



# ***RHINE base model User Interface Board***

## ***Adapted from Volga Wet base model User Interface Board***

Changelog:

- REV A -- Rhine P1.5 board  
-- PCB Q25062-001  
-- Adapted from Q25042-005
- REV B -- Rhine P2.5 board  
-- PCB Q25062-001  
-- CHANGED C123 TO 470uF.  
-- DEPOPULATE R146.  
-- CHANGE R139 TO 10K.  
-- REMOVE NOTE ABOUT UNPOPULATING BAIL ATTENUATOR.  
-- CHANGE R119 TO INCREASE LED CURRENT. (WAS 121 OHMS)  
-- DEPOPULATE BAIL DISABLE TRANSISTOR.
- REV C -- Rhine P2.5 board  
-- Added Dp1 - Dp6 protection diodes to low side drivers  
-- Pushed to Q25062-002
- REV D -- Rhine P3.0 board  
-- Changed C34 Electrolytic Capacitor into CB1-CB6 1206 capacitors for Reverse polarity protection  
-- Changed Rev Bit 0 for micro to populate. It is now 001. For Reverse Battery connection protect.  
-- Pushed to Q25062-003
- REV E -- Rhine P3.0 board  
-- Changed GND\_SIGNAL to GND for U26 and R355  
-- Pushed to Q25062-004

