P0.25		29	P0.11	
9	XL2	CONNECTS 32.768KHZ CRYSTAL; ADC INPUT 0 GENERAL-PURPOSE DIGITAL I/O (P0.27)	30	P0.12	
			31	P0.13	
10	XL1	CONNECTS 32.768KHZ CRYSTAL; ADC INPUT 1 GENERAL-PURPOSE DIGITAL I/O (P0.27)	32	P0.14	
			33	P0.15	
11	P0.28	GENERAL-PURPOSE DIGITAL I/O	34	P0.16	
12	P0.29		35	SWDIO	SYSTEM RESET(ACTIVE LOW).ALSO HW DEBUG AND FLASH PROGRAMMING
13	GND	GROUND			
14	VDD	POWER SUPPLY	36	SWCLK	HW DEBUG AND FLASH PROGRAMMING
15	DCC	DC/DC OUTPUT VOLTAGE TO EXTERNAL LC FILTER	37	P0.17	GENERAL-PURPOSE DIGITAL I/O
16	P0.30	GENERAL-PURPOSE DIGITAL I/O	38	P0.18	
17	P0.00	GENERAL-PURPOSE DIGITAL I/O; ADC REF VOLTAGE	39	P0.19	
18	P0.01	GENERAL-PURPOSE DIGITAL I/O; ADC INPUT 2	40	P0.20	
19	P0.02	GENERAL-PURPOSE DIGITAL I/O; ADC INPUT 3	41	DEC2	POWER SUPPLY DECOUPLING
20	P0.03	GENERAL-PURPOSE DIGITAL I/O; ADC INPUT 4	42	GND	GROUND
21	P0.04	GENERAL-PURPOSE DIGITAL I/O; ADC INPUT 5			

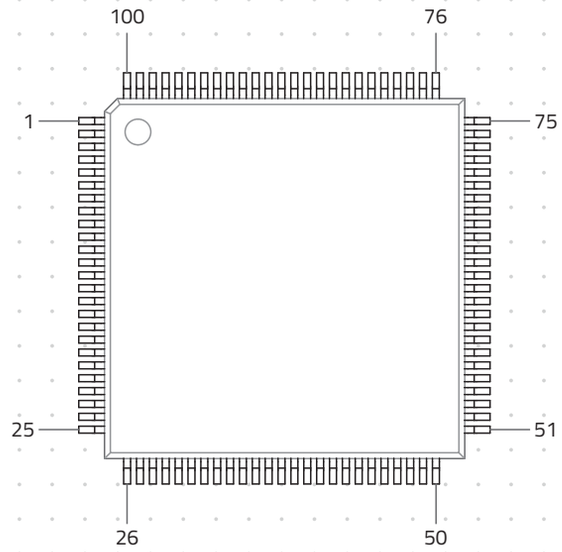


#	NAME	NOTES	#	NAME	NOTES
1	GND	GROUND	21	P0.08	GENERAL-PURPOSE DIGITAL I/O
2	P0.25	GENERAL-PURPOSE DIGITAL I/O	22	P0.09	GENERAL-PURPOSE DIGITAL I/O NFC ANTENNA CONNECTION
3	P0.26	GENERAL-PURPOSE DIGITAL I/O	23	P0.10	
4	P0.27	GENERAL-PURPOSE DIGITAL I/O	24	GND	GROUND
5	P0.28	GENERAL-PURPOSE DIGITAL I/O SAADC/COMP/LPCOMP INPUT	25	P0.11	GENERAL-PURPOSE DIGITAL I/O
6	P0.29		26	P0.12	
7	P0.30		27	P0.13	
8	P0.31		28	P0.14	GENERAL-PURPOSE DIGITAL I/O TRACE PORT OUTPUT
9	DEC4	1V3 REG SUPPLY DECOUPLING. INPUT FROM DC/DC CONVERTER. OUTPUT FROM 1V3 LDO	29	P0.15	
			30	P0.16	
10	DCC	DC/DC CONVERTER OUTPUT PIN	31	P0.17	GENERAL-PURPOSE DIGITAL I/O
11	VDD	POWER-SUPPLY PIN	32	P0.18	GENERAL-PURPOSE DIGITAL I/O TRACE PORT OUTPUT
12	GND	GROUND			
13	P0.00/XL1	GENERAL-PURPOSE DIGITAL I/O CONNECTION TO 32.768KHZ CRYSTAL (LFXO)	33	P0.19	GENERAL-PURPOSE DIGITAL I/O
14	P0.01/XL2		34	P0.20	GENERAL-PURPOSE DIGITAL I/O TRACE PORT CLOCK OUTPUT
15	P0.02	GENERAL-PURPOSE DIGITAL I/O SAADC/COMP/LPCOMP INPUT			
16	P0.03		35	P0.21/RST	GENERAL-PURPOSE DIGITAL I/O; RESET PIN
17	P0.04		36	SWDCLK	SERIAL WIRE DEBUG CLOCK INPUT
18	P0.05		37	SWDIO	SERIAL WIRE DEBUG I/O
19	P0.06	GENERAL-PURPOSE DIGITAL I/O	38	P0.22	GENERAL-PURPOSE DIGITAL I/O
20	P0.07	GENERAL-PURPOSE DIGITAL I/O	39	GND	GROUND

