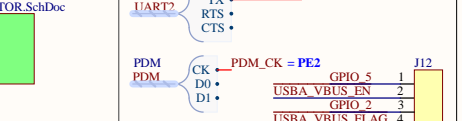
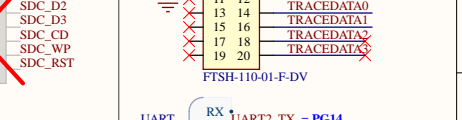
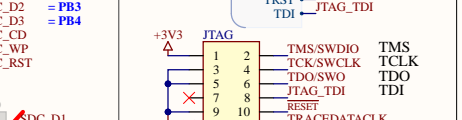
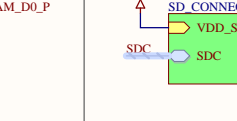
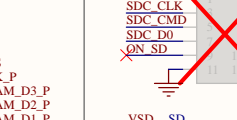
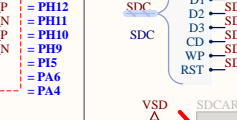
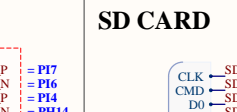
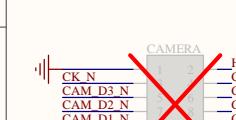
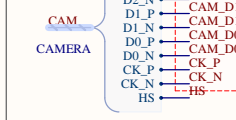
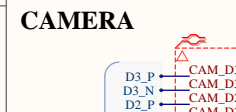
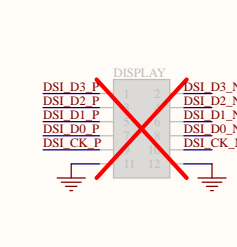
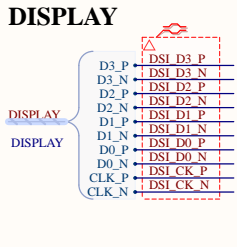
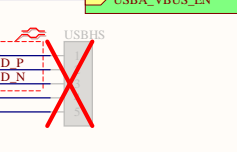
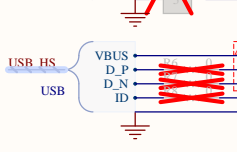
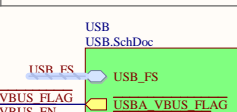
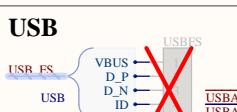
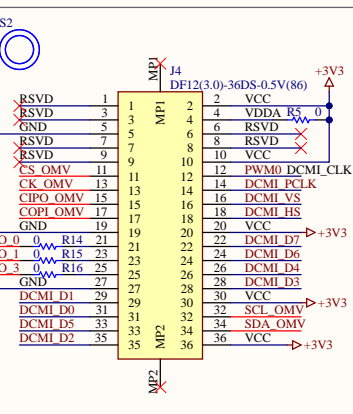
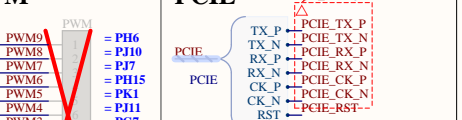
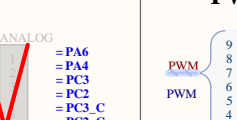
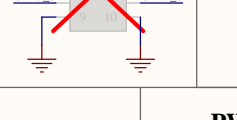
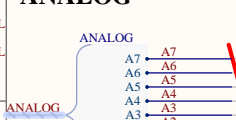
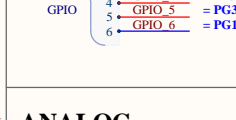
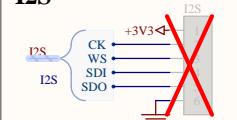
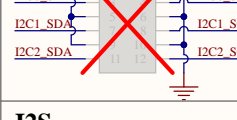
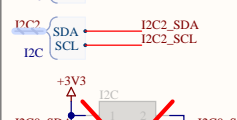
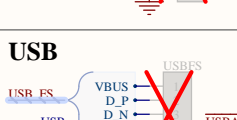
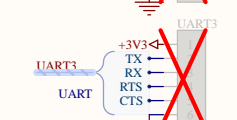
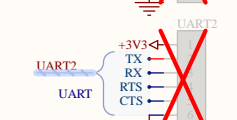
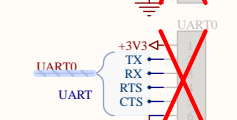


SHARED PINS TABLE (RED WIRES)

