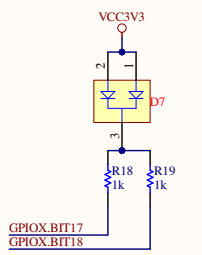
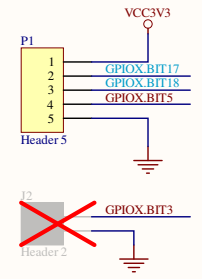
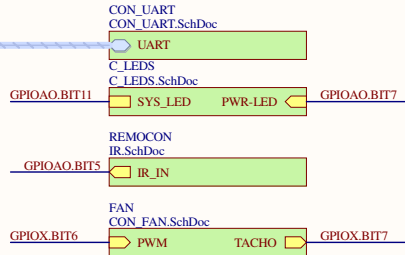
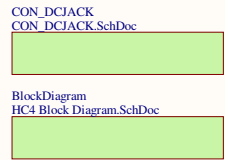
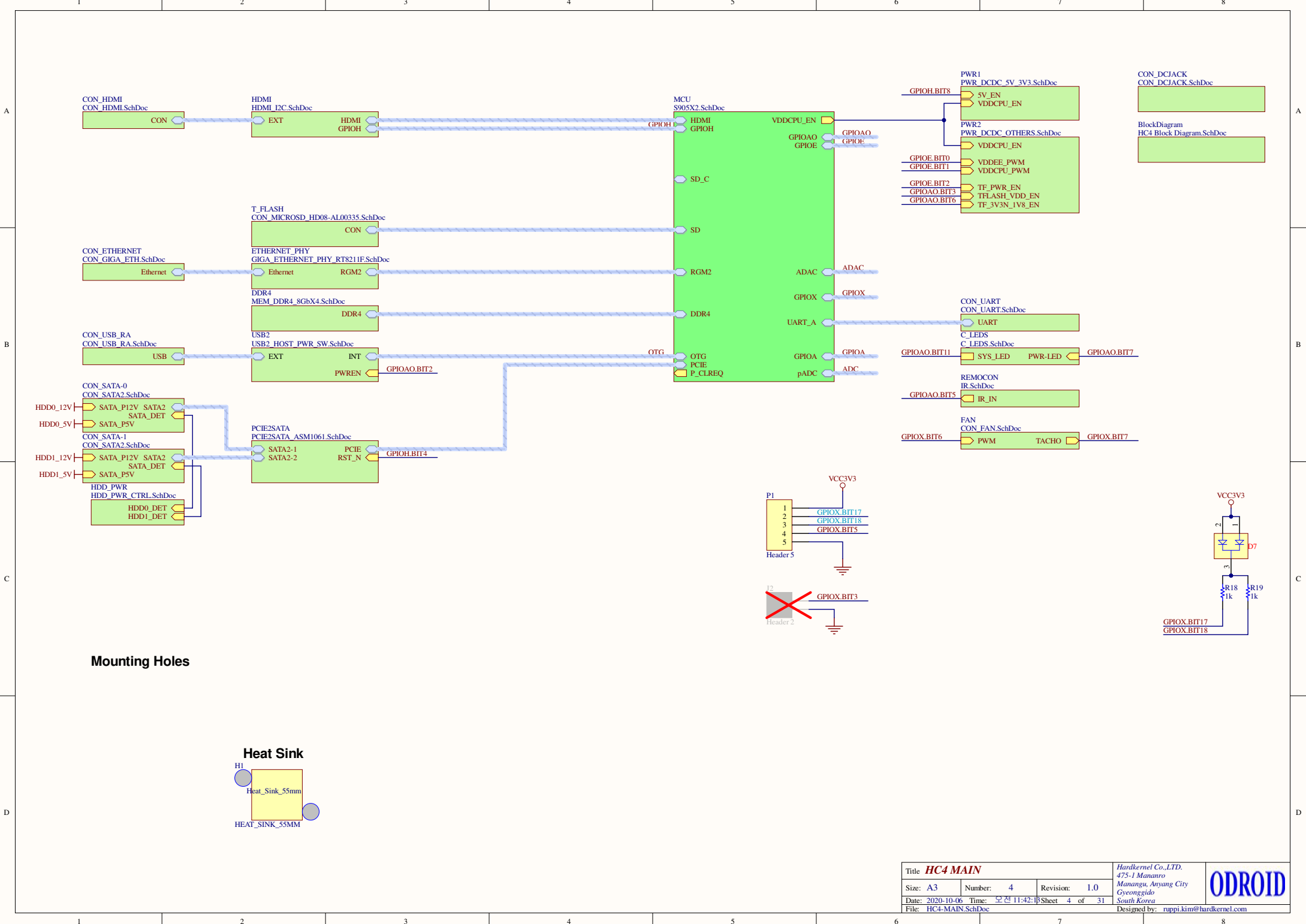
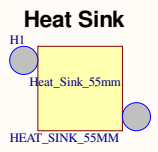


|                                |                   |   |                                       |               |
|--------------------------------|-------------------|---|---------------------------------------|---------------|
| Title <b>HC4 Block Diagram</b> |                   | Hardkernel Co.,LTD.<br>475-1 Mananro<br>Manangu, Anyang City<br>Gyeonggido<br>South Korea |                                       | <b>ODROID</b> |
| Size: A4                       | Number: 1         | Revision: 0.1   |                                       |               |
| Date: 2020-10-06               | Time: 오전 11:42:12 | Sheet 1 of 31   |                                       |               |
| File: HC4 Block Diagram.SchDoc |                   |   | Designed by: rупpi kim@hardkernel.com |               |

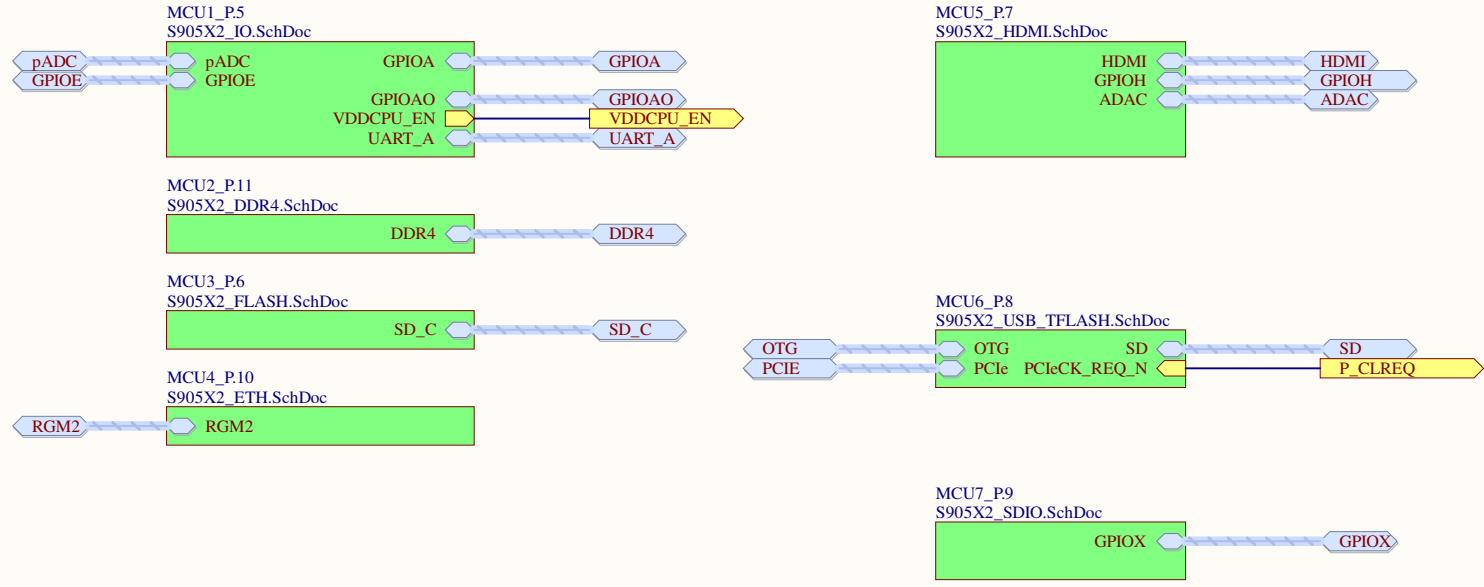


**Mounting Holes**



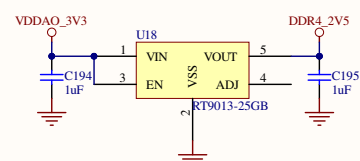
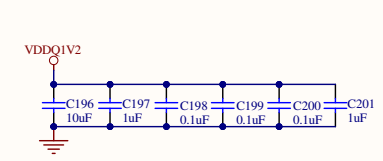
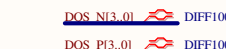
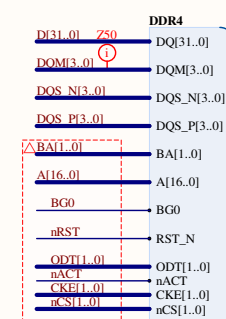
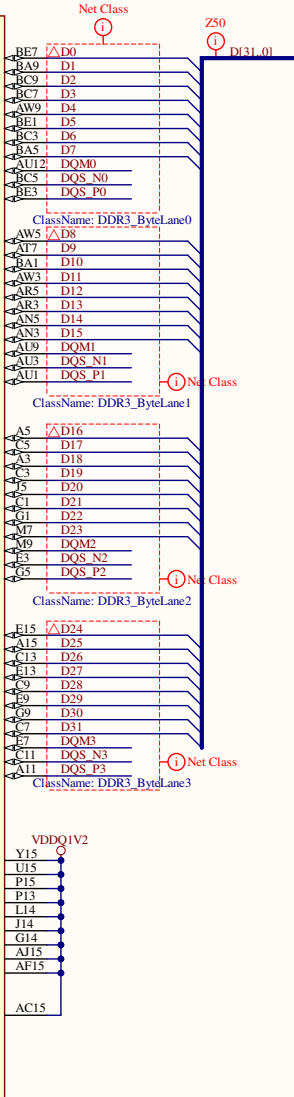
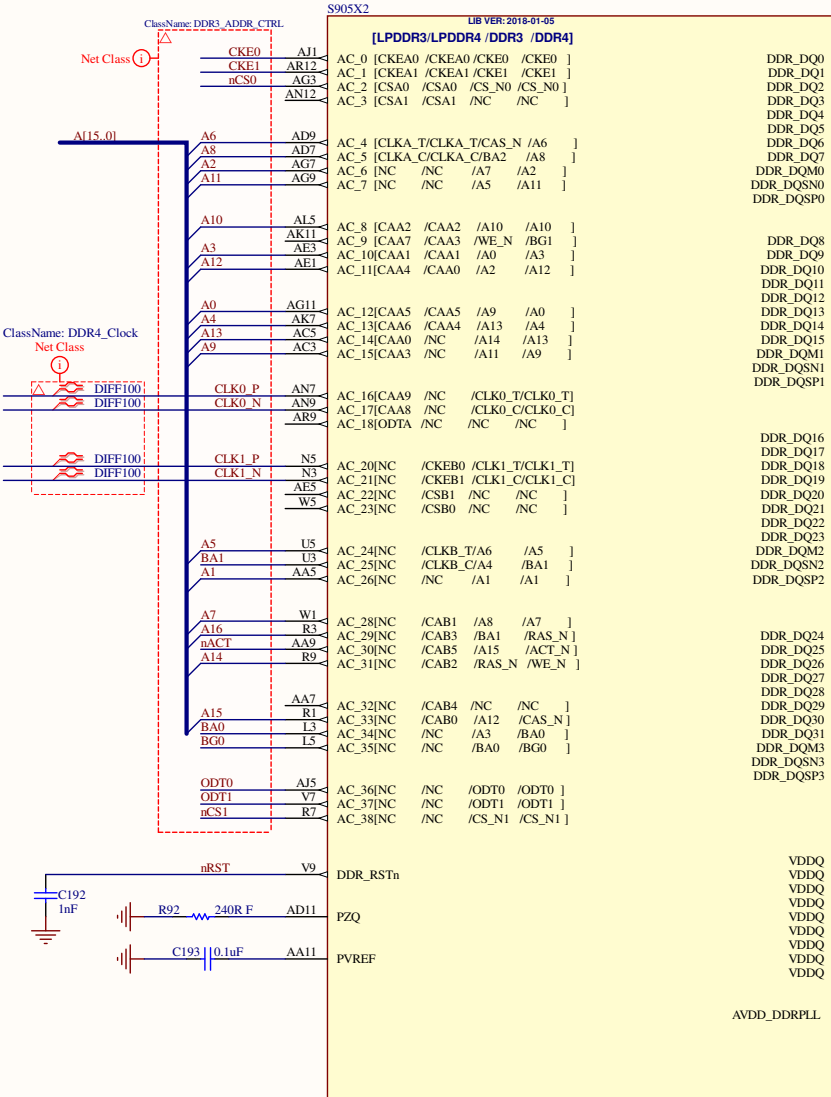
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|--|-----------|---------------|---|--|
| Title <b>HC4 MAIN</b>                            |           |               | Hardkernel Co.,LTD.<br>475-1 Mananro<br>Manangu, Anyang City<br>Gyeonggido<br>South Korea |  |
| Size: A3   | Number: 4 | Revision: 1.0 |   |  |
| Date: 2020-10-06 Time: 오전 11:42:18 Sheet 4 of 31 |           |               | Designed by: ruppi.kim@hardkernel.com   |  |
| File: HC4-MAIN.SchDoc                            |           |               |   |  |





