

NOTES, UNLESS OTHERWISE SPECIFIED:

1. RESISTANCE VALUES IN OHMS.
2. CAPACITANCE VALUES IN MICROFARADS.
3. REFERENCE DESIGNATORS USED:
4. ALL 0.1 uF AND 0.01uF CAPACITORS ARE DECOUPLING CAPS UNLESS OTHERWISE NOTED. THEY ARE SHOWN ON THE PAGE WITH THE INTEGRATED CIRCUITS THEY SHOULD BE PLACED NEAR.
5. NHET1xx means NHET1_[xx].
6. OBSERVE THE LAYOUT NOTES IN SCHEMATIC.

RevB Changes:

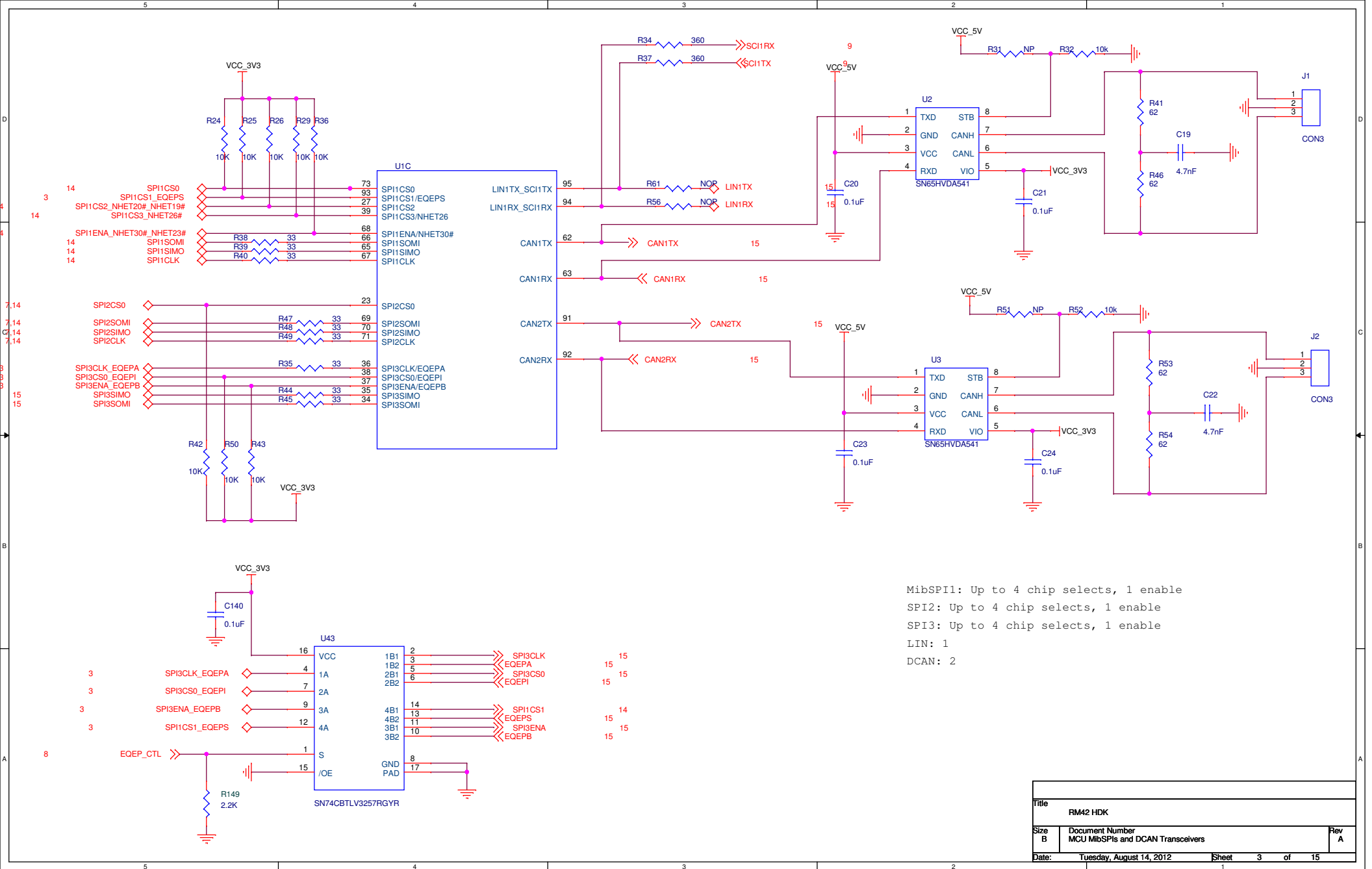
1. Changed JP1: In RevA, Y1 is connected to Pin2 of JP1. In RevB, Y1 is connected to Pin1.

