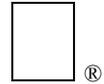


# Apple II Technical Notes



---

Developer Technical Support

## Apple IIc

### #9: Detecting VBL

Written by:

Dan

Strnad

November 1990

This Technical Note describes how the `VBLInt` flag at `$C019` behaves differently than documented in the *Apple IIc Technical Reference Manual*, Second Edition, when being polled.

---

The *Apple IIc Technical Reference Manual*, Second Edition, claims that reading `$C019` reads and resets the `VBLInt` flag. This is not correct. After reading `$C019` once the high bit has been set to flag VBL, the high bit remains set. A program polling VBL at `$C019` would have to access either `PTrig` at `$C070` or `RdIOUDis` at `$C07E` to reset the high-bit for `$C019`. Note that `IOUDis` must have been turned off by writing to `$C07F` then `ENVBL` accessed at `$C05B` in order to poll for `$C019` on the IIc.

Developers are encouraged to detect VBL using an interrupt handler with one of the VBL-based mouse modes on the IIc, if possible.

## Further Reference

---

- *Apple IIc Technical Reference Manual, Second Edition*