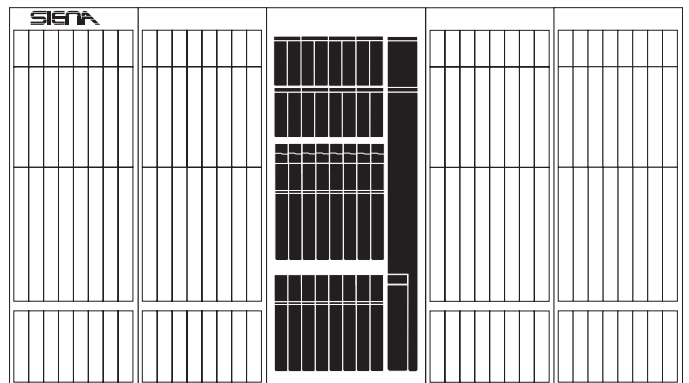


# SIENA

## Master Section



The Master Section of the Siena console is divided into two principal areas:

On the left hand side of the panel, the two rows of eight faders, associated controls and metering provide output control for the console's 16 mix busses. Typically, these 16 mix bus outputs are used for auxiliary send masters and/or group outputs.

On the right hand side of the section, you will find the stereo master output, local and headphone monitoring, master AFL/PFL selector, talkback, tone, direct input and auto mute master controls.

## **Mix Bus Outputs (Auxiliary Send/Group Masters)**

The Siena has 16 mix bus outputs for use as auxiliary sends or group outputs. The console uses a generic approach to the mix bus structure to enable it to cover a wide range of applications.

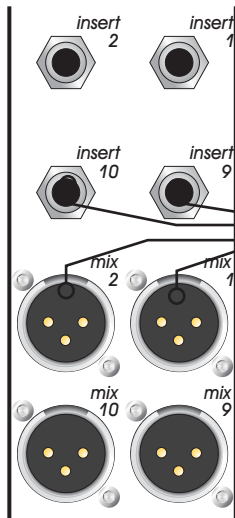
For example, today you may be using the console purely as a monitor desk, in which case you probably want to generate as many auxiliary sends as possible. In addition, you may require both mono and stereo monitor mixes to feed a mixture of floor monitors and wireless in-ear monitoring. By configuring any odd/even pair of the Siena's mix busses for stereo operation, you have complete flexibility over the console layout.

Alternatively, in a hybrid FOH/monitor application, you may wish to create both auxiliary sends and group masters. You may already have noticed that the controls for mix outputs 9-16 vary slightly from those for mix outputs 1-8. This is due to the fact that mix bus outputs 9-16 may be routed, and panned, onto the stereo master bus. Therefore, mix busses 9-16 are ideal for use as group outputs as they may be output separately from the console and/or summed onto the stereo master for a FOH mix. For these reasons, use mix busses 1-8 for auxiliary sends and 9-16 to create audio sub groups when working in a hybrid FOH/Monitor application.



# Master Section: Mix Bus Outputs

## Rear Panel



Each of mix bus outputs 1-16 may be connected to external equipment by means of one single balanced male XLR socket (0dBu nominal level).

In addition to this, each mix bus provides an insert send and return on a single unbalanced quarter-inch TRS jack conventionally wired (0dBu nominal level).

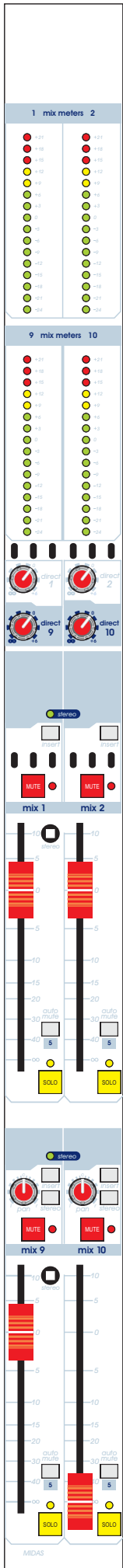
Mix Bus Inserts  
Mix Bus Outputs

### XLR Sockets

1 - Screen 2 - Signal Hot 3 - Signal Cold

### TRS Insert Jacks

T - Signal Send R - Signal Return S - Screen

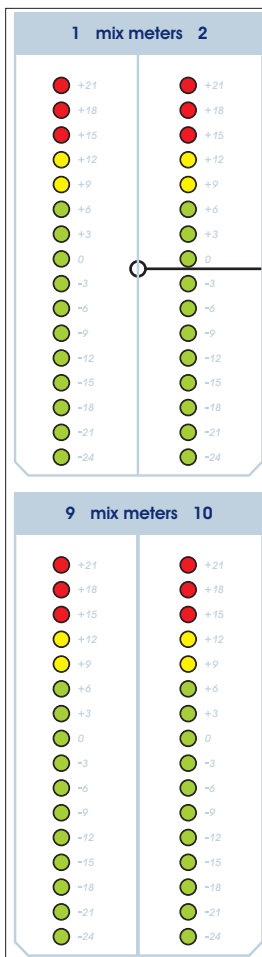


## Mix Bus Outputs (Auxiliary Send/Group Masters)

### Metering

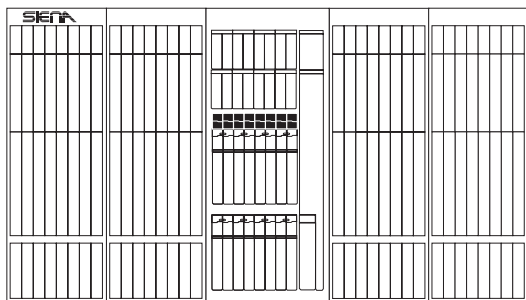
On Siena, every one of the 16 mix bus outputs features its own dedicated LED meter, providing a constant overview of every mix leaving the console.

