

PC Technologies, the manufacturer of this board is no longer in business. Phase, Inc. is available for service and parts. The card is supported only by Radio Shack. All cards have a 90 day warranty only! This warranty is honored only by Tandy.

NOTE: The daughter board AXX-7130 is no longer available.

Copying Files from Distribution Diskette

Before starting the installation, copy all of the files from the diskette that came with the 286 Express Card to your default hard disk directory, or to your system disk.

Creating or Modifying the CONFIG.SYS File

For the 286 Express Card to operate properly, the operating system must be configured to load the EXPRESS.SYS device driver at system start-up. You do this using the CONFIG.SYS file. If you do not already have a CONFIG.SYS file you must create one. If you already have a CONFIG.SYS file, add the line shown below as the first line in the file.

```
DEVICE = EXPRESS.SYS
```

Setting Option Switches

Switches 1, 2, and 10 - Clock Speed for Math Co-processor

S1	S2	S10	Definition
ON	ON	ON	Invalid Setting
ON	OFF	OFF	8 MHz Clock Speed 80287-8
OFF	ON	ON	5 MHz Clock Speed 80287-3
OFF	OFF	OFF	No Numeric Processor

Switch 3 - Computer Model

S3 Definition

ON 286 Express Card installed in 1000SX
 OFF 286 Express Card installed in 1000 or 1000A

Switches 4-7 Memory Limits for Caching

Memory	S4	S5	S6	S7
64K	-	-	-	-
128K	-	-	-	ON
192K	-	-	ON	-
256K	-	-	ON	ON
320K	-	ON	-	-
384K	-	ON	-	ON
448K	-	ON	ON	-
512K	-	ON	ON	ON
576K	ON	-	-	-
640K	ON	-	-	ON

LEGEND

- = SWITCH IS OFF (OPEN)
ON = SWITCH IS ON (CLOSED)

Switch 8 Must be OFF

Switch 9 I/O Address

S9 Definition

ON I/O Address 03E0H
OFF I/O Address 0100H

Installation 1000SX

Insert board in middle slot J13.
Remove 8088 processor chip.
Plug 8088 processor chip into daughterboard.
Plug I/O cable into 8088 socket of motherboard.
Plug daughterboard into 286 Express Card.

Installation 1000A

Insert board in slot J9.
Remove 8088 processor chip.
Plug 8088 processor chip into daughterboard.
Plug I/O cable into 8088 socket of motherboard.
Plug daughterboard into 286 Express Card.

Installation 1000

Note: The daughterboard supplied with this product will not work with the original 1000. You need a special daughter-board (part # AXX-7130). (This board is no longer available.)

Insert board in slot J10.
Remove 8088 processor chip.
Plug 8088 processor chip into daughterboard.
Plug I/O cable into 8088 socket of motherboard.
Plug daughterboard into 286 Express Card.

CONFIGURING THE 286 EXPRESS CARD

This manual tells you how to install the 286 Express Card in the Tandy 1000 SX, Tandy 1000 A, and Tandy 1000 computers.

COPYING FILES FROM DISTRIBUTION DISKETTE

Before starting the installation, copy all of the files from the diskette that came with the 286 Express Card to your "default" hard disk directory, or to your system diskette:

EXPRESS.SYS-----a device driver for the 286 Express Card that turns caching on and off and provides a way for the system

to erase the 8K cache memory.

PCT.EXE-----a program that allows you to use keyboard commands or batch files to switch between your system's 8088 processor and the 286 processor. also included are caching on or off and test hardware status.

README.BAT-----this file uses the remaining files on the distribution diskette (DEMO.EXE, PCTINFO.BAT, etc.) to demonstrate the power of the 286 Express Card.

NOTE: Source file CACHE.ASM is also provided on the distribution diskette. We have included this program to provide you with an example of how to code your own caching on/off routine.

CREATING OF MODIFYING THE CONFIG.SYS FILE

For the 286 Express Card to operate properly, the operating system must be configured to load the EXPRESS.SYS device driver at system start-up. you do this using the CONFIG.SYS file. We suggest that you configure your system before you install the 286 Express Card. That way, your system will operate properly when you first turn it on following installation.

