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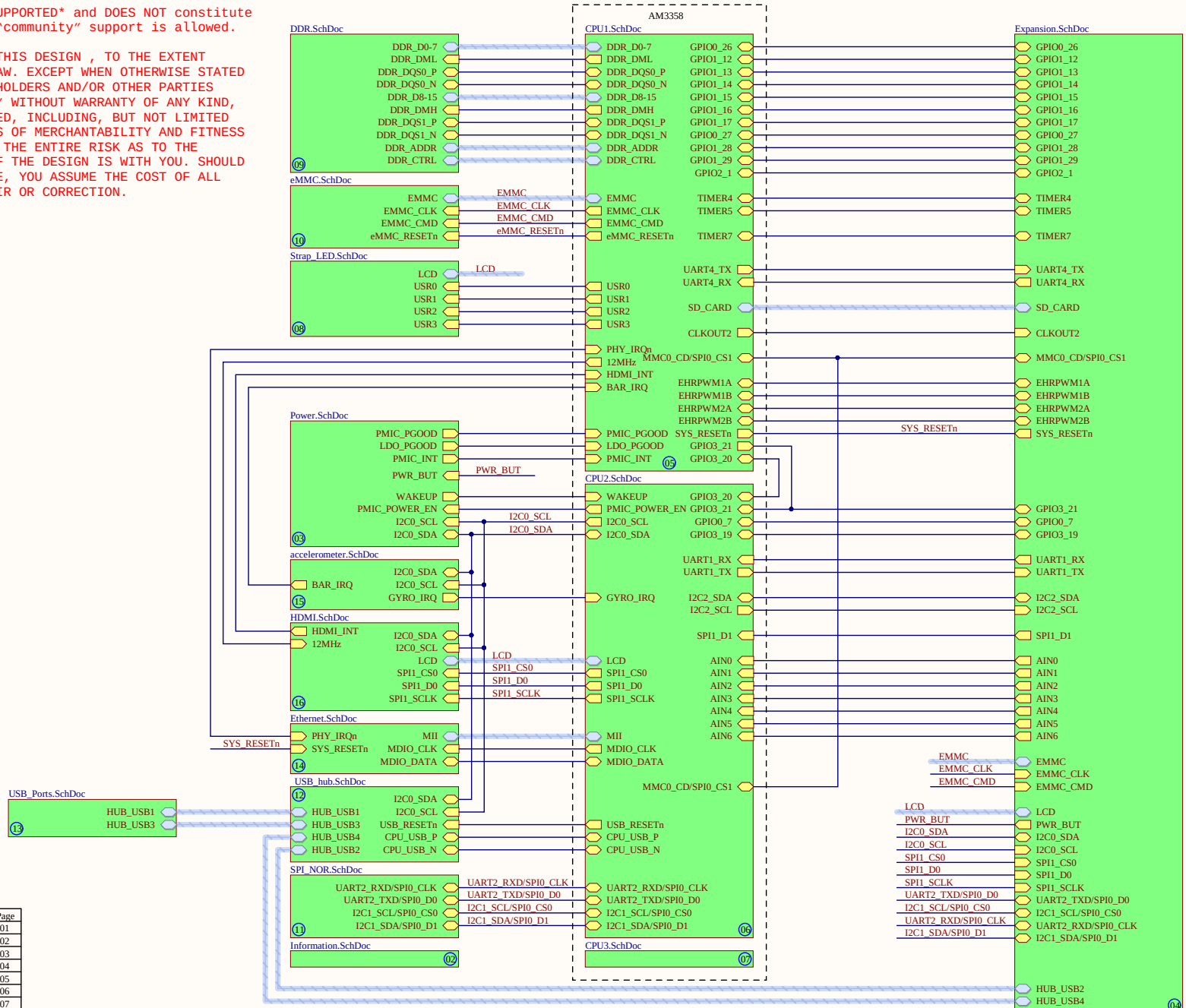

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Title:	Top Level
Size:	A3
Date:	23/01/2018
Drawn by	David Fields
Review by	*
Revision	1D
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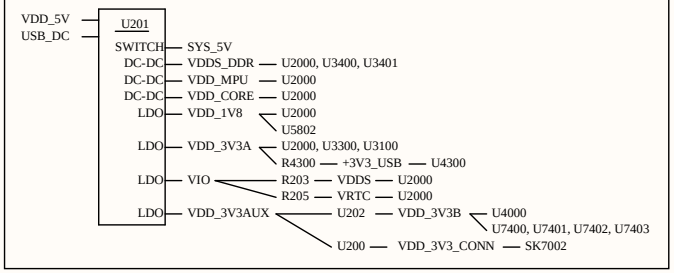
United Kingdom

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
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	11000b	SPI0 SW7100 open	MMC0 SW7100 closed	USB0	UART0

Power Tree



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	
	VDD_CORE	VDD_MPU	VDDS_DDR	VDD_1V8~	VDD_IO§	VDD_3V3A	VDD_3V3B	VDD_3V3CONN	SYS_5V
Functional Block	1.1V	1.1V	1.5V	1.8V	3.3V	3.3V	3.3V	3.3V	5V
Core	400								
MPU		380							
DDR			450						
RTC + VDDS					55				
CPU PLL + ADC				120					
CPU IO						415			
eMMC									
SPI NOR*								230	
USB Hub								25	
USB Ports								80	1000
Ethernet							54		
Accelerometer*									
Barometer*								4	
HDMI				127				1	65
Expansion EEPROM								3	
Micro SD Card								100	
Sled									
Total Current (mA)	400	380	450	247	55	760	54	100	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					
DC-DC efficiency									
Input Power									
Input Current									

* 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

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.

