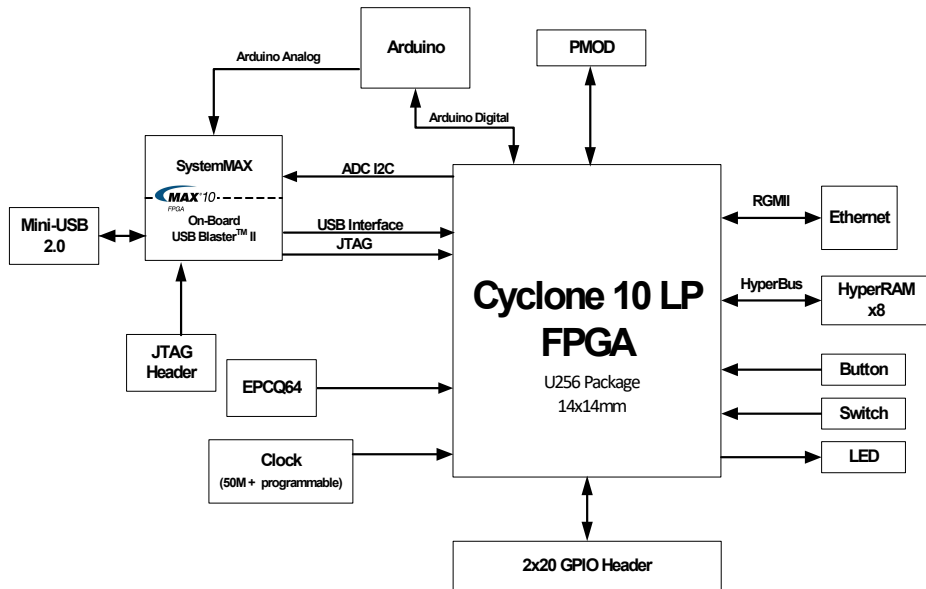


NOTES:

1. Project Drawing Numbers:
- | | |
|--------------------------|----------------|
| Raw PCB | 100-0321321-A1 |
| Gerber Files | 110-0321321-A1 |
| PCB Design Files | 120-0321321-A1 |
| Assembly Drawing | 130-0321321-A1 |
| Fab Drawing | 140-0321321-A1 |
| Schematic Drawing | 150-0321321-A1 |
| PCB Film | 160-0321321-A1 |
| Bill of Materials | 170-0321321-A1 |
| Schematic Design Files | 180-0321321-A1 |
| Functional Specification | 210-0321321-A1 |
| PCB Layout Guidelines | 220-0321321-A1 |
| Assembly Rework | 320-0321321-A1 |