The meters are arranged in pairs so that when busses are configured for stereo operation, metering may be clearly identified. In addition, they are laid out in two rows reflecting the 1-8 and 9-16 layout of the master faders lower down the module.



Each LED meter indicates the peak signal level of the mix bus output from -24dB to +21dB in 3 dB steps. Signal is measured after the master fader and mute providing a true representation of the level leaving the mix output XLR on the rear of the console.

# Master Section: Mix Bus Outputs



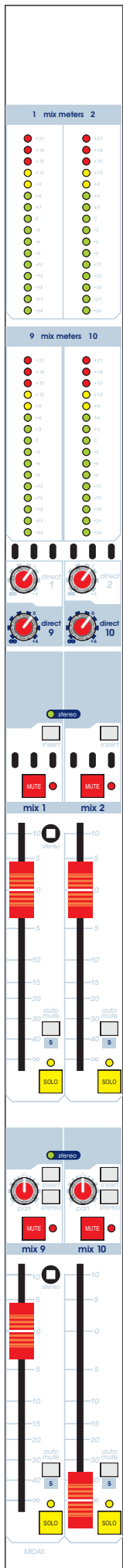
## Direct Input to Mix

In addition to the console's input channels, Siena features a single stereo direct input (line level) which may be added to any of the 16 mix bus outputs or stereo master.

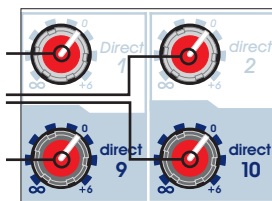
A common application is to use the direct input as a stereo effects return. For example, you may be using an auxiliary send to feed signals to an external reverberation unit. Connecting the reverb return to the direct input allows you to add reverb back to each of your artist's monitor sends, without needing to use an additional pair of input channels for this purpose.

The direct input is a stereo line level input available on the rear panel of the master section. It features its own input level control, solo and mute facilities. For more details on these controls and connections, please refer to Page 20.

Following the input stage, the **direct 1** to **direct 16** controls adjust the amount of direct input signal added to the each of the 16 mix busses.



**Direct Input Level to Mix** - Controls the direct input level added to each mix bus output. Level may be adjusted continuously from off (-inf) to +6dB.



The signal added to each mix bus is affected by the mono/stereo configuration of each mix bus. For example, if mix busses 1 and 2 are configured for stereo operation, bus 1 is fed from direct input left and bus 2 from direct input right according to the level settings of the **direct 1** and **direct 2** controls. However, the left and right direct input signals are also summed, so that if say mix bus 3 is configured as a mono bus, it is the mono sum which is added to this output.

Note: a -3dB offset is applied to the mono sum. This automatic level compensation ensures that when adding the direct input to a mixture of mono and stereo mix busses, similar direct level settings may be applied without any perceptible difference in level.

# Master Section: Mix Bus Outputs

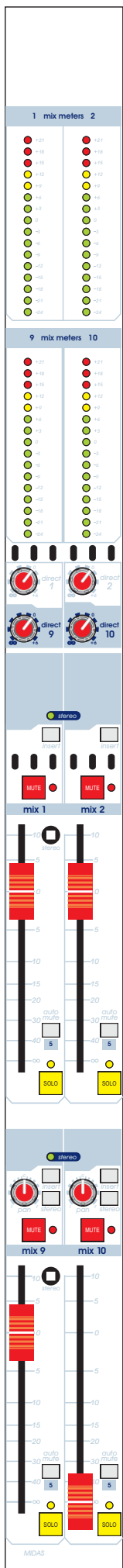


## Auxiliary Send/Group Masters

The master controls for mix bus outputs 1-8 vary slightly from those offered on mix bus outputs 9-16. This is due to the fact that mix busses 9-16 offer the additional feature of routing, and panning, onto the stereo master bus. This makes mix busses 9-16 ideal for use as group outputs in a hybrid FOH/Monitor application.

## Mix Bus 1-8 Master Controls

First, let's deal with the controls for mix bus masters 1-8. Note that for clarity, only the first pair of mix bus outputs are illustrated on the front panel drawings below.



**Stereo LED** Illuminates when mix busses are linked for stereo operation, see below.

**Mute** The **MUTE** switch mutes the mix bus output signal post fader. (i.e. signal is muted at all points except the mix bus insert send and PFL bus). The mute status is indicated by the corresponding mute LED.

