

# Octavo Systems OSD32MP15x DK2 Reference Design (based on ST's STM32MP157x DK2 design)

## Table of contents

Sheet 1: Project/Top (this page)

Sheet 2: OSD32MP157C using STM32 MPU

Sheet 3: Power MPU

Sheet 4: Power PMIC

Sheet 5: USB Host Hub &Type-C DRP

Sheet 6: Audio

Sheet 7: DSI LCD Connector

Sheet 8: HDMI

Sheet 9: GPIO & Arduino Connectors

Sheet 10: DDR3 16bits

Sheet 11: Ethernet

Sheet 12: Peripherals

Sheet 13: WLAN Bluetooth

Sheet 14: Peripherals, ST\_LINK\_V2-1

ST's DK2 Reference Design can be found at:  
[https://www.st.com/resource/en/schematic\\_pack/mb1272-dk2-c01\\_schematic.pdf](https://www.st.com/resource/en/schematic_pack/mb1272-dk2-c01_schematic.pdf)

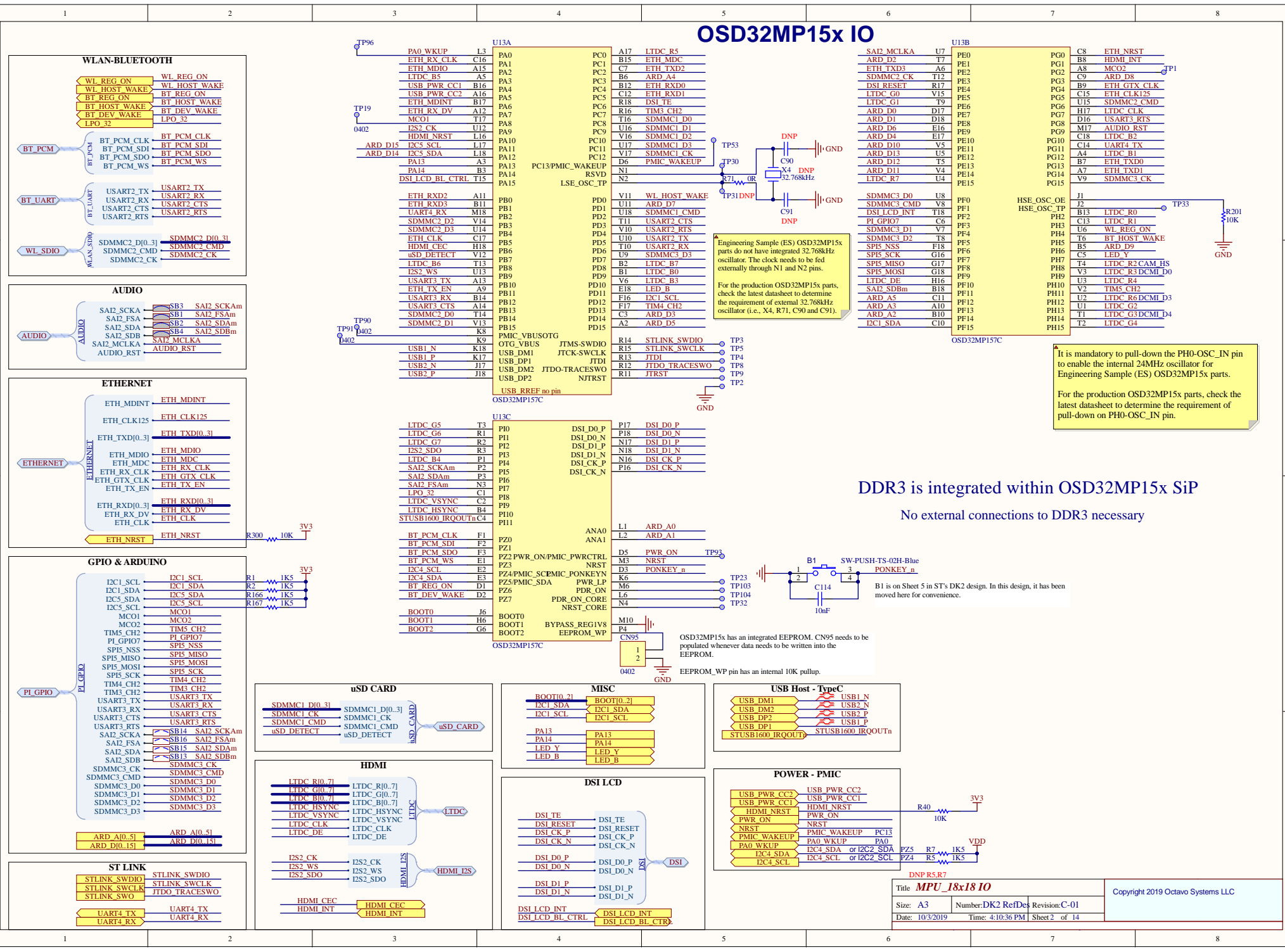
10/03/2019 - Rev. C-01: Initial Release

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The Revision number of this schematic matches its ST DK2 counterpart.

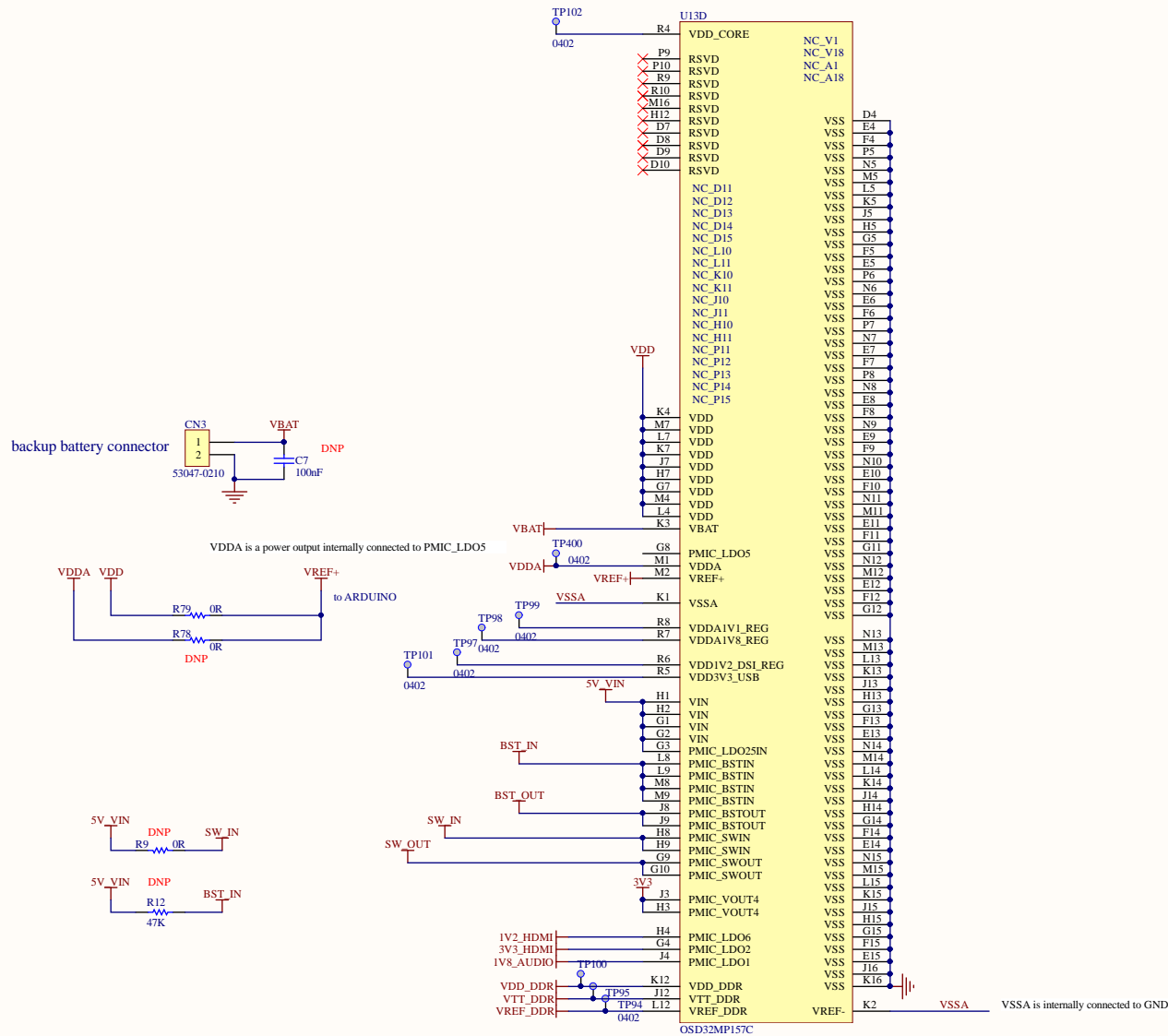
|                     |                   |               |                                   |
|---------------------|-------------------|---------------|-----------------------------------|
| Title: <b>Title</b> |                   |               | Copyright 2019 Octavo Systems LLC |
| Size: A3            | Number:DK2 RefDes | Revision:C-01 |                                   |
| Date: 10/3/2019     | Time: 4:10:36 PM  | Sheet 1 of 14 |                                   |



