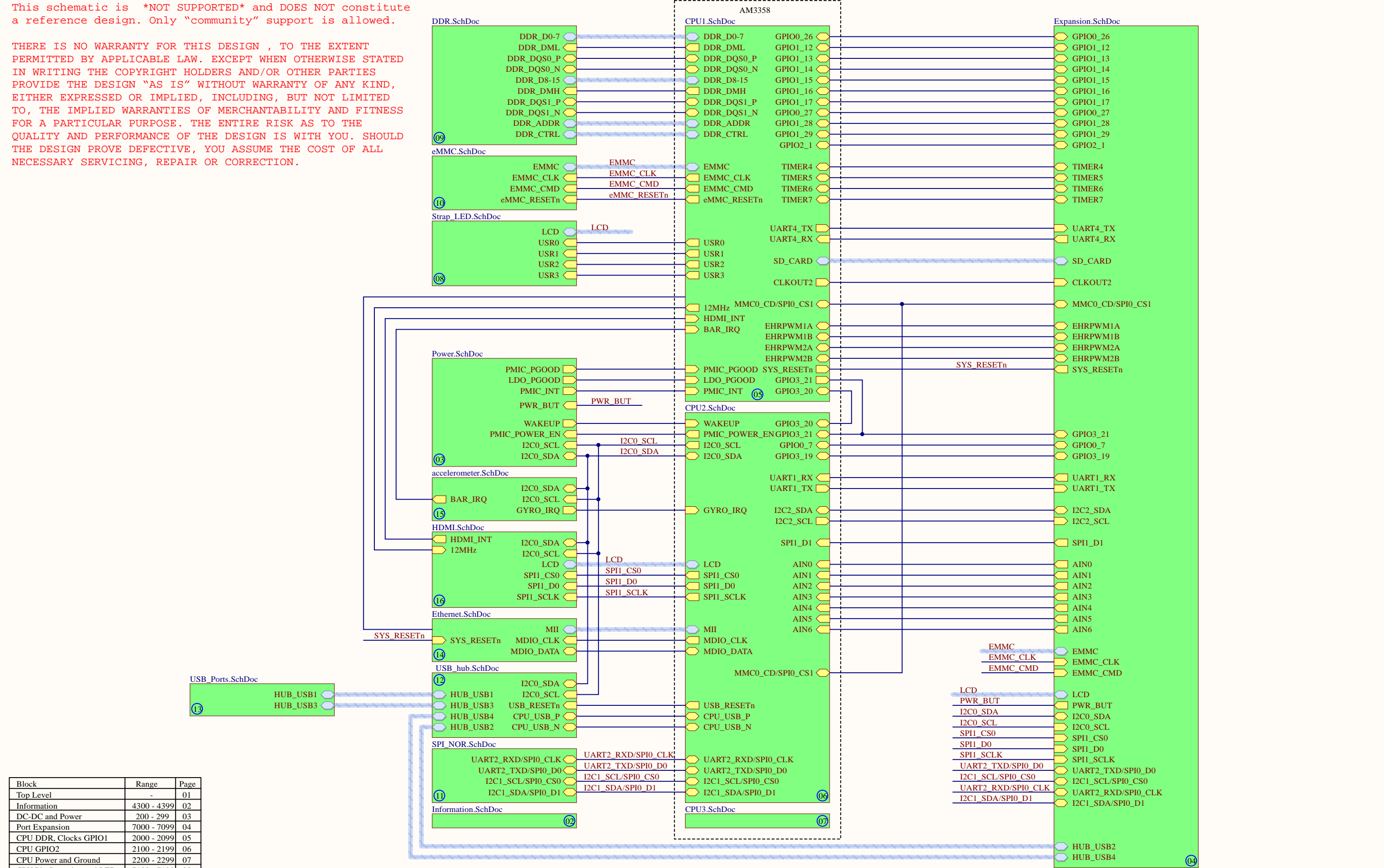


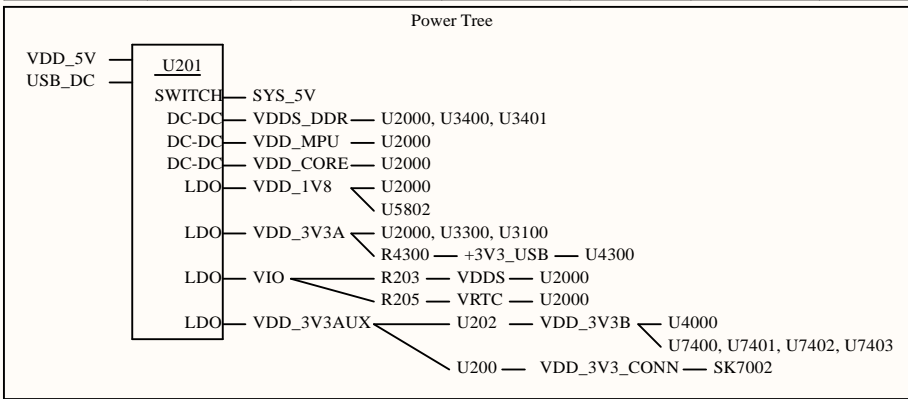
This schematic is ***NOT SUPPORTED*** and DOES NOT constitute a reference design. Only “community” support is allowed.

