

# Re: Preventing Voltage Dips

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*Source:* <http://sci.tech--archive.net/Archive/sci.electronics.design/2006-11/msg04800.html>

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- *From:* Jan Panteltje <pNaonStpealmtje@xxxxxxxx>
  - *Date:* Thu, 23 Nov 2006 13:04:55 GMT
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On a sunny day (Thu, 23 Nov 2006 11:35:30 GMT) it happened "AJ" <itisme33@xxxxxxxxxxxxxxxx> wrote in <6If9h.70600\$rP1.43972@xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx>:

Hi

I am trying to power an GSM module from a 3.6V lithium battery via a couple of FETS and I am finding that the modem won't connect when the battery voltage drops to about 3.6V. I have measured the voltage at the modem with my scope and I have noticed that the voltage dips about 800mV during its transmissions bursts. At first I thought it was a problem with my FET's but when I measured right back at the battery it was still dropping around 500mV. I have about 1200uF on the modem and I have noticed that the more capacitance I use, the better it is but I would prefer not too use big capacitors on this design. Does anyone know of any better ways to get around this? The Current spikes are around 2A for about 500uS every 5mS.

Best regards,

Adrian Hamilton

You lose 300mV at 2A in the FETS, so that is a Ron of .15 Ohm, that can be done better I think.

Because  $Q = C.U = i.t$  and say if you only allowed 100mV drop, the C would have to be:

$C = i.t / U = (2 \times .0005) / .1 = .001 / .1 = 10\text{mF}$  or 10000uF.

Caps would not be that big a size, as the voltage is rather low.

Those caps only cost a few \$