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Revisions

Rev	Description	Date	Designer
X1	First Release	19-Nov-13	Shanu Gupta
X2	Based on feedback	24-Dec-13	Shanu Gupta
X3	Based on feedback	02- Jan-14	Shanu Gupta
X4	Based on feedback	10- Jan-14	Shanu Gupta
X5	Based on feedback	16- Jan-14	Shanu Gupta
A	Final revision for production	20- Jan-14	Shanu Gupta
B	Change in UART configuration	10-Jul-14	Shanu Gupta
B1	Added PU on I2C lines and Added HDR to SDA	06-Aug-14	Puneet Arora
C	Removed MIC section and added HDR To JTAG TRS signal	08-Aug-14	Puneet Arora
C1	Change Sub-Assembly part (Socket) to DNP	24-Nov-14	Puneet Arora
C2	Change Sub-Assembly part (Socket) to DNP	3-Dec-14	Puneet Arora

		Microcontroller Solutions Group 6501 William Cannon Drive West Austin, TX 78752-8689	
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Designer: Shanu Gupta		ICAP Classification: FOP: FLUQ: PUBI: X	
Drawn by: Shanu Gupta		TWR-KV46F150M	
Table of Contents/Revisions			
Approved: Mohammad Kamil	Size C	Document Number SCH-28177 PDF: SPF-28177	Rev C2
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1. Unless Otherwise Specified:

- All resistors are in ohms
- All capacitors are in uF
- All voltages are DC
- All polarized capacitors are aluminum electrolytic


2. Interrupted lines coded with the same letter or letter combinations are electrically connected.

3. Device type number is for reference only. The number varies with the manufacturer.

4. Special signal usage:

- _B Denotes - Active-Low Signal
- <> or [] Denotes - Vectored Signals

5. Interpret diagram in accordance with American National Standards Institute specifications, current revision, with the exception of logic block symbology.

