

Reference Designs ARE PROVIDED "AS IS" AND "WITH ALL FAULTS. Arduino SA DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, REGARDING PRODUCTS, INCLUDING BUT NOT LIMITED TO, ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

Arduino SA may make changes to specifications and product descriptions at any time, without notice. The Customer must not rely on the absence or characteristics of any features or instructions marked "reserved" or "undefined".

Arduino SA reserves these for future definition and shall have no responsibility whatsoever for conflicts or incompatibilities arising from future changes to them. The product information on the Web Site or Materials is subject to change without notice.

Do not finalize a design with this info. ARDUINO and other Arduino brands and logos and Trademarks of Arduino SA. All Arduino SA Trademarks cannot be used without owner's formal permission.

#### Title: Portenta Breakout Carrier

ID: ASX00031

Revision: V1.3

Date: 07/04/2022

Time: 16:39:20

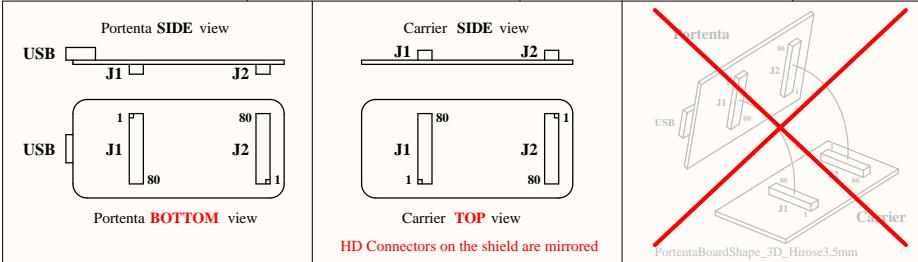
Sheet 1 of 6

File: TOP.SchDoc

Author: Ernesto Lopez

RevAuthor: Silvio Navaretti



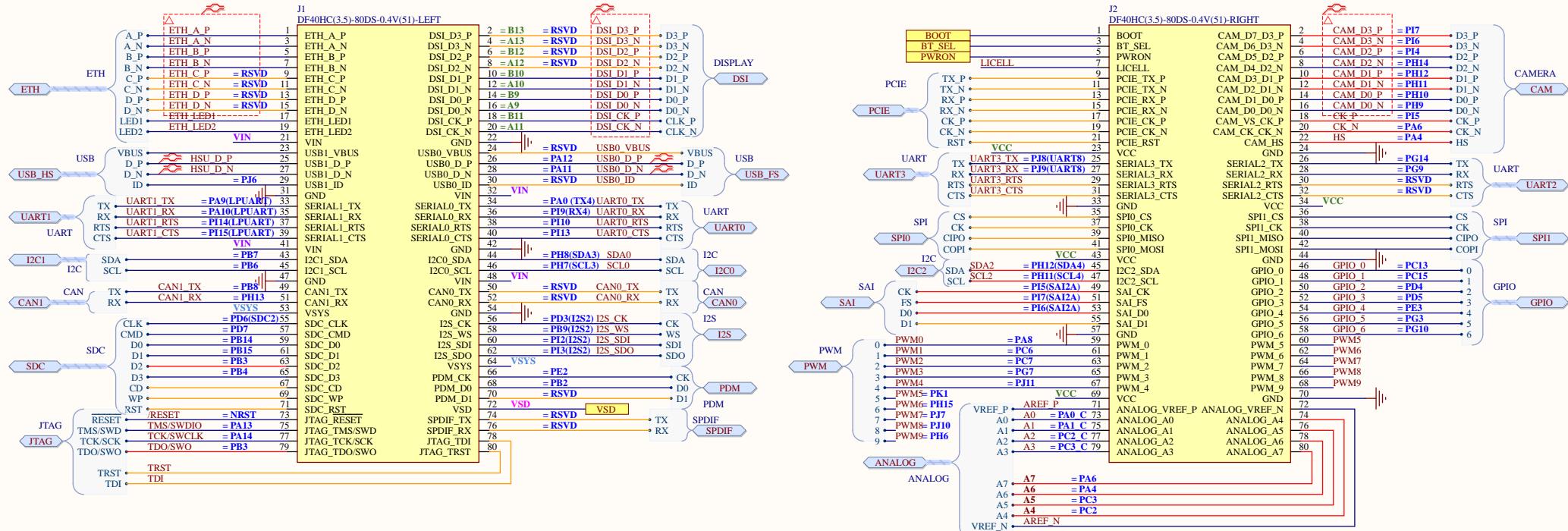


## COLOR LEGEND:

**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**



## SHARED PINS TABLE (RED WIRES)

NET	BUS 1	BUS 2
PB3	JTAG	SDC2
PH11	CAM	I2C4
PH12	CAM	I2C4
PI5	CAM	SA12A
PI6	CAM D3_N	SA12A
PI7	CAM D3_P	SA12A
PA4	CAM	ANALOG
PA6	CAM	ANALOG
PC2	ANALOG (A4)	ANALOG 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 buck inside the PMIC itself.
LICELL	PORTENTA INPUT	Coincell max 3.6V, max 46uA.	Max 4uA with PMIC (U10) in coin cell mode, max 46uA with PMIC in standby/suspend mode.

Reference Designs ARE PROVIDED "AS IS" AND "WITH ALL FAULTS. Arduino SA DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, REGARDING PRODUCTS, INCLUDING BUT NOT LIMITED TO, ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

Arduino SA may make changes to specifications and product descriptions at any time, without notice. The Customer must not rely on the absence or characteristics of any features or instructions marked "reserved" or "undefined".

Arduino SA reserves these for future definition and shall have no responsibility whatsoever for conflicts or incompatibilities arising from future changes to them. The product information on the Web Site or Materials is subject to change without notice.

Do not finalize a design with this info. ARDUINO and other Arduino brands and logos and Trademarks of Arduino SA. All Arduino SA Trademarks cannot be used without owner's formal permission.