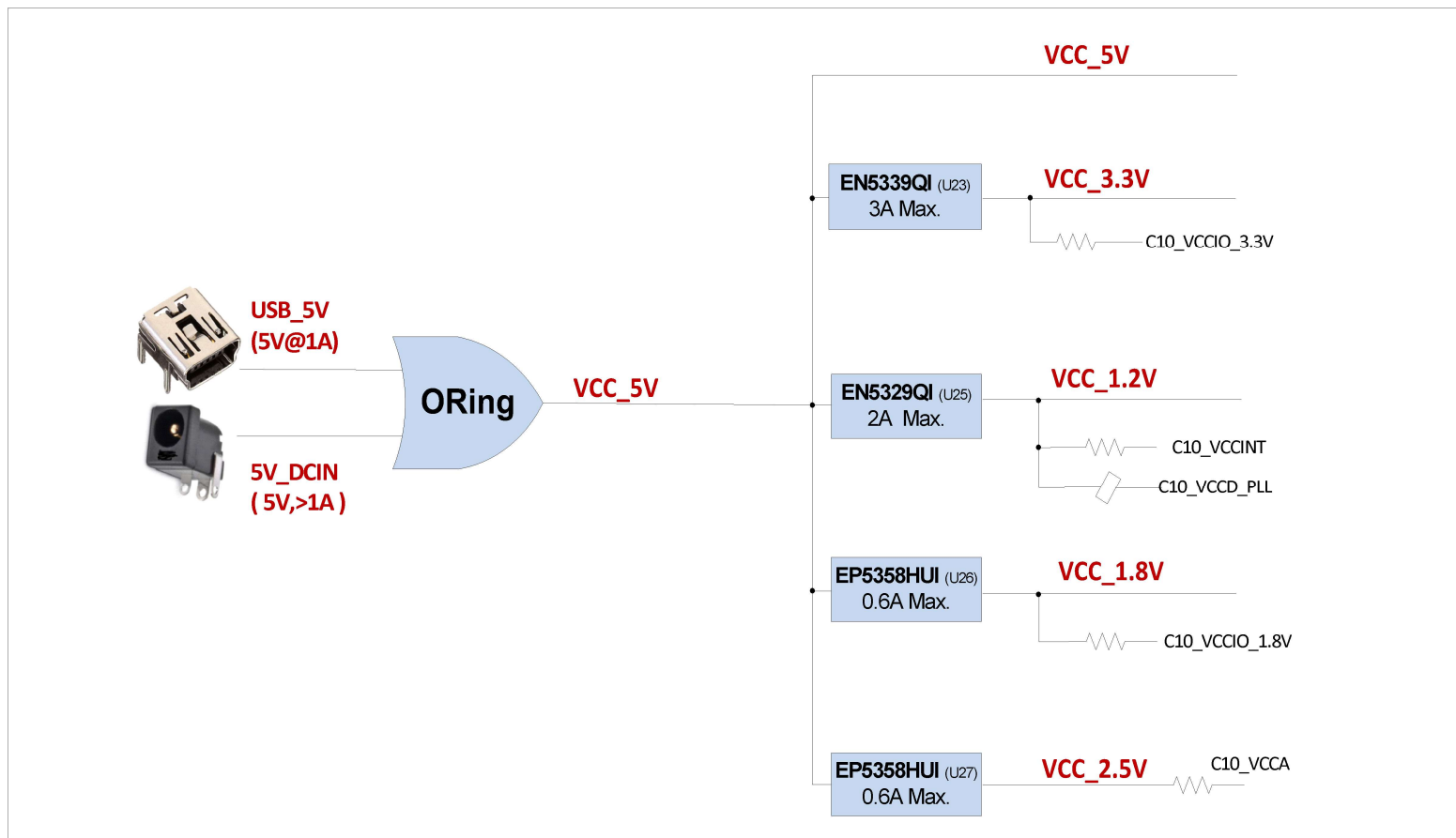


REV	DATE	PAGES	DESCRIPTION
A1	08/16/17	All	Initial Release

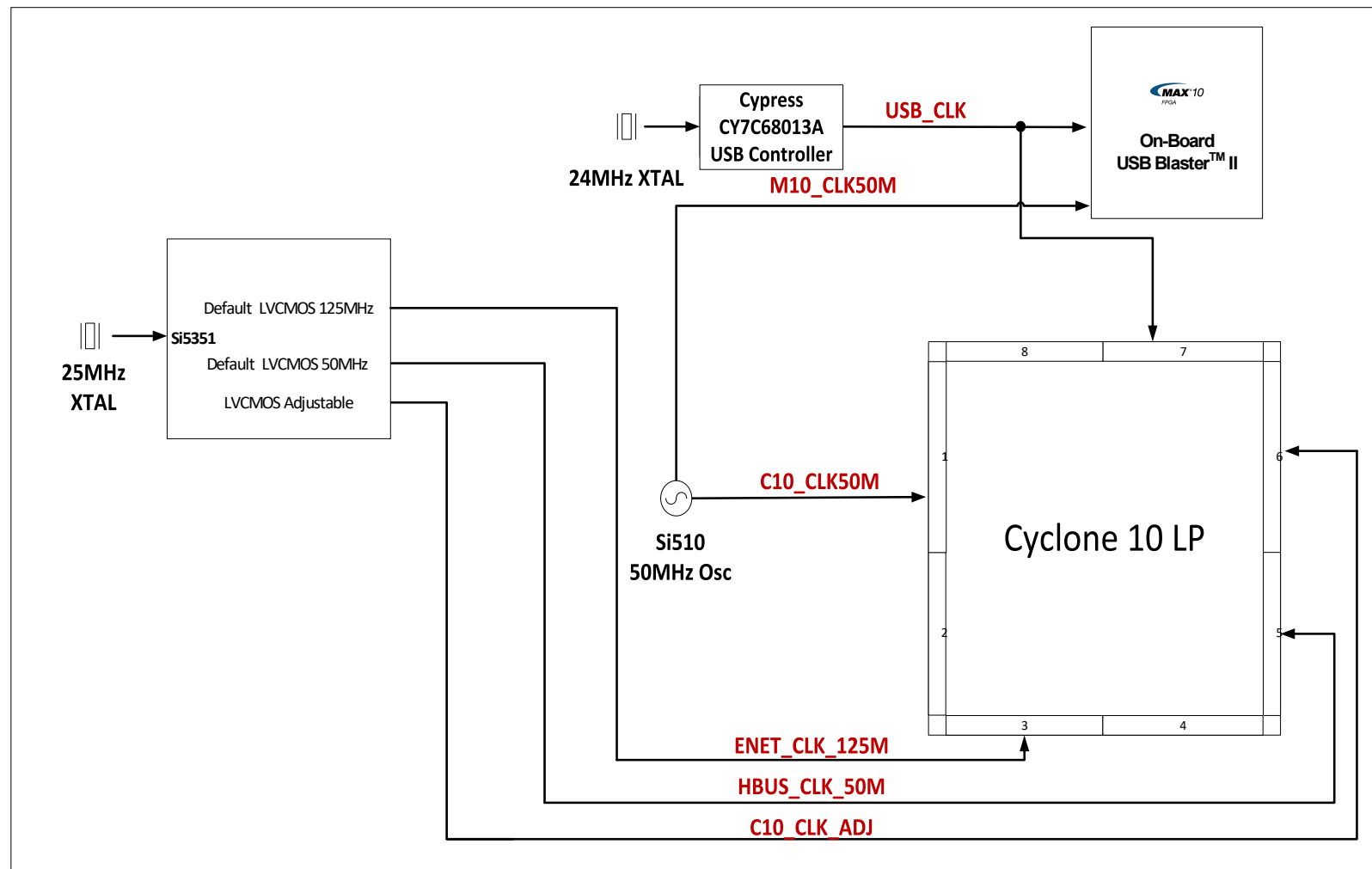
PAGE	DESCRIPTION
1	Title, Notes, Block Diagram, Rev. History
2	Power Diagram
3	Clock Daigram
4	Cyclone 10 Bank 1~4
5	Cyclone 10 Bank 5~8
6	Cyclone 10 Power
7	MAX10 - UBII-A
8	MAX10 - UBII-B
9	MAX10 - ADC
10	HyperRAM
11	Ethernet
12	Arduino Header
13	PMOD, 2x20 GPIO
14	LED, PB, DIP SW
15	Clock
16	Power Input
17	1.2V, 1.8V, 2.5V, 3.3V



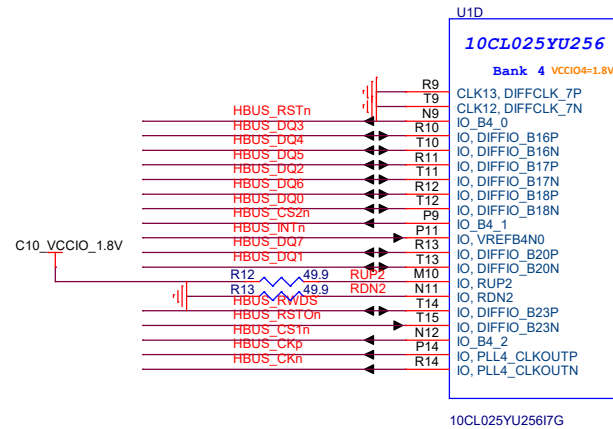
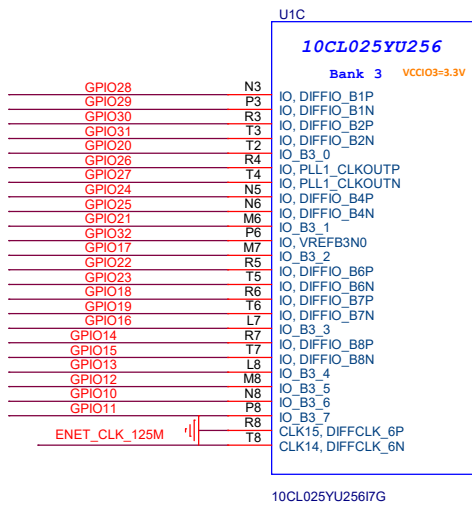
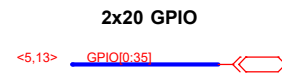
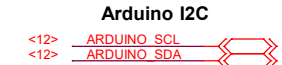
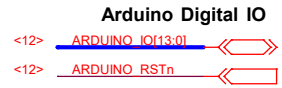
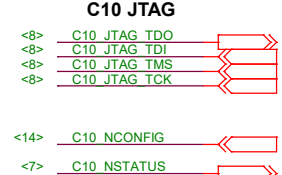
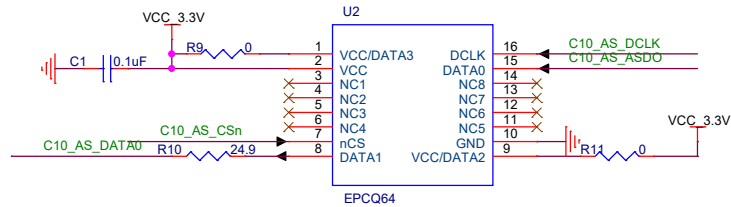
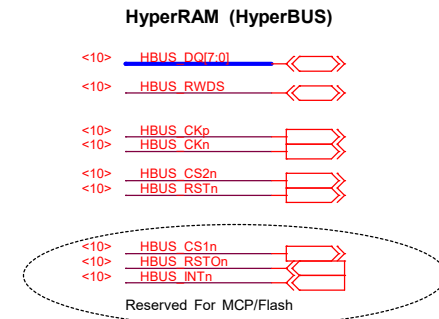
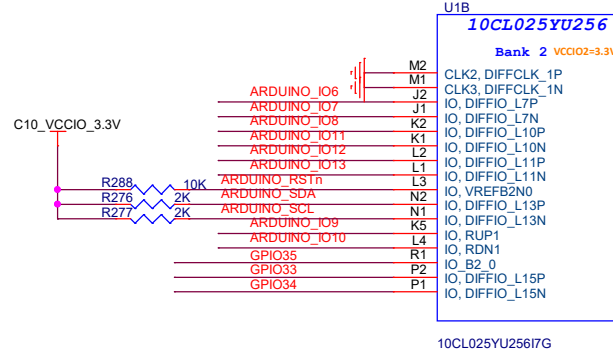
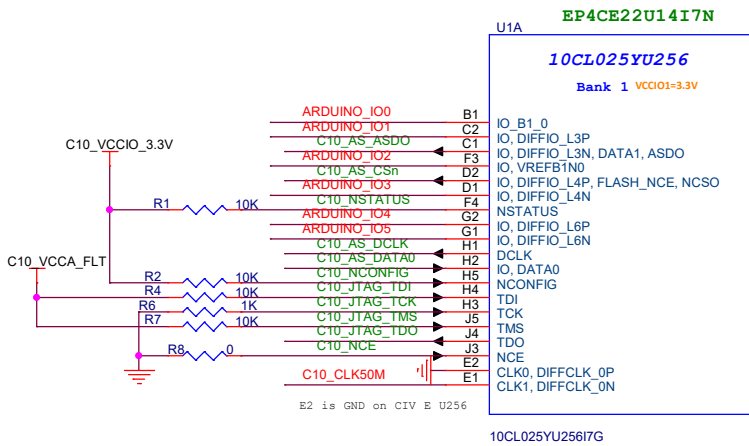
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	150-0321321-A1 (6XX-44504R)		
Date:	Wednesday, August 16, 2017	Sheet	1 of 17