			
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Sheet 7

OpenSDA Circuit

USB Mini B Connector

PK20DX128VFM5

Voltage Translation

OpenSDA/JTAG Header

Sheet 6

LEDs

Sheet 6

MIC

Sheet 6

IRQ

Sheet 6

Motor Control Board
Connector

Auxiliary Connector

Sheet 7

UART

PK20DX128VFM5 Translators

PK20DX128VFM5 Source Selectors

Sheet 4

KV46F256

Sheet 6

Thermistors

Headers & LP Filters

Sheets 7

Power Supply Circuits

Sheets 4

VSSA/VDDA filter

Sheet 4

Crystal


Sheet 6

CAN

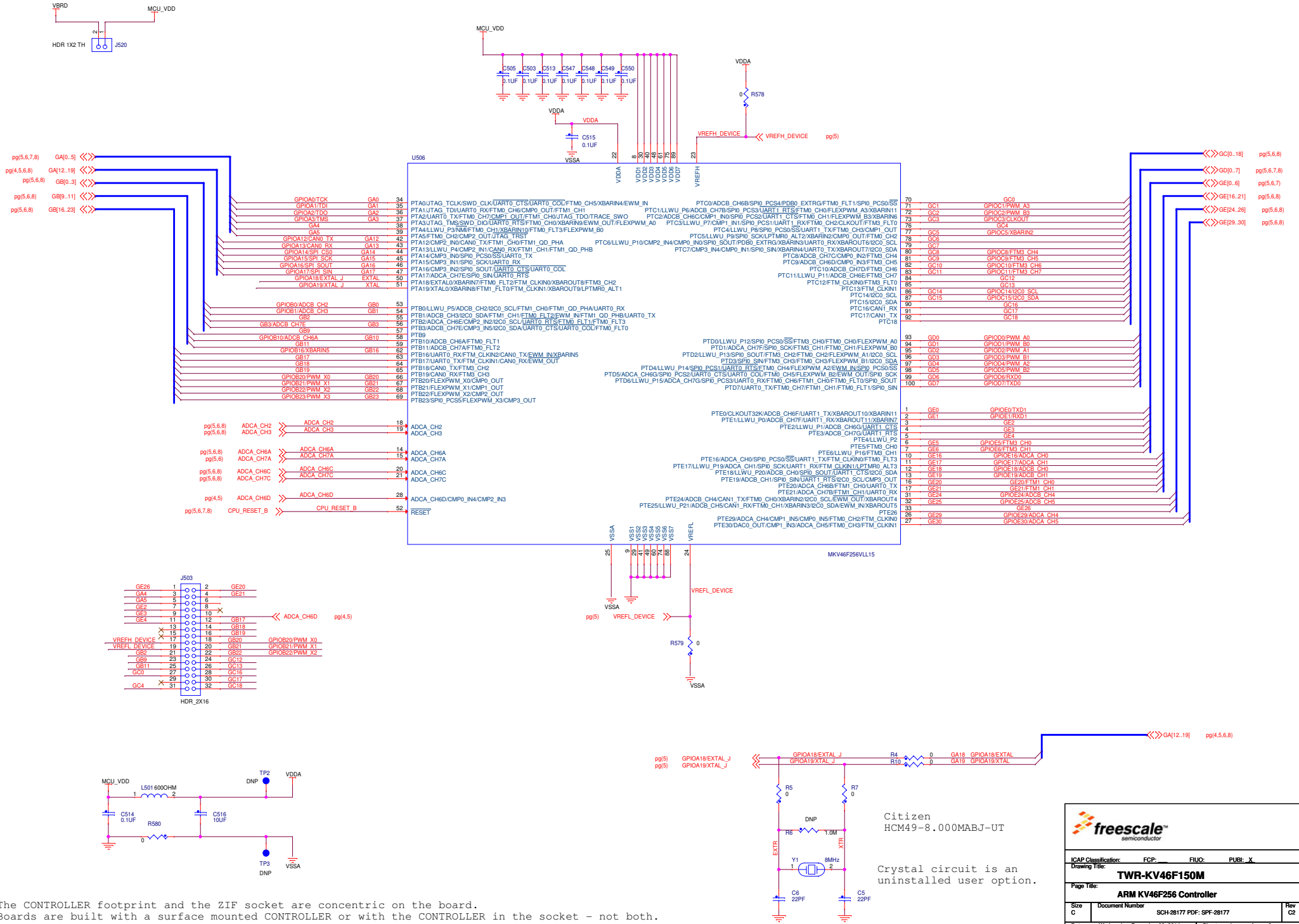
Transceiver
Header

Sheet 8

Elevator Connectors

			
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Block Diagram			
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KV46F256 Controller



The CONTROLLER footprint and the ZIF socket are concentric on the board. Boards are built with a surface mounted CONTROLLER or with the CONTROLLER in the socket - not both.

