

CARY 9000
REFERENCE
MANUAL

Copyright @ 1992, CARY Peripherals Inc., no part of this document may be copied or reproduced in any form or by any means without the prior written consent of CARY Peripherals Inc.

CARY Peripherals Inc. makes no warranties with respect to this documentation and disclaims any implied warranties of commercial viability and fitness for a particular purpose. Information in this document is subject to change without notice. CARY Peripherals Inc. assumes no responsibility for any errors that may appear in this document.

From time to time changes may occur in the filenames and in the files actually included on the program disks. CARY Peripherals Inc. makes no warranties that such files or filenames as mentioned in this document exist on the program disks or as part of the materials distributed.

Document #: CP-9000-02
Second Edition: January 1993
Printed: February 1993

Cary Peripherals Inc.
190 Colonnade Road South
Unit 9
Nepean, Ontario
Canada
K2E 7J5

First edition printed May 1991.

TABLE OF CONTENTS

CHAPTER 1	1
INTRODUCTION	1
What's in your manual	1
ABOUT THE CARY 9000 SERIES	1
WHAT'S NEW ABOUT V4.00	2
CHAPTER 2	3
INSTALLATION	3
SYSTEM REQUIREMENTS	3
Choosing a download port	3
INSTALLATION ON A HARD DISK	3
INSTALLATION ON A FLOPPY DISK	5
CHAPTER 3	6
PROGRAMMING	6
PRINCIPLES OF OPERATION	6
HOW IT WORKS	6
3D memory	7
Other Features	7
RUNNING THE PROGRAM	9
Basic Format	10
USING THE PROGRAM	11
Programming a New Keyboard Configuration	12
Programming an Existing Keyboard Application	12
Tailoring the Program	12
COMMAND REFERENCE	12
1 - LOAD CONFIG	14
2 - LINK KEYS	17
3 - EDIT KEYCODES	19
Membrane Keyboard	23
4 - KEYBOARD SET-UP	24
5 - SAVE CONFIG	27
6 - DOWNLOAD	28
CHAPTER 4	46
WINDOWS	46
CHAPTER 5	48
TROUBLE SHOOTING	48
PRACTICAL OBSERVATIONS	50
CHAPTER 6	51

TECHNICAL SPECIFICATIONS	51
ORDERING INFORMATION.....	52
Cary 9000 Series Keyboards	52

CHAPTER 1 INTRODUCTION

Congratulations on the purchase of the CARY Peripherals 9000 Programming Accessories Kit (PAK)

Your package contains:

- Software diskette, 3 1/2"
- Programming cable
- CARY 9000 Reference Manual

What's in your manual

Chapter 1 -	Introduction:	What is the CARY 9000 PAK
Chapter 2 -	Installation:	What you need to install your CARY 9000 PAK
Chapter 3 -	Programming:	A step-by-step guide on how to program your CARY 9000
Chapter 4 -	Windows:	Running CARY 9000 under windows
Chapter 5 -	Trouble Shooting:	What to do when things go wrong
Chapter 6 -	Technical Specifications:	CARY 9000 Electrical Specifications

ABOUT THE CARY 9000 SERIES

The CARY 9000 series of keyboards was conceived to replace the standard keyboard on any PC or compatible with one better suited for point of sale. The base keyboard has 57 reprogrammable, reconfigurable, releasable keys, intelligent barcode scanner port, optional/internal magnetic stripe reader

INTRODUCTION

and four position keylock. Each key can be programmed with up to 8 characters. The keyboard also contains several wedge like features such as insertion of pre/postamble to barcode and magstripe messages, inter-character delay and the possibility of plugging in an upstream keyboard.

There are several ways to increase the number of available keys, thereby increasing the functionality and flexibility of the keyboard. One is to use an optional second level of memory called 3D. Not unlike the 2nd function on a calculator, this memory level is completely separate from the first and can be accessed by the use of specially designated key. The other is to physically increase the number of keys. This was implemented in the form of a membrane addition to the base keyboard. This membrane adder contains a 4 x 14 array of membrane switches(56) which virtually doubles the number of keys available on the keyboard. The array automatically contains the 3D level option.

WHAT'S NEW ABOUT V4.00

The S/W Version 4.00 has the following feature enhancements over Version 2.72:

- 1) Locking Feature: the ability to suppress any key output based on any specified keylock position
- 2) Keylock Suppression: the ability to enable or suppress any or all keylock messages
- 3) Full AT Support: provide support for most AT keyboard scancodes
- 4) PS/2 & PS/1 Support: fully compatible with most PS Series computers

The S/W Version 4.00 is fully compatible with all previous versions of the software. However, to access the new features, you must have a unit equipped with the corresponding version of firmware. Firmware upgrades are available for units with older versions. For more details, contact your CARY 9000 representative.

CHAPTER 2 INSTALLATION

Installing your CARY 9000 dealer kit consists of installing and configuring the software on the hard disk . Once the software has been installed, you can proceed to configure and program your CARY 9000s.

SYSTEM REQUIREMENTS

The minimum equipment required to operate the CARY Peripherals Keyboard Setup Utility is:

IBM PC-XT or compatible computer
 one floppy drive, 3 1/2
 640 K RAM
 one serial port, COM1:, COM2:, COM3:, or COM4:

Optional: Mouse
 Hard disk
 Printer

CHOOSING A DOWNLOAD PORT

Before loading your CARY Peripherals Keyboard Set-up program you must choose a serial port for downloading to your CARY 9000. Any COM port may be used, however the download port must not be paired with a mouse. Use the Table 1 below to select your programming port.

Table 1: Valid Programming Ports

Mouse Port	Programming Ports
COM 1 or COM 3	COM 2 or COM 4
COM 2 or COM 4	COM 1 or COM 3

INSTALLATION ON A HARD DISK

If you plan to run the program from a hard disk, follow the instructions in this section.

INSTALLATION

Install the software onto your hard disk by typing:

```
C>md cary <ENTER>  
C>cd cary <ENTER>
```

Insert the software diskette into a drive and type:

```
C>a: <ENTER> or C>b: <ENTER>.  
and  
A>copy *.* c: <ENTER> or B>copy *.* c: <ENTER>
```

The software will be transferred to your hard drive in the given directory.

```
A>c: <ENTER> or B>c: <ENTER>.  
and  
C>cary <ENTER>
```

The program will run and load the programmed defaults. Change the system data to that which is appropriate for your system. For further details, see section 8 - SYSTEM SET-UP.

Once the program has been configured you are now ready to begin programming your keyboards.

INSTALLATION ON A FLOPPY DISK

If you plan to run the program from a floppy disk, follow the instructions in this section.

Insert the software diskette into the A or B drive and type:

a:<ENTER> or b:<ENTER>

Copy the distribution software onto a backup disk by typing:

A>diskcopy <ENTER> or B>diskcopy <ENTER>

Follow the instructions given by your computer to copy the distribution disk.

Install the software by typing:

C>cary <ENTER>

The program will run and load the programmed defaults. Change the system data to that which is appropriate for your system. For further details, see section 8 - SYSTEM SET-UP.

Once the program has been configured you are now ready to begin programming your keyboards.

PROGRAMMING

**CHAPTER 3
PROGRAMMING**

Programming your CARY 9000 is a simple matter of using the CARY 9000 KEYBOARD SET-UP UTILITY to define the actions of each key and the configuration of the keyboard. Once configured, the CARY 9000 is programmed when you use the command 6 - DOWNLOAD (explained later in this reference) to load your configuration.

PRINCIPLES OF OPERATION

The CARY 9000 series of keyboards operates in place of, or as an adjunct to your existing PC keyboard. The CARY 9000 monitors the communication between your existing keyboard and the host computer and inserts keystrokes whenever a key is pressed. In addition to transmitting keystrokes, the CARY 9000 can transmit information from a magnetic stripe reader, a key lock, and a barcode reader.

Unlike the PC keyboard which outputs one scan code per key, the CARY 9000 can output a stream of up to eight scan codes with each key. The definition of each key message is programmed by you and downloaded to the CARY 9000 using the CARY 9000 KEYBOARD SET-UP UTILITY. Since the CARY 9000 transmits the message as if the user was typing them by hand, the POS software can accept the input using conventional keyboard input functions. Furthermore, since the CARY 9000 transmits standard PC scan codes, most keyboard interrupt software will operate without modification.

HOW IT WORKS

The designer determines what keystrokes are required for each key of the application, for example "Hello[ENT]". In addition, the designer must also determine certain system parameters such as the host PC type (XT or AT), a magstripe/barcode scanner preamble and postamble, a key lock message, etc. That information is entered into the CARY 9000 KEYBOARD SET-UP UTILITY which converts the keystrokes into scan codes and downloads the configuration file to the CARY 9000 keyboard. An onboard micro-controller accepts the downloaded data and stores it into an EEPROM.

Later when the user presses a key or swipes a card, the micro-controller interprets the action and transmits the corresponding scan codes to the PC. The keyboard interrupt handler of the PC converts scan codes to text and passes it on to the POS application software.

