MULTICHANNEL DISTRIBUTOR

September 18, 1985

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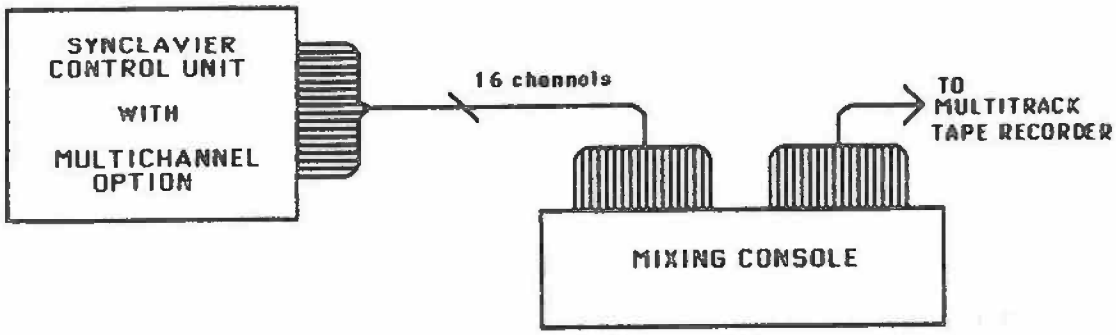
INTRODUCTION

The Multichannel Distributor Option links the Synclavier (R) to a standard multitrack mixing console. With it, you can route each track of the memory recorder to an independent output channel. Each output channel can be equalized and processed independently so that a final equalized mix of a multitrack sequence can be made directly from the memory recorder. In effect, the Synclavier (R) can become a "tapeless" studio.

You can also use the Multichannel Distributor to spin off multiple tracks of the memory recorder simultaneously to a multitrack tape recorder for a standard stereo composite.

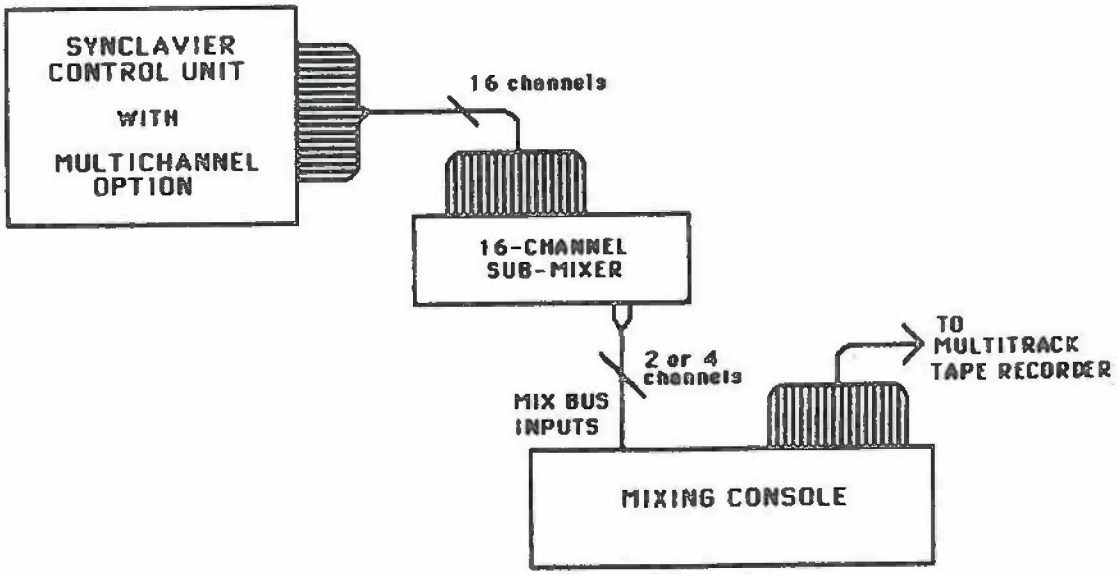
SETTING UP THE MULTICHANNEL DISTRIBUTOR

Normally the Multichannel Distributor will be connected directly to the main mixing console.



The illustration shows a 16-output distributor; Multichannel Distributors are also available with 8, 24, or 32 outputs.

Another possible installation is connecting the Multichannel Distributor to a 16-channel sub-mixing board. The output of the sub-mixer is then summed into the mix bus inputs of the main mixing console.



In either case, the purpose of the Multichannel Distributor is to connect each track of the Synclavier (R) memory recorder to a separate input of a mixing console. Equalization or special signal conditioning can be done as required to each track depending on the capabilities of the console.

The audio outputs on the Control Unit (under FM SYNTHESIZER OUT and POLYPHONY SAMPLING OUT) are a composite of all the memory recorder tracks. These outputs are unaffected by the Multichannel Distributor.

