

**THE PICK PC SYSTEM**  
**USER INFORMATION**

**Copyright (c) 1985 PICK SYSTEMS**

**All rights reserved.**

TABLE OF CONTENTS

SECTION		Page
1.1	PICK SYSTEMS IBM PC-XT PACKAGE . . . . .	3
1.2	THE PICK OPERATING SYSTEM REQUIREMENTS . . . . .	3
1.3	DAILY PROCEDURES . . . . .	4
1.3.1	BOOTING . . . . .	4
1.3.2	RESTORING THE SYSTEM . . . . .	4
1.4	COLOR AND MONO VERBS : MEMORY MAPPED MONITOR . . . . .	6
1.5	PRINT@ FUNCTIONS . . . . .	7
1.6	NEW TERM TYPES . . . . .	8
1.6.1	IBM PC-XT LINE 0: TERM TYPE "I" . . . . .	8
1.7	IBM PC-XT CABLING : PORT 2 & 3 . . . . .	9
1.7.1	SERIAL PRINTER CABLING . . . . .	9
1.7.2	PICK SERIAL PORTS DEFAULT . . . . .	10
1.7.3	TROUBLE-SHOOTING SERIAL PORTS . . . . .	10
1.8	IBM PC-XT KEYBOARD DIFFERENCES . . . . .	11
1.9	SET-KBRD PROGRAM . . . . .	12
1.10	SET-FUNC Program . . . . .	12
1.11	FDISK VERB : FIXED DISK PARTITIONING . . . . .	13
1.12	SET-BAUD VERB : SETTING BAUD-RATE (Ports 1 & 2) . . . . .	14
1.13	POWER-OFF: CONTROLLED SHUT-DOWN . . . . .	15
1.13.1	REBOOT . . . . .	15
1.14	FFORMAT: FORMATTING FLOPPY DISKETTES . . . . .	16
1.15	EUROPEAN DATE FORMAT . . . . .	16
1.16	OKIDATA PRINTER SET-UP PROGRAM . . . . .	17
1.17	PC-XT USER MODES . . . . .	17

**THE PICK PC SYSTEM**  
**USER INFORMATION**

**PROPRIETARY INFORMATION**

This document contains information which is proprietary to and considered a trade secret of PICK SYSTEMS. It is expressly agreed that it shall not be reproduced in whole or part, disclosed, divulged, or otherwise made available to any third party either directly or indirectly. Reproduction of this document for any purpose is prohibited without the prior express written authorization of PICK SYSTEMS. All rights reserved.

## 1.1 PICK SYSTEMS IBM PC-XT PACKAGE

Enclosed in the PC-XT package are:

```
-----  
: * Four (4) diskettes, labeled: :  
: PICK PC SYSTEM #1 :  
: PICK PC SYSTEM #2 :  
: PICK PC SYSTEM #3 :  
: PICK PC SYSTEM #4 :  
: * PICK User Reference Manual :  
: * End-user License Agreement :  
: (found on outside of package) :  
-----
```

## 1.2 THE PICK OPERATING SYSTEM REQUIREMENTS

- \* IBM PC-XT or IBM PC with IBM expansion chassis.
- \* A minimum of 256K RAM memory.
- \* Either Monochrome or Color Graphics monitor.
- \* Optionally, one or two additional terminals may be connected to IBM asynchronous communication adapters.
- \* Optionally, IBM printers may be connected to a parallel port or IBM asynchronous communication adapters.
- \* Allocation of space for the PICK PC-XT System on the IBM hard disk must be one block of contiguous cylinders. Three hundred (300) tracks of the total tracks available must be allocated for the PICK PC-XT System. Additional space must be allocated for user data space. Each additional track allocated provides 8704 bytes of user data space.

Hard disk space is allocated by cylinders. On a standard IBM 10mb drive each cylinder has four (4) tracks. If each track has 8704 bytes, then an IBM cylinder has 34816 bytes. PICK's space requirements are expressed on a track basis because the PICK PC System can run on a variety of hard disks which have different numbers of tracks per cylinder.

