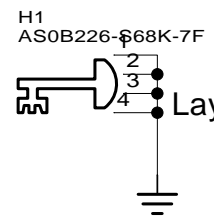
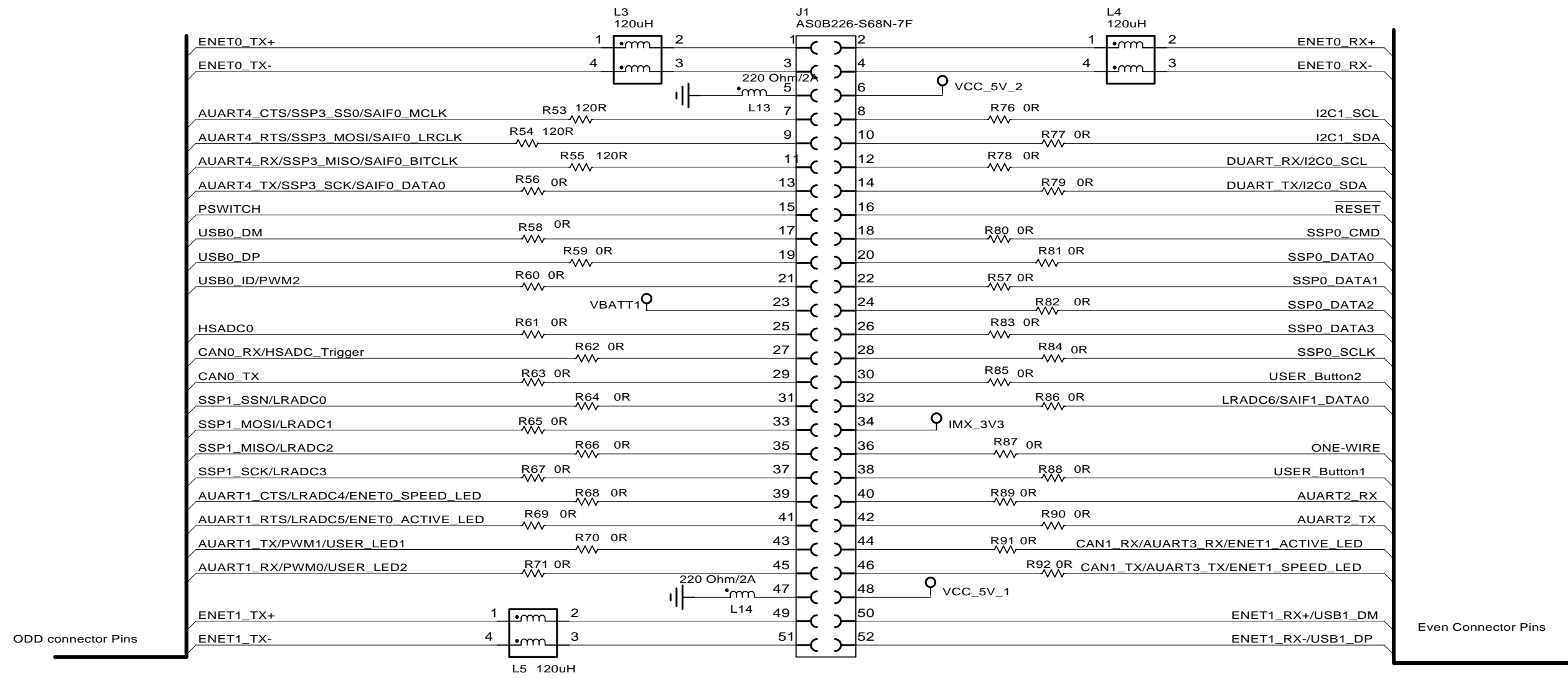


REV	ECO	DESCRIPTION OF CHANGE	BY	CKD	APPR	DATE
APPROVALS:		DATE:	TITLE			
DESIGNED:		09/15/11	Master/Maximum Population Option			
DRAWN:		xx/xx/xx	Block Diagram			
CHECKED:		xx/xx/xx				
ENGINEER:		Scott McCall	PART NO.		REV.	
			30013791-04		A	
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						SHEET 1 of 24



Layout for PCIe mini card

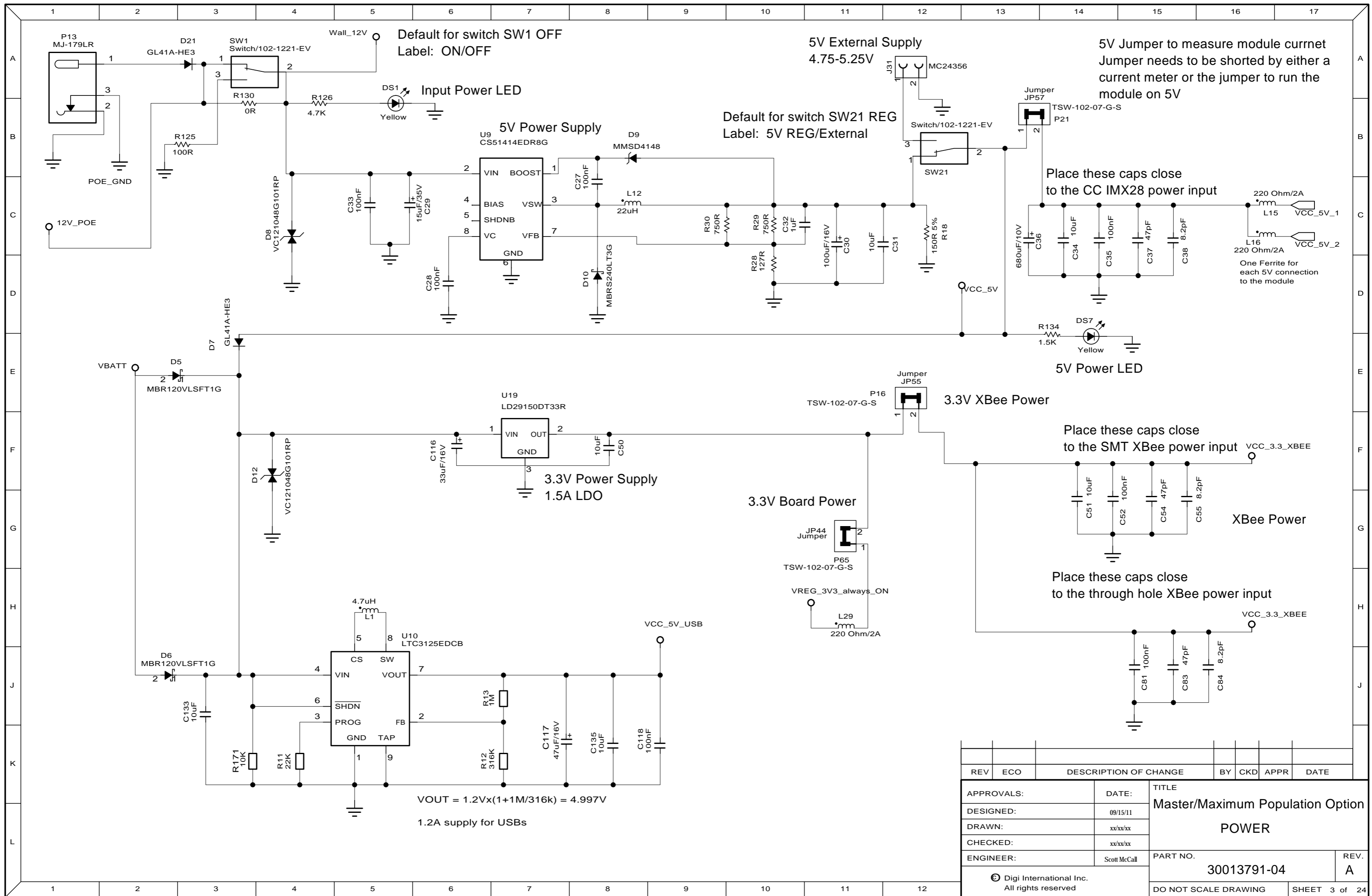
CC IMX28 Edge Connector



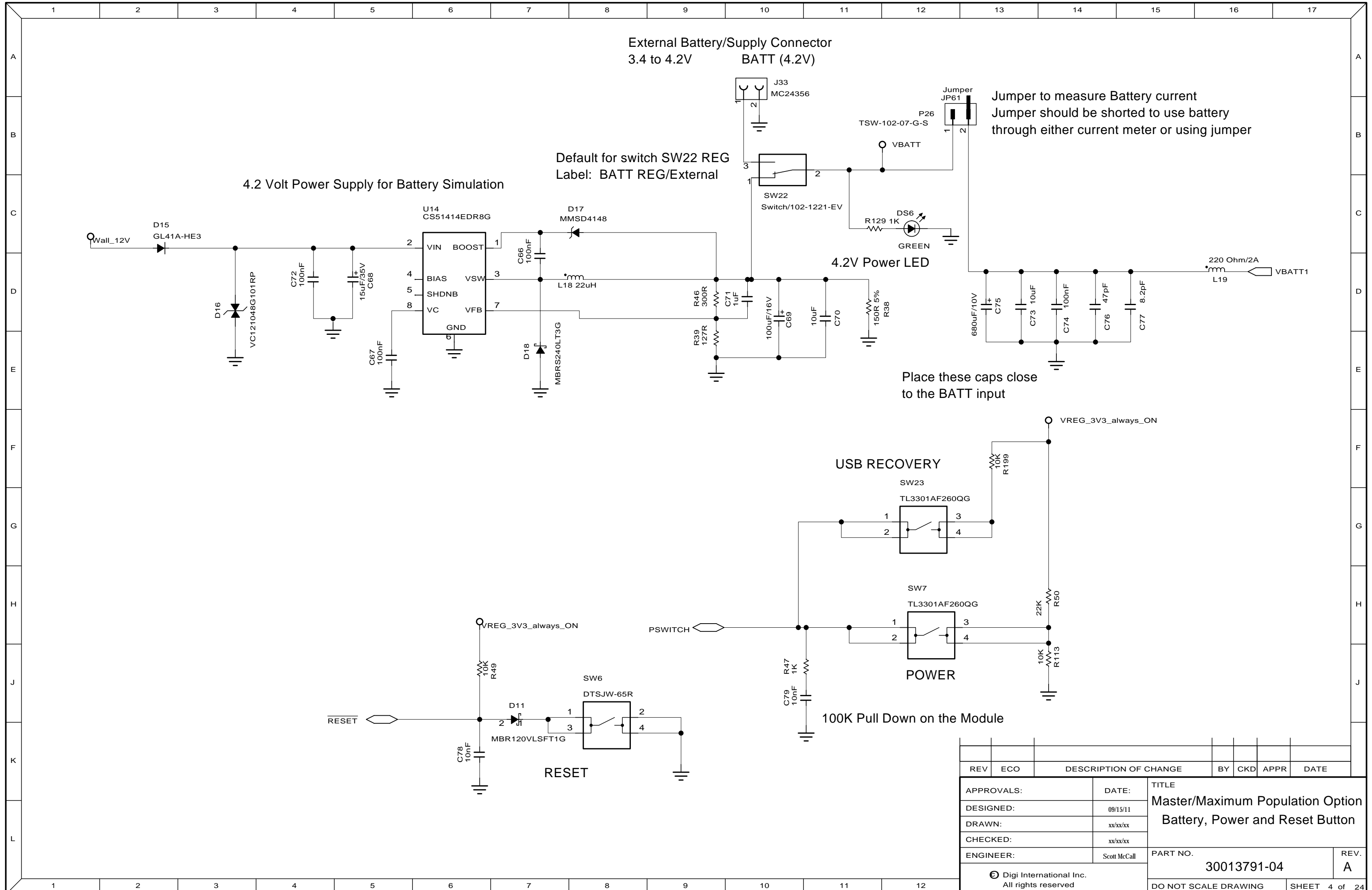
The zero ohm resistors are to allow disconnection of various portions of the DEV board from the module.
 This will allow development to go forward while the DEV board is being updated (should updates be required).

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.

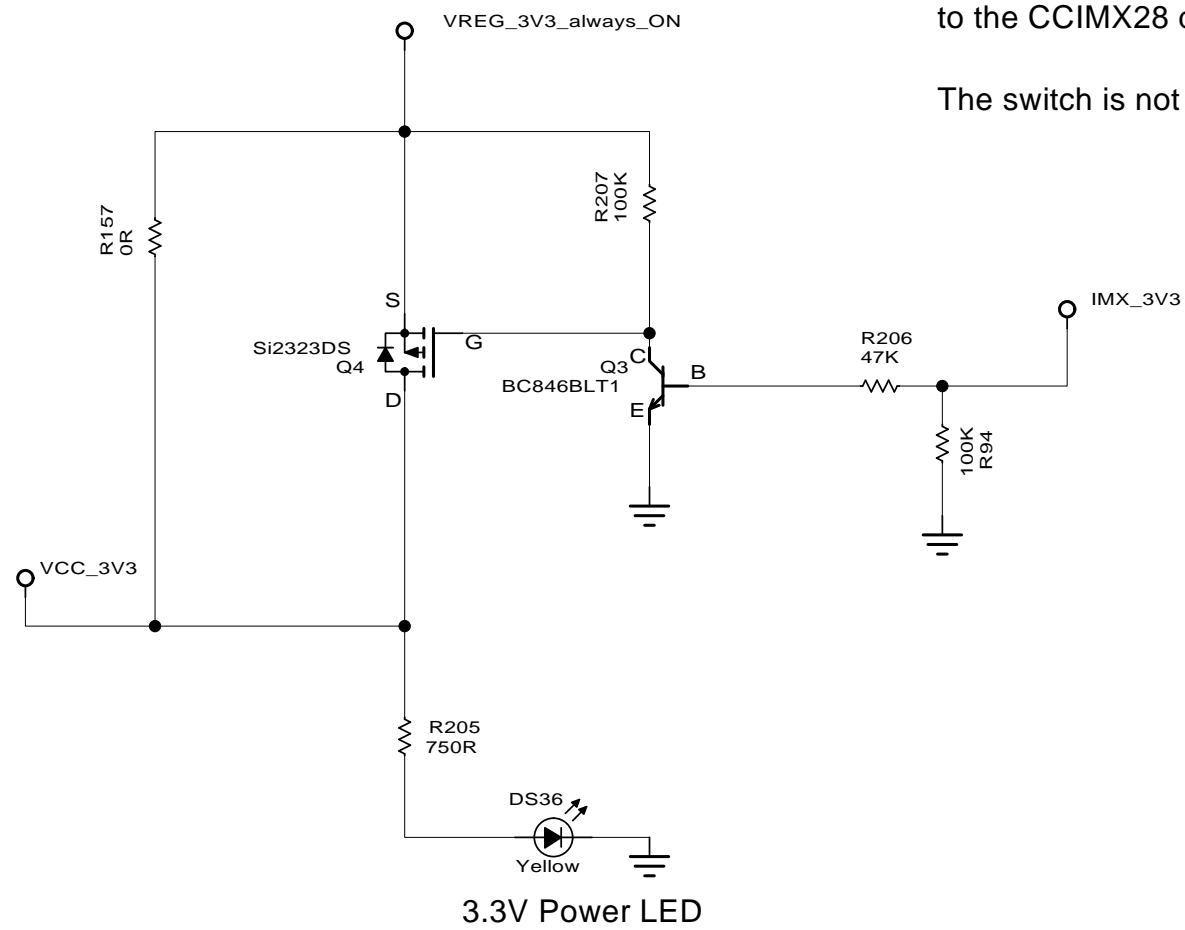
REV	ECO	DESCRIPTION OF CHANGE	BY	CKD	APPR	DATE	
APPROVALS:		DATE:	TITLE				
DESIGNED:		09/15/11	Master/Maximum Population Option				
DRAWN:		xx/xx/xx	Edge Connector				
CHECKED:		xx/xx/xx					
ENGINEER:		Scott McCall	PART NO.		REV.		
			30013791-04		A		
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REV	ECO	DESCRIPTION OF CHANGE	BY	CKD	APPR	DATE
APPROVALS:		DATE:	TITLE			
DESIGNED:		09/15/11	Master/Maximum Population Option			
DRAWN:		xx/xx/xx	POWER			
CHECKED:		xx/xx/xx	PART NO.			
ENGINEER:		Scott McCall	30013791-04		REV. A	
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						SHEET 3 of 24



