

# SONIFEX

S2 Digital I/O Analogue  
Radio Broadcast Mixer

2014-15  
Catalogue





## S2 Digital I/O Analogue Radio Broadcast Mixer



**Category:** Radio Broadcast Mixing Consoles - S2 Digital I/O Analogue Radio Broadcast Mixer.

**Product Function:** Modular multi-channel analogue on-air broadcast mixer with digital I/O.

**Typical Applications:** Community, student, hospital and small scale radio broadcast mixer, secondary or backup on-air mixer.

**Features:**

- Wide range of input and output channels.
- PFL/cue buttons & bus.
- Fader-start operation of equipment.
- Automatic monitor muting on mic-live.
- Light controlling remote outputs.
- Optional EQ on input modules.
- Gram amp input options.
- 2 main audio buses, allowing you to broadcast on the PRG bus while recording on the AUD bus.
- Bus output selection on each module.
- Separate 1U power supply.

S2 is a modular broadcast mixer which offers digital audio quality with analogue reliability in a modular format. S2 has both digital and analogue input channels, together with simultaneous analogue and digital outputs.

Following on from the Sovereign range of audio mixers, S2 combines all the features needed of a radio broadcast mixer in a stylish, flush-mounting chassis

### Innovative Design

- The S2 chassis is available in 5 module width sections, allowing 5, 10, 15, 20, 25 and 30 module width mixers. This means S2 can be used for small newsrooms or large on-air situations.
- Modular “pop-up” input and output channels means that the mixer can be maintained simply and quickly. Hot-swappable input channels can be individually removed and repaired whilst still on-air.

- The angle of the meterbridge can be varied and set for best viewing position.
- Any module can be in any position so that customising the mixer for your own purposes is easy.
- Large back-lit buttons allow you to see the status of the mixer at all times.
- The fitted rear panel hides all cable connections but can be simply unclipped and reclipped for maintenance.
- The modular design of the desk gives you the flexibility to expand it at a later date
- You can even add another S2 mixer and link them together with a bus connector cable to allow for split desk configurations.



*Radio Broadcast Mixer Using S2-25 Chassis and Script Space.*



### Superb Audio Quality and Unquestionable Reliability

- The S2 uses Crystal semiconductor parts to allow input and output of digital audio signals up to 24 bit, 96kHz sample rate.
- The analogue signal paths use low noise circuitry to provide superb audio performance well capable of satisfying radio listeners worldwide.
- The high reliability and build quality of S2 minimises the chance of failure, avoiding lost air-time. Each module is individually checked twice before being assembled into the finished chassis and the whole unit is tested before shipping.
- ALPS long throw 100mm faders give a smooth, repeatable response and the XLR Neutrik connectors used are an industry standard.
- The use of VCAs controlled by the faders ensures tight stereo tracking and eliminates mechanical and electronic noise.
- S2 has a separate 1U power supply providing regulated, ripple-free power to the mixer. There is an optional switcher to control 2 power supplies providing redundancy.
- High quality stainless steel is used for the chassis and screws to prevent corrosion in high humidity environments.
- Each channel is metal coated internally to provide exceptional EMC screening.

## S2 Input Channels

There is a wide choice of input channels for the S2 mixer. Each channel has a number of common features:

### Assigning an Input Channel to an Output Bus

Switches at the top of the channel are used to select the output group routing, to either Program, Audition, or both output buses. Selecting the PGM and/or AUD buttons routes the channel audio to the PGM and/or AUD mix buses. The buttons illuminate green to indicate the routing status.

### Changing the Input Level

Coarse gain is set using pre-set potentiometers on the channel circuit board which allow unbalanced inputs to be used on mono and stereo line inputs. The front panel TRIM control allows fine gain of  $\pm 12\text{dB}$ .

### Changing the Signal Pan, or Balance

The BAL/PAN control is used on mono channels to pan the mono input signal in the stereo image and on stereo channels to balance the stereo image.

### CUE/PFL (Pre Fade Listen)

Selecting the CUE/PFL button routes the pre-fader input signal to the monitoring system where the signal can be heard via headphones and/or loudspeakers. The button lights green when CUE/PFL is active

and a jumper option is available to cancel the CUE/PFL selection when the fader is raised. This button works with both a momentary and latched operation - if held down, the selection is cancelled on release, otherwise the button is alternate action.

### Fader Start & ON Button Control

The ON button works in conjunction with the 100mm long-throw carbon fader and is used to control channel remotes (e.g. starting a CD player), routing and timers, etc. When unlit, the channel is off. Flashing red indicates that the channel has been selected to ON but not routed to either PGM or AUD. Steady red indicates that the channel is ON and "armed", ready for the fader to be raised. Raising the fader changes the illumination to green indicating that the channel is live. Alternatively, with the button unlit the fader may be raised and the channel can be operated simply by selecting ON. The illumination in this case toggles between unlit (channel OFF) and green (channel ON).

### Programmable Button Settings

To make the S2 modules as flexible as possible, every button on each channel can be set to a number of different modes to aid the use of the mixer and allow for extra functionality. Each button can be set to

either operate manually, be permanently on, or permanently disabled. Also, the ON button can be configured to operate in a number of modes, altering remote start functions, and the channel ON function can be controlled remotely by automation payout systems, such as RCS® or VCS.

