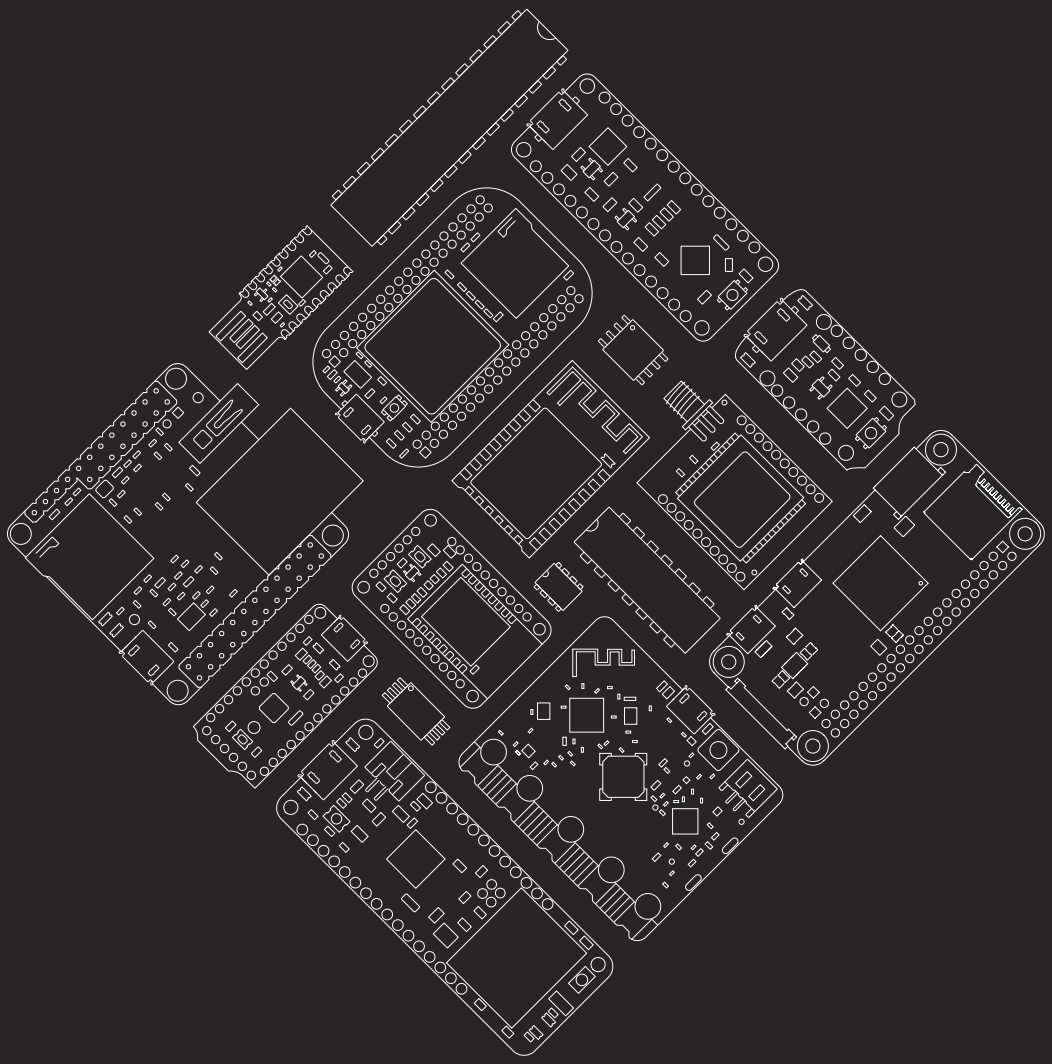

BY
SA

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 at the top of the pages. These each redirect to official datasheets or specifications.

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

Happy building :)
NODE & Baptiste

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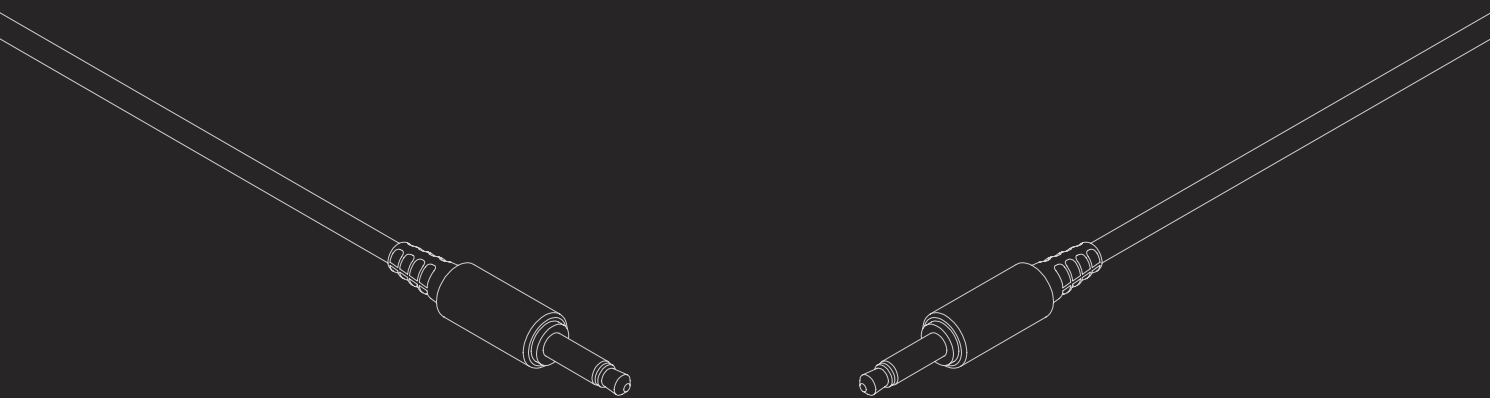
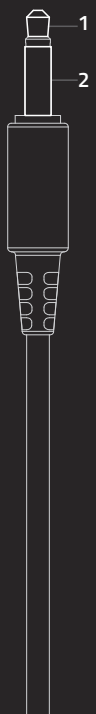
CONNECTORS / AUDIO & VIDEO / 3.5MM (2 CONTACT / TS)

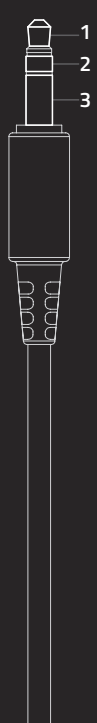
PINOUTS.ORG/A01





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

**May vary depending on application*


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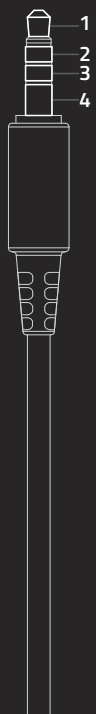
#	NAME	TYPICAL FUNCTION*
1	TIP	LEFT CHANNEL
2	RING	RIGHT CHANNEL
3	SLEEVE	GROUND

**May vary depending on application*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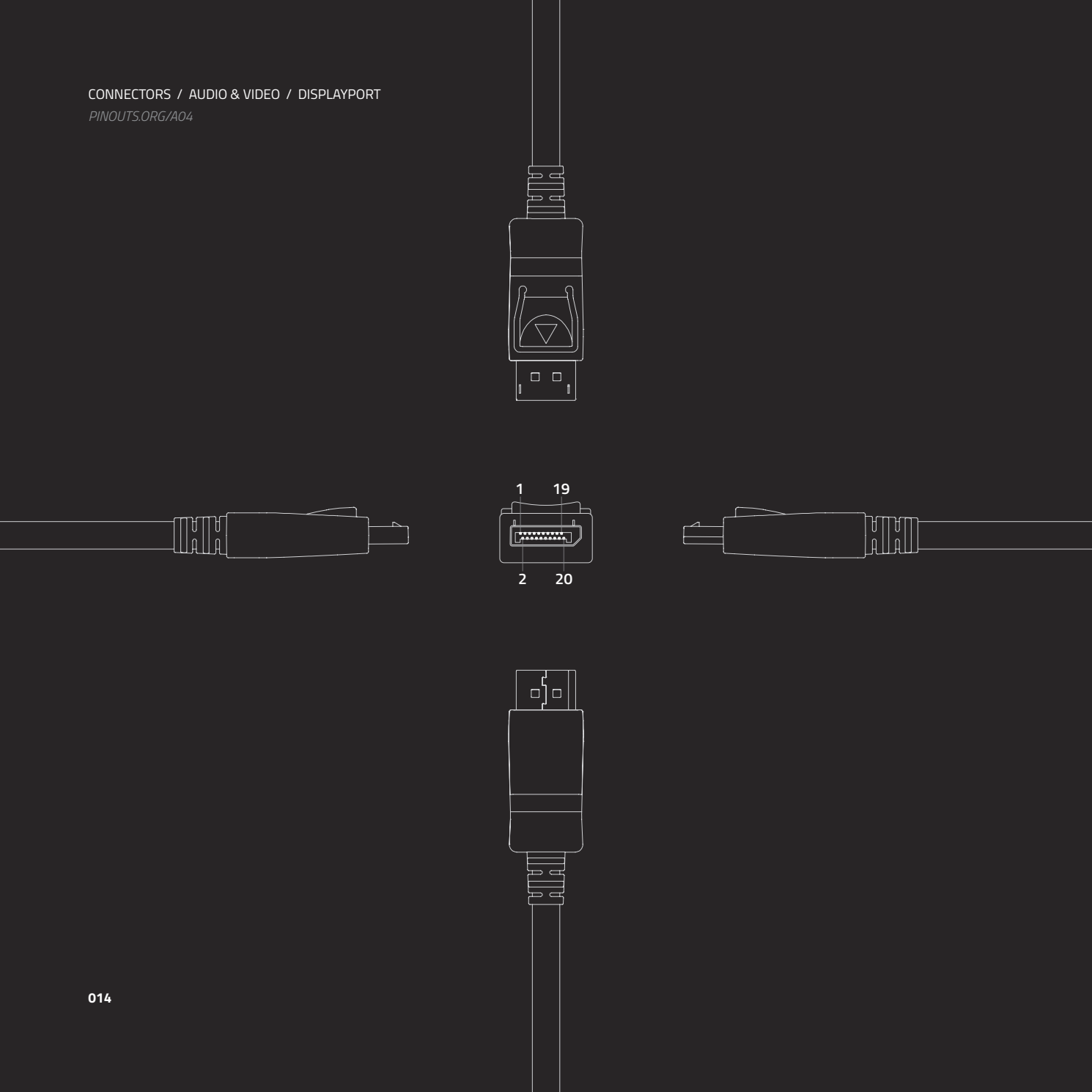
#	NAME	TYPICAL FUNCTION*
1	TIP	LEFT CHANNEL
2	RING	RIGHT CHANNEL
3	RING	GROUND
4	SLEEVE	MICROPHONE

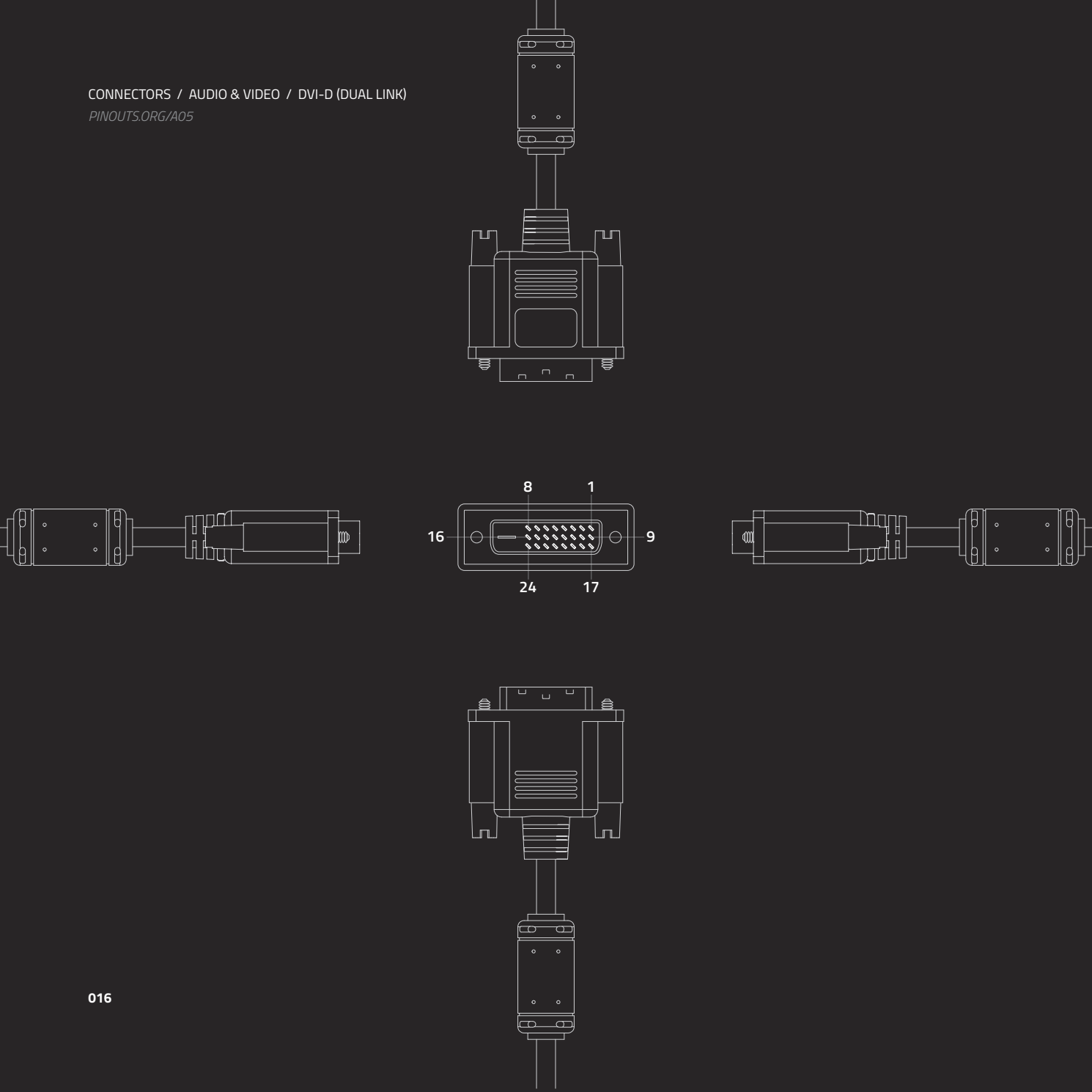
**May vary depending on application*


1
19
2
20

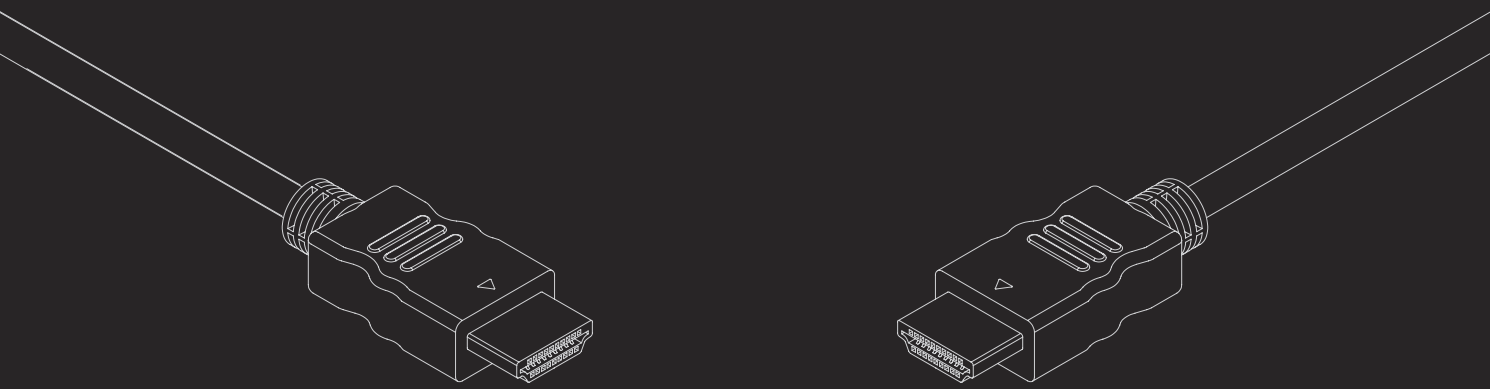
SOURCE / DOWNSTREAM SIDE		
#	NAME	NOTES
1	OUT	ML_LANE 0 (+)
2	GND	GROUND
3	OUT	ML_LANE 0 (-)
4	OUT	ML_LANE 1 (+)
5	GND	GROUND
6	OUT	ML_LANE 1 (-)
7	OUT	ML_LANE 2 (+)
8	GND	GROUND
9	OUT	ML_LANE 2 (-)
10	OUT	ML_LANE 3 (+)
11	GND	GROUND
12	OUT	ML_LANE 3 (-)
13	CONFIG*	CONFIG1
14	CONFIG*	CONFIG2
15	I/O	AUX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

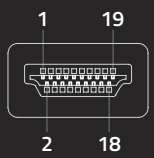
RECEIVING / UPSTREAM SIDE		
#	NAME	NOTES
1	IN	ML_LANE 3 (-)
2	GND	GROUND
3	IN	ML_LANE 3 (+)
4	IN	ML_LANE 2 (-)
5	GND	GROUND
6	IN	ML_LANE 2 (+)
7	IN	ML_LANE 1 (-)
8	GND	GROUND
9	IN	ML_LANE 1 (+)
10	IN	ML_LANE 0 (-)
11	GND	GROUND
12	IN	ML_LANE 0 (+)
13	CONFIG*	CONFIG1
14	CONFIG*	CONFIG2
15	I/O	AUX CH (+)
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*


8
1
16
9
24
17

#	NAME	#	NAME
1	TMDS DATA2-	13	TMDS DATA3+
2	TMDS DATA2+	14	+5V POWER
3	TMDS DATA2/4 SHIELD	15	GROUND (FOR +5V)
4	TMDS DATA4-	16	HOT PLUG DETECT
5	TMDS DATA4+	17	TMDS DATA0-
6	DDC CLOCK	18	TMDS DATA0+
7	DDC DATA	19	TMDS DATA0/5 SHIELD
8	NO CONNECT	20	TMDS DATA5-
9	TMDS DATA1-	21	TMDS DATA5+
10	TMDS DATA1+	22	TMDS CLOCK SHIELD
11	TMDS DATA1/3 SHIELD	23	TMDS CLOCK+
12	TMDS DATA3-	24	TMDS CLOCK-

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2
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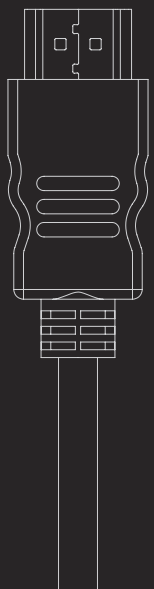
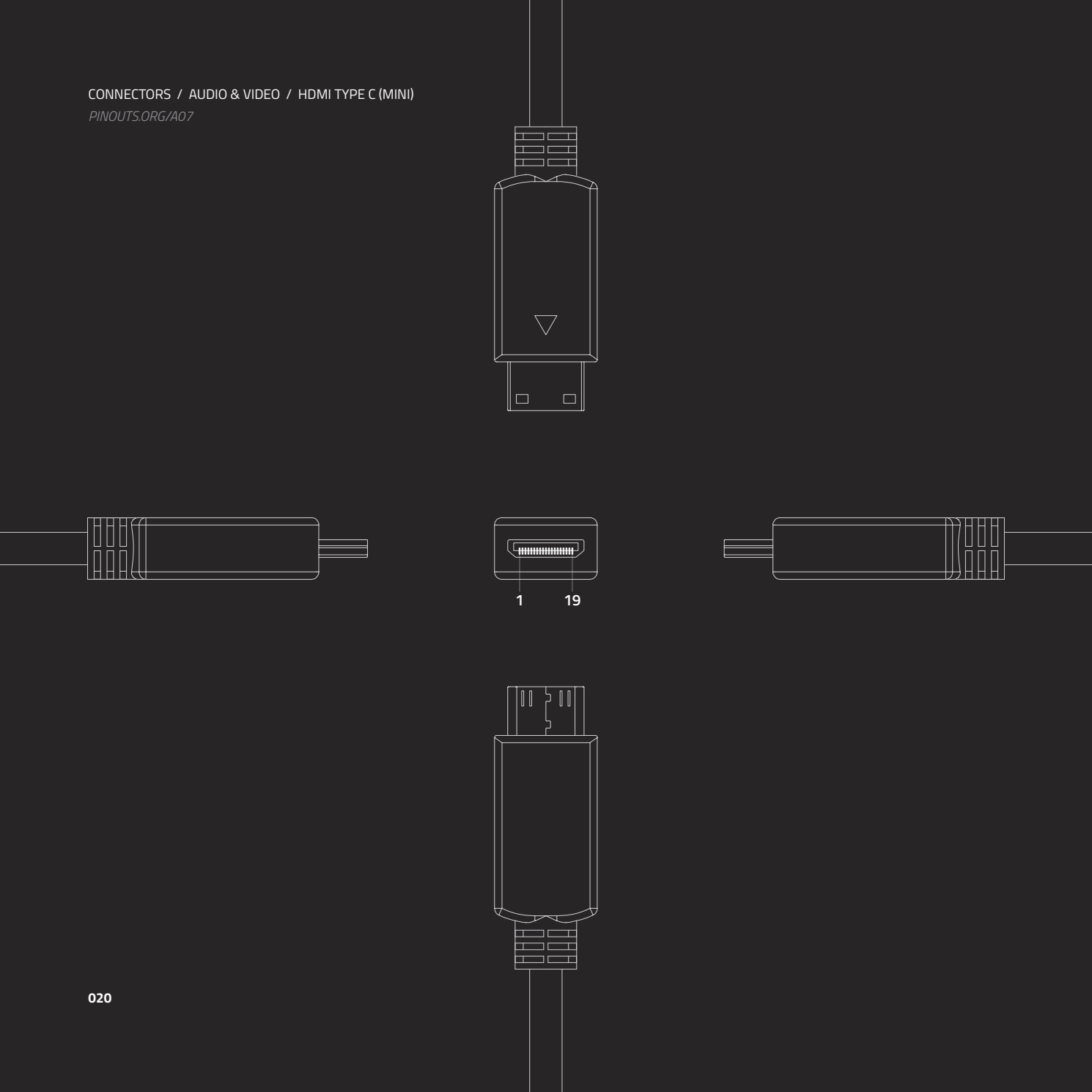
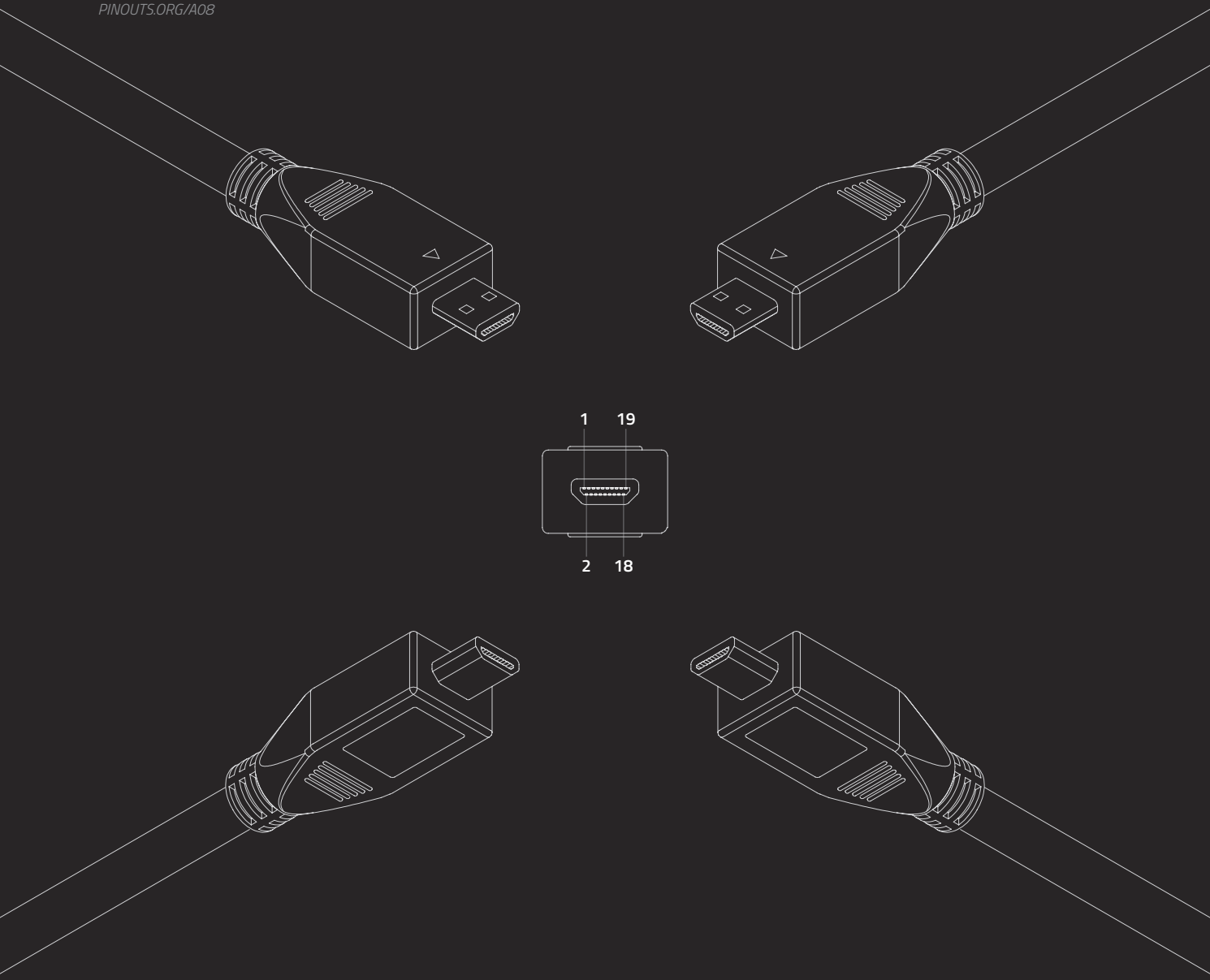


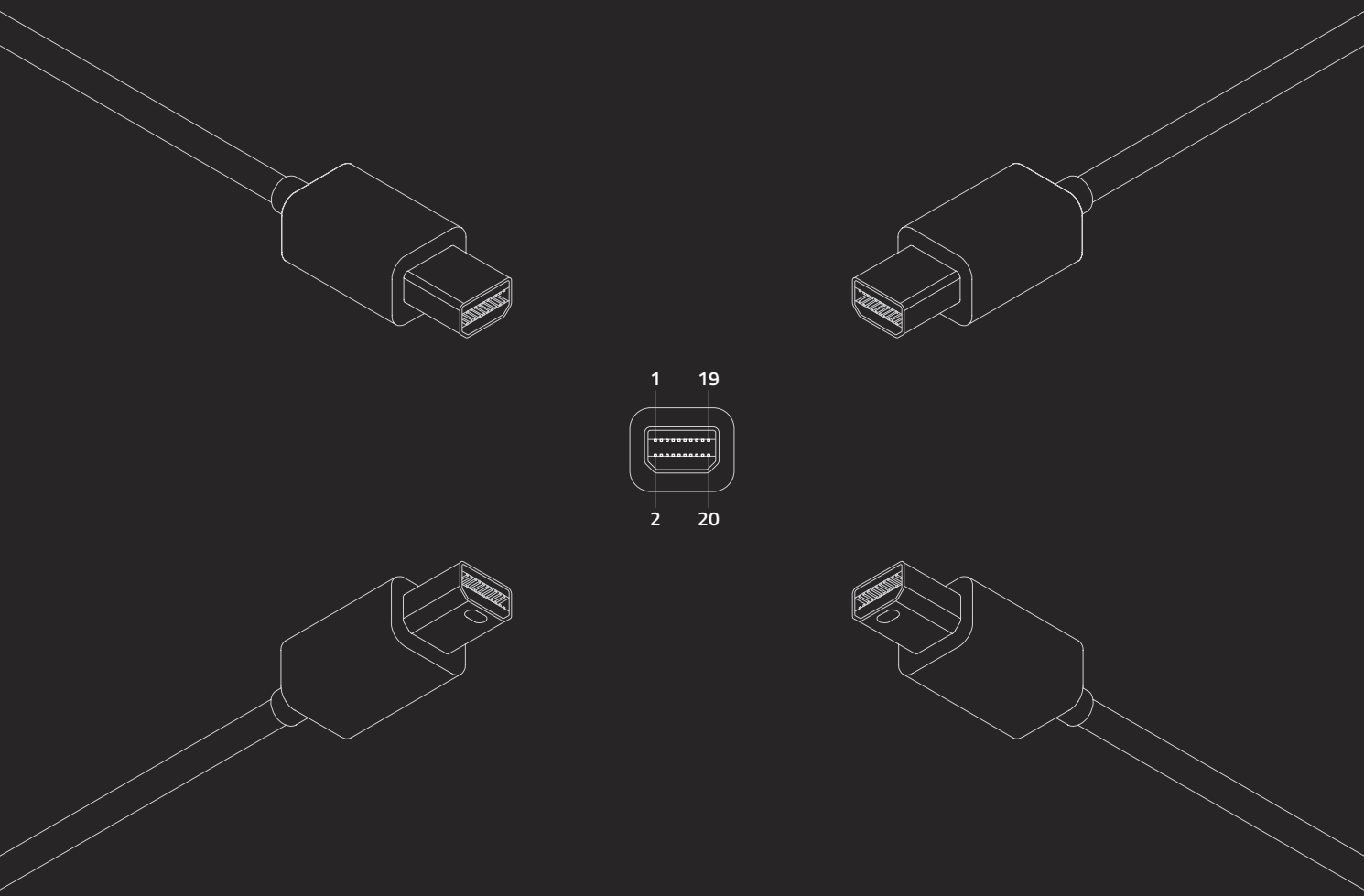
#	NAME
1	TMDS DATA2+
2	TMDS DATA2 SHIELD
3	TMDS DATA2-
4	TMDS DATA1+
5	TMDS DATA1 SHIELD
6	TMDS DATA1-
7	TMDS DATA0+
8	TMDS DATA0 SHIELD
9	TMDS DATA0-
10	TMDS CLOCK+
11	TMDS CLOCK SHIELD
12	TMDS CLOCK-
13	CEC
14	UTILITY
15	SCL
16	SDA
17	DDC/CEC GROUND
18	+5V POWER (MIN 55mA)
19	HOT PLUG DETECT


1
19

#	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


1
19
2
18

#	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)

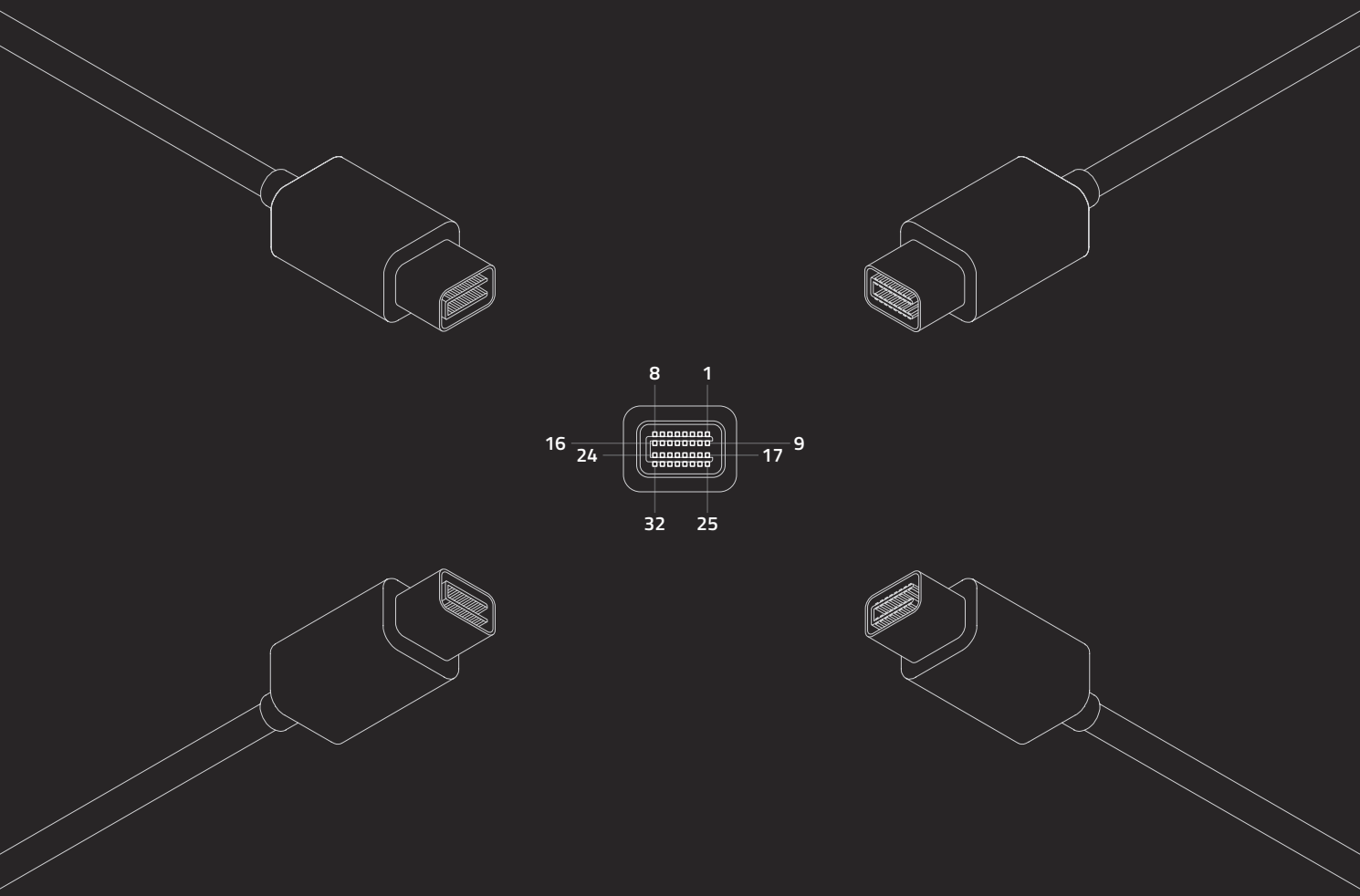


1
19
2
20

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_LANE1 (-)
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*


8
1
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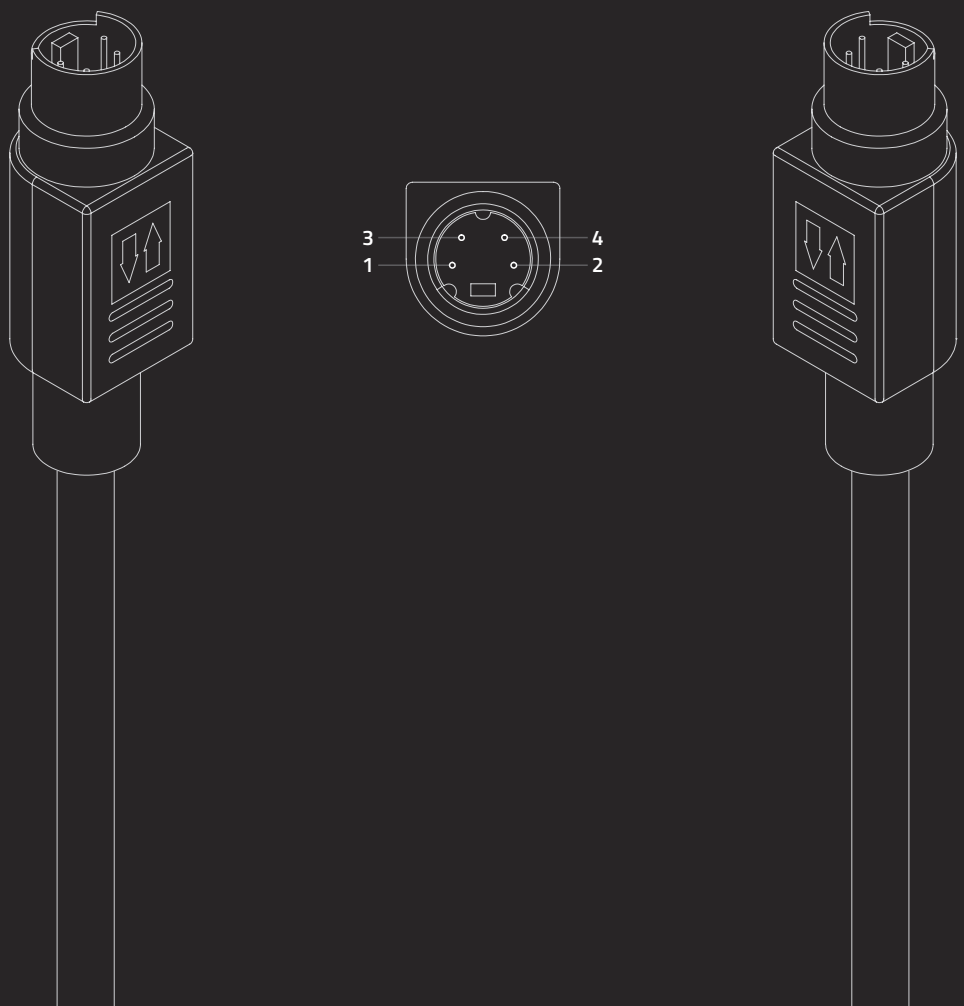
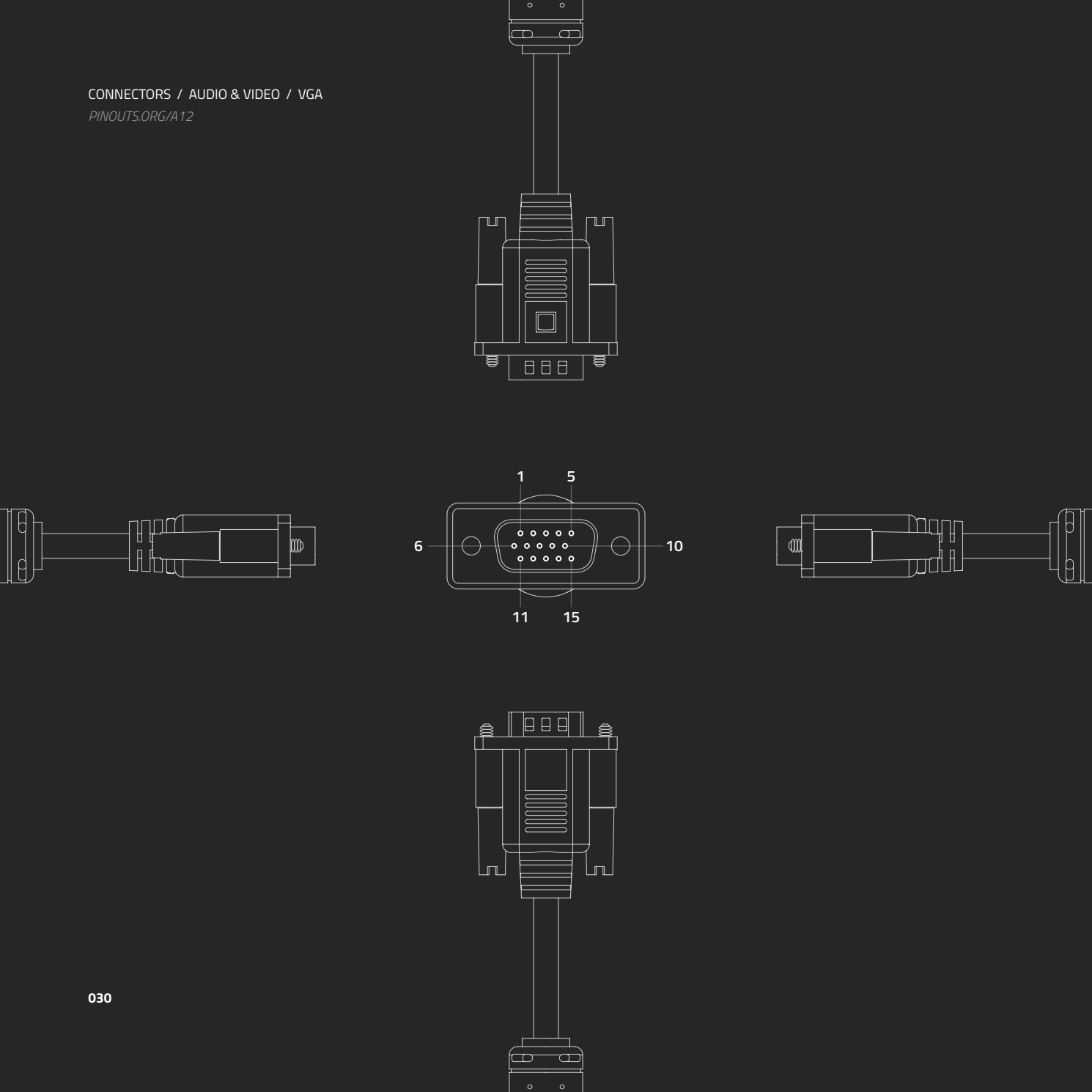
32
25