PROGRAMMING

When programming the CARY 9000 keyboard, you can define the following items:

- 1 - Host PC type
- 2 - Scan codes for each key,
- 3 - Key click Enable
- 4 - Inter character delay
- 5 - Upstream keyboard Enable
- 6 - Membrane Keyboard present or not
- 7 - Key lock message
- 8 - Magstripe preamble, separator, and postamble
- 9 - Barcode preamble and postamble
- 10 - Control key mapping

3D MEMORY

With the optional 3D memory, you can program two distinct messages into each key. The first is transmitted when the key is pressed, the second is transmitted when the 3D function key is activated while the key is pressed.

In addition to programming each key so that it outputs a message with each keystroke, any key can be designated to act as a SHIFT, CONTROL, or ALT key. Using this, you can program a particular key to be (say) "a", and use the SHIFT, CONTROL, and ALT keys to obtain "A", "^A", or "ALT-A" from the same key.

OTHER FEATURES

Programming, printing labels, and system set-up are also accomplished by using the CARY programming package. This program contains all of the software necessary to work with your CARY Peripherals 9000 keyboard.

The descriptions of the terminology used in this manual to describe features of the CARY 9000 software and hardware are given below.

PROGRAMMING

DEFINITIONS

BARCODE READER	An externally attached device to read barcodes using the built-in serial port.
DEFINITION FILE	All of the information required to define a keyboard application. This includes the keycodes, magstripe information, and all other programmable parameters.
KEYCODE(S)	The message output by the CARY 9000 after striking a key.
KEYLOCK	A programmable, four position, key-activated switch located on the upper right hand corner of the keyboard.
MAGNETIC STRIPE READER	This is an optional device which is used to read magnetically-encoded cards. It is located on the right-hand side of the keyboard.
MEMBRANE KEYBOARD	This is an optional supplemental keyboard installed onto the Cary 9000. It is attached to the top of the CARY 9000 and provides 56 additional key positions.
SCANCODE	The serial message transmitted between the keyboard and the PC. The format of the message depends on the type of computer used.
UPSTREAM KEYBOARD	The conventional PC keyboard plugged into the CARY 9000 keyboard.

PROGRAMMING

RUNNING THE PROGRAM

To begin your first session with the CARY 9000 make certain that you are in the directory containing the CARY.EXE program. Type CARY<ENTER>.

Once the program has finished loading you will see the display as shown in Figure 1.

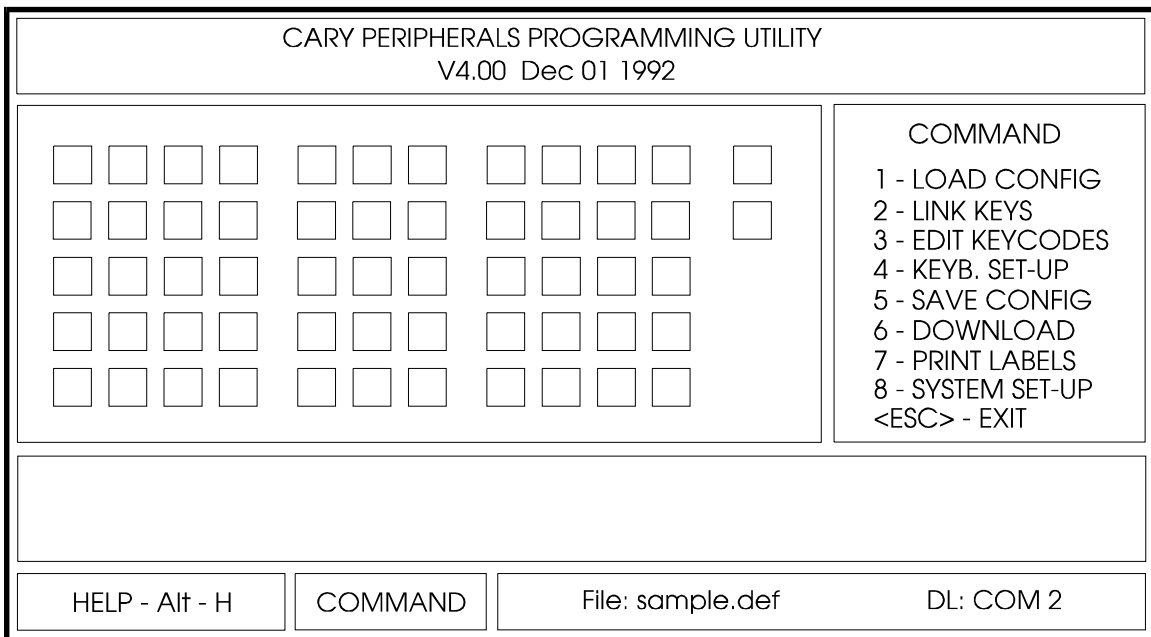


Figure 1: CARY 9000 KEYBOARD

PROGRAMMING

BASIC FORMAT

The basic format of the CARY 9000 keyboard display is shown in Figure 2 below. Each area of the keyboard display has a particular function, and displays information relating to that function. The function of each area remains the same no matter which command in the program you are using.

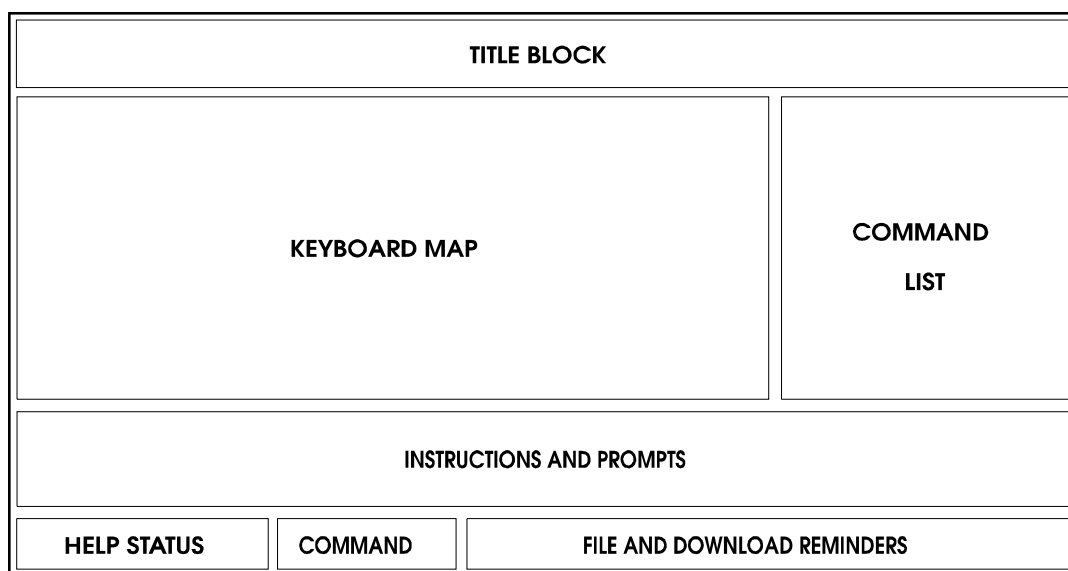


Figure 2: CARY 9000 KEYBOARD SETUP UTILITY LAYOUT

PROGRAMMING

TITLE BLOCK	Shows the name of the program and the current software revision.
KEYBOARD MAP	Shows how the keyboard is currently configured. As keys are linked and unlinked, the map will change to show the new configuration. In some cases, the keyboard map area will be used to select other keys or options.
COMMAND LIST	Shows the commands that you can perform in programming the keyboard. You can execute these commands in any order.
INSTRUCTIONS & PROMPTS	Shows additional information, instructions and prompts for using the program.
HELP STATUS	Shows whether or not help is available for the current command. If the box shows HELP-ALT-H then help is available by pressing <ALT-H>. Help will remain on the display until any key is struck.
CURRENT COMMAND	Indicates the command currently being used. Initially the area shows COMMAND, indicating that it is waiting for a command to be entered. Once a command has been selected, this area will change to indicate when a file is being loaded, for example "LOADING".
FILE & DOWNLOAD REMINDERS	Shows the name of the keyboard file being configured and the name of the download port. Changing the keyboard definition file or the download port will change the reminder area.

USING THE PROGRAM

Choosing a command can be accomplished by any one of three methods:

- 1 - Type the number or letter before the operation to be performed. For example, 6 -DOWNLOAD can be executed by typing <6>.
- 2 - Use the cursor keys to move the scroll bar to the desired operation and strike <ENTER>.
- 3 - Use the mouse to move the scroll bar over the desired operation, then press the left button or strike <ENTER>.

PROGRAMMING

Any time that the program requests text input, for example when entering a string, you may take advantage of the built-in line editor. The editor permits you to modify the text string by scrolling left or right with the arrow keys and typing new text in. Pressing the <INSERT> key will insert the new text between the existing text. The input is accepted by the program when the <ENTER> key is pressed, or ignored if <ESC> is pressed.