### Scribble Pad

A scribble pad is provided at the bottom of the channel for user labelling of the channel function.

*RCS® is a registered trademark of Radio Computer Systems Inc.*

*VCS is a wholly-owned subsidiary of SciSys plc.*

## S2-CMM Mic/Mic Channel

The mic/mic input channel is a dual mono microphone input with a button switch to select either Mic 1 or Mic 2.

Each Mic input has jumper settable phantom power available at +48V and a high pass filter to remove low frequency rumbles. When enabled, the LF response of the microphone is rolled off at 125kHz, 6dB per octave. If the Mic input is used for the presenter's mic it can also become the talkback mic.

Equalisation is fitted as standard on this channel and is enabled by the EQ button, S2-CMM Mic/Mic Channel.

providing 10dB cut and boost at HF (6.5kHz) and LF (100Hz).

The BAL/PAN control operates as follows: Full anti-clockwise pans the signal to the left and increases the signal by 3dB (right channel reduces by 70dB); full clockwise pans the signal to the right and increases the signal by 3dB (left channel reduces by 70dB).

A balanced line level insert send and return is available for the Mic input.

This is useful for hooking up an outboard effects unit to be used with the microphone.

There are logic remote input controls for Mic Cough muting and Reverse Talkback, together with 2 separate output controls for Mic Cue lights, momentary or latching.

The remote outputs on the 9 way D-type plug are fed from NPN opto-isolators.

Both Mic inputs have a jumper selectable output to facilitate either Control Room speaker or Studio speaker muting and the channel can also be used to control either one of two separate timer displays.

Gold plated Neutrik XLR connectors are used for the audio inputs and outputs.

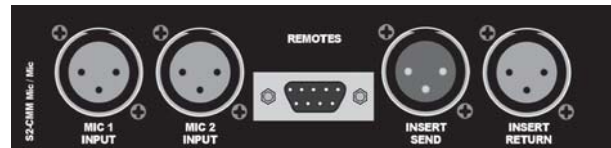
## S2-CML Mic/Line Channel

The mic/line input channel is a mono input with a button switch to select either Mic or Mono Line.

For the Mic input, phantom power at +48V can be configured. The Mic input has a jumper selectable high pass filter to remove low frequency rumbles.

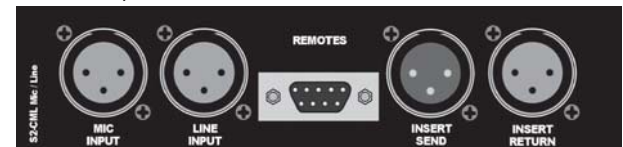
If the Mic input is used for the presenter's mic it can also become the talkback mic. The talkback function will be retained when the channel input is switched to Line.

Equalisation is fitted as standard on this



S2-CMM Mic/Mic Rear.

S2-CML Mic/Line Channel Rear.



S2-CML Mic/Line Channel.

channel and is enabled by the EQ button, providing 10dB cut and boost at HF (6.5kHz) and LF (100Hz).

A balanced line level insert send and return is available for the Mic input for the insertion of an effects, or voice, processor into the mic channel. The send and return is disabled in Line mode. There are logic remote input controls for Mic Cough muting

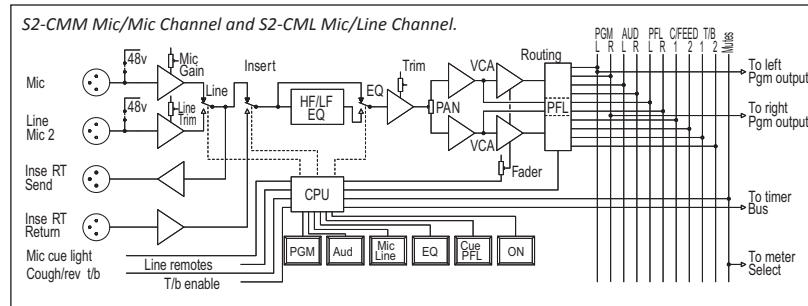
and Reverse Talkback. There are output controls for Mic Cue lights and separate line remote start/stop controls by fader or ON button. Both latching and momentary contacts are catered for. The remote outputs on the 9 way D-type plug are fed from NPN opto-isolators.

The Mic input provides a jumper selectable output to facilitate either Control Room

speaker or Studio speaker muting and the channel can also be used to control either one of two separate timer displays.

In addition the Line input can be configured with all the features of the Mic input when used as a Mic input with an external microphone amplifier, e.g. for monitor muting purposes.

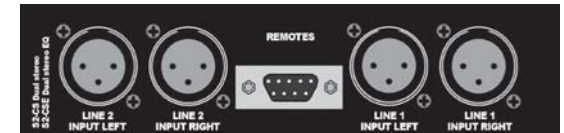
Gold plated Neutrik XLR connectors are used for the audio inputs and outputs.