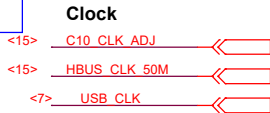
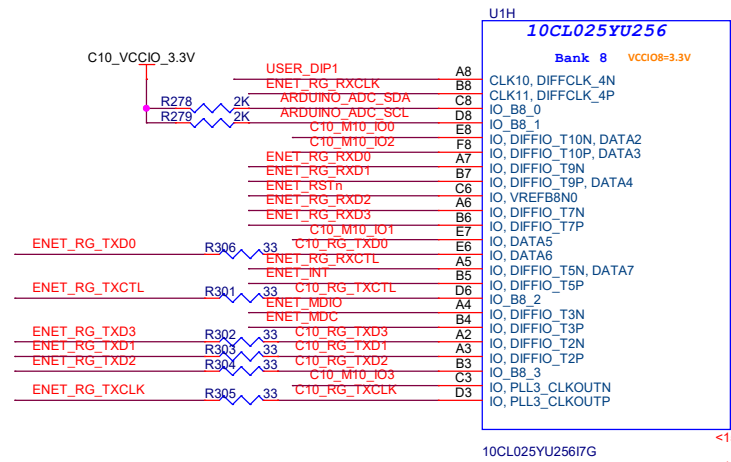
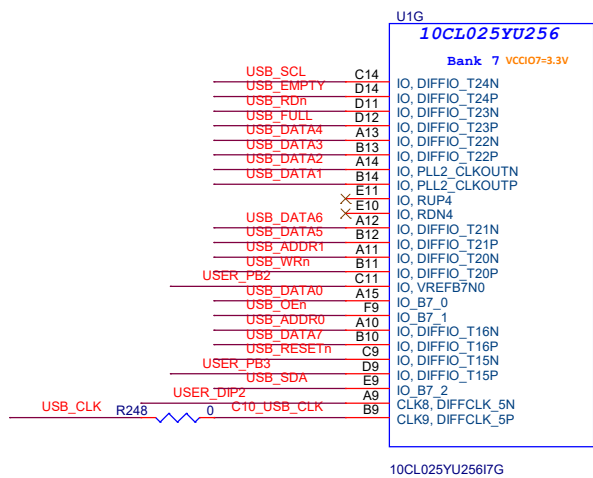
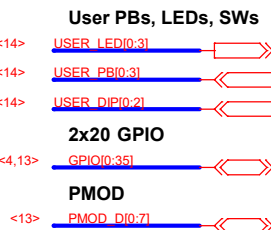
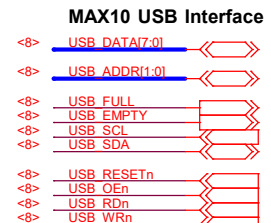
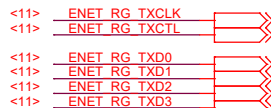
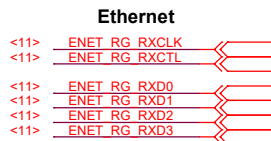
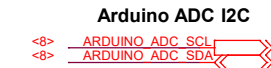
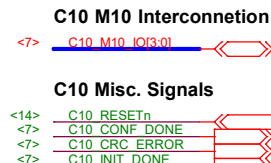
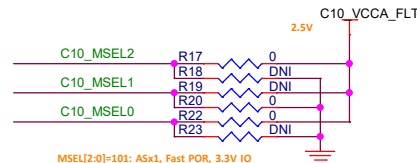
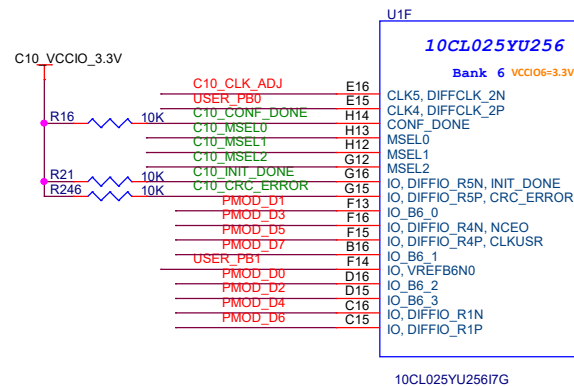
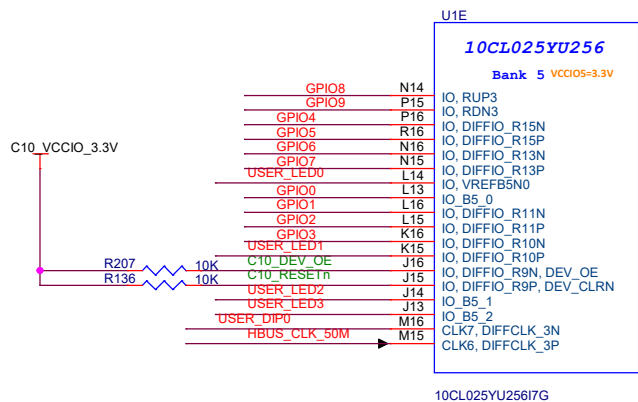
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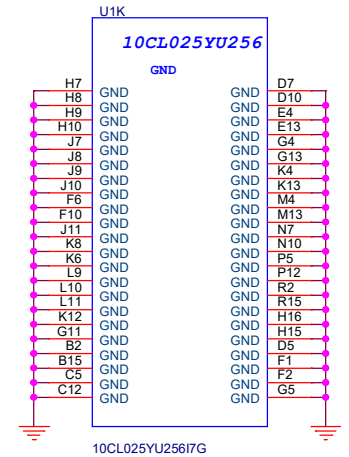
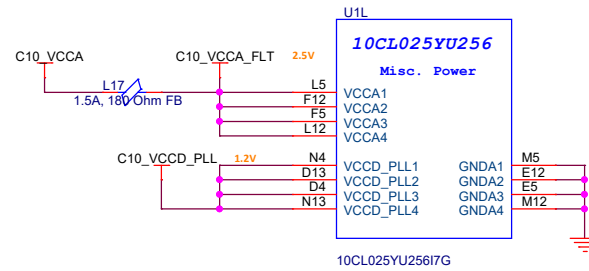
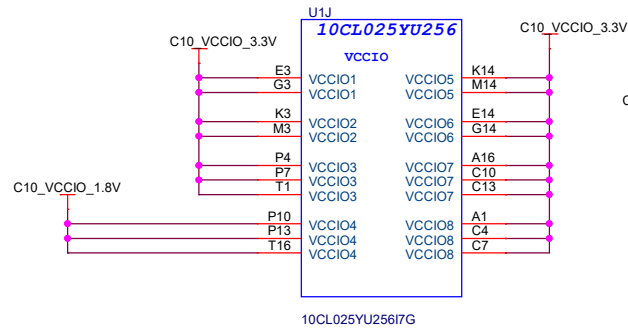
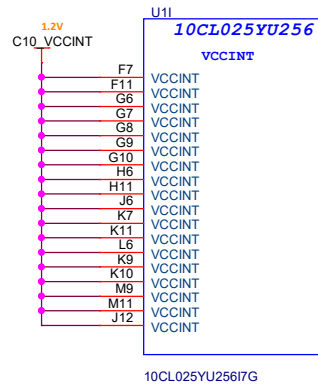
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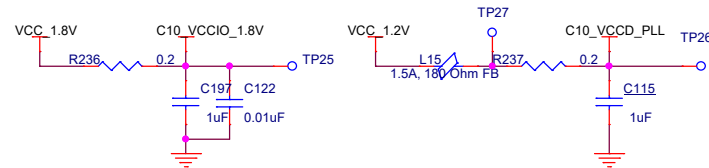
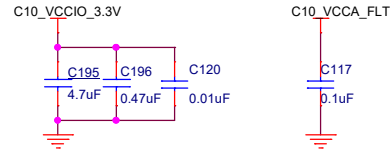
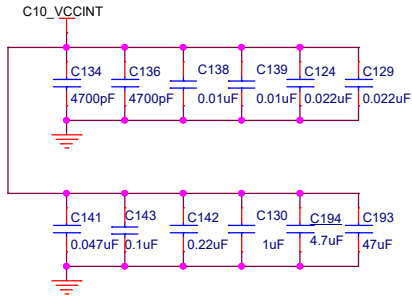
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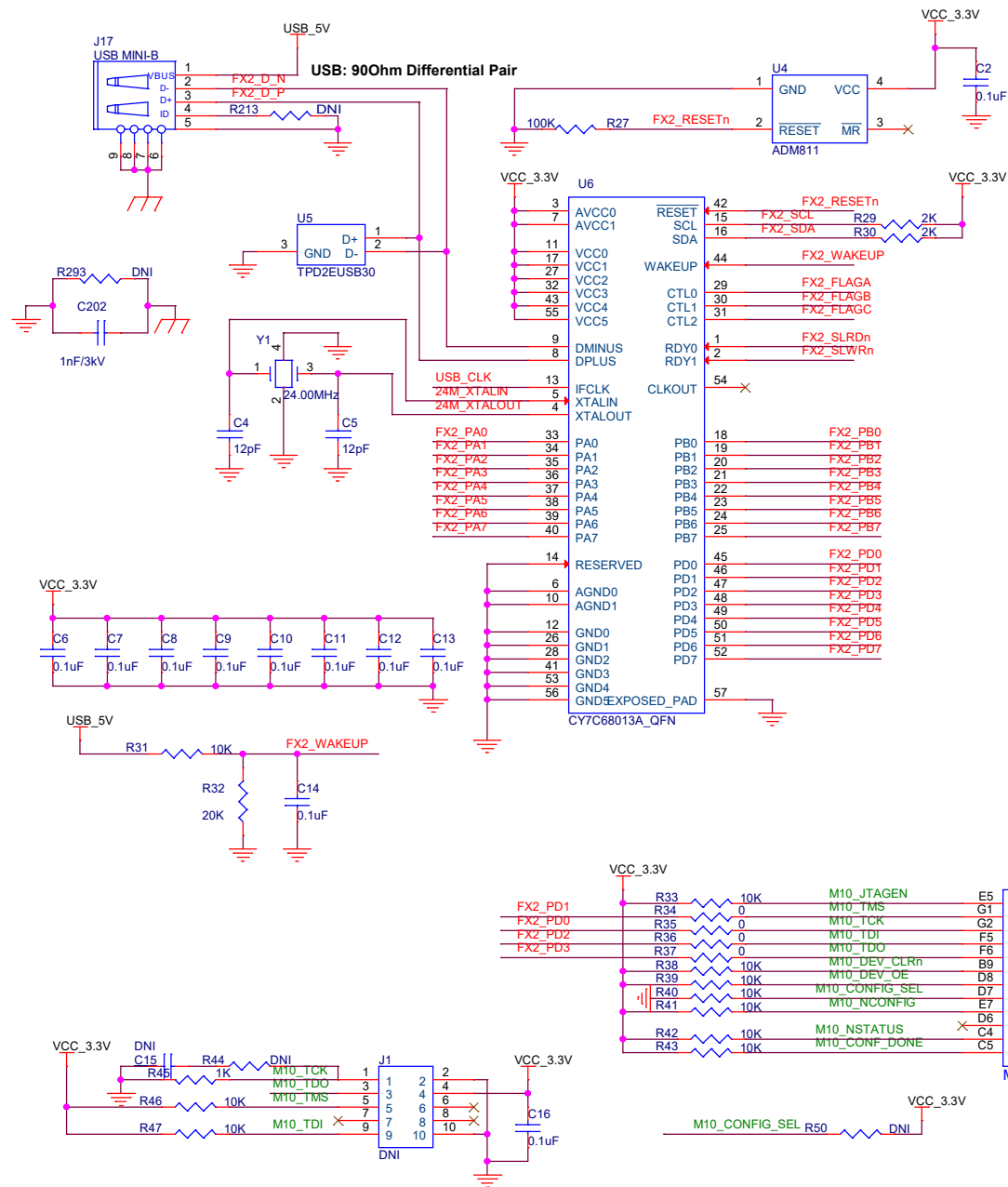
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D5, F1, F2, G5 are IO on CIV E U256



