SCOPE SIGNALS FOR TROUBLESHOOTING 81-240-n

The examples of correct signals shown below do not represent all of the signals on a Kaypro mainboard, since most signals will be simple high-low toggles. A group of video signals (CCØ through CC3) are included as illustrations of the timing relationships between the various video signals. Note that only one of the I/O signals on U57 will be low at any given time.

State of the machine: with a blank, 2732, EPROM inserted in place of normal EPROM at location U 47. The door of drive A is open; the machine is waiting to boot.

The signal measurements were made using a Tektronix oscilloscope, model 2213. It has a bandwidth of DC-6Ø MHz, sensitivity of 2mV/cm, a sweep delay of Ø.1 microseconds to 1 second, and a graticule display measuring 8 x 1Ø cm.

Signal M1 from pin 27 of the CPU (U63) was triggered on. This signal is shown in the top half of each display and was channel 1. Ground for the signals shown on channel 2 was established at first graticule line above the bottom of the display.

Each square of the representation is the equivalent of one square cm on the graticule. The scope was set for 2V/div. for all figures, and was set for .5 micro-secs/div. for all figures EXCEPT figure 6, which was taken using 1 micro-secs/div.

Figure 1: Pin 6 of U63, 2.5MHz clock signal.

Figure 2: Pin 24 of U82, 1MHz clock signal.

Figure 3: Pin 3 of U6, CCØ.

Figure 4: Pin 4 of U6, CC1.

Figure 5: Pin 5 of U6, CC2.

Figure 6: Pin 6 of U6, CC3.