It is mandatory to pull-down the PH0-OSC\_IN pin to enable the internal 24MHz oscillator for Engineering Sample (ES) OSD32MP15x parts.

For the production OSD32MP15x parts, check the latest datasheet to determine the requirement of pull-down on PH0-OSC\_IN pin.

# OSD32MP15x POWER

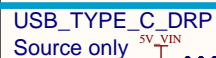


## A



B





Source only

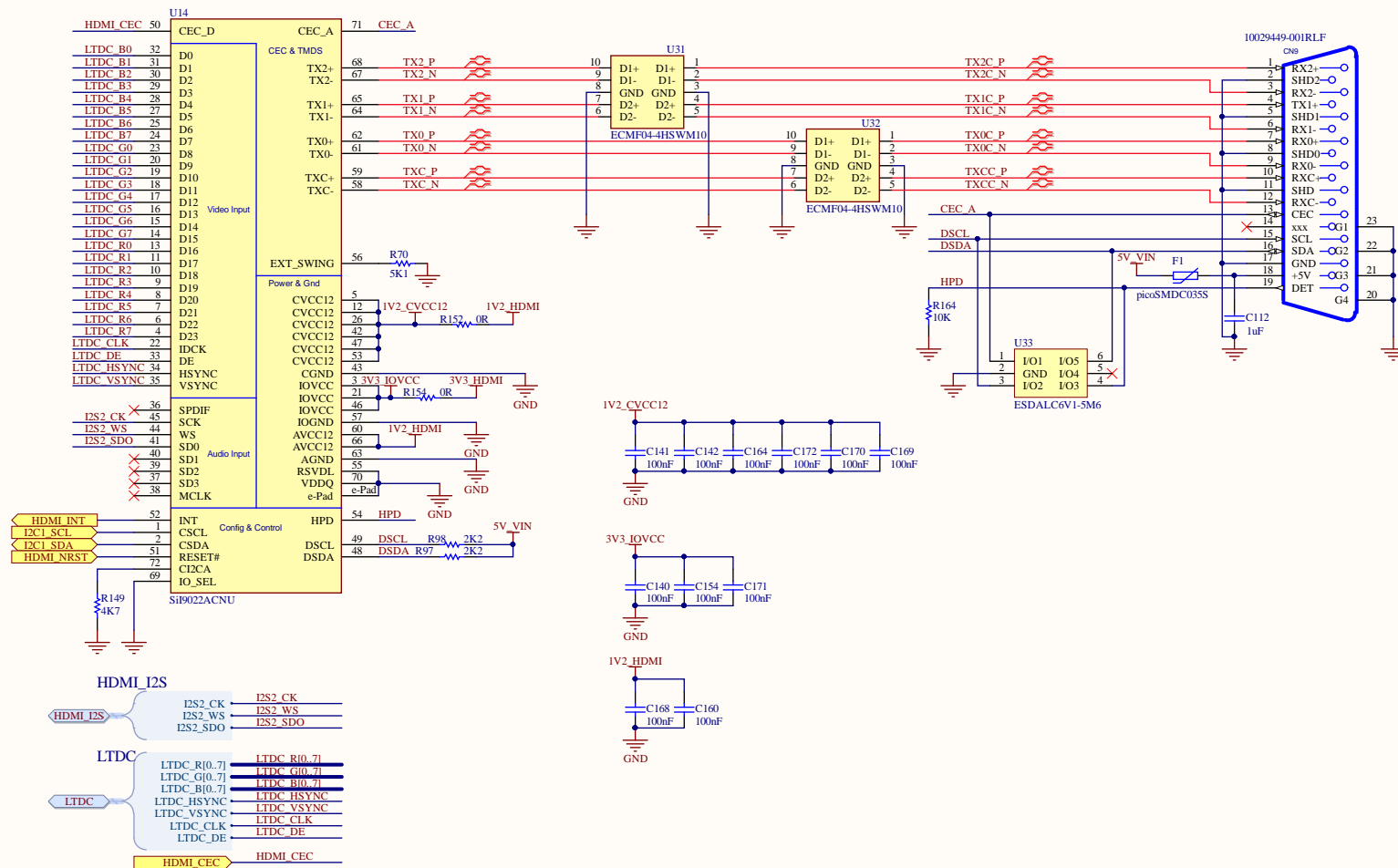


This schematic reflects the connections in ST's DK2 layout. In the schematics of ST's DK2 design, all the even pins of CN4 are NC but they're connected (as shown here) in layout.

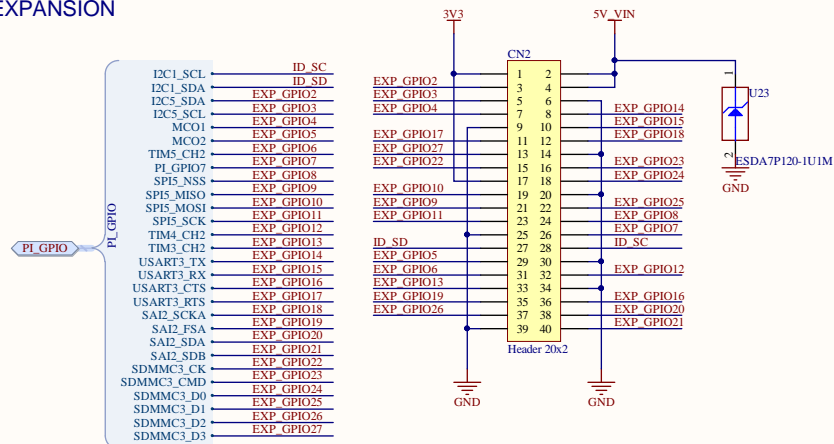


|                                       |                           |                             |                                   |
|---------------------------------------|---------------------------|-----------------------------|-----------------------------------|
| Title <b><i>DSI_LCD_connector</i></b> |                           |                             | Copyright 2019 Octavo Systems LLC |
| Size: <b>A3</b>                       | Number: <b>DK2 RefDes</b> | Revision: <b>C-01</b>       |                                   |
| Date: <b>10/3/2019</b>                | Time: <b>4:10:38 PM</b>   | Sheet <b>7</b> of <b>14</b> |                                   |
|                                       |                           |                             |                                   |