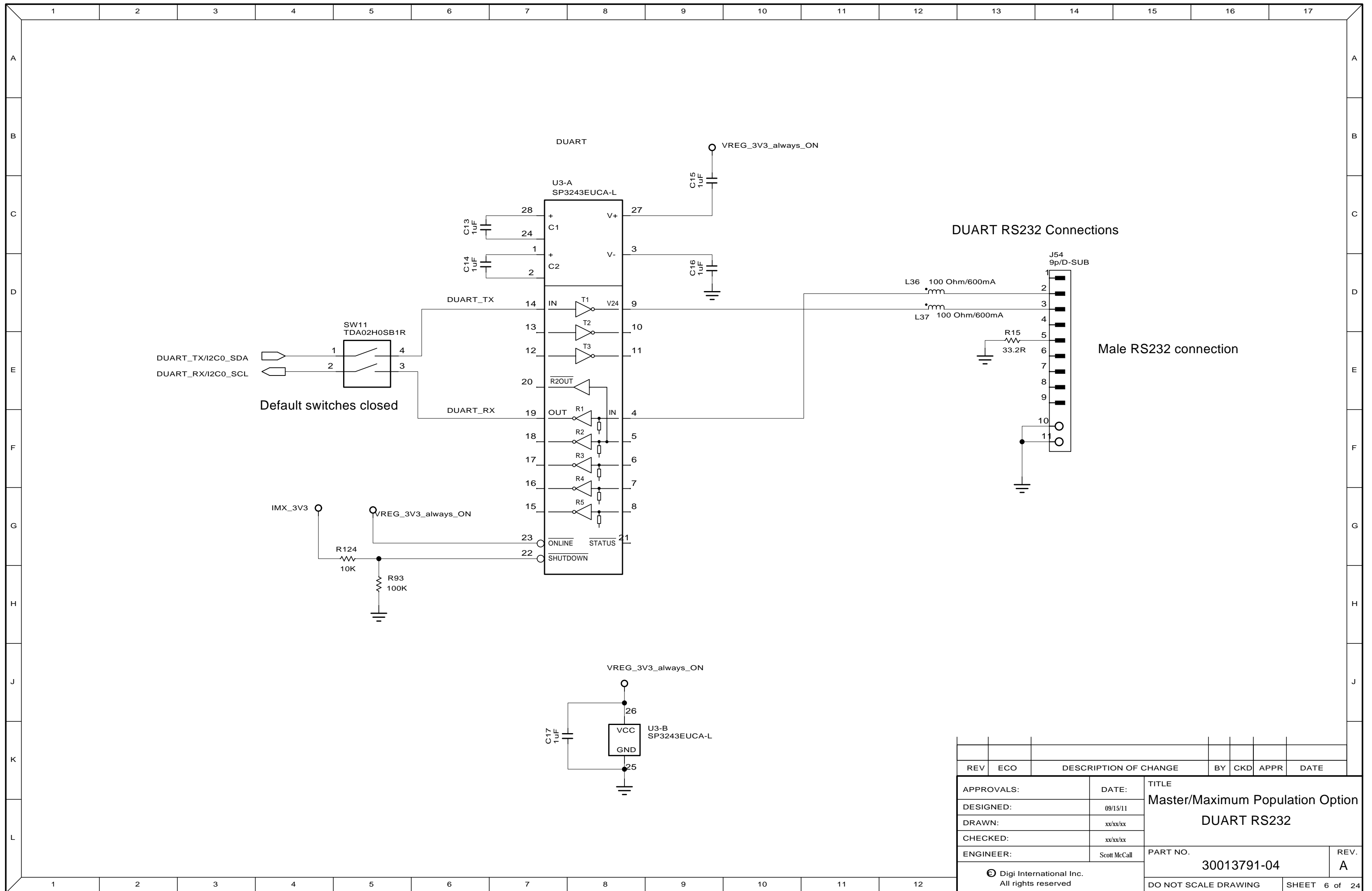
REV	ECO	DESCRIPTION OF CHANGE	BY	CKD	APPR	DATE
APPROVALS:		DATE:	TITLE			
DESIGNED:		09/15/11	Master/Maximum Population Option			
DRAWN:		xx/xx/xx	Battery, Power and Reset Button			
CHECKED:		xx/xx/xx	PART NO.			
ENGINEER:		Scott McCall	30013791-04		REV. A	
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This switch is included to remove all 3.3V inputs to the CCIMX28 during reset should the need arise.

The switch is not populated on the development board

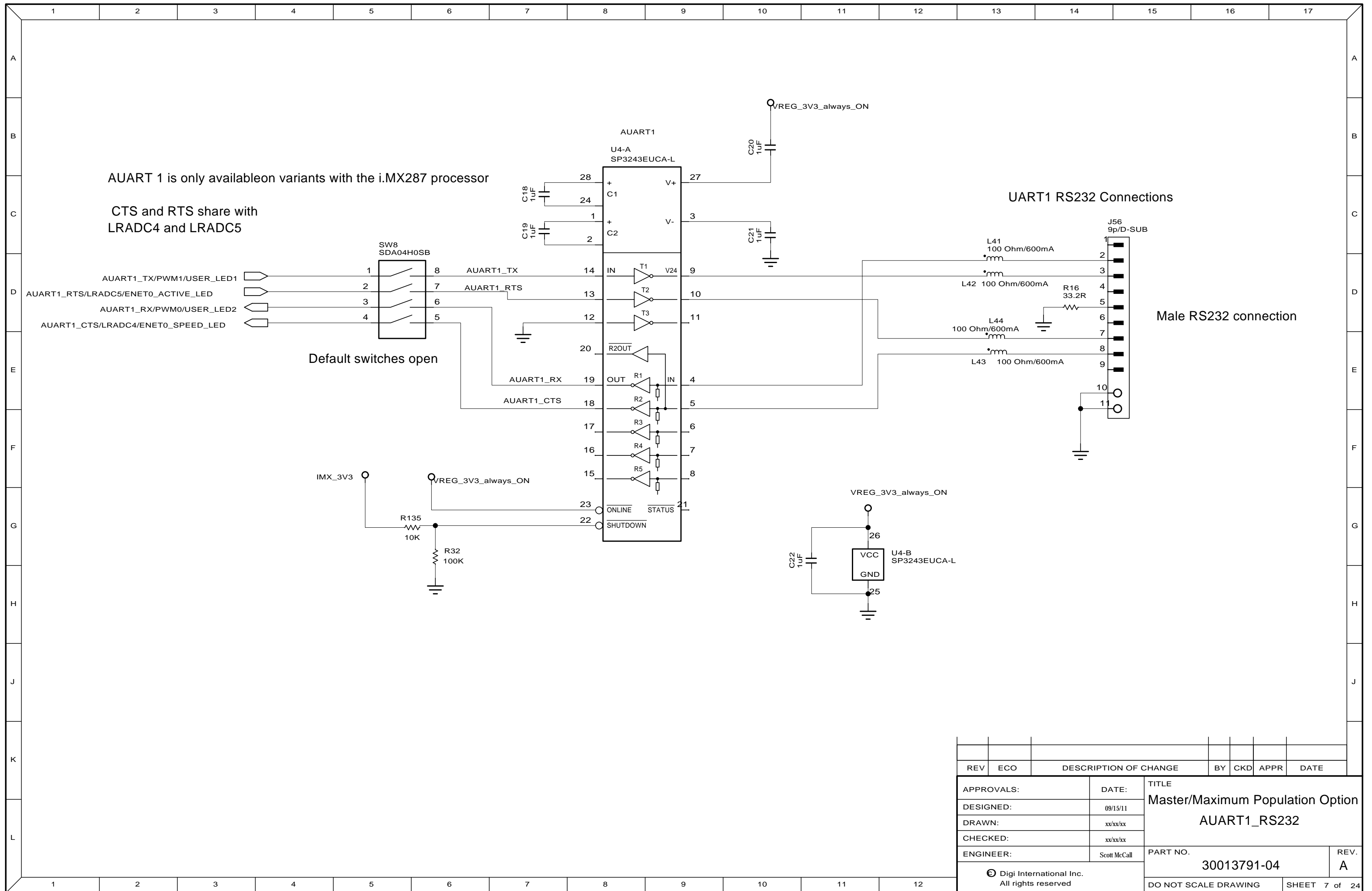
REV	ECO	DESCRIPTION OF CHANGE	BY	CKD	APPR	DATE	
APPROVALS:		DATE:	TITLE				
DESIGNED:		09/15/11	Master/Maximum Population Option				
DRAWN:		xx/xx/xx	3.3V LDO Switch				
CHECKED:		xx/xx/xx	PART NO.				
ENGINEER:		Scott McCall	30013791-04		REV. A		
© Digi International Inc. All rights reserved						DO NOT SCALE DRAWING	SHEET 5 of 24



