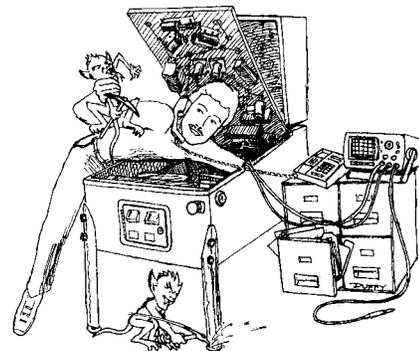




# Nº 157 Service Bulletin



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**TO:** Parts & Service Managers

**DATE:** June 20, 2005

**SUBJ:** New Version 8 of the Sound Operating System (O/S)\* for the White Star CPU/Sound II Board

\* This new version O/S 8 is compatible with all previous versions of CPU/Snd II ROM's.



## Symptom

No sound or static and noise in place of normal sounds. These symptoms typically occur after swapping sound ROM's between different model games using different versions of the **Operating System (O/S)** (see table below).

## CPU/SND BD II Games Affected

Terminator® 3, The Lord of the Rings™, Ripley's Believe It or Not!®, ELVIS®, Harley-Davidson® 3rd Edition and The Sopranos®.

## Explanation

T3™ was the first game to start using the new White Star CPU/Sound II Board (SPI Part Number: 520-5300-00). This PC board utilizes new hardware in the sound section. This hardware required a new **Operating System (O/S)** in software that has been continually improved and updated since T3™. This has created some compatibility issues between the different versions of **Operating Systems**. One example would be games using sound ROM's programmed to work with O/S 5 will not work correctly in a board programmed with O/S 4. The version of the O/S can be identified by the **number of times LED1 flashes** upon power-up (e.g. The LED1 will *fl i c k e r* then **flash 4 times = O/S 4, ... 5 times = O/S 5, etc.**). **Note: Color dots\*\*** are used on the IC in position **U8** to also determine O/S Version for boards.

**\*\* WHEN DETERMINING WHAT OPERATING SYSTEM THE CPU/SOUND BOARD II HAS, USE THE FLASHING LED1 METHOD AND NOT THE COLOR DOT(S). SOMEONE MAY HAVE REFLASHED THE BOARD AND DID NOT CHANGE THE COLOR DOT(S). WHEN REFLASHING YOUR BOARD, BE SURE TO CHANGE THE COLORED DOT(S) ON THE U8 IC PER THE TABLE BELOW.**

This update is only required if you have the above symptoms or if you are required to swap boards with different O/S versions (O/S 4 through O/S 7).

**Look! Please Read! >>** This new version O/S 8 will not improve the sound of a working board with an older operating system, it only corrects the COMPATIBILITY ISSUE.

## Solution

Reboot your Flash Memory (U8 IC) with a U7 Bootflash EPROM. Our software department has released the new Sound Operating System O/S 8 Version (which is compatible with all White Star CPU/Sound Board II U7 Sound EPROMs).

### U8 IC (ATMEL) FLASH MEMORY IDENTIFICATION (LED1)

U8 MFG. CODE	U8 COLOR DOTS **	LED1 # of Flashes	GAME NAME
11TC or 11TI 70TI	Green Single Dot	4-Flashes	The Lord of the Rings™ and Ripley's Believe It or Not!®
70TI	Blue Single Dot	5-Flashes	ELVIS®
70TI	Silver (or gray) Single Dot	6-Flashes	Harley-Davidson® 3rd Ed. and The Sopranos®
70TI	Gold (or yellow) Double Dot	7-Flashes	The Sopranos®
70TI	Green Double Dot	8-Flashes	All Title Games Produced after June 13, 2005 have O/S 8*

\* as of Service Bulletin Date for the White Star CPU/Sound Board II Operating System Pinball and Redemption Games Only.

