

## INTERFACING A HEWLETT-PACKARD SERIAL PLOTTER TO A SEIKO DISK STATION

### Problem

A customer possesses a HP-7550A or HP-7475A serial plotter and desires to interface it to the Seiko Thermal Analysis Disk Station rather than purchase a new plotter with a parallel interface. The Seiko Disk Station communicates to the plotter using HP-GL graphics language through a parallel interface. It is therefore necessary to convert to a serial interface.

### Solution

To convert the Seiko Disk Station plotter signal from parallel to serial the following items are required:

- A buffered parallel to serial converter interface installed between the Disk Station and plotter.
- Cable to connect the Disk Station to the converter.
- Cable to connect the converter to the plotter.

The following was used to successfully install a serial HP plotter to a Seiko Disk Station:

- An Applied Creative Technology Inc., (214) 352-2281, Versadapter converter. It was purchased through Misco, a mail-order computer accessory company, (800) 876-4726. The Versadapter is a dual purpose adapter for connecting either a parallel or serial output computer to a serial or parallel device. It has a selectable 2-way conversion capability with a 100 character hysteresis buffer. The adapter has four switches which should be set to:

| <u>Switch No.</u> | <u>Position</u> | <u>Function</u>                |
|-------------------|-----------------|--------------------------------|
| 1                 | OFF             | Parallel to serial interfacing |
| 2                 | ON              | 9600 baud                      |
| 3                 | ON              | 9600 baud                      |
| 4                 | OFF             | 8 bit word length, no parity   |

Some other converters have a bidirectional capability. Several of these were tried without success as well a converter without a buffer.

- A Centronics parallel cable with a male connector on each end to connect the Disk Station to the converter.

- A DB-25 cable to connect the converter to the plotter with one male and one female connector on the ends. A cable can be purchased from Hewlett-Packard. Their help number is (208) 323-2551 and the cable part number is 17255D. The pin connection of the cable is shown below.

|    |       |                        |
|----|-------|------------------------|
| 1  | _____ | 1 Protective Ground    |
| 2  | _____ | 3 Received Data        |
| 3  | _____ | 2 Transmitted Data     |
| 7  | _____ | 7 Signal Ground        |
| 20 | _____ | 5                      |
| 5  | _____ | 6                      |
| 6  | _____ | 20 Data Terminal Ready |

After having installed the parallel to serial converter as detailed above, the last task to perform is configuration of the HP plotter by means of its front panel and menu control buttons. For a detailed description of each menu and step by step instructions on changing the plotter configuration please refer to the HP plotter manual. The following menus should be set as shown:

HP-IB Address: 05 (meaningless for our application)

Monitor: Off

Standard: Not Enhanced

Serial: Data Flow - Remote and Stand Alone

Bypass: Off

Handshake: Hardwire and Direct

Duplex: Full

Parity: 8 bit and Off

Baud: 9600

### **Summary**

Using the above parallel to serial adapter and installing it as described will allow the Seiko Disk Station to be interfaced with a HP serial plotter. The hardcopy output obtained from the serial plotter is identical to that which would be obtained from a parallel interface but taking slightly longer to be produced due to the slower transfer rate.

This Applications Note is not meant to imply the procedure described above is the only configuration that will successfully convert the parallel plotter signal to a serial signal. It simply describes the hardware and configuration settings used in one successful interface of a HP serial plotter to the Seiko Disk Station.