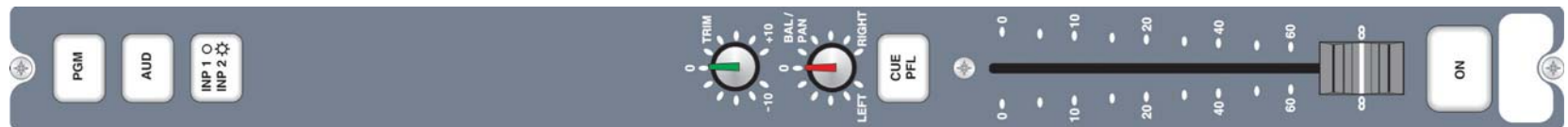
## S2-CS Dual Stereo Line Channel & S2-CSE Dual Stereo Line Channel with EQ

The S2-CS dual stereo line channel has two balanced stereo inputs on Neutrik XLR connectors.

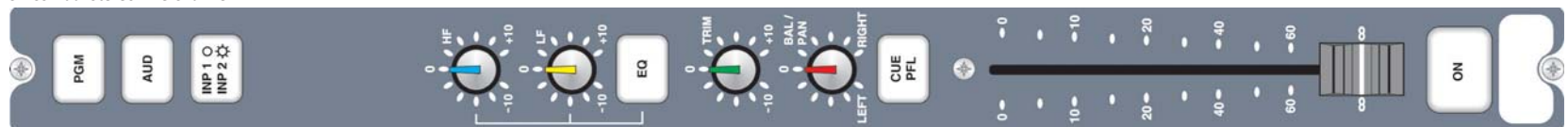
The INP 1/INP 2 button selects which input is routed through the channel. The button is illuminated in red to indicate when Input 2 is selected. The operation of the button is inhibited when the channel is "live".



S2-CS Dual Stereo Line and S2-CSE Dual Stereo Line with EQ Rear.



S2-CS Dual Stereo Line Channel.



S2-CSE Dual Stereo Line Channel.

There are separate logic remote output controls for both of the two inputs providing start/stop functions by fader, or ON button. Remotes, etc, are triggered when the fader is up and the channel ON button shows green. The start function can be configured to be either momentary (500mS) or latched for each input. The remote outputs on the 9 way D-type plug are fed from NPN opto-isolators.

Continuous momentary start can be enabled such that when the fader is up and the channel is on, each press of the ON button triggers a momentary start.

Two remote pins can also be configured for general use as either inputs, outputs, latching, or momentary and active high or low. Uses for this include channel live indication or specific channel function remote control.

The BAL/PAN control adjusts the stereo balance in the following manner : Full anti-

clockwise shifts the signal to the left and increases the signal by 6dB (right channel reduces by 6dB); full clockwise shifts the signal to the right and increases the signal by 6dB (left channel reduces by 6dB).

The 100mm VCA fader provides unity gain when fully open. The channel input signal is routed to the outputs whenever the fader is open, the ON button is selected and either or both of the routing buttons are selected.

The S2-CSE channel is the dual stereo line channel as above but fitted with equalisation, providing 10dB cut and boost at HF (6.5kHz) and LF (100Hz).

The EQ button places the equalisation in and out of the signal path. The button is illuminated in yellow when the EQ is active.

The channel can be used to control either one of two separate timer displays.

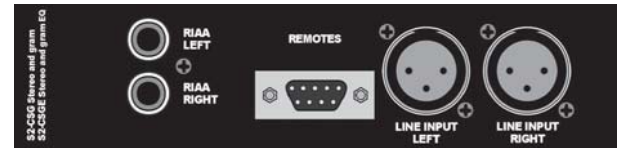
## S2-CSG Stereo Line & Gram Channel & S2-CSGE Stereo Line & Gram Channel with EQ

The S2-CSG channel is the dual stereo line channel fitted with an RIAA input amplifier on the second input. The balanced stereo line input is on Neutrik XLR connectors and the unbalanced RIAA stereo input on phonos.

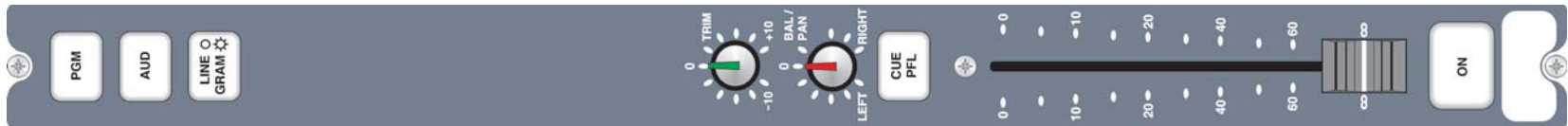
The channel is used for connecting a turntable or record deck. The GRAM inputs have RIAA equalisation suitable for magnetic pick-up cartridges.

Selecting the LINE/GRAM button switches the channel input between Stereo Line and RIAA . The button is illuminated in red to indicate when Gram (RIAA) is selected. The operation of the button is inhibited when the channel is "live".

There are separate logic remote output controls for both of the two inputs providing start/stop functions by fader, or ON button. Remotes, etc, are triggered when the fader is up and the channel ON



S2-CSG Stereo Line & Gram and S2-CSGE Stereo Line & Gram with EQ Rear.



S2-CSG Stereo Line & Gram Channel.