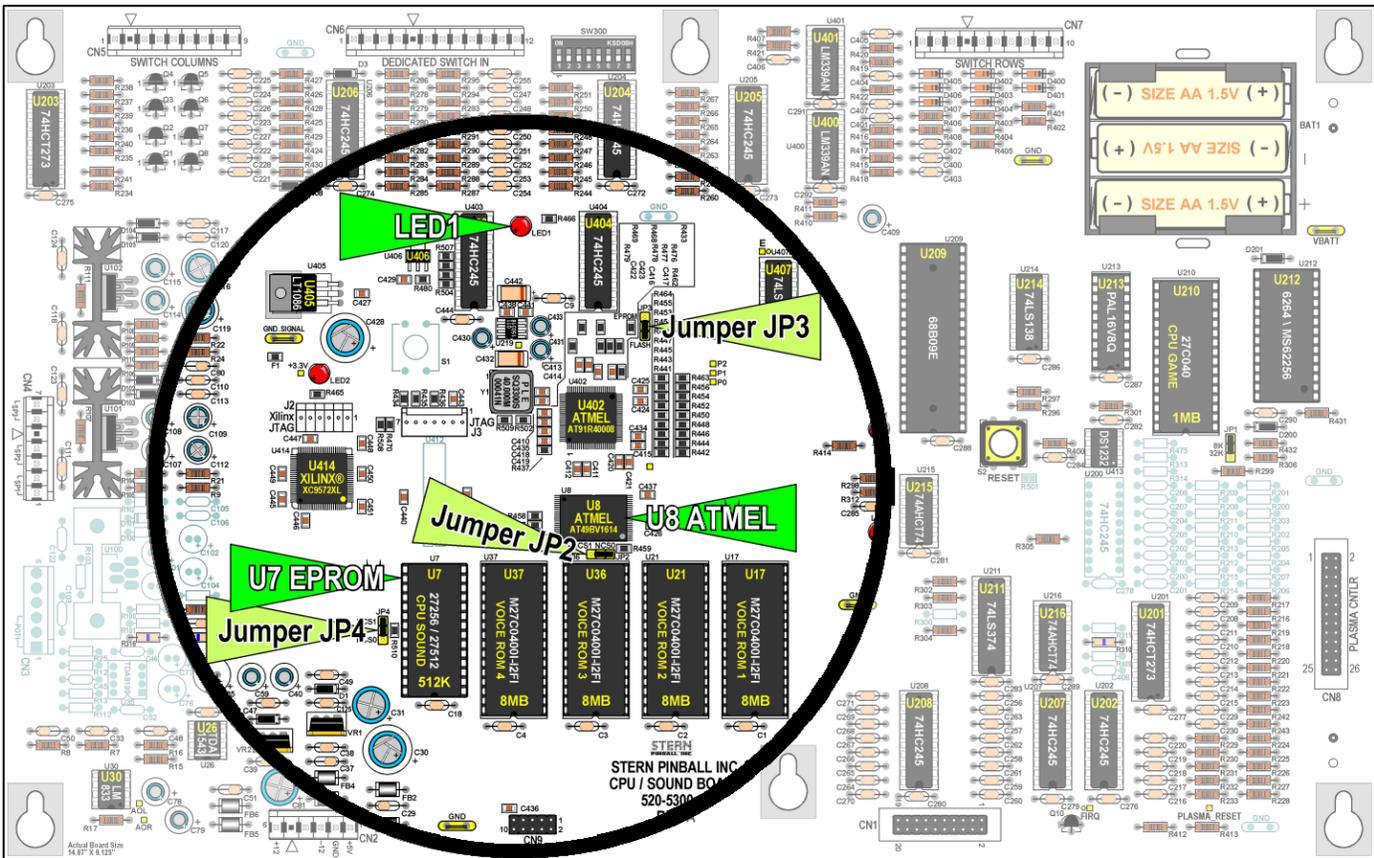
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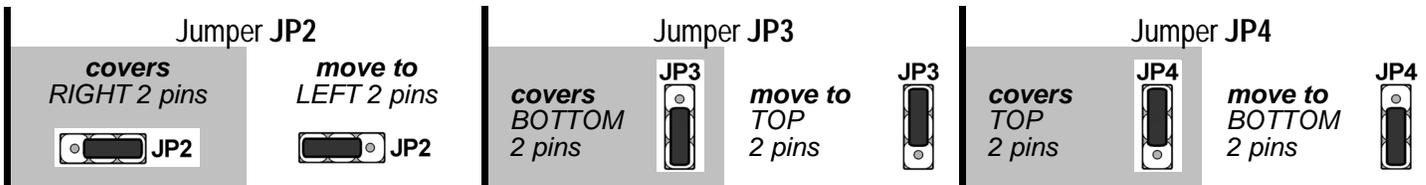
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### Atmel Flash Memory Installation Procedure (on CPU/Sound Board II only)

A **Bootflash O/S 8 Sound EPROM (512K)** (Checksum \$8F2E) is required for this installation. You can purchase this EPROM from your local distributor (SPI PN: **965-0200-08**) or download the Boot Flash 8 Data File from our website <http://www.sternpinball.com/ROM-code.shtml> (*EPROM Programmer & Blank 512K EPROM required to utilize data files*)

- Step 1:** Turn Pinball Game **OFF** (remove backglass for procedure). Reference the above CPU/Sound Board II Component Layout drawing for the locations of **U7, JP2, JP3, JP4** and **LED1**.
- Step 2:** Remove the current Sound EPROM at **U7** and replace with **Bootflash O/S 8 Sound EPROM** in its' place.
- Step 3:** Move the jumpers at locations **JP2, JP3 & JP4** to the opposite position.



- Step 4:** Turn Pinball Game **ON**. Wait for **LED1** to start flashing continuously (*this indicates flash procedure was successful*). **Note:** This usually takes a few minutes.
- Step 5:** Turn Pinball Game **OFF**.
- Step 6:** Remove **Bootflash O/S 8 EPROM** at **U7** and replace with original EPROM you had just previously removed.
- Step 7:** **IMPORTANT!!** >>> Move Jumpers **JP2, JP3, JP4** back to their original positions. (**JP2 = RIGHT, JP3 = BOTTOM & JP4 = TOP**)
- Step 8:** Turn Pinball Game **ON**. Watch **LED1** upon power-up. The **LED1** will **flicker** then **flash 8 times**.

**Tip:** For proper insertion or replacement of EPROMS, refer to **Service Bulletin 150** available on-line: <http://www.sternpinball.com/ServiceBulletins.shtml#04> and click on **Nr. 150** to download (open) the PDF.

Please phone or eMail with any questions or comments at the below numbers or address.