THERE IS NO WARRANTY FOR THIS DESIGN , TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE DESIGN “AS IS” WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE DESIGN IS WITH YOU. SHOULD THE DESIGN PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.



| Block | Range | Page |
|-----------------------------|-------------|------|
| Top Level | - | 01 |
| Information | 4300 - 4399 | 02 |
| DC-DC and Power | 200 - 299 | 03 |
| Port Expansion | 7000 - 7099 | 04 |
| CPU DDR, Clocks GPIO1 | 2000 - 2099 | 05 |
| CPU GPIO2 | 2100 - 2199 | 06 |
| CPU Power and Ground | 2200 - 2299 | 07 |
| CPU Pin Strapping and LEDs | 7100 - 7199 | 08 |
| DDR | 3400 - 3499 | 09 |
| eMMC Flash | 3300 - 3099 | 10 |
| SPI NOR Flash | 3100 - 3199 | 11 |
| USB Hub | 4300 - 4399 | 12 |
| USB Ports | 4200 - 4299 | 13 |
| Ethernet and RJ45 | 4000 - 4099 | 14 |
| Accelerometer and Barometer | 7400 - 7499 | 15 |
| HDMI Port | 5800 - 5899 | 16 |

| | | | | | | | | | | | |
|--|------------------------------------|-------------------------|-------------------------|-------------------------|-------------------------|---|--------------|------------------|--------------------|-------|-------|
| 1 | | 2 | | | 3 | | | 4 | | | |
| SYSBOOT[15:14] | SYSBOOT[13:12] | SYSBOOT[11:10] | SYSBOOT[9] | SYSBOOT[8] | SYSBOOT[7:6] | SYSBOOT[5] | SYSBOOT[4:0] | Boot Sequence | | | |
| 00b = 19.2MHz 01b = 24MHz 10b = 25MHz 11b = 26MHz | 00b (all other values reserved) | Don't care for ROM code | Don't care for ROM code | Don't care for ROM code | Don't care for ROM code | 0 = CLKOUT1 disabled 1 = CLKOUT1 enabled | 11100b <- | MMC1 SW7100 open | MMC0 SW7100 closed | UART0 | USB0 |