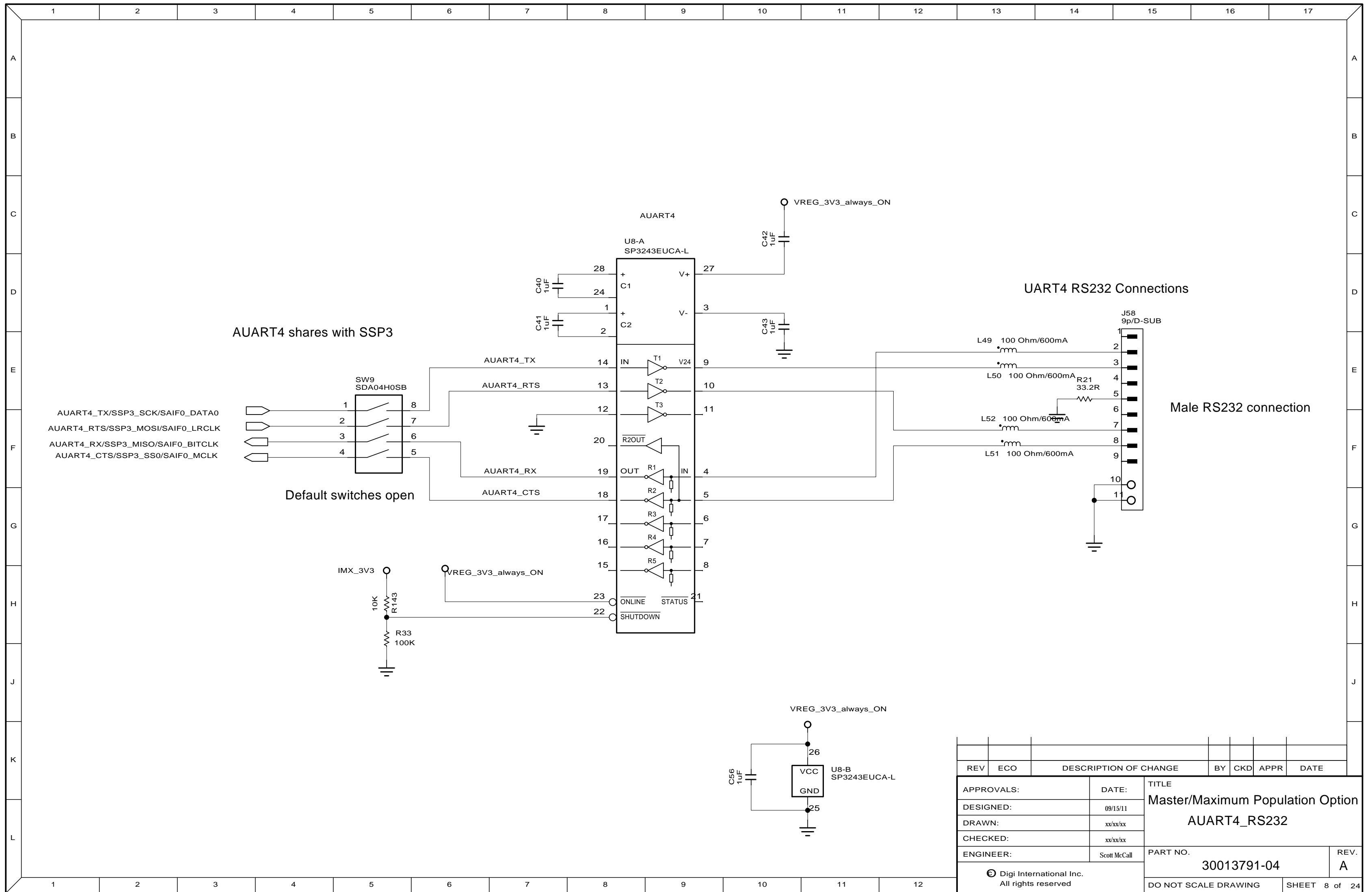
DUART RS232 Connections

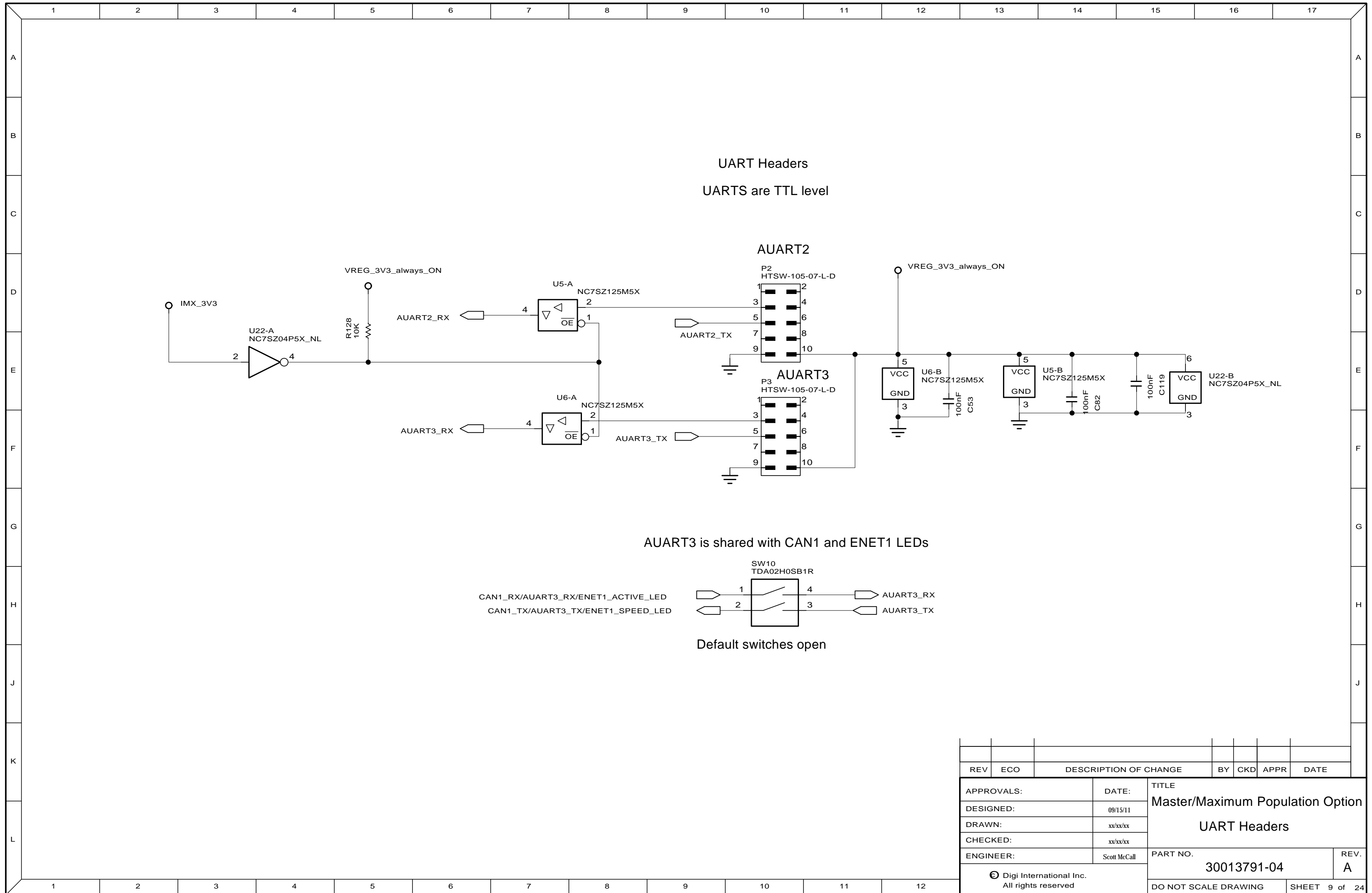
Male RS232 connection

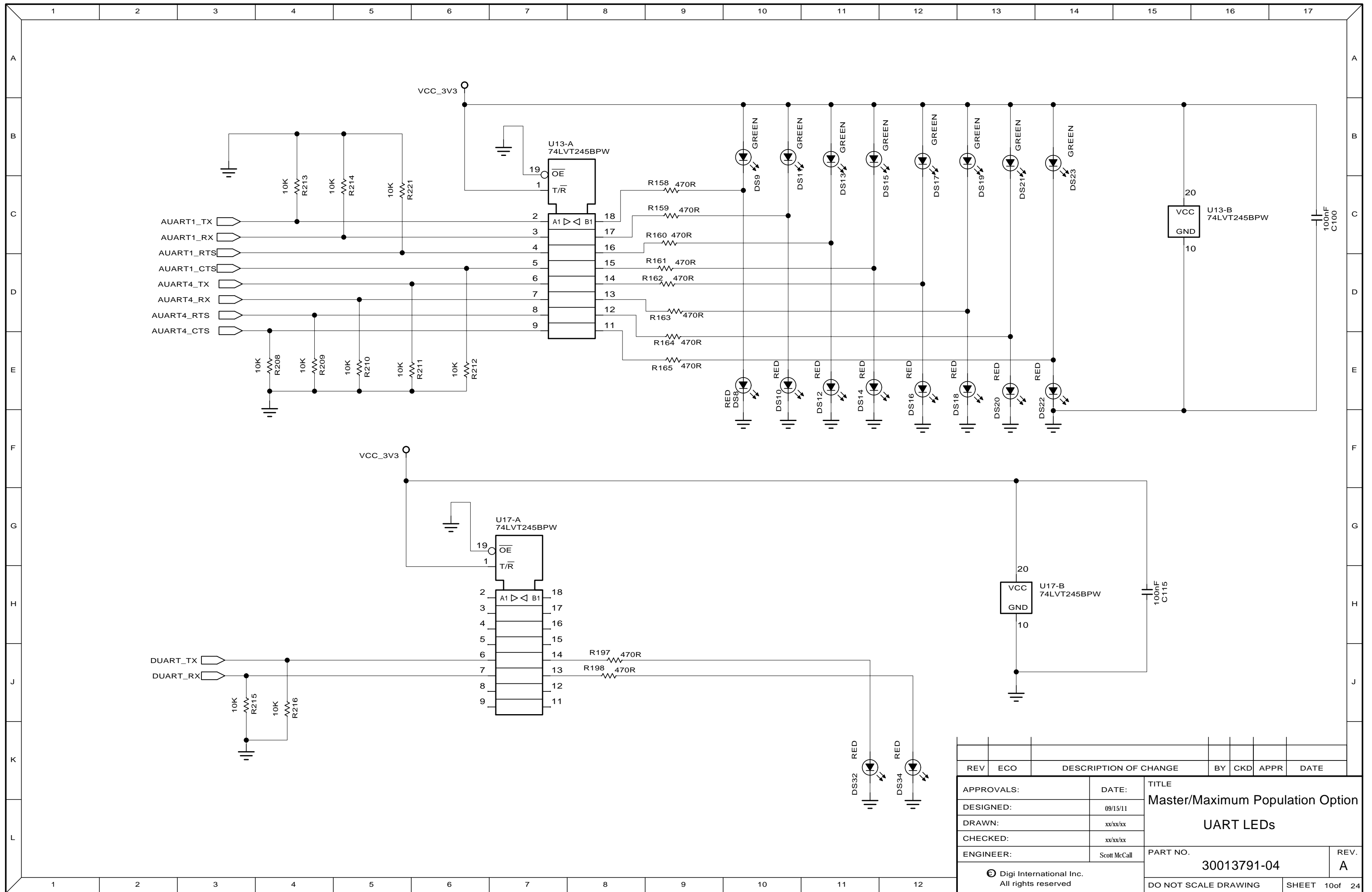
REV	ECO	DESCRIPTION OF CHANGE	BY	CKD	APPR	DATE
APPROVALS:		DATE:	TITLE			
DESIGNED:		09/15/11	Master/Maximum Population Option			
DRAWN:		xx/xx/xx	DUART RS232			
CHECKED:		xx/xx/xx				
ENGINEER:		Scott McCall	PART NO.		REV.	
			30013791-04		A	
Digi International Inc. All rights reserved					DO NOT SCALE DRAWING	
						SHEET 6 of 24



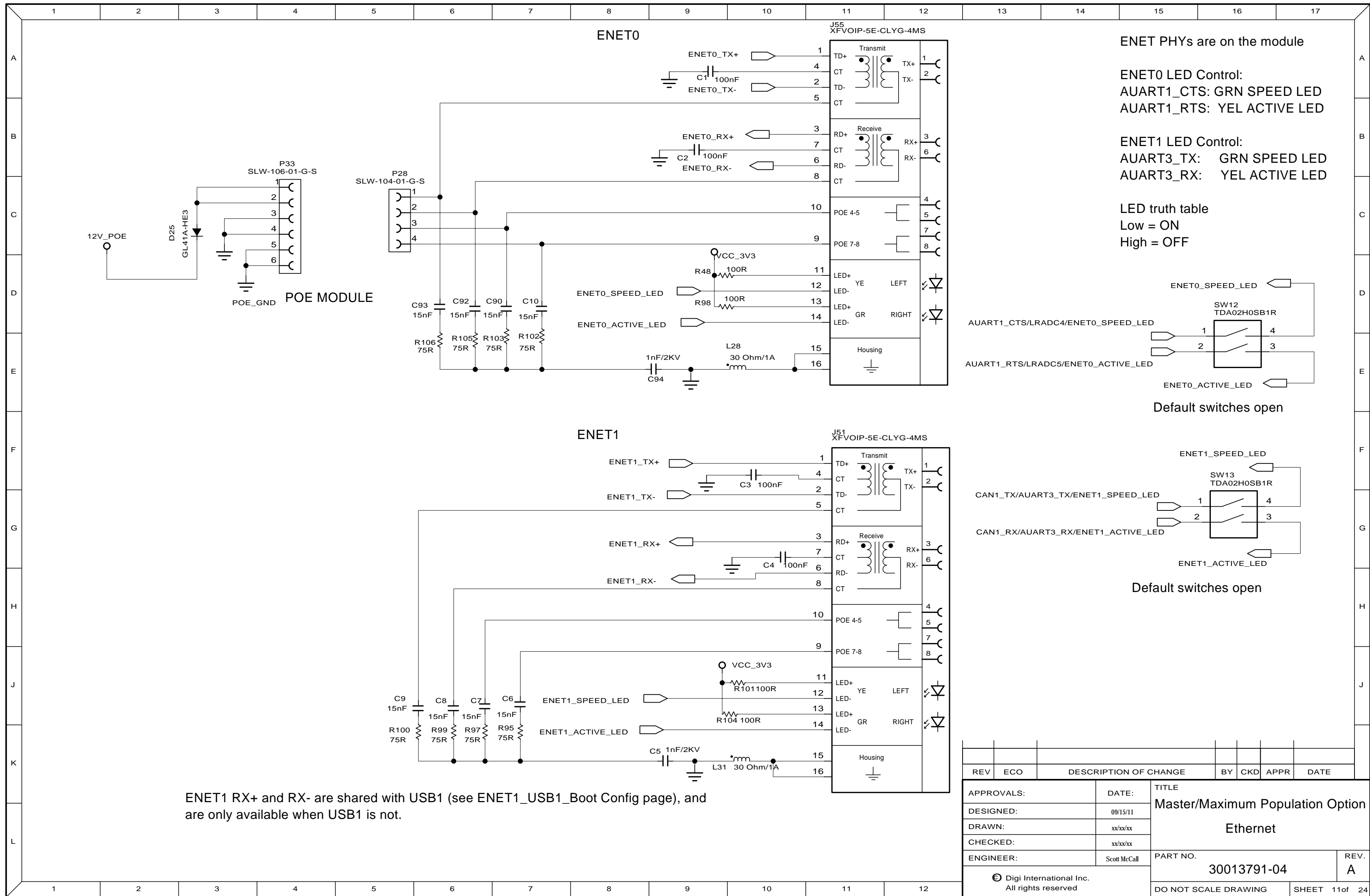
REV	ECO	DESCRIPTION OF CHANGE	BY	CKD	APPR	DATE
APPROVALS:		DATE:	TITLE			
DESIGNED:		09/15/11	Master/Maximum Population Option			
DRAWN:		xx/xx/xx	AUART1_RS232			
CHECKED:		xx/xx/xx				
ENGINEER:		Scott McCall	PART NO.		REV.	
			30013791-04		A	
© Digi International Inc. All rights reserved					DO NOT SCALE DRAWING	
						SHEET 7 of 24







REV	ECO	DESCRIPTION OF CHANGE	BY	CKD	APPR	DATE
APPROVALS:		DATE:	TITLE			
DESIGNED:		09/15/11	Master/Maximum Population Option			
DRAWN:		xx/xx/xx	UART LEDs			
CHECKED:		xx/xx/xx	PART NO.			
ENGINEER:		Scott McCall	30013791-04		REV. A	
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						SHEET 10 of 24

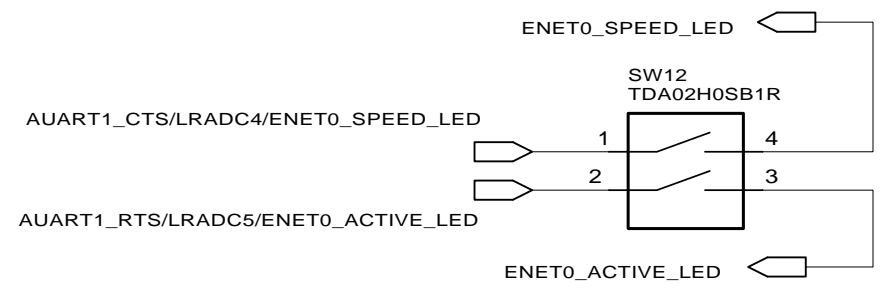


ENET PHYs are on the module

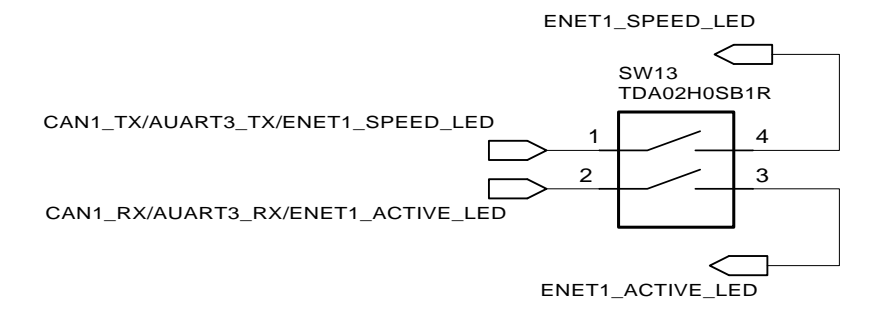
ENET0 LED Control:
 AUART1_CTS: GRN SPEED LED
 AUART1_RTS: YEL ACTIVE LED