S2-CSGE Stereo Line & Gram Channel with EQ.

button shows green. The start function can be configured to be either momentary (500ms) or latched for each input. The remote outputs on the 9 way D-type plug are fed from NPN opto-isolators.

Continuous momentary start can be enabled such that when the fader is up and the channel is on, each press of the ON button triggers a momentary start.

Two remote pins can also be configured for general use as either inputs, outputs, latching, or momentary and active high or low. Uses for this include channel live indication or specific channel function remote control.

The BAL/PAN control adjusts the stereo balance in the following manner : Full anti-clockwise shifts the signal to the left and

increases the signal by 6dB (right channel reduces by 6dB); full clockwise shifts the signal to the right and increases the signal by 6dB (left channel reduces by 6dB).

The 100mm VCA fader provides unity gain when fully open. The channel input signal is routed to the outputs whenever the fader is open, the ON button is selected and either or both of the routing buttons are selected.

The S2-CSGE channel is the stereo line & gram channel as above but fitted with equalisation, providing 10dB cut and boost at HF (6.5kHz) and LF (100Hz). The EQ button places the equalisation in and out of the signal path. The button is illuminated in yellow when the EQ is active.

The channel can be used to control either one of two separate timer displays.

## S2-CDS Digital Dual Stereo Channel

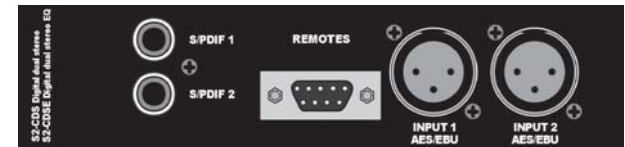
The digital dual stereo channel has two 24-bit 96kHz digital inputs with an INP 1/INP 2 button switch to select between them.

The button is illuminated in red to indicate when Input 2 is selected. The operation of the button is inhibited when the channel is “live”.

Either input can be configured to be balanced AES/EBU on standard XLR, or S/PDIF on phono sockets, selected by internal jumpers.

An additional jumper option can be used to decode emphasis when indicated by certain status bits in the incoming data stream.

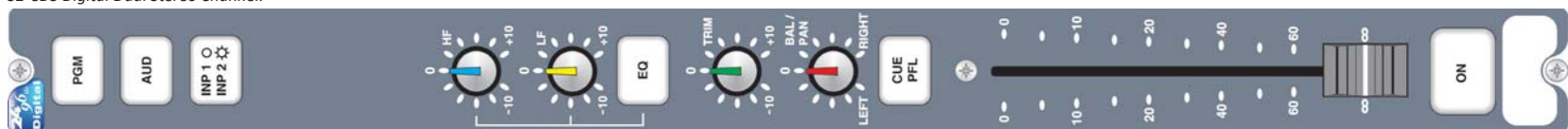
The digital signals are converted to analogue and from this point the channel functions are the same as the S2-CS Dual Stereo Line channel with the addition that when the ON button flashes green, it means that there is no valid digital input.



S2-CDS Digital Dual Stereo Channel and S2-CDSE Digital Dual Stereo Channel with EQ and Rear.Rear.



S2-CDS Digital Dual Stereo Channel.



S2-CDSE Digital Dual Stereo Channel with EQ.

## S2-CDSE Digital Dual Stereo Channel with EQ

This channel is the digital dual stereo channel as above but fitted with equalisation.

The HF and LF controls are used to adjust the equalisation of the signal. The HF control boosts and cuts the signal by 10dB at 6.5kHz. The LF control boosts and cuts the signal by 10dB at 100Hz. The EQ button places the equalisation in and out of the signal path and is illuminated yellow when the EQ is active.

Both S2-CDS and S2-CDSE channels can be used to control either one of two separate timer displays.

## S2-CDAS Dual Stereo Line Channel & S2-CDASE Dual Stereo Line Channel with EQ

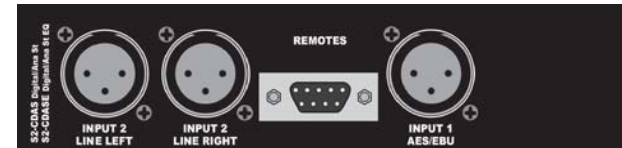
The S2-CDAS dual stereo line channel has one 24-bit 96kHz AES/EBU digital input and one balanced analogue stereo input, both on Neutrik XLR connectors.

The INP 1/INP 2 button selects which input is routed through the channel. The button is illuminated in red to indicate when Input 2 the balanced analogue source is selected. The operation of the button is inhibited when the channel is "live".

Input 1 is configured to be the AES/EBU input on standard XLR. An additional jumper option can be used to decode emphasis when indicated by certain status bits in the incoming data stream.

The digital signals are converted to analogue and from this point the channel functions are the same as the S2-CS Dual Stereo Line channel with the addition that when Input 1 is selected and the ON button flashes green, it means that there is no valid digital input signal being received.

There are separate logic remote output controls for both of the two inputs providing start/stop functions by fader, or ON button. Remotes, etc, are triggered when the fader is up and the channel ON button shows green. The start function can be configured to be either momentary (500mS) or latched



S2-CDAS Dual Stereo Line Channel and S2-CDASE Dual Stereo Line Channel with EQ Rear.



