VIDEO MONITORS AND HP HANDHELD CALCULATORS
Can I Use My TV Set?

HP and third party suppliers offer HP-IL interfaces to RS-232, IEEE-488, Centronics parallel, etc. They are used by modems, printers, and other computers. These interfaces are all useable with the HP-41 82160 HP-IL module. The interface to a video monitor or TV set is special.

A video monitor is not the same as a TV set. A TV set receives a radio frequency, RF, signal transmitted from the TV station. To produce a video signal, an antenna is required along with a tuner to select the stations. The TV's special circuits convert the transmitted signal to video signals that are presented on the screen. A video monitor does not have the tuner circuits and high gain amplifiers required to receive weak signals from a transmitter. Because a video monitor has less electronics, it is usually lower in cost.

Video monitors were first used in TV studios to monitor camera signals. When computers became common, the video monitor was also used to display small charaters on the scrren. The bandwidth required to show crisp clear characters was higher than that of normal monitors and soon most monitors were manufactured to 'computer standards.' Most monitors made in the last five years are suitable, but higher quality (wider bandwidth) monitors will produce sharper characters.

In general, TV sets are not suitable to use for monitor for two reasons. The video bandwidth and the tuner bandwidth are both inadequate. In order to use a TV set, an RF modulator is required; these may be found at video stores in the $10 to $20 range. Usually the output of an RF modulator is on channel 3 or 4. Sony TV sets are the best because of their wide bandwidth circuits. The weak link is the TV set rather than the RF modulator. If you travel and must use hotel TV sets, you will have to accept fuzzy characters on the screen. Check with the manager before using hotel and motel TV sets because some have alarm systems that are activated when the antenna is removed from the set. Some new TV sets have a separate video connector for use with computers or VCRs. These models are being used more and more by hotel and motels.

The first video interface was the HP 82163. This small AC operated device provided a character generator only—no graphics. Input was HP-IL and the output was composite video. Users wanted the video interface for two reasons. First they wanted a multiple line display. Programs could be debugged more easily because the monitor was faster than a printer and it didn't use a printer or make noise. Many programs could effectively use the 16 line 32 character display for tables, multiple outputs, etc. The second reason is in the business environment, where several people need to conveniently see the display at the same time. In the educational environment, large monitors could be used for instructional purposes.

The 82163 didn't last very long. Another company, Mountain Computer, offered a physically larger video interface, 92198. This model provided 24 lines of 80 characters. HP liked the Mountain Computer video interface because HP-75 spreadsheet programs needed the 80 charcter line. Soon an arrangement was made whereby HP would market the Mountain Compunter design and give it an HP stock number. The 92198 had more features than the 82163. It could also display a larger charcter set of 20 rows of 40 characters. It had the normal features of inverse video, a full charcter set, full cursor control, etc., but it did not have graphics. The intent of Mountain Computer was to provide a graphics board and this is the reason the box was so much larger than HP's. The 92198 was popular with HP-41, HP-71 and HP-75 owners. The lack of graphics capability, however, encouraged the development of three other HP-IL video interfaces by European manufacturers. The European models tend to be nearly twice the $300 range of the 92198. The MC/HP

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video interface was discontinued in late 1979. To day there is no video interface available in the United States. Obviously the US handheld user was not willing to pay the price and keep the manufacturers in business. All is not lost, however, because there is an alternative!

Corvallis MicroTechnology—CMT—of Corvallis Oregon announced their HP-IL LCD display in the spring of 1988. This battery-powered 8 line, 40 character portable display may be inadequate for spreadsheet users, but it does provide a product that has not been available in the past. The features that are offered by the CMT LCD are: HP-IL, eight softkeys for user-in-charge control, loop power up/down, Raster graphics, 2K display memory, and battery power. Look for this $250 range product in catalog #40, available mid-year.