

Board Size should be 7 X 8 inches
 Group similar connections together (ENET, USB, UART, etc)

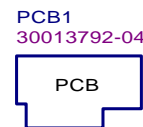
Jumpers and switches need to be organized in functional groups and labeled with legible font. We will be adding tables to the silk screen to show positions.

Need Vias for mounting 55001503-01 LCD kit in upper right hand corner

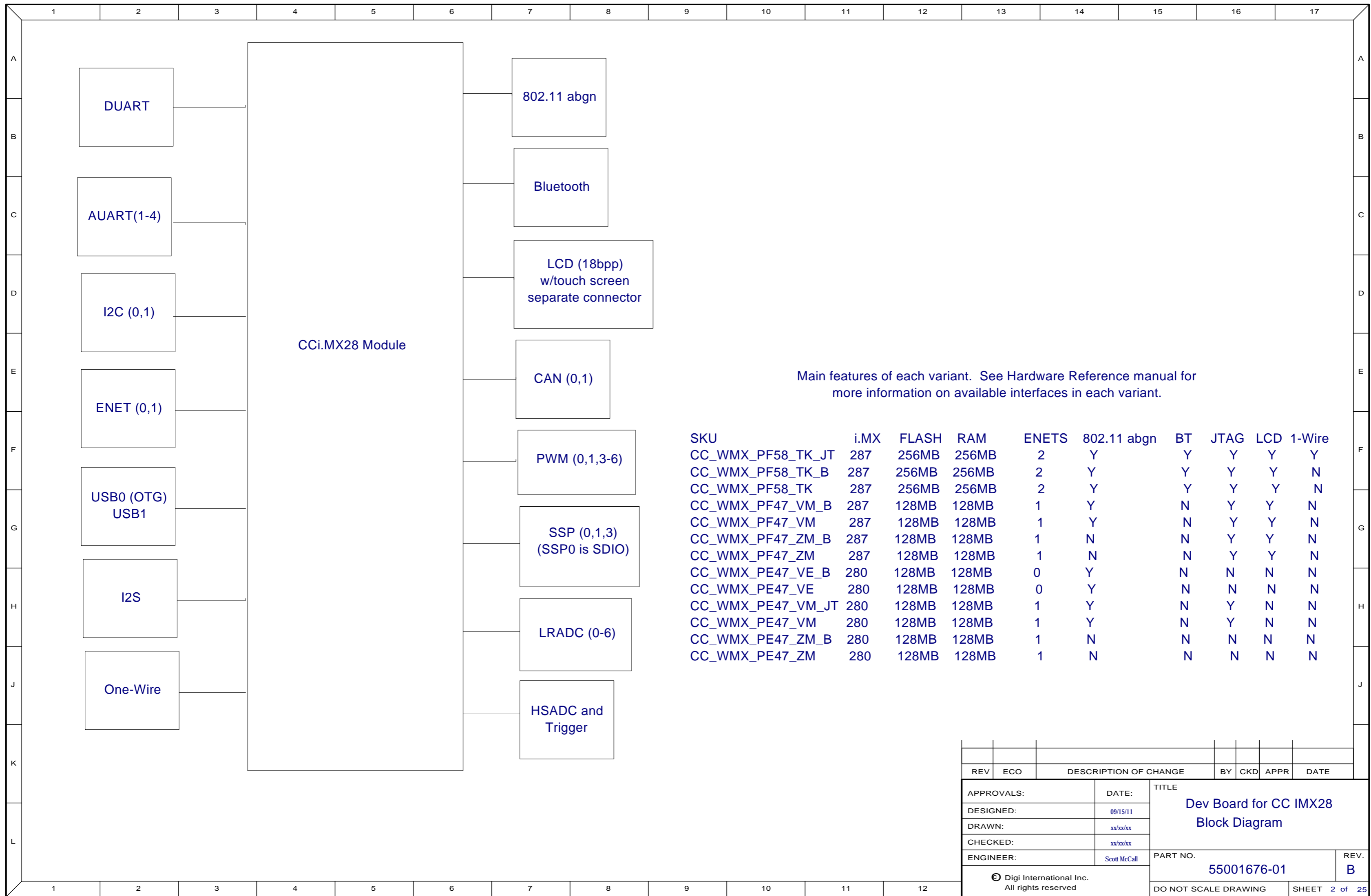
Please mark all pin 1 locations for interfaces connectors.

Line up ZIF (LCD) connectors on the module with ZIF (LCD) connector on the Dev Board

Feet should go on bottom of board in the center and corners



REV	ECO	DESCRIPTION OF CHANGE	BY	CKD	APPR	DATE
APPROVALS:		DATE:	TITLE Dev Board for CC IMX28 Mechanicals PART NO. 55001676-01 DO NOT SCALE DRAWING			
DESIGNED:		09/15/11				
DRAWN:		xx/xx/xx				
CHECKED:		xx/xx/xx				
ENGINEER:		Scott McCall				
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						SHEET 1 of 25

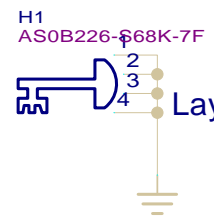


Main features of each variant. See Hardware Reference manual for more information on available interfaces in each variant.

SKU	i.MX	FLASH	RAM	ENETS	802.11 abgn	BT	JTAG	LCD	1-Wire
CC_WM_X_P_F58_TK_JT	287	256MB	256MB	2	Y	Y	Y	Y	Y
CC_WM_X_P_F58_TK_B	287	256MB	256MB	2	Y	Y	Y	Y	N
CC_WM_X_P_F58_TK	287	256MB	256MB	2	Y	Y	Y	Y	N
CC_WM_X_P_F47_VM_B	287	128MB	128MB	1	Y	N	Y	Y	N
CC_WM_X_P_F47_VM	287	128MB	128MB	1	Y	N	Y	Y	N
CC_WM_X_P_F47_ZM_B	287	128MB	128MB	1	N	N	Y	Y	N
CC_WM_X_P_F47_ZM	287	128MB	128MB	1	N	N	Y	Y	N
CC_WM_X_P_E47_VE_B	280	128MB	128MB	0	Y	N	N	N	N
CC_WM_X_P_E47_VE	280	128MB	128MB	0	Y	N	N	N	N
CC_WM_X_P_E47_VM_JT	280	128MB	128MB	1	Y	N	Y	N	N
CC_WM_X_P_E47_VM	280	128MB	128MB	1	Y	N	Y	N	N
CC_WM_X_P_E47_ZM_B	280	128MB	128MB	1	N	N	N	N	N
CC_WM_X_P_E47_ZM	280	128MB	128MB	1	N	N	N	N	N

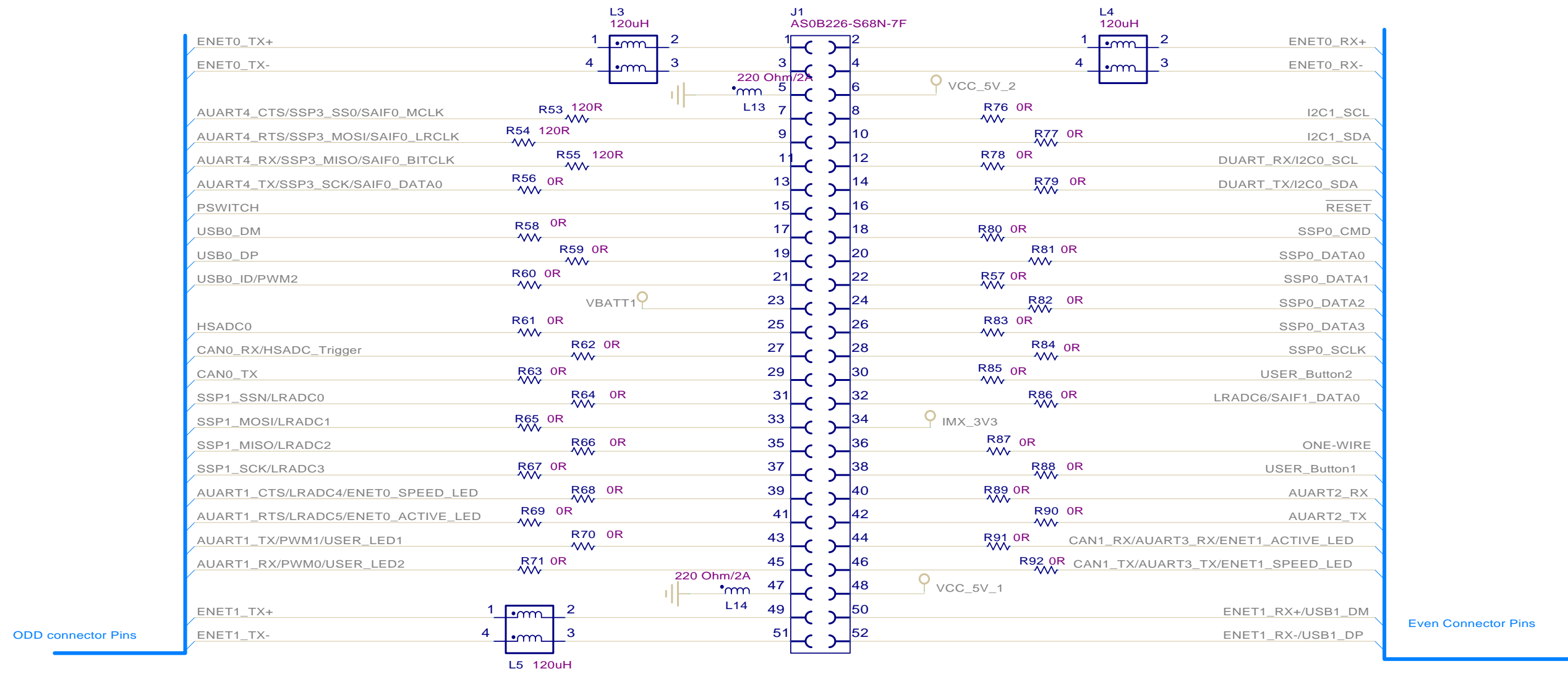
REV	ECO	DESCRIPTION OF CHANGE	BY	CKD	APPR	DATE

APPROVALS:	DATE:	Dev Board for CC IMX28 Block Diagram
DESIGNED:	09/15/11	
DRAWN:	xx/xx/xx	
CHECKED:	xx/xx/xx	
ENGINEER:	Scott McCall	
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Layout for PCIe mini card

CC IMX28 Edge Connector



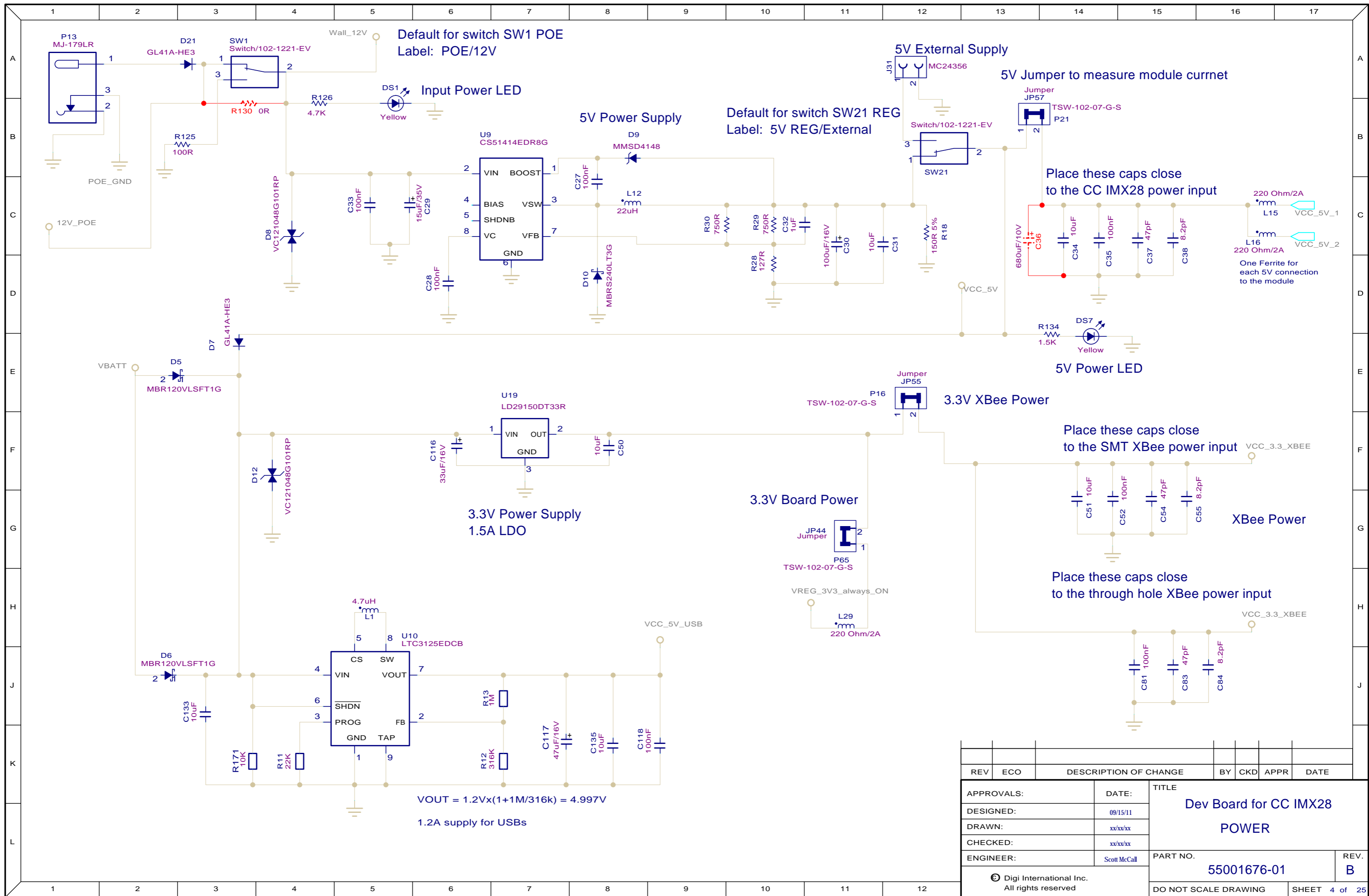
ODD connector Pins

Even Connector Pins

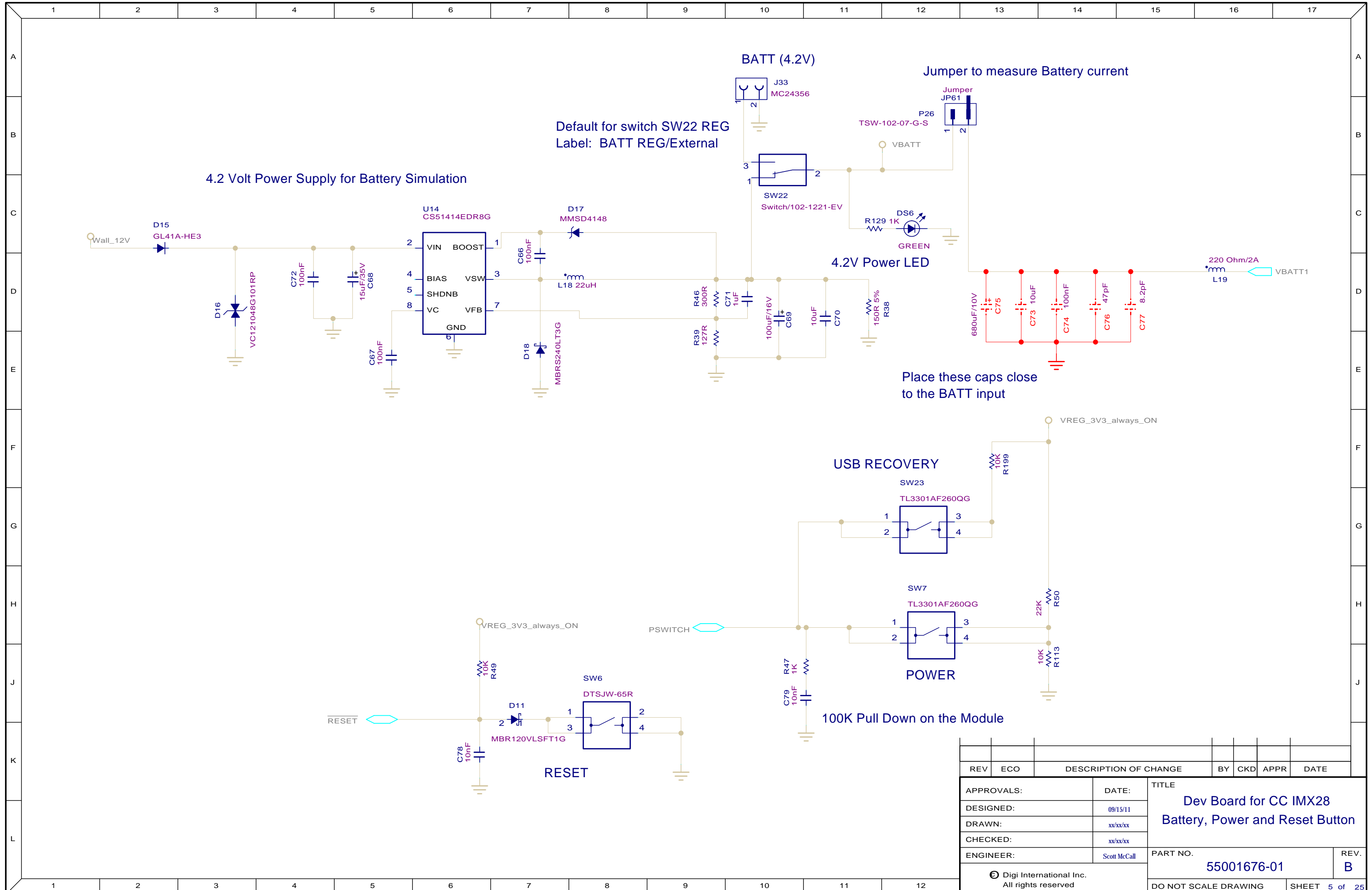
The zero ohm resistors are to allow disconnection of various portions of the DEV board from the module.
 This will allow development to go forward while the DEV board is being updated (should updates be required).