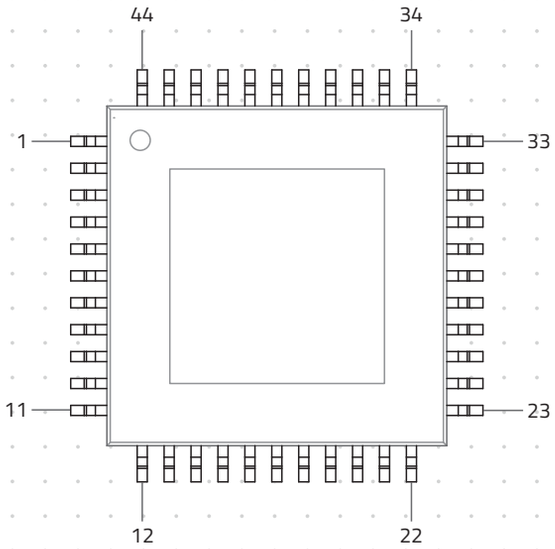


#	NAME	NOTES	#	NAME	NOTES
1	GND	GROUND	19	PIO2**	STATUS, HIGH WHEN CONNECTED, ELSE LOW
2	SPI MOSI*	PROGRAMMING ONLY	20	PIO3**	AUTO DISCOVERY = HIGH
3	PIO6**	SET BT MASTER (HIGH=AUTO-MASTER MODE)	21	PIO5**	STATUS, BASED ON STATE, LOW ON CONNECT
4	PIO7**	SET BAUD (HIGH = FORCE 9600, LOW = 115K)	22	PIO4**	SET FACTORY DEFAULTS
5	RESET	ACTIVE LOW RESET	23	SPI_CSB	PROGRAMMING ONLY
6	SPI_CLK	PROGRAMMING ONLY	24	SPI_MISO	PROGRAMMING ONLY
7	PCM_CLK	PCM INTERFACE	25	GND	GROUND FOR RN42-N
8	PCM_SYNC		26	RF PAD	RF PAD FOR RN42-N
9	PCM_IN		27	GND	GROUND FOR RN42-N
10	PCM_OUT		28	GND	GROUND
11	VDD	3.3V REGULATED POWER INPUT	29	GND	GROUND
12	GND	GROUND	30	AIO0	OPTIONAL ANALOG INPUT
13	UART_RX**	UART RECEIVE INPUT	31	PIO8**	OPTIONAL ANALOG INPUT
14	UART_TX**	UART TRANSMIT OUTPUT	32	PIO9**	IO
15	UART_RTS**	UART RTS, GOES HIGH TO DISABLE HOST TX	33	PIO10**	IO (REMOTE DTR SIGNAL)
16	UART_CTS**	UART CTS, IF HIGH, DISABLES TRANSMITTER	34	PIO11**	IO (REMOTE RTS SIGNAL)
17	USB_D+**	USB PORT	35	AIO1	OPTIONAL ANALOG INPUT
18	USB_D-**	USB PORT			

**Pin Voltage: 3V **Pin Voltage: 0V-3.3V*

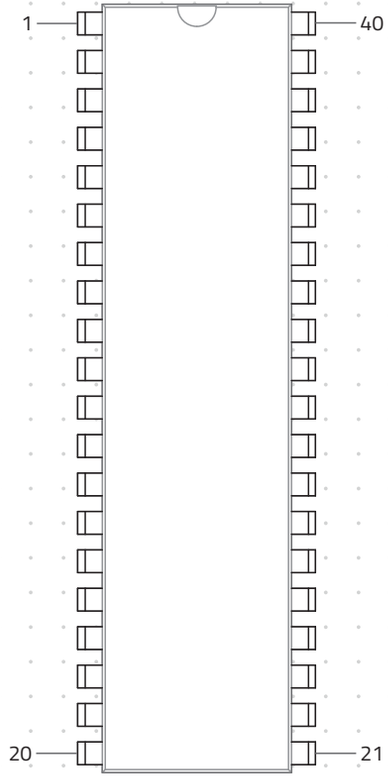


#	NAME	#	NAME	#	NAME	#	NAME
1	PG5 (OC0B)	26	PB7 (OC0A/OC1C/PCINT7)	51	PG0 (WR)	76	PA2 (AD2)
2	PE0 (RXD0/PCINT8)	27	PH7 (T4)	52	PG1 (RD)	77	PA1 (AD1)
3	PE1 (TXD0)	28	PG3 (TOSC2)	53	PC0 (A8)	78	PA0 (AD0)
4	PE2 (XCK0/AIN0)	29	PG4 (TOSC1)	54	PC1 (A9)	79	PJ7
5	PE3 (OC3A/AIN1)	30	RESET	55	PC2 (A10)	80	VCC (4.5V-5.5V)
6	PE4 (OC3B/INT4)	31	VCC (4.5V-5.5V)	56	PC3 (A11)	81	GND
7	PE5 (OC3C/INT5)	32	GND	57	PC4 (A12)	82	PK7 (ADC15/PCINT23)
8	PE6 (T3/INT6)	33	XTAL2	58	PC5 (A13)	83	PK6 (ADC14/PCINT22)
9	PE7 (CLKO/ICP3/INT7)	34	XTAL1	59	PC6 (A14)	84	PK5 (ADC13/PCINT21)
10	VCC (4.5V-5.5V)	35	PL0 (ICP4)	60	PC7 (A15)	85	PK4 (ADC12/PCINT20)
11	GND	36	PL1 (ICP5)	61	VCC (4.5V-5.5V)	86	PK3 (ADC11/PCINT19)
12	PH0 (RXD2)	37	PL2 (T5)	62	GND	87	PK2 (ADC10/PCINT18)
13	PH1 (TXD2)	38	PL3 (OC5A)	63	PJ0 (RXD3/PCINT9)	88	PK1 (ADC9/PCINT17)
14	PH2 (XCK2)	39	PL4 (OC5B)	64	PJ1 (TXD3/PCINT10)	89	PK0 (ADC8/PCINT16)
15	PH3 (OC4A)	40	PL5 (OC5C)	65	PJ2 (XCK3/PCINT11)	90	PF7 (ADC7/TDI)
16	PH4 (OC4B)	41	PL6	66	PJ3 (PCINT12)	91	PF6 (ADC6/TDO)
17	PH5 (OC4C)	42	PL7	67	PJ4 (PCINT13)	92	PF5 (ADC5/TMS)
18	PH6 (OC2B)	43	PD0 (SCL/INT0)	68	PJ5 (PCINT14)	93	PF4 (ADC4/TCK)
19	PB0 (SS/PCINT0)	44	PD1 (SDA/INT1)	69	PJ6 (PCINT15)	94	PF3 (ADC3)
20	PB1 (SCK/PCINT1)	45	PD2 (RXD1/INT2)	70	PG2 (ALE)	95	PF2 (ADC2)
21	PB2 (MOSI/PCINT2)	46	PD3 (TXD1/INT3)	71	PA7 (AD7)	96	PF1 (ADC1)
22	PB3 (MISO/PCINT3)	47	PD4 (ICP1)	72	PA6 (AD6)	97	PF0 (ADC0)
23	PB4 (OC2A/PCINT4)	48	PD5 (XCK1)	73	PA5 (AD5)	98	AREF
24	PB5 (OC1A/PCINT5)	49	PD6 (T1)	74	PA4 (AD4)	99	GND
25	PB6 (OC1B/PCINT6)	50	PD7 (T0)	75	PA3 (AD3)	100	AVCC