SCHEMATIC CONTENTS

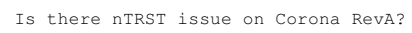
- ```
01 TITLE SHEET
02 MCU ADC
03 MCU SPI and DCAN Transceivers
04 MCU JTAG and OSC
05 MCU NHET and GIO
06 MCU Power and GND
07 Sensors, LEDs, and Pushbutton
08 JTAG Connector
09 XD100V2 FTDI2232
10 XDS100V2 CPLD
11 RESET
12 Power Supply
13 Power Input
14 EXP P1 and EXP P2
15 EXP P3
```

|                       |                          |       |   |          |
|-----------------------|--------------------------|-------|---|----------|
| Texas Instruments Inc |                          |       |   |          |
| Title<br>RM42 HDK     |                          |       |   |          |
| Size<br>A             | Document Number<br>TITLE |       |   | Rev<br>B |
| Date:                 | Wednesday, July 31, 2013 | Sheet | 1 | of 15    |



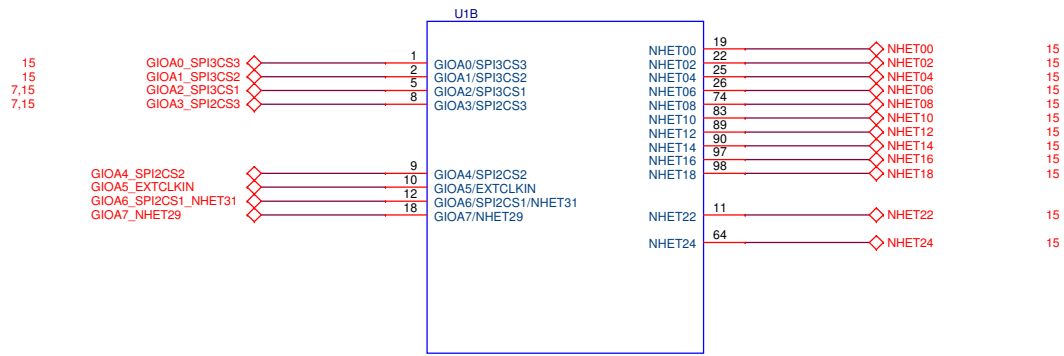


|          |                                   |               |
|----------|-----------------------------------|---------------|
| Title    |                                   |               |
| RM42 HDK |                                   |               |
| Size     | Document Number                   | Rev           |
| B        | MCU MibSPis and DCAN Transceivers | A             |
| Date:    | Tuesday, August 14, 2012          | Sheet 3 of 15 |



Changed JP1: In RevA, Y1 is connected to Pin2 of JP1.

|          |                                   |       |   |       |
|----------|-----------------------------------|-------|---|-------|
| Title    |                                   |       |   |       |
| RM42 HDK |                                   |       |   |       |
| Size B   | Document Number<br>MCU JTAG & OSC |       |   | Rev B |
| Date:    | Tuesday, August 14, 2012          | Sheet | 4 | of 15 |