Do not put traces into the board under the module connectors.
 We need to have copper fill with vias on each layer of the PCB for thermal management.

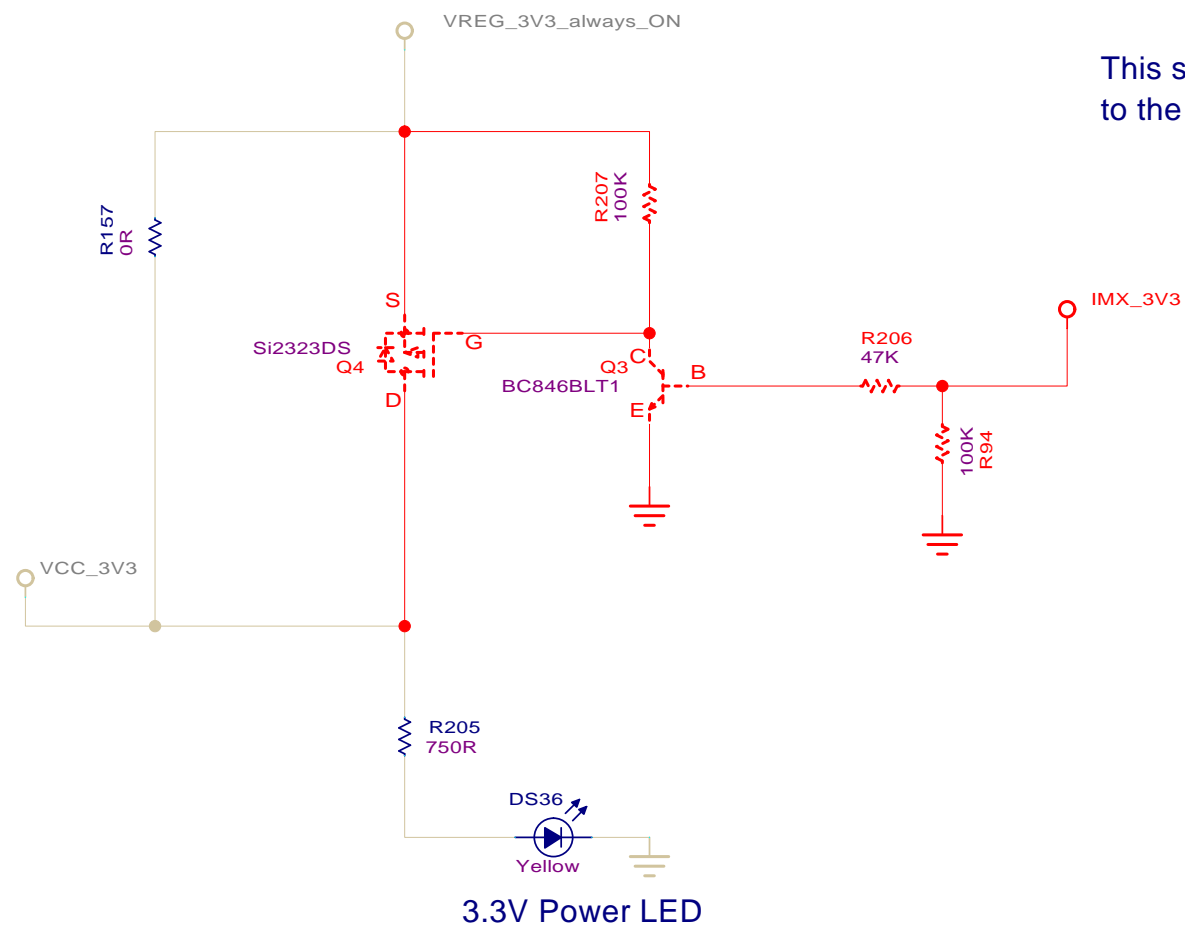
REV	ECO	DESCRIPTION OF CHANGE	BY	CKD	APPR	DATE	
APPROVALS:		DATE:	TITLE				
DESIGNED:		09/15/11	Dev Board for CC IMX28				
DRAWN:		xx/xx/xx	Edge Connector				
CHECKED:		xx/xx/xx					
ENGINEER:		Scott McCall	PART NO.		REV.		
			55001676-01		B		
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REV	ECO	DESCRIPTION OF CHANGE	BY	CKD	APPR	DATE	
APPROVALS:		DATE:	TITLE				
DESIGNED:		09/15/11	Dev Board for CC IMX28				
DRAWN:		xx/xx/xx	POWER				
CHECKED:		xx/xx/xx					
ENGINEER:		Scott McCall	PART NO.		REV.		
			55001676-01		B		
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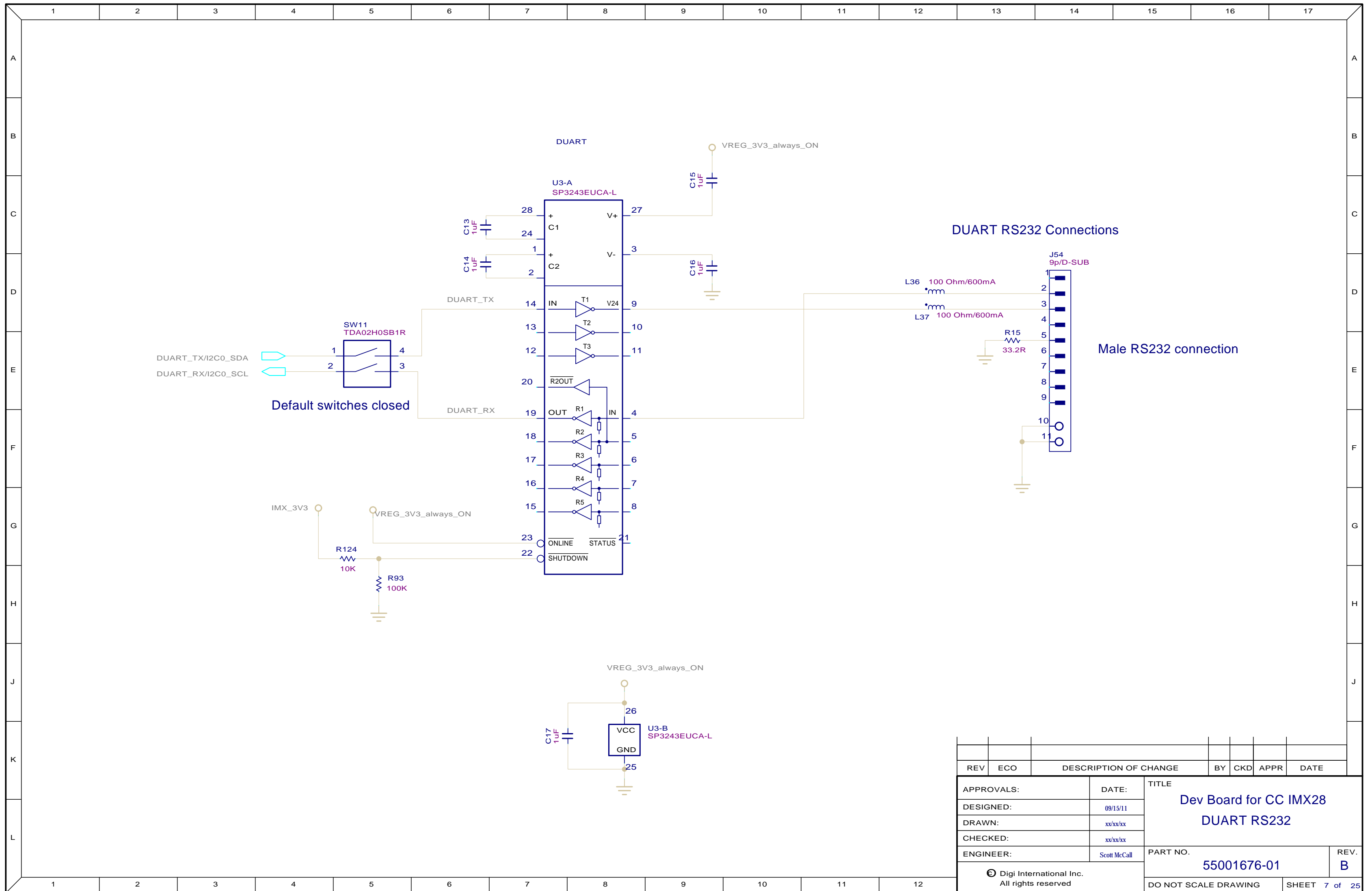
REV	ECO	DESCRIPTION OF CHANGE	BY	CKD	APPR	DATE
APPROVALS:		DATE:	TITLE			
DESIGNED:		09/15/11	Dev Board for CC IMX28			
DRAWN:		xx/xx/xx	Battery, Power and Reset Button			
CHECKED:		xx/xx/xx	PART NO.			
ENGINEER:		Scott McCall	55001676-01		REV. B	
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This switch is included to remove all 3.3V inputs to the CCIMX28 during reset should the need arise

3.3V Power LED

REV	ECO	DESCRIPTION OF CHANGE	BY	CKD	APPR	DATE	
APPROVALS:		DATE:	TITLE				
DESIGNED:		09/15/11	Dev Board for CC IMX28				
DRAWN:		xx/xx/xx	3.3V LDO Switch				
CHECKED:		xx/xx/xx					
ENGINEER:		Scott McCall	PART NO.		REV.		
			55001676-01		B		
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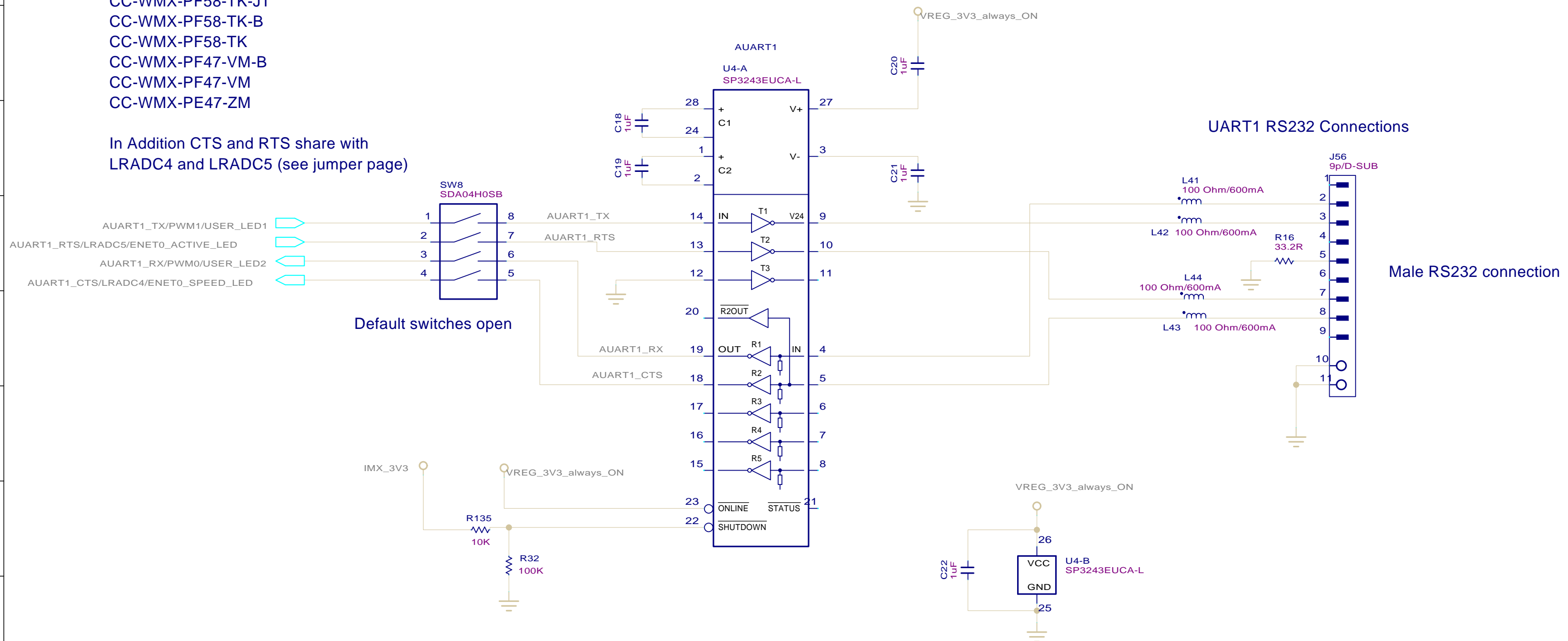
DUART RS232 Connections

Male RS232 connection

REV	ECO	DESCRIPTION OF CHANGE	BY	CKD	APPR	DATE
APPROVALS:		DATE:	TITLE			
DESIGNED:		09/15/11	Dev Board for CC IMX28			
DRAWN:		xx/xx/xx	DUART RS232			
CHECKED:		xx/xx/xx				
ENGINEER:		Scott McCall	PART NO.		REV.	
			55001676-01		B	
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					SHEET 7 of 25	

AUART 1 is only available in the following Variants:
 CC-WMX-PF58-TK-JT
 CC-WMX-PF58-TK-B
 CC-WMX-PF58-TK
 CC-WMX-PF47-VM-B
 CC-WMX-PF47-VM
 CC-WMX-PE47-ZM

In Addition CTS and RTS share with
 LRADC4 and LRADC5 (see jumper page)



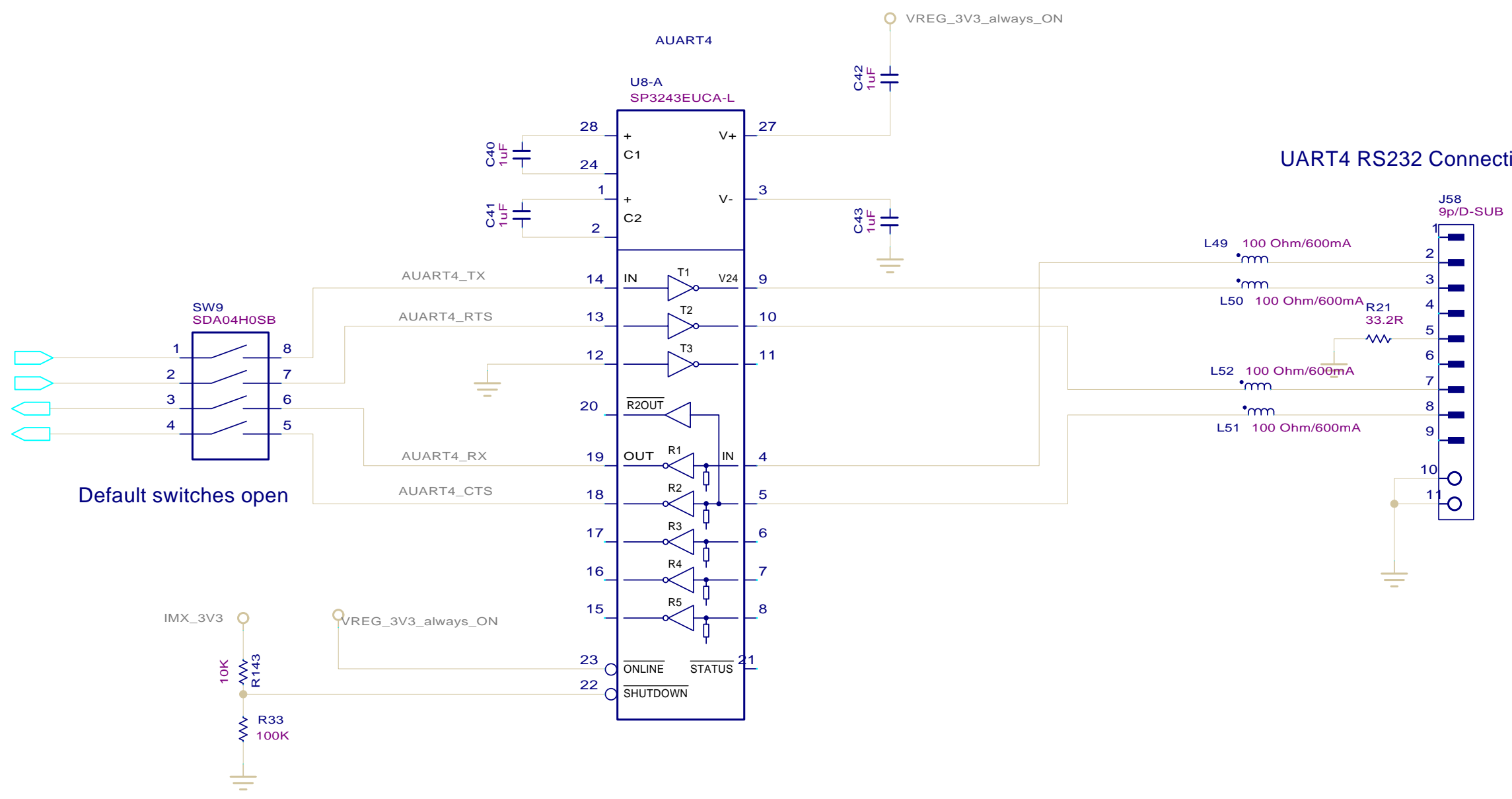
UART1 RS232 Connections

Male RS232 connection

REV	ECO	DESCRIPTION OF CHANGE	BY	CKD	APPR	DATE
APPROVALS:		DATE:	TITLE			
DESIGNED:		09/15/11	Dev Board for CC IMX28			
DRAWN:		xx/xx/xx	AUART1_RS232			
CHECKED:		xx/xx/xx	PART NO.			
ENGINEER:		Scott McCall	55001676-01		REV.	
					B	
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AUART4 shares with SSP3 (see jumper page) for the following variants:
 CC-WMX-PF58-TK-JT
 CC-WMX-PF58-TK-B
 CC-WMX-PF58-TK
 CC-WMX-PF47-VM-B
 CC-WMX-PF47-VM
 CC-WMX-PE47-ZM

