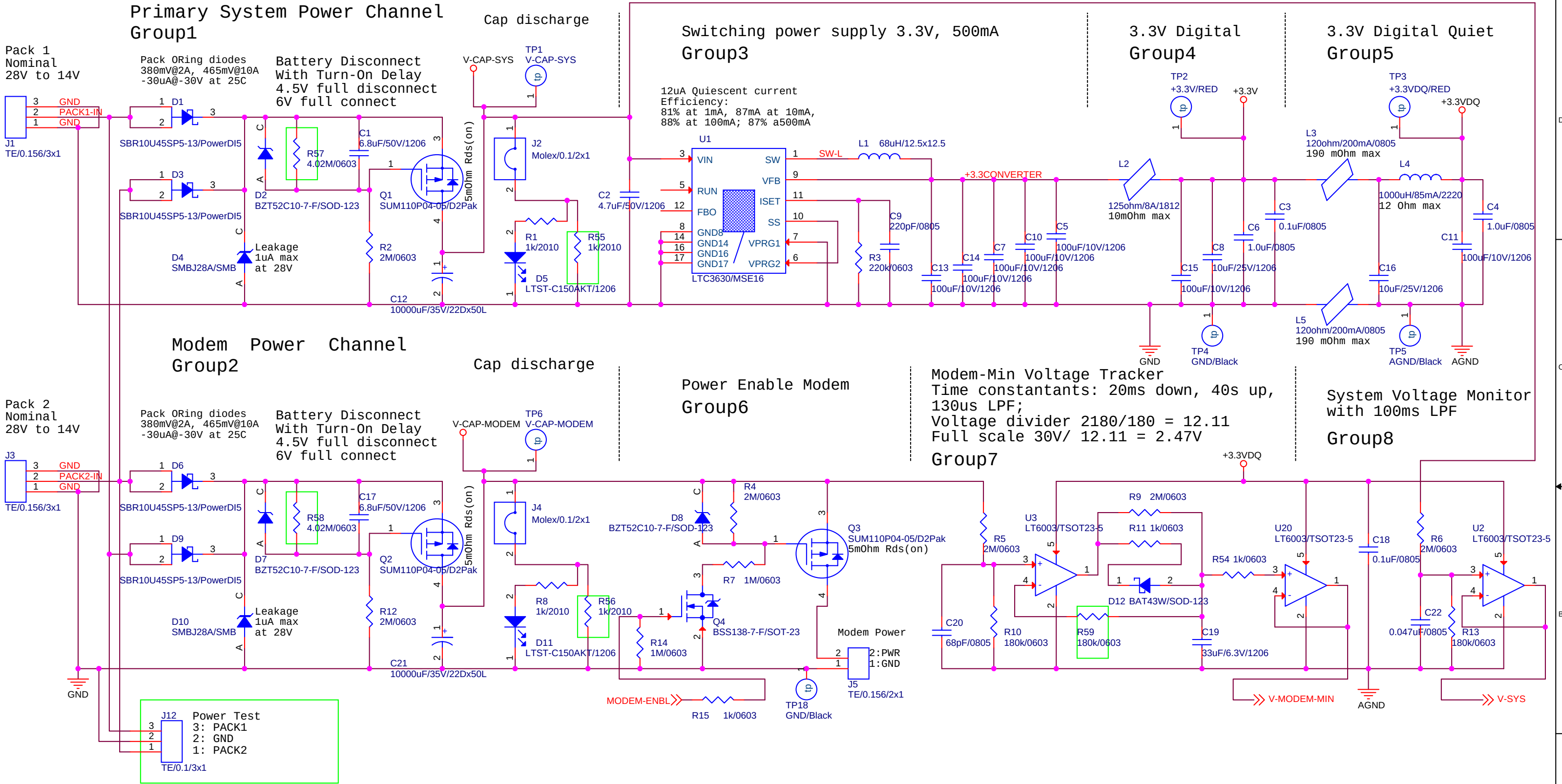


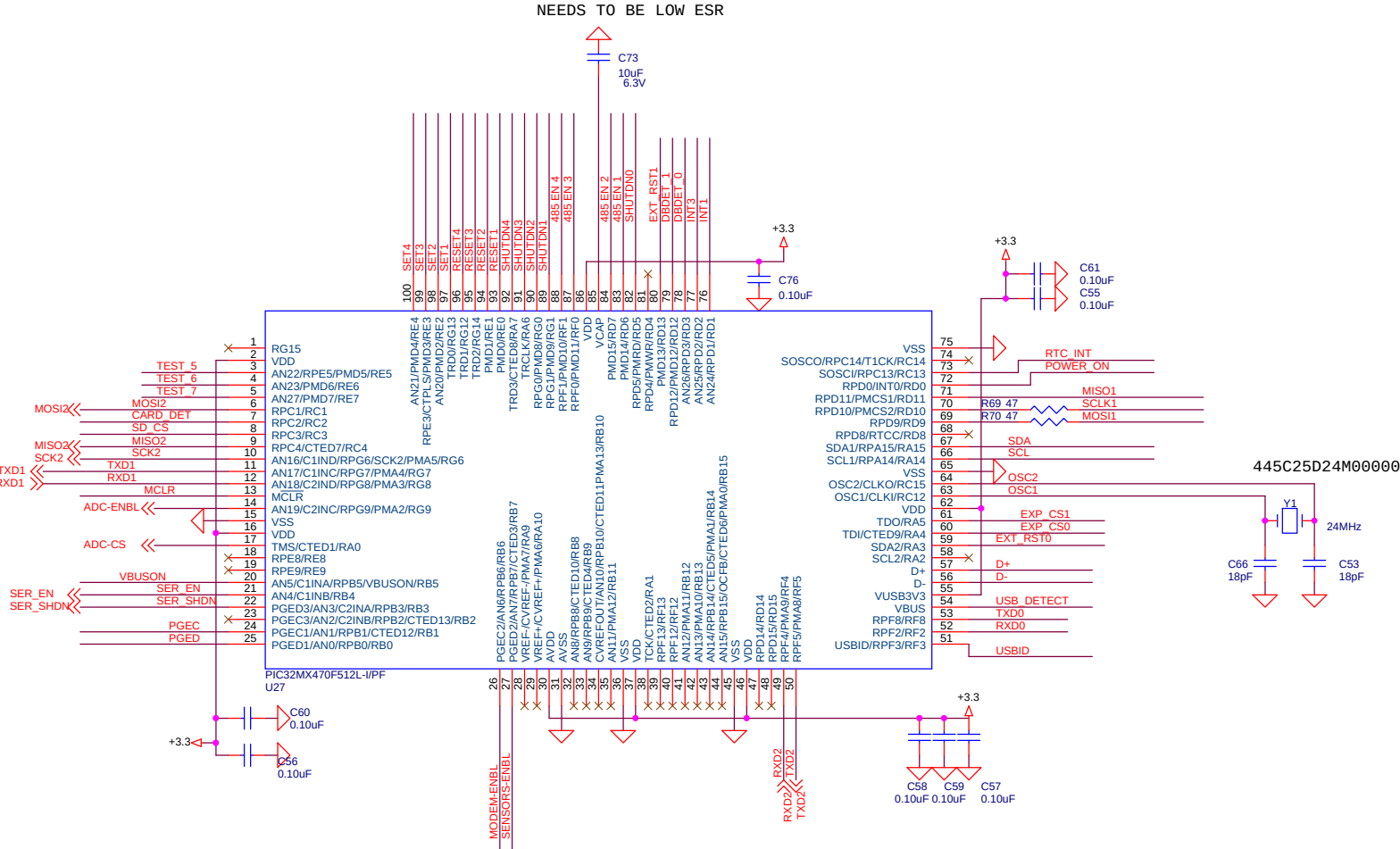
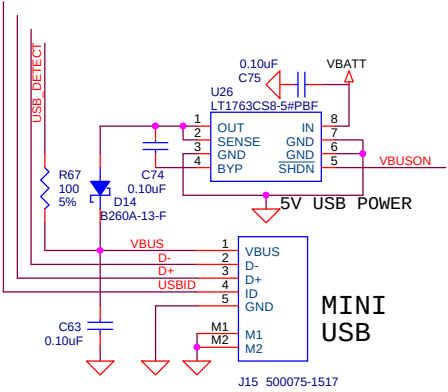
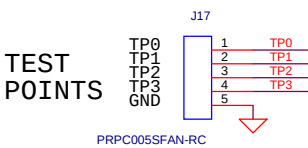
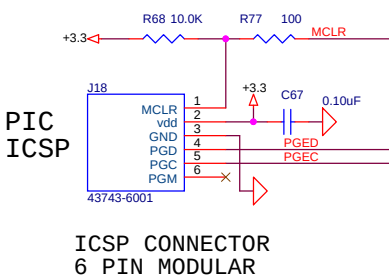
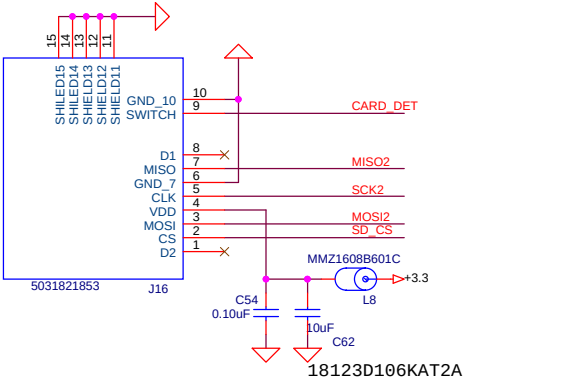