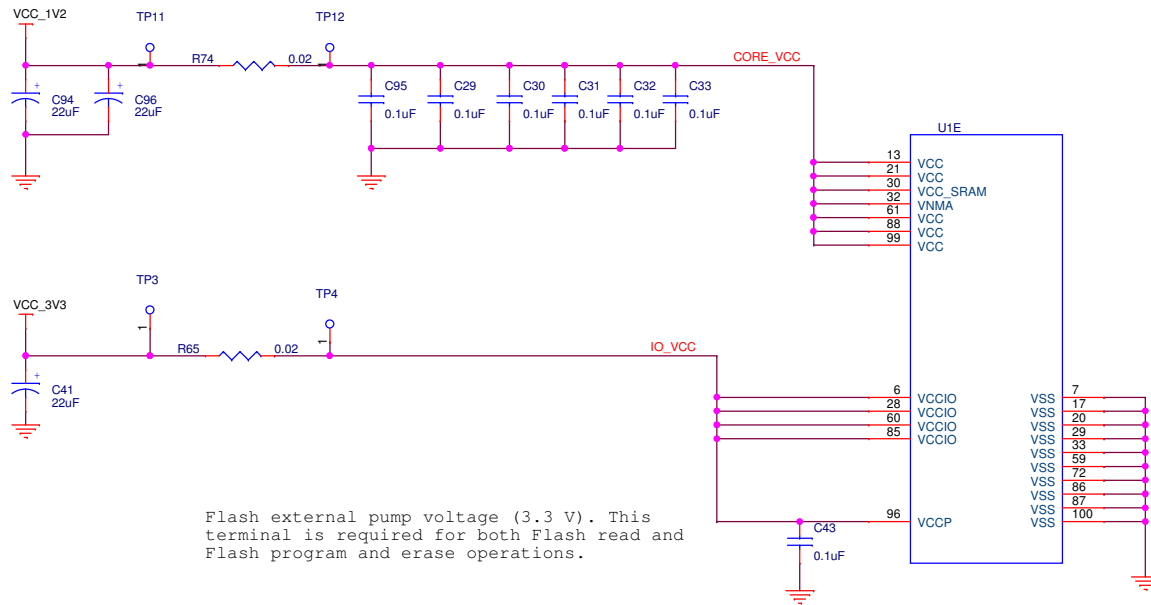
GPIO: 8 dedicated GIO pins

NHET:  
144 Package: 31 NHET channels  
100A Package: 18 NHET channels

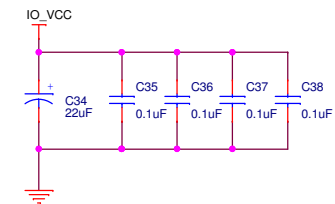
|          |                          |               |
|----------|--------------------------|---------------|
| Title    |                          |               |
| RM42 HDK |                          |               |
| Size     | Document Number          | Rev           |
| B        | MCU NHET and GIO         | A             |
| Date:    | Tuesday, August 14, 2012 | Sheet 5 of 15 |

Core Supply Voltage (VCC): 1.08V - 1.38V  
I/O Supply Voltage (VCCIO): 3.0V - 3.6 V  
ADC Supply Voltage (VCCAD): 3.0V - 3.6V

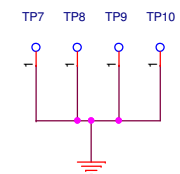
Vdd\_pgm (eFuse) is bonded to Vcc pad  
Vcc\_sram: is bonded to Vcc pad  
Vnwa (SRAM): is also bounded to Vcc pad