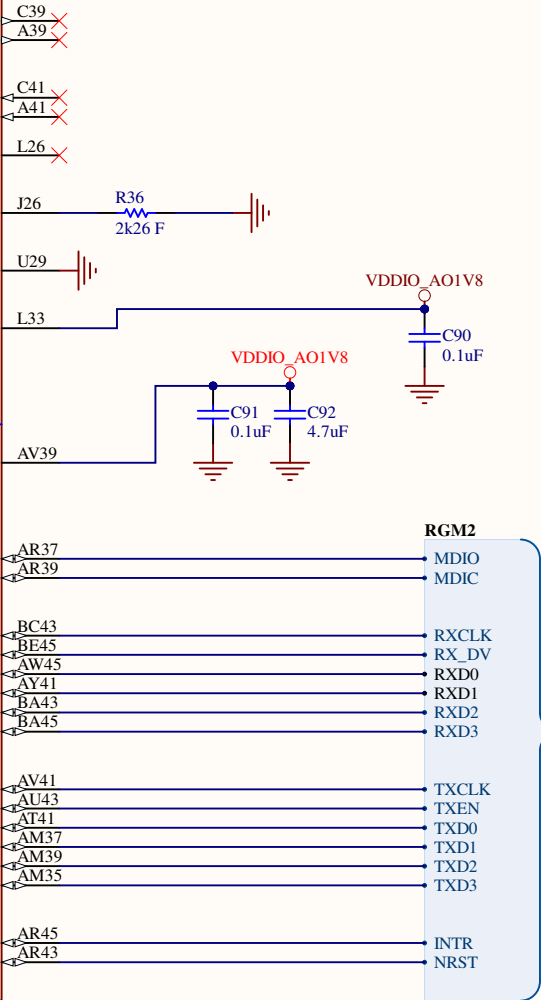
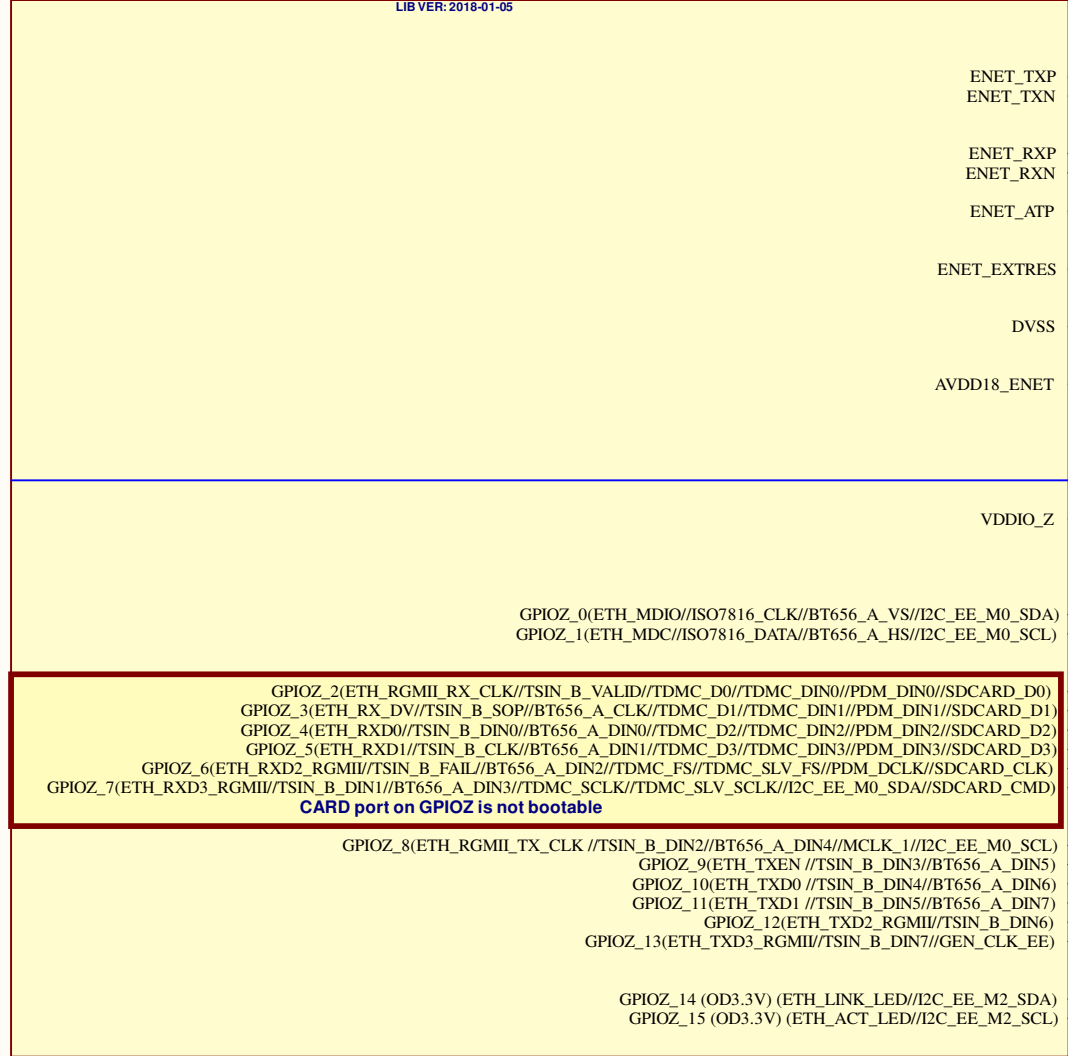
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|---------------------|-------------------|---------------|---|--|
| Title <b>S905X2</b> |                   |               | Hardkernel Co.,LTD.<br>475-1 Mananro<br>Manangu, Anyang City<br>Gyeonggido<br>South Korea |  |
| Size: A4            | Number: 5         | Revision: 0.1 | Designed by: <a href="mailto:ruppi.kim@hardkernel.com">ruppi.kim@hardkernel.com</a>       |  |
| Date: 2020-10-06    | Time: 오전 11:42:13 | Sheet 5 of 31 |   |  |
| File: S905X2.SchDoc |                   |               |   |  |





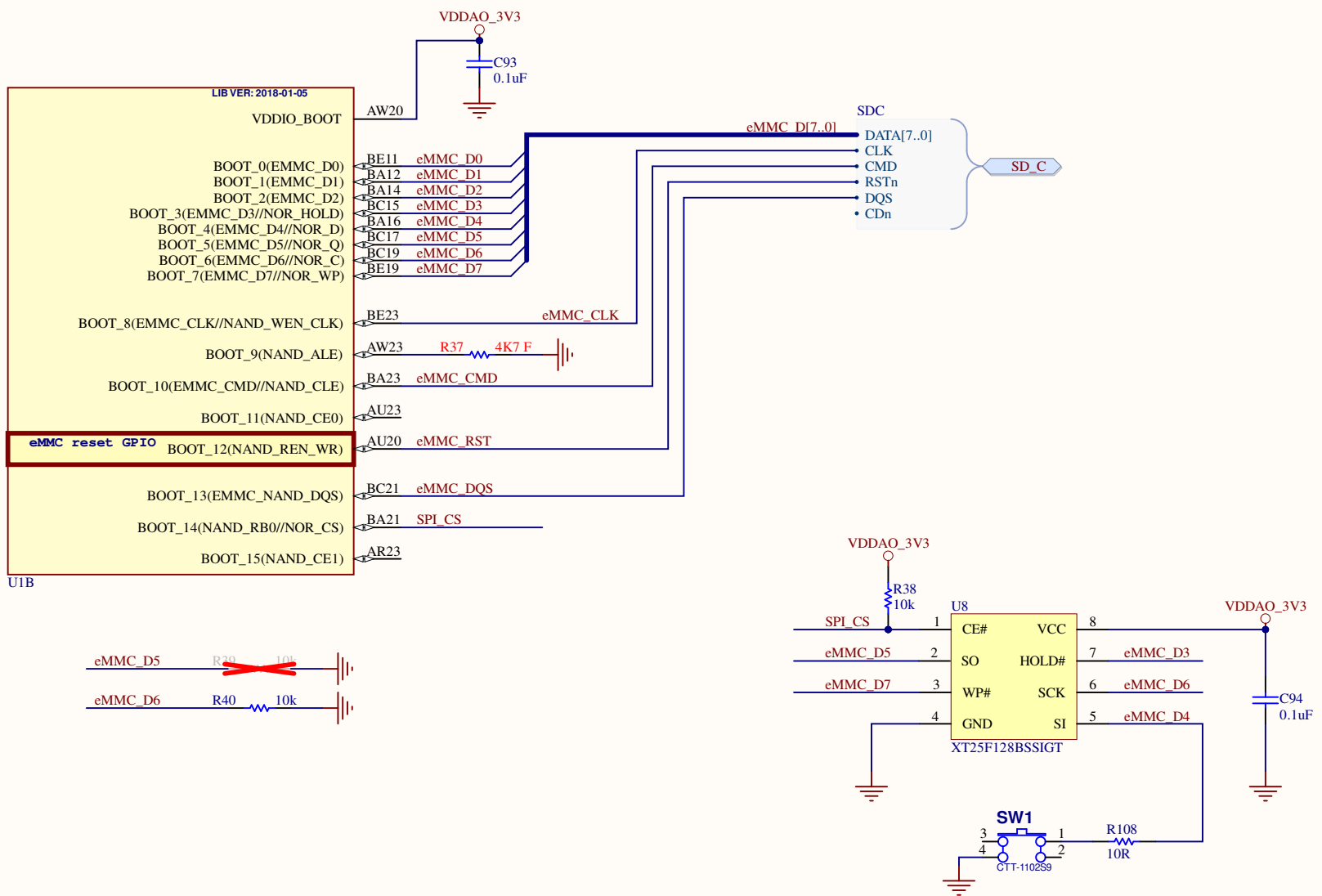
S905X2

LIB VER: 2018-01-05



UIG

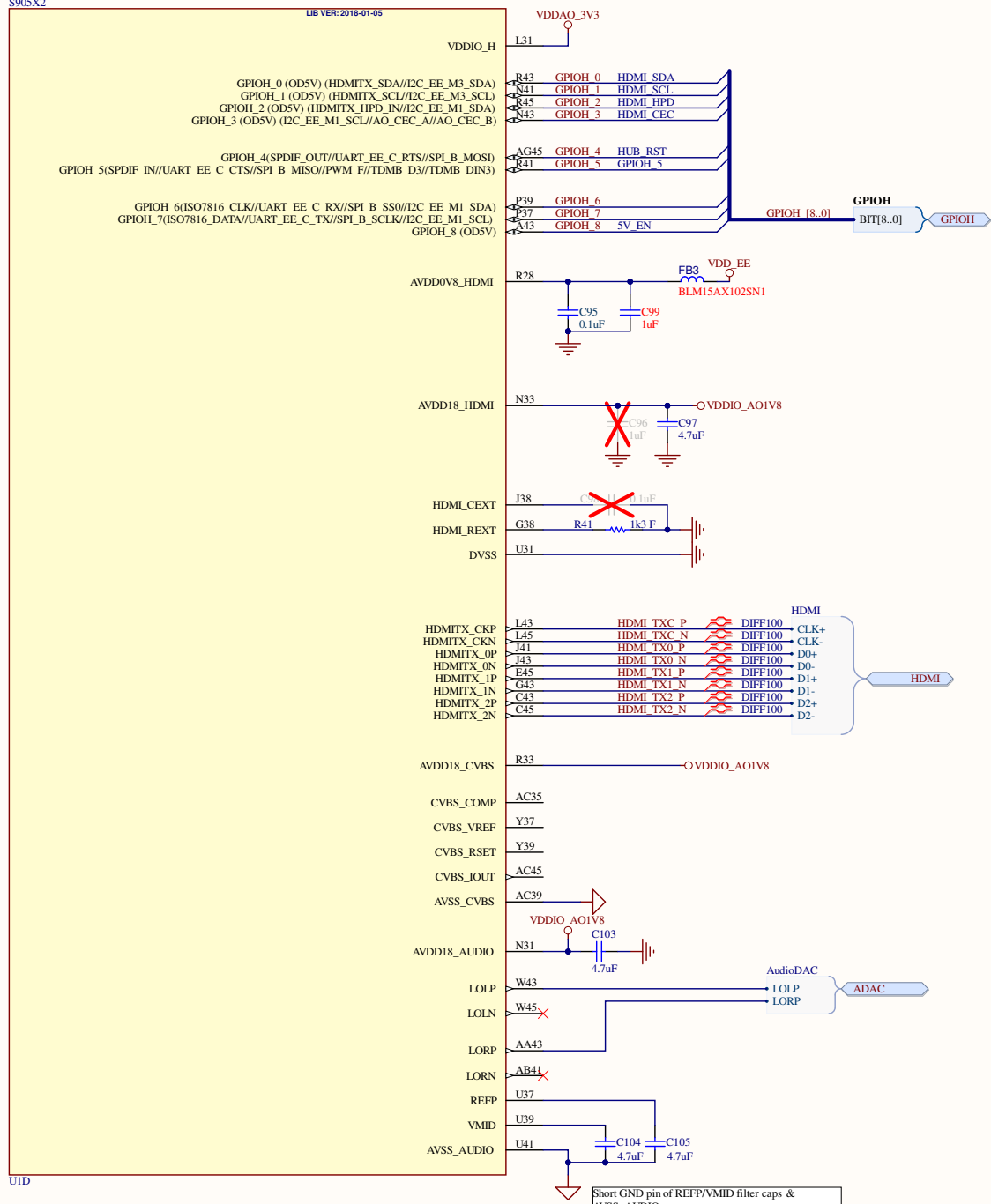
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|-------------------------|-------------------|----------------|---|--|---------------|
| Title <b>S905X2_ETH</b> |                   |                | Hardkernel Co., LTD<br>475-1 Mananro<br>Manangu, Anyang City<br>Gyeonggido<br>South Korea |  | <b>ODROID</b> |
| Size: A4                | Number: 11        | Revision: 0.1  | Designed by: neal.kim@hardkernel.com  |  |               |
| Date: 2020-10-06        | Time: 오전 11:42:13 | Sheet 11 of 31 |   |  |               |
| File: S905X2_ETH.SchDoc |                   |                |   |  |               |