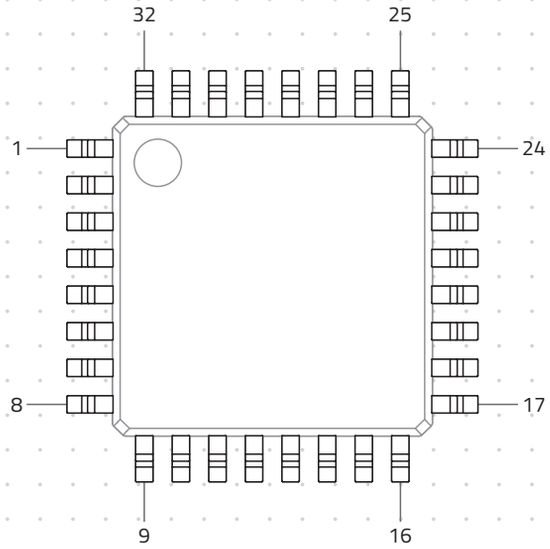
#	NAME	NOTES	#	NAME	NOTES
1	PB5 (MOSI)	PORT B. AN 8-BIT I/O PORT WITH INTERNAL PULL-UP RESISTORS	23	PC4 (TDO)	PORT C. 8-BIT I/O PORT WITH INTERNAL PULL-UP RESISTORS. ALSO SERVES JTAG INTERFACE FUNCTIONS
2	PB6 (MISO)		24	PC5 (TDI)	
3	PB7 (SCK)		25	PC6 (TOSC1)	
4	RESET	RESET INPUT	26	PC7 (TOSC2)	
5	VCC	SUPPLY VOLTAGE (4.5V-5.5V)	27	AVCC	SUPPLY VOLTAGE PORT A*
6	GND	GROUND	28	GND	GROUND
7	XTAL2	OSCILLATOR INPUT	29	AREF	ANALOG REFERENCE PIN
8	XTAL1	OSCILLATOR OUTPUT	30	PA7 (ADC7)	PORT A. SERVES AS ANALOG INPUT TO A/D CONVERTER. ALSO 8-BIT I/O PORT
9	PD0 (RXD)	PORT D. 8-BIT I/O PORT WITH INTERNAL PULL-UP RESISTORS	31	PA6 (ADC6)	
10	PD1 (TXD)		32	PA5 (ADC5)	
11	PD2 (INT0)		33	PA4 (ADC4)	
12	PD3 (INT1)		34	PA3 (ADC3)	
13	PD4 (OC1B)		35	PA2 (ADC2)	
14	PD5 (OC1A)		36	PA1 (ADC1)	
15	PD6 (ICP1)		37	PA0 (ADC0)	
16	PD7 (OC2)		38	VCC	SUPPLY VOLTAGE (4.5V-5.5V)
17	VCC	SUPPLY VOLTAGE (4.5V-5.5V)	39	GND	GROUND
18	GND	GROUND	40	PB0 (XCK/T0)	PORT B. AN 8-BIT I/O PORT WITH INTERNAL PULL-UP RESISTORS
19	PC0 (SCL)	PORT C. 8-BIT I/O PORT WITH INTERNAL PULL-UP RESISTORS. ALSO SERVES JTAG INTERFACE FUNCTIONS	41	PB1 (T1)	
20	PC1 (SDA)		42	PB2 (AIN0/INT2)	
21	PC2 (TCK)		43	PB3 (AIN1/OC0)	
22	PC3 (TMS)		44	PB4 (SS)	

** Also supply voltage for A/D Converter. Should be externally connected to VCC even if the ADC is not used. If the ADC is used, it should be connected to VCC through a low-pass filter.*



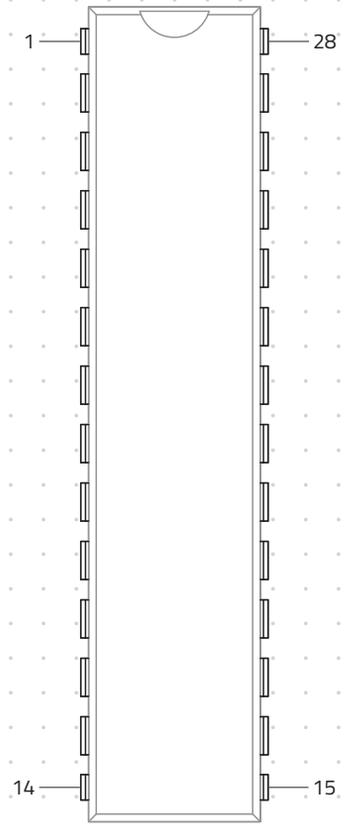
#	NAME	NOTES	#	NAME	NOTES
1	PB0 (XCK/T0)	PORT B. AN 8-BIT I/O PORT WITH INTERNAL PULL-UP RESISTORS	21	PD7 (OC2)	PORT C. 8-BIT I/O PORT WITH INTERNAL PULL-UP RESISTORS. ALSO SERVES JTAG INTERFACE FUNCTIONS
2	PB1 (T1)		22	PC0 (SCL)	
3	PB2 (INT2/AIN0)		23	PC1 (SDA)	
4	PB3 (OC0/AIN1)		24	PC2 (TCK)	
5	PB4 (SS)		25	PC3 (TMS)	
6	PB5 (MOSI)		26	PC4 (TDO)	
7	PB6 (MISO)		27	PC5 (TDI)	
8	PB7 (SCK)		28	PC6 (TOSC1)	
9	RESET	RESET INPUT	29	PC7 (TOSC2)	
10	VCC	SUPPLY VOLTAGE (4.5V-5.5V)	30	AVCC	SUPPLY VOLTAGE PORT A*
11	GND	GROUND	31	GND	GROUND
12	XTAL2	OSCILLATOR OUTPUT	32	AREF	ANALOG REFERENCE PIN
13	XTAL1	OSCILLATOR INPUT	33	PA7 (ADC7)	PORT A. SERVES AS ANALOG INPUT TO A/D CONVERTER. ALSO 8-BIT I/O PORT
14	PD0 (RXD)	PORT D. AN 8-BIT I/O PORT WITH INTERNAL PULL-UP RESISTORS ALSO SERVES FUNCTIONS OF VARIOUS SPECIAL ATMEGA32 FEATURES	34	PA6 (ADC6)	
15	PD1 (TXD)		35	PA5 (ADC5)	
16	PD2 (INT0)		36	PA4 (ADC4)	
17	PD3 (INT1)		37	PA3 (ADC3)	
18	PD4 (OC1B)		38	PA2 (ADC2)	
19	PD5 (OC1A)		39	PA1 (ADC1)	
20	PD6 (ICP1)		40	PA0 (ADC0)	

** Also supply voltage for A/D Converter. Should be externally connected to VCC even if the ADC is not used. If the ADC is used, it should be connected to VCC through a low-pass filter.*