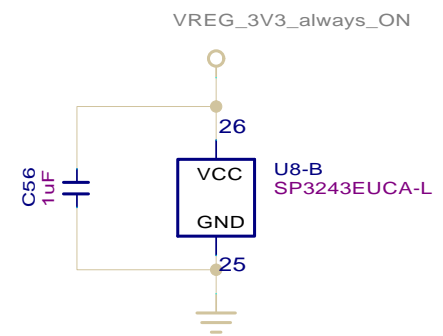
AUART4_TX/SSP3_SCK/SAIF0_DATA0
 AUART4_RTS/SSP3_MOSI/SAIF0_LRCLK
 AUART4_RX/SSP3_MISO/SAIF0_BITCLK
 AUART4_CTS/SSP3_SS0/SAIF0_MCLK



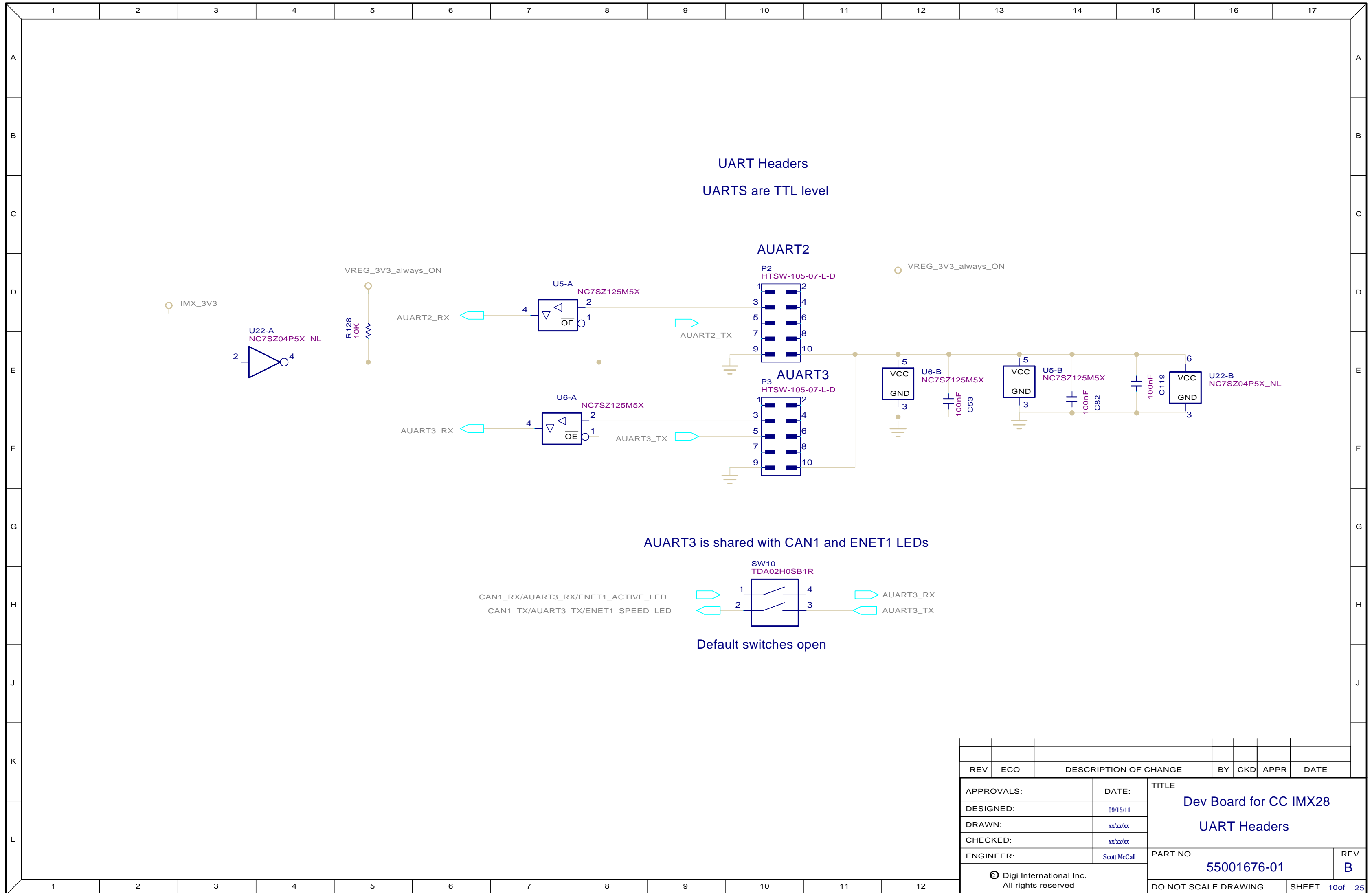
Default switches open

UART4 RS232 Connections

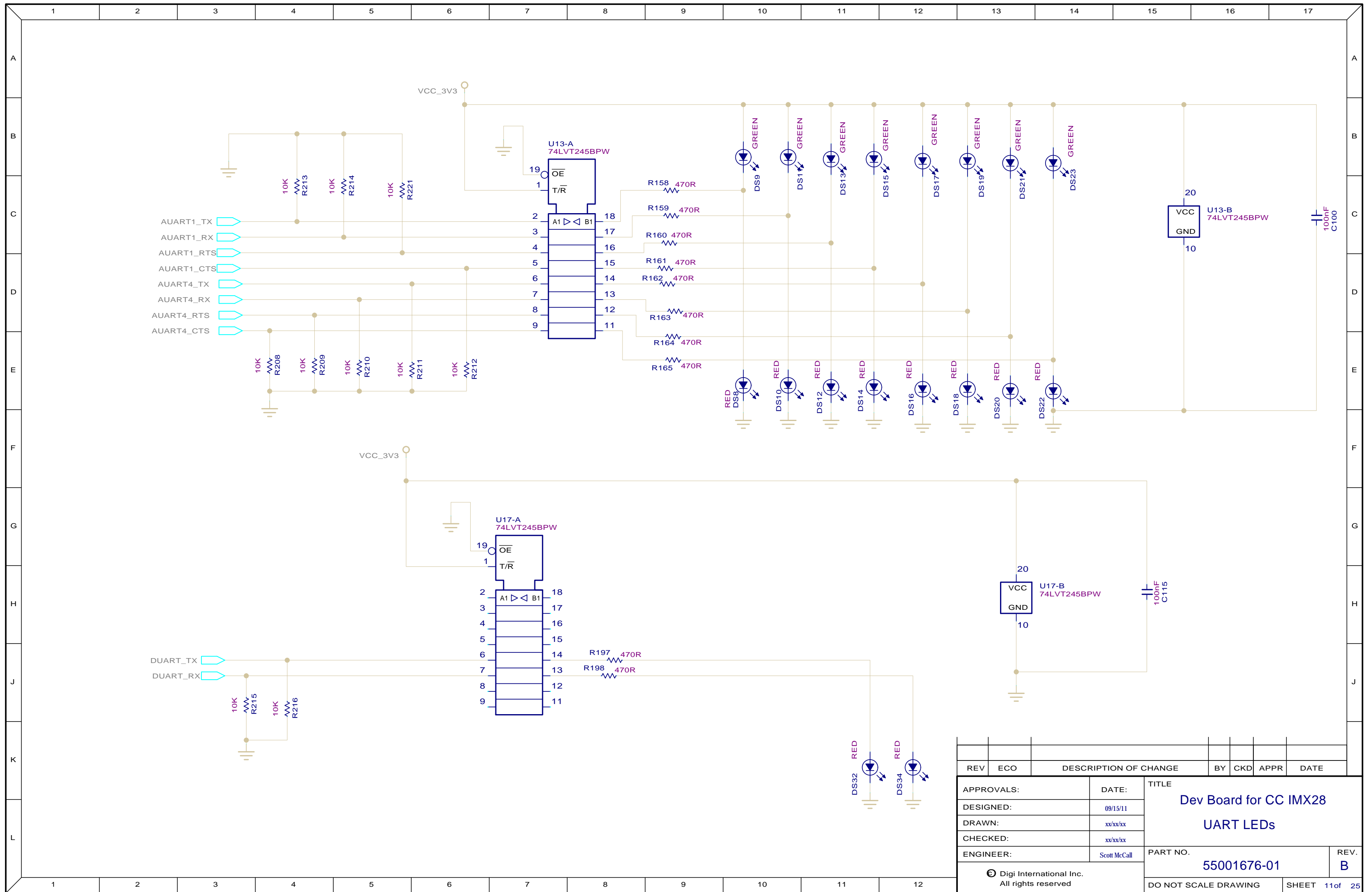
Male RS232 connection



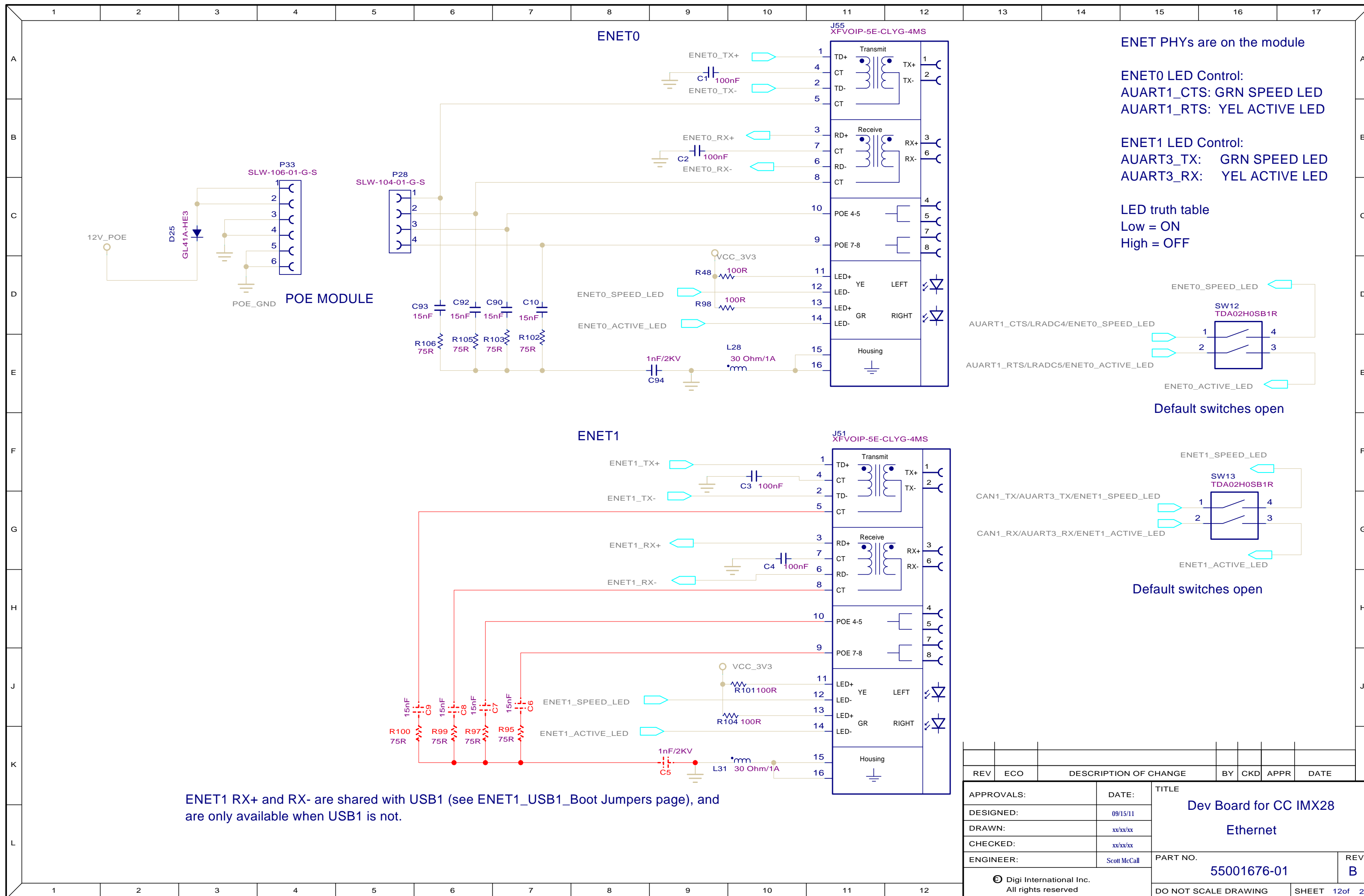
REV	ECO	DESCRIPTION OF CHANGE	BY	CKD	APPR	DATE	
APPROVALS:		DATE:	TITLE				
DESIGNED:		09/15/11	Dev Board for CC IMX28				
DRAWN:		xx/xx/xx	AUART4_RS232				
CHECKED:		xx/xx/xx					
ENGINEER:		Scott McCall	PART NO.		REV.		
			55001676-01		B		
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REV	ECO	DESCRIPTION OF CHANGE	BY	CKD	APPR	DATE	
APPROVALS:		DATE:	TITLE				
DESIGNED:		09/15/11	Dev Board for CC IMX28				
DRAWN:		xx/xx/xx	UART Headers				
CHECKED:		xx/xx/xx					
ENGINEER:		Scott McCall	PART NO.		REV.		
			55001676-01		B		
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REV	ECO	DESCRIPTION OF CHANGE	BY	CKD	APPR	DATE	
APPROVALS:		DATE:	TITLE				
DESIGNED:		09/15/11	Dev Board for CC IMX28				
DRAWN:		xx/xx/xx	UART LEDs				
CHECKED:		xx/xx/xx					
ENGINEER:		Scott McCall	PART NO.		REV.		
			55001676-01		B		
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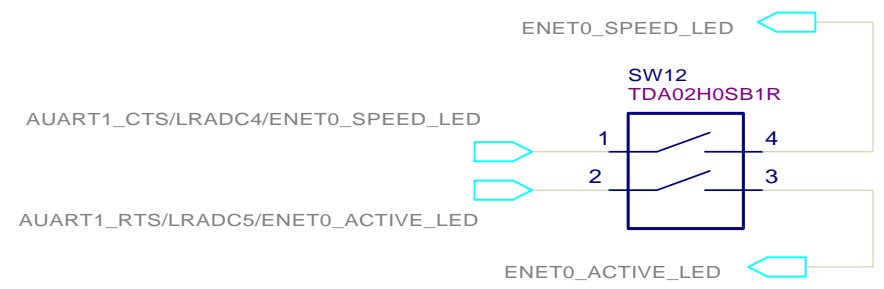


ENET PHYs are on the module

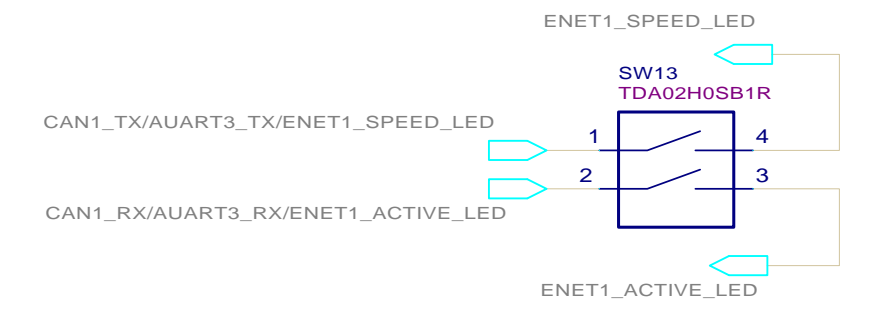
ENET0 LED Control:
 AUART1_CTS: GRN SPEED LED
 AUART1_RTS: YEL ACTIVE LED

ENET1 LED Control:
 AUART3_TX: GRN SPEED LED
 AUART3_RX: YEL ACTIVE LED

LED truth table
 Low = ON
 High = OFF



Default switches open



Default switches open

ENET1 RX+ and RX- are shared with USB1 (see ENET1_USB1_Boot Jumpers page), and are only available when USB1 is not.