Any mistakes in running the program can be corrected by striking the <ESC> key to abandon the current operation. Unless otherwise indicated, all operations are terminated by the <ENTER> key.

PROGRAMMING A NEW KEYBOARD CONFIGURATION

New configurations are created by selecting the 1 - LOAD CONFIG. command and entering the name of the definition file. The program will erase all of the key configurations and present you with a blank keyboard.

PROGRAMMING AN EXISTING KEYBOARD APPLICATION

An existing configuration can be programmed by using 1 - LOAD CONFIG. to bring the definition files into the program. Once loaded, you may change the keyboard configuration and save the results or proceed directly to download the keyboard.

In the case of both a new and an existing configuration you are free to perform the commands in any order, or repeat commands as necessary to complete the keyboard configuration.

TAILORING THE PROGRAM

The CARY 9000 KEYBOARD SET-UP UTILITY is designed to be operated with a variety of computers and printers. Tailoring the program for your system is done by using 8 - SYSTEM SET-UP to configure the details specific to your computer.

COMMAND REFERENCE

The commands available in the CARY 9000 KEYBOARD SET-UP UTILITY are:

1 - LOAD CONFIG: Read a file from disk

PROGRAMMING

2 - LINK KEYS:	Link the keys together
3 - EDIT KEYCODES:	Edit the messages given by each key
4 - KEYB. SET-UP:	Program the hardware used by the CARY 9000
5 - SAVE CONFIG:	Write a file to disk
6 - DOWNLOAD:	Program a CARY 9000 keyboard
7 - PRINT LABELS:	Print the labels for the CARY 9000
8 - SYSTEM SET-UP:	Configure the CARY 9000 KEYBOARD SET-UP UTILITY to your computer

You may use the commands in any order, and return to a command at any time. Each of the commands is detailed in the following pages.

PROGRAMMING**1 - LOAD CONFIG.**

A CARY 9000 definition file is loaded into the program by using the 1 - LOAD CONFIG. command. After selecting <1> the program will prompt you for the name of the file to load as shown in Figure 3.

CARY PERIPHERALS PROGRAMMING UTILITY V4.00 Dec 01 1992			
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>			
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>			
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>			
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>			
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>			
Load file ? *.def			
	LOADING	File: sample.def	DL: COM 2

Figure 3: LOAD CONFIGURATION MENU

PROGRAMMING

The message Load file: ? *.def is prompting you to enter the name of the file to be loaded.

Choosing a file name can be accomplished by any one of four methods:

- 1 - Strike <ENTER> to obtain a directory listing of all .DEF files.
- 2 - Type *.*<ENTER> to obtain a directory listing of all files
- 3 - Type in NAME<ENTER> to load the named file.
- 4 - Strike <ESC> to abandon loading and return to the command menu.

If the name *.def is used, the program will display a listing of the current directory as shown in Figure 4. Move the scroll bar up or down until the desired file is highlighted, and strike <ENTER> to load the file. In the case of large directories, the <PgUp> and <PgDn> keys are used to page through the directory.

DIRECTORY	
ALLAN	. DEF
ALLANX	. DEF
BILL	. DEF
CARY	. DEF
FRED	. DEF
LABELT	. DEF
NEW	. DEF
NUMLOCK	. DEF
SAMPLE	. DEF
SAMPLE2	. DEF
TEST	. DEF
WINDOWS	. DEF
WP	. DEF

Figure 4: DIRECTORY LISTING POP-DOWN MENU.

PROGRAMMING

Alternatively, typing in a new file name will result in that file being loaded into the program. Entering the name of a file which does not exist will cause the program to create a blank keyboard and warn you that a NEW keyboard definition file is being created.

Once the file has been loaded, the display will be updated to show the current layout of the CARY 9000.

CARY Peripherals recommend the use of .DEF as a program suffix so that the windows file manager can associate .DEF files with the CARY 9000 KEYBOARD SET-UP UTILITY.

PROGRAMMING

2 - LINK KEYS

The physical layout of the keyboard, for example, single or quad keys is programmed using the 2 - LINK KEYS command from the main menu.

Selecting <2> from the main menu will present you with the layout of the keyboard, along with instructions as shown in Figure 5.

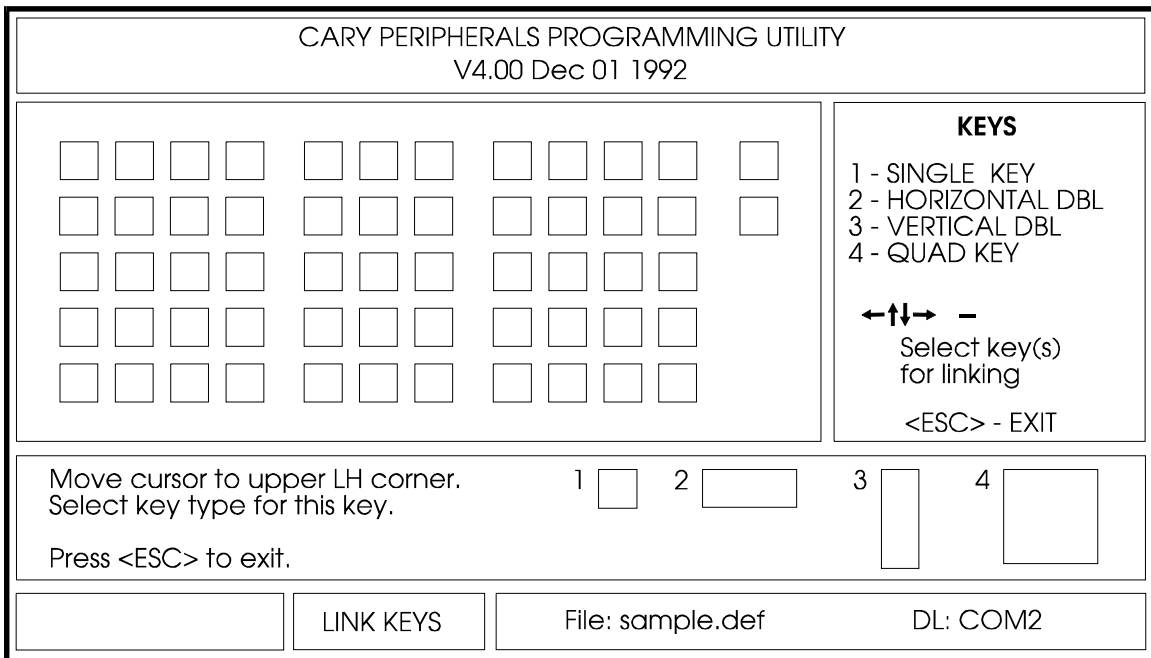


Figure 5: LINK KEYS MENU.

Each key configuration has a corresponding number. Use the cursor keys (or mouse) to move the cursor to the Upper-Left-Hand corner of the key(s) to be linked, then type the number (1 to 4) of the desired configuration.

PROGRAMMING

The four legal key configurations are:

SINGLE	1 single key, not linked to any others
HORIZONTAL DOUBLE	2 adjacent keys, linked horizontally
VERTICAL DOUBLE	2 adjacent keys, linked vertically
QUAD	4 adjacent keys, 2 by 2, linked to form a large, square key

Any other key configurations are illegal and will not be allowed. Examples of illegal configurations are:

- configurations that use any shape other than a rectangle or a square; for example an L-shape
- configurations that try to link keys outside of each three or four-set of columns of keys.

Any selection which results in an illegal key configuration is detected and prevented by the program. In this case, the program will display the error message shown in Figure 6 and ignore the input.

To correct this error, you must first unlink all the affected keys and then re-link them using one of the four legal configurations. To unlink the affected keys type the number 1. This brings the configuration back to its default setting; only single keys.

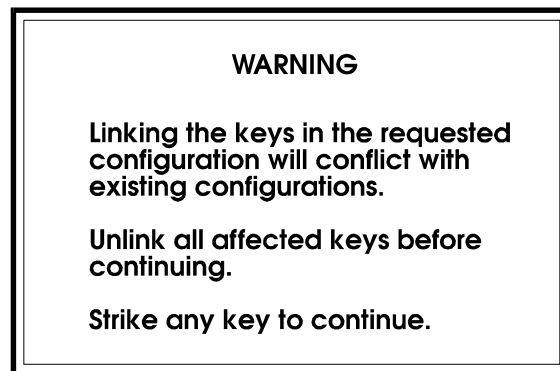


Figure 6: LINK KEYS ERROR MESSAGE

SPECIFICATIONS

3 - EDIT KEYCODES

The text and labels associated with individual keys are set by using the 3 - EDIT KEYCODES command. Selecting <3> will present you with the display shown in Figure 7. As you move the cursor over the keyboard, the prompts area shows the keycodes and label programmed into the keys.

To edit an individual key, move the cursor to the key to be changed and strike <ENTER>. The display will highlight the key and permit you to enter new keycodes and label as shown below.

