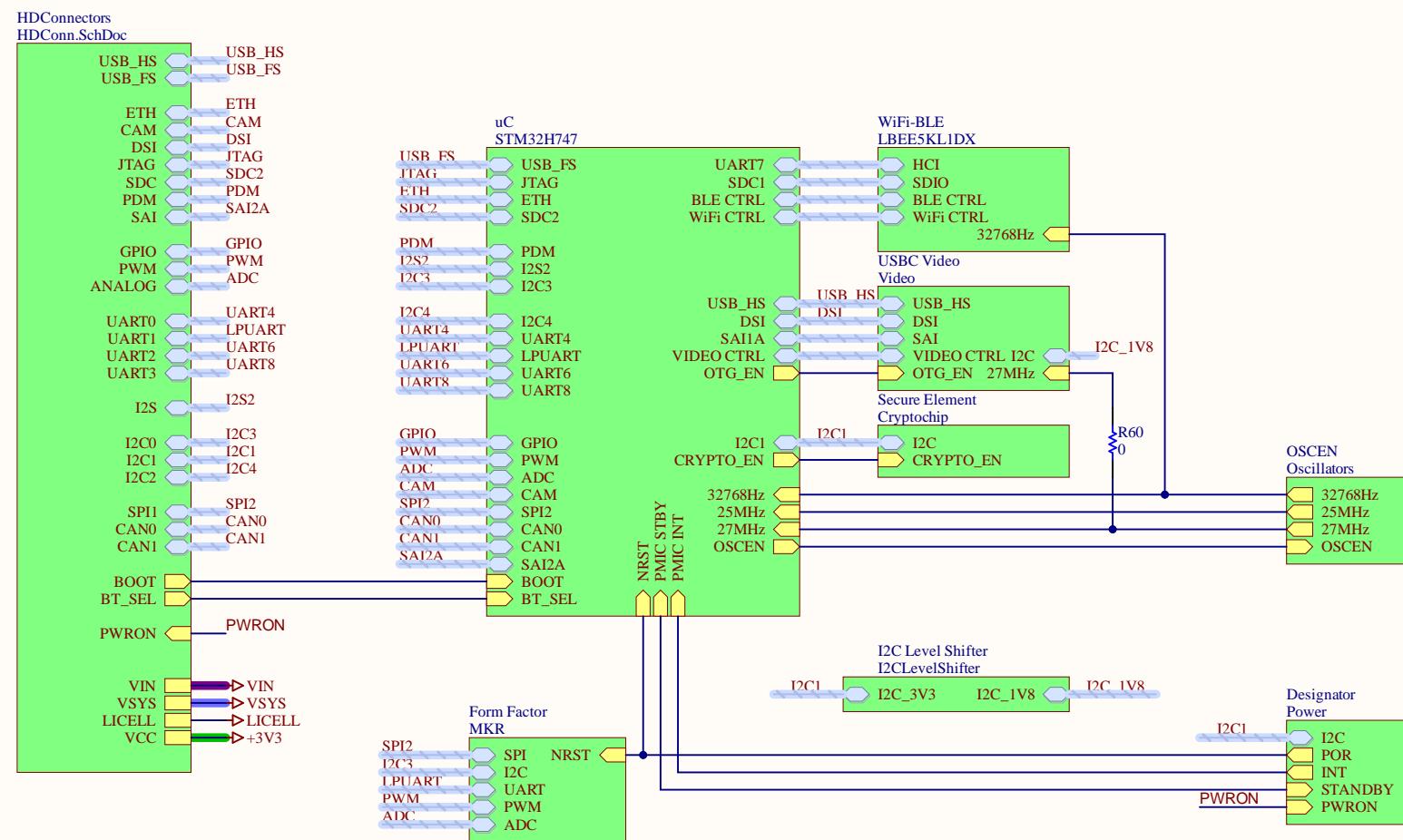


A



B

B

A

B

C

C

D

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: PortentaH7

ID: SL-ABX00042

Revision: V4.10

Date: 5/16/2023

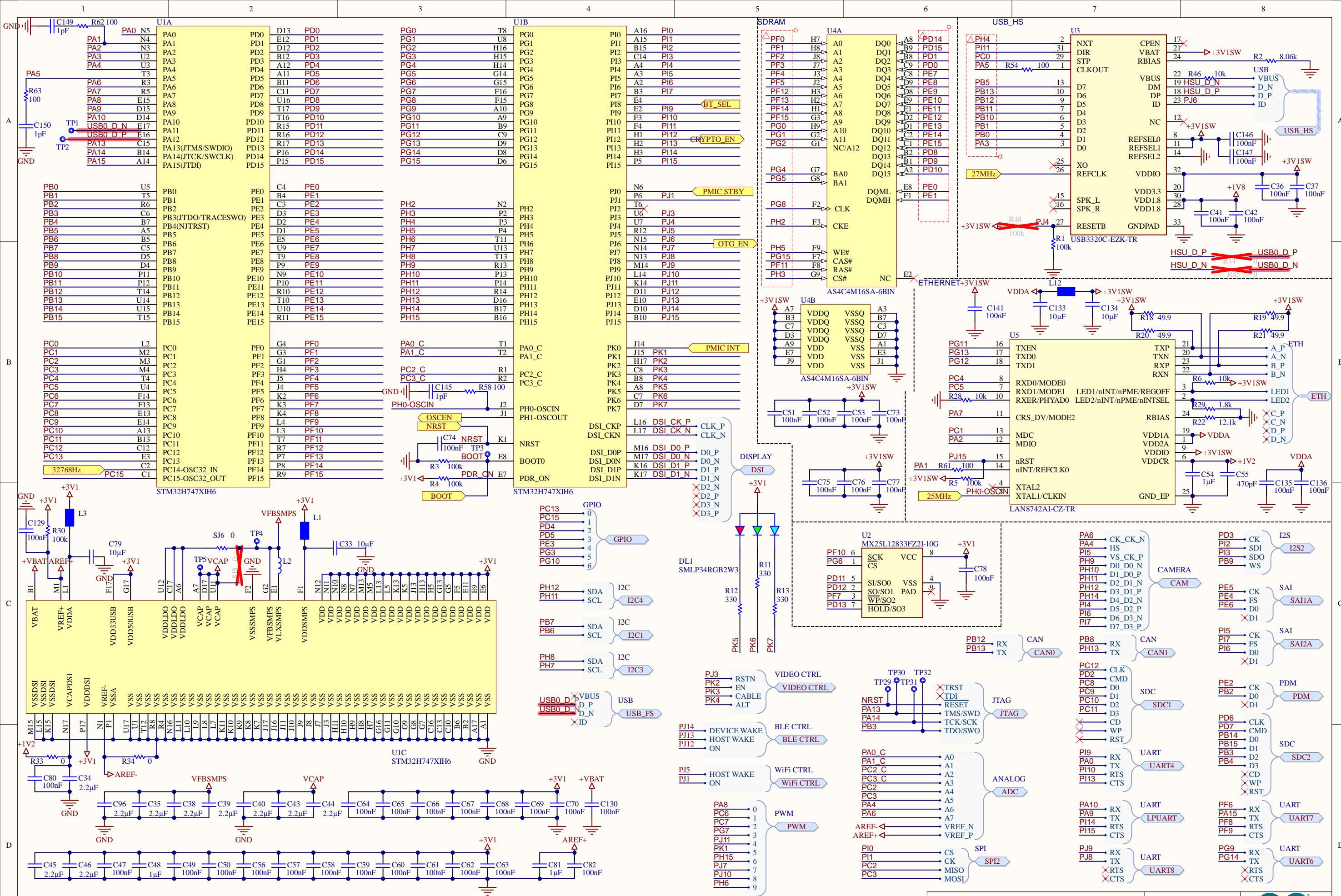
Time: 4:55:41 PM

Sheet 1 of 10

File: TopView.SchDoc

Author: Arturo Guadalupi





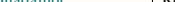
Reference Designs ARE PROVIDED "AS IS" AND "WITH ALL FAULTS. Arduino SA DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, REGARDING PRODUCTS, INCLUDING BUT NOT LIMITED TO, ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