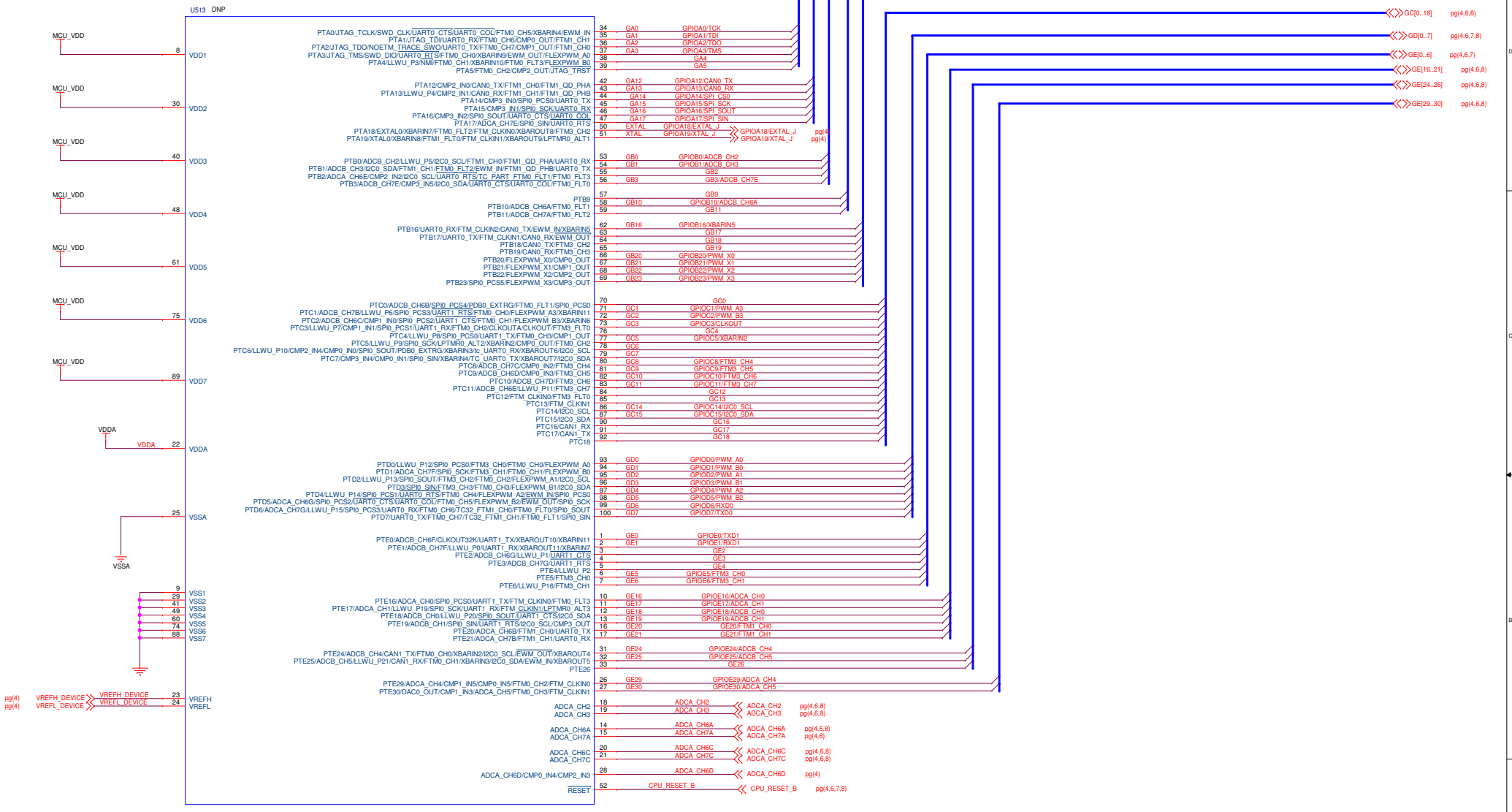
Citizen
HCM49-8.000MABJ-UT

Crystal circuit is an
uninstalled user option.

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KV46F256 Controller Socket



PKV40Z256VLL100 - IC500-1004-004P

The CONTROLLER footprint and the ZIF socket are concentric on the board. Boards are built with a surface mounted CONTROLLER or with the CONTROLLER in the socket - not both.

ICAP Classification: FCP: FIUC: PUBI: X
 Drawing Title: **TWR-KV46F150M**
 Page Title: **KV46F256 - 100 LQFP ZIF Socket**
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- pg(4.5,7,8) GA[0..5] <<>
- pg(4.5,8) GA[12..19] <<>
- pg(4.5,8) GB[0..3] <<>
- pg(4.5,8) GB[9..11] <<>
- pg(4.5,8) GB[16..23] <<>
- pg(4.5,8) GC[0..18] <<>
- pg(4.5,7,8) GD[0..7] <<>
- pg(4.5,7) GE[0..6] <<>
- pg(4.5,8) GE[16..21] <<>
- pg(4.5,8) GE[24..26] <<>
- pg(4.5,8) GE[29..30] <<>