S2-CDAS Dual Stereo Line Channel.



S2-CDASE Dual Stereo Line Channel with EQ.



## S2-C6SS 6 Way Stereo Source Select Channel with EQ

for each input. The remote outputs on the 9 way D-type plug are fed from NPN opto-isolators.

Continuous momentary start can be enabled such that when the fader is up and the channel is on, each press of the ON button triggers a momentary start.

Two remote pins can also be configured for general use as either inputs, outputs, latching, or momentary and active high or low. Uses for this include channel live indication or specific channel function remote control.

The BAL/PAN control adjusts the stereo balance in the following manner : Full anti-clockwise shifts the signal to the left and increases the signal by 6dB (right channel reduces by 6dB); full clockwise shifts the

signal to the right and increases the signal by 6dB (left channel reduces by 6dB).

The 100mm VCA fader provides unity gain when fully open. The channel input signal is routed to the outputs whenever the fader is open, the ON button is selected and either or both of the routing buttons are selected.

The S2-CDASE channel is the dual stereo line channel as above but fitted with equalisation, providing 10dB cut and boost at HF (6.5kHz) and LF (100Hz).

The EQ button places the equalisation in and out of the signal path. The button is illuminated in yellow when the EQ is active.

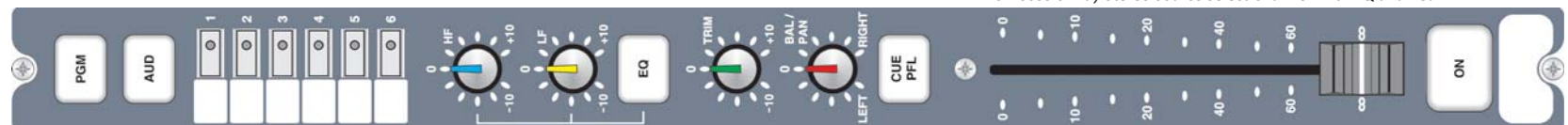
The channel can be used to control either one of two separate timer displays.

The 6 way stereo line source select channel has 6 balanced stereo inputs on a 25 way D-type connector selectable by a 6 way mechanical interlocking switch bank, numbered 1 - 6. A depressed button indicates the selected input.

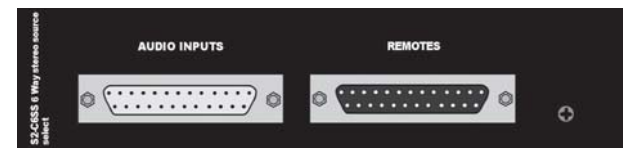
The switch bank also controls 6 sets of remote outputs allowing each source to have a set of start/stop remotes. The remote starts can be set as momentary or latching. Continuous momentary start can also be enabled such that when the fader is up and the channel is on, each press of the ON button triggers a momentary start.

The channel is fitted with EQ as standard and other functions are similar to the S2-CSE Dual Stereo channel with EQ.

The HF and LF controls are used to adjust the equalisation of the signal. The HF control boosts and cuts the signal by 10dB at 6.5kHz. The LF control boosts and cuts the signal by 10dB at 100Hz. The EQ button places the equalisation in and out of the signal path and is illuminated yellow when the EQ is active. The channel can be used to control either one of two separate timer displays.



S2-C6SS 6 Way Stereo Source Select Channel With EQ.



S2-C6SS 6 Way Stereo Source Select Channel With EQ and Rear.

## S2-CSMM Stereo Mix Minus Channel

The stereo mix-minus channel has one balanced stereo line level input and a balanced stereo mix-minus output, on XLR connectors. The channel is intended for use where a remote stereo source, such as another studio connected via ISDN, requires a stereo cleanfeed return. The cleanfeed is generated by the mix-minus method from either the PGM or AUD outputs, depending on the routing selection.

Selecting the CUE/PFL & T/B button routes the pre-fader input signal to the monitoring system where the signal can be heard via headphones and/or loudspeakers.

In addition, talkback is routed to the cleanfeed output. This enables the presenter/technical operator to communicate with the remote source prior to going live to air. PFL can be automatically disabled when the fader is opened.

The outputs on this channel can be configured by jumper settings as a mono sum of mix-minus on the left channel and continuous talkback on the right channel (for some ISDN codecs and hybrid applications).

The fader, or ON button, control a logic remote output function. The remote

function can be configured to be either momentary or latched. The remote outputs on the 9 way D-type plug are fed from NPN opto-isolators.

Continuous momentary start can be enabled such that when the fader is up and the channel is on, each press of the ON button triggers a momentary start.

Two remote pins can also be configured for general use as either inputs, outputs, latching, or momentary and active high or low. Uses for this include channel live indication or specific channel function remote control.

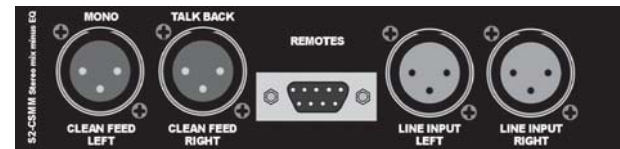
Selecting the PGM and/or AUD buttons routes the channel audio output to the PGM and/or AUD mix buses. Selecting the PGM button also routes the PGM main output via the mix minus system to the cleanfeed output. Selecting the AUD button routes the AUD main output to the mix minus system. The mix minus is derived from the PGM output when selecting both PGM and AUD.