REV	ECO	DESCRIPTION OF CHANGE	BY	CKD	APPR	DATE
APPROVALS:		DATE:	TITLE			
DESIGNED:		09/15/11	Dev Board for CC IMX28			
DRAWN:		xx/xx/xx	Ethernet			
CHECKED:		xx/xx/xx				
ENGINEER:		Scott McCall	PART NO.		REV.	
			55001676-01		B	
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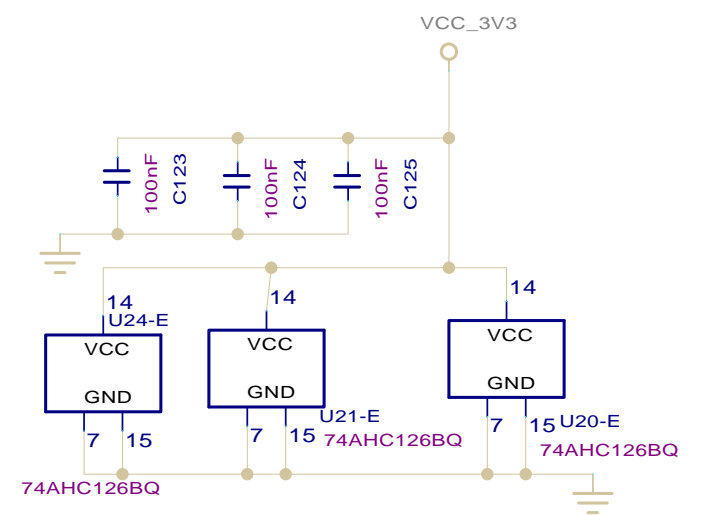
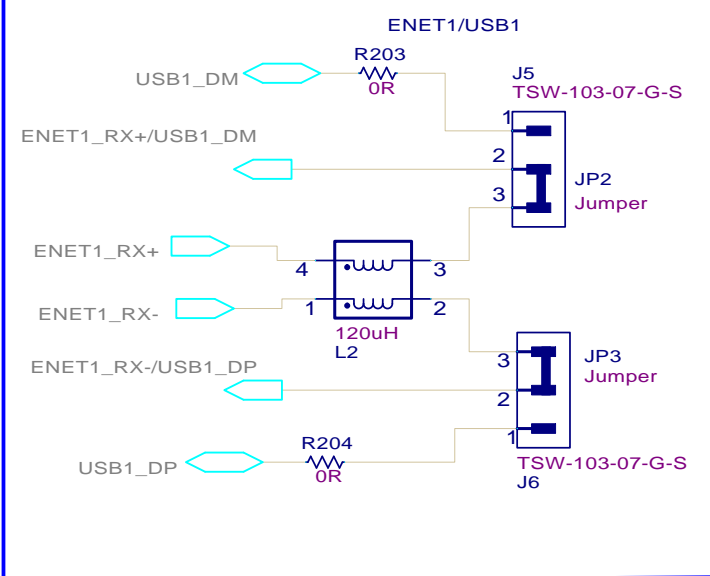
Settings for USB1 and ENET1

Variant	Setting
CC-WMX-PF58-TK-JT	ENET1
CC-WMX-PF58-TK-B	ENET1
CC-WMX-PF58-TK	ENET1
CC-WMX-PF47-VM-B	USB1
CC-WMX-PF47-VM	USB1
CC-WMX-PE47-ZM	USB1
CC-WMX-PE47-VE-B	USB1
CC-WMX-PE47-VE	USB1
CC-WMX-PE47-VM-JT	USB1
CC-WMX-PE47-VM-B	USB1
CC-WMX-PE47-VM	USB1
CC-WMX-PE47-ZM-B	USB1
CC-WMX-PE47-ZM	USB1

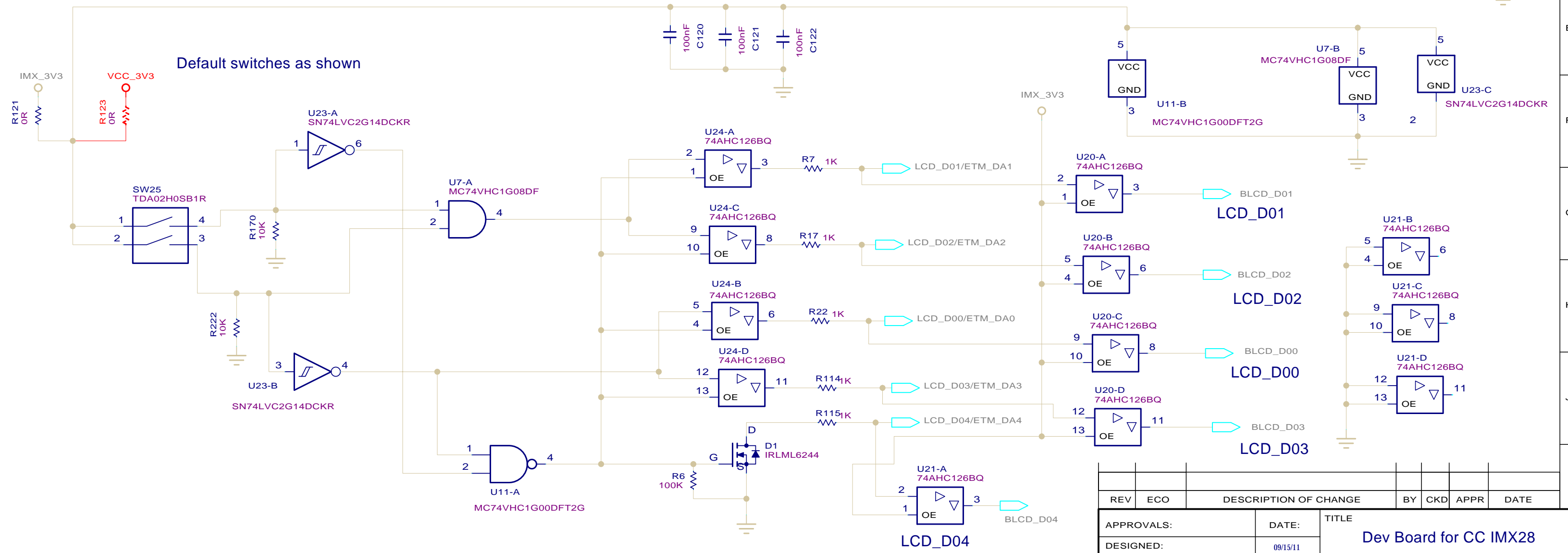
IMX28 Boot Mode Config:

Mode	C0	C1	D00	D01	D02	D03	D04	Buffer Enable
NAND FLASH	0	0	T	T	T	T	T	0
USB	0	1	0	0	0	0	X	1
SD	1	0	1	0	0	1	0	1
JTAG	1	1	0	1	1	0	0	1

Module Default is NAND Flash boot
Setting C0, C1 to 0, 0 boots from
Module Defaults by setting all buffers in tri-state.
T= tri-state (high Z)

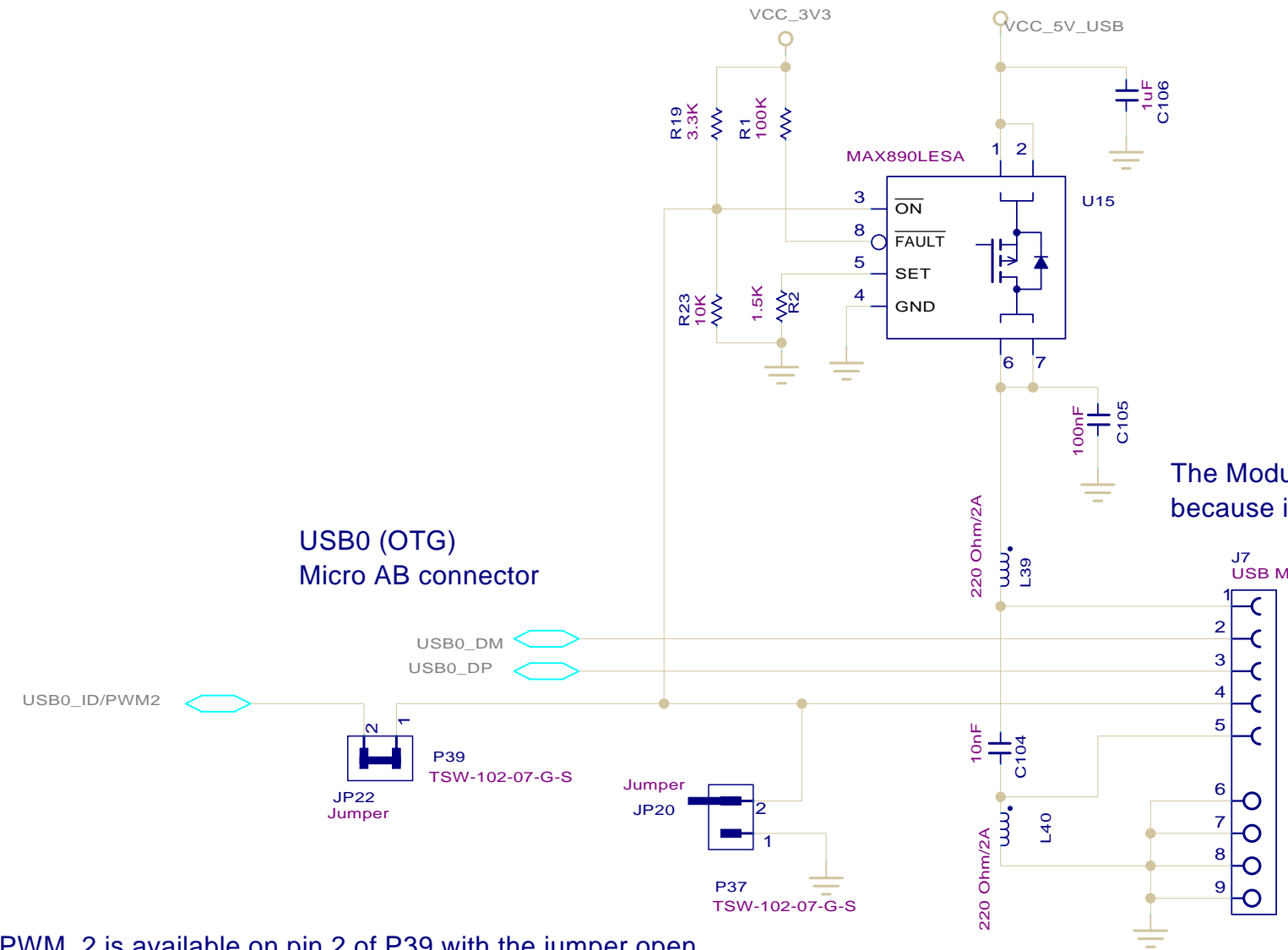


Place 1 Cap by each chip (U7, U11, U20, U21, U23, and U24)



REV	ECO	DESCRIPTION OF CHANGE	BY	CKD	APPR	DATE

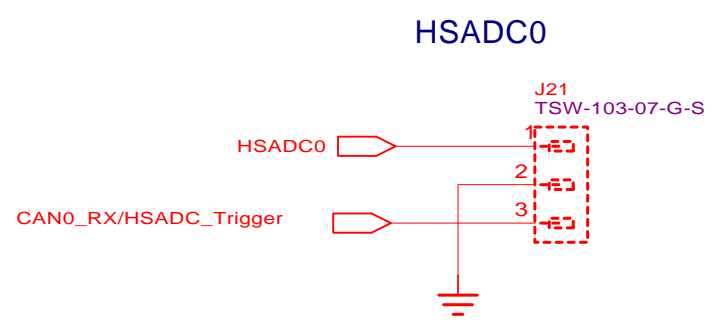
APPROVALS:	DATE:	TITLE
DESIGNED:	09/15/11	Dev Board for CC IMX28
DRAWN:	xx/xx/xx	ENET1_USB1 Jumpers_Boot Config
CHECKED:	xx/xx/xx	
ENGINEER:	Scott McCall	
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DO NOT SCALE DRAWING		REV. B



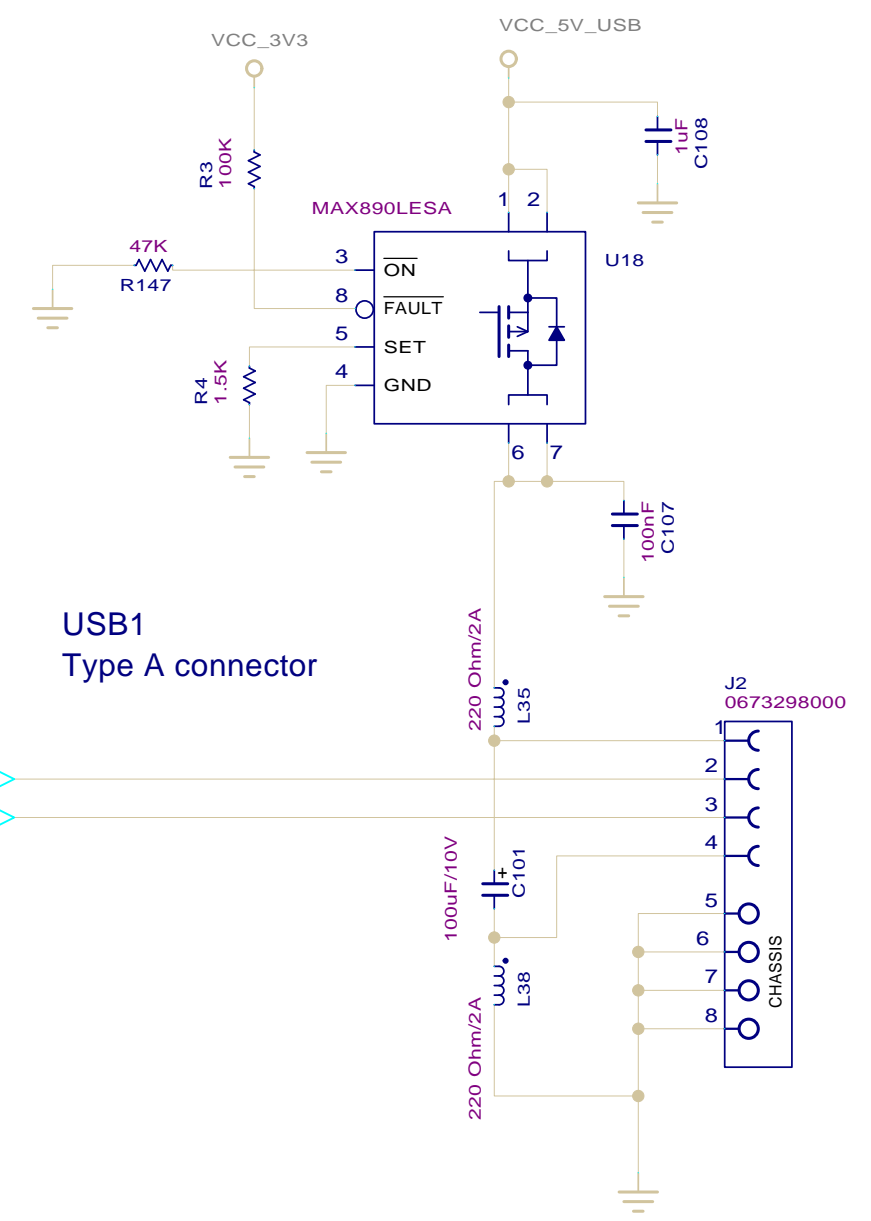
USB0 (OTG)
Micro AB connector

The Module is not powered from the USB
because it can pull more than 500mA

PWM_2 is available on pin 2 of P39 with the jumper open.