NET	BUS 1	BUS 2
I2C2.SCL	I2C CONN	OPENMV_CAM_SCL
I2C2.SDA	I2C CONN	OPENMV_CAM_SDA
SPI1.CLK	SPI1	OPENMV_CAM_SCK
SPI1.MISO	SPI1	OPENMV_CAM_MISO
SPI1.MOSI	SPI1	OPENMV_CAM_MOSI
SPI1.CS	SPI1	OPENMV_CAM_CS
GPIO_0	GPIO_CONN	OPENMV_CAM_RST
GPIO_1	GPIO_CONN	OPENMV_CAM_FSN
GPIO_3	GPIO_CONN	OPENMV_CAM_PWDN
PWM0	PWM	OPENMV_CAM_CLK
GPIO_4	GPIO_CONN	TRACEDATA0 (JTAG)
UART2_TX	UART2	TRACEDATA1 (JTAG)
PDM_CK	PDM	TRACEDATACLK (JTAG)
GPIO_5		



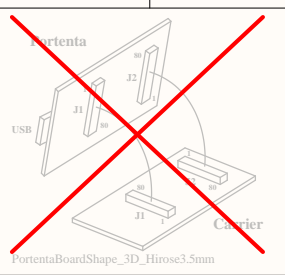
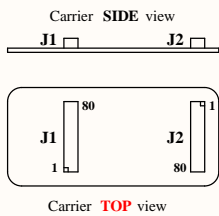
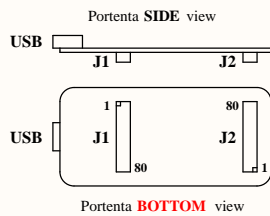
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Title: Portenta Breakout Carrier
 ID: ASX00031
 Date: 07/04/2022 Time: 16:39:20
 File: Top.SchDoc

Revision: V1.3
 Sheet 1 of 6
 Author: Ernesto Lopez

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 ARDUINO

RevAuthor: Silvio Navaretti



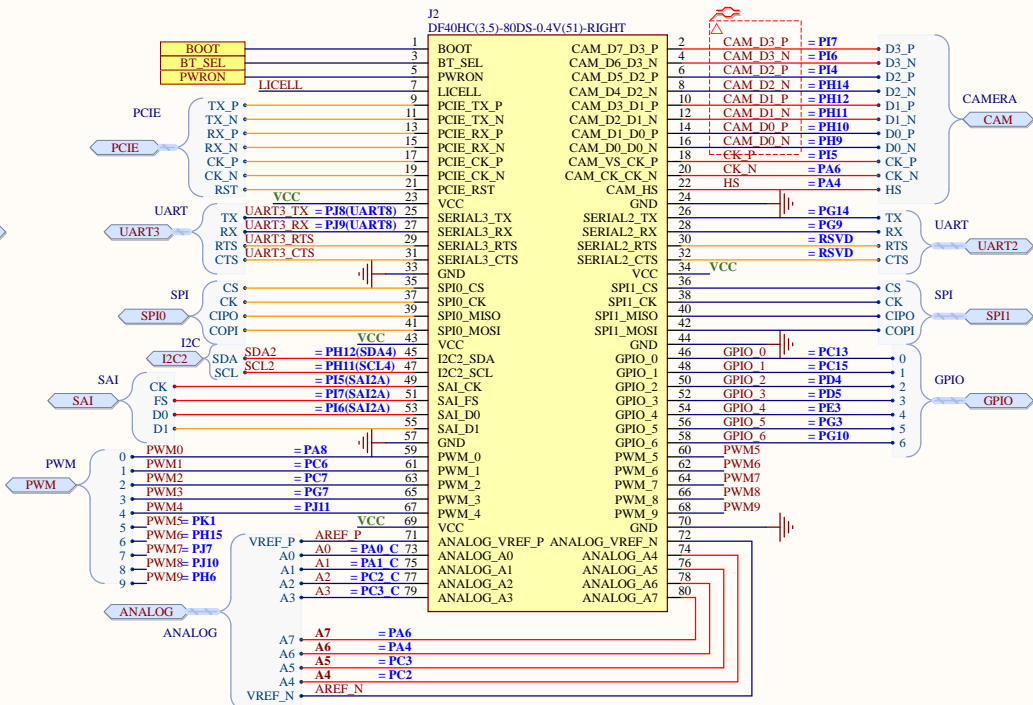
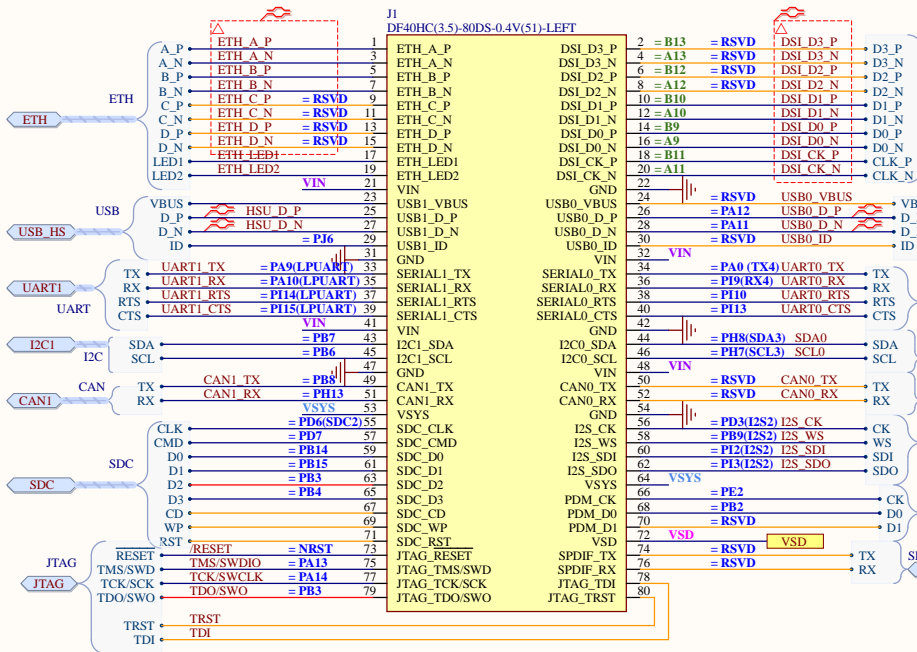
COLOR LEGEND:

RED WIRES with bold names represent pins shared between two different peripherals/busses on Portenta H7

= BLUE labels indicates portenta H7 pins
= GREEN labels indicates portenta M8 pins

Orange Wires represent not-connected pins on Portenta H7

HD Connectors on the shield are mirrored



SHARED PINS TABLE (RED WIRES)

NET	BUS 1	BUS 2
PB3	JTAG	SDC2
PH11	CAM	I2C4
PH12	CAM	I2C4
PI5	CAM	SAI2A
PI6	CAM D3_N	SAI2A
PI7	CAM D3_P	SAI2A
PA4	CAM	ANALOG
PA6	CAM	ANALOG
PC2	ANALOG (A4)	SPI2 (D10/MISO)
PC3	ANALOG (A5)	SPI2 (D8/MOSI)

POWER NETS TABLE

NET	TYPE	RANGES	DESCRIPTION
VIN	PORTENTA INPUT	4.1V to 6V.	Default 3.3V, PMIC (U10) programmable output.
VCC	PORTENTA OUTPUT	1.1V to 3.3V in steps, max 1A.	Default 3.3V, PMIC (U10) programmable output.
VSYS	PORTENTA RESERVED OUTPUT	RESERVED, DO NOT USE 3.5V to 4.2V, max 600mA.	Default 4.2V, PMIC (U10) programmable output which is also the input voltage of the bucks inside the PMIC itself.
LICELL	PORTENTA INPUT	Coinc cell max 3.6V, max 46uA.	Max 4uA with PMIC (U10) in coin cell mode, max 46uA with PMIC in standby/suspend mode.

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Title: Portenta Breakout Carrier