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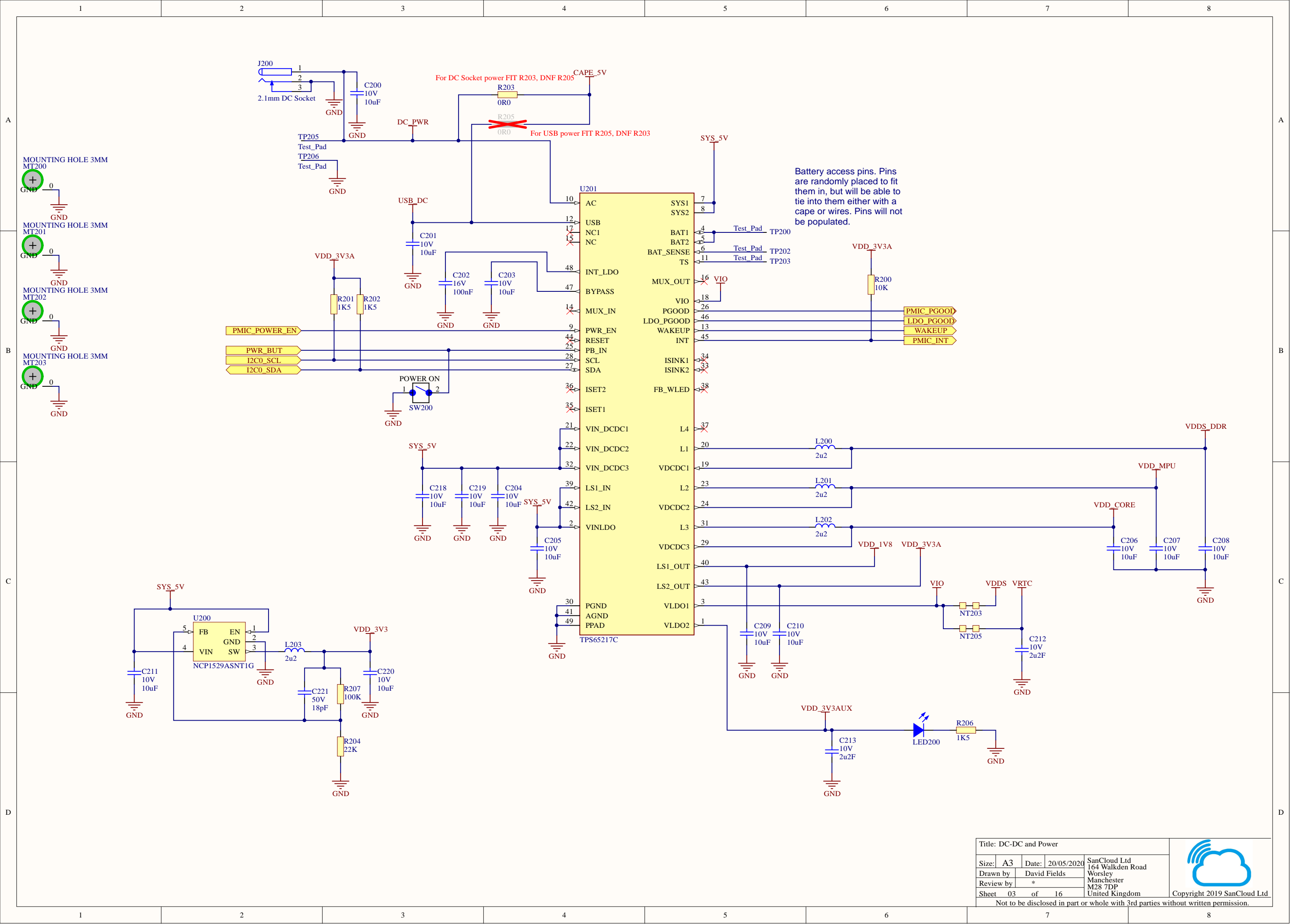
| I2C Buses | | | |
|-----------|--------|------------------------------|---------------|
| BUS | DEVICE | FUNCTION | I2C READ ADDR |
| I2C0 | U201 | REGULATOR | 0x24 |
| | U7000 | EEPROM | 0xA0 |
| | U7401 | MPU-6050 Gyro, Accelerometer | 0xC0 or 0xC1 |
| | U7403 | LPS331AP Barometer | 0xB8 or 0xBA |
| | U5802 | TDA19988 HDMI Transmitter | |
| | | | |
| I2C1 | - | Expansion Port | |

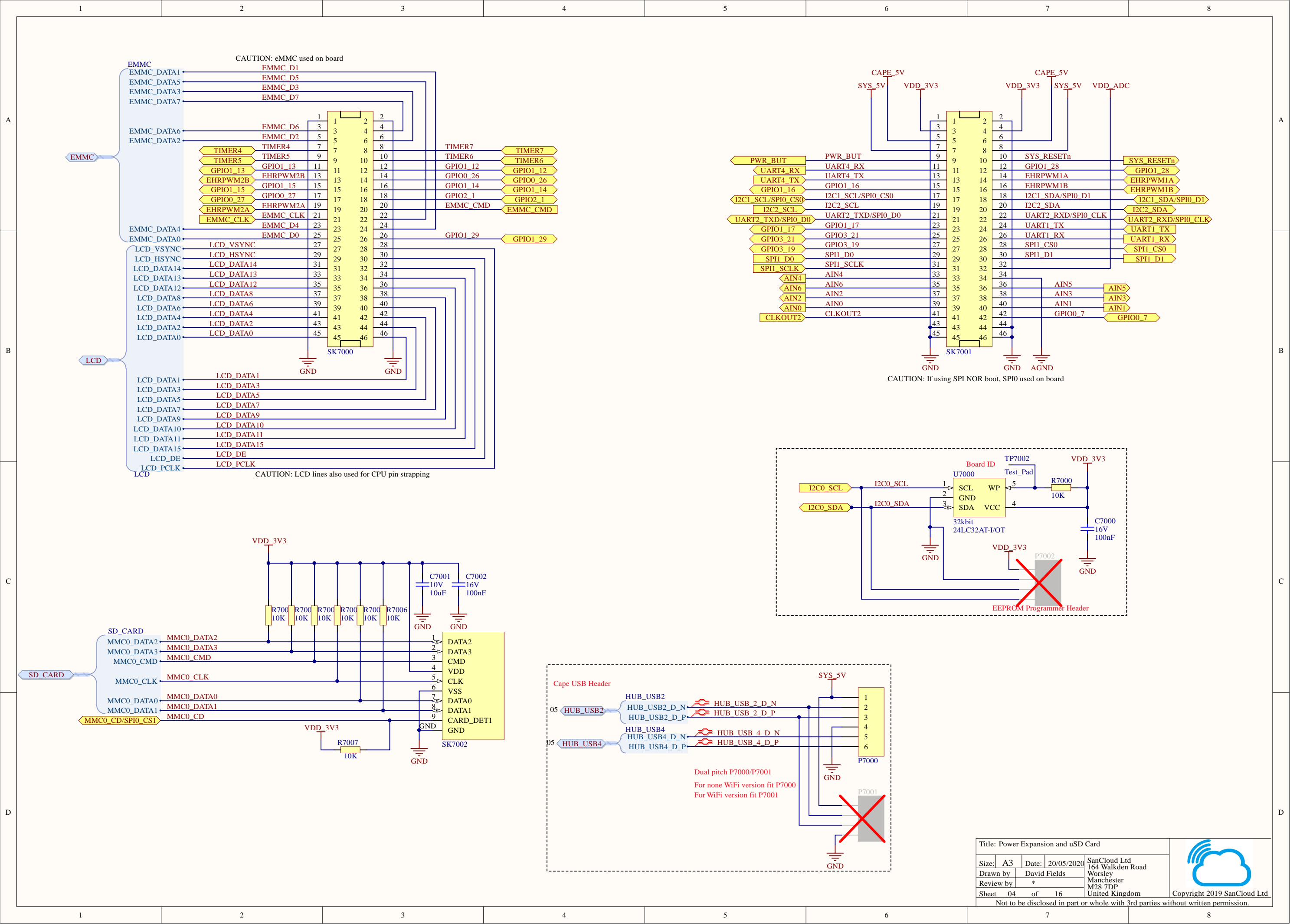
| Power Budget (Max) | | | | | | | | | | All current in mA | |
|--------------------|----------|---------|----------|---------|--------|----------|----------|-------------|--------|-------------------|------|
| Functional Block | VDD_CORE | VDD_MPU | VDDS_DDR | VDD_1V8 | VDD_IO | VDD_3V3A | VDD_3V3B | VDD_3V3CONN | SYS_5V | | |