### 1.3 DAILY PROCEDURES

#### 1.3.1 BOOTING

If the PICK Operating System was marked as active (SEE: FDISK VERB) at the time the system was last shut off, PICK will boot from the hard disk when the system is powered up. When the boot process finishes, control is transferred to the COLDSTART procedure.

#### 1.3.2 RESTORING THE SYSTEM

Restoring the system means replacing the software and/or data on the hard disk from a backup media such as floppy diskettes.

Typically, software/data is restored when the running copy is suspected to be damaged or when a new copy of the system is available.

To restore the Pick environment on the PC-XT, place PICK PC SYSTEM #1 diskette into the floppy drive and boot the system (CTRL-ALT-DEL). Following the system sign-on message the screen will display:

#### OPTIONS (A,F,K)

The 'K' option is used to delete the PICK partition and is discussed in the next section.

The 'A' and 'F' options are used for restoring PICK.

The 'A' option will restore the PICK Operating System (sometimes referred to as the Monitor and ABS). Once you have entered an 'A' the following will occur:

1. The system will read the #1 diskette's contents and then prompt you to load the PICK PC SYSTEM #2 diskette.
2. The system will read the #2 diskette's contents and then will prompt you to load the PICK PC SYSTEM #3 diskette.
3. The system will read the #3 diskette's contents and then go directly to the COLDSTART PROC just as if you had done a system boot. At this point the PICK Operating System has been restored. The accounts and data files, however, will not have been altered.

The 'F' option will initialize the Pick partition on the hard disk, restore the PICK Operating System and do a full file restore. When you have entered an 'F' the following will occur:

1. The system will reinitialize the PICK part of the hard disk/s.
2. The system will read the #1 diskette's contents and then prompt you to load the PICK PC SYSTEM #2 diskette. 3. The system will read the #2 diskette's contents and then prompt you to load the PICK PC SYSTEM #3 diskette.
4. The system will read the #3 diskette's contents and then prompt with:

load PICK PC DATA FILES #1 then type 'C' to continue

At this point you will do one of the following things:

- A. You will load your #1 FILE-SAVE diskette, if you want to restore the accounts and data files as they exist on your last FILE-SAVE.
- B. You will load the PICK PC DATA FILES #1 diskette followed by PICK PC DATA FILES #2 if you want to restore the accounts and data files as they were when you first installed the Pick system.

In either case you will be prompted to load diskettes as necessary by the following:

load PICK PC DATA FILES #2 then type 'C' to continue  
LABEL <label data may appear here> #

At this point mount the next diskette in the drive and type C to continue.

5. When the system has read the last diskette it will go directly to the COLDSTART PROC just as if you had done a system boot. At this point the PICK Operating System will have been restored, a full file-restore accomplished and you will be in the PICK environment.

#### 1.4 COLOR AND MONO VERBS : MEMORY MAPPED MONITOR

Two new verbs, COLOR and MONO, have been provided to support the use of IBM's memory mapped monitors. In addition, PICK/BASIC and PROC now support IBM's memory mapped monitors.

#### FORMAT:

COLOR {foreground color}{,background color}{switches}

The supported colors for background and foreground are:

Black, Blue, Green, Cyan, Red, Magenta, Brown and White

The supported switches are:

/B or /BLINK	Activate character blinking
/NB or /NOBLINK	De-activate character blinking
/F or /FULL	Full intensity foreground
/H or /HALF	Half intensity foreground
/R or /REVERSE	Activate reverse video
/NR or /NOREVERSE	De-activate reverse video

<u>STATEMENT</u>	<u>EXPLANATION</u>
COLOR RED	Set foreground to red.
COLOR ,BLUE	Set background color to blue.
COLOR /B	Activate character blinking.
COLOR /NB/R	Deactivate character blinking, activate reverse video.
COLOR BROWN/F	Set foreground to brown and full intensity.
COLOR ,RED/H	Set background to red, set foreground to half-intensity.
COLOR GREEN,CYAN/HALF	Set foreground to half intensity green, background cyan.

Sample usage of the COLOR verb.

#### FORMAT:

MONO {switches}

The supported switches are identical to the COLOR verb switches, with the addition of the following:

/U or /UNDERLINE	Activate character underlining
/NU or /NOUNDERLINE	Deactivate character underlining

PICK PC SYSTEM

Copyright (c) 1985 PICK SYSTEMS

## 1.5 PRINT@ FUNCTIONS

New functions have been added to the PICK/BASIC "PRINT@" statement and the PROC "T" command to support IBM's memory mapped monitors.