ID: ASX00031

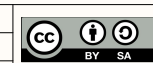
Revision: V1.3

Date: 07/04/2022 Time: 16:39:22

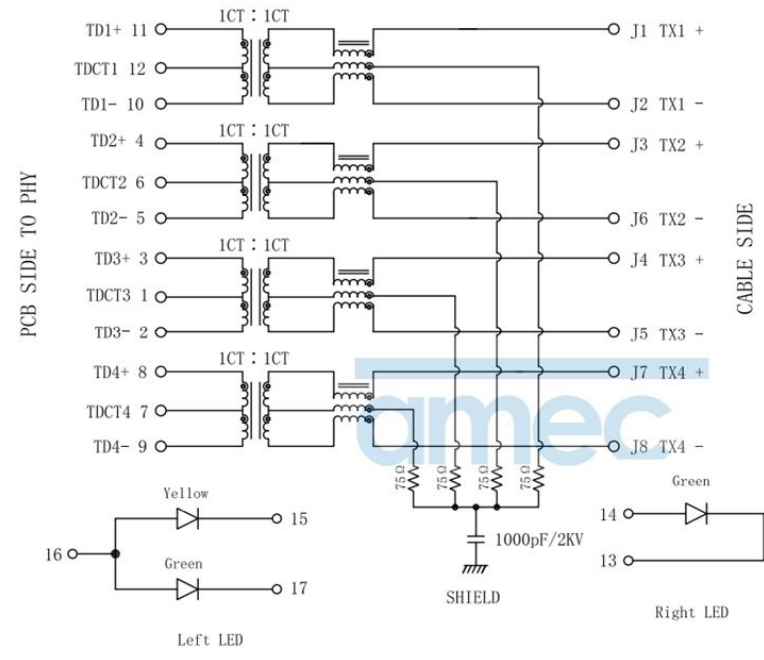
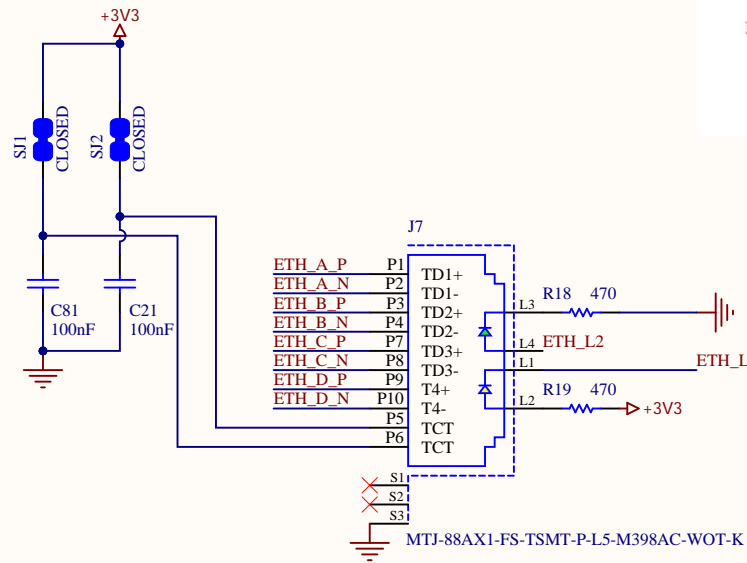
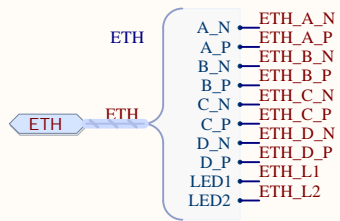
Sheet 2 of 6

File: HDConn_FEMALE.SchDoc

Author: S. Navaretti





RevAuthor: Silvio Navaretti



Cannot open file F:\ARDUINO\ETH2.png. File does not exist.

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Title: Portenta Breakout Carrier		 	
ID: ASX00031	Revision: V1.3		
Date: 07/04/2022	Time: 16:39:24	Sheet 3 of 6	
File: ETHERNET.SchDoc	Author: Ernesto Lopez	RevAuthor: Silvio Navaretti	