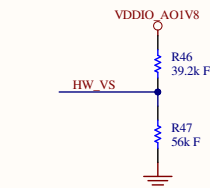
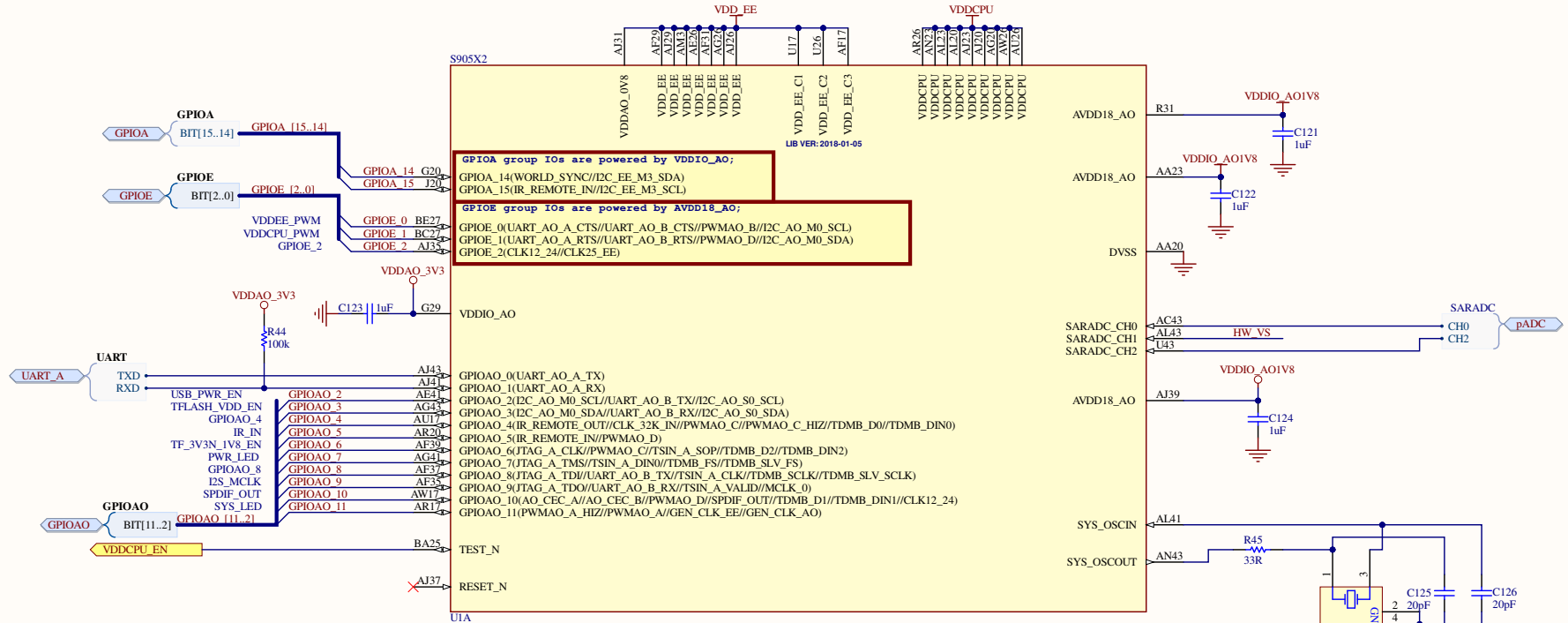
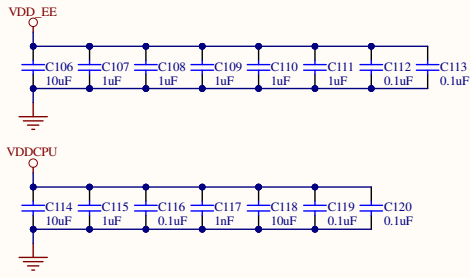
|                           |                           |               |  |  |               |
|---------------------------|---------------------------|---------------|--|--|---------------|
| Title <b>S905X2_FLASH</b> |                           |               | Hardkernel Co., LTD.<br>475-1 Mananro<br>Manangu, Anyang City<br>Kyeonggido<br>South Korea |  | <b>ODROID</b> |
| Size: A4                  | Number: 7                 | Revision: 0.1 | Designed by: neal.kim@hardkernel.com   |  |               |
| Date: 2020-10-06          | Time: 2020.10.06 11:42:13 | Sheet 7 of 31 |  |  |               |
| File: S905X2_FLASH.SchDoc |                           |               |  |  |               |

S905X2

LIB VER: 2018-01-05



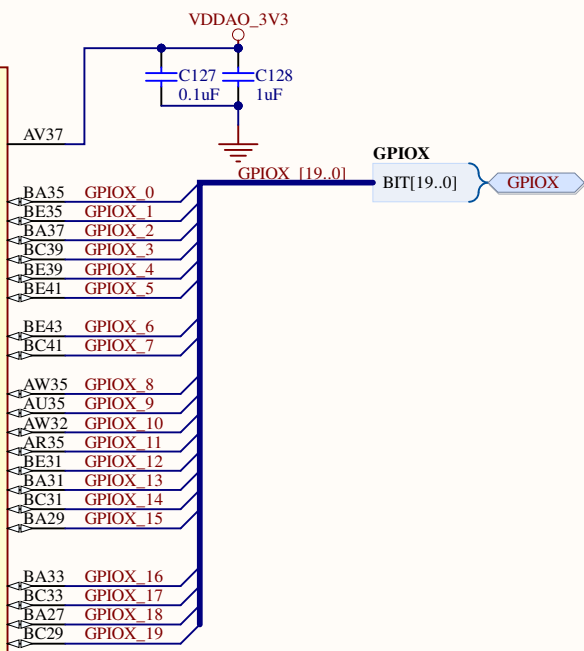
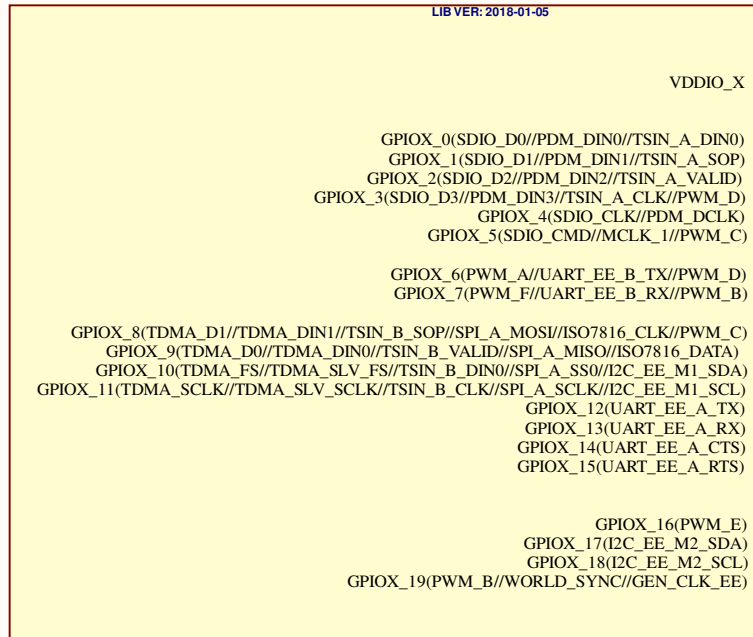
Short GND pin of REFP/VMID filter caps & AVSS\_AUDIO together, then to GND (single point connection)



| SW ID     | 0    | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12   |
|-----------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| ADC Data  | 0    | 35  | 67  | 98  | 124 | 140 | 152 | 155 | 159 | 175 | 186 | 188 | 193  |
| Fullup    | x    | 91k | 82k | 82k | 82k | 82k | 82k | 82k | 82k | 82k | 82k | 82k | 100k |
| Full-down | 100k | 82k | 82k | 82k | 82k | 82k | 82k | 82k | 82k | 82k | 82k | 82k | x    |
| Revision  | 0.0  |     |     |     |     |     |     |     |     |     |     |     |      |

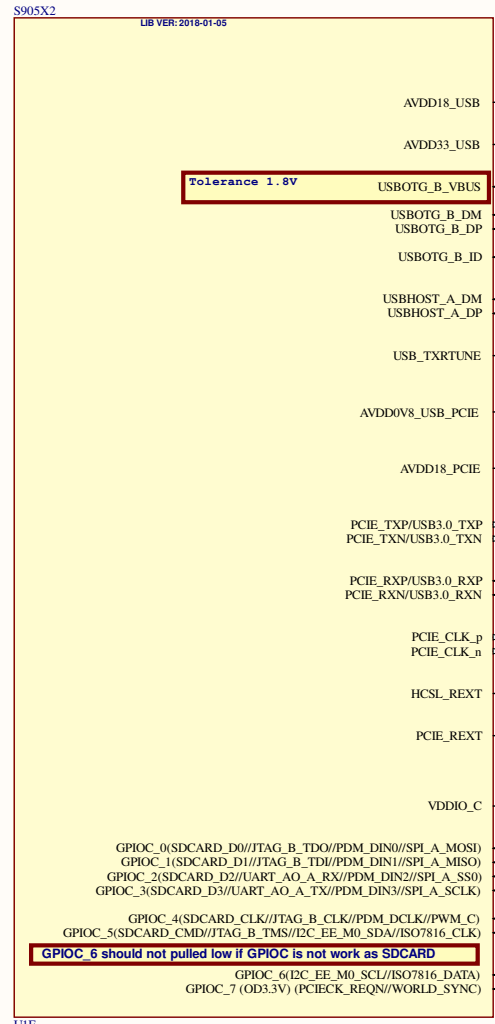
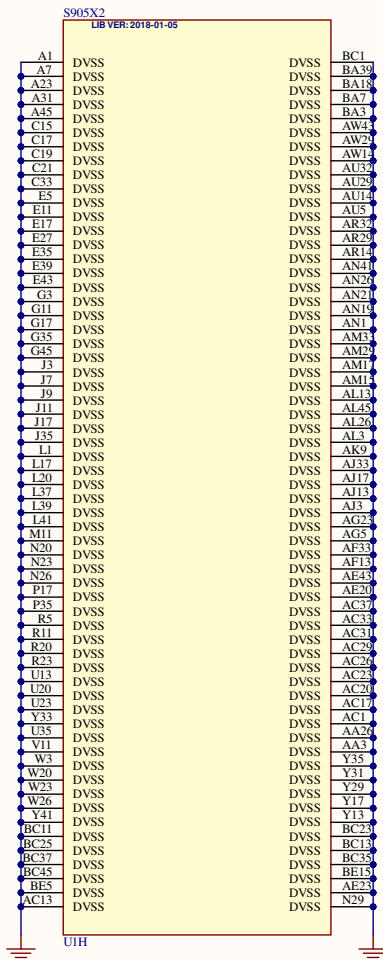