The "PRINT" statement and the PROC "T" command formerly allowed negative integers in the range -1 to -10 as arguments. For the PICK PC-XT implementation the argument range has been extended from -1 to -127.

For all PICK machines the ranges break down as follows:

-1 TO -32	Functions which affect all machines
-33 to -127	Functions which are implementation specific

More specifically:

(across all future PICK implementations)

-1 to -10	Remain as defined in the PICK Pocket Guide
-11 to -16	Are defined in the DOC file on SYSPROG
-17 to -32	Are reserved for future expansion

(for the IBM PC/XT implementation)

-33 to -40	Define background colors
-41 to -48	Define full intensity foreground colors
-49 to -56	Are reserved for future expansion
-57 to -64	Define half intensity foreground colors
-65 to -88	Are reserved for future expansion
-89 to -96	Define IBM memory mapped monitor modes
-97 to -127	Are reserved for future expansion

PICK/BASIC Examples:

```
* Clear screen and home the cursor
PRINT @(-1)
```

```
* Clear screen and home the cursor (same, but more readable)
CLEAR.SCREEN = @(-1)
PRINT CLEAR.SCREEN
```

PROC Examples:

```
PQ
C Clear the screen and home the cursor
T (-1)
```

```
PQ
C Activate Color/Graphics, foreground = blue, background = white
T (-93),(-63),(-49)
```

Note: In the SYSPROG account in the file SYSPROG-PL is a program called DEMO which demonstrates the extended support for memory mapped monitors under PICK/BASIC.

## 1.6 NEW TERM TYPES

### 1.6.1 IBM PC-XT LINE 0: TERM TYPE "I"

A new term type "I", has been added to the list of supported term types.

The new term type is "I". It was created to support the IBM memory-mapped monitors; monochrome and color/graphics.

If the cursor addressing is incorrect on either of the memory-mapped monitors, then type "TERM I" to invoke the new term type. This can also be done automatically each time you log into an account if the account's login PROC calls a BASIC program called TERM-TYPE. Edit the item SYSFROG, in SYSFROG's MD for an example.

```
-----  
: A   ADDS 880  
: B   AMPEX 210  
: C   CITOH VTS2  
: D   DATAMEDIA  
: I   IBM PC-XT (port 0)  
: L   LEAR SIEGLER  
: M   AMPEX 80  
: P   PERTEC 701  
: R   ADDS REGENT  
: V   ADDS VIEWPOINT  
: W   WYSE 80  
:-----
```

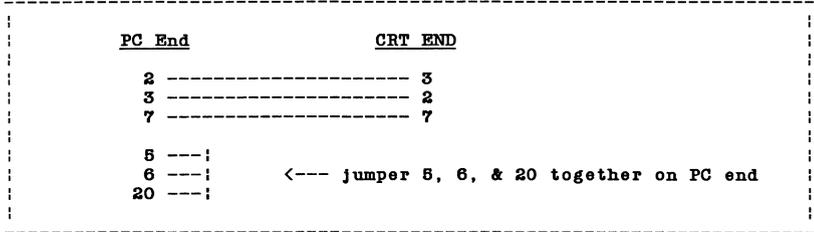
#### PC-XT Term Types

CRTs which can emulate other CRTs can be used if they emulate any of the CRTs listed above.

## 1.7 IBM PC-XT CABLING : PORT 2 & 3

### CRT Cable Schematics for PICK Users 2 and 3

The following cable schematic can be used to make cables for users 2 and 3 under the PICK System. These cables will connect the user's CRT to one or the other of the asynchronous communications adaptors.



Terminal cabling schematic.

### 1.7.1 SERIAL PRINTER CABLING

Serial printer cabling information allows printer-busy to control the IBM PC-XT.

Up to two (2) serial printers may be connected to the PC-XT via the asynchronous communication ports. Each printer, however, will cost one serial terminal user.