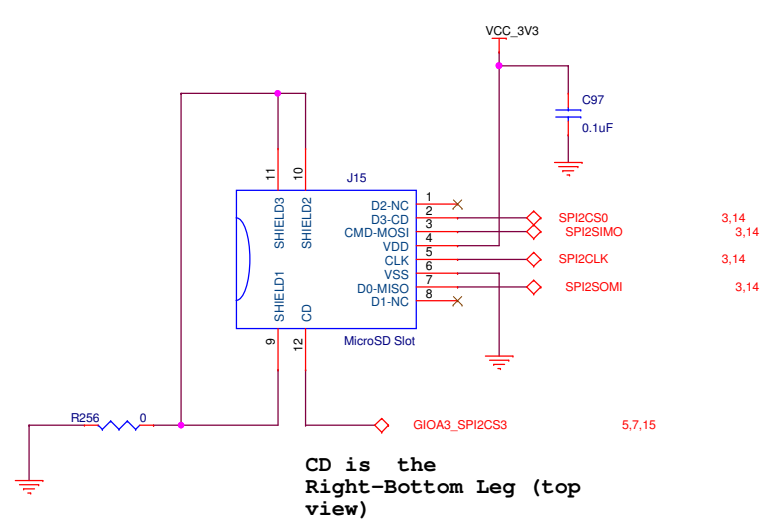
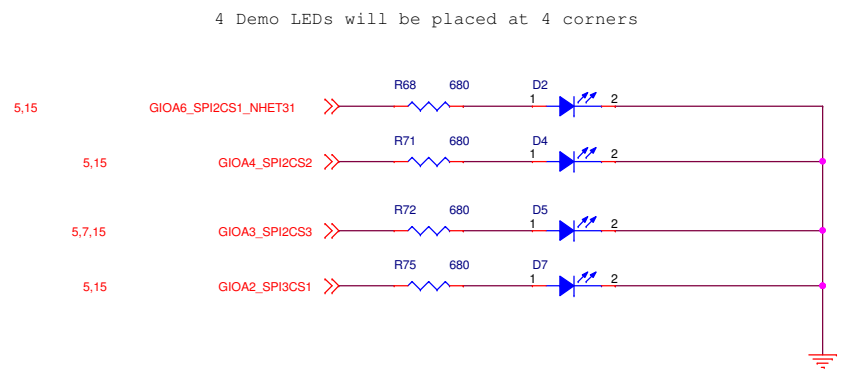
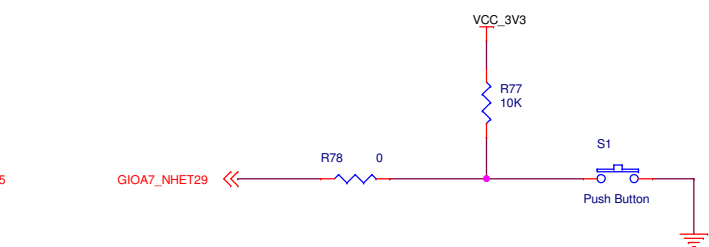
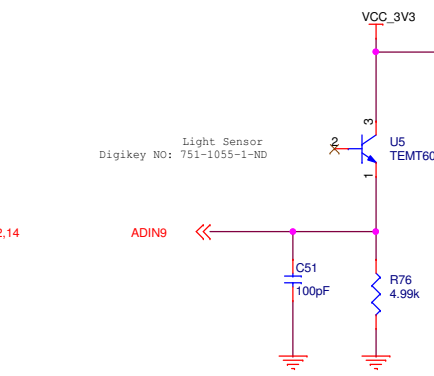
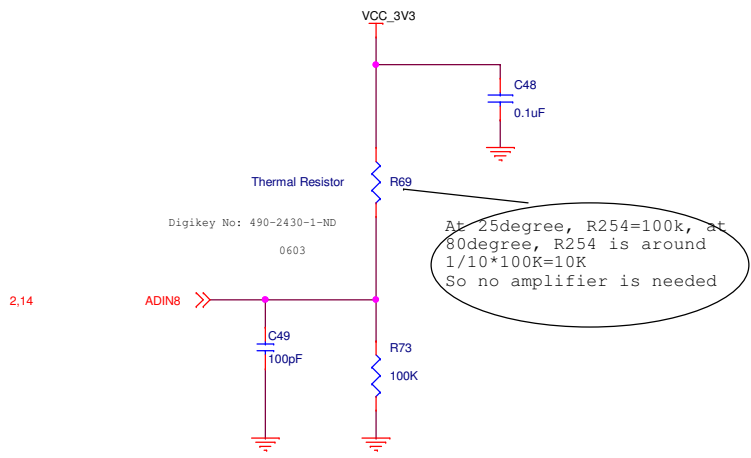
Flash external pump voltage (3.3 V). This terminal is required for both Flash read and Flash program and erase operations.