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FX2_PA7	M3	IO_2_M3/PLL_L_CLKOUTN/DIFFIO_RX_L27N
FX2_SLWRn	L3	IO_2_L3/PLL_L_CLKOUTP/DIFFIO_RX_L27P
FX2_RESETh	J1	IO_2_J1/DIFFIO_RX_L19N
C10_CRC_ERROR	J2	IO_2_J2/DIFFIO_RX_L19P
C10_NSTATUS	M1	IO_2_M1/DIFFIO_RX_L21N
C10_CONF_DONE	M2	IO_2_M2/DIFFIO_RX_L21P
SYS_CONF_DONE	L2	IO_2_L2
C10_INIT_DONE	K1	IO_2_K1/DIFFIO_RX_L28N
	K2	IO_2_K2/DIFFIO_RX_L28P

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C10_M10_IO3	L5	IO_3_L5/DIFFIO_TX_RX_B1N
FX2_PA6	M4	IO_3_M4/DIFFIO_TX_RX_B2N
FX2_PD7	L4	IO_3_L4/DIFFIO_TX_RX_B1P
FX2_PA4	M5	IO_3_M5/DIFFIO_TX_RX_B2P
FX2_SLDRn	K5	IO_3_K5/DIFFIO_TX_RX_B3N
FX2_PD8	N4	IO_3_N4/DIFFIO_TX_RX_B4N
FX2_PA3	N5	IO_3_N5/DIFFIO_TX_RX_B3P
FX2_PA0	N6	IO_3_N6/DIFFIO_TX_RX_B5N
FX2_PA1	N7	IO_3_N7/DIFFIO_TX_RX_B6N
FX2_FLAGB	N8	IO_3_N8/DIFFIO_TX_RX_B5P
FX2_SCL	J6	IO_3_J6/DIFFIO_TX_RX_B7N
FX2_FLAGC	M8	IO_3_M8/DIFFIO_TX_RX_B8N
MAX_SDA	K6	IO_3_K6/DIFFIO_TX_RX_B7P
FX2_FLAGA	M9	IO_3_M9/DIFFIO_TX_RX_B8P
FX2_PD4	J7	IO_3_J7/DIFFIO_TX_RX_B9N
FX2_PD5	K7	IO_3_K7/DIFFIO_TX_RX_B9P
FX2_PD2	N12	IO_3_N12
FX2_PD5	N10	IO_3_M13/DIFFIO_TX_RX_B10N
FX2_PD1	N12	IO_3_N10/DIFFIO_TX_RX_B11N
FX2_PD7	N9	IO_3_M12/DIFFIO_TX_RX_B10P
FX2_PD6	M10	IO_3_N9/DIFFIO_TX_RX_B11P
C10_M10_IO2	L10	IO_3_M10/DIFFIO_TX_RX_B16N
C10_M10_IO0	K8	IO_3_L10/DIFFIO_TX_RX_B16P
C10_M10_IO1	J8	IO_3_K8/DIFFIO_TX_RX_B14P
FX2_PD4	L11	IO_3_J8/DIFFIO_TX_RX_B14N
FX2_PD3	M11	IO_3_L11/DIFFIO_TX_RX_B12P
		IO_3_M11/DIFFIO_TX_RX_B12N

