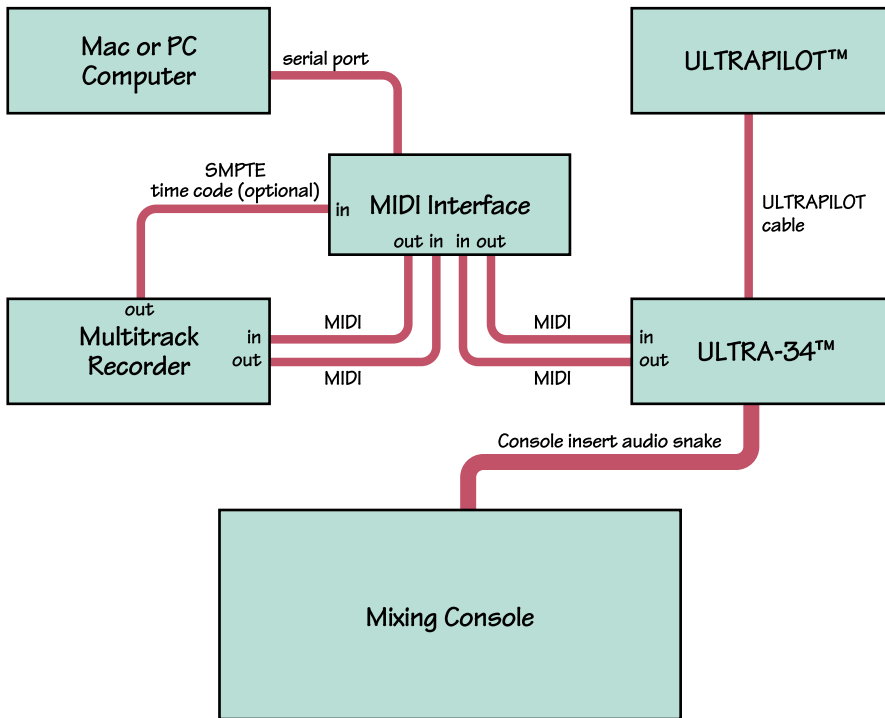


PART TWO: SETTING UP YOUR SYSTEM

The following pages detail how to set up your UltraMix system, including making the audio connections, computer/MIDI connections, and software installation.

Of course, if you want UltraMix to work, you must make sure everything's hooked up correctly and communicating with each other. So read through this section, set up your system, and get down to automation.



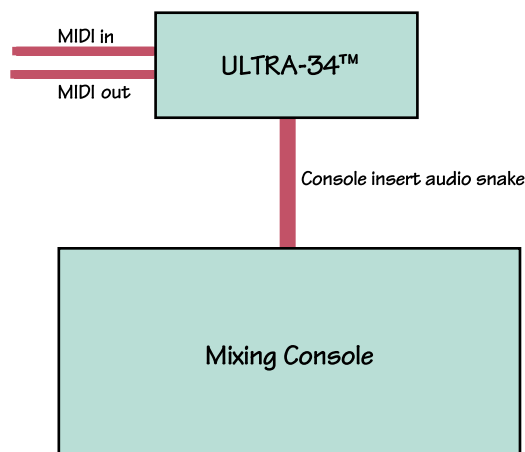
Basic UltraMix Interconnect Diagram

AUDIO CONNECTIONS

Making The Audio Connections

Front and back, your Ultra-34 has a total of 136 jacks on it. You're not going to get out of this without connecting some cables. And remember what your first-grade teacher told you at penmanship time: neatness counts. Use labels and cable ties, or you could get swamped in spaghetti.

First, identify all the mixer channels you want to automate. This probably includes most or all of the input channels, your main stereo mix buses and perhaps some or all of your auxiliary returns.



Count the channels to be automated. If the total is 34 or less, you can get right to work. If you have more than 34 channels to automate, you either have to pare down your wish list or buy additional Ultra-34 units.

