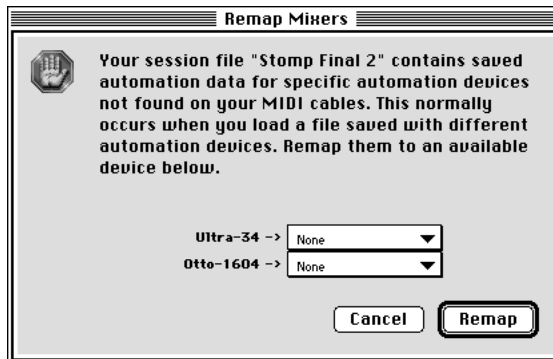


## APPENDIX C: REMAPPING DISABLED MIXERS

No, this has nothing to do with helping handicapped mixers find their way around the studio. Rather, this is how UltraMix Pro software deals with assigning channels to a device (Ultra-34 or Otto-1604) not defined in the studio setup. This can happen when:

- 1) You take your session file to another studio where their device has a different name than yours.
- 2) You change from OMS to FMS in Mac-based systems.
- 3) You add Ultra-34s (or Otto-1604s) to or delete them from your system.

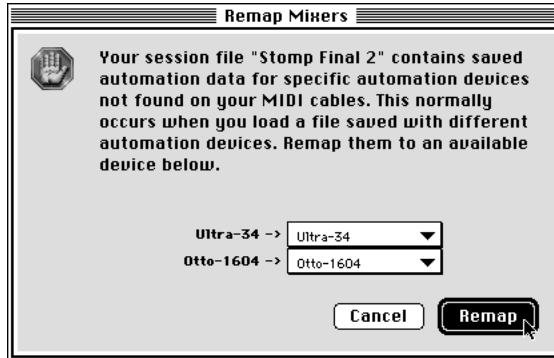
If you open an UltraMix session and UltraMix Pro doesn't recognize a device, this window appears:



If you did a session on an Ultra-34 device named “Ultra-34” (you’re so original!), and then took it over to your friend’s house and his device is called “Joe” (only *slightly* original), you would need to remap.

Click on the dropdown menu, select the Ultra-34 or Otto-1604 to which the session window should be assigned (in the example, “Joe” would show up in the

dropdown next to the words Ultra-34), and click the Remap button. UltraMix then automatically remaps the appropriate continuous controller number (up to 128, one for each fader) to the proper fader channels.



## APPENDIX D: USING A STAND-ALONE ULTRA-34

If you need to control the Ultra-34 with sequencing software or some other MIDI device, the MIDI protocol is quite simple.

The MIDI specification states that each of sixteen MIDI channels, each having:

- 128 different continuous controllers (cc), each having:
  - 128 step values (0-127)
- 128 note values, each having:
  - Note Off commands
  - Note On commands, each having:
    - 128 different velocity values

UltraMix uses a small subset of this specification. Each fader uses 128 step values (0-127) for the separate continuous controllers, and each Mute is toggled on by a Note On command of some velocity value greater than zero (1-127). The Mute is toggled off by a Note On command of velocity equal to zero.

All data is on MIDI channel 16. This cannot be changed from the UltraMix Pro software or hardware. For example, if you need to silence audio channel 22, either (the fader approach) send it a continuous controller 21 message with a value of 0 on MIDI channel 16, or (the Mute approach) send it a Note On command of A1 on MIDI channel 16 with a non-zero velocity (any velocity value between 1 and 127). Remember that the Mute always wins, i.e., just like a mixer, the Mute is post-fader. Also, fader data can be recorded while Mute is engaged; you just won't hear it unless the VCA bypass is engaged.

***NOTE: A value of 98=Unity gain, 127=+10dB, 0= about -80dB.***

We recommend that you dedicate one pair of MIDI In and Out jacks per Ultra-34 to accommodate the bandwidth necessary for MIDI automation communications.

**UltraMix  
Stand-Alone  
MIDI  
Implementation**

<i>Audio Channel</i>	<i>Fader</i>	<i>Mute On/Off</i>
1	cc0	C0
2	cc1	C#0
3	cc2	D0
4	cc3	D#0
5	cc4	E0
6	cc5	F0
7	cc6	F#0
8	cc7	G0
9	cc8	G#0
10	cc9	A0
11	cc10	A#0
12	cc11	B0
13	cc12	C1
14	cc13	C#1
15	cc14	D1
16	cc15	D#1
17	cc16	E1
18	cc17	F1
19	cc18	F#1
20	cc19	G1
21	cc20	G#1
22	cc21	A1
23	cc22	A#1
24	cc23	B1
25	cc24	C2
26	cc25	C#2
27	cc26	D2
28	cc27	D#2
29	cc28	E2
30	cc29	F2
31	cc30	F#2
32	cc31	G2
33 (L & R)	cc32	G#2

## APPENDIX E: TRAINING THE OTTO-1604

If you have an Otto-1604, you have to “train” it to receive information from UltraMix. (The Ultra-34 does not need to be trained.)

