

# Using the MCI-04 and DeReader

V5.00 or later

V1.40 or later

for DataTaker-formatted PC Card (PCMCIA) memory cards

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Data Electronics' MCI-04 Memory Card Reader provides high-speed access to PCMCIA memory cards\* using RS-232 communication at up to 115,000 baud.

### What You Can Do with an MCI-04 and DeReader (Figure 1)

Using your MCI-04 and Data Electronics' *DeReader* software, data stored on your DataTaker PCMCIA memory cards can be

- copied directly to a file on your computer (IBM® or compatible PC)
- transferred and translated to files in a number of formats supporting popular third-party PC software (Microsoft® Excel, Lotus® 1-2-3® and others).

\* PCMCIA (Personal Computer Memory Card International Association) memory cards are also known as "PC cards".

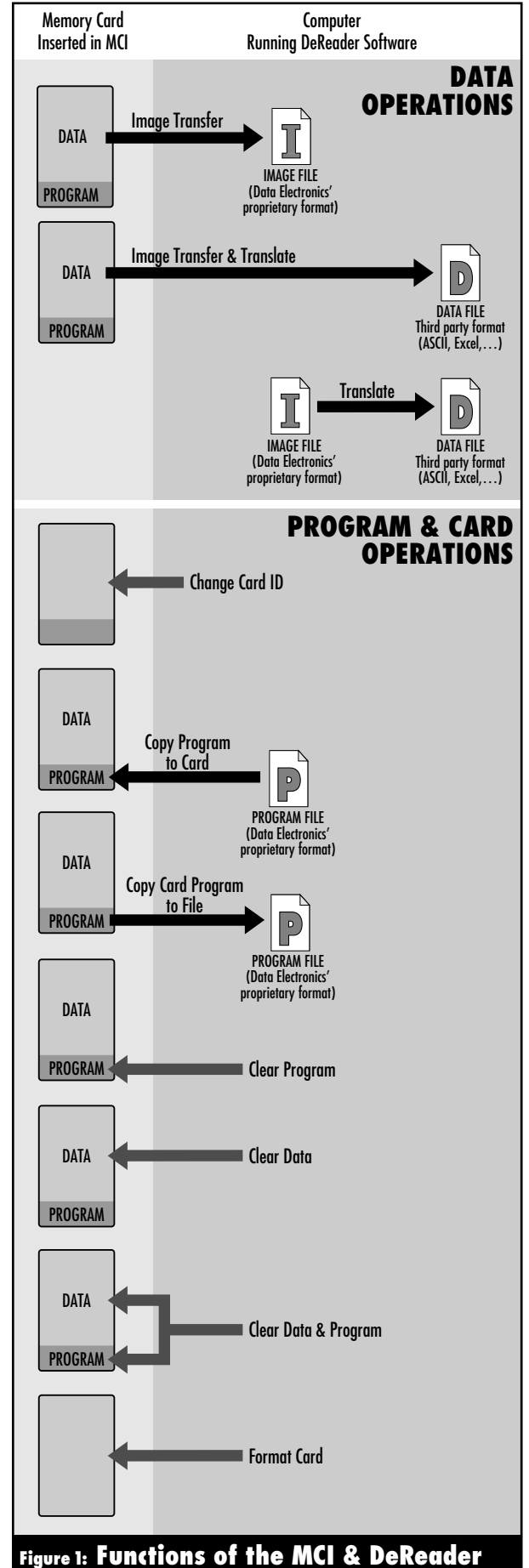


Figure 1: Functions of the MCI & DeReader

You can also

- change a memory card's identification text
- send a DataTaker program to a memory card, or copy a DataTaker program from a memory card to a file on your computer
- clear a DataTaker program from a memory card (leaving any data intact), or clear DataTaker data from a memory card (leaving any DataTaker program intact), or clear all (DataTaker data and program)
- format memory cards.

### Computer Requirements and Recommendations

DeReader is capable of driving your PC's serial port at up to 115,200 baud. But some PCs cannot support this speed (either because the serial port hardware is not fast enough, or the PC itself cannot cope with incoming characters at this speed).

Therefore, we make the following recommendations to obtain best performance from DeReader:

- Only run DeReader on a 20MHz (or faster) 386 (or above) IBM PC or compatible computer.
- You can run this version of DeReader (v1.40 or later) from DOS, Microsoft® Windows® 3.1, Windows for Workgroups 3.11 or Windows NT. But, because DeReader is designed for use with DOS 3.1 or later (and therefore works best under this operating system), you may experience some reduction in communication speed when running it from Windows.

*See also "Active Window" in "Warnings" below.*

- Run DeReader from a hard disk (requires 430KB of hard disk space).
- DOS users: ensure that the computer has 435KB of RAM (Random Access Memory, or "memory") available when launching DeReader.

### Information Files

There are two information files supplied on your DeReader floppy disk:

- **Read.me** explains how to install and run DeReader under DOS, and lists the files provided on the DeReader disk (which are all copied to the DeReader directory during installation).
- **Formats.txt** contains detailed information about the definition files (extension **.FIL**) that are provided on the DeReader disk and copied to the DeReader directory during installation. These definition files are for use with DeReader's **Translate Card =Data File** and **Translate Image File =Data File** functions.

### Help

Context-sensitive help is always available by pressing the **F1** key when DeReader is running.

## Warnings

### Version Compatibility

This version of DeReader (v1.40 or later) is for use with MCIs fitted with version 5.00 (or later) firmware. It does NOT support pre-v5.00 MCIs.

### Active Window

For reliable operation, ensure that DeReader's window is always active during data transfer. That is, keep the DeReader window in the foreground with its title bar highlighted. Do not minimize the DeReader window.