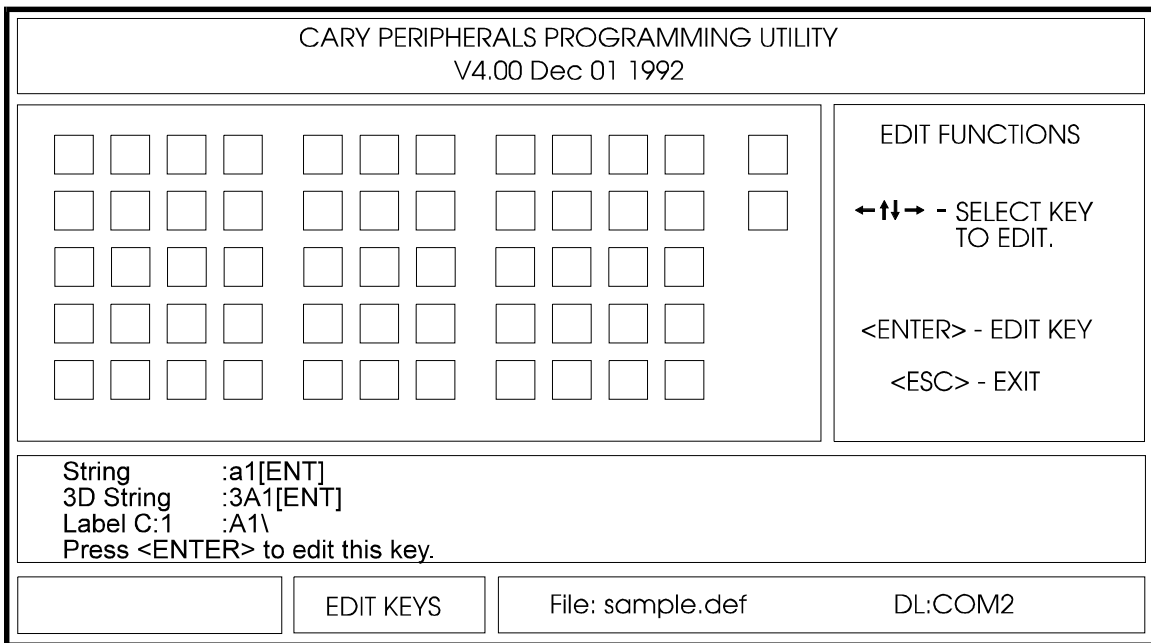


Figure 7: EDIT KEYCODES MENU

SPECIFICATIONS

Editing all of the keycodes is accomplished by any one of three methods:

- 1 - Enter the new keycodes and strike <ENTER>; or,
- 2 - Strike <ENTER> to use the keycodes given; or,
- 3 - Strike <ESC> to abandon editing the keycodes.

The program will accept the text for the keycodes simply by typing in the message as you wish it to appear, for example "Hello". In addition to conventional text, the CARY 9000 can generate special strings, for example F1, by enclosing the string in [] brackets. If your application requires "[" to be transmitted by the CARY 9000, you can obtain that character by using [[in place of [.

The program will accept any text string of eight characters or less. The special control characters SHIFT, CONTROL, or ALT and uppercase characters use 1.5 character positions, while the alphabetic characters (lowercase characters) and all other special control characters use 1 character position.

Examples of valid keycodes are:

- | | |
|----------------|-----------------------------------|
| 1 - Hello | 5.5 characters |
| 2 - Hello[ENT] | 6.5 characters (including ENTER) |
| 3 - [F1] | 1 character |
| 4 - [C]c | 2.5 characters (Control C) |
| 5 - [L123]CASH | 7 characters |
| 6 - [[| 1 character (The text string [) |

Examples of invalid keycodes are:

- | | |
|------------|---|
| 1 - [F99] | Function key 99 does not exist |
| 2 - STRING | More than 8 characters long (6 x 1.5 = 9) |

In the first example, the program will report invalid keycodes and display the reason for rejecting the input. In the second, it will truncate the text string to STRIN (5 x 1.5 = 7.5), which is the maximum allowable number of characters, below the 8 character limit.

SPECIFICATIONS

Striking ALT-H while editing will display the list of special keycodes along with a list of examples.

Version 4 help text		Special keys			
Keypad keys	[A] Alt	[B] Backspace	[C] Control		
[N] [/] [*] [-]	[E] Esc	[E] Shift	[T] Tab		
[7] [8] [9] [+]	[ENT] Enter	[F x] F-key x	[] Space		
[4] [5] [6]	[[Sqr Bracket	[N] Num Lock	[SL] Scroll Lock		
[1] [2] [3]	[L \rightarrow] Left	[R \rightarrow] Right	[PUP] Pg Up		
[0] [.]	[U \rightarrow] Up	[D \rightarrow] Down	[PDOWN] Pg Dn		
	[HOME] [END] [INSERT]		[DELETE]		
	[L1 $\&$ 2 $\&$ 3 $\&$ 4] Disable key output based on keylock position				
	Note: [N] and [SL] work with inter character delay only				

			Notes		
1 - [C]e	Control C		1 - 8 characters maximum.		
2 - [C][A][.]	Control - Alt - Del		2 - [C], [A], [S] and upper		
3 - [F1]	Function Key 1		case use 1.5 char each		
4 - [L1 $\&$ 2]	Lockout w/keylock 1 & 2		3 - [[is used to insert		
5 - A[ENT]B[ENT]	Text A+Enter & B+Enter				

Figure 8: LIST OF SPECIAL KEYCODES

Once the text is acceptable, striking the <ENTER> key will accept the input. Striking <ESC> will abandon any input leaving the keycodes intact.

- NOTE:**
- 1) The 3D memory circuit may not be installed in a particular keyboard, in which case the text will be accepted by the program, but ignored by the CARY 9000 during download.
 - 2) Be sure that all text strings not contain any unnecessary spaces, especially at the end of the string, otherwise they will be considered as part of the string.

SPECIFICATIONS

After the String and 3D String have been modified, you will be presented with a label-edit menu as shown in Figure 9.

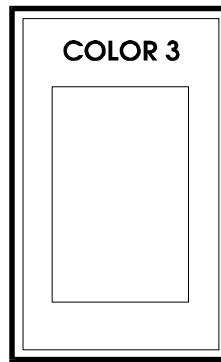


Figure 9: EDIT LABEL POP DOWN MENU

The inner box represents the limits of the text that can be placed on a label. The size and shape of this box will vary with the type of key selected. The color number indicates the color of paper which can be used when printing the label.

You have a choice of 4 colours, from numbers 1 to 4. Assign each colour to any number of your choice between 1 to 4, but only assign one colour for each number.

A label is created by moving the cursor within the box and entering the text in the desired location. Any combination of cursor movement and text is permitted. Entering too much text will result in the program beeping to indicate that it cannot accept any more characters on that line.

The color of the printed label can be changed by pressing <PgUp> or <PgDn> to step through the colors.

Once the desired label has been created, striking <CTRL><END> will cause the program to accept the new label. Striking <ESC> will abandon any input leaving the label intact.

SPECIFICATIONS

MEMBRANE KEYBOARD

The membrane keyboard is programmed using the 3 - EDIT KEYCODES command. To program the membrane keyboard, follow the steps given below:

- 1 - Using 4 - KEYBOARD SET-UP, select 6 - MEMBRANE KEYBOARD and set it to PRESENT.
- 2 - Return to the 3-EDIT KEYCODES command and edit the keycodes.

When 3 - EDIT KEYCODES has been selected, the display will show a membrane keyboard above the regular keyboard. Use the cursor keys to move to the membrane key to be edited and press enter. You will now be prompted to enter the keycodes, 3D keycodes and label. For the membrane keyboard, you may not specify the label colour. Any colour that is entered will be ignored when printing.

SPECIFICATIONS

4 - KEYBOARD SET-UP

The keyboard set-up is changed by using 4 - KEYB. SET-UP. After typing <4>, you are presented with the current set-up as shown in Figure 10 and you may change individual settings as required. You can select the set-up item to be changed by typing the number or letter beside the item, or by moving the scroll bar and striking <ENTER>.

CARY PERIPHERALS PROGRAMMING UTILITY	
V4.00 Dec 01 1992	
1 - Host Type	PC-AT
2 - Scancode Set	SET_1
3 - Key click	ENABLE
4 - Inter-character delay	NONE
5 - Upstream keyboard	ENABLE
6 - Membrane keyboard	NONE
7 - Keylock	
8 - Magstripe	
9 - Barcode	
A - Control key mapping	
Type number to select set-up item. Type <ESC> to exit.	
	SET-UP
File: sample.def	DL:COM2

Figure 10: KEYBOARD SET-UP

A description of each set-up item is given in Table 2 (next page).