## HDMI



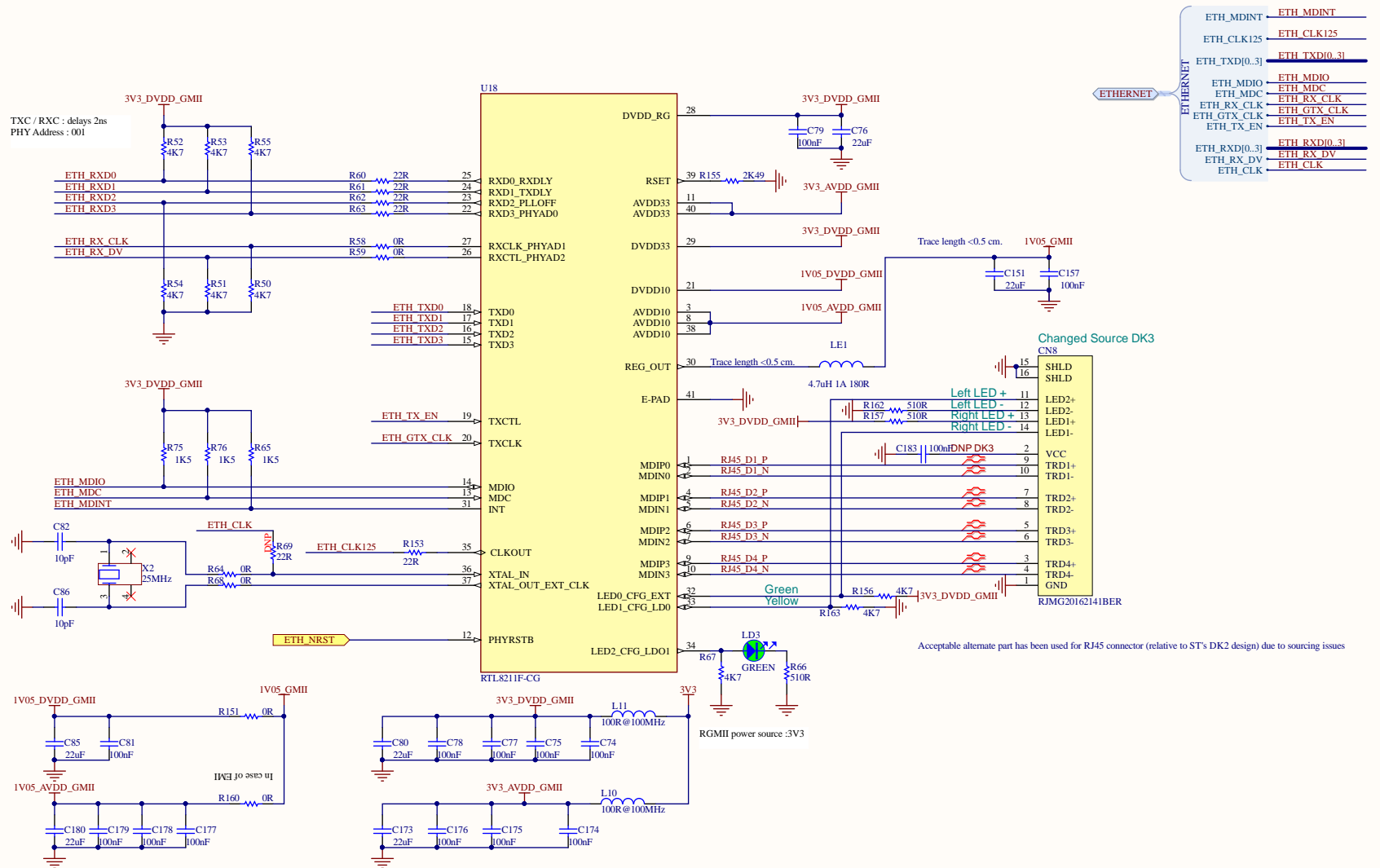
## ARDUINO, EXPANSION GPIO



|                             |   |                |                                   |   |   |   |   |                             |  |  |                                   |          |                   |               |                 |                  |                |
|-----------------------------|---|----------------|-----------------------------------|---|---|---|---|-----------------------------|--|--|-----------------------------------|----------|-------------------|---------------|-----------------|------------------|----------------|
| 1                           | 2   | 3              | 4                                 | 5 | 6 | 7   | 8 |                             |  |  |                                   |          |                   |               |                 |                  |                |
| A                           | <div>DDR3</div>   |                |                                   |   |   |   |   | A                           |  |  |                                   |          |                   |               |                 |                  |                |
| B                           | <div>DDR3 and its circuitry is integrated within the OSD32MP15x SiP. No external connections to DDR3 necessary.</div> |                |                                   |   |   |   |   | B                           |  |  |                                   |          |                   |               |                 |                  |                |
| C                           |   |                |                                   |   |   |   |   | C                           |  |  |                                   |          |                   |               |                 |                  |                |