Title: Information			
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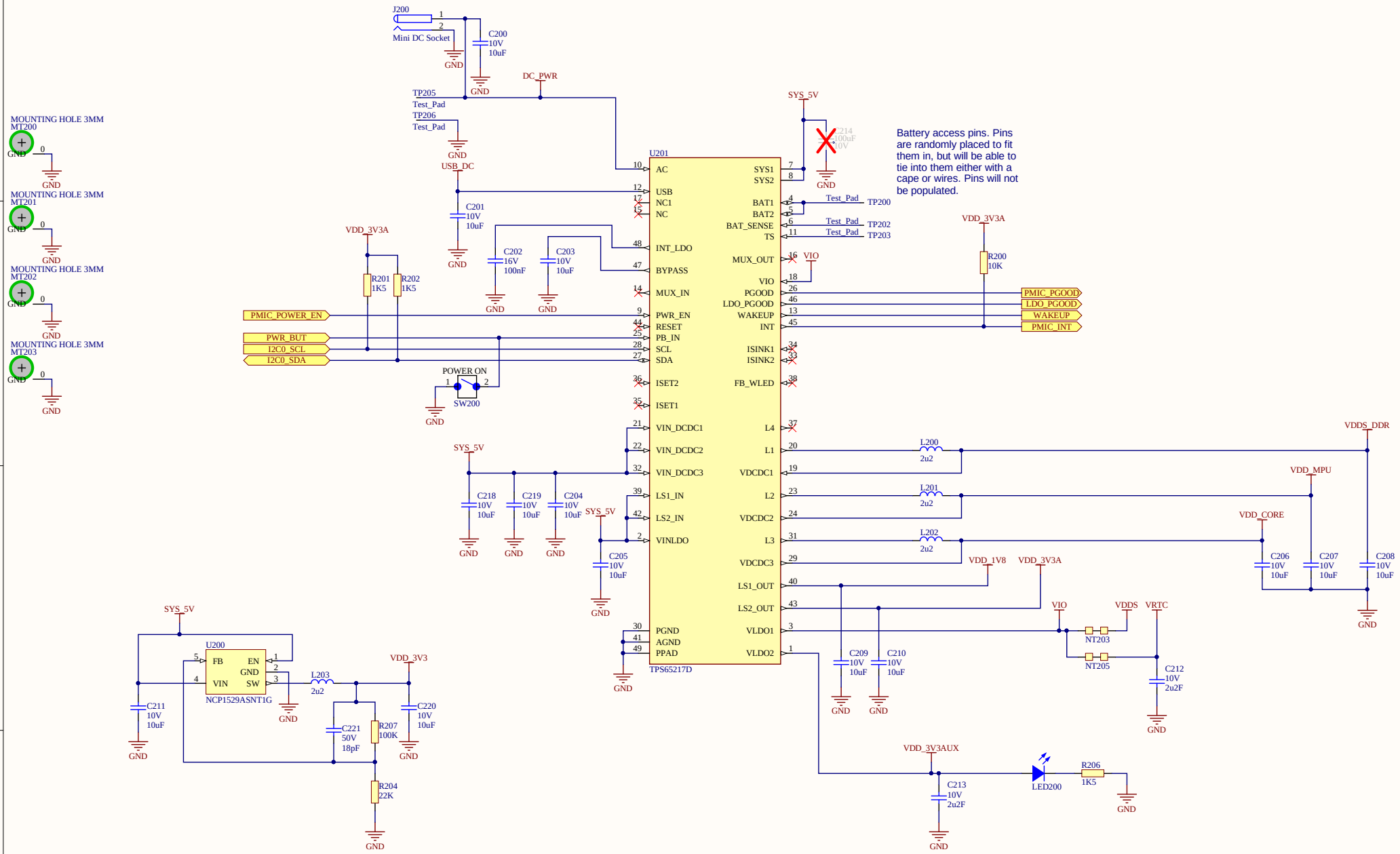

Title: DC-DC and Power			
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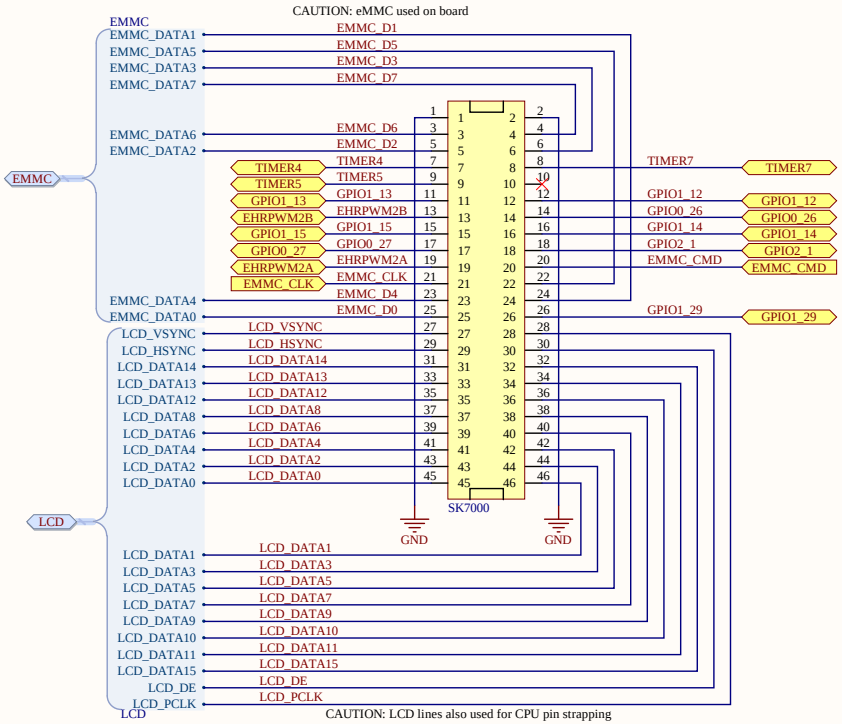