SPECIFICATIONS

Table 2: KEYBOARD SET-UP

ITEM	PURPOSE	CHOICES
HOST TYPE	Selects the keyboard protocol compatible with the host computer to be used with the CARY 9000 keyboard.	1 - PC-XT 2 - PC-AT 3 - PS SERIES 4 - PS SERIES WITH F1
SCANCODE SET	Selects the scan codes given by the keyboard. This must be compatible with the POS computer used with the CARY 9000. For any model of computer use Scan code Set 1, except for IBM PS/2 model 57SLC (and equivalents) where you must use Set 2.	1 - SET 1 2 - SET 2
KEY CLICK	Turns the CARY 9000 audible beep on or off.	1 - ENABLE 2 - DISABLE
INTER-CHARACTER DELAY	Sets the delay time between each scan code sent to the computer. (Includes all data from keyboard, magstripe reader and barcode port)	1 - NONE 2 - 10 mSec 3 - 25 mSec 4 - 50 mSec
UPSTREAM KEYBOARD	Enables or disables the upstream keyboard. Regardless of this setting, the upstream keyboard will be enabled when the key lock is moved to the manager position.	1 - ENABLE 2 - DISABLE
MEMBRANE KEYBOARD	Reflects whether a membrane keyboard is connected to the CARY 9000.	1 - NONE 2 - PRESENT

SPECIFICATIONS

ITEM	PURPOSE	CHOICES
KEYLOCK	<p>This function is used to set up the parameters associated with the key lock. The parameters are:</p> <p>1 - Enables the key lock 2 - Disables message on power up 3 - 4 character (max) message associated with each key lock position</p> <p>If ENABLED, and programmed with the message <i>lock</i>, the CARY 9000 will transmit <i>lock0lock3</i> when moved from position 2 to 3. The <i>lock0</i> message is transmitted between all key positions.</p>	See program
1 - Display all key lock messages 2 - Initial key lock message 3 - Key lock message		
MAGSTRIPE	<p>This menu permits you to choose the magnetic stripe reader installed in your CARY 9000, and the messages which will be transmitted when a magstripe card is swiped. The LRC is the Longitudinal Redundancy Check character, which is generated by the MSR.</p>	See program
BARCODE	<p>This menu permits you to program the messages which will be transmitted when the barcode port is used.</p>	See Program
CONTROL KEY MAPPING	<p>These settings allow you to select the keys which will enable the 3D, 3D Toggle, SHIFT, CONTROL, or ALT functions.</p> <p>When any of these functions has been selected, you will be presented with a layout of the CARY 9000. Use the cursor keys to move the flashing cursor to the key location best suited for your application and press ENTER.</p> <p>The program will check for duplicate functions and remove the previous selection.</p>	See Program
1 - 3D 2 - 3D Toggle 3 - Shift Mapping 4 - Control Mapping 5 - ALT Mapping		

NOTE: The membrane keyboard cannot be used to select any of the special control keys.

SPECIFICATIONS**5 - SAVE CONFIG**

The keyboard configuration is saved by using the 5 - SAVE CONFIG command. After selecting <5> the program will prompt you for the name of the file to save the configuration in as shown in Figure 11.

Save file? sample.def			
	SAVING	File: sample.def	DL:COM2

Figure 11: SAVE CONFIGURATION PROMPT

The prompt Save file? sample.def requires you to do one of the following:

- 1 - <ENTER> to save the file name given or;
- 2 - Enter the name of the new file to be saved and then hit <ENTER> or;
- 3 - <ESC> to abandon saving and return to the command menu.

If you enter the name of a file which already exists, the program will prompt you for a confirmation to replace the file. If no confirmation is given, (or by pressing <ESC>), the program will return to the command menu and the file will not be saved.

SPECIFICATIONS

6 - DOWNLOAD

The CARY 9000 Keyboard is programmed by downloading a configuration file when 6 - DOWNLOAD is selected.

Downloading the program to the CARY 9000 is a three-part operation:

- 1 - Connect the CARY 9000 to the downloading computer and power supply.
- 2 - Download the CARY 9000 configuration.
- 3 - Cycle power to the CARY 9000 to load the program into the working memory.

Step 1: Connecting the CARY 9000

A) Attach the programming cable to the serial port on the computer, and to the barcode / programming port on the CARY 9000 as shown in Figure 12.

NOTE:

- 1) Most serial ports on PC compatible computers use a DB-25 male connector. However, some units use a DB-9 male connector only. In most cases, you can use a standard 25 to 9 pin adapter to convert our DB-25 connector to the required DB-9 format. Be sure to check specifications of adapter and both ports to insure compatability.
- 2) Make sure that the selected COM port is alive. Consult your computer's technical manual for further explanations.
- 3) Be sure never to connect or disconnect the programming cable when the unit is ON. Always turn the CARY 9000 OFF (power box switchj to the OFF position) before inserting any connector into the barcode/programming port.

B) Insert the wallmount power suply into the wall outlet, then plug the other end (RCA jack) into the power box. Make sure that the switch is in the OFF position (LED is OFF).

C) Plug the CARY 9000 keyboard cable into the power box, turn the switch to the ON position (LED is lit), and wait for the liveness beep (a one to two second beep emanating from the keyboard) that indicates that the keyboard is operational. This normally takes two to three seconds, but can take up to 30 seconds for keyboards previously programmed for PS Series support. Once the CARY 9000 beeps and the cables are properly connected, you are ready to begin downloading.

Step 2: Download the program

Select the download command by typing <6>, the program will display the downloading prompt shown in Figure 13.

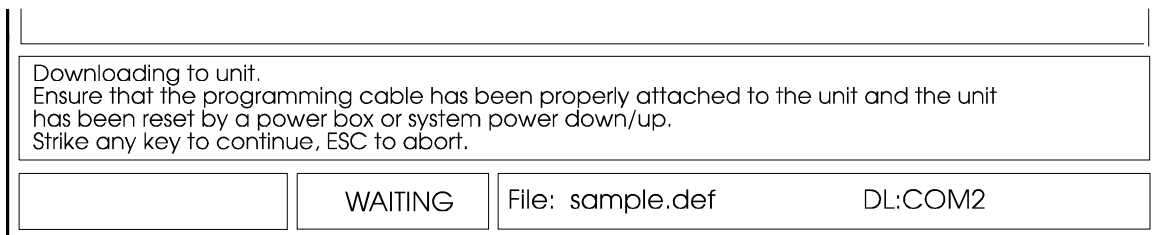


Figure 13: DOWNLOADING PROMPT

SPECIFICATIONS

You are prompted to attach the cables. When ready, strike any key to begin downloading. The program will display the following message shown in Figure 14.

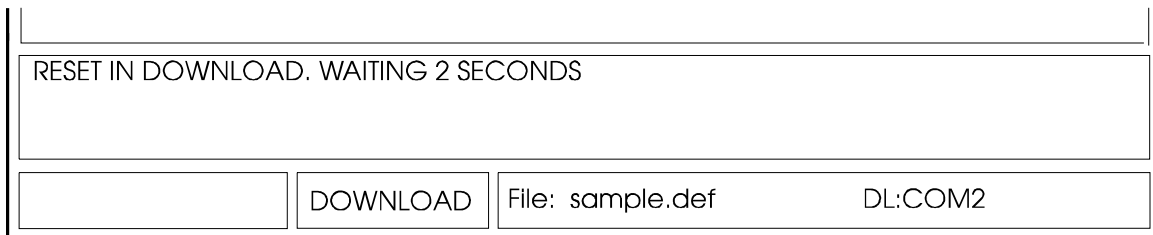


Figure 14: RESET BEFORE DOWNLOADING

After the RESET has been executed, for each block of data downloaded, the program will display : for all regular-level information, or ; for all 3D-level information, and [or] for the membrane and 3D membrane information respectively, to show that the download is progressing.

If the download is corrupted, there can be two probable causes:

1) If the programming cable has not been properly connected to the computer, the program will display the following messages.

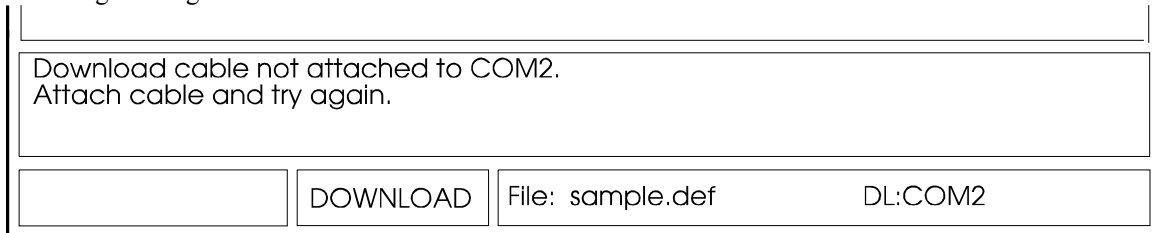


Figure 15: CABLE NOT ATTACHED WARNING

SPECIFICATIONS

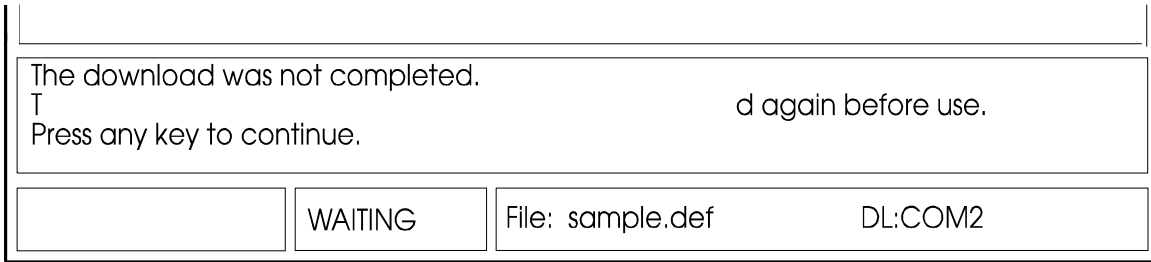


Figure 16: INCOMPLETE DOWNLOAD WARNING

Re - enter the 6-DOWNLOAD section to begin the download again. Please check that all the cables are properly attached before starting the download.

