Simple Backup System for CMI09RAM

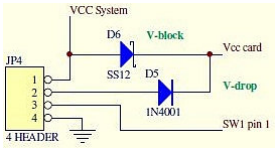
Using the following data:

The 74HCxxx VCC from 2V - 7V
The GAL VCC from 0.5 - 7V
The RAM VCC from 1.5 - 5.5V data retention
Li cell from 3.0V - 4.2V (fully charged)

Because there are too many chips on the VCC trace, it is too complex to modify the board to use standby for just the ram chips.
So we just put the whole board in standby !

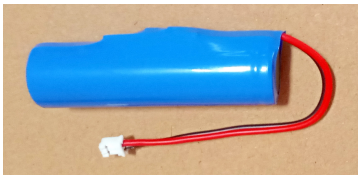
RAM Card.

1: Connect a small 5V/200mA adaptor with:
Plus to pin 2 (VCC ram)
Minus to pin 4 (ground)



2: We use a Li-cell from 3.0V - 4.2V, we need to charge the cell outside the system.
And we have to test ourselves that the cell does not drop below the 3V.
Backup RAM voltage will be from ~ 2.4V - 3.5V.

Place a Li cell:
Li cell plus to pin 2 (VCC ram)
Li cell minus to pin 4 (ground)

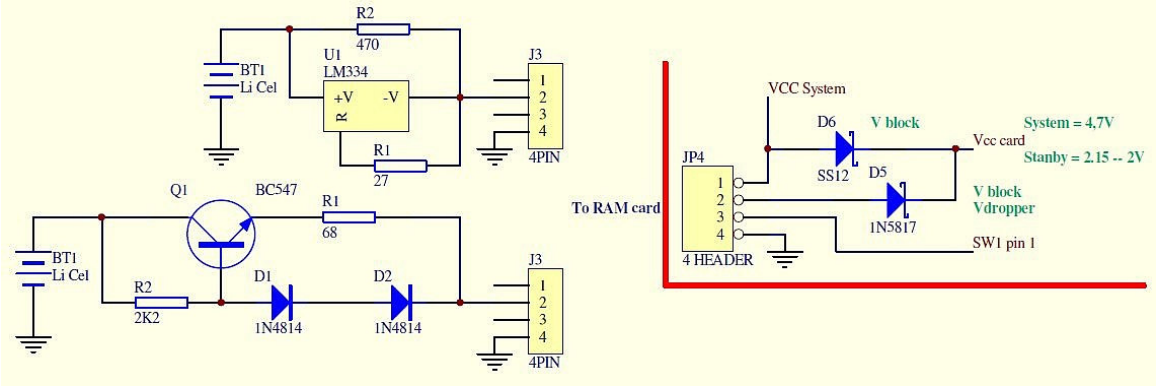


18650 3.7V 3600mA with protection

Standby on Li cell 3600/30 ~ 120 hour.
The ram card will use less power when the voltage drops.
Expected standby 160 hour, ~6 days.

3: If we keep the voltage just above the 2V the 74HCxxx chips will remain there status.
We replace the 1N4001 by a 1N5817.
And use one of these circuits:

RAM Card.



We apply an average current of ~4.5mA to pin 2 (VCC ram).
Expected standby ~800 hour, >30 days.

A backup system to charge the cell when the system is on and an external 5V charging option is in the development and testing phase.
It must also generate a battery low signal and have a reset function.
After restarting and loading FLEX and VIRTUAL, the driver will test for low battery.