Re: Battery can't cope with regulator startup?

Source: http://sci.tech−archive.net/Archive/sci.electronics.basics/2008−02/msg00180.html

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- *Date*: Fri, 08 Feb 2008 03:14:26 GMT

"swe_seeker" <t.plus.s.plus.tabo@xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx> wrote in message news:fofu8o$55h$1@xxxxxxxxxxx

> [As I don't trust my ASCII skills, I won't try to draw schematics or curves here. Images can be viewed here instead:]
> Circuit schematics:
> http://thunderdome.myftp.org/diverse/battery/schematics.jpg
> Oscilloscope curve for D flip−flop,clk in − /Q out to D in loop − Q out
> Without modifications, and with IC5:1 lifted, respectively(bad brand):
> http://thunderdome.myftp.org/diverse/battery/curve_no_mod.gif
> http://thunderdome.myftp.org/diverse/battery/curve_leglift.gif
> **********
> Hi.
> I use a 9V battery, a pushbutton and a D flip−flop to control /ENABLE for a voltage regulator. This works just fine most of the time, as long as I use one particular battery brand(I have two brands here at home, of course there are more out there). If I use the other, bad brand the flip−flop input starts to rise as it is supposed to, but halfway or something into the rise the voltage on the input pin dips. So the regulator /ENABLE never goes active. If I cut the connection between the flip−flop output and the regulator then the flip−flop output does what it should, i.e. go low to enable the regulator. On the other hand, if I use the good brand − or a variable power supply − the dip never happens. I've tried the same voltage as the bad battery, higher and lower as well, for both the good battery brand(have a few of them) and the supply. In both cases the circuit works. So my limited experience points me towards the battery :o].
>
> Simple(open circuit voltage+voltage over ~120ohm resistor) measurements of the internal impedances in the batteries gives ~55ohm for the bad brand and ~8ohm for the good brand. Can that be the problem? My interpretation of the oscilloscope curves is that the input signal to the flip−flop is ok with the bad brand, but when the signal gets past the flip−flop and tells the regulator to get going it all dips, because the bad brand battery can't cope with it.
>
> I've experimented a little with the decoupling, removing/adding capacitors to decoupling/signal path between batt