HSADC0

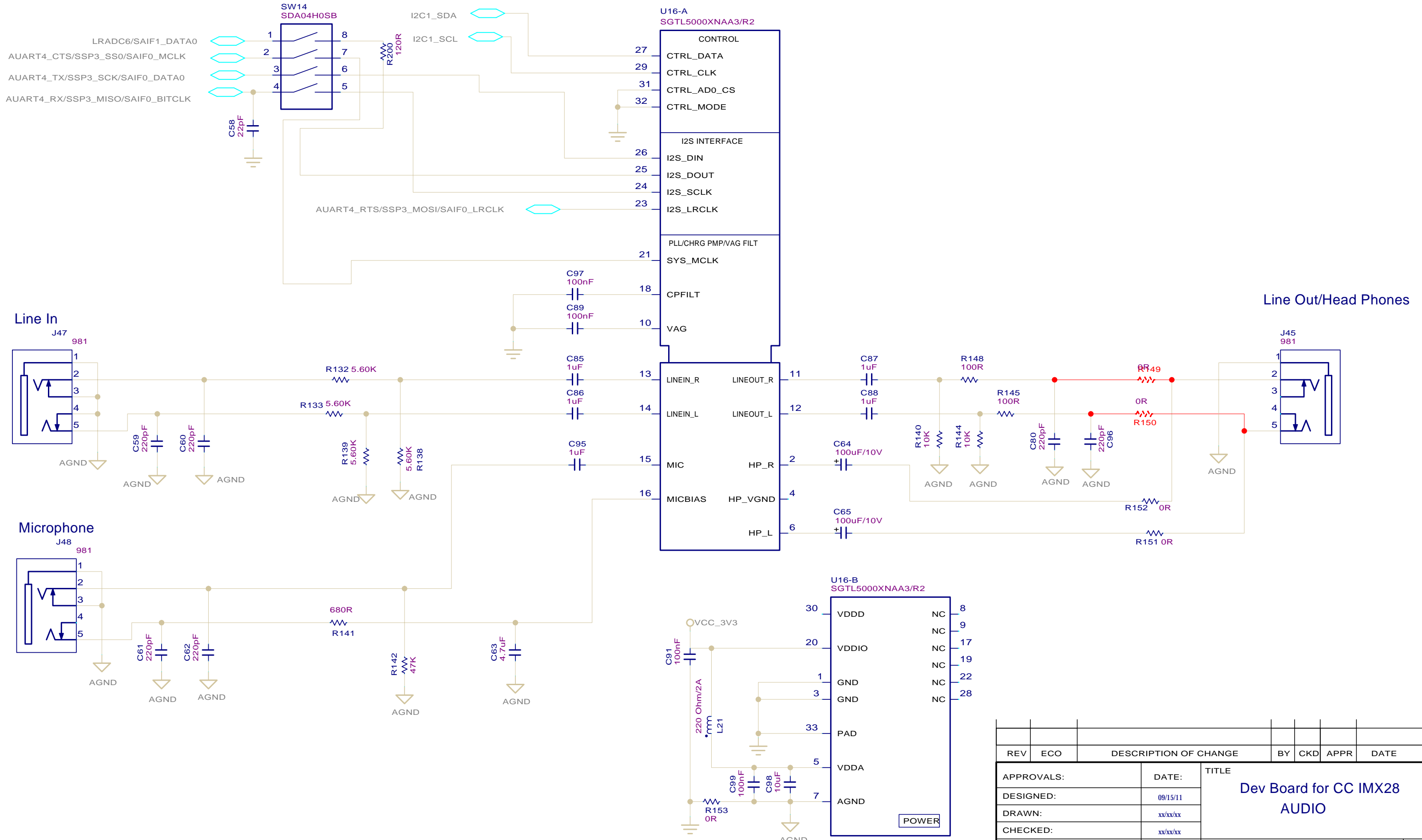


USB1
Type A connector

USB1 is shared with ENET1 RX+ and RX- (see ENET1_USB1_Boot Jumpers page), and is only available when ENET1 is not.

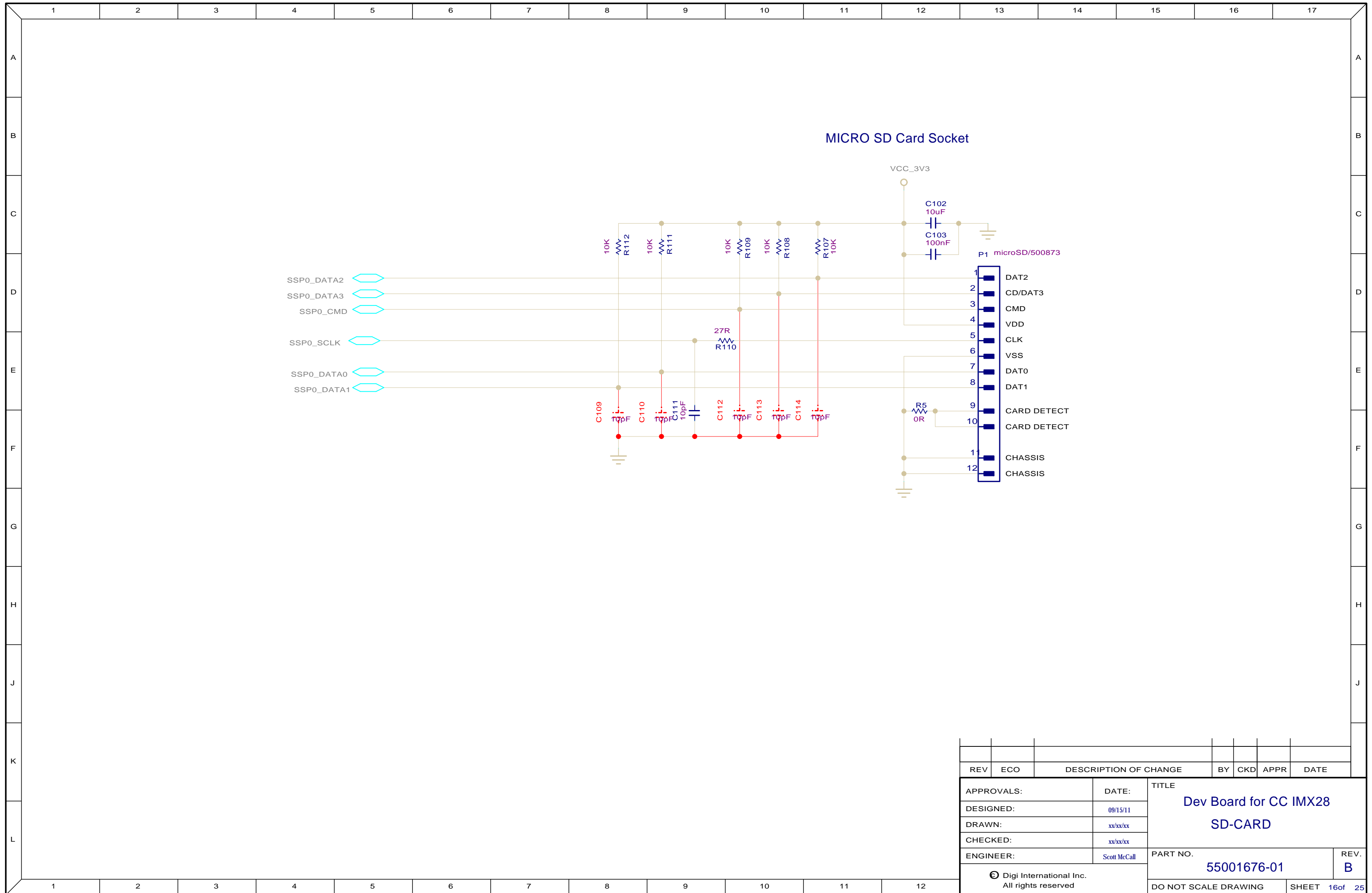
REV	ECO	DESCRIPTION OF CHANGE	BY	CKD	APPR	DATE
APPROVALS:		DATE:	TITLE			
DESIGNED:		09/15/11	Dev Board for CC IMX28			
DRAWN:		xx/xx/xx	USB_HSADC			
CHECKED:		xx/xx/xx	PART NO.			
ENGINEER:		Scott McCall	55001676-01		REV. B	
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Default switches open

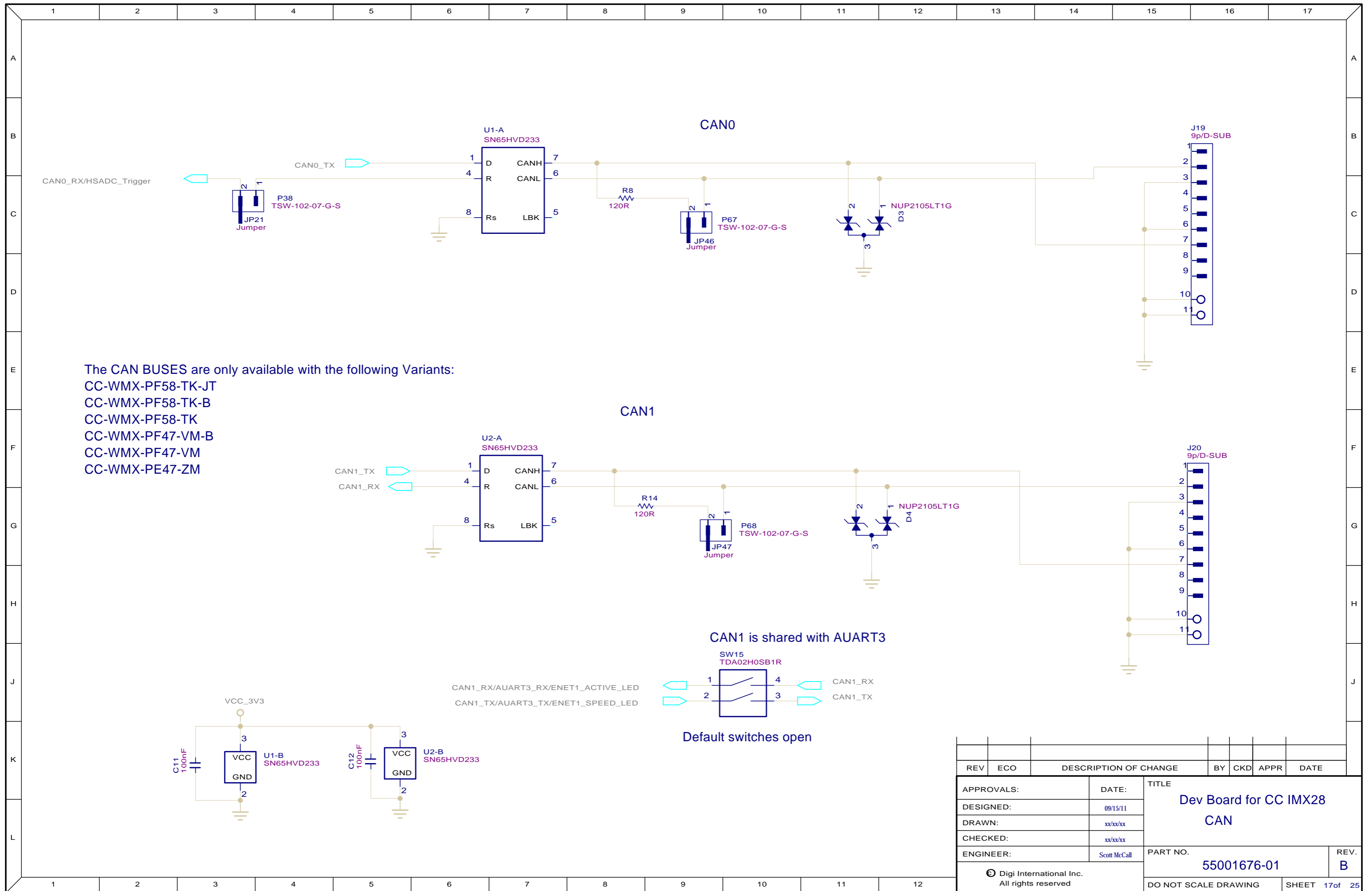


REV	ECO	DESCRIPTION OF CHANGE	BY	CKD	APPR	DATE

APPROVALS:	DATE:	TITLE
DESIGNED:	09/15/11	Dev Board for CC IMX28 AUDIO
DRAWN:	xx/xx/xx	
CHECKED:	xx/xx/xx	
ENGINEER:	Scott McCall	
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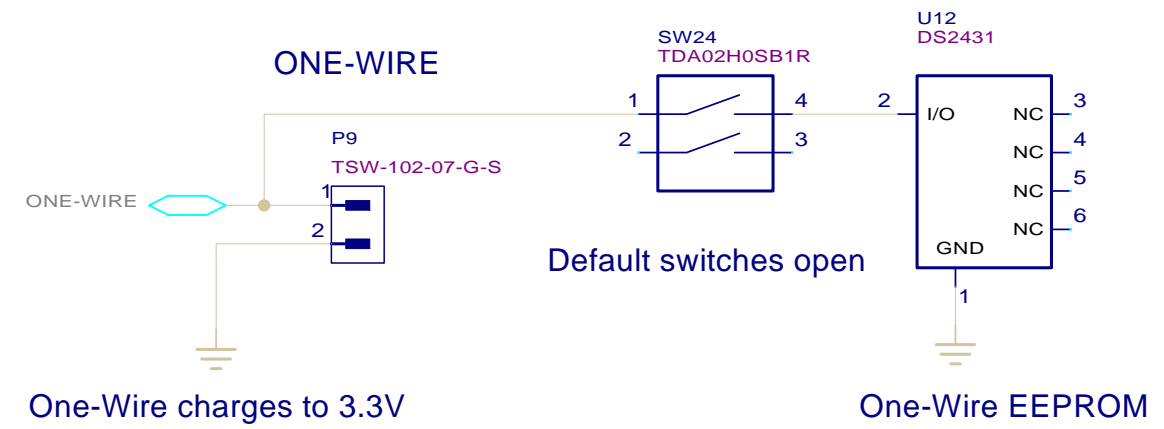
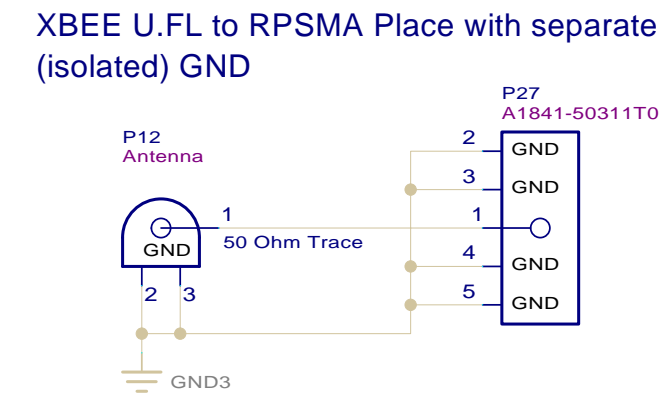
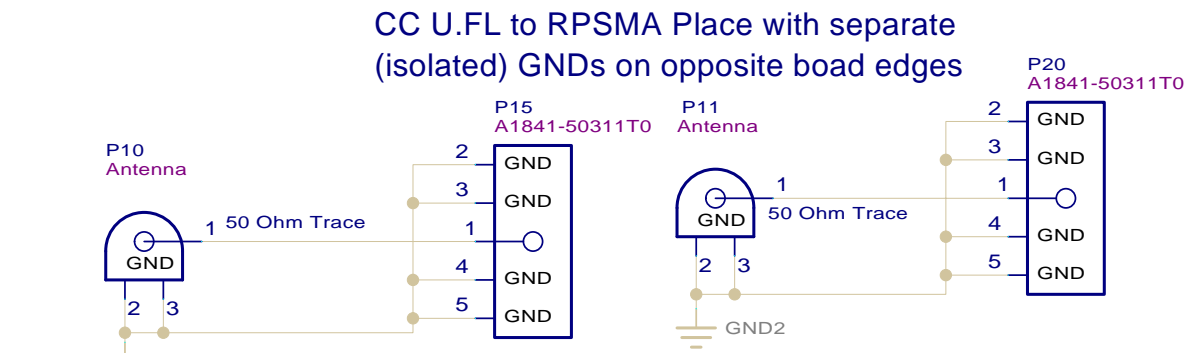
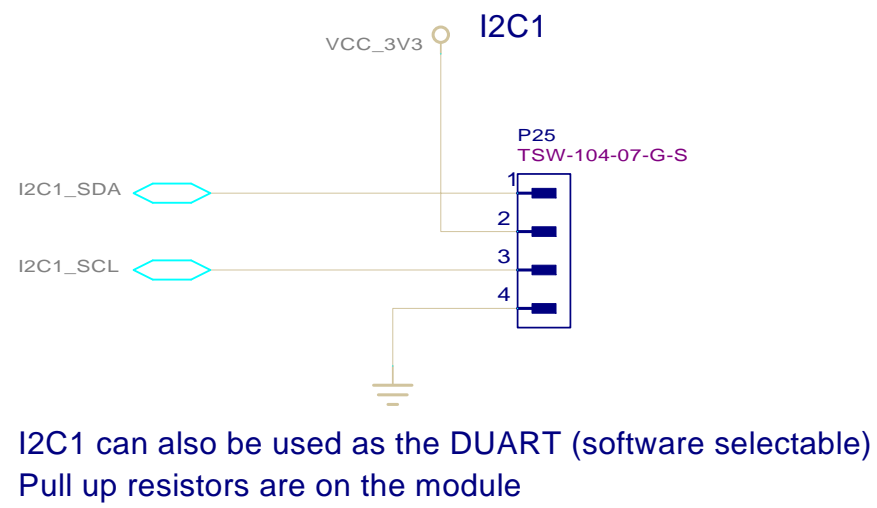
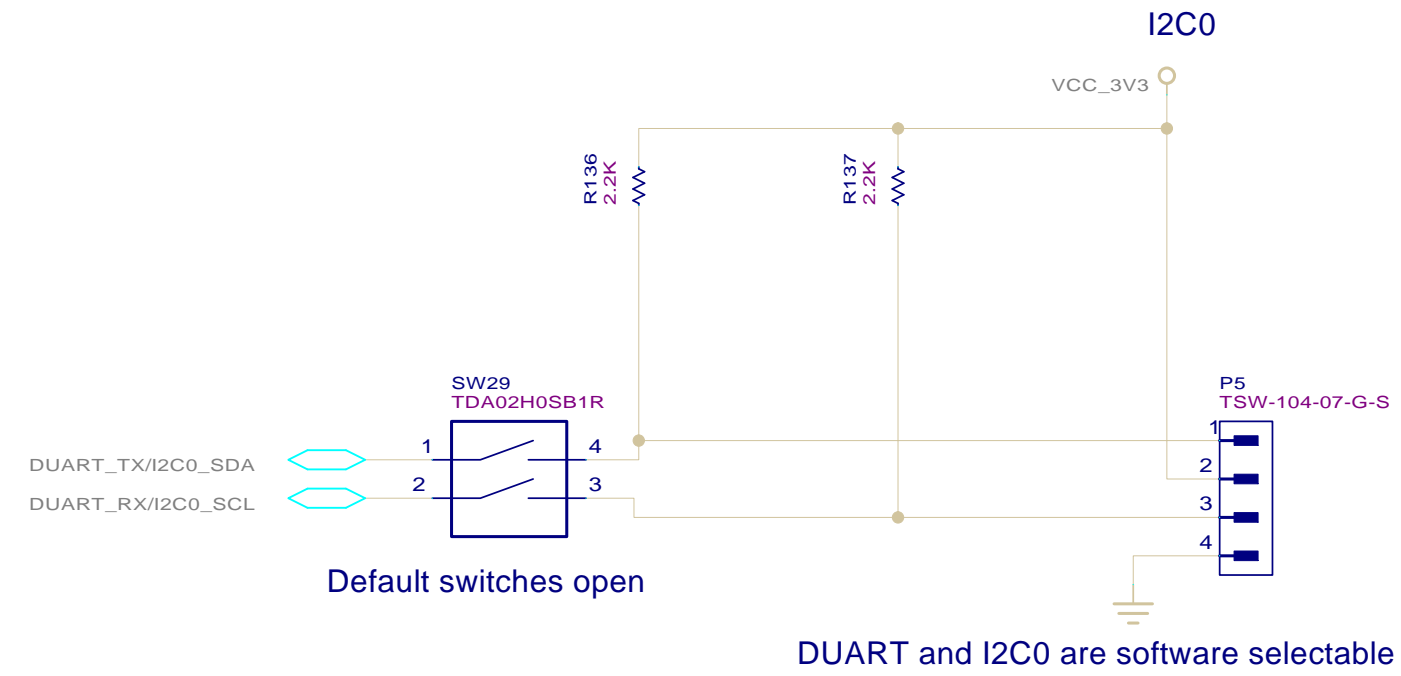