| Core | 400 | | | | | | | | | | |
| MPU | | 380 | | | | | | | | | |
| DDR | | | 450 | | | | | | | | |
| RTC + VDDS | | | | | 55 | | | | | | |
| CPU PLL + ADC | | | | 120 | | | | | | | |
| CPU IO | | | | | | 415 | | | | | |
| eMMC | | | | | | | | | | | |
| WiFi/BT | | | | | | | | 215 | | | |
| USB Hub | | | | | | | | 25 | | | |
| USB Ports | | | | | | | | 80 | 1000 | | |
| Ethernet | | | | | | | 54 | | | | |
| Acceleromter* | | | | | | | | | | | |
| Barometer* | | | | | | | | 4 | | | |
| HDMI | | | | 127 | | | | 1 | 65 | | |
| Expansion EEPROM | | | | | | | | 3 | | | |
| Micro SD Card | | | | | | | | 100 | | | |
| Sled | | | | | | | | | | | |
| Total Current (mA) | 400 | 380 | 450 | 247 | 55 | 415 | 54 | 428 | 1065 | | |
| Voltage Rail (V) | 1.1 | 1.1 | 1.5 | 1.8 | 3.3 | 3.3 | 3.3 | 3.3 | 5 | | |
| Rail Power (mW) | 440 | 418 | 675 | 444 | 181 | 1367 | 178 | 703 | 440 | | |