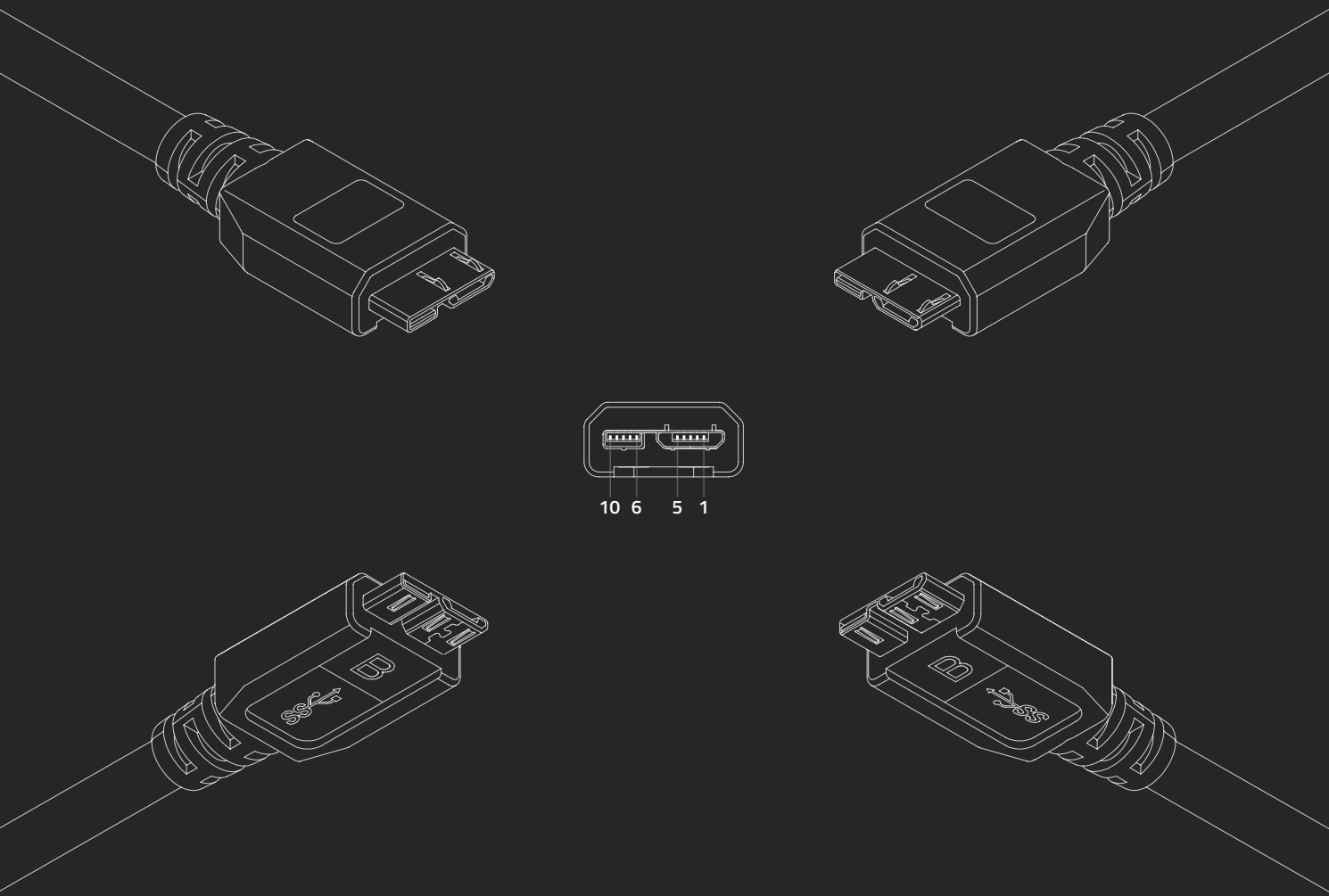
#	NAME	#	NAME
1	DATA2 +	17	+5V POWER
2	DATA2 -	18	DDC_DATA
3	DATA1 +	19	SPARE
4	DATA1 -	20	BLUE
5	DATA0 +	21	NOT INSTALLED
6	DATA0 -	22	GREEN
7	CLOCK +	23	NOT INSTALLED
8	CLOCK -	24	RED
9	DGND	25	DETECT
10	DGND	26	DDC_CLOCK
11	DGND	27	SPARE
12	DGND	28	DGND
13	DGND	29	HSYNC
14	DGND	30	DGND
15	DGND	31	VSYNC
16	DGND	32	DGND


3
4
1
2

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

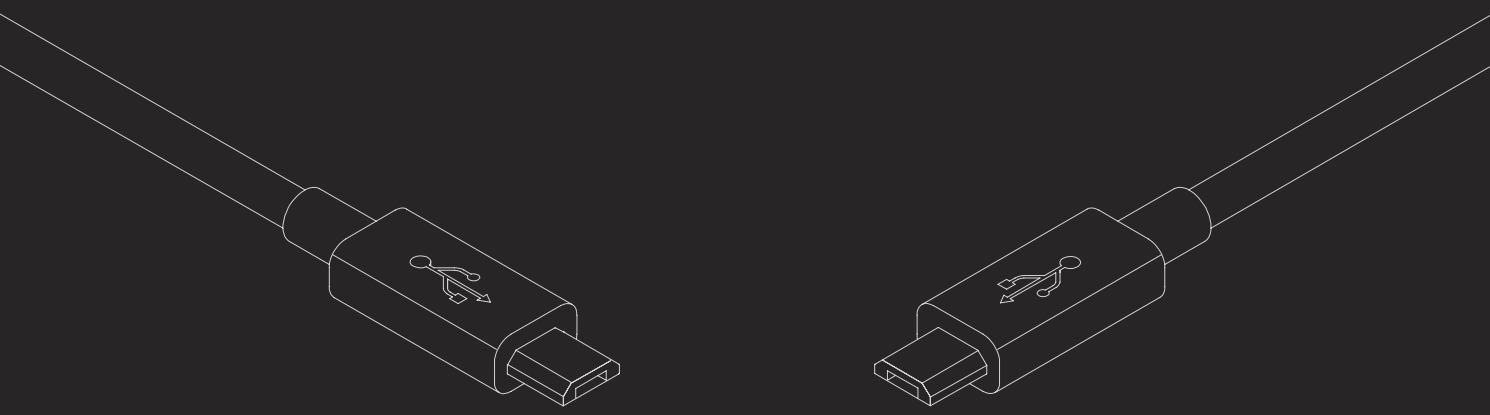

1
5
6
10
11
15

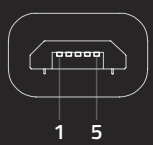
#	NAME	NOTES
1	RED	RED VIDEO
2	GREEN	GREEN VIDEO
3	BLUE	BLUE VIDEO
4	RES	RESERVED
5	GND	GROUND (HSYNC)
6	RED_RTN	RED RETURN
7	GREEN_RTN	GREEN RETURN
8	BLUE_RTN	BLUE RETURN
9	KEY/PWR	+5V POWER (50mA - 1A)
10	GND	GROUND (VSYNC)
11	RES	RESERVED
12	SDA	I2C DATA
13	HSYNC	HORIZONTAL SYNC
14	VSYNC	VERTICAL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


10 6 5 1

#	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

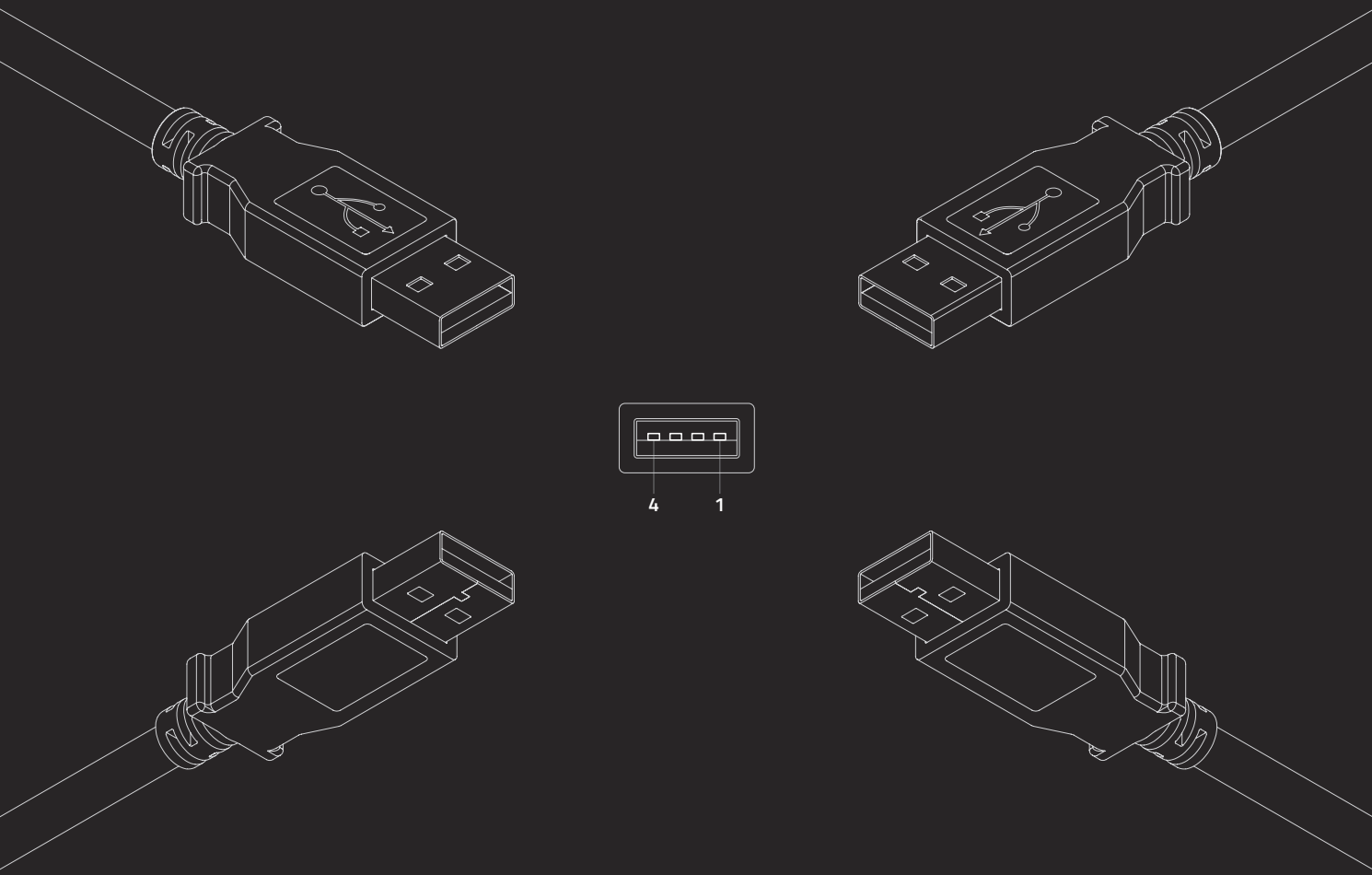
Note: TX and RS are defined from the device perspective




1
5

#	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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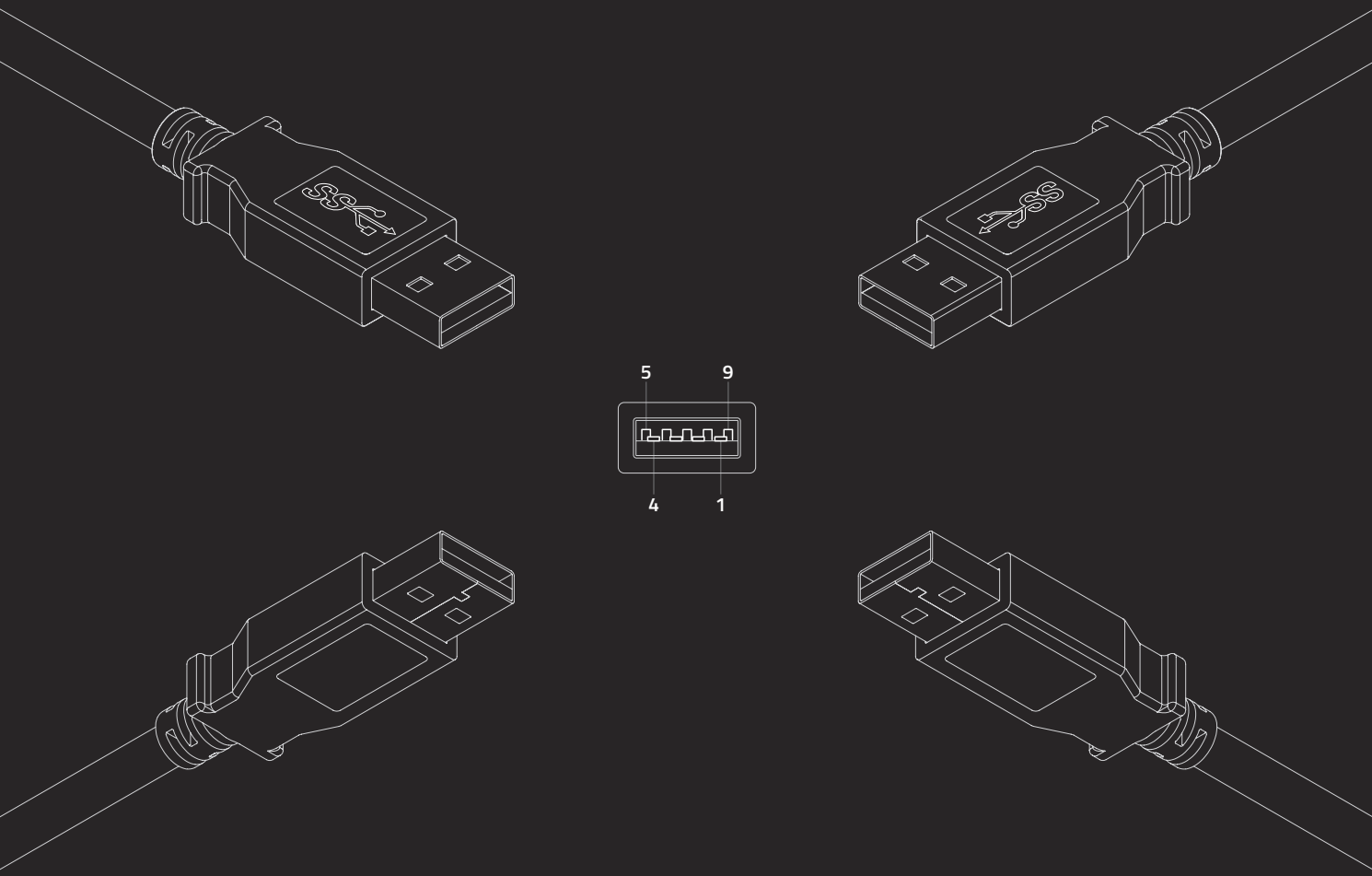
1

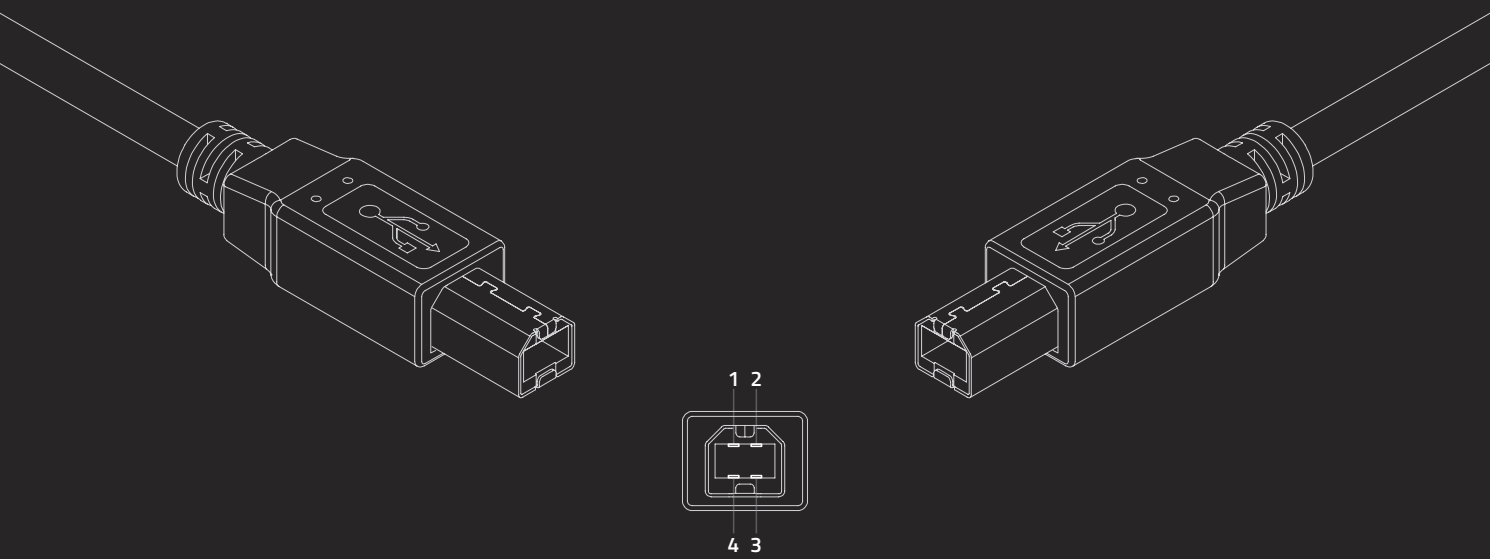
#	NAME	NOTES	WIRE COLOR
1	VBUS	5V POWER	RED
2	D-	DATA -	WHITE
3	D+	DATA +	GREEN
4	GND	GROUND	BLACK

PINOUTS.ORG/B04



#	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 RS are defined from the host perspective



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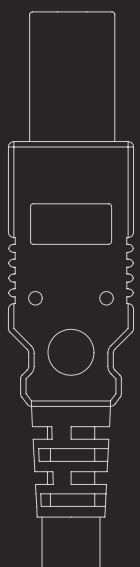
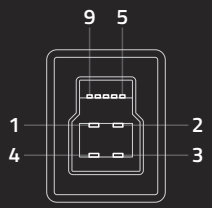


#	NAME	NOTES	WIRE COLOR
1	VBUS	5V POWER	RED
2	D-	DATA -	WHITE
3	D+	DATA +	GREEN
4	GND	GROUND	BLACK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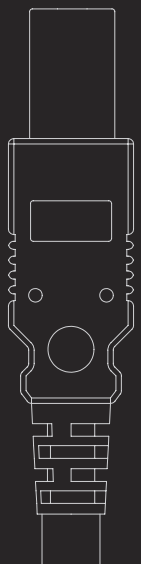
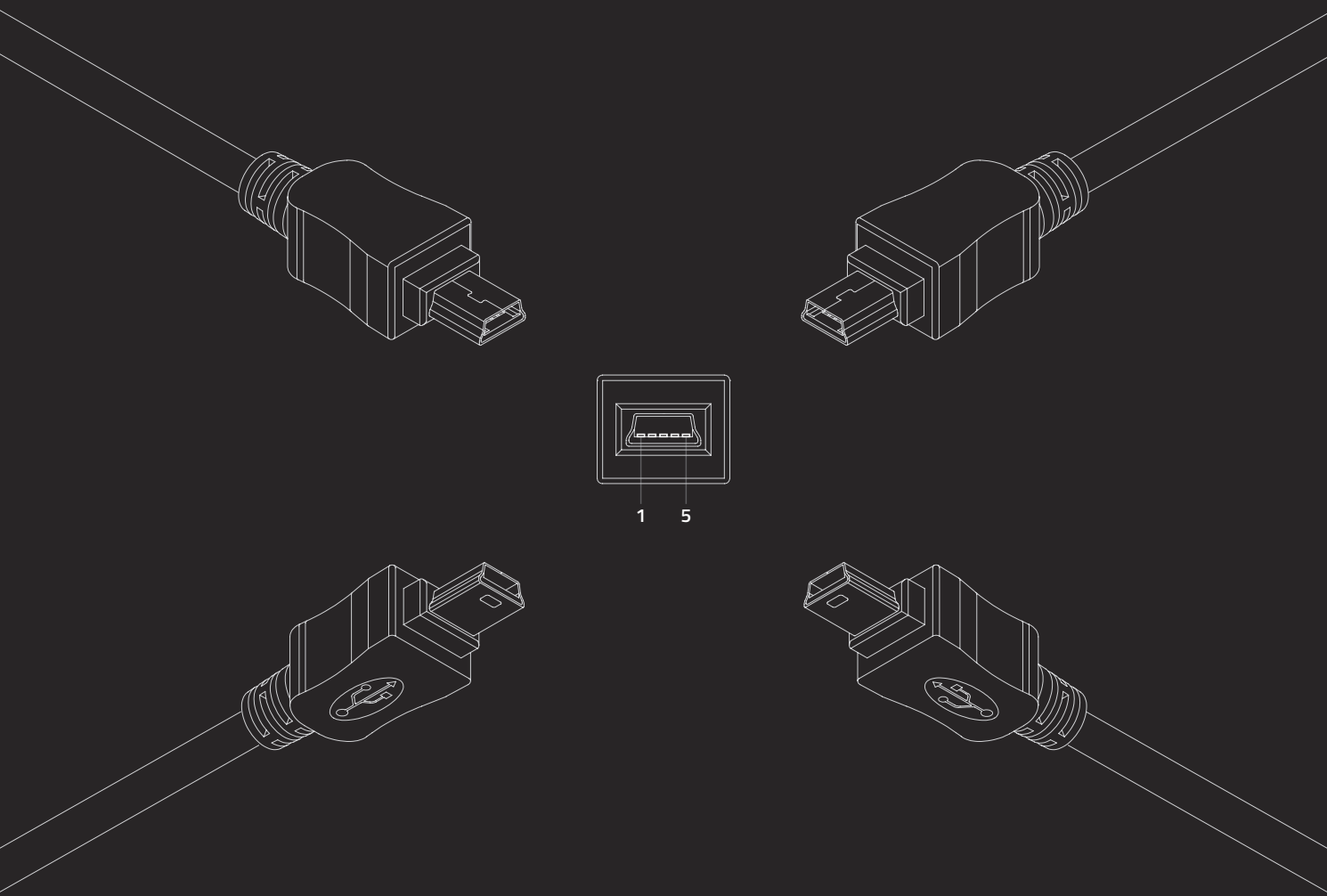


#	NAME	NOTES	WIRE COLOR
1	VBUS	5V POWER	RED
2	D-	USB 2.0 DIFFERENTIAL PAIR	WHITE
3	D+	USB 2.0 DIFFERENTIAL PAIR	GREEN
4	GND	GROUND FOR POWER RETURN	BLACK
5	STDB_SSTX-	SUPERSPEED TX DIFFERENTIAL PAIR	BLUE
6	STDB_SSTX+	SUPERSPEED TX DIFFERENTIAL PAIR	YELLOW
7	GND_DRAIN	GROUND FOR SUPERSPEED SIGNAL RETURN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

Note: TX and RS are defined from the device perspective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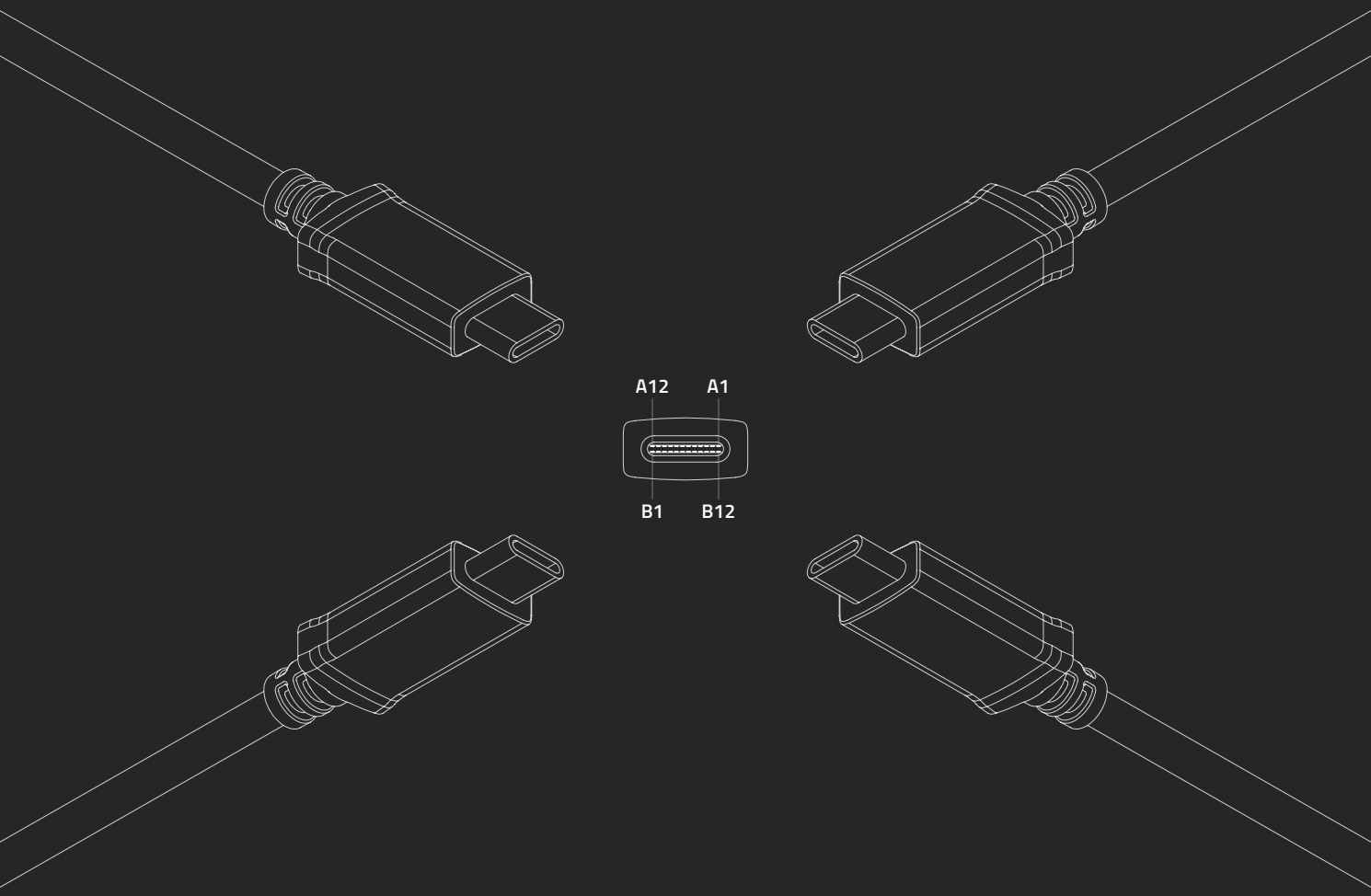
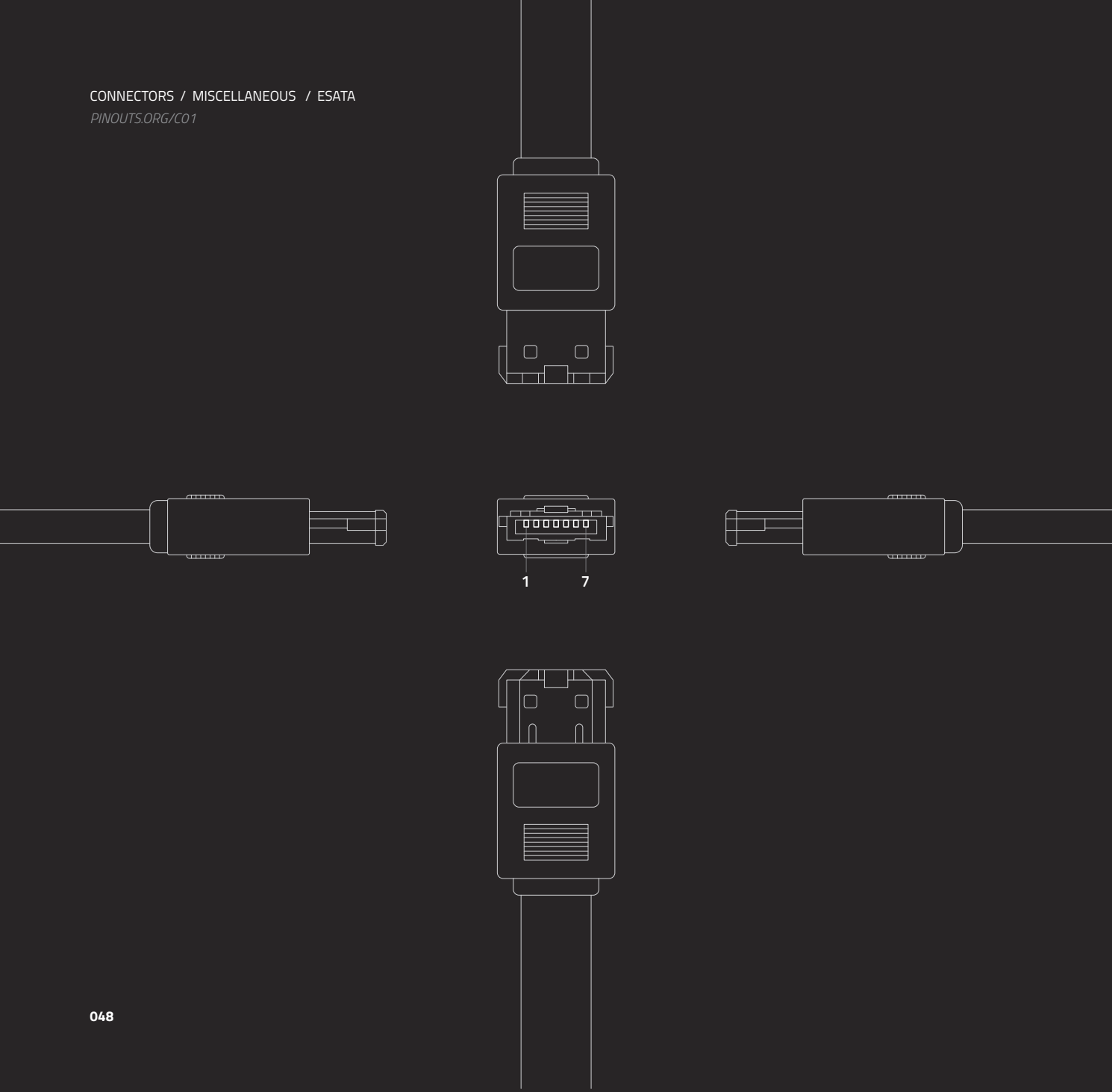
#	NAME	NOTES	WIRE COLOR
1	VBUS	5V POWER	RED
2	D-	DATA -	WHITE
3	D+	DATA +	GREEN
4	ID	OTG IDENTIFICATION	-
5	GND	GROUND	BLACK


A12
A1
B1
B12

#	NAME	NOTES	#	NAME	NOTES
A1	GND	GROUND*	B1	GND	GROUND*
A2	TX1+	USB3.1 OR ALTERNATE MODE	B2	TX2+	USB3.1 OR ALTERNATE MODE
A3	TX1-	USB3.1 OR ALTERNATE MODE	B3	TX2-	USB3.1 OR ALTERNATE MODE
A4	VBUS	POWER*	B4	VBUS	POWER*
A5	CC1	CC OR VCONN	B5	CC2	CC OR VCONN
A6	D+	DATA+ (USB 2.0)	B6	D+	DATA+ (USB 2.0)
A7	D-	DATA- (USB 2.0)	B7	D-	DATA- (USB 2.0)
A8	SBU1	ALTERNATE MODE	B8	SBU2	ALTERNATE MODE
A9	VBUS	POWER*	B9	VBUS	POWER*
A10	RX2-	USB3.1 OR ALTERNATE MODE	B10	RX1-	USB3.1 OR ALTERNATE MODE
A11	RX2+	USB3.1 OR ALTERNATE MODE	B11	RX1+	USB3.1 OR ALTERNATE MODE
A12	GND	GROUND*	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


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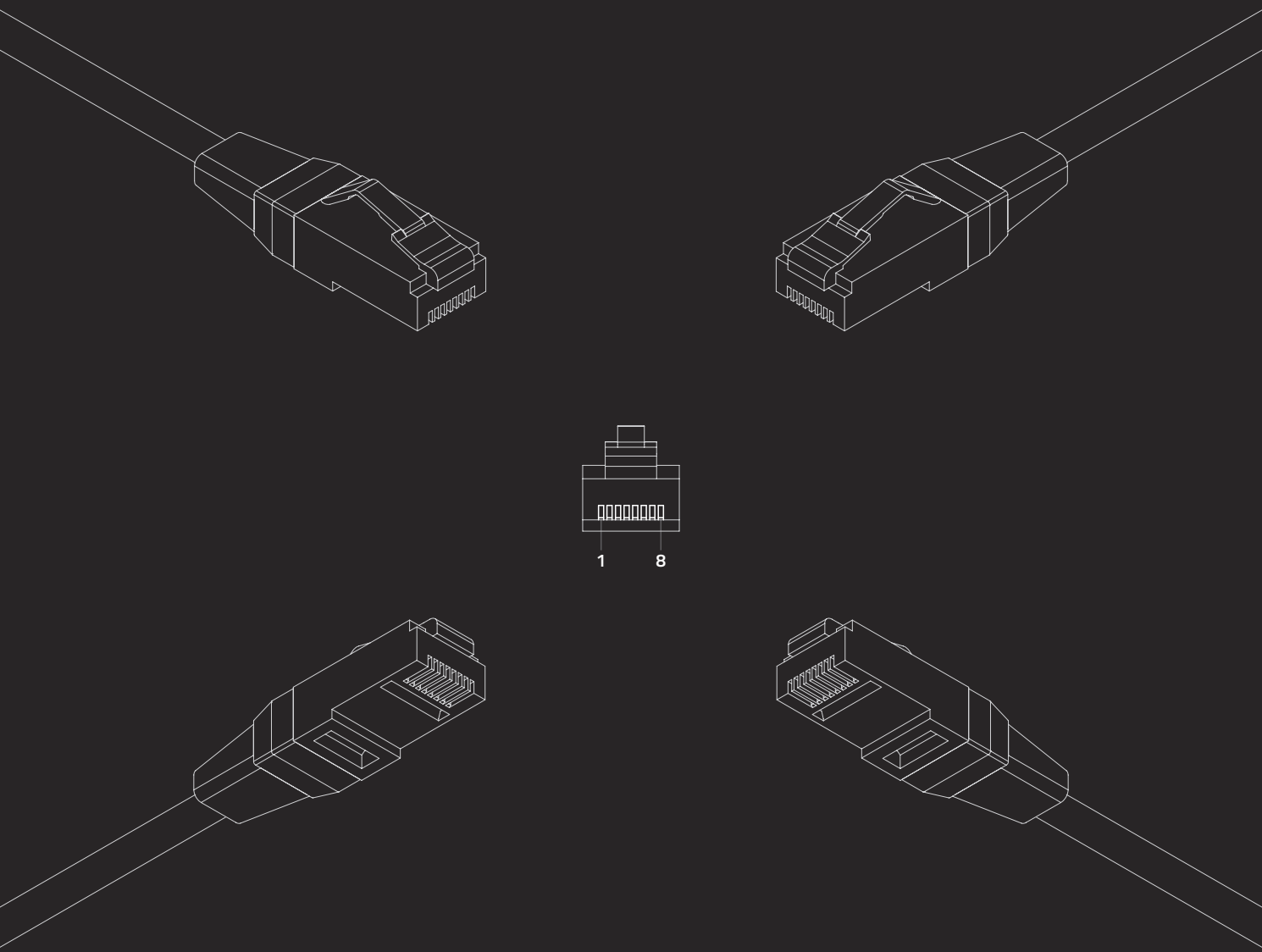
#	NAME	NOTES
1	GND	GROUND
2	A+	TRANSMIT +
3	A-	TRANSMIT -
4	GND	GROUND
5	B-	RECEIVE -
6	B+	RECEIVE +
7	GND	GROUND



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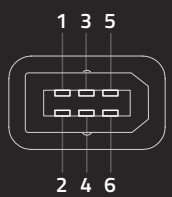
T568A STANDARD				
#	10BASE-T	100BASE-T	1000BASE-T	WIRE COLOR
1	TX+	TX+	BI_DA+	WHITE W/ GREEN STRIPE
2	TX-	TX-	BI_DA-	SOLID GREEN
3	RX+	RX+	BI_DB+	WHITE W/ ORANGE STRIPE
4	UNUSED	UNUSED	BI_DC+	SOLID BLUE
5	UNUSED	UNUSED	BI_DC-	WHITE W/ BLUE STRIPE
6	RX-	RX-	BI_DB-	SOLID ORANGE
7	UNUSED	UNUSED	BI_DD+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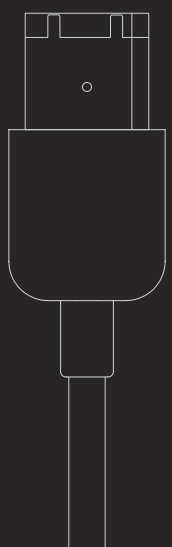
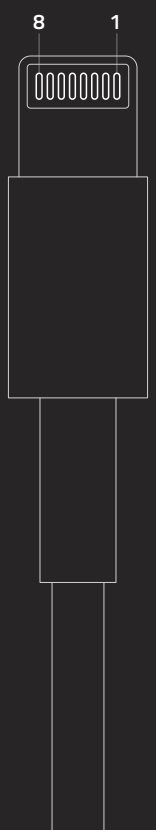
2 4 6