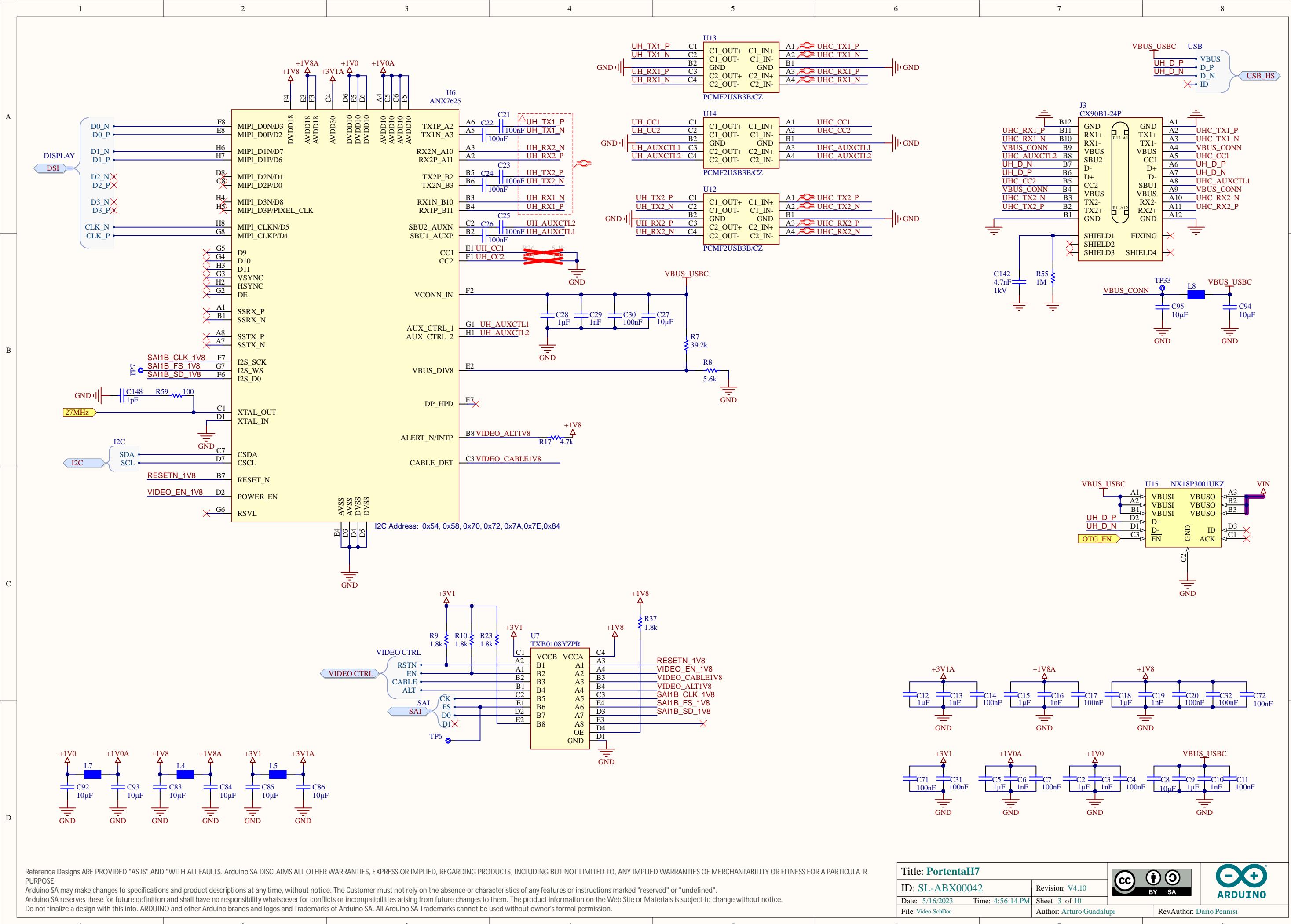
Arduíno SA may make changes to specifications and product descriptions at any time, without notice. The Customer must not rely on the absence or characteristics of any features or instructions marked "reserved" or "undefined".

Arduino SA may make changes to specifications and product descriptions at any time without notice. The customer shall rely on the accuracy of information contained in any documentation or other materials provided by Arduino SA 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: PortentaH7  
 D: SL-ABX00042 Revision: V4.10  
 Date: 5/16/2023 Time: 4:56:09 PM Sheet 2 of 10  
