

Surprise!™

Help and Technical Reference

SURPRISE! will surprise you with the speed it gives to the PC. For those times when you have problems, we have compiled a list of questions and answers you might be asking while installing or using SURPRISE!.

IF YOUR PROBLEM IS NOT COVERED HERE, don't hesitate to contact your local dealer for assistance. For additional assistance, or to answer any questions you might have concerning SURPRISE! contact the Maynard Electronics Customer Support Department at:

Maynard Electronics
460 E. Semoran Blvd
Casselberry, Florida, 32707
c/o Technical Services

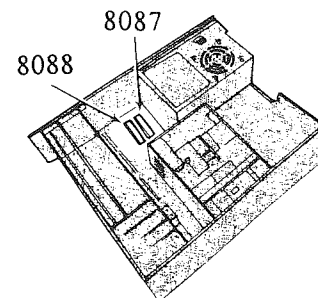
HELP

Q: WHAT IF I DON'T HAVE AN IBM PC?

A: If there is enough room above the 8088 socket for the SURPRISE! card to fit, then you will be able to use the IBM installation for SURPRISE!. The IBM installation can be found in the SURPRISE! Owner's Installation Manual. When installing SURPRISE!, be sure the gold edge connector that is labeled "A1" is at the same end as pin #1 of the 8088 socket. Pin #1 of the 8088 socket is on the same end as the notch or circle in the 8088 chip. If there is not enough room, there is a SURPRISE! kit available for computers other than the IBM PC. If you have an IBM compatible and you would like to add SURPRISE!, contact your local dealer.

Q: WHERE IS THE 8088 SOCKET?

A: The 8088 chip is a 40 pin chip (about 2 inches long). "8088" will be printed somewhere on the top of the chip. The 8088 chip and socket are on the system board, near the power supply in the IBM PC. Next to the 8088 socket will be another socket for another 40 pin chip (the 8087). The 8088 is made of plastic or ceramic. The 8087 chip sometimes has a gold box on the top of the chip.

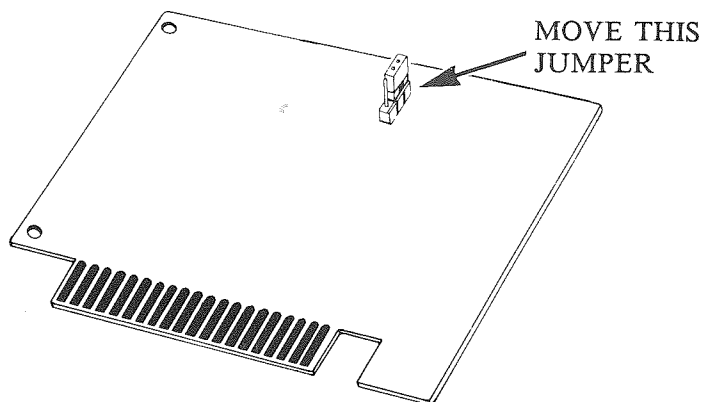


Q: WHY DO I GET 4 BEEPS WHEN I USE SURPRISE?

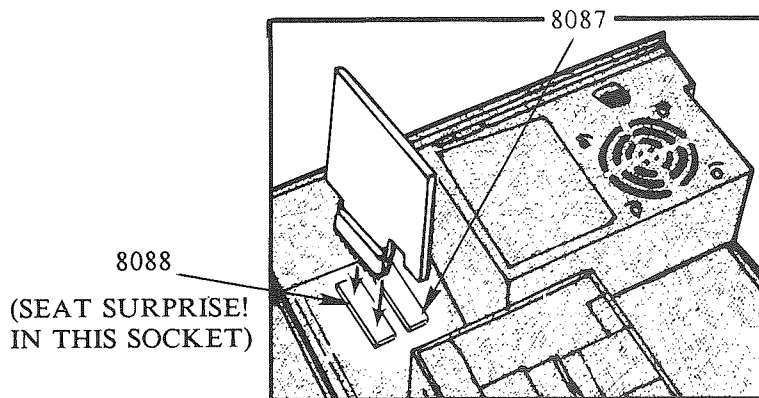
A: You probably have a conflict with another option in your computer. Check the I/O address jumper on your SURPRISE! card. The card can be set for a different address by moving the jumper. To change the I/O address of SURPRISE! follow these steps:

- Turn off the computer.
- Remove the cover.
- Remove the SURPRISE! card.
- Move the jumper so it covers the middle pin and the exposed pin.
- Replace the card and close the computer.