## 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

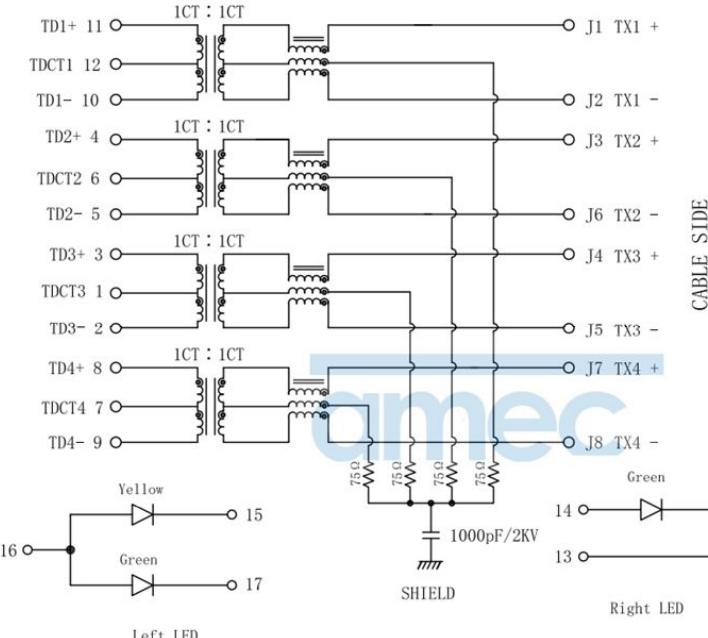
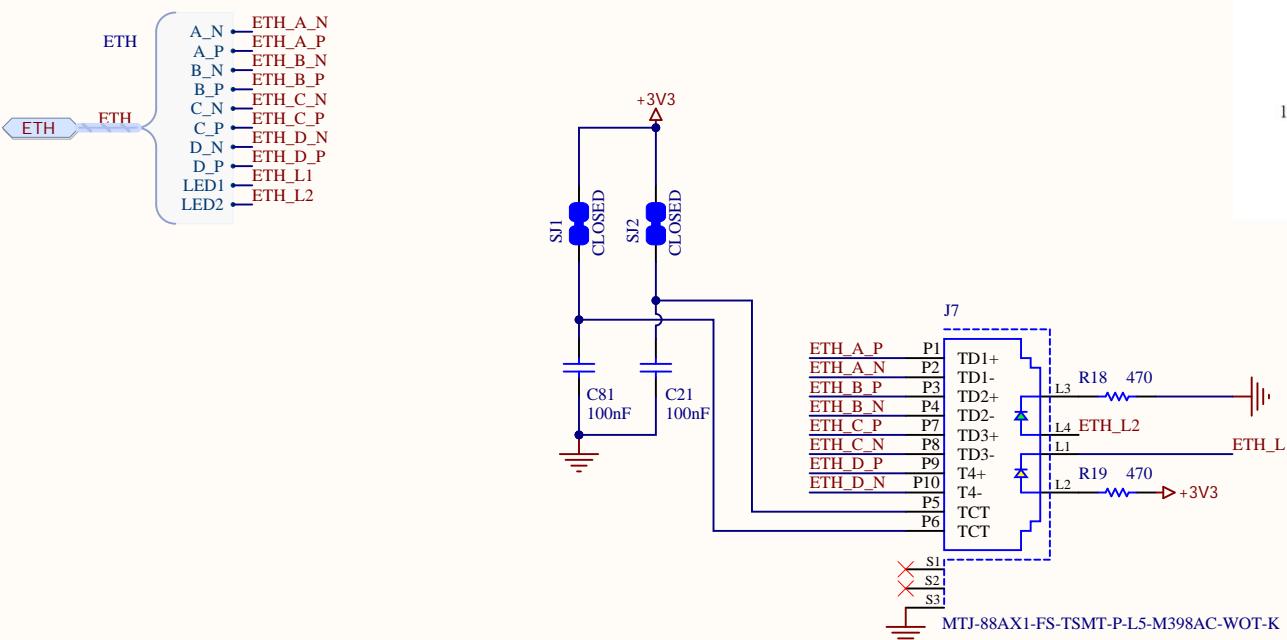


1

2

3

4



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

Reference Designs ARE PROVIDED "AS IS" AND "WITH ALL FAULTS. Arduino SA DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, REGARDING PRODUCTS, INCLUDING BUT NOT LIMITED TO, ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

Arduino SA may make changes to specifications and product descriptions at any time, without notice. The Customer must not rely on the absence or characteristics of any features or instructions marked "reserved" or "undefined". Arduino SA reserves these for future definition and shall have no responsibility whatsoever for conflicts or incompatibilities arising from future changes to them. The product information on the Web Site or Materials is subject to change without notice.

Do not finalize a design with this info. ARDUINO and other Arduino brands and logos and Trademarks of Arduino SA. All Arduino SA Trademarks cannot be used without owner's formal permission.