 File: STM32H747.SchDoc Author: Arturo Guadalupe RevAuthor: Dario Pennisi

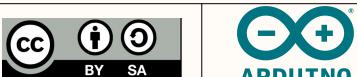


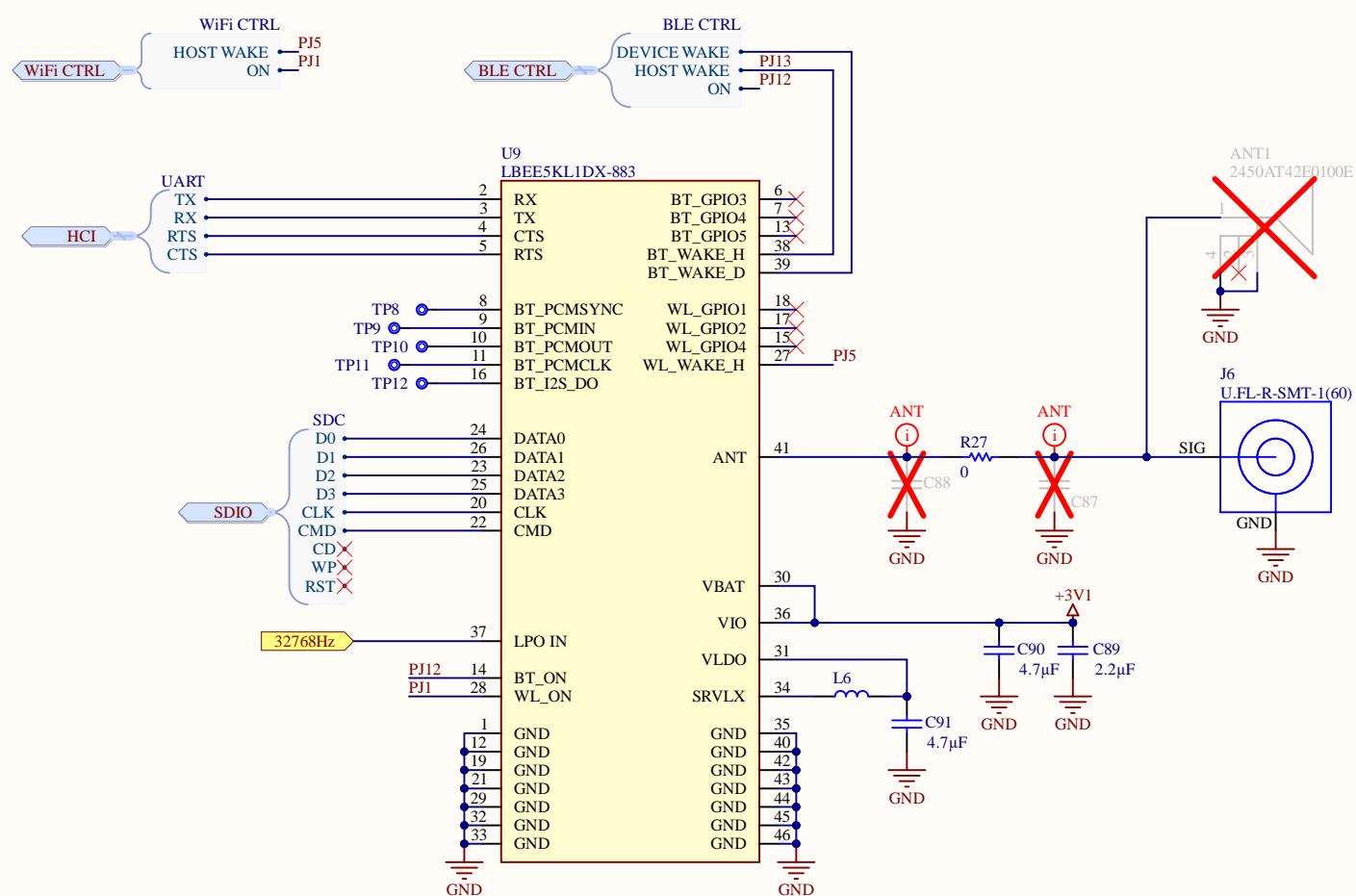
Reference Designs ARE PROVIDED "AS IS" AND "WITH ALL FAULTS. Arduino SA DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, REGARDING PRODUCTS, INCLUDING BUT NOT LIMITED TO, ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Arduino SA may change to specifications and product 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: PortentaH7		BY SA
ID: SL-ABX00042	Revision: V4.10	
Date: 5/16/2023	Time: 4:56:14 PM	
Sheet 3 of 10		