| D                           |   |                |                                   |   |   |   |   | D                           |  |  |                                   |          |                   |               |                 |                  |                |
|                             |   |                |                                   |   |   | <table><tr><td colspan="3">Title: <i>DDR3L 16 bits</i></td><td rowspan="3">Copyright 2019 Octavo Systems LLC</td></tr><tr><td>Size: A3</td><td>Number:DK2 RefDes</td><td>Revision:C-01</td></tr><tr><td>Date: 10/3/2019</td><td>Time: 4:10:38 PM</td><td>Sheet 10 of 14</td></tr></table> |   | Title: <i>DDR3L 16 bits</i> |  |  | Copyright 2019 Octavo Systems LLC | Size: A3 | Number:DK2 RefDes | Revision:C-01 | Date: 10/3/2019 | Time: 4:10:38 PM | Sheet 10 of 14 |
| Title: <i>DDR3L 16 bits</i> |   |                | Copyright 2019 Octavo Systems LLC |   |   |   |   |                             |  |  |                                   |          |                   |               |                 |                  |                |
| Size: A3                    | Number:DK2 RefDes   | Revision:C-01  |                                   |   |   |   |   |                             |  |  |                                   |          |                   |               |                 |                  |                |
| Date: 10/3/2019             | Time: 4:10:38 PM  | Sheet 10 of 14 |                                   |   |   |   |   |                             |  |  |                                   |          |                   |               |                 |                  |                |
| 1                           | 2   | 3              | 4                                 | 5 | 6 | 7   | 8 |                             |  |  |                                   |          |                   |               |                 |                  |                |