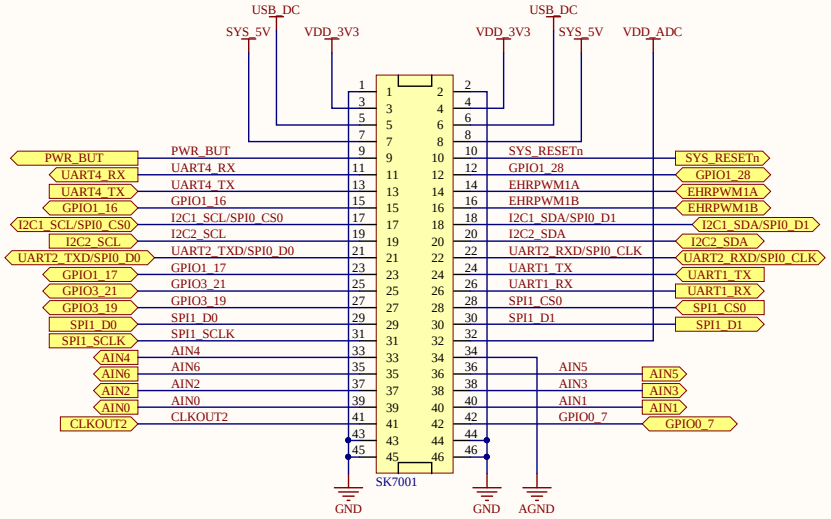

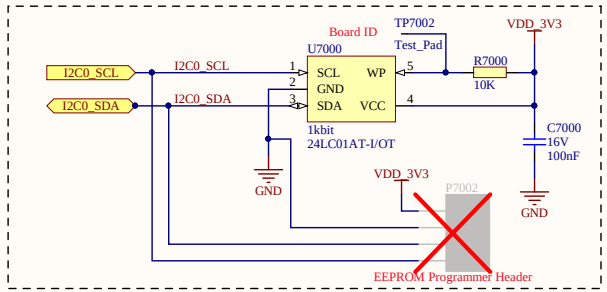

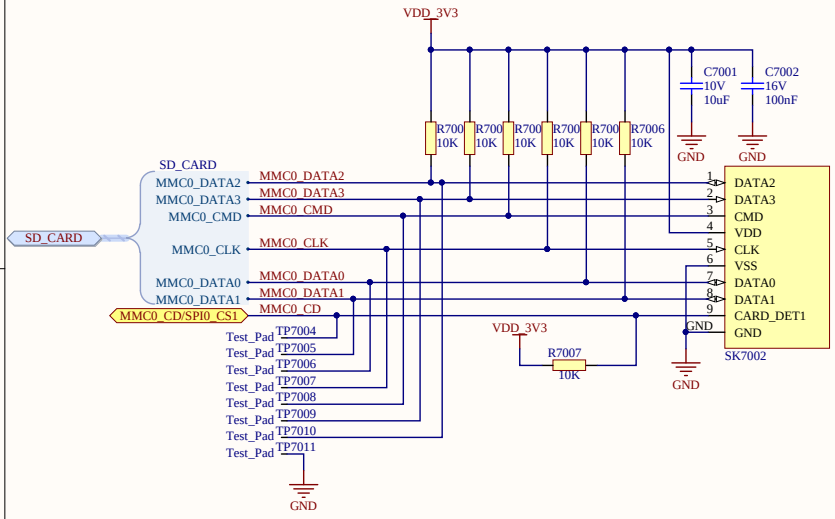

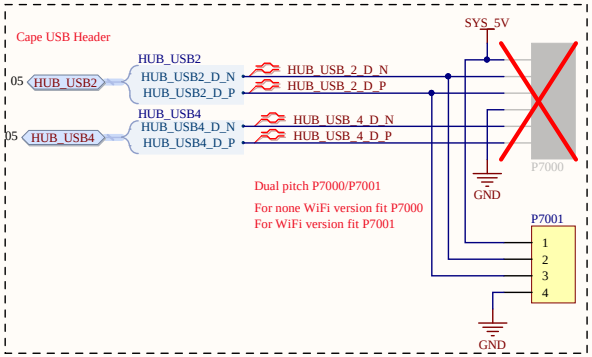

Title: Power Expansion and uSD Card			
Size: A3	Date: 23/01/2018	SanCloud Ltd 164 Walkden Road Worsley Manchester M28 7DP United Kingdom	
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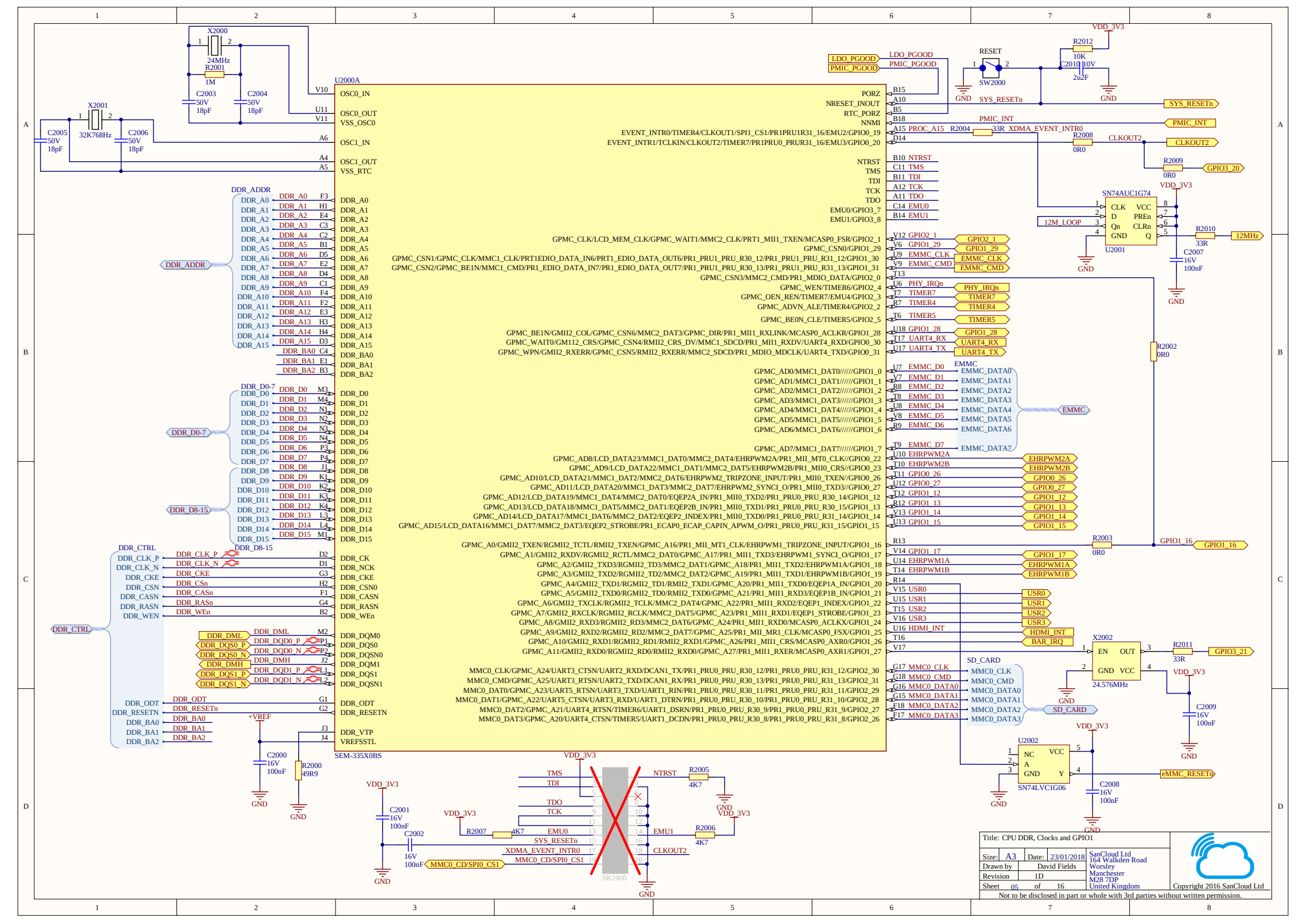