Multichannel Outputs

Each multichannel unit housed in your computer control unit has 16 separate outputs, numbered 1 through 16. If you have purchased the Multichannel Option with eight channels, only the first 8 outputs, numbered 1-8, will be active. If you have purchased the option with 16 channels, all 16 outputs will be active.

If you have purchased the option with more than 16 channels, you will have two multichannel control panels on your computer control unit. The unit labeled "Group 1" will correspond to outputs 1-16. The one labeled "Group 2" will correspond to outputs 17-32.

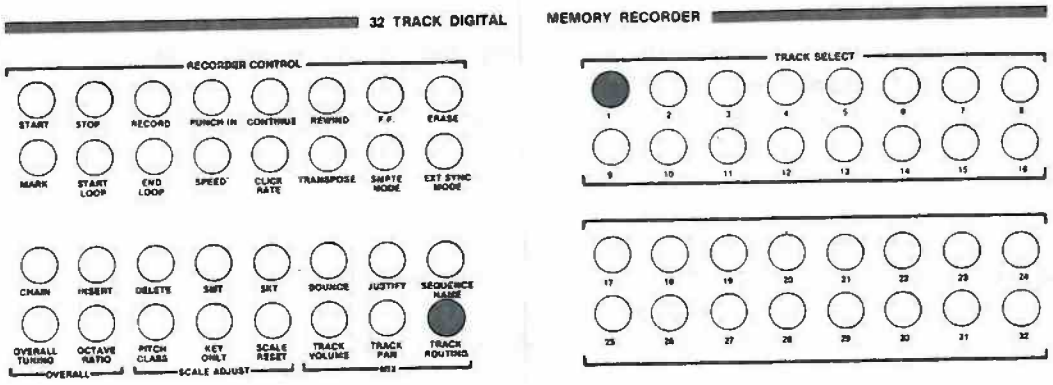
See the section "Multichannel Output Panels" in the "Synclavier (R) Set-Up Manual" in Binder 1 for further information on the multichannel control panels.

The output level at all active outputs matches typical requirements for mixing boards. Before using the system, connect all active output jacks to your mixing console. Set up identical equalization and level controls on all console input channels.

TRACK ROUTING

When the Synclavier (R) is first turned on, a slight buzz will come out of the Multichannel Distributor as the software checks out the channels.

By default, each track will be routed to the output channel with the same number. That is, Track 1 will be routed to the output labeled 1, Track 2 to the output labeled 2 and so on. The keyboard timbre will be routed to output 1. You can change these default routings by using the TRACK ROUTING button in the second panel of the keyboard control panel, the numbered buttons under TRACK SELECT and the control knob.



To change the routings for any track,

1. press TRACK ROUTING and hold it down while you. . .

2. . . .press the desired track number button under TRACK SELECT. Release both buttons. You will see the current routing for the selected track in the display window.

3. Turn the control knob to change the track routing.

To change the routing for the keyboard,

1. press TRACK ROUTING and hold it down while you. . .

2. . . .press any note on the keyboard. Release the button and the key. You will see the current routing for the keyboard in the display window.

3. Turn the control knob to change the routing.

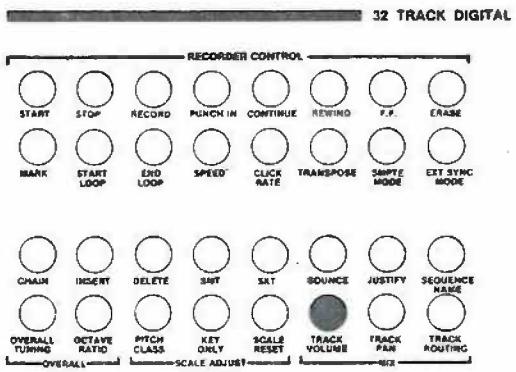
If you have a split keyboard, press a key in the upper range to route the upper timbre and a key in the lower range to route the lower timbre.

Multiple Tracks

Several tracks of the Synclavier (R) memory recorder may be routed to the same output of the Multichannel Distributor without degrading the signal-to-noise ratio. For example, Tracks 1, 2 and 3 could all appear at the output numbered 1, while Tracks 3 through 8 could appear at the output numbered 2.

When routing several tracks to a single channel, however, the signal levels may become overloaded, especially if each track contains many notes.

To prevent overloading, you may use the TRACK VOLUME button in the second panel to to lower the volume of each track.



Follow these instructions:

1. Press START. The sequence in the memory recorder will start to play.

2. Press and hold TRACK VOLUME while you. . .

3. . . .press the selected track button under TRACK SELECT and then release both buttons. You will see in the display window

   TRK [number] VOL 100.0

4. Turn the control knob to adjust the track volume from 0.0 to 100.0. As you turn the knob, you will hear the change in volume in the selected track.

5. Press STOP.

The track volume for each track will be stored with the sequence.