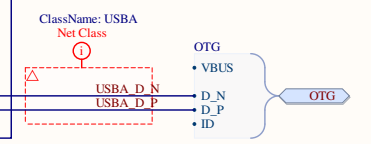


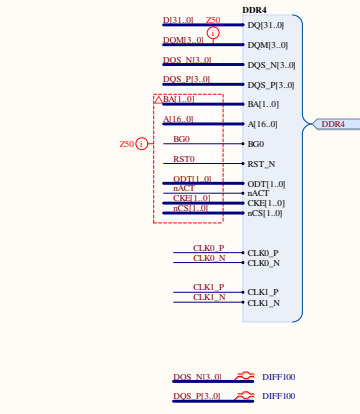
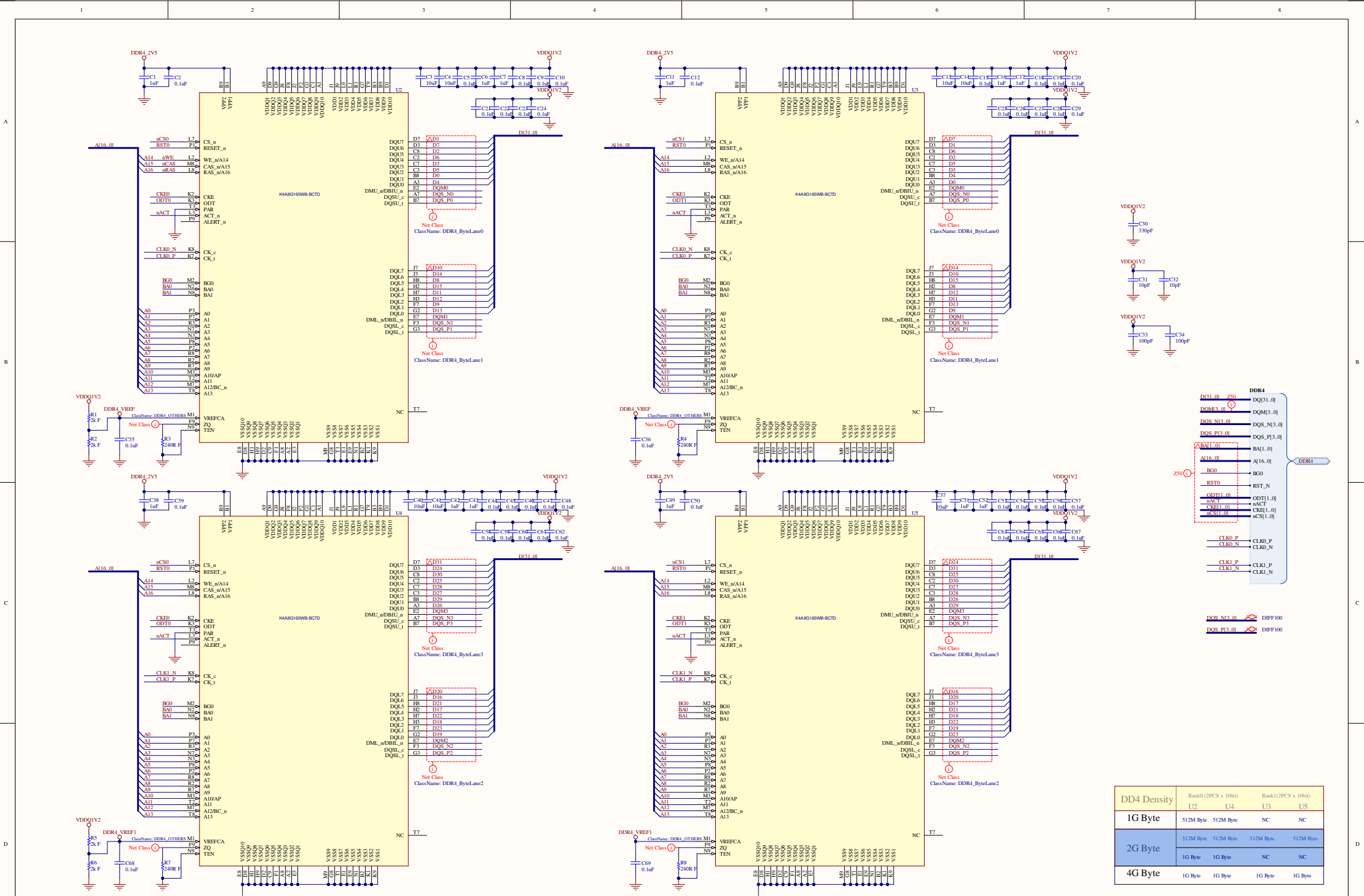
UIF

|                          |                   |                |   |  |               |
|--------------------------|-------------------|----------------|---|--|---------------|
| Title <b>S905X2_SDIO</b> |                   |                | Hardkernel Co., LTD<br>475-1 Mananro<br>Manangu, Anyang City<br>Gyeonggido<br>South Korea |  | <b>ODROID</b> |
| Size: A4                 | Number: 10        | Revision: 0.1  |   |  |               |
| Date: 2020-10-06         | Time: 오전 11:42:13 | Sheet 10 of 31 |   |  |               |
| File: S905X2_SDIO.SchDoc |                   |                | Designed by: neal.kim@hardkernel.com  |  |               |



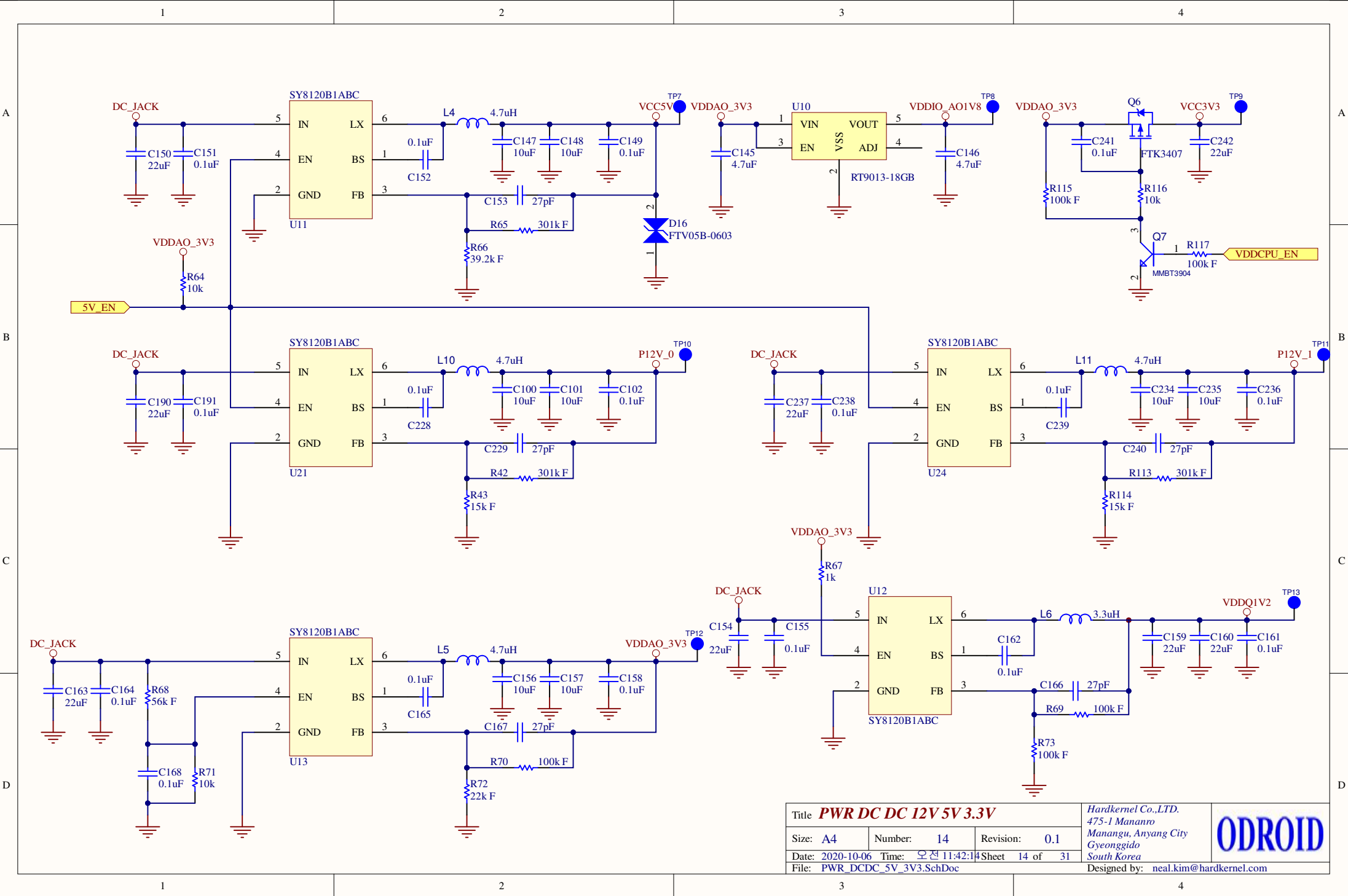
| USB MODE | R107   | R111   | Default |
|----------|--------|--------|---------|
| HOST     | Mount  | Remove | Default |
| DEVICE   | Remove | Mount  |         |



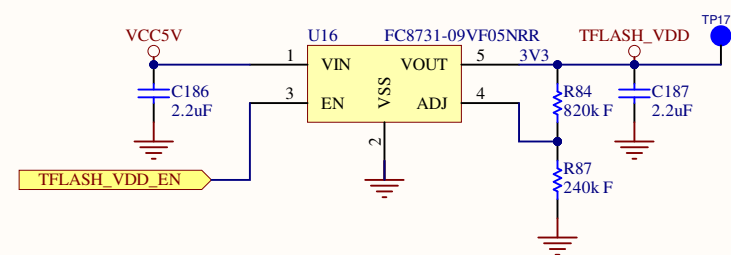
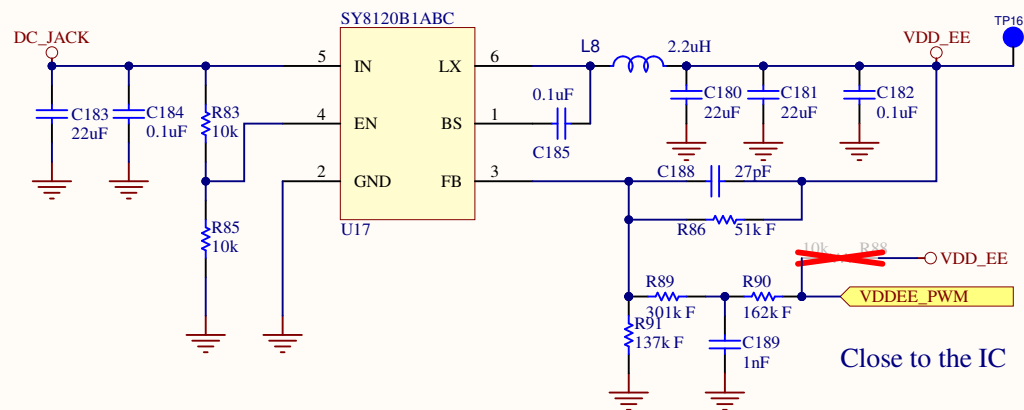
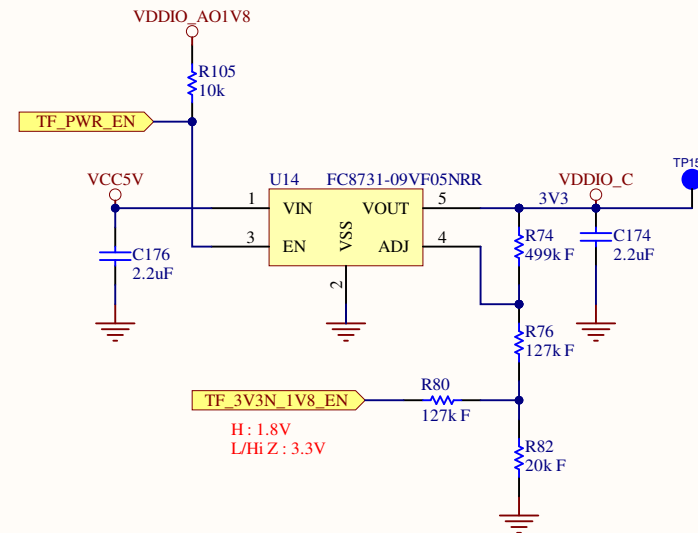
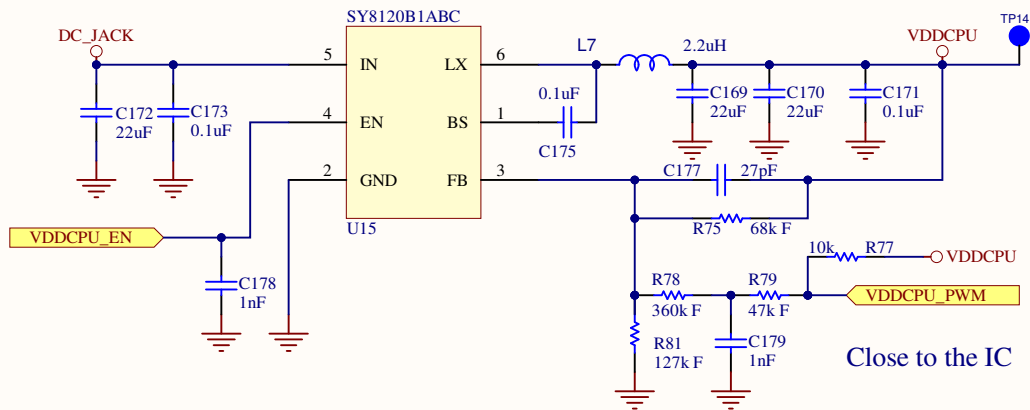



| DD4 Density | Rank0 (2PCS x 16Gb) |           | Rank1 (2PCS x 16Gb) |           |
|-------------|---------------------|-----------|---------------------|-----------|
|             | U12                 | U14       | U13                 | U15       |
| 1G Byte     | 512M Byte           | 512M Byte | NC                  | NC        |
| 2G Byte     | 512M Byte           | 512M Byte | 512M Byte           | 512M Byte |
|             | 1G Byte             | 1G Byte   | NC                  | NC        |
| 4G Byte     | 1G Byte             | 1G Byte   | 1G Byte             | 1G Byte   |