Serial printers can be driven at baud rates higher than their effective printing rates so most serial printers have on-board buffers to capture the incoming data until they can print it. When a buffer becomes full, the printer must be able to tell the sending computer that it cannot accept any more data for a moment. This is called busy/not busy handshaking. This handshaking is typically accomplished in one or two ways:

- 1) By RS-232C control line signaling
- 2) By ASCII character signaling

In RS-232C signaling, the printer signals it is busy by raising the voltage on one of its RS-232C plug pins (typically, but not always, pin 11). If this pin is routed through to the computer it will recognize that the printer has a full buffer, or is "busy". Later, when the printer lowers the signal voltage, the computer will resume transmission.

In ASCII character signaling, a character (typically DC1) is sent by the printer when its buffer is full. Later, when it catches up, it sends a second character (typically DC3) to inform the computer it can accept more data. When a <CNTRL><S> or <CNTRL><Q> is typed at the keyboard to stop start a display, the system is doing the same thing.

PICK can accomodate both forms of printer "busy" signaling.

ASCII busy signaling printers require no special cabling. They can be connected using the cable described above for connecting CRTs.

To cable an RS-232C busy signaling printer to a PICK PC-XT a similar cable to the standard CRT cable is used. The only difference is that where the standard cable has pins 5, 6 and 20 jumpered together on the PC-XT end, only 5 and 20 are jumpered together. Pin 6 is connected to whichever printer pin the printer is using to signal busy. Pin 6 is the pin that PICK watches to determine if the printer is "busy" or not.

### 1.7.2 PICK SERIAL PORTS DEFAULT

The following port characteristics are set up at BOOT time:

```
Baud rate   = 9600 baud
Parity      = none
Stop bits   = 1 bit
Word length = 8 bits
```

Baud rates may be changed with the SET-BAUD verb. Other characteristics are not modifiable at this time.

### 1.7.3 TROUBLE-SHOOTING SERIAL PORTS

Many PICK users do not realize that the serial I/O cards or, as IBM calls them, asynchronous communication ports, have addresses which may require setting. If the system has two (2) serial ports and they both share the same address, then PICK cannot "talk" to them.

In PC-DOS terms this means that both ports are addressed as COM1 or as COM2. In PICK terms they would both be trying to be Line 1 or Line 2.

Read the IBM Installation Guide to determine how to set IBM serial port addresses. If non-IBM serial ports are used, read the documentation that comes with those devices. PICK Systems does not support non-IBM asynchronous controllers.

## 1.8 IBM PC-XT KEYBOARD DIFFERENCES

Certain capabilities of the IBM System keyboard are disabled under the PICK Operating System to make the keyboard appear to be a standard CRT keyboard.

The following is a list of keyboard changes under PICK:

- ```
-----
:
: - Keypad area now generates numerics only.
:
: - Backtabs cannot be generated from the keyboard.
:
: - Print screen functions disabled.
:
: - The Function Keys F1 to F10 are disabled under 1.2
:
:   Function keys are user-definable via the included BASIC
:   program SET-FUNC.
:
: - The ALT key recognition is disabled except in these cases:
:   the CTL-ALT-DEL keyboard reset sequence, the ALT nnn special
:   ASCII character generation sequence, and the ALT key in
:   combination with user-defined function key.
:
:-----
```

IBM PC-XT Keyboard differences.

## 1.9 SET-KBRD PROGRAM

-----  
: New SET-KBRD program allows line 0's keyboard to be redefined. :  
-----

FORMAT:

>SET-KBRD <filename> <itemname>

Where <filename> is the name of the file which holds the keyboard definition item <itemname>.

Several keyboard definition items are included with the system. These may be found in the file KEYBOARDS in the account SYSPROG. These include:

FRENCH  
GERMAN  
SPANISH  
ITALIAN  
ENGLISH  
USA

The system 'boots-up' using the USA keyboard.

You may want to create your own keyboard definition items. An explanation of how to create such definitions is found in a file called DOC on the SYSPROG account.

## 1.10 SET-FUNC Program

-----  
: New SET-FUNC program allows the line 0 function keys to be :  
: redefined. :  
-----

FORMAT:

>SET-FUNC <filename> <itemname>

Where <filename> is the name of the file which holds the function key definition item <itemname>.