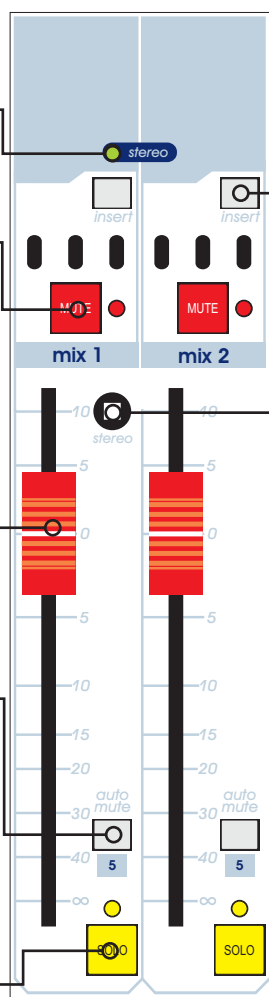
Note: the mute switch may be controlled by Auto Mute master 5, see below.

**Fader** The fader provides continuous adjustment of the mix bus output level from off (-inf) to +10dB.

**Auto Mute 5** Depress this switch to assign any of the 16 mix bus output mutes to auto mute group 5. The Siena has five auto mute groups that can be controlled from the master section of the console. Any input channel may be assigned to auto mute groups 1-4; both input channels and mix bus masters may be assigned to group 5.

**Solo** When selected, the mix bus **SOLO** switch routes signal onto the stereo After Fade Listen (AFL) and mono Pre Fade Listen (PFL) busses. The solo LED indicator illuminates to show that the mix bus solo is active. Depending on the AFL/PFL selector in the master section, you may now be listening to the mix bus output signal after the fader (AFL) or pre fader (PFL) on your local monitoring or headphone outputs.

Any of the 16 mix bus master **SOLO** switches may also trigger auto solo messages on an external Helix digital equaliser via the console's Solo Tracking System. For more details, please refer to Page 25.



**Insert** When depressed, the corresponding mix bus insert return is inserted pre fader into the mix bus output signal path.

**Stereo/Mono** Use the recessed **stereo** switch to link the odd/even pair of mix busses for stereo operation. When set for stereo, the following operational changes occur:

On each **input channel**, separate level and pan controls become available for the stereo mix send. To switch the stereo send pre fader, use the lower of the two channel **pre** switches. (The upper **pre** switch is inactive in stereo mode.) Please see Page 10 for more details on input channel controls.

The solos for a stereo bus are adjusted such that odd bus solos route signal to AFL left and even bus solos route signal to AFL right. When mix busses are configured for mono operation, solos are summed in mono onto the AFL output.

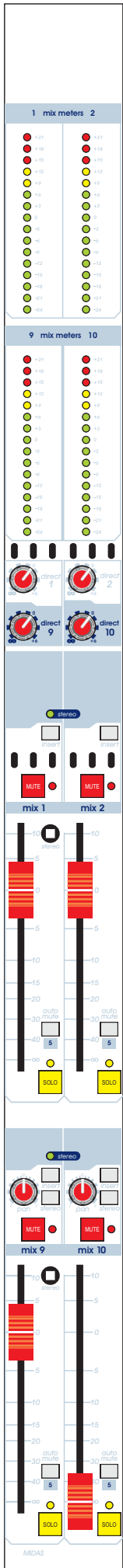
All other controls (e.g. fader output level, mute, solo and insert return switching) remain independent for the left and right sides of the mix bus master.

# Master Section: Mix Bus Outputs

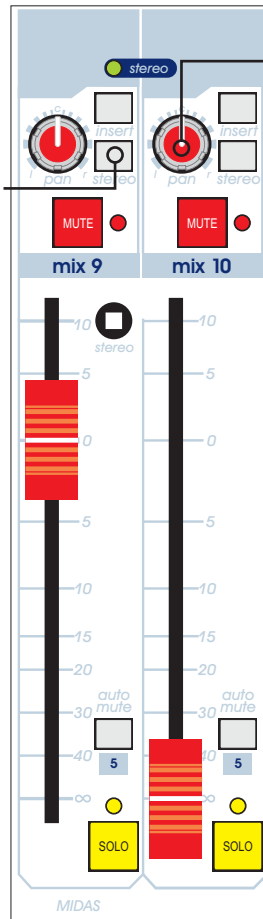
## Auxiliary Send/Group Masters

### Mix Bus 9-16 Master Controls

The master controls for mix bus outputs 9-16 are identical to those for mix bus outputs 1-8 with the addition of the following features:



**Route to Stereo Master** Depressing the **stereo** switch routes the mix bus output onto the stereo (master left and right) bus. The signal is sourced post insert, pan, mute and fader.



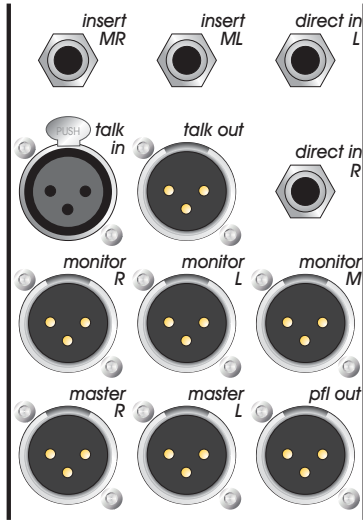
**Pan** The signal from the mix bus output may be positioned within the stereo master field using the pan control. Turn the control fully anticlockwise to pan signal to the left or clockwise to pan to the right. Adjustment between hard left and hard right is continuous, with a centre detent.