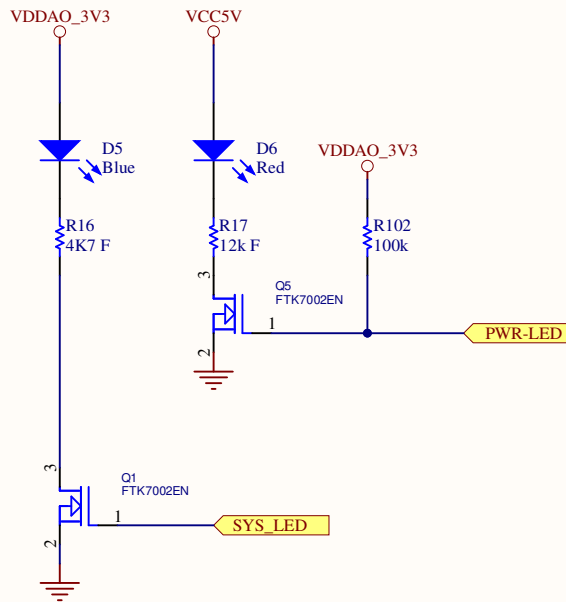




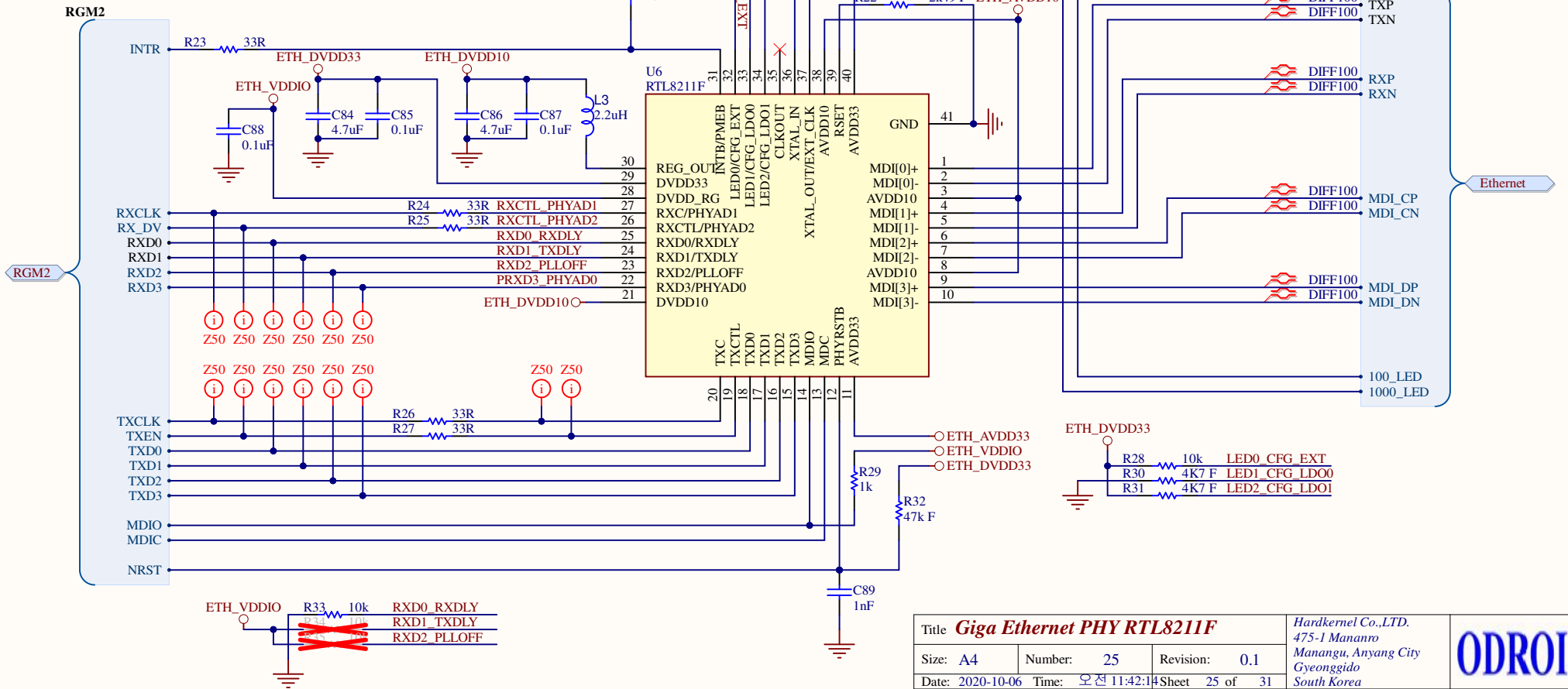
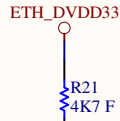
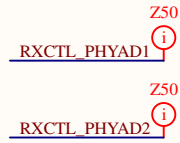
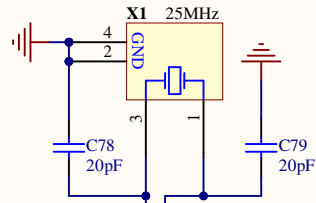
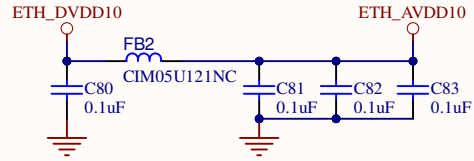
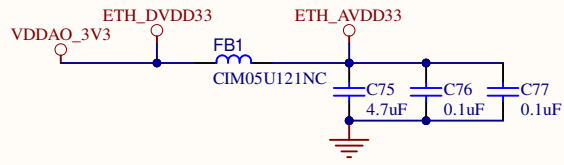
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|------------------------------------|---------------------------|----------------|---|---------------|
| Title <b>PWR DC DC 12V 5V 3.3V</b> |                           |                | Hardkernel Co.,LTD.<br>475-1 Mananro<br>Manangu, Anyang City<br>Gyeonggido<br>South Korea | <b>ODROID</b> |
| Size: A4                           | Number: 14                | Revision: 0.1  |   |               |
| Date: 2020-10-06                   | Time: 2020.10.06 11:42:14 | Sheet 14 of 31 | Designed by: neal.kim@hardkernel.com  |               |
| File: PWR_DCDC_5V_3V3.SchDoc       |                           |                |   |               |



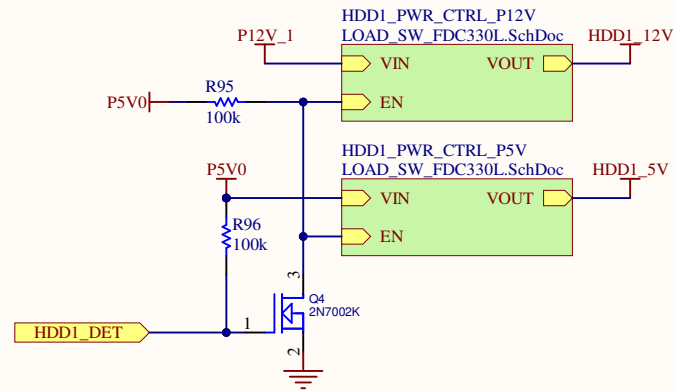
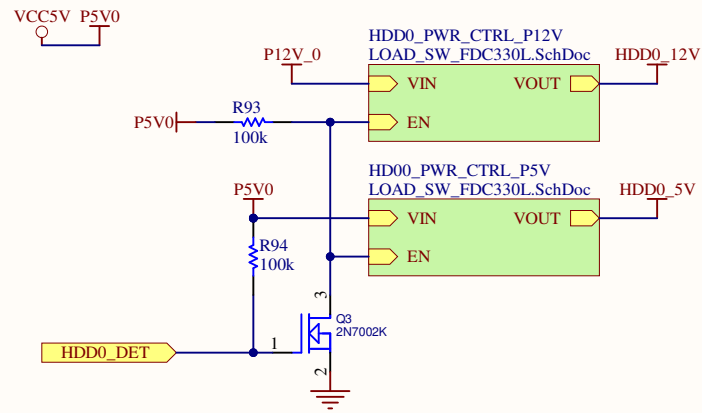
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|-------------------------------|-------------------|----------------|---|--|
| Title <b>PWR DC DC Others</b> |                   |                | Hardkernel Co.,LTD.<br>475-1 Mananro<br>Manangu, Anyang City<br>Gyeonggido<br>South Korea |  |
| Size: A4                      | Number: 15        | Revision: 0.1  |      |  |
| Date: 2020-10-06              | Time: 오전 11:42:14 | Sheet 15 of 31 |   |  |
| File: PWR_DCDC_OTHERS.SchDoc  |                   |                | Designed by: neal.kim@hardkernel.com  |  |



|                              |                   |                |   |               |
|------------------------------|-------------------|----------------|---|---------------|
| Title <b>PWR SYSTEM LEDs</b> |                   |                | Hardkernel Co.,LTD.<br>475-1 Mananro<br>Manangu, Anyang City<br>Gyeonggido<br>South Korea | <b>ODROID</b> |
| Size: A4                     | Number: 21        | Revision: 0.1  |   |               |
| Date: 2020-10-06             | Time: 오전 11:42:14 | Sheet 21 of 31 |   |               |
| File: C_LEDS.SchDoc          |                   |                | Designed by: ruppi.kim@hardkernel.com   |               |