You can also adjust the volume of the keyboard with respect to the sequence in the memory recorder. This feature can be used in the studio when recording live tracks along with a sequence.

To adjust the keyboard loudness,

1. press and hold TRACK VOLUME while you. . .

2. . . .play a note on the keyboard. Release both button and key. The display window will show

   KEYBRD VOL: 100.0

3. Turn the control knob to adjust overall loudness of the keyboard. If you press a key while you turn the control knob, you will hear the changes in volume.

If you have a split keyboard, you can adjust the loudness of each half of the keyboard.

NOTE: You are adjusting the keyboard loudness, not the timbre loudness. When you change timbres, the keyboard loudness that you have dialed in will remain in effect.

Stereo Routing

Some Synclavier (R) timbres use panning to shift the stereo position between left and right. Other timbres use a stereo spread or a dynamic pan between different partial timbres to create a spacial effect. These stereo effects may be built into the timbre itself or they may be controlled using real time effects. (See the tabbed sections "Timbre Design" and "Keyboard Control and Real-Time Effects" in Binder 1.)

When a timbre with any kind of stereo is recorded on a track in the memory recorder, the track generates both a left and a right output signal. Each channel of a mixing console, however, is simply a signal, with no concept of stereo. Thus, a Synclavier (R) stereo timbre that uses one track in the memory recorder will require two channels on the mixing console.

To preserve the stereo feature, the keyboard or memory recorder track containing stereo must be routed to two outputs from the Multichannel Distributor (and two input channels of the mixing console).

To do this, you will set up an assignment for the left and right halves of the track. Follow these instructions:

1. Press TRACK ROUTING and hold it down while you. . .

2. . . .press the numbered button under TRACK SELECT corresponding to the track containing the stereo timbre.

3. Turn the control knob to route both left and right track signal to the selected Multichannel Distributor output.

4. Press TRACK ROUTING again and hold it down while you. . .

5. . . .turn the control knob. The right signal only will be assigned to the selected multichannel output. The left signal will remain on the previously selected multichannel output.

If it is the keyboard timbre that requires assignment to two outputs, press any key on the keyboard instead of a numbered button under TRACK SELECT.

When setting up multichannel assignments for stereo timbres, it helps to route the left and right signal of each stereo track to adjacent mixing console inputs. If, when first routing Synclavier (R) stereo tracks to the Multichannel Distributor, you leave every other output empty, then the left signal of each track can remain on the original routing and the right signal can be routed later to the adjacent output.

Multichannel Distributor Display Screen

The Real-Time Terminal Displays include a Multichannel Display that provides a quick presentation of the keyboard and track routings. You can also make output assignments from the display.

Select the Multichannel Display from the MAIN MENU. When it first appears, you will see in the upper left hand box the name of the keyboard timbre. If you have a split keyboard, the name of the upper timbre will be in this box and the name of the lower keyboard timbre will be in the upper right hand box.

If a multitrack sequence is in the memory recorder, the names of the timbres of Tracks 1-8 will appear in the lower left hand box and the names of the timbres of Tracks 9-16 in the lower right hand box. For any track that is empty, "EMPTY TRACK" will appear in the Timbre Name column. Each time you record a track, the timbre selected for that track will appear in the Timbre Name column.

Immediately following the timbre names is the currently assigned left and right routing of the keyboard timbre and each track. If you have made no previous assignments, the routings will be Track 1 to Output 1, Track 2 to Output 2 and so on. The keyboard will be routed to Output 1.

When you make an assignment using the control knob on the keyboard, the settings dialed in will be immediately reflected on the terminal screen. You can also make assignments from the terminal keyboard. To do this,

1. use the arrow keys to move the cursor until it is positioned next to the output routing you want to change;

2. type in the new output number.

When you move the cursor, or press RETURN, the original channel routing number will disappear.

Special Requirements for Recording

The keyboard timbre has its own routing, independent of the track routings. As soon as the RECORD button is pressed, however, the notes played on the keyboard will be routed to the Multichannel Distributor output to which the selected track in the memory recorder is routed. It is a good idea, then, to route the keyboard to the same output being used by the track on which you are going to record.

Alternatively, you may want to use the audio output, which is a composite output, for monitoring purposes. This would eliminate unexpected output switching when the RECORD button is pressed.

Storing and Recalling a Sequence

The track routings of a sequence are automatically saved when it is written to disk. When a sequence is called up, the last track routing used with that sequence is automatically re-activated.

Bringing a Timbre to the Keyboard

When you use the SKT button to bring a timbre from a track to the keyboard, its track routing is also brought to the keyboard. Thus, any equalizing that has been applied will be brought to the keyboard along with the timbre.

[Number] VOICE ERRORS

This message appearing in the bottom half of the display window indicates a hardware problem in the Multichannel Distributor, e.g., a loose wire or electrical damage. If this message occurs, please call New England Digital.