We recommend this because of Microsoft Windows' inability to service communications for background tasks.

## DeReader Features and Functions

### Sleep Mode — Battery Conservation

To conserve the MCI's internal battery, the MCI "goes to sleep" whenever there has been no serial port activity for a period of 10 seconds. Once asleep, it can only be awakened by serial port activity — that is, by a transmission from the computer.

When asleep, most of the internal electronics shuts down — in this mode, the internal battery can power the MCI for more than a year without being recharged. And if the mains adaptor is connected and turned ON, the internal battery will be recharged even though the MCI is asleep.

The MCI never sleeps when being accessed by DeReader.

### Monitor Color Scheme

You can choose from available color schemes by pressing the **F5** key repeatedly to cycle through the options.

In particular, users with an LCD or Plasma screen may find DeReader's default color scheme difficult to read and should therefore choose another option.

### Command Line Options

You can use command line options to start DeReader using a particular COM port, baud rate, color scheme and so on.

DOS users: to see the command line options, type **DEREADER HELP** or **DEREADER ?** from your DeReader directory in DOS.

Windows users: to see the command line options, open the **Run...** dialog box (from the Start menu) and type **c:\dereader\dereader help** or **c:\dereader\dereader ?**.

You can also run DeReader from a shortcut that includes these options by creating a shortcut to Dereader.exe (you'll probably want to place it on the Desktop), opening the shortcut's Properties dialog box, clicking the Program tab, and entering the command line and options you want in the **Cmd line** field.

### Baud Rate

DeReader adjusts the baud rate it uses to communicate with the MCI to obtain the highest rate at which reliable communication can be maintained. (DeTransfer first attempts communication at the highest rate, 115200 baud. If it finds this rate to be unreliable, it tries 57600, then 19200 and finally 9600 baud.)

Communication is continually monitored and if it becomes unreliable, DeReader reduces the baud rate automatically.

### Transfer Times

The table below gives typical times taken to carry out a full-card image transfer (for two different card sizes) to a 100MHz 486 computer at various baud rates.

	Card Size →	512KB	1MB
9,600Bd		8:45	17:30
19,200Bd		5:15	10:30
57,600Bd		2:40	5:15
115,200Bd		1:45	3:30
Time in minutes:seconds			

### Status Indicators

The three indicators on the front panel of the MCI-04 light as follows:

GREEN	YELLOW	RED
Power ON		
Data transfer		
		No card
		Slow flash (every 2 seconds): card is write-protected
		Fast flash (every second): card battery low

When none of the indicators is lit, the MCI is asleep (unless, of course, it is completely un-powered).

# Software Installation and Hardware Setup

Before you can use your MCI-04 and DeReader, you must install DeReader on your PC and set up the MCI's hardware.

## Step 1: Install the DeReader Software

In DOS or Windows, you install DeReader by running the file **Setup.bat** provided on the DeReader floppy disk. This batch file creates **C:\dereader**, a new directory on your hard disk, and copies the contents of the DeReader floppy disk into it. The installation requires 430KB of free space on the hard disk.

Follow one of the two procedures below depending on whether you're installing under DOS or Windows.

### > To install DeReader under DOS

1. Start the computer.
2. Make a copy of the DeReader disk.  
We recommend that you store the original and install from a copy.
3. Insert the copy of the DeReader disk into your computer's floppy drive.
4. At the DOS prompt type **A:\SETUP.BAT** ↵

#### Note

↵ is the symbol for your computer's **Enter** key and is used throughout this guide.

The computer lists the files as they are copied and finishes in the new DeReader directory with the message **Installation complete**. DeReader is now ready to run. Go to Step 2 below to set up the MCI hardware.

### > To install DeReader under Windows

1. Start the computer.
2. Use one of the following Windows methods of running the file **Setup.bat** provided on the DeReader floppy disk:
  - Use Windows' "Add/Remove Programs" procedure.  
Double-click the Add/Remove Programs icon in the Control Panel window.
  - Use Windows' "Run..." procedure.  
On the Start menu, choose **Run...** and type **a:\setup.bat**.
  - Double-click **Setup.bat** in the Windows Explorer window, the My Computer window, or the A:\ window.

A DOS window opens in which the computer lists the files as they are copied and finishes in the new DeReader directory with the message **Installation complete**. DeReader is now ready to run. Go to Step 2 below to set up the MCI hardware.

## Step 2: Set Up the MCI-04 Hardware

You set up the hardware by providing power to the unit and connecting it to your PC.

### > To set up the hardware

1. Unpack the MCI.
2. Connect an external power supply to the MCI (8-18V AC).  
A suitable mains adaptor is supplied with the unit.
3. Turn the power ON at the wall.  
The green indicator on the front panel verifies that you've applied power.

#### NOTE

The MCI is shipped with its battery discharged, so an external supply will be required to charge the battery initially. Nevertheless, you can use the MCI as soon as you connect the mains adaptor. You don't have to wait for its battery to charge because the mains adaptor powers the MCI and charges the internal battery at the same time.

Allow 12 hours for the battery to charge fully.

4. Connect the communications cable (supplied) between the MCI's serial port (labelled **RS-232 DTE**) and the PC's serial port (COM1 or COM2).  
This cable is *not* the same as the one supplied with DataTaker data loggers.

### Step 3: Test the System

You test the system by running DeReader and checking that it communicates with the MCI.

Follow one of the two procedures below depending on whether you're using DOS or Windows.