90C to -20C

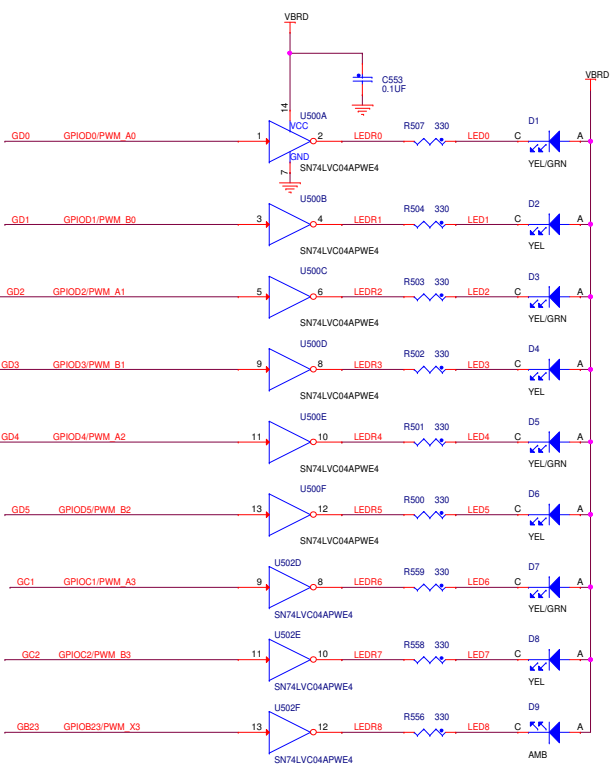
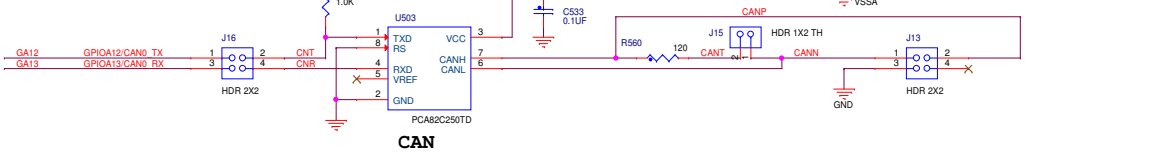
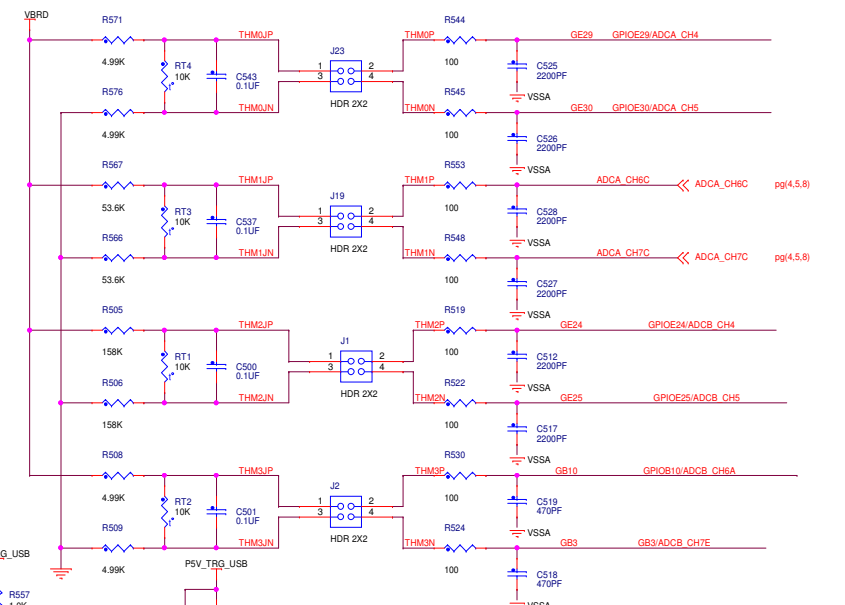
Vdiff ~ 0.305V
to 3.001V
(Ta=25C 1.650V)
Use Gain = 1

Vdiff ~ 0.031V
to 1.539V
(Ta=25C 0.282V)
Use Gain <= 2

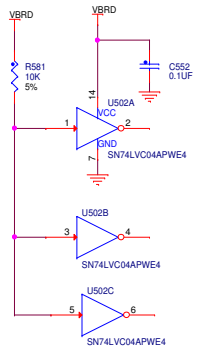
Vdiff ~ 10.4mV
to 793.3mV
(Ta=25C 101.2mV)
Use Gain <= 4

