

6... PCMCIA CARD CONFIGURATION AND USE

OVERVIEW:

The HyperLogger utilizes the optional PCMCIA Card System to provide expanded data storage capacity within the HyperLogger and/or to provide storage to a removable memory card that can be removed and transported to another location where the data is read from the card and saved into a file on the a PC.

For expanded memory capability, the HyperLogger requires the HLIM-5 Interface Module which includes the PCMCIA card socket and one or more PCMCIA cards. If the memory card is to be used in a transportable mode, an external PCMCIA drive (PD-1 or also referred to as TMD-650) is required at the PC location.

With PCMCIA memory card system the following features are available:

- ◆ Expanded memory... HyperLogger memory storage increase from the standard 40,000 readings to in excess of 250,000 readings.
- ◆ Transportable data... the memory card can be removed from the HyperLogger and transported to a PC location where the data can be read from the card
- ◆ Field reprogramming of the HyperLogger... a Program Net can be built in the office through HyperWare, then loaded onto the PCMCIA card for transport to the HyperLogger location

PCMCIA CARD SYSTEM COMPONENTS:

The PCMCIA card system consists of the following components:

- ◆ **HLIM-5 Interface Module:** the HLIM-5 interface module installs into the HyperLogger System Base and contains the socket into which the memory card inserts.

NOTE

This socket is not PCMCIA spec compliant. For this reason, do not plug any products into this socket that have not been provided or approved by Logic Beach Incorporated.

- ◆ **Memory Card:** with varying capacity from 50,000 samples to in excess of 250,000 samples, this is the transportable SRAM memory onto which data and Program Nets are stored.
- ◆ **PD-1 (also referred to as the TMD-650) PCMCIA Drive:** this external drive connects to the PC parallel (printer) port and provides read/write capability between the PC (running HyperWare software) and the PCMCIA card.
- ◆ **PD-1 Software Drivers:** a set of software drivers (CardTalk) provided with the PD-1 that are installed to hard disk and provide the necessary software interface between the PD-1 drive and HyperWare. Also included are a number of utilities for use in formatting, copying etc on the PCMCIA card.

PCMCIA CARD - EXPANDED MEMORY CAPACITY APPLICATION

Hardware Configuration

For applications using the PCMCIA card only for expanded memory capacity within the HyperLogger, the only components required are the HLIM-5 and one or more memory cards (formatted for use with the HyperLogger PCMCIA card system). The HLIM-5 module should be installed per the Interface Module instructions in Chapter 3. Memory cards for use in this system are supplied pre-formatted from Logic Beach Incorporated.

Software Configuration

No special software configuration is required. When the HLIM-5 is installed in the HyperLogger, the HyperLogger will auto-detect the presence of the module.

Operation of the HLIM-5 and PCMCIA Memory Card:

To use the PCMCIA card for data storage...

1. STOP the HyperLogger. Cycle the HyperLogger power to OFF.
2. Visually inspect the formatted and prepared (as supplied from Logic Beach Incorporated) PCMCIA card connector for any debris in any of the connector holes and clean if necessary.
The Write Protect switch located on the end of the card opposite the connector should be slid away from the WP position to enable writing of data to the memory card (Refer to Figure 6... -1).
3. Orient the card with the top label facing toward the right side of the HyperLogger and slide the card fully into the card slot in Option Port 2. Upon full insertion, the Eject button next to the slot will be fully extended.
4. Turn the HyperLogger Power ON. Press the ENABLE button.
5. The PCMCIA card will be automatically detected and the LCD will display ENABLED - PCMCIA. All logged data will be stored in the PCMCIA card.
 - ◆ If the HyperLogger displays STOPPED after Enabling, the Write Protect switch on the PCMCIA card is in the PROTECT position. Correct and reinsert the card. Press ENABLE and observe the display.
 - ◆ If the PCMCIA card does not contain the proper format and support files (as supplied from Logic Beach Incorporated) a message on the display will indicate CARD ERROR. The card must be reformatted and the support files rewritten before use.

CAUTION:

If the memory card does not easily insert fully into the socket, double-check the orientation. The socket is designed to prevent full insertion with reversed orientation.

For data storage on the memory card, the Write Protect switch must be in the disabled position (ie slid away from the WP mark)

NOTE

Numerous types of PCMCIA cards are currently available on the market utilizing various technologies. To insure compatibility with the HLIM-5, utilize only Logic Beach supplied memory cards or verify alternate parts compatibility with Logic Beach Technical Support prior to plugging into the HyperLogger.