REFERENCE PART NUMBERS:  
ASSEMBLY 1219795

- MH1

MOUNTING HOLE

1
- MH2

MOUNTING HOLE

1
- MH3

MOUNTING HOLE

1
- MH4

MOUNTING HOLE

1

- FW

FIRMWARE

Q30068-001
- PCB1

PCB

Q25062-004
- SCHEMATIC1

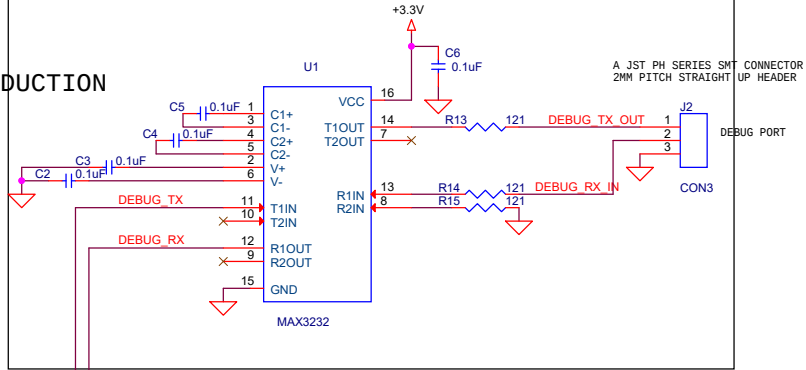
SCHEMATIC

Q26014-001

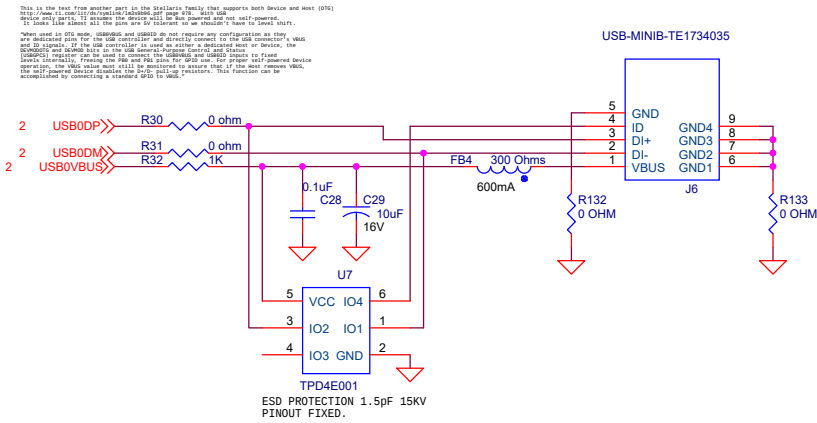
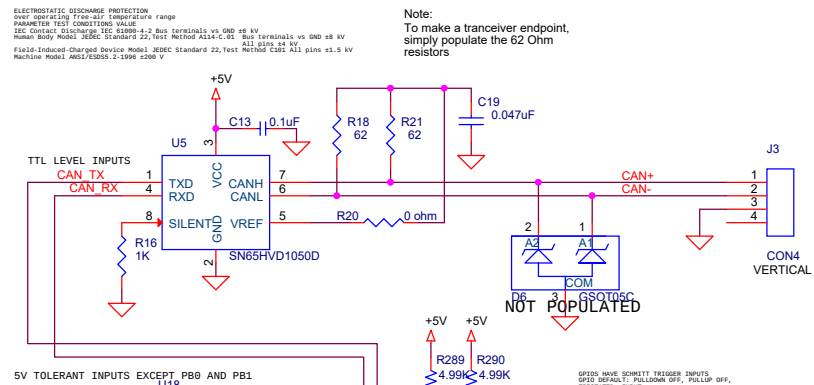
|                                  |                         |              |
|----------------------------------|-------------------------|--------------|
| Title                            |                         |              |
| RHINE BASE USER INTERFACE MODULE |                         |              |
| Size B                           | Document Number         | Rev E        |
|                                  | Q26014-001              |              |
| Date:                            | Tuesday, April 02, 2019 | Sheet 1 of 4 |