#	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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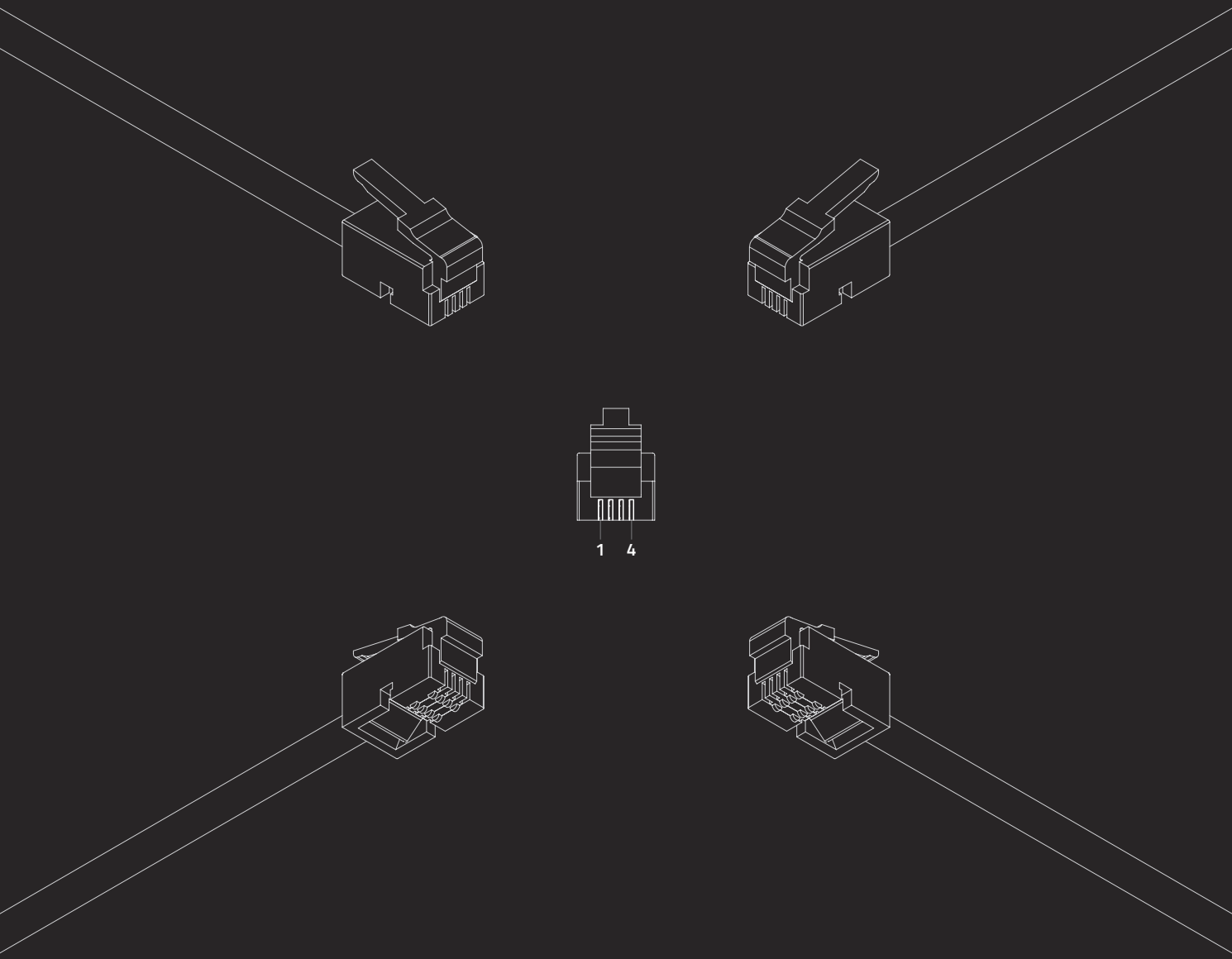
#	NAME	NOTES
1	GND	GROUND
2	L0P	LANE 0 +
3	L0N	LANE 0 -
4	ID0	IDENTIFICATION/CONTROL 0
5	PWR	POWER (CHARGER OR BATTERY)
6	L1N	LANE 1 -
7	L1P	LANE 1 +
8	ID1	IDENTIFICATION/CONTROL 1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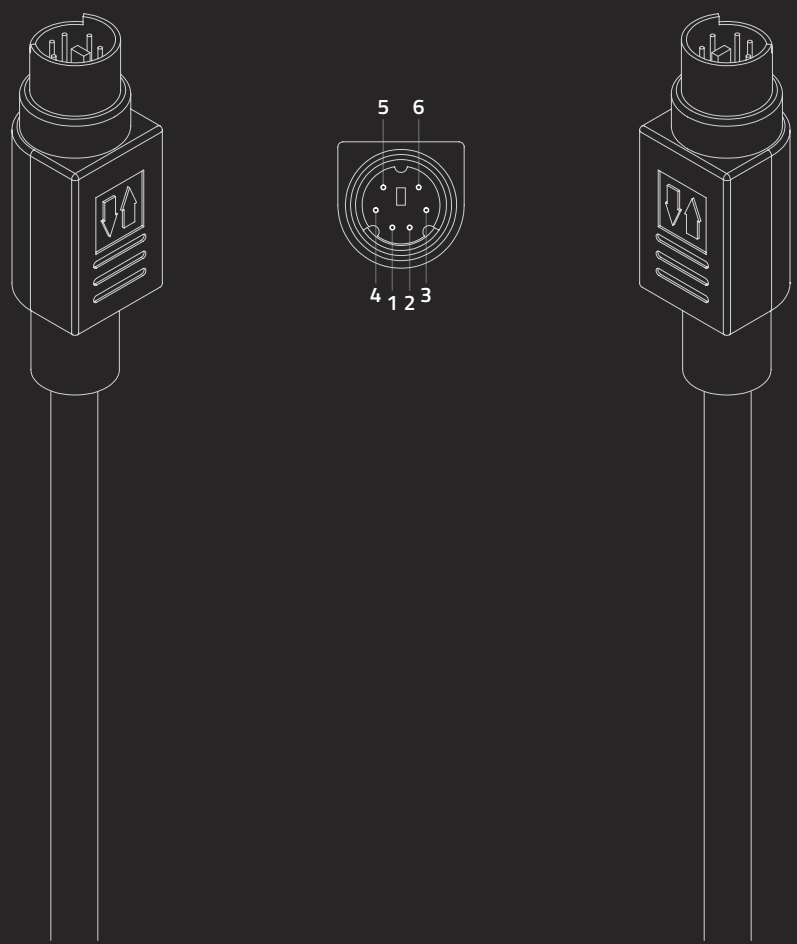
#	PAIR	RJ11	RJ14	WIRE COLOR	WIRE COLOR (OLD)
1	B		TX+	WHITE W/ ORANGE STRIPE	BLACK
2	A	RX-	RX-	BLUE W/ WHITE STRIPE	RED
3	A	TX+	TX+	WHITE W/ BLUE STRIPE	GREEN
4	B		RX-	ORANGE W/ WHITE STRIPE	YELLOW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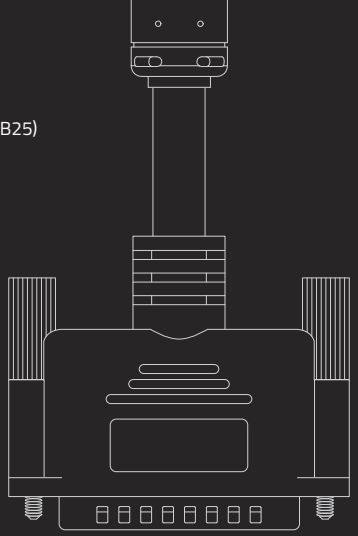
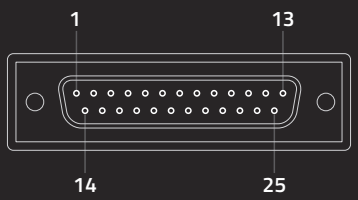
#	NAME	NOTES
1	DATA	KEY DATA
2	NC	NOT CONNECTED
3	GND	GROUND
4	VCC	+5V POWER
5	CLK	CLOCK
6	NC	NOT CONNECTED

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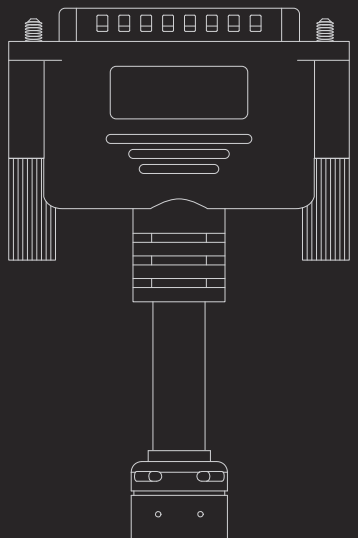
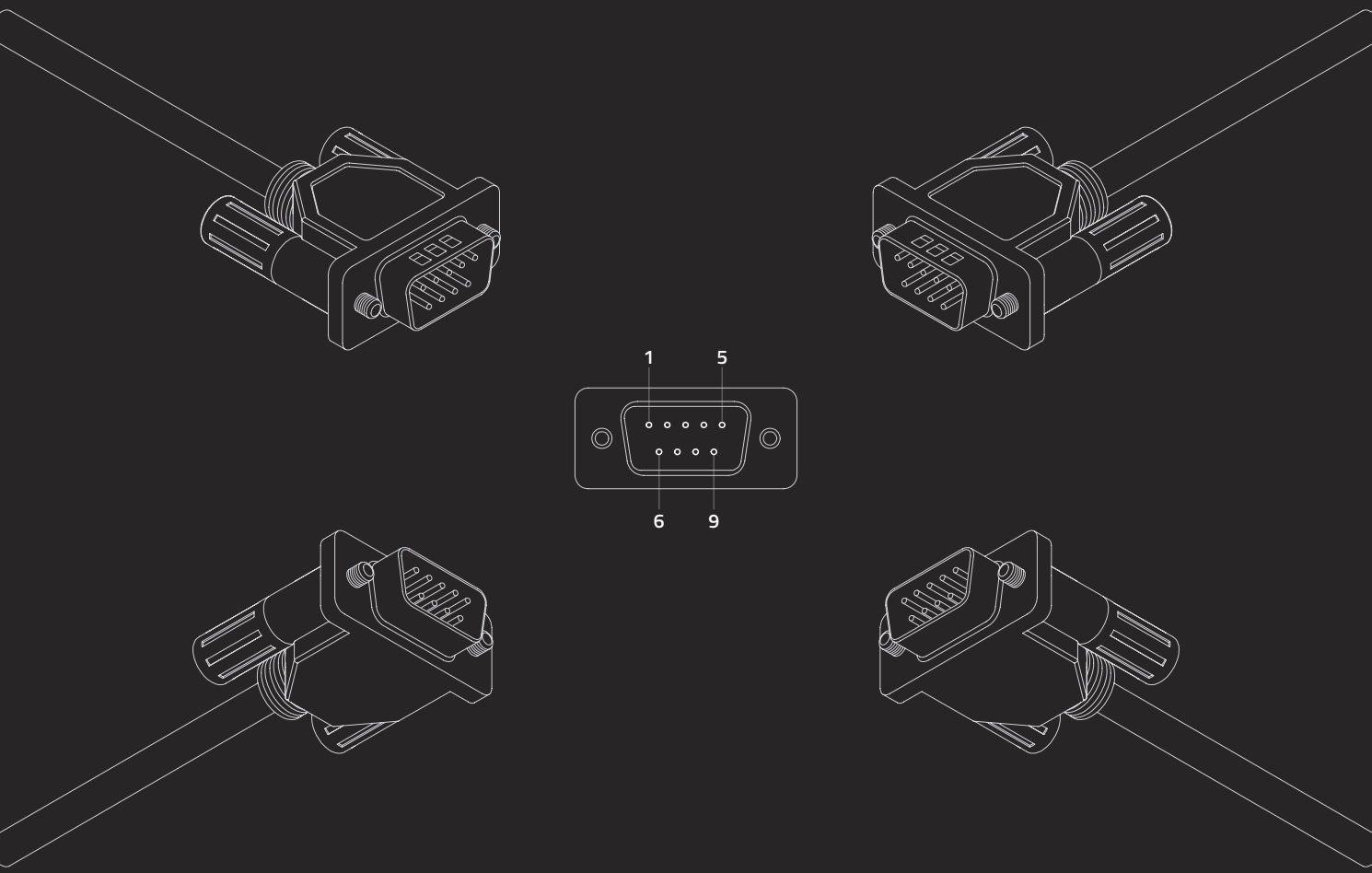
25



#	NAME	NOTES	#	NAME	NOTES
1	GND	SHIELD GROUND	14	S.TXD	SECONDARY TRANSMIT DATA
2	TXD	TRANSMIT DATA	15	TCK	TX SIGNAL ELEMENT TIMING
3	RXD	RECEIVE DATA	16	S.RXD	SECONDARY RECEIVE DATA
4	RTS	REQUEST TO SEND	17	RCK	RX SIGNAL ELEMENT TIMING
5	CTS	CLEAR TO SEND	18	LL	LOCAL LOOP CONTROL
6	DSR	DATA SET READY	19	S.RTS	SECONDARY REQUEST TO SEND
7	GND	SYSTEM GROUND	20	DTR	DATA TERMINAL READY
8	CD	CARRIER DETECT	21	RL	REMOTE LOOP CONTROL
9	-	RESERVED	22	RI	RING INDICATOR
10	-	RESERVED	23	DSR	DATA SIGNAL RATE SELECTOR
11	STF	SELECT TRANSMIT CHANNEL	24	XCK	TRANSMIT SIGNAL ELEMENT TIMING
12	S.CD	SECONDARY CARRIER DETECT	25	TI	TEST INDICATOR
13	S.CTS	SECONDARY CLEAR TO SEND			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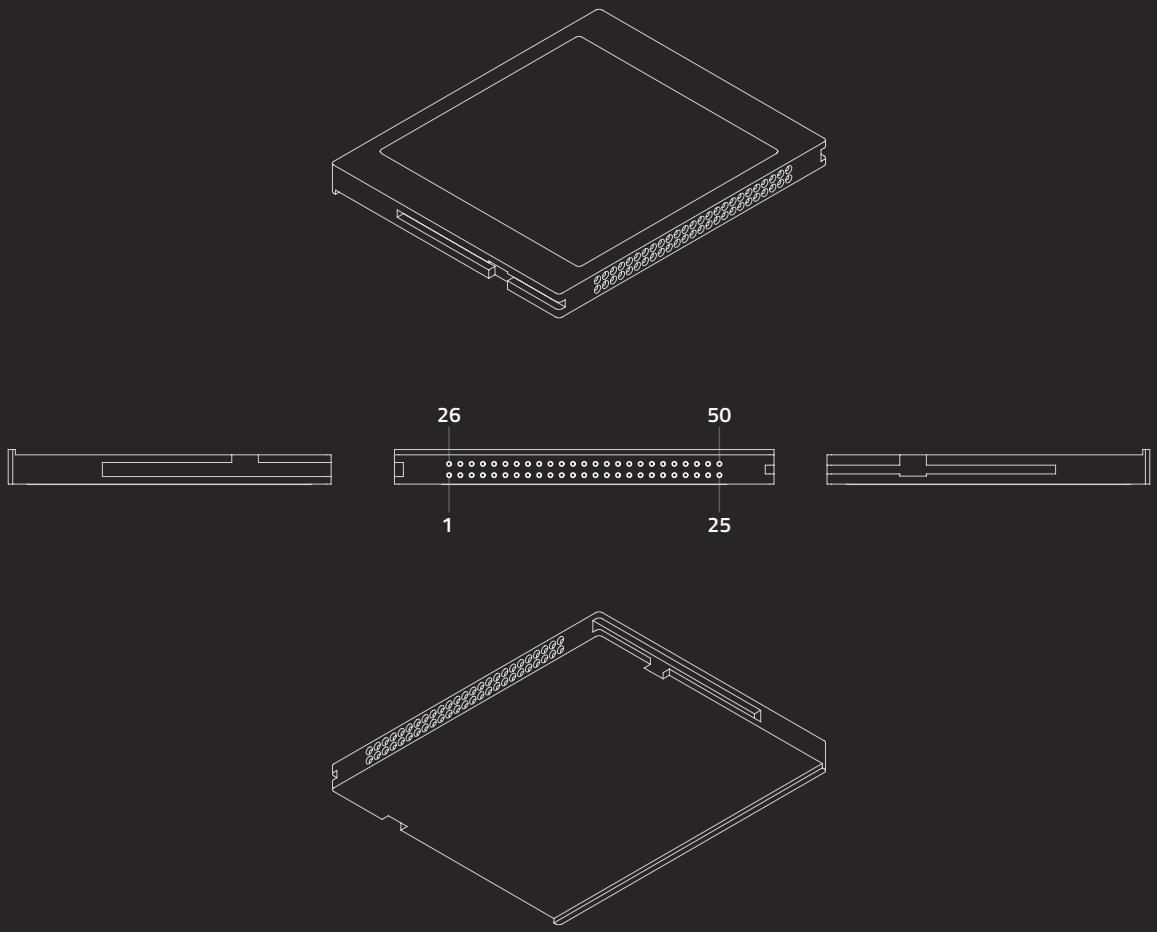
#	NAME	I/O	NOTES
1	DCD	IN	DATA CARRIER DETECT
2	RXD	IN	RECEIVE DATA
3	TXD	OUT	TRANSMIT DATA
4	DTR	OUT	DATA TERMINAL READY
5	GND	-	GROUND
6	DSR	IN	DATA SET READY
7	RTS	OUT	READY TO SEND
8	CTS	IN	CLEAR TO SEND
9	RI	IN	RING INDICATOR

MEMORY


26
50
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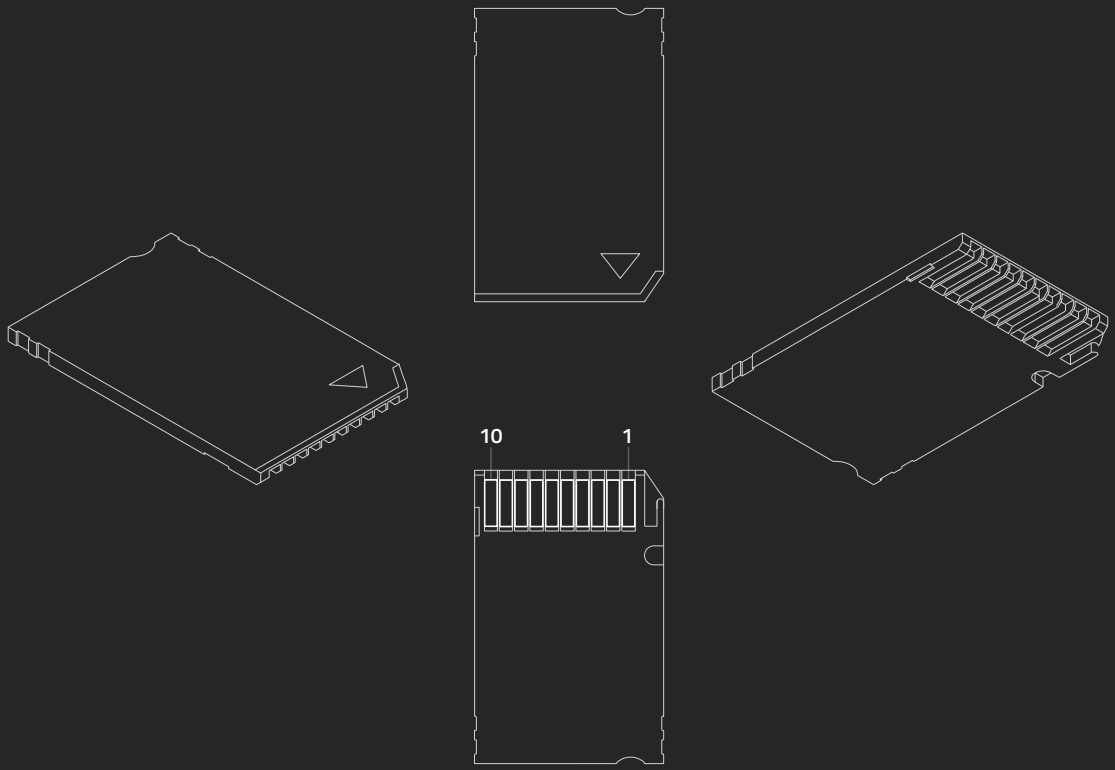
25

#	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	-	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


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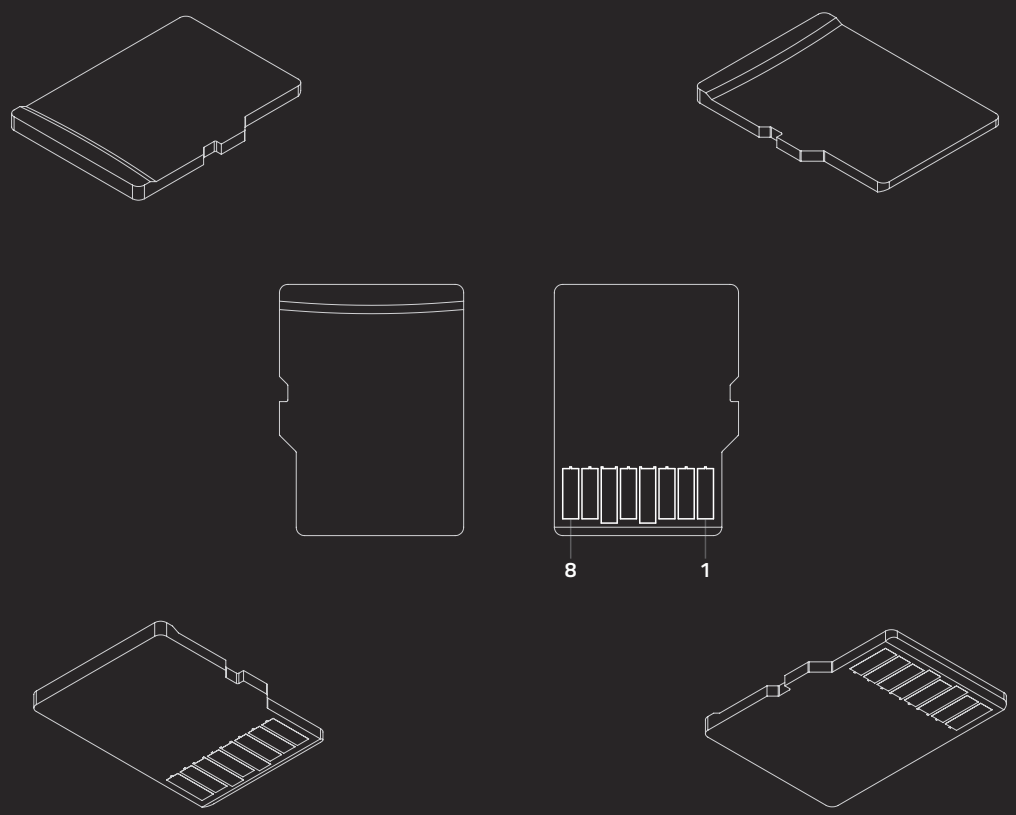
#	NAME	NOTES	TYPE
1	VSS	GROUND	-
2	BS	BUS STATE SIGNAL	I
3	DATA1	DATA1 PARALLEL / NC SERIAL	I/O
4	SDIO/DATA0	DATA0 PARALLEL / DATA SERIAL	I/O
5	DATA2	DATA2 PARALLEL / NC SERIAL	I/O
6	INS	STICK DETECT (CONNECTED TO VSS)	O
7	DATA3	DATA3 PARALLEL / NC SERIAL	I/O
8	SCLK	CLOCK SIGNAL	I
9	VCC	POWER SUPPLY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

I: Input to Card, O: Output from Card, I/O: Bi-directional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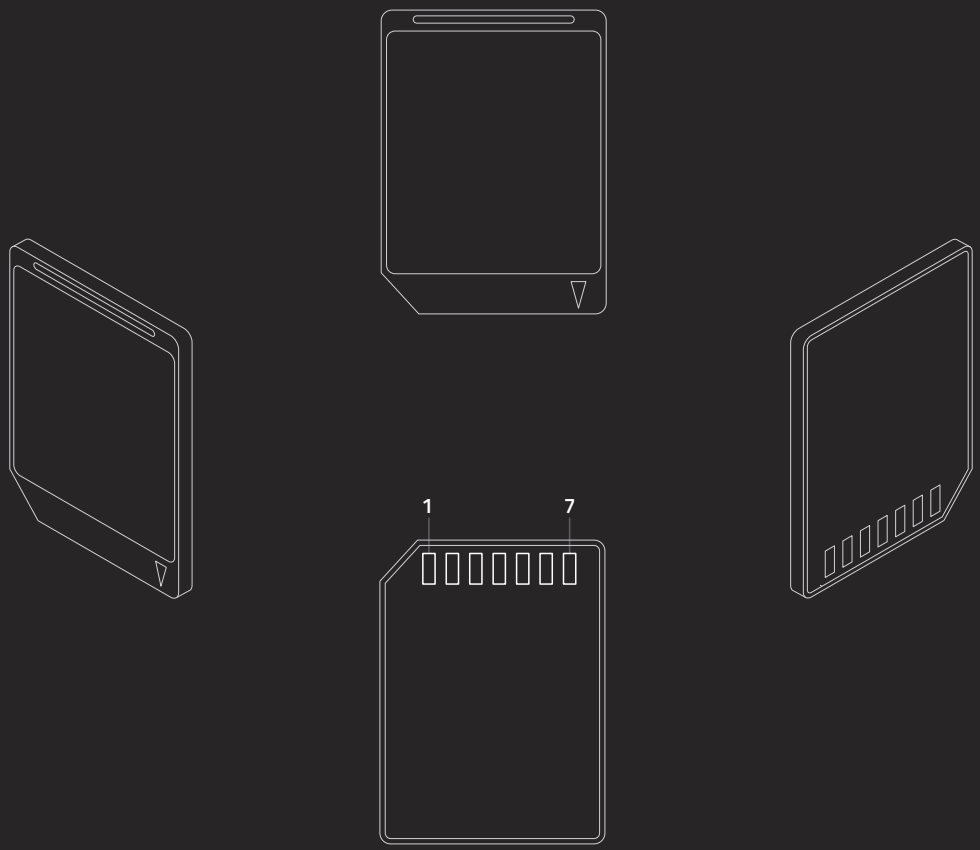
1

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*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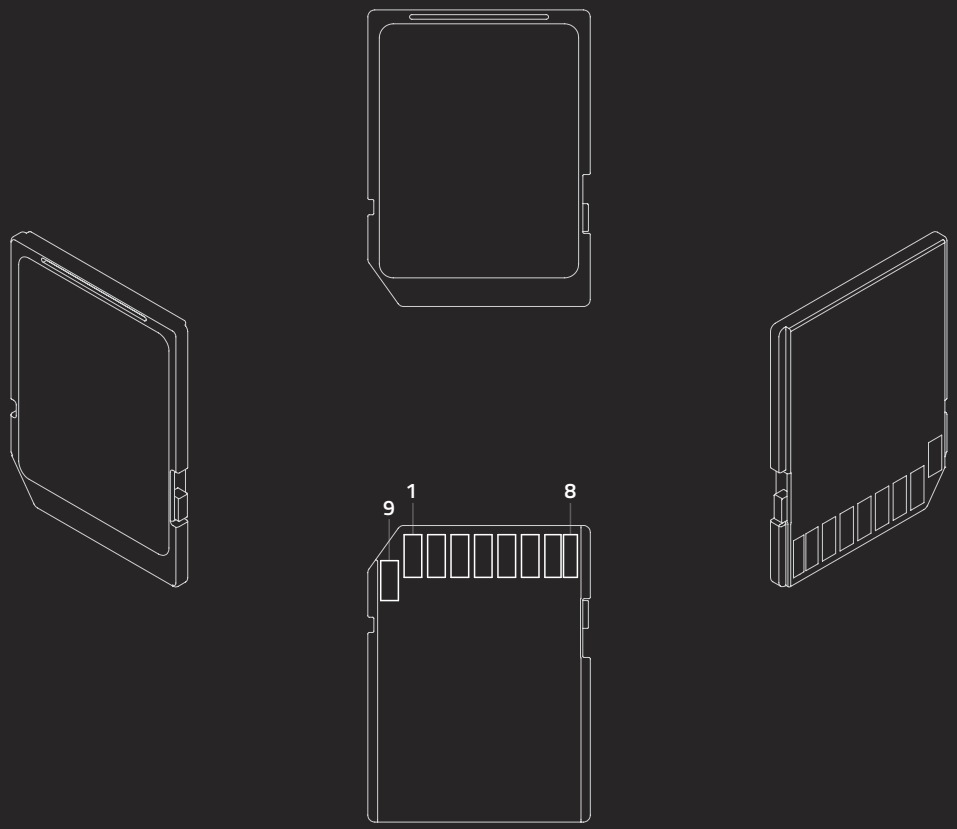
7

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	GROUND
4	VCC	POWER SUPPLY
5	SCLK	SERIAL CLOCK
6	VSS2	GROUND
7	DO	DATA OUT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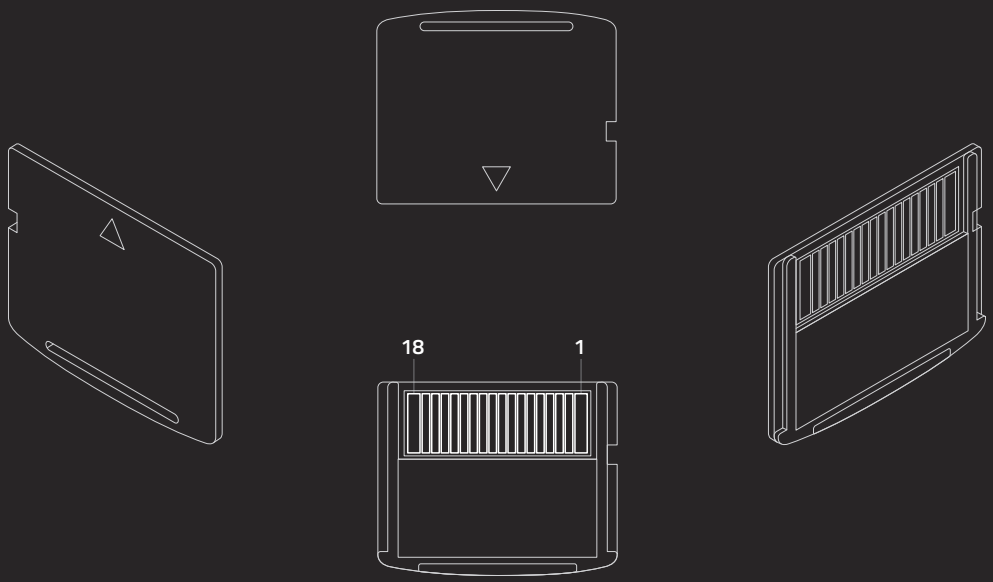
SD MODE		
#	NAME	NOTES
1	DAT3	DATA LINE (BIT 3)
2	CMD	COMMAND/RESPONSE
3	VSS1	GROUND
4	VDD	POWER SUPPLY (3.3V)
5	CLK	CLOCK
6	VSS	GROUND
7	DAT0	DATA LINE (BIT 0)
8	DAT1	DATA LINE (BIT 1)
9	DAT2	DATA LINE (BIT 2)

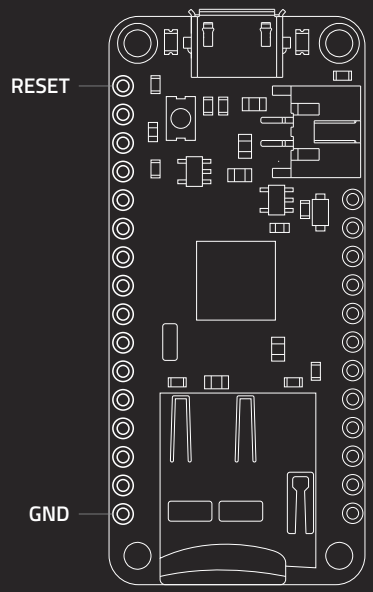
SPI MODE		
#	NAME	NOTES
1	CS	CHIP SELECT
2	DI	DATA IN
3	VSS1	GROUND
4	VDD	POWER SUPPLY (3.3V)
5	CLK	CLOCK
6	VSS	GROUND
7	DO	DATA OUT
8	NC	NOT CONNECTED
9	NC	NOT CONNECTED


18
1

#	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	-	-

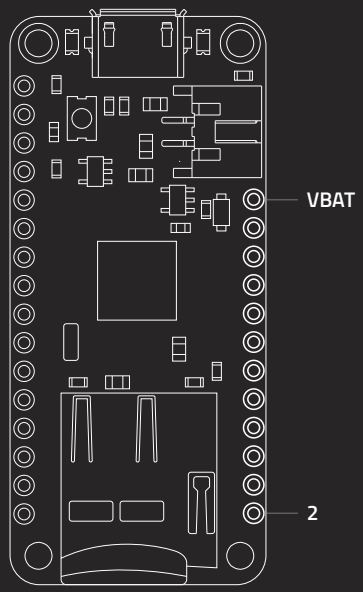
I: Input to Card, O: Output from Card, I/O: Bi-directional, OD: Open drain

BOARDS


RESET
GND

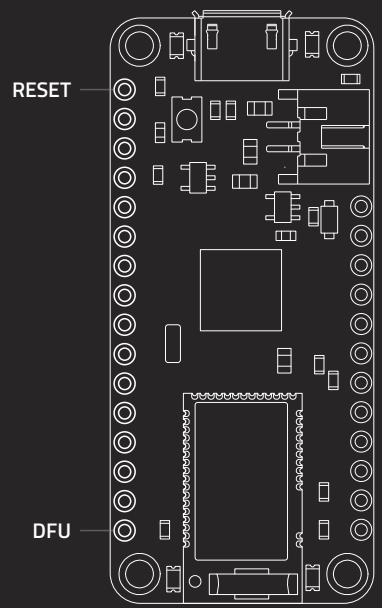
	NAME	PHYSICAL	PORT	SERIAL	ANALOG	INTERRUPT	IDE	SD CARD
◎	RST	13						
◎	3.3V							
◎	AREF*	42						
◎	GND							
◎	A0	36	PF7	TDI	ADC7		18 / A0	
◎	A1	37	PF6	TDO	ADC6		19 / A1	
◎	A2	38	PF5	TMS	ADC5		20 / A2	
◎	A3	39	PF4	TCK	ADC4		21 / A3	
◎	A4	40	PF1		ADC1		22 / A4	
◎	A5	41	PF0		ADC0		23 / A5	
◎	SCK	9	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.*


VBAT
2

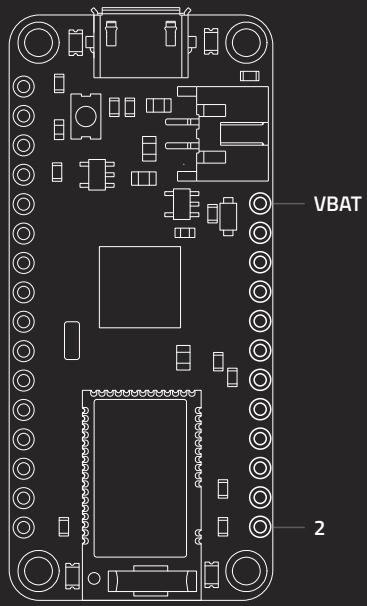
	NAME	PORT	PHYSICAL	PIN FUNCTION	INTERRUPT	SERIAL	ANALOG	IDE
◎	VBAT*							
◎	EN							
◎	VBUS**							
◎	13	PC7	32	CLK0 / OC4A / ICP3				13
◎	12	PD6	26	T1 / OC4D			ADC9	12 / A11
◎	11	PB7	12	OC1C / OC0A	PCINT7	RTS		11
◎	10	PB6	30	OC1B / OC4B	PCINT6		ADC13	10 / A10
◎	9	PB5	29	OC1A / OC4B	PCINT5		ADC12	9 / A9
◎	6	PD7	27	T0 / OC4D			ADC10	6 / A7
◎	5	PC6	31	OC3A / OC4A				5
◎	3	PD0	18	OC0B	INT0	SCL		3
◎	2	PD1	19		INT1	SDA		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.


RESET
DFU

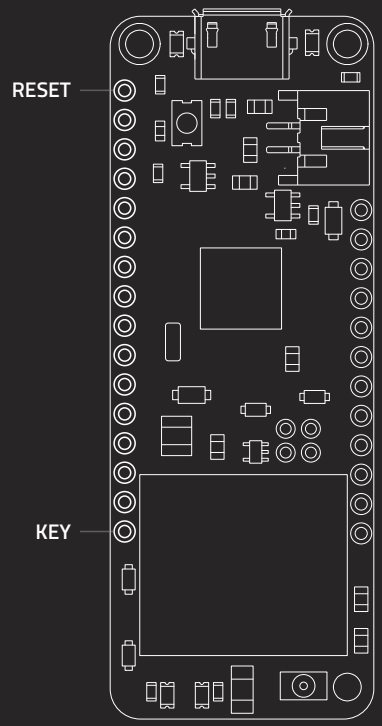
	NAME	PHYSICAL	PORT	SERIAL	ANALOG	INTERRUPT	IDE	BLE MODULE
◎	RST	13						
◎	3.3V							
◎	AREF*	42						
◎	GND							
◎	A0	36	PF7	TDI	ADC7		18 / A0	
◎	A1	37	PF6	TDO	ADC6		19 / A1	
◎	A2	38	PF5	TMS	ADC5		20 / A2	
◎	A3	39	PF4	TCK	ADC4		21 / A3	
◎	A4	40	PF1		ADC1		22 / A4	
◎	A5	41	PF0		ADC0		23 / A5	
◎	SCK	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.*


VBAT
2

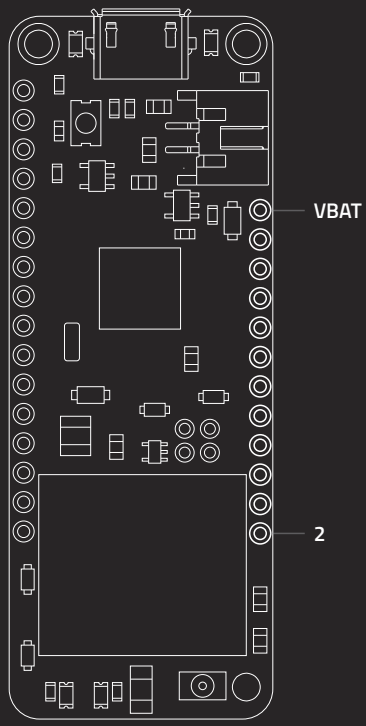
	NAME	PORT	PHYSICAL	PIN FUNCTION	INTERRUPT	SERIAL	ANALOG	IDE
◎	VBAT*							
◎	EN							
◎	VBUS**							
◎	13	PC7	32	CLK0 / OC4A / ICP3				13
◎	12	PD6	26	T1 / OC4D			ADC9	12 / A11
◎	11	PB7	12	OC1C / OC0A	PCINT7	RTS		11
◎	10	PB6	30	OC1B / OC4B	PCINT6		ADC13	10 / A10
◎	9	PB5	29	OC1A / OC4B	PCINT5		ADC12	9 / A9
◎	6	PD7	27	T0 / OC4D			ADC10	6 / A7
◎	5	PC6	31	OC3A / OC4A				5
◎	3	PD0	18	OC0B	INT0	SCL		3
◎	2	PD1	19		INT1	SDA		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.


RESET
KEY

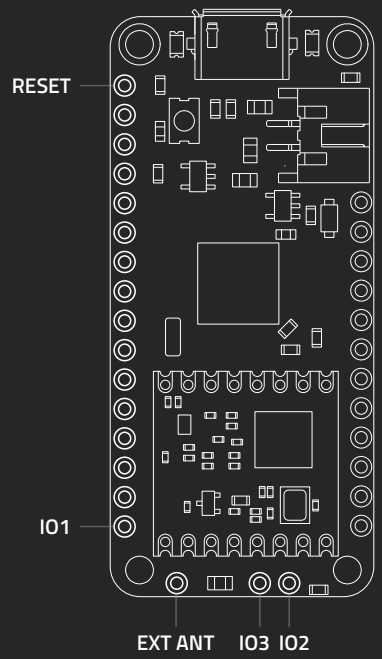
	NAME	PHYSICAL	PORT	SERIAL	ANALOG	INTERRUPT	IDE
◎	RST	13					
◎	3.3V						
◎	AREF*	42					
◎	GND						
◎	A0	36	PF7	TDI	ADC7		18 / A0
◎	A1	37	PF6	TDO	ADC6		19 / A1
◎	A2	38	PF5	TMS	ADC5		20 / A2
◎	A3	39	PF4	TCK	ADC4		21 / A3
◎	A4	40	PF1		ADC1		22 / A4
◎	A5	41	PF0		ADC0		23 / A5
◎	SCK	9	PB1	SCLK		PCINT1	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).*


VBAT
2

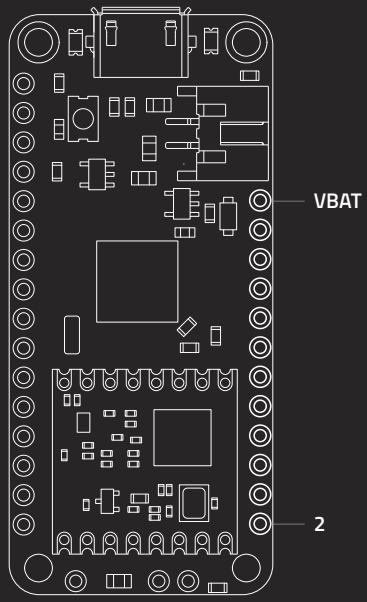
	NAME	PORT	PHYSICAL	PIN FUNCTION	INTERRUPT	SERIAL	ANALOG	IDE
◎	VBAT*							
◎	EN							
◎	VBUS**							
◎	13	PC7	32	CLK0 / OC4A / ICP3				13
◎	12	PD6	26	T1 / OC4D			ADC9	12 / A11
◎	11	PB7	12	OC1C / OC0A	PCINT7	RTS		11
◎	10	PB6	30	OC1B / OC4B	PCINT6		ADC13	10 / A10
◎	9	PB5	29	OC1A / OC4B	PCINT5		ADC12	9 / A9
◎	6	PD7	27	T0 / OC4D			ADC10	6 / A7
◎	5	PC6	31	OC3A / OC4A				5
◎	3	PD0	18	OC0B	INT0	SCL		3
◎	2	PD1	19		INT1	SDA		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.