PCMCIA CARD - TRANSPORTABLE DATA APPLICATION

For applications of the PCMCIA card for transportable data, the HyperLogger must be configured with the HLIM-5 Interface Module and an the external PCMCIA drive (PD-1) must be connected to the PC and interface drivers installed. The correct PCMCIA drive letter must then be specified within HyperWare.

HyperLogger Configuration

The HLIM-5 module should be installed per the Interface Module instructions in Chapter 3. Memory cards for use in this system are supplied pre-formatted from Logic Beach Incorporated.

PC / External PCMCIA Drive Configuration

The following steps must be performed to configure the PC and the PD-1 external PCMCIA card drive. The procedure for connecting the PD-1 (also known as TMD-650) drive and configuring the software drivers is contained within the User's Guide supplied with the PD-1 drive. Additional comments and suggestions are provided below.

Connecting the PD-1 Drive:

Follow the instruction detailed in the User's Guide supplied with the drive.

Installing the CardTalk Drivers:

Follow the detailed instructions in the User's Guide supplied with the drive. The installation process creates a directory called CardTalk and copies a number of files into it. It then modifies the AUTOEXEC.BAT and CONFIG.SYS files. A few additional comments on this installation process:

- ◆ Insure that the installation is done from DOS as specified
- ◆ Either the Express or the Custom Installation can be used.
- ◆ For use with HyperWare, only the SRAM card drivers are required. (ie at the prompt, do not select to install the FFS2 drivers for Microsoft Flash File system as they are not required)
- ◆ Two different types of parallel port are available on PC's today, the EPP (enhanced parallel port) and Standard. All installations will run with the Standard port type selected. If a EPP port is available, selecting this type will provide slightly faster data read/write performance. During the installation, if EPP is selected but is not detected, a message will display and the CardTalk software will not be installed. If this occurs, repeat the installation choosing Standard.
- ◆ Specify the correct printer port to use during installation (the default is LPT1)

Near the end of the installation process, changes will be made to the PC AUTOEXEC.BAT and CONFIG.SYS files. Three lines are added to the CONFIG.SYS file:

```
DEVICEHIGH=C:\CARDTALK\SSPPORT.SYS /lpt:1
DEVICEHIGH=C:\CARDTALK\CTALKCS.EXE
DEVICEHIGH=C:\CARDTALK\CARDTALK.SYS /A /MEMW
/IOW
```

In the AUTOEXEC.BAT file, the CARDTALK directory is added to the PATH.

TIP: These drivers are fairly large and will be loaded into memory at reboot. For Users running DOS 6.0 or later with the Multiple Configuration boot options, it may be desirable to set up an optional load of these drivers. Refer to the DOS Help and/or manual for details on how to set up the Multiple Configuration boot.

TIP: Upon boot of the PC with the standard drivers installed, the PD-1 will be assigned the next consecutive drive letter. For User's requiring specific assignment of a drive letter to the PD-1 drive, the CONFIG.SYS file can be modified to force the PD-1 drive to be assigned to a particular drive letter. Refer to the Technical Support FAQ (frequently asked questions) sheet supplied with the drive for details.

TIP: For user's that do not require control of the specific drive letter assigned to the PD-1 and want to minimize the size of the loaded PD-1 interface drivers, an older version of the CardTalk drivers (V2.16 for the TMD-550) is available. This version requires only 24K of memory and will support only the SRAM cards used in the HyperLogger system. Additionally, this version of drivers does not allow for a User assigned drive letter... it will automatically use the next drive letter in the system. If used, these drivers install into a directory called DATABOOK instead of the directory called CARDTALK referred to within this chapter.

NOTE:

The HyperLogger and HyperWare PCMCIA card system has been designed to be implemented using the external PD-1 PCMCIA drive. Users with PC's equipped with integral PCMCIA drives may be able to utilize drivers supplied with their PC's for read/write from DOS formatted SRAM PCMCIA cards. However due to the variability in PCMCIA card spec compliance and system configurations, considerable cautious experimentation may be required to implement the system.

Quick Test of the PCMCIA Drive Configuration

After installation of the drivers, reboot the PC and the drivers will be loaded into memory. The drive letter that the PCMCIA drive is installed as will be displayed briefly in the on-screen messages displayed during the system boot. Note this letter for future use.

If the system does not correctly identify the drive, error messages will display. Refer to the PCMCIA drive User's Guide for instructions on troubleshooting drive configuration problems.