2) If the programming cable has not been properly connected to the CARY 9000, or if it is connected properly but the CARY 9000 is not powered up, after 20 seconds (resetting before downloading) the program will display the following message.

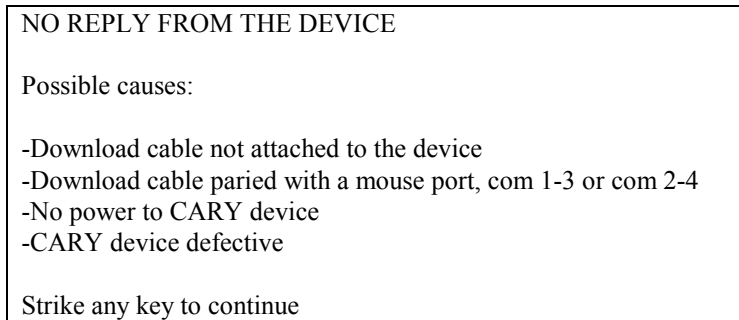


Figure 17: NO REPLY FROM DEVICE

Verify that all possible causes are resolved, then follow the instructions on the screen. For more information, see Figure 16: INCOMPLETE DOWNLOAD WARNING.

NOTE: If you have selected a non-existent COM port, the system will lock up during download. You will need to execute a system reset to continue.

SPECIFICATIONS

Step 3: Cycling power

When the download has been completed, the program will display the message in Figure 18.



Figure 18: CYCLING POWER REMINDER

This is a reminder that you must reset the keyboard so that the new configuration can be loaded into the working memory of the CARY 9000. This is done by switching the power off and on using the power switch on the box.

SPECIFICATIONS

7 - PRINT LABELS

Printing the labels for the CARY 9000 is accomplished by using the 8 - PRINT LABELS command or by using the CorelDRAW!™ template included on your software disk. In both cases, you can print custom labels onto the custom-label forms included with your CARY 9000 keyboard.

NOTE: To take advantage of the template, you must have a copy of CorelDRAW!™

Printing from within the CARY Program is performed in four steps:

1. - Select the type of printing to be performed: membrane or regular keys;
2. - Determin how many copies are required;
3. -Align the paper (not required for laser printers);
- 4.- Print the individual label sheets.

Step 1: Selecting the type of printing

Select whether you want to print labels for your regular CARY 9000 keyboard or your CARY Membrane keyboard. Enter the number corresponding to your selection.

Step 2: Determining how many copies are required

The program will prompt you to enter the quantity of label sets required, for example, three sets for three CARY 9000 keyboards. The program will then determine how many sheets of each color are required to print the specified number of copies and prompt you as shown in Figure 19. Make certain that you have the required number of sheets before continuing.

SPECIFICATIONS

How many label sets are required? 1			
	PRINTING	File: sample.def	DL:COM2

Figure 19: LABEL COLOR PROMPT

Step 3 : Aligning the paper

Dot matrix printers require that the paper be aligned horizontally and vertically, otherwise, the labels will be printed over the perforations (selecting the type of printer is done using 8 - SYSTEM SET-UP). Your label paper is created with an alignment mark at the top of the page as shown in Figure 20.

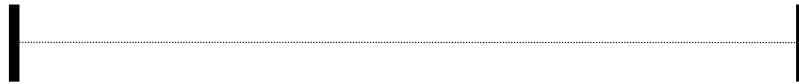


Figure 20 : LABEL ALIGNMENT MARK

If you are using a dot matrix printer, the program will stop and display the message shown in Figure 21 to permit you to align the paper. The program will output a row of dashes each time that the <ENTER> key is struck. Align the dashes so that they fall over the perforations as shown in Figure 21.

SPECIFICATIONS

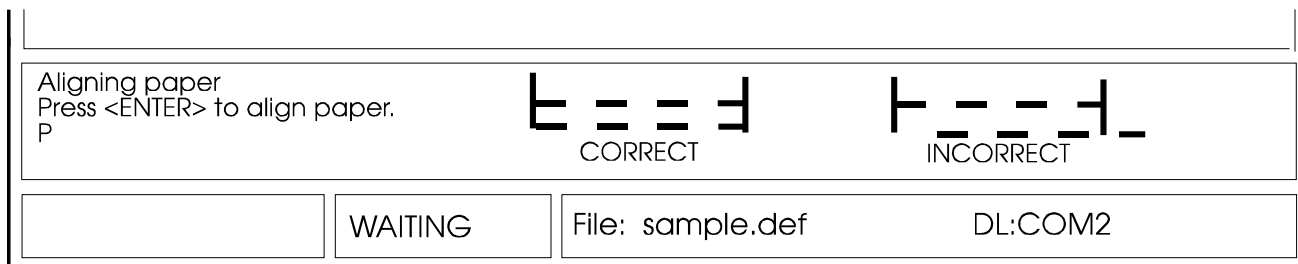


Figure 21: ALIGNMENT PROMPT

The dotted lines need to be aligned left to right and top to bottom as presented in figure 22.

The program will permit you to move the paper as often as is required to obtain good alignment. Once the paper is aligned, press <P> to begin printing.

SPECIFICATIONS

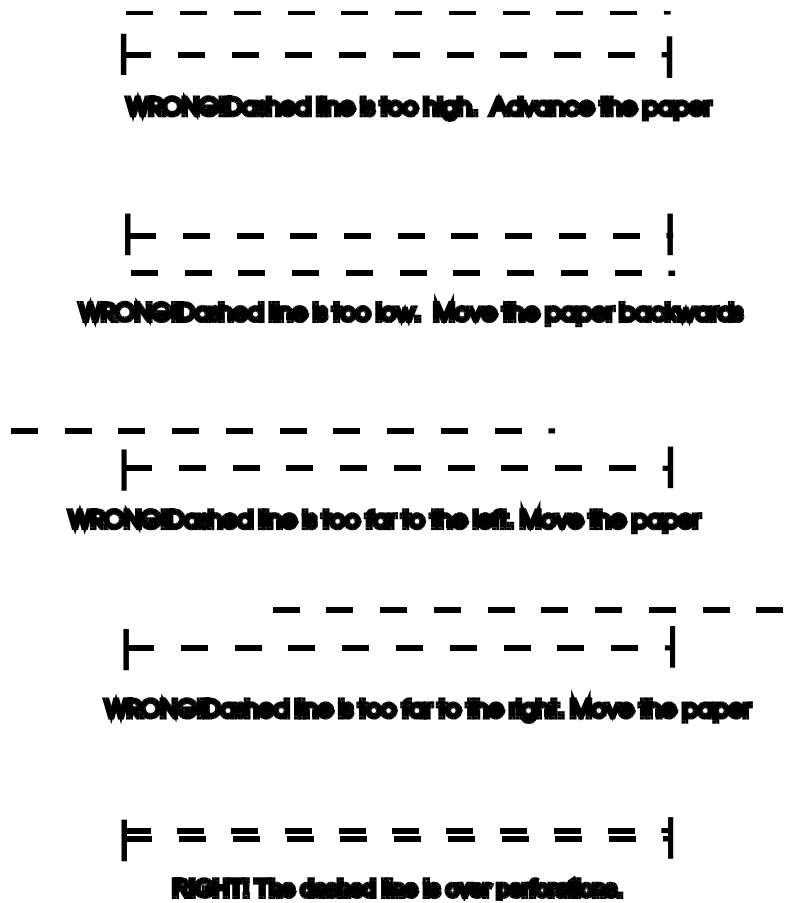


Figure 22: LABEL ALIGNMENT

Step 4: Printing

Once the paper is aligned, the program will print the labels in the correct position on the label paper.

SPECIFICATIONS

8 - SYSTEM SET-UP

The CARY 9000 KEYBOARD SET-UP UTILITY is designed to be used with a variety of computers and peripherals. In order to support different hardware configurations, the program has a SYSTEM SET-UP utility to set installation specific details for the programming station.