Title:	CPU DDR, Clocks and GPIO1
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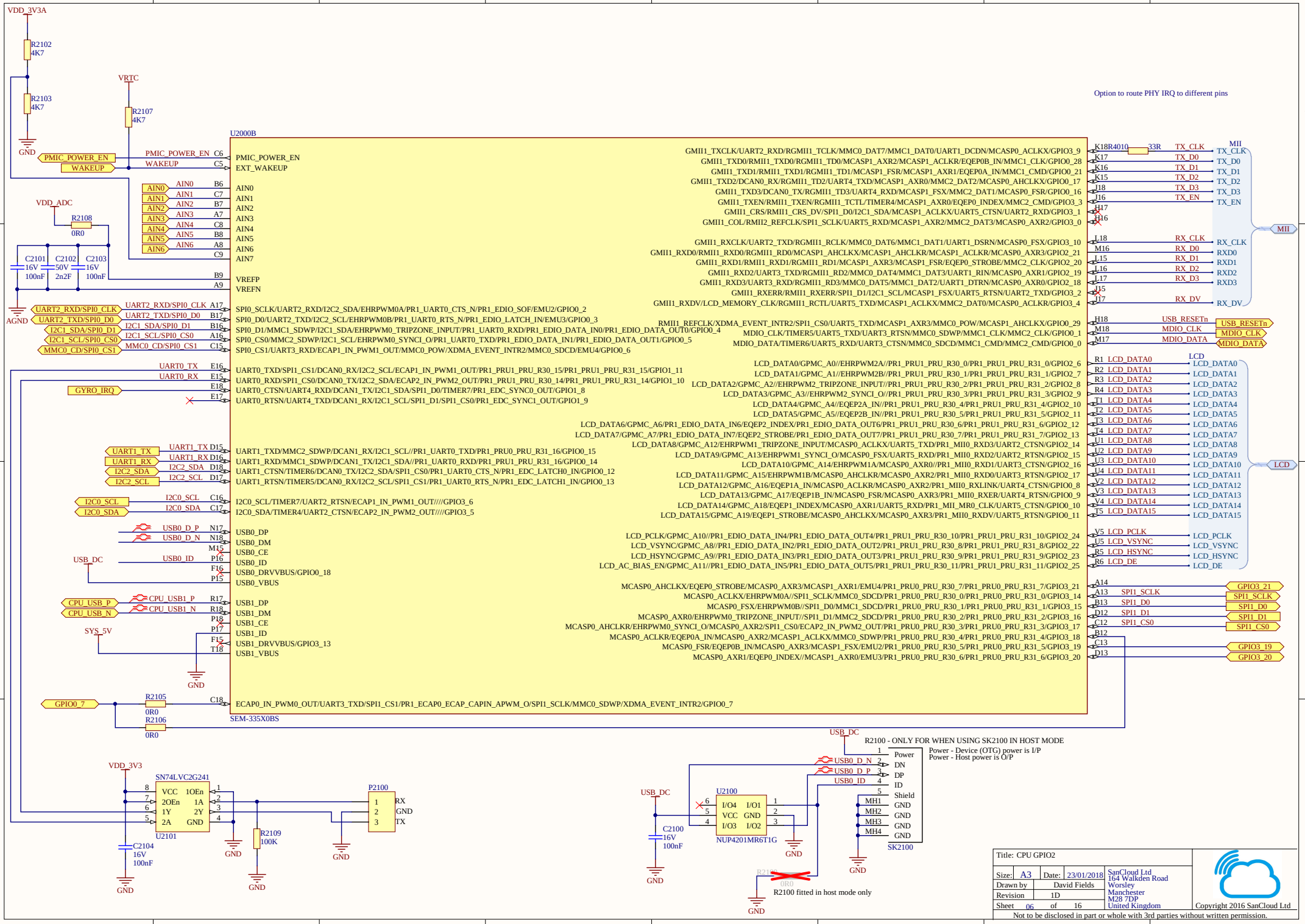
VDD_3V3A
R2102 4K7
R2103 4K7
GND
VRTC
R2107 4K7
PMIC_POWER_EN
WAKEUP
VDD_ADC
R2108 0R0
C2101 16V 100nF
C2102 50V 2nF
C2103 16V 100nF
AGND
U2000B
SEM-335X0BS
Option to route PHY IRQ to different pins
MII
LCD
R2100 - ONLY FOR WHEN USING SK2100 IN HOST MODE
Power - Device (OTG) power is I/P
Power - Host power is O/P
SK2100
R2100 fitted in host mode only
U2100
NUP4201MR6T1G
U2101
SN74LVC2G241
P2100
C2104 16V 100nF
C2100 16V 100nF
R2109 100K
Title: CPU GPIO2
Size: A3
Date: 23/01/2018
Drawn by David Fields
Revision 1D
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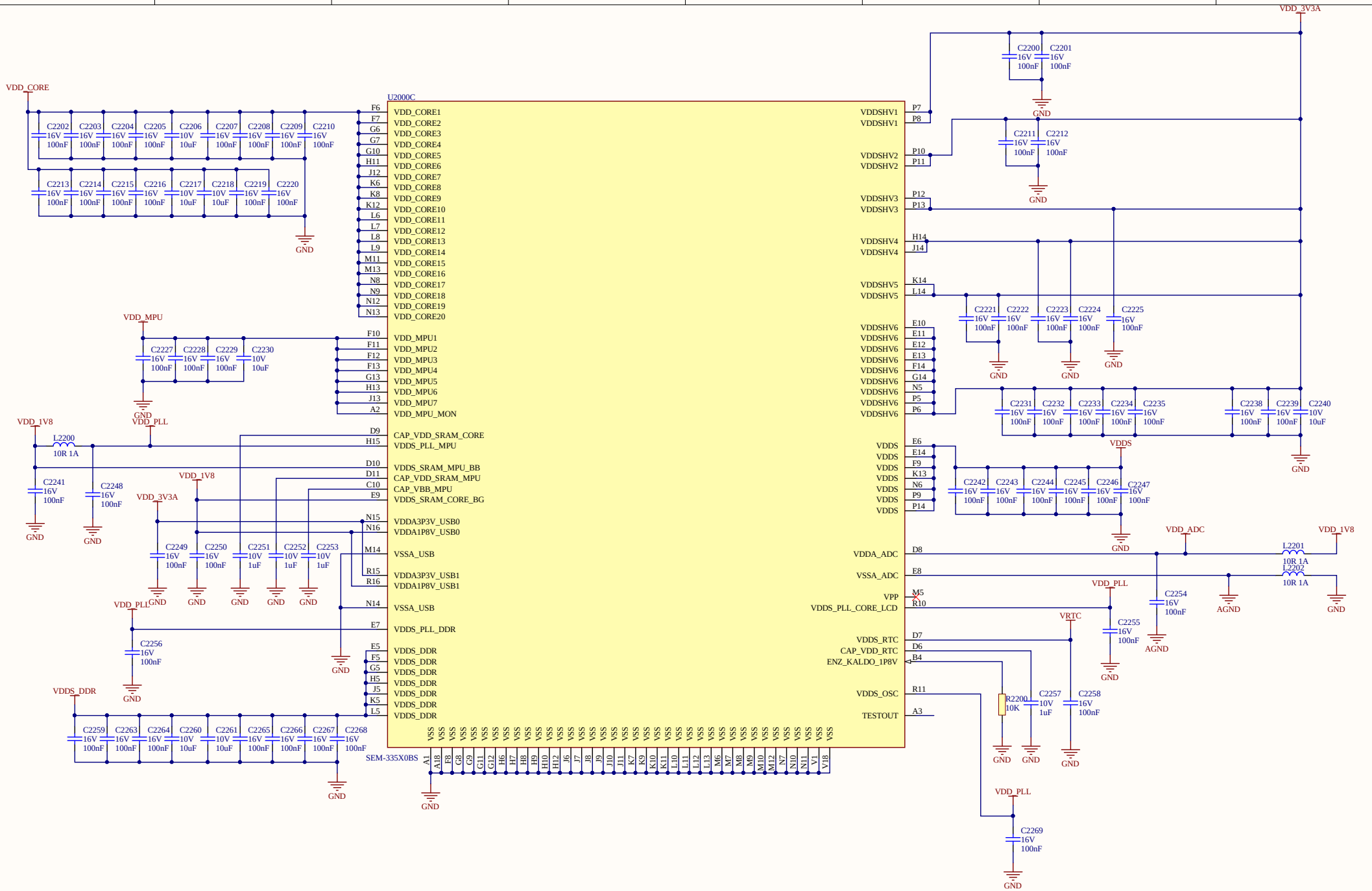

