

# MACKIE.®

## Mackie Control™ and Mackie Control Extender™ Microcontroller Upgrade

### Overview

- This microcontroller upgrade allows the Mackie Control and Mackie Control Extender to work with Pro Tools™.

### ⚠ Safety Instructions

1. Please read, understand and follow all safety and installation instructions before you proceed.
2. Keep the microcontroller in its protective anti-static bag until the exact moment you are ready to use it.
3. This upgrade requires opening your unit and handling sensitive electronic components. Anti-static precautions must be taken in order to prevent damage to the unit or the microcontroller from electro-static discharge (ESD).
4. Damage caused to the unit due to improper installation or handling of these components will not be covered under warranty.
5. If you prefer, please call Mackie Tech Support at 800-898-3211 to obtain a referral to an authorized service center.

### Tools required:

The following items are available from many electronics and computer stores, such as Radio Shack® for example:

- Anti-static wrist strap, with a cord that clips to the metal chassis of the unit you are working on. This will discharge any static electricity from you onto the chassis, and prevent zapping the sensitive electronic parts.

⚠ **WARNING:** The wrist-strap and cord are electrically conductive and present a potentially LETHAL safety hazard. Once wearing it, keep the cord away from all live electrical circuits, outlets, sockets, contacts, electric heaters, or toasters for example.

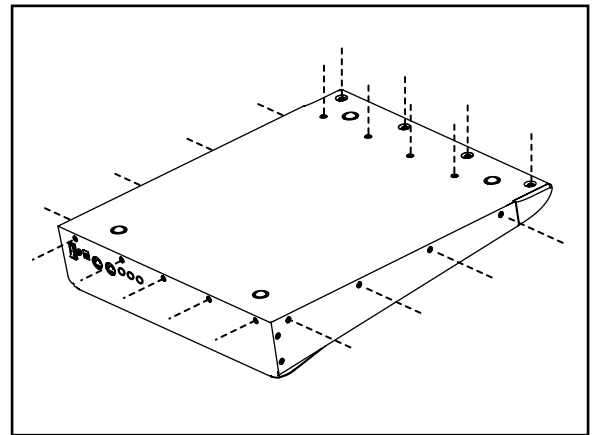
- IC chip-puller for pulling the old BIOS chip out of its socket.
- Sharp medium Phillips screwdriver, and safety glasses.

### Preliminary

- Choose a brightly-lit, clean and dry area such as the kitchen table, and remove any crumbs, breakfast cereal, dust, milk, small children, pets, etc.
- Protect the table surface from scratching, or you might be in the dog-house for weeks. Better yet, use an anti-static mat.
- Put on your safety glasses.

### Procedure:

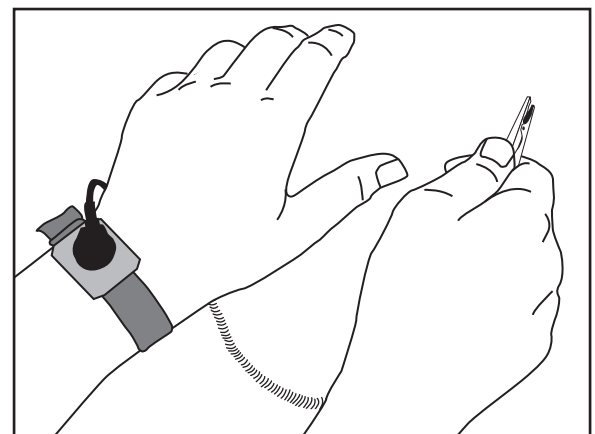
1. Turn the power off, unplug and remove all external cables from the unit.
2. Place the unit face down on your table.
3. Remove the bottom cover by undoing the host of screws shown in this diagram.



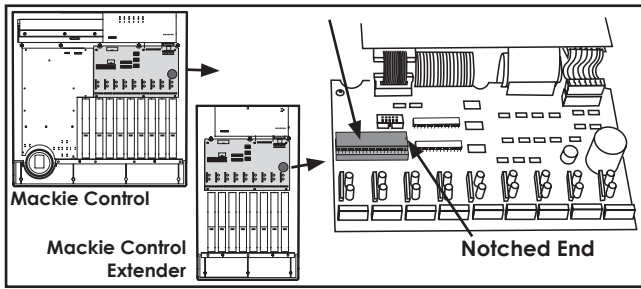
If you are having trouble undoing the screws, try using a new sharp Phillips screwdriver that has not been worn down by opening up jars of paint and drilling holes in wood.