#### ➤ To test the system — DOS users

1. If you're not in the DeReader directory:
  - a) Type **C:..** to return to the root directory.
  - b) Type **CD \DEREADER..** to change to the newly-created DeReader directory.
2. Start DeReader in one of two ways (depends on the computer serial port to which the MCI is connected):
  - a) If the MCI is connected to your computer's COM1 port, simply type **DEREADER..**
  - b) If the MCI is connected to your computer's COM2 port, type **DEREADER COM2..**  
DeReader launches and displays its main screen (Figure 2).
3. Check that DeReader has found the MCI.  
If DeReader has successfully communicated with the MCI, the version number of the MCI's firmware appears beside **MCI** near the upper left-hand corner of DeReader's main screen (DeReader has retrieved this information from the MCI).  
If DeReader does not find the MCI, refer to "Troubleshooting" near the end of this guide.

#### ➤ To test the system — Windows users

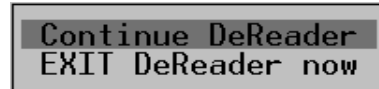
1. In Windows Explorer or the My Computer window, locate the file **Dereader.exe** in the newly-created **dereader** directory.
2. Double-click **Dereader.exe**.  
For future use, you may want to create a shortcut to Dereader.exe on the Desktop and use it to launch DeReader.  
DeReader starts and displays its main screen in a DOS window (Figure 2).
3. Check that DeReader has found the MCI.  
If DeReader has successfully communicated with the MCI, the version number of the MCI's firmware appears beside **MCI** near the upper left-hand corner of DeReader's main screen (DeReader has retrieved this information from the MCI).  
If DeReader does not find the MCI, refer to "Troubleshooting" near the end of this guide.

### Step 4: Quit DeReader

#### ➤ To quit (exit, close) DeReader — DOS and Windows users

1. From DeReader's main screen, press the **Esc** key.

The Continue/Exit dialog box opens.



2. Select **Exit...** using the up/down arrow keys.
3. Press **↵**.

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↵ represents the **Enter** key on your keyboard.

## Using DeReader

DeReader gives you the tools to carry out the following ten operations:

### Data Operations (Transfer and/or Translate)

- ❶ Perform an “image transfer” of data *from* a DataTaker memory card (inserted in the MCI) *to* your computer’s hard disk, thereby creating an “image file” on the computer.  
Data stored in a DataTaker memory card is in a Data Electronics’ proprietary format (not ASCII), and the file created on the computer is an exact copy (that is, an image) of the card data.
- ❷ Transfer and translate the card data directly to any one of a number of popular ASCII formats.
- ❸ Translate an image file to any one of a number of popular ASCII formats.

### Housekeeping (Card and Card Program Operations)

- ❹ Change a memory card’s identification text (the card’s “name”).
- ❺ Send a DataTaker program to a memory card.
- ❻ Copy a DataTaker program from a memory card to a file on your computer.
- ❼ Clear a DataTaker program from a memory card (leaving any data intact).
- ❽ Clear DataTaker data from a memory card (leaving any DataTaker program intact).
- ❾ Clear all (DataTaker data and program).
- ❿ Format a memory card (note that formatting clears all, data and program, from the card).

The ten operations are summarised in Figure 1, presented visually in Figure 3 (the centrespread of this user’s guide) and described step-by-step in “The Ten Operations in Detail” later in this guide.

*Because of the intuitive nature of DeReader’s screens and dialog boxes, Figures 2 and 3 are intended to be your main source of information about using DeReader with the MCI. In Figure 3 you can easily navigate to and work through any of the ten DeReader operations you require.*

## Main Options Box — The Starting Point

The key to using DeReader is the rectangle in the lower left-hand corner of DeReader’s main screen, the Main Options box.

This is your starting point when working with DeReader.