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

LED truth table
 Low = ON
 High = OFF



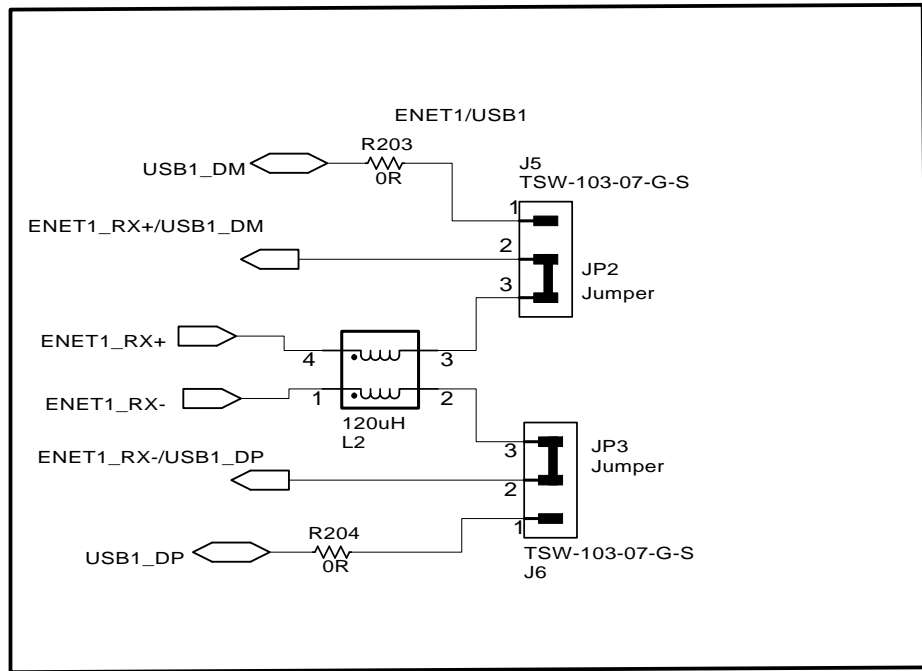
Default switches open



Default switches open

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

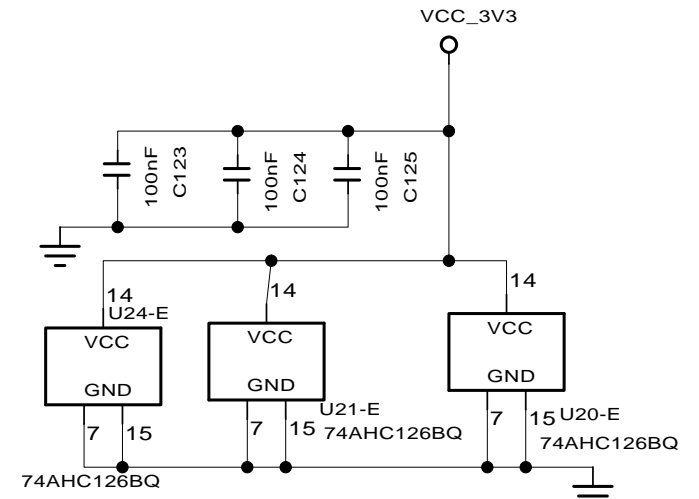
REV	ECO	DESCRIPTION OF CHANGE	BY	CKD	APPR	DATE
APPROVALS:	DATE:	TITLE				
DESIGNED:	09/15/11	Master/Maximum Population Option				
DRAWN:	xx/xx/xx	Ethernet				
CHECKED:	xx/xx/xx	PART NO.				
ENGINEER:	Scott McCall	30013791-04			REV. A	
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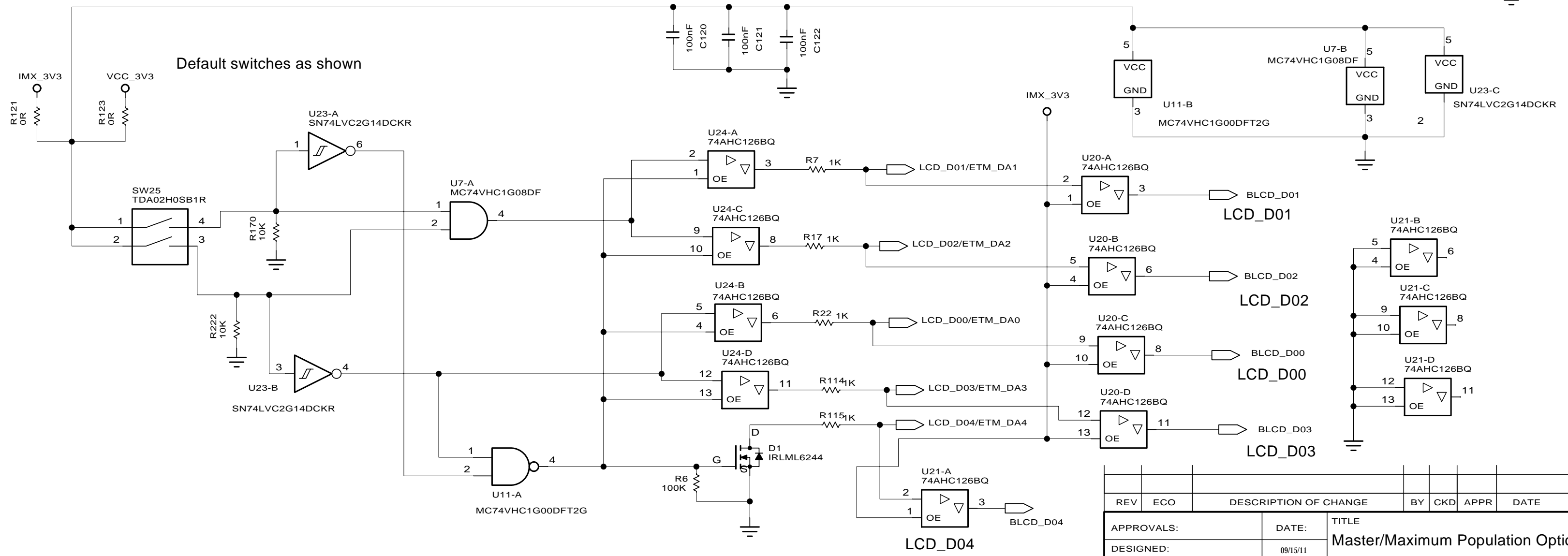
IMX28 Boot Mode Config:

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)



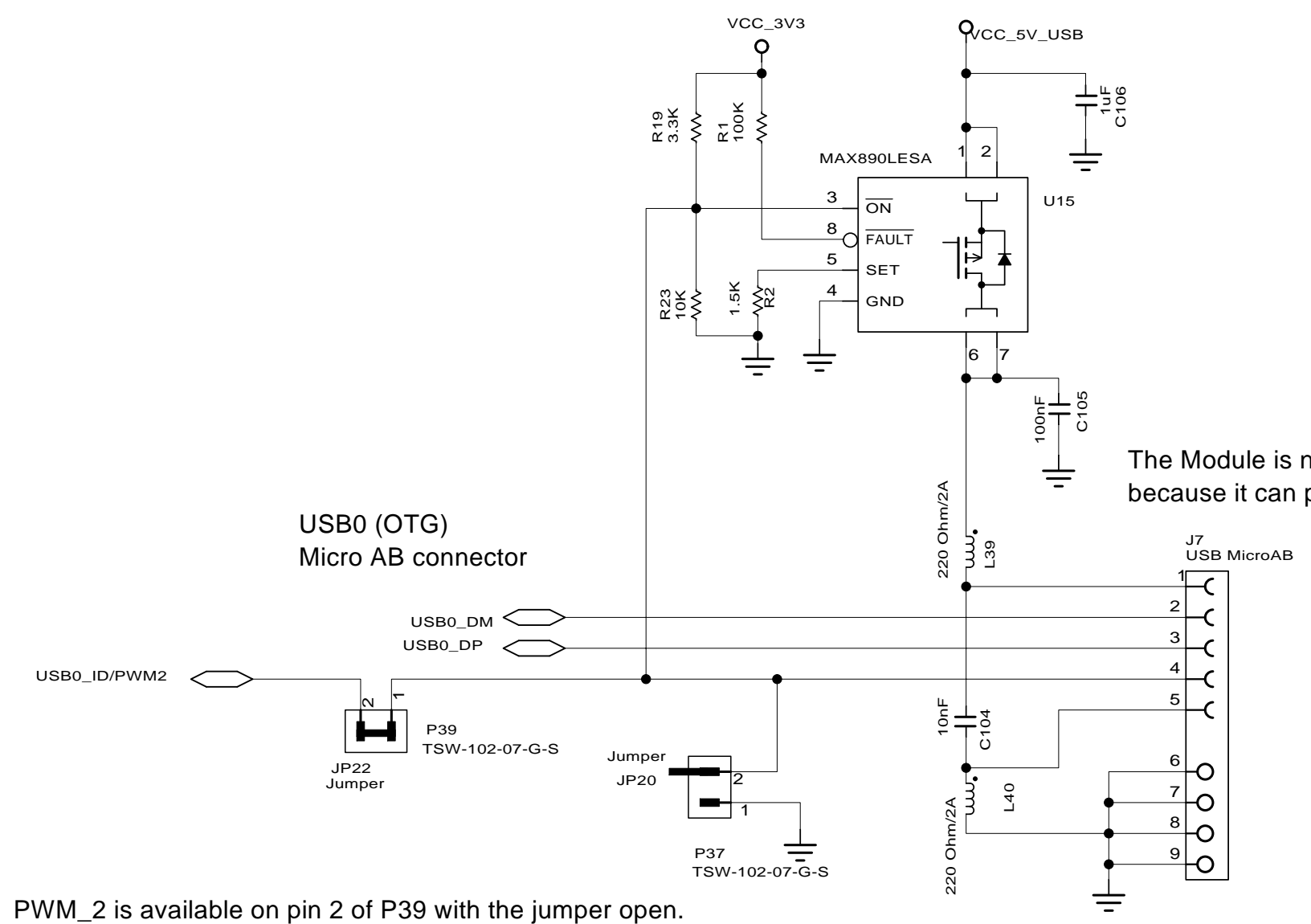
Place 1 Cap by each chip (U7, U11, U20, U21, U23, and U24)



Default switches as shown

REV	ECO	DESCRIPTION OF CHANGE	BY	CKD	APPR	DATE

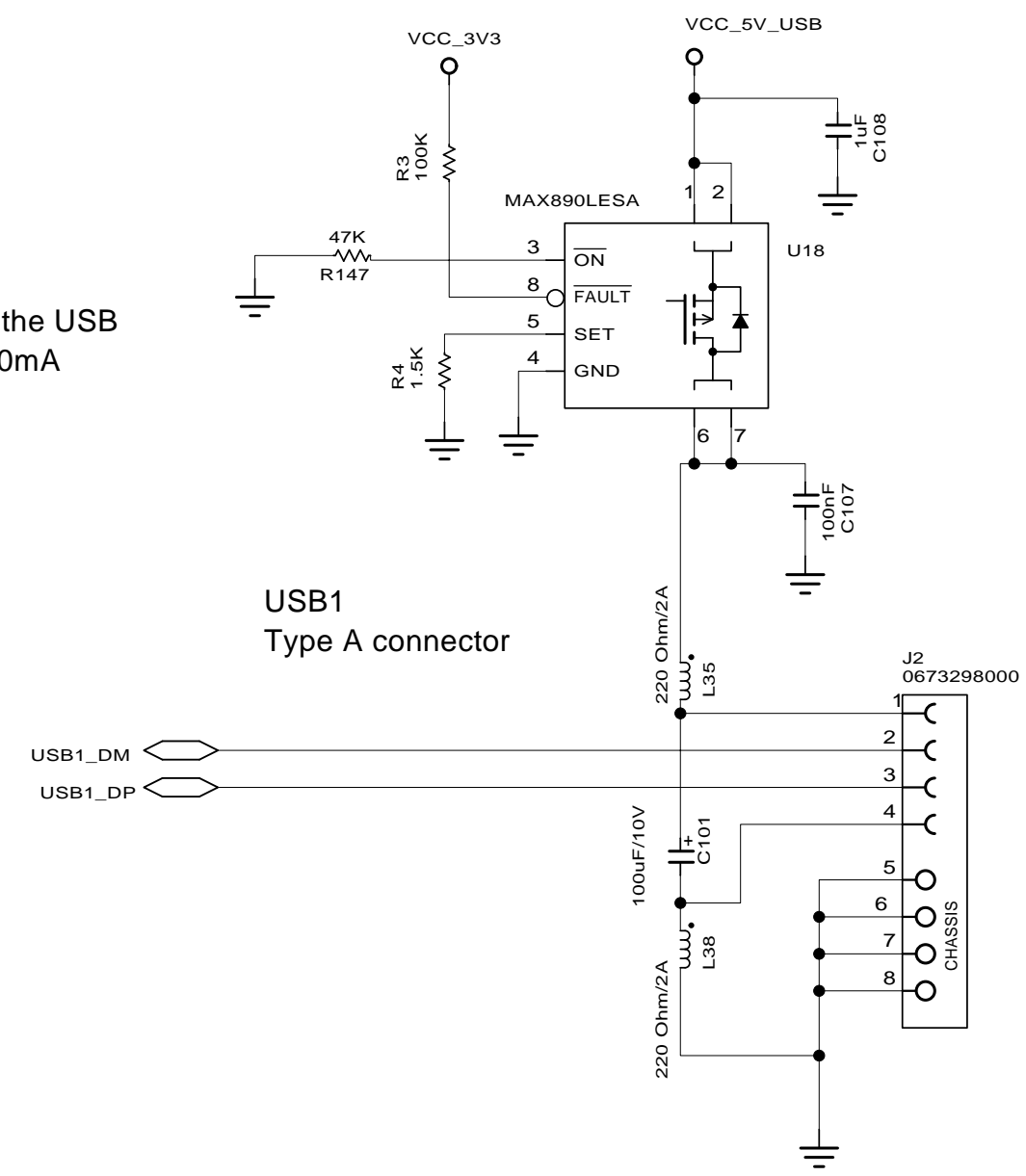
APPROVALS:	DATE:	TITLE
DESIGNED:	09/15/11	Master/Maximum Population Option
DRAWN:	xx/xx/xx	ENET1_USB1 Jumpers_Boot Config
CHECKED:	xx/xx/xx	
ENGINEER:	Scott McCall	
© Digi International Inc. All rights reserved.		PART NO. 30013791-04
DO NOT SCALE DRAWING		REV. A



USB0 (OTG)
Micro AB connector

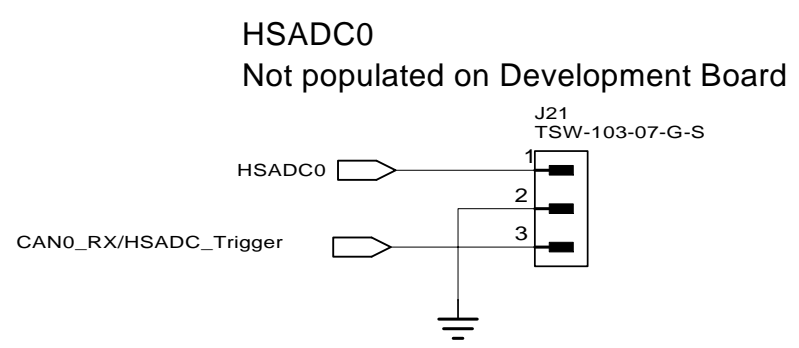
PWM_2 is available on pin 2 of P39 with the jumper open.