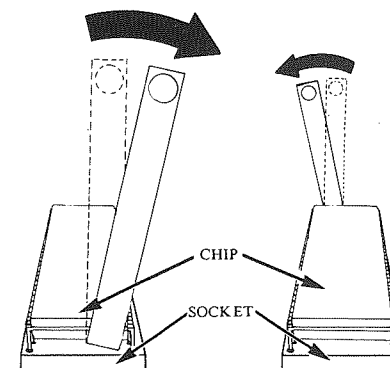
(Refer to page 8 in this manual for more information on I/O addresses.)

**Q: WHY DON'T I GET A CURSOR?**

A: Check to be sure you have installed SURPRISE! in the 8088 socket and not in the 8087 socket. The 8088 socket is the socket that contained the 8088 chip. Make sure the daughter board is snugly connected to the SURPRISE! edge connector. Also be sure that each of the pins on the daughter board is in the 8088 socket. The pins may be bent, or a set of pins may be hanging over the edge of the socket. BE CAREFUL, straightening bent pins may cause them to break.

**Q: HOW DO I GET THE 8088 CHIP OUT OF THE SOCKET?**

A: The chip puller that was included with SURPRISE!, was specifically designed to remove chips from a circuit board. Place the chip puller under one end of the chip, and move the chip puller to the right and left (perpendicular to the chip). When the pins are partially out of the socket, move the chip puller to the other end of the chip and use the same rocking motion. BE SURE THE CHIP PULLER DOES NOT SLIDE UNDER THE SOCKET! You do not want to pull the socket out of the circuit board. Refer to the owner's installation manual for more information.

**Q: WHAT DO I DO IF MY VIDEO CARD IS NOT ON THE LIST?**

A: When you get to the menu that asks you what type of video card you have, and you don't know what type you have or your card is not listed, you have two possible options, "UNKNOWN" and "FAST." If you select UNKNOWN, your video card will work with SURPRISE without difficulty, but the increase in speed might be minimized. Most monochrome cards and some color cards run fast. If you wish to select FAST for your video card, you will increase the speed of the computer, but you may get snow on the screen. ("Snow" is a bunch of dots and dashes that appear when the monitor is scrolling.) In this case you must begin the SURPRISE! software installation again and select "UNKNOWN" from the list.

Q: WHY ARE MY RESIDENT MEMORY PROGRAMS CONFLICTING WITH THE SURPRISE! SOFTWARE?

A: Resident programs often take control of the keyboard. Collisions can occur between different resident programs, especially if they are using the same keyboard keys. When you experience possible conflicts, remove the "keybuf=" parameter from the "device=surprise.sys" statement in your CONFIG.SYS file. If the problem persists, also remove the "keyboard=" parameter.

Q: WHEN I PUSH <CTRL> <ALT> <\\> NOTHING HAPPENS.

A: Maynard Electronics selected this series of keystrokes to toggle the SURPRISE! speed. These same keystrokes are used by Compaq to change the speed of the Compaq Deskpro*. Most applications do not conflict with the Compaq keyboard. Make sure there are no conflicts with these keystrokes in your application. If your application uses <Ctrl> <Alt> <\\>, try to reassign the keystrokes in the program.

Q: WHY DOESN'T MY SOFTWARE WORK WITH SURPRISE! IN THE FAST SPEED MODE?

A: There may be one of two problems here. If your software has a copy protection scheme that is speed sensitive, you will need to change SURPRISE! to the slow speed to enter the application. Once in the application you can toggle SURPRISE! to the fast mode. The other problem might be a conflict where the application just won't work with SURPRISE! in the fast mode. In this case, use SURPRISE! in the slow mode with the application, and toggle to the fast mode when you are outside the application.

Q: WHAT IS THE DIFFERENCE BETWEEN THE HARDWARE FAST MODE AND THE SOFTWARE FAST MODE?

A: Installing the SURPRISE! hardware increases the speed at which the CPU runs (but does not change the timing of the computer). Installing the the SURPRISE! software increases the speed of DOS. All of the programs that use DOS speed up when the SURPRISE! software is installed and SURPRISE! is in the fast mode.

Q: HOW CAN I MAKE SURPRISE! WORK FAST WITH MY PROGRAMS THAT RUN IN AN OPERATING SYSTEM OTHER THAN MS-DOS OR PC-DOS?