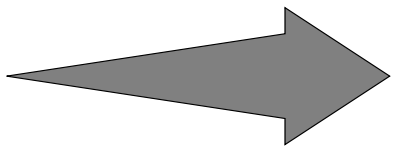
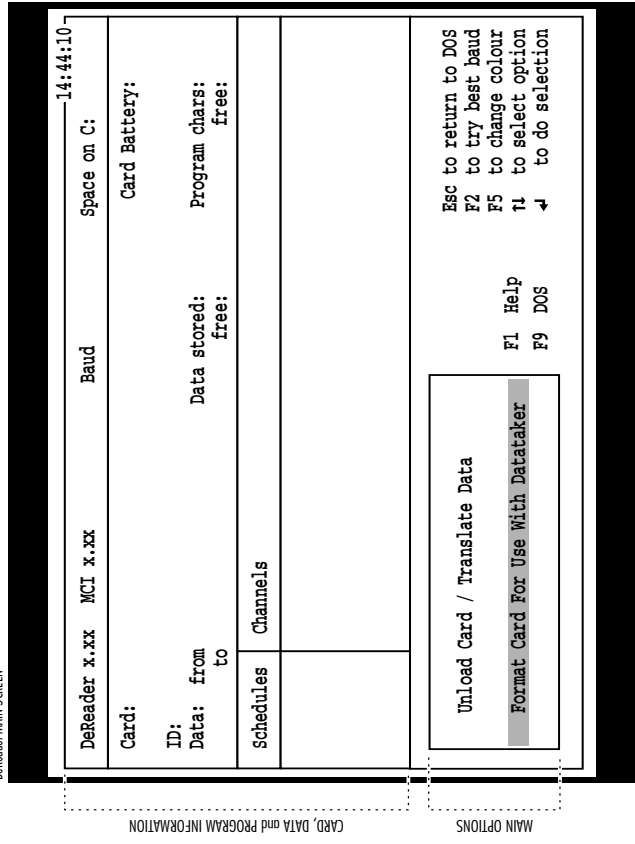
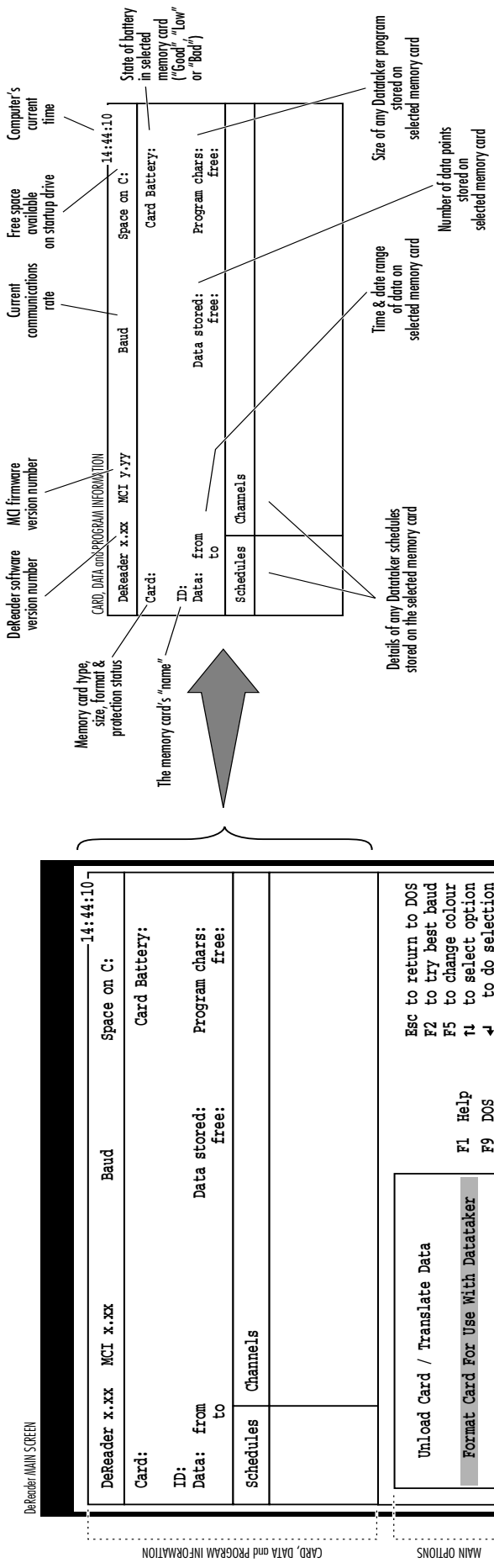
### ➤ To use the Main Options box

1. Insert a PCMCIA card into the MCI.
2. In the Main Options box, select the required option using the up/down arrow keys.  
If the inserted card is unformatted or not DataTaker-formatted, the bottom (housekeeping) option changes from **Card Operations (ID, Program, Clear)** to **Format Card For Use With DataTaker**.
3. Press ↵ and continue as shown in Figure 3.

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↵ represents the **Enter** key on your keyboard.