Equalisation is fitted as standard on this channel and operates in the same way as on the S2-CSE channel.

The channel can be used to control either one of two separate timer displays.

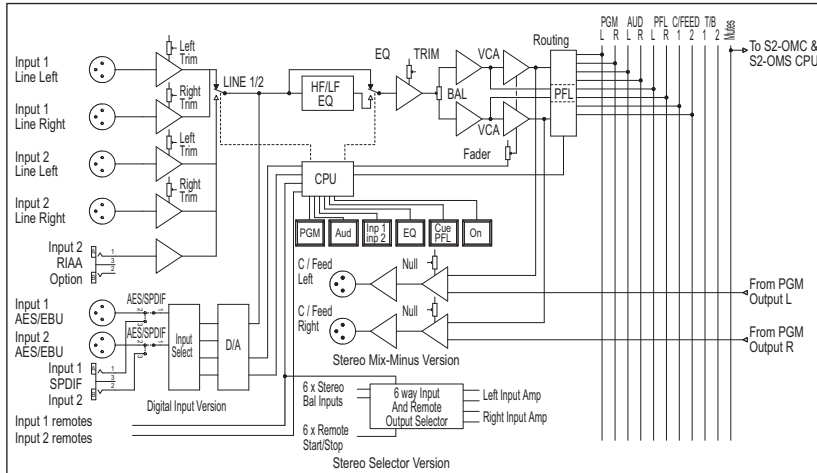


S2-CSMM Stereo Mix Minus Channel.



S2-CSMM Stereo Mix Minus Channel Rear.

## S2-CT Telco Channel



S2-CSG Stereo Line With Gram (S2-CSGE with EQ), S2-CS Dual Stereo (S2-CSE with EQ), S2-CDS Digital Dual Stereo (S2-CDSE with EQ), S2-CSMM Stereo Mix Minus and S2-C6SS Stereo Source Select.

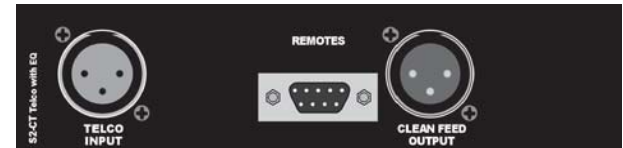
The telco input channel controls the connection to a telephone balance unit (or hybrid). It has one balanced line level mono input on Neutrik XLR, and one balanced line level cleanfeed output to the hybrid.

Selecting the CUE/PFL & T/B button routes the pre-fader input signal to the monitoring system where the signal can be heard via headphones and/or loudspeakers. In addition, talkback is automatically routed back to the caller via the cleanfeed system. This enables the presenter, or technical operator, to communicate with the caller prior to putting the caller live to air. PFL can

be automatically disabled when the fader is opened.

There is a logic remote output to place the hybrid "on hold" by using the LINE HOLD button. The remote output on the 9 way D-type plug is fed from an NPN opto-isolator and it can be made momentary or latching.

Selecting the PGM and/or AUD buttons routes the channel audio output to the PGM and/or AUD mix buses. The buttons are illuminated in green to indicate the routing status. Changing the status of the PGM button is inhibited when the channel is "live".



S2-CT Telco Input Channel Rear.

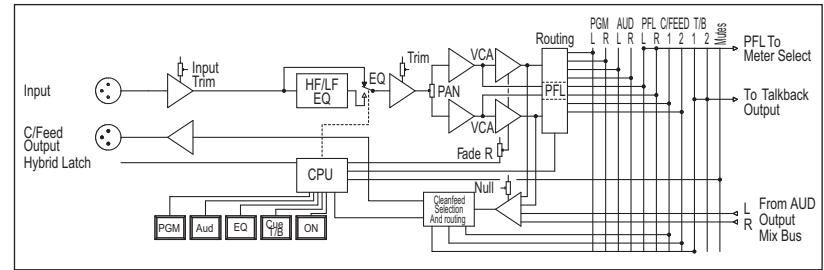


S2-CT Telco Input Channel.

Selecting the PGM button also routes the channel to one of the two true cleanfeed buses (jumper selectable). When selecting only the AUD button, for example to record off-line telephone conversations, a cleanfeed is generated via the channel mix-minus system. When both PGM and AUD are selected the channel operates in

the true cleanfeed mode, sending the PGM signal to the cleanfeed bus.

Equalisation is fitted as standard and is enabled by the EQ button, providing 10dB cut and boost at HF (6.5kHz) and LF (100Hz). The EQ button places the equalisation in and out of the signal path and is illuminated yellow when the EQ is active.



S2-CT Telco Input Channel.

## S2-CB Blank Channel

This blank channel is used to fill in areas of the mixer where you don't require an input or output channel.



## S2 Output Channels

There are six different output channels available, for controlling monitoring in both a Control Room and separate Studio, with the two main output channels also having a master fader option.

