

CONCEPT

Shared Printer Interface

User's Manual

Human Designed Systems, Inc.
3700 Market Street
Philadelphia, PA 19104
(215) 382-5000

DNI300-7902-2
February, 1979

The material in this manual is for informational purposes and is subject to change without notice.

Human Designed Systems, Inc. assumes no responsibility for any errors which may appear in this manual.

Printed in U.S.A.

I. INTRODUCTION AND DESCRIPTION

The *Concept* Shared Printer Interface (SPI) is an integral device designed to allow multiple *Concept* 100/*Concept* APL display terminals to share a single printer or other auxiliary device. Each SPI accepts from one-to-four inputs and issues one output either to a printer or to another SPI. In this manner SPI's may be cascaded to allow more than four terminals to share a single device.

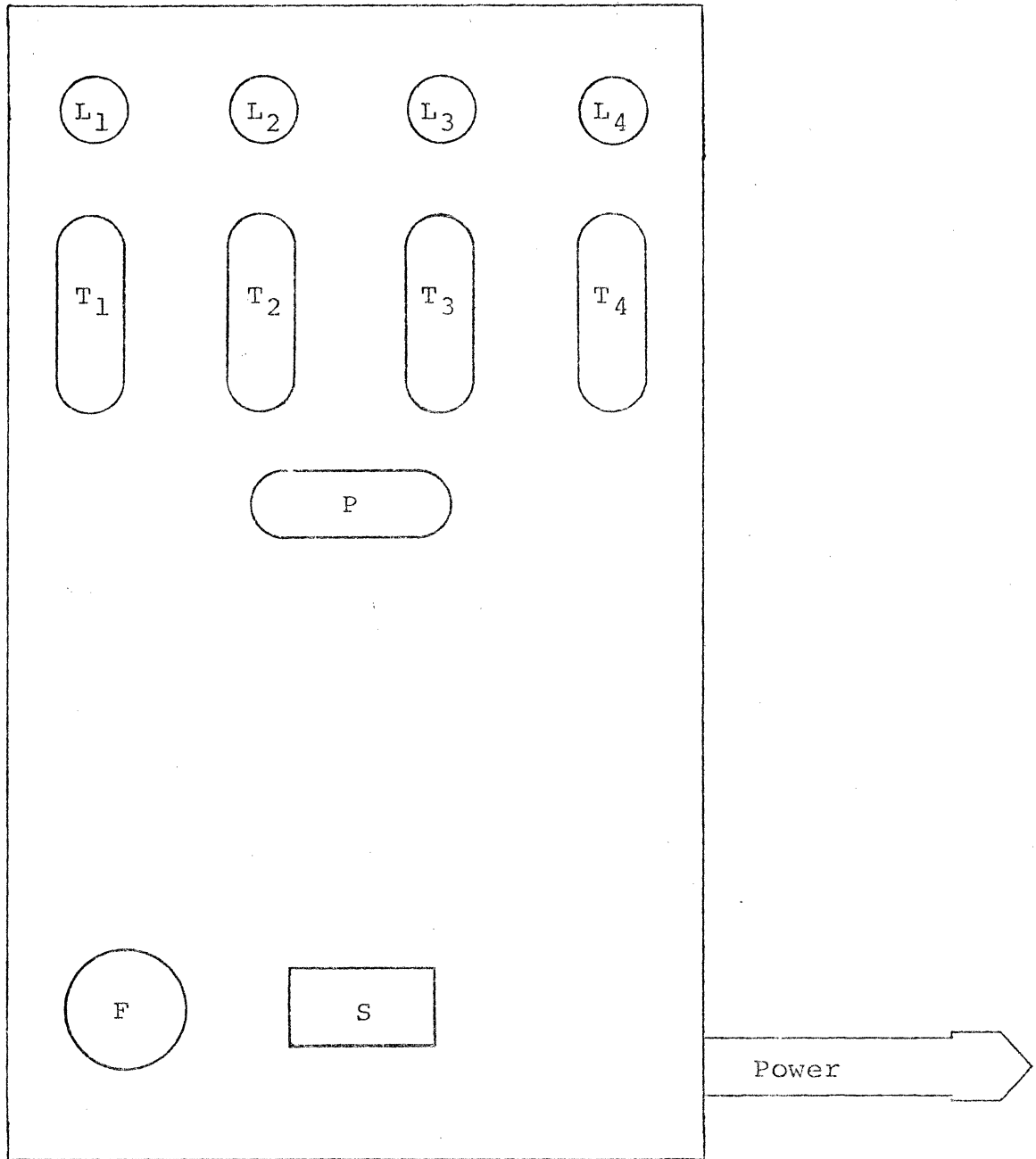
The physical layout of the SPI is shown in Figure 1. Each SPI contains its own power supply and should be connected directly to a normal 110 Volt-60 cycle grounded outlet. The four connectors (labeled "T") are male connectors for each *Concept* terminal. An LED next to each connector indicates that the corresponding terminal is making use of the printer. The printer connector goes to either the printer or to a terminal connector of another SPI.