# Figure 2: DeReader MAIN SCREEN

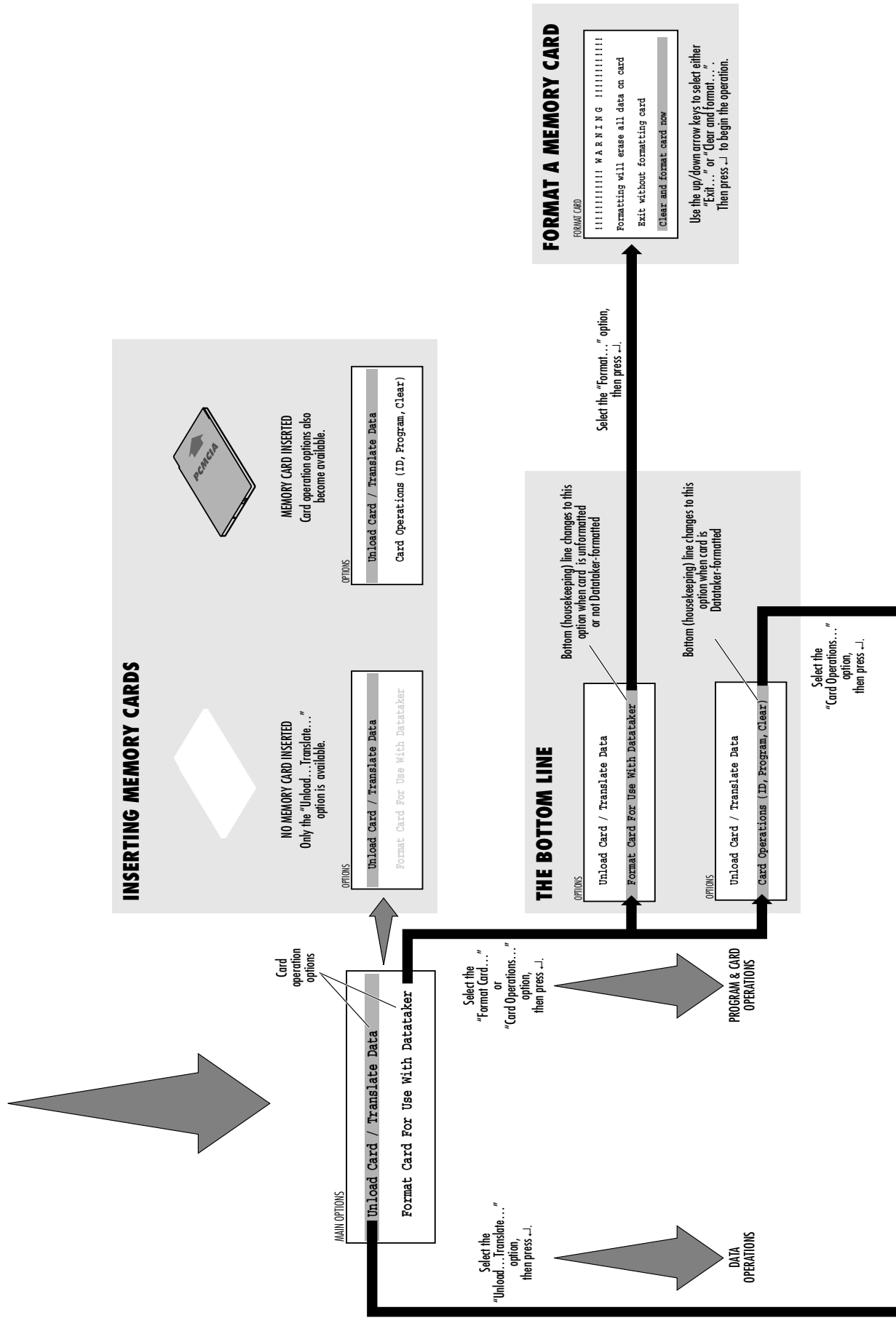


To Figure 3: DeReader OPERATIONS (next page)

# Figure 3: DeReader OPERATIONS

The symbol \_J\_ represents your computer's ENTER key.

From Figure 2: DeReader MAIN SCREEN (previous page)





## Data Operations: UNLOAD CARD / TRANSLATE DATA

UNLOAD CARD / TRANSLATE DATA

Copy Card → Image File  
Translate Card → Data File  
Translate Image File → Data File

Use the up/down arrow keys to select an operation. Then press **↵**.

CHOOSE FORMAT  
Format Definition file  
Ext [F11]  
Dir [C:\DR]  
File [..]  
Press **↵**

Specify the format of the destination data file by choosing one of the definition files (F11) in the DR directory.

TRANSLATE CARD DATA (SOURCED TO DATA FILE (DESTINATION))

Translate Card Directly

Baud Space on C: 14:44:10  
Channel data only  
Time as hh:mm:ss  
Time as hh:mm:ss  
Data as dd/mm/yy  
Date as mm/dd/yy  
Days from 1/1/89  
Temperature is stored as deg C  
Temperature is stored as deg F  
Temperature is stored as deg K  
Temperature is stored as deg R  
Minimum Significant Digits (5)  
To Dest File  
[C:\DR]  
Translate Card Now

Use the up/down arrow keys to highlight an item. Pressing **↵** either selects the highlighted item or opens a sub-window for you to enter more information.

SPECIFY DESTINATION FILE

Destination data file:  
Ext [..]  
Dir [C:\DR]  
File [..]  
Press **↵** when this line is highlighted.

Specify the name and location of the destination data file.

TRANSLATE IMAGE FILE (SOURCED TO DATA FILE (DESTINATION))

Translate Image Files

Source File: [..]  
Format Type: [..]  
All Schedules  
Schedule A Only  
Schedule B Only  
Schedule C Only  
Schedule D Only  
Schedule X Only  
From First Data  
From Time, Date  
To Last Data  
To Time, Date  
To Date [..]  
To Dest File [..]  
[C:\DR]  
Translate File Now

Use the up/down arrow keys to highlight an item. Pressing **↵** either selects the highlighted item or opens a sub-window for you to enter more information.

SPECIFY DESTINATION FILE

Destination data file:  
Ext [..]  
Dir [C:\DR]  
File [..]  
Press **↵** when this line is highlighted.

Specify the name and location of the destination data file.

## Program & Card Operations: ID, PROGRAM, CLEAR

CARD OPERATIONS

Change Identification Text on Card  
Send Databaker Program File → Card  
Copy Databaker Program on Card → File  
Clear Databaker Program on Card Only  
Clear Databaker Data on Card Only  
Clear All Data and Program on Card

Use the up/down arrow keys to select an operation. Then press **↵**.

CHANGE CARD ID

Card Identification Text:  
[..]  
Exit without changing Card ID  
Write new Card ID to Card Now

Type the new Card ID text (up to 40 characters). Use the up/down arrow keys to select an operation. Then press **↵**.

SEND PROGRAM FILE TO CARD

Program file to card:  
Ext [CUD]  
Dir [C:\DR]  
File [..]  
Locate the Databaker program file. Then press **↵** to send the file.

COPY CARD PROGRAM TO FILE

Card program to file:  
Ext [CUD]  
Dir [C:\DR]  
File [..]  
Specify the destination file. Then press **↵** to copy the program.

CLEAR CARD PROGRAM

!!!!!!!!!!!!!! WARNING !!!!!!!!!!!!!!!  
Clearing will erase all the card program  
Exit without clearing card program  
Clear card program now

Select "Exit..." or "Clear..."  
Then press **↵**.

CLEAR CARD DATA

!!!!!!!!!!!!!! WARNING !!!!!!!!!!!!!!!  
Formatting will erase all data on card  
Exit without formatting card  
Clear card data only now

Select "Exit..." or "Clear..."  
Then press **↵**.

CLEAR CARD DATA & PROGRAM

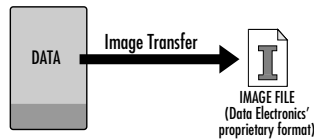
!!!!!!!!!!!!!! WARNING !!!!!!!!!!!!!!!  
Formatting will erase all data on card  
Exit without formatting card  
Clear and format card now

Select "Exit..." or "Clear all now..."  
Then press **↵**.