Selecting 8 - SYSTEM SET-UP will result in the display shown in Figure 23.

CARY PERIPHERALS PROGRAMMING UTILITY V4.00 Dec 01 1992			
- Monitor configuration 3 - Printer configuration			
type <ESC> to exit.			
	DEFAULT	Keycode file: SAMPLE.DEF	DL: COM 2

Figure 23: SYSTEM SET-UP MENU

SPECIFICATIONS

The purpose for each heading and their sub-menus are described in Table 3 below. More precise information about using the System Set-Up option follows the table. Select any of the three headings to choose the desired system set-up configuration choices.

Table 3 : SYSTEM SET_UP

ITEM	PURPOSE	CHOICES
FILE AND HARDWARE CONFIGURATION		
1 File path	Sets the hardware-specific details of your system, for example the name of the download port or what files will be loaded.	
2 Scancodes file		
3 Keycodes file		
4 Download port		
MONITOR CONFIGURATION	Identifies the monitor used with your program.	1 - COLOR 2 - MONO
PRINTER CONFIGURATION	Sets the printer specific control strings into the software	
1 Label printer type	Sets which type of printer is used.	1 - EPSON 2 - HP LASER II
2 Printer port	Sets which port the printer is connected to	
3 Align printer before printing	Sets whether to align the paper before printing or not. (Dot matrix printers require that the paper be aligned before printing.)	1 - YES 2 - NO
4 Printer alignment message	Sets the control-string message for the printer to align the printer	Default; unless otherwise necessary
5 Initial label printer message Initialize singles Initialize horizontal doubles Initialize vertical doubles Initialize membranes	Sets the control-string message to begin printing the different label types: single, horizontal double, vertical double and quad.	Default; unless otherwise necessary
6 Terminal printer message	Sets the control-string message to	Default; unless

SPECIFICATIONS

Terminate singles Terminate horizontal doubles Terminate vertical quads Terminate membrane	terminate printing of the different label types	otherwise necessary
7 Space between keys: Space singles Space horizontal doubles Space vertical doubles Space quads	Sets the horizontal printing space between the keycode labels of each type: single, horizontal double, vertical double, and quad.	Default; unless otherwise necessary
8 Feed between keys	Sets the vertical printing space between the keycode labels.	Default; unless otherwise necessary

All inputs to these menus are either pop-down menus, which indicate the choices for input, or prompts for text or numeric input.

Note: Do not modify the printer configuration unless you understand how your specific printer operates. Modifying the printer strings may result in the labels and perforations being out of register.

SPECIFICATIONS

1 - File and hardware configuration

The file and hardware configuration for your system is set by the choices under this heading. Type <1> or use the arrow keys to move the highlight bar to the selection 1 - File and Hardware Configuration and press <ENTER>. Each of the four choices can be set individually.

File path

If you wish to save the keyboard definition files in a directory other than the one that you are currently in, type <1> or use the arrow keys to highlight the selection 1 -File path and type <ENTER>.

Recommended setting: Blank

Scancodes file

The scancodes file name is used to identify the file which contains the scancodes. Do not change this file.

Recommended setting: SCANCODE.TBL for all keyboards.

Keycodes file

The keycodes file name is used to automatically load a keycodes file whenever you run the program. This entry will change whenever you load or save a keyboard configuration file.

Download port

The download port setting identifies the serial port used for downloading. This port may be any serial port from COM1 to COM4. The only restriction is that the download port is not used by any other device, including the mouse.

Recommended setting: See Table 1 for possible download port assignments.

SPECIFICATIONS

2 - Monitor configuration

The monitor configuration menu presents you with a list of two possible monitor types. Select the appropriate one for your system.

Recommended setting: Set for your monitor type

3 - Printer configuration: Settings 1 to 4

The printer menu is in two parts: the generic printer installation and printer specific control strings. Selecting the printer menu will provide you with the information shown in Figure 21.

1 - Label printer type

Selecting this option will provide a pop-up menu showing the types of printers available (choose the one closest to your needs). If your specific printer is not displayed, select the closest and customize the control strings.

2 - Printer port

Enter the port or file name used for the printer, for example LPT1.

3 - Align printer before printing

Select YES if you are using a dot matrix printer, NO if using a laser printer.

4 - Printer alignment message

The printer alignment message can be changed to suit your system, but must perform the following functions:

- 1 - Reset the printer
- 2 - Set the desired font and print quality
- 3 - Set the print pitch to 12 CPI
- 4 - Set the print spacing to 8 LPI

SPECIFICATIONS

If you have an Epson or a HP laser printer use the default alignment message. Setting your printer type is done under 8 - System Set-up.

For other printers you may have to fine-tune the print head so that the text lines up with the perforations. Before modifying the printer alignment message, consult your printer manual to find the message strings that control the print head positions. You will need to modify the printer alignment message using the control strings specific to your printer to micro-step the printer in the necessary directions. This may take a few tries before the adjustment is complete.

CARY PERIPHERALS PROGRAMMING UTILITY V4.00 Dec 01 1992	
1 - Label printer type	HP LASER II
2 - Printer port	lpt2
3	NO
	<027>(s12H<027>(s3T...
- T	
- Feed between keys	
Type <ESC> to exit.	
	DEFAULT

Figure 24: PRINTER CONFIGURATION MENU

SPECIFICATIONS

Printer configuration: settings 5 to 8

For each group of labels, SINGLE to QUAD, the printer strings provide the means of moving the print head over the perforations.

Settings 5 to 8 allow you to correct for run-out as the printer prints the labels on the label paper. See Table 3 for the purpose of each selection. Table 4 (next page) shows the space requirement necessary for selection.

5 - Initial label printer message

Each of the five choices of printer string messages under this heading will tell the print head where to begin printing each section of labels.

Recommended Setting: Default

NOTE:

- 1) These messages can be used to correct for run-out while printing on the page. If your printer prints over the perforations, using the information in your printer manual enter the printer strings needed to re-align the print head.
- 2) Under normal circumstances these strings should be empty.

6 - Terminal printer message

This is the message that tells the print head to stop printing a particular section of labels.

Recommended Setting: Default

7 - Space between keys

This selection tells the printer how much horizontal space to have between the labels when printing.

Recommended Setting: Default

SPECIFICATIONS

8 - Feed Between Keys

This selection tells the printer how much vertical space to leave between the labels when printing.

Recommended Setting: Default

Table 4: Printer-String Requirements

	SINGLE	VERTICAL DOUBLE	HORIZONTAL DOUBLE	QUAD
INITIAL	empty(1)	empty(1)	empty(1)	empty(1)
SPACE BETWEEN KEYS	0.003" right	0.003" right	0.003" right	0.003" right
FEED BETWEEN KEYS	0.003" down	0.003" down	0.003" down	0.003" down
TERMINAL	empty(2)	empty(2)	empty(2)	empty(2)

In Figure 24 (next page) the label drawing shows the exact position of the label perforations.

SPECIFICATIONS

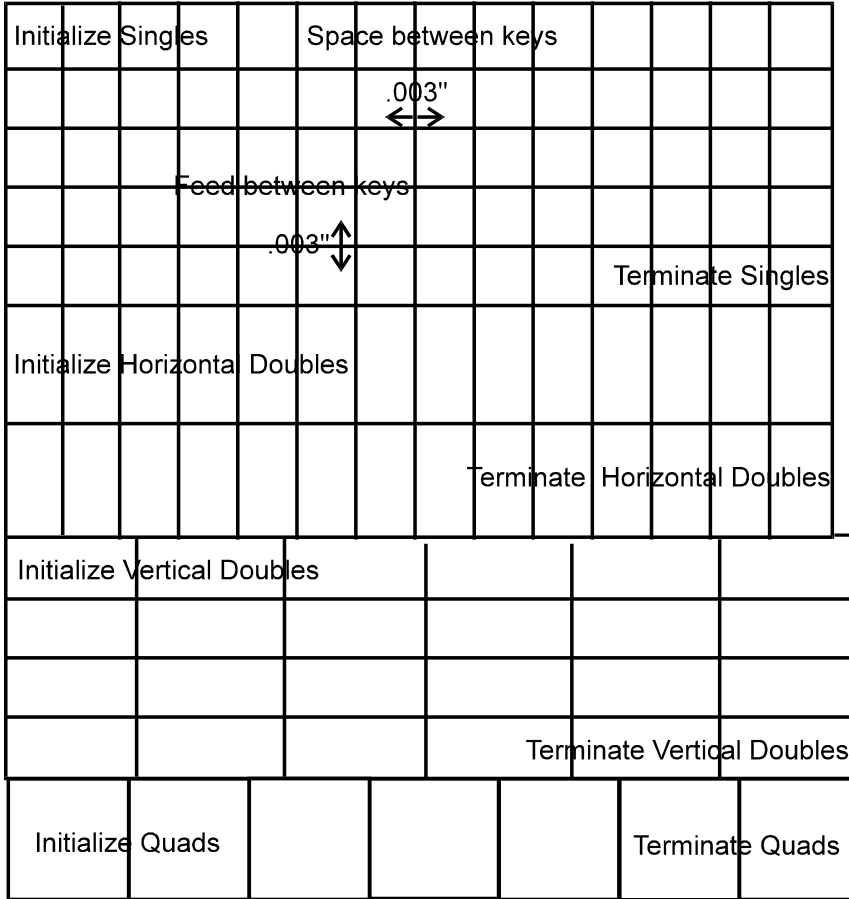


Figure 25: LABEL PERFORATIONS

SPECIFICATIONS

CHAPTER 4

WINDOWS

You can run the CARY 9000 KEYBOARD SET-UP UTILITY as a DOS program under windows. The advantage is that the program can be multi-tasked with other windows applications to speed up keyboard programming.