RESET
IO1
EXT ANT
IO3
IO2

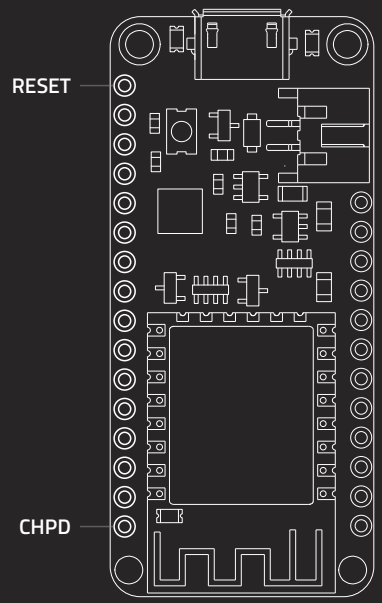
	NAME	PHYSICAL	PORT	SERIAL	ANALOG	INTERRUPT	IDE	RFM RADIO
◎	RST	13						
◎	3.3V							
◎	AREF*	42						
◎	GND							
◎	A0	36	PF7	TDI	ADC7		18 / A0	
◎	A1	37	PF6	TDO	ADC6		19 / A1	
◎	A2	38	PF5	TMS	ADC5		20 / A2	
◎	A3	39	PF4	TCK	ADC4		21 / A3	
◎	A4	40	PF1		ADC1		22 / A4	
◎	A5	41	PF0		ADC0		23 / A5	
◎	SCK	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							

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.*


VBAT
2

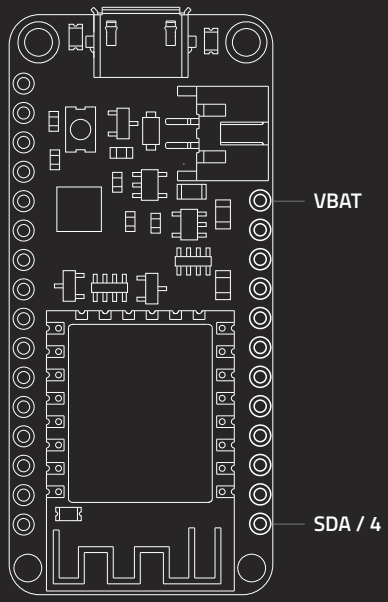
	NAME	PORT	PHYSICAL	PIN FUNCTION	INTERRUPT	SERIAL	ANALOG	IDE
◎	VBAT*							
◎	EN							
◎	VBUS**							
◎	13	PC7	32	CLK0 / OC4A / ICP3				13
◎	12	PD6	26	T1 / OC4D			ADC9	12 / A11
◎	11	PB7	12	OC1C / OC0A	PCINT7	RTS		11
◎	10	PB6	30	OC1B / OC4B	PCINT6		ADC13	10 / A10
◎	9	PB5	29	OC1A / OC4B	PCINT5		ADC12	9 / A9
◎	6	PD7	27	T0 / OC4D			ADC10	6 / A7
◎	5	PC6	31	OC3A / OC4A				5
◎	3	PD0	18	OC0B	INT0	SCL		3
◎	2	PD1	19		INT1	SDA		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.*


RESET
CHPD

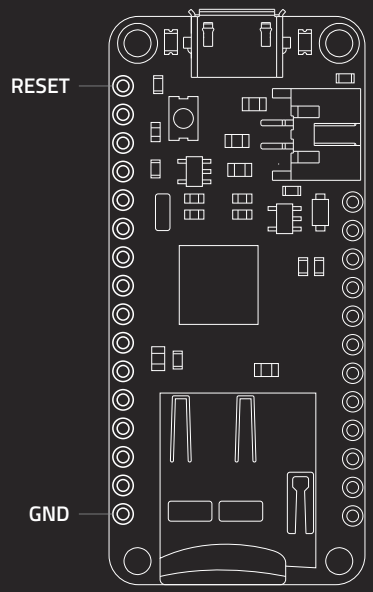
	NAME	PHYSICAL	PORT	PIN	SERIAL	ANALOG	IDE
◎	RST	1					
◎	3.3V						
◎	NC						
◎	GND						
◎	ADC	2	ADC	TOUT		ADC	17 / A0
◎	NC						
◎	NC						
◎	NC						
◎	NC						
◎	NC						
◎	SCK	5	IO14		SCLK / HSPI (CLK)		14
◎	MOSI	7	IO13		MOSI / CTS0 / HSPI (D) / RXD2		13
◎	MISO	6	IO12		MISO / HSPI(Q)		12
◎	RX	15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

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


VBAT
SDA / 4

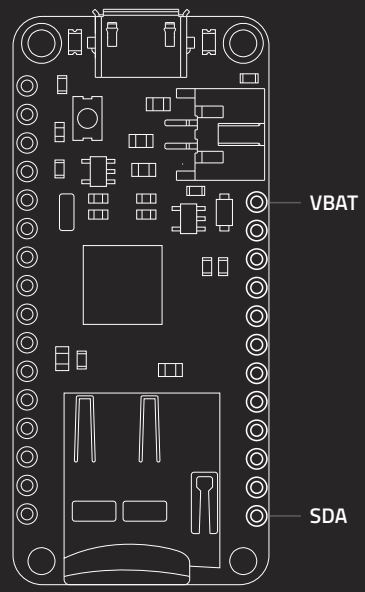
NAME	PHYSICAL	PORT	PIN	SERIAL	IDE
VBAT*					
EN					
VBUS**					
14	5	IO14		HSPI (CLK) / SCK	14
12	6	IO12		HSPI (Q) / MISO	12
13	7	IO13		RXD2 / HSPI (D) / MOSI	13
15	10	IO15		TXD2 / HSPI (CS) / RTS0	15
0	12	IO0		CS2	0
16	4	IO16	WAKE		16
2	11	IO2		TXD1	2
SCL / 5	14	IO5		SCL	5
SDA / 4	13	IO4		SDA	4

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.*


RESET
GND

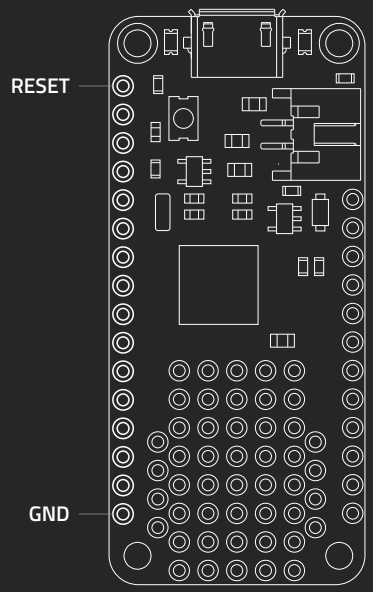
	NAME	PHYSICAL	PORT	INTERRUPT	SERIAL	ANALOG	IDE	SD CARD
◎	RESET	40						
◎	3.3V							
◎	AREF*	4	PA03	EINT3		AIN1 / VREF A		
◎	GND							
◎	A0	3	PA02	EINT2		AIN0 / DAC	14 / A0	
◎	A1	7	PB08	EINT8	S 4:0	AIN2	15 / A1	
◎	A2	8	PB09	EINT9	S 4:1	AIN3	16 / A2	
◎	A3	9	PA04	EINT4	S 0:0	AIN4 / VREF B	17 / A3	
◎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


VBAT
SDA

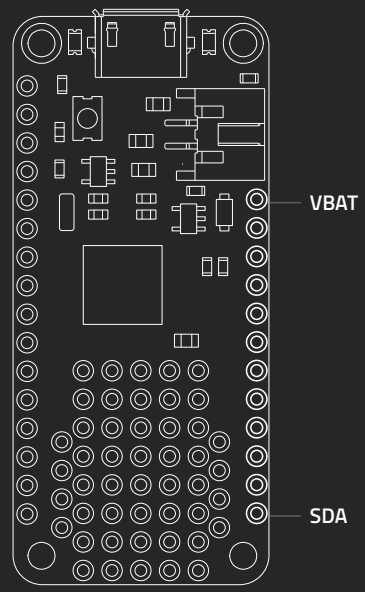
	NAME	PHYSICAL	PORT	INTERRUPT	SERIAL	ANALOG	IDE
◎	VBAT*						
◎	EN						
◎	VBUS**						
◎	13	26	PA17	EINT1	I2C / S1 3:1		13
◎	12	28	PA19	EINT3	I2SD0 / S1 3:3		12
◎	11	25	PA16	EINT0	12C / S1 3:0		11
◎	10	27	PA18	EINT2	S1 3:2		10
◎	9	12	PA07	EINT7	I2SD0 / S 0:3	AIN7	9 / A7
◎	6	29	PA20	EINT4	I2SSC / S3 5:2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


RESET
GND

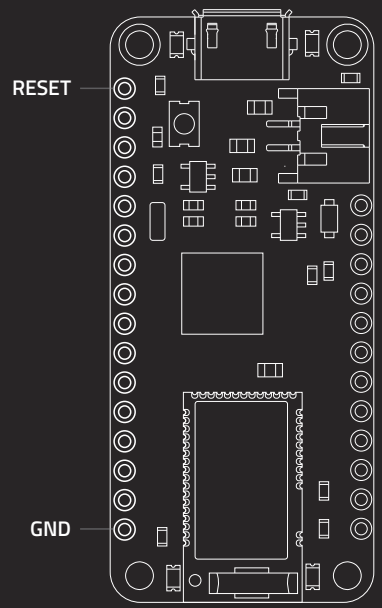
	NAME	PHYSICAL	PORT	INTERRUPT	SERIAL	ANALOG	IDE
◎	RESET	40					
◎	3.3V						
◎	AREF*	4	PA03	EINT3		AIN1 / VREF A	
◎	GND						
◎	A0	3	PA02	EINT2		AIN0 / DAC	14 / A0
◎	A1	7	PB08	EINT8	S 4:0	AIN2	15 / A1
◎	A2	8	PB09	EINT9	S 4:1	AIN3	16 / A2
◎	A3	9	PA04	EINT4	S 0:0	AIN4 / VREF B	17 / A3
◎	A4	10	PA05	EINT5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


VBAT
SDA

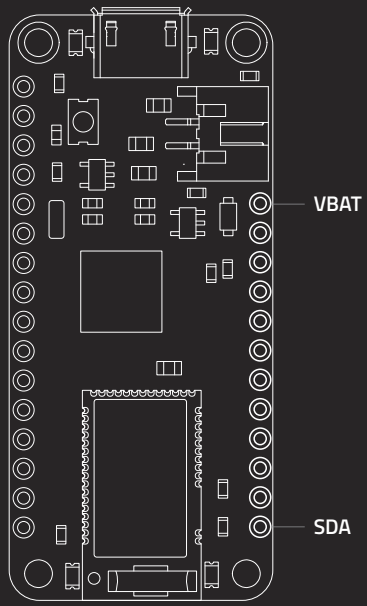
	NAME	PHYSICAL	PORT	INTERRUPT	SERIAL	ANALOG	IDE
◎	VBAT*						
◎	EN						
◎	VBUS**						
◎	13	26	PA17	EINT1	I2C / S1 3:1		13
◎	12	28	PA19	EINT3	I2SD0 / S1 3:3		12
◎	11	25	PA16	EINT0	12C / S1 3:0		11
◎	10	27	PA18	EINT2	S1 3:2		10
◎	9	12	PA07	EINT7	I2SD0 / S 0:3	AIN7	9 / A7
◎	6	29	PA20	EINT4	I2SSC / S3 5:2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


RESET
GND

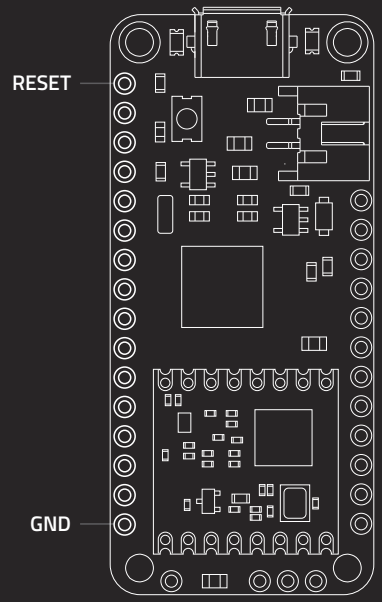
	NAME	PHYSICAL	PORT	INTERRUPT	SERIAL	ANALOG	IDE	BLE
◎	RESET	40						
◎	3.3V							
◎	AREF*	4	PA03	EINT3		AIN1 / VREF A		
◎	GND							
◎	A0	3	PA02	EINT2		AIN0 / DAC	14 / A0	
◎	A1	7	PB08	EINT8	S 4:0	AIN2	15 / A1	
◎	A2	8	PB09	EINT9	S 4:1	AIN3	16 / A2	
◎	A3	9	PA04	EINT4	S 0:0	AIN4 / VREF B	17 / A3	
◎	A4	10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


VBAT
SDA

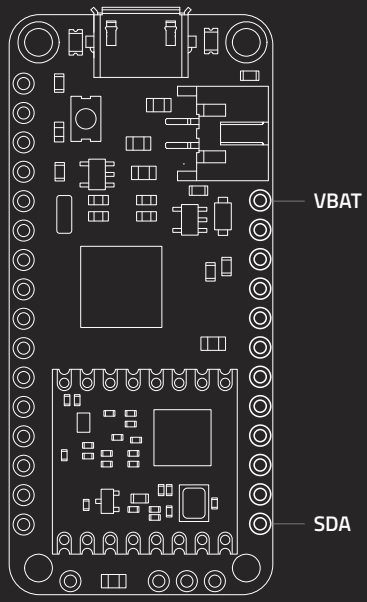
	NAME	PHYSICAL	PORT	INTERRUPT	SERIAL	ANALOG	IDE
◎	VBAT*						
◎	EN						
◎	VBUS**						
◎	13	26	PA17	EINT1	I2C / S1 3:1		13
◎	12	28	PA19	EINT3	I2SD0 / S1 3:3		12
◎	11	25	PA16	EINT0	12C / S1 3:0		11
◎	10	27	PA18	EINT2	S1 3:2		10
◎	9	12	PA07	EINT7	I2SD0 / S 0:3	AIN7	9 / A7
◎	6	29	PA20	EINT4	I2SSC / S3 5:2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


RESET
GND

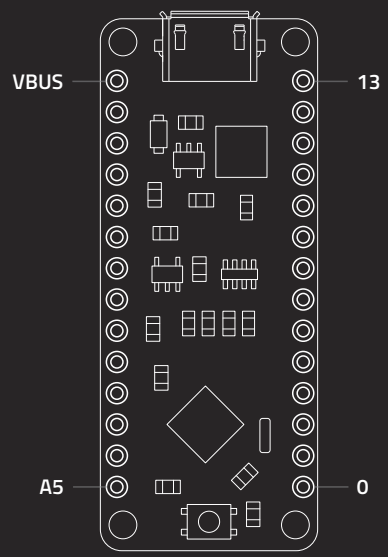
	NAME	PHYSICAL	PORT	INTERRUPT	SERIAL	ANALOG	IDE	RFM
◎	RESET	40						
◎	3.3V							
◎	AREF*	4	PA03	EINT3		AIN1 / VREF A		
◎	GND							
◎	A0	3	PA02	EINT2		AIN0 / DAC	14 / A0	
◎	A1	7	PB08	EINT8	S 4:0	AIN2	15 / A1	
◎	A2	8	PB09	EINT9	S 4:1	AIN3	16 / A2	
◎	A3	9	PA04	EINT4	S 0:0	AIN4 / VREF B	17 / A3	
◎	A4	10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

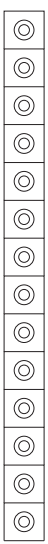
Power: The total current of each port power group should not exceed 65mA. Absolute maximum current per pin 10mA, 7mA recommended. Absolute maximum 130mA for the entire package.
**AREF can't go higher than 3.3V **Pins also used by RFM radio module. Refer to datasheet for more information.*


VBAT
SDA

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

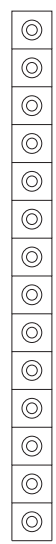
Power: The total current of each port power group should not exceed 65mA. Absolute maximum current per pin 10mA, 7mA recommended. Absolute maximum 130mA for the entire package.
**VBAT is the positive voltage from the JST battery jack. **VBUS is connected to the 5V USB port. Absolute maximum current 500mA.*

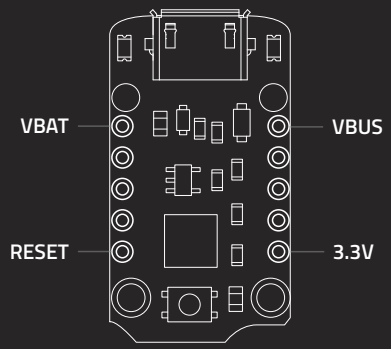

VBUS
13
A5
0



NAME	ARDUINO	GPIO	CIRCUITPYTHON	OTHER
VBUS				
RESET				
3.3V				
5V				
GND				
GND				
VIN				
AREF			AREF	
A0	14	PC0	AD0	
A1	15	PC1	AD1	
A2	16	PC2	AD2	
A3	17	PC3	AD3	
A4	18	PC4	AD4	SDA
A5	19	PC5	AD5	SCL

OTHER	CIRCUITPYTHON	GPIO	ARDUINO	NAME
SCK	D13	PB5	13	13
MISO	D12	PB4	12	12
MOSI / OC2A	D11	PB3	11	11
SS / OC1B	D10	PB2	10	10
OC1A	D9	PB1	9	9
	D8	PB0	8	8
	D7	PD7	7	7
OC0A	D6	PD6	6	6
OC0B	D5	PD5	5	5
	D4	PD4	4	4
INT1 / OC2B	D3	PD3	3	3
INT0	D2	PD2	2	2
TX	D1	PD1	1	1
RX	D0	PD0	0	0

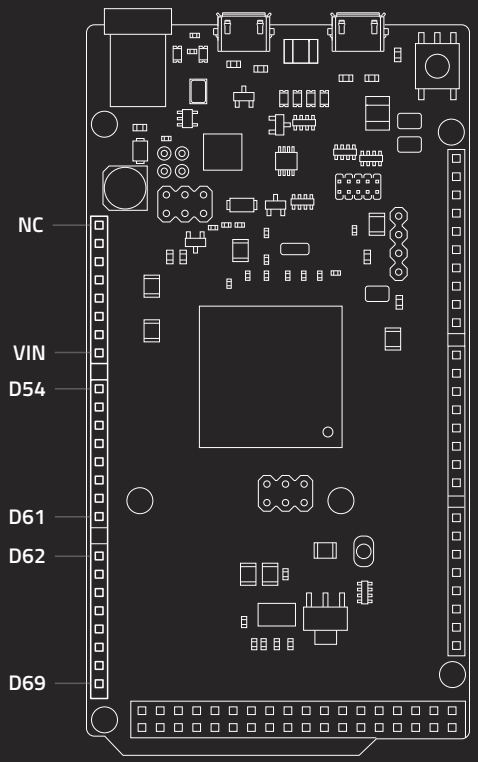



VBAT
VBUS
RESET
3.3V

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

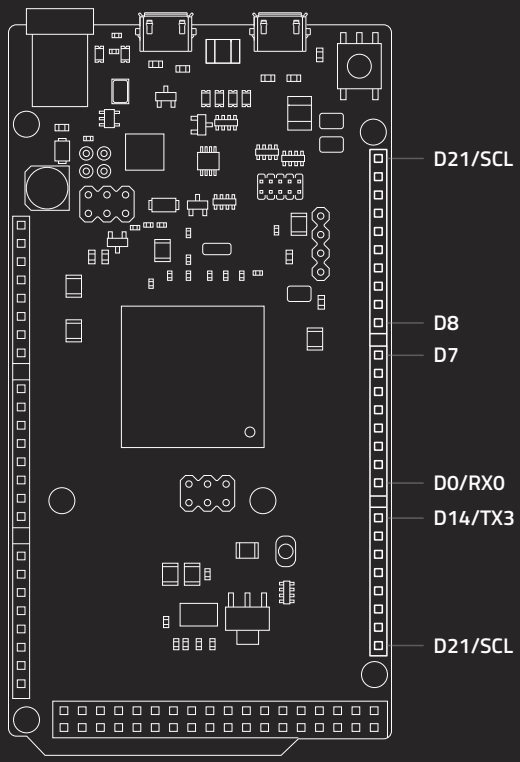
NAME	GPIO	INT	PWM	SPI	ADC	SPECIAL
VBUS**						
0	PB0	PCINT0	OC0A / !OC1A	MOSI		
1	PB1	PCINT1	OC0B / OC1A	MISO		LED
2	PB2	INT0 / PCINT2		SCK	A1	
3.3V***						

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


NC
VIN
D54
D61
D62
D69

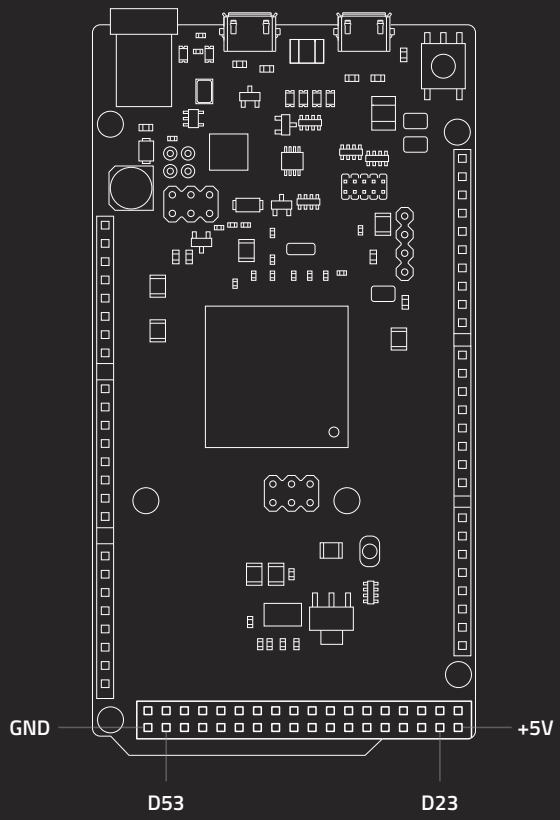
NAME	MAIN FUNCTIONS		ANALOG	PWM	COMMS	CAN	TIMER	INTERRUPT
NC								
IOREF								
RESET								
3.3V								
5V								
GND								
GND								
VIN								
D54 / A0	PA16	ADC[0]	AD[7]		SPCK1			
D55 / A1	PA24	ADC[1]	AD[6]				PCK1	
D56 / A2	PA23	ADC[2]	AD[5]				TCLK4	
D57 / A3	PA22	ADC[3]	AD[4]				TCLK3	
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]		TXD2 / SPI0_NPCS1			
D66 / DAC2	PB15	DAC[0]	DAC[0]	PWMH3		CANRX1		WKUP[12]
D67 / DAC1	PB16	DAC[1]	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 pinout functions are available in the official documentation.


D21/SCL
D8
D7
D0/RX0
D14/TX3
D21/SCL

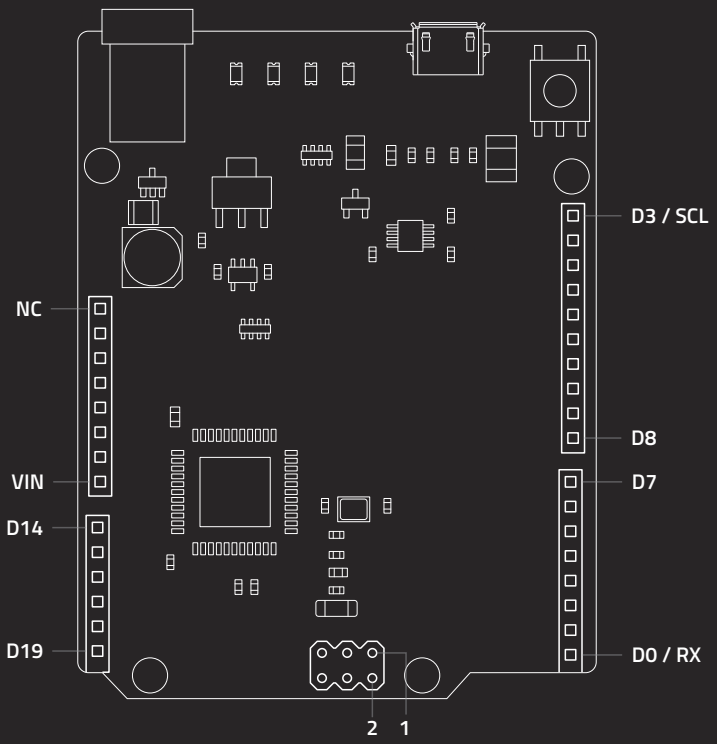
	NAME	MAIN		ANALOG	PWM	COMM	TIMER	INTERRUPT
☐	D21 / SCL	PA18	SCL			TWCK0		WKUP[9]
☐	D20 / SDA	PA17	SDA			SPCK0/TWD0		
☐	AREF	AREF				AREF		
☐	GND							
☐	D13	PB27		AD[10]	PWML1			
☐	D12	PD8					TI0B8	
☐	D11	PD7					TI0A8	
☐	D10	PA28				SPI0_NPCS0	PCK2	WKUP[11]
☐	D9	PC21			PWML4			
☐	D8	PC22			PWML5			
☐	D7	PC23			PWML6			
☐	D6	PC24			PWML7			
☐	D5	PC25					TIOA6	
☐	D4	PA29				SPI0_NPCS1		
☐	D3	PC28					TI0A7	
☐	D2	PB25				RTS0	TI0A0	
☐	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.


GND
+5V
D53
D23

ETH	COMM	PWM	ANALOG	NAME			NAME	PWM	COMM	CAN	ETH
	CTS0			+5V	☐	☐	+5V		RTS1	+5V	
	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
			AD[14]	PB21 / D52	☐	☐	D53 / PB14	PWMH2		CANTX1	
				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.


NC
VIN
D14
D19
D3 / SCL
D8
D7
D0 / RX
2
1

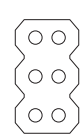
FUNCTIONS	
NC	
IOREF	
RESET	
+3V3	
+5V	
GND	
GND	
VIN	

D14 / A0	PF7	ADC[7]	TDI JTAG DATA INPUT	
D15 / A1	PF6	ADC[6]	TDO JTAG DATA OUTPUT	
D16 / A2	PF5	ADC[5]	TMS JTAG TEST MODE SLECT	
D17 / A3	PF4	ADC[4]	TCK JTAG TEST 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/OC0A	RTS		PB7	D11
OC4B/OC1B		ADC[13]	PB6	D10
OC1A/OC4B		ADC[12]	PB5	D9
		ADC[11]	PB4	D8

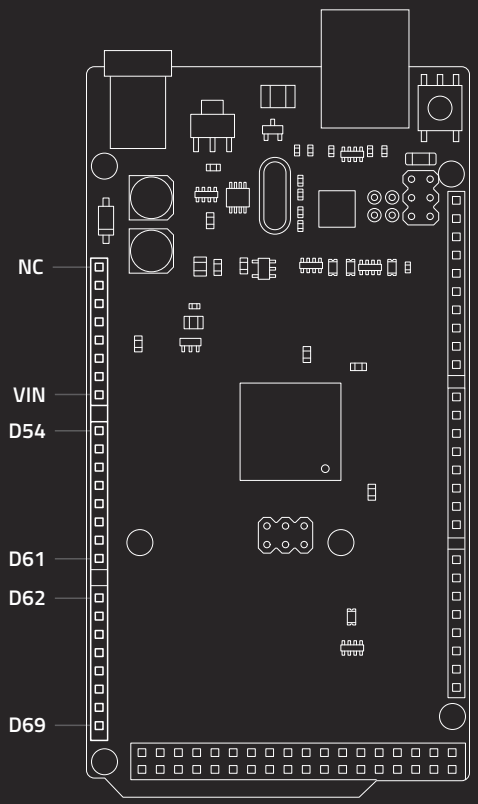
		AIN[0]	PE6	D7
T0/OC4D		ADC[10]	PD7	D6
ICP3/OC3A/OC4A			PC6	D5
ICP1		ADC[8]	PD4	D4
OC0B	SCL		PD0	D3
	SDA		PD1	D2
	TXD1		PD3	D1 / TX
	RXD1		PD2	D0 / RX

FUNCTIONS				#
PCINT[3]	CIPO	PB3	CIPO	1
PCINT[1]	SCLK	PB1	SCK	3
			RESET	5



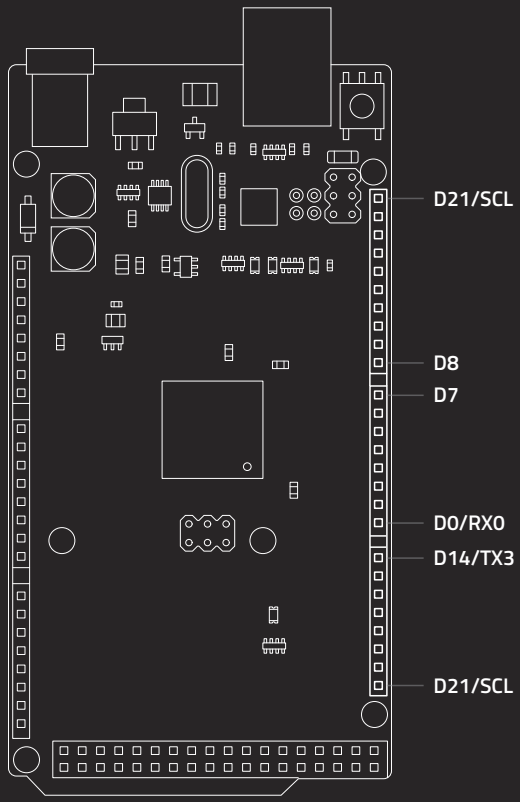
#	FUNCTIONS			
2	+5V			
4	COPI	PB2	COPI	PCINT[2]
6	GND			

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.


NC
VIN
D54
D61
D62
D69

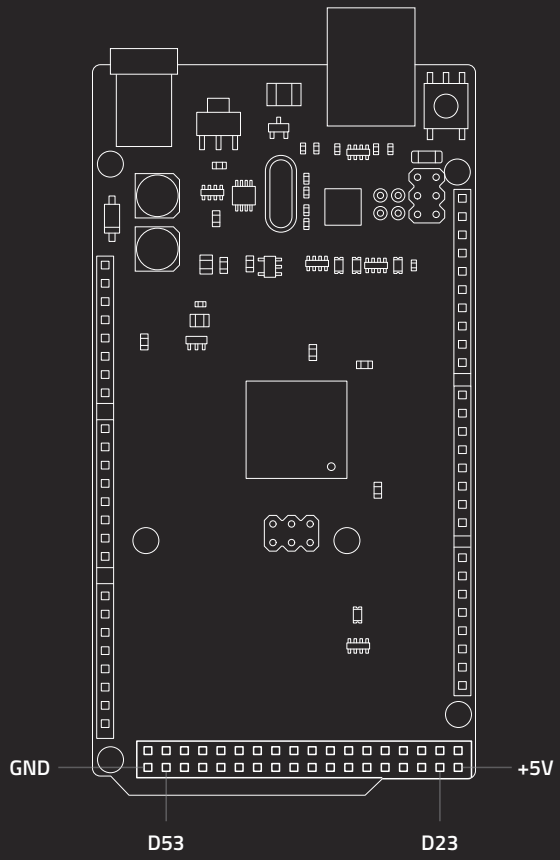
	NAME	FUNCTIONS			
☐	NC				
☐	IOREF				
☐	RESET				
☐	+3V3				
☐	+5V				
☐	GND				
☐	GND				
☐	VIN				
☐	D54 / A0	PF0	ADC[0]		
☐	D55 / A1	PF1	ADC[1]		
☐	D56 / A2	PF2	ADC[2]		
☐	D57 / A3	PF3	ADC[3]		
☐	D58 / A4	PF4	ADC[4]	TCK JTAG TEST CLOCK	
☐	D59 / A5	PF5	ADC[5]	TMS JTAG TEST MODE SLECT	
☐	D60 / A6	PF6	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.


D21/SCL
D8
D7
D0/RX0
D14/TX3
D21/SCL

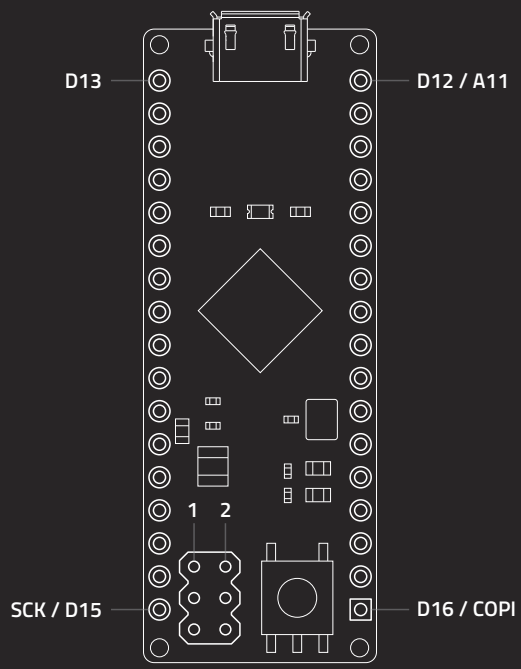
	NAME	FUNCTIONS				
☐	D21 / SCL	PD0		SCL		INT[0]
☐	D20 / SDA	PD1		SDA		INT[1]
☐	AREF	AREF				
☐	GND					
☐	D13	PB7			OC0A/OC1C	PCINT[7]
☐	D12	PB6			OC1B	PCINT[6]
☐	D11	PB5			OC1A	PCINT[5]
☐	D10	PB4			OC2A	PCINT[4]
☐	D9	PH6			OC2B	
☐	D8	PH5			OC4C	
☐	D7	PH4			OC4B	
☐	D6	PH3			OC4A	
☐	D5	PE3	AIN[1]		OC3A	
☐	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.


GND
+5V
D53
D23

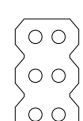
		FUNCTIONS		NAME			NAME	FUNCTIONS		
				+5V	☐	☐	+5V			
		AD0	PA0	D22	☐	☐	D23	PA1	AD1	
		AD2	PA2	D24	☐	☐	D25	PA3	AD3	
		AD4	PA4	D26	☐	☐	D27	PA5	AD5	
		AD6	PA6	D28	☐	☐	D29	PC7	AD7	
		A15	PC7	D30	☐	☐	D31	PC6	A14	
		A13	PC5	D32	☐	☐	D33	PC4	A12	
		A11	PC3	D34	☐	☐	D35	PC2	A10	
		A9	PC1	D36	☐	☐	D37	PC0	A8	
	T0		PD7	D38	☐	☐	D39	PG2	ALE	
		RD	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.


D13
D12 / A11
1
2
SCK / D15
D16 / COPI

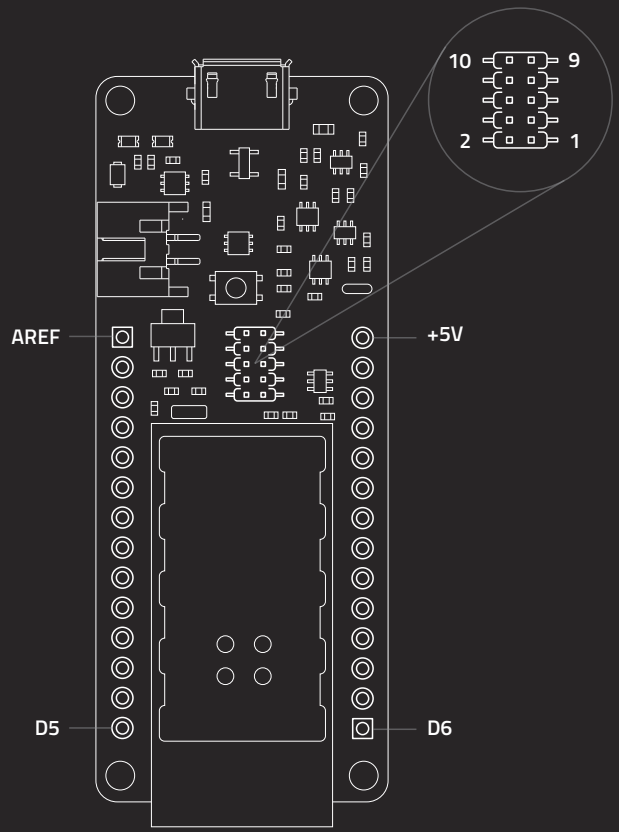
NAME	FUNCTIONS			FUNCTIONS	NAME
D13	PC7			PD6	A11 / D12
+3V3				PB7	D11
AREF	AREF			PB6	A10 / D10
A0 / D18	PF7	ADC[7]		PB5	A9 / D9
A1 / D19	PF6	ADC[6]		PB4	A8 / D8
A2 / D20	PF5	ADC[5]		PE6	D7
A3 / D21	PF4	ADC[4]		PD7	A7 / D6
A4 / D22	PF1	ADC[1]		PC6	D5
A5 / D23	PF0	ADC[0]		PD4	A6 / D4
NC				PD0	SCL / D3
NC				PD1	SDA / D2
+5V					GND
RESET					RESET
GND				PD2	RX / D0
VIN				PD3	TX / D1
CIPO / D14	PB3	CIPO	SS	PB0	SS / D17
SCK / D15	PB1	SCK	COPI	PB2	COPI / D16

FUNCTIONS				#
PCINT[3]	CIPO	PB3	CIPO	1
PCINT[1]	SCLK	PB1	SCK	3
			RESET	5



#	FUNCTIONS			
2	+5V			
4	COPI	PB2	COPI	PCINT[2]
6	GND			

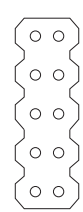
Power: VIN 6-9V input to the board. Maximum current per I/O pin is 40mA. Maximum current per +3.3V pin is 50mA


10
9
2
1
AREF
+5V
D5
D6

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	

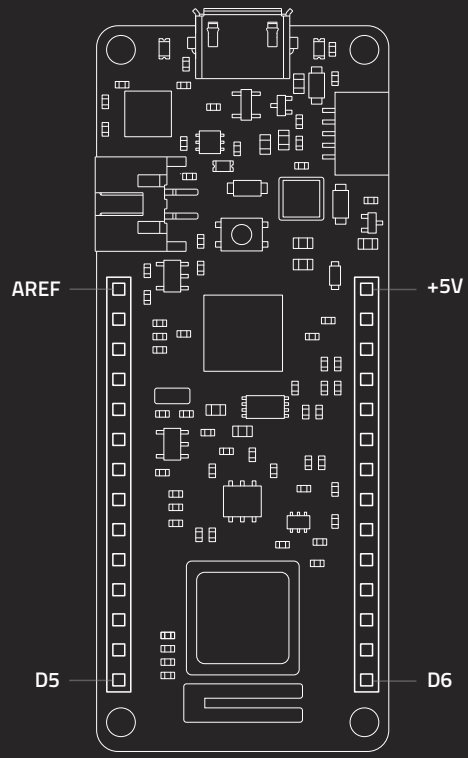
FUNCTIONS		NAME
		+5V
		VIN
		+3V3
		GND
		RESET
TX (SC5)	PB22	D14
RX (SC5)	PB23	D13
SCL (SC2)	PA09	D12
SDA (SC2)	PA08	D11
CIPO (SC1)	PA19	D10
SCK (SC1)	PA17	D9
COPI (SC1)	PA16	D8
	PA21	D7
	PA20	D6

FUNCTIONS			#
		RESET_N	10
			8
			6
TCC1 / WO[0]	PA30	SWCLK	4
TCC1 / WO[1]	PA31	SWDIO	2



#	FUNCTIONS
9	GND
7	
5	GND
3	GND
1	+3V3

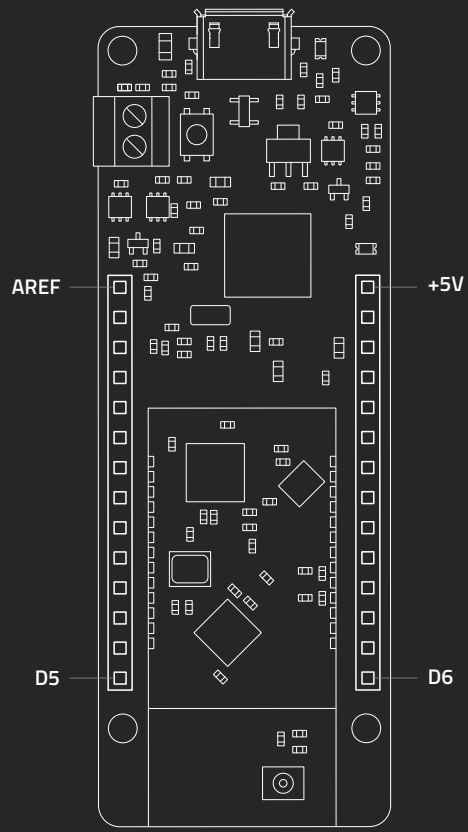
Power: Maximum current per pin is 7mA. Maximum source current is 46mA. Maximum sink current is 65mA per pin group.
Further pinout functions are also available in official datasheet.


AREF
+5V
D5
D6

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

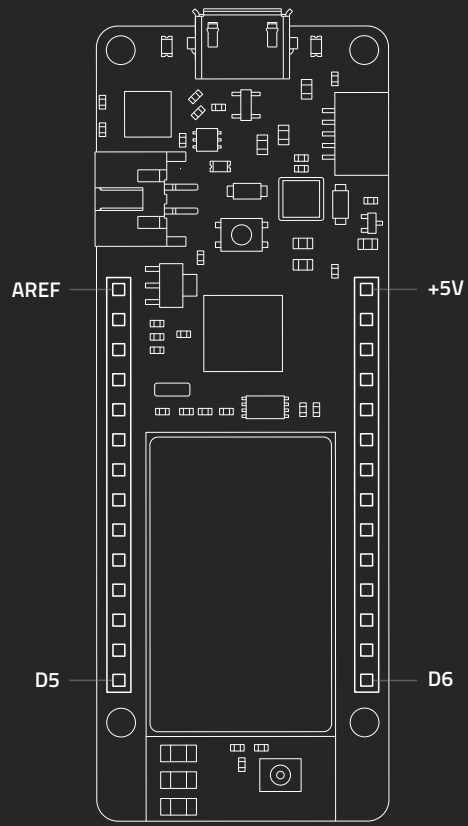
Power: Maximum current per pin is 7mA. Maximum source current is 46mA. Maximum sink current is 65mA per pin group.
Further pinout functions are also available in official datasheet.