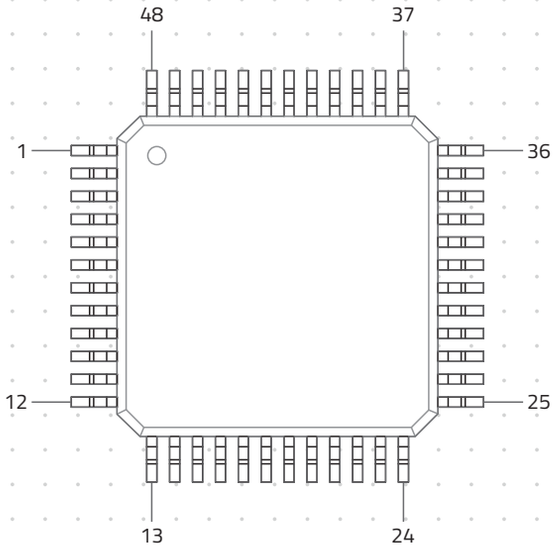
#	NAME	NOTES	#	NAME	NOTES
1	PD3 (PCINT19/OC2B/INT1)	SEE NOTE 1	17	PB5 (SCK/PCINT5)	SEE NOTE 1
2	PD4 (PCINT20/XCK/T0)	SEE NOTE 1	18	AVCC	SEE NOTE 3
3	GND	GROUND	19	ADC6	A/D CONVERTER INPUT
4	VCC	VOLTAGE (1.8V-5.5V)	20	AREF	ANALOG REFERENCE PIN
5	GND	GROUND	21	GND	GROUND
6	VCC	VOLTAGE (1.8V-5.5V)	22	ADC7	A/D CONVERTER INPUT
7	PB6 (PCINT6/XTAL1/TOSC1)	SEE NOTE 1	23	PC0 (ADC0/PCINT8)	SEE NOTE 2
8	PB6 (PCINT6/XTAL1/TOSC1)	SEE NOTE 1	24	PC1 (ADC1/PCINT9)	SEE NOTE 2
9	PD5 (PCINT21/OC0B/T1)	SEE NOTE 1	25	PC2 (ADC2/PCINT10)	SEE NOTE 2
10	PD6 (PCINT22/OC0A/AIN0)	SEE NOTE 1	26	PC3 (ADC3/PCINT11)	SEE NOTE 2
11	PD7 (PCINT23/AIN1)	SEE NOTE 1	27	PC4 (ADC4/SDA/PCINT12)	SEE NOTE 2
12	PB0 (PCINT0/CLKO/ICP1)	SEE NOTE 1	28	PC5 (ADC5/SCL/PCINT13)	SEE NOTE 2
13	PB1 (PCINT1/OC1A)	SEE NOTE 1	29	PC6 (RESET/PCINT14)	SEE NOTE 2
14	PB2 (PCINT2/SS/OC1B)	SEE NOTE 1	30	PD0 (RXD/PCINT16)	SEE NOTE 1
15	PB3 (PCINT3/OC2A/MOSI)	SEE NOTE 1	31	PD1 (TXD/PCINT17)	SEE NOTE 1
16	PB4 (PCINT4/MISO)	SEE NOTE 1	32	PD2 (INT0/PCINT18)	SEE NOTE 1

NOTE 1: Ports B & D are 8-bit bi-directional I/O ports with internal pull-up resistors (selected for each bit). As inputs ,Ports B & D pins that are externally pulled low will source current if the pull-up resistors are activated. Refer to the datasheet for alternate functions of Ports B & D.
NOTE 2: Port C is a 7-bit bi-directional I/O port with internal pull-up resistors (selected for each bit). As inputs, Port C pins that are externally pulled low will source current if the pull-up resistors are activated. Refer to the datasheet for alternate functions of Port C.
NOTE 3: AVCC is the supply voltage pin for the A/D Converter, PC3:0 and ADC7:6. It should be externally connected to VCC even if ADC is not used.



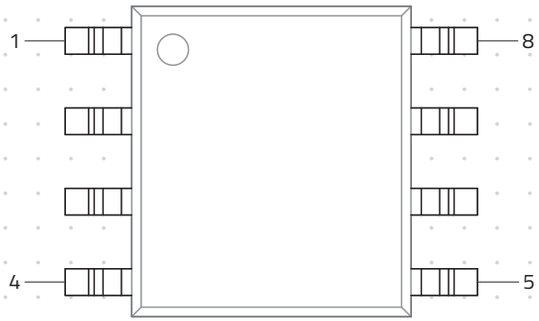
#	NAME	NOTES	#	NAME	NOTES
1	PC6 (PCINT14/RESET)	SEE NOTE 2	15	PB1 (OC1A/PCINT1)	SEE NOTE 1
2	PD0 (PCINT16/RXD)	SEE NOTE 1	16	PB2 (SS/OC1B/PCINT2)	SEE NOTE 1
3	PD1 (PCINT17/TXD)	SEE NOTE 1	17	PB3 (MOSI/OC2A/PCINT3)	SEE NOTE 1
4	PD2 (PCINT18/INT0)	SEE NOTE 1	18	PB4 (MISO/PCINT4)	SEE NOTE 1
5	PD3 (PCINT19/OC2B/INT1)	SEE NOTE 1	19	PB5 (SCK/PCINT5)	SEE NOTE 1
6	PD4 (PCINT20/XCK/T0)	SEE NOTE 1	20	AVCC	SEE NOTE 3
7	VCC	VOLTAGE (1.8V-5.5V)	21	AREF	ANALOG REFERENCE PIN
8	GND	GROUND	22	GND	GROUND
9	PB6 (PCINT6/XTAL1/TOSC1)	SEE NOTE 1	23	PC0 (ADC0/PCINT8)	SEE NOTE 2
10	PB7 (PCINT7/XTAL2/TOSC2)	SEE NOTE 1	24	PC1 (ADC1/PCINT9)	SEE NOTE 2
11	PD5 (PCINT21/OC0B/T1)	SEE NOTE 1	25	PC2 (ADC2/PCINT10)	SEE NOTE 2
12	PD6 (PCINT22/OC0A/AIN0)	SEE NOTE 1	26	PC3 (ADC3/PCINT11)	SEE NOTE 2
13	PD7 (PCINT23/AIN1)	SEE NOTE 1	27	PC4 (ADC4/SDA/PCINT12)	SEE NOTE 2
14	PB0 (PCINT0/CLKO/ICP1)	SEE NOTE 1	28	PC5 (ADC5/SCL/PCINT13)	SEE NOTE 2

NOTE 1: Ports B & D are 8-bit bi-directional I/O ports with internal pull-up resistors (selected for each bit). As inputs ,Ports B & D pins that are externally pulled low will source current if the pull-up resistors are activated. Refer to the datasheet for alternate functions of Ports B & D.
NOTE 2: Port C is a 7-bit bi-directional I/O port with internal pull-up resistors (selected for each bit). As inputs, Port C pins that are externally pulled low will source current if the pull-up resistors are activated. Refer to the datasheet for alternate functions of Port C.
NOTE 3: AVCC is the supply voltage pin for the A/D Converter, PC3:0 and ADC7:6. It should be externally connected to VCC even if ADC is not used.