File: Video.SchDoc Author: Arturo Guadalupe RevAuthor: Dario Pennisi



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: PortentaH7

ID: SL-ABX00042

Revision: V4.10

Date: 5/16/2023 Time: 4:56:18 PM

Sheet 4 of 10

File: LBEE5KL1DX.SchDoc

Author: Arturo Guadalupe



A

B

C

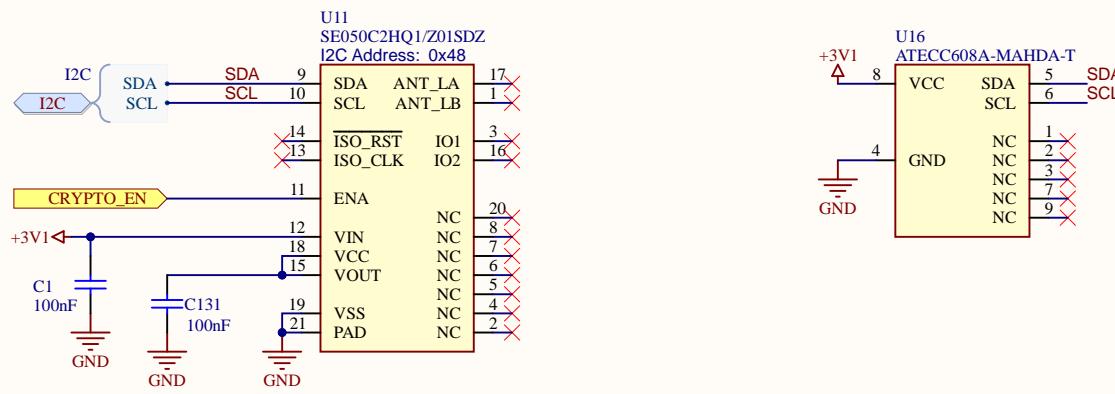
D

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: PortentaH7

ID: [SL-ABX00042](#)

Revision: [V4.10](#)

Date: [5/16/2023](#)

Time: [4:56:23 PM](#)

Sheet [5](#) of 10

File: [Cryptochip.SchDoc](#)

Author: [ArturoGuadalupe](#)