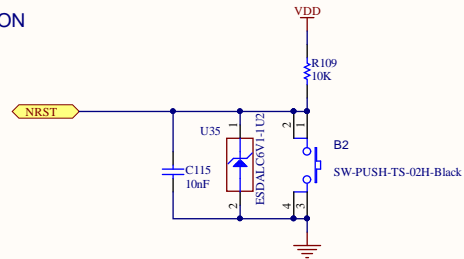
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| Title: <b>DDR3L 16 bits</b> |                  |                | Copyright 2019 Octavo Systems LLC |  |
| Size: A3                    | Number: DK2      | RefDes: C-01   |                                   |  |
| Date: 10/3/2019             | Time: 4:10:38 PM | Sheet 10 of 14 |                                   |  |

# Ethernet

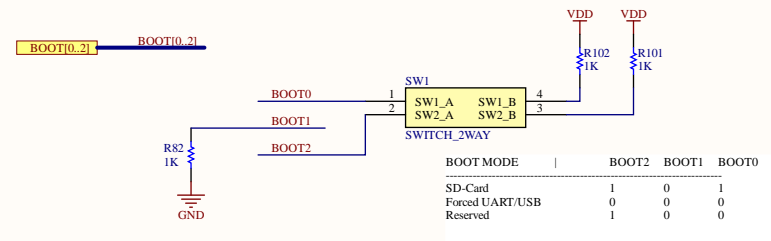


# PERIPHERALS

## RESET BUTTON

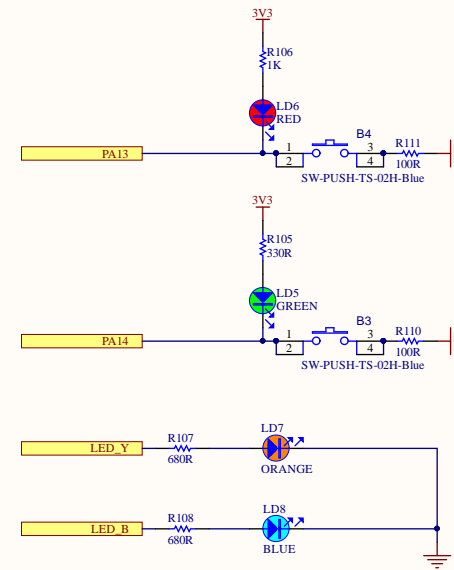
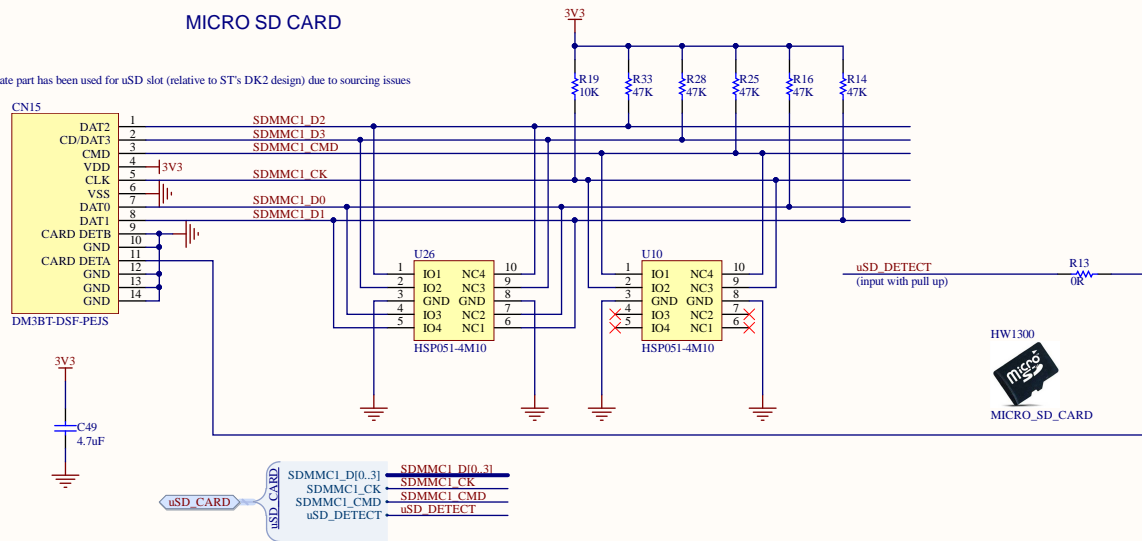