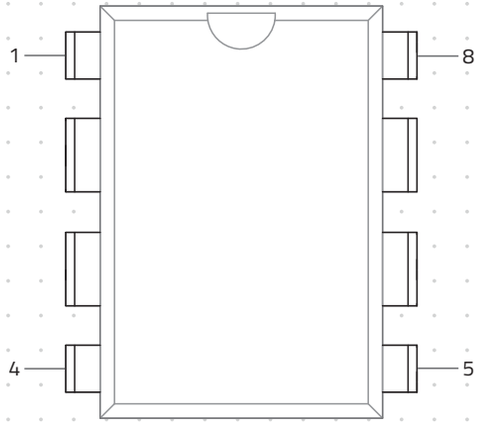
#	NAME	#	NAME	#	NAME	#	NAME
1	PA00	13	PA08	25	PA16	37	PB22
2	PA01	14	PA09	26	PA17	38	PB23
3	PA02	15	PA10	27	PA18	39	PA27
4	PA03	16	PA11	28	PA19	40	RESET
5	GNDANA	17	VDDIO	29	PA20	41	PA28
6	VDDANA	18	GND	30	PA21	42	GND
7	PB08	19	PB10	31	PA22	43	VDDCORE
8	PB09	20	PB11	32	PA23	44	VDDIN
9	PA04	21	PA12	33	PA24	45	PA30
10	PA05	22	PA13	34	PA25	46	PA31
11	PA06	23	PA14	35	GND	47	PB02
12	PA07	24	PA15	36	VDDIO	48	PB03

Operating voltage: 1.62V - 3.63V



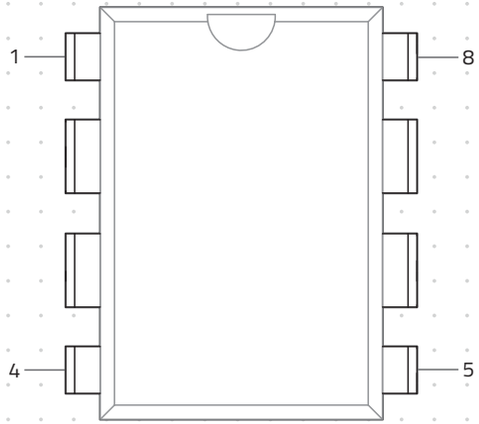
#	NAME	NOTES
1	PB5 (PCINT5/RESET/ADC0/DW)	PORT B. 6-BIT BI-DIRECTIONAL I/O PORT WITH INTERNAL PULL-UP RESISTORS. ALSO SERVES VARIOUS SPECIAL FEATURES (IN ROUND BRACKETS)*
2	PB3 (PCINT3/XTAL1/CLKI/OC1B/ADC3)	
3	PB4 (PCINT4/XTAL2/CLKO/OC1B/ADC2)	
4	GND	GROUND
5	PB0 (MOSI/DI/SDA/AIN0/OC0A/OC1A/AREF/PCINT0)	PORT B. 6-BIT BI-DIRECTIONAL I/O PORT WITH INTERNAL PULL-UP RESISTORS. ALSO SERVES VARIOUS SPECIAL FEATURES (IN ROUND BRACKETS)*
6	PB1 (MISO/DO/AIN1/OC0B/OC1A/PCINT1)	
7	PB2 (SCK/USCK/SCL/ADC1/T0/INT0/PCINT2)	
8	VCC	SUPPLY VOLTAGE (2.7 - 5.5V)

**On the ATtiny25, ports PB3 and PB4 are exchanged in ATtiny15 Compatibility Mode for backwards compatibility with ATtiny15.*

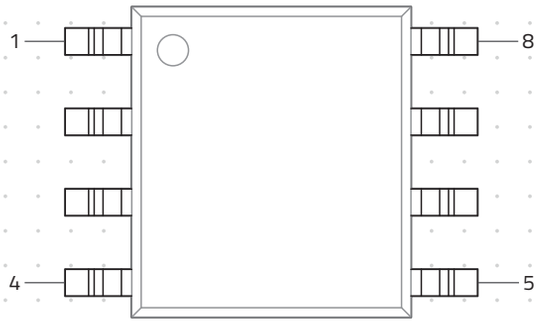


#	NAME	NOTES
1	PB5 (PCINT5/RESET/ADC0/DW)	PORT B. 6-BIT BI-DIRECTIONAL I/O PORT WITH INTERNAL PULL-UP RESISTORS. ALSO SERVES VARIOUS SPECIAL FEATURES (IN ROUND BRACKETS)*
2	PB3 (PCINT3/XTAL1/CLKI/OC1B/ADC3)	
3	PB4 (PCINT4/XTAL2/CLKO/OC1B/ADC2)	
4	GND	GROUND
5	PB0 (MOSI/DI/SDA/AIN0/OC0A/OC1A/AREF/PCINT0)	PORT B. 6-BIT BI-DIRECTIONAL I/O PORT WITH INTERNAL PULL-UP RESISTORS. ALSO SERVES VARIOUS SPECIAL FEATURES (IN ROUND BRACKETS)*
6	PB1 (MISO/DO/AIN1/OC0B/OC1A/PCINT1)	
7	PB2 (SCK/USCK/SCL/ADC1/T0/INT0/PCINT2)	
8	VCC	SUPPLY VOLTAGE (2.7 - 5.5V)

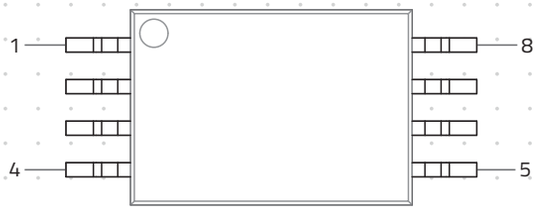
**On the ATtiny25, ports PB3 and PB4 are exchanged in ATtiny15 Compatibility Mode for backwards compatibility with ATtiny15.*