A

A

B

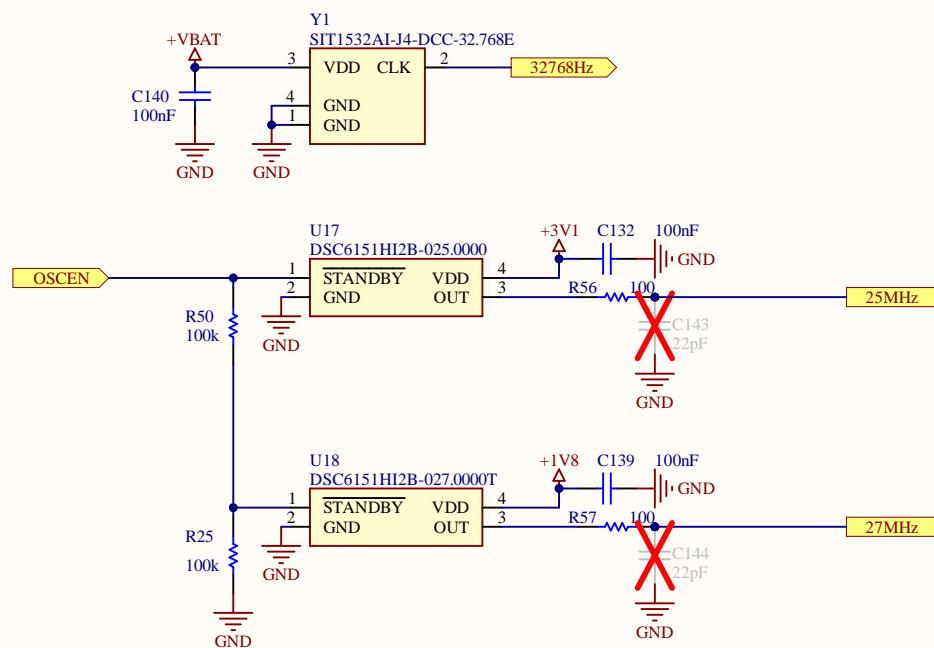
B

C

C

D

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: PortentaH7

ID: SL-ABX00042

Revision: V4.10

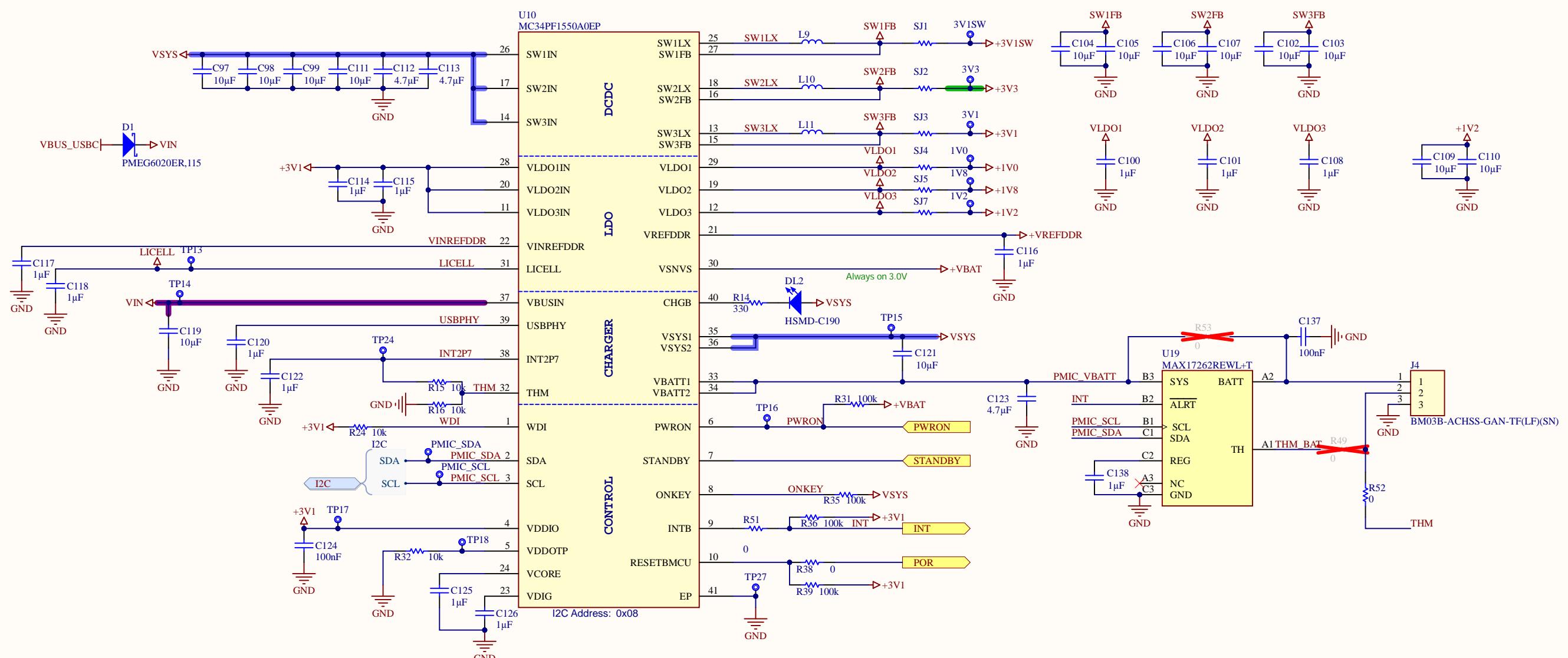
Date: 5/16/2023 Time: 4:56:27 PM Sheet 6 of 10