A *Concept* terminal will try to attach the printer through the SPI when any of three commands is issued:

- . Attach Printer (MC { }) - networks the display to the printer.
- . Print to End of Line (MC { }) - transmits all data from the beginning of the line up to but not including the cursor position.
- . Print to End of Window (MC { }) - transmits all data from the beginning of the line containing the start of print up to but not including the cursor position.

All three commands attach to the printer through Line 2 of the terminal. If the printer is unavailable (because it is busy or is not operating) the terminal sounds the bell or sends a NAK if requested by a communication line. When the terminal is successfully attached the corresponding LED will light up. The printer is detached either explicitly by the user (MC ~) or by the terminal at the end of each Print operation.

Figure 1
SPI LAYOUT



- T - connector to terminal
- L - LED indicator for terminal attached
- P - connector to printer or SPI
- S - on/off switch
- F - fuse ($\frac{1}{4}$ amp)

II. DEVICE INTERCONNECTION

The Shared Printer Interface should be connected to the *Concept* terminals by a male/female null modem. Figure 2 illustrates the necessary connections (for a more detailed description of the signal usage on the printer port, see Appendix E of The *Concept* Reference Manual).

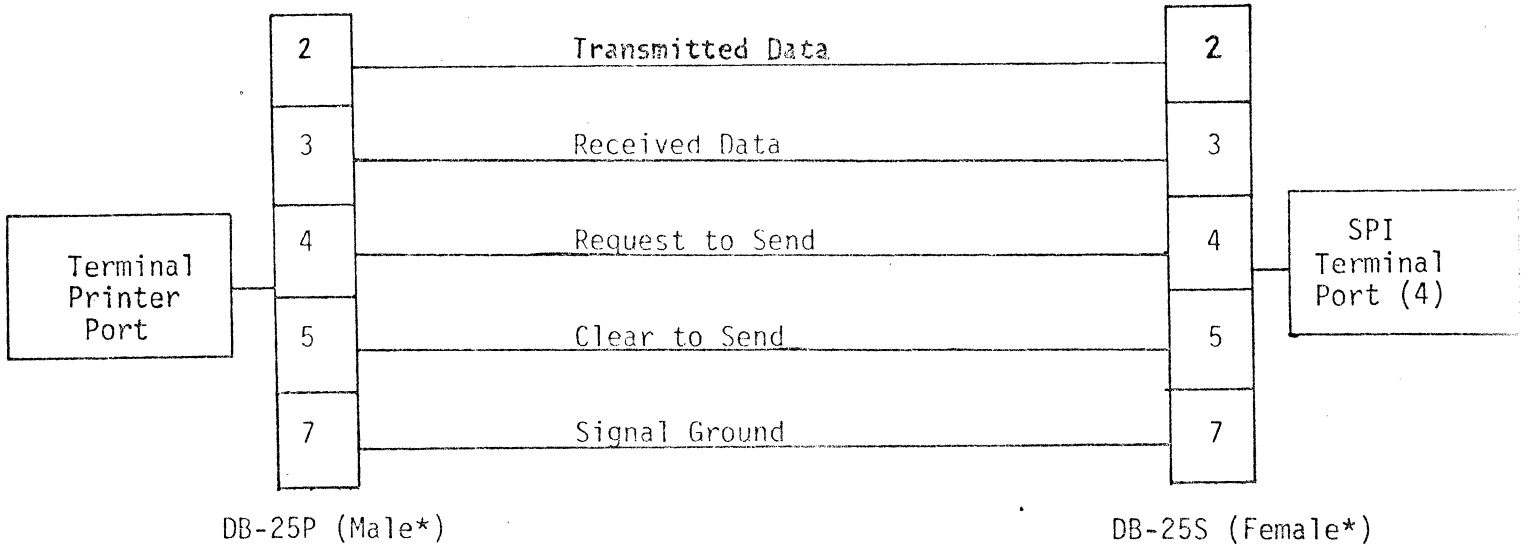
The female socket (DB-25S) on the SPI has been designed to accept the male plug (DB-25P) found on many hard-copy devices. Figure 3 illustrates the necessary connections.

Note that in order for the SPI to function properly, the Request-to-Send (Pin 4) from the printer must be held in an ON state. For devices that do not use this control signal pins 4 and 5 of the printer connector on the SPI must be jumpered together.

Two or more SPI's should be interconnected using male/female null modem. This is the same type of cable as used to connect the *Concept* terminal to the SPI (See Figure 2).

Figure 2

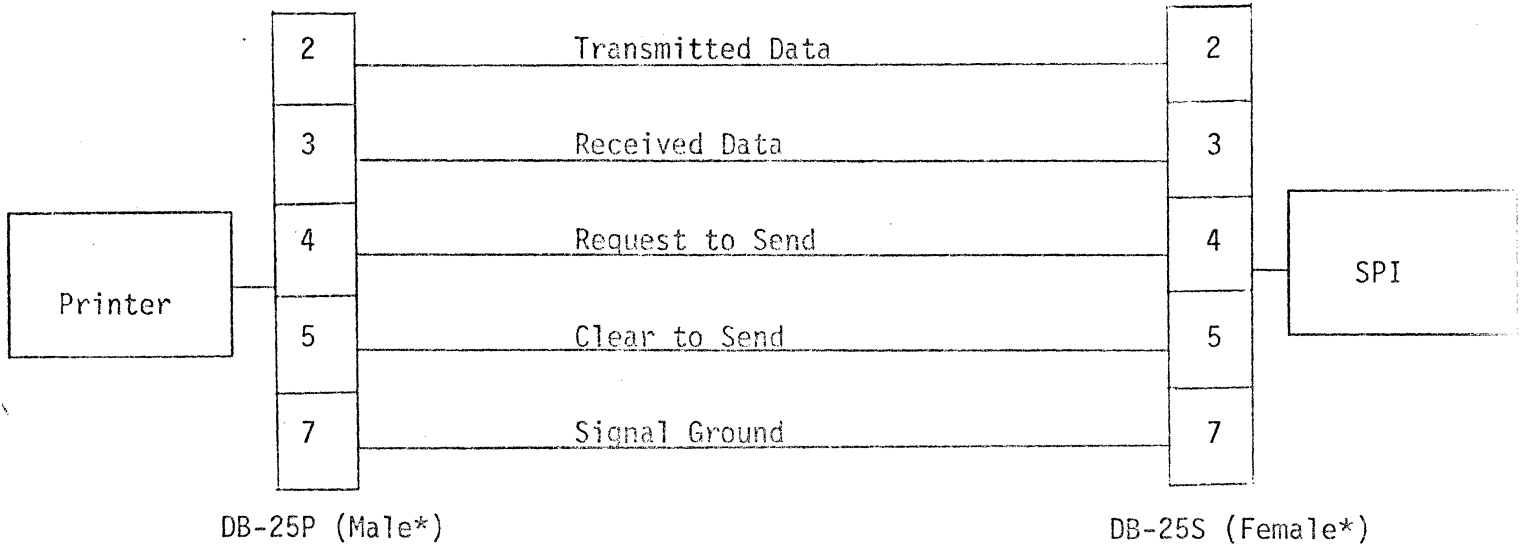
TERMINAL-SPI INTERCONNECTION



(*) Or equivalent

Figure 3

SPI-PRINTER INTERCONNECTION



(*) Or equivalent

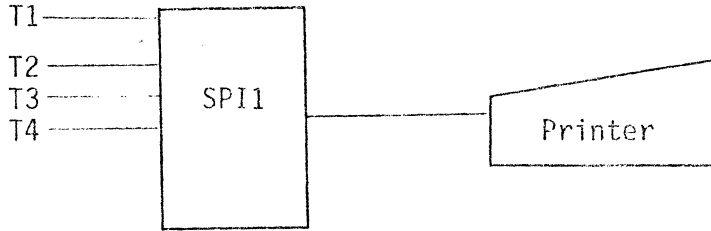
III. MULTI-TERMINAL CONFIGURATION

As mentioned in Section I, SPI's may be connected to each other to allow more than four terminals to share a single printer. A variety of configurations may be used, though one which minimizes the "distance" between any terminal and the printer is recommended (this is due to the requirement to respond to the terminal's Request-To-Send within a finite time period). Figure 4. shows the recommended configurations for one-to-five SPI's (which corresponds to one-to-sixteen terminals).

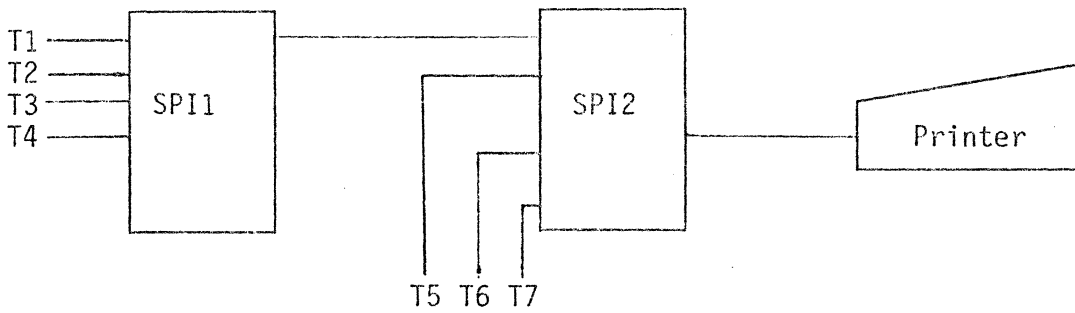
Figure 4

MULTI-TERMINAL SPI CONFIGURATIONS

One SPI (Four Terminals)



Two SPIs (Seven Terminals)



Three SPIs (Ten Terminals)

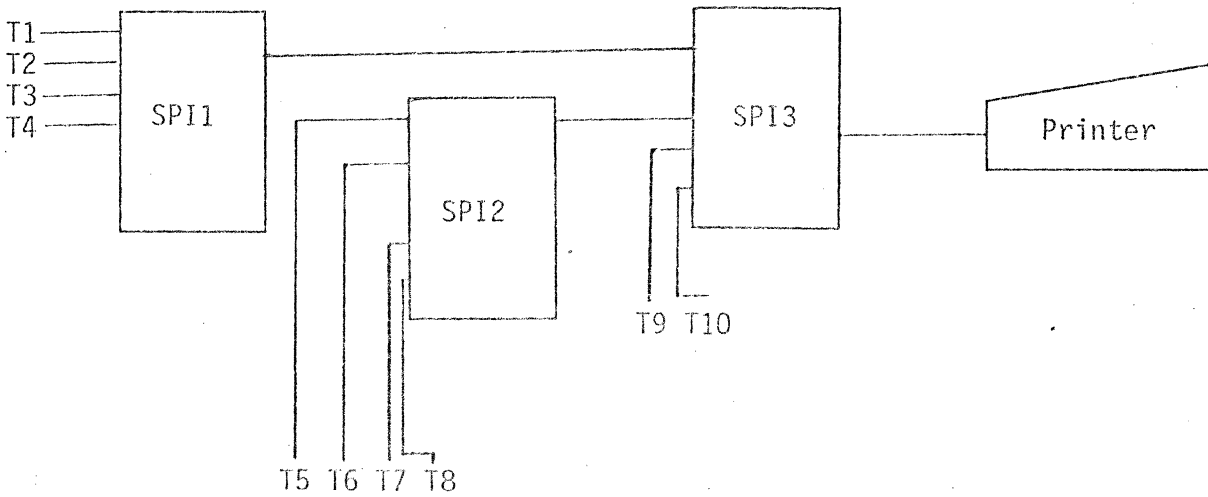
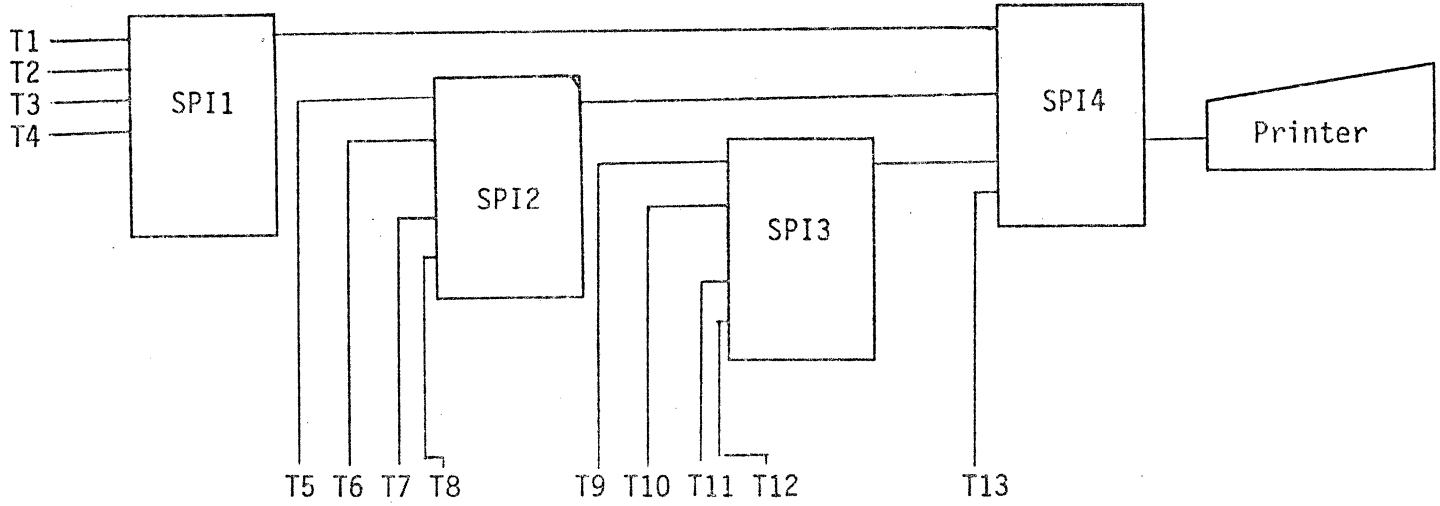


Figure 4 (continued)

Four SPIs (Thirteen Terminals)



Five SPIs (Sixteen Terminals)

