Subject: soft vs hard reset
Posted by Ray Carlsen on Thu, 28 Feb 2013 18:05:46 GMT
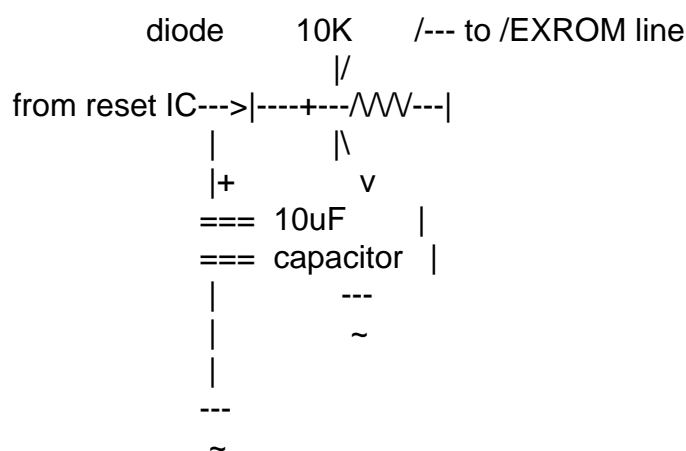View Forum Message <> Reply to Message

A system reset button is easily added to the C64. The resulting
"soft" reset will clear the C64 screen of a BASIC program. However, if
running a ML program such as Music Construction Set, pressing reset will
stop the program, the screen freezes but does not clear, and the
computer locks up. If an EPYX FastLoad cart is plugged in, a complete
reset is done. It apparently clears the memory and returns the computer
to it's start-up state. Can anyone tell me how that works?
    There is a hardware change that will enable a "hard" reset with no
cart inserted. With the addition of a few small components to the 64
motherboard, pressing reset will completely clear the screen of the ML
program. Although it will remain in memory (press RESTORE to show it),
another program can be loaded and run anyway. Note: with this mod in
place, a FL cart no longer works. You just get a blank blue screen at
boot-up! JiffyDOS and all other carts I tried function normally however.
    To do the hardware mod, the reset IC output (a positive going
pulse) is used to charge a small capacitor which turns on a transistor.
Its collector is tied to the /EXROM line which is held low during and
for a fraction of a second after reset time.

```
                     NPN transistor


         diode      10K      /--- to /EXROM line
                             |/
  from reset IC--->|----+---/\/\/---|
                   |         |\
                   |+         v
                  ===  10uF       |
                  ===  capacitor  |
                   |         ---
                   |          ~
                   |
                  ---
                   ~
```

Ray

Subject: Re: soft vs hard reset
Posted by Zbiggy on Thu, 28 Feb 2013 21:44:01 GMT
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In comp.sys.cbm, Ray Carlsen wrote:

>   A system reset button is easily added to the C64. The resulting

> "soft" reset will clear the C64 screen of a BASIC program.

It's not "soft" (more properly: "warm") reset - it's exactly "hard" (more correctly: "cold") reset.

> However, if running a ML program such as Music Construction Set, pressing
> reset will stop the program, the screen freezes but does not clear, and
> the computer locks up.

It's not because there's a need for some additional transistor - it's because of "CBM80" signature present in memory at $8004.

Some kernal-variants have a workaround for this: for example, using Speeddos Plus it's enough to press reset button while holding <Space> down.
--
It's us, the scobs.

Subject: Re: soft vs hard reset
Posted by Ray Carlsen on Fri, 01 Mar 2013 03:15:46 GMT

>> A system reset button is easily added to the C64. The resulting
>> "soft" reset will clear the C64 screen of a BASIC program.

> It's not "soft" (more properly: "warm") <or> "hard" (more correctly:
> "cold") reset.

Thanks for the correction. I used my own terminology there. How does the EPYX FastLoad get around that? Does it replace the Kernal? I notice its boot screen is immediate as if it's bypassing the normal start-up routines.

>> However, if running a ML program such as Music Construction Set,
>> pressing reset will stop the program, the screen freezes but does
>> not clear, and the computer locks up.

> It's not because there's a need for some additional transistor - it's
> because of "CBM80" signature present in memory at $8004. Some
> kernal-variants have a workaround for this: for example, using
> Speeddos Plus it's enough to press reset button while holding <Space>
> down.

But if you don't have such a workaround, the mod I suggested may be useful for some users. I'd want to hear about any drawbacks to such a mod if anyone cares to try it.

Ray

Subject: Re: soft vs hard reset
Posted by Groepaz on Fri, 01 Mar 2013 16:49:09 GMT
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Ray Carlsen wrote:

>>> A system reset button is easily added to the C64. The resulting
>>> "soft" reset will clear the C64 screen of a BASIC program.
>
>> It's not "soft" (more properly: "warm") <or> "hard" (more correctly:
>> "cold") reset.
>
> Thanks for the correction. I used my own terminology there. How does the
> EPYX FastLoad get around that? Does it replace the Kernal? I notice its
> boot screen is immediate as if it's bypassing the normal start-up
> routines.
>
>>> However, if running a ML program such as Music Construction Set,
>>> pressing reset will stop the program, the screen freezes but does
>>> not clear, and the computer locks up.
>
>> It's not because there's a need for some additional transistor - it's
>> because of "CBM80" signature present in memory at $8004. Some
>> kernal-variants have a workaround for this: for example, using
>> Speeddos Plus it's enough to press reset button while holding <Space>
>> down.
>
> But if you don't have such a workaround, the mod I suggested may be
> useful for some users. I'd want to hear about any drawbacks to such a
> mod if anyone cares to try it.

there is no drawback - and it has been a common hack for at least 20 years.
(and many cartridges do exactly that)

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http://www.hitmen-console.org   http://magicdisk.untergrund.net
http://www.pokefinder.org   http://ftp.pokefinder.org

Man who stands on toilet is high on pot.