If you do not already have a CONFIG.SYS file, you must create one. You can either use a word processor or the EDLIN line editor that came with your operating system. If you already have a CONFIG.SYS file, add the line shown below as the first line in the file.

CONFIG.SYS File

```
DEVICE = EXPRESS.SYS [OFF] [88] [CPU] [CACHE] [ALT] other device drivers
```

The parameters enclosed in brackets may or may not be required depending upon your system configuration.

PARAMETER	PURPOSE
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OFF	If this parameter is listed, the system boots, then turns caching off. If you omit this parameter, the 286 Express Card's memory caching feature is turned on immediately following boot-up. Normally, you will want to omit this parameter and leave caching enabled.
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88	If this parameter is listed, the system remains in the slower 8088 mode following boot-up. The only time you should want to remain in the 8088 mode is when you want to run a speed-sensitive program immediately following boot-up.
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If you omit this parameter, your system boots in the 8088 mode, but is then automatically switched to the faster 80286 mode by the system driver. Normally, you will want to omit this parameter and switch to the faster 80286 processor following boot-up.

CPU	Following boot-up, the "Hot Keys" (ALT< or ALT>) used to switch between processors are enabled when this parameter is listed. If this parameter is omitted, the processor switching "Hot Keys"
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are disabled and have no effect.

CACHE Following boot-up, the "Hot Key" (ALT-Right Shift) used to enable or disable memory caching is enabled when this parameter is listed. If this parameter is omitted, the cache enable/disable "Hot Key" is disabled and has no effect.

ALT The standard I/O address (100h) the software uses to access the 286 Express Card is the correct one for most applications. If you have an optional board installed in your computer that already uses the 100h address, you must list the ALT parameter in the command line. This changes the address the software uses to 03E0h.

If the ALT parameter is listed, you must also change the 286 Express Card's address by setting option switch 9 ON.

If no parameters are listed, the default status is:

- * Caching enabled
- * 80286 enabled
- * Processor switching "Hot Key" disabled
- * Cache enable/disable "Hot Key" disabled
- * Standard I/O address (100h) used by 286 Express Card

SETTING OPTION SWITCHES

Before installing the 286 Express Card, you must set the option switches shown in Figure 3. These switches define the board's environment and describe the particular operating mode you have chosen.

Unfortunately, two different labeling schemes are used by switch manufacturers. The switches on your board will either be labeled "ON" or "OPEN". The two terms are opposite: OPEN is the same as OFF. If you need to translate the settings shown in this section, substitute "not OPEN" for ON in the following charts.

Note that an asterisk (*) next to a switch indicates the switch's "as-shipped" setting.

SWITCHES 1,2, and 10--CLOCK SPEED FOR MATH CO-PROCESSOR

S1	S2	S10	DEFINITION
ON	ON	ON	Invalid Setting
ON	OFF	OFF	8 MHz Clock Speed (80287)
OFF	ON	ON	5 MHz Clock Speed (80287-3)
*OFF	*OFF	*OFF	No Numeric Processor

There are two types of 80287 math co-processors: 80287 or 80287-3. Either co-processor will work in the 286 Express Card as long as these switches are set properly. Determine which type you have by looking at the printing on the chip, then set these switches accordingly. (NOTE: a 6 MHz co-processor can be used in place of a 5 MHz co-processor if desired. Use the 5 MHz switch setting.)

SWITCH 3--COMPUTER MODEL

S3 DEFINITION

*ON 286 Express Card installed in Tandy 1000SX
OFF 286 Express Card installed in Tandy 1000 or 1000A

For Tandy computers, the model number is shown on a plate at the rear of the case. See Figure 2.

SWITCHES 4 THROUGH 7--MEMORY LIMITS FOR CACHING

Switches 4 through 7 let the 286 Express Card know how much memory you want to cover with the memory caching feature. Normally, you should set these switches to reflect the total amount of memory you have installed, since the 286 Express Card can provide caching for everything below the DOS 640K boundary.

(DTC/jlc-03/28/94)