The master output channels provide balanced analogue audio outputs as well as simultaneous AES/EBU or S/PDIF digital audio outputs for both PRG and AUD buses. The analogue mono output can be selected from PRG or AUD and meter selection is available to show either the PRG bus, AUD

bus, or to follow the Control Room Monitor selection.

Both Control Room and Studio Monitor channels are available for controlling what's routed to the presenter's and guest's headphones and monitor speakers. 2 external inputs can also be monitored.

A minimum of 3 channels need to be fitted into a mixer: channels S2-OMC, S2-ODP (or S2-ODPF) and S2-ODA (or S2-ODAF) must be fitted and S2-OMS is optional.

## S2-OMC Control Room Monitor Channel

The control room monitor channel is common to every mixer and is used for the monitoring of various sources on the control room loudspeakers (MONITOR) on a 6.35mm stereo jack socket and presenter's headphones (PHONES) on 6.35mm stereo jack sockets. Front panel control knobs are used to vary the monitor and headphone levels and headphones can be plugged in on the front or the rear of this channel. The control room monitor loudspeaker and headphone levels are variable between 0 (cut off) and 10 (max).

A four way electronically interlocking switch bank selects the source routed to the speakers and headphones from either of two external inputs (EXT 1, EXT 2), the PGM, or AUD output. The buttons illuminate to show the selected source, PGM and AUD in green, EXT 1 and EXT 2 in red. The external inputs can be used for monitoring an off air signal or another studio output.

An illuminated Mute LED shows when a live microphone channel in the control room has muted the speakers, to prevent feedback. Mute outputs on the remote connector of

the PGM output channel can be used to remotely illuminate "Mic Live" lights.

AUTO CUE/PFL buttons adjacent to each level control allow the monitoring of PFL when an input channel has been selected to CUE/PFL. In addition, SPLIT CUE/PFL can be selected to the headphones, which will place the selected source in mono in one ear and PFL in mono in the other.

This channel controls the signal conditioning for the talkback input and output and routes these signals to and from the talkback bus.



S2-OMC Control Room Monitor Rear.



S2-OMC Control Room Monitor Channel.

Internal jumpers can be configured to allow talkback to replace or dim the selected source, dimming independently on monitor speakers or headphones.

A Global Talkback system can be configured to allow every contribution point in the control room and studio to communicate with each other via their microphone and headphones.

## S2-OMS Studio Monitor Channel

The studio monitor channel is optional and is used for the monitoring of various sources on the studio loudspeakers (MONITOR) on a 6.35mm stereo jack socket and studio headphones (PHONES) on a 6.35mm stereo jack socket.

A front panel control is used to vary the monitor level. The studio monitor loudspeaker level can be variable between 0 (cut off) and 10 (max). The output will need to be fed to a suitable power amplifier to drive the loudspeakers. Headphones

with impedances of 35Ω and above can be driven directly from the channel headphone connector on the rear panel.

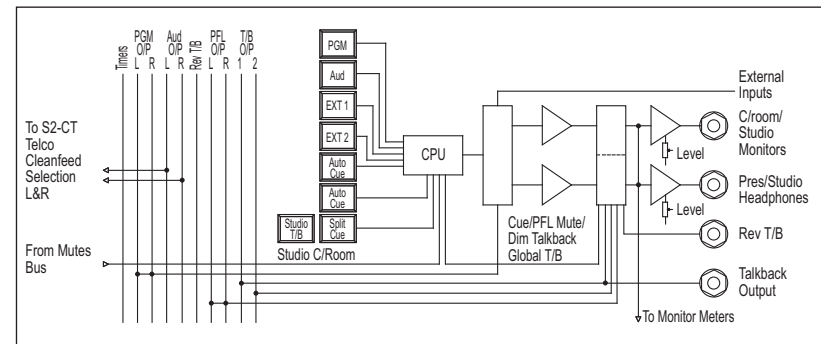
A four way electronically interlocking switch bank selects the source routed to the speakers and headphones from either of two external inputs (EXT 1, EXT 2), the PGM, or AUD output. The buttons illuminate to show the selected source, PGM and AUD in green, EXT 1 and EXT 2 in red. External inputs can be used for monitoring an off air signal or another studio output.

An illuminated Mute LED shows when a live microphone channel in the studio has muted the speakers. Mute outputs on the remote connector of the AUD output channel can be used to remotely illuminate "Mic Live" lights.

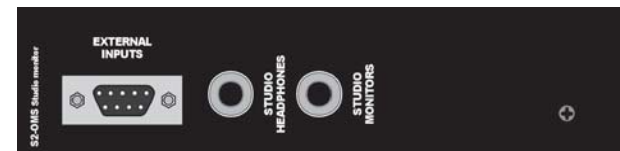
Green illuminated AUTO CUE/PFL buttons adjacent to each level control allow the monitoring of PFL when an input channel has been selected to CUE/PFL, either to the monitors or headphones.

A separate Studio T/B button is provided to allow the presenter/engineer to talk to the studio monitors and/or headphones and internal jumpers allow this talkback to replace or dim the selected source.

A Global Talkback system can be configured to allow every contribution point in the control room and studio to communicate with each other via their microphone and headphones.



S2-OMS Studio Monitor Channel and S2-OMC Control Room Monitor Channel.