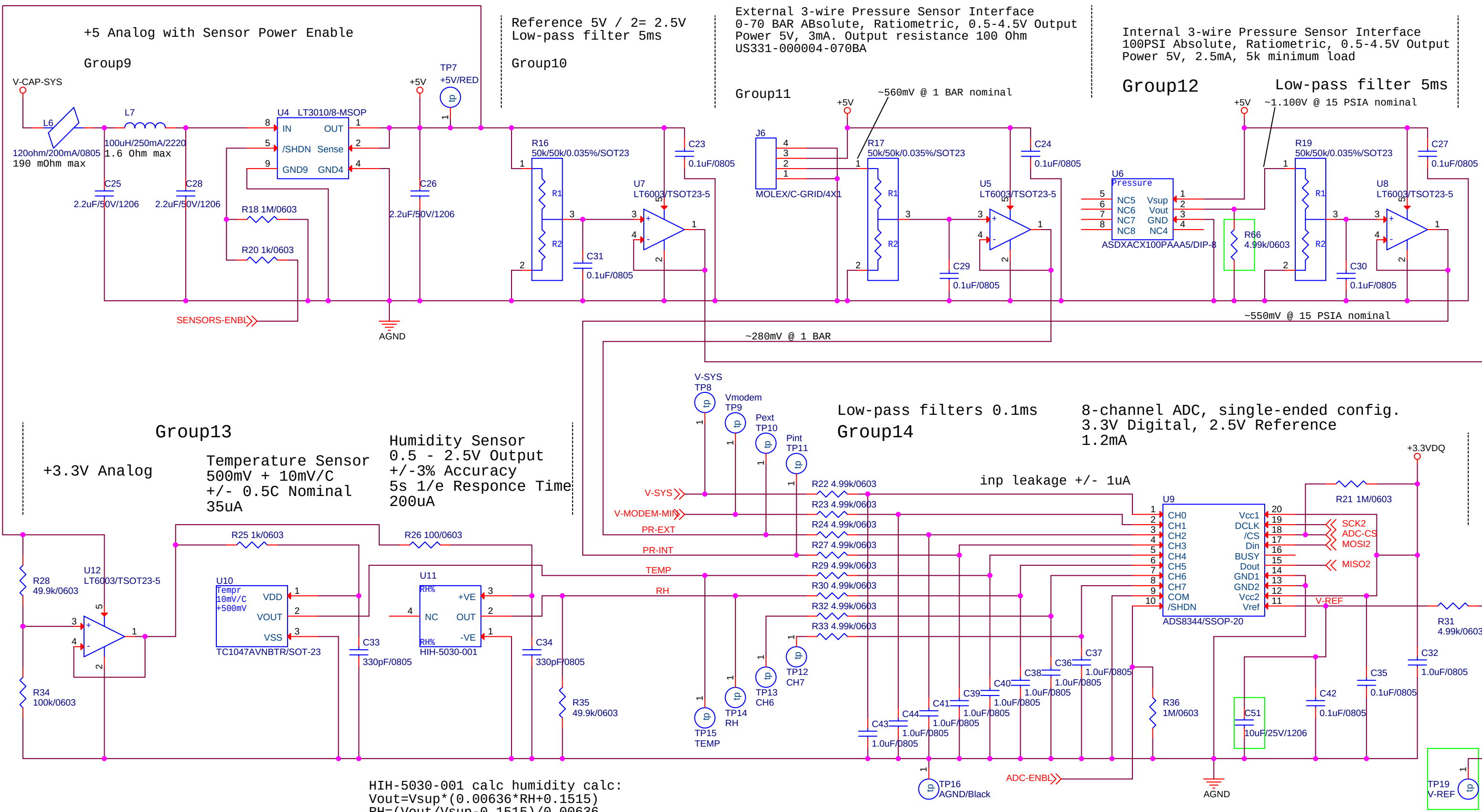
Rev0(01/24/2013): Initial Release  
Rev1(05/07/2013): C1,C17(2.2uF to 6.8uF+4M), R2,R12(1M to 2M), R55,R56(1k, added), L3(1k to 120ohm), L5(600ohm to 120ohm), C11(10uF to 100uF), C19(10uF to 33uF), cont. Page2

