

## IMAGE DISPLAY HARD COPY EVALUATION

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The following is a summary of the evaluations of the various image display hard copy devices that were investigated.

## 1. APPLICON

This company makes a very nice color ink jet printer which is also very expensive.

## 2. ADVANCED COLOR TECHNOLOGY

This device is a color ink jet printer which costs a little more than the Honeywell or Tektronix gray scale devices. When I called them in September, they said that their first delivery was scheduled for November, 1981. I asked them to send a sample output, including gray scale as well as color, but I never received the samples. I suspect that the device is not very good at making gray scale copies.

## 3. BELL &amp; HOWELL CEC912 GRAY SCALE PRINTER

After three phone calls to the company, I still have been unable to talk to anyone to find out additional information about this device. The following information is obtained from a brief brochure and a sample output that was picked up at the SIGGRAPH conference. The cost of the device is about \$13,720, which is about \$5,000 more than either the Honeywell or Tektronix devices. The image is produced by partially or totally removing the top light colored layer of a special paper, which exposes a black layer. The sample output did not include a real gray scale image, so it is difficult to compare the image quality with the others. However, I doubt if it would be better. A possible disadvantage of this device is that it may only make copies from a standard video source. A possible advantage is that it may be possible to output directly to the device from the computer. This could include image data and text data, which might be nice for labelling of the outputs.

## 4. DUNN INSTRUMENTS

This company makes a device which produces film output. It is thus not suitable for our application.

## 5. EDO WESTERN

This company makes several different gray scale output devices. However, these devices produce higher resolution images than are needed for CRT hard copy. Their cheapest device is about \$29,000.

#### 6. HONEYWELL VIDEO GRAPHIC RECORDER 4000

This device makes copies on dry silver paper which are similar to the copies produced by the Tektronix device. The price of the device (and the copies) is also similar to the Tektronix device. One of the main differences is that this device has a standard option which allows use by up to four displays. Also, it outputs more status information, which would probably make it more convenient to control the copy process from a program.

#### 7. IMAGE RESOURCE

This company makes a device which produces film output. It is thus not suitable for our application.

#### 8. MATRIX INSTRUMENTS

This company makes a device which produces film output. It is thus not suitable for our application.

#### 9. PHOTOPHYSICS

An old brochure dated 1975 indicated that this company made CRT hard copy devices. However, their phone number is now assigned to a private residence. Directory Assistance had no listing for the company in the city listed in the brochure.

#### 10. PRINTACOLOR

This company makes relatively low priced ink jet printers which connect directly to a computer through an RS-232 line or a printer interface. Their brochure did not mention a direct video interface. From the sample output, it appears unlikely that the device could give the gray scale resolution that we require.

#### 11. TEKTRONIX 4634 IMAGING HARD COPY UNIT

This device produces copies on dry silver paper which are similar to the copies produced by the Honeywell device. The price of the device (and the copies) is also similar to the Honeywell device. However, although there is no standard option to allow connecting more than one display to the unit, this is available as a "special product" which costs about twice as much as the Honeywell multiplex option. (Tektronix also has a cheaper model which would probably not produce an acceptable quality image.)

## 12. CONCLUSIONS

The Honeywell and Tektronix devices are the most suitable for our application. Both devices produce copies of about equal quality. They also cost about the same, although the Honeywell device is a little cheaper if you consider the multiplex option. However, being able to get the multiplex feature as a standard option and having more status information available for reading by the computer make the Honeywell VGR 4000 the preferred device. Also, at least one image display company has picked Honeywell for the hard copy device for their image display systems. Another advantage of the Honeywell system is that the image size on the copy is a little bigger than is the Tektronix image size.