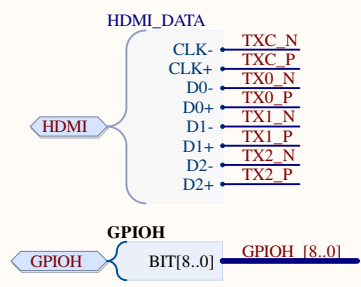
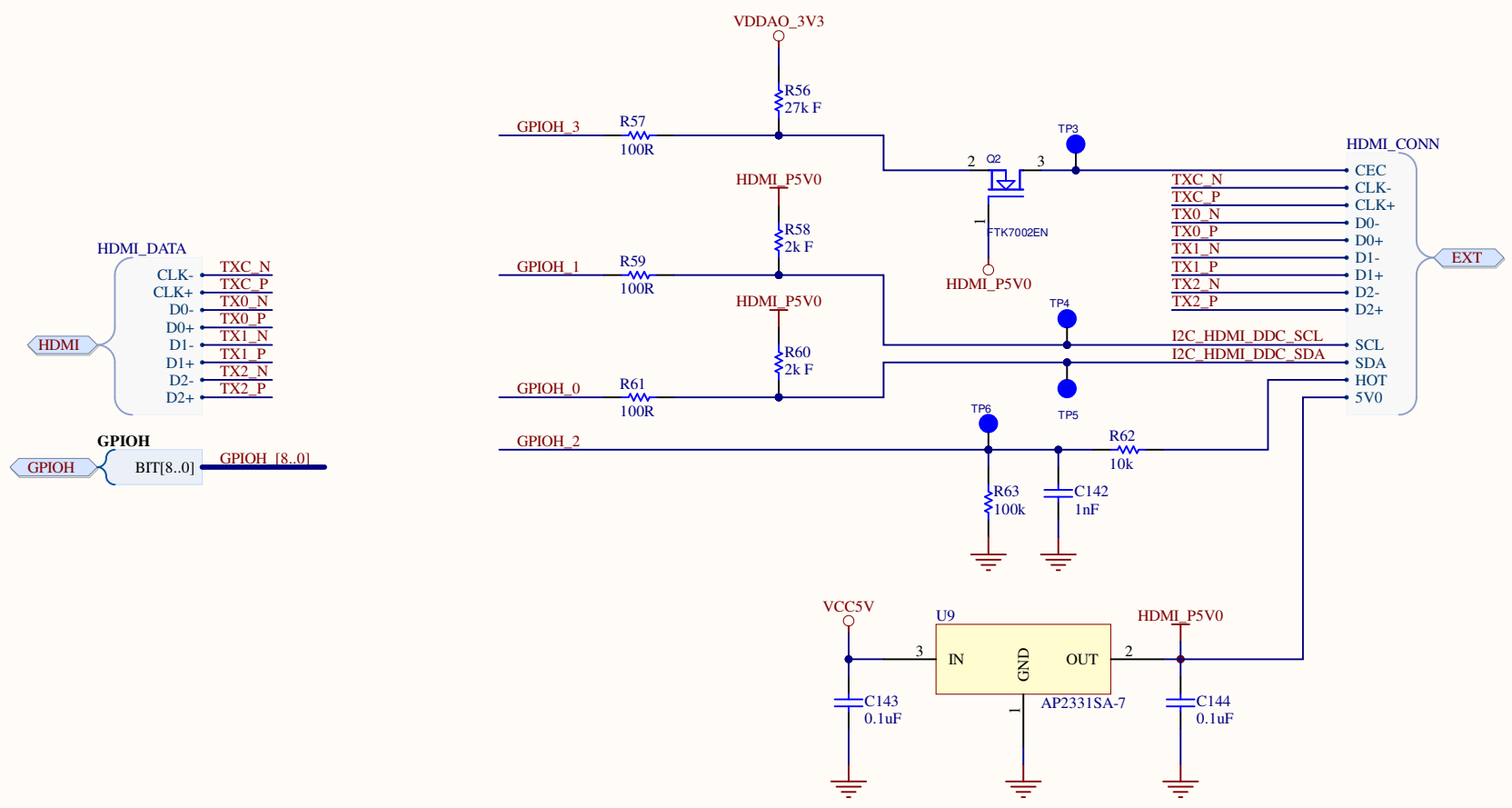


|   |                           |                |   |               |
|---|---------------------------|----------------|---|---------------|
| Title <b>Giga Ethernet PHY RTL8211F</b> |                           |                | Hardkernel Co.,LTD.<br>475-1 Mananro<br>Manangu, Anyang City<br>Gyeonggido<br>South Korea | <b>ODROID</b> |
| Size: A4                                | Number: 25                | Revision: 0.1  | Designed by: ruppi.kim@hardkernel.com   |               |
| Date: 2020-10-06                        | Time: 2020.10.06 11:42:14 | Sheet 25 of 31 |   |               |
| File: GIGA_ETHERNET_PHY_RT8211F.SchDoc  |                           |                |   |               |

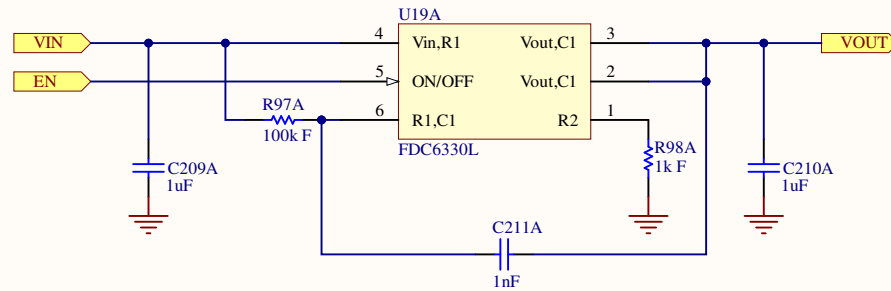


|                              |                           |                |   |               |
|------------------------------|---------------------------|----------------|---|---------------|
| Title <b>HDD PWR Control</b> |                           |                | Hardkernel Co.,LTD.<br>475-1 Mananro<br>Manangu, Anyang City<br>Gyeonggido<br>South Korea | <b>ODROID</b> |
| Size: A4                     | Number: 20                | Revision: 0.1  |   |               |
| Date: 2020-10-06             | Time: 2020-10-06 11:42:14 | Sheet 20 of 31 |   |               |
| File: HDD_PWR_CTRL.SchDoc    |                           |                | Designed by: ruppi.kim@hardkernel.com   |               |

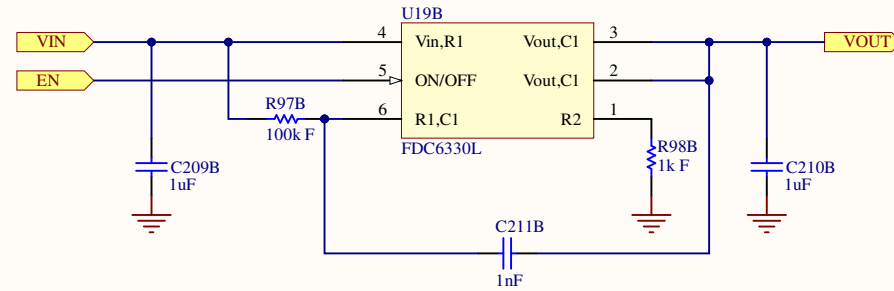




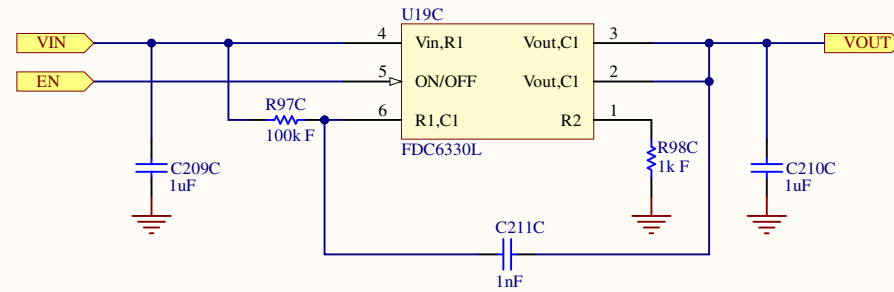
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|-----------------------|-------------------|----------------|---|--|---------------|
| Title <b>HDMI I2C</b> |                   |                | Hardkernel Co.,LTD.<br>475-1 Mananro<br>Manangu, Anyang City<br>Gyeonggido<br>South Korea |  | <b>ODROID</b> |
| Size: A4              | Number: 16        | Revision: 0.1  |   |  |               |
| Date: 2020-10-06      | Time: 오전 11:42:14 | Sheet 16 of 31 |   |  |               |
| File: HDMI_I2C.SchDoc |                   |                | Designed by: ruppi.kim@hardkernel.com   |  |               |



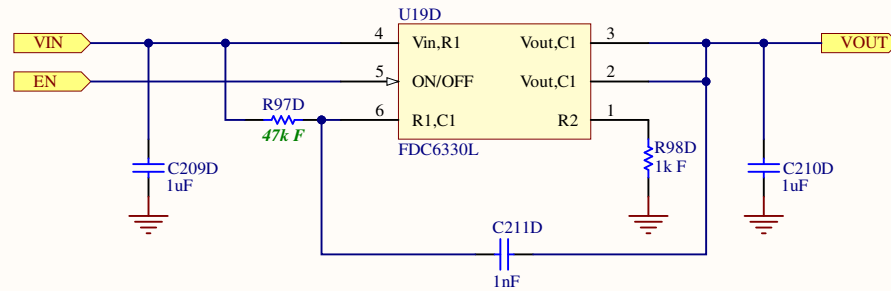
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|------------------------------|-------------------|----------------|---|--|
| Title <b>LOAD SW FDC330L</b> |                   |                | Hardkernel Co.,LTD.<br>475-1 Mananro<br>Manangu, Anyang City<br>Gyeonggido<br>South Korea |  |
| Size: A4                     | Number: 18        | Revision: 0.1  | <b>ODROID</b>   |  |
| Date: 2020-10-06             | Time: 오전 11:42:14 | Sheet 18 of 31 |   |  |
| File: LOAD_SW_FDC330L.SchDoc |                   |                |   |  |
|                              |                   |                | Designed by: ruppi.kim@hardkernel.com   |  |



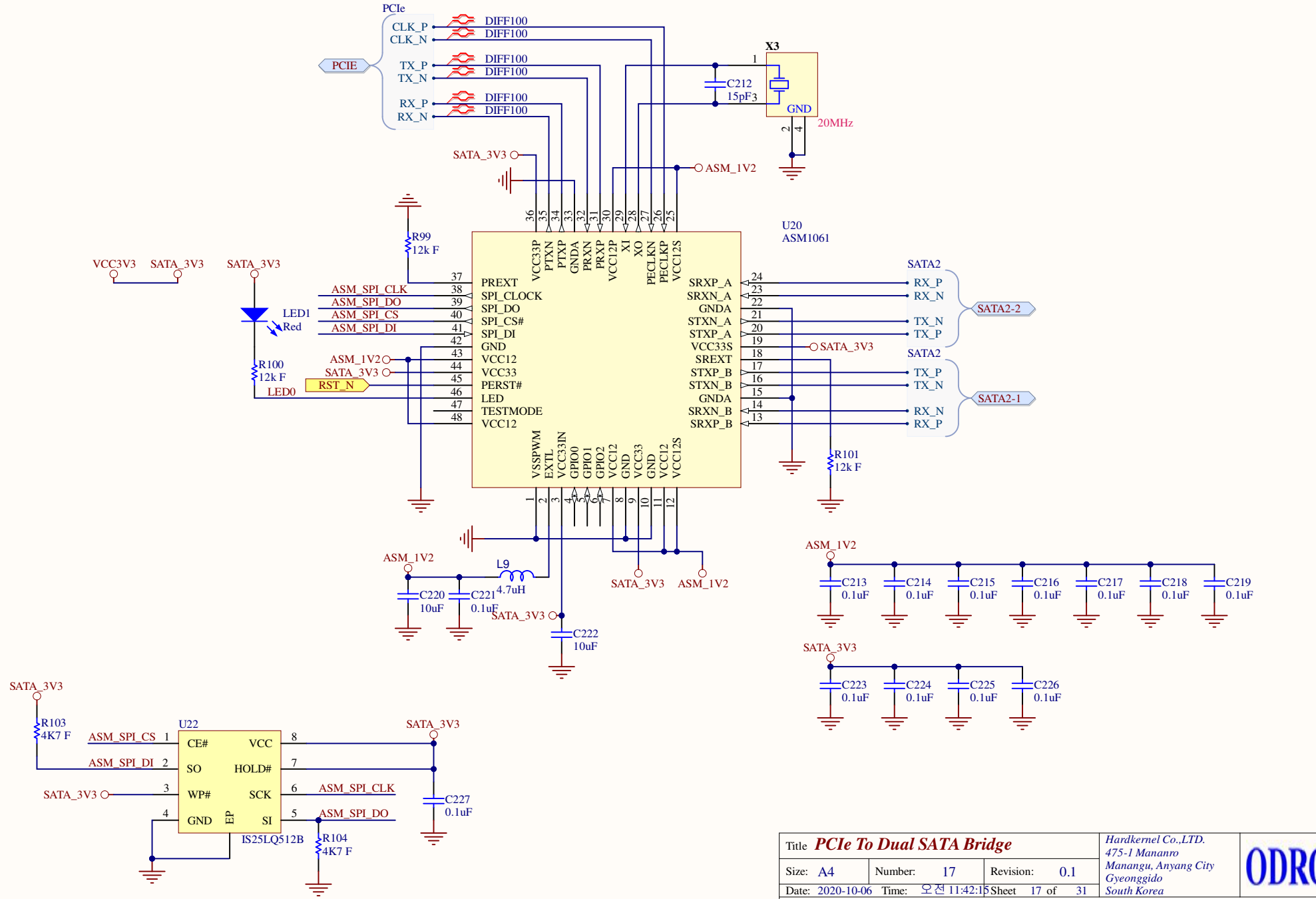
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| Title <b>LOAD SW FDC330L</b> |                   |                | Hardkernel Co.,LTD.<br>475-1 Mananro<br>Manangu, Anyang City<br>Gyeonggido<br>South Korea |  |
| Size: A4                     | Number: 18        | Revision: 0.1  | <b>ODROID</b>   |  |
| Date: 2020-10-06             | Time: 오전 11:42:15 | Sheet 18 of 31 |   |  |
| File: LOAD_SW_FDC330L.SchDoc |                   |                |   |  |
|                              |                   |                | Designed by: ruppi.kim@hardkernel.com   |  |



|                              |                   |                |   |               |
|------------------------------|-------------------|----------------|---|---------------|
| Title <b>LOAD SW FDC330L</b> |                   |                | Hardkernel Co.,LTD.<br>475-1 Mananro<br>Manangu, Anyang City<br>Gyeonggido<br>South Korea | <b>ODROID</b> |
| Size: A4                     | Number: 18        | Revision: 0.1  |   |               |
| Date: 2020-10-06             | Time: 오전 11:42:15 | Sheet 18 of 31 | Designed by: ruppi.kim@hardkernel.com   |               |
| File: LOAD_SW_FDC330L.SchDoc |                   |                |   |               |



|                              |                   |                |   |               |
|------------------------------|-------------------|----------------|---|---------------|
| Title <b>LOAD SW FDC330L</b> |                   |                | Hardkernel Co.,LTD.<br>475-1 Mananro<br>Manangu, Anyang City<br>Gyeonggido<br>South Korea | <b>ODROID</b> |
| Size: A4                     | Number: 18        | Revision: 0.1  |   |               |
| Date: 2020-10-06             | Time: 오전 11:42:15 | Sheet 18 of 31 | Designed by: ruppi.kim@hardkernel.com   |               |
| File: LOAD_SW_FDC330L.SchDoc |                   |                |   |               |



|                                       |                           |                |   |  |               |
|---------------------------------------|---------------------------|----------------|---|--|---------------|
| Title <b>PCIe To Dual SATA Bridge</b> |                           |                | Hardkernel Co.,LTD.<br>475-1 Mananro<br>Manangu, Anyang City<br>Gyeonggido<br>South Korea |  | <b>ODROID</b> |
| Size: A4                              | Number: 17                | Revision: 0.1  |   |  |               |
| Date: 2020-10-06                      | Time: 2020.10.06 11:42:15 | Sheet 17 of 31 |   |  |               |
| File: PCIE2SATA_ASM1061.SchDoc        |                           |                | Designed by: ruppi.kim@hardkernel.com   |  |               |