AREF
+5V
D5
D6

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	

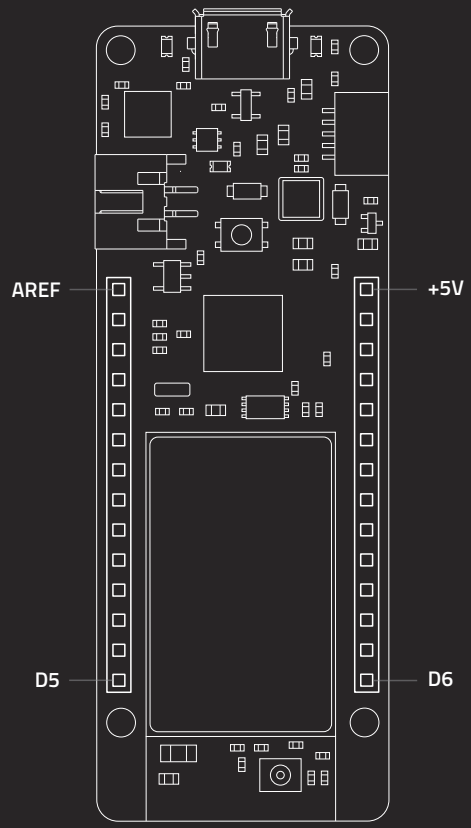
FUNCTIONS		NAME
		+5V
		VIN
		+3V3
		GND
		RESET
TX (SC5)	PB22	D14
RX (SC5)	PB23	D13
SCL (SC2)	PA09	D12
SDA (SC2)	PA08	D11
CIPO (SC1)	PA19	D10
SCK (SC1)	PA17	D9
COPI (SC1)	PA16	D8
	PA21	D7
	PA20	D6

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.


AREF
+5V
D5
D6

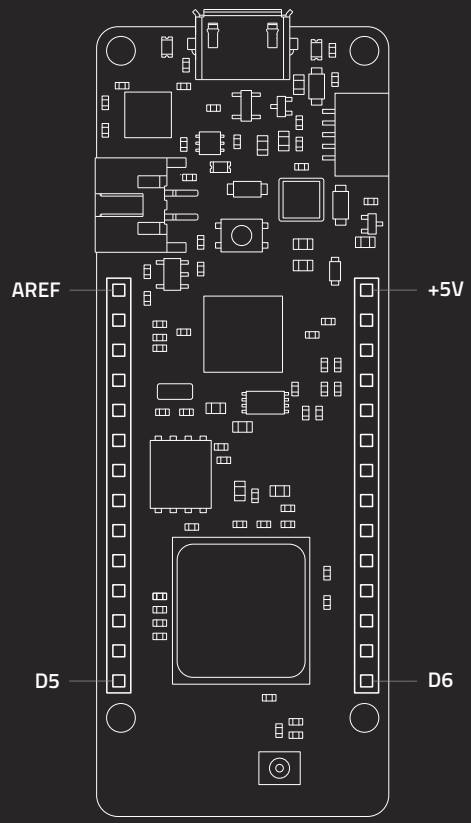
NAME	FUNCTIONS		FUNCTIONS		NAME
AREF	PA03	AREF / AIN[1]			+5V
D15 / A0	PA02	DAC0 / AIN[0]			VIN
D16 / A1	PB02	AIN[10]			+3V3
D17 / A2	PB03	AIN[11]			GND
D18 / A3	PA04	AIN[4]			RESET
D19 / A4	PA05	AIN[5]	TX (SC5)	PB22	D14
D20 / A5	PA06	AIN[6]	RX (SC5)	PB23	D13
D21 / A6	PA07	AIN[7]	SCL (SC2)	PA09	D12
D0	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.


AREF
+5V
D5
D6

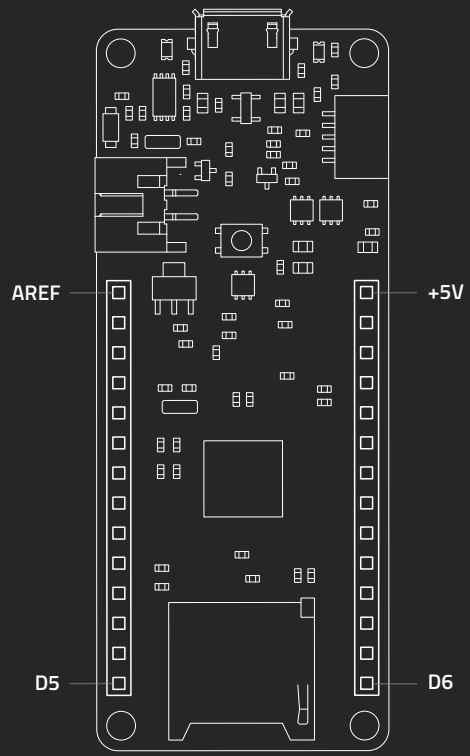
	NAME	FUNCTIONS			FUNCTIONS	NAME	
◎	AREF	PA03	AREF / AIN[1]			+5V	○
○	D15 / A0	PA02	DAC0 / AIN[0]			VIN	○
○	D16 / A1	PB02	AIN[10]			+3V3	○
○	D17 / A2	PB03	AIN[11]			GND	○
○	D18 / A3	PA04	AIN[4]			RESET	○
○	D19 / A4	PA05	AIN[5]	TX (SC5)	PB22	D14	○
○	D20 / A5	PA06	AIN[6]	RX (SC5)	PB23	D13	○
○	D21 / A6	PA07	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.


AREF
+5V
D5
D6

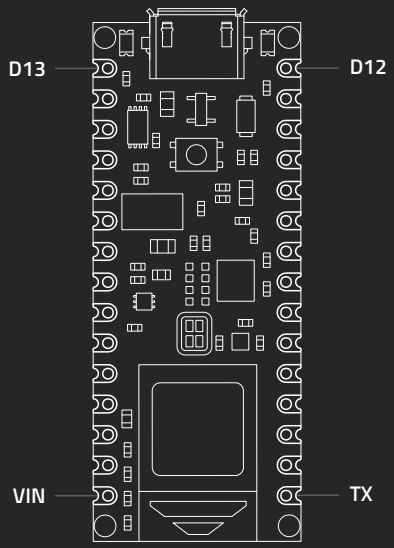
NAME	FUNCTIONS		FUNCTIONS		NAME
AREF	PA03	AREF / AIN[1]			+5V
D15 / A0	PA02	DAC0 / AIN[0]			VIN
D16 / A1	PB02	AIN[10]			+3V3
D17 / A2	PB03	AIN[11]			GND
D18 / A3	PA04	AIN[4]			RESET
D19 / A4	PA05	AIN[5]	TX (SC5)	PB22	D14
D20 / A5	PA06	AIN[6]	RX (SC5)	PB23	D13
D21 / A6	PA07	AIN[7]	SCL (SC2)	PA09	D12
D0	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.


AREF
+5V
D5
D6

	NAME	FUNCTIONS			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	◎

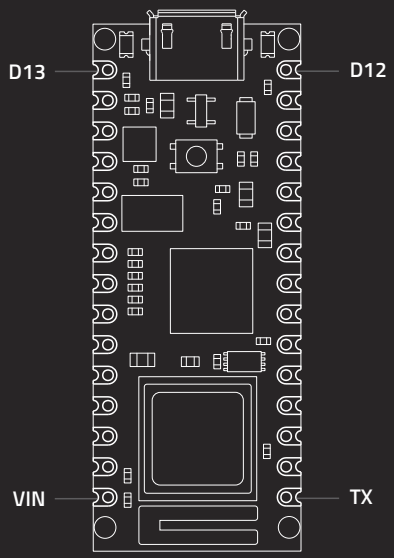
Power: Maximum current per pin is 7mA. Maximum source current is 46mA. Maximum sink current is 65mA per pin group.
Further pinout functions are also available in official datasheet.


D13
D12
VIN
TX

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

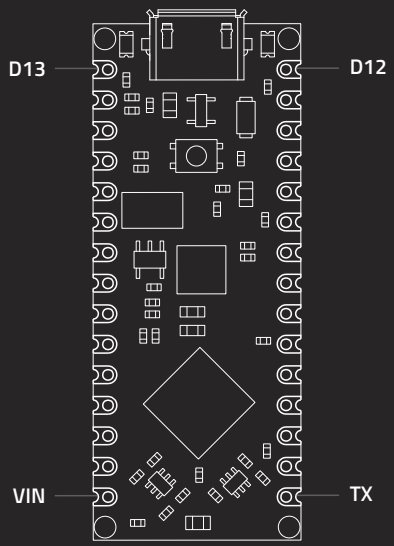
Power: 5-21V input to the board. Maximum output current per pin is 15mA. Maximum input current per pin is 5mA. Maximum external current is 25mA for the sum of all GPIO current and the current being drawn from VDD. Extra pin functions are listed in the official datasheet.


D13
D12
VIN
TX

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

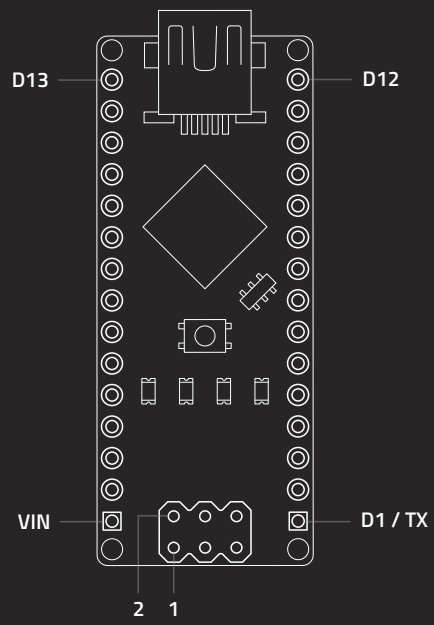
Power: 5-21V input to the board. Maximum current per pin is 7mA. Maximum source current is 46mA. Maximum sink current is 65mA per pin group. Extra pin functions are listed in the official datasheet.

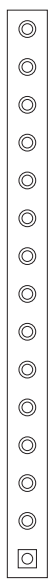

D13
D12
VIN
TX

NAME	FUNCTIONS	
D13	PE2	SCK
+3V3		
AREF	PD7	
D14 / A0	PD3	AIN[3]
D15 / A1	PD2	AIN[2]
D16 / A2	PD1	AIN[1]
D17 / A3	PD0	AIN[0]
D18 / A4	PA2	SDA
D19 / A5	PA3	SCL
D20 / A6	PD4	AIN[4]
D21 / A7	PD5	AIN[5]
+5V		
RESET		
GND		
VIN		

FUNCTIONS		NAME
CIPO (SC1)	PE1	D12
COPI (SC1)	PE0	D11
	PB1	D10
	PB0	D9
	PE3	D8
	PA1	D7
	PF4	D6
	PB2	D5
	PC6	D4
	PF5	D3
	PA0	D2
		GND
		RESET
	PC5	RX
	PC5	TX

Power: 7-21V input to the board. Maximum current per pin 40mA, 20mA recommended. Maximum 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.

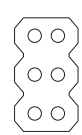

D13
D12
VIN
D1 / TX
2
1



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		

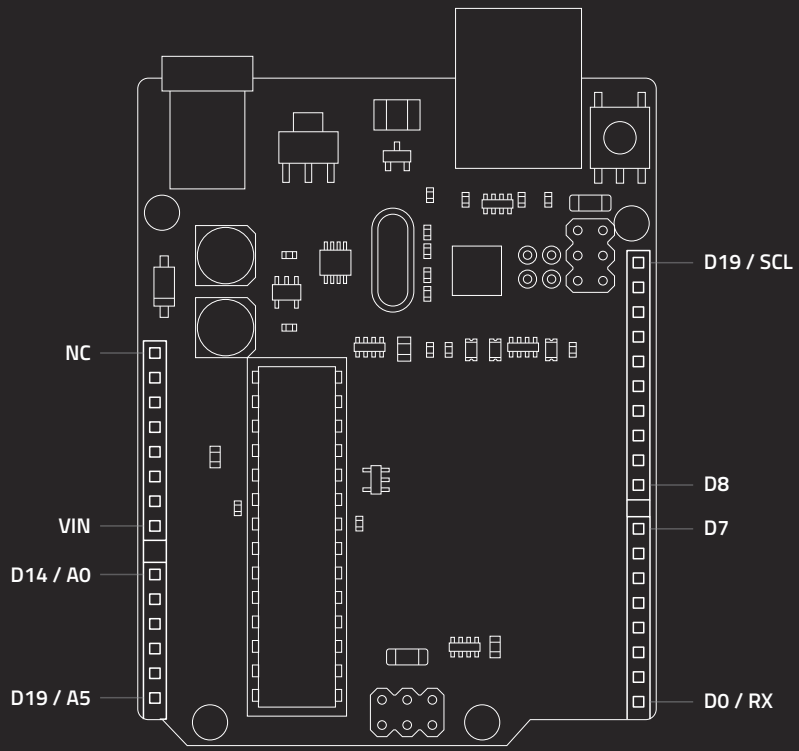
FUNCTIONS		NAME
CIPO	PB4	D12
COPI	PB3	D11
	PB2	D10
	PB1	D9
	PB0	D8
	PD7	D7
	PD6	D6
	PD5	D5
	PD4	D4
	PD3	D3
	PD2	D2
		GND
	PC6	RESET
	PD0	RX
	PD1	TX

FUNCTIONS				#
PCINT[4]	CIPO	PB4	CIPO	1
PCINT[5]	SCK	PB5	SCK	3
			RESET	5



#	FUNCTIONS			
2	+5V			
4	COPI	PB3	COPI	PCINT[3]
6	GND			

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.


NC
VIN
D14 / A0
D19 / A5
D19 / SCL
D8
D7
D0 / RX

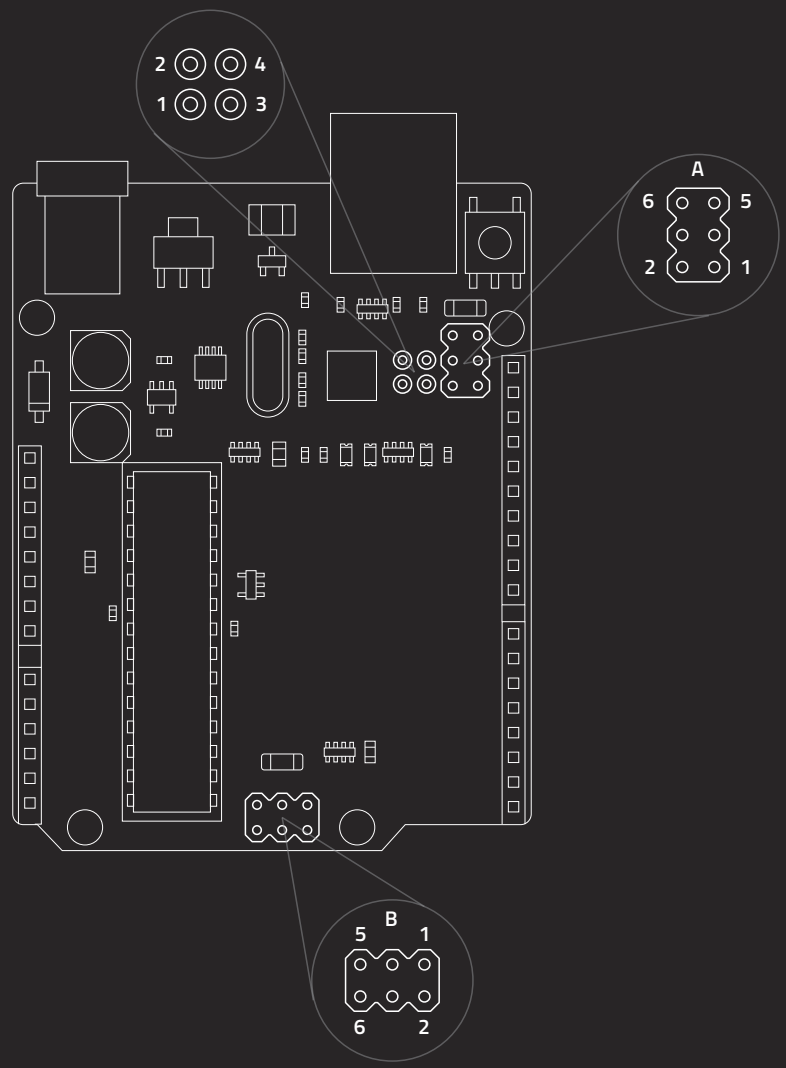
FUNCTIONS		
NC		
IOREF		
RESET	PC6	
+3V3		
+5V		
GND		
GND		
VIN		

D14 / A0	PC0	ADC[0]
D15 / A1	PC1	ADC[1]
D16 / A2	PC2	ADC[2]
D17 / A3	PC4	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. 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.


2
4
1
3
A
6
5
2
1
B
5
1
6
2

ATMEGA16U2	#
PB6	2
PB4	1

#	ATMEGA16U2
4	PB7
3	PB5

ICSP1 / ATMEGA16U2		#
GND		6
UPDI	COPI	4
+5V		2

A

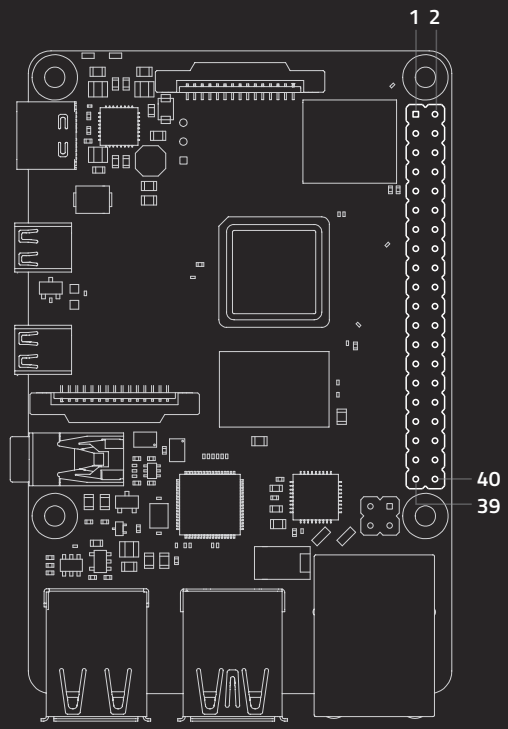
#	ICSP1 / ATMEGA16U2	
5	RESET	
3	SCK	CIPO
1	CIPO	SCK

		ICSP	#
PCINT[4]	PB4	CIPO	1
PCINT[5]	PB5	SCK	3
		RESET	5

B

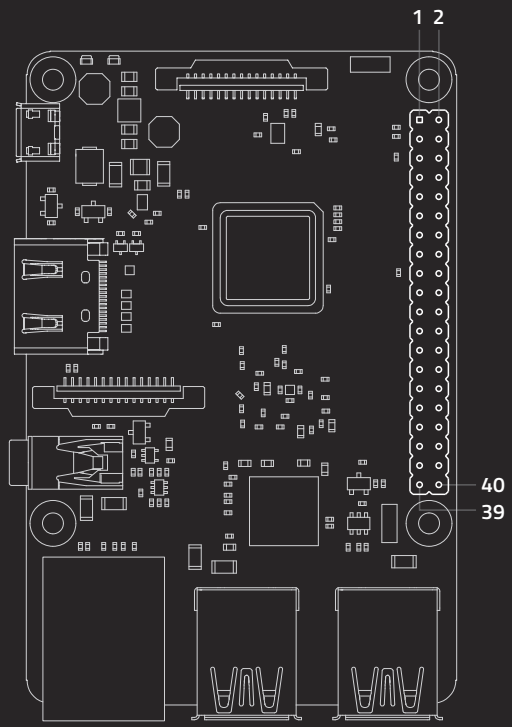
#	ICSP			
2	+5V			
4	COPI	PB3	OC2A	PCINT[3]
6	GND			

Power: 6-20V 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.


1
2
40
39

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 (EEPROM SDA)	27	○	○	28	GPIO 1 (EEPROM SCL)	31
21	BCM 5	29	○	○	30	GROUND	
22	BCM 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.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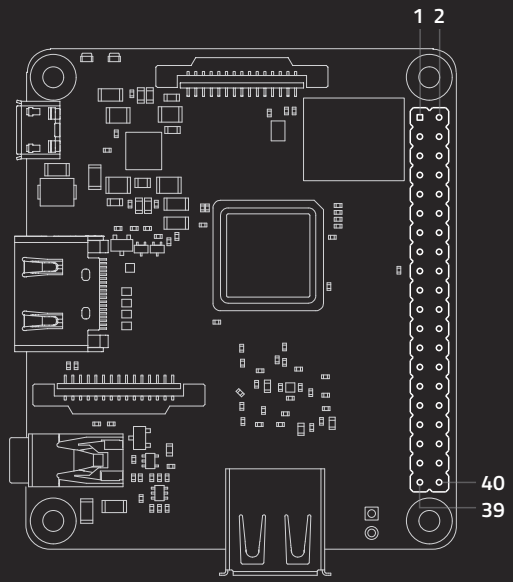
WIRING PI #	MAIN FUNCTIONS	#			#	MAIN FUNCTIONS	WIRING PI #
	3V3 POWER	1	□	○	2	5V POWER	
8	GPIO 2 (I2C1 SDA)	3	○	○	4	5V POWER	
9	GPIO 3 (I2C1 SCL)	5	○	○	6	GROUND	
7	GPIO 4 (GPCLK0)	7	○	○	8	GPIO 14 (UART TX)	15
	GROUND	9	○	○	10	GPIO 15 (UART RX)	16
0	GPIO 17	11	○	○	12	GPIO 18 (PCM CLK)	1
2	GPIO 27	13	○	○	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 (EEPROM SDA)	27	○	○	28	GPIO 1 (EEPROM SCL)	31
21	BCM 5	29	○	○	30	GROUND	
22	BCM 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.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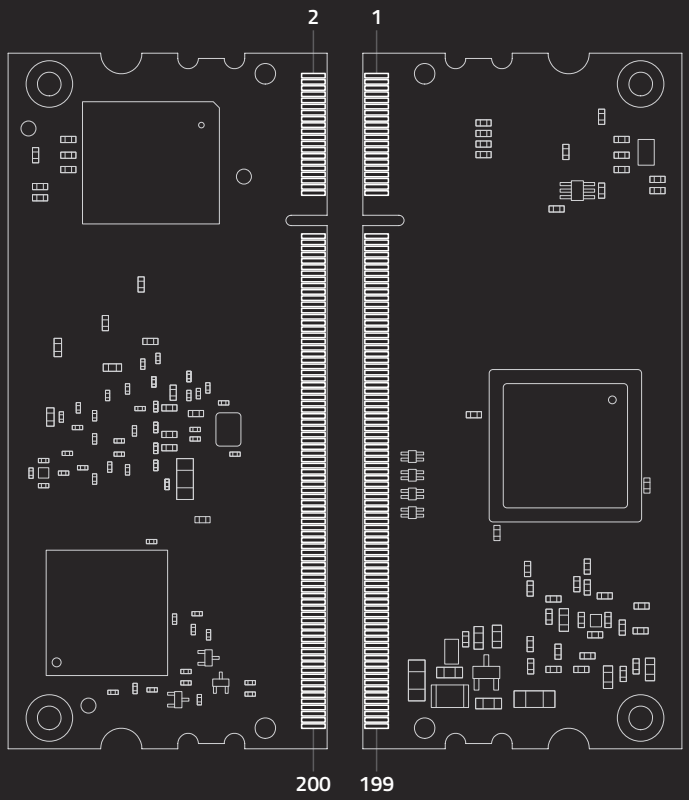
WIRING PI #	MAIN FUNCTIONS	#			#	MAIN FUNCTIONS	WIRING PI #
	3V3 POWER	1	□	○	2	5V POWER	
8	GPIO 2 (I2C1 SDA)	3	○	○	4	5V POWER	
9	GPIO 3 (I2C1 SCL)	5	○	○	6	GROUND	
7	GPIO 4 (GPCLK0)	7	○	○	8	GPIO 14 (UART TX)	15
	GROUND	9	○	○	10	GPIO 15 (UART RX)	16
0	GPIO 17	11	○	○	12	GPIO 18 (PCM CLK)	1
2	GPIO 27	13	○	○	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 (EEPROM SDA)	27	○	○	28	GPIO 1 (EEPROM SCL)	31
21	BCM 5	29	○	○	30	GROUND	
22	BCM 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.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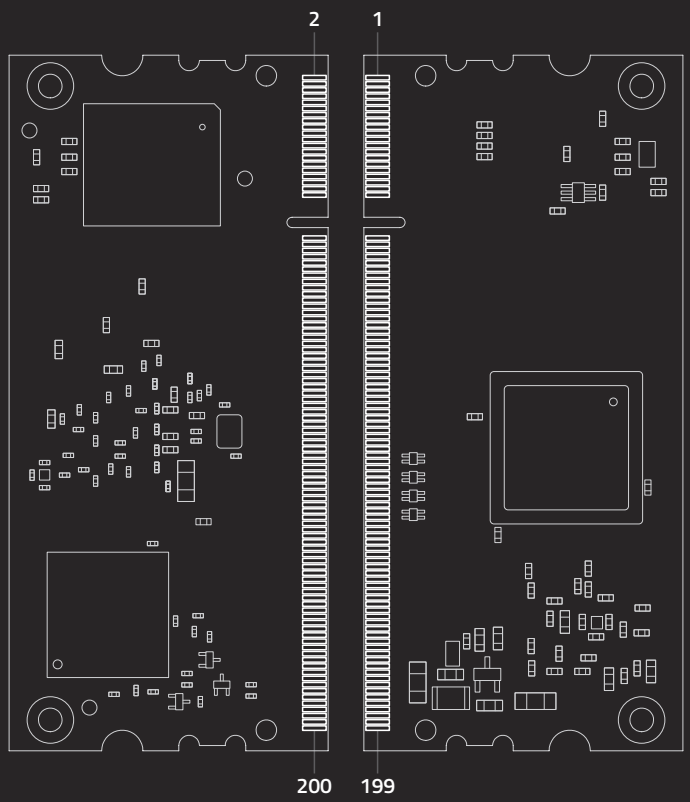
#	NAME	#	NAME	#	NAME	#	NAME
1	GND	26	GND	51	GPIO14	76	GPIO42
2	EMMC_DISABLE_N	27	GPIO8	52	GPIO34	77	GPIO23
3	GPIO0	28	GPIO28	53	GPIO15	78	GPIO43
4	NC	29	GPIO9	54	GPIO35	79	GND
5	GPIO1	30	GPIO29	55	GND	80	GND
6	NC	31	GND	56	GND	81	GPIO24
7	GND	32	GND	57	GPIO16	82	GPIO44
8	GND	33	GPIO10	58	GPIO36	83	GPIO25
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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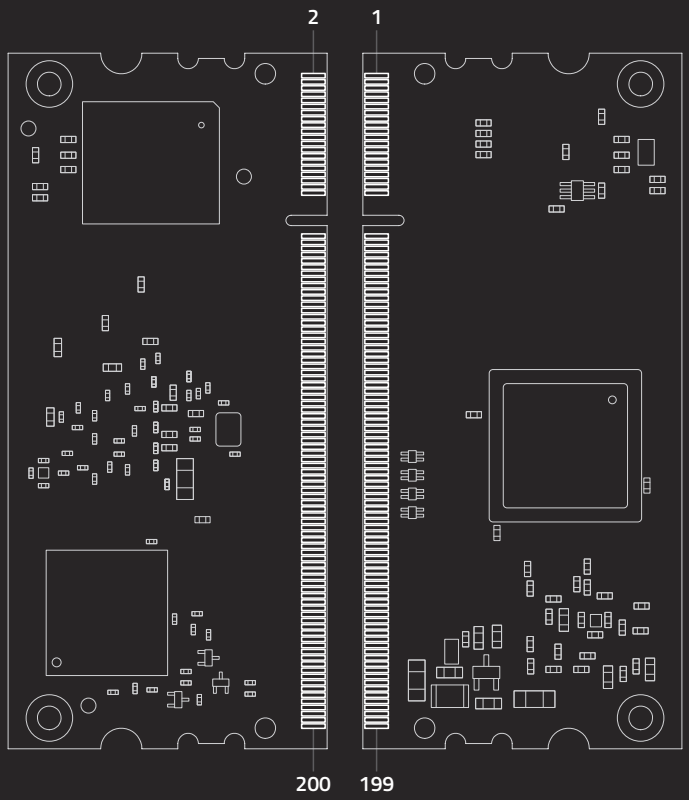
#	NAME	#	NAME	#	NAME	#	NAME
101	DSI0_DP0	126	NC	151	GND	176	VC_TMS
102	DSI1_CN	127	GND	152	GND	177	RUN
103	GND	128	NC	153	CAM1_DP1	178	VC_TDO
104	GND	129	HDMI_D2_N	154	NC	179	VDD_CORE*
105	DSI0_CN	130	NC	155	CAM1_DN1	180	VC_TCK
106	DSI1_DP3	131	HDMI_D2_P	156	NC	181	GND
107	DSI0_CP	132	NC	157	GND	182	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*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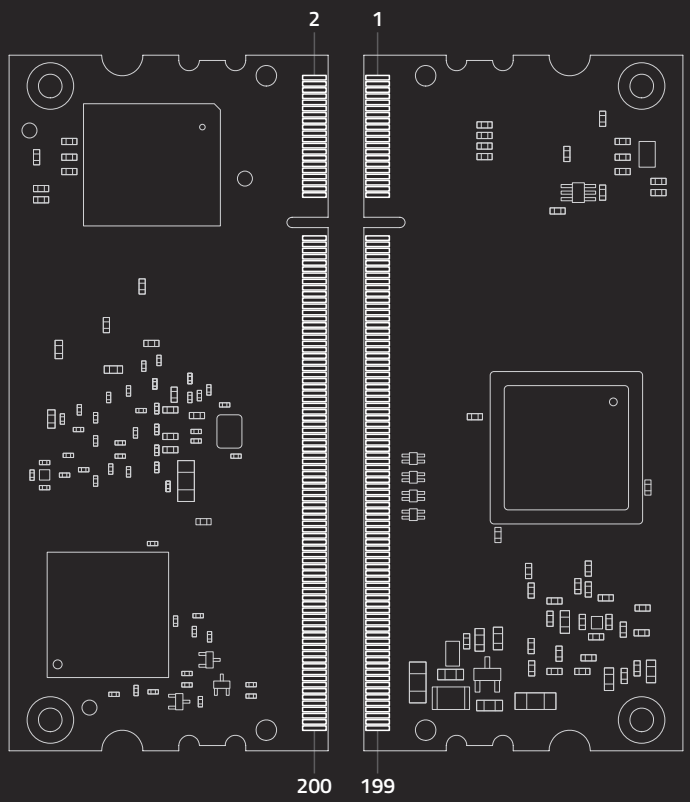
#	NAME	#	NAME	#	NAME	#	NAME
1	GND	26	GND	51	GPIO14	76	GPIO42
2	EMMC_DISABLE_N	27	GPIO8	52	GPIO34	77	GPIO23
3	GPIO0	28	GPIO28	53	GPIO15	78	GPIO43
4	SDX_VDD	29	GPIO9	54	GPIO35	79	GND
5	GPIO1	30	GPIO29	55	GND	80	GND
6	SDX_VDD	31	GND	56	GND	81	GPIO24
7	GND	32	GND	57	GPIO16	82	GPIO44
8	GND	33	GPIO10	58	GPIO36	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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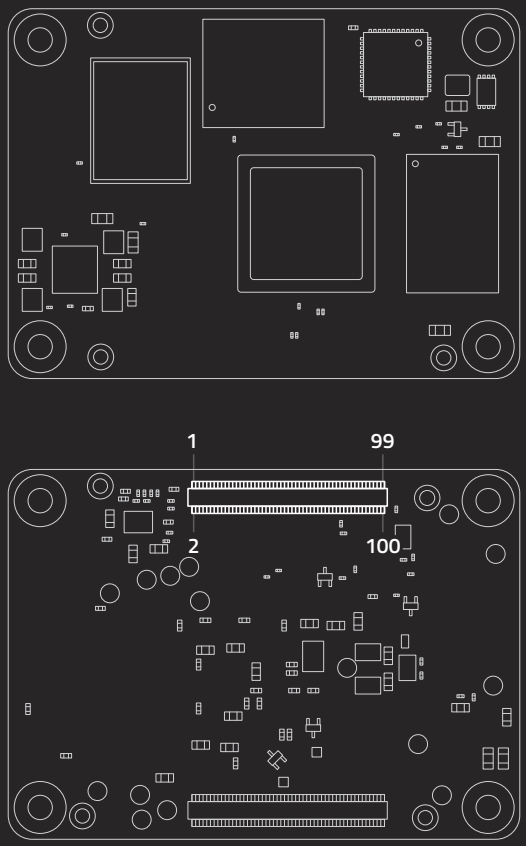
#	NAME	#	NAME	#	NAME	#	NAME
101	DSI0_DP0	126	NC	151	GND	176	VC_TMS
102	DSI1_CN	127	GND	152	GND	177	RUN
103	GND	128	NC	153	CAM1_DP1	178	VC_TDO
104	GND	129	HDMI_D2_N	154	NC	179	VDD_CORE*
105	DSI0_CN	130	NC	155	CAM1_DN1	180	VC_TCK
106	DSI1_DP3	131	HDMI_D2_P	156	NC	181	GND
107	DSI0_CP	132	NC	157	GND	182	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*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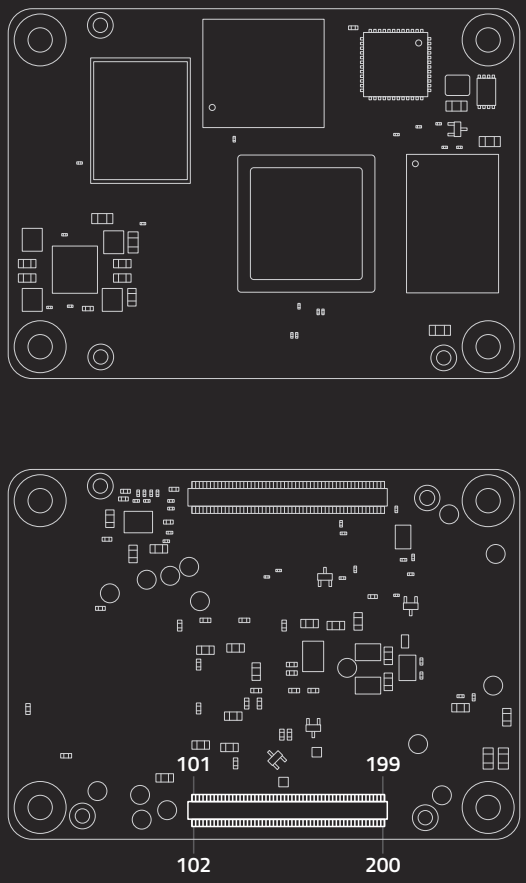
#	NAME	#	NAME	#	NAME	#	NAME
1	GND	26	GPIO19	51	GPIO15	76	RESERVED
2	GND	27	GPIO20	52	GND	77	+5V (INPUT)
3	ETHERNET_PAIR3_P	28	GPIO13	53	GND	78	GPIO_VREF
4	ETHERNET_PAIR1_P	29	GPIO16	54	GPIO4	79	+5V (INPUT)
5	ETHERNET_PAIR3_N	30	GPIO6	55	GPIO14	80	SCL0
6	ETHERNET_PAIR1_N	31	GPIO12	56	GPIO3	81	+5V (INPUT)
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	GPIO18	74	GND	99	GLOBAL_EN
25	GPIO21	50	GPIO17	75	SD_PWR_ON	100	NEXTRST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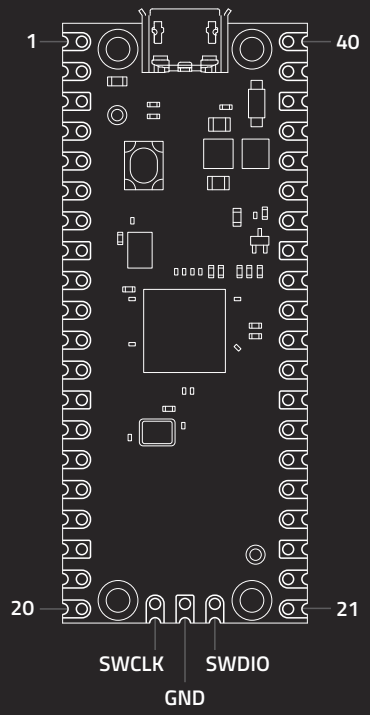
#	NAME	#	NAME	#	NAME	#	NAME
101	USB_OTG_ID	126	GND	151	HDMI0_CEC	176	HDMI0_TX1_P
102	PCIE_CLK_NREQ	127	CAM1_C_N	152	HDMI1_TX1_P	177	DSI1_D0_P
103	USB_N	128	CAM0_D0_N	153	HDMI0_HOTPLUT	178	HDMI0_TX1_N
104	RESERVED	129	CAM1_C_P	154	HDMI1_TX1_N	179	GND
105	USB_P	130	CAM0_D0_P	155	GND	180	GND
106	RESERVED	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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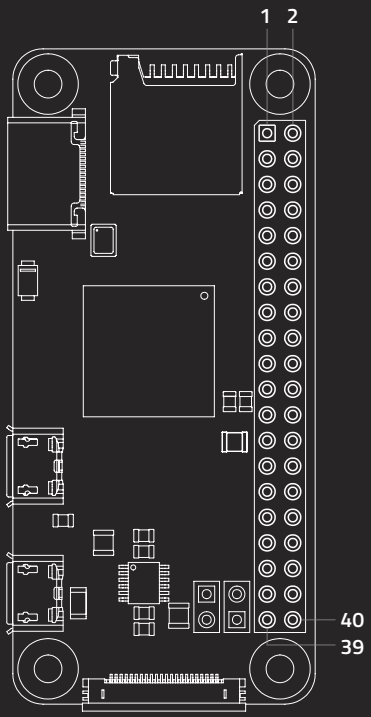
SWCLK
SWDIO
GND

#	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			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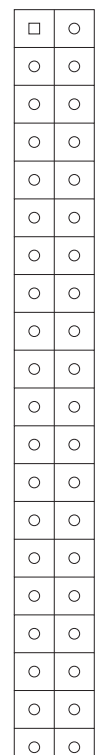
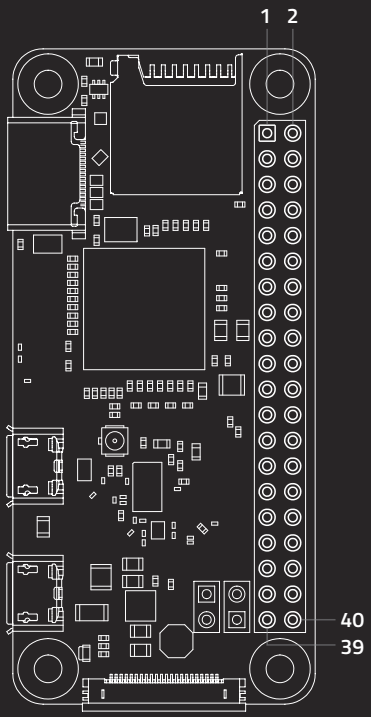
WIRING PI #	MAIN FUNCTIONS	#
	3V3 POWER	1
8	GPIO 2 (I2C1 SDA)	3
9	GPIO 3 (I2C1 SCL)	5
7	GPIO 4 (GPCLK0)	7
	GROUND	9
0	GPIO 17	11
2	GPIO 27	13
3	GPIO 22	15
	3V3 POWER	17
12	GPIO 10 (SPI0 MOSI)	19
13	GPIO 9 (SPI0 MISO)	21
14	GPIO 11 (SPI0 SCLK)	23
	GROUND	25
30	GPIO 0 (EEPROM SDA)	27
21	BCM 5	29
22	BCM 6	31
23	GPIO 13 (PWM1)	33
24	GPIO 19 (PCM FS)	35
25	GPIO 26	37
	GROUND	39

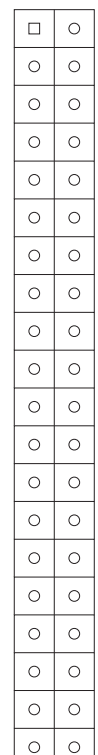


#	MAIN FUNCTIONS	WIRING PI #
2	5V POWER	
4	5V POWER	
6	GROUND	
8	GPIO 14 (UART TX)	15
10	GPIO 15 (UART RX)	16
12	GPIO 18 (PCM CLK)	1
14	GROUND	
16	GPIO 23	4
18	GPIO 24	5
20	GROUND	
22	GPIO 25	6
24	GPIO 8 (SPI0 CE0)	10
26	GPIO 7 (SPI0 CE1)	11
28	GPIO 1 (EEPROM SCL)	31
30	GROUND	
32	GPIO 12 (PWM0)	26
34	GROUND	
36	GPIO 16	27
38	GPIO 20 (PCM DIN)	28
40	GPIO 21 (PCM DOUT)	29

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

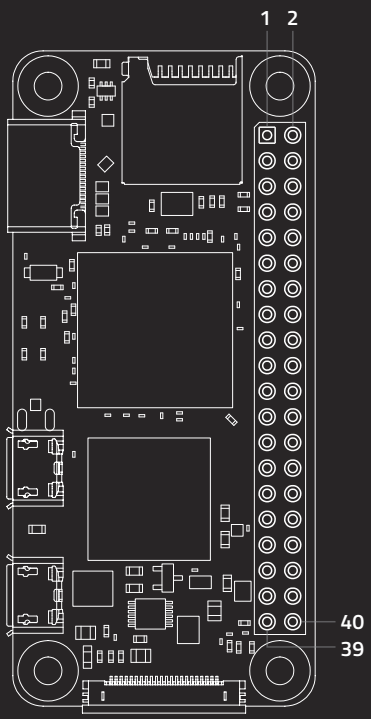

1
2
40
39

WIRING PI #	MAIN FUNCTIONS	#
	3V3 POWER	1
8	GPIO 2 (I2C1 SDA)	3
9	GPIO 3 (I2C1 SCL)	5
7	GPIO 4 (GPCLK0)	7
	GROUND	9
0	GPIO 17	11
2	GPIO 27	13
3	GPIO 22	15
	3V3 POWER	17
12	GPIO 10 (SPI0 MOSI)	19
13	GPIO 9 (SPI0 MISO)	21
14	GPIO 11 (SPI0 SCLK)	23
	GROUND	25
30	GPIO 0 (EEPROM SDA)	27
21	BCM 5	29
22	BCM 6	31
23	GPIO 13 (PWM1)	33
24	GPIO 19 (PCM FS)	35
25	GPIO 26	37
	GROUND	39



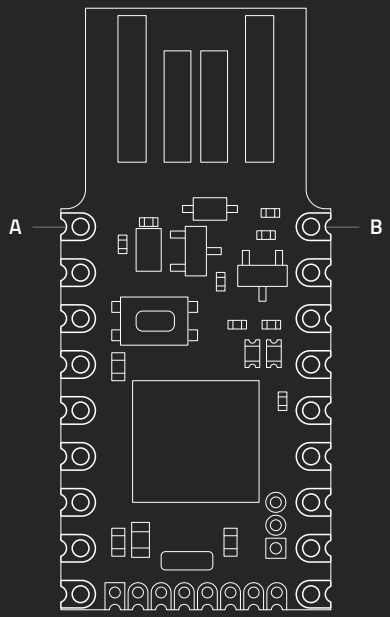
#	MAIN FUNCTIONS	WIRING PI #
2	5V POWER	
4	5V POWER	
6	GROUND	
8	GPIO 14 (UART TX)	15
10	GPIO 15 (UART RX)	16
12	GPIO 18 (PCM CLK)	1
14	GROUND	
16	GPIO 23	4
18	GPIO 24	5
20	GROUND	
22	GPIO 25	6
24	GPIO 8 (SPI0 CE0)	10
26	GPIO 7 (SPI0 CE1)	11
28	GPIO 1 (EEPROM SCL)	31
30	GROUND	
32	GPIO 12 (PWM0)	26
34	GROUND	
36	GPIO 16	27
38	GPIO 20 (PCM DIN)	28
40	GPIO 21 (PCM DOUT)	29

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


1
2
40
39

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 (EEPROM SDA)	27	○	○	28	GPIO 1 (EEPROM SCL)	31
21	BCM 5	29	○	○	30	GROUND	
22	BCM 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.