Title: CPU Power and Ground			
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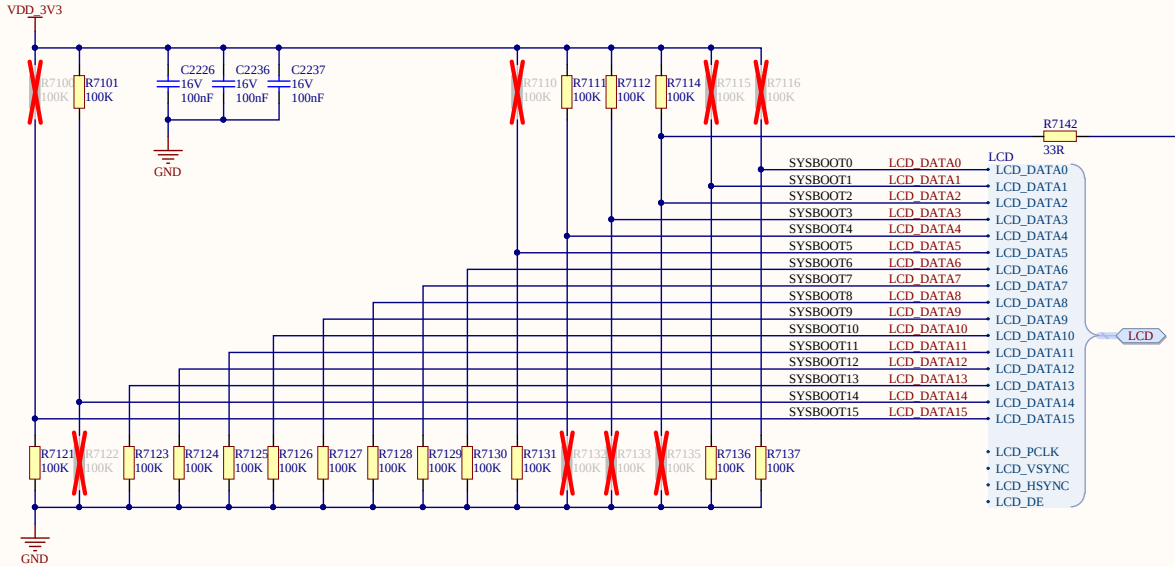

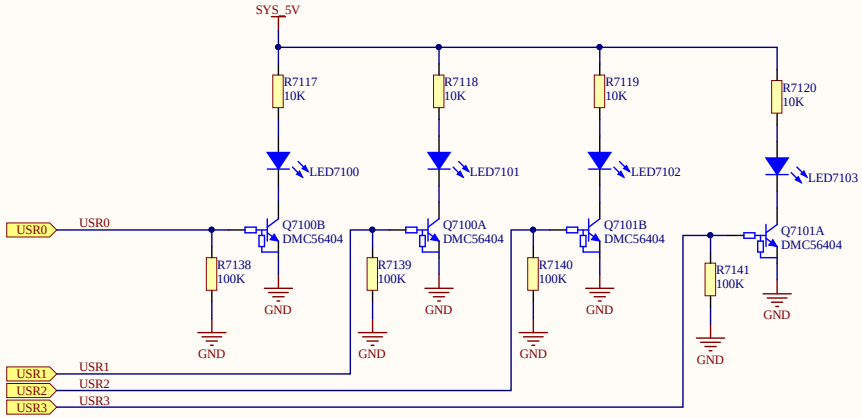

SYSBOOT[15:14]	SYSBOOT[13:12]	SYSBOOT[11:10]	SYSBOOT[9]	SYSBOOT[8]	SYSBOOT[7:6]	SYSBOOT[5]	SYSBOOT[4:0]	Boot Sequence			
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Title: CPU Pin Strapping and LEDs			
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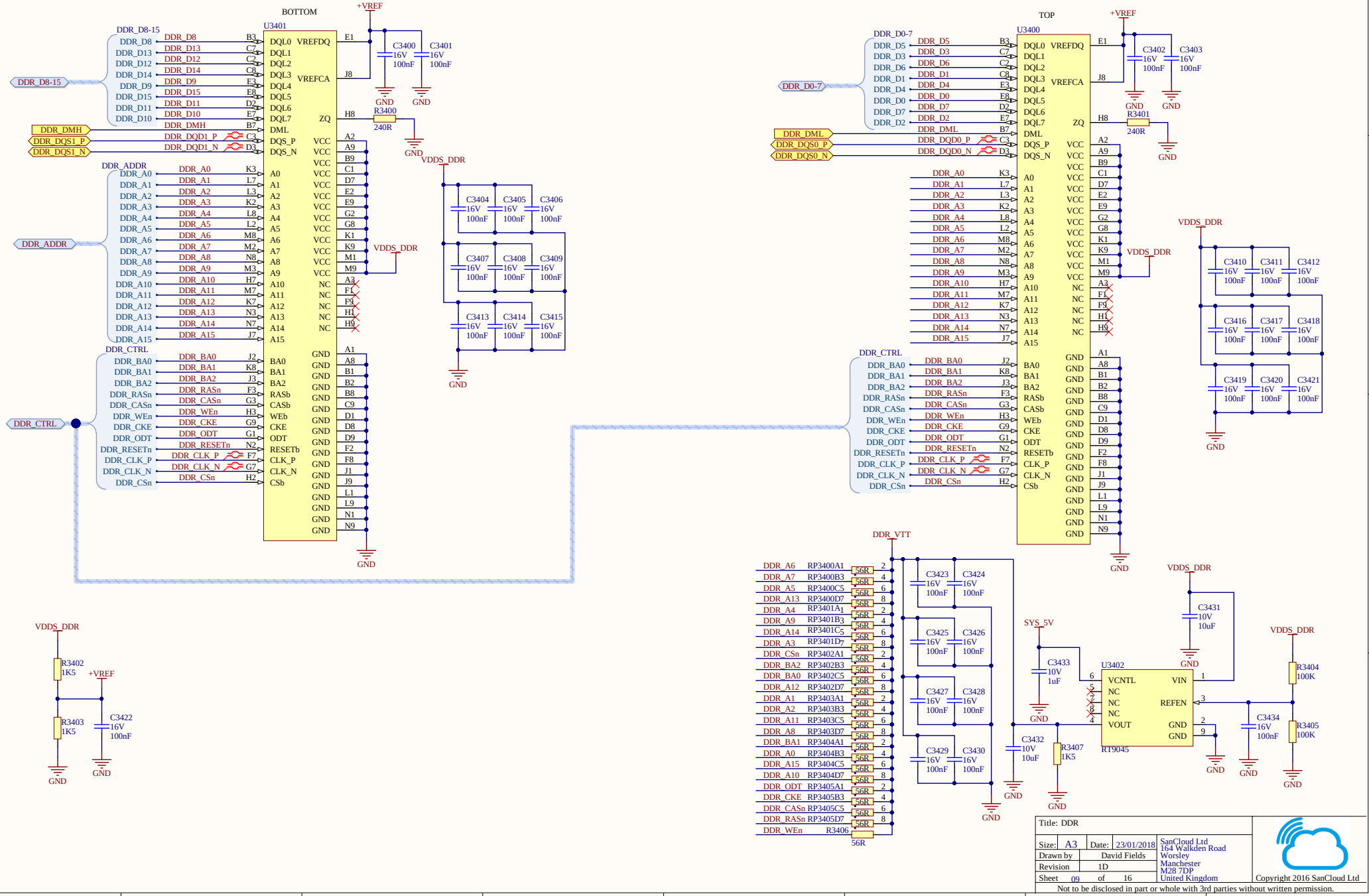