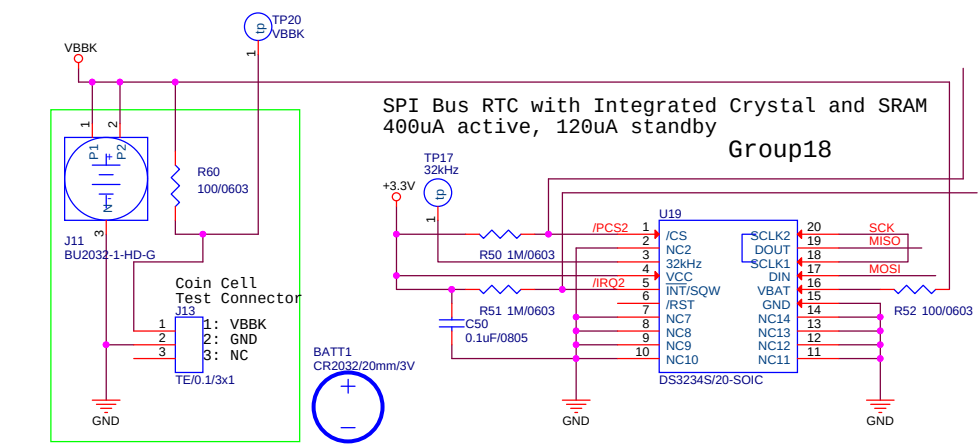
MOB1 to MOB2 revision:  
R55: 1k/2010 added  
R56: 1k/2010 added  
R57: 4.02M/0603 added  
R58: 4.02M/0603 added  
R59: 180k/0603 added  
J12: Molex C-grid 3x1 added

|                                                                                       |  |                                                                                      |  |
|---------------------------------------------------------------------------------------|--|--------------------------------------------------------------------------------------|--|
|  |  | Monterey Bay Aquarium Research Institute<br>7700 Sandholdt Rd, Moss landing CA 95076 |  |
| Engineer<br>Klimov                                                                    |  | Page Title<br><b>BEDS Mother Board/ Power</b>                                        |  |
| Size<br>B                                                                             |  | Project:<br>901006                                                                   |  |
| Doc. or Part Number<br><Doc>                                                          |  | File Name (auto)<br>10020895-MOB3                                                    |  |
| Page Modify Date (auto):<br>Design Modify Date (auto):                                |  | Rev<br>0                                                                             |  |
| Full path (auto):                                                                     |  | Sunday, February 04, 2018<br>Sunday, February 04, 2018                               |  |
|                                                                                       |  | Sheet:<br>1 of 4                                                                     |  |