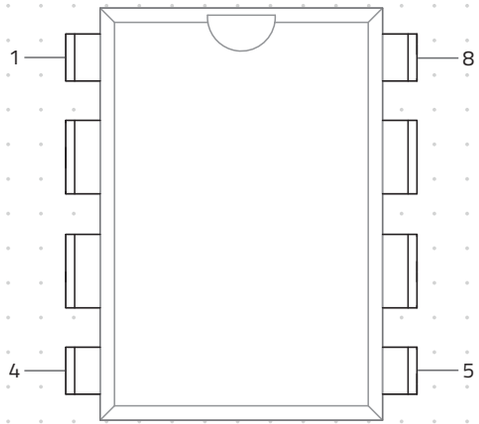
#	NAME	NOTES
1	PB5 (PCINT5/RESET/ADC0/DW)	PORT B. 6-BIT BI-DIRECTIONAL I/O PORT WITH INTERNAL PULL-UP RESISTORS. ALSO SERVES VARIOUS SPECIAL FEATURES (IN ROUND BRACKETS)
2	PB3 (PCINT3/XTAL1/CLKI/OC1B/ADC3)	
3	PB4 (PCINT4/XTAL2/CLKO/OC1B/ADC2)	
4	GND	GROUND
5	PB0 (MOSI/DI/SDA/AIN0/OC0A/OC1A/AREF/PCINT0)	PORT B. 6-BIT BI-DIRECTIONAL I/O PORT WITH INTERNAL PULL-UP RESISTORS. ALSO SERVES VARIOUS SPECIAL FEATURES (IN ROUND BRACKETS)
6	PB1 (MISO/DO/AIN1/OC0B/OC1A/PCINT1)	
7	PB2 (SCK/USCK/SCL/ADC1/T0/INT0/PCINT2)	
8	VCC	SUPPLY VOLTAGE (2.7 - 5.5V)



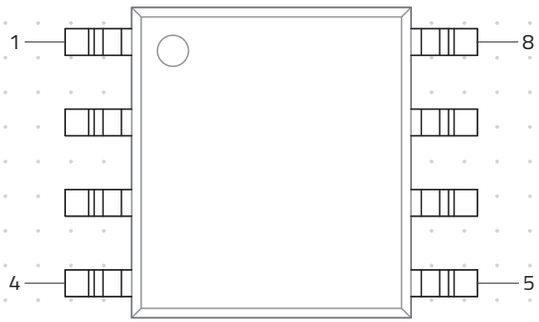
#	NAME	NOTES
1	PB5 (PCINT5/RESET/ADC0/DW)	PORT B. 6-BIT BI-DIRECTIONAL I/O PORT WITH INTERNAL PULL-UP RESISTORS. ALSO SERVES VARIOUS SPECIAL FEATURES (IN ROUND BRACKETS)
2	PB3 (PCINT3/XTAL1/CLKI/OC1B/ADC3)	
3	PB4 (PCINT4/XTAL2/CLKO/OC1B/ADC2)	
4	GND	GROUND
5	PB0 (MOSI/DI/SDA/AIN0/OC0A/OC1A/AREF/PCINT0)	PORT B. 6-BIT BI-DIRECTIONAL I/O PORT WITH INTERNAL PULL-UP RESISTORS. ALSO SERVES VARIOUS SPECIAL FEATURES (IN ROUND BRACKETS)
6	PB1 (MISO/DO/AIN1/OC0B/OC1A/PCINT1)	
7	PB2 (SCK/USCK/SCL/ADC1/T0/INT0/PCINT2)	
8	VCC	SUPPLY VOLTAGE (2.7 - 5.5V)



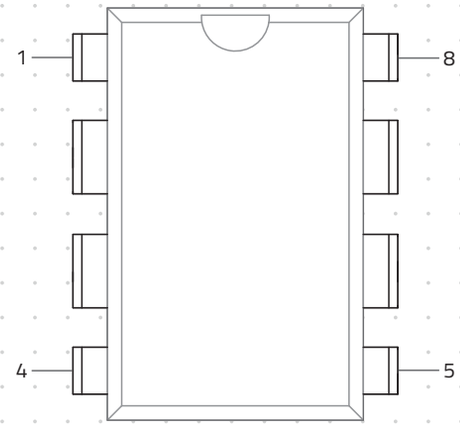
#	NAME	NOTES
1	PB5 (PCINT5/RESET/ADC0/DW)	PORT B. 6-BIT BI-DIRECTIONAL I/O PORT WITH INTERNAL PULL-UP RESISTORS. ALSO SERVES VARIOUS SPECIAL FEATURES (IN ROUND BRACKETS)
2	PB3 (PCINT3/XTAL1/CLKI/OC1B/ADC3)	
3	PB4 (PCINT4/XTAL2/CLKO/OC1B/ADC2)	
4	GND	GROUND
5	PB0 (MOSI/DI/SDA/AIN0/OC0A/OC1A/AREF/PCINT0)	PORT B. 6-BIT BI-DIRECTIONAL I/O PORT WITH INTERNAL PULL-UP RESISTORS. ALSO SERVES VARIOUS SPECIAL FEATURES (IN ROUND BRACKETS)
6	PB1 (MISO/DO/AIN1/OC0B/OC1A/PCINT1)	
7	PB2 (SCK/USCK/SCL/ADC1/T0/INT0/PCINT2)	
8	VCC	SUPPLY VOLTAGE (2.7 - 5.5V)



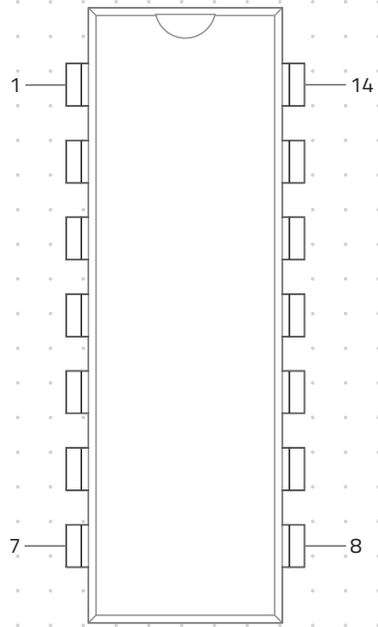
#	NAME	NOTES
1	PB5 (PCINT5/RESET/ADC0/DW)	PORT B. 6-BIT BI-DIRECTIONAL I/O PORT WITH INTERNAL PULL-UP RESISTORS. ALSO SERVES VARIOUS SPECIAL FEATURES (IN ROUND BRACKETS)
2	PB3 (PCINT3/XTAL1/CLKI/OC1B/ADC3)	
3	PB4 (PCINT4/XTAL2/CLKO/OC1B/ADC2)	
4	GND	GROUND
5	PB0 (MOSI/DI/SDA/AIN0/OC0A/OC1A/AREF/PCINT0)	PORT B. 6-BIT BI-DIRECTIONAL I/O PORT WITH INTERNAL PULL-UP RESISTORS. ALSO SERVES VARIOUS SPECIAL FEATURES (IN ROUND BRACKETS)
6	PB1 (MISO/DO/AIN1/OC0B/OC1A/PCINT1)	
7	PB2 (SCK/USCK/SCL/ADC1/T0/INT0/PCINT2)	
8	VCC	SUPPLY VOLTAGE (2.7 - 5.5V)