**Note:** The three (or four) screws along the bottom lower edge are different from all the others. Do not mix them up. Do not touch any of the electronic parts.

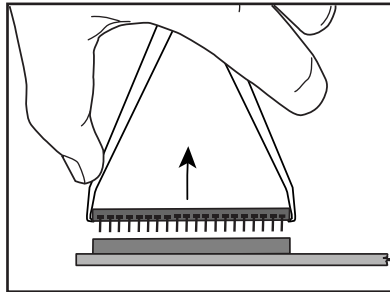
4. Put on the wrist-strap and connect the end of the cord to the metal chassis area of your unit, where you can see bare metalwork to make a good electrical contact.



- The microcontroller to be replaced is the large 40-pin integrated circuit (IC U29) shown here. It is located on the same circuit board inside the Mackie Control and Mackie Control Extender.

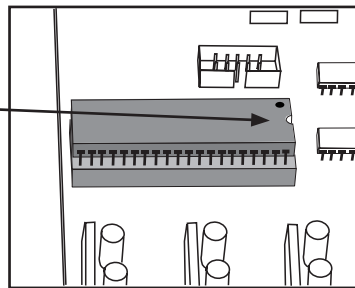


- Fit the chip-puller over the microcontroller and gently pull it out of its IC socket. Note that your puller may not look exactly like this, but they all grip the chip and then you gently tease the chip out of its socket.

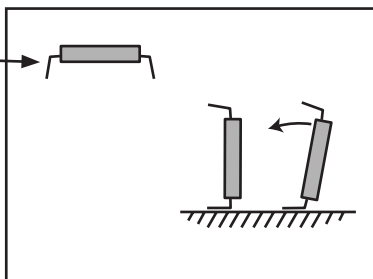


- Remove the new microcontroller from its anti-static bag. (The chip-puller is not used to install it.) Always hold it by the plastic case, and do not touch the metal pins with your fingers.

- Replace the new microcontroller, making sure that the notched end is pointing towards the center of its circuit board. It is easy for it to go in the wrong way, so you must take care or you will damage your unit. Make sure that all pins are fully inserted into their sockets, then press down firmly (without touching the pins). The pins can appear to be inserted, only to find that one is buckled under without going into its socket.



**Note:** If the pins are not perpendicular to the body and won't fit easily into the socket, you can straighten them up as follows: Hold the microcontroller so all pins on one side are touching your table.



Then gently rotate the body to the upright position, straightening all the pins on that side at once. Do not over-rotate or the pins will be bent inwards. Repeat for the other side. The microcontroller should now fit the socket nicely.

- Replace the bottom cover and make sure the three (or four) screws that are different from all the others are along the lower edge, and screw into the plastic armrest.
- Remove the wrist-strap and save it and the chip-puller in a safe place.
- Carefully wrap up the old microcontroller and put it in a drawer next to your socks. It can also be recycled as a lovely earring or broach.

## After the upgrade

- When you first turn the unit on, it will prompt you to select either: "Mackie Ctrl" mode (press Ch. 1 V-Pot) or "HUI" mode (press Ch. 4 V-Pot). The unit remembers this mode thereafter.
- To call up this mode-select dialog in future, hold down the Ch. 1 and Ch. 2 SELECT buttons during boot-up.
- Place the Pro Tools overlay (included with this kit) over the right-hand side of the Mackie Control.
- Download the "Mackie Control for Pro Tools User's Guide" from [www.mackie.com](http://www.mackie.com).

## Troubleshooting

- If your unit appears to be dead, or operating strangely, or your pet hamster is missing, repeat steps 1 to 4 to open the unit.
- Make sure the new Microcontroller has been put in the right way around, and that all pins are all fully inserted.
- Check also that no cables or wires have been disconnected.
- Please contact Mackie Technical Support at 800-258-6883 if you have any questions.

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