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



USB1
Type A connector

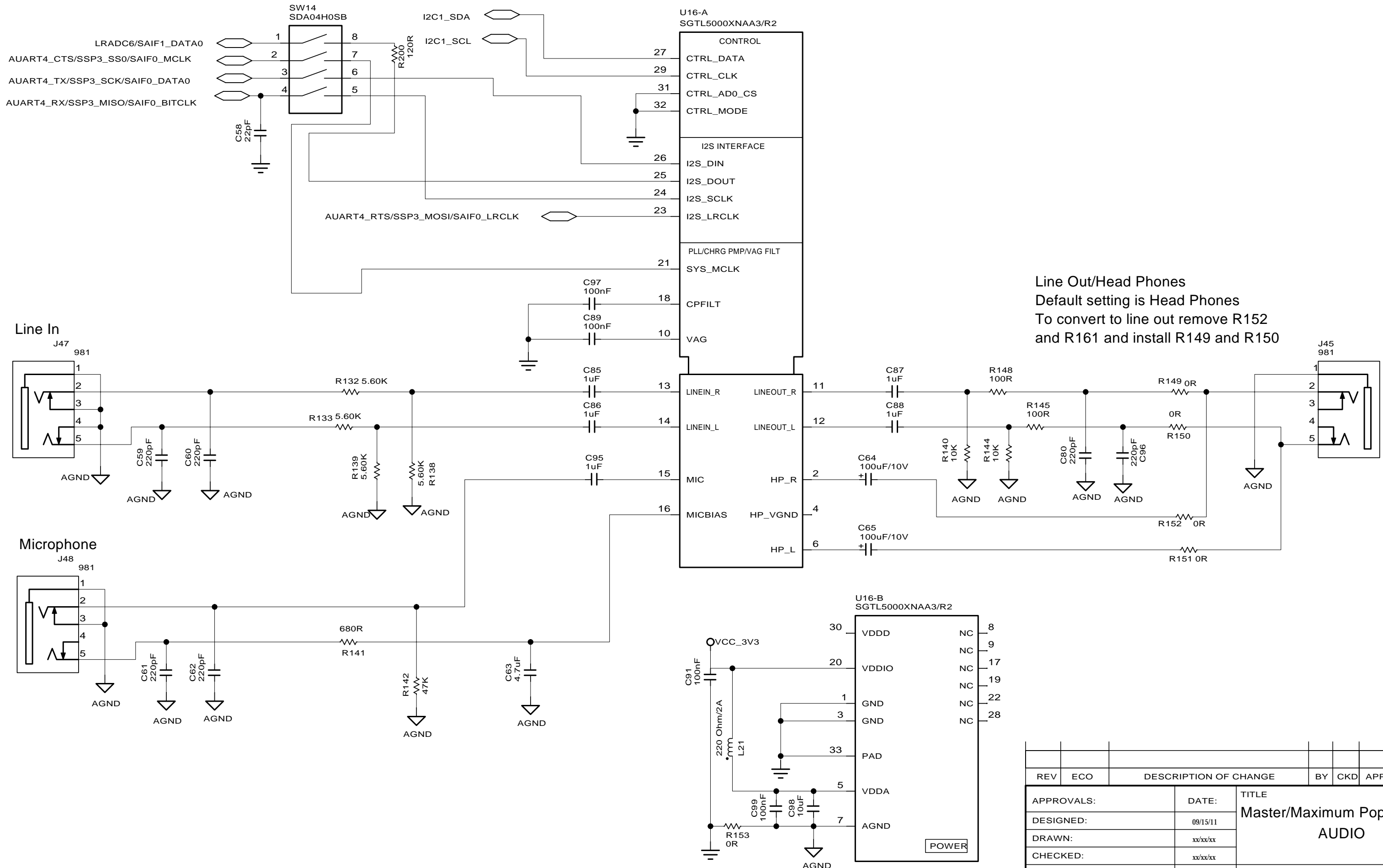
USB1 is shared with ENET1 RX+ and RX- (see ENET1_USB1_Boot Config page), and is only available when ENET1 is not.



HSADC0
Not populated on Development Board

REV	ECO	DESCRIPTION OF CHANGE	BY	CKD	APPR	DATE	
APPROVALS:		DATE:	TITLE				
DESIGNED:		09/15/11	Master/Maximum Population Option				
DRAWN:		xx/xx/xx	USB_HSADC				
CHECKED:		xx/xx/xx					
ENGINEER:		Scott McCall	PART NO.		REV.		
			30013791-04		A		
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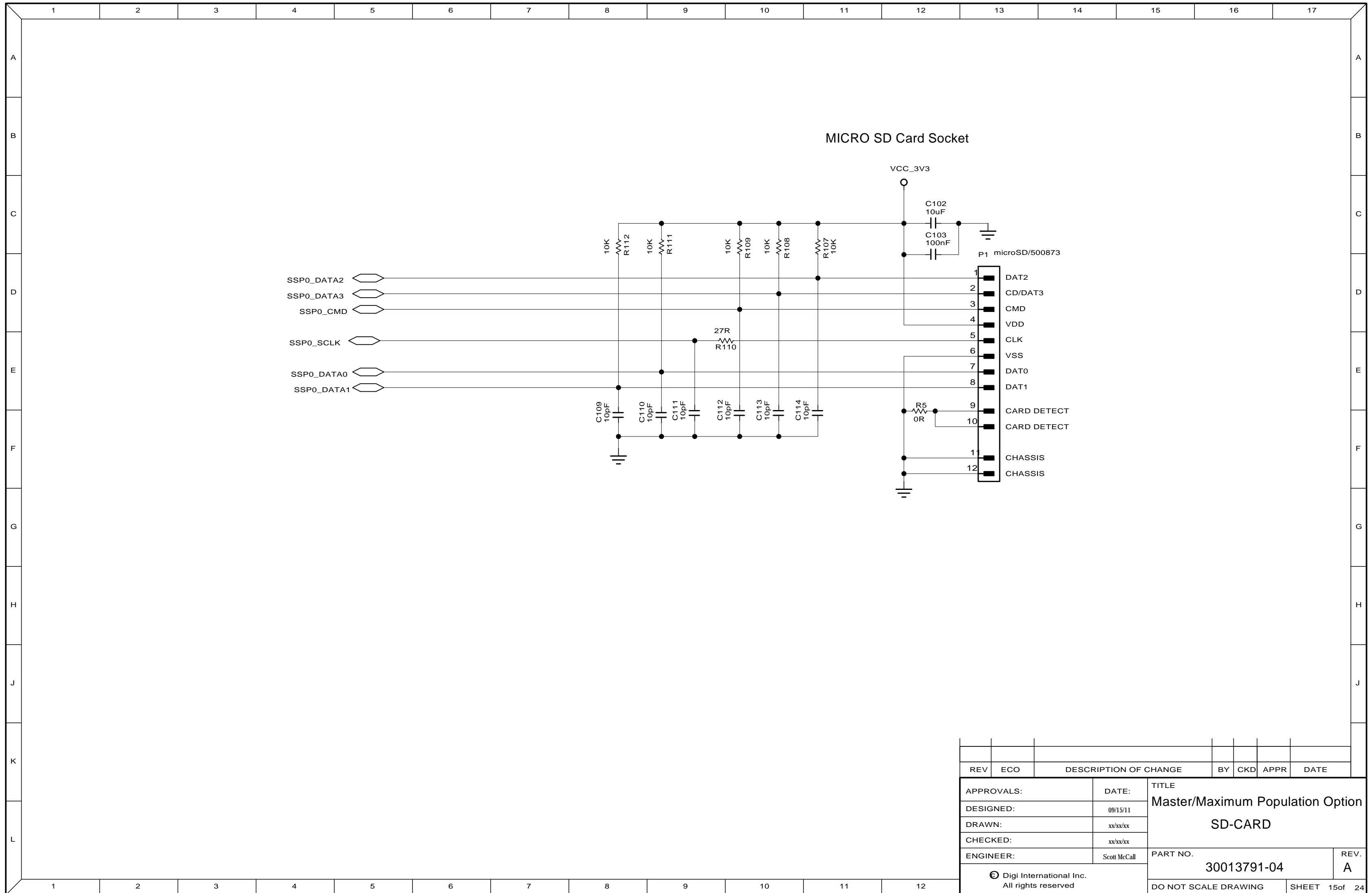
Default switches open



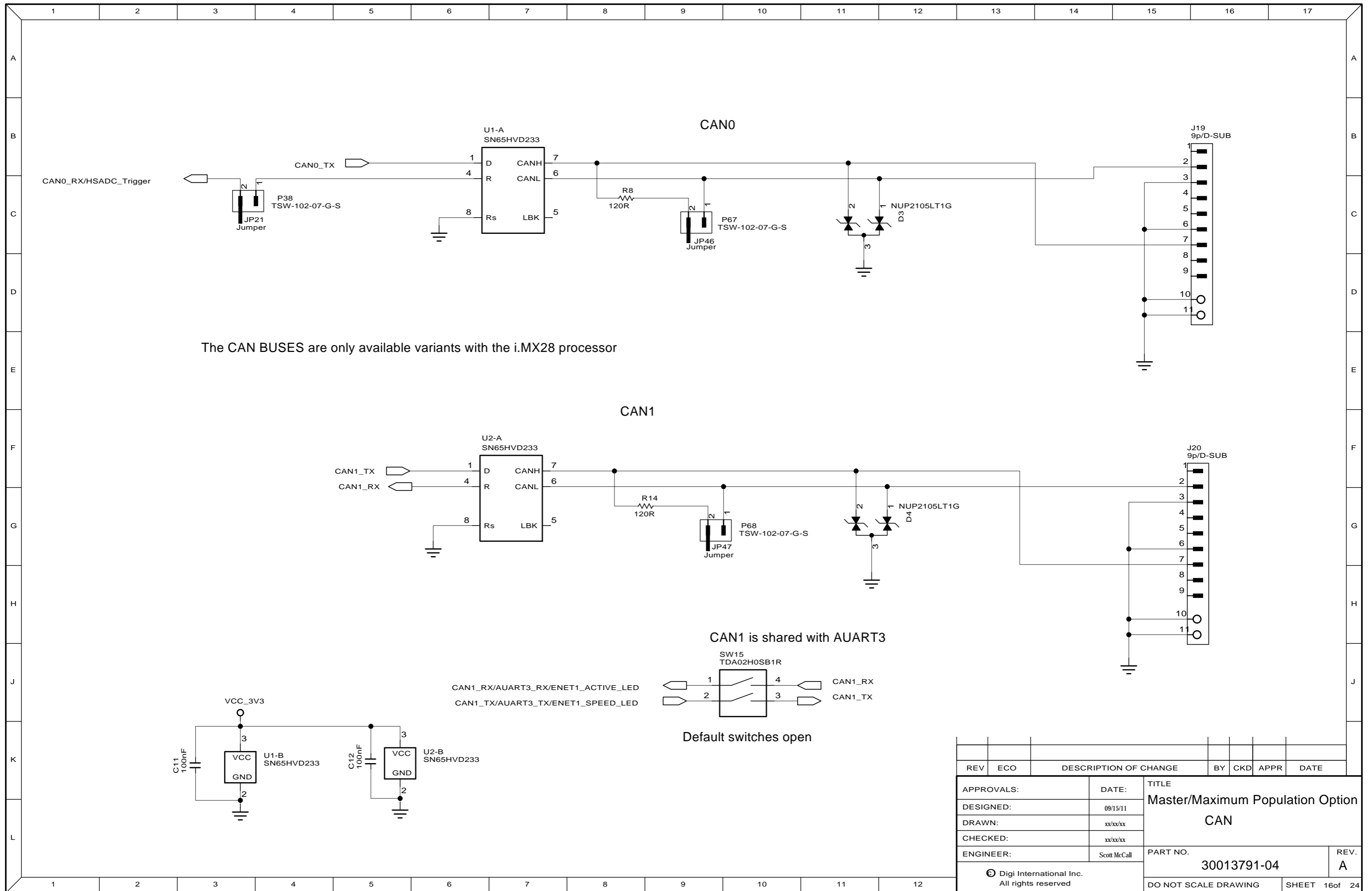
Line Out/Head Phones
 Default setting is Head Phones
 To convert to line out remove R152
 and R161 and install R149 and R150

REV	ECO	DESCRIPTION OF CHANGE	BY	CKD	APPR	DATE

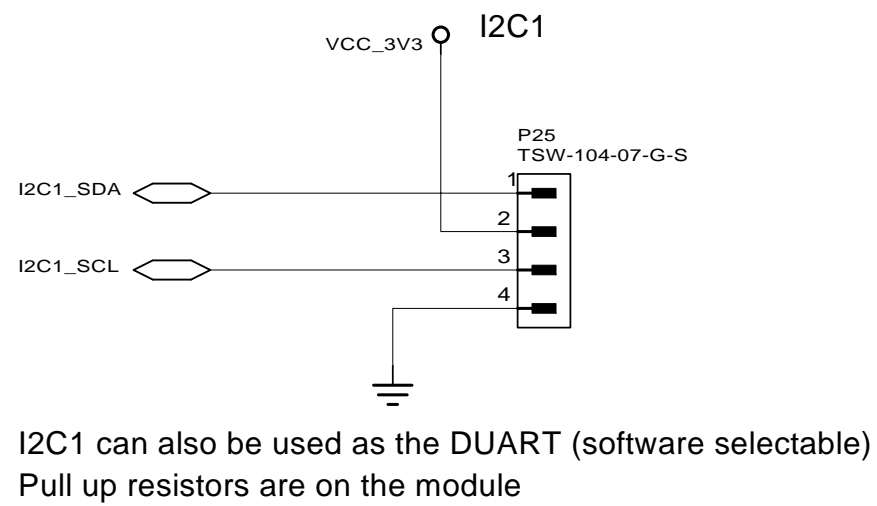
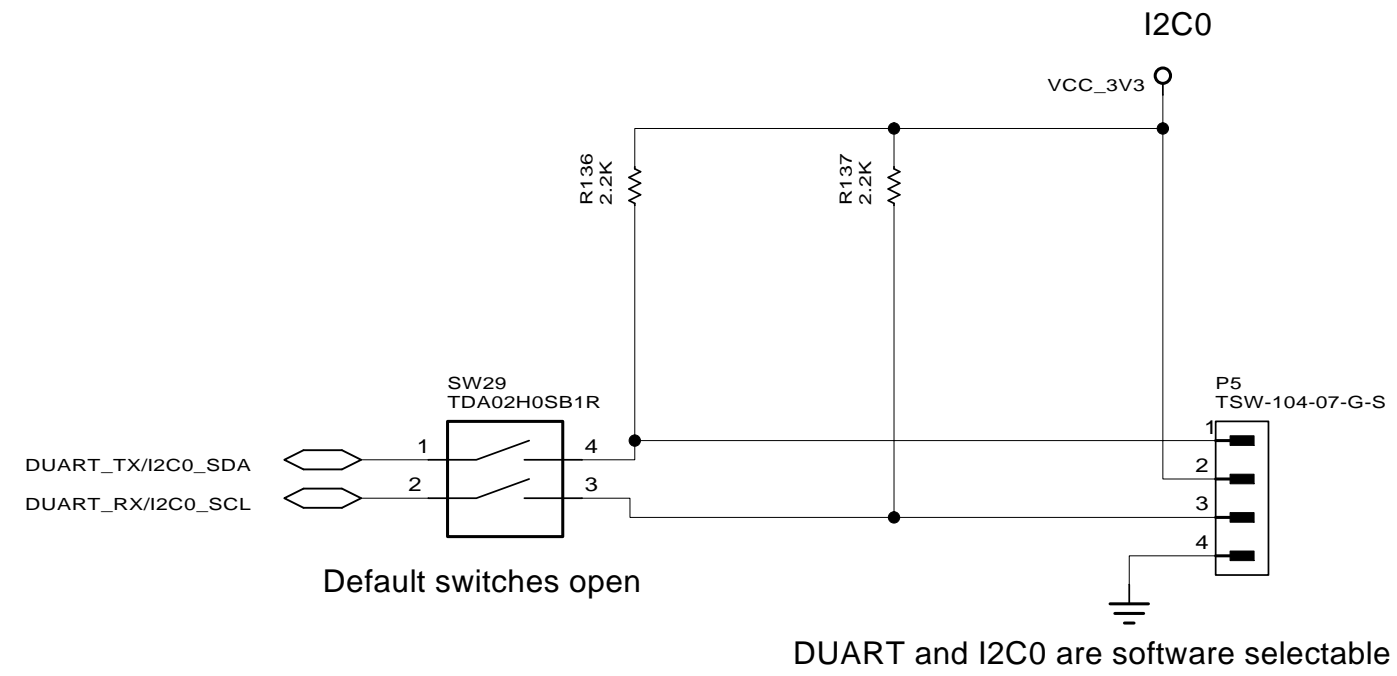
APPROVALS:	DATE:	TITLE
DESIGNED:	09/15/11	Master/Maximum Population Option
DRAWN:	xx/xx/xx	AUDIO
CHECKED:	xx/xx/xx	
ENGINEER:	Scott McCall	PART NO.
Digi International Inc. All rights reserved		30013791-04
DO NOT SCALE DRAWING		REV. A