File: Oscillators.SchDoc

Author: Arturo Guadalupi

RevAuthor: Dario Pennisi





A

B

C

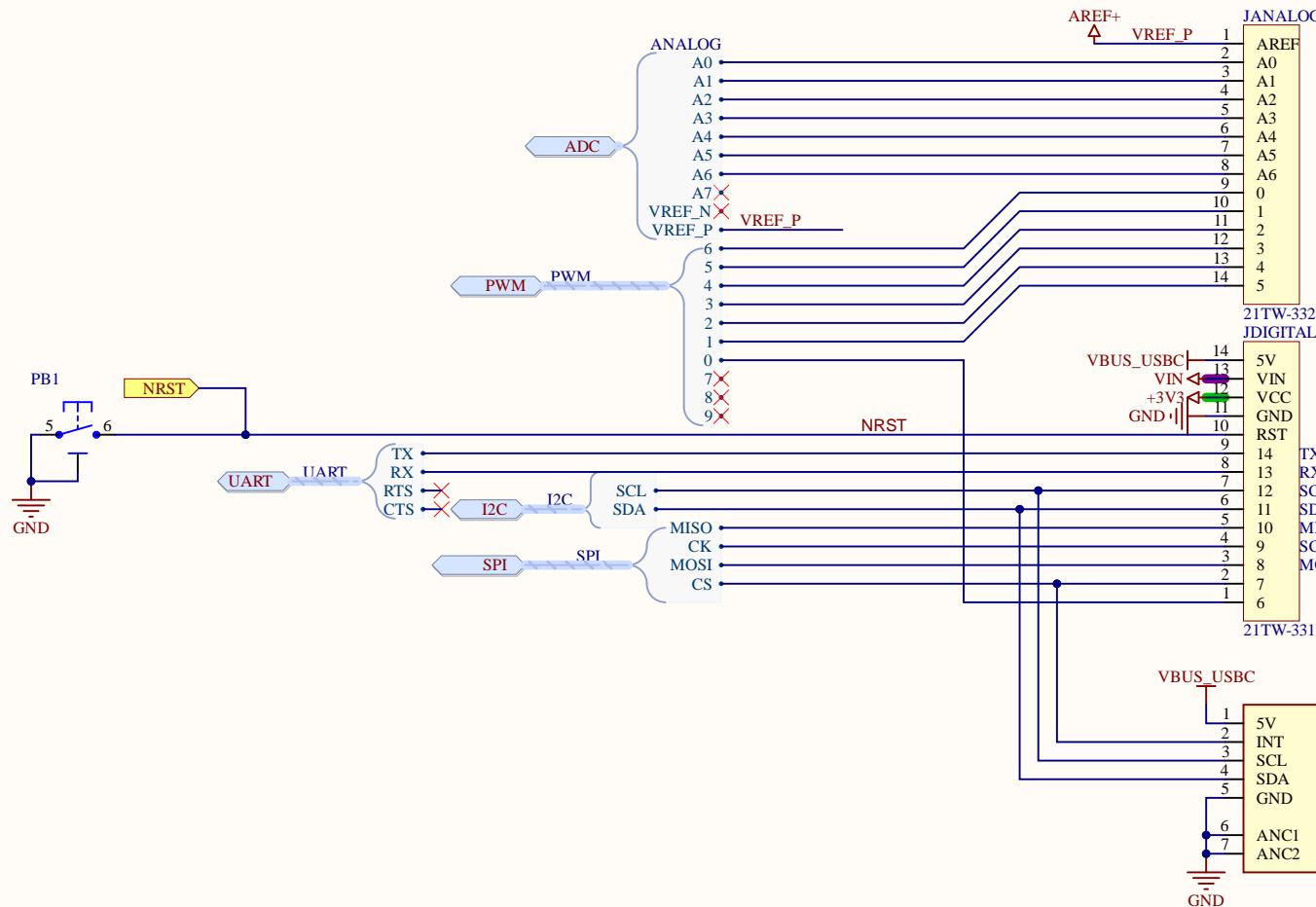
D

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: PortentaH7

ID: SL-ABX00042

Revision: V4.10

Date: 5/16/2023

Time: 4:56:36 PM

Sheet 8 of 10

File: MKR.SchDoc

Author: Arturo Guadalupe



A

B

C

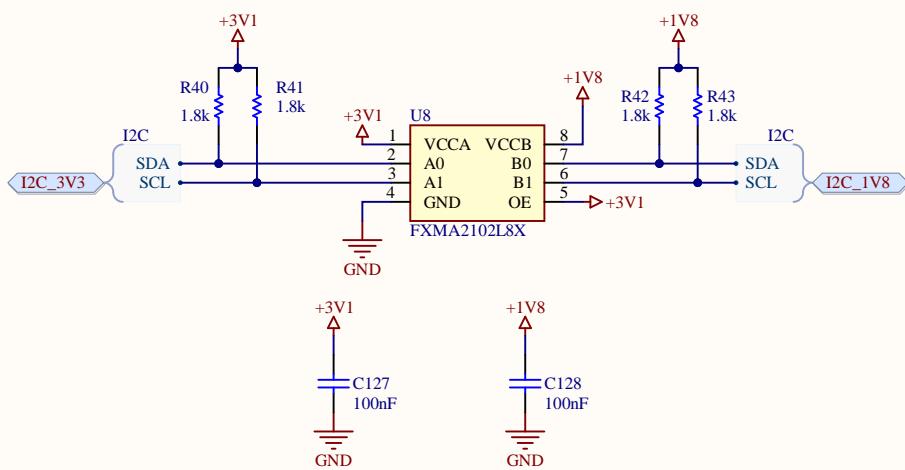
D

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: PortentaH7

ID: SL-ABX00042

Revision: V4.10

Date: 5/16/2023

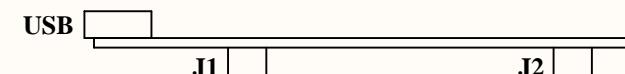