Note: the pan control obeys a constant power law (i.e. -3db at the centre.)

These additional features make mix busses 9-16 ideal for creating sub mix groups from the console.

# Master Section: Stereo Master & Monitoring Controls

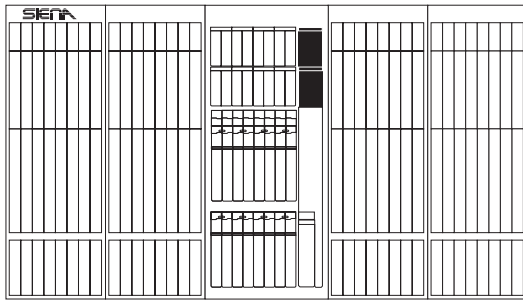
## Rear Panel



The Siena's stereo master and monitoring outputs are located on the rear of the console and provide:

Output	Source	Connector	Nom. Level
Master L	Left Bus	XLR Male (Bal)	0dBu
Master R	Right Bus	XLR Male (Bal)	0dBu
PFL Out	PFL Solo Bus	XLR Male (Bal)	0dBu
Monitor L	Local Monitor Left	XLR Male (Bal)	0dBu
Monitor R	Local Monitor Right	XLR Male (Bal)	0dBu
Monitor M	Local Monitor Mono	XLR Male (Bal)	0dBu
Talk Out	Talk Bus	XLR Male (Bal)	0dBu

Also provided are Master L and R insert points (Insert MR and Insert ML) on conventionally wired quarter-inch TRS jacks (0dBu nominal level), a stereo direct input (Direct In L and Direct In R) on line level balanced jack inputs and Talk Input (Male XLR balanced, 0dBu nominal level).



## Stereo Master and Monitoring Controls

### Metering



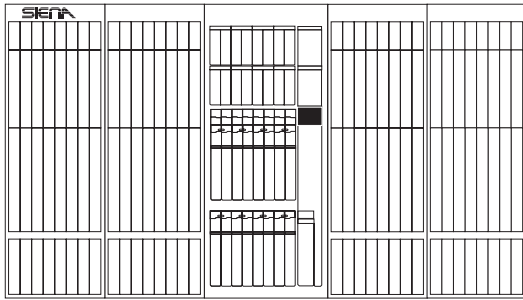
**Master Meters** The two master meters indicate the peak signal level of the left and right master outputs from -24dB to +21dB in 3 dB steps. Signal is measured after the master fader and mute providing a true representation of the level leaving the output on the rear of the console.

**Solo Meters** The two solo meters always follow what is being monitored on the local monitor and headphone outputs. Therefore, they will meter either stereo AFL or mono PFL signals depending on the solo selections across the console and master AFL/PFL selector. Please refer to Page 24 for more details on the console's solo system.

Note: when in PFL mode, the mono PFL bus appears on the left and right Solo meters.

The solo meters are pre monitor and phones mute and level control, and so are unaffected by changes in headphone or local monitoring level.

# Master Section: Stereo Master & Monitoring Controls



## Direct Input Master Controls

In addition to the console's input channels, Siena features a single stereo direct input (line level) which may be added to any of the 16 mix bus outputs or stereo master.

A common application is to use the direct input as a stereo effects return. For example, you may be using an auxiliary to send to feed signals to an external reverberation unit. Connecting the reverb return to the direct input allows you to add reverb back to each of your artist's monitor sends, without needing to use an additional pair of input channels for this purpose.

The direct input is a stereo line level feed available on the rear panel of the master section. It features its own input level control, solo and mute facilities as follows:

**Direct Input Level** The direct input level provides continuous adjustment of input level from off (-inf) to +20dB. Use this control to set the optimum input level for the stereo direct input.

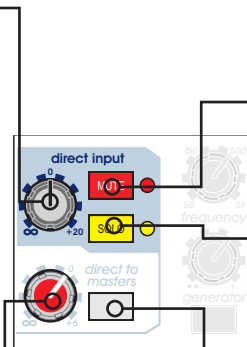
**Direct to Masters Level** This level control sets the level of the direct input applied to the stereo master bus when the Direct to Masters switch is depressed. Level may be adjusted from off (-inf) to +6dB.

Note: the **direct 1** to **direct 16** controls located above the mix bus output master faders adjust the amount of direct input signal added to the each of the 16 mix busses. For more details on these controls, please refer to Page 16.

**Mute** The **MUTE** switch mutes the direct input cutting off all feeds except to the PFL bus. The mute status is indicated by the corresponding mute LED.

**Solo** The **SOLO** switch routes the direct input signal onto the mono PFL and stereo AFL busses. The solo status is indicated by the solo LED.

**Direct to Masters** When depressed, this switch routes the stereo direct input to the master stereo bus, via the Direct to Masters level control.



## Tone Generator (Oscillator)

The Siena provides an internal tone generator which may be routed to any of the console's 16 mix bus and stereo master outputs.

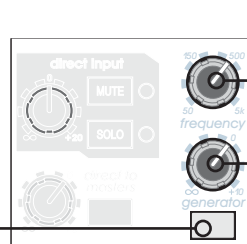
When enabled, the output of the tone generator is added to the talk bus where it may be combined with the console's talk mic and external talk inputs. The combined signals are then routed to any of the bus masters using the 'talk to mix' and 'talk to masters' switches located in the Talkback section.