## The Ten Operations In Detail

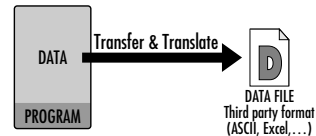
This section is an alternative to Figure 3. It contains the same information, but presented in a different format.

### Operation 1: Unloading Data from a Card to an Image File (Image Transfer to Computer)



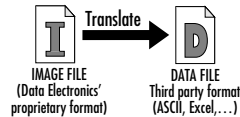
1. Ensure that your MCI is connected to the computer and that DeReader is running.
2. In the Main Options box (lower left-hand corner of DeReader's main screen)
  - a) Highlight **Unload Card / Translate Data**.  
Use the up/down arrow keys.
  - b) Press ↵  
The Unload Card / Translate Data dialog box opens.
3. Highlight **Copy Card ⇒ Image File** then press ↵  
The Save Card to File dialog box opens.
4. In the Save Card to File dialog box
  - a) Select/specify a path and a name (**MYCARD.CRD**, for example) for the the image file that will be created on the computer.  
You can overwrite existing files — DeReader will warn you if this is about to happen.
  - b) Press ↵  
The image transfer begins. DeReader reports the percentage complete as the operation progresses.
5. When the transfer is complete, press the **Esc** key to return to the main screen.
6. If you want to exit DeReader, press the **Esc** key again.  
The image file (extension **.CRD**) is now available on your computer and can be translated any number of times (explained in "Operation 2" below).

### Operation 2: Transferring and Translating Card Data Directly to a Data File in a Single Operation



1. Ensure that your MCI is connected to the computer and that DeReader is running.
2. In the Main Options box (lower left-hand corner of DeReader's main screen)
  - a) Highlight **Unload Card / Translate Data**.  
Use the up/down arrow keys.
  - b) Press ↵  
The Unload Card / Translate Data dialog box opens.
3. Highlight **Translate Card ⇒ Data File** then press ↵  
The Translate Card Directly dialog box opens.
4. In the Translate Card Directly dialog box, specify the translation details.  
Use the up/down arrow keys to highlight each item in turn.  
When a non-option item is highlighted (for example, **Format Type**, the first item), press ↵ This opens a dialog box where you select or enter information.  
When an item in a list of options is highlighted, press ↵ to select it (your selection is tagged with a ♦).
5. When you've specified all the details in the Translate Card Directory dialog box
  - a) Highlight the last item, **Translate Card Now**.  
This item only becomes available when DeReader is satisfied that you've provided all necessary information.
  - b) Press ↵  
The image transfer and translation begins. DeReader reports the percentage complete as the operation progresses.
6. When the operation is complete, press the **Esc** key to return to the main screen.
7. If you want to exit DeReader, press the **Esc** key again.  
The data file is now available on your computer in the format you specified. You can import it into software packages like Microsoft Excel or Lotus 1-2-3, or TYPE it to the screen.

### Operation 3: Translating an Image File to a Data File



Here's how to translate an image file (obtained by carrying out Operation 1) into one of the popular spreadsheet formats.

The MCI is not required for this operation, but the procedure differs slightly depending on whether or not your MCI is connected to the computer.

#### If Your MCI is Connected:

1. Run DeReader.
2. In the Main Options box (lower left-hand corner of DeReader's main screen)
  - a) Highlight **Unload Card / Translate Data**.  
Use the up/down arrow keys.
  - b) Press ↵  
The Unload Card / Translate Data dialog box opens.
3. Highlight **Translate Image File =Data File** then press ↵  
The Translate Image Files dialog box opens.
4. Go to step 5 below.

#### If Your MCI is not Connected:

1. Run DeReader.  
Because your MCI is *not* connected, the **Looking for MCI...** dialog box opens.
2. Highlight **Use filed images only**.
3. Press ↵  
The Translate Image Files dialog box opens.
4. Go to step 5 below.

#### Specify Translation Details

5. In the Translate Image Files dialog box, specify the translation details.  
Use the up/down arrow keys to highlight each item in turn.  
When a non-option item is highlighted (for example, **Source File**, the first item), press ↵. This opens a dialog box where you select/enter information.  
When an item in a list of options is highlighted, press → to select it (your selection is tagged with a ♦).
6. When you've specified all the details
  - a) Highlight the last item, **Translate File Now**.  
This item only becomes available when DeReader is satisfied that you've provided all necessary information.

- b) Press ↵

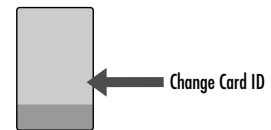
The translation begins. DeReader reports the percentage complete as the operation progresses.

7. Translate another image file, or press the **Esc** key to return to the main screen.

8. If you want to exit DeReader, press the **Esc** key again.

The data file is now available on your computer in the format you specified. You can import it into software packages like Microsoft Excel or Lotus 1-2-3, or TYPE it to the screen.

### Operation 4: Changing a Card's ID (Identification Text)



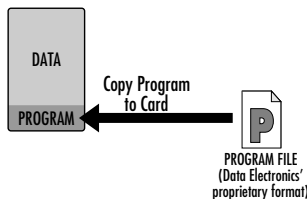
Follow the procedure here to change a memory card's name. (When you use DeReader to format a memory card, it automatically gives it a default name based on the size of the card — **1024KB Card**, for example.)