To install the program under WINDOWS, follow the steps given below:

Create a WINDOWS program group

Start windows and in the program manager create a program group CARY, (ALT-F, N, Program Group, OK). Give the new program group the name CARY.

Create a WINDOWS application

Add a new application to the group by typing ALT-F, N, Program Item, OK.

When prompted for a description, type CARY SET-UP.

Move the cursor to the Command Line and type in the path of your CARY directory and the program name, for example C:\CARY\CARY.EXE.

Move the mouse over the Change Icon button and select it.

When prompted for a file name, type in the path of your CARY directory and the icon name, for example C:\CARY\CARY.ICO.

Press OK until you are back in the program manager.

Running the CARY.EXE in Windows

In the program manager, double clicking on the CARY icon will start the program. Once started, you can switch between tasks by using CTRL-ESC to select a task. Cutting and pasting between applications can now be performed with the CARY 9000 KEYBOARD SET-UP UTILITY.

Associating files with CARY.EXE

Files can be associated with CARY.EXE so that you will automatically run the CARY KEYBOARD SET-UP UTILITY when you select a file. To do this, follow the steps given below.

From the Program Manager, select FILE MANAGER.

Use the directory listing and mouse to move to a definition file, it should have a .DEF extension.

Select the file by clicking the mouse on it.

Type ALT-F, A to associate the file. When prompted, type in the path and name of the CARY 9000 KEYBOARD SET-UP UTILITY, for example C:\CARY\CARY.EXE.

Press OK until you are back in the file manager.

Double click on the file. The CARY 9000 KEYBOARD SET-UP UTILITY will start and load in the associated file.

SPECIFICATIONS

CHAPTER 5

TROUBLE SHOOTING

If you experience problems with your CARY 9000 please refer to Table 5 to identify the problem and take corrective action.

TABLE 5: CARY 9000 TROUBLE SHOOTING GUIDE

SYMPTOM	PROBABLE CAUSE	SOLUTION
CARY 9000 does not output anything.	Keyboard unplugged	Turn off your computer and install CARY 9000. Check cables. Turn computer back on.
Keyboard outputs gibberish.	1 - Keyboard not programmed for your application. 2 - Wrong scan code set being used.	Reconfigure and reprogram. See 4 -KEYB.SET-UP/Item 2
Upstream keyboard does not work at all.	Upstream keyboard not plugged into CARY 9000.	Turn off your computer and install computer keyboard into the CARY 9000. Turn computer back on.
Upstream keyboard operation restricted to the Manager position.	Upstream keyboard disabled.	Enable upstream keyboard. See 4 - KEYB.SET-UP/Item 5.
Magstripe reader does not work.	1 - CARY 9000 not properly programmed for magstrip reader support. 2. Magstripe reader not installed.	Reconfigure and reprogram. Contact your CARY 9000 representative to have magstripe option installed.

SPECIFICATIONS

SYMPTOM	PROBABLE CAUSE	SOLUTION
Barcode reader does not work.	1 - Barcode reader not attached. 2 - Barcode reader pin not compatible with CARY 9000 serial port. 3 - Barcode reader parameters are improperly set for CARY 9000.	Turn off your computer and attach the barcode reader to the 9 pin din Dsub miniature connector. Turn your computer back on. Consult both technical specifications sections or contact your CARY 9000 representative for further information. Refer to barcode reader manual for instructions and reprogram reader. Refer to barcode reader manual for instructions and reprogram reader.
Downloading problems	Various causes	Refer to Section 6 - DOWNLOAD of the manual.

SPECIFICATIONS

PRACTICAL OBSERVATIONS

1) Auto sense keyboards

Auto sense keyboards are keyboards with no physical switch to change between XT/AT operating modes. Such keyboards behave differently upon boot-up and are unpredictable when used with the CARY 9000 Series keyboards. We therefore strongly suggest that you refrain from using them in conjunction with the CARY 9000 Series keyboard.

2) Inter character delay

The inter character delay function does not affect the information coming from the upstream keyboard. It only applies to the CARY 9000 keyboard itself, the keylock message, the magstripe reader data and the barcode scanner port data.

3) Num Lock and Scroll Lock features

In order to implement those features, you must introduce an inter character delay of at least 25 ms (i.e.:25ms or 50ms). You cannot successfully apply these functions without it.

4) Magnetic stripe reader

Due to the increase in the amount of data to be read when reading track 1, the card must be swiped slower in track 1 mode and dual track mode than in track 2 mode. The appropriate speed for track 1 mode and dual track mode is 8 - 150cm/sec.

5) Self diagnostic test

When the CARY 9000 series keyboard is powered on, the micro controller inside the unit executes a self diagnostics test. If it passes that test, the unit will beep to let the user know that all is well. This beep usually takes about 3 seconds, but can take up to 30 seconds to occur, depending on the previously programmed configuration. Only after the beep is the keyboard operational. If the keyboard does not beep at all upon boot-up, the unit is to be considered defective.

CHAPTER 6

TECHNICAL SPECIFICATIONS

Power consumption 300 mA max.

Keyboard: connector	XT: 5 Pin DIN AT: 5 Pin DIN PS Series: 6 Pin mini-DIN										
Keylock:	Four position keylock, with manager setting. (Brass key accesses manager's position) ESD rated to 20 kV.										
Magstipe:	Track 1, Track 2, or both (as per ISO standards)										
Barcode/Prog: port	Pin specifications: DB-9 Male <table border="0" style="margin-left: 20px;"> <tr> <td>1 - No connection</td> <td>6 - No connection</td> </tr> <tr> <td>2 - RS232 Data in</td> <td>7 - Do not connect</td> </tr> <tr> <td>3 - RS232 Data out</td> <td>8 - Do not connect</td> </tr> <tr> <td>4 - No connection</td> <td>9 - +5 Volt supply</td> </tr> <tr> <td>5 - GND</td> <td></td> </tr> </table>	1 - No connection	6 - No connection	2 - RS232 Data in	7 - Do not connect	3 - RS232 Data out	8 - Do not connect	4 - No connection	9 - +5 Volt supply	5 - GND	
1 - No connection	6 - No connection										
2 - RS232 Data in	7 - Do not connect										
3 - RS232 Data out	8 - Do not connect										
4 - No connection	9 - +5 Volt supply										
5 - GND											
Prog. Cable:	Pin specifications: <table border="0" style="margin-left: 20px;"> <tr> <td>DB-9 Female</td> <td>DB-25 Female</td> </tr> <tr> <td>2 - TXD</td> <td>2 - TXD</td> </tr> <tr> <td>3 - RSD</td> <td>3 - RXD</td> </tr> <tr> <td>5 - GND</td> <td>7 - GND</td> </tr> <tr> <td>jumper 7-8</td> <td>jumpers 4-5 & 6-20</td> </tr> </table>	DB-9 Female	DB-25 Female	2 - TXD	2 - TXD	3 - RSD	3 - RXD	5 - GND	7 - GND	jumper 7-8	jumpers 4-5 & 6-20
DB-9 Female	DB-25 Female										
2 - TXD	2 - TXD										
3 - RSD	3 - RXD										
5 - GND	7 - GND										
jumper 7-8	jumpers 4-5 & 6-20										

NOTE: The jumpers on the DB-9 is needed to indicate to the keyboard that it is in programming mode.

WARNING: DO NOT USE THE BARCODE READER CONNECTOR AS A GENERAL PURPOSE INTERFACE. IT HAS BEEN DESIGNED AS A BARCODE/PROGRAMMING INTERFACE, AND ANY OTHER APPLICATION MAY RESULT IN PERMANENT DAMAGE TO THE INTERFACE.

SPECIFICATIONS

ORDERING INFORMATION

Cary 9000 Series Keyboards

9XXX - XXXXXX

Customization No.

- 0 - No MSR
- 1 - Track 1 MSR
- 2 - Track 2 MSR
- 3 - Track 1 & 2 MSR

- 0 - No 3D option
- 1- 3D option (as of February 1993 this feature is standard on all CARY 9000 keyboards)
- 2 - Membrane option (3D feature standard)

- 0 - Equipped with 5-pin DIN upstream keyboard connector
- 1 - Equipped with 6-pin mini DIN upstream connector