Note: to route only the tone generator to a mix bus output or stereo master, without talkback, make sure that both the **talk on** and **talk ext** switches are disabled.

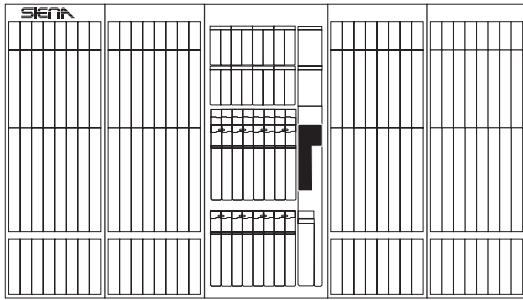
**Generator On** Enables the tone generator.

**Frequency** The output frequency of the generator is continuously variable from 50Hz to 5kHz allowing the user to test, for example, three or four bands of a crossover system.

**Generator Level** The level of the generator output is continuously variable from off (-inf) to +10dB.



# Master Section: Stereo Master & Monitoring Controls



## Talkback

The Siena provides talkback which may be routed to any of the console's 16 mix bus and stereo master outputs. There are two options for connecting talkback sources to the console:

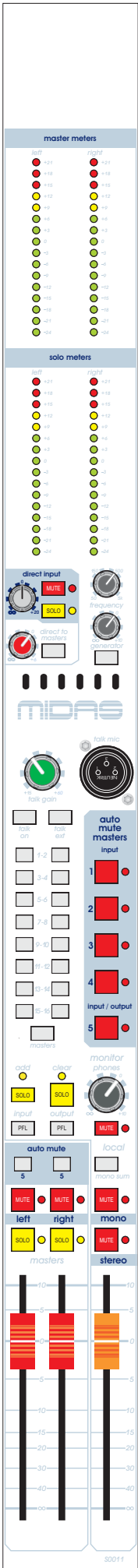
On the front panel, a conveniently located internal talk mic socket, supplied with 48V phantom power, allows connection of a condenser microphone.

On the rear panel of the master section, the **talk in** XLR allows connection of an external talkback source.

Each of these circuits is individually routed to the talk bus, and combined with the tone generator if it is enabled. The combined talkback and tone signals may then be routed to any of the console's 16 mix bus and stereo master outputs using the 'talk to mix' and 'talk to masters' switches shown below.

Note: to route only talkback to a mix bus output or stereo master, without the tone generator, make sure that the **Generator On** switch is disabled.

In addition to routing talkback to the console's mix bus and master outputs, the **talk out** circuit available on the rear panel of the master section, provides an output of the talk bus enabling the combined talkback and tone signals to be output to an external communications system.

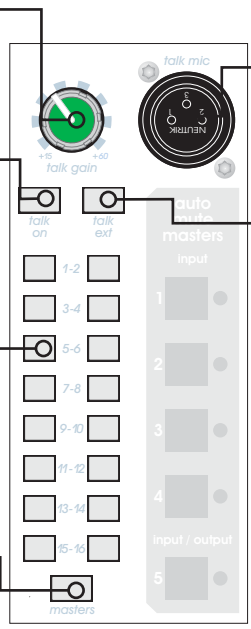


**Talk Mic Gain** The gain of the internal talk mic input is continuously variable from +15dB to +60dB.

**Talk On** When depressed, the internal talk mic input is enabled and routed to the talk bus. In addition, all local monitor outputs are attenuated by 20dB to help prevent feedback.

**Talk to Mix Bus Outputs (1-2, 3-4, etc.)** The 16 talk to mix switches route the combined talkback and tone generator signals individually to each of the console's 16 mix busses.

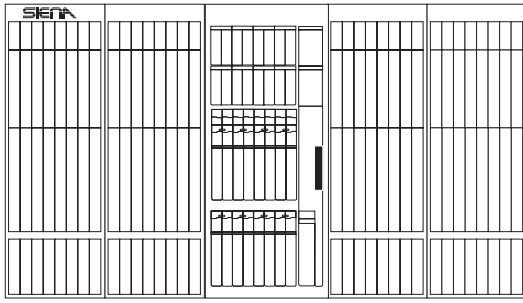
**Talk to Masters** The **masters** switch routes the combined talkback and tone generator signals to the console's stereo master.



**Talk Mic** The internal talk mic socket is a conventionally wired XLR male and is supplied with 48V phantom power allowing the connection of condenser microphones for engineer talkback.

**Talk External** The **talk ext** switch enables both the **talk in** and **talk out** connections on the rear panel of the master section. This adds the external talkback source connected to the **talk in** XLR to the talk bus. It also activates the **talk out** connection providing an output feed from the talk bus.

# Master Section: Stereo Master & Monitoring Controls



## Auto Mute Masters

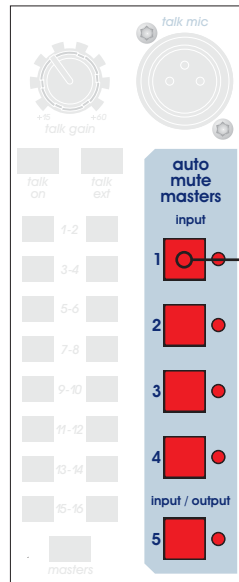
The Siena provides five auto mute groups commonly used to provide easy muting of similar channels. For example:

Channels	Reason
Drum Mics	Allows the engineer to mute the whole drum kit at once.
Choir Overheads	Allows the engineer to quickly remove all choir mics at once
Orchestra Parts	Allows the engineer to zone mics together (e.g. Brass, Strings, etc.) and mute sections together if they were not playing.