1

2

3

4

A

A

B

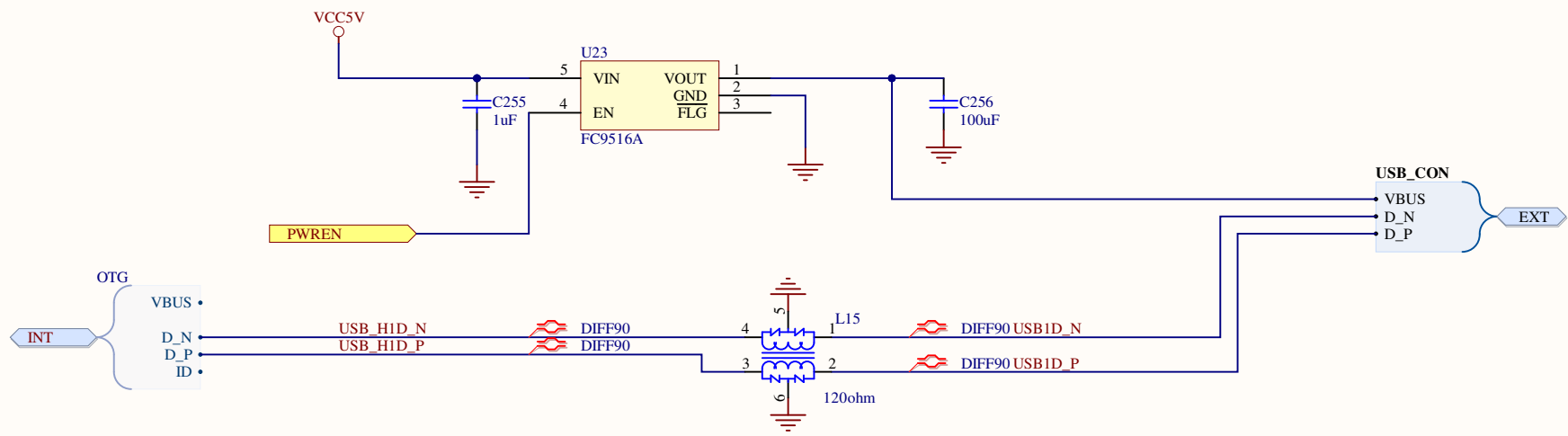
B

C

C

D

D



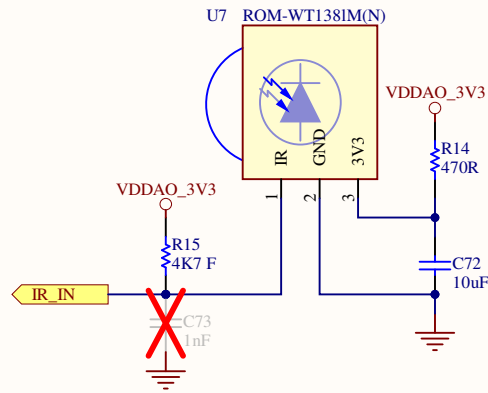
|                               |                   |                |   |               |
|-------------------------------|-------------------|----------------|---|---------------|
| Title <b>USB HOST PWR SW</b>  |                   |                | Hardkernel Co.,LTD.<br>475-1 Mananro<br>Manangu, Anyang City<br>Gyeonggido<br>South Korea | <b>ODROID</b> |
| Size: A4                      | Number: 22        | Revision: 0.1  |   |               |
| Date: 2020-10-06              | Time: 오전 11:42:15 | Sheet 22 of 31 |   |               |
| File: USB2_HOST_PWR_SW.SchDoc |                   |                | Designed by: ruppi.kim@hardkernel.com   |               |

1

2

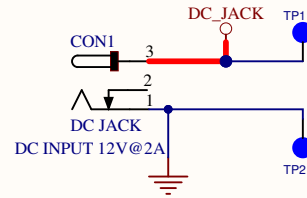
3

4

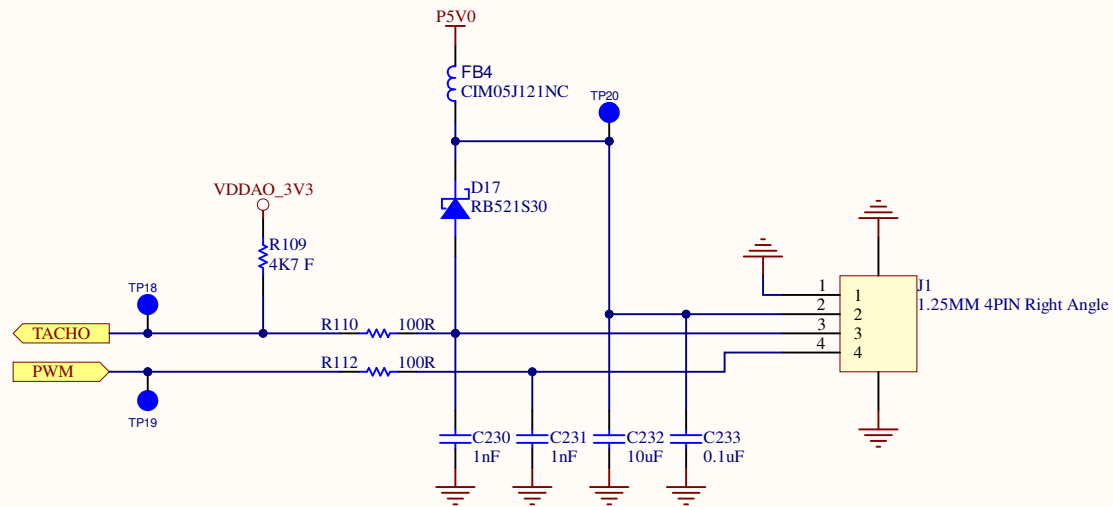



|   |                   |                |   |  |
|---|-------------------|----------------|---|--|
| Title <b>Remote Controller Receiver</b> |                   |                | Hardkernel Co.,LTD.<br>475-1 Mananro<br>Manangu, Anyang City<br>Gyeonggido<br>South Korea |  |
| Size: A4                                | Number: 19        | Revision: 0.1  |   |  |
| Date: 2020-10-06                        | Time: 오전 11:42:15 | Sheet 19 of 31 |   |  |
| File: IR.SchDoc                         |                   |                | Designed by: rупpi.kim@hardkernel.com   |  |



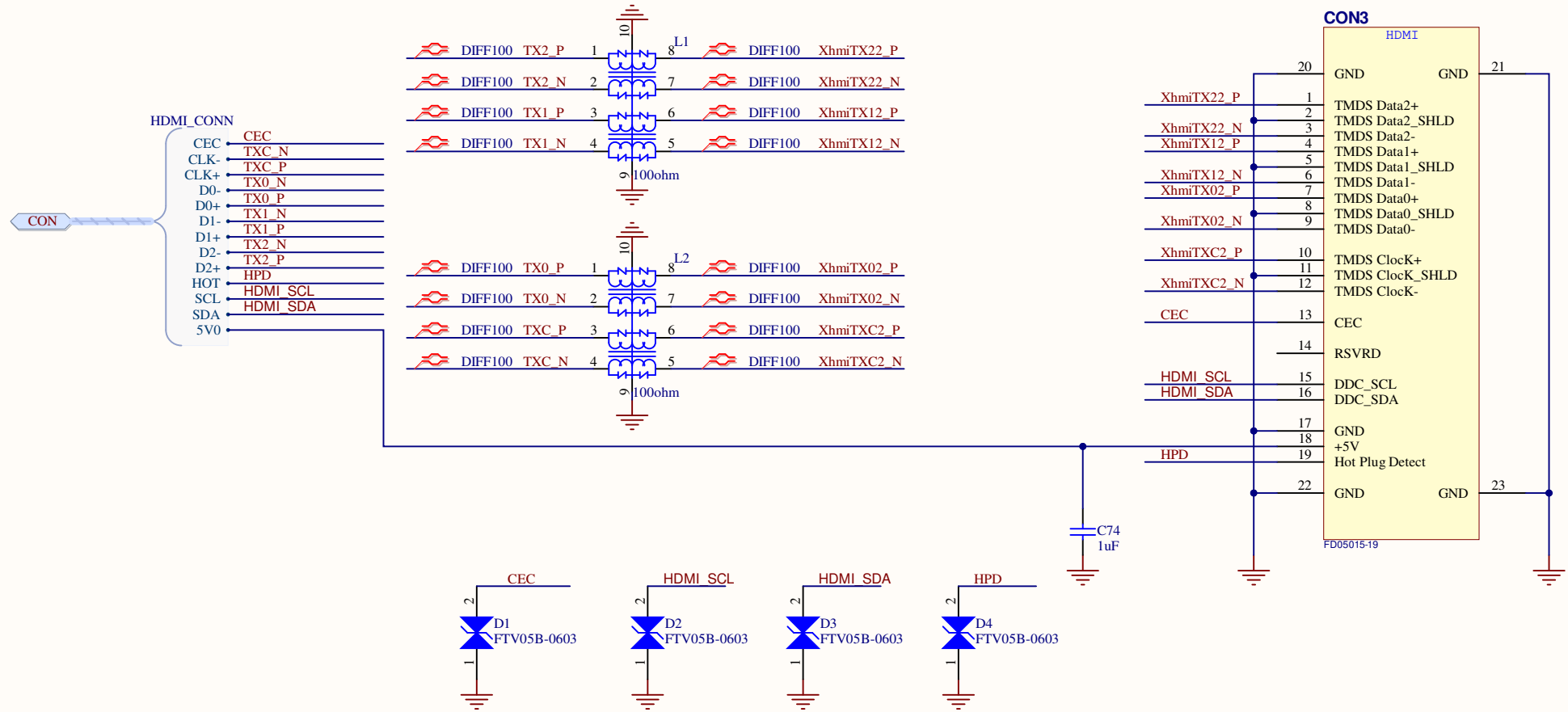


|                         |                   |                |   |               |
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| Title <b>DC JACK</b>    |                   |                | Hardkernel Co.,LTD.<br>475-1 Mananro<br>Manangu, Anyang City<br>Gyeonggido<br>South Korea | <b>ODROID</b> |
| Size: A4                | Number: 23        | Revision: 0.1  |   |               |
| Date: 2020-10-06        | Time: 오전 11:42:15 | Sheet 23 of 31 | Designed by: ruppi.kim@hardkernel.com   |               |
| File: CON_DCJACK.SchDoc |                   |                |   |               |