4 GND test points at the board's 4 corners



|          |                          |       |         |
|----------|--------------------------|-------|---------|
| Title    |                          |       |         |
| RM42 HDK |                          |       |         |
| Size B   | Document Number          |       | Rev A   |
|          | POWER and GND            |       |         |
| Date:    | Tuesday, August 14, 2012 | Sheet | 6 of 15 |



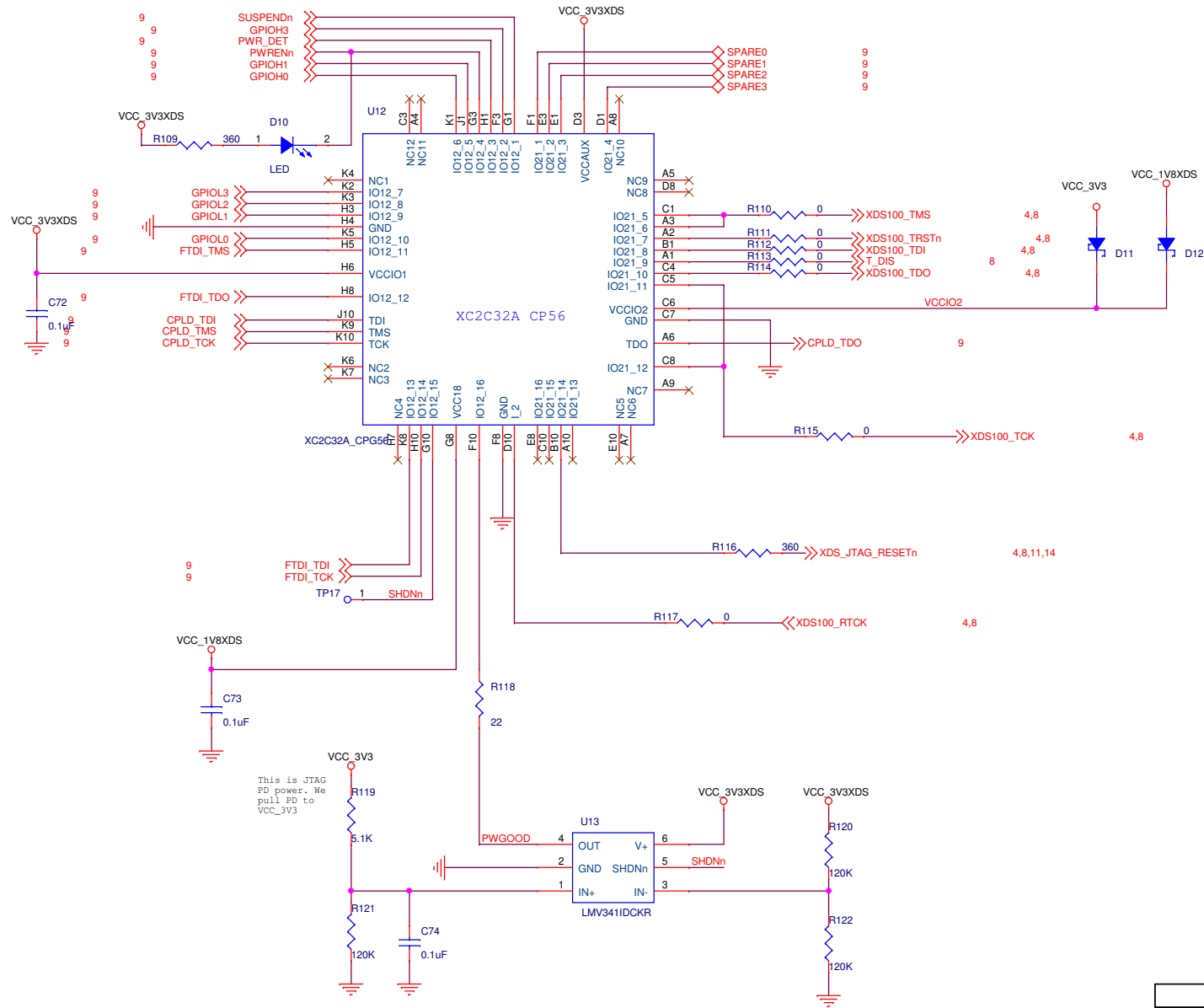
This push button can be used for bootloader ForceUpdate

|          |                          |               |
|----------|--------------------------|---------------|
| Title    |                          |               |
| RM42 HDK |                          |               |
| Size B   | Document Number          | Rev A         |
|          | SENSOR, LED, PB          |               |
| Date:    | Tuesday, August 14, 2012 | Sheet 7 of 15 |