Vdiff ~ 0.305V
to 3.001V
(Ta=25C 1.650V)
Use Gain = 1

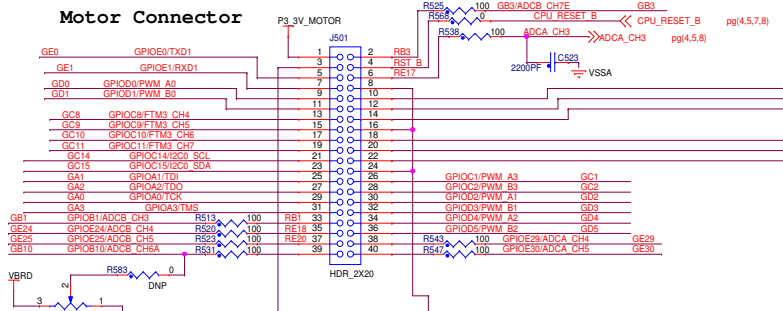
Thermistors



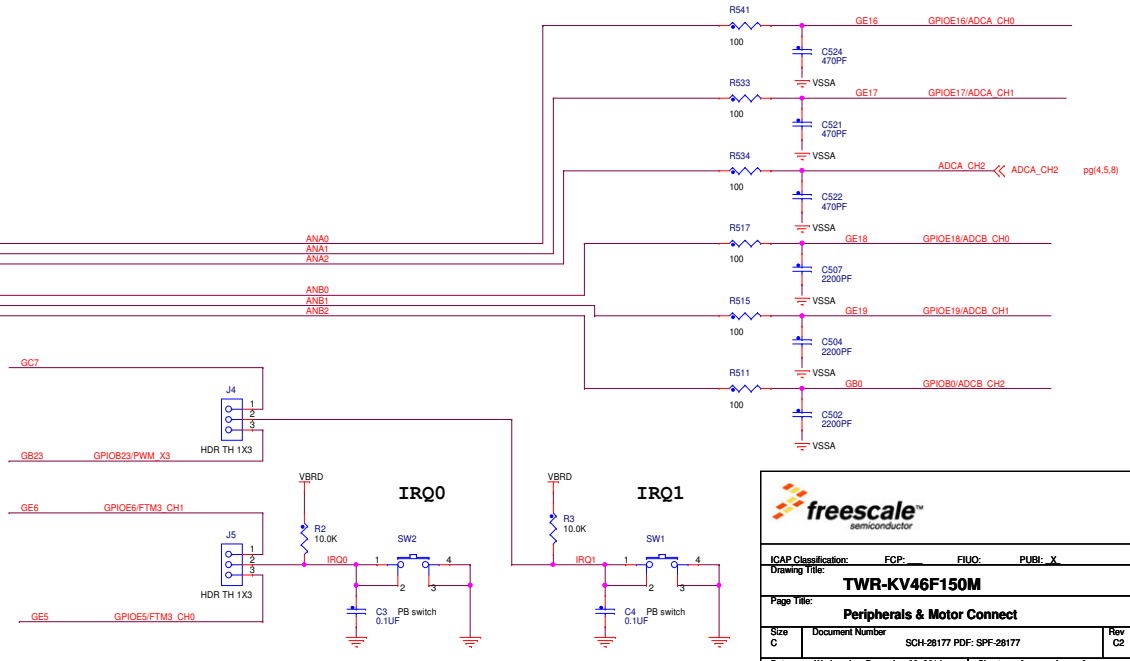
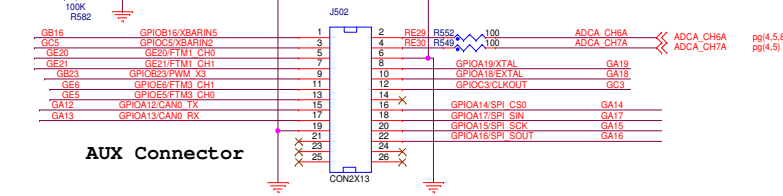
LEDs