### *To train the Otto-1604:*

1. Yell “Sit” at Otto. If nothing happens, then:
2. Open UltraMix by double-clicking its icon (if it isn’t already open).
3. Choose Train Otto-1604 from the UltraMix Setup menu.
4. Press the Learn button on the Otto-1604 Control Module. The Otto-1604 Control Module is a 1/2 rackmount-space box that is separate from and connected to the CR-1604 mixing console. When you press the Learn button, its LED lights. (This first press sends Fader control data.)
5. Click Send in the window shown above.
6. When UltraMix prompts you, press the Learn button on the Otto-1604 again. (This press sends Mute control data.)
7. Click Send again. UltraMix takes just a few seconds to train the Otto-1604.
8. Say “Good Boy” or “Good Girl” to Otto and give him/her a treat.
9. If none of this works, go through the hardware reset routine for Otto. Turn off the CR-1604, then hold down both the Learn and Snapshot buttons on the Control Module while powering up again. You may also need to check to make sure your Otto-1604 is defined in OMS/FMS (Mac systems), and that the MIDI port is configured properly.

**Notes On  
Using  
OTTO-1604  
Alone**

- You can't use UltraMix Pro if you are using the Otto-1604 alone, because the program requires the Ultra-34 and UltraPilot to be present and on-line.
- Otto-1604 circuits do not have level-sensing capability, so the Automute and metering functions are disabled.
- Bank switching on the UltraPilot is implemented in the newer software versions. The first bank of UltraPilot faders controls the first 16 channels; the second bank controls channels 17-23 for automated level control of aux returns. Because Otto is not a closed-loop system, you must move faders on the UltraPilot for the faders to be updated on the screen.
- The OTTO-1604 stereo master is controlled by the group/master window's master fader.
- Do not use the OTTO-1604 and the Ultra-34 on the same MIDI port or in a serial daisy-chain arrangement. It will wreak MIDI havoc and will not produce the intended results (i.e., great mixing automation).

## APPENDIX F: GROUNDING

Grounding exists in your audio system for two reasons: safety and noise reduction. The third prong on the Ultra-34 power cord is there for safety reasons. It provides a low-resistance path back to the electrical service to protect the user (that's you) from electrical shock. The assumption is that the resistance to ground through the safety ground (the third prong) is lower than that through the user (you again) back to ground. Usually, this assumption is correct and the juice flows through the ground—and not through you—when something goes wrong or you do something terribly silly with your feet wet. If you remove this connection (by cutting off the third prong or by using a “ground cheater”), this alternate ground path ceases to exist, which creates a safety hazard.

Also, the metal chassis of the product, the ground connections provided by the various connectors, and the shields within your connecting cables provide a low potential point for noise signals. The goal is to provide a lower impedance path to ground for noise signals than through the signal wiring. This helps minimize hum, buzz, and other extraneous non-audio signals.

Some “authorities” tell you that shields should only be connected at one end. Sometimes this can be true, but for most (99%) audio systems, it is unnecessary. If you do everything else correctly, you should be able to connect every component of your audio system using standard, off-the-shelf connectors that are available at any music store.

One further note: If you bundle your cables together, don't bundle your AC wiring and audio wiring together—you will likely add noise to your signal paths (and therefore your mix). Always keep the power cords and audio cables separate, with as much distance between them as is reasonably possible.

## APPENDIX G: TROUBLESHOOTING

The UltraMix system, if you haven't noticed, is now an integral part of your studio. All your channel inserts are now running into Ultra-34, and you must keep Ultra-34 powered and in Bypass mode to maintain the normal use of the mixer channels that you have automated.

However, unless you are actually using UltraMix to automate a mix, you do not have to maintain power or other connections to UltraPilot, your MIDI interface, or your computer. You may use your computer, MIDI interface and modem and printer ports for anything you want without affecting the Bypass status of Ultra-34.

When you decide to use UltraMix, use this checklist to verify the settings and connections before you begin your session.

### **Make sure:**

- ✓ Ultra-34 is powered on and in Bypass mode (the Bypass LED is lit).
- ✓ UltraPilot is connected to Ultra-34 via the UltraPilot cable; UltraPilot indicates connection by LEDs.
- ✓ The MIDI cables between Ultra-34 and the MIDI interface are properly connected (In to Out).
- ✓ The serial cables between your computer and the MIDI interface are properly connected.
- ✓ The MIDI interface setup and serial port bypass (printer) switches are in the proper positions.
- ✓ The SMPTE time code cable between the tape machine/DAW and the MIDI interface is properly connected.
- ✓ The MIDI cables between the tape machine/DAW (if you are using optional MMC) and the MIDI interface are properly connected.
- ✓ On a Macintosh, be sure your current OMS or FMS setup is correct and includes Ultra-34 as a device.
- ✓ Mac users, make sure you have the correct synchronization source selected, as described in "Defining a Synchronization Source" on page 49.