A: Be sure the jumper that sets the SURPRISE! speed is set to start SURPRISE! in the FAST mode. If you have floppies, or a hard drive with an active DOS partition, install the SURPRISE! software to speed up DOS. Otherwise, no software is required for non-dos operating systems.

Q: WHY DOES MY COMPAQ CLICK WHENEVER I TOUCH A KEY?

A: Compaq lets you control the "click" volume of their keyboard. SURPRISE! simply turns that volume up. You can turn it back down if you by pressing <Ctrl> <Alt> and then repetitively pressing <+> up or <-> down, or add "keyclick=0...16" to the "device=surprise.sys" statement in the CONFIG.SYS file. Zero equals no click, 16 equals a loud click.

TECHNICAL REFERENCE

SURPRISE! is a unique, highly economical design that was built with compatibility as the foremost goal. SURPRISE! increases the speed of your PC 30% to 250% (depending on the application), offers two speed modes, and does not require an expansion slot.

SURPRISE! registered the following results when tested by PC Magazine's Benchmark Test #21:

| | PC Time in Seconds | SURPRISE! Time in Seconds | Computing Speed of a PC |
|---|--------------------------|---------------------------------|-------------------------------|
| 1. NOP Executions Spanning 128K: | 10.16 | 7.69 | 131% |
| 2. Do-Nothing (NOP) Loop: | 9.94 | 6.21 | 159% |
| 3. Integer Add from Memory Loop: | 9.94 | 6.54 | 152% |
| 4. Integer Multiplier from Memory Loop: | 10.00 | 3.57 | 280% |
| 5. Floating Point without 8087 | 155.82 | 98.10 | 158% |

The 8087 and SURPRISE!

The 8087 chip is a math co-processor that is used for certain types of calculations by certain programs like AutoCAD*, Symphony* version 1.2, and version 2.0 of Lotus 1-2-3*.

SURPRISE! will work with the 8087 in the slow mode. If you enter an application in the fast mode, SURPRISE! does not take advantage of the 8087, but SURPRISE! will work with the 8087 installed in the computer.

There are some 8087 applications where running SURPRISE! by itself in the fast mode will be faster than running the application with the 8087 and SURPRISE! in the slow mode. This is usually true for applications like 1-2-3, Symphony, and Framework* where the spreadsheets do not include a lot of scientific calculations (trigonometry, logarithms, and floating point calculations).

We recommend you leave the 8087 in the computer if you are using numeric, or scientific applications like AutoCAD. These applications (with the 8087) calculate floating point arithmetic, trigonometric functions, and logarithmic functions at a speed that SURPRISE! cannot match.

Do not change the speed of SURPRISE! while you are in an application program that uses an 8087 (even if no 8087 is being used). To make use of the 8087 with SURPRISE!, enter the application in the slow mode and do not change modes. The 8087 must be handled at 4.77 MHz and will not be used when SURPRISE! is in the fast mode.

The AST SixPakPlus* (or other memory boards) and SURPRISE!

Because of the manner in which the AST SixPakPlus (and some other memory boards), start their memory refresh SURPRISE! must be started in the slow mode. Be sure the FAST/SLOW jumper is set for SLOW. Once the computer has booted up, SURPRISE! can be toggled to the FAST mode without difficulty. If the problem persists on the AST SixPakPlus, disable the parity of the AST board. Refer to the AST owner's manual for instructions on disabling parity.

Communication Programs and SURPRISE!

Some communication programs are timing sensitive. If you have a communication program that has trouble using SURPRISE! in the FAST mode, toggle to SLOW before you start using the program.

SideKick* and SURPRISE!

The <Ctrl> <Alt> keystrokes are used to make the Sidekick menu appear. Pressing <Ctrl> <Alt> <\> will change the speed of SURPRISE! and will make the Sidekick menu appear. Pressing <Esc> will make Sidekick disappear. Both SURPRISE! and Sidekick will work normally when using these toggle keys. If you do not want Sidekick to appear when you change SURPRISE! speeds, change the SURPRISE! toggle keys. (See page 10.)

What SURPRISE! does

SURPRISE! has a V2010 chip. This is a special processor designed for SURPRISE! that runs at 9.54 or 4.77 MHz. SURPRISE! optimizes the performance of CPU intensive programs, and averages 2.6 on the Norton SI scale in the fast mode.

Since SURPRISE! was designed for maximum compatibility SURPRISE! does not:

- change the system timing
- change timing on DMA or interrupt cycles
- speed up the system bus

If you change the computer timing and speed up the bus, you could start to have timing problems with your add-on cards, especially memory cards. Most controller cards that work at normal PC speed, work with SURPRISE!. This includes memory boards, video boards, etc.