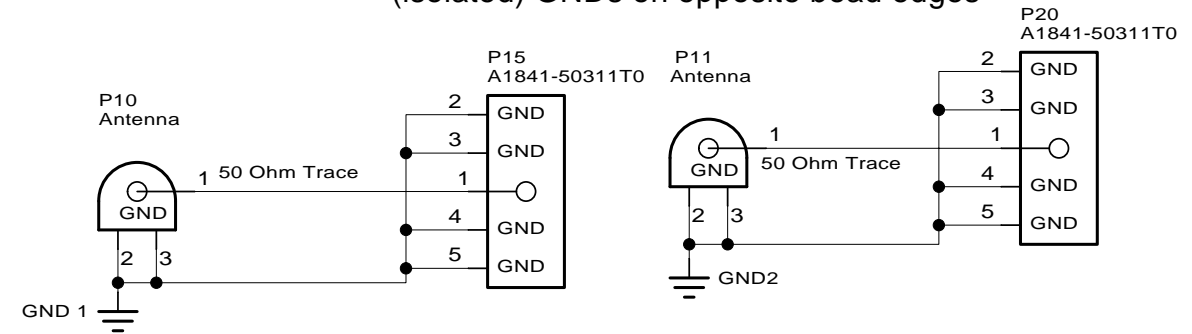
REV	ECO	DESCRIPTION OF CHANGE	BY	CKD	APPR	DATE
APPROVALS:		DATE:	TITLE			
DESIGNED:		09/15/11	Master/Maximum Population Option			
DRAWN:		xx/xx/xx	SD-CARD			
CHECKED:		xx/xx/xx				
ENGINEER:		Scott McCall	PART NO.		REV.	
			30013791-04		A	
© Digi International Inc. All rights reserved					DO NOT SCALE DRAWING	
					SHEET 15 of 24	



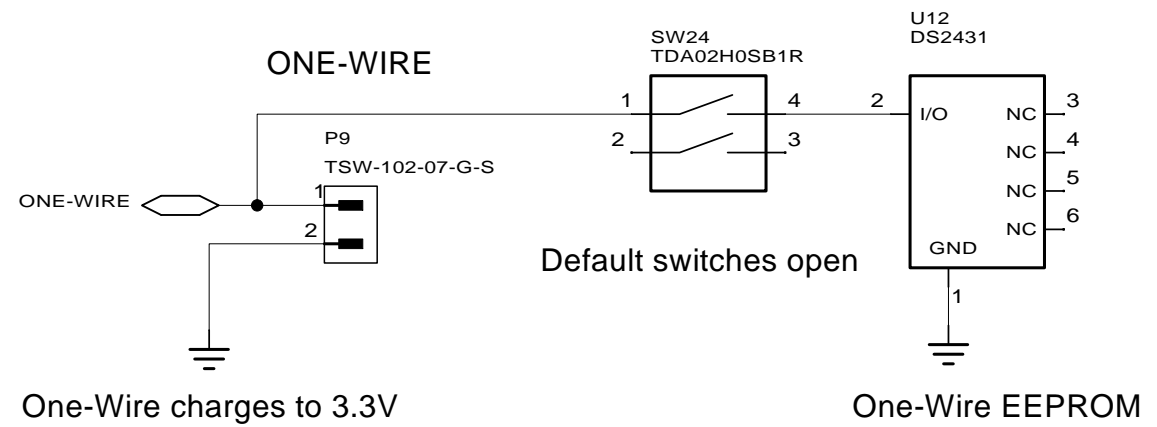
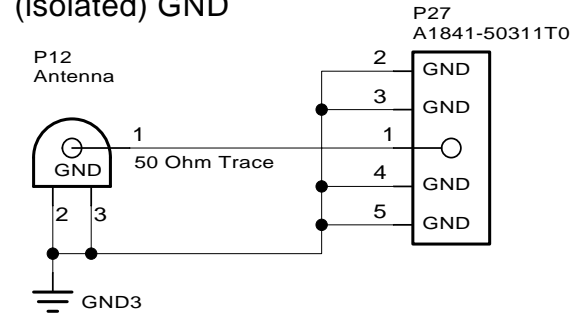
REV	ECO	DESCRIPTION OF CHANGE	BY	CKD	APPR	DATE
APPROVALS:		DATE:	TITLE			
DESIGNED:		09/15/11	Master/Maximum Population Option			
DRAWN:		xx/xx/xx	CAN			
CHECKED:		xx/xx/xx				
ENGINEER:		Scott McCall	PART NO.		REV.	
			30013791-04		A	
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						SHEET 16 of 24



CC U.FL to RPSMA Place with separate (isolated) GNDs on opposite board edges



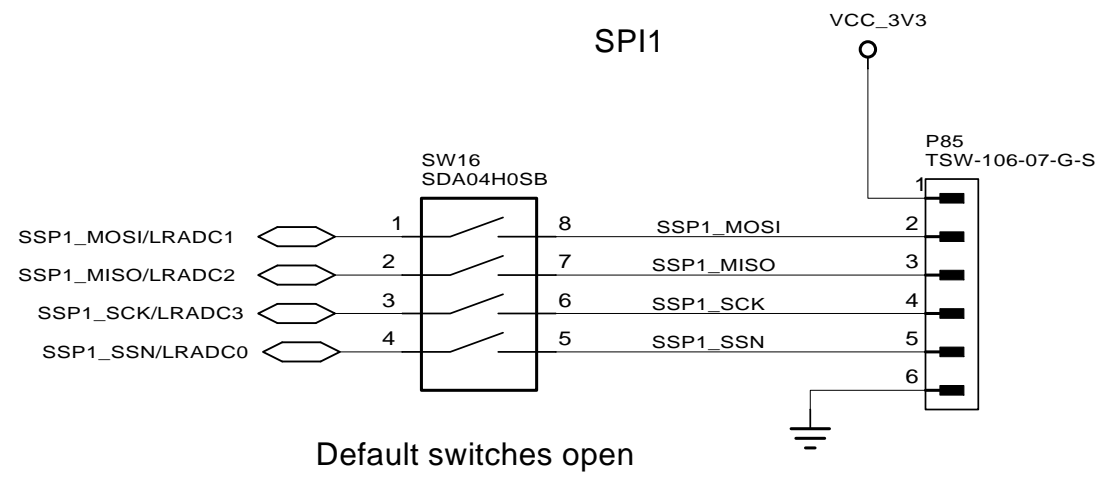
XBEE U.FL to RPSMA Place with separate (isolated) GND



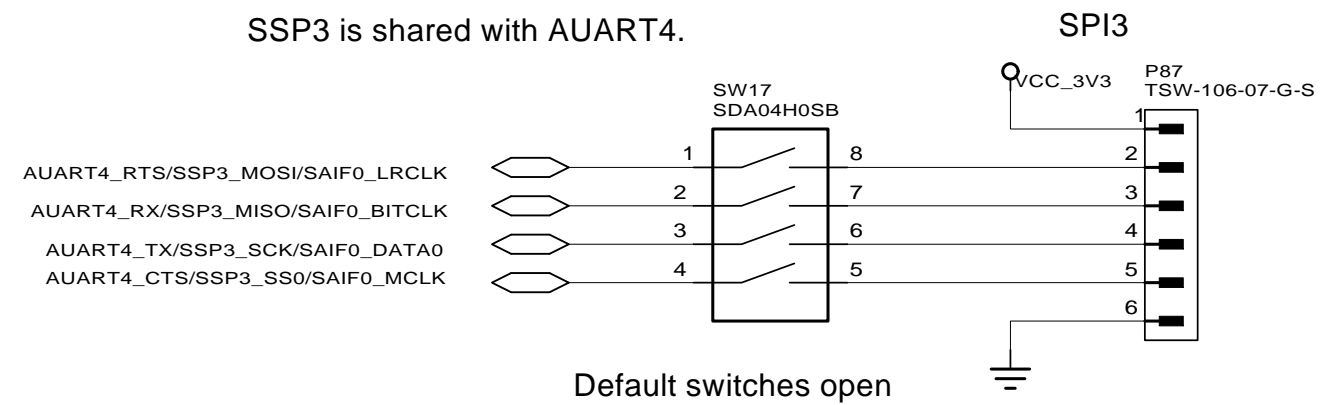
One-Wire charges to 3.3V

ONE-WIRE is only available on the CC-WMX-PF58-JT and CC-WMX-PF58-JT-B

REV	ECO	DESCRIPTION OF CHANGE	BY	CKD	APPR	DATE	
APPROVALS:		DATE:	TITLE				
DESIGNED:		09/15/11	Master/Maximum Population Option				
DRAWN:		xx/xx/xx	I2C, 1-Wire, U.FL				
CHECKED:		xx/xx/xx	PART NO.				
ENGINEER:		Scott McCall	30013791-04		REV. A		
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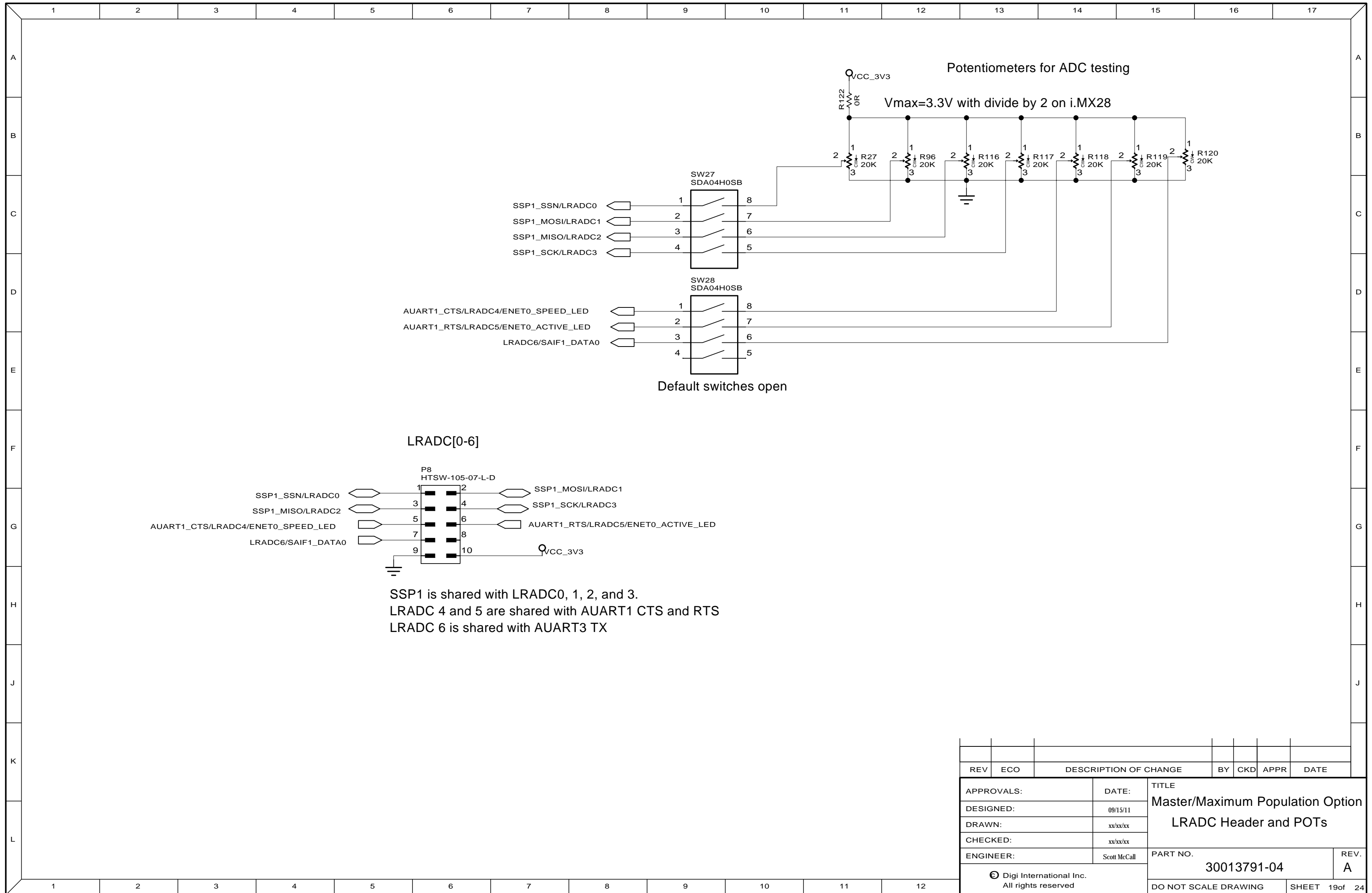


SSP1 is shared with LRADC0, 1, 2, and 3.
 LRADC 4 and 5 are shared with AUART1 CTS and RTS
 LRADC 6 is shared with AUART3 TX



SSP3 is shared with AUART4.