REV	ECO	DESCRIPTION OF CHANGE	BY	CKD	APPR	DATE	
APPROVALS:		DATE:	TITLE				
DESIGNED:		09/15/11	Dev Board for CC IMX28 SD-CARD				
DRAWN:		xx/xx/xx					
CHECKED:		xx/xx/xx					
ENGINEER:		Scott McCall					
PART NO.			REV.				
55001676-01			B				
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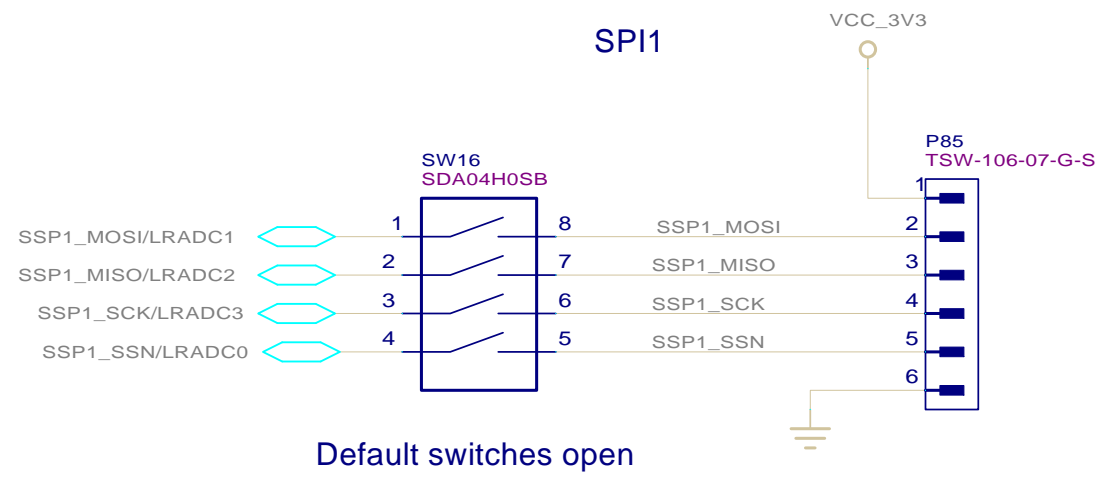


The CAN BUSES are only available with the following Variants:
 CC-WMX-PF58-TK-JT
 CC-WMX-PF58-TK-B
 CC-WMX-PF58-TK
 CC-WMX-PF47-VM-B
 CC-WMX-PF47-VM
 CC-WMX-PE47-ZM

REV	ECO	DESCRIPTION OF CHANGE	BY	CKD	APPR	DATE
APPROVALS:		DATE:	TITLE			
DESIGNED:		09/15/11	Dev Board for CC IMX28			
DRAWN:		xx/xx/xx	CAN			
CHECKED:		xx/xx/xx	PART NO.			
ENGINEER:		Scott McCall	55001676-01		REV. B	
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						SHEET 17 of 25

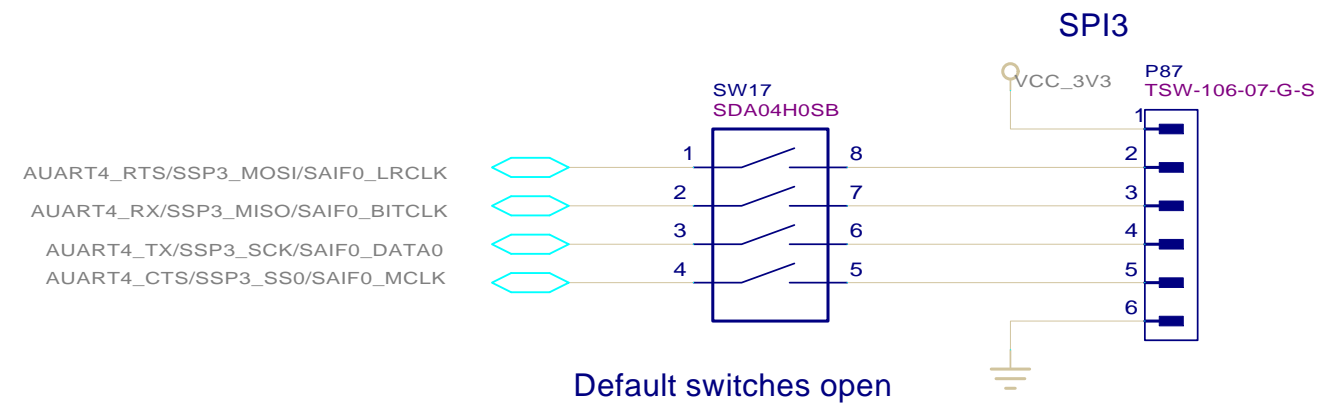


REV	ECO	DESCRIPTION OF CHANGE	BY	CKD	APPR	DATE	
APPROVALS:		DATE:	TITLE				
DESIGNED:		09/15/11	Dev Board for CC IMX28				
DRAWN:		xx/xx/xx	I2C, 1-Wire, U.FL				
CHECKED:		xx/xx/xx	PART NO.				
ENGINEER:		Scott McCall	55001676-01		REV. B		
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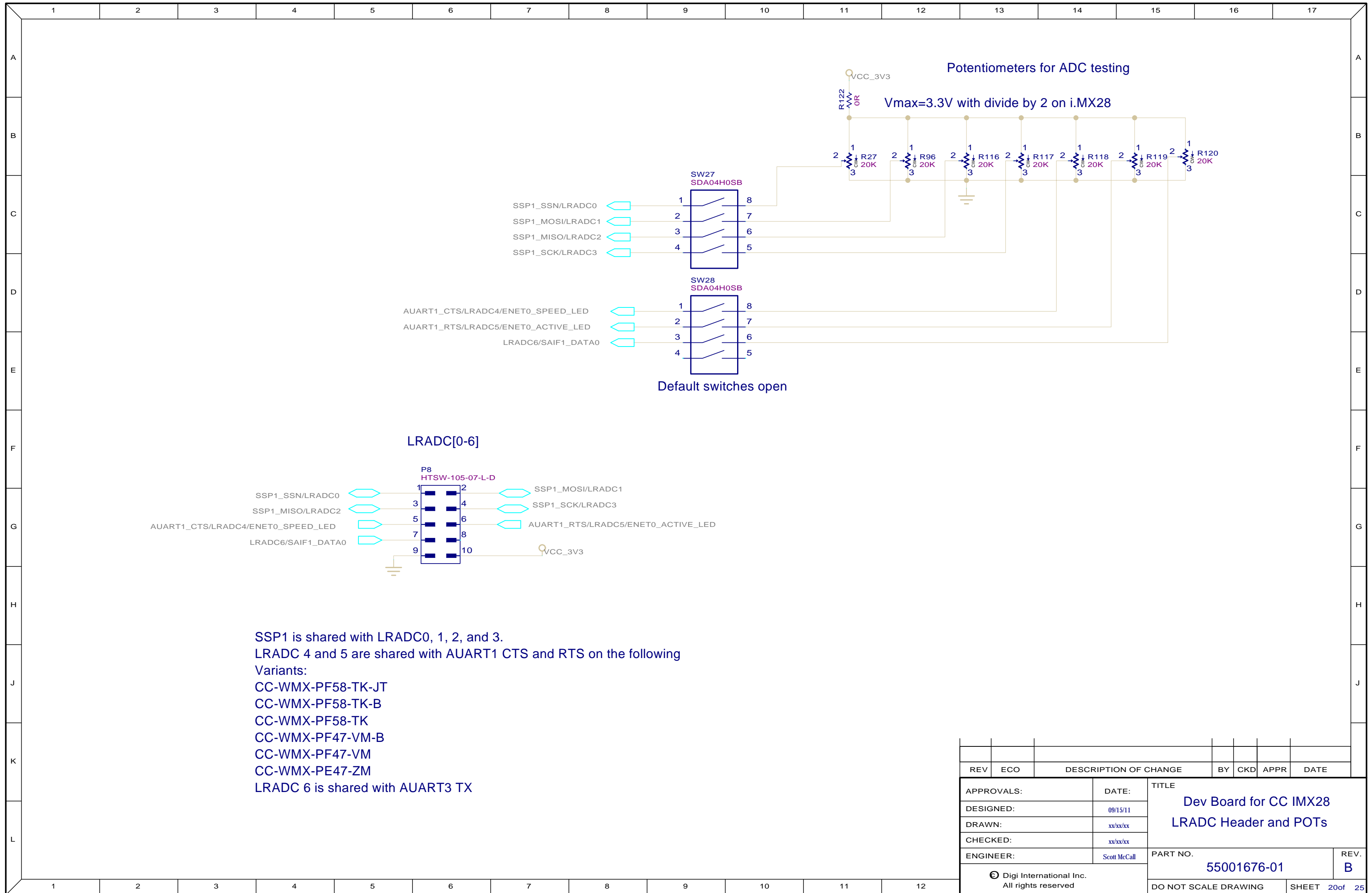


SPI1 is shared with LRADC0, 1, 2, and 3.
 LRADC 4 and 5 are shared with AUART1 CTS and RTS on the following Variants:
 CC-WMX-PF58-TK-JT
 CC-WMX-PF58-TK-B
 CC-WMX-PF58-TK
 CC-WMX-PF47-VM-B
 CC-WMX-PF47-VM
 CC-WMX-PE47-ZM
 LRADC 6 is shared with AUART3 TX

SPI3 is shared with AUART4. SPI3 is only available on the following Variants:
 CC-WMX-PF58-TK-JT
 CC-WMX-PF58-TK-B
 CC-WMX-PF58-TK
 CC-WMX-PF47-VM-B
 CC-WMX-PF47-VM
 CC-WMX-PE47-ZM



REV	ECO	DESCRIPTION OF CHANGE	BY	CKD	APPR	DATE	
APPROVALS:		DATE:	TITLE				
DESIGNED:		09/15/11	Dev Board for CC IMX28				
DRAWN:		xx/xx/xx	SPI Headers				
CHECKED:		xx/xx/xx					
ENGINEER:		Scott McCall	PART NO.		REV.		
			55001676-01		B		
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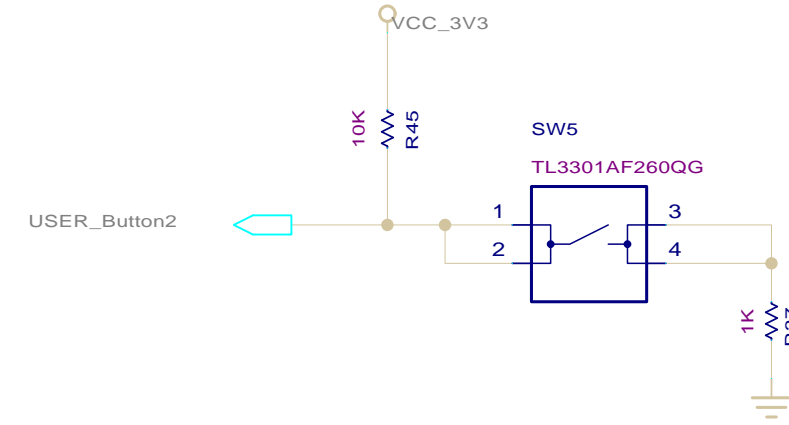
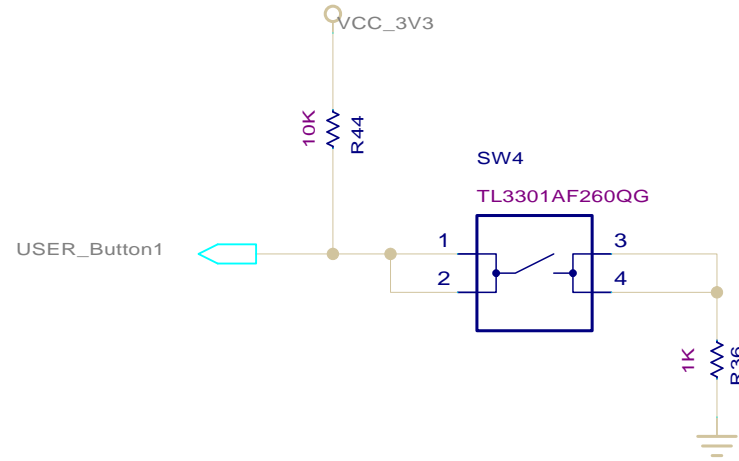
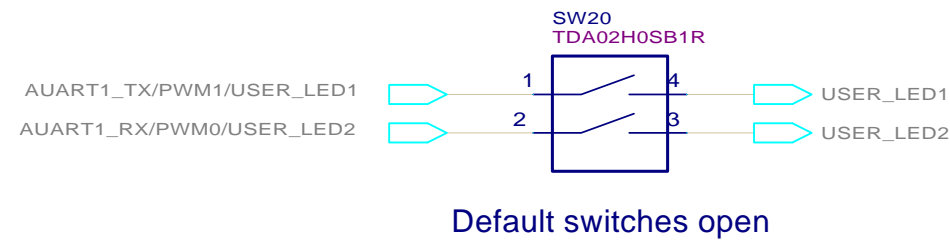


SSP1 is shared with LRADC0, 1, 2, and 3.
 LRADC 4 and 5 are shared with AUART1 CTS and RTS on the following
 Variants:
 CC-WMX-PF58-TK-JT
 CC-WMX-PF58-TK-B
 CC-WMX-PF58-TK
 CC-WMX-PF47-VM-B
 CC-WMX-PF47-VM
 CC-WMX-PE47-ZM
 LRADC 6 is shared with AUART3 TX