Some example function key definition items are included with the system. These may be found in the file FUNCKEYS on the SYSPROG account.

The system 'boots-up' with the function keys undefined.

If you want to create your own set of function key definitions, there is an explanation of how to do so in a file called DOC on the SYSPROG account.

PICK PC SYSTEM

Copyright (c) 1985 PICK SYSTEMS

## 1.11 FDISK VERB : FIXED DISK PARTITIONING

-----  
| A new verb, FDISK, has been provided to support the use of IBM's Fixed |  
| Disk Partitioning concept. |  
|-----

FORMAT:

>FDISK

(from Sysprog Account)

IBM's Fixed Disk Partitioning concept allows up to four (4) different operating systems to co-reside on one or two drives. They each "live" on the hard disk within their own range of contiguous cylinders.

The FDISK verb or command, as implemented under PC DOS and PICK, allows the user control over which operating system is currently executing. FDISK allows a user to mark one of the co-resident operating systems as "active". When the system is booted, the operating system marked as "active" assumes control of the machine. Therefore, to move from operating system "A" to operating system "B", FDISK is invoked, "B" is marked "active" and when the system is booted system "B" will be active.

The PICK implementation of its FDISK verb closely resembles IBM's PC DOS FDISK command in both presentation and capabilities.

For users familiar with PC DOS' FDISK, PICK's FDISK differs in two ways:

1. The create a partition option is non-functional under PICK because partition creation is handled automatically at system installation time.
2. The delete partition option will refuse to delete the PICK partition unless another partition is first made "active". In the case where PICK is the only operating system this does not apply.

1.12 SET-BAUD VERB : SETTING BAUD-RATE (Ports 1 & 2)

The SET-BAUD verb allows ports 1 and 2 to be set to various baud rates.

FORMAT:

>SET-BAUD line.no,baud.rate

The SET-BAUD verb only effects port 1 and port 2. Therefore, all line.no parameters other than 1 or 2 are ignored.

Meaningful baud-rates are listed below.

|       |                |
|-------|----------------|
| 50    | Forced to 110  |
| 75    | forced to 110  |
| 110   |                |
| 134.8 | forced to 150  |
| 150   |                |
| 300   |                |
| 600   |                |
| 1200  |                |
| 1800  | forced to 2400 |
| 2000  | forced to 2400 |
| 2400  |                |
| 3600  | forced to 4800 |
| 4800  |                |
| 7200  | forced to 9600 |
| 9600  |                |

Meaningful Baud-Rates.

NOTE: With only 1 serial I/O port, it must be configured as line 1 for SET-BAUD to work. If a sole serial I/O port is set up as line 2, then the SET-BAUD will not see it.

STATEMENT

EXPLANATION

SET-BAUD 1,4800

Sets port 1 to 4800 baud.

Sample usage of the SET-BAUD verb.

### 1.13 POWER-OFF: CONTROLLED SHUT-DOWN

-----  
: This verb prior to system power-down ensures that all :  
: write-required frames are flushed from memory to disk. :  
-----

FORMAT:                    >POWER-OFF

The operating system automatically flushes memory buffers to disk whenever the system has been quiescent for two (2) seconds. If this automatic flush has already taken place, the system can be powered down without having to type POWER-OFF.

POWER-OFF will disable all users, flush memory to disk, and put the machine into a HALTED state from which powering off and then back on is the only recovery.

Using the POWER-OFF verb is a recommended procedure.

This verb only works on Line 0.

#### 1.13.1 REBOOT

-----  
: REBOOT will allow the PICK System to re-load the operating system :  
: without doing normal BOOTing procedures. :  
-----

FORMAT:                    >REBOOT

A new verb, REBOOT, exists in the Master Dictionary of the SYSPROG account. REBOOT will disable all users, flush memory to disk, and cause the system to boot, just as if (ALT-CTRL-DEL) had been pressed.

This verb only works on line zero (0).

1.14 FFORMAT: FORMATTING FLOPPY DISKETTES

-----  
: This program formats floppy diskettes under the PICK Operating :  
: System. :  
-----

FORMAT: >FFORMAT (in SYSPROG)

A new program is included in the SYSPROG BP file called FFORMAT. The program formats diskettes in 9 sectored, double-sided format. This is consistent with IBM's current standard. These diskettes, however, are NOT usable under PC or MS DOS, because PICK's formatter program does not build the necessary DOS File Allocation Tables (FAT).