DNI FOR PRODUCTION

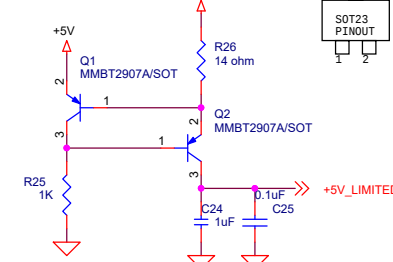
## RS-232 SERIAL PORT



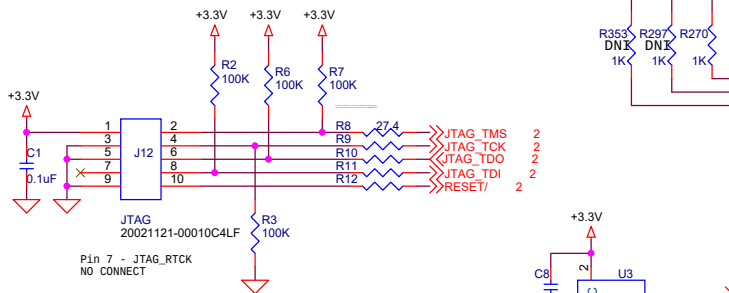
## CAN INTERFACE



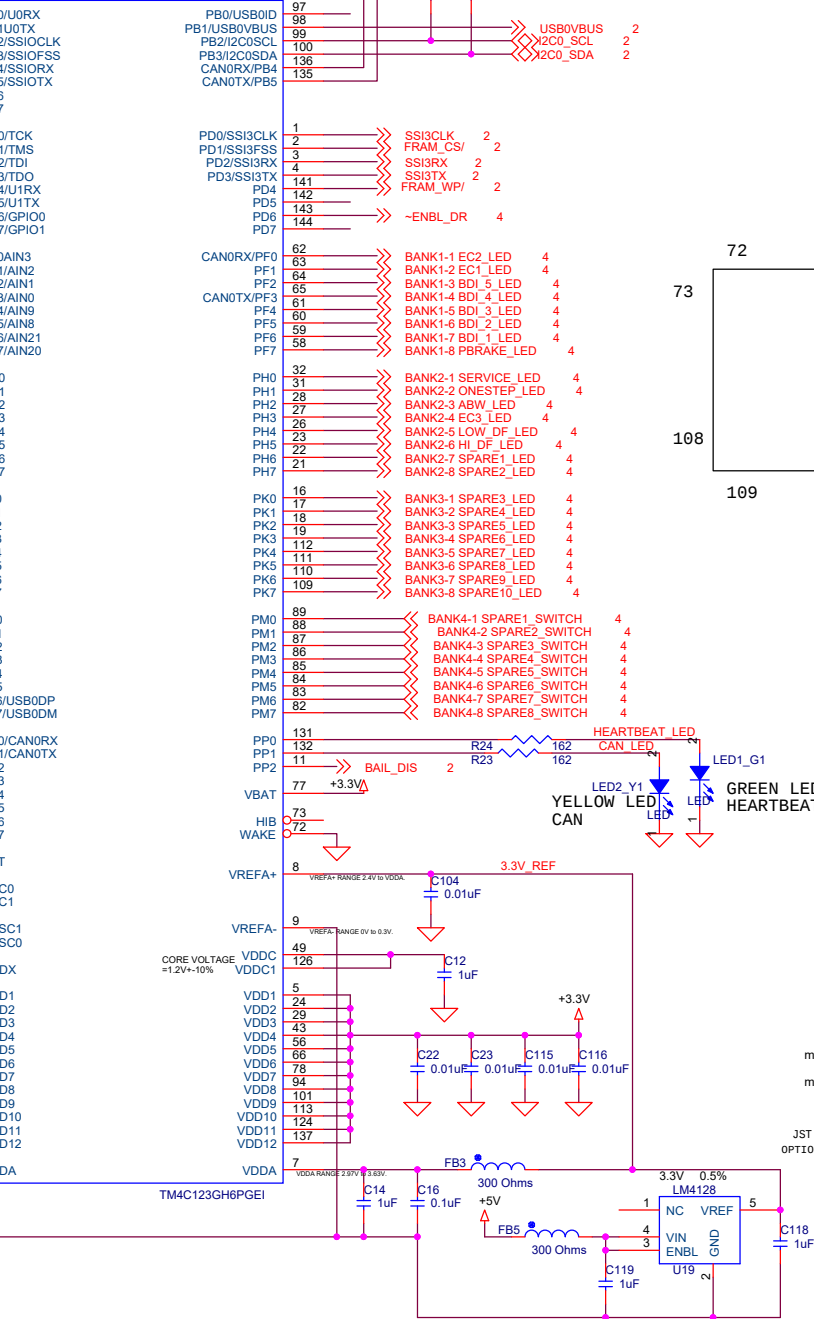
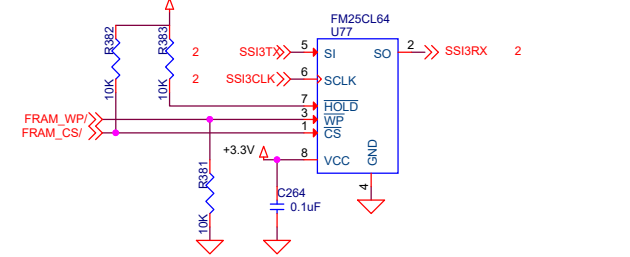
Current limited 5V source  
50mA max