1. Ensure that your MCI is connected to the computer and that DeReader is running.
2. Insert the memory card into your MCI.
3. In the Main Options box (lower left-hand corner of DeReader's main screen)
  - a) Highlight **Card Operations (ID, Program, Clear)**.  
Use the up/down arrow keys.
  - b) Press ↵  
The Card Operations dialog box opens.
4. Highlight **Change Identification Text on Card** then press ↵  
The Card Identification Text dialog box opens.
5. In the Card Identification Text dialog box
  - a) Type the new name for the card
  - b) Highlight **Write new Card ID to Card Now**.
  - c) Press ↵  
The new name appears beside **ID** in the Card area of DeReader's main screen.

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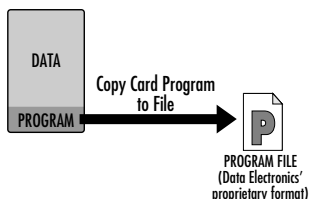
↵ represents the **Enter** key on your keyboard.

### Operation 5: Copying a DataTaker Program to a Memory Card



1. Ensure that your MCI is connected to the computer and that DeReader is running.
2. Insert the memory card into your MCI.
3. In the Main Options box (lower left-hand corner of DeReader's main screen)
  - a) Highlight **Card Operations (ID, Program, Clear)**.  
Use the up/down arrow keys.
  - b) Press ↵  
The Card Operations dialog box opens.
4. Highlight **Send DataTaker Program File =Card** then press ↵  
The Program File to Card dialog box opens.
5. Locate/specify the DataTaker program file to be sent to the memory card, then press ↵ to begin the copy operation.  
You'll be able to see the new program details on the right-hand half of the Card area in DeReader's main screen.

### Operation 6: Copying the DataTaker Program from a Memory Card to the Computer



1. Ensure that your MCI is connected to the computer and that DeReader is running.
2. Insert the memory card into your MCI.
3. In the Main Options box (lower left-hand corner of DeReader's main screen)
  - a) Highlight **Card Operations (ID, Program, Clear)**.  
Use the up/down arrow keys.
  - b) Press ↵  
The Card Operations dialog box opens.
4. Highlight **Copy DataTaker Program on Card =File** then press ↵

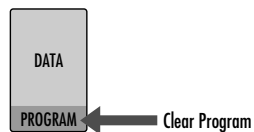
The Card Program to File dialog box opens.

5. Specify the destination file, then press ↵ to begin the copy operation.

The program file is copied to your computer according to the path and name you specified.

You can overwrite an existing file with the same name in the same location — DeReader will ask for confirmation if this is about to happen.

### Operation 7: Clearing the DataTaker Program from a Memory Card

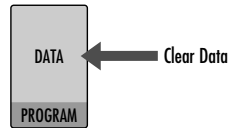


1. Ensure that your MCI is connected to the computer and that DeReader is running.
2. Insert the memory card into your MCI.
3. In the Main Options box (lower left-hand corner of DeReader's main screen)
  - a) Highlight **Card Operations (ID, Program, Clear)**.  
Use the up/down arrow keys.
  - b) Press ↵  
The Card Operations dialog box opens.
4. Highlight **Clear DataTaker Program on Card Only** then press ↵  
A Warning dialog box opens.
5. Highlight **Clear card program now** then press ↵  
The number of program characters changes to zero in the Card area of DeReader's main screen. Any DataTaker data on the card is left intact.

---

↵ represents the **Enter** key on your keyboard.

### Operation 8: Clearing the DataTaker Data from a Memory Card



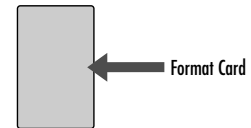
1. Ensure that your MCI is connected to the computer and that DeReader is running.
2. Insert the memory card into your MCI.
3. In the Main Options box (lower left-hand corner of DeReader's main screen)
  - a) Highlight **Card Operations (ID, Program, Clear)**.  
Use the up/down arrow keys.
  - b) Press ↵  
The Card Operations dialog box opens.
4. Highlight **Clear DataTaker Data on Card Only** then press ↵  
A Warning dialog box opens.
5. Highlight **Clear card data only now** then press ↵  
The number of data characters changes to zero in the Card area of DeReader's main screen. Any DataTaker program on the card is left intact.

### Operation 9: Clearing Data and Program from a Memory Card



1. Ensure that your MCI is connected to the computer and that DeReader is running.
2. Insert the memory card into your MCI.
3. In the Main Options box (lower left-hand corner of DeReader's main screen)
  - a) Highlight **Card Operations (ID, Program, Clear)**.  
Use the up/down arrow keys.
  - b) Press ↵  
The Card Operations dialog box opens.
4. Highlight **Clear All Data and Program on Card** then press ↵  
A Warning dialog box opens.
5. Highlight **Clear and format card now** then press ↵  
The number of data and program characters changes to zero in the Card area of DeReader's main screen.

### Operation 10: Formatting an Unformatted Memory Card



1. Ensure that your MCI is connected to the computer and that DeReader is running.
2. Insert the unformatted memory card into your MCI.  
When an unformatted (or non-DataTaker-formatted) memory card is inserted, the option at the bottom of DeReader's Main Options box changes to **Format Card For Use With DataTaker**.
3. In the Main Options box (lower left-hand corner of DeReader's main screen)
  - a) Highlight **Format Card For Use With DataTaker**.  
Use the up/down arrow keys.
  - b) Press ↵  
A Warning dialog box opens.
4. Highlight **Clear and format card now** then press ↵

#### ..... **WARNING**

In addition to preparing the card for DataTaker use, formatting completely clears the card — any previous DataTaker program or data is erased.  
.....

## Improving Performance

DeReader adjusts the baud rate used to communicate with the MCI to obtain the highest rate at which reliable communications can be maintained. Communication is continually monitored and if it becomes unreliable, the baud rate is reduced automatically.