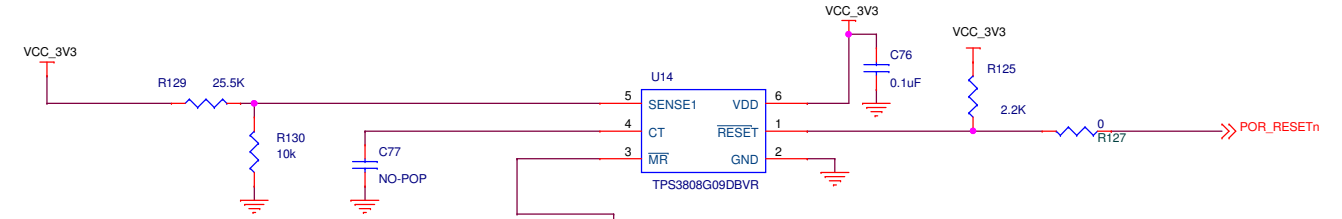
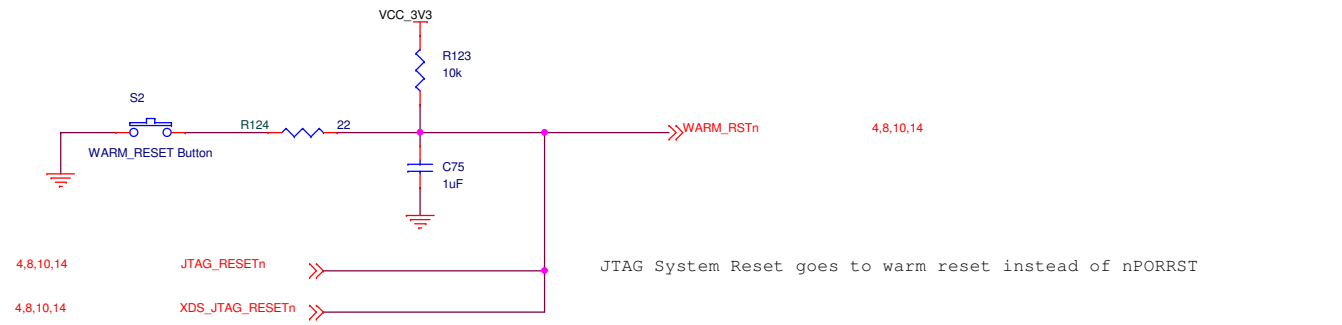