### 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



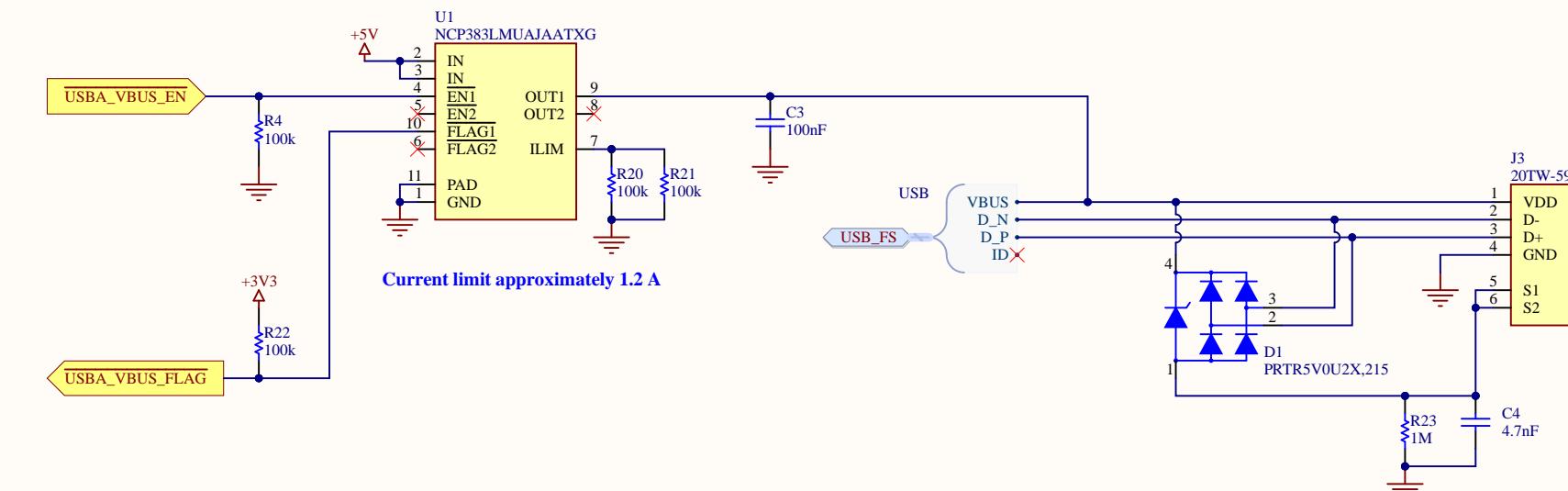
1

2

3

4

A



B

Reference Designs ARE PROVIDED "AS IS" AND "WITH ALL FAULTS. Arduino SA DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, REGARDING PRODUCTS, INCLUDING BUT NOT LIMITED TO, ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

Arduino SA may make changes to specifications and product descriptions at any time, without notice. The Customer must not rely on the absence or characteristics of any features or instructions marked "reserved" or "undefined". Arduino SA reserves these for future definition and shall have no responsibility whatsoever for conflicts or incompatibilities arising from future changes to them. The product information on the Web Site or Materials is subject to change without notice.

Do not finalize a design with this info. ARDUINO and other Arduino brands and logos and Trademarks of Arduino SA. All Arduino SA Trademarks cannot be used without owner's formal permission.