After a successful configuration, the drive installation can be simply tested as follows:

CAUTION

Before inserting a PCMCIA card into the drive, touch the case of the PC or some other ground to discharge any static body charge. This step minimizes the chance of damaging the card by discharging your body static charge through the PCMCIA card connector.

1. Insert a formatted and prepared (as supplied by Logic Beach Incorporated) PCMCIA card into the drive. Be sure that a card is inserted fully into the drive before testing.
2. Use the conventional DOS command DIR X: where X represents the drive letter assigned to the PCMCIA drive to read the files on the card.
Three files should be listed on the card:
FORMAT.MEM
NET.MEM
DATA.MEM

HyperWare Software Configuration

After the PD-1 drive has been connected, the drivers installed, an installed drive letter determined, and access to the drive has been tested through DOS, HyperWare must be configured.

Launch the HyperWare program under Windows and select the *Options/Paths* menu from the HyperComm Window Menu Bar.

1. In the PCMCIA Format Command Text Box specify the drive and path where the CardTalk drivers are located followed by the command TCFORMAT.
In most installations, this will be
C:\CARDTALK\TCFORMAT.EXE.

The command TCFORMAT is a special command supplied with the CardTalk drivers that is used for formatting PCMCIA cards in the PD-1 drive. The resulting card format is DOS compatible.

2. In the PCMCIA drive Text Box, specify the drive letter that is used to access the PCMCIA drive. This letter was determined and tested in previous steps.
3. Select OK to save the changes and close the dialog.
4. Double-click on the PC drive graphic and HyperWare will scan the PCMCIA card installed in the drive checking for proper format and the presence of the three support files.

PCMCIA Card Usage with HyperWare

The PCMCIA card, in a transportable memory application is typically used to transfer collected data from a remotely located HyperLogger to the PC and/or to transfer a new Program Net from the PC to a remotely located HyperLogger.

Transferring Data from the HyperLogger to the PC

After data has been stored on a PCMCIA card in the HyperLogger, the card can be transported back to the PC location where the collected data is transferred from the card to a Download File on the PC. The following steps detail this procedure:

1. Press STOP on the HyperLogger front panel and cycle the HyperLogger power OFF. Remove the PCMCIA card with the Eject button.
2. At this time, a new formatted and prepared card can be inserted into the PCMCIA card socket and the HyperLogger can be powered up and the ENABLE button pressed.
Observe the LCD for any error messages before leaving the site.
NOTE: review the tips and cautionary measures to be used in handling and insertion of the PCMCIA card in the section above titled *PCMCIA Card - Expanded Memory Application*
3. Transport the PCMCIA card to the PC location and insert the card into the PCMCIA drive.
4. Double-click on the PCMCIA drive graphic within the HyperComm Window and the PCMCIA card will automatically be scanned. After a short delay, a Program Net and Data icon will be displayed overlaying the PCMCIA drive graphic.
5. Drag the Data icon from the PCMCIA drive to the PC and the data transfer will commence. Refer to Chapter 6 for details on entering comments, etc during the data transfer process.
6. The PCMCIA card can be cleared by double-clicking on the CLEAR button located by the PD-1 graphic.

Transferring a Program Net from the PC to the HyperLogger

A HyperLogger at a remote location can be reprogrammed by writing a Program Net on a PCMCIA card at the PC location, then plugging the PCMCIA card into the HyperLogger. The following steps will implement the programming:

1. Develop the new Program Net at the PC location (see Chapter 7 on HyperNet Programming for details).
NOTE: it is imperative that the developed Program Net is compatible with the remotely located HyperLogger. Great inconvenience can result if an incompatible Program Net is developed, transported to the

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HyperLogger, and attempted to be run. Methods to insure this are discussed in Chapter 7.

2. Insert a PCMCIA card into the PD-1 drive
3. Drag the Program Net icon from the PC to the PD-1 graphic. A dialog will display stating that any data currently on the PCMCIA card will be erased. Select OK and the program is transferred.
4. Transport the card to the HyperLogger location. Stop the HyperLogger and cycle the power OFF. Insert the PCMCIA card.
5. Turn the power ON and press ENABLE. Upon Enabling, if a Program Net is detected on the card, the HyperLogger will automatically be reprogrammed with this Program Net and start logging data to the card.
6. Proper execution can be confirmed via the LCD Status display(s).

PCMCIA - MISCELLANEOUS

Formatting PCMCIA cards

Before a PCMCIA card can be used in the HyperLogger system, it must be properly formatted and prepared. As supplied from Logic Beach Incorporated, PCMCIA card are already formatted and prepared however, this procedure is fully supported under HyperWare.