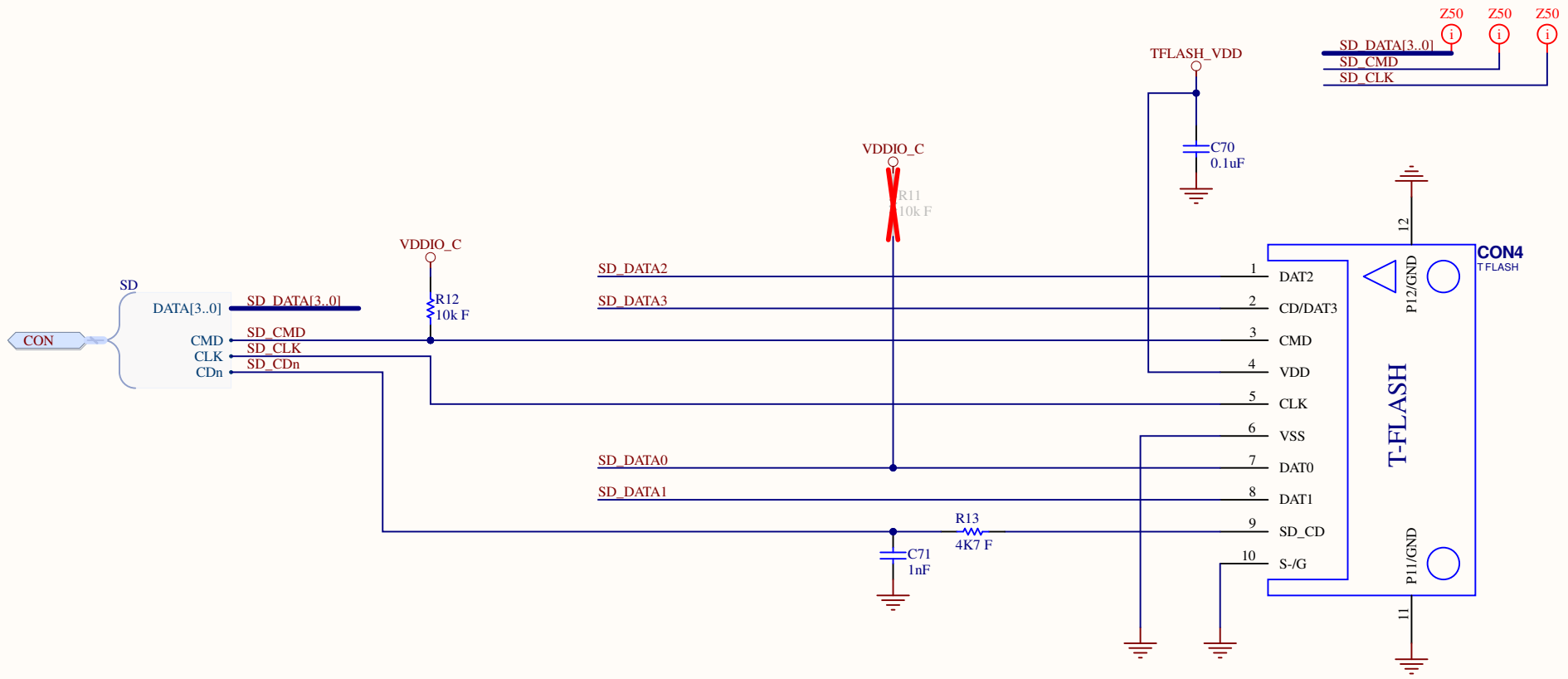



|                      |                   |                |   |  |
|----------------------|-------------------|----------------|---|--|
| Title <b>CON FAN</b> |                   |                | Hardkernel Co.,LTD.<br>475-1 Mananro<br>Manangu, Anyang City<br>Gyeonggido<br>South Korea |  |
| Size: A4             | Number: 31        | Revision: 0.1  |      |  |
| Date: 2020-10-06     | Time: 오전 11:42:15 | Sheet 31 of 31 |   |  |
| File: CON_FAN.SchDoc |                   |                | Designed by: ruppi.kim@hardkernel.com   |  |

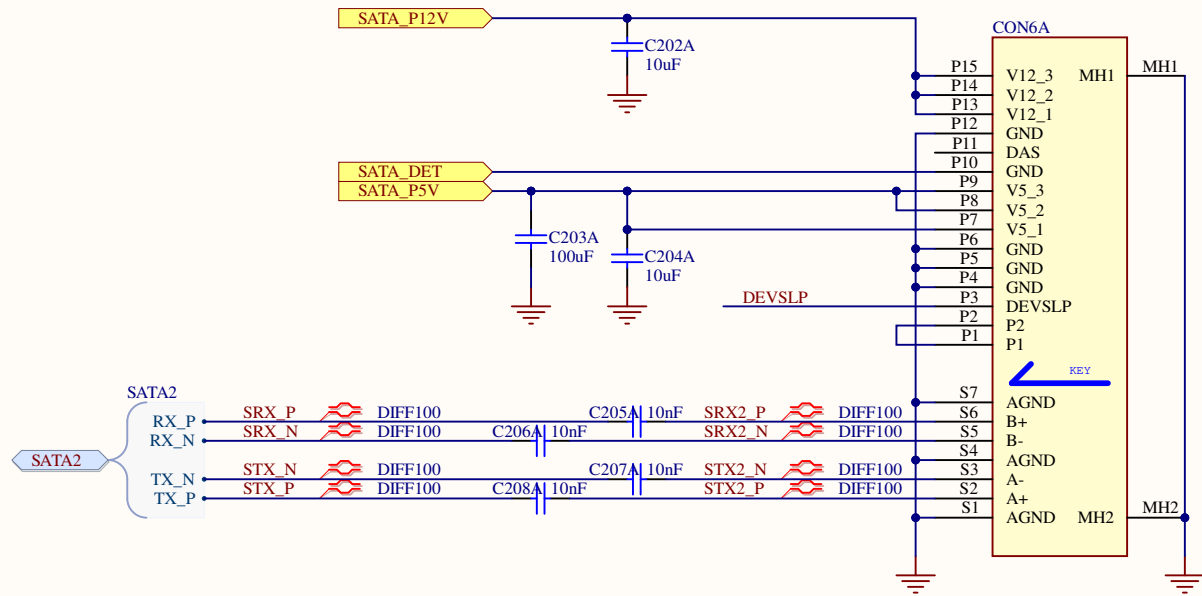




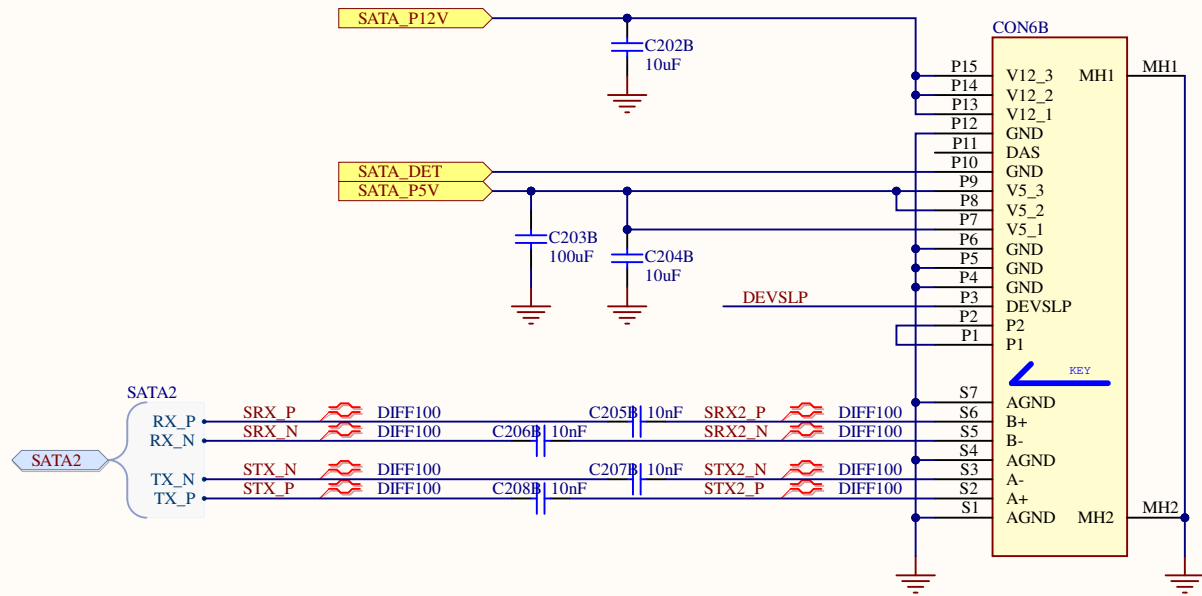
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| Title <b>HDMI Connector</b>           |                   |                | Hardkernel Co.,LTD.<br>475-1 Mananro<br>Manangu, Anyang City<br>Gyeonggido<br>South Korea |  |
| Size: A4                              | Number: 30        | Revision: 0.1  | <b>ODROID</b>   |  |
| Date: 2020-10-06                      | Time: 오전 11:42:15 | Sheet 30 of 31 |   |  |
| File: CON_HDMI.SchDoc                 |                   |                |   |  |
| Designed by: ruppi.kim@hardkernel.com |                   |                |   |  |



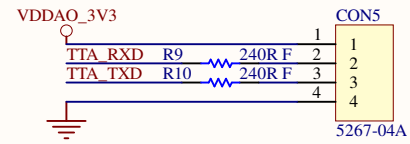
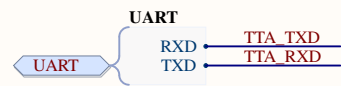
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| Title <b>MicroSD Socket</b>           |                           |                | Hardkernel Co.,LTD.<br>475-1 Mananro<br>Manangu, Anyang City<br>Gyeonggido<br>South Korea |  |
| Size: A4                              | Number: 26                | Revision: 0.1  |      |  |
| Date: 2020-10-06                      | Time: 2020.10.06 11:42:15 | Sheet 26 of 31 |   |  |
| File: CON_MICROSD_HD08-AL00335.SchDoc |                           |                | Designed by: ruppi.kim@hardkernel.com   |  |



|                              |                   |                |  |  |
|------------------------------|-------------------|----------------|--|--|
| Title <b>SATA2 Connector</b> |                   |                | Hardkernel Co.,LTD.<br>704 Anyang K-center 1591-9<br>Manangu, Anyang City<br>Gyeonggido<br>South Korea |  |
| Size: A4                     | Number: 29        | Revision: 0.1  | <b>ODROID</b>  |  |
| Date: 2020-10-06             | Time: 오전 11:42:15 | Sheet 29 of 31 |  |  |
| File: CON_SATA2.SchDoc       |                   |                |  |  |
|                              |                   |                | Designed by: rупpi.kim@hardkernel.com  |  |

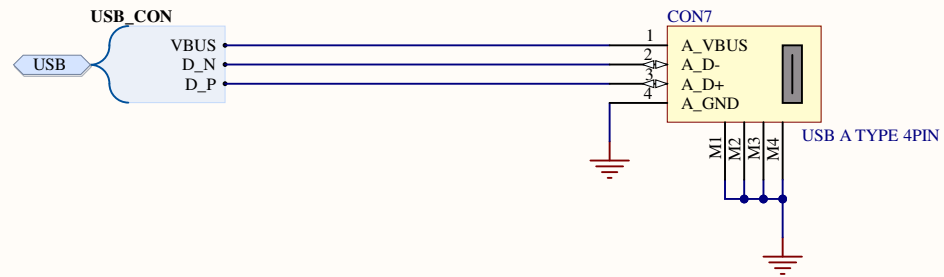


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| Title <b>SATA2 Connector</b> |                   |                | Hardkernel Co.,LTD.<br>704 Anyang K-center 1591-9<br>Manangu, Anyang City<br>Gyeonggido<br>South Korea |  |
| Size: A4                     | Number: 29        | Revision: 0.1  | <b>ODROID</b>  |  |
| Date: 2020-10-06             | Time: 오전 11:42:15 | Sheet 29 of 31 |  |  |
| File: CON_SATA2.SchDoc       |                   |                |  |  |
|                              |                   |                | Designed by: ruppi.kim@hardkernel.com  |  |



|                             |                   |                |   |               |
|-----------------------------|-------------------|----------------|---|---------------|
| Title <b>UART Connector</b> |                   |                | Hardkernel Co.,LTD.<br>475-1 Mananro<br>Manangu, Anyang City<br>Gyeonggido<br>South Korea | <b>ODROID</b> |
| Size: A4                    | Number: 24        | Revision: 0.1  |   |               |
| Date: 2020-10-06            | Time: 오전 11:42:15 | Sheet 24 of 31 |   |               |
| File: CON_UART.SchDoc       |                   |                | Designed by: ruppi.kim@hardkernel.com   |               |





|                                       |                   |                |                                      |  |
|---------------------------------------|-------------------|----------------|--------------------------------------|--|
| Title <b>USB 2.0 Type A Connector</b> |                   |                | Hardkernel Co.,LTD.<br>475-1 Mananro |  |
| Size: A4                              | Number: 28        | Revision: 0.1  | Manangu, Anyang City                 |  |
| Date: 2020-10-06                      | Time: 오전 11:42:15 | Sheet 28 of 31 | Gyeonggido                           |  |
| File: CON_USB_RA.SchDoc               |                   |                | South Korea                          |  |
| Designed by: ruppi.kim@hardkernel.com |                   |                |                                      |  |