MAX10 10M08SA U169

C10 M10 Interconnection

<5> C10_M10_IO3:01

C10 Misc. Signals

<4> C10_NSTATUS
 <5> C10_CONF_DONE
 <14> SYS_CONF_DONE
 <5> C10_CRC_ERROR
 <5> C10_INIT_DONE

<5> USB_CLK
 <15> M10_CLK50M

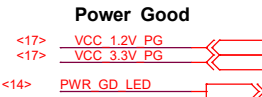
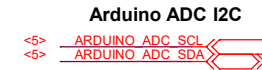
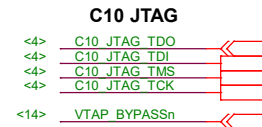
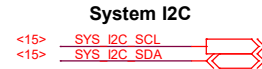
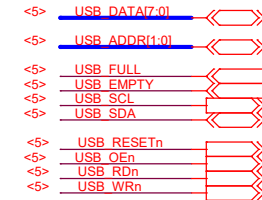
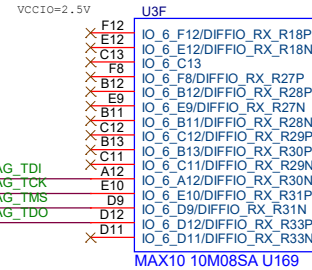
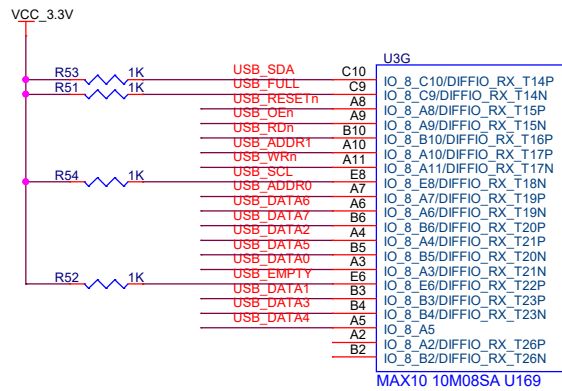
USB_CLK	0	R247	M10_USB_CLK	G5	IO_2_G5/CLK0N/DIFFIO_RX_L18N
				H6	IO_2_H6/CLK0P/DIFFIO_RX_L18P
				H5	IO_2_H5/CLK1N/DIFFIO_RX_L20N
				H4	IO_2_H4/CLK1P/DIFFIO_RX_L20P
				N2	IO_2_N2/DPCLK0/DIFFIO_RX_L22N
				N3	IO_2_N3/DPCLK1/DIFFIO_RX_L22P
				G9	IO_6_G9/CLK2P/DIFFIO_RX_R14P
				G10	IO_6_G10/CLK2N/DIFFIO_RX_R14N
				F13	IO_6_F13/CLK3P/DIFFIO_RX_R16P
				F9	IO_6_F9/CLK3N/DIFFIO_RX_R16N
				F10	IO_6_F10/DPCLK2/DIFFIO_RX_R26N
				H1	IO_1B_H1/REFB1N0
				L1	IO_2_L1/REFB2N0
				N11	IO_3_N11/REFB3N0
				K13	IO_5_K13/REFB5N0
				D13	IO_6_D13/REFB6N0
				B7	IO_8_B7/REFB8N0

MAX10 10M108SA U169

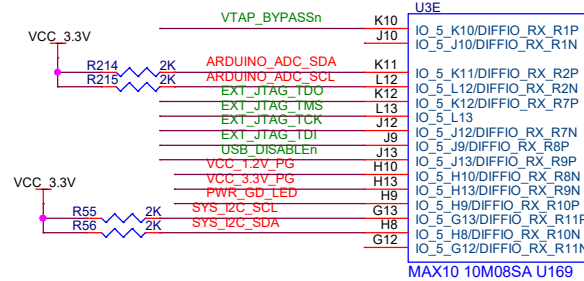
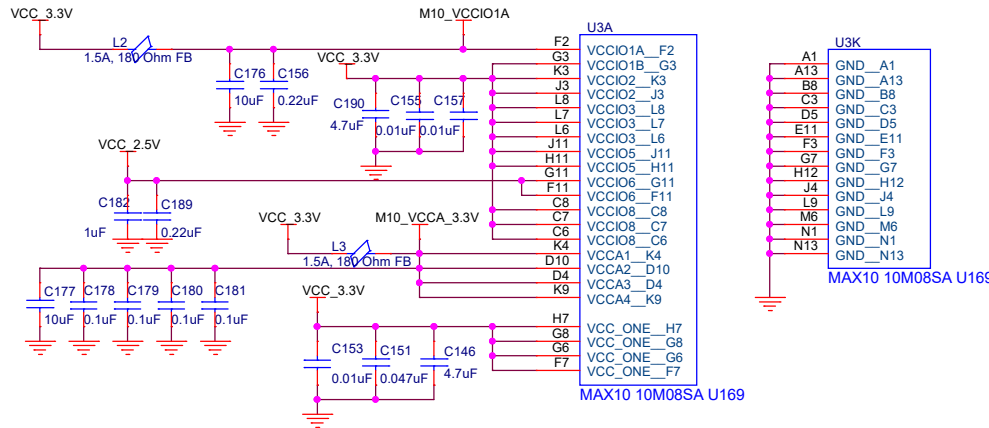
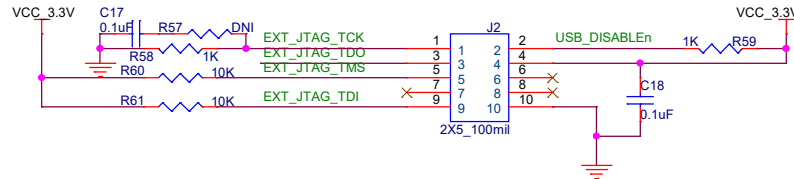
IO_1B_E5/JTAGEN	E5	M10_JTAGEN
IO_1B_G1/TMS/DIFFIO_RX_L11N	G1	M10_TMS
IO_1B_G2/TCK/DIFFIO_RX_L11P	G2	M10_TCK
IO_1B_F5/TDI/DIFFIO_RX_L12N	F5	M10_TDI
IO_1B_F6/TDO/DIFFIO_RX_L12P	F6	M10_TDO
IO_8_B9/DEV_CLRN/DIFFIO_RX_T16N	B9	M10_DEV_CLRN
IO_8_D8/DEV_OE/DIFFIO_RX_T18P	D8	M10_DEV_OE
IO_8_D7/CONFIG_SEL	D7	M10_CONFIG_SEL
INPUT_ONLY_8_E7/NCONFIG	E7	M10_NCONFIG
IO_8_D6/CRC_ERROR/DIFFIO_RX_T22N	D6	M10_NSTATUS
IO_8_C4/NSTATUS/DIFFIO_RX_T24P	C4	M10_CONF_DONE
IO_8_C5/CONF_DONE/DIFFIO_RX_T24N	C5	M10_CONF_DONE