REV	ECO	DESCRIPTION OF CHANGE	BY	CKD	APPR	DATE
APPROVALS:		DATE:	TITLE			
DESIGNED:		09/15/11	Dev Board for CC IMX28			
DRAWN:		xx/xx/xx	LRADC Header and POTs			
CHECKED:		xx/xx/xx				
ENGINEER:		Scott McCall	PART NO.		REV.	
			55001676-01		B	
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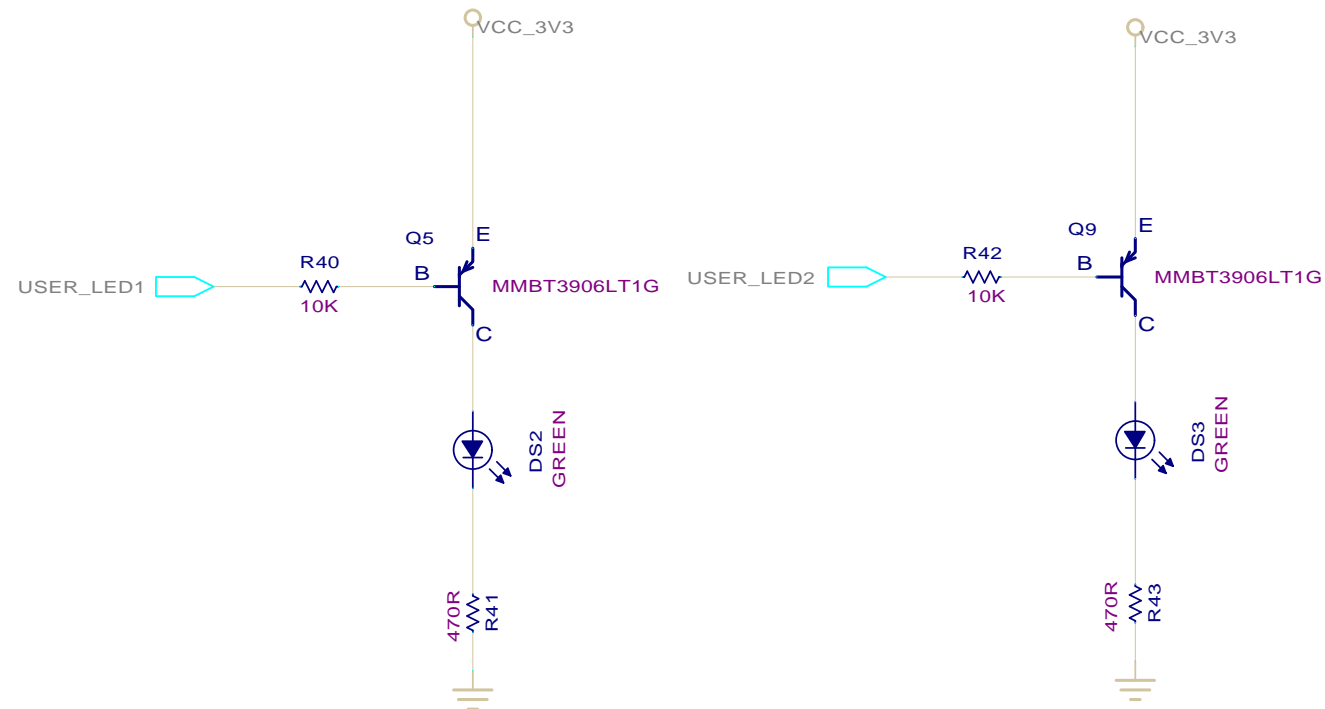
User Buttons

These connections come through AUART2_RTS, and SSP0_CARD_DETECT

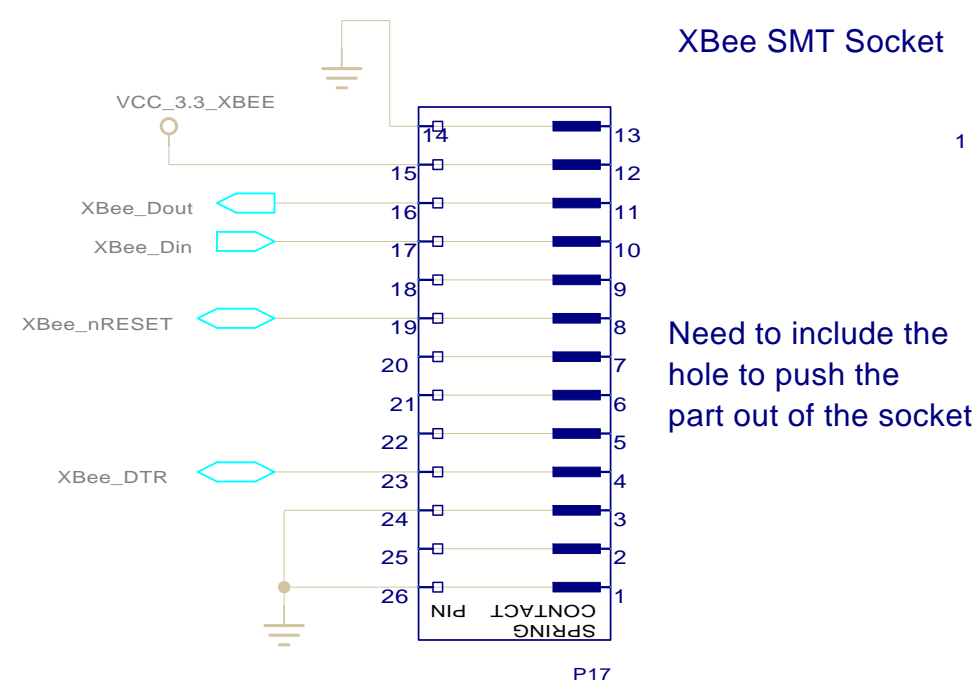


User LEDs

Connected to UART4_CTS and UART4_RTS (PWM3 and PWM5 respectively)



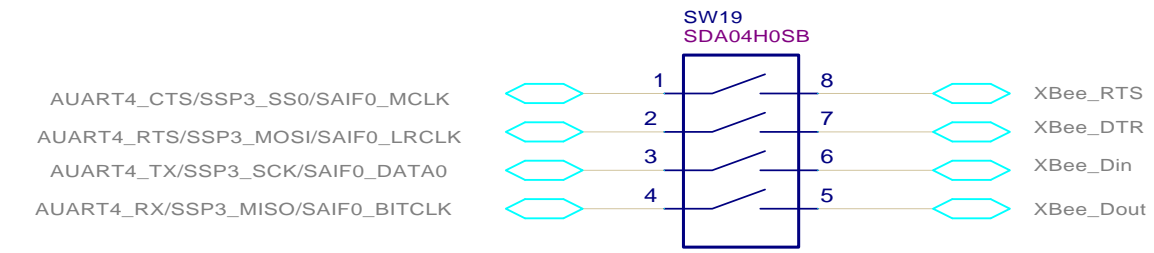
REV	ECO	DESCRIPTION OF CHANGE	BY	CKD	APPR	DATE	
APPROVALS:		DATE:	TITLE				
DESIGNED:		09/15/11	Dev Board for CC IMX28				
DRAWN:		xx/xx/xx	User LEDs and Buttons				
CHECKED:		xx/xx/xx					
ENGINEER:		Scott McCall	PART NO.		REV.		
			55001676-01		B		
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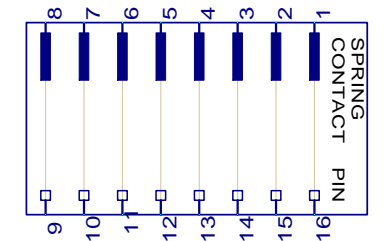
Need to include the hole to push the part out of the socket

The layout of the SMT socket needs to be done the same as it is on 3001189x (the SMT Dev. Board).

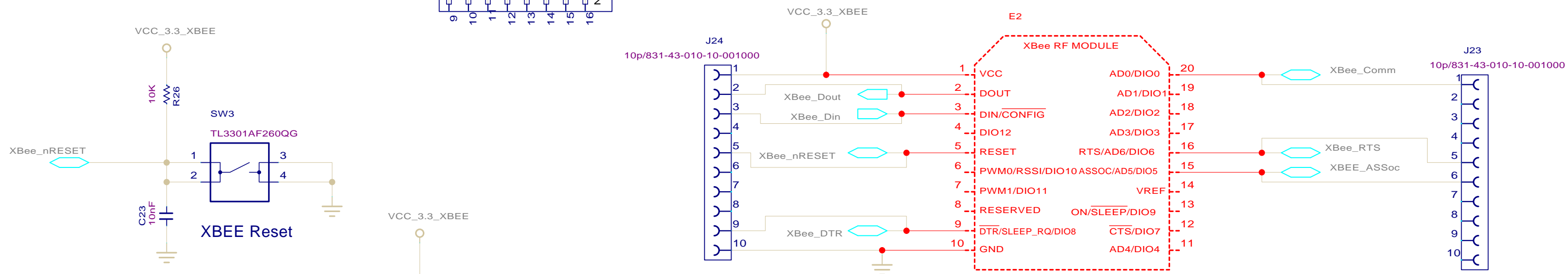
XBee Connections for AUART4
AUART4_RTS is used for DTR during firmware upgrades