1

2

3

4

A

A

B

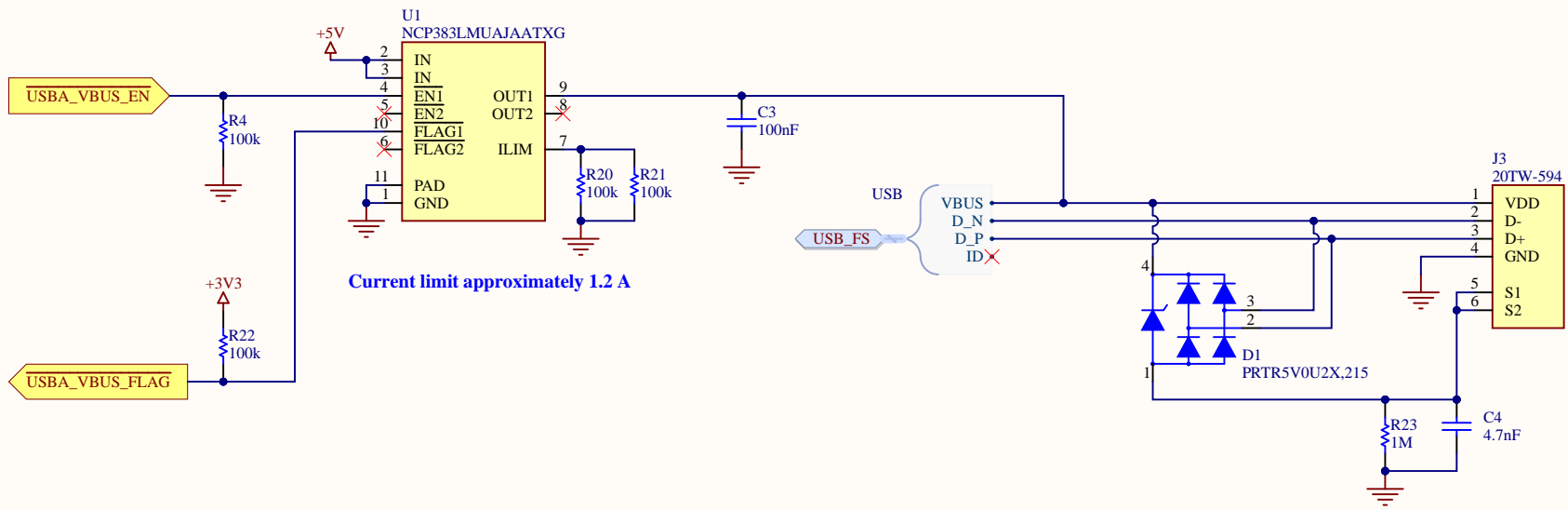
B

C

C

D



D



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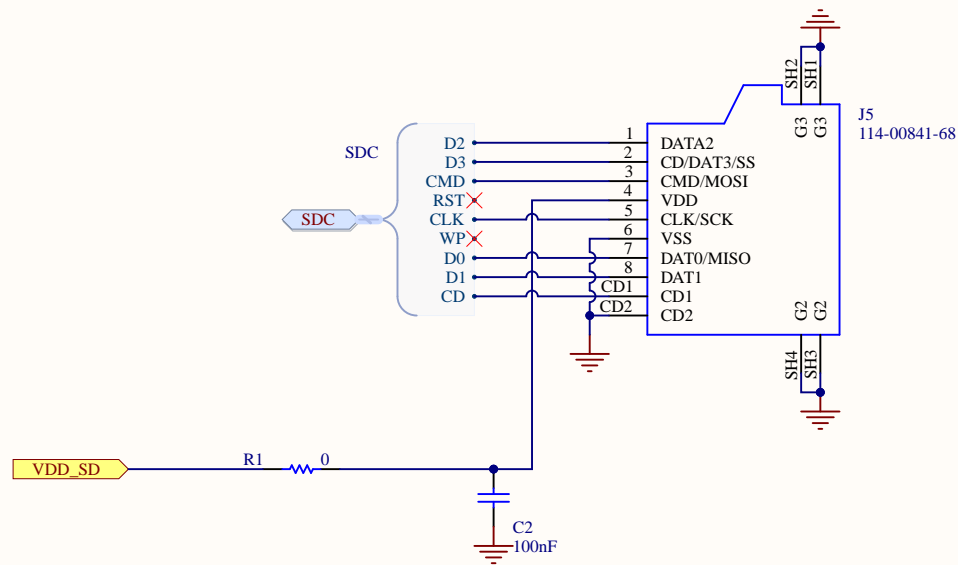
Title: Portenta Breakout Carrier			 
ID: ASX00031	Revision: V1.3		
Date: 07/04/2022	Time: 16:39:26	Sheet 4 of 6	
File: USB.SchDoe	Author: Ernesto Lopez		RevAuthor: Silvio Navaretti