You do not have to change memory chip speeds for SURPRISE! to work in your computer.

The SURPRISE! software installation is optional. If installed, it optimizes common DOS functions by replacing the way DOS handles the functions with faster, more efficient code. In order to toggle between fast and slow you must install the software.

What INSTALL does

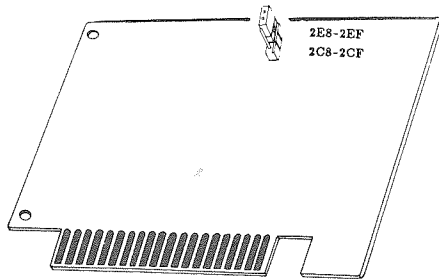
The SURPRISE! installation adds a line to the CONFIG.SYS file, so the SURPRISE! driver will be loaded automatically every time you "boot up" the computer.

INSTALL gives you a chance to place the SURPRISE! files in a subdirectory of your choice during the installation. If no directory is specified they are placed in the Maynard subdirectory on a hard drive, or in the root directory on a floppy disk.

To maximize the software speed improvement, the SURPRISE! installation requests the type of video card you are using. During the retrace period (when the beam moves back to the beginning of a line or to the top of the screen), video cards allow the screen to be updated. Some video cards do not require waiting for the retrace period. If your video card does not require waiting, the SURPRISE! software can write quickly to the screen. If SURPRISE! writes when it should be waiting you may get "snow" on the screen. Selecting your video card from the list will avoid the possibility of snow. The video card information is added to the CONFIG.SYS buffer.

I/O Addresses for SURPRISE!

The default setting for SURPRISE! is $2E8_H - 2EF_H$. Moving the jumper that is near the top center of the board, you can set the I/O address to $2C8_H - 2CF_H$. The only time you should ever have to move this jumper is when you have an I/O address conflict with another option in the computer.



You will be informed of a conflict whenever you install SURPRISE! Instead of hearing 1 or 2 beeps for a successful installation, you will hear 4 beeps and the SURPRISE! message will say "SURPRISE! not installed."

When you toggle between the fast and slow modes you write out to the I/O address you have selected.

Two utilities called FAST.EXE and SLOW.EXE can also output to these I/O addresses in the event that the SURPRISE! software cannot be installed. To use these utilities you can type "fast" or "slow" at a DOS prompt, or you can add "fast" or "slow" to a batch file that starts your application. Just add "fast" to the batch file to put SURPRISE! in the fast mode, or type "slow" to put SURPRISE! in the slow mode.

A batch file that starts a program might look like this:

```
echo=off
cd \prog
prog
cd\
```

To start SURPRISE! in the fast mode, use a line editor to make the batch file look like this:

```
echo=off
fast
cd \prog
prog
cd\
```

NOTE If you have the I/O jumper set for the 2C8-2CF address (refer to the drawing on page 8), you must add "/2" after the FAST and SLOW commands. For example: FAST /2 or SLOW /2.

Changing the SURPRISE! toggle keys

SURPRISE! is toggled between the fast and slow modes by pressing <Ctrl> <Alt> <\>. If this series of keystrokes conflicts with an application you are using, you can change the keystrokes.

To change keystrokes you must add the parameter "keystroke=n1,n2" to the "device=surprise.sys" statement in the CONFIG.SYS file. The statement would look like this:

```
device=\maynard\surprise.sys keystroke=n1,n2
```

<Ctrl>, <Alt>, Right <Shift>, Left <Shift> and combinations of these four keys can be used as part (or all) of the keystroke series to toggle SURPRISE! speed. This chart shows what keystrokes are activated by the number you enter for n1:

| | |
|-----------------------------------|-----------------------------------|
| 0 = no keystrokes but n2 | 8 = <Alt> |
| 1 = Right <Shift> | 9 = <Alt> Right <Shift> |
| 2 = Left <Shift> | 10 = <Alt> Left <Shift> |
| 3 = Right and Left <Shift> | 11 = <Alt> Right and Left <Shift> |
| 4 = <Ctrl> | 12 = <Ctrl> <Alt> |
| 5 = <Ctrl> Right <Shift> | 13 = <Ctrl> <Alt> Right <Shift> |
| 6 = <Ctrl> Left <Shift> | 14 = <Ctrl> <Alt> Left <Shift> |
| 7 = <Ctrl> Right and Left <Shift> | |

If you enter 0 for n1 then neither <Ctrl>, <Alt>, Right <Shift> nor Left <Shift> will be used as toggle keys, but you must enter a number for n2. (i.e. keystroke=0,70)

To change the last keystroke (n2), to something other than <\> you must change the second number of the "device=surprise.sys keystroke=n1,n2" statement. Each key on the keyboard is assigned a decimal number that can be inserted in n2.