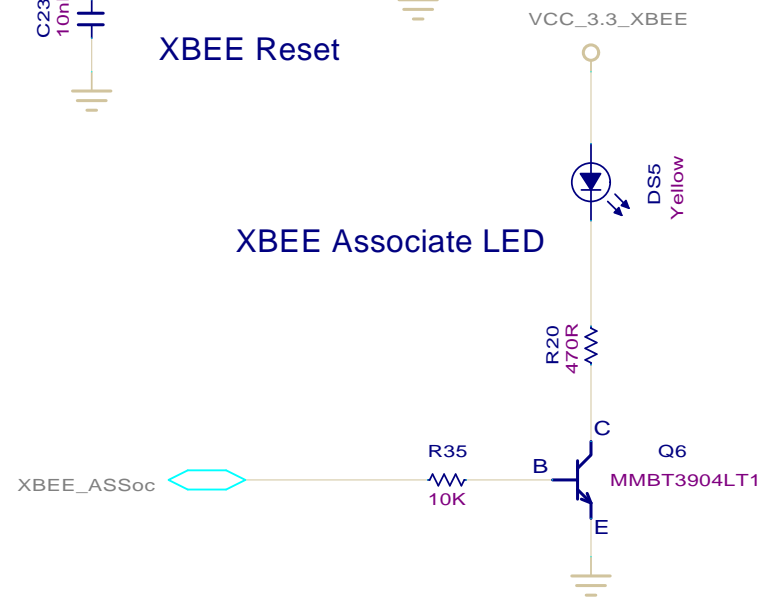
Default switches open



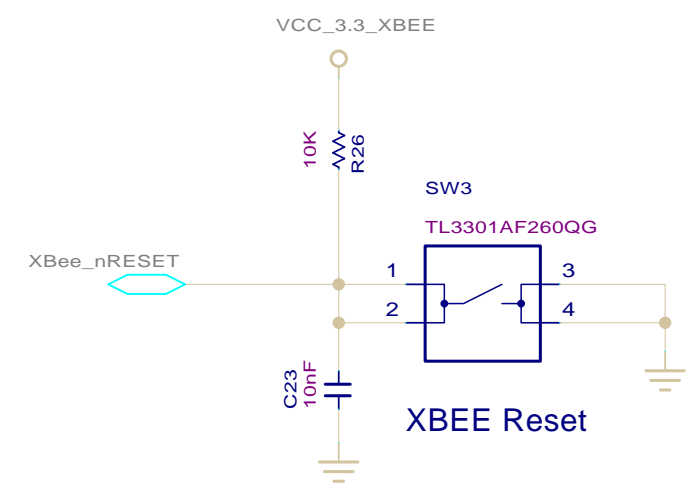
XBee Through Hole Socket



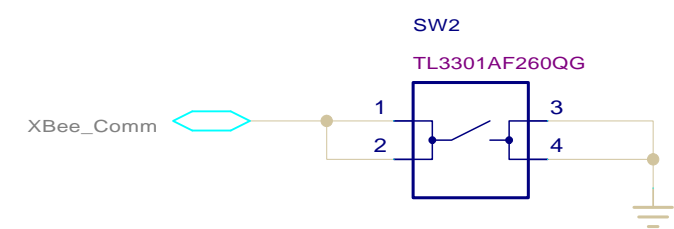
XBEE Associate LED



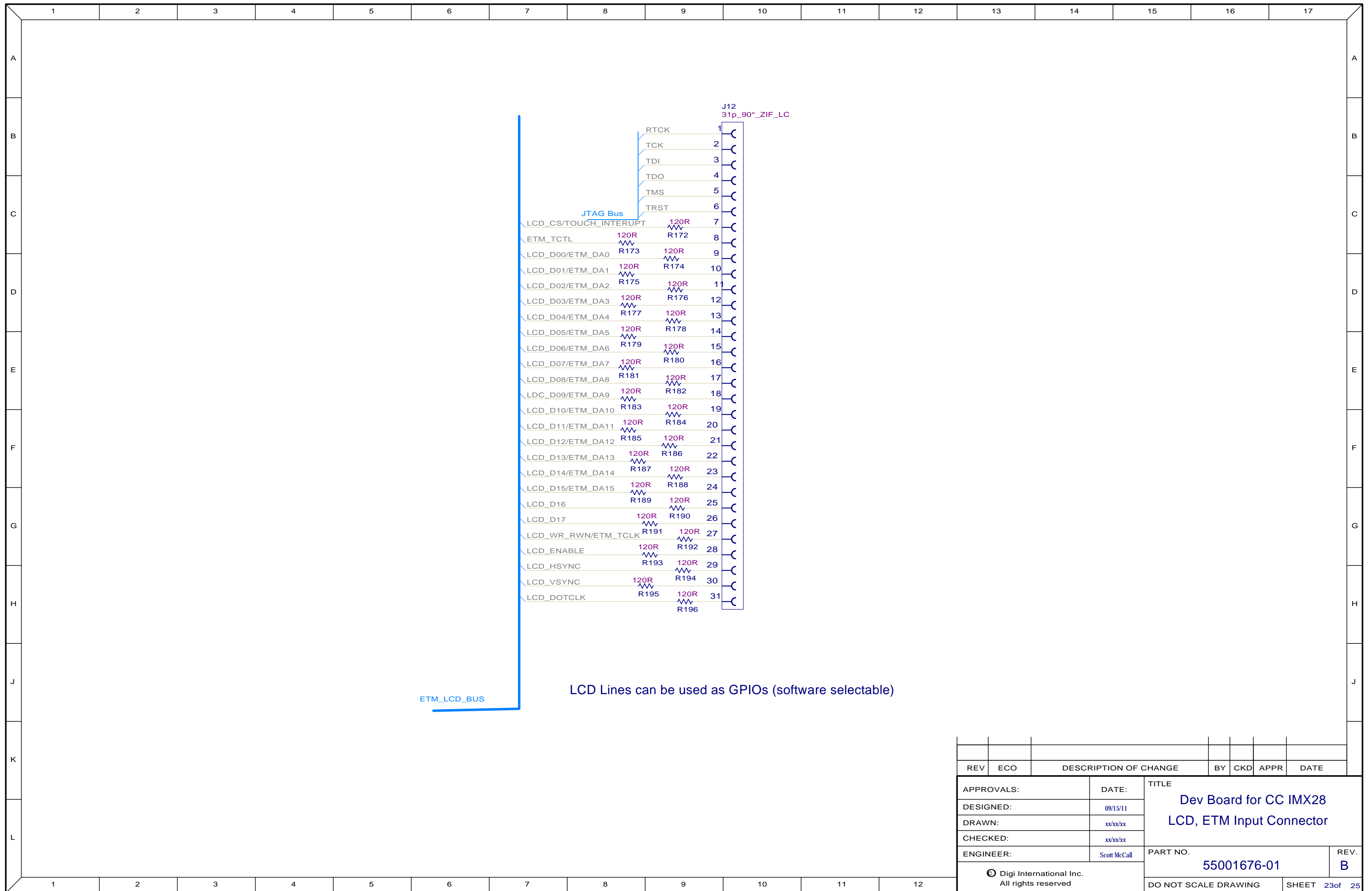
XBEE Reset



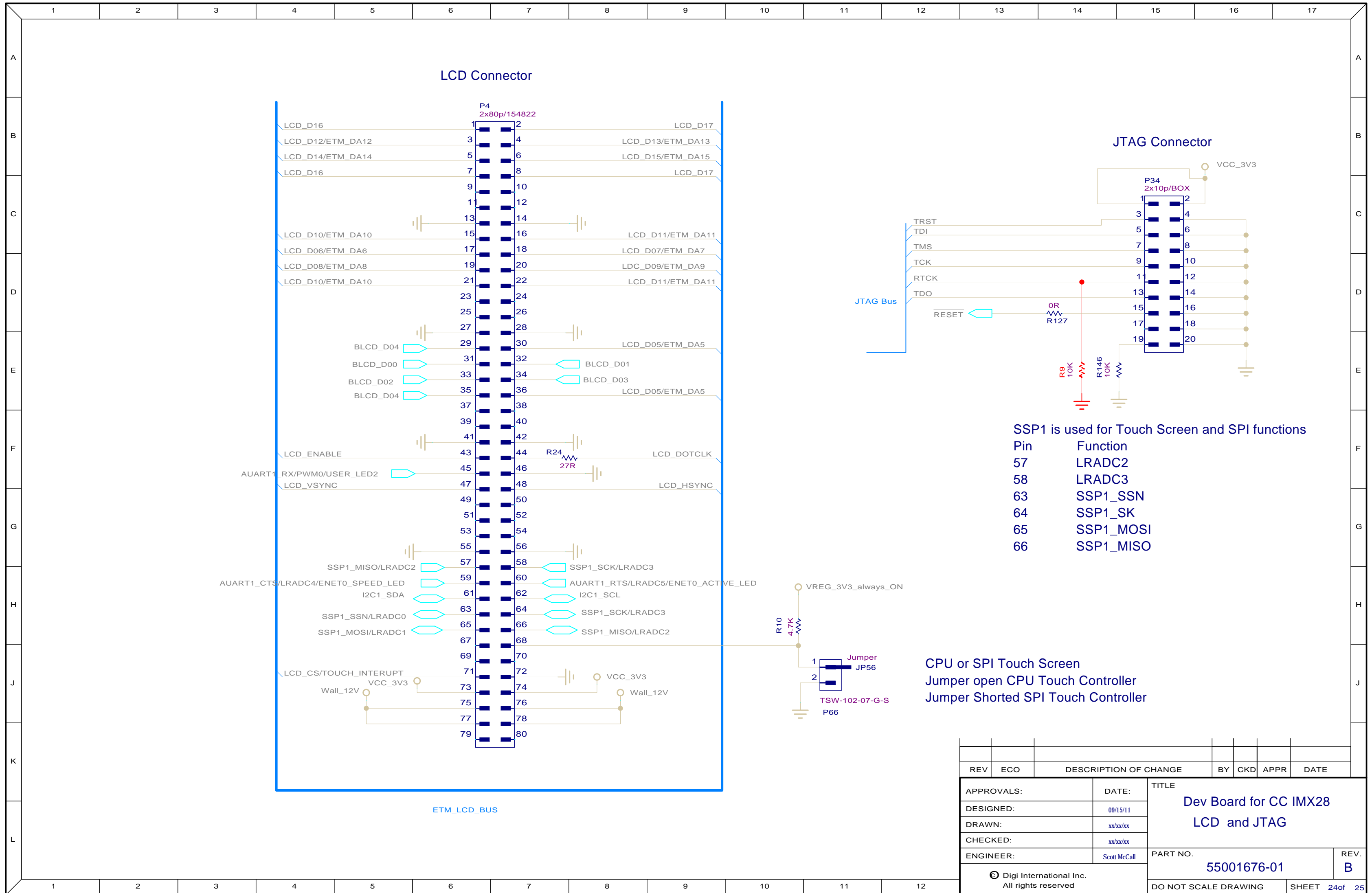
XBEE COMM



REV	ECO	DESCRIPTION OF CHANGE	BY	CKD	APPR	DATE	
APPROVALS:		DATE:	TITLE				
DESIGNED:		09/15/11	Dev Board for CC IMX28				
DRAWN:		xx/xx/xx	XBee				
CHECKED:		xx/xx/xx	PART NO.				
ENGINEER:		Scott McCall	55001676-01		REV.		
					B		
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REV	ECO	DESCRIPTION OF CHANGE	BY	CKD	APPR	DATE
APPROVALS:		DATE:	TITLE			
DESIGNED:		09/15/11	Dev Board for CC IMX28			
DRAWN:		xx/xx/xx	LCD, ETM Input Connector			
CHECKED:		xx/xx/xx				
ENGINEER:		Scott McCall	PART NO.		REV.	
			55001676-01		B	
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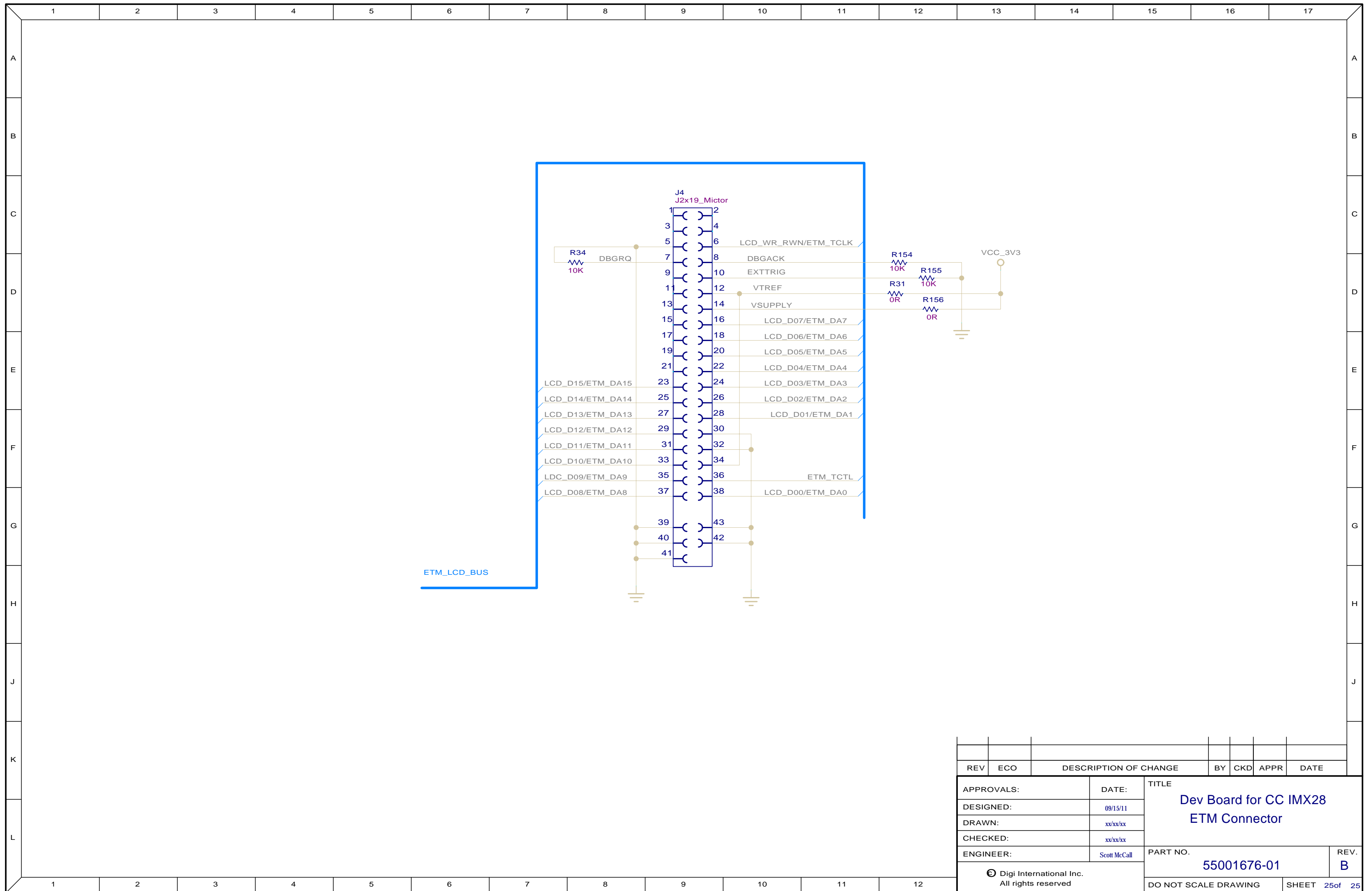
SSP1 is used for Touch Screen and SPI functions

Pin	Function
57	LRADC2
58	LRADC3
63	SSP1_SSN
64	SSP1_SK
65	SSP1_MOSI
66	SSP1_MISO

CPU or SPI Touch Screen
 Jumper open CPU Touch Controller
 Jumper Shorted SPI Touch Controller

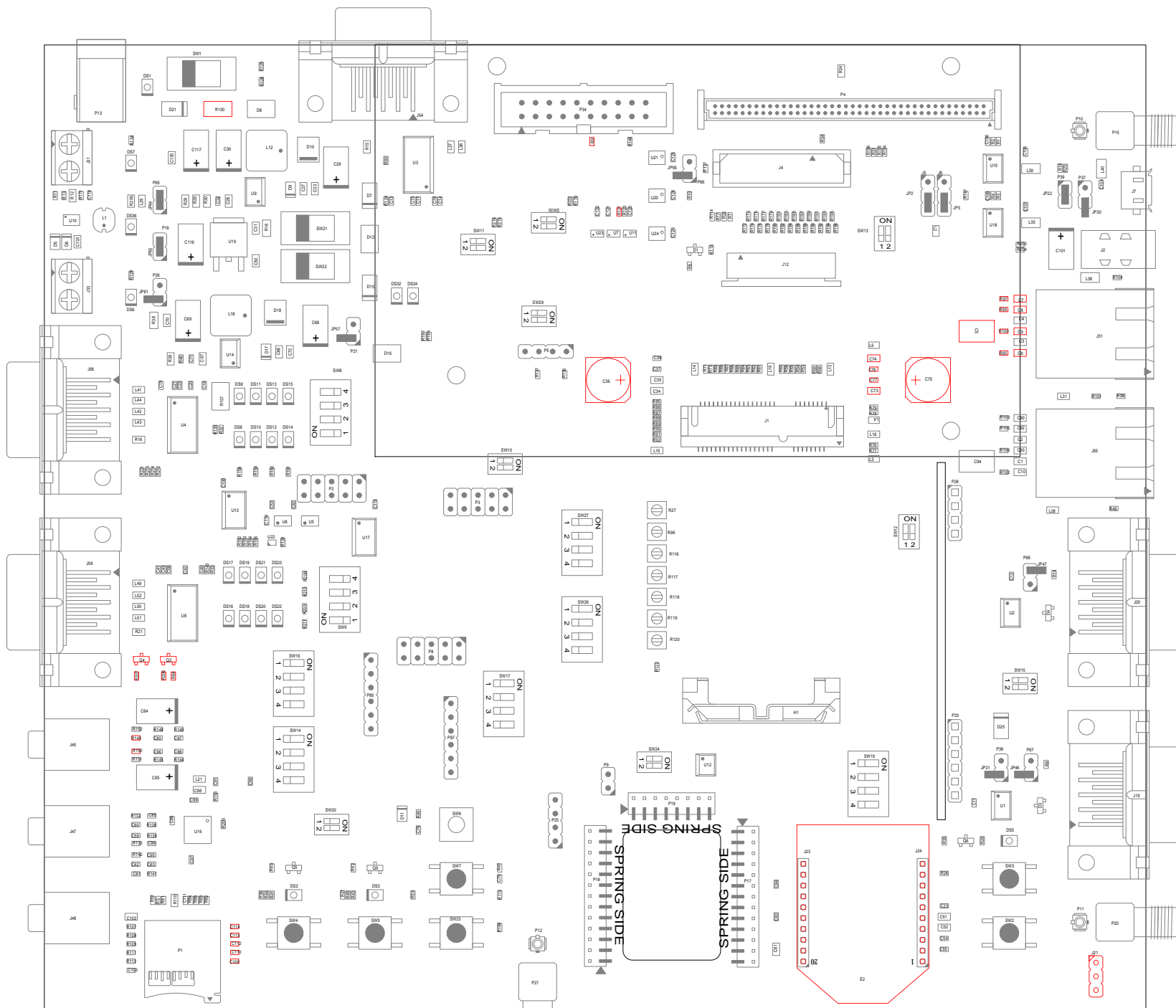
REV	ECO	DESCRIPTION OF CHANGE	BY	CKD	APPR	DATE

APPROVALS:	DATE:	TITLE
DESIGNED:	09/15/11	Dev Board for CC IMX28
DRAWN:	xx/xx/xx	LCD and JTAG
CHECKED:	xx/xx/xx	
ENGINEER:	Scott McCall	
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DO NOT SCALE DRAWING		REV. B

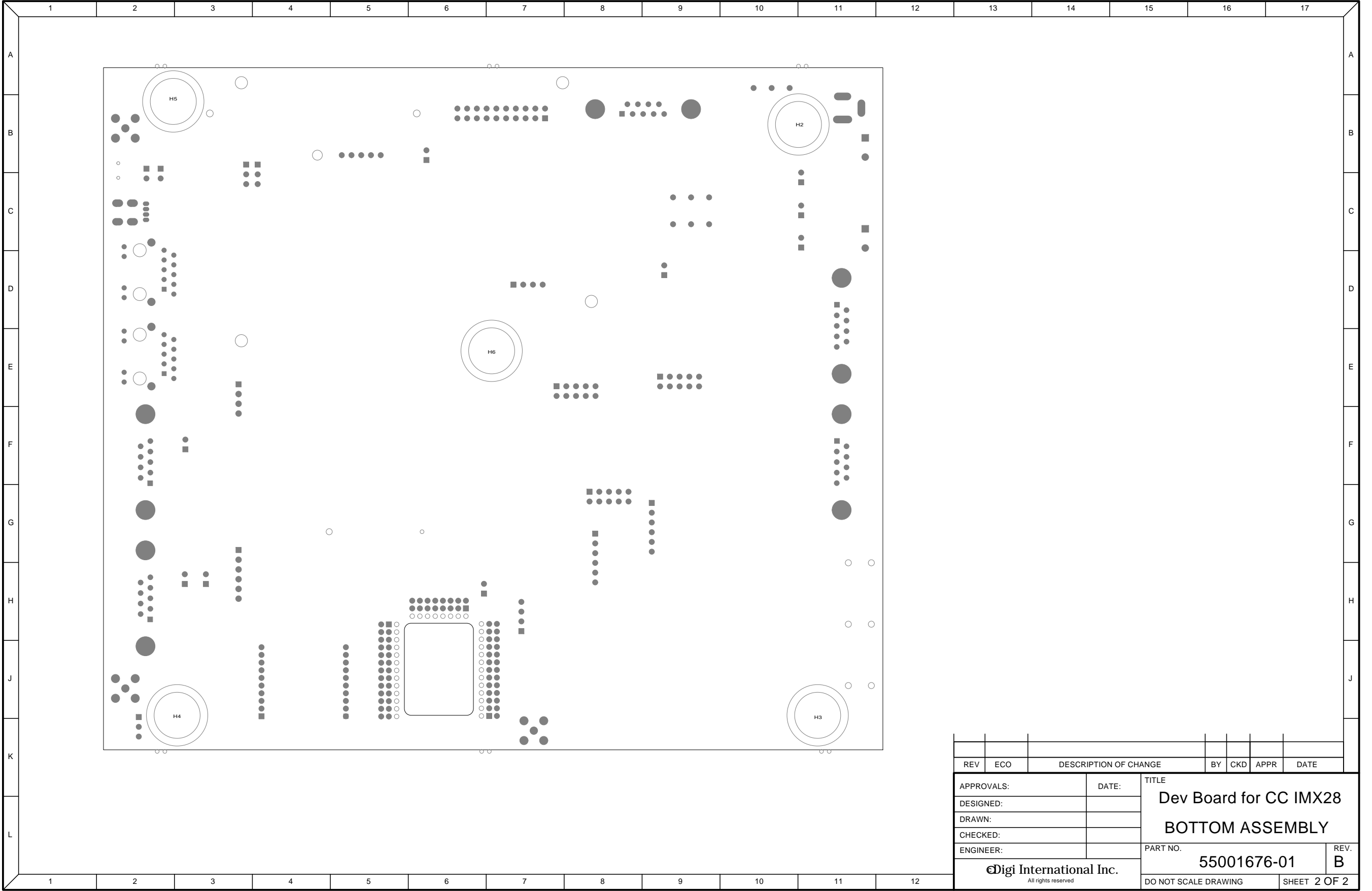


REV	ECO	DESCRIPTION OF CHANGE	BY	CKD	APPR	DATE

APPROVALS:	DATE:	Dev Board for CC IMX28 ETM Connector
DESIGNED:	09/15/11	
DRAWN:	xx/xx/xx	
CHECKED:	xx/xx/xx	
ENGINEER:	Scott McCall	
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DO NOT SCALE DRAWING		REV. B
SHEET 25 of 25		



REV	ECO	DESCRIPTION OF CHANGE	BY	CKD	APPR	DATE
APPROVALS:		DATE:	TITLE			
DESIGNED:			Dev Board for CC IMX28			
DRAWN:			TOP ASSEMBLY			
CHECKED:			PART NO.		REV.	
ENGINEER:			55001676-01		B	
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REV	ECO	DESCRIPTION OF CHANGE	BY	CKD	APPR	DATE
APPROVALS:		DATE:	TITLE			
DESIGNED:			Dev Board for CC IMX28			
DRAWN:			BOTTOM ASSEMBLY			
CHECKED:			PART NO.		REV.	
ENGINEER:			55001676-01		B	
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