Communicating at high baud rates (greater than 19,200 baud) can be unreliable on some PCs. This can be due to hardware or software limitations. The communications baud rate used between the MCI and DeReader can be improved depending on the nature of the problem.

### UARTs

Certain UARTs (Universal Asynchronous Receiver Transmitters) do not communicate reliably at the higher baud rates supported by DeReader.

There are two basic types of UART: standard single-byte buffered UARTs like the 8250 and 16450, and the more-advanced 16-byte FIFO (First In First Out) buffered UARTs such as the 16550.

Some standard UARTs do not work at all at the higher baud rates due to problems with the UART itself. For example, the National Semiconductor® 8250 UART is not certified to work at 115,200 baud whereas most others will operate at that speed.

A common problem with standard single-byte buffered UARTs is that an interrupt signaling incoming character reception can be missed due to interrupts being disabled for too long. This can be caused by other interrupts taking too long to be serviced, or by some other software disabling communications interrupts for too long. These problems can be overcome by replacing the expansion board in the PC that contains the serial port UART(s) with one that uses a 16550 type UART. If the serial port UART(s) are part of the motherboard or cannot be changed for some other reason, then it may be possible to add additional serial port(s) that use the 16550 type UART.

### Noise

A far less common problem is electrical noise affecting the performance of the serial connection. With a short shielded cable (less than 2 metres) there would rarely be a problem with electrical noise. If there is any suspicion of electrical noise then a shorter cable or the removal of the noise source should fix the problem.

### Software — DOS

Some software (drivers, TSRs) can affect the performance of serial communications. If the UART cannot be replaced with a more advanced type, then determining the software responsible for the performance degradation and removing it can help.

Do this by renaming the DOS configuration files **CONFIG.SYS** and **AUTOEXEC.BAT** and then restarting the PC. If the performance improves then you can isolate the problem software by renaming the configuration files back to their correct names and removing drivers and TSRs named within the files one by one until the offending software is found. If the offending software cannot be removed (because it is required

for normal operation), then you should consider installing an advanced UART as described above.

If DeReader always sets your serial communications to less than 115,200 baud, you can tell DeReader to limit its maximum baud rate to the highest reliable rate so that initial connection is quicker. The **MAXBAUD** command line argument can be used to specify the maximum baud rate by starting DeReader in the following ways:

If using COM1, try...

**DEREADER MAXBAUD=57600.**

or... **DEREADER MAXBAUD=19200.**

or... **DEREADER MAXBAUD=9600.**

If using COM2, try...

**DEREADER COM2 MAXBAUD=57600.**

or... **DEREADER COM2 MAXBAUD=19200.**

or... **DEREADER COM2 MAXBAUD=9600.**

(. represents the symbol for your keyboard's **Enter** key.)

### Software — Windows

Be sure to read the topic "Active Window" in "Warnings" near the start of this guide.

---

. represents the **Enter** key on your keyboard.

## Troubleshooting

To aid in troubleshooting, note that the MCI firmware version number (**y.yy** in Figure 2) only appears next to **MCI** in the upper left-hand corner of DeReader's main screen *when DeReader can "see" the MCI*. No firmware version number means that DeReader can not see the MCI.

### General

If you encounter a problem, check the following in order:

1. If the MCI is being powered from the mains, check that the mains adaptor and its connector are functioning correctly. If using a DC supply, make sure the positive is connected to the centre pin of the MCI's power connector.
2. If the MCI is being powered from its internal battery, check that this battery has not discharged.
3. The supplied communications cable supplied must be connected between the MCI and the RS-232 port of the computer.
4. DeReader's default is to look for your MCI on the computer's COM1 comms port. If you are using COM2 instead, restart DeReader with **DEREADER COM2** (see "Command Line Options" in "DeReader Features and Functions").

### Older Computers

Some older XT machines may lock up when DeReader attempts to set the communications baud rate to 115,200. If this happens, limit the baud rate to a lower value using the **MAXBAUD** command line argument as explained in the section "Improving Performance" above.

### Windows Users

In Windows, ensure that the DeReader window is always active (see "Active Window" in "Warnings" near the start of this guide).

If you still have a problem after working through the items above, don't hesitate to contact Data Electronics for help.

# Specifications

## Memory Cards Supported

PCMCIA Type 1 and Type 2 SRAM (Static RAM, not FLASH) memory cards (memory only, not I/O types)  
Up to 16MB capacity  
8-bit data width only (not 16-bit)  
Write protection and battery level detection supported

## Serial Interface

DB-9 female connector  
115200, 57600, 19200, 9600 baud, automatically established  
No parity, 8 data bits, 1 or 2 stop bits  
Software handshake  
Requires PC to MCI communications cable (supplied)

## Power

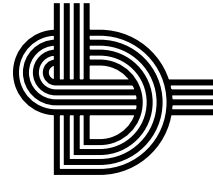
8-18V AC external power (mains adaptor supplied)  
Internal Battery (supplied)  
6V 1.2Ah gel cell  
Recharge time from flat 12 hours  
Power Consumption (typical)  
Inserted card, active 55mA  
Inserted card, idle 45mA  
Asleep 100µA  
Battery Life (typical)  
Inserted card, active 21 hours  
Asleep 12-18 months

## Status Indicators

3 activity LEDs (light-emitting diodes)

## Physical

Enclosure  
ABS flame retardant to 94V-0  
Dimensions  
Height 56mm  
Width 135mm  
Depth 137mm  
Weight  
700gm  
1120gm with mains adaptor



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