To format and prepare a new card, insert it into the PC-1 drive and double-click on the PD-1 graphic. HyperWare will detect that the card has not been formatted nor prepared and a dialog will respond accordingly. Selecting YES at the request will automatically format the card using the TCFORMAT.EXE utility from the CardTalk directory, then the 3 required files (FORMAT.MEM, DATA.MEM, and NET.MEM) will be copied onto the PCMCIA card.

Windows 95 - Special PCMCIA Card Considerations

In systems running Windows 95, HyperWare cannot format the card by calling the TCFORMAT command. To format the card, exit windows 95 and manually run the TCFORMAT command with the following syntax:

TCFORMAT X: where X is the PD-1 drive letter

After the card has been tformatted, the copying the three support files can be completed from within HyperWare. Launch HyperWare and double-click on the drive, then follow the ensuing dialogs.

MEMORY CARD HANDLING / MAINTENANCE

The MC series memory cards are packaged in a protective metal case, however reasonable care should be exercised in the handling and use of the cards. The card should not be exposed to water, extremely high or low temperatures (eg on the dash of a car on a sunny day), or dirt/mud... especially on the connector end.

The MC-XX memory cards utilize an internal lithium cell (Panasonic BR-2325, 3V or equivalent) for power when not installed in the HyperLogger or the PD-1 drive at the

PC location. This lithium cell should be replaced yearly for maximum data integrity. Data in memory will be maintained for up to 2 hours with the battery removed from the compartment, *however it is highly recommended that any valuable data in the card be downloaded before replacing the battery.*

To replace the cell:

1. Locate a clean area to work.
2. Visually locate the battery access door and lock located on the end of the memory card opposite the connector end.
1. Using a paper clip or other small probe, slide the Lock pin away from the embossed LOCK mark.

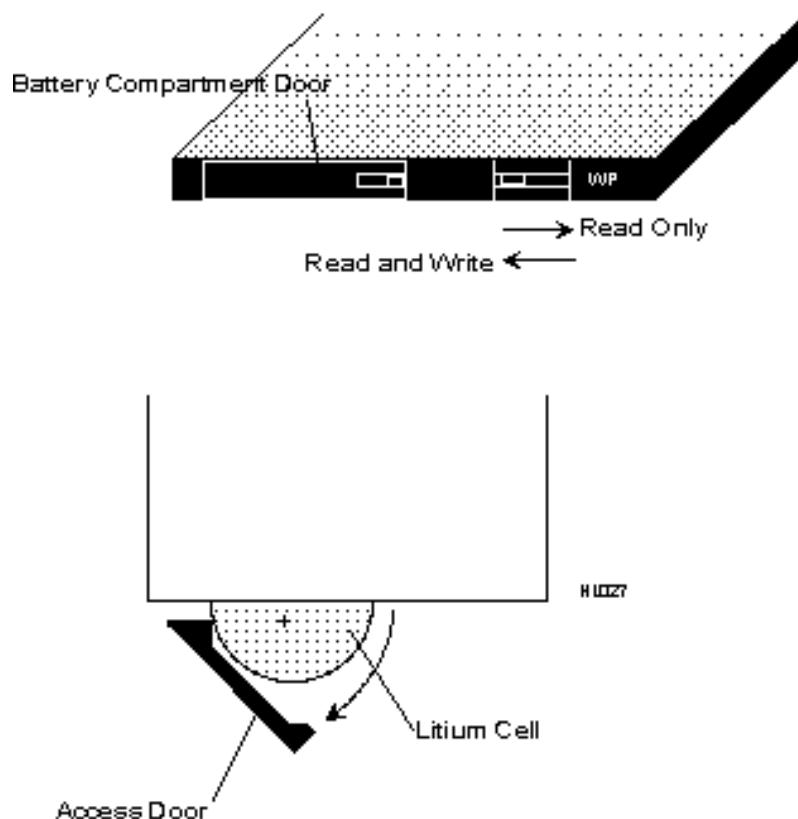


Figure 6... -1: Memory Card lithium cell access and Write Protect Switch

2. Swing open and remove the battery compartment door . The lithium cell can then be removed.
3. Slide the new cell into the compartment *insuring the positive (+) side of the cell is toward the top of the card.*
4. Carefully insert the battery door and swing it closed.
5. Slide the Lock pin to the LOCK position.

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NOTES: