CHAPTER 1: CP+ AND THE QX-10

If you have never used a computer before, CP+ is the first
program you should get to know. CP+ makes it easy for you to run
CP/M-80 programs by replacing the technical language of CP/M-80
with simpler English-language messages and directions.

The CP/M-80 diskette is set up to autoboot into CP+. That is,
CP+ comes up **automatically** when you insert the diskette into
drive A of your QX-10.

If you're experienced with CP/M-80, you probably won't want to
use CP+. In that case, skip this chapter and go on to Chapters 2
and 3. But don't forget to **make a copy of your** CP/M-80 diskette
right away, using the COPYDISK utility described in Chapter 3.
Also refer to Chapter 3 (the Autoboot Option of the SETUP
utility) for instructions on DISABLING the CP+ autoboot.

GETTING STARTED

Before going any further,   MAKE A COPY OF YOUR CP/M-80 DISKETTE,
as follows:

1.   Turn the power on. Your QX-10 displays the message INSERT
DISKETTE in the center of the screen.

2.   Insert a blank diskette, with the notch to the left, into
drive B (the one on the right) and push the drive release button
in. (See your QX-10 Operations Manual if you need more details.)

3.   Insert the CP/M-80 Diskette into drive A (the one on
the left) and push the drive release button in. You will hear a
buzzing sound and in a few seconds, you'll see the CP+ START
SCREEN:

```
                    HELLO
                WELCOME TO CP+
            THIS IS THE START SCREEN
        Your Options are:
                        (H)   HELP!
                        (S)   SELECT and RUN a PROGRAM
                        (P)   PRINT COMMANDS
                        (F)   FILE COMMANDS
                        (R)   REVIEW COMMANDS
                        (X)   EXIT to CP/M
                        (U)   CHANGE USER AREAS
        Press the chosen LETTER.
```

You may have noticed that there's something special about this
screen – in addition to the fact that it's very friendly. What's
extra special is that one of the options on the menu is

highlighted.   That's to let you know that **that's** the option we
want you to choose.   This is a convention we've followed
throughout this manual.

4.   So, key in S to **SELECT and RUN a PROGRAM.**   This screen will
appear:

                        CP+ SELECT AND RUN A PROGRAM
            This allows you to select and run a program.
            Your Options are:

   (H) HELP!   (V) VIEW the DIRECTORY   PAGE TURNING
   (S) **SELECT the NAME of a PROGRAM to be RUN**   (+) for the NEXT PAGE
   (E) ENTER the NAME of a PROGRAM to be RUN   (-) for PREVIOUS PAGE
   (C) CHANGE the CURRENT DISK DRIVE   (#) CHOOSE A PAGE #

        Press the chosen LETTER or turn a page.
                                                This is PAGE 1
                                                of the CATALOG
        Item   FileName.Type   File Description   for DISK DRIVE A
   ----
        1   ASM.COM
        2   COLD.SUB   CP+ system entry program
        3   **COPYDISK.COM**
        4   CP+.COM   This is a demonstration program for CP+
        5   DDT.COM
        6   DEMO.COM

            WHEN FINISHED: Press RETURN for the CP+ START screen.

Please notice that **two** of the options on the screen are
highlighted. This is because you'll use them both, as follows:

5.   Key in S to **SELECT the NAME of a PROGRAM to be RUN**, then

6.   Key in **3**, to select **COPYDISK.**

A message asking for "arguments" will appear on the screen.   An
"argument" is additional information that is not required in this
case, so press RETURN. This screen will appear:

                        MAIN OPTION LIST:

                1 - Format and Erase a Diskette

                2 - **Copy the Contents of One Diskette**
                    to Another

                E - EXIT TO CP/M

                ENTER OPTION -->

7.   Key in **2**, to **Copy the Contents of One Diskette to Another.**
This screen will appear:

2

```
STATUS        COPY OPTION LIST:

     A:       1 - Location  of Diskette  to  be Copied FROM

     B:       2 - Location of Diskette to be Copied TO

   ALL        3 - Copy All, System or Data Tracks


              COPY COMMAND LIST:

           S - START COPY OPERATION

           E - EXIT TO MAIN MENU

           ENTER OPTION==>
```

8. Key in S, START COPY OPERATION.
This message will display:

```
        Insert diskette to be copied FROM in drive:  A
        Insert diskette to be copied TO in drive:  B
        This  operation will erase the contents of the diskette
        in drive B.

        DO YOU WANT TO CONTINUE?  (Y/N):
```

9.   Key in Y, and the copy procedure will begin. If you've
changed your mind and don't want to make a copy right now after
all - even though we strongly advise against changing your mind -
you can bail out by selecting N instead.

It will take about two minutes to make the copy.   When the copy
procedure is completed, remove the original diskette from drive A
and put it away in a safe place. It should be stored at room
temperature, and kept away from electrical appliances.

If you wish to proceed and learn to use CP+ right now, remove the
copy from drive B and insert it into drive A, and continue
reading.

DEMO VS. FULLY-FUNCTIONAL

CP+ can operate in two modes: DEMOnstration-only or FULLY-
FUNCTIONAL.   It is delivered to you in DEMO mode. In DEMO mode,
CP+'s functions are limited and most operations (file
manipulation and printing) are only simulated.   This is to allow
you to use the system and get a feel for CP+'s operation without
damaging your disk files.

Now refer to Sections I - IV of your CP+ User Guide and learn to
use CP+, in DEMO mode, through the guided lessons. When you have
finished the guided lessons, return to this manual and read the
next section on Installing and Unlocking CP+.

3
```

## INSTALLING AND UNLOCKING CP+

Up to this point, you have been using CP+ in DEMO mode only. When you **Install** and **Unlock** CP+, your diskette will switch from DEMO to FULLY-FUNCTIONAL, permitting complete use of all CP+ functions.

(One note of caution:  **Unlock** removes some special demonstration files from your diskette, making it difficult to follow the self-teaching section of the <u>User Guide</u> precisely.  So be sure you have made a copy of the original diskette and that you thoroughly understand the lessons **before you Unlock** CP+.)

The **Install/Unlock** procedure is as follows:

1.  Go to the CP+ START SCREEN.  (You know how to do that now, right?  In case it has temporarily slipped your mind, we'll remind you:  just press RETURN.  Depending on where you are, you may need to press RETURN more than once, but RETURN will eventually take you back to the START SCREEN.)

2.  Next, key in S, to **SELECT and RUN a PROGRAM.**

3.  Now, find the **INSTALL+.COM** program on the **SELECT and RUN a PROGRAM SCREEN.**  If this program is not on the first page of the screen, turn the page until you locate it.

4.  Key in the correct Item number on the screen for the INSTALL+.COM program.

A message asking for "arguments" will appear.  Once again, this additional information is not required, so simply press RETURN. You will see this message:

> I need to know which drives are configured for your system. Please enter the '*' character below each applicable drive name, and space for others.
>
> ABCDEFGHIJKLMNOP
> **

Note that the **default** configuration is for two disk drives. That's because the QX-10 is delivered to you with two disk drives.

5.  If you have two disk drives, press RETURN **now.** But if you have altered the configuration of your QX-10, key an asterisk under the appropriate letters.

Assuming that you have two disk drives and pressed RETURN without making any changes, this message will appear:

> Configured drives are:  AB
> Correct?  (y or n):

4

6.  Key in y, and the following message will appear:

    Unlock full CP+ functionality?  (y or n):

7.  Key in y.  This message will appear:

    Will configure for FULL FUNCTIONALITY.

    ----------------------------------------

    Configuring CP+; one moment.


VOILA!   You are no longer in DEMO mode,  and can now use all
the features of CP+.

## CHAPTER 2:  CP/M-80 AND THE QX-10

CP/M-80 Version 2.2 brings the wealth of programs available under CP/M-80 to QX-10 users.  It also supports a variety of QX-10 configurations, including floppy disk drives and printers.

Most standard CP/M-80 utility programs will run on your QX-10. There are also some special QX-10 utilities available to you as a QX-10 owner.

### GETTING STARTED

To make full use of CP/M-80 with your QX-10,  you'll need to know what files are on your CP/M-80 diskette.  The files are:

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| CATALOG | CP+: | CP+ | 000: | CP+ | 001: | CP+ | 002: |
| CP+ | 003: | CP+ | 004: | CP+ | 005: | CP+ | 006: |
| CP+ | COM: | DEMFILE | TXT: | DEMO | COM: | DEMPRNT | TXT: |
| EXECUTE | COM: | INSTALL+ | COM: | WORDPROC | COM: | XSUB+ | COM: |
| ASM | COM: | COLD | SUB: | COPYDISK | COM: | CR1510 | COM: |
| DDT | COM: | DUMP | ASM: | DUMP | COM: | ED | COM: |
| LOAD | COM: | MBASIC | COM: | PIP | COM: | RANTEST | BAS: |
| RFILE | COM: | SETUP | COM: | STAT | COM: | SUBMIT | COM: |
| TIMESET | COM: | XSUB | COM: | | | | |

The files highlighted above are all CP+ files.  You won't need to do anything with any of them,  directly.  CP+ does that for you. That's why CP+ exists – to intercede between you and actual programs,  and  save you the trouble of having to figure out what to do with them.

Now let's look at the remaining files:

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| CATALOG | CP+: | CP+ | 000: | CP+ | 001: | CP+ | 002: |
| CP+ | 003: | CP+ | 004: | CP+ | 005: | CP+ | 006: |
| CP+ | COM: | DEMFILE | TXT: | DEMO | COM: | DEMPRNT | TXT: |
| EXECUTE | COM: | INSTALL+ | COM: | WORDPROC | COM: | XSUB+ | COM: |
| ASM | COM: | COLD | SUB: | COPYDISK | COM: | CR1510 | COM: |
| DDT | COM: | DUMP | ASM: | DUMP | COM: | ED | COM: |
| LOAD | COM: | MBASIC | COM: | PIP | COM: | RANTEST | BAS: |
| RFILE | COM: | SETUP | COM: | STAT | COM: | SUBMIT | COM: |
| TIMESET | COM: | XSUB | COM: | | | | |

The  files that are now highlighted are the ones you'll use  with CP/M-80.  Information  regarding  these files  is  available  as follows:

- The QX-10 utilities COPYDISK and SETUP are described in detail in Chapter 3 of this manual.

- The hard disk drive for the QX-10 (Comrex Part No. CR15-10) is available from Comrex International, Inc.* The program CR1510.COM on your CP/M-80 diskette modifies the BIOS and loads hard disk drivers on your QX-10 so that it recognizes the Comrex hard disk.

- MBASIC.COM, RANTEST.BAS and RFILE are described in <u>Microsoft BASIC for the QX-10</u>, which you received with your QX-10.

- SUBMIT allows you to direct the system to automatically execute a "batch" of programs one after the other. XSUB extends the power of SUBMIT by allowing you to include responses to program queries in the SUBMIT file.

- The remaining programs on the CP/M-80 diskette are described in the <u>CP/M Primer.</u>


## CP/M-80 & QX-10 SYSTEM CHARACTERISTICS

Every computer system that runs CP/M-80 programs does so in its own unique way. The QX-10 is no exception. In order to understand exactly how CP/M-80 operates on the QX-10, you'll need to become familiar with the system characteristics described below.

### Terminal Characteristics

The QX-10 terminal (display screen and keyboard) emulates a Televideo 920 CRT terminal. It offers a variety of features that characterize the Televideo 920 - Bell, Carriage Return, Clear Screen, Lock/Unlock Keyboard, and High Intensity On/Off, among others.

The terminal features are activated by an Escape Sequence (ESCAPE key followed by some other specified key) or a Control Code (CONTROL key in combination with some other specified key). Escape Sequences and Control Codes may either be entered at the keyboard or transmitted to the console by an application program.

A complete list of TVI-920 terminal features supported by the QX-10, along with their associated Escape Sequences, Control Codes Decimal and Hexadecimal Codes, appears in Appendix B. Unsupported features appear in Appendix C.

The QX-10 terminal is not case sensitive. You may key in either uppercase or lowercase letters.

---

*Comrex International, Inc., 3701 Skypark Drive, Suite 120, Torrance, CA 90505, (213) 373-0280.

## Memory Mapping

The QX-10's display terminal is memory mapped - that is, a specified area of memory is dedicated to the display terminal. This feature enhances the speed and efficiency of operation of the QX-10, as it relieves the Central Processing Unit of the extra burden of communicating with the display terminal.

In other computers, memory mapping decreases the total area of memory that can be used for storing program data because a portion of main memory is dedicated to the video display. This is not the case with the QX-10. When used with CP/M-80, the QX-10 offers 64K of main memory plus 32K of memory devoted solely to operating the video display.

## Error Messages and Status Message

When you use CP/M-80 on your QX-10, the video display screen contains up to 25 lines and 80 characters. Line 25 is reserved for one status message (date and time) and for error messages.

To set the date and time, use the TIMESET utility, described in Chapter 3. The date and time will always display on Line 25, unless you DISABLE the display through the SETUP utility, also described in Chapter 3.

There are four possible error messages - one Printer Error Message and three Disk Error Messages. These messages are:

    PRINTER NOT READY - (R)etry/(A)bort

    - the printer is disconnected
    - the printer is powered off
    - the printer is powered on but is off line
    - the printer is out of paper

    DRIVE X - SEEK ERROR: (R)etry/(A)bort/(C)ontinue/(I)gnore

    - the diskette is bad
    - the data is corrupted (possibly caused by magnetism)
    - the diskette contains an erroneous program instruction

    DRIVE X - RD/WR ERROR: (R)etry/(A)bort/(C)ontinue/(I)gnore

    - the diskette is bad
    - the data is corrupted (possibly caused by magnetism)
    - the diskette has a write protect tab on it

    DRIVE X - NOT READY: (R)etry/(A)bort/(C)ontinue/(I)gnore

    - the PUSH button has not been PUSHed in
    - a diskette has not been inserted into the drive
    - the drive doesn't exist - e.g, you've requested drive C and
      you only have two disk drives

You may have noticed that when an error message displays on the screen, it is accompanied by optional responses.  There are four possible responses to error messages - (R)etry, (A)bort, (C)ontinue and (I)gnore.  All four responses accompany Disk Error Messages;  only (R)etry and (A)bort accompany the Printer Error Message.

Let's take a look at what each of these four Operator Responses means.

(R)etry - **Attempt I/O operation again.**  Example:  You suddenly realize that you received an error message because you were attempting to write to a diskette that has a write protect tab in place.  Simply remove the diskette from the disk drive, remove the tab from the diskette, reinsert the diskette and key in R to try the operation again.

(A)bort - **Cancel current operation and program, and invoke a system warmstart.**  Example:  When logging in, you press the wrong key.  CP/M-80 recognizes the syntax and dutifully updates its currently logged value to drive G.  It then tries to log into the device, and returns a BDOS error message.  You can cancel the "read directory" operation with Control C, but you cannot prevent CP/M-80 from again attempting to log on to drive G - UNLESS you key in A to abort the entire operation, reset the currently logged device to A, and cause a warm boot.

(C)ontinue - **Continue operations and return error code to BDOS.**  Example:  You are running a Disk Test Utility program and have encountered a bad diskette.  Your whole purpose is to detect errors of this type, so key in C to continue exactly what you are doing.

(I)gnore - **Alter disk I/O return code to indicate successful I/O operation and return to BDOS.**  Example:  You are working with a file that has three sectors and sector two is bad.  The IGNORE option returns a successful disk input/output status to BDOS when the bad sector is encountered, enabling a program to go on and read sector three.

Keyboards:  STANDARD and HASCI

The QX-10 STANDARD keyboard is intended for use with CP/M-80.  You may also use the QX-10 HASCI keyboard with CP/M-80, but if you do, you must use the SETUP utility - described in Chapter 3 - to notify the QX-10 of the change.  This will allow the BIOS to properly interpret each keystroke.

For details about the STANDARD and HASCI keyboards, refer to the Appendixes.

Typamatic Keys

The QX-10 also features typamatic keys, which repeat when held down.  If you prefer to have non-repeating keys on your keyboard,

you may DISABLE the typamatic key feature through the SETUP
utility.

## Type-Ahead Buffer

If you happen to be a fast typist, you may type ahead of what you
see displayed on your screen. The QX-10 will store up to 64
characters that have been typed ahead without losing a single
character. This gives you plenty of latitude, because it's
extremely unlikely that you'll ever get more than a few
characters ahead of the QX-10.

## Printer Characteristics

All Epson MX and FX series of printers will operate with the QX-
10. MX and FX printers can be either serial or parallel.

Other brands of printers will also operate with the QX-10, as
long as they have a QX-10-compatible port. The QX-10 serial port
is the standard RS232C and the parallel port is the standard
Centronics-compatible. If you decide to use a serial printer
with your QX-10,

   - use the SETUP utility to specify the serial port
     characteristics of the printer you have selected, and

   - change the IOBYTE with the STAT commmand to redirect
     printer output to the serial port. (See the discussion on
     the IOBYTE in the Device Assignments section.)

The standard CP/M-80 printer features are implemented on the QX-
10. If your printer has special features - e.g., graphics, back
form feed, colors, character fonts - your application programs
must support those features. You must also rely on application
programs to receive reports of printer aborts and recoveries.

## Floppy Disk Subsystem Characteristics

The customized Basic Input Output System (BIOS) supports the two
integral 5-1/4 inch double-sided diskette drives that are part of
your QX-10. The standard diskette format is 512 byte sectors
with 10 sectors per track.

If you'd like more background on the BIOS, see pages 26, 75, and
76 of the CP/M Primer. Likewise, pages 33-36 of the Primer
describe diskette tracks and sectors.

## Device Assignments

CP/M-80 has special names for **physical** (actual) devices. It also
has **logical** device names - i.e., names that are used in computer
programs to reference physical (actual) devices. For a
description of CP/M-80 logical and physical devices, see pages 16
and 17 of your CP/M Primer.

When used with the QX-10, CP/M-80 physical device names are assigned to actual physical devices on the QX-10. Similarly, the CP/M-80 logical device names are assigned to specific physical devices that are part of your QX-10 system configuration.

## Physical Device Assignments

The CP/M-80 physical device names, and their corresponding QX-10 physical devices, are as follows:

| CP/M-80 Physical Device | | QX-10 Physical Device |
|---|---|---|
| CRT: | Cathode ray tube | Input = Keyboard |
| | | Output = Video Display |
| PTR: | Paper tape reader | Input = Keyboard |
| PTP: | Paper tape printer | Output = Video Display |
| LPT: | Line printer | Parallel Printer Port |
| TTY: | Teletype device | Video Display |
| UC1: | User defined console | *Serial Port |
| UR1: | User defined reader #1 | *Serial Port |
| UR2: | User defined reader #2 | *Serial Port |
| UP1: | User defined punch #1 | *Serial Port |
| UP2: | User defined punch #2 | *Serial Port |
| UL1: | User defined list device | *Serial Port |
| BAT: | Batch processing | Input = current RDR setting |
| | | Output = current LST setting |

*There is only one Serial Port (RS232C), but you may assign it to any one of six CP/M-80 physical devices.

## Logical Device Assignments

In CP/M, there are four logical device names: CON:= Console device, RDR:= Reader device, PUN:= Punch device, LST:= List device. Each of these device names may be applied to one of four different CP/M-80 physical devices, as follows:

| CP/M-80 Logical Device Name | | CP/M-80 Physical Devices |
|---|---|---|
| CON: | = | TTY:, **CRT:**, BAT:, UC1: |
| RDR: | = | TTY:, PTR:, UR1:, UR2: |
| PUN: | = | TTY:, PTP:, UP1:, UP2: |
| LST: | = | TTY:, CRT:, **LPT:**, UL1: |

The current assignments of physical to logical devices are highlighted above, and may be changed with the STAT command. The next section - on the IOBYTE - describes how.

## IOBYTE

The IOBYTE is a reserved byte of memory that keeps track of logical-to-physical device assignments, and tells the system precisely which physical device is to be used. For example, if

you have two different printers, the one that's contained in the IOBYTE is the one that responds to your PRINT or LIST command.

The location of the IOBYTE is address 0003 hex - even though the CP/M Primer tells you it's at 0004 hex. The CP/M Primer is wrong in this case.

The IOBYTE may be reviewed, changed and saved by the CP/M-80 STAT command, as follows:

> STAT DEV: displays the current assignments for the four CP/M-80 logical device names, CON:, RDR:, PUN: and LST:.
>
> STAT logical device:=physical device: is the form of the STAT command used to change assignments.
>
> STAT VAL: displays the possible physical device names that you can assign to each logical device name.

Using the STAT command to change the IOBYTE has only a **temporary** effect, and the **original** logical device assignments will go back into effect on the next reset or cold boot. If you wish to make your IOBYTE change **permanent**, so that the new device assignments will remain in effect even when you reset or restart your QX-10, you must:

> 1.  Use STAT logical device:=physical device: (e.g., **STAT PUN:=UP1:**) to change device assignments.
>
> 2.  Run SETUP.
>
> 3.  Exit from SETUP with the P Exit Option. (See Chapter 3 for a discussion of SETUP.)

Now even when you reset or restart your QX-10, the new assignment (PUN:=UP1:) will remain in effect - until you change the assignment again with STAT, SETUP, and the P Exit Option.

## Port Characteristics

The QX-10 RS232C **serial** port is set up for a D.C. Hayes Smartmodem 1200. If you wish to attach some other modem to your QX-10, use the SETUP utility to change the settings, if necessary. The SETUP utility is described in Chapter 3, and the appropriate specifications should accompany your modem.

If you are not using a modem with your QX-10, you can assign the **serial** port to any one of the four CP/M-80 logical devices with the STAT command, as described above. Use the SETUP utility to set the **serial** port characteristics for the device. Specifications accompanying the device should tell you what settings to use.

The QX-10 **parallel** port is intended for use with an Epson parallel printer.

ONWARD...

Now that you know how CP/M-80 works with the QX-10, let's go on to the specifics of the QX-10 utilities. Chapter 3 will tell you exactly what they do and how to use them.

# CHAPTER 3:  QX-10 UTILITY PROGRAMS

There are three special QX-10 Utility Programs:  COPYDISK, SETUP,
and TIMESET.  This chapter describes the characteristics and uses
of these utilities.

## THE COPYDISK UTILITY

COPYDISK  is an image copy program – that is,  it copies an image
of the source diskette onto the destination, or target, diskette.
The  COPYDISK  program allows you to format  and/or  copy  floppy
diskettes.

You work with COPYDISK through the COPYDISK menus.  Each menu has
a self-prompting option list.  For all COPYDISK menus, line 24 is
'ENTER OPTION --.'.  Line 23 displays either COPYDISK information
or error messages.

1.    Immediately  after  the A> prompt,  key in  COPYDISK.   Your
screen will look like this:  A>COPYDISK

2.  Now, press RETURN.  This screen will appear:

<p style="text-align:center">MAIN OPTION LIST</p>

**1 – Format and Erase a Diskette**

2 – Copy the Contents of One Diskette
         to Another

E – EXIT TO CP/M


ENTER OPTION ==>


Please notice that this menu allows you to select either a **Format**
operation  or  a  **Copy** operation.   These two  possibilities  are
described in detail below.

Use the E option to exit from COPYDISK.

**Format and Erase a Diskette**

You  should select **1 – Format and Erase a Diskette** from the  Main
Option List if you:

    –  Have a blank diskette that you wish to use on your QX-10.
       (Blank diskettes must be formatted before use.)

- Have a diskette containing data that you no longer need. The Format option will erase the present contents of the diskette so that you can record new data on it. DON'T select this option if the diskette contains data that you need.

3. Key in 1 now. This menu will appear on your screen:

```
         STATUS              FORMAT OPTION LIST

            B             1 - Location of Diskette to
                              be formatted


                            FORMAT COMMAND LIST

                          S - Start FORMAT Operation

                          E - EXIT to Main Menu


                          ENTER OPTION ==>
```

Option 1

The default setting for 1 - **Location of Diskette to be formatted** is drive B. You will never need to change this default setting, unless drive B is not operational. In that case, you can use the CP/M-80 diskette to load the program from drive A; then remove the diskette, insert the blank diskette into drive A, and key in S to START FORMAT OPERATION.

Option E

Exits back to the Main Option Menu.

4. Key in E now, to return to the Main Menu.

Copy the Contents of One Diskette to Another

The second option on the Main Menu is 2 - **Copy the Contents of One Diskette to Another.** You will use this option when you wish to copy all or part of a diskette. (In fact, if you've been following the instructions in this manual, you already used this option - when you copied your CP/M-80 diskette. But now you will see that there are three different copy procedures.)

5. Key in 2 now. You will see this screen:

15

```
STATUS              COPY OPTION LIST

    A:              1 - Location of Diskette to be Copied FROM

    B:              2 - Location of Diskette to be Copied TO

   ALL              3 - Copy All, System or Data Tracks


                    COPY COMMAND LIST:

                    S - START COPY OPERATION

                    E - EXIT TO MAIN MENU


                    ENTER OPTION ==>
```

Option 1

Notice that the **default** setting for 1 - **Location of Diskette to
be Copied FROM** is drive A.   You should never have to change this
setting.

Option 2

The **default** setting for 2 - **Location of Diskette to be copied TO**
is drive B.   It's unlikely that you'll ever need to change this
setting, but if you wish - or if it becomes necessary - you may
select the same drive for the diskette being copied and the
diskette being created. This feature is useful if only one drive
is operational.

On a single disk copy operation, the system prompts you to
alternately mount the source and destination diskettes until the
copy operation is complete.   The disadvantage of a single drive
system copy procedure is that it requires at least 16 operator
steps to perform a disk format and copy operation!

Option 3

The default setting for 3 - **Copy All, System or Data Tracks** is
ALL.   If you wish to copy the entire diskette, leave the setting
as it is and press the S key to **START COPY OPERATION** and press Y
to verify that you do indeed wish to begin.

2. Key in 3 now, to take a look at the copy options available to
you.   This message will appear at the bottom of the screen:

     0=COPY ENTIRE DISKETTE 1=COPY SYSTEM ONLY 2=COPY DATA ONLY

Notice anything strange? No? Well, look again:

0 = COPY ENTIRE DISKETTE - This option has the same effect as
the default **ALL** setting on the COPY OPTIONS LIST above. You used

                               16

the default ALL option once already, when you copied your CP/M-80 diskette.

But if you're not sure what you want to copy when you look at the COPY OPTIONS LIST, you can key in 3 to review all your copy options. Then if you decide that you really **did** want the default COPY ALL option, just key in O to COPY ENTIRE DISKETTE.

When you select this option,

- the system formats the target diskette, **erasing all files that may be on it,** and

- the program reads tracks from the source diskette and writes them to the target diskette.

This process continues until the entire source diskette is read and copied. And exactly the same things happen when you select the default ALL.

1 = COPY SYSTEM ONLY - This option copies only the system tracks of the Diskette to be Copied FROM to the Diskette to be Copied TO. Use the Format Option of COPYDISK to format a diskette before copying system tracks to it, or copy the system tracks to a diskette that is already properly formatted. Later, use PIP to transfer whatever files you need to the System Diskette you have just created. Detailed instructions for the use of PIP appear on pages 42-43 of your CP/M Primer.

2 = COPY DATA ONLY - Use this option when you wish to copy the entire data tracks to another diskette without altering the system tracks and configuration that already exist on the COPIED TO diskette. You may wish to do this if the diskette has a different version of the operating SYSGEN (such as when you are upgrading to a new BIOS release), or the current setup on that diskette has the serial port, display options, etc. configured for a particular need.

S - START COPY OPERATION

Whichever of the three copy options you select, the operation won't actually get underway until you key in S - START COPY OPERATION.

E - EXIT TO MAIN MENU

3. Key in E now, to return to the Main Menu.

4. Key in E again, to Exit to CP/M-80.

COPYDISK and PIP

You may have noticed that COPYDISK doesn't allow you to copy individual files from one diskette to another. But PIP does, and it is available on your CP/M-80 System Diskette. Before running PIP, first format your blank diskette using the format option of COPYDISK. Detailed instructions for the use of PIP appear in the CP/M Primer.

THE SETUP UTILITY

When you receive your QX-10, it is set to a certain system configuration through default settings. These default settings are described in this section, and may be reviewed and/or changed through the SETUP utility.

If you decide to make any changes through SETUP, you have the choice of making them permanent (so that the changes will remain in effect even when you reset or restart your QX-10), or of making them temporary (so that they will remain in effect only until you next reset or restart your QX-10.)

Key in SETUP and press RETURN. The following menu will display on your screen:

```
                MAIN OPTION LIST:

        1 - Display Options
        2 - Disk Subsystem Options
        3 - Keyboard Options
        4 - Serial Port Options
        5 - Auto Boot Execution Option

                EXIT OPTION LIST:

        P - EXIT and Permanently Update Configuration
        T - EXIT AND Test Updated Configuration
        Q - ABORT SETUP with no Configuration Changes