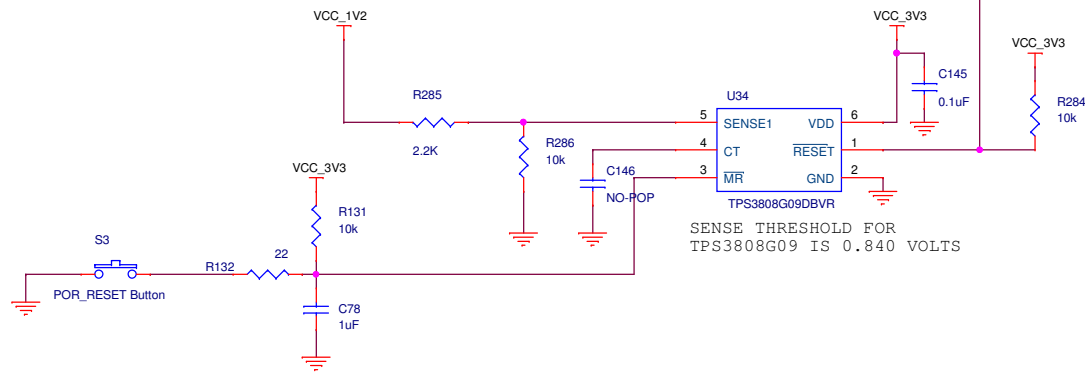




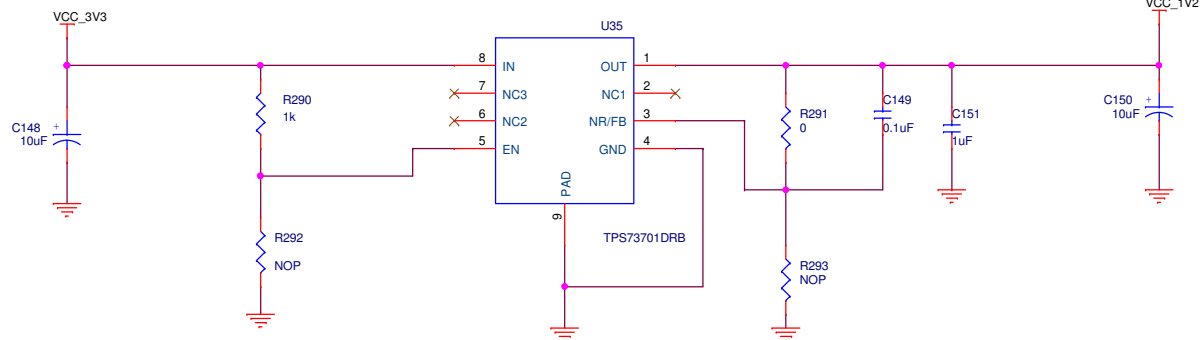
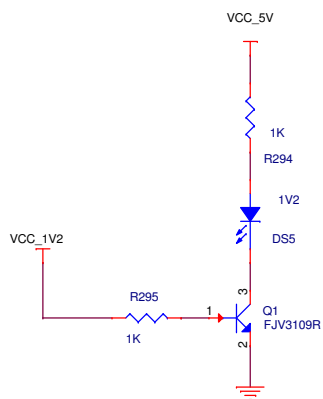
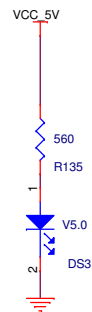
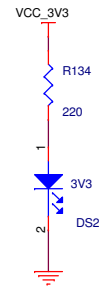
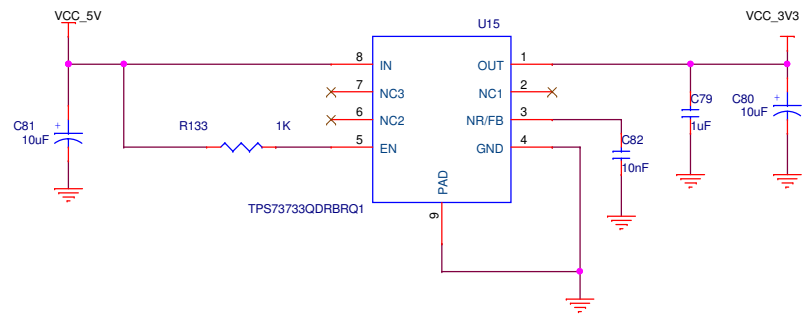
|       |                          |                 |               |          |
|-------|--------------------------|-----------------|---------------|----------|
| Title |                          | RM42 HDK        |               |          |
| Size  | B                        | Document Number | XDS100V2 CPLD |          |
| Date: | Tuesday, August 14, 2012 |                 | Sheet         | 10 of 15 |