Any input channel may be assigned to auto mute groups 1-4; both input channels and mix bus masters may be assigned to group 5, therefore, you may wish to reserve this group for dealing with output mute functions.

For example, when using the console to run monitors during a live concert, there may be one song where most of the band will leave the stage. During this part of the show, monitor sends are only needed for one or two performers. By selecting auto mute 5 on all of the other band members' auxiliary send masters, you may mute these monitor feeds with one switch press auto mute master 5.

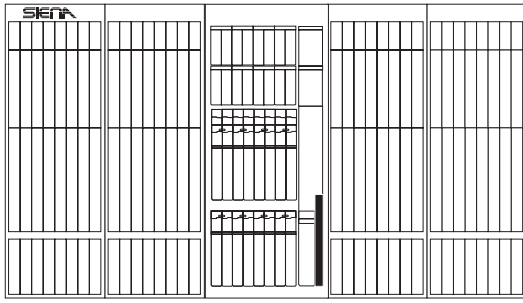
The auto mute master switches located in the master section activate each auto mute group as follows:



**Auto Mute Masters 1, 2, 3, 4 & 5**  
Press the corresponding auto mute master switch to mute all input channels and/or bus masters included within the auto mute group (1 through 5). The auto mute master status is indicated by the corresponding LED.

Note: don't forget to check the status of your auto mute masters and auto mute group assignments carefully, as any mutes on assigned input channels or bus outputs will not be released until the auto mute master is disabled!

# Master Section: Stereo Master & Monitoring Controls



## Local Monitoring and Headphone Outputs

The Siena provides local stereo and mono monitor outputs, stereo headphone and separate PFL output. Typically, each of these outputs is provided for the following applications:

Output	Format	Connection	Application
Local Monitor L/R	Stereo	Rear Panel	For connection of local stereo loudspeakers.
Local Monitor M	Mono	Rear Panel	For connection of a local mono loudspeaker.
Headphone (Phones)	Stereo	Arm Rest	For connection of stereo headphones.
PFL Out	Mono	Rear Panel	For linking the PFL output of the Siena to another console.

**Tip:** when running monitors, you may wish to listen to your mono floor monitor feeds on a separate speaker to your stereo in-ear monitoring so that you know what the artist is hearing from each system. Connect a pair of stereo speakers to the **Local Monitor L/R** output and a separate mono speaker to the **Local Monitor M** output. Now solo the mix bus masters feeding both the in-ear monitoring and floor monitors. Using the mono and stereo local monitor **MUTE** switches, you will now be able to mute the floor monitor speaker to listen to the stereo in-ear monitor feed or vice versa.

Do not confuse the **Local Monitor M** output with the **PFL Output** connection, as the PFL Out is always active and does not feature level or mute control. This is because the PFL Out is typically used to connect the PFL bus to a second console. For example, if the Siena is working with the support band, it may be necessary to feed its PFL output to the main band's console.

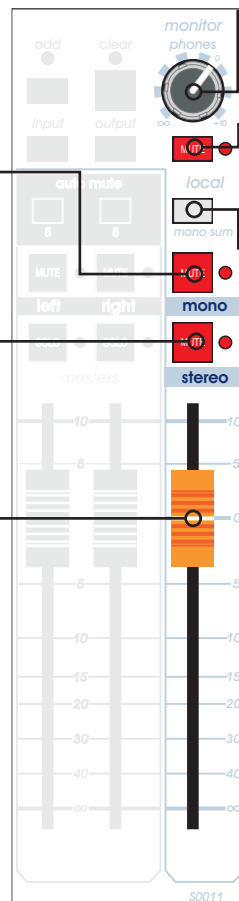
By default, you will be monitoring the AFL bus on the local monitor and headphone outputs. However, you may choose to monitor the PFL bus for either inputs and/or outputs using the master AFL/PFL selector, see 'The Solo System' on Page 24 for more details.



**Local Monitor Mono Mute** The mono **MUTE** switch mutes the Monitor M output. The mute status is indicated by the corresponding LED.

**Local Monitor Stereo Mute** The stereo **MUTE** switch mutes the Monitor L and Monitor R outputs. The mute status is indicated by the corresponding LED.

**Local Monitor Fader** The local monitor fader allows for continuous adjustment of both the mono and stereo local monitor outputs (Monitor L, Monitor R and Monitor M) from off (-inf) to +10dB.