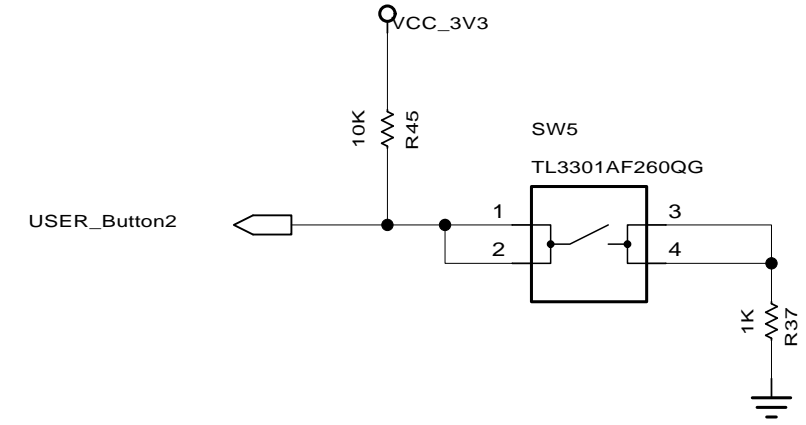
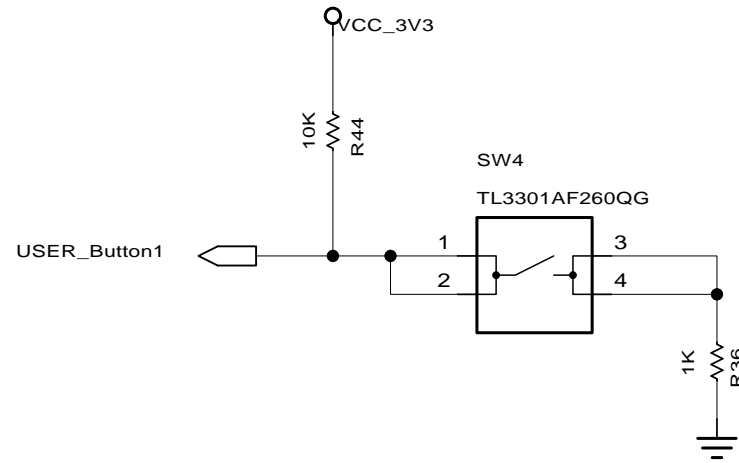
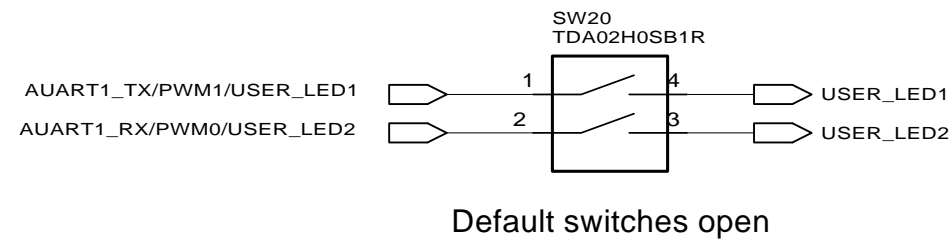
REV	ECO	DESCRIPTION OF CHANGE	BY	CKD	APPR	DATE	
APPROVALS:		DATE:	TITLE				
DESIGNED:		09/15/11	Master/Maximum Population Option				
DRAWN:		xx/xx/xx	SPI Headers				
CHECKED:		xx/xx/xx					
ENGINEER:		Scott McCall	PART NO.		REV.		
			30013791-04		A		
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REV	ECO	DESCRIPTION OF CHANGE	BY	CKD	APPR	DATE	
APPROVALS:		DATE:	TITLE				
DESIGNED:		09/15/11	Master/Maximum Population Option				
DRAWN:		xx/xx/xx	LRADC Header and POTs				
CHECKED:		xx/xx/xx					
ENGINEER:		Scott McCall	PART NO.		REV.		
			30013791-04		A		
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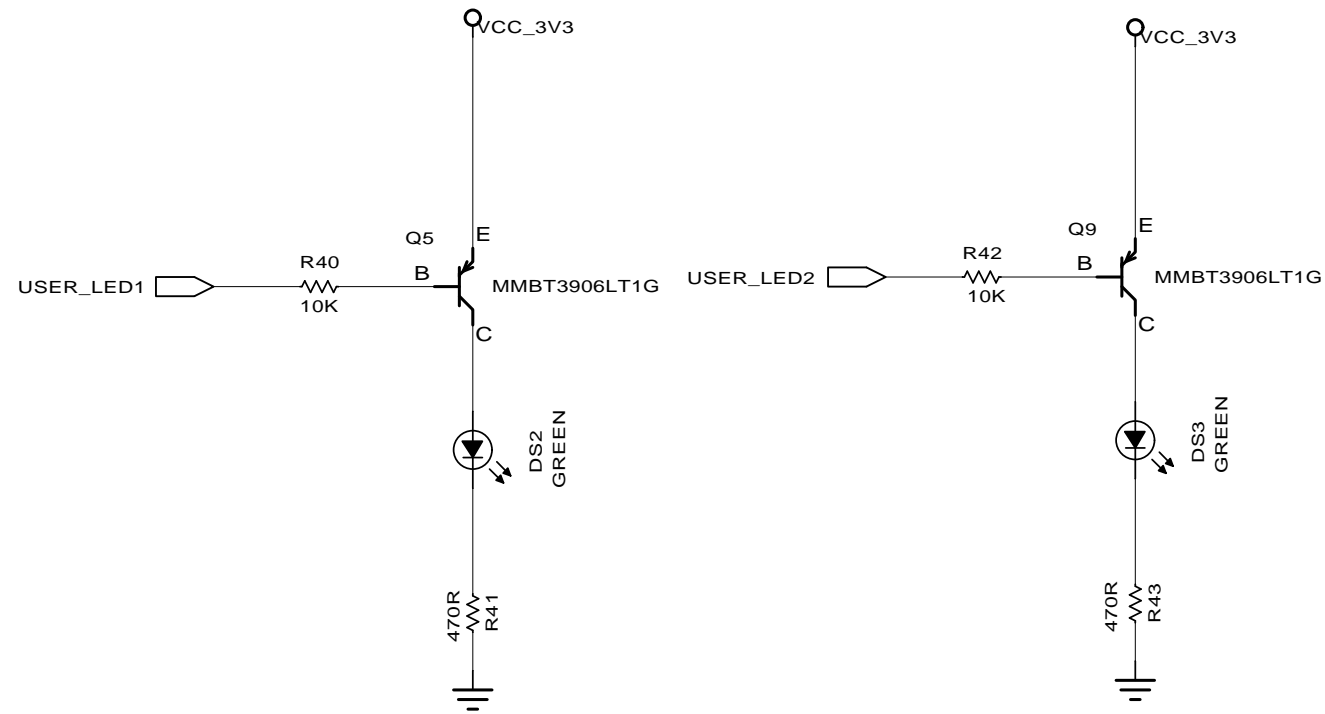
User Buttons

These connections come through AUART2_RTS, and SSP0_CARD_DETECT

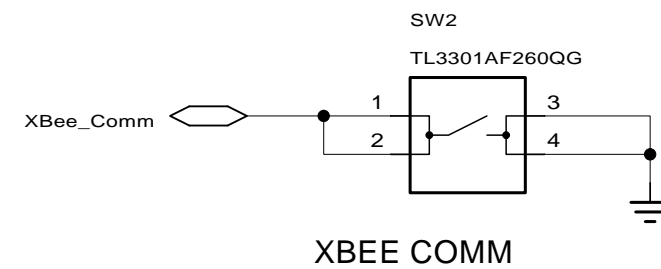
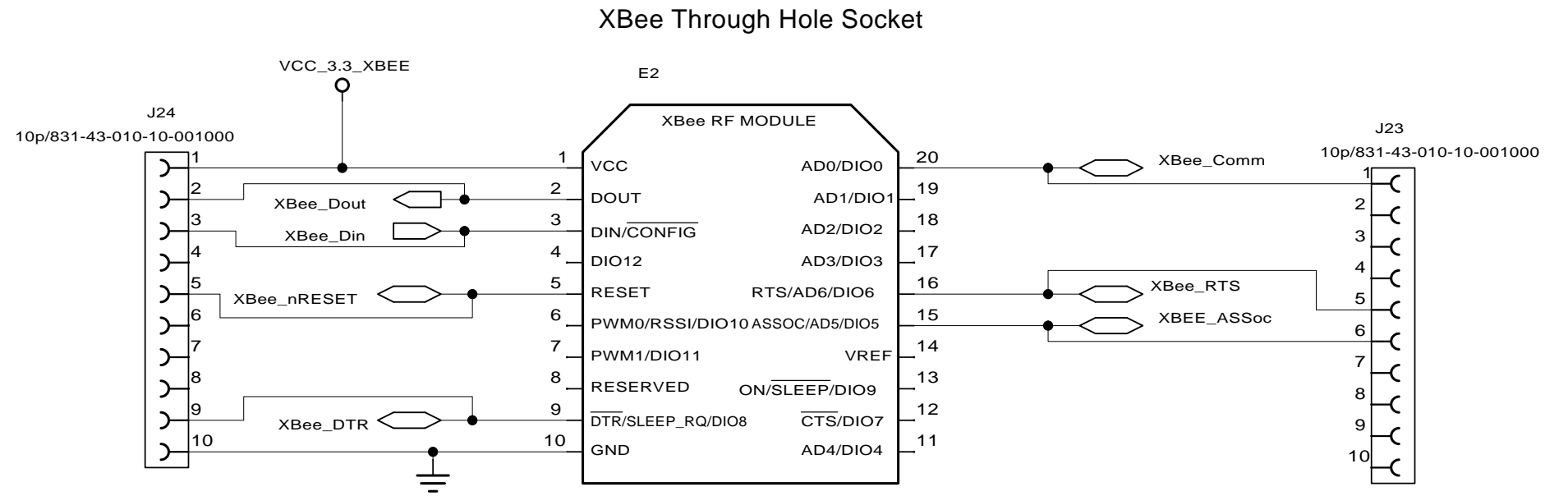
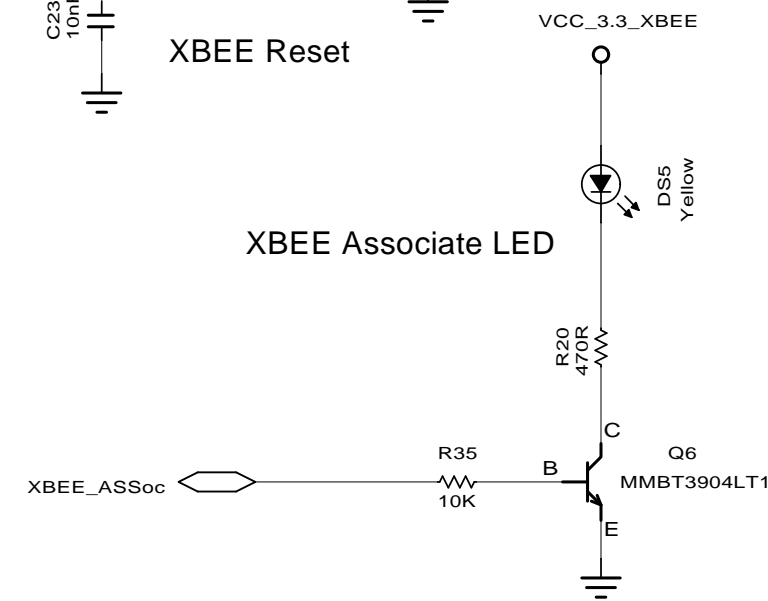
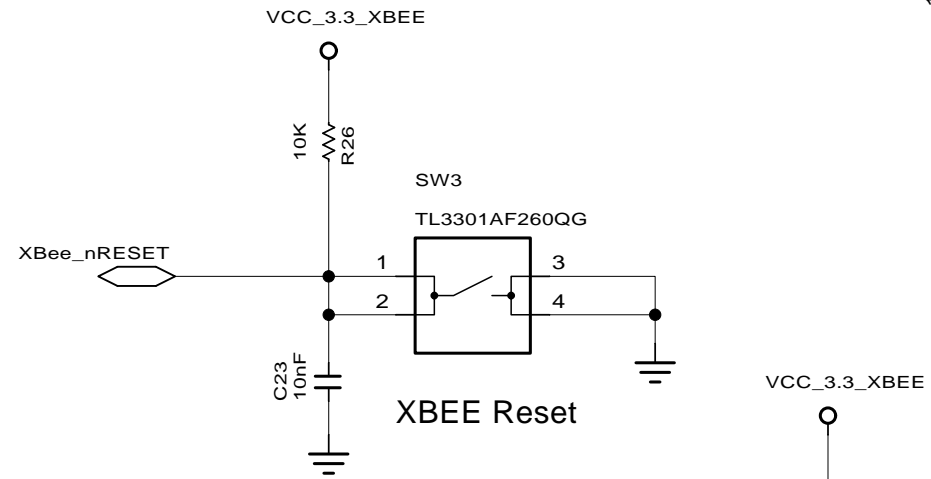
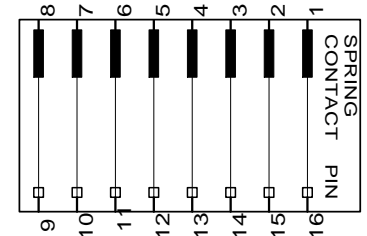
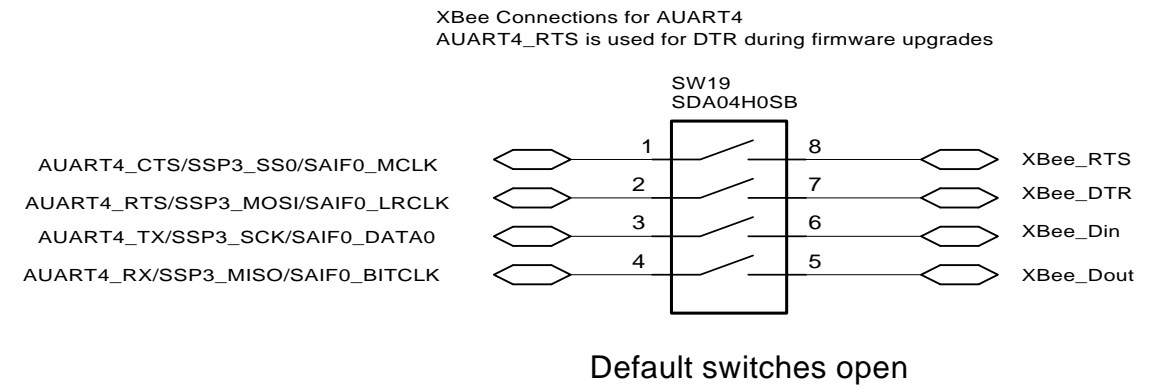
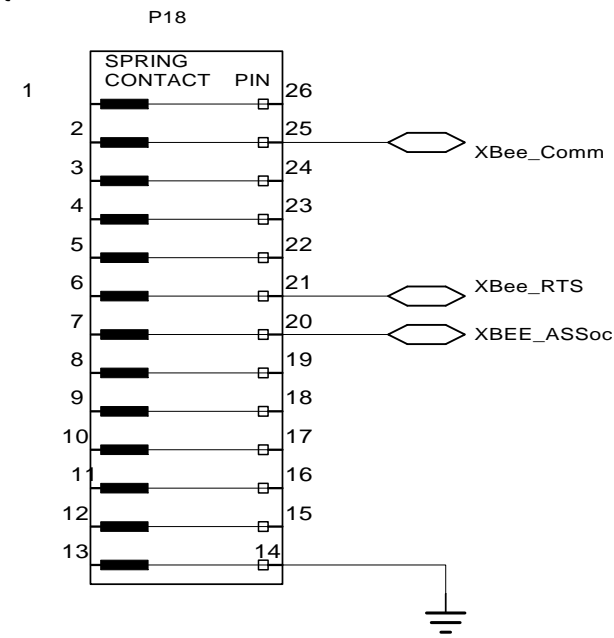
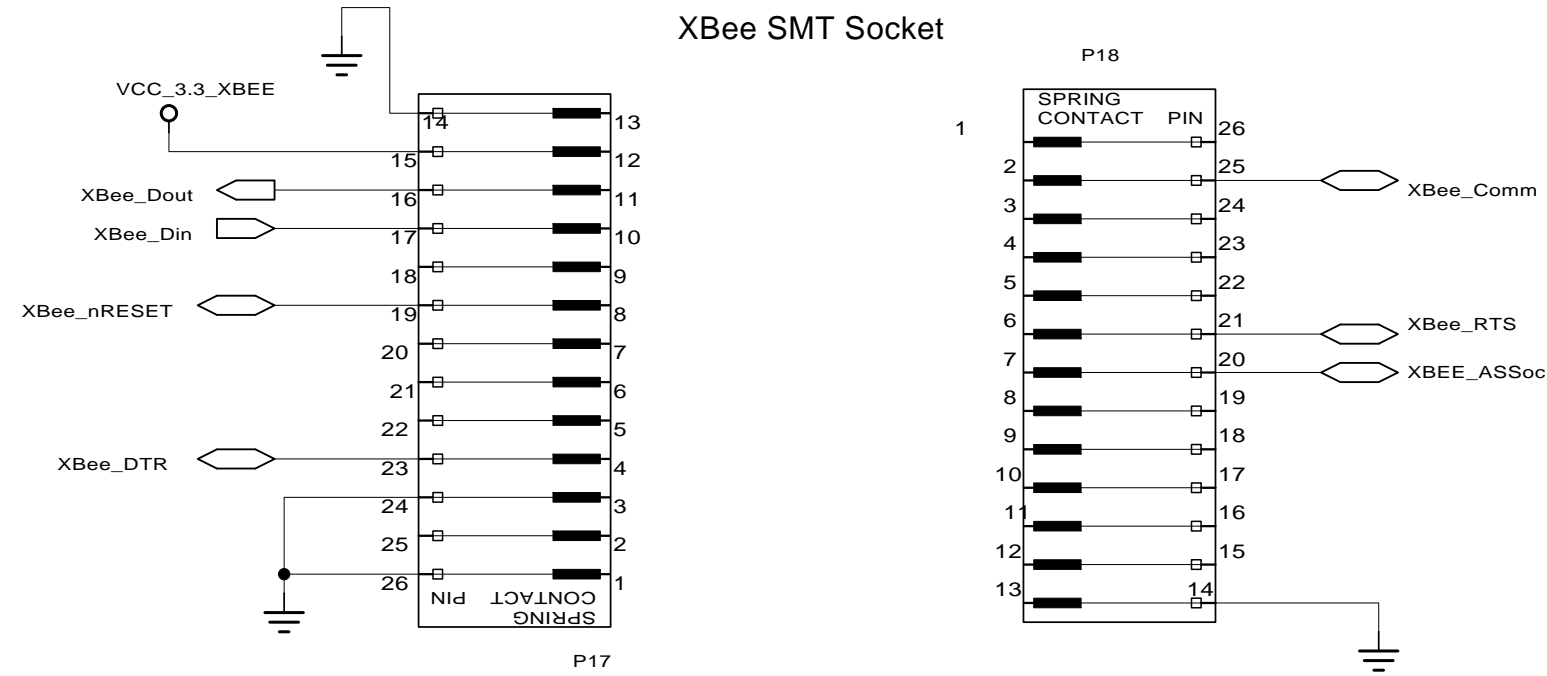