If VCC\_3.3V below 3.0V --> RESET  
If VCC\_1.2V below 1.0V --> RESET



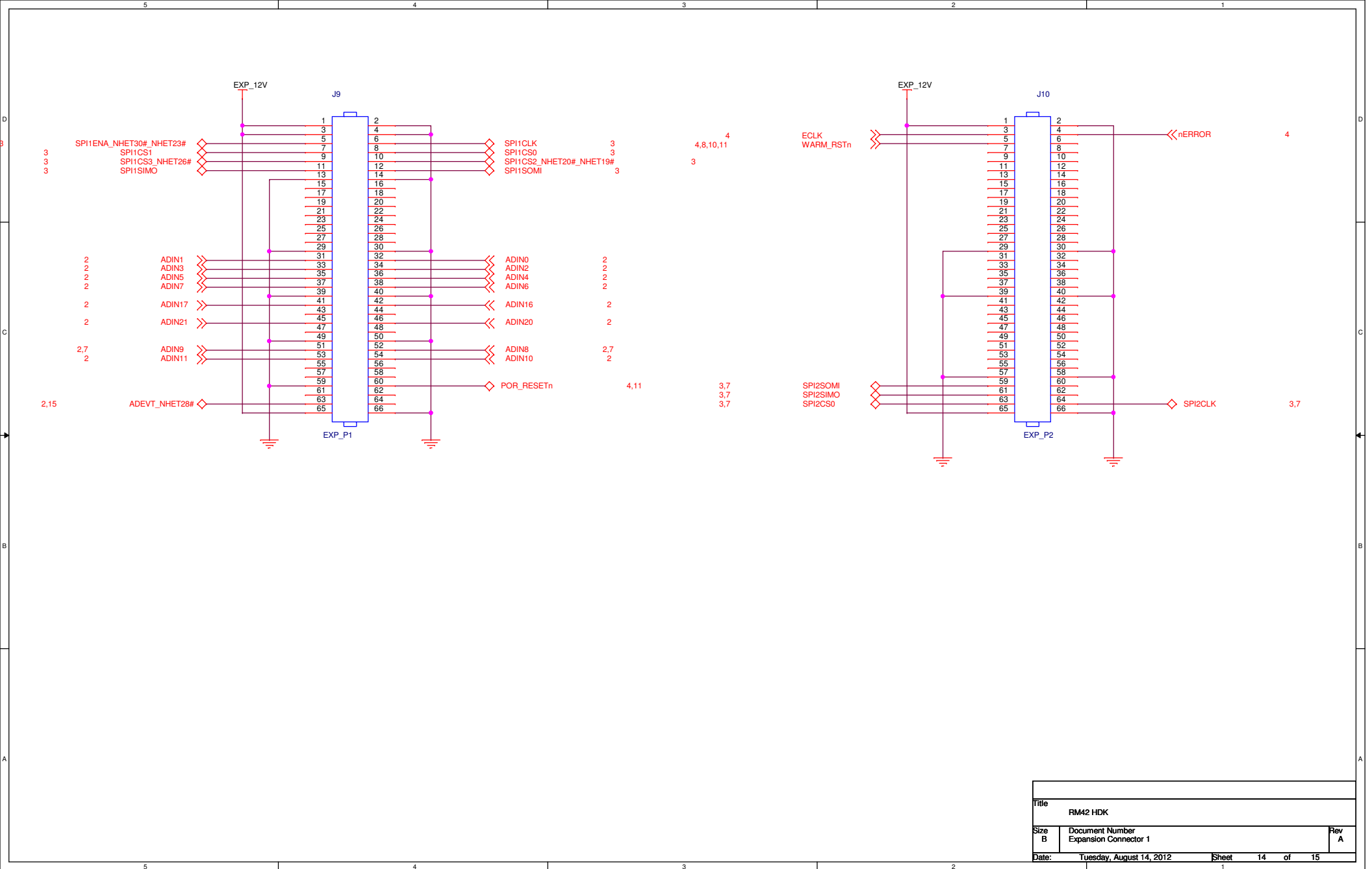
|          |                          |                |
|----------|--------------------------|----------------|
| Title    |                          |                |
| RM42 HDK |                          |                |
| Size     | Document Number          | Rev            |
| B        | RESET                    | A              |
| Date:    | Tuesday, August 14, 2012 | Sheet 11 of 15 |



$V_{out} = (1 + R1/R2) * 1.204$   
 For  $V_{out}=1.2V$ , R291 shorted, and R293 Open  
 For  $V_{out}=1.5$ , R291=23.2Kohms, and R293=95.3Kohms  
 R281: ERJ-2RK2322X

|          |                          |                |
|----------|--------------------------|----------------|
| Title    |                          |                |
| RM42 HDK |                          |                |
| Size     | Document Number          | Rev            |
| B        | Power Supply             | A              |
| Date:    | Tuesday, August 14, 2012 | Sheet 12 of 15 |





|       |                          |  |          |       |          |
|-------|--------------------------|--|----------|-------|----------|
| Title |                          |  | RM42 HDK |       |          |
| Size  | Document Number          |  |          |       | Rev      |
| B     | Expansion Connector 1    |  |          |       | A        |
| Date: | Tuesday, August 14, 2012 |  |          | Sheet | 14 of 15 |