BASIC CABLE CONNECTION GUIDE

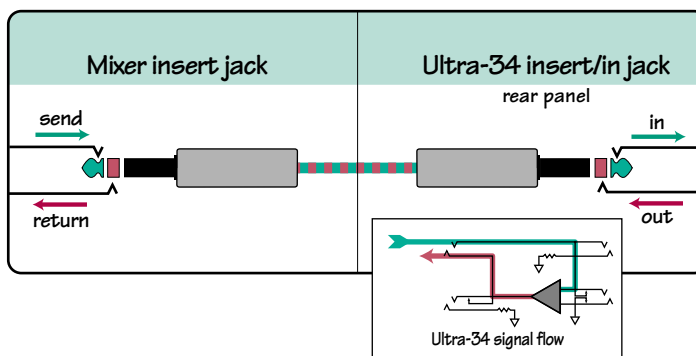
Assuming your console has a single unbalanced insert point in a TRS jack (most do), you can use Methods 1 or 2 on the following page. Methods 3 and 4 is more likely to be used when connecting directly to console input channels in an "in-line" fashion (no inserts necessary). Actually, you can mix and match any method – heck, the Ultra-34's a patchbay.

**Method 1:
TRS to TRS
(unbalanced)**

TRS to TRS cables connecting the mixer insert to the Ultra-34's rear panel Insert/In jack. The signal flows this way: the mixer insert send signal routes to the Ultra-34's Insert/In jack, then through the internal MIDI-controlled gain cell, which then routes back through the return path to the mixer insert. This is an unbalanced signal connection.

NOTE: This will work properly only if your mixer inserts are Tip-send and Ring-return.

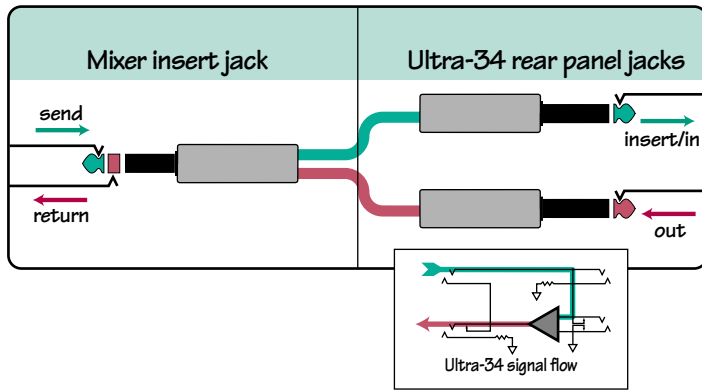
Advantage: Less cabling than Method 2.



**Method 2:
TRS "Y"-ed
to 2 TS
(unbalanced)**

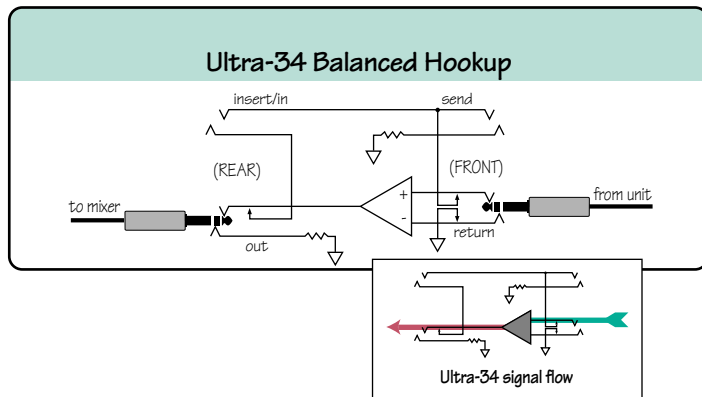
TRS mixer insert "Y"-ed to 2 TS cables into the Insert/In and Out Ultra-34 rear panel jacks. This "Y" cable is also an unbalanced signal connection. The signal flows this way: the mixer insert send signal routes to the Ultra-34's Insert/In jack, then through the internal MIDI-controlled gain cell and finally exits from the Ultra-34's Out jack, back through the return path in the mixer insert. This works with either Tip-send or Tip-return inserts (using either TS cable in the proper manner).

Advantage: This method can reduce crosstalk over a long cable distance by better isolating the send and return paths.



**Method 3:
TRS to TRS
(balanced)**

A balanced connection is the best way to reduce external noise and crosstalk in any audio system over greater cable lengths. Route the input signal to the Ultra-34 using the front panel Return jack as the input and then route the output from the back panel Out jack, using three-conductor jacks/cables (TRS = Tip-hot, Ring-cold, Sleeve-ground).