Title:	DDR
Size:	A3
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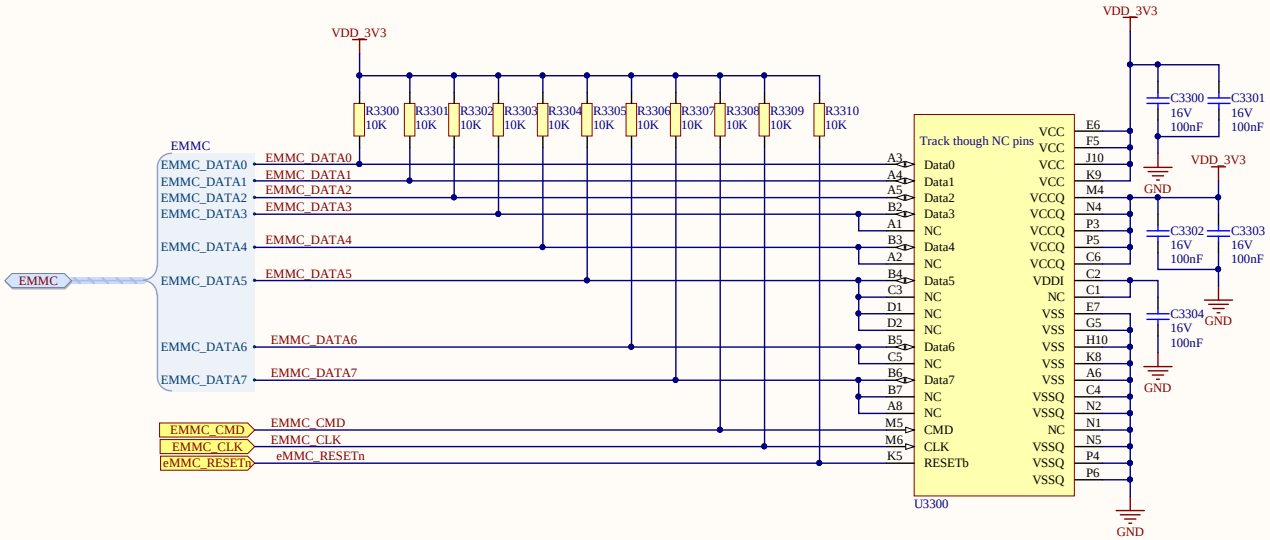

Title: eMMC Flash			
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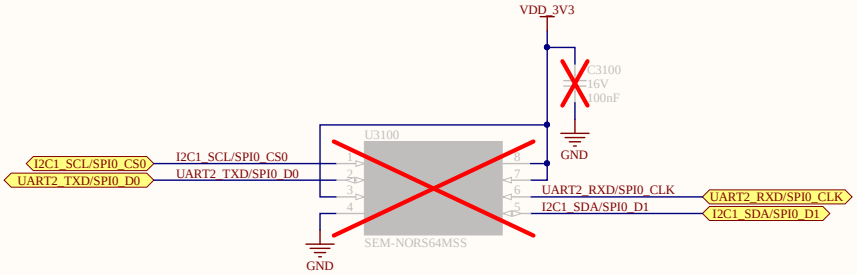

Title: SPI NOR Flash			
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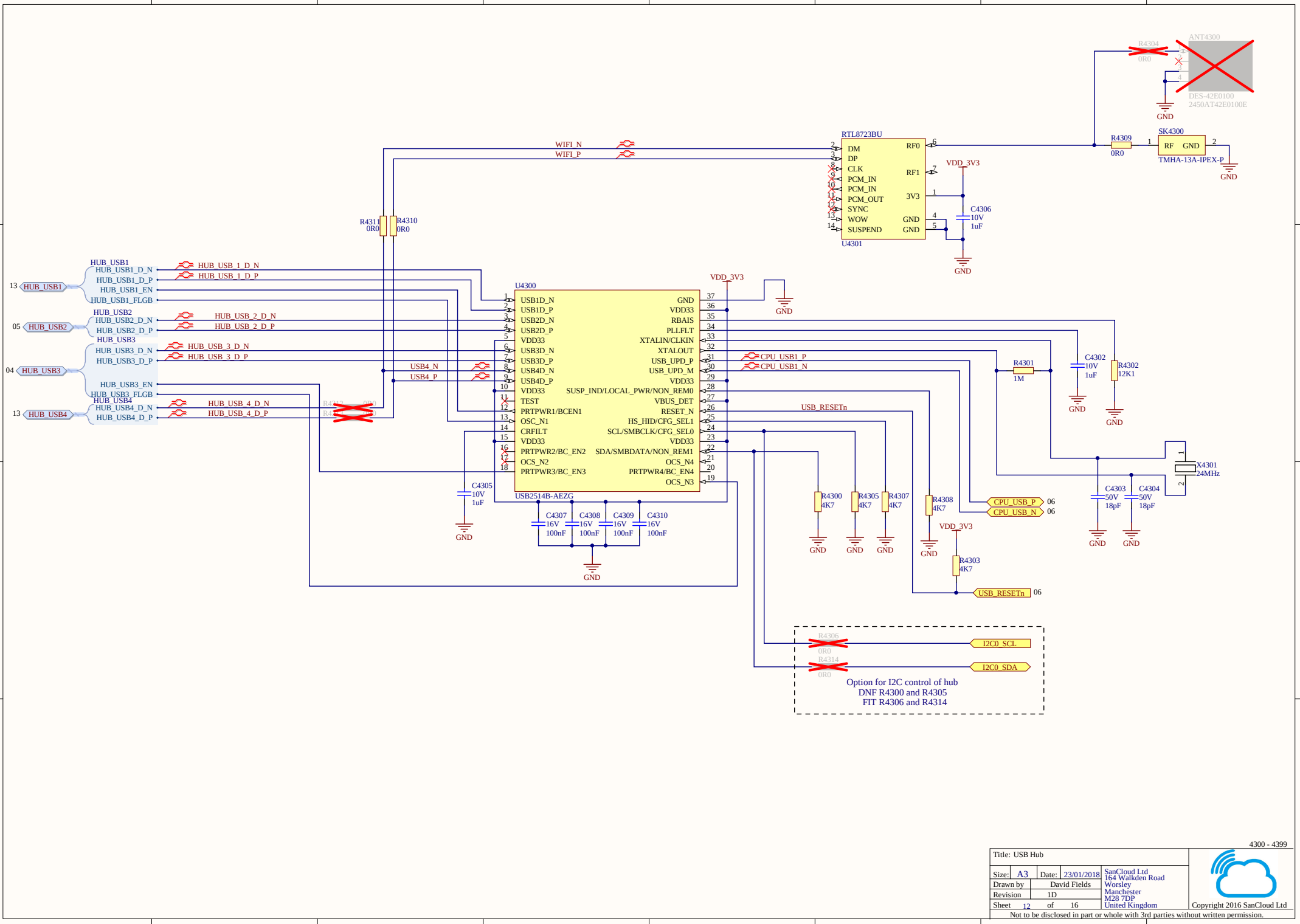