| DC-DC efficiency | 85% | 85% | 85% | | | | | 85% | | | |
| Input Power | 517 | 491 | 794 | | | | | 503 | | | |
| Input Current | 103 | 98 | 158 | 247 | 55 | 415 | 54 | 100 | 1065 | 5V Total Current | 2295 |
| | | | | | | | | | | 5V Current no USB | 1296 |

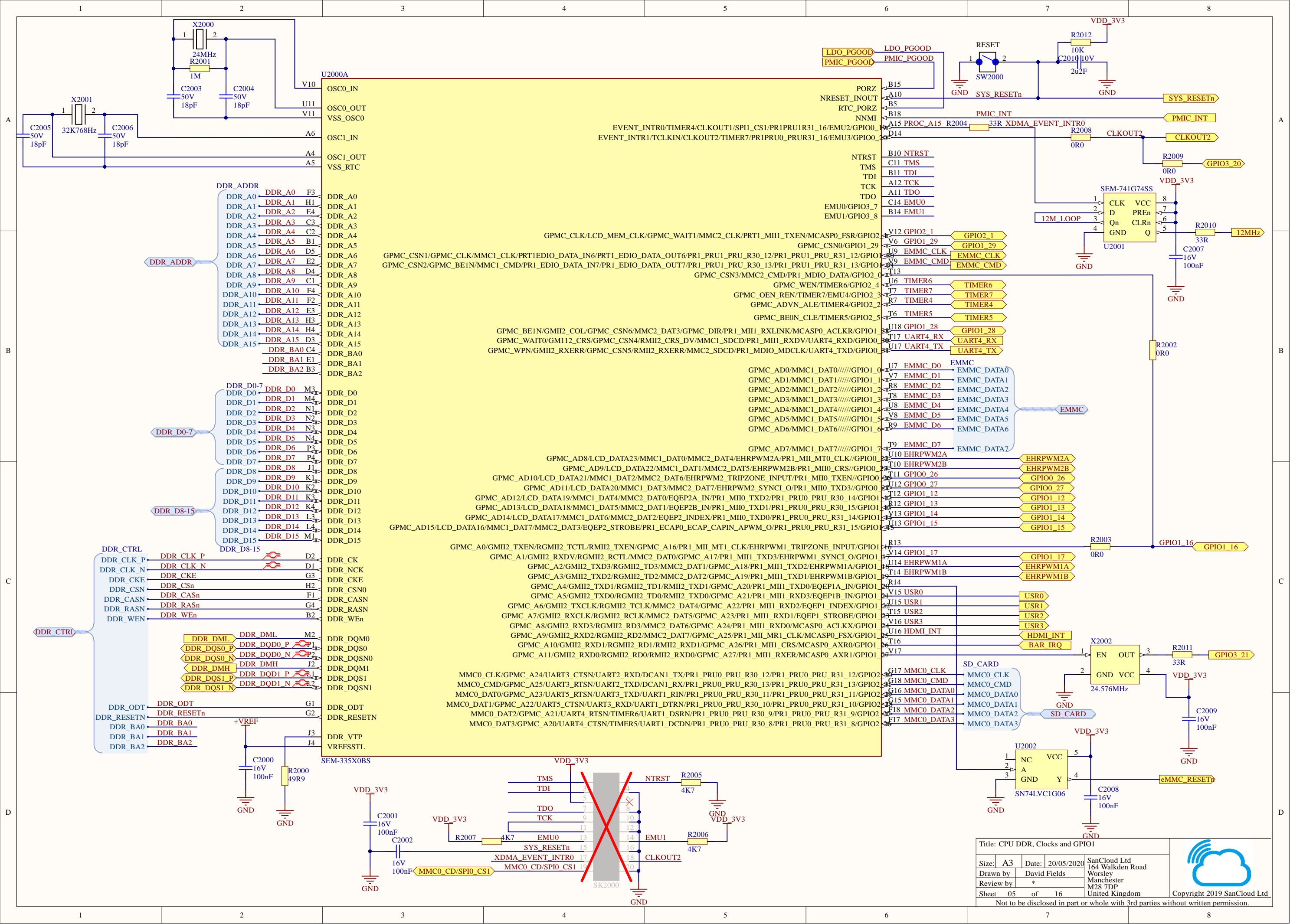
* If Part Is Fitted Only
§ VIO is a combination of VDDS and VRTC
~ VDD 1V8 is a combination of VDD_PLL, VDD_ADC and VDD_1V8

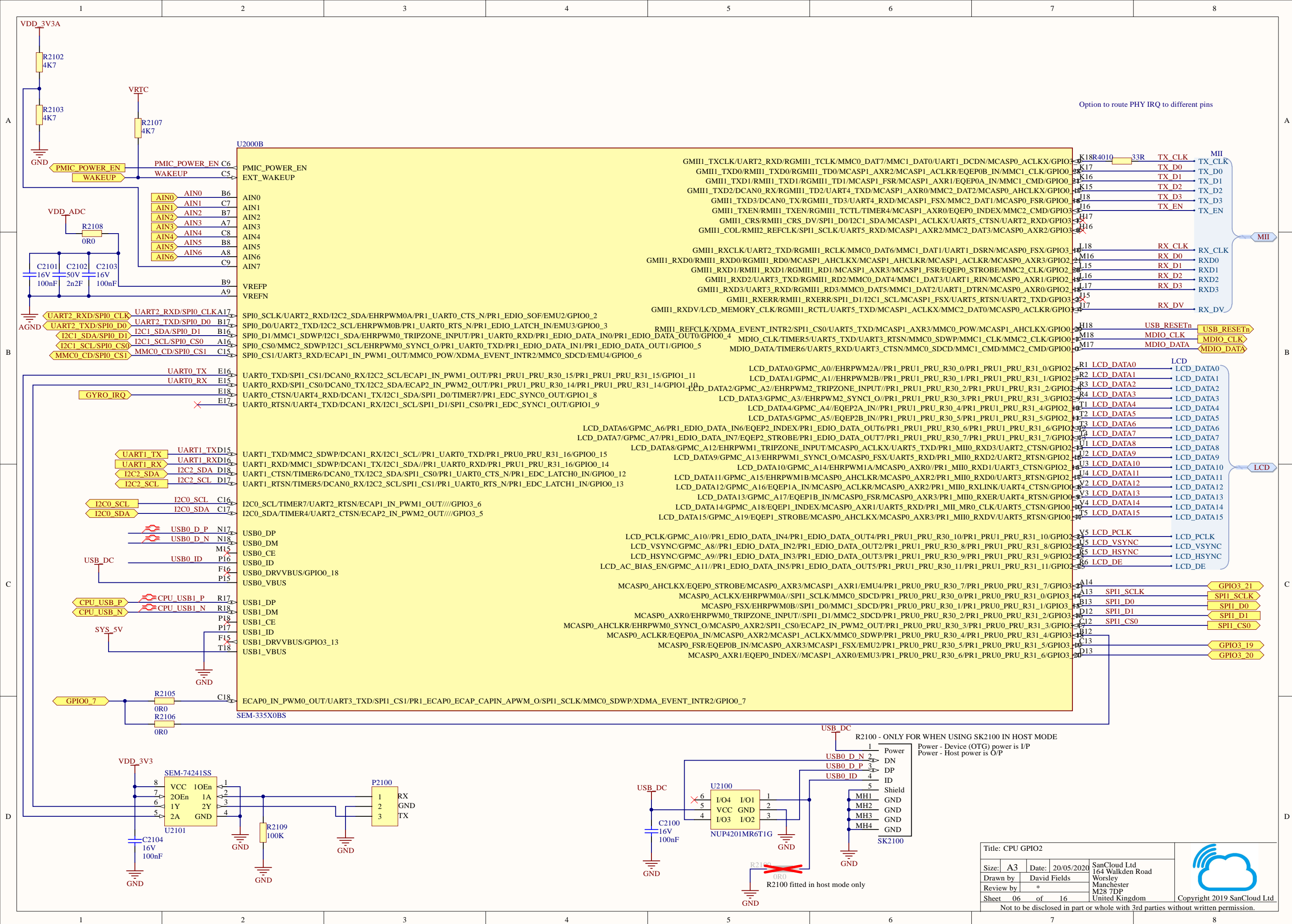
| Version | Description |
|---------|--|
| 1D | Backer Released Design |
| 1H | Replaced USB WiFi module with dual band version Option for USB hub to be controlled by CPU using SMA bus Replaced some parts for high temperature versions |

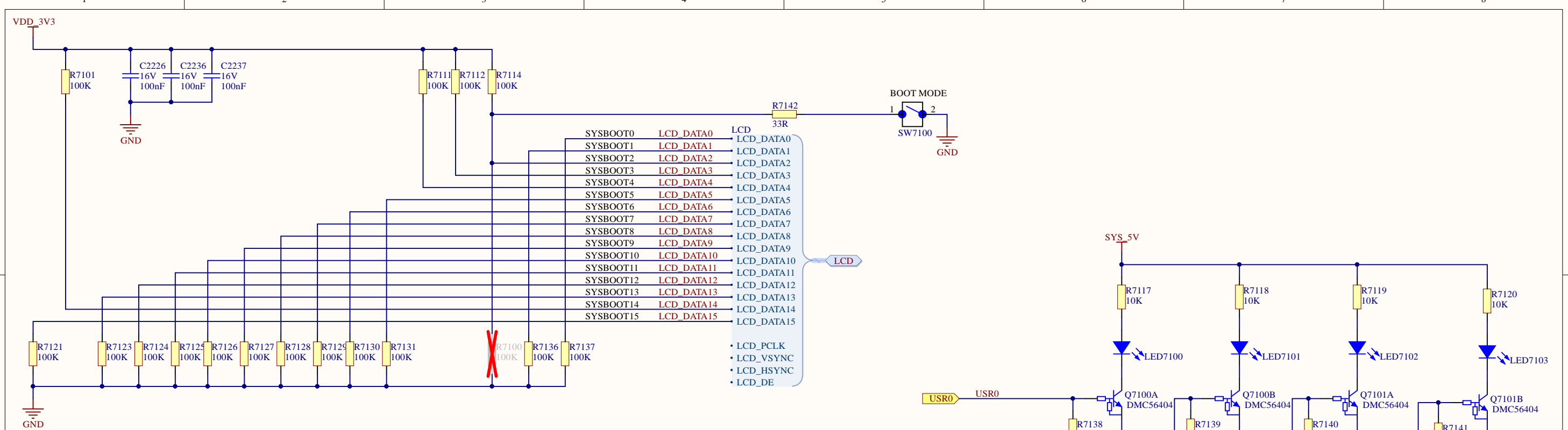
| Notes: | |
|----------------|---|
| USB OTG Port - | Normally USB port 0 on U2000 is configured for a device port only. Siince this port is an On The Go port it can be configured for host mode instead. To use USB 0 has host mode R2000 and R2104 must be fitted. R2000 means U2000 is in host mode. R2104 is to make the OTG port provide power to the external device The Linux Kernel must also be recompiled to enable USB 0 in host mode. |
| SPI NOR - | Standard boot device is eMMC flash. It is possible to make U2000 boot from SPI NOR instead. This has several security benefits since the bootloader is now seperate from the application image To enable this mode SYSMODE[2] must change from 1 to 0. This is done by removing R7135 and fitting R7114. U3100 must also be fitted. Be aware that SPI NOR signals are also used on the expansion port. |
| | |











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