## JTAG



## FRAM

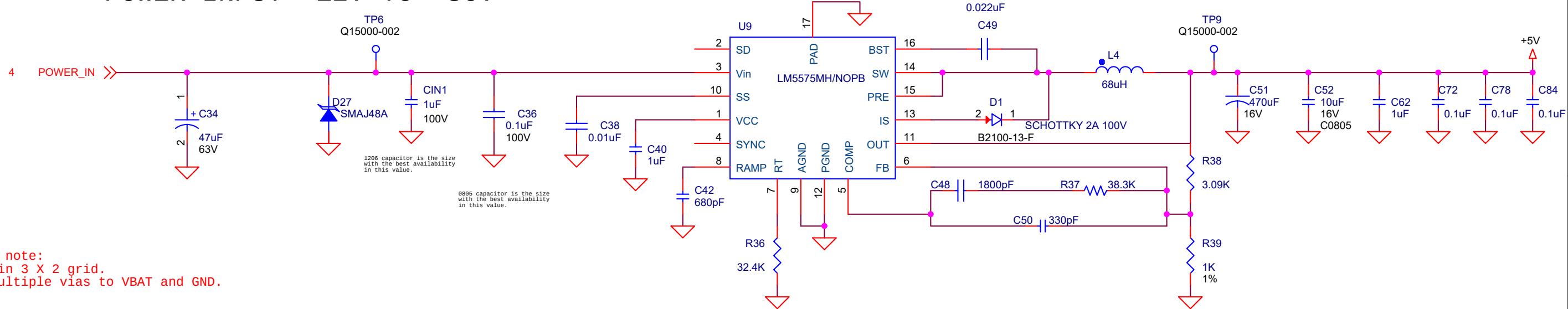


POWER SUPPLY +5V

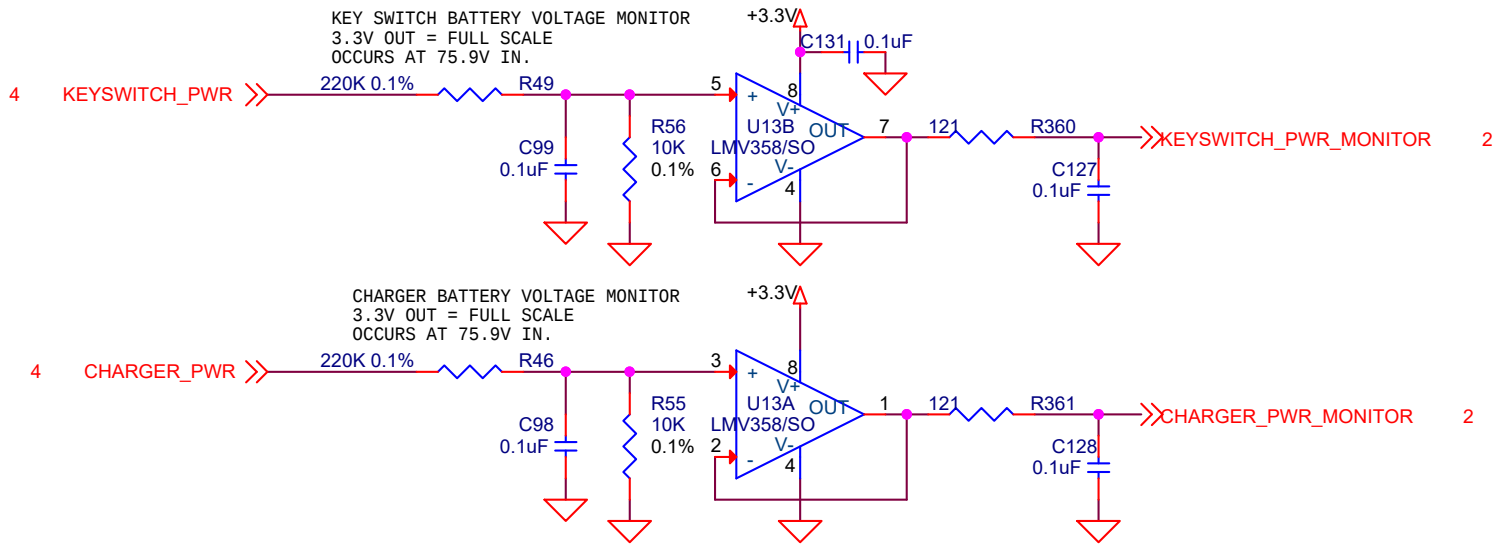
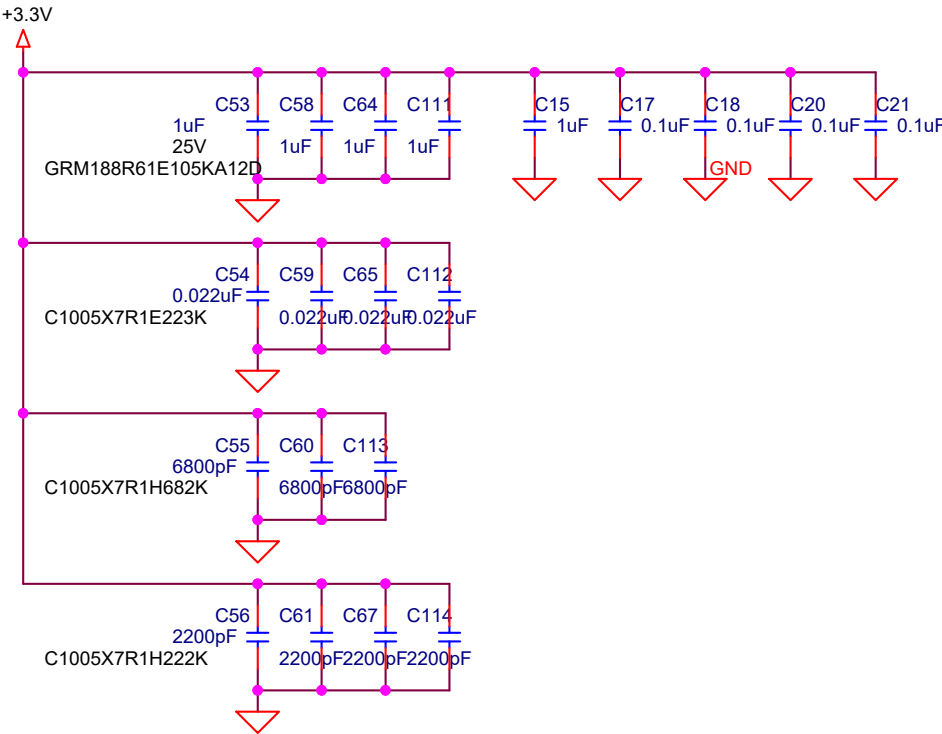
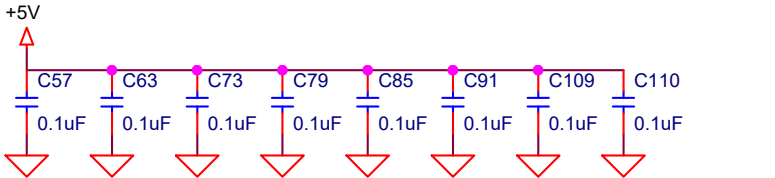
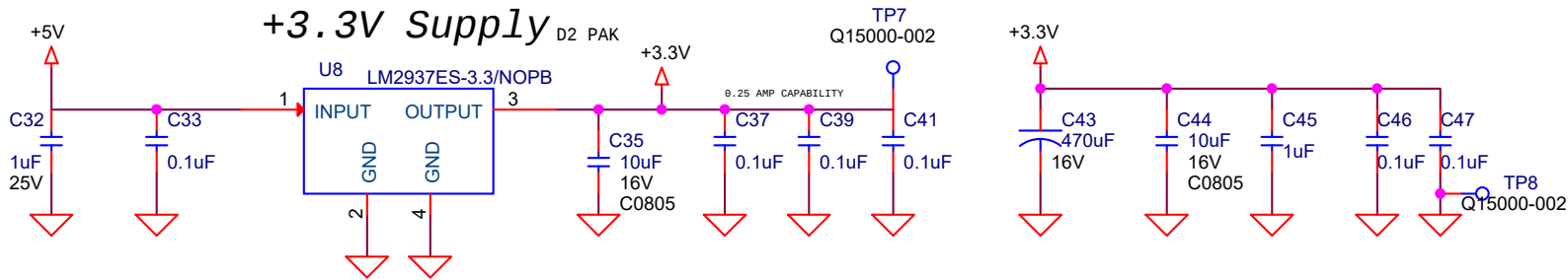
design borrowed from Einstein  
Input range 8V-72V

POWER INPUT +12V TO +36V

Layout note:  
Place in 3 X 2 grid.  
With multiple vias to VBAT and GND.



+3.3V Supply



Power Supplies

|                                  |                         |              |
|----------------------------------|-------------------------|--------------|
| Title                            |                         |              |
| RHINE BASE USER INTERFACE MODULE |                         |              |
| Size B                           | Document Number         | Rev E        |
|                                  | Q26014-001              |              |
| Date:                            | Tuesday, April 02, 2019 | Sheet 3 of 4 |