Motor Connector



AUX Connector



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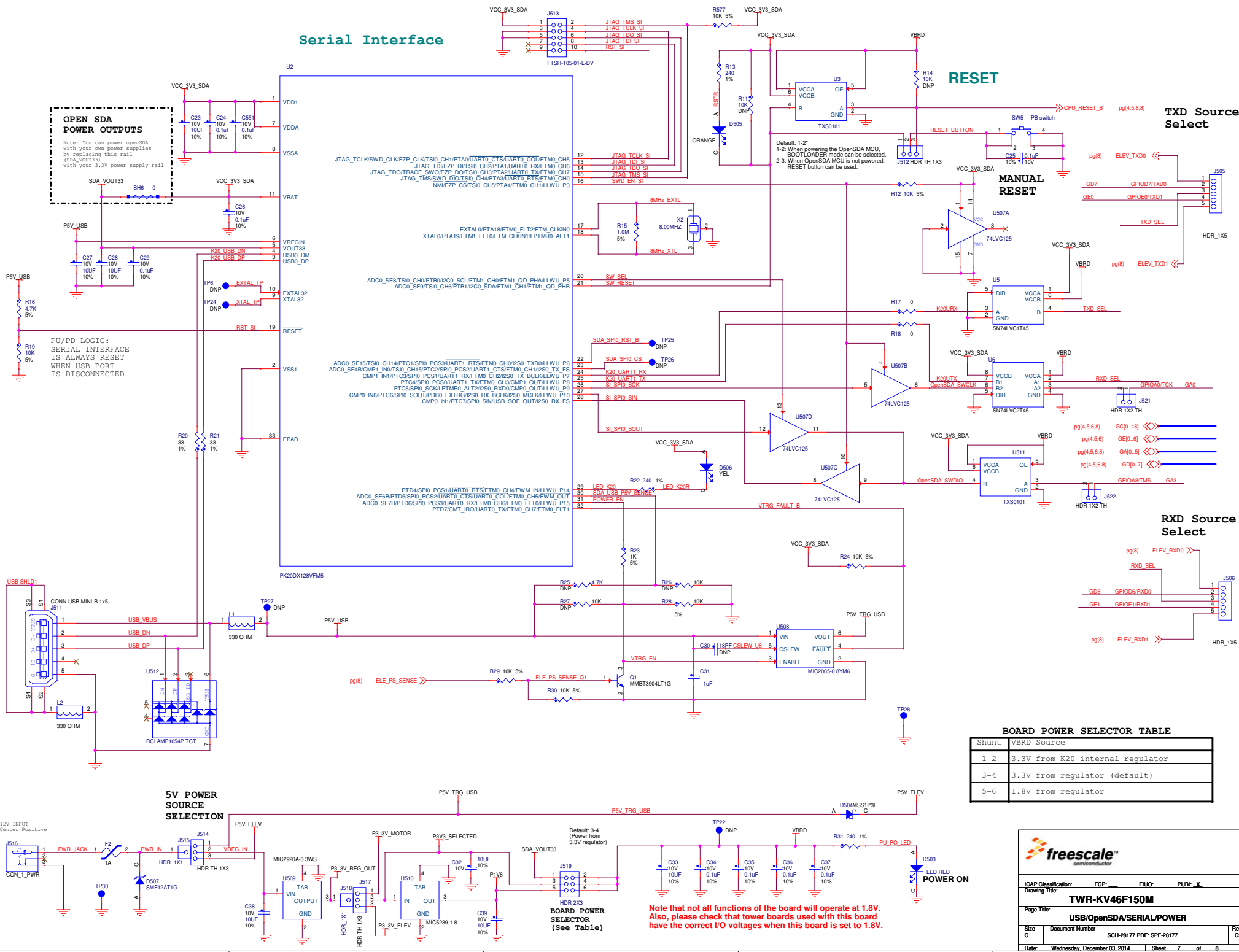
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Drawing Title: **TWR-KV46F150M**

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Serial Interface



OPEN SDA POWER OUTPUTS
 Note: You can power openSDA with your own power supplies by replacing this rail (SDA_VOUT13) with your 3.3V power supply rail.