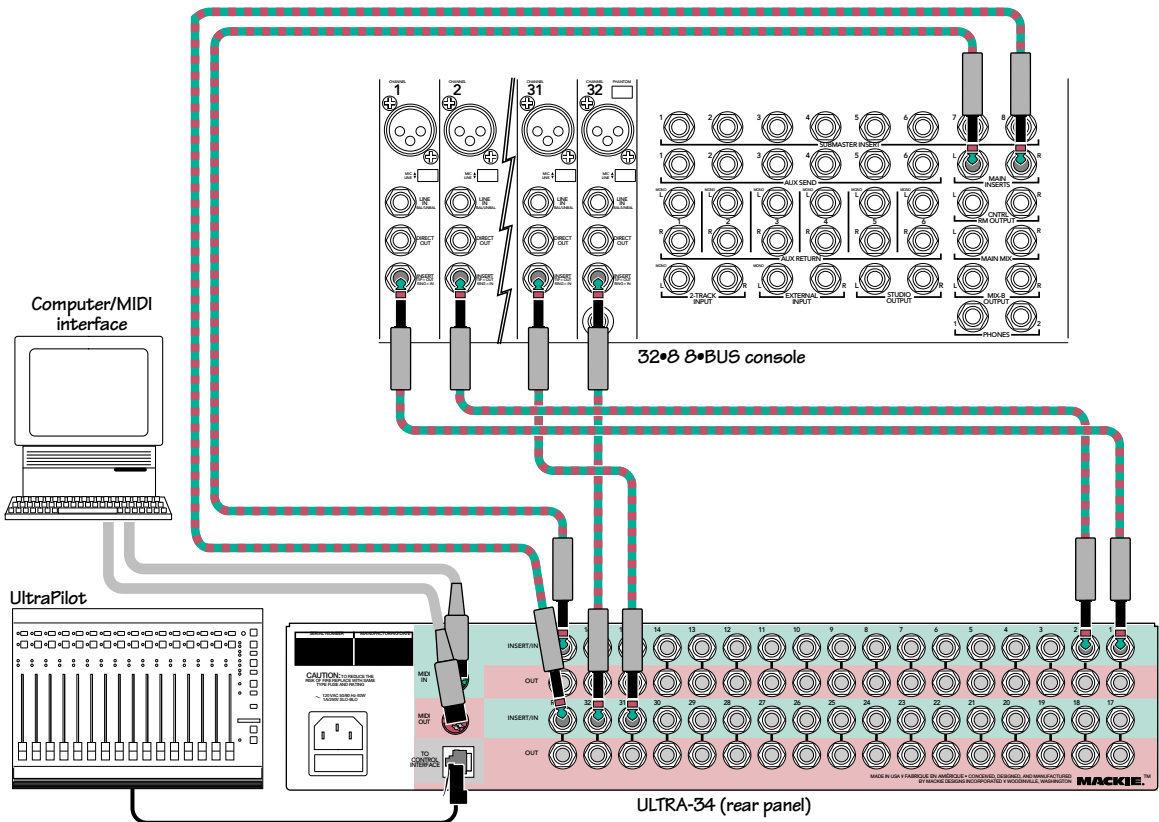
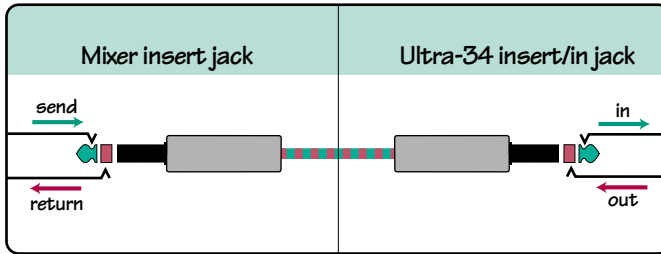


**Method 4:
TS to TS
(unbalanced)**

This is similar to Method 3, but uses two-conductor Tip-sleeve (TS) plugs for unbalanced discrete in or out connections. The signal flow is the same, but you lose the advantages of a balanced line on the return path.