#### Title: Portenta Breakout Carrier

ID: ASX00031

Revision: V1.3

Date: 07/04/2022 Time: 16:39:26

Sheet 4 of 6

File: USB.SchDoc

Author: Ernesto Lopez

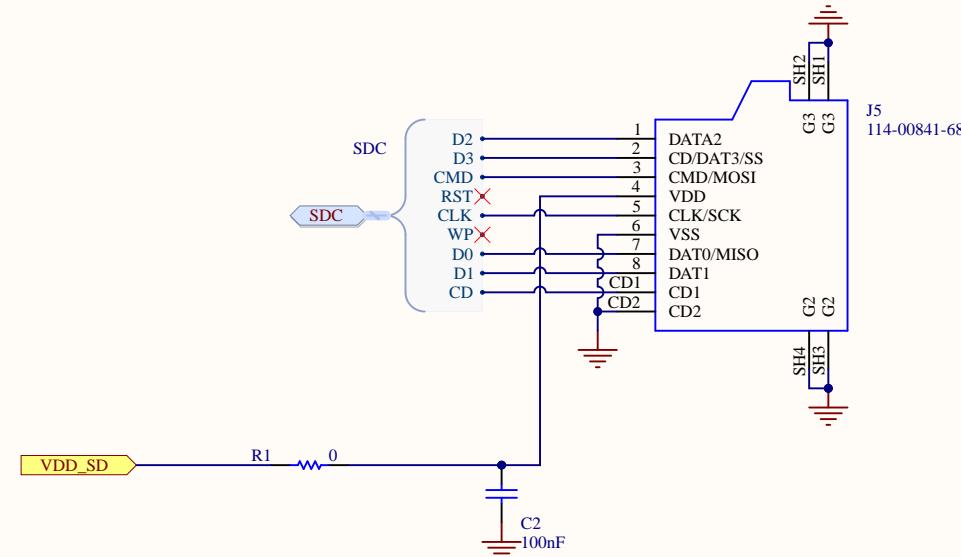


A

B

C

D



Reference Designs ARE PROVIDED "AS IS" AND "WITH ALL FAULTS. Arduino SA DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, REGARDING PRODUCTS, INCLUDING BUT NOT LIMITED TO, ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

Arduino SA may make changes to specifications and product descriptions at any time, without notice. The Customer must not rely on the absence or characteristics of any features or instructions marked "reserved" or "undefined". Arduino SA reserves these for future definition and