## BOOT MODE



## MICRO SD CARD

Acceptable alternate part has been used for uSD slot (relative to ST's DK2 design) due to sourcing issues

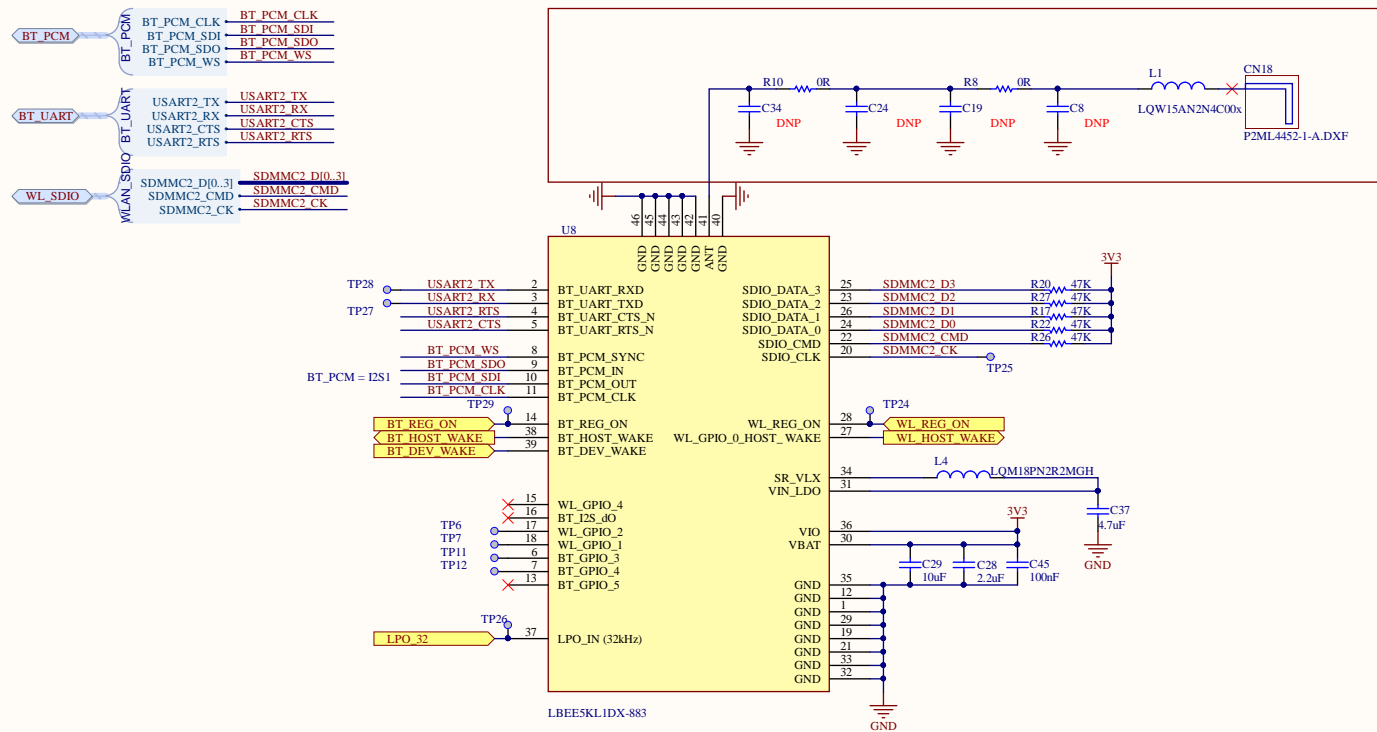


HW1302 BOARD CPN STM32MP157C-DK2

HW1303 BOARD REF MB1272B-01 Ayywxxxxx

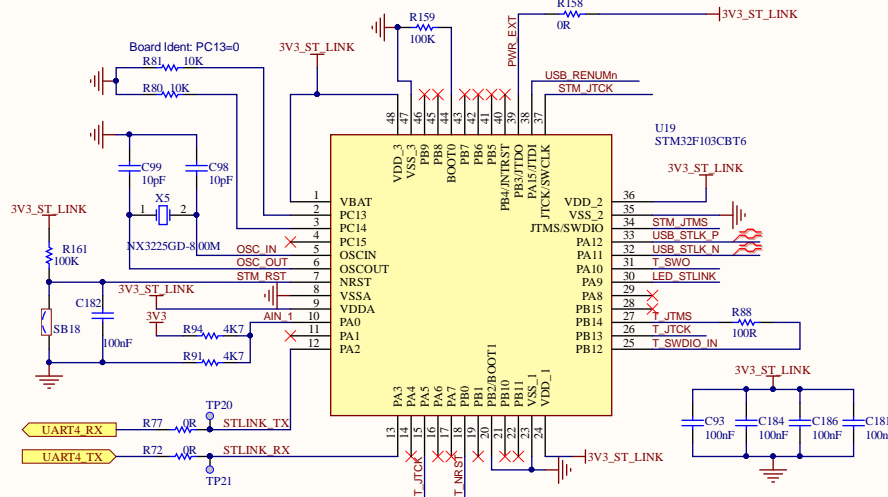
HW1301 PCB MB1272B