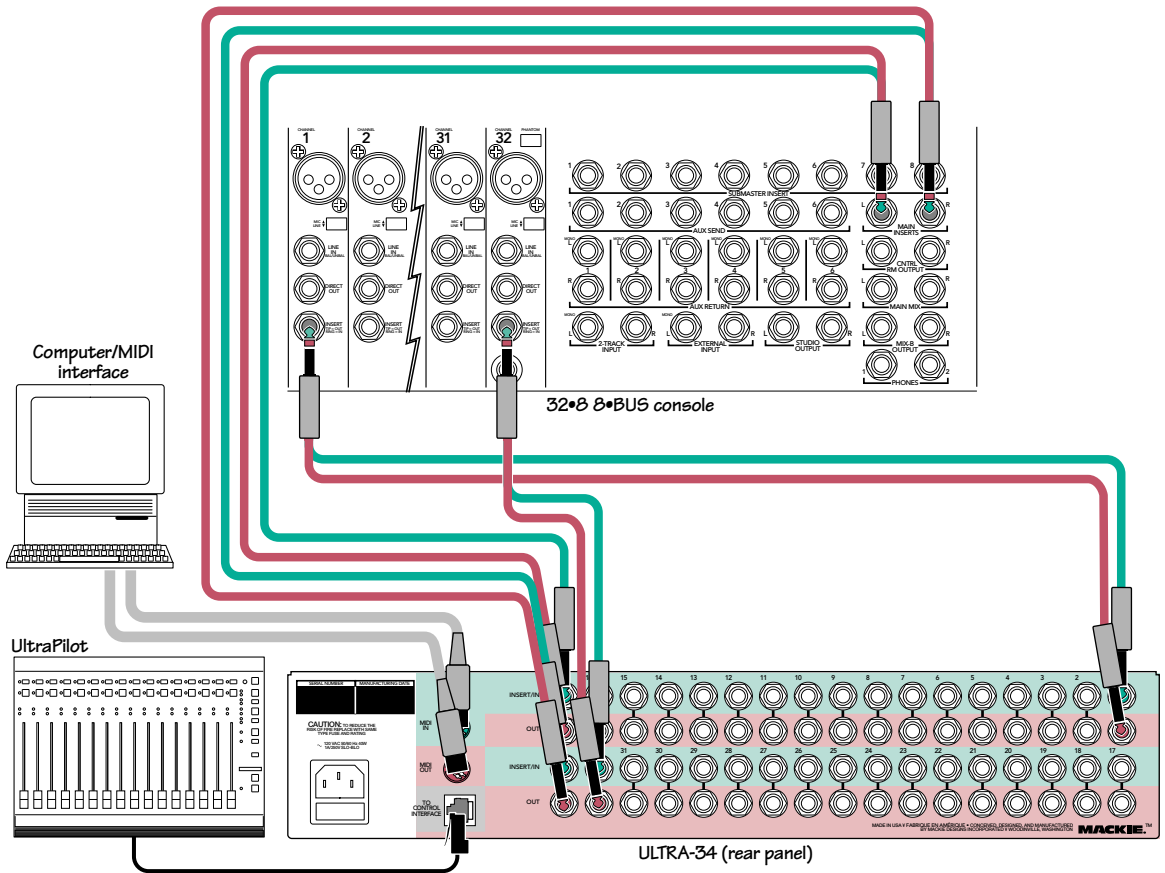
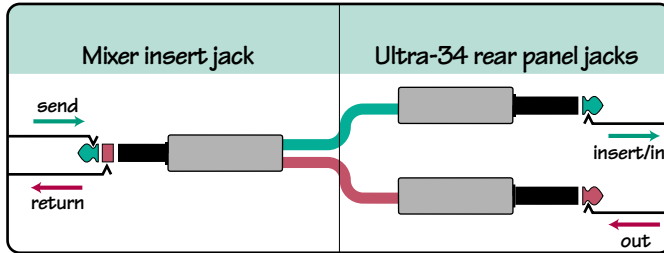
Hookup Diagram 1

