Simple Circuit for Verification of CRT-Software Synchronization

Burr-Brown OPT101, a monolithic photodiode and linear amplifier on a single integrated circuit.

Figure 1.
Photograph of 8-pin OPT101 integrated circuit. The package is clear to allow light to reach the on-chip 5.225 mm$^2$ photodiode.

Figure 2.
OPT101 response is weak for blue light but relatively strong for yellow/orange/red light.

Figure 3.
OPT101 sensitivity drops as its alignment deviates from the plane of the CRT screen.
Figure 4.
Schematic diagram of simple circuit used to detect the arrival of the CRT beam. Use potentiometer on non-inverting input to the comparator to adjust the analog level from the OPT101 needed to trigger an active digital output.

Figure 5.
Wiring diagram.