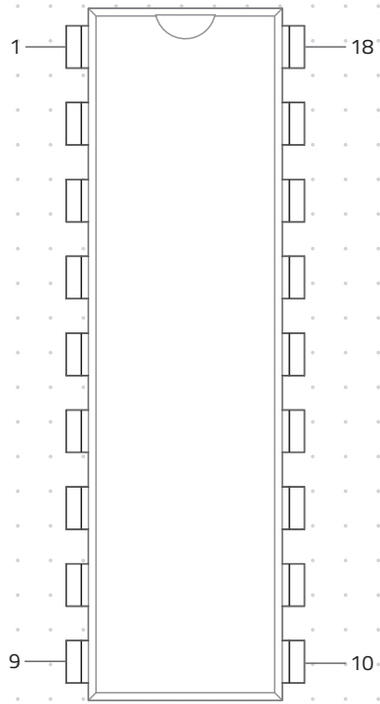
#	NAME	NOTES
1	PB5 (PCINT5/RESET/ADC0/DW)	PORT B. 6-BIT BI-DIRECTIONAL I/O PORT WITH INTERNAL PULL-UP RESISTORS. ALSO SERVES VARIOUS SPECIAL FEATURES (IN ROUND BRACKETS)
2	PB3 (PCINT3/XTAL1/CLKI/OC1B/ADC3)	
3	PB4 (PCINT4/XTAL2/CLKO/OC1B/ADC2)	
4	GND	GROUND
5	PB0 (MOSI/DI/SDA/AIN0/OC0A/OC1A/AREF/PCINT0)	PORT B. 6-BIT BI-DIRECTIONAL I/O PORT WITH INTERNAL PULL-UP RESISTORS. ALSO SERVES VARIOUS SPECIAL FEATURES (IN ROUND BRACKETS)
6	PB1 (MISO/DO/AIN1/OC0B/OC1A/PCINT1)	
7	PB2 (SCK/USCK/SCL/ADC1/T0/INT0/PCINT2)	
8	VCC	SUPPLY VOLTAGE (2.7 - 5.5V)



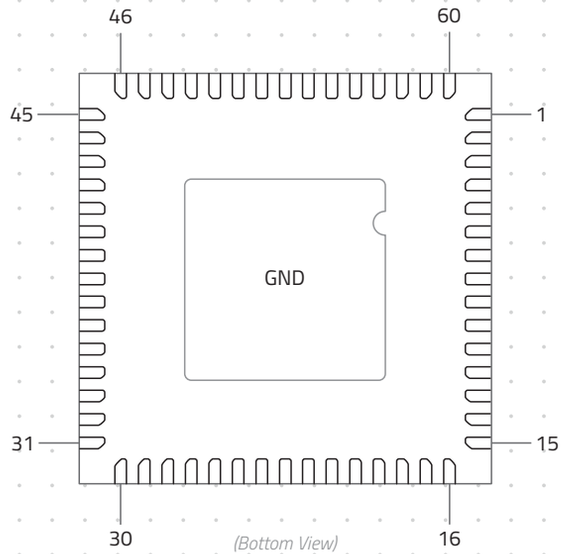
#	NAME	NOTES	TYPE
1	+V	SUPPLY VOLTAGE (4.5V OR 5V)	-
2	C.5	SERIAL IN	IN
3	C.4	TOUCH / ADC	IN / OUT
4	C.3	-	IN
5	C.2	ADC / TOUCH / PWM / TUNE / SRQ / HI2C SDA	IN / OUT
6	C.1	ADC / TOUCH / HSERIN / SRI / HI2C SCL	IN / OUT
7	C.0	HSEROUT / DAC	OUT
8	0V	-	-



#	NAME	NOTES	TYPE
1	+V	SUPPLY VOLTAGE (4.5V OR 5V)	-
2	C.5	SERIAL IN	IN
3	C.4	TOUCH / ADC	IN / OUT
4	C.3	-	IN
5	C.2	PWN / HPWN A / KB CLK	IN / OUT
6	C.1	HPWN B / KB DATA	IN / OUT
7	C.0	ADC / TOUCH / PWN / HPWN C	IN / OUT
8	B.5	ADC / TOUCH / HPWN D	IN / OUT
9	B.4	ADC / TOUCH / PWN / HI2C SDA	IN / OUT
10	B.3	ADC / TOUCH / HI2C SCL	IN / OUT
11	B.2	ADC / TOUCH / PWN / SRQ	IN / OUT
12	B.1	ADC / TOUCH / SRI / HSERIN	IN / OUT
13	B.0	SERIAL OUT / HSEROUT / DAC	OUT
14	0V	-	-

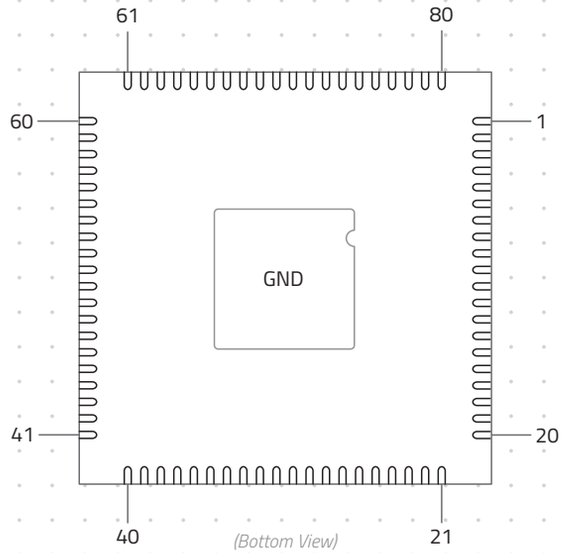


#	NAME	NOTES	TYPE
1	C.2	ADC / TOUCH / DAC	IN / OUT
2	C.3	SERIAL OUT	OUT
3	C.4	SERIAL IN	IN
4	C.5	-	IN
5	0V	-	-
6	B.0	SRI	IN / OUT
7	B.1	ADC / TOUCH / I2C SDA	IN / OUT
8	B.2	ADC / TOUCH / HSERIN	IN / OUT
9	B.3	ADC / TOUCH / PWN	IN / OUT
10	B.4	ADC / TOUCH / I2C SCL	IN / OUT
11	B.5	ADC / TOUCH / PWN / HSEROUT	IN / OUT
12	B.6	ADC / TOUCH / PWN	IN / OUT
13	B.7	ADC / TOUCH	IN / OUT
14	+V	SUPPLY VOLTAGE (4.5V OR 5V)	-
15	C.6	{KB CLOCK}	IN / OUT
16	C.7	{KB DATA}	IN / OUT
17	C.0	ADC / TOUCH	IN / OUT
18	C.1	ADC / TOUCH	IN / OUT