User LEDs

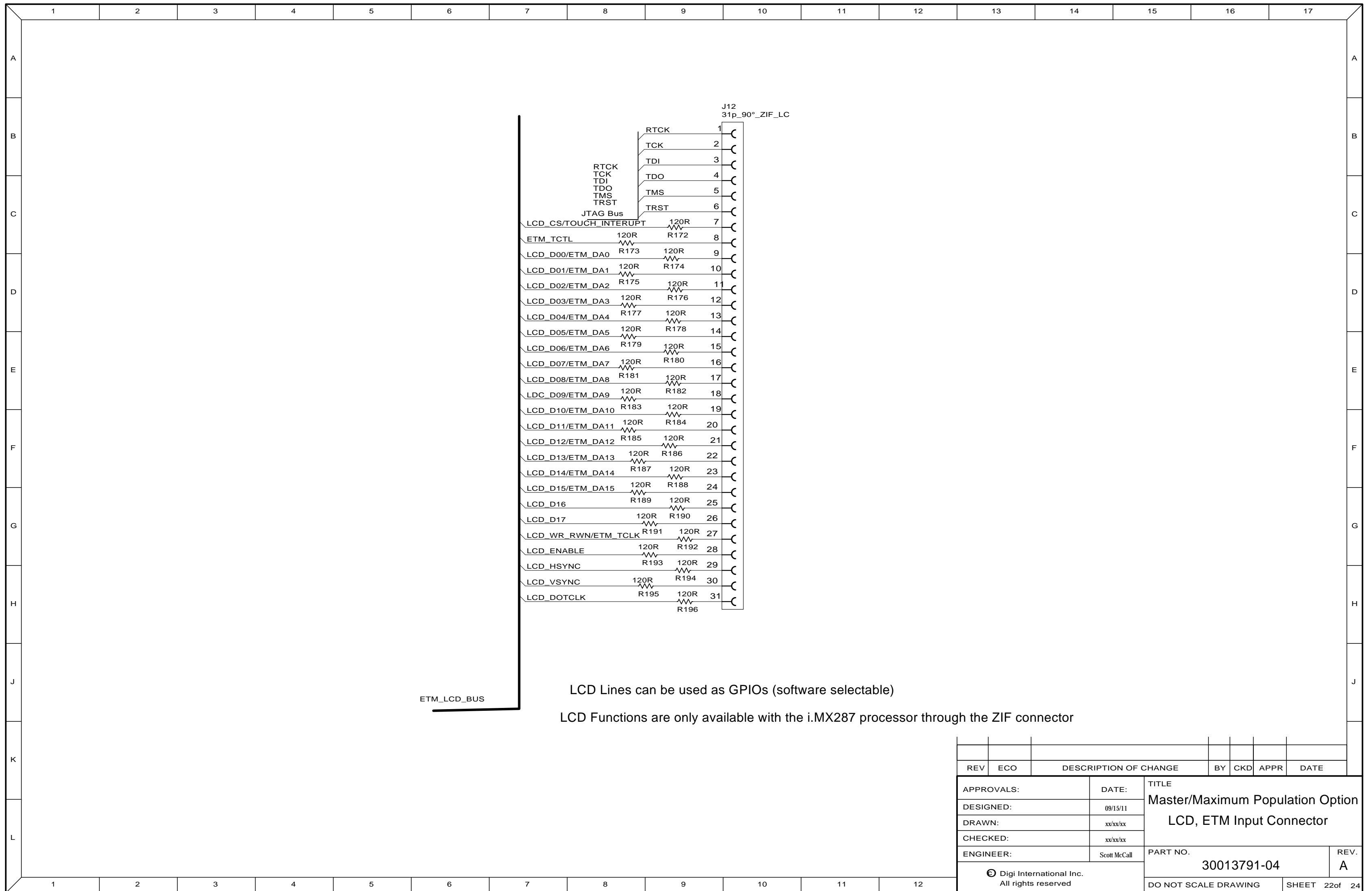
Connected to AUART1_TX and AUART1_RX (PWM1 and PWM0 respectively)



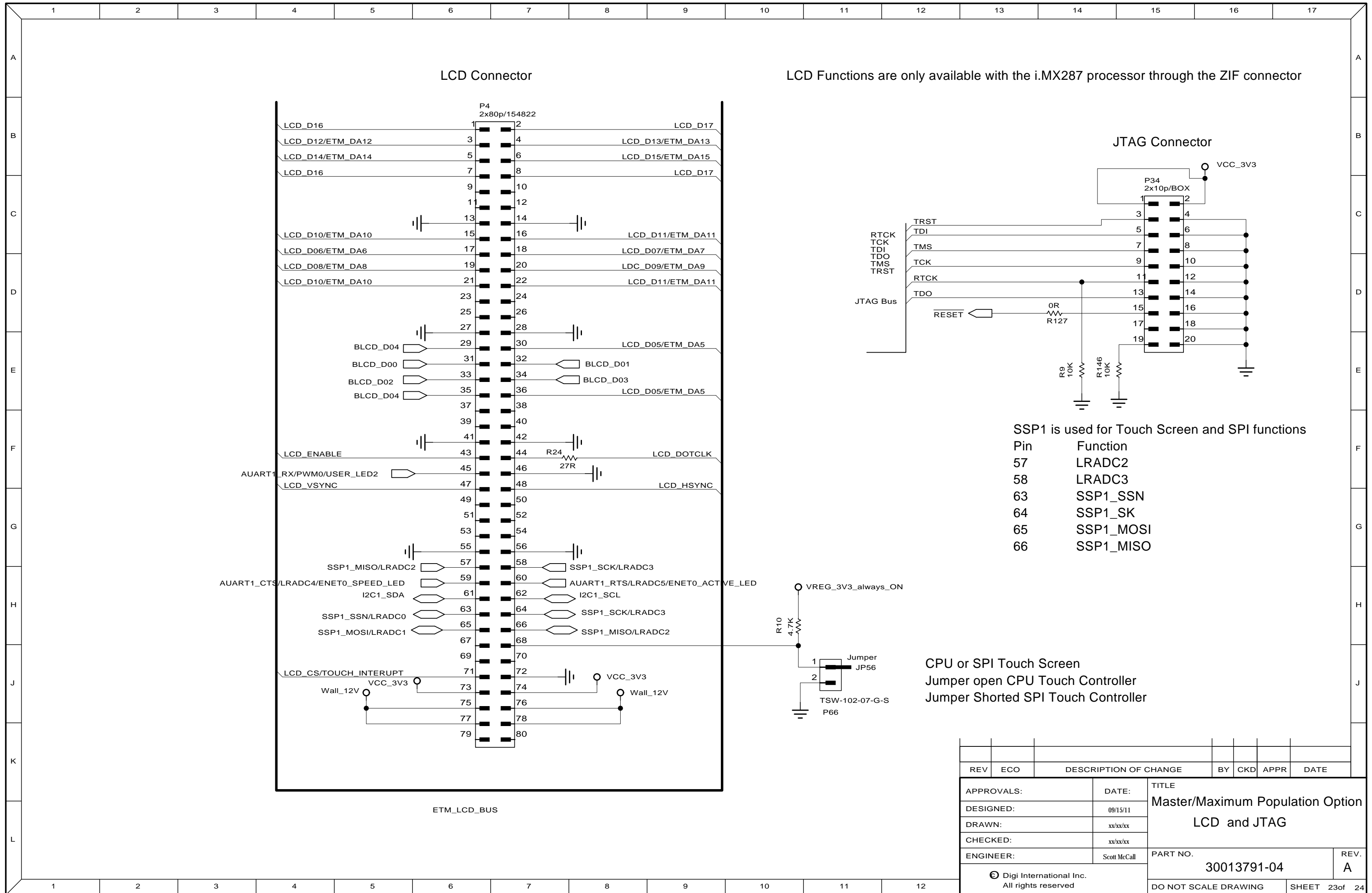
REV	ECO	DESCRIPTION OF CHANGE	BY	CKD	APPR	DATE	
APPROVALS:		DATE:	TITLE				
DESIGNED:		09/15/11	Master/Maximum Population Option				
DRAWN:		xx/xx/xx	User LEDs and Buttons				
CHECKED:		xx/xx/xx					
ENGINEER:		Scott McCall	PART NO.		REV.		
			30013791-04		A		
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REV	ECO	DESCRIPTION OF CHANGE	BY	CKD	APPR	DATE	
APPROVALS:		DATE:	TITLE				
DESIGNED:		09/15/11	Master/Maximum Population Option				
DRAWN:		xx/xx/xx	XBee				
CHECKED:		xx/xx/xx					
ENGINEER:		Scott McCall	PART NO.		REV.		
			30013791-04		A		
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REV	ECO	DESCRIPTION OF CHANGE	BY	CKD	APPR	DATE	
APPROVALS:		DATE:	TITLE				
DESIGNED:		09/15/11	Master/Maximum Population Option				
DRAWN:		xx/xx/xx	LCD, ETM Input Connector				
CHECKED:		xx/xx/xx					
ENGINEER:		Scott McCall	PART NO.		REV.		
			30013791-04		A		
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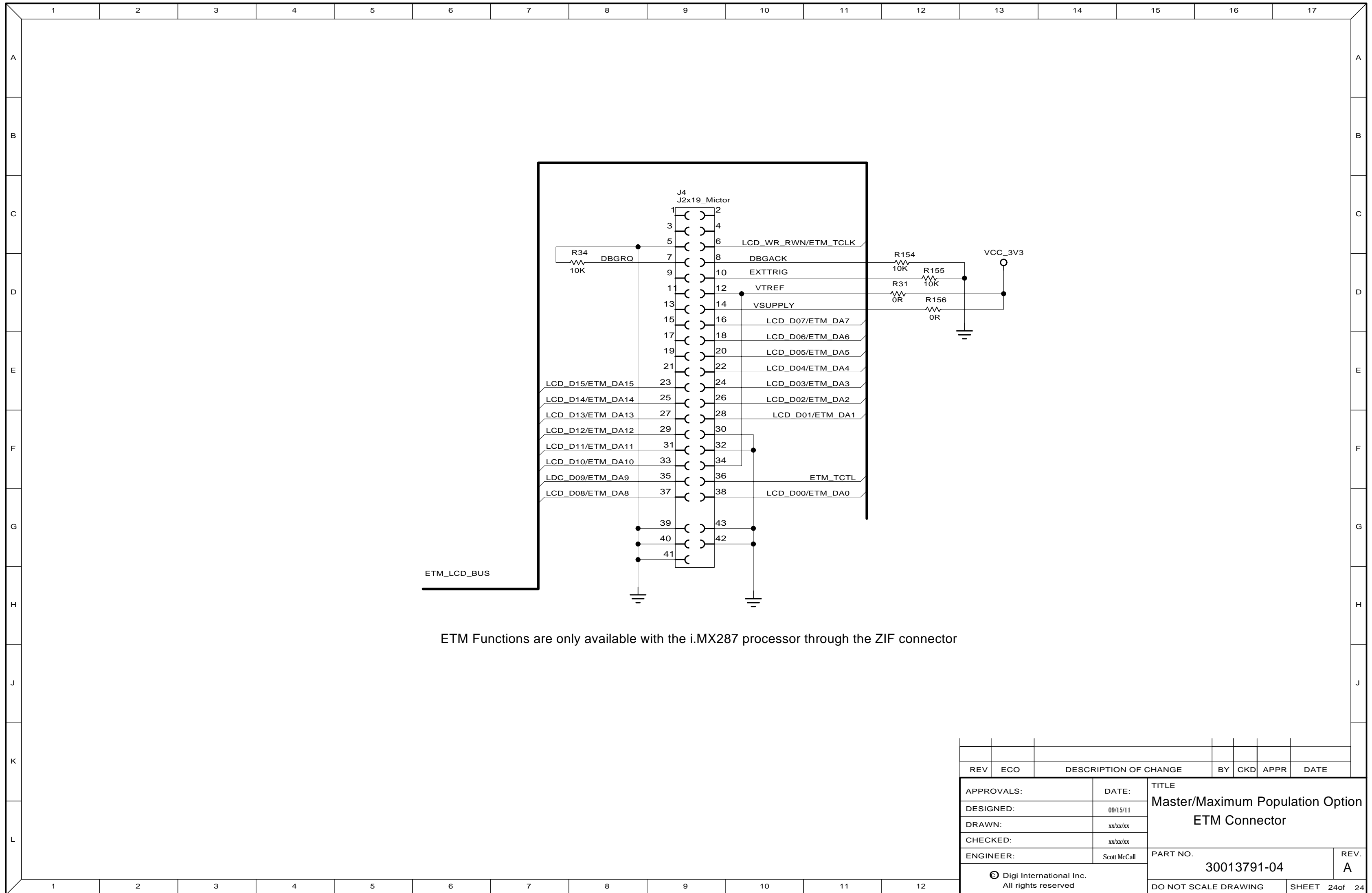
LCD Functions are only available with the i.MX287 processor through the ZIF connector

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	Master/Maximum Population Option			
DRAWN:		xx/xx/xx	LCD and JTAG			
CHECKED:		xx/xx/xx	PART NO.			
ENGINEER:		Scott McCall	30013791-04		REV. A	
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ETM Functions are only available with the i.MX287 processor through the ZIF connector

REV	ECO	DESCRIPTION OF CHANGE	BY	CKD	APPR	DATE
APPROVALS:		DATE:	TITLE			
DESIGNED:		09/15/11	Master/Maximum Population Option			
DRAWN:		xx/xx/xx	ETM Connector			
CHECKED:		xx/xx/xx				
ENGINEER:		Scott McCall	PART NO.		REV.	
			30013791-04		A	
© Digi International Inc. All rights reserved			DO NOT SCALE DRAWING		SHEET 24 of 24	