4300 - 4399

Title: USB Hub			
Size: A3	Date: 23/01/2018	SanCloud Ltd 164 Walkden Road Worsley Manchester M28 7DP United Kingdom	
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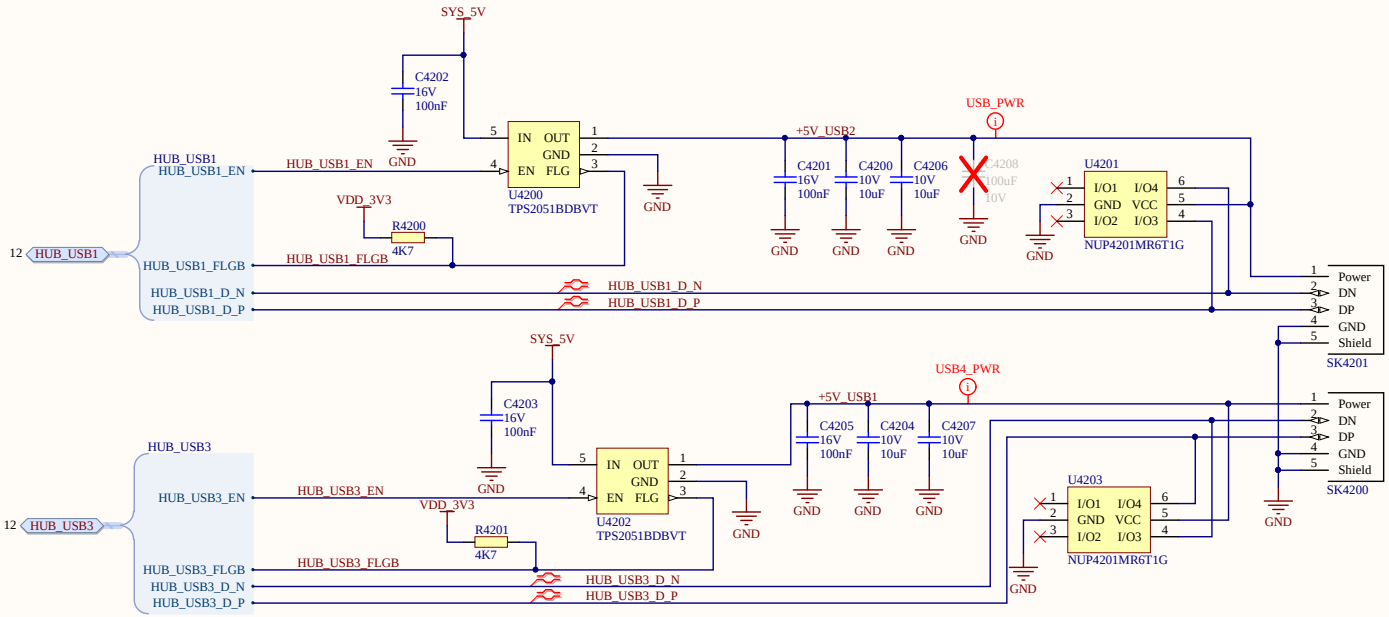

4200 - 4299

Title: USB Ports			
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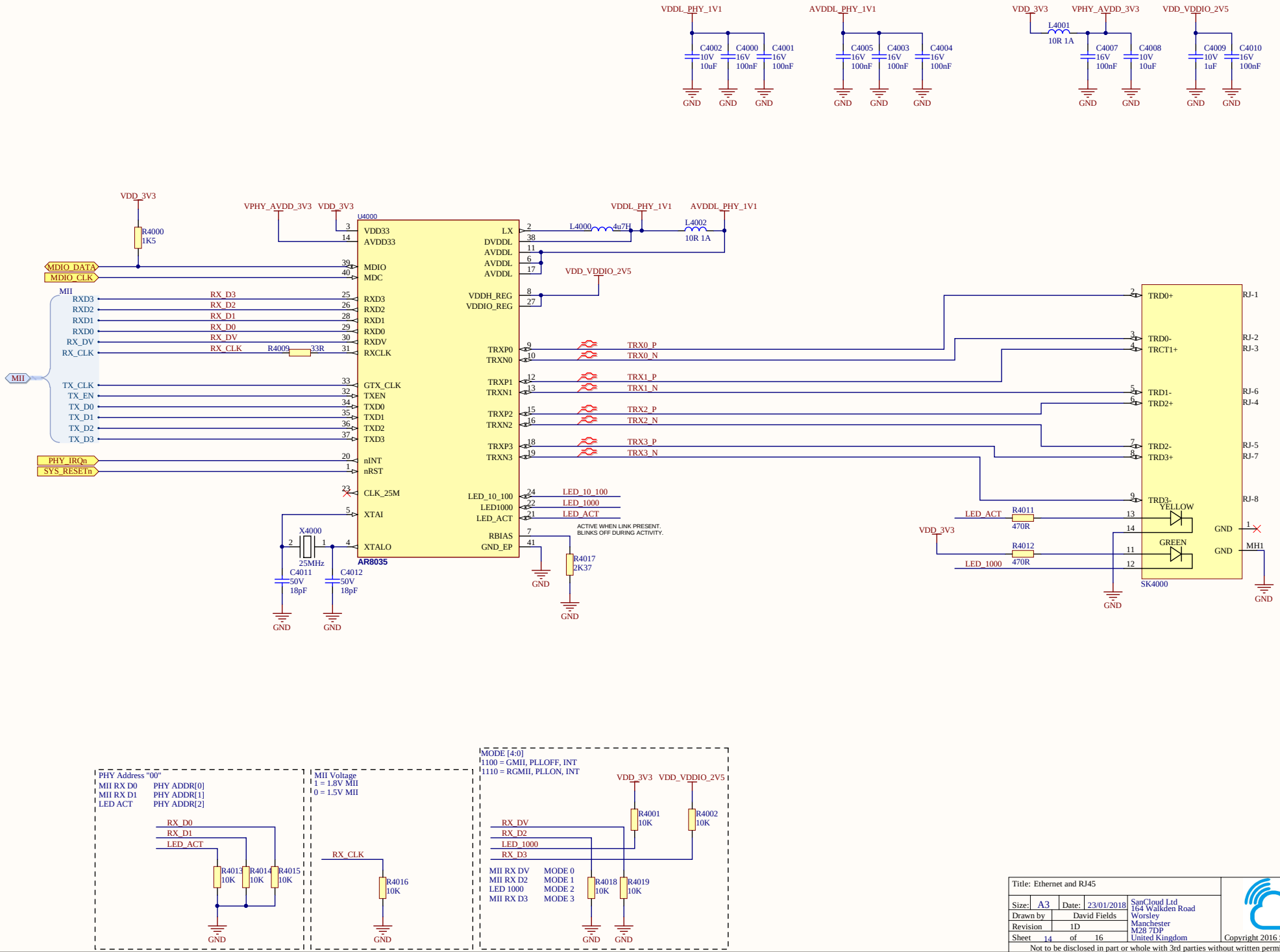