ULTRA-34 with 32•8 using TRS to TRS



Hookup Diagram 2

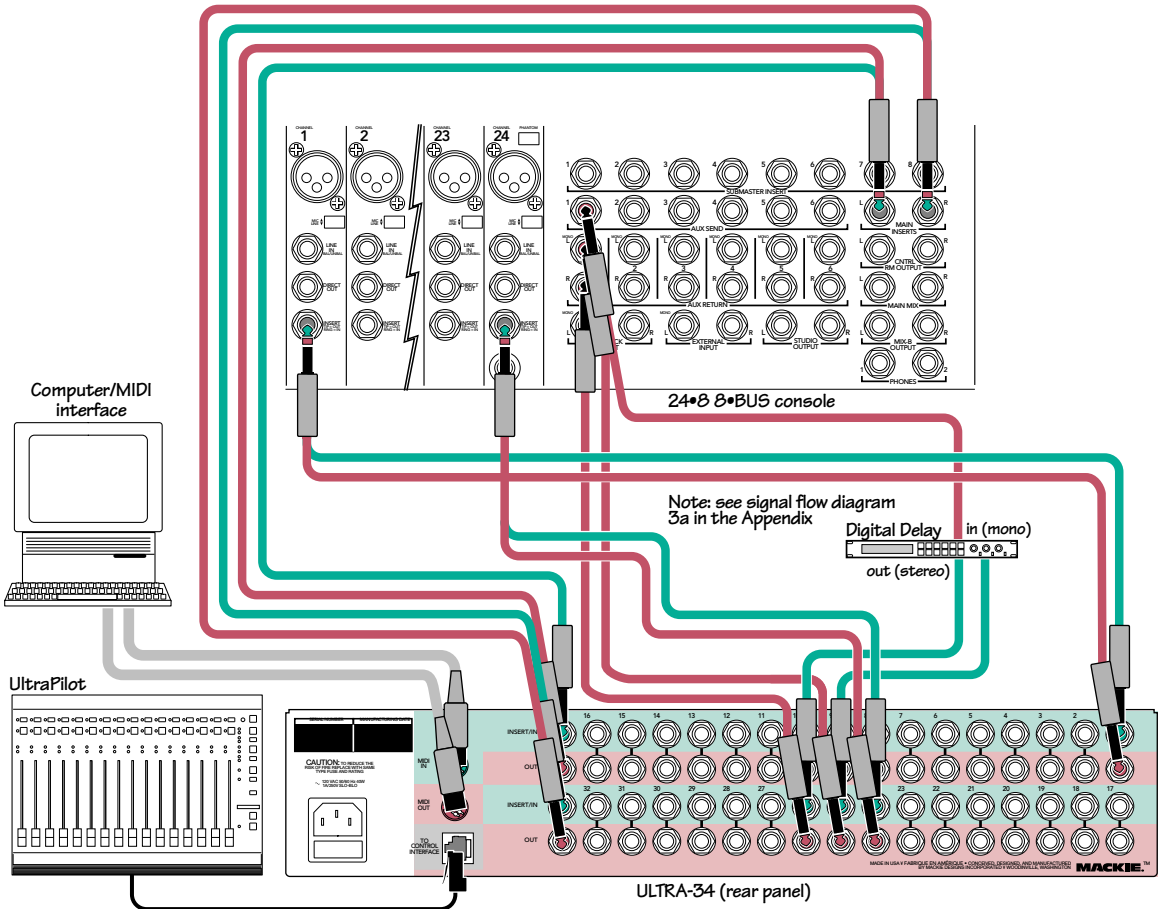
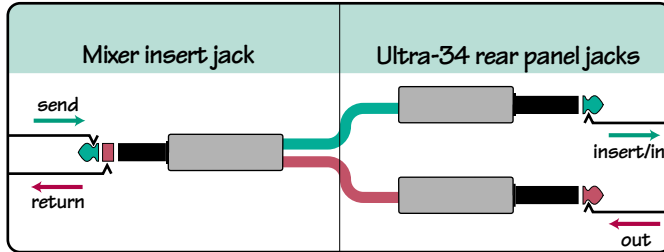
ULTRA-34 with 32•8 using "Y" cables



Hookup Diagram 3

ULTRA-34 with 24•8 using "Y" cables

with automated effects



No Channel Inserts On Console?

Some mixers have inserts available only on some channels, and some have none at all. You can still use the UltraMix system when there are no channel inserts by routing the tape (or effect) output directly into Ultra-34, and then connecting the output of Ultra-34 to the mixer input.

Check out your mixer. For example, the Mackie CR-1604 has TRS inserts on channels 1 through 8, but no insert connections on channels 9 through 16. Most larger mixing consoles, like the Mackie 8•Bus, have TRS jacks on all the channel and bus inserts. But occasionally you will need to automate an input or an output without an insert point. That's part of the beauty of UltraMix: as long as you can get the signal out someplace and then back into your mix in any way, you can automate it!

The hookup diagrams on pages 27-30 illustrate some basic studio hookups using an 8•Bus console and a CR-1604 with the UltraMix system.