If you suspect that your UltraPilot may be the source of the problem, you can do a quick diagnostic check. While Ultra-34 is powered up and connected to UltraPilot, hold down Soft Keys 1, 2, and 3, remove the connector jack on the UltraPilot's backside, and then plug it back in again. If all LEDs light up, then UltraPilot is not likely to be the source of your problem. However, if one or more LEDs does not light up, call Mackie Technical Support since you may have a faulty UltraPilot. Unplug and replug the power cord to return to normal operation.

### **A few more things you may want to check before you call for help:**

**Power connections.** This sounds insultingly simple, but if the whole system is completely dead, it's time to make sure that the power cable is connected to a live source of power.

**Intermittent signal problems?** Faulty plugs and cables are often the culprits. A TRS plug can sit in a socket for months doing its job and then suddenly decide (based on the phase of the moon and barometric pressure) to short or stop conducting. If you're having trouble with an individual channel, send or return, for gosh sakes swap cables before sending the components in for service.

**Check patching and switch positions.** The UltraMix Universal Automation System is not exactly a space shuttle cockpit, but it is possible to have a switch in the wrong position and not notice it.

**Hardware/software glitches?** Try quitting UltraMix Pro (save your work first!) and rebooting your computer. Try the same thing that caused the problem and see if it happens again. If it doesn't, you may have had a conflict in RAM and rebooting cleared it out. You can also try re-powering the Ultra-34 (that is, unplug it and then plug it back in, since there's no power switch) It's best to make sure that problems are repeatable, so the Tech Support crew can help you troubleshoot. So take notes, in case it happens again and you need to call us. Which takes us right into...

## APPENDIX H: SERVICE

### **Please Save the Shipping Boxes**

(Yes, here we go again.) You will need the boxes and internal foam if your automation components need service at some time in the future. If your kids make the boxes into gerbil palaces, or if you stuff them in the dumpster of the fast-food place next door, or even if you conscientiously recycle them, we may have to sell and ship you more packing boxes later on.

### **Got Trouble? Right There in River City?**

Mackie components are notoriously bulletproof and reliable. But, this is not a perfect world. Any electronic product can occasionally suffer a minor casualty somewhere inside. This is particularly true following those mishaps that tend to visit electronic components in studios: spilled coffee, toppling monitors, and small rodents chewing on cables salty with sweat. Zap! You've got problems.

### **Don't Touch That Dial...Yet**

Before you call Mackie, please run through all the points in the Troubleshooting checklist on page 217. It could save you from the needless embarrassment that occasionally results (despite the extremely polite demeanor of our Tech Support staff) from overly hasty calls.

### **Still Stumped?**

Before you pack any boxes, it doesn't hurt to call our Technical Support Department at 800/258-6883 (8:00 AM–5:00 PM Pacific time) to see if they have any ideas as to what might be wrong. They chalk up a surprising percentage of over-the-phone fixes, particularly where software questions are involved.

### **How to Get Service**

Service and repairs of UltraMix system components are to be performed only at our high-tech, rainforest-situated factory. Unauthorized service, repairs, or modification will void your warranty.

Call Mackie Customer Service at 800/258-6883 (Monday through Friday 8:00 AM - 5:00 PM Pacific Time) to get a Return Authorization (RA) Number and shipping instructions. Please have your serial number(s) ready.

Calling Mackie for your RA number is important, because any products returned without an RA number will be refused service (even if wearing shoes and a shirt).

## APPENDIX I: SPECIFICATIONS AND FCC NOTICE

### ULTRA-34 SPECIFICATIONS

Bandwidth: 5Hz-62kHz +/- .5dB

Maximum Attenuation: 85dB

Maximum Gain: 10dB

Dynamic Range: 117dB

T.H.D.: <.005% (at 0dBu)

Noise Floor (20-20kHz): -92dBu

Inter-channel Crosstalk: <80dB @10kHz

Weight: 15 lbs. 7 oz. (7 kg.)

Dimensions: 17.5 x 11.75 x 3.5 inches (444 x 298 x 889 mm)

### ULTRAPILOT SPECIFICATIONS

Dimensions: 13.75 x 9.5 x 2.5 inches (349 x 241 x 635 mm)

Weight: 5 lbs, 8 oz. (2.5 kg)

***NOTE: This device complies with part 15 of the FCC Rules. Operation is subject to the following conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.***

### ULTRAMIX PRO SPECIFICATIONS

Dimensionless.

Weight: < 10 nanograms