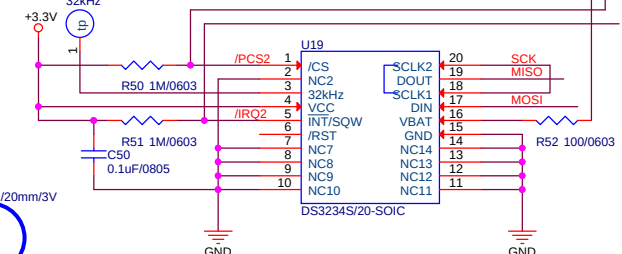
MICRO SD CARD







SPI Bus RTC with Integrated Crystal and SRAM  
400uA active, 120uA standby



Group16

PPS/GPS: 5V 100ms active high

PPS/Clock: 3.3V 400us active high

5nS low pass filter

J9  
ConnRF/SMA

5V

1

R39 100/0603

D13  
BZT52C10-7-F/SOD-123

R40 1k/0603

1

Q5  
BSS138-7-F/SOT-23

3.3V

R38 1M/0603

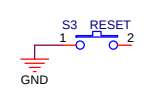
I/O5

5nS

GND

MOB1 to MOB2 revision:  
J11: BU2032-1-ND-G added  
R60: 100/0603 added  
J13: TE 0.1/3x1 added  
J14, R61, R62, R63, R64, R65, U21 added  
Rev2 (cont. from Page2): Install J11 (BU2032)  
instead of J10 (Keystone/3003)

Pinout diagram for the Persistor-CF2/Conn25x2 connector. The diagram shows a 25-pin connector with pins numbered C0 to C25. The pins are color-coded: blue for U14C, red for RSCTS, green for TPU13, purple for TPU9, orange for SENSORS-ENBL, yellow for ADC-ENBL, light blue for MISO, dark blue for MOSI, pink for SCK, and light green for R48. The pins are connected to various components: U14C (pins C0-C25), RSCTS (pins C49-C50), TPU13 (pins C34-C35), TPU9 (pins C30-C31), SENSORS-ENBL (pins C24-C25), ADC-ENBL (pins C22-C23), MISO (pins C20-C21), MOSI (pins C18-C19), SCK (pins C16-C17), R48 (pins C14-C15), VBBK (pins C12-C13), VSHDN (pins C10-C11), VREG (pins C8-C9), VRESET (pins C6-C7), VBAK (pins C4-C5), GND (pins C2-C3), and /DS (pins C0-C1).



Bring-up Checklist

Fully assembled Mother Board, no Persistor Board, no MPU-6050 board. Set power supply to 12V, power up.

- 0. Connect jumpers to J2 and J4, verify LEDs light up, record PS current with and without LEDs running
- 1. Check voltage level and noise on 3.3V (TP2) with test load on 3.3V, 100mA (33 Ohm) and 200mA (16 Ohm)
- 2. Check voltage level and noise on 3.3VDQ (TP3) with 100mA (33 Ohm) test load on 3.3V power
- 3. Check operation of Modem\_Enable with 5 Ohm 50W test load in J5 (2.3A).
- 4. Measure V-CAP-MODEM (TP6), voltage at J5.2, and difference between them (<50mV)
- 5. Check V-SYS (TP8) and V-MODEM-MIN (TP9) trackers with Modem-ENBL cycling and 5 Ohm 50W test load in J5
- 6. Check operation of SENSOR-ENBL and measure 5V (TP7) value and noise.
- 7. Check operation of TPU6 (U14.C27) and voltage on U18.A10

Sensors

- 8. External pressure sensor. Check voltages on J6.3, J6.2, and TP10
- 9. Internal Pressure sensor. Check voltages on U6.1, U6.2, TP11
- 10. Temperature sensor. Check voltage on U10.1 (3.3V) and TP15
- 11. Humidity sensor. Check voltage on U11.3 (3.3V) and TP14.

Plug test Persistor board and run AD Test.  
Record values on channels:

- 0:
- 1:
- 2:
- 3:
- 4:
- 5:

|                                                                                       |                                      |                                                                                      |                               |
|---------------------------------------------------------------------------------------|--------------------------------------|--------------------------------------------------------------------------------------|-------------------------------|
|  |                                      | Monterey Bay Aquarium Research Institute<br>7700 Sandholdt Rd, Moss landing CA 95076 |                               |
| Engineer<br>Klimov 831-775-1914                                                       |                                      | Page Title<br><b>BEDS Mother Board / Checklist</b>                                   | Project:<br><i>see page 1</i> |
| Size<br>B                                                                             | Document Number<br><i>see page 1</i> | File Name (auto)<br>10020895-MOB3                                                    | Rev<br><i>see page 1</i>      |
| Page Modify Date (auto):<br>Sunday, February 04, 2018                                 |                                      | Sheet:                                                                               |                               |
| Design Modify Date (auto):<br>Sunday, February 04, 2018                               |                                      | 4                                                                                    | of 4                          |
| Full path (auto):<br>U:\ORCAD PROJECTS\BEDS\10020895-MOB3\10020895-MOB3.DSN           |                                      |                                                                                      |                               |