        ENTER OPTION ==>
```

Main Option List

The five options on the Main Option List allow you to select a subsystem menu for the part of the system configuration you wish to examine or change. We'll discuss each of the subsystem menus in detail below. But first, you need to understand the Exit Options available under SETUP:

Exit Option List

Under the SETUP utility, there are three different Exit Options:

P Option - Exits and **permanently** updates the configuration. That is, it changes the configuration of the running system **and** writes this information on disk. The new setting will remain in effect when you reset or restart your QX-10. If you decide later that you prefer the original or some other default setting, use SETUP to enter the values and exit with the P Option. (Note: if you change keyboards through SETUP, use the P Option **and** immediately reset the system. The keyboard change will not go into effect until you press the reset button.)

T Option - Exits and allows testing of the updated configuration. This option changes only the running system (in memory). These values remain in effect until you run SETUP again or until a cold boot. When you are satisfied with the values, use the P Exit Option to make the configuration permanent. (Note: a keyboard change through SETUP has no effect if the T Option is used.)

Q Option - Aborts SETUP and does not change the running system or permanent disk configuration.

Note: If you have changed the IOBYTE with the STAT command and want the new device assignments to be permanent, immediately run SETUP and exit with the P Exit Option.

Back to the Main Option List

Now that you know how to use the SETUP Exit Options, we can safely proceed with the promised discussion of the five subsystem menus under SETUP. Please be **sure** to read the following Display Options section. It provides a step-by-step guide to changing the Display Options, and the same procedure applies to all the other options on the MAIN OPTION LIST.

Display Options

1. Key in 1 now, to review the DISPLAY OPTIONS List. It looks like this:

STATUS	DISPLAY OPTIONS:
ENABLED	1 - Auto Line Wrap
ENABLED	2 - Blinking Cursor
ENABLED	3 - Date and Time
DISABLED	4 - Bit 7 Masking
	E - EXIT TO MAIN MENU
	ENTER OPTION ==>

19

You've probably figured out that the words in the STATUS column indicate the **default** settings for the DISPLAY OPTIONS. SETUP allows you to change the settings. Let's say, for example, that you wish to DISABLE the Auto Line Wrap:

2. Key in 1 now. This message will appear on your screen:

   0 = **Line Wrap Disabled** 1 = Line Wrap Enabled

   ENTER OPTION ==>

3. Key in 0 now. The STATUS of Auto Line Wrap will change – instantaneously – from ENABLED to DISABLED.

But you probably want Auto Line Wrap ENABLED, so,

4. Key in 1. This message will display again:

   0 = Line Wrap Disabled 1 = **Line Wrap Enabled**

   ENTER OPTION ==>

5. This time, key in 1, and the Auto Line Wrap option will change back to ENABLED.

Now, let's review all the options on the Display Option List.

Option 1

When Auto Line Wrap is ENABLED, input characters display on the next line if the line overflows. When a line ends, a carriage return and a line feed occur automatically.

DISABLED causes a line overflow and results in subsequent characters being displayed in the last character position – i.e., previous overflow characters are overwritten.

In either mode, you cannot lose information.

Option 2

ENABLED causes the QX-10 cursor to appear as a blinking block.

DISABLED causes it to appear as a steady block.

Option 3

When the Date and Time option is ENABLED, the date and time will always display on Line 25. (Use the TIMESET utility, described in the next section, to set the date and time.)

If you prefer not to see a display of the date and time, DISABLE this option.

Option 4

The QX-10 character set is comprised of the standard ASCII character set 0-127 and the QX-10 graphics characters 128-255. The BIOS does not strip off the high-order bit (bit 7), in order to enable graphics characters in the QX-10.

Some programs assume the hardware device (terminal) or BIOS will strip off the high-order bit, resulting in a 7-bit ASCII character. Without bit 7 masking, these programs would generate unreadable displays, as the assumed ASCII character would produce a graphics character on the screen.

Use this option to adjust your QX-10 to programs that require filtering of the most significant bit. Simply ENABLE Bit 7 Masking to establish proper communication with the program.

Option E

Select this option to return to the Main Option List or the Exit Option List.

6. Key in E now, to return to the Main Menu.

Disk Subsystem Options

1. Now, key in 2, for a display of the Disk Subsystem Options:

STATUS	DISK SUBSYSTEM OPTIONS:
ENABLED	1 - Diagnostic Error Messages
ENABLED	2 - Standard Disk Error Retry
	E - EXIT TO MAIN MENU
	ENTER OPTION ==>

Option 1

ENABLED causes the system to report diagnostic error messages to you when an error, non-recoverable (hard) or recoverable (soft), occurs in the disk subsystem.

DISABLED causes only hard errors to be reported.

Note: Regardless of the setting of Option 1, you always receive reports of hard errors.

Option 2

ENABLED means that disk error recovery is always attempted by retrying the operation ten (10) times. If the operation fails on all ten retries and you have disabled option 2, "Standard Disk Error Retry", the error is treated as non-recoverable and a fatal error message is issued. The error is then returned to BDOS.