Hookup Diagram 1 (page 27)

1. Single TRS to TRS cables (Method 1) connect the channel insert jacks on the 32•8 to the respective Insert/In jacks on the Ultra-34.
2. Single TRS to TRS cables connect the main insert jacks on the 32•8 to the L and R Insert/In jacks on the Ultra-34.

Hookup Diagram 2 (page 28)

1. "Y" cables (Method 2) connect the channel insert jacks on the 32•8 to the respective Insert/In jacks (signal input) and Out jacks (automated return signal) on the Ultra-34.
2. "Y" cables connect the Main Insert jacks on the 32•8 to the L and R Insert/In jacks (signal input) and Out jacks (automated return signal) on the Ultra-34.

Hookup Diagram 3 (page 29)

1. "Y" cables (Method 2) connect the channel insert jacks on the 24•8 to the respective Insert/In jacks (signal input), and to the Out jacks (automated return signal) on the Ultra-34.
2. "Y" cables connect the Main Insert jacks on the 24•8 to the L and R Insert/In jacks (signal input), and to the Out jacks (automated return signal) on the Ultra-34.
3. A single TS (2-conductor) cable connects Aux Send to the stereo effects device.

**Hookup
Diagram 4
(page 30)**

4. Two TS cables connect the effects device output to the Insert/In jacks on channels 25 and 26 of the Ultra-34.
5. Two TS unbalanced or TRS balanced cables connect the Out jacks on the Ultra-34 to the L and R effects returns on the 24•8.

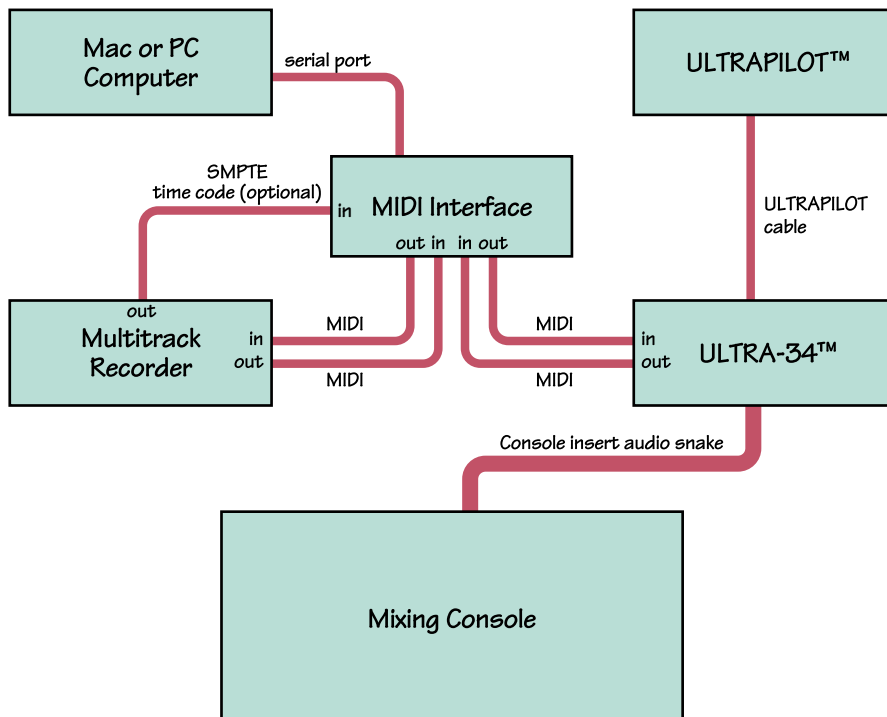
NOTE: Additional effects devices can be automated in the same way using other Aux bus outputs and Ultra-34 channels 27-32 on the Ultra-34.

1. TRS balanced or TS unbalanced cables connect the Main L/R outputs on the CR-1604 to the aux returns on the 8•Bus.
2. TRS balanced or TS unbalanced cables connect the Alt 3/4 bus outputs on the CR-1604 to the Line Inputs on channels 23 and 24 of the 24•8.
3. Three-conductor TRS cables connect the inserts for Channels 1-8 on the CR-1604 to Insert/In jacks on Channels 25-32 of the Ultra-34.
4. Three-conductor TRS cables connect the Main Inserts on the 8•Bus to the Main Insert/In jacks on the Ultra-34.

NOTE: This setup provides direct automation of channels 1-8 on the CR-1604, plus automation of the Alt 3/4 bus through channels 23 and 24 of the 24•8. Main outputs of the CR-1604 are automated through the main bus of the 24•8 through the aux return path.