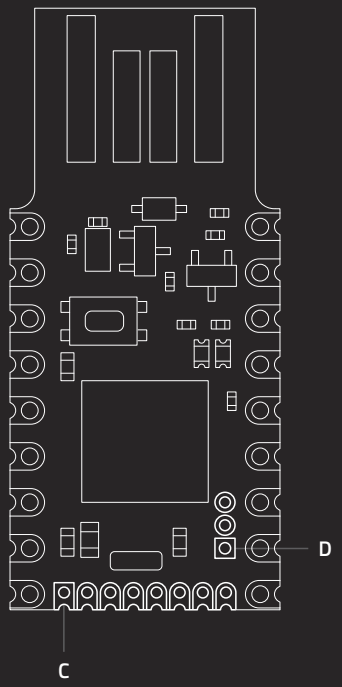

A
B

A

NAME				
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	

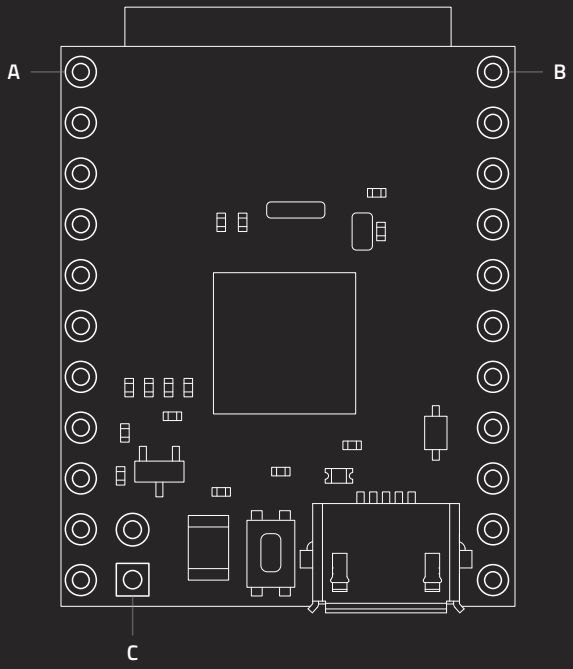
B

NAME			
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


D
C

C	NAME			
	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_RX
	A4	ADC1_IN4	USART2_CK	

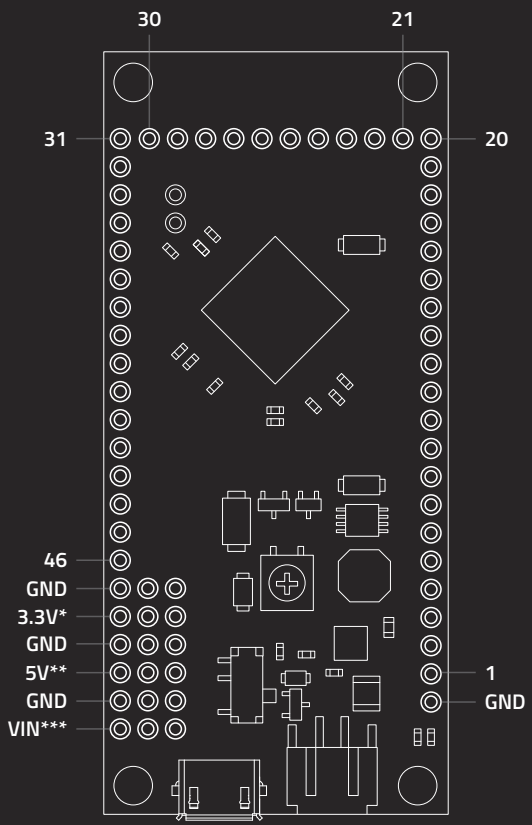
D	NAME
□	GND
○	3.3V
○	VBAT


A
B
C

A	NAME			
○	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)	

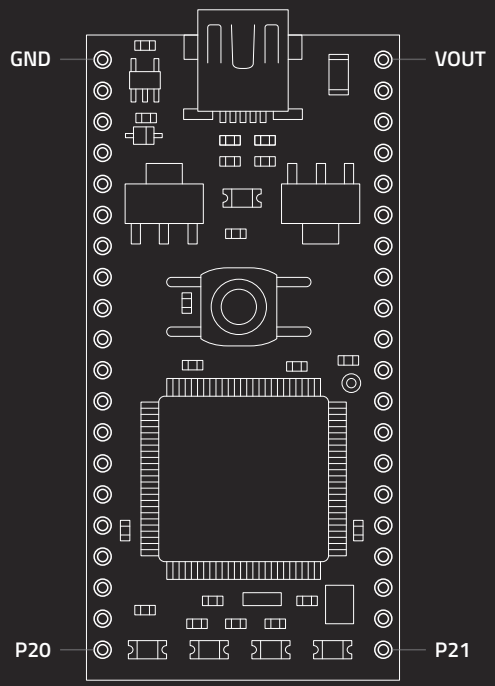
B	NAME				
○	B0	ADC1_IN8	PWM (TIM1_CH2N, TIM3_CH3)		
○	B9	I2C1_SDA	PWM (TIM11_CH1, TIM4_CH4)		
○	B8	I2C1_SCL	PWM (TIM10_CH1, TIM4_CH3)		
○	B7	I2C1_SDA	PWM (TIM4_CH2)	USART1_RX	
○	B6	I2C1_SCL	PWM (TIM4_CH1)	USART1_TX	
○	B5	PWM (TIM3_CH2)	SPI1_MOSI	SPI3_MOSI	
○	B4	I2C3_SDA	PWM (TIM3_CH1)	SPI1_MISO	SPI3_MISO
○	B3	I2C2_SDA	PWM (TIM2_CH2)	SPI3_SCK	SPI1_SCK
○	3.3	*(3.3v output from the on-board voltage regulator)*			
○	VUSB	*(This pin is connected directly to USB 5V. Only use to power the Espruino if micro USB is unplugged)*			
○	GND				

C	NAME			
○	A10	PWN (TIM1_CH3)	USART1_RX	
□	A8	I2C3_SCL	PWM (TIM1_CH1)	USART1_CK


30
21
31
20
46
GND
3.3V*
GND
5V**
GND
VIN***
1
GND

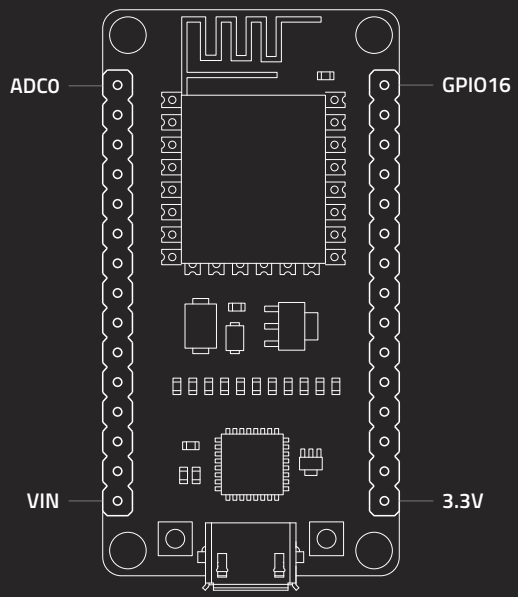
#	PIC	FUNCTIONS	#	PIC	FUNCTIONS
1	31	SDA2/RP10/GD4/CN17/RF4	24	1	VSYNC/CN63/RE5
2	32	SCL2/RP17/GD5/CN18/RF5	25	2	GD12/SCL3/CN64/RE6
3	42	RTCC/DMLN/RP2/CN53/RD8	26	3	GD13/SDA3/CN65/RE7
4	43	DPLN/SDA1/RP4/GD8/CN54/RD9	27	4	C1IND/RP21/CN8/RG6
5	44	SCL1/RP3/GD6/CN55/RD10	28	5	C1INC/RP26/CN9/RG7
6	45	RP12/GD7/CN56/RD11	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.*

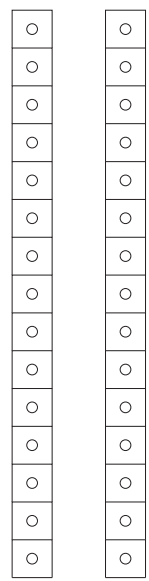

GND
VOUT
P20
P21

	NAME		
○	GND	0V	
○	VIN	4.5V - 9.0V IN	
○	VB		
○	NR		
○	P5	SPI (MOSI)	
○	P6	SPI (MISO)	
○	P7	SPI (SCK)	
○	P8		
○	P9	SERIAL (TX)	I2C (SDA)
○	P10	SERIAL (RX)	I2C (SCL)
○	P11		SPI (MOSI)
○	P12		SPI (MISO)
○	P13	SERIAL (TX)	SPI (SCK)
○	P14	SERIAL (RX)	
○	P15	ANALOGIN	
○	P16	ANALOGIN	
○	P17	ANALOGIN	
○	P18	ANALOGIN	ANALOGOUT
○	P19	ANALOGIN	
○	P20	ANALOGIN	

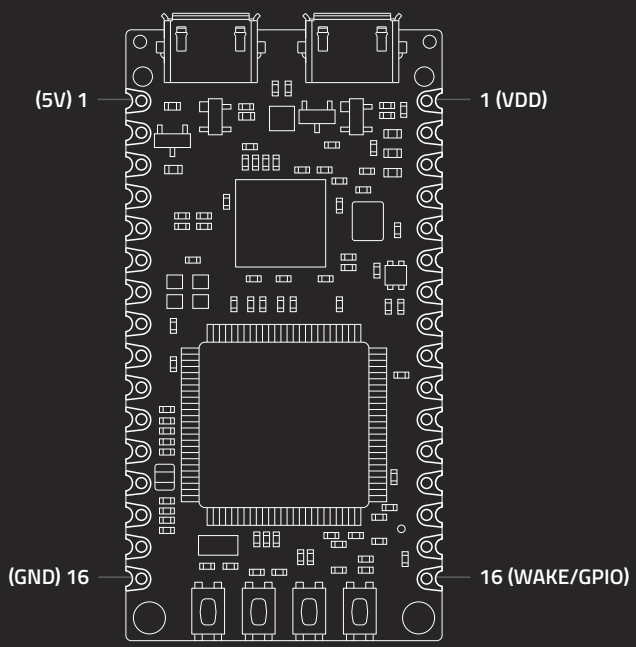
	NAME		
○	VOUT	3.3V REGULATED OUT	
○	VU	5.0V USB OUT	
○	IF-		
○	IF+		
○	RD-	ETHERNET	
○	RD+	ETHERNET	
○	TD-	ETHERNET	
○	TD+	ETHERNET	
○	D-	USB	
○	D+	USB	
○	P30	CAN (RD)	
○	P29	CAN (TD)	
○	P28	SERIAL (TX)	I2C (SDA)
○	P27	SERIAL (RX)	I2C (SCL)
○	P26	PWMOUT	
○	P25	PWMOUT	
○	P24	PWMOUT	
○	P23	PWMOUT	
○	P22	PWMOUT	
○	P21	PWMOUT	


ADC0
GPIO16
VIN
3.3V

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

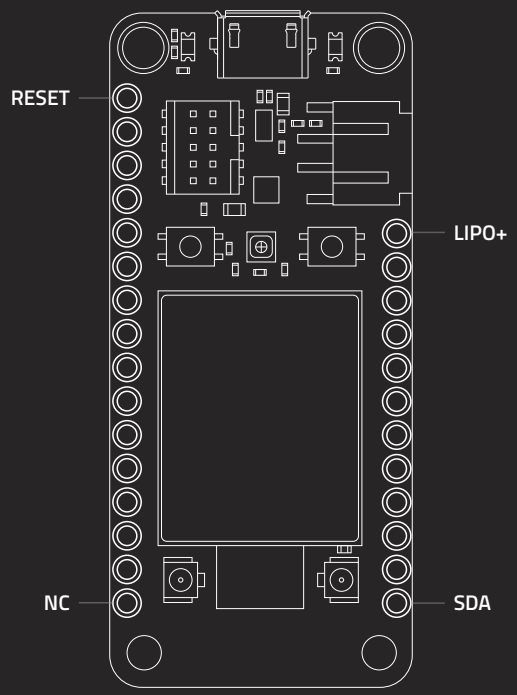


NAME		
GPIO16	USER	WAKE
GPIO5		
GPIO4		
GPIO0	FLASH	
GPIO2	TXD1	
3.3V		
GND		
GPIO14		HSCLK
GPIO12		HMISO
GPIO13	RXD2	HMOSI
GPIO15	TXD2	HCS
GPIO3	RXD0	
GPIO1	TXD0	
GND		
3.3V		


(5V) 1
1 (VDD)
(GND) 16
16 (WAKE/GPIO)

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

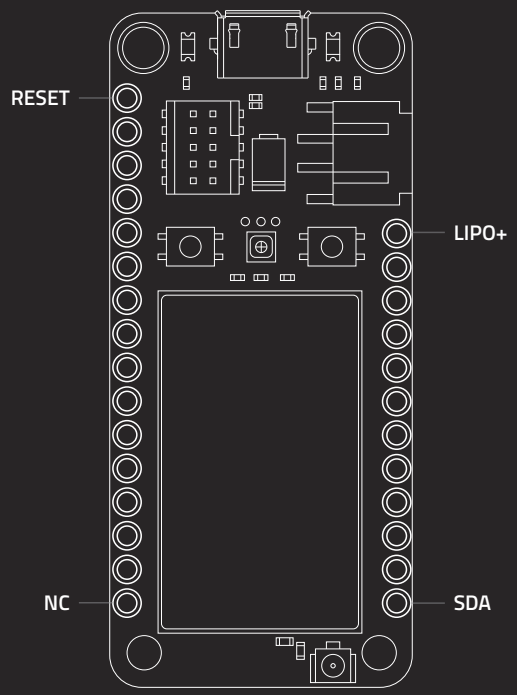
#	NAME	
1	VDD	
2	LED R	PIO_4
3	LED G	PIO1_7
4	LED B	PIO1_6
5	FC4_SCL	PIO1_20
6	FC4_SDA	PIO1_21
7	GPIO	PI01_7
8	GPIO	PIO1_0
9	GPIO	PIO0_31
10	SSEL1	PIO1_1
11	SCK	PIO1_2
12	MISO	PIO1_3
13	MOSI	PIO0_26
14	GPIO	PIO1_27
15	GPIO	PIO1_26
16	WAKE/GPIO	


RESET
LIPO+
NC
SDA

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

	NAME				
○	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

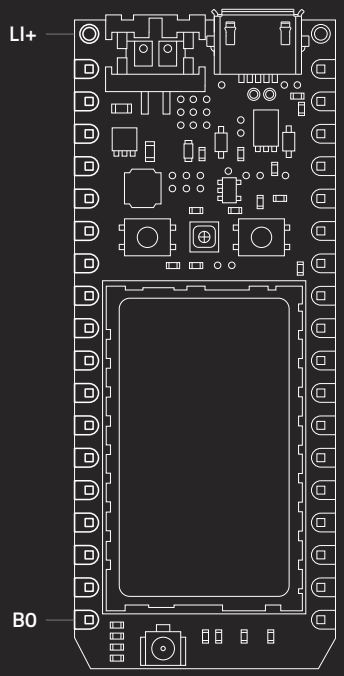
**3.3VDC / 1000mA Max Output. **Connected to + pin of LiPo connector. ***Connect to GND to disable device. ****Connected to USB power pin (5VDC typical)*


RESET
LIPO+
NC
SDA

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

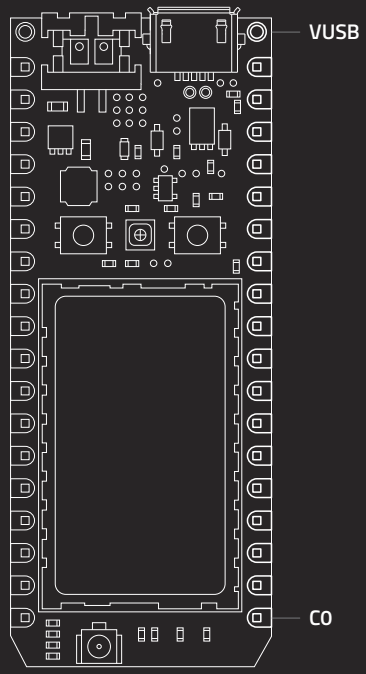
	NAME				
○	LIPO+**				
○	ENABLE***				
○	VBUS****				
○				PWM 1	P1.03
○				PWM 0	P1.12
○				PWM 1	P1.11
○				PWM 1	P1.10
○			SPI1_MISO	PWM 1	P1.08
○		UART1_CTS	SPI1_MOSI	PWM 3	P1.02
○		UART1_RTS	SPI1_SCK	PWM 3	P1.01
○	SCL				P0.27
○	SDA				P0.26

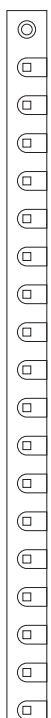
**3.3VDC / 1000mA Max Output. **Connected to + pin of LiPo connector. ***Connect to GND to disable device. ****Connected to USB power pin (5VDC typical)*


LI+
B0

NAME				
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

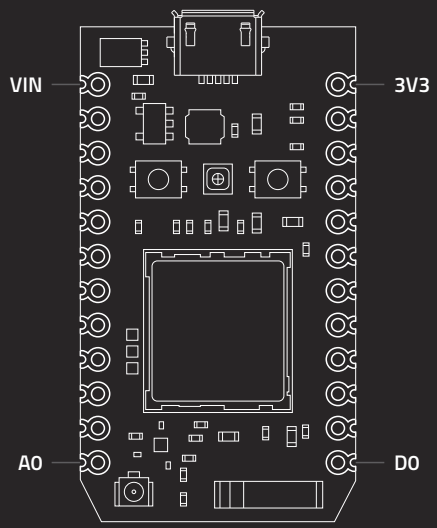
**Connected to the positive terminal of the LiPo battery **3.9VDC to 12VDC Input*


VUSB
C0



NAME						
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

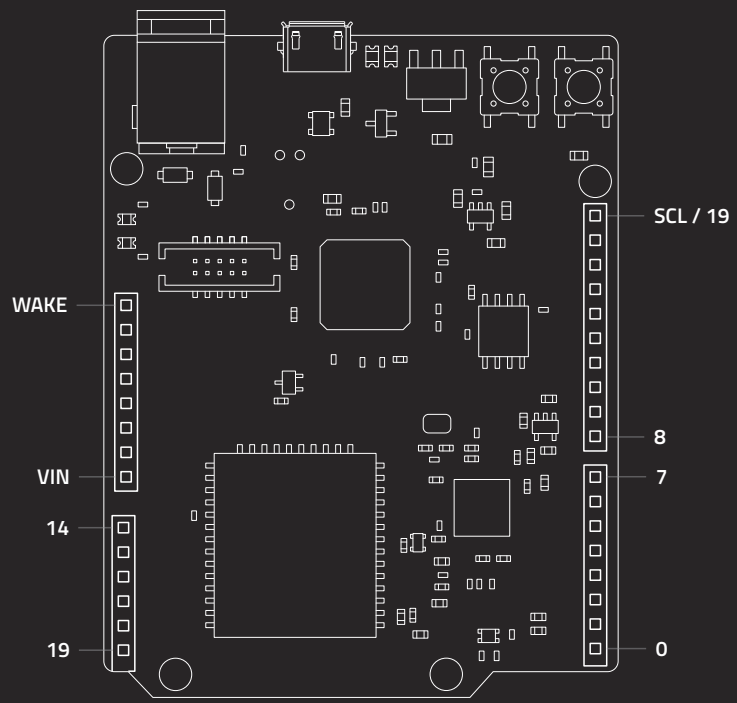
**Connected to USB VCC (+5v Typical) **3v3DC/800mA max output ***Internally jumpered to 3V3*


VIN
3V3
A0
D0

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).*

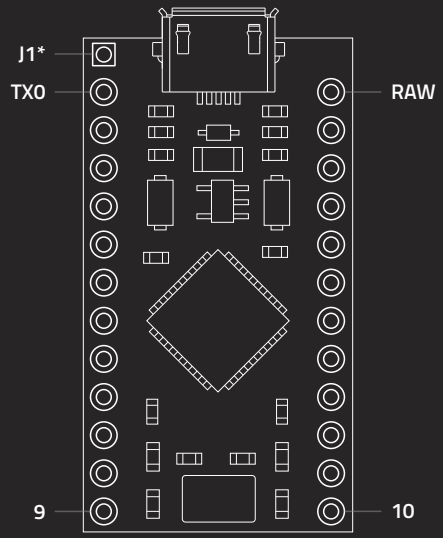

WAKE
VIN
14
19
SCL / 19
8
7
0

NAME
DIGITAL WAKE
IOREF = 3.3V
RESET
3.3V OUT
5V OUT
GND
GND
VIN (7-12V)

NAME	FUNCTIONS				
14	NO CONNECT				
15	GPIO 9	INT 9			SPI
16	GPIO 10	INT 10	PWM		SPI
17	GPIO 11	INT 11	PWM		
18	GPIO 12	INT 12	PWM	I2C	
19	GPIO 13	INT 13	PWM	I2C	

FUNCTIONS					NAME
	I2C	PWM	INT 21	GPIO 13	SCL / 19
	I2C	PWM	INT 20	GPIO 12	SDA / 18
				NO CONNECT	AREF
				GROUND	GND
SPI			INT 13	GPIO 5	13
SPI			INT 12	GPIO 4	12
SPI		PWM	INT 11	GPIO 3	11
SPI		PWM	INT 10	GPIO 2	10
		PWM	INT 9	GPIO 1	9
		PWM			8

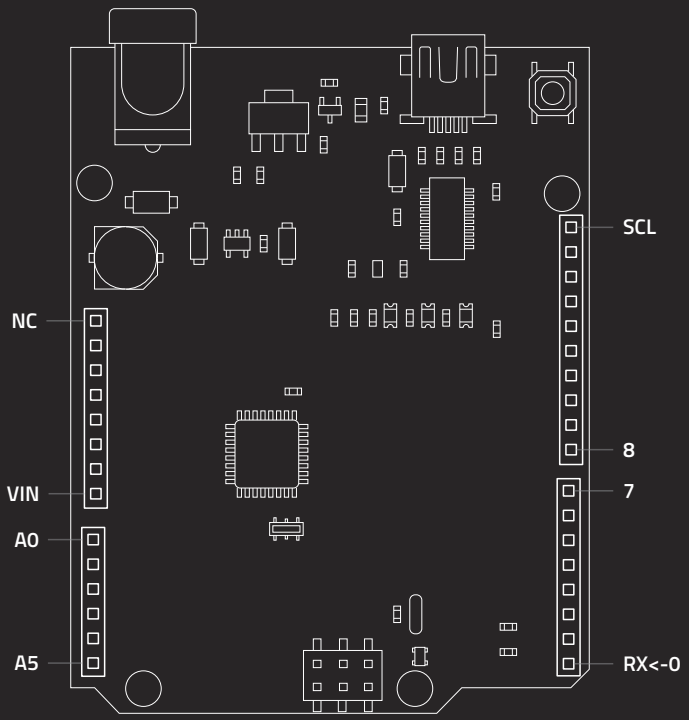
FUNCTIONS				NAME
SERIAL		INT 31	GPIO 23	7
	PWM	INT 30	GPIO 22	6
	PWM	INT 29	GPIO 21	5
	PWM	INT 28	GPIO 20	4
	PWM	INT 27	GPIO 19	3
SERIAL		INT 26	GPIO 18	2
SERIAL		INT 25	GPIO 17	TX0>1
SERIAL		INT 24	GPIO 16	RX<0


J1*
TX0
RAW
9
10

NAME	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	OC3A	OCA4		
6	D6/A7	PD7	ADC10	10-BIT	OC4D	TO	
7	D7	PE6	INT6	AIN0			
8	D8/A8	PB4	ADC11	PCINT4			
9	D9/A9	PB5	ADC12	16-BIT	PCINT5	OC1A	OC4B

NAME	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	A0	PF7	ADC7	TDI			
15	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	OC4B

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


SCL
NC
8
VIN
7
A0
A5
RX<-0

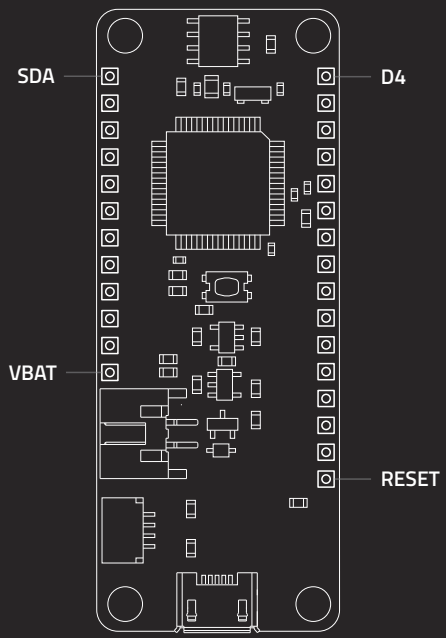
NAME	FUNCTIONS		
NC	NC		
IOREF	IOREF		
RST	RESET	PC6	PCINT14
3.3V	3.3V		
5V	5V		
GND	GND		
GND	GND		
VIN	VIN		

NAME	FUNCTIONS				
A0	A0/D14	PC0	ADC0	PCINT8	
A1	A1/D15	PC1	ADC1	PCINT9	
A2	A2/D16	PC2	ADC2	PCINT10	
A3	A3/D17	PC3	ADC3	PCINT11	
A4	A4/D18	PC4	ADC4	SDA	PCINT12
A5	A5/D19	PC5	ADC5	SCL	PCINT13

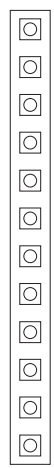
FUNCTIONS						NAME
	PCINT13	SCL	ADC5	PC5	A5/D19	SCL
	PCINT12	SDA	ADC4	PC4	A4/D18	SDA
					AREF	AREF
					GND	GND
	LED	PCINT5	SCK	PB5	D13	13
		PCINT4	MISO	PB4	D12	12
OC2A	PCINT3	MOSI	8-BIT	PB3	D11	11
OC1B	PCINT2	SS	8-BIT	PB2	D10	10
	OC1A	PCINT1	8-BIT	PB1	D9	9
	CLKO	ICP1	PCINT0	PB0	D8	8

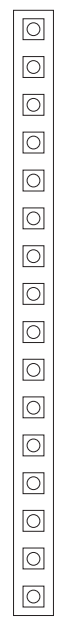
FUNCTIONS						NAME
		IN1	PCINT23	PD7	D7	7
AIN0	OC0A	PCINT22	8-BIT	PD6	D6	6
T1	OC0B	PCINT21	8-BIT	PD5	D5	5
	XCK	T0	PCINT20	PD4	D4	4
OC2B	PCINT19	INT1	8-BIT	PD3	D3	3
		PCINT18	INT0	PD2	D2	2
		PCINT17	TXD	PD1	D1	TX0>1
		PCINT16	RXD	PD0	D0	RX<0

Power: VIN: 7-15V. VCC: 5V. Max Current: 800mA on 5V, 150mA on 3.3v


SDA
D4
VBAT
RESET

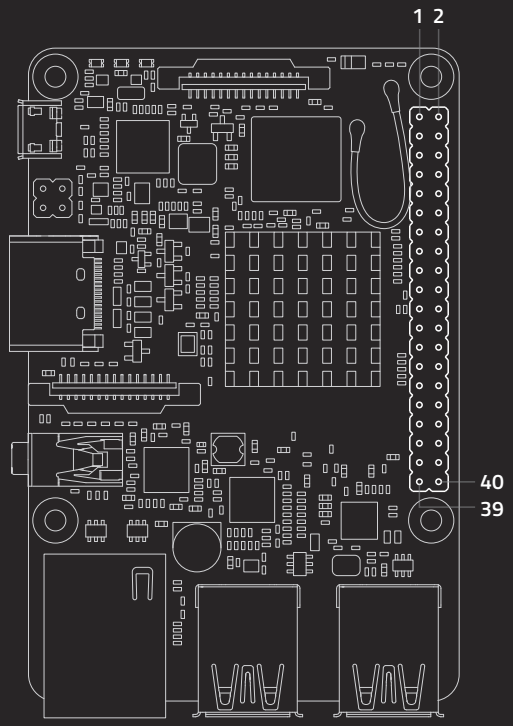
FUNCTIONS					NAME
3:0/5:1	SDA	INT6	PA22	D20	SDA
3:1/5:0	SCL	INT7	PA23	D21	SCL
	2:3/4:3	INT15	PA15	D5	D5
	5:2/3:2	INT4	PA20	D6	D6
0:3	INT7	AIN7	PA07	D9	D9
	1:2/3:2	INT2	PA18	D10	D10
	1:0/3:1	INT0	PA16	D11	D11
	1:3/3:3	INT3	PA19	D12	D12
LED	1:1/3:0	INT1	PA17	D13	D13
				VUSB	VUSB
				VREG	EN
				VBAT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



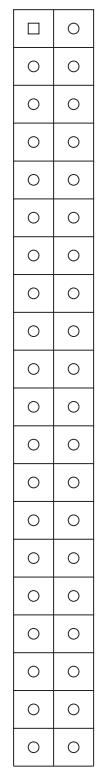


NAME	FUNCTIONS					
D4	D4	PA06	AIN6	INT6	0:2	VREFC
D1	D1	PA12	INT12	RX	2:0/4:1	
D0	D0	PA13	INT13	TX	2:1/4:0	
MISO	D22	PA11	INT11	MISO	4:3	
MOSI	D23	PB12	INT12	MOSI	4:0	
SCK	D24	PB13	INT13	SCK	4:1	
A5	A5	PB02	AIN14	INT2	5:0	
A4	A4	PA05	AIN5	INT5	0:1	DAC1
A3	A3	PA04	AIN4	INT4	0:0	VREFB
A2	A2	PB09	AIN3	INT9	4:1	
A1	A1	PB08	AIN2	INT8	4:0	
A0	A0	PA02	AIN0	INT2	DAC0	
GND	GND					
NC	NC					
3.3V	3.3V					
RESET	RST					

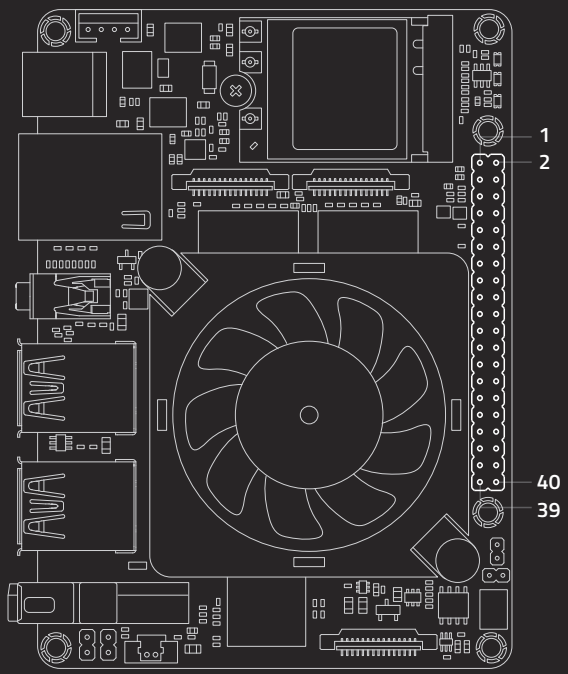
Power. Vin: 2.5 - 6V. VCC: 3.3V @ 600mA. JST: Single Cell LiPo Battery charging via USB.


1
2
40
39

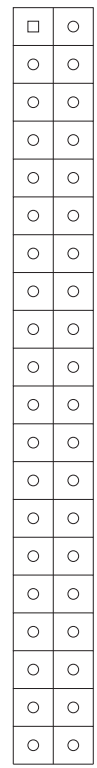
WPI	GPIO.ASUS	NAME	#
		VCC3.3V_IO	1
8	252	GP8A4_I2C1_SDA	3
9	253	GP8A5_I2C1_SCL	5
7	17	GP0C1_CLKOUT	7
		GROUND	9
0	164	GP5B4_SPI0_TXD_UART4TX	11
2	166	GP5B6_SPI0_TXD_UART4TX	13
3	167	GP5B7_SPI0_RXD_UART4RX	15
		VCC33_IO	17
12	257	GP8B1_SPI2TXD	19
13	256	GP8B0_SPI2RXD	21
14	254	GP8A6_SPI2CLK	23
		GROUND	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	GPIO.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

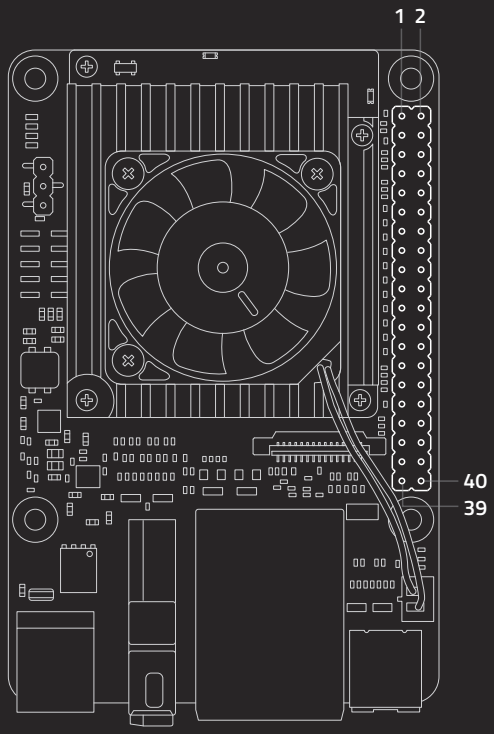

1
2
40
39

NAME	#
VCC3.3V_IO	1
GPIO2_B1_I2C6_SDA	3
GPIO2_B2/I2C6_SCL	5
GPIO2_D1_CLKOUT	7
GND	9
GPIO2_C3/UART0_RTSN	11
GPIO2_C5/SPI5_TXD	13
GPIO2_C4/SPI5_RXD	15
VCC3.3_IO	17
GPIO1_B0/SPI1_TXD/UART4_TX	19
GPIO1_A7/SPI1_RXD/UART4_RX	21
GPIO1_B1/SPI1_CLK	23
GND	25
GPIO2_A7/I2C7_SDA	27
GPIO3_D6/I2S0_SDI3SDO1	29
GPIO3_D5/I2S0_SDI2SDO2	31
GPIO4_C6/PWM1	33
GPIO3_D1/1S20_LRCK	35
GPIO4_C5/SPDIF_TX	37
GND	39



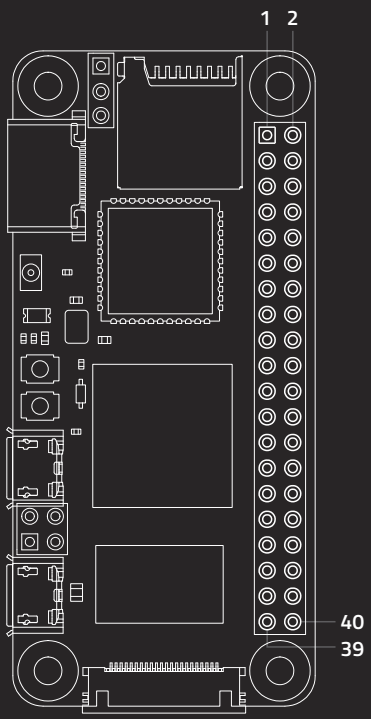
#	NAME
2	VCC5V
4	VCC5V
6	GND
8	GPIO2_C1/UART0_TX
10	GPIO2_C0/UART0_RX
12	GPIO3_D0/I2S0_SCLK
14	GND
16	GPIO2_C6/SPI5_CLK
18	GPIO2_C7/SPI5_CSN0
20	GND
22	GPIO3_D4/I2S0_SDISDO3
24	GPIO1_B2/SPI1_CSN0
26	GPIO0_A6/PWM3A_IR
28	GPIO2_B0/I2C7_SCL
30	GND
32	GPIO4_C2/PWM0
34	GND
36	GPIO2_C2/UART0_CTSN
38	GPIO3_D3/I2S0_SDI0
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.

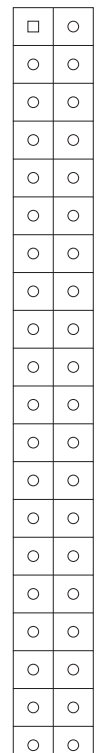

1 2
40
39

SYSFS PATH	NAME	#			#	NAME	SYSFS PATH
	VCC3.3V_IO	1	□	○	2	VCC5V	
/dev/i2c-1	GPIO145_I2C2_SDA	3	○	○	4	VCC5V	
/dev/i2c-1	GPIO144_I2C2_SCL	5	○	○	6	GND	
/dev/ttymxc2	GPIO155_UART3_TXD	7	○	○	8	GPIO151_UART1_TXD	/dev/ttymxc0
	GND	9	○	○	10	GPIO150_UART1_RXD	/dev/ttymxc0
/dev/ttymxc2	GPIO154_UART3_RXD	11	○	○	12	GPIO107_SAI1_TXC	
/sys/class/gpio/gpio6	GPIO6	13	○	○	14	GND	
/sys/class/pwm/pwmchip2/pwm0	GPIO130_PWM4	15	○	○	16	GPIO73	/sys/class/gpio/gpio73
	VCC3.3V_IO	17	○	○	18	GPIO138	/sys/class/gpio/gpio138
/dev/spidev32766	GPIO135_ECSPI1_MOSI	19	○	○	20	GND	
/dev/spidev32766	GPIO136_ECSPI1_MISO	21	○	○	22	GPIO140	/sys/class/gpio/gpio140
/dev/spidev32766	GPIO134_ECSPI1_SCLK	23	○	○	24	GPIO137_ECSPI1_SS0	/dev/spidev32766.0
	GND	25	○	○	26	GPIO66_ECSPI1_SS1	/dev/spidev32766.1
/dev/i2c-2	GPIO147_I2C3_SDA	27	○	○	28	GPIO146_I2C3_SCL	/dev/i2c-2
/sys/class/gpio/gpio7	GPIO7	29	○	○	30	GND	
/sys/class/gpio/gpio8	GPIO8	31	○	○	32	GPIO1_PWM1	/sys/class/pwm/pwmchip0/pwm0
/sys/class/pwm/pwmchip1/pwm0	GPIO13_PWM2	33	○	○	34	GND	
	GPIO106_SAI1_TXFS	35	○	○	36	GPIO141	/sys/class/gpio/gpio141
/sys/class/gpio/gpio77	GPIO77	37	○	○	38	GPIO98_SAI1_RXD0	
	GND	39	○	○	40	GPIO108_SAI_TXD0	

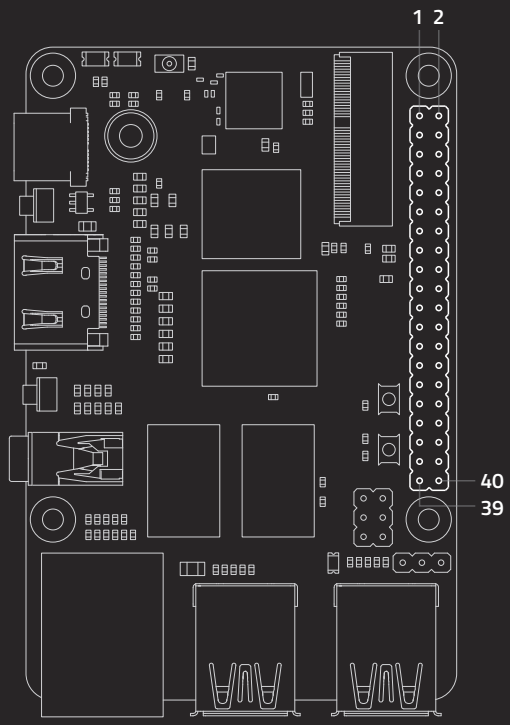
NOTE: All I/O pins have a 90k pull-down resistor inside the iMX8M SoC that is used by default during bootup, except for the I2C pins, which instead have a pull-up to 3.3V on the SoM. Do not connect a device that draws more than ~ 82 mA of power or you will brownout the system.