To be useable by PICK, diskettes must format "perfectly". No bad sectors are allowed. The PICK formatter will display an error message when a bad diskette is encountered.

1.15 EUROPEAN DATE FORMAT

-----  
: The European date format is supported on the PC-XT. :  
-----

>SET-DATE-EUR

Sets the system to use European date format

>SET-DATE-STD

Sets the system back to non-European data format.

This can be tested by keying in and using the following PICK/BASIC program:

```
001 PRINT DATE() 'D/'
002 END
```

-----  
: EXAMPLE: :  
-----

```
>SET-DATE EUR
>SET-DATE Enter date as: DD/MM/YY

>SET-DATE-STD
>SET-DATE Enter date as: MM/DD/YY
```

### 1.16 OKIDATA PRINTER SET-UP PROGRAM

An Okidata printer set-up program called OKIDATA is included in the SYSPROG account's BP file. This program is delivered in Version 1.3 and subsequent releases of the PICK PC-XT software.

This program allows the user to change the printer parameters to 10, 12 or 17 characters per inch, 6 or 8 lines per inch, correspondence or data quality print, expanded character print and paper length settings.

This program was developed by PICK programmers for their own use. PICK Systems makes no claims for it, nor do we intend to support it. It has, however, worked well for its developers and therefore is included.

-----  
OKIDATA - Pick Systems

- |                    |                      |                 |
|--------------------|----------------------|-----------------|
| 1. Set 10 CPI      | 2. Set 12 CPI        | 3. Set 17 CPI   |
| 4. Set 6 LPI       | 5. Set 8 LPI         | 6. Set expanded |
| 7. Set Corr qual   | 8. Set Data qual     |                 |
| 9. 8.5" Wide paper | 10. 14 In wide paper |                 |

Enter choices separated by spaces or enter <CR> for default setup.

=

-----  
OKIDATA Program Menu

### 1.17 PC-XT USER MODES

The PICK Operating System is currently using the following frames above frame 399:

400-403, 405, 407, 418-419, 422, 468-469

All other frames are currently free. PICK Systems reserves the right to use any of these in the future.

## INDEX

|                                          |       |
|------------------------------------------|-------|
| BAUD-RATES . . . . .                     | 1.014 |
| BOOTING . . . . .                        | 1.004 |
| COLOR VERB . . . . .                     | 1.006 |
| CONTROLLED SHUT-DOWN . . . . .           | 1.015 |
| DAILY PROCEDURES . . . . .               | 1.004 |
| DISK PARTITIONING . . . . .              | 1.013 |
| EUROPEAN DATE FORMAT . . . . .           | 1.016 |
| FDISK VERB . . . . .                     | 1.013 |
| FFORMAT . . . . .                        | 1.016 |
| FORMATTING FLOPPY DISKS . . . . .        | 1.016 |
| IBM PC-XT KEYBOARD differences . . . . . | 1.011 |
| MEMORY MAPPED MONITOR . . . . .          | 1.006 |
| MONO VERB . . . . .                      | 1.006 |
| PC-XT CABLING - PRINTER . . . . .        | 1.009 |
| PC-XT CABLING - TERMINAL . . . . .       | 1.009 |
| POWER-OFF . . . . .                      | 1.015 |
| PRINT@ FUNCTIONS . . . . .               | 1.007 |
| PRINTER SET-UP Program . . . . .         | 1.017 |
| REBOOT . . . . .                         | 1.015 |
| RESTORING THE SYSTEM . . . . .           | 1.004 |
| SERIAL PORT - TROUBLE SHOOTING . . . . . | 1.010 |
| SET-BAUD Verb . . . . .                  | 1.014 |
| SET-FUNC Program . . . . .               | 1.012 |
| SET-KBRD Program . . . . .               | 1.012 |
| SYSTEM RESTORE . . . . .                 | 1.004 |
| TERM-TYPES . . . . .                     | 1.008 |
| USER MODES . . . . .                     | 1.017 |