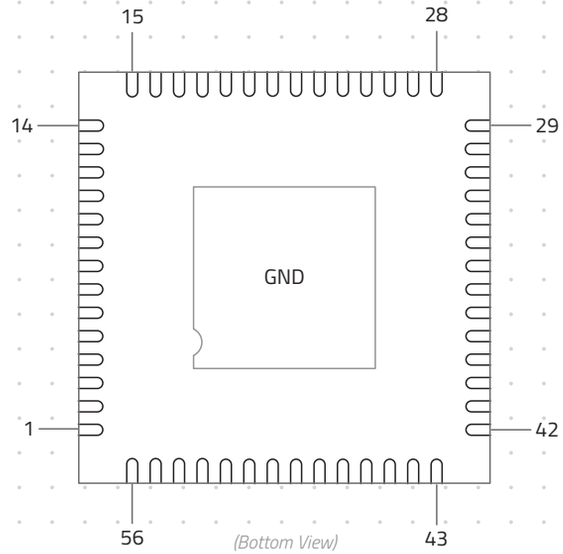
#	NAME	#	NAME	#	NAME	#	NAME
1	IOVDD*	16	GPIO12	31	GPIO19	46	VREG_AVDD
2	GPIO0	17	GPIO13	32	GPIO20	47	VREG_PGND
3	GPIO1	18	GPIO14	33	GPIO21	48	VREG_LX
4	GPIO2	19	GPIO15	34	GPIO22	49	VREG_VIN
5	GPIO3	20	IOVDD*	35	GPIO23	50	VREG_FB
6	DVDD	21	XIN	36	GPIO24	51	USB_DM
7	GPIO4	22	XOUT	37	GPIO25	52	USB_DP
8	GPIO5	23	DVDD	38	IOVDD*	53	USB_OTP_VDD
9	GPIO6	24	SWCLK	39	DVDD	54	QSPI_IOVDD
10	GPIO7	25	SWDIO	40	GPIO26/ADC0	55	QSPI_SD3
11	IOVDD*	26	RUN	41	GPIO27/ADC1	56	QSPI_SCLK
12	GPIO8	27	GPIO16	42	GPIO28/ADC2	57	QSPI_SD0
13	GPIO9	28	GPIO17	43	GPIO29/ADC3	58	QSPI_SD2
14	GPIO10	29	GPIO18	44	ADC/AVDD	59	QSPI_SD1
15	GPIO11	30	IOVDD*	45	IOVDD*	60	QSPI_SS

NOTE: GPIO pins have extra functions (SPI, UART, I2C, PWM, SIO, PIO, USB & more). Refer to datasheet for complete list.
**Power supply for digital GPIOs, nominal voltage 1.8V to 3.3V*



#	NAME	#	NAME	#	NAME	#	NAME
1	GPIO4	21	GPIO21	41	IOVDD*	61	VREG_AVDD
2	GPIO5	22	GPIO22	42	GPIO33	62	VREG_PGND
3	GPIO6	23	GPIO23	43	GPIO34	63	VREG_LX
4	GPIO7	24	IOVDD*	44	GPIO35	64	VREG_VIN
5	IOVDD*	25	GPIO24	45	GPIO36	65	VREG_FB
6	GPIO8	26	GPIO25	46	GPIO37	66	USB_DM
7	GPIO9	27	GPIO26	47	GPIO38	67	USB_DP
8	GPIO10	28	GPIO27	48	GPIO39	68	USB_OTP_VDD
9	GPIO11	29	IOVDD*	49	GPIO40/ADC0	69	QSPI_IOVDD
10	DVDD	30	XIN	50	IOVDD*	70	QSPI_SD3
11	GPIO12	31	XOUT	51	DVDD	71	QSPI_SCLK
12	GPIO13	32	DVDD	52	GPIO41/ADC1	72	QSPI_SD0
13	GPIO14	33	SWCLK	53	GPIO42/ADC2	73	QSPI_SD2
14	GPIO15	34	SWDIO	54	GPIO43/ADC3	74	QSPI_SD1
15	IOVDD*	35	RUN	55	GPIO44/ADC4	75	QSPI_SS
16	GPIO16	36	GPIO28	56	GPIO45/ADC5	76	IOVDD*
17	GPIO17	37	GPIO29	57	GPIO46/ADC6	77	GPIO0
18	GPIO18	38	GPIO30	58	GPIO47/ADC7	78	GPIO1
19	GPIO19	39	GPIO31	59	ADC/AVDD	79	GPIO2
20	GPIO20	40	GPIO32	60	IOVDD*	80	GPIO3

NOTE: GPIO pins have extra functions (SPI, UART, I2C, PWM, SIO, PIO, USB & more). Refer to datasheet for complete list.
**Power supply for digital GPIOs, nominal voltage 1.8V to 3.3V*



#	NAME	#	NAME	#	NAME	#	NAME
1	IOVDD*	15	GPIO12	29	GPIO18	43	ADC_AVDD
2	GPIO0	16	GPIO13	30	GPIO19	44	VREG_VIN
3	GPIO1	17	GPIO14	31	GPIO20	45	VREG_VOUT
4	GPIO2	18	GPIO15	32	GPIO21	46	USB_DM
5	GPIO3	19	TESTEN	33	IOVDD*	47	USB_DP
6	GPIO4	20	XIN	34	GPIO22	48	USB_VDD
7	GPIO5	21	XOUT	35	GPIO23	49	IOVDD*
8	GPIO6	22	IOVDD*	36	GPIO24	50	DVDD
9	GPIO7	23	DVDD	37	GPIO25	51	QSPI_SD3
10	IOVDD*	24	SWCLK	38	GPIO26/ADC0	52	QSPI_SCLK
11	GPIO8	25	SWDIO	39	GPIO27/ADC1	53	QSPI_SD0
12	GPIO9	26	RUN	40	GPIO28/ADC2	54	QSPI_SD2
13	GPIO10	27	GPIO16	41	GPIO29/ADC3	55	QSPI_SD1
14	GPIO11	28	GPIO17	42	IOVDD*	56	QSPI_SS_N

NOTE: GPIO pins have extra function capabilities (SPI, UART, I2C, PWM, SIO, PIO, USB). Refer to datasheet for complete list.
**Power supply for digital GPIOs, nominal voltage 1.8V to 3.3V*