RESET

MANUAL RESET

TXD Source Select

RXD Source Select

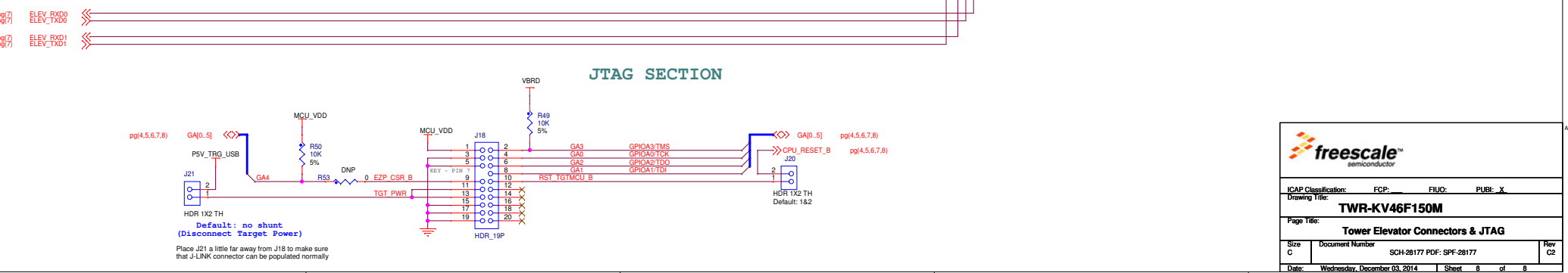
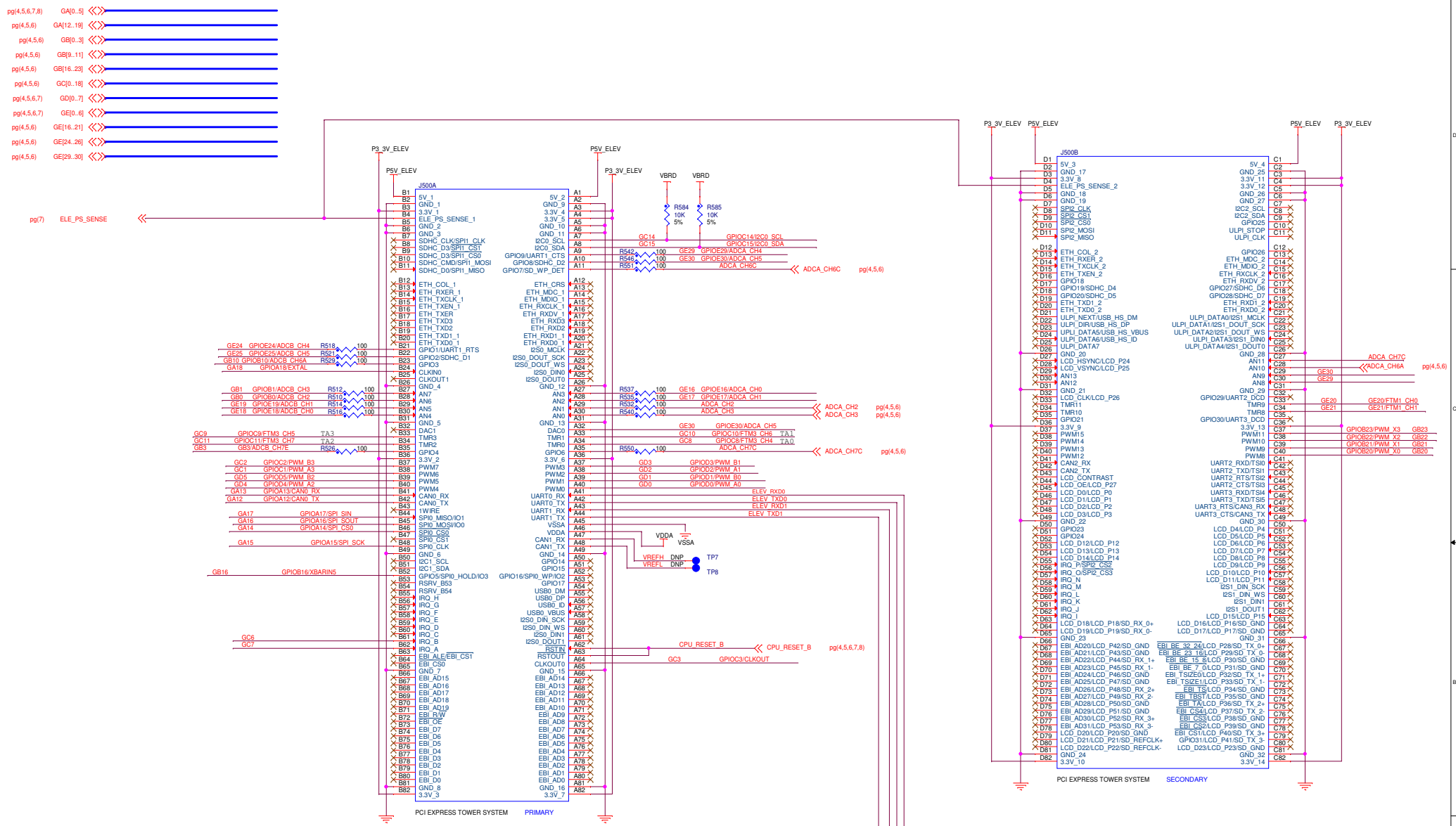
BOARD POWER SELECTOR TABLE

Shunt	VBRD Source
1-2	3.3V from K20 internal regulator
3-4	3.3V from regulator (default)
5-6	1.8V from regulator

Note that not all functions of the board will operate at 1.8V. Also, please check that lower boards used with this board have the correct I/O voltages when this board is set to 1.8V.

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