Title: Ethernet and RJ45			
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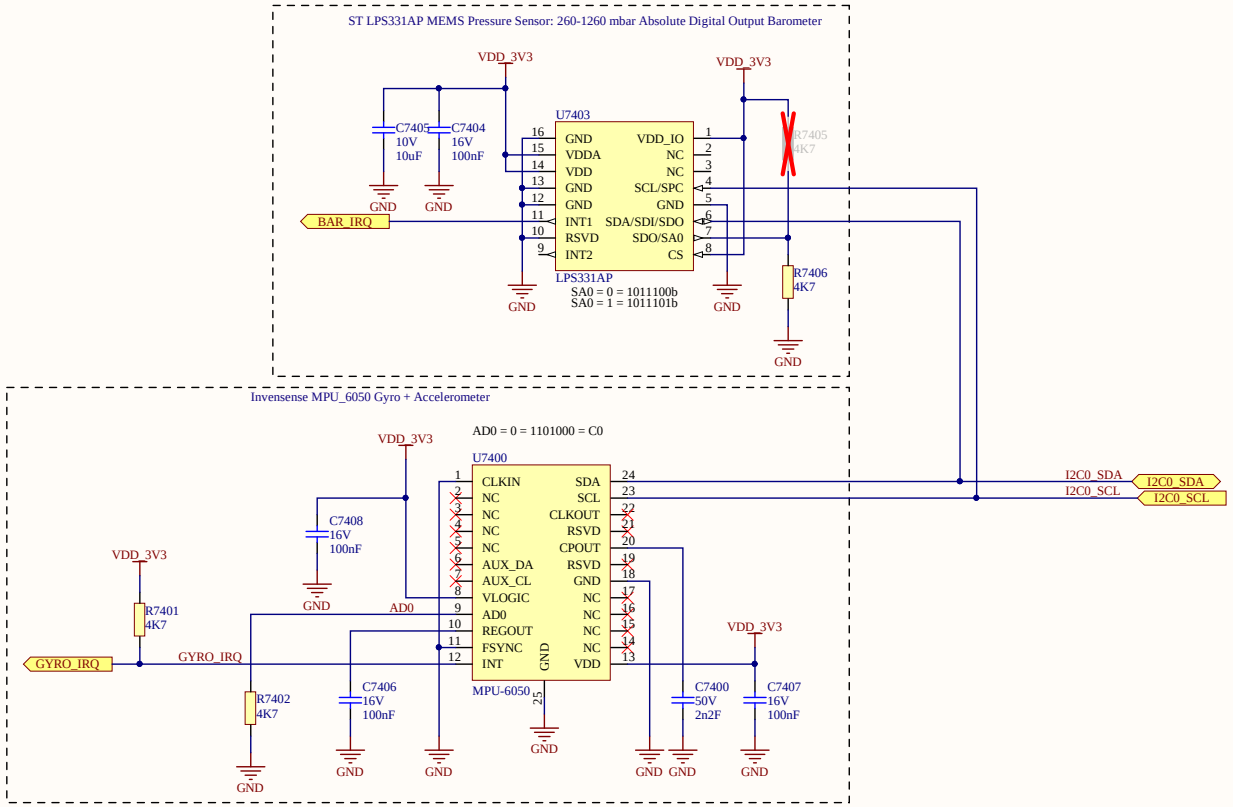

Title: Accelerometer and Barometer			
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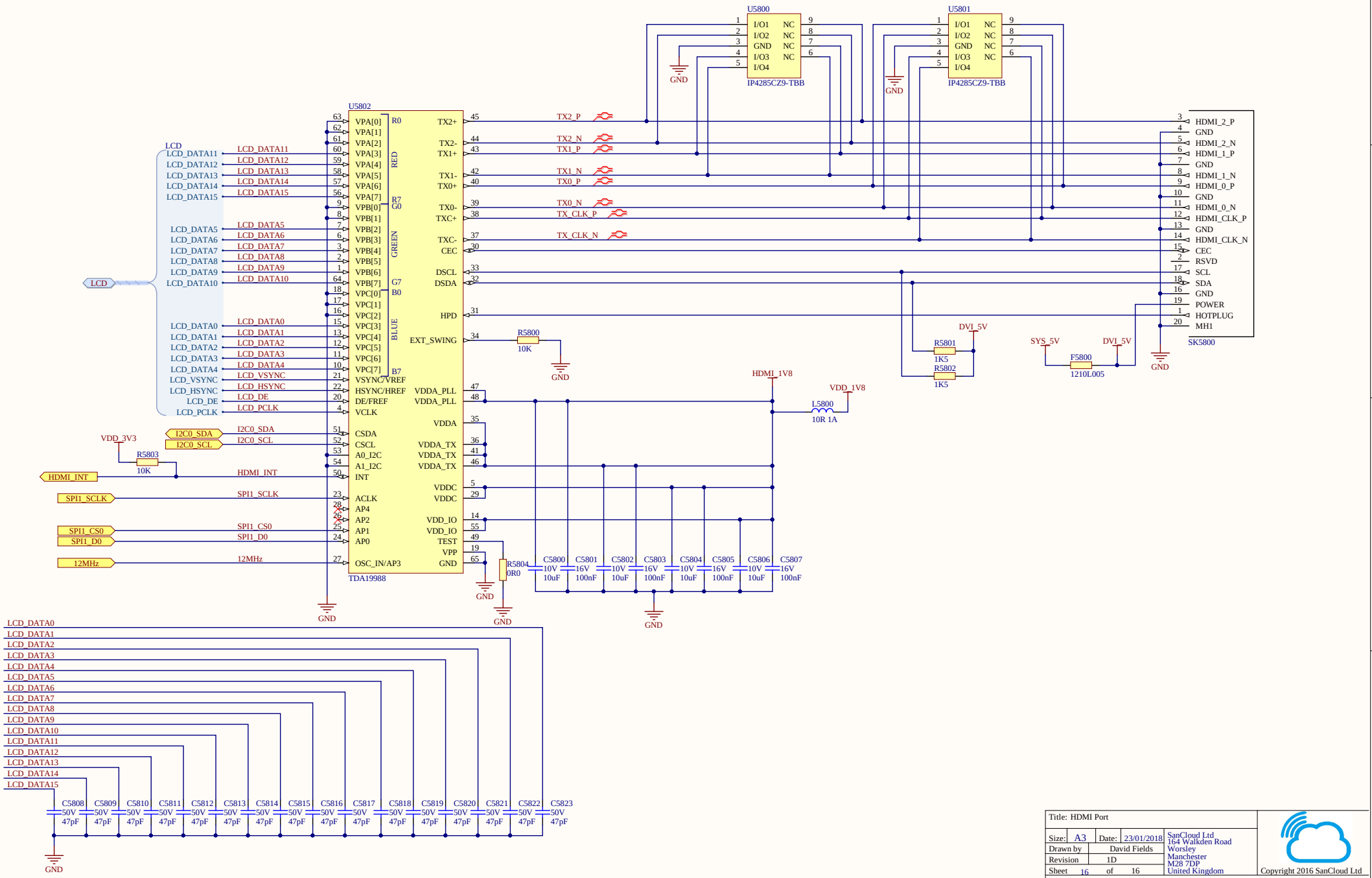

Title: HDMI Port			
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