shall have no responsibility whatsoever for conflicts or incompatibilities arising from future changes to them. The product information on the Web Site or Materials is subject to change without notice.

Do not finalize a design with this info. ARDUINO and other Arduino brands and logos and Trademarks of Arduino SA. All Arduino SA Trademarks cannot be used without owner's formal permission.

#### Title: Portenta Breakout Carrier

ID: ASX00031

Revision: V1.3

Date: 07/04/2022 Time: 16:39:27

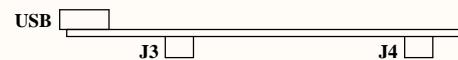
Sheet 5 of 6

File: SD\_CONNECTOR.SchDoc

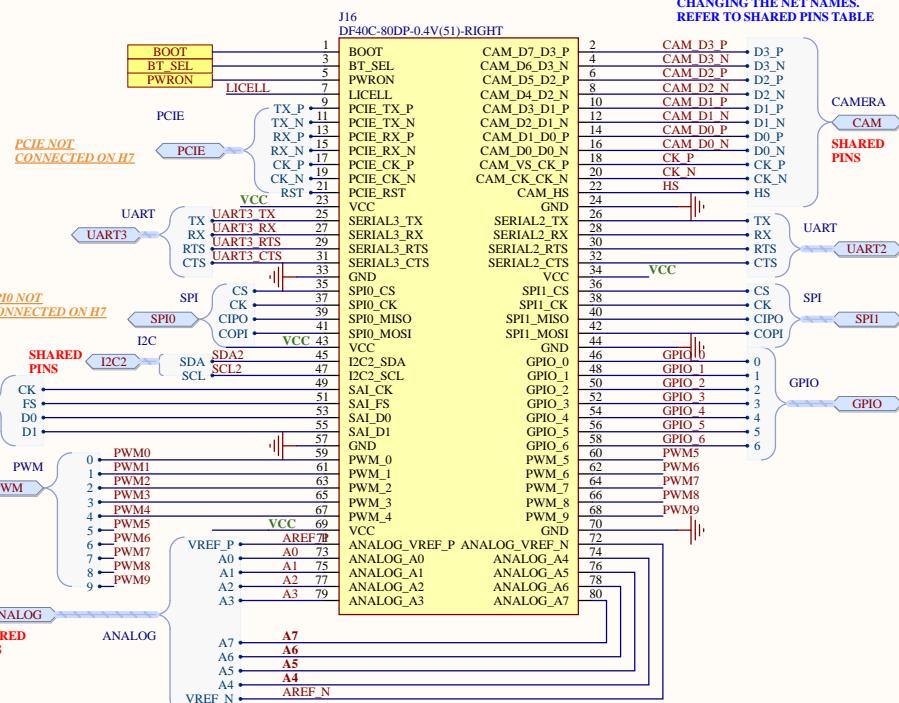
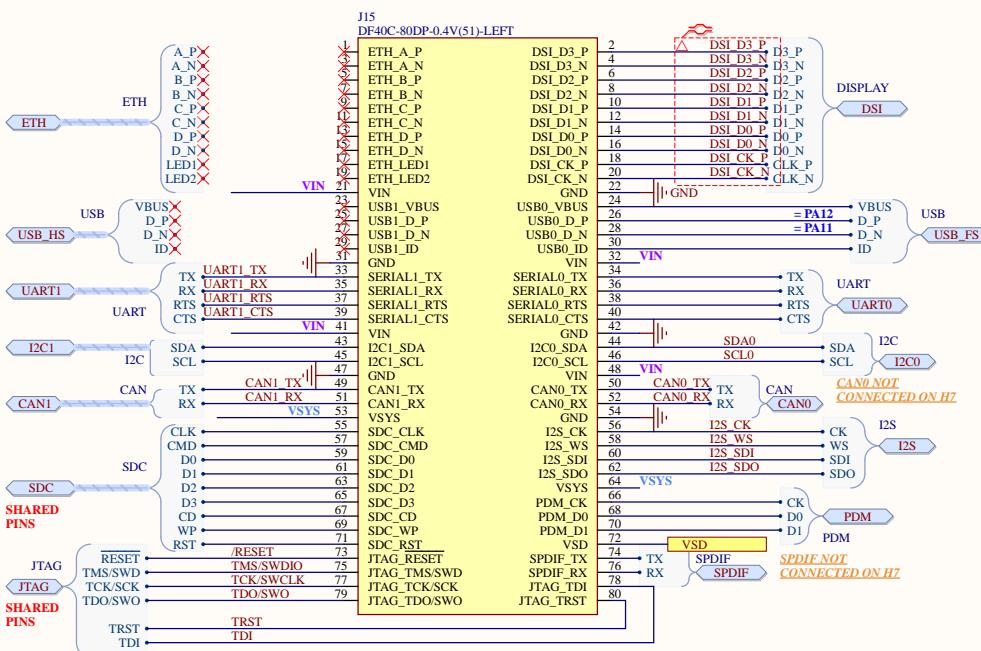
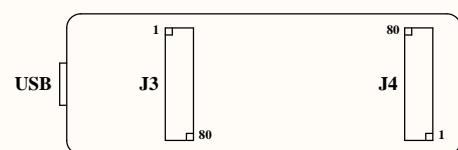
Author: Ernesto Lopez