PLACING YOUR ULTRAMIX SYSTEM HARDWARE

The interconnect diagram below shows a typical UltraMix system installation. There are always options and variations – this shows the basic system. The connections between the Ultra-34 and your mixing console are dealt with in the second part of this section.



Basic UltraMix Interconnect Diagram

Before you buy or make your cables, you should consider where you want to place the equipment. Here are a couple of suggestions:

Configuring For Automation: What Goes Where In Your Studio?

- **Make sure your computer monitor is clearly visible from your primary mixing position.** A number of operations can be done only with the mouse, and many more are done more easily this way—depending on personal preferences. Also, in some operations (e.g., recording in Null mode) you need to distinctly see the relationship between the “glass” and “solid” faders. That means you’ll want to keep your computer monitor within about four feet or so in order to clearly see faders in the 1x view mode.

If you expect to mix at the console (to have easy access to EQ and aux sends), then a small monitor is best placed in front, between your near-field speakers. If that’s difficult, just off to the side is fine.

Of course, one big advantage of UltraMix is that you can mix from anywhere in the room. So feel free to grab your UltraPilot and move around to find some preferred alternate mixing positions. Do it for acoustic reasons. Do it for personal comfort. Or do it just to express your freedom to move and groove. You’ll find you can do a lot without even having the computer monitor in view.

- **Find a place for your mouse.** If it squeals and bites, it should be in a cage. If it moves a cursor around your computer monitor, it should be in a handy spot at your primary mixing position. If you’re working on a Mackie 8•Bus, just flop a mouse pad over your group LEDs, since you probably won’t be using them while mixing anyway. If your console doesn’t have such a convenient flat surface, consider making some kind of mouse pad platform. Also, you may need to purchase an extension for your mouse cable if your computer is more than a couple feet away.

- **Keep your QWERTY (computer) keyboard handy.** You will need it at the start of a session to name faders, and perhaps later for entering start and end or fade duration times when using some of the advanced techniques. It’s best to keep your QWERTY at arm’s length, or at most a quick chair-roll away.

Whether you want to keep your computer keyboard right in front of you depends on how you prefer to work, and how good you are at memorizing keyboard shortcuts. If you cut your

teeth on DOS (and liked it), you may find that you can work faster using the QWERTY keyboard regularly. If you don't already have a swing-arm keyboard holder, you may want to consider getting one so you can keep the keyboard right in front of you without it getting in the way of console tweaking. On the other hand, if you are an old-school fader jockey and you can't even remember your Social Security number, don't worry. Use the QWERTY only when you need it.

- **Set up the UltraPilot fader unit, as well as your computer's monitor, keyboard, and mouse, next to your mixing console.** You will be using all of these controls to perform your automated mix.

- **Locate the Ultra-34 unit in or near your patchbay rack.** This gives you a convenient way to patch your auxiliary processing gear into your console audio inserts via the front Send and Return jack(s) of the Ultra-34, since the console channel and Main inserts will be occupied.

The location of these components, the location of your MIDI interface unit and the location of your recorder will determine the length of your serial, MIDI, and UltraPilot cables and your audio channel cabling. Maximum recommended length for any of these cables is 25 feet.

MAKING THE COMPUTER AND MIDI CONNECTIONS

Let's start putting your system together. Remember, the hardware must be properly connected in order to run the software. For a visual representation, refer to the overall interconnections diagram, which shows the system data connections in greater detail.

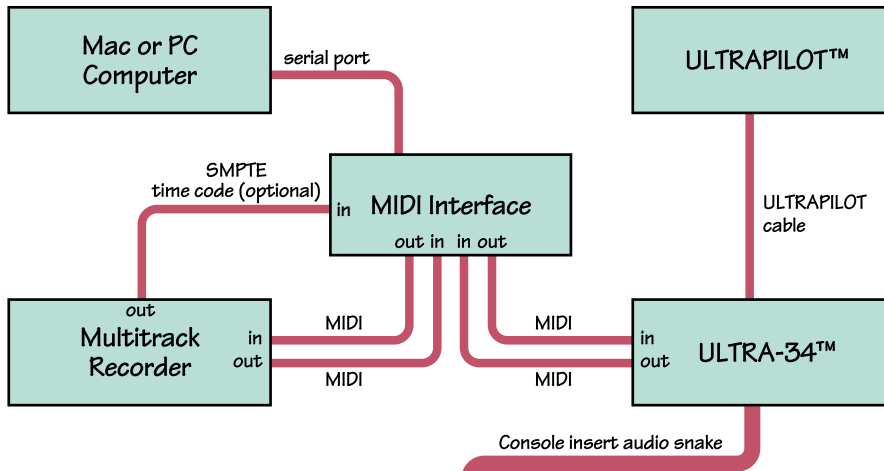
NOTE: Some abbreviations used here and elsewhere in the manual include:


MDM = Modular Digital Multitrack (ADAT, DA-88, etc.)

DAW = Digital Audio Workstation (DR-16, RADAR, etc.)

MMC = MIDI Machine Control

MTC = MIDI time code



 *To set up your hardware:*

1. Locate the UltraPilot cable included with your system; it's the one with the oversized phone jacks. Insert one end of the UltraPilot cable into the modular connector on the rear of Ultra-34, and the other end into the modular connector on the rear of UltraPilot.

2. Connect your computer to your MIDI interface using serial interface cable(s) plugged into the modem or printer port, or both ports, on your computer. (You can purchase a serial interface cable at any store that carries computer equipment.) Check your MIDI interface manual for input port connections and setup switch settings.

If UltraMix is your only MIDI device, and you will be running only Standard MIDI Files (SMFs) from inside UltraMix for all your mixes (not likely), you can get by using only one computer port and a basic MIDI interface. Otherwise, you will need to connect both serial ports of your computer to a dual-port MIDI interface, or a couple of single-port MIDI interfaces, one per serial port of your computer. Hint: Go with a multiport interface – it's much easier to deal with. If you have separate single interfaces, one port would carry the sync data to and from the external sync source (MDM, DAW, sequencer), while the other would carry data to and from the Ultra-34.

NOTE: MIDI interface boxes have additional serial outputs so you can maintain your connections to your computer modem and computer printer without constant repatching. Simply connect an additional serial cable to the correct interface serial output port and to your modem or printer port. Check your MIDI interface manual for output port connections and bypass switch settings.

3. Next connect Ultra-34 to the interface like any other MIDI device, using two standard MIDI cables. The MIDI OUT jack on Ultra-34 must be connected to a MIDI IN port on your interface, and the MIDI IN jack on Ultra-34 must be connected to the corresponding MIDI OUT port on the interface. Use high-quality, shielded MIDI cables, which are available from many music stores and musical instrument mail-order catalogs in a variety of lengths.

NOTE: You will need a dedicated pair of MIDI IN and OUT ports for each Ultra-34 in your UltraMix system.

4. If your tape deck/DAW has MMC/MTC capabilities, connect MIDI cables from an OUT port on your MIDI interface to the MIDI IN port on your tape deck/DAW. Also connect MIDI OUT from the tape deck/DAW to the IN port on the MIDI interface unit. Transport MMC control messages (like Stop, Play, etc.) from UltraMix are sent as “ALL CALL” to any device in your studio setup, so you don’t need to worry about setting up your tape decks or DAWs.

NOTE: If you are using multiple MDM recorders in a master/slave configuration, you only need to connect your interface to the MIDI IN and MIDI OUT on the master tape deck; all of the slave decks will follow by means of the MDM system’s own internal sync connections.

5. If you are using SMPTE time code for synchronization, connect a SMPTE time code cable from your tape deck/DAW to your MIDI interface. This cable is often just a simple shielded audio patch cord.

6. Take a break to catch your breath. Now...

FIRE UP YOUR ULTRA-34

Check to make sure all your audio connections are snug and secure. Then plug Ultra-34 into a main power source. The front panel Power and Bypass LEDs will light, as will some LEDs on the UltraPilot.

With Ultra-34 in Bypass mode, each of your mixing console channels should operate just like they did before you plugged in your automation hardware. Test all your mixing console functions, making sure all the channels work properly and sound just like UltraMix wasn't even there. (Verify that all signal present and meter bridge functions are operational.)

When you have satisfied yourself that the audio circuits are working correctly, press the Bypass button on Ultra-34 to extinguish the Bypass LED and leave the Bypass mode. Now, with signal running through your mixer, the audio signals passing through Ultra-34 should cycle on and off every time you hit the Bypass button.