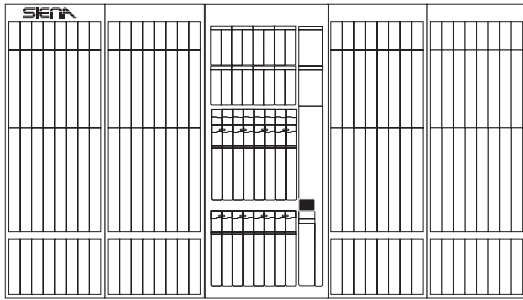


**Phones Level** The level of the headphone output is continuously variable from off (-inf) to +20dB.

**Phones Mute** The **MUTE** switch mutes the headphone output. The mute status is indicated by the corresponding LED.

**Mono Sum** The **mono sum** switch sums the left and right monitor signals feeding both the local monitor and headphone outputs so that the stereo output may be checked for phasing issues and mono compatibility

# Master Section: Stereo Master & Monitoring Controls



## The Solo System (AFL and PFL)

Siena's hierarchical solo system and master AFL/PFL selector provides the flexibility to monitor signals pre fade (PFL) or post fade (AFL) quickly and easily.

By default, you will be monitoring channels or outputs in AFL on the local monitor and headphone outputs when you press a SOLO switch. To change to PFL monitoring, use the master AFL/PFL selector as described below.

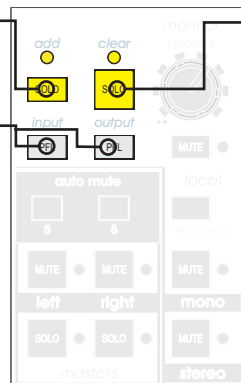
Normally, solo switches intercanceled. However, if you press a number of SOLO switches in less than a second, they will latch on together. This provides a quick way of listening to a number of channels or outputs. For example, to solo both the left and right sides of a stereo mix bus output. Alternatively, you can force the console solos to always be additive by enabling the **Solo Add** mode. Note: in this mode, solos are prioritised according to the type of input or output - see 'Solo Hierarchy' below for more details.

Note also that the master stereo left and right SOLO switches are both mechanically latching. By selecting these two switches you can set the default solo state to monitor the stereo master output whenever other solos are cleared.

Note: If these stereo master SOLO switches are not pressed, and no other solos are active, then no signal will feed the AFL or PFL busses and you will be monitoring silence.

**SOLO Add** When depressed, the **SOLO Add** switch allows multiple SOLO switches to be selected.

**AFL/PFL Selector** By default, you will be monitoring channels or outputs in AFL on the local monitor and headphone outputs when you press a SOLO switch. Press **input PFL** to force all input (input channels and the stereo direct input) solos into PFL mode. Press **output PFL** to force all output (16 mix bus and stereo master) solos into PFL mode. Select both switches to force PFL solos across the console.



**SOLO Clear** The **SOLO Clear** LED illuminates to show a solo is active. Press the **SOLO Clear** switch to cancel all active solos. Note: Solo Clear does not apply to the stereo master left and right solos as these are mechanically latching switches.

## Solo Hierarchy

In addition to the master AFL/PFL selector, Siena's hierarchical solo system allows you to quickly switch between monitoring say an input channel in PFL and a mix bus output in AFL. The local monitor and headphone outputs are controlled according to the following solo hierarchy:

1. Input channels and the stereo Direct Input solos take highest priority.
2. The 16 mix bus master solos take second priority.
3. The stereo master left and right solos take lowest priority.

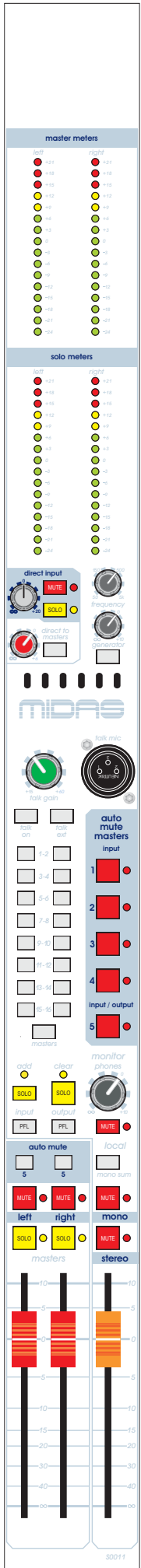
To best explain the power of this system, let's take a typical operating scenario. For example, you may wish to set up the console so that you can PFL any input channel quickly, but still monitor your mix bus auxiliary sends or group masters in AFL. Select the **input PFL** switch to force all input channel and the stereo direct input solos into PFL mode. Also check that the **output PFL** switch is not selected so that all output solos remain in AFL. Turn on the **Solo Add** switch to enable additive solo selections. Finally, turn on the stereo master left and right SOLO latching switches and check that you are now monitoring the stereo master output post fader (in AFL).

Now press any of the 16 mix bus master SOLO switches. Since the mix bus master solos are higher in priority than the stereo master solos, you will be monitoring only the output of the mix bus (in AFL) even though all three SOLO switches remain illuminated.

Then select a SOLO switch on any input channel. This time the hierarchical system works to provide you with monitoring of the input channel only. The input channel is monitored pre fader (in PFL) since this was the selection made from the master AFL/PFL selector.

If you now deselect the input channel solo, you will go back to monitoring the mix bus output in AFL.

Remember that you can also use **SOLO Clear** at any time to clear down all selections except the stereo master solos. This allows you to quickly revert to monitoring the stereo master output.