MAX10 10M08SA U169

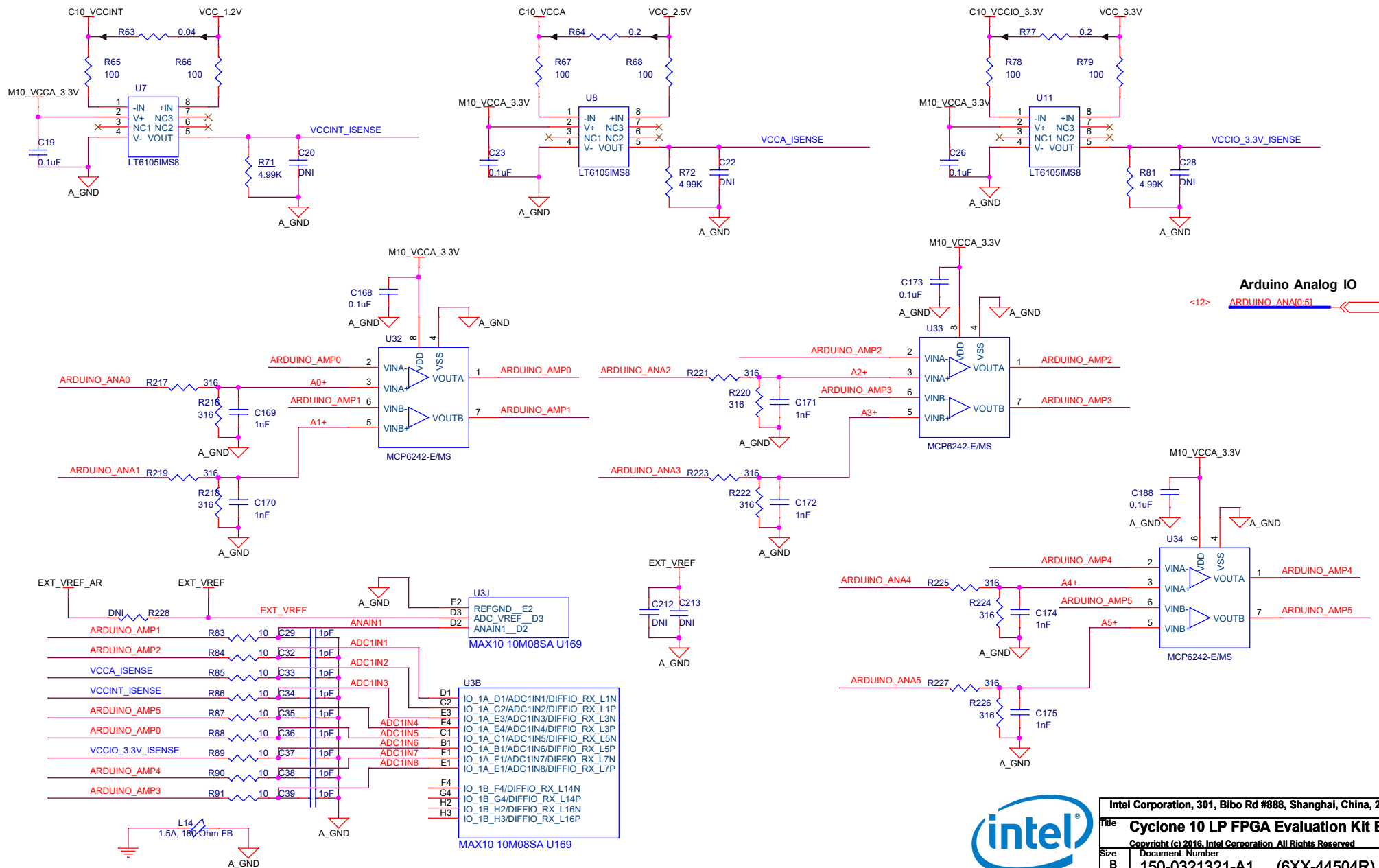


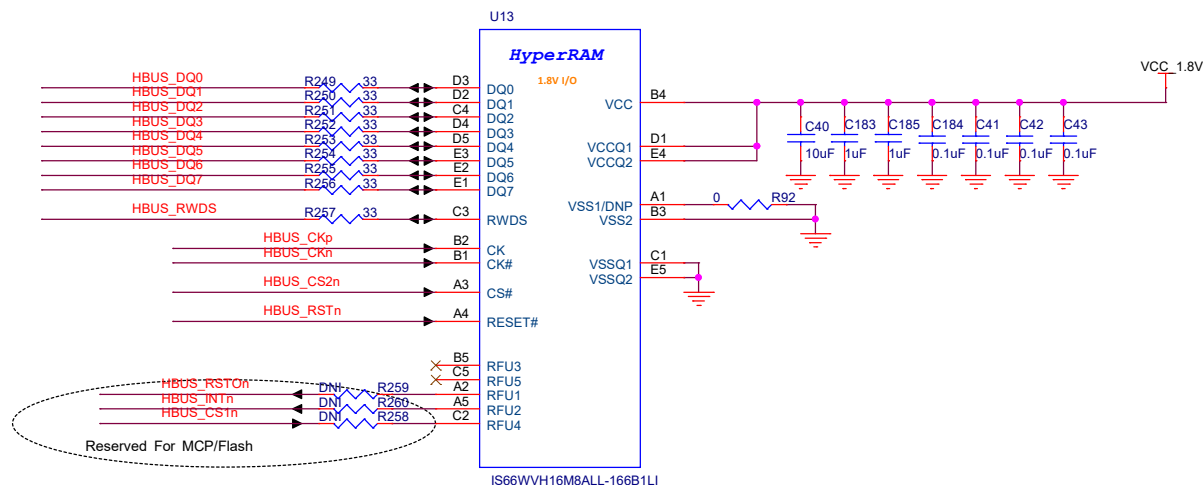


USB Blaster Programming Header (uses JTAG mode only)



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HBUS_CS1n: For Flash (Reserved)
HBUS_CS2n: For RAM

In customer's design, please consult with HyperRAM vendor to decide if need to assemble this parallel resistor (R243) with specified HyperRAM design

HyperRAM (HyperBUS)

<4> HBUS_DQ[7:0]

<4> HBUS_RWDS

<4> HBUS_CKp
<4> HBUS_CKn

<4> HBUS_CS2n
<4> HBUS_RSTn

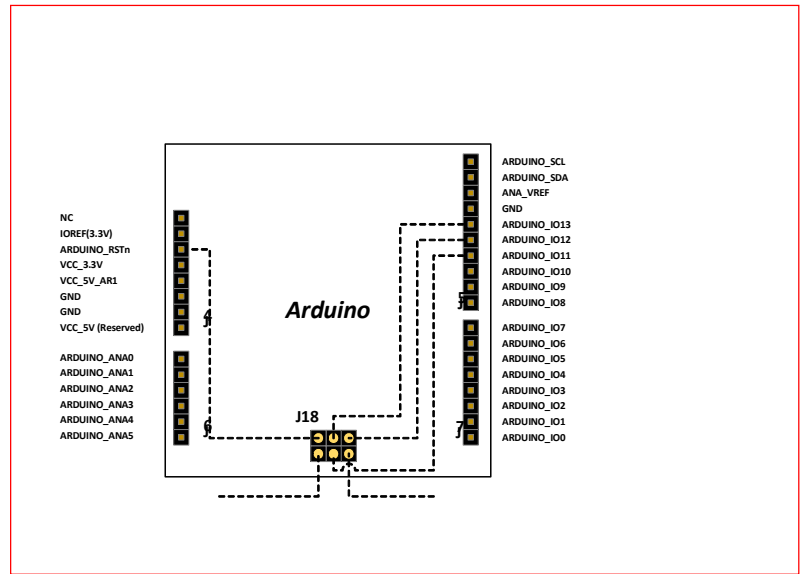
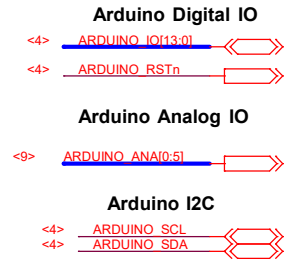
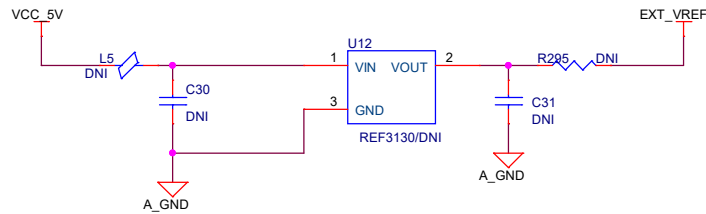
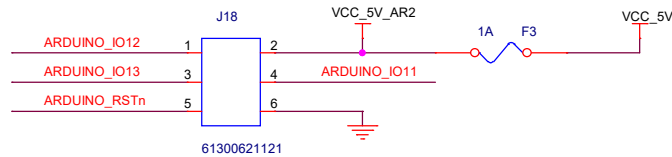
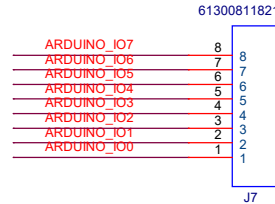
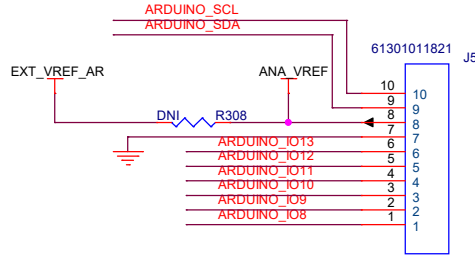
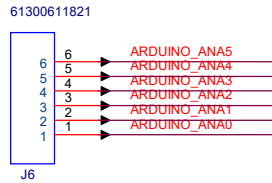
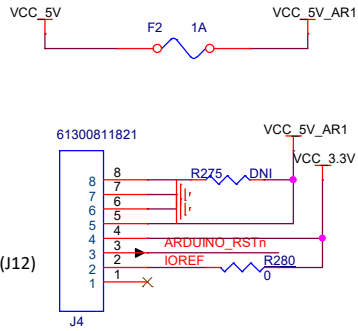
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<4> HBUS_RSTn
<4> HBUS_INTn