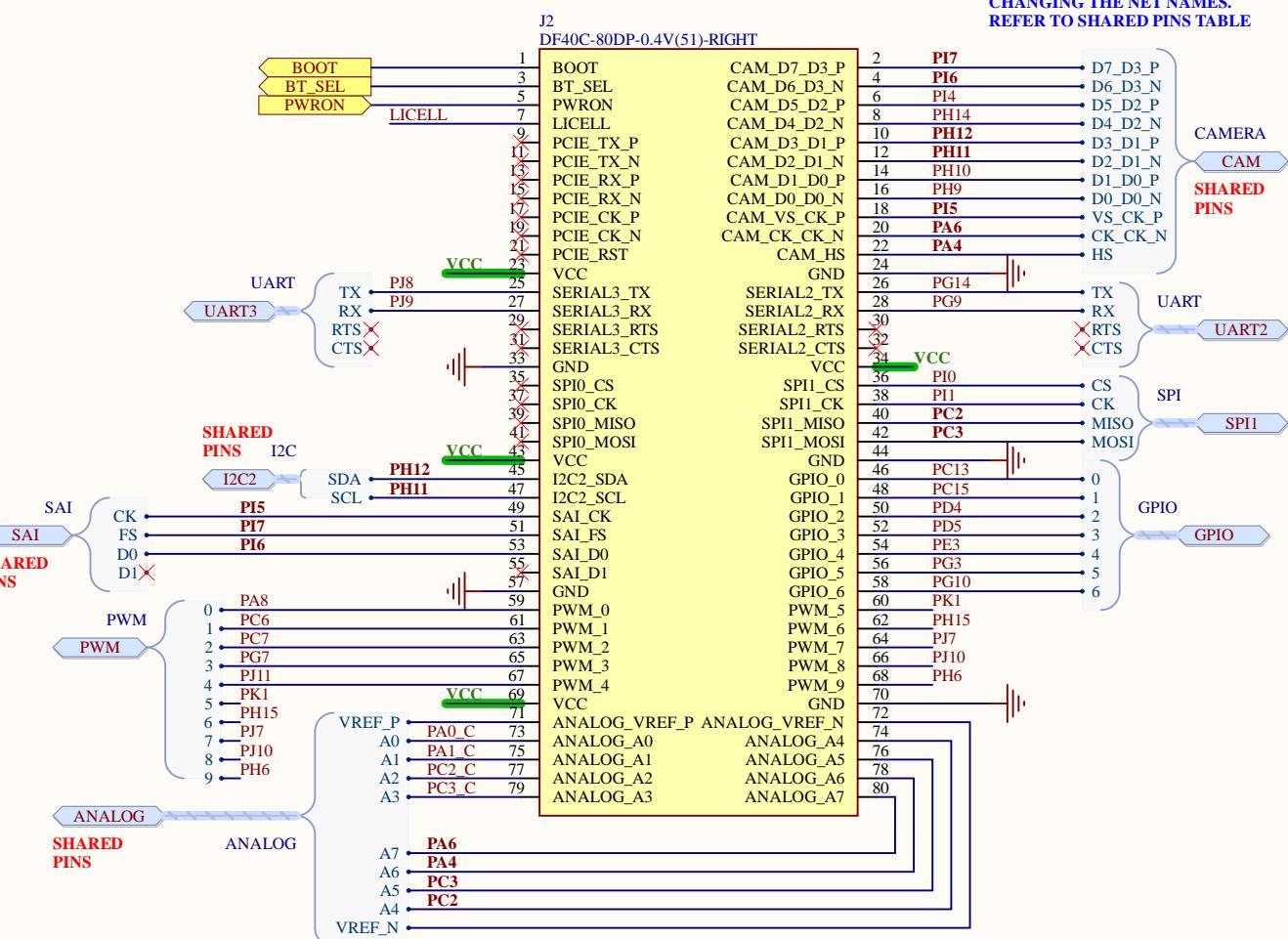
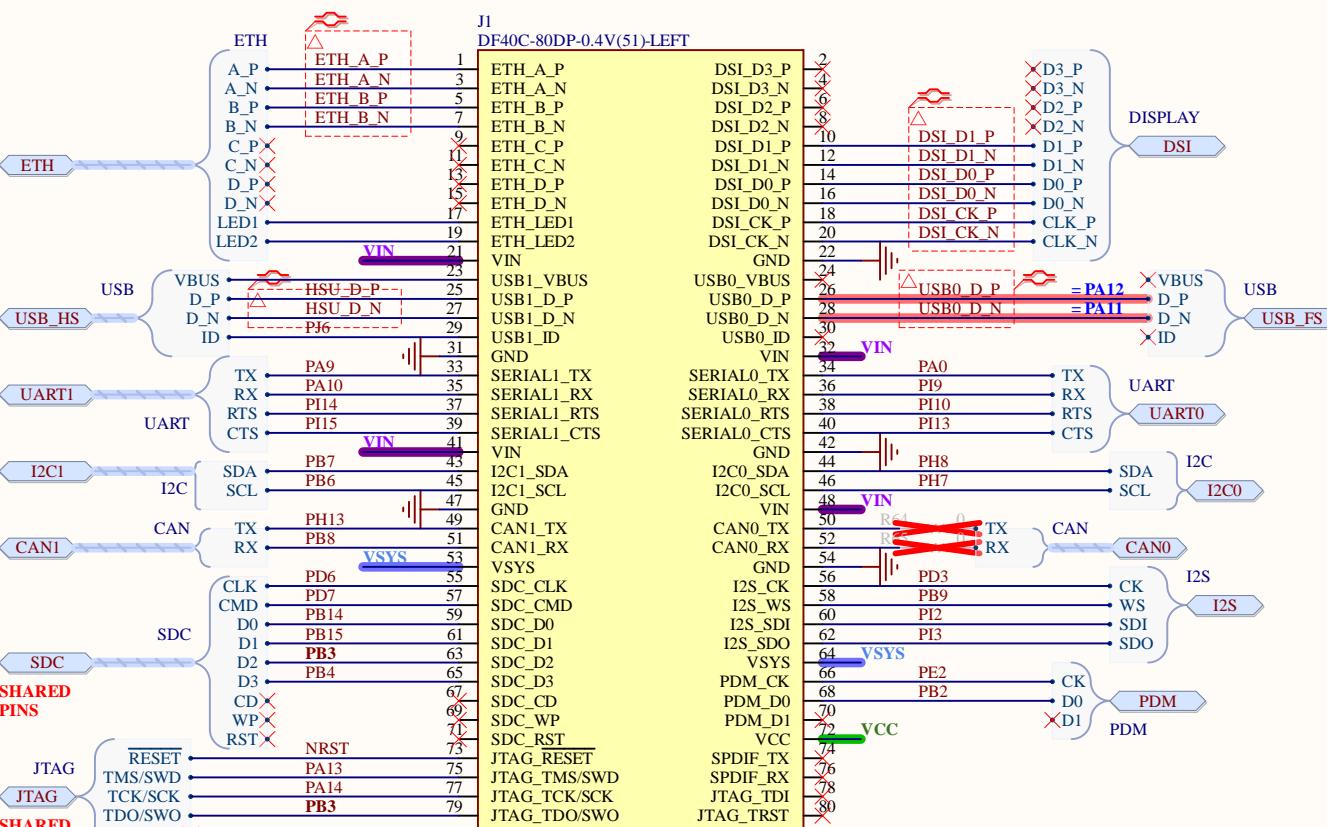
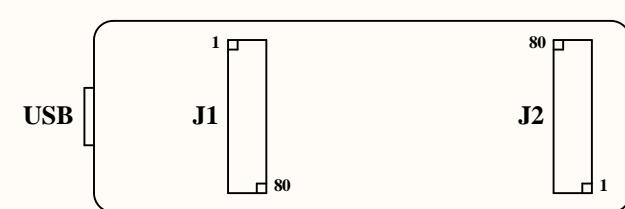
Time: 4:56:41 PM

Sheet 9 of 10

File: I2CLevelShifter.SchDoc

Author: Arturo Guadalupi



**Board side view:****Board BOTTOM view:****SHARED PINS TABLE**

NET	BUS 1	BUS 2
PB3	JTAG	SDC2
PH11	CAM	I2C4
PH12	CAM	I2C4
P15	CAM	SAI2A
P16	CAM	SAI2A
PI7	CAM	SAI2A
PA4	CAM	ANALOG
PA6	CAM	ANALOG
PC2	ANALOG	SPI2
PC3	ANALOG	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	Default 4.2V, PMIC (U10) programmable output which is also the input voltage of the bucks 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 and Trademarks of Arduino SA. All Arduino SA Trademarks cannot be used without owner's formal permission.

Title: HD Connectors

ID: SL-ABX00042

Revision: V4.10

Date: 5/16/2023 Time: 4:56:46 PM

Sheet 10 of 10

File: HDConn.SchDoc

Author: Arturo Guadalupe



This project's hardware is licensed under the Creative Commons Attribution-ShareAlike 4.0 International License. To view a copy of this license, visit <https://creativecommons.org/licenses/by-sa/4.0/deed.en>