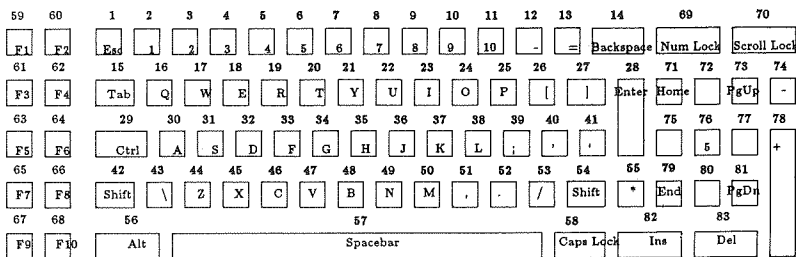
If, for example, you wanted the toggle to be activated by the keystrokes <Ctrl> <Esc>, the device statement in the CONFIG.SYS file would read:

```
device=\maynard\surprise.sys keystroke=4,1
```

The 4 represents the Control key, and the 1 represents the Escape key. Here are some other examples:

```
<F10> only      device=\maynard\surprise.sys keystroke=0,68
<Ctrl><F10>     device=\maynard\surprise.sys keystroke=4,68
<Ctrl><Alt><F10> device=\maynard\surprise.sys keystroke=12,68
```

The decimal value for <Esc> is 1. The decimal value for <\> is 43. Refer to the diagram below for the decimal value of other keys on the IBM PC keyboard.



SURPRISE! Keyboard buffer

```
device=\maynard\surprise.sys keybuf=n
```

Adding the keybuf=n parameter to the SURPRISE! driver in the CONFIG.SYS file, will tell the driver to create a keyboard buffer the size of "n." N can be any number from 1-128. The absence of the above parameter implies that the driver will not create a keyboard buffer.

If you use BASIC programs, resident programs, or resident operating systems, do not include this parameter. These programs attempt to take command of the keyboard. Adding the keybuf=n parameter to "device=\surprise.sys" will cause a conflict with these programs because SURPRISE! will also attempt to command the keyboard.

SURPRISE! Keyclicks

A feature that we have included as a bonus for the advanced user is SURPRISE's ability to add sound to the keystrokes. To add sound to the keystrokes you must add "keyclick=x" to the SURPRISE! statement in the CONFIG.SYS file.

For example, if you want a moderately loud click every time you pressed a key the "device=" statement would look like this:

```
device=\maynard\surprise.sys keyclick=8
```

The number following "keyclick=" can be anything from 1 to 16 (16 being the loudest).

SURPRISE! Parameters

Below are the default parameters for the "device=" statement that is created when the SURPRISE! software is installed:

```
device=[\maynard]\surprise.sys [color] [ndos] [keystroke=n1,n2] [keyclick=n]
```

[\maynard] If you install the SURPRISE! software on a hard drive, the necessary files will be stored in this directory.

[color] This parameter will be present if you have a slow video card.

[ndos] This parameter will be present if you opted not to increase the speed of DOS.

[keystroke=n1,n2] The default for this parameter is 12,43 (<Ctrl> <Alt> <\>).

[keyclick=n] The default for this parameter is 0 (no keyclick).

NOTES: There is a space required between each parameter.

[keybuf=n] is not included in the default parameters of the "device=surprise.sys" statement.

12 Technical Reference

Any of the parameters listed in this technical reference can be added to the "device=\maynard\surprise.sys" statement.

BASIC and SURPRISE!

If you use BASIC, do not use the SURPRISE! keyboard buffer (keybuf=n) in the "device=surprise.sys" statement.

Desqview* and SURPRISE!

Be sure you are not using the keybuf parameter in the "device=surprise.sys" statement. Type the CONFIG.SYS file to view this statement. Also, remove the <Alt> key from the keystroke sequence that toggles SURPRISE! between fast and slow. Refer to page 10 of this manual for information on changing the toggle keys.

Memory Resident Programs and SURPRISE!

If you use memory resident programs, do not use the SURPRISE! keyboard buffer (keybuf=n) in the "device=surprise.sys" statement.

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