Reserved For MCP/Flash

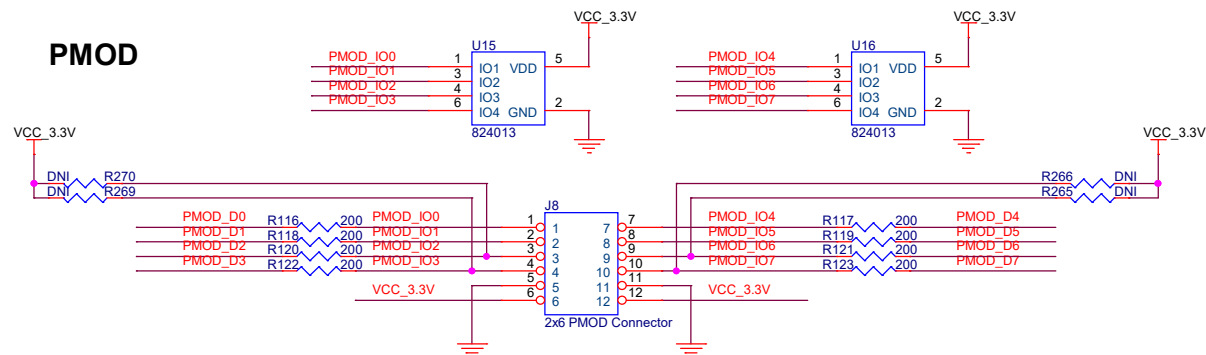


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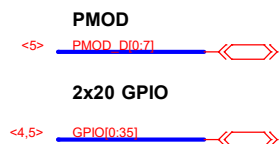
Arduino Power Output Capability
3.3V: J4.2, J4.4 100mA Max. total
5V: J4.5, J18.2 500mA Max. total
Using external adaptor power input (J12)



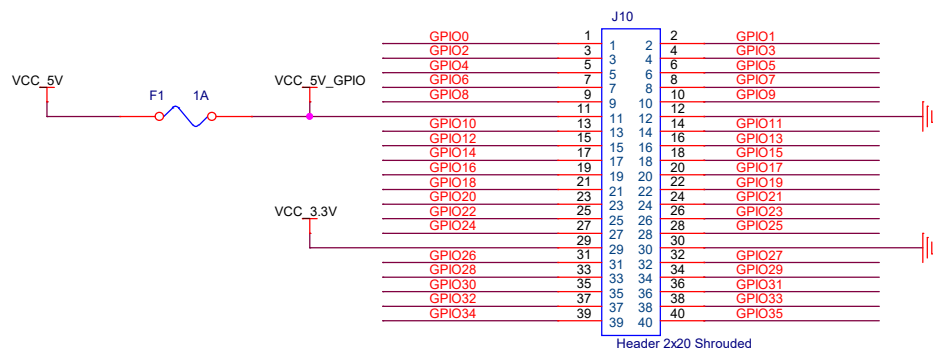
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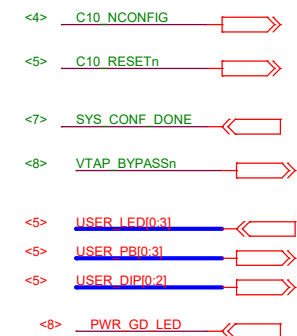
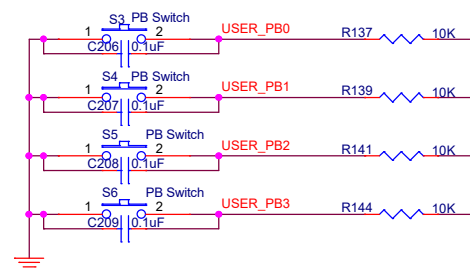
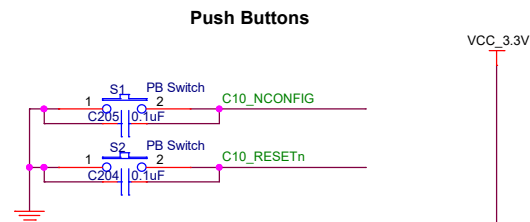
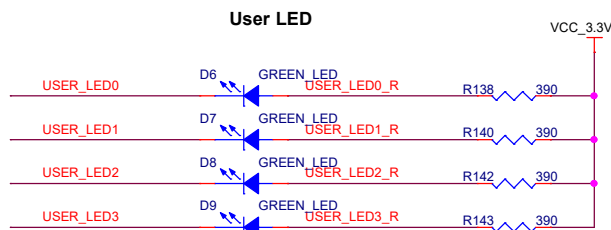
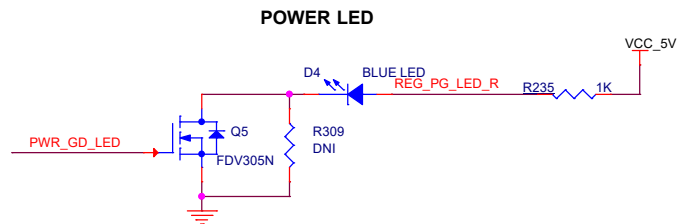
PMOD Specification not specified module power consumption but assumed no more than approximately 100mA.



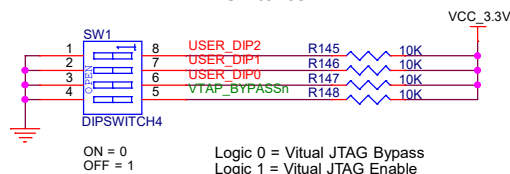
2x20pin GPIO Header



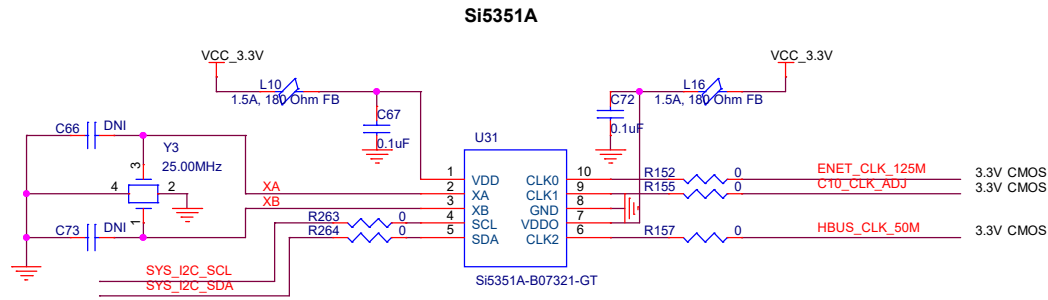
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DIP Switches

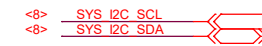


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Use Clock GUI to Program Si5351A
 Default Frequency:
 CLK0: 125MHz
 CLK1: 100MHz
 CLK2: 50MHz
 I2C Address: 0x60