1



2

3

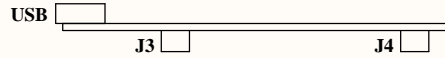
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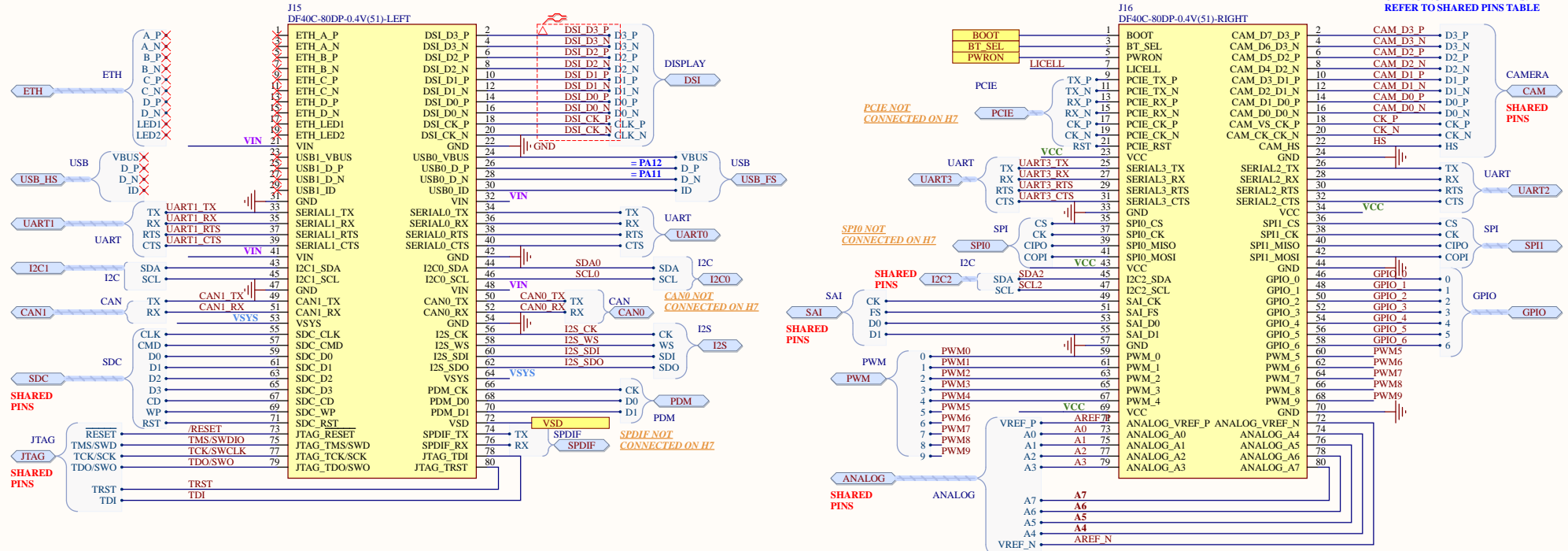
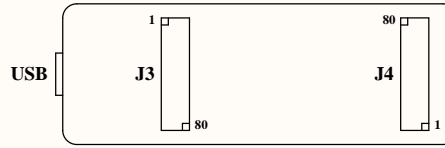
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Title: Portenta Breakout Carrier			 
ID: ASX00031	Revision: V1.3		
Date: 07/04/2022	Time: 16:39:27	Sheet 5 of 6	
File: SD_CONNECTOR.SchDoc		Author: Ernesto Lopez	RevAuthor: Silvio Navaretti

Board side view:



Board BOTTOM view:



IF NECESSARY ROUTE CAMERA WITH DIFFERENTIAL PAIR RULES REFER TO SHARED PINS TABLE

SHARED PINS TABLE

NET	BUS 1	BUS 2
JTAG	TRST	TRST
CAM	I2C4	I2C4
CAM	SAI2A	SAI2A
CAM	SAI2A	SAI2A
CAM	ANALOG	ANALOG
CAM	SPI2	SPI2
CAM	SPI2	SPI2

POWER NETS TABLE

NET	TYPE	RANGES	DESCRIPTION
VIN	PORTENTA INPUT	4.1V to 6V.	Default 3.3V, PMIC (U10) programmable output.
VCC	PORTENTA OUTPUT	1.1V to 3.3V in steps, max 1A.	Default 3.3V, PMIC (U10) programmable output.
VSYS	PORTENTA RESERVED OUTPUT	RESERVED, DO NOT USE 3.5V to 4.2V, max 600mA.	Default 4.2V, PMIC (U10) programmable output which is also the input voltage of the bucks inside the PMIC itself.
LICELL	PORTENTA INPUT	Coinc cell max 3.6V, max 46uA.	Max 4uA with PMIC (U10) in coin cell mode, max 46uA with PMIC in standby/suspend mode.

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Title: Portenta Breakout Carrier
 ID: ASX00031 Revision: V1.3
 Date: 07/04/2022 Time: 16:39:29 Sheet 6 of 6
 File: HDConn_MALE.SchDoc Author: S. Navaretti RevAuthor: Silvio Navaretti