## WLAN, BLUETOOTH

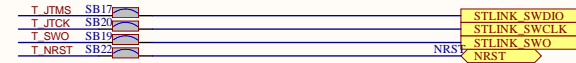


# ST\_LINK

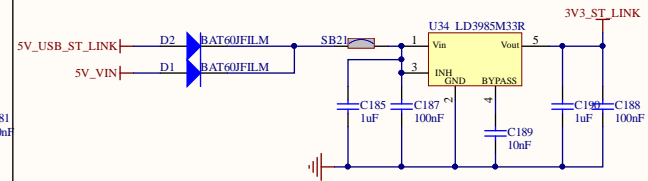
## ST-LINK MCU



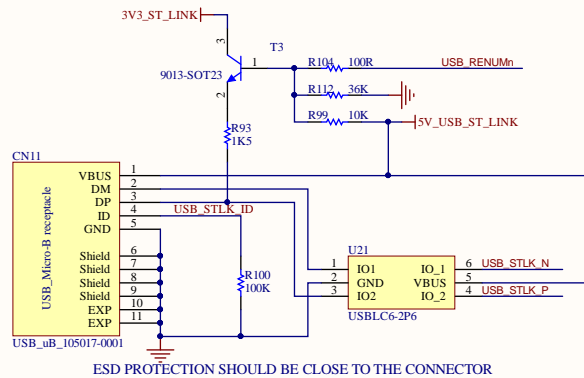
## SWD INTERFACE



## ST-LINK POWER 3V3 / 150mA

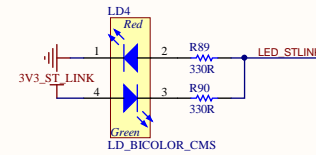


## ST-LINK USB CONNECTOR



ESD PROTECTION SHOULD BE CLOSE TO THE CONNECTOR

## STLINK\_LED



## ST-LINK DFU