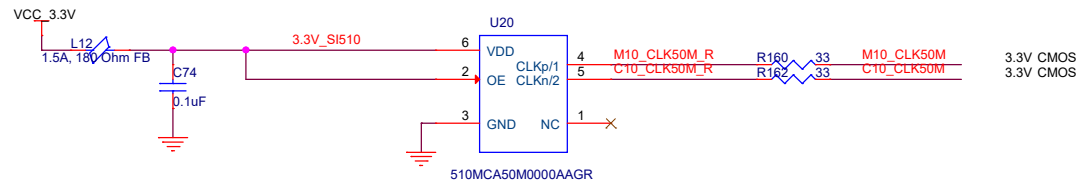
System I2C



Clocks



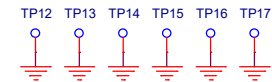
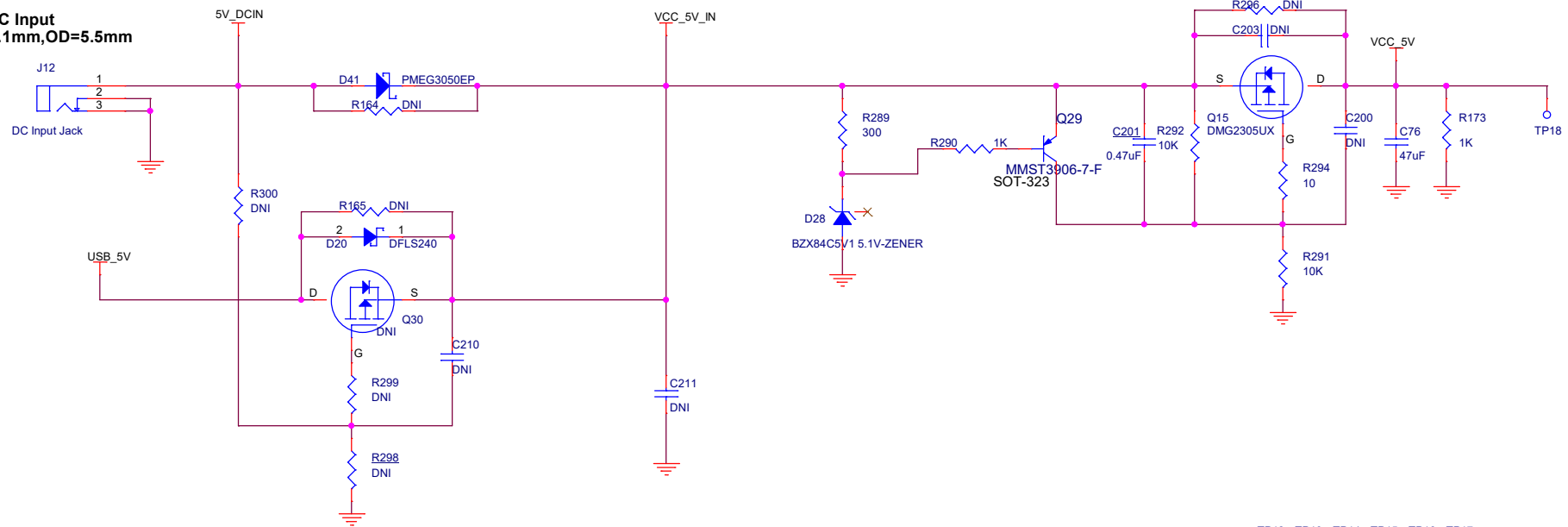
50MHz Oscillator



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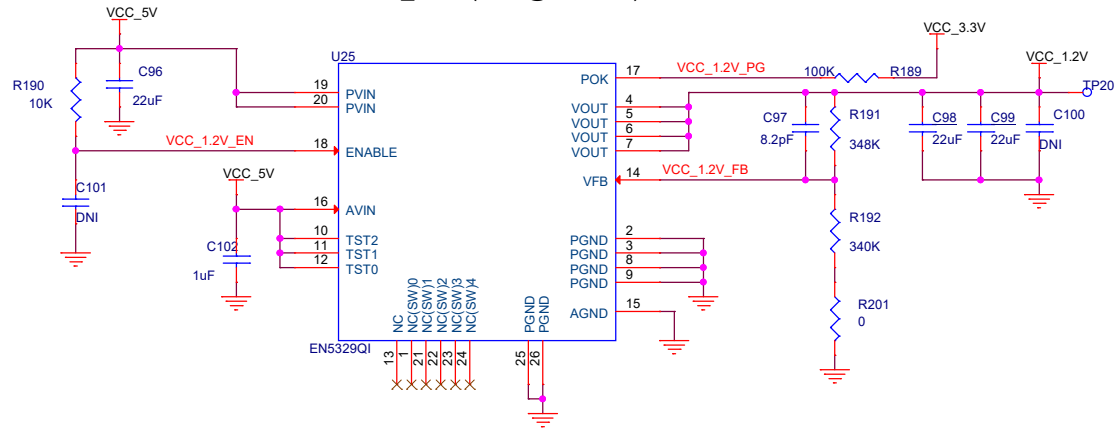
5V Input Selection, Protection and Control

5V DC Input
ID=2.1mm,OD=5.5mm

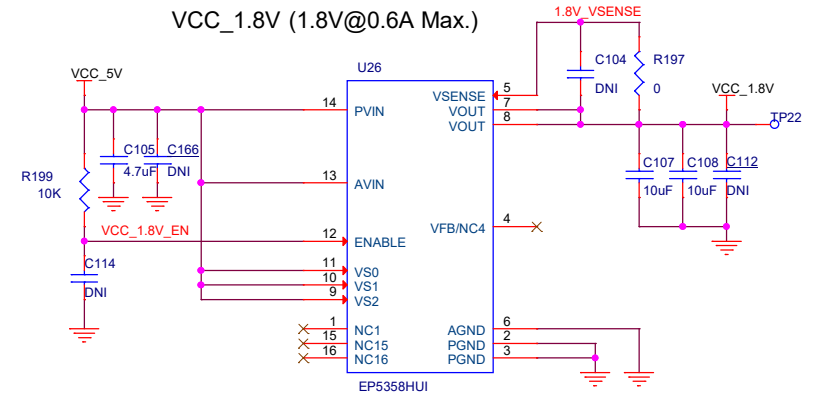


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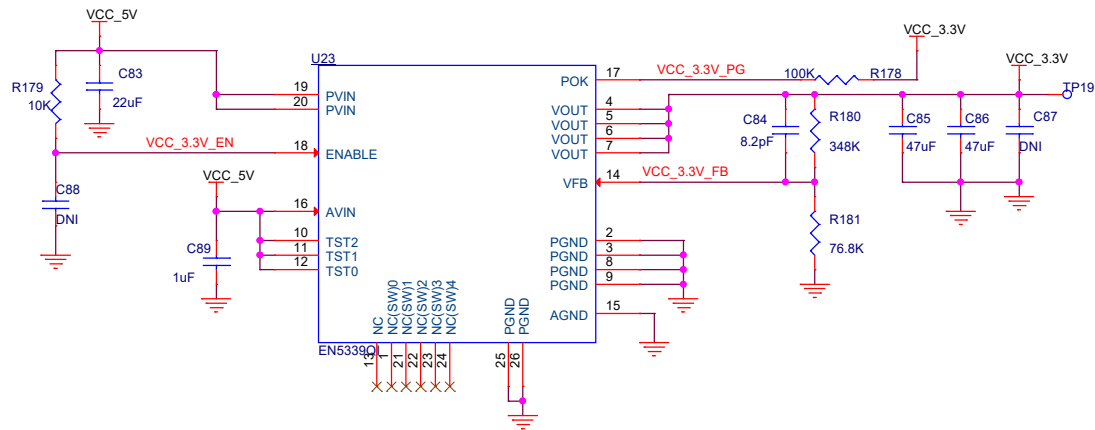
VCC_1.2V (1.2V@2A Max.)



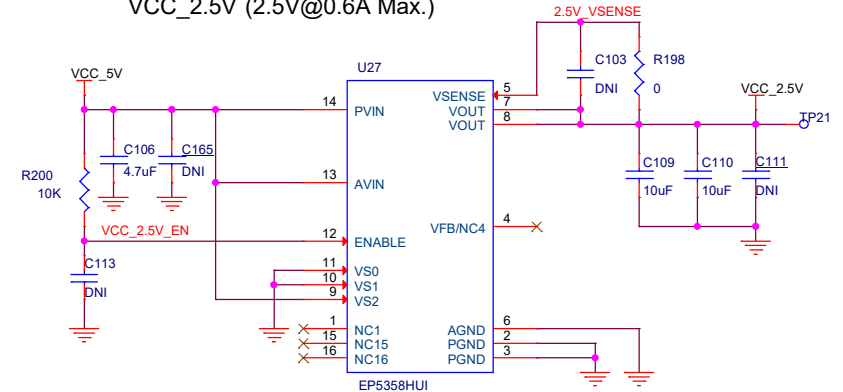
VCC_1.8V (1.8V@0.6A Max.)



VCC_3.3V (3.3V@3A Max.)



VCC_2.5V (2.5V@0.6A Max.)



<8> VCC_3.3V_PG
<8> VCC_1.2V_PG



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