1
2
40
39

WIRING PI #	MAIN FUNCTIONS	#
	3V3 POWER	1
8	GPIO2 (I2C1 SDA)	3
9	GPIO3 (I2C1 SCL)	5
7	GPIO4 (GPCLK0)	7
	GROUND	9
0	GPIO17	11
2	GPIO27	13
3	GPIO22	15
	3V3 POWER	17
12	GPIO10 (SPI0 MOSI)	19
13	GPIO9 (SPI0 MISO)	21
14	GPIO11 (SPI0 SCLK)	23
	GROUND	25
30	GPIO0 (EEPROM SDA)	27
21	BCM 5	29
22	BCM 6	31
23	GPIO13 (PWM1)	33
24	GPIO19 (PCM FS)	35
25	GPIO26	37
	GROUND	39



#	MAIN FUNCTIONS	WIRING PI #
2	5V POWER	
4	5V POWER	
6	GROUND	
8	GPIO14 (UART TX)	15
10	GPIO15 (UART RX)	16
12	GPIO18 (PCM CLK)	1
14	GROUND	
16	GPIO23	4
18	GPIO24	5
20	GROUND	
22	GPIO25	6
24	GPIO8 (SPI0 CE0)	10
26	GPIO7 (SPI0 CE1)	11
28	GPIO1 (EEPROM SCL)	31
30	GROUND	
32	GPIO12 (PWM0)	26
34	GROUND	
36	GPIO16	27
38	GPIO20 (PCM DIN)	28
40	GPIO21 (PCM DOUT)	29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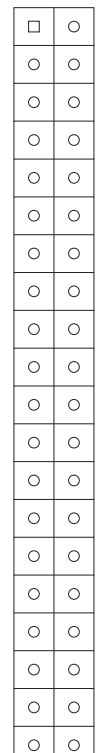
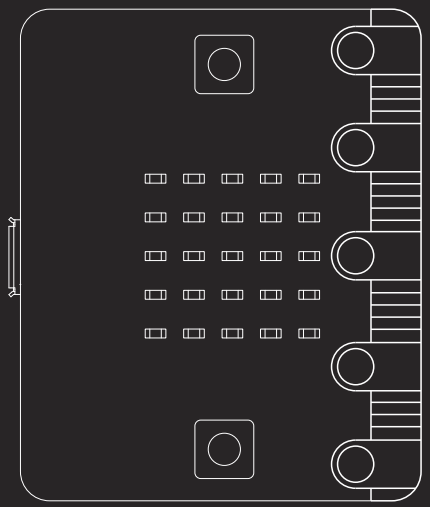
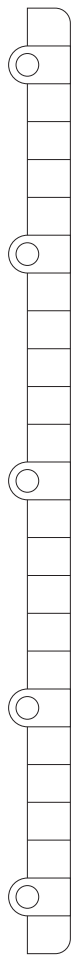
ALT	FUNCTION	NAME	#
	VCC-3V3	CON1-P01	1
GPIO17	I2C1_SDA	CON1-P03	3
GPIO16	I2C1_SCL	CON1-P05	5
GPIO21	PWM1	CON1-P07	7
	GND	CON1-P09	9
GPIO42	SDIO-D0	CON1-P11	11
GPIO43	SDIO-D1	CON1-P13	13
GPIO44	SDIO-D2	CON1-P15	15
	VCC-3V3	CON1-P17	17
GPIO31	GSPI-MOSI	CON1-P19	19
GPIO18	GSPI-MISO	CON1-P21	21
GPIO19	GSPI-SCK	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

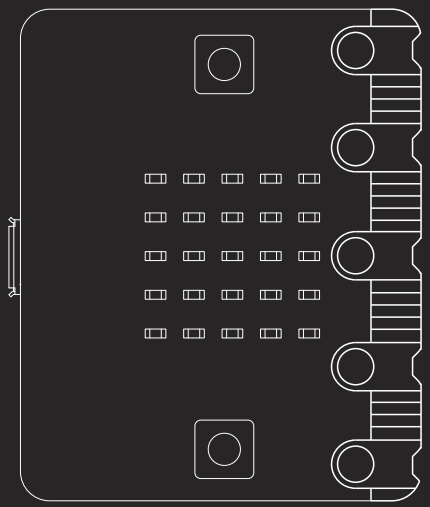


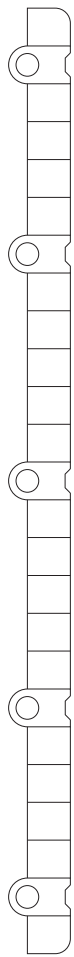
#	NAME	FUNCTION	ALT
2	CON1-P02	DCIN	
4	CON1-P04	DCIN	
6	CON1-P06	GND	
8	CON1-P08	UR1_TX	GPIO9
10	CON1-P10	UR1_RX	GPIO8
12	CON1-P12	AIO_BCK	GPIO3
14	CON1-P14	GND	
16	CON1-P16	UR1_RTS	GPIO11
18	CON1-P18	UR1_CTS	GPIO10
20	CON1-P20	GND	
22	CON1-P22	GPIO47	GPIO47
24	CON1-P24	GSPI-CS	GPIO20
26	CON1-P26	PWM2	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



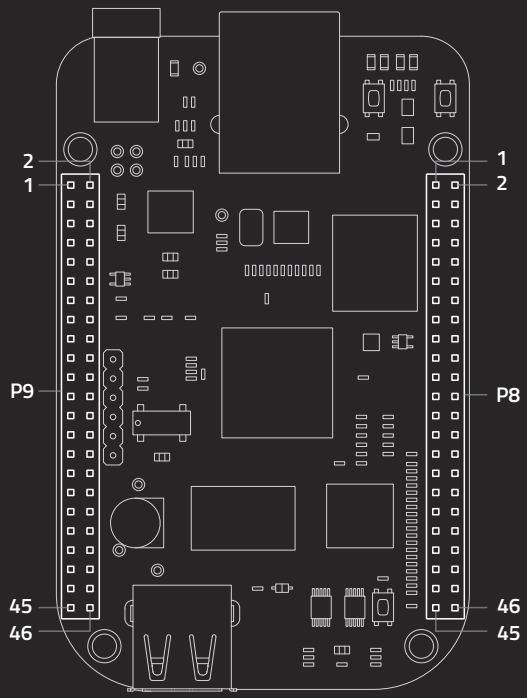


NAME	MAIN FUNCTION	ALT FUNCTIONS
GND	GROUND	
GND	GROUND	
GND	GROUND	
P20	I2C (SDA)	GPIO, PWM, UART
P19	I2C (SCL)	GPIO, PWM, UART
+3V3	3V POWER SUPPLY (MAX 90mA).	
+3V3	3V POWER SUPPLY (MAX 90mA).	
+3V3	3V POWER SUPPLY (MAX 90mA).	
P16	GPIO	PWM, UART
P15	GPIO	SPI (MOSI), PWM, UART
P14	GPIO	SPI (MISO), 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





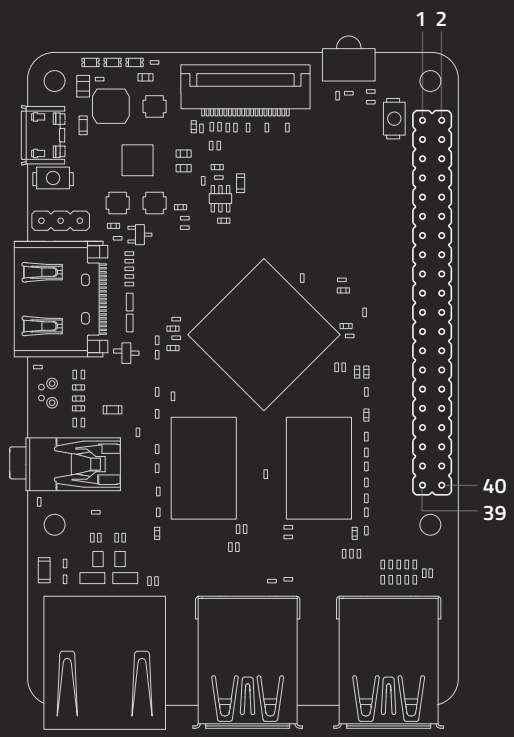
NAME	MAIN FUNCTION	ALT FUNCTIONS
GND	GROUND	
GND	GROUND	
GND	GROUND	
P20	I2C (SDA)	GPIO, PWM, UART
P19	I2C (SCL)	GPIO, PWM, UART
+3V3	3V POWER SUPPLY (MAX 90mA).	
+3V3	3V POWER SUPPLY (MAX 90mA).	
+3V3	3V POWER SUPPLY (MAX 90mA).	
P16	GPIO	PWM, UART
P15	GPIO	SPI (MOSI), PWM, UART
P14	GPIO	SPI (MISO), 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


2
1
1
2
P9
P8
45
46
46
45

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: More pin modes are available in the datasheet


1
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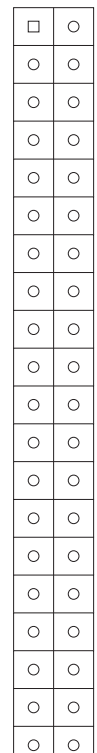
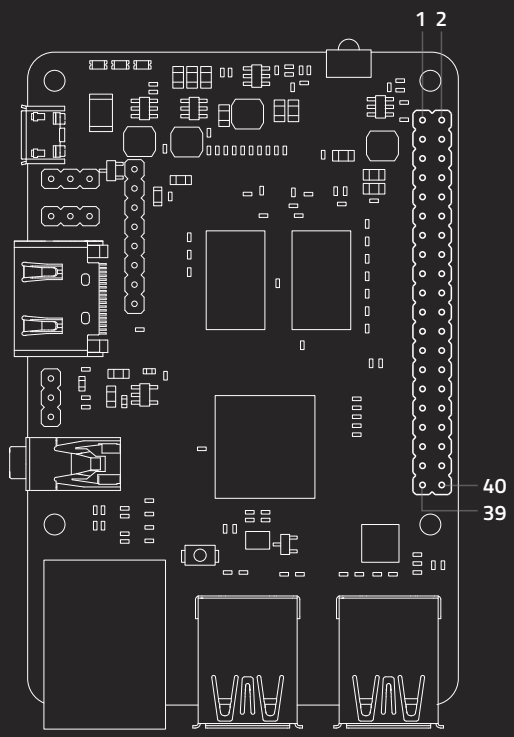
39

LINUX #	NAME	#
	VCC3V3-OUT	1
12	TWI0-SDA	3
11	TWI0-SCK	5
2	CPUX-TDO	7
	GND	9
1	CPUX-TCK	11
0	CPUX-TMS	13
3	CPUX-TDI	15
	VCC3V3-OUT	17
64	SPI0-MOSI	19
65	SPI0-MISO	21
66	SPI0-CLK	23
	GND	25
19	I2S0-SCLK	27
20	I2S0-SDO	29
21	I2S0-SDI	31
6	PWM1	33
202	BB-PCM-SYNC	35
16	UART3-CTS	37
	GND	39



#	NAME	LINUX #
2	VCC5V	
4	VCC5V	
6	GND	
8	AP-UART1-TX	198
10	AP-UART1-RX	199
12	BB-PCM-CLK	203
14	GND	
16	AP-UART1-CTS	201
18	AP-UART1-RTS	200
20	GND	
22	UART3-RX	14
24	SPI0-CS	67
26	SPDIF	17
28	I2S0-LRCK	18
30	GND	
32	UART3-TX	13
34	GND	15
36	UART3-RTS	
38	BB-PCM-DIN	205
40	BB-PCM-DOUT	204


1 2
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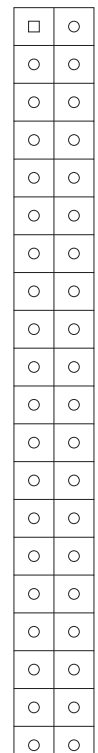
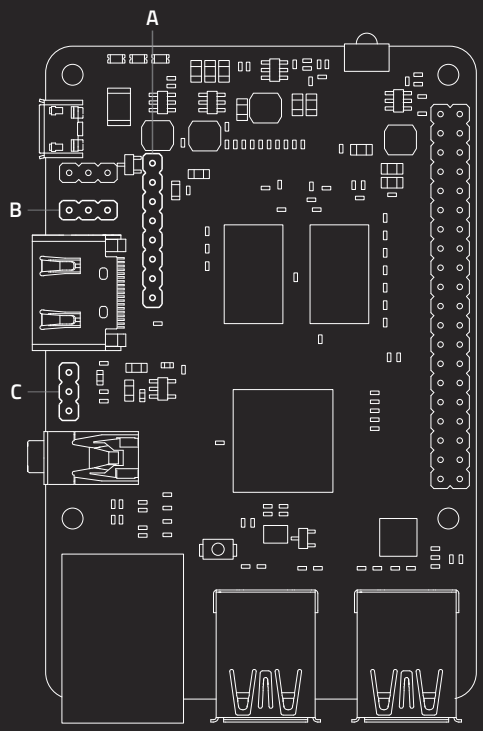
SYSFS	LINUX #	NAME	#
		VCC3.3V	1
5	5	I2C_SDA_AO	3
4	4	I2C_SCK_AO	5
2	98	GPIOCLK_0	7
		GND	9
8	8*	I2SOUT-CH23	11
9	9	I2SOUT-CH45	13
10	10*	I2SOUT-CH67	15
		VCC3.3V	17
97	87	BTPCM_DOUT	19
98	88	BTPCM_DIN	21
100	90	BTPCM_CLK	23
		GND	25
85	75	I2C_SDA_A	27
106	96	BT_EN	29
107	97	BT_WAKE_HOST	31
95	85	WIFI_PWREN	33
96	86	WIFI_WAKE_HOST	35
94	94	WIFI_SD_CMD	37
		GND	39



#	NAME	LINUX #	SYSFS
2	VCC5V		
4	VCC5V		
6	GND		
8	UART_A_TX	91	101
10	UART_A_RX	92	102
12	PWM_F	6	6
14	GND		
16	UART_A_CTS_N	93	103
18	UART_A_RTS_N	94	104
20	GND		
22	WIFI_SD_D0	79	89
24	BTPCM_SYNC	89	99
26	WIFI_SD_D1	80	90
28	I2C_SCK_A	76	86
30	GND		
32	WIFI_32K	95	105
34	GND		
36	WIFI_SD_D2	81	91
38	WIFI_SD_D3	82	92
40	WIFI_SD_CLK	83	93

** Requires J11 jumper to be positioned to pass GPIOAO_8 to 40 pin header*
*** Requires Linux kernel 4.19+ to set direction to output*

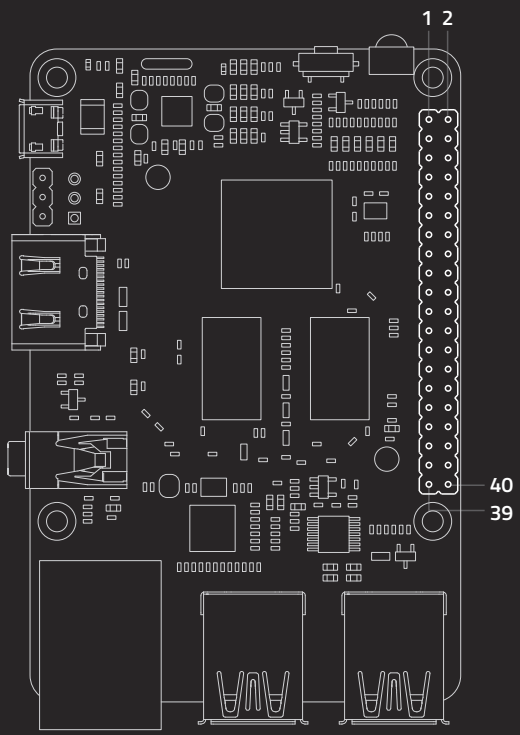

A
B
C

A	#	NAME	LINUX #	SYSFS
□	1	ADC0		
○	2	ADC2		
○	3	I2SOUT-CH01	25	35
○	4	I2S-LR-CLK	24	34
○	5	I2S-AO-CLK	23	33
○	6	I2S-AM-CLK	22	32
○	7	GND		
○	8	VDDIO_AO3.3V		

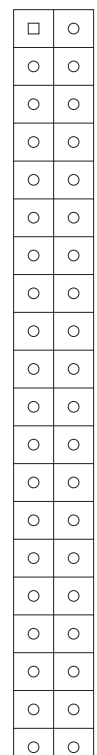
B	#	NAME	LINUX #	SYSFS
□	1	GND		
○	2	LINUX_TX	0	0
○	3	LINUX_RX	1	1

C	#	NAME	LINUX #	SYSFS
□	1	GND		
○	2	SPDIF_OUT	20	30
○	3	VCC5V		

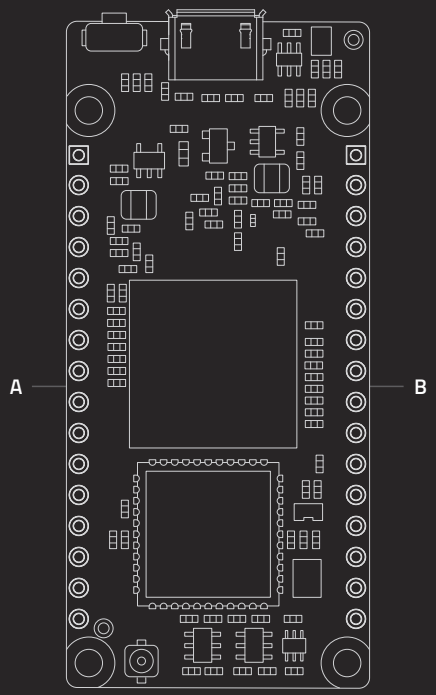
PINOUTS.ORG/J11



NOTES	NAME	#
3.3V OUTPUT	VCC_IO	1
GPIO2_D1_U/I2C0_SDA	I2C0_SDA	3
GPIO2_D0_U/I2C0_SCL	I2C0_SCL	5
GPIO1_D4_D/CLKOUT	CLK	7
GROUND	GND	9
GPIO2_C4_U/I2S1_SDO1	SDO1	11
GPIO2_C5_U/I2S1_SDO2	SDO2	13
GPIO2_C6_U/I2S1_SDO3	SDO3	15
3.3V	VCC_IO	17
GPIO3_A1_U/SPI_TXD	STX	19
GPIO3_A2_D/SPI_RXD	SRX	21
GPIO3_A0_U/SPI_CLK	CLK	23
GROUND	GND	25
GPIO2_A4_U/I2C1_SDA	SDA1	27
GPIO2_C3_U/I2S1_SDI	SDI	29
GPIO2_C7_U/I2S1_SDO	SDO	31
GPIO2_C0_U/I2S1_LRCK_RX	LRCK	33
GPIO2_C2_D/I2S1_SCLK	LCLK	35
GPIO2_B7_D/I2S1_MCLK	MCLK	37
GROUND	GND	39

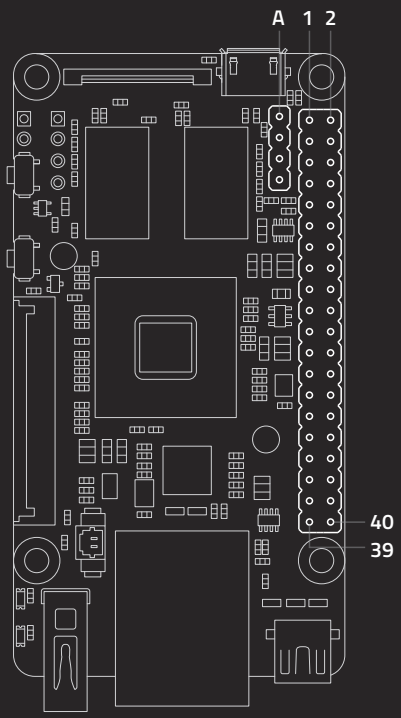


#	NAME	NOTES
2	VCC_SYS	5V OUTPUT
4	VCC_SYS	5V OUTPUT
6	GND	GROUND
8	TX1	GPIO3_A4_U/UART1_TXD
10	RX1	GPIO3_A6_U/UART1_RXD
12	PWM	GPIO2_A6_U/PWM2
14	GND	GROUND
16	CTS	GPIO3_A7 _U/UART1_CTSN
18	RTS	GPIO3_A5_U/UART1_RTSN
20	GND	GROUND
22	CLK0	GPIOA2_D/CLKOUT/SPDIF_TX_M2
24	CSN0	GPIO3_B0_D/SPI_CSN0_M2
26	CSN1	GPIO2_B4_U/SPI_CSN1_M0
28	SCL1	GPIO2_A5_U/ I2C1_SCL
30	GND	GROUND
32	GPIO	GPIO0_A0_D/CLKOUT_WIFI_M0
34	GND	GROUND
36	TX2	GPIO2_A0_D/UART2_TX
38	RX2	GPIO2_A1_U/UART2_RX
40	SPDIF1	GPIO0_D3_D/SPDIF_TX_M0


A
B

ALT	ALT	MAIN	#	A
IN/OUT		5V	1	□
IN/OUT		5V	2	○
OUT		3V3	3	○
GND		GND	4	○
PL11		IRRX	5	○
PG11		PG11	6	○
D-	USB3	DM3	7	○
D+	USB3	DP3	8	○
D-	USB2	DM2	9	○
D+	USB2	DP2	10	○
RXN	EPHY	RD-	11	○
RXP	EPHY	RD+	12	○
TXN	EPHY	TD-	13	○
TXP	EPHY	TD+	14	○
LED-LINK	EPHY	LNK	15	○
LED-SPD	EPHY	SPD	16	○

B	#	MAIN	ALT	ALT	ALT
□	1	RXD	DEBUG	RX	PA5
○	2	TXD	UART0	TX	PA4
○	3	GND			GND
○	4	SCL	I2C0	SCL	PA11
○	5	SDA	I2C0	SDA	PA12
○	6	CS	SPI1	CS	PA13
○	7	CLK	SPI1	CLK	PA14
○	8	MISO	SPI1	MISO	PA16
○	9	MOSI	SPI1	MOSI	PA15
○	10	RX1	UART1	RX	PG7
○	11	TX1	UART1	TX	PG6
○	12	CVBS	CVBS		CVBS
○	13	LL	LINEOUT		L
○	14	LR	LINEOUT		R
○	15	MP	MIC		P
○	16	MN	MIC		N


A
1
2
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39

NAME	#			#	NAME
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
□
○
○
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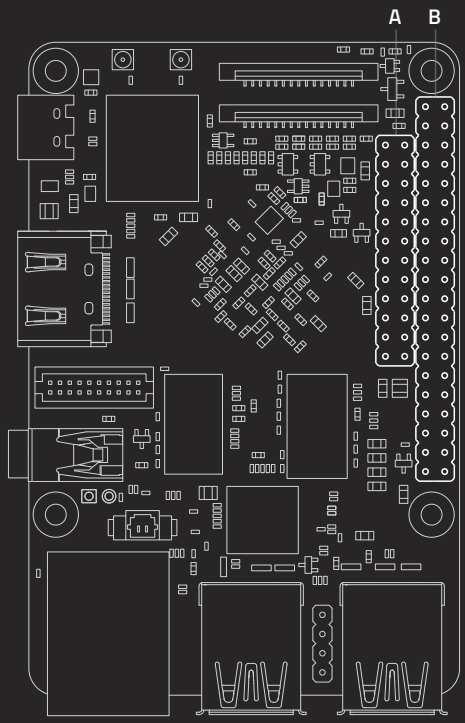
#	NAME
1	DGND
2	VDD_5V
3	UART_TXD0
4	UART_RXD0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NAME	#
VCC5V0_SYS	1
PCIE_RX1_P	3
PCIE_RX1_N	5
GND	7
PCIE_RX0_P	9
PCIE_RX0_N	11
GND	13
PCIE_REF_CLKP	15
PCIE_REF_CLKN	17
GND	19
PWR_KEY	21
GPIO4_C6/PWM1*	23

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#	NAME
2	VCC5V0_SYS
4	PCIE_TX1P
6	PCIE_TX1N
8	GND
10	PCIE_TX0P
12	PCIE_TX0N
14	GND
16	HOST0_DM
18	HOST0_DP
20	GND
22	HOST1_DM
24	HOST1_DP

** 3V*

NAME	#
VCC3V3_SYS	1
I2C2_SDA*	3
I2C2_SCL*	5
GPIO1_A0*	7
GND	9
GPIO1_A1*	11
GPIO1_A3*	13
GPIO1_A4*	15
VCC3V3_SYS	17
SPI1_TXD/UART4_TX*	19
SPI1_RXD/UART4_RX*	21
SPI1_CLK*	23
GND	25
I2C2_SDA**	27
I2S0_LRCK_RX**	29
I2S0_LRCK_TX**	31
I2S0_SCLK**	33
I2S0_SDI0**	35
I2S0_SDI1SDO3**	37
GND	39

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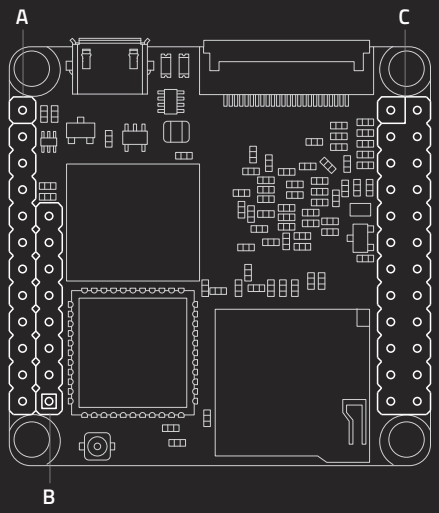
#	NAME
2	VDD_5V
4	VDD_5V
6	GND
8	GPIO4_C1/I2C3_SCL*
10	GPIO4_C0/I2C3_SDA*
12	GPIO1_C2*
14	GND
16	GPIO1_C6*
18	GPIO1_C7*
20	GND
22	GPIO1_D0*
24	SPI1_CSN0*
26	GPIO4_C5/SPDIF_TX*
28	I2C2_SCL**
30	GND
32	I2S_CLK**
34	GND
36	I2S0_SDO0**
38	I2S0_SDI2SDO2**
40	I2S0_SDI3SDO1**

** 3V **1.8V*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		NAME	#
		5V (OUT)	1
D+		USB2	2
D-		USB2	3
D+		USB3	4
D-		USB3	5
PL11	RX	IR	6
PA17	OUT	SPDIF	7
LRCK		I2S0	8
BCK		I2S0	9
DOUT		I2S0	10
DIN		I2S0	11
		GND	12

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#	NAME	
1	GND	
2	5V (OUT)	
3	UART0	TX
4	UART0	RX
5	LINEOUT	LL
6	LINEOUT	LR
7	LINEIN	MN
8	LINEIN	MP

		NAME	#
		3.3V (OUT)	1
SDA		I2C0	3
SCL		I2C0	5
		PG11	7
		GND	9
PA0	TX	UART2	11
PA2	RTS	UART2	13
PA3	CTS	UART2	15
		3.3V (OUT)	17
PC0	MOSI	SPI0	19
PC1	MISO	SPI0	21
PC2	CLK	SPI0	23

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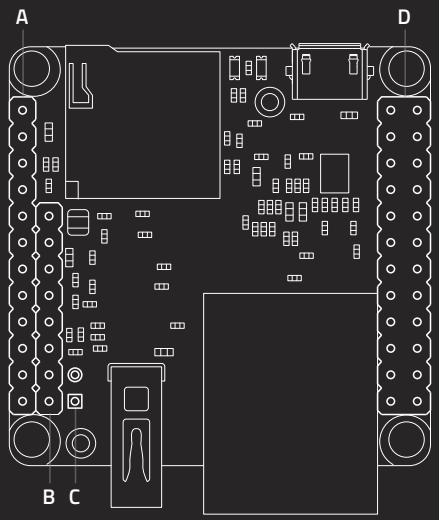
#	NAME		
2	5V (IN/OUT)		
4	5V (IN/OUT)		
6	GND		
8	UART1	TX	PG6
10	UART1	RX	PG7
12	PA6		
14	GND		
16	UART1	RTS	PG8
18	UART1	CTS	PG9
20	GND		
22	UART2	RX	PA1
24	SPI0	CS	PC3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		NAME	#
		5V (OUT)	1
D+		USB1	2
D-		USB1	3
D+		USB2	4
D-		USB2	5
PL11	RX	IR	6
PA17	OUT	SPDIF	7
LRCK		I2S0	8
BCK		I2S0	9
DOUT		I2S0	10
DIN		I2S0	11
		GND	12

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#	NAME	
1	GND	
2	5V (OUT)	
3	UART0	TX
4	UART0	RX
5	LINEOUT	LL
6	LINEOUT	LR
7	LINEIN	MN
8	LINEIN	MP

C
□
○

#	NAME
1	GND
2	CVBS

		NAME	#
		3.3V (OUT)	1
SDA		I2C0	3
SCL		I2C0	5
		PG11	7
		GND	9
PA0	TX	UART2	11
PA2	RTS	UART2	13
PA3	CTS	UART2	15
		3.3V (OUT)	17
PC0	MOSI	SPI0	19
PC1	MISO	SPI0	21
PC2	CLK	SPI0	23

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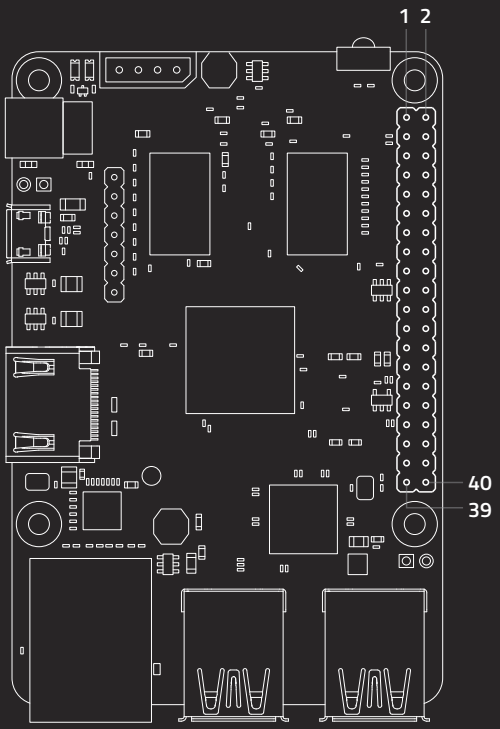
#	NAME		
2	5V (IN/OUT)		
4	5V (IN/OUT)		
6	GND		
8	UART1	TX	PG6
10	UART1	RX	PG7
12	PA6		
14	GND		
16	UART1	RTS	PG8
18	UART1	CTS	PG9
20	GND		
22	UART2	RX	PA1
24	SPI0	CS	PC3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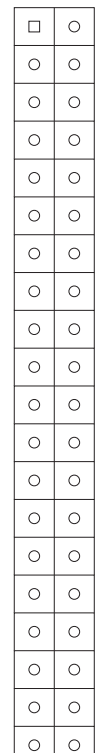
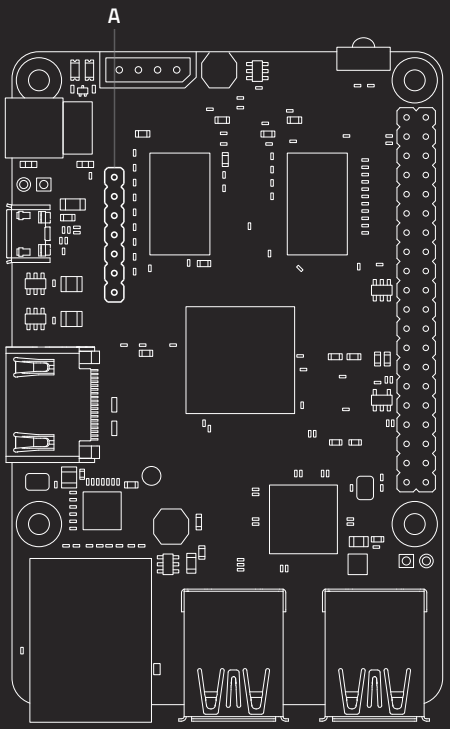
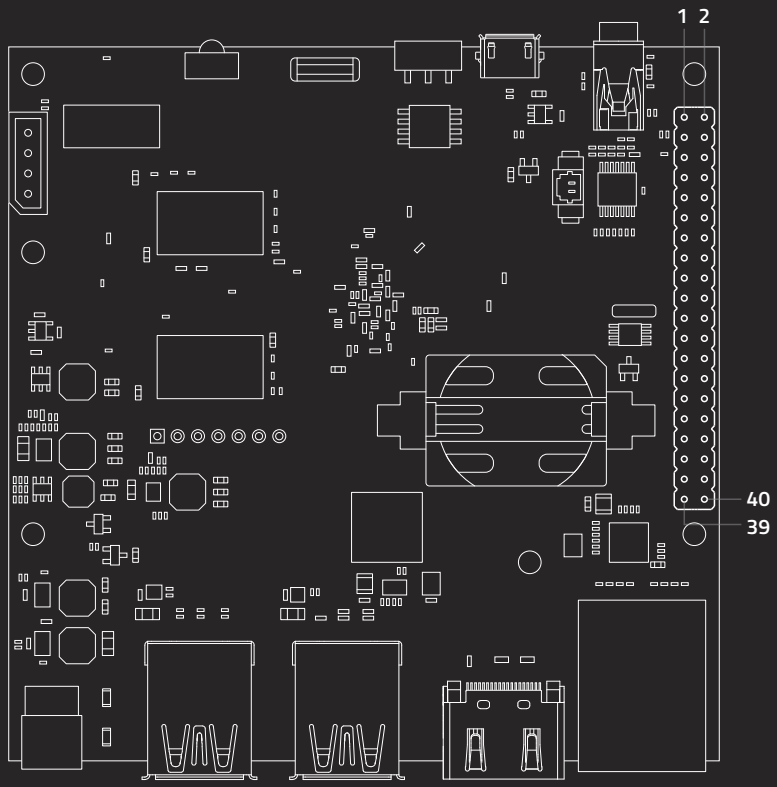
GPIO #	MAIN FUNCTIONS	#
	3.3V POWER	1
493	I2C_EE_M2_SDA/GPIOX_17	3
494	I2C_EE_M2_SCL_GPIOX_18	5
481	PWM_C/GPIOX_5	7
	GROUND	9
479	PWM_D/GPIOX_3	11
480	GPIOX_4	13
483	GPIOX_7/PWM_F	15
	3.3V POWER	17
484	SPI_A_MOSI/GPIOX_8	19
485	SPI_A_MISO/GPIOX_9	21
487	SPI_A_SCLK/GPIOX_11	23
	GROUND	25
474	I2C_EE_M3_SDA/GPIOA_14	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	


A

A	#	NAME	ALT	GPIO #
□	1	GND		
○	2	GPIOA0.10	SPDIF OUTPUT	506
○	3	5.0V		
○	4	GPIOA0.9	I2S MCLK	505
○	5	GPIOA0.7	I2S LRCLK	503
○	6	GPIOA0.8	I2S SCLK	504
○	7	GPIOA0.4	I2S DATA OUTPUT	500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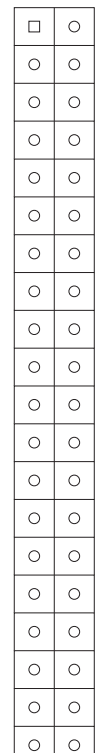
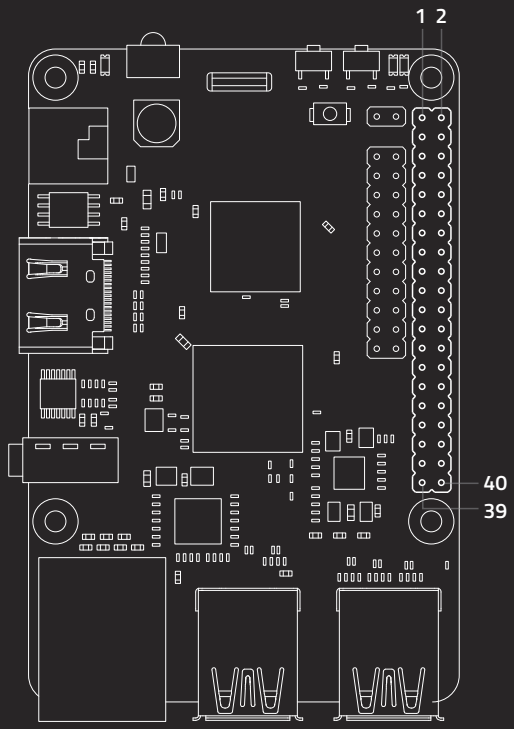
GPIO #	MAIN FUNCTIONS	#
	3.3V POWER	1
493	I2C_EE_M2_SDA/GPIOX_17	3
494	I2C_EE_M2_SCL_GPIOX_18	5
473	SPDIF_OUT_GPIOA_13	7
	GROUND	9
479	PWM_D/GPIOX_3	11
480	GPIOX_4	13
483	PWM_B/PWM_F/GPIOX_7	15
	3.3V POWER	17
484	SPI_A_MOSI/GPIOX_8	19
485	SPI_A_MISO/GPIOX_9	21
487	SPI_A_SCLK/GPIOX_11	23
	GROUND	25
474	I2C_EE_M3_SDA/GPIOA_14	27
490	UART_EE_A_CTS/GPIOX_14	29
491	UART_EE_A_RTS/GPIOX_15	31
481	PWM_C/GPIOX_5	33
482	PWM_D/GPIOX_6	35
	ADC.AIN3	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	GPIOA_4	464
28	GPIOA_15/I2C_EE_M3_SCL	475
30	GROUND	
32	GPIOH_12	472
34	GROUND	
36	PWM_B/GPIOX_19	495
38	VDDIO_AO1V8	
40	ADC.AIN2	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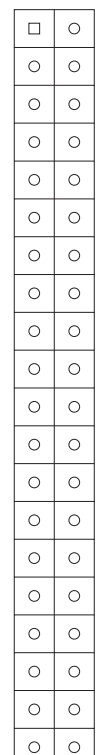
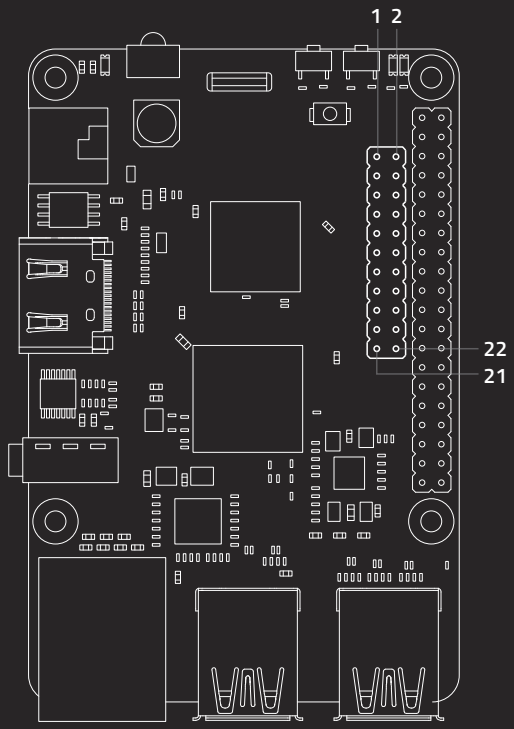
GPIO #	MAIN FUNCTIONS	#
	3.3V	1
89	GPIO2_D1 (I2C0_SDA)	3
88	GPIO2_D0 (I2C0_SCL)	5
	GPIO1_D4 (CLK32KOUT_M1)	7
	GROUND	9
	NC	11
	GPIO0_A0	13
100	GPIO3_A4	15
	3.3V	17
97	GPIO3_A1 (SPI_TXD_M2)	19
98	GPIO3_A2 (SPI_RXD_M2)	21
96	GPIO3_A0 (SPI_CLK_M2)	23
	GROUND	25
68	GPIO2_A4 (I2C1_SDA)	27
	NC	29
	NC	31
32	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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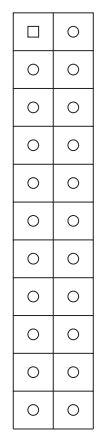
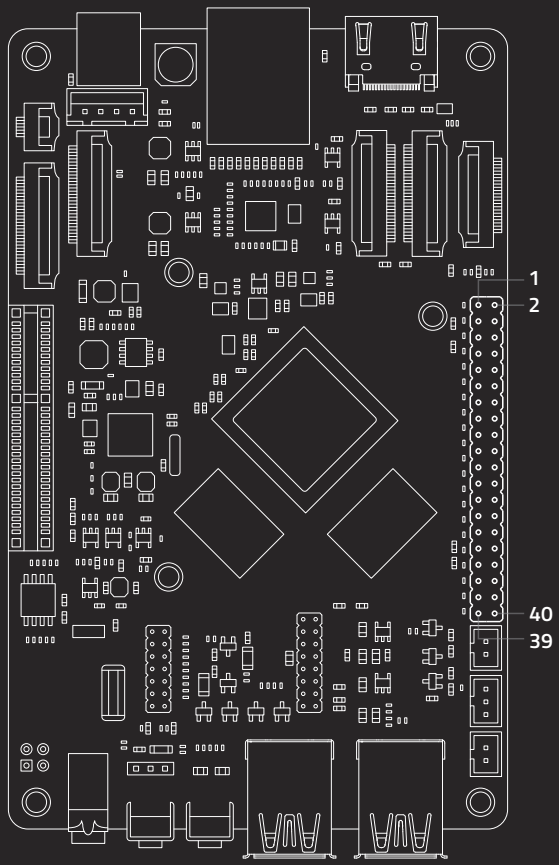
GPIO #	MAIN FUNCTIONS	#
	3.3V	1
81	GPIO2_C1 (I2S1_LRCKTX)	3
87	GPIO2_C7 (I2S1_SDO)	5
	GROUND	7
80	GPIO2_C0 (I2S1_LRCKRX)	9
85	GPIO2_C5 (I2S1_SDIO2)	11
27	GPIO0_D3 (SPDIF_TX_M0)	13
	GROUND	15
	ETHERNET RD+	17
	ETHERNET TX+	19
89	GPIO2_D1 (ETHERNET SPEED)	21

