VCA Groups Explained

VCA groups provide an important alternative to audio subgroups for simultaneously controlling the level of more than one channel using a single fader.

Unlike an audio subgroup the signal is not routed through the group fader itself. Instead, you route the signal directly to the main output. The VCA group fader sends a DC voltage to remotely control the assigned channel levels, so providing the group control. This is possible because each channel has a pre-pan VCA (voltage controlled amplifier) which can be controlled by both the channel fader and group faders. This means that all post-fade outputs from assigned channels will be affected by the VCA master faders. Note that the channel pre-fade (monitor) sends are not affected by VCA groups.

Note that the channel fader always controls the signal level. If the channel is assigned to one or more VCA groups then both the channel and the group faders control the level as if they were in series. Refer to the diagrams on the next page.

The **ML3000** has 8 VCA groups. Mono and stereo input channels can be assigned to one or more groups. The VCA group assignments are stored as part of the console snapshot memory system (externally controlled).

The benefits of VCA grouping

Effects balance is maintained. Because the channel post-fade sends are affected, the reverb level returned elsewhere in the console also follows the group fader movements.

Stereo groups on one fader. Because the level is controlled before the channel pan circuit, a single VCA group fader is all that is required to control a stereo or LCR group. This would take 2 or 3 faders using audio groups if the channel pan image is to be maintained.

Multiple output control. The relative balance between all outputs is maintained when moving VCA group faders.

Multi-level grouping. A channel can be assigned to more than one VCA group. This lets you assign multi-level groups, or even a 'grand master', impossible with audio groups.

Conventional audio groups are still useful when you need to insert a signal processor such as a compressor to affect a group of signals, or you need to feed different groups of signals into the matrix. However, fewer such groups are usually required on a VCA equipped console. For this reason the **ML3000** provides the mode switching to reconfigure unused audio groups as full featured aux sends.

Using VCA Groups

Use audio groups where you want to insert group signal processing or send groups of signals to the matrix. Use VCA groups if you want grouped level control only.

Route the channels to the mix by pressing the MAIN MIX switch. Adjust the PAN and BLEND controls for the image required. Assign the channel to the required VCA group using method described on the next page. The channel GROUP ASSIGNED LEDs next to the faders light channels are assigned to one or more VCA groups. Once assigned, the group fader affects the channel level. Start with the group fader set to its nominal '0' position.

You can assign the channel to more than one group. Take for example a theatre musical production. Here, you may have stage microphones assigned to Group 1, radio mics to Group 2, and all microphones to Group 3. You may also have all channels assigned to Group 8 as a 'grand master' to control the overall volume. In this case, a radio microphone would be assigned to Groups 2, 3 and 8. Note that the VCA groups affect all channel post-fade sends such as effects and direct outputs but not the pre-fade monitors.

AUDIO GROUP

VCA GROUP
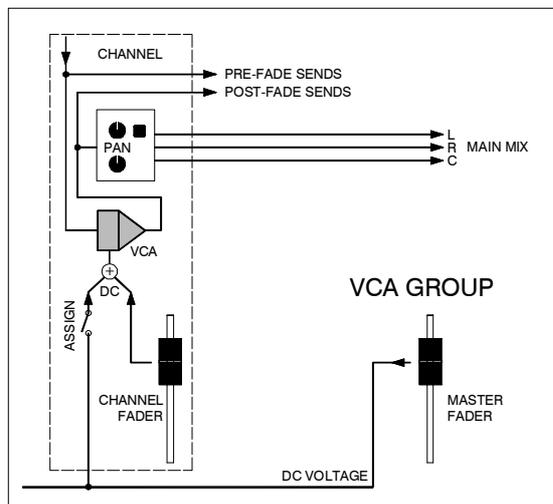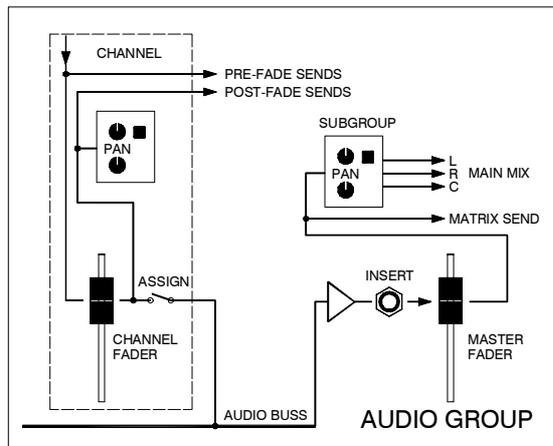
MUTE. This momentary action switch turns all assigned input channels on or off. It acts as a remote control for the mute switches on those channels. The channel pre-fade, post-mute sends are also affected. The mute switches on assigned channels light when the group is muted.

The switch also functions as the group select key when in ASSIGN mode.

The VCA group mute cannot be assigned to a mute group or snapshot memory. However, channels which have been muted by the group can be stored in the memories.

VCA GROUP FADER. The fader adjusts the level of all channels assigned to the group. The '0' position is referred to as the 'nominal' operating setting. At this position the channel levels are as marked on the channel faders. Any adjustment made to the group fader offsets the channel level by that amount. It is best to start with the group faders set to their '0' position.

At minimum position the fader shuts off all assigned channels. At maximum position it provides a further +10dB boost. Note that the maximum boost that may be applied to the channel VCA is +10dB regardless of how many group faders are assigned and set above '0'. It is best to work with the faders around '0' and avoid excessive boost.

The following diagrams illustrate the combined channel gain when assigning more than one VCA group. In this case the final gain is affected by the channel fader and three VCA groups.
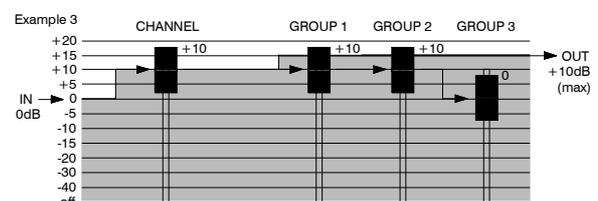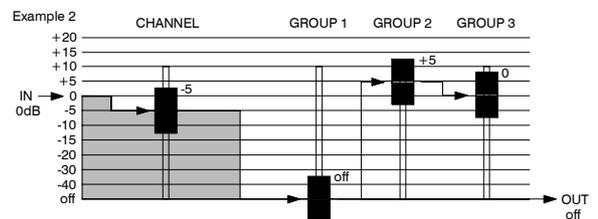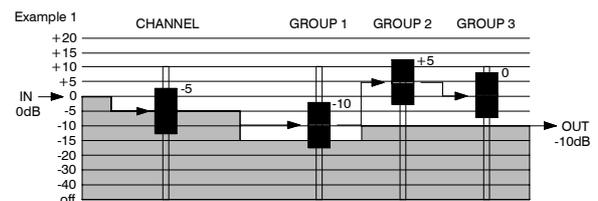
How to Assign and View VCA and MUTE Groups

The same method is used to assign the VCA and MUTE groups. The groups are assigned or viewed one at a time. Pressing ASSIGN puts the console into assign mode. The channel mutes become edit keys to toggle them in or out of the groups. The ASSIGN and selected group master keys flash to warn that the console is in this mode. You can also view the group assignments using the quick 'press and hold' VIEW function without the risk of accidentally overwriting the settings.
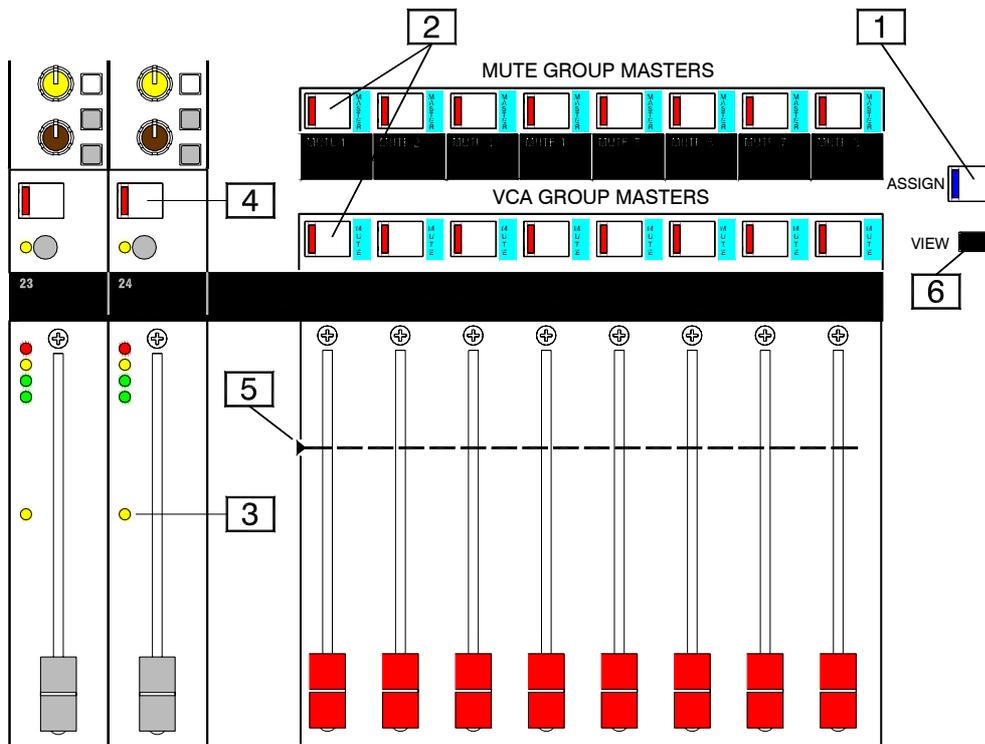

To ASSIGN a Group

1   Press the ASSIGN key ⬚1 . Its blue LED flashes.

2   Now press one of the VCA or MUTE group master MUTE keys ⬚2 . This selects the group to assign. Both the mute and the assign keys flash.

3   View the current group assignments on the channel GROUP ASSIGNED LEDs next to the faders ⬚3 .

4   Press the channel MUTE keys ⬚4 to toggle the channels in or out of the group. This does not affect the channel mute status which remains as it was before assign mode was entered.

5   Press another master MUTE key ⬚2 to select a different group to edit.

6   When you have finished, press the ASSIGN key ⬚1 again to exit assign mode.

To VIEW a Group

1   Press and hold down the VIEW key.

2   While holding down VIEW press and release the master MUTE key of the group you wish to check.

3   View the current settings on the channel GROUP ASSIGNED LEDs next to the faders. The channel mute function is not affected.

4   While holding down VIEW press each group master MUTE key in turn to view the assignments.

5   Release VIEW when you are finished.

Note: Brief instructions are printed on the panel next to the ASSIGN and VIEW keys to remind the operator.
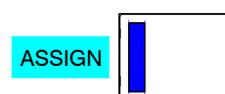
ASSIGN

Assign MUTE and VCA groups:
Select using GRP MUTE
Assign using CH MUTES

VIEW

Press and Hold with GRP MUTE
View on channels