# Master Section: Stereo Master & Monitoring Controls



## HELIX Digital Equaliser Solo Tracking System

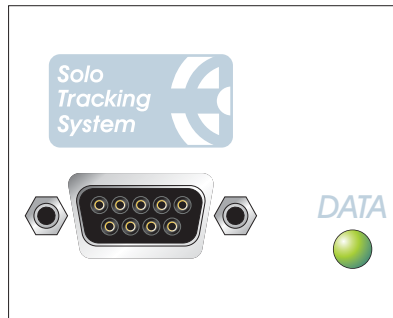


The Siena console features a Solo Tracking System which allows any of the 16 mix bus master or stereo master solos on the console to trigger auto solo messages on the Klark Teknik DN9340 (HELIX) digital graphic equaliser. This unique interface allows engineers to quickly view the equaliser settings for a mix output on the HELIX master display simply by pressing the corresponding mix solo switch on the console.

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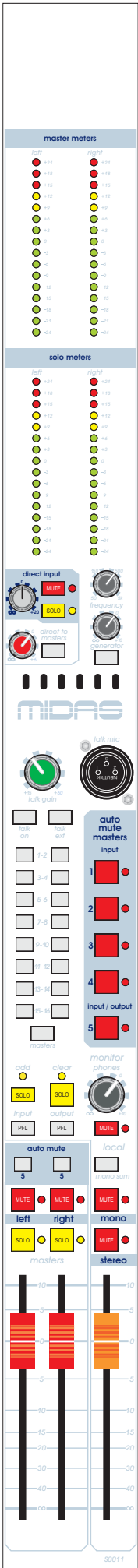
Note: the Solo Tracking System supports the Klark Teknik DN9340 (HELIX) digital graphic equaliser only. Multiple Helix units may be linked together to provide enough digital equalisers for all 16 mix bus and stereo master outputs as required. Please refer to the HELIX Operator's Manual for more details on configuration.

The console is connected to the master HELIX equaliser system using the RS-232 (9-pin) data port located on the lower rear connector panel. The data LED is not normally lit but will illuminate briefly each time a mix bus or master solo is triggered.

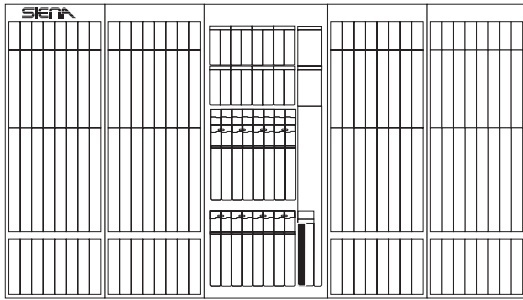


Pressing any one of the 16 mix bus master or left/right stereo master solo switches on the console triggers the corresponding auto solo message to the HELIX. This results in the relevant EQ being automatically shown on the HELIX master display allowing you to now quickly view and adjust the master's EQ settings.

Note: the Solo Tracking System responds to the console's **Solo Clear** and the hierarchical system. For example, when you select the stereo master left SOLO switch, the HELIX will respond by displaying equaliser settings for the stereo master output. Now select one of the 16 mix bus master solos. As these are higher priority, the system cancels the stereo master solo trigger and the HELIX will now display equaliser settings for the chosen mix bus output. If you then deselect the mix bus master solo, the system reactivates the stereo master solo returning the Helix display to show EQ settings for the stereo master.



# Master Section: Stereo Master & Monitoring Controls



## Stereo Master Output Controls

In addition to the console's 16 mix bus outputs, the Siena provides a stereo master typically used to generate the front of house (FOH) mix, if required. Independent controls are provided for the left and right sides of the stereo master retaining ultimate control at all times.

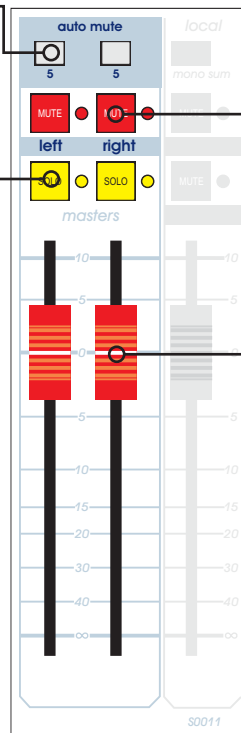


**Auto Mutes** The two auto mute 5 switches are used to assign the left or right stereo master output mute to auto mute group 5.

**Solos** The two **SOLO** switches route the left and right stereo master signals onto the stereo AFL and mono PFL busses. The solo LED indicators illuminate to show that the master solos are active. Depending on the PFL selector in the master section, you may be listening to the master output signal in AFL or PFL on your local monitoring or headphone outputs.

Note: the left and right master SOLO switches are mechanically latching and are not affected by the **SOLO Clear** function. By selecting these two switches you can set the default solo state to monitor the stereo master output whenever other solos are cleared.

The two stereo master SOLO switches may also trigger auto solo messages on an external Helix digital equaliser via the console's Solo Tracking System. For more details, please refer to Page 25.



**Mutes** The two **MUTE** switches mute the left and right stereo master signals post fader. (i.e. signal is muted at all points except the master insert send and PFL bus). The mute status is indicated by the corresponding mute LED. Note: the mute switch may be controlled by Auto Mute master 5, see left.

**Faders** The two stereo master faders provide continuous adjustment of the left and right master outputs from off (-inf) to +10dB.