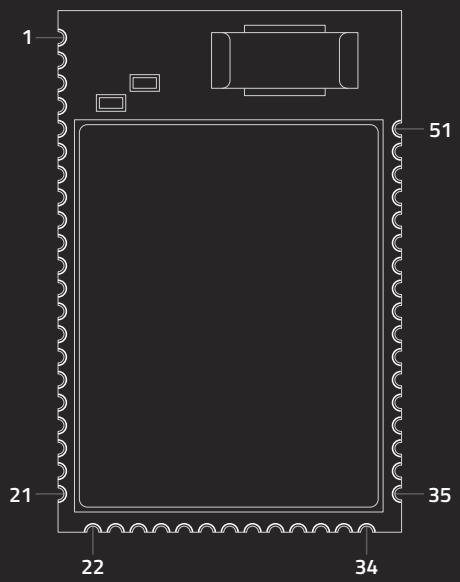


#	MAIN FUNCTIONS	GPIO #
2	5V	
4	GPIO2_C2 (I2S1_SCLK)	82
6	GPIO2_C3 (I2S1_SDI)	83
8	GROUND	
10	GPIO2_B7 (I2S1_MCLK)	79
12	GPIO2_C4 (I2S1_SDIO1)	84
14	GPIO2_C6 (I2S1_SDIO3)	86
16	GROUND	
18	ETHERNET RD-	
20	ETHERNET TX-	
22	GPIO2_D0 (ETHERNET LINK)	88

PINOUTS.ORG/J20



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)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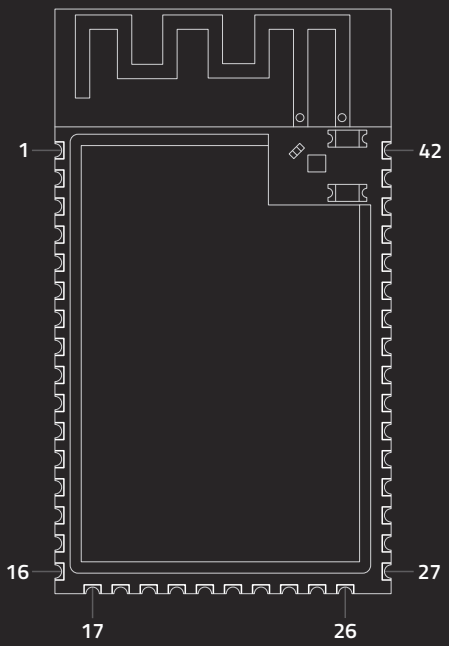
#	NAME	NOTES	#	NAME	NOTES
1	GND	COMMON GROUND	26	PIO_4	PROGRAMMABLE I/O
2	GND	COMMON GROUND	27	GND	COMMON GROUND
3	GND	COMMON GROUND	28	VREGEN	SEE NOTE*
4	GND	COMMON GROUND	29	CHG_EXT	BATTERY CHARGER CTRL
5	PIO_6	PROGRAMMABLE I/O	30	VCHG	BATTERY INPUT
6	PIO_7	PROGRAMMABLE I/O	31	VBAT_SENSE	BATTERY SENSE
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_3	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_2	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)*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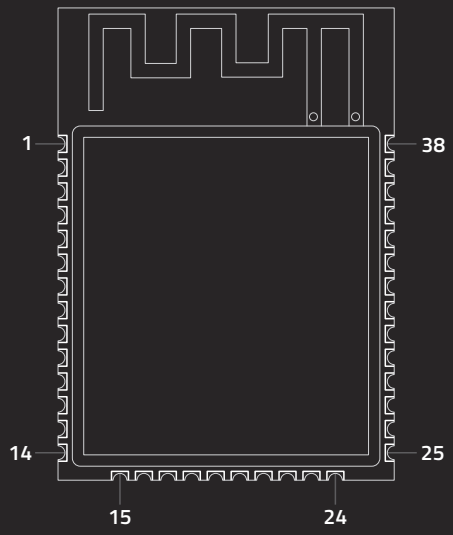
#	NAME	NOTES	#	NAME	NOTES
1	GND	GROUND	22	IO19	RTC19, IO19, U1RTS, ADC2_CH8, CLK_OUT2, USB_D-
2	3V3	POWER SUPPLY (OPERATING VOLTAGE 3.0 ~ 3.6 V)	23	IO20	RTC20, IO20, U1CTS, ADC2_CH9, CLK_OUT1, USB_D+
3	IO0	RTC0, IO0	24	IO21	RTC21, IO21
4	IO1	RTC1, IO1, TOUCH1, ADC1_CH0	25	IO26	SPICS1, IO26*
5	IO2	RTC2, IO2, TOUCH2, ADC1_CH1	26	GND	GROUND
6	IO3	RTC3, IO3, TOUCH3, ADC1_CH2	27	IO33	SPIIO4, IO33, FSPIHD
7	IO4	RTC4, IO4, TOUCH4, ADC1_CH3	28	IO34	SPIIO5, IO34, FSPICS0
8	IO5	RTC5, IO5, TOUCH5, ADC1_CH4	29	IO35	SPIIO6, IO35, FSPID
9	IO6	RTC6, IO6, TOUCH6, ADC1_CH5	30	IO36	SPIIO7, IO36, FSPICLK
10	IO7	RTC7, IO7, TOUCH7, ADC1_CH6	31	IO37	SPIDQS, IO37, FSPIQ
11	IO8	RTC8, IO8, TOUCH8, ADC1_CH7	32	IO38	IO38, FSPIWP
12	IO9	RTC9, IO9, TOUCH9, ADC1_CH8, FSPIHD	33	IO39	MTCK, IO39, CLK_OUT3
13	IO10	RTC10, IO10, TOUCH10, ADC1_CH9, FSPICS0, FSPIIO4	34	IO40	MTDO, IO40, CLK_OUT2
14	IO11	RTC11, IO11, TOUCH11, ADC2_CH0, FSPID, FSPIIO5	35	IO41	MTDI, IO41, CLK_OUT1
15	IO12	RTC12, IO12, TOUCH12, ADC2_CH1, FSPICLK, FSPIIO6	36	IO42	MTMS, IO42
16	IO13	RTC13, IO13, TOUCH13, ADC2_CH2, FSPIQ, FSPIIO7	37	TXD0	U0TXD, IO43, CLK_OUT1
17	IO14	RTC14, IO14, TOUCH14, ADC2_CH3, FSPIWP, FSPIDQS	38	RXD0	U0RXD, IO44, CLK_OUT2
18	IO15	RTC15, IO15, U0RTS, ADC2_CH4, XTAL_32K_P	39	IO45	IO45
19	IO16	RTC16, IO16, U0CTS, ADC2_CH5, XTAL_32K_N	40	IO46	IO46
20	IO17	RTC17, IO17, U1TXD, ADC2_CH6, DAC_1	41	EN	SEE NOTE**
21	IO18	RTC18, IO18, 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.*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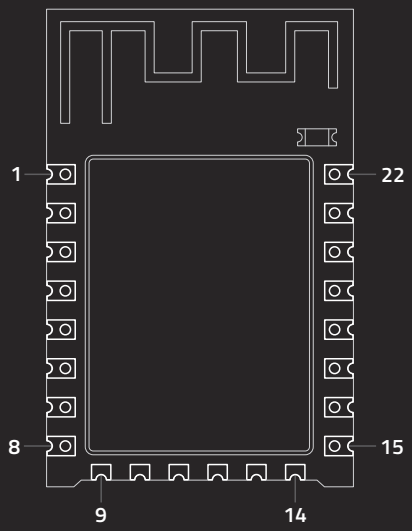
#	NAME	NOTES
1	GND	GROUND
2	3V3	POWER (OPERATING VOLTAGE 3.0 ~ 3.6 V)
3	EN	MODULE-ENABLE SIGNAL. ACTIVE HIGH
4	SENSOR_VP	IO36, ADC1_CH0, RTC0
5	SENSOR_VN	IO39, ADC1_CH3, RTC3
6	IO34	IO34, ADC1_CH6, RTC4
7	IO35	IO35, ADC1_CH7, RTC5
8	IO32	IO32, XTAL_32K_P, ADC1_CH4, TOUCH9, RTC9
9	IO33	IO33, XTAL_32K_N, ADC1_CH5, TOUCH8, RTC8
10	IO25	IO25, DAC_1, ADC2_CH8, RTC6, EMAC_RXD0
11	IO26	IO26, DAC_2, ADC2_CH9, RTC7, EMAC_RXD1
12	IO27	IO27, ADC2_CH7, TOUCH7, RTC17, EMAC_RX_DV
13	IO14	IO14, ADC2_CH6, TOUCH6, RTC16, MTMS, HSPICLK, HS2_CLK, SD_CLK, EMAC_TXD2
14	IO12	IO12, ADC2_CH5, TOUCH5, RTC15, MTDI, HSPIQ, HS2_DATA2, SD_DATA2, EMAC_TXD3
15	GND	GROUND
16	IO13	IO13, ADC2_CH4, TOUCH4, RTC14, MTCK, HSPID, HS2_DATA3, SD_DATA3, EMAC_RX_ER
17	SHD/SD2*	IO9, SD_DATA2, SPIHD, HS1_DATA2, U1RXD
18	SWP/SD3*	IO10, SD_DATA3, SPIWP, HS1_DATA3, U1TXD
19	SCS/CMD*	IO11, SD_CMD, SPICS0, HS1_CMD, U1RTS
20	SCK/CLK*	IO6, SD_CLK, SPICLK, HS1_CLK, U1CTS
21	SDO/SD0*	IO7, SD_DATA0, SPIQ, HS1_DATA0, U2RTS
22	SDI/SD1*	IO8, SD_DATA1, SPID, HS1_DATA1, U2CTS
23	IO15	IO15, ADC2_CH3, TOUCH3, MTDO, HSPICS0, RTC13, HS2_CMD, SD_CMD, EMAC_RXD3
24	IO2	IO2, ADC2_CH2, TOUCH2, RTC12, HSPIWP, HS2_DATA0, SD_DATA0
25	IO0	IO0, ADC2_CH1, TOUCH1, RTC11, CLK_OUT1, EMAC_TX_CLK
26	IO4	IO4, ADC2_CH0, TOUCH0, RTC10, HSPIHD, HS2_DATA1, SD_DATA1, EMAC_TX_ER
27	IO16	IO16, HS1_DATA4, U2RXD, EMAC_CLK_OUT
28	IO17	IO17, HS1_DATA5, U2TXD, EMAC_CLK_OUT_180
29	IO5	IO5, VSPICS0, HS1_DATA6, EMAC_RX_CLK
30	IO18	IO18, VSPICLK, HS1_DATA7
31	IO19	IO19, VSPIQ, U0CTS, EMAC_TXD0
32	NC	-
33	IO21	IO21, VSPIHD, EMAC_TX_EN
34	RXD0	IO3, U0RXD, CLK_OUT2
35	TXD0	IO1, U0TXD, CLK_OUT3, EMAC_RXD2
36	IO22	IO22, VSPIWP, U0RTS, EMAC_TXD1
37	IO23	IO23, VSPID, HS1_STROBE
38	GND	GROUND

** 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.*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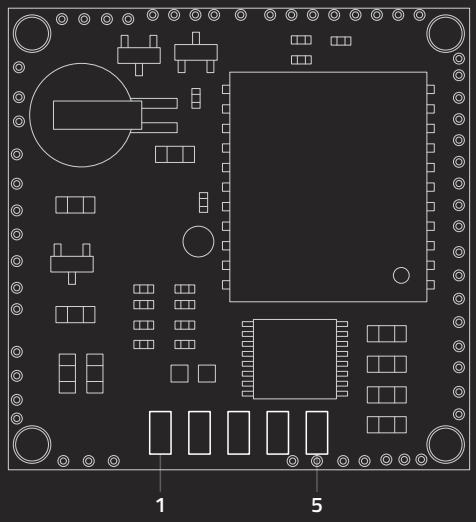
#	NAME	NOTES
1	RST	EXTERNAL RESET SIGNAL (LOW VOLTAGE LEVEL: ACTIVE)
2	ADC	ANALOG-TO-DIGITAL CONVERTER
3	EN	CHIP ENABLE. HIGH: ON, CHIP WORKS PROPERLY; LOW: OFF, SMALL CURRENT
4	IO16	GPIO16; DEEP-SLEEP WAKEUP
5	IO14	GPIO14; HSPI_CLK
6	IO12	GPIO12; HSPI_MISO
7	IO13	GPIO13; HSPI_MOSI; UART0_CTS
8	VCC	POWER 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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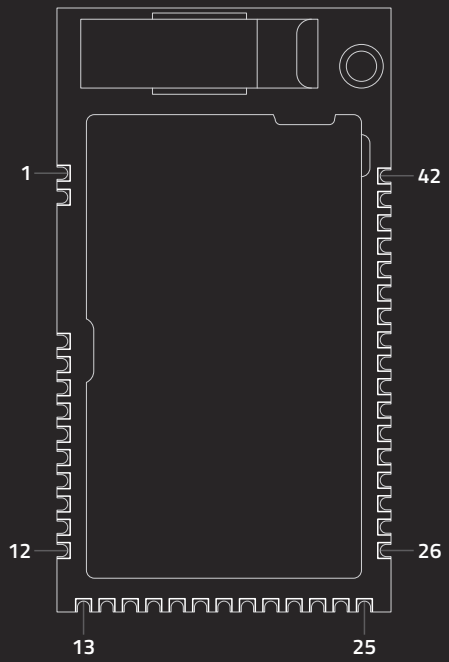
#	NAME	NOTES
1	VCC	POWER INPUT (4V ~ 6V)
2	RX	DATA INPUT (RS232 LEVEL)
3	TX	DATA OUTPUT (RS232 LEVEL)
4	GND	GROUND
5	GND	GROUND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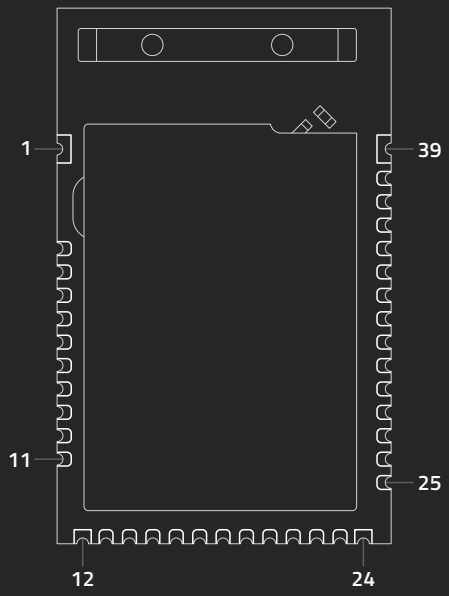
#	NAME	NOTES
1	GND	GROUND
2	GND	GROUND
3	AVDD	ANALOG POWER SUPPPLY
4	P0.21	GENERAL-PURPOSE DIGITAL I/O
5	P0.22	
6	P0.23	
7	P0.24	
8	P0.25	
9	XL2	CONNECTOR FOR 32.768KHZ CRYSTAL; ADC INPUT 0 GENERAL-PURPOSE DIGITAL I/O (P0.27)
10	XL1	CONNECTOR FOR 32.768KHZ CRYSTAL; ADC INPUT 1 GENERAL-PURPOSE DIGITAL I/O (P0.27)
11	P0.28	GENERAL-PURPOSE DIGITAL I/O
12	P0.29	
13	GND	GROUND
14	VDD	POWER SUPPLY
15	DCC	DC/DC OUTPUT VOLTAGE TO EXTERNAL LC FILTER
16	P0.30	GENERAL-PURPOSE DIGITAL I/O
17	P0.00	GENERAL-PURPOSE DIGITAL I/O; ADC REF VOLTAGE
18	P0.01	GENERAL-PURPOSE DIGITAL I/O; ADC INPUT 2
19	P0.02	GENERAL-PURPOSE DIGITAL I/O; ADC INPUT 3
20	P0.03	GENERAL-PURPOSE DIGITAL I/O; ADC INPUT 4
21	P0.04	GENERAL-PURPOSE DIGITAL I/O; ADC INPUT 5
22	P0.05	GENERAL-PURPOSE DIGITAL I/O; ADC INPUT 6
23	P0.06	GENERAL-PURPOSE DIGITAL I/O; ADC INPUT 7
24	P0.07	GENERAL-PURPOSE DIGITAL I/O
25	GND	GROUND
26	P0.08	GENERAL-PURPOSE DIGITAL I/O
27	P0.09	
28	P0.10	
29	P0.11	
30	P0.12	
31	P0.13	
32	P0.14	
33	P0.15	
34	P0.16	
35	SWDIO	SYSTEM RESET(ACTIVE LOW).ALSO HW DEBUG AND FLASH PROGRAMMING
36	SWCLK	HW DEBUG AND FLASH PROGRAMMING
37	P0.17	GENERAL-PURPOSE DIGITAL I/O
38	P0.18	
39	P0.19	
40	P0.20	
41	DEC2	POWER SUPPLY DECOUPLING
42	GND	GROUND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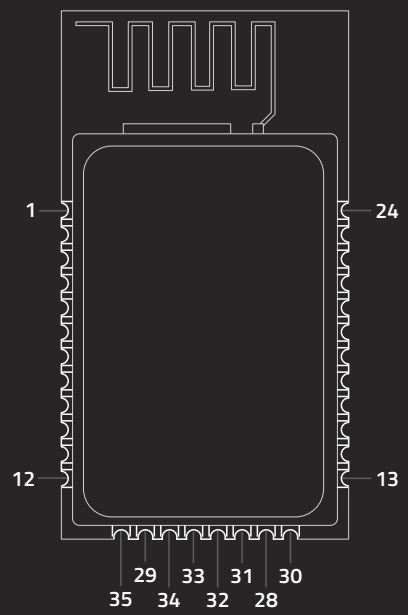
#	NAME	NOTES	#	NAME	NOTES
1	GND	GROUND	21	P0.08	GENERAL-PURPOSE DIGITAL I/O
2	P0.25	GENERAL-PURPOSE DIGITAL I/O	22	P0.09	GENERAL-PURPOSE DIGITAL I/O NFC ANTENNA CONNECTION
3	P0.26	GENERAL-PURPOSE DIGITAL I/O	23	P0.10	
4	P0.27	GENERAL-PURPOSE DIGITAL I/O	24	GND	GROUND
5	P0.28	GENERAL-PURPOSE DIGITAL I/O 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 REGULATOR 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	35	P0.21/RST	GENERAL-PURPOSE DIGITAL I/O; RESET PIN
16	P0.03		36	SWDCLK	SERIAL WIRE DEBUG CLOCK INPUT
17	P0.04		37	SWDIO	SERIAL WIRE DEBUG I/O
18	P0.05		38	P0.22	GENERAL-PURPOSE DIGITAL I/O
19	P0.06	GENERAL-PURPOSE DIGITAL I/O	39	GND	GROUND
20	P0.07	GENERAL-PURPOSE DIGITAL I/O			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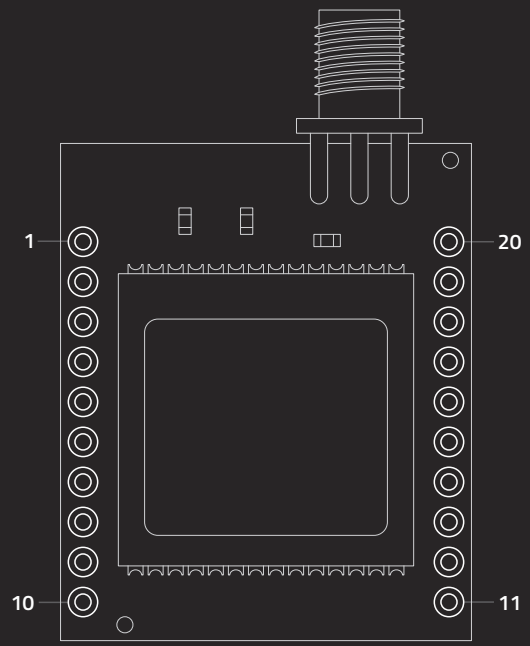
#	NAME	NOTES	#	NAME	NOTES
1	GND	GROUND	19	PIO2**	STATUS, HIGH WHEN CONNECTED, ELSE LOW
2	SPI MOSI*	PROGRAMMING ONLY	20	PIO3**	AUTO DISCOVERY = HIGH
3	PIO6**	SET BT MASTER (HIGH=AUTO-MASTER MODE)	21	PIO5**	STATUS, BASED ON STATE, LOW ON CONNECT
4	PIO7**	SET BAUD (HIGH = FORCE 9600, LOW = 115K)	22	PIO4**	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	PCM INTERFACE	26	RF PAD	RF PAD FOR RN42-N
9	PCM_IN	PCM INTERFACE	27	GND	GROUND FOR RN42-N
10	PCM_OUT	PCM INTERFACE	28	GND	GROUND
11	VDD	3.3V REGULATED POWER INPUT	29	GND	GROUND
12	GND	GND	30	AIO0	OPTIONAL ANALOG INPUT
13	UART_RX**	UART RECEIVE INPUT	31	PIO8**	STATUS (RF DATA RX/TX)
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 SET 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*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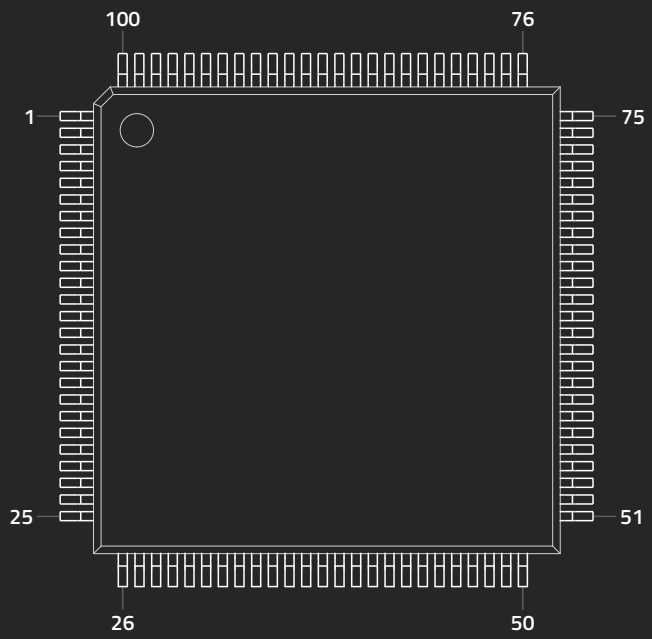
#	NAME	NOTES
1	LNA	LNA ENABLE. CAN BE USED WITH ACTIVE ANTENNAS ONLY. ACTIVE LOW LOGIC LEVEL SIGNAL TO CONTROL EXTERNAL LNA
2	VBAT	VOLTAGE SUPPLY FOR BACKUP BATTERY 2.7 - 3.3V
3	OPEN	ANTENNA OPEN. LOGIC LEVEL FROM EXTERNAL ANTENNA DETECTION CIRCUIT
4	SHORT	ANTENNA SHORT. LOGIC LEVEL FROM EXTERNAL ANTENNA DETECTION CIRCUIT
5	R1	RESERVED. DO NOT CONNECT
6	R2	RESERVED. DO NOT CONNECT
7	XRST	ACTIVE LOW LOGIC LEVEL RESET. DO NOT CONNECT IF NOT USED
8	VCC	MODULE POWER SUPPLY 2.7 - 3.3 VDC
9	GND	SIGNAL GROUND. CONNECT TO COMMON GROUND
10	XSTBY	SELECTS "RUN" OR "STANDBY" MODE. CONNECT TO VCC IF NOT USED (RUN ONLY)
11	R3	RESERVED. DO NOT CONNECT
12	R4	RESERVED. DO NOT CONNECT
13	PPS	PULSE PER SECOND. LOGIC LEVEL TIMING SIGNAL AT 1 HZ. DO NOT CONNECT IF NOT USED
14	RX-B	LOGIC LEVEL SECONDARY SERIAL PORT RECEIVE
15	RX-A	LOGIC LEVEL PRIMARY SERIAL PORT RECEIVE
16	R5	RESERVED. DO NOT CONNECT
17	TX-A	LOGIC LEVEL PRIMARY SERIAL PORT TRANSMIT
18	TX-B	LOGIC LEVEL SECONDARY SERIAL PORT TRANSMIT
19	R6	RESERVED. DO NOT CONNECT
20	R7	RESERVED. DO NOT CONNECT

CHIPS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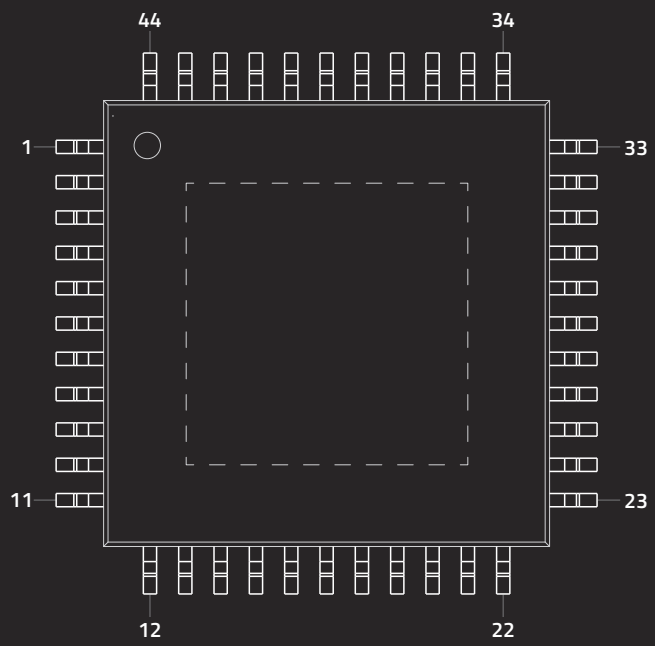
#	NAME	#	NAME	#	NAME	#	NAME
1	PG5 (OC0B)	26	PB7 (OC0A/OC1C/PCINT7)	51	PG0 (WR)	76	PA2 (AD2)
2	PE0 (RXD0/PCINT8)	27	PH7 (T4)	52	PG1 (RD)	77	PA1 (AD1)
3	PE1 (TXD0)	28	PG3 (TOSC2)	53	PC0 (A8)	78	PA0 (AD0)
4	PE2 (XCK0/AIN0)	29	PG4 (TOSC1)	54	PC1 (A9)	79	PJ7
5	PE3 (OC3A/AIN1)	30	RESET	55	PC2 (A10)	80	VCC (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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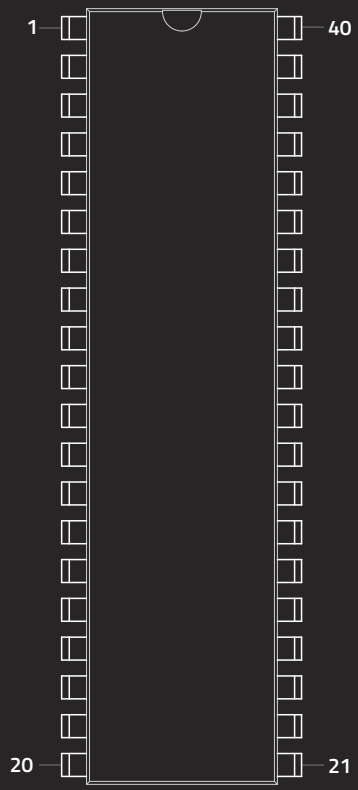
#	NAME	NOTES	#	NAME	NOTES
1	PB5 (MOSI)	PORT B. AN 8-BIT I/O PORT WITH INTERNAL PULL-UP RESISTORS	23	PC4 (TDO)	PORT C. 8-BIT I/O PORT WITH INTERNAL PULL-UP RESISTORS. ALSO SERVES JTAG INTERFACE FUNCTIONS
2	PB6 (MISO)		24	PC5 (TDI)	
3	PB7 (SCK)		25	PC6 (TOSC1)	
4	RESET	RESET INPUT	26	PC7 (TOSC2)	
5	VCC	SUPPLY VOLTAGE (4.5V-5.5V)	27	AVCC	SUPPLY VOLTAGE FOR 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.*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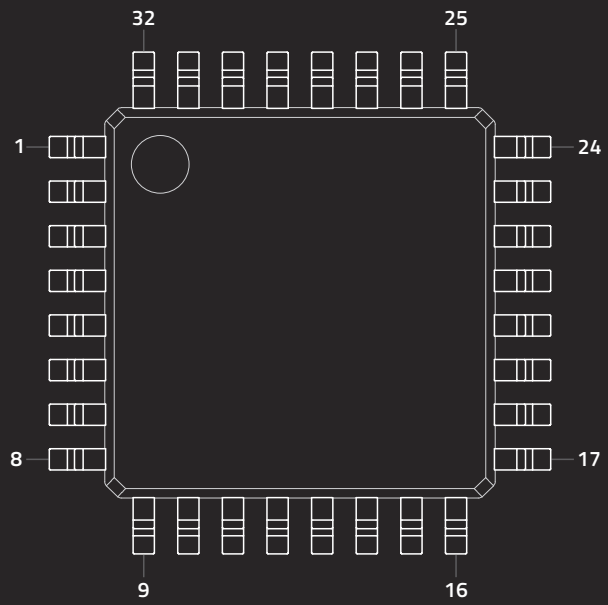
#	NAME	NOTES	#	NAME	NOTES
1	PB0 (XCK/T0)	PORT B. AN 8-BIT I/O PORT WITH INTERNAL PULL-UP RESISTORS	21	PD7 (OC2)	
2	PB1 (T1)		22	PC0 (SCL)	PORT C. 8-BIT I/O PORT WITH INTERNAL PULL-UP RESISTORS. ALSO SERVES JTAG INTERFACE FUNCTIONS
3	PB2 (INT2/AIN0)		23	PC1 (SDA)	
4	PB3 (OC0/AIN1)		24	PC2 (TCK)	
5	PB4 (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 FOR 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.*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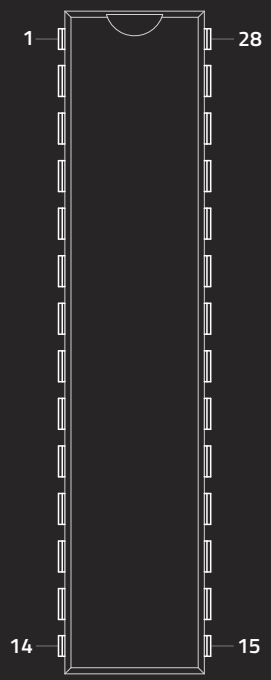
#	NAME	NOTES	#	NAME	NOTES
1	PD3 (PCINT19/OC2B/INT1)	SEE NOTE 1	17	PB5 (SCK/PCINT5)	SEE NOTE 1
2	PD4 (PCINT20/XCK/T0)	SEE NOTE 1	18	AVCC	SEE NOTE 3
3	GND	GROUND	19	ADC6	A/D CONVERTER INPUT
4	VCC	VOLTAGE SUPPLY (1.8V-5.5V)	20	AREF	ANALOG REFERENCE PIN
5	GND	GROUND	21	GND	GROUND
6	VCC	VOLTAGE SUPPLY (1.8V-5.5V)	22	ADC7	A/D CONVERTER INPUT
7	PB6 (PCINT6/XTAL1/TOSC1)	SEE NOTE 1	23	PC0 (ADC0/PCINT8)	SEE NOTE 2
8	PB7 (PCINT7/XTAL2/TOSC2)	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.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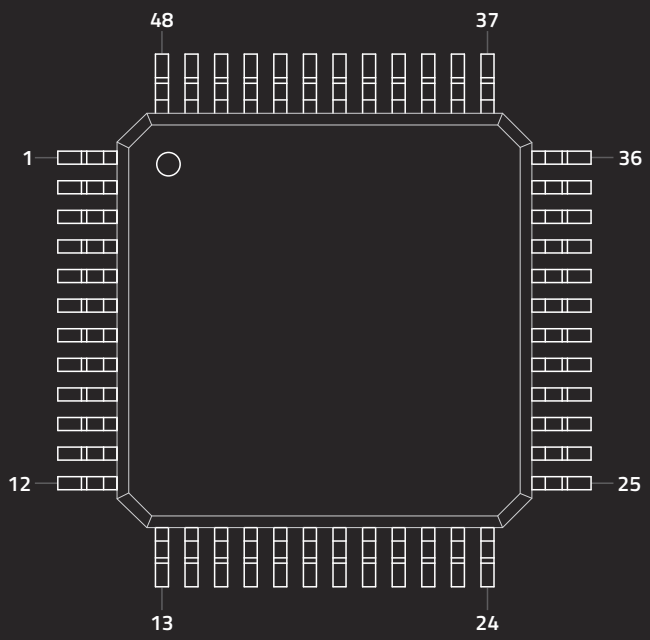
#	NAME	NOTES	#	NAME	NOTES
1	PC6 (PCINT14/RESET)	SEE NOTE 2	15	PB1 (OC1A/PCINT1)	SEE NOTE 1
2	PD0 (PCINT16/RXD)	SEE NOTE 1	16	PB2 (SS/OC1B/PCINT2)	SEE NOTE 1
3	PD1 (PCINT17/TXD)	SEE NOTE 1	17	PB3 (MOSI/OC2A/PCINT3)	SEE NOTE 1
4	PD2 (PCINT18/INT0)	SEE NOTE 1	18	PB4 (MISO/PCINT4)	SEE NOTE 1
5	PD3 (PCINT19/OC2B/INT1)	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 SUPPLY (1.8-5.5V)	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.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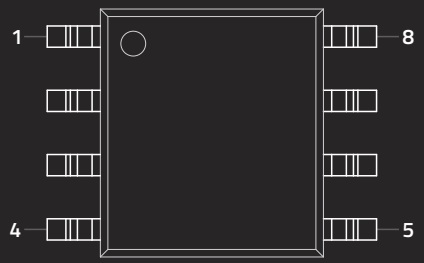
#	NAME	#	NAME	#	NAME	#	NAME
1	PA00	13	PA08	25	PA16	37	PB22
2	PA01	14	PA09	26	PA17	38	PB23
3	PA02	15	PA10	27	PA18	39	PA27
4	PA03	16	PA11	28	PA19	40	RESET
5	GNDANA	17	VDDIO	29	PA20	41	PA28
6	VDDANA	18	GND	30	PA21	42	GND
7	PB08	19	PB10	31	PA22	43	VDDCORE
8	PB09	20	PB11	32	PA23	44	VDDIN
9	PA04	21	PA12	33	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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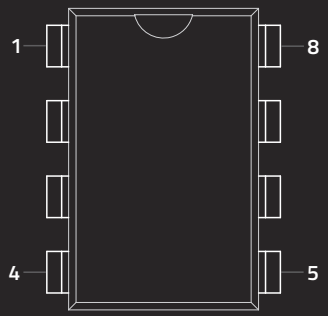
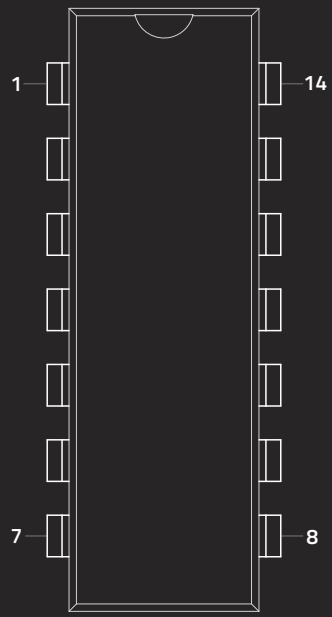
#	NAME	NOTES
1	PB5 (PCINT5/RESET/ADC0/DW)	PORT B. 6-BIT BI-DIRECTIONAL I/O PORT WITH INTERNAL PULL-UP RESISTORS. ALSO SERVES VARIOUS SPECIAL FEATURES (IN ROUND BRACKETS)
2	PB3 (PCINT3/XTAL1/CLKI/OC1B/ADC3)	
3	PB4 (PCINT4/XTAL2/CLKO/OC1B/ADC2)	
4	GND	GROUND
5	PB0 (MOSI/DI/SDA/AIN0/OC0A/OC1A/AREF/PCINT0)	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)

PINOUTS.ORG/E14



#	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	-	-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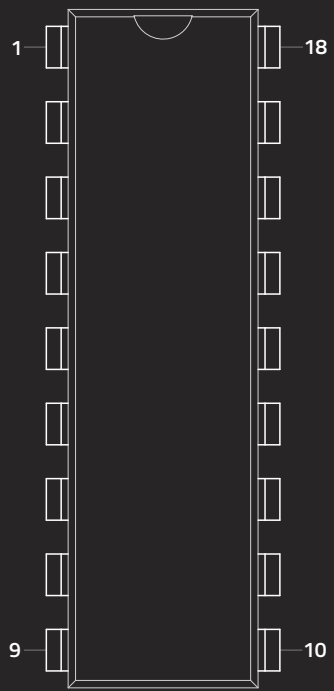
#	NAME	NOTES	TYPE
1	+V	SUPPLY VOLTAGE (4.5V OR 5V)	-
2	C.5	SERIAL IN	IN
3	C.4	TOUCH / ADC	IN / OUT
4	C.3	-	IN
5	C.2	PWN / HPWN A / KB CLK	IN / OUT
6	C.1	HPWN B / KB DATA	IN / OUT
7	C.0	ADC / TOUCH / PWN / HPWN C	IN / OUT
8	B.5	ADC / TOUCH / HPWN D	IN / OUT
9	B.4	ADC / TOUCH / PWN / HI2C SDA	IN / OUT
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	-	-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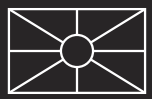
#	NAME	NOTES	TYPE
1	C.2	ADC / TOUCH / DAC	IN / OUT
2	C.3	SERIAL OUT	OUT
3	C.4	SERIAL IN	IN
4	C.5	-	IN
5	0V	-	-
6	B.0	SRI	IN / OUT
7	B.1	ADC / TOUCH / I2C SDA	IN / OUT
8	B.2	ADC / TOUCH / HSERIN	IN / OUT
9	B.3	ADC / TOUCH / PWN	IN / OUT
10	B.4	ADC / TOUCH / I2C SCL	IN / OUT
11	B.5	ADC / TOUCH / PWN / 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