DISABLED causes the system to ask if more repetitions of the ten retries are desired.

Option E

Select this option to return to the Main Option List/Exit Option List.

2. Key in E now, to return to the Main Menu.

Keyboard Options

The Keyboard Options Menu allows you to enable or disable the typamatic feature of the keyboard. This typamatic feature causes keys to repeat if the key is held down.

This menu also allows you to set your QX-10 to operate with either the STANDARD or HASCI keyboard.

1. Key in 3 now, to review the Keyboard Option List:

STATUS	KEYBOARD OPTIONS:
ENABLED	1 - Typamatic Keys
STANDARD	2 - Keyboard Connected
	E - EXIT TO MAIN MENU
	ENTER OPTION ==>

Option 1

When this option is ENABLED the typamatic keyboard feature is operative. Each key, when held down, will repeat until it is released. When this option is DISABLED the keys will not repeat when held down.

Option 2

The **default** keyboard is STANDARD. If you have the HASCI keyboard connected to your QX-10, you must change the "Keyboard Connected" from STANDARD to HASCI. When the HASCI keyboard is selected, the keyboard scan codes are mapped into codes that CP/M-80 is expecting.

Important: The HASCI option will only be ENABLED if you select P as the EXIT OPTION, then **RESET** the system. (Remember, the three Exit Options are described at the beginning of the SETUP section.)

Option E

Select this option to return to the Main Option List/Exit Option List.

2. Key in E now, to return to the Main Menu.

Serial Port Options

The Serial Port Options Menu allows you to specify the attributes of the QX-10 serial port.

1. Key in 4 now, for a display of the Serial Port Option List:

STATUS	SERIAL PORT OPTION LIST
1200	1 - Baud rate
NONE	2 - Line Protocol
NONE	3 - Parity
8	4 - Data Length in Bits
1	5 - Number of Stop Bits
DISABLED	6 - Bit 7 Masking
	E - EXIT TO MAIN MENU
	ENTER OPTION ==>

Option 1

Allows you to set the Baud rate for the RS232C port. Allowable settings are: 110, 150, 300, 600, 1200, 2400, 4800, 9600 and 19,200.

Option 2

Allows you to select ETX/ACK, XON/XOFF or no handshaking protocol, or you may select the hardware handshaking protocol CTS/RTS.

Option 3

Allows you to select odd, even, or no parity.

Option 4

Allows you to select 5, 6, 7 or 8 bits as the data length.

Option 5

Allows you to set the number of stop bits to 1, 1.5 or 2.

Option 6

The QX-10 serial port is set up for a D.C. Hayes Smartmodem 1200.
Since 8-bit data is transmitted through a modem, the default
status of the Bit 7 Masking Option of the serial port is
DISABLED. To attach a device that transmits only 7-bit ASCII
character code, change the status of Bit 7 Masking to ENABLED.

Option E

Select this option to return to the Main Option List/Exit Option
List.

2. Key in E now, to return to the Main Menu.

Auto Boot Execution Options

The Auto Boot option of SETUP allows you to DISABLE the CP+
autoboot.

Disabling the CP+ Autoboot

1. Key in 5, to select the Auto Boot Execution Option. You will
see this screen:

         STATUS   AUTO BOOT OPTIONS:

         ENABLED   1 - Execute COLD.SUB on Cold Start

                             E - EXIT TO MAIN MENU

                     ENTER OPTION ==>

2. Now, key in 1. You will see this message:

    0 = COLD.SUB Execution Disabled   1 = COLD.SUB Execution Enabled

3. Key in 0, to DISABLE the autoboot option.

4. Next, key in E to Exit to the Main Menu.

5. Finally, key in P so that the change you have made will remain
    in effect the next time you power on or reset your QX-10.

To check out what you've just done, press the reset button
NOW...Did CP+ come up automatically? It shouldn't have. If it
did, go over the steps above and try again.

You may also cause the system to autoboot to something other than
CP+ by changing the contents of the COLD.SUB file.

NOTE: To create a new COLD.SUB file, use the CP/M-80 text
         editor ED. It's described in the CP/M Primer.

Option E

Select this option to return to the Main Option List/Exit Option
List. Once there, be sure to use the **P Exit Option and reset the
system** if you have changed the setting of COLD.SUB, or the new
setting won't go into effect.

THE TIMESET UTILITY

As you learned when you read the section on SETUP (you did read
it, didn't you?) the QX-10 automatically displays the date and
time, unless you DISABLE the display through SETUP. The TIMESET
program allows you to **set** the date and time so that they are
accurate.

After the A> prompt, key in **TIMESET.** This message will display
on your screen:

       Enter Date & Time (DAY MM/DD/YY HH:MM):

A sample entry would be,

             Fri 04/15/83 11:20

where the day is three or more characters, the month and day are
one or two characters each and are followed by /, the year is two
characters, and the time is the hour and minutes only.

DATE AND TIME WITH APPLICATION PROGRAMS

The QX-10 implementation of CP/M-80 allows application programs
to access and/or change the system date and time. The procedure
is outlined in Appendix A. Please be advised that this
information will only be useful to you if you are experienced
with both CP/M-80 BIOS and Assembly Language programming.

THE END

This completes our introduction to CP/M-80 and the QX-10. You
are now prepared to move on to the CP/M Primer. After reviewing
it carefully, you'll be well on your way to using CP/M-80 with
the QX-10.