## Board side view:



## Board BOTTOM view:



## SHARED PINS TABLE

NET	BUS 1	BUS 2
JTAG	SDC2	I2C4
CAM	I2C4	CAM
CAM	SA12A	SA12A
CAM	SA12A	SA12A
CAM	ANALOG	ANALOG
CAM	ANALOG	ANALOG
ANALOG	SP12	SP12
ANALOG	SP12	SP12

## 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	Default 4.2V, PMIC (U10) programmable output which is also the input voltage of the buck inside the PMIC itself.
LICELL	PORTENTA INPUT	3.5V to 4.2V, max 600mA.	Max 4uA with PMIC (U10) in coin cell mode, max 46uA with PMIC in standby/suspend mode.

Reference Designs ARE PROVIDED "AS IS" AND "WITH ALL FAULTS. Arduino SA DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, REGARDING PRODUCTS, INCLUDING BUT NOT LIMITED TO, ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

Arduino SA may make changes to specifications and product descriptions at any time, without notice. The Customer must not rely on the absence or characteristics of any features or instructions marked "reserved" or "undefined".

Arduino SA reserves these for future definition and shall have no responsibility whatsoever for conflicts or incompatibilities arising from future changes to them. The product information on the Web Site or Materials is subject to change without notice.

Do not finalize a design with this info. ARDUINO and other Arduino brands and logos are Trademarks of Arduino SA. All Arduino SA Trademarks cannot be used without owner's formal permission.

## Title: Portenta Breakout Carrier

ID: ASX00031

Revision: V1.3



Date: 07/04/2022 Time: 16:39:29 Sheet 6 of 6

File: HConn\_MALE.SchDoc Author: S. Navaretti RevAuthor: Silvio Navaretti