S2-OMS Studio Monitor Rear.



S2-OMS Studio Monitor Channel.

## S2-ODP Digital PGM Output Channel & S2-ODPF Digital PGM Output Channel with Master Fader

This channel is common to every mixer and provides a digital and analogue output from the PGM mix bus. The digital output is available as a balanced AES/EBU signal via a standard XLR or as S/PDIF on phono sockets. The balanced analogue PGM output and mono output is on a 15 way D-type connector. This also carries the two sets of latching relay contacts for the control room mutes.

The main power input from the S2-PSU is on this channel. Button switches at the top of the channel select the mono output source from either PGM or AUD. The Mono compatible output could be used to feed a mono transmitter or any station output monitoring system that requires a mono signal, such as a background music system.

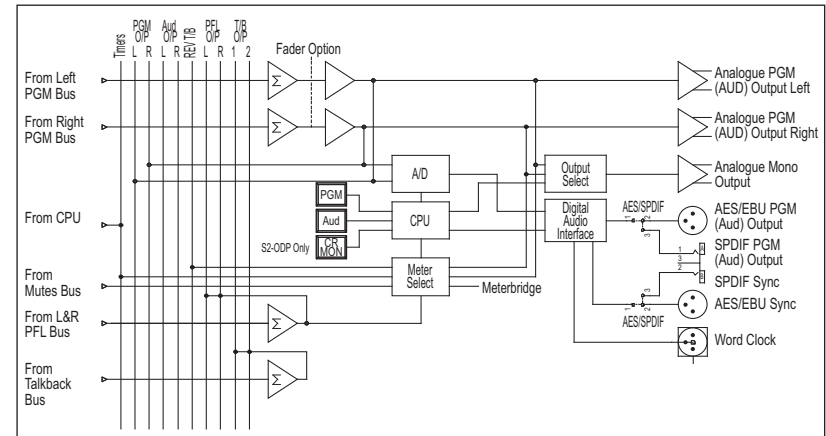
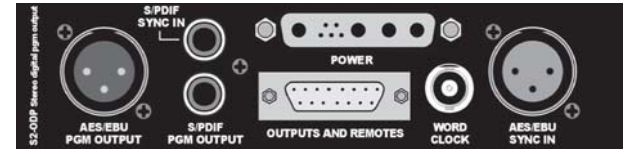
The digital output status bits (consumer or professional), output sample size (16, 20 or 24 bits) and sample rate (automatically or by internal jumpers from 32 kHz to 96 kHz) can be set. The digital output can be synchronised from an external input, or

from an on-board master clock. There are 4 different sync modes : Master, Auto, Auto Lock and Slave.

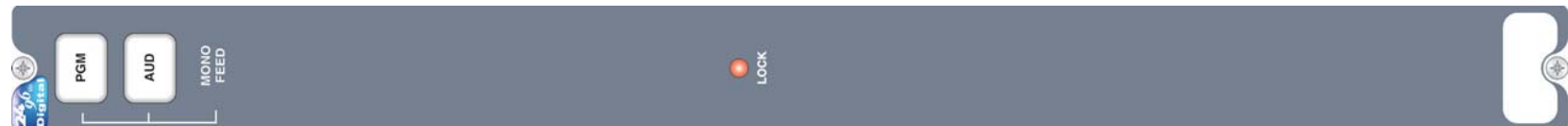
The illuminated LOCK LED shows that the digital output is locked to the onboard master clock, incoming word clock or AES/EBU or S/PDIF sync signal. The channel automatically locks to a valid sync clock, flashing if sync is lost. Synchronisation can be jumper disabled.

The S2-ODPF channel also has a 100mm VCA output fader for production use which provides unity gain when fully open.

S2-ODP Digital PGM Output and S2-ODPF Digital PGM Output with Master Fader Rear.



S2-ODP Digital PGM Output Channel (S2-ODPF with Master Fader) and S2-ODA Digital AUD Output Channel (S2-ODAF with Master Fader).



S2-ODP Digital PGM Output Channel.



S2-ODPF Digital PGM Output Channel with Master Fader.

## S2-ODA Digital AUD Output Channel & S2-ODAF Digital AUD Output Channel with Master Fader

This channel is also common to every mixer and provides a digital and analogue output from the AUD mix bus. The digital output is available as a balanced AES/EBU signal via a standard XLR or as S/PDIF on phono sockets. The balanced analogue AUD outputs are available on a 15 way D-type connector which also carries the two sets of latching relay contacts for the studio mutes.

Button switches at the top of the channel select the monitoring source to the meterbridge. Meters in the meterbridge which are connected to the "Monitor Meter" position will display the selected signal from the electronically interlocking PGM, AUD, or CR MON buttons. The CR MON signal source is whatever is being

monitored on the presenter's headphone on the control room monitor channel, pre talkback and level control. This signal could be PGM, AUD, EXT 1, EXT 2, or PFL, as selected by the presenter.

The digital output status bits (consumer or professional), output sample size (16, 20 or 24 bits) and sample rate (automatically or by internal jumpers from 32 kHz to 96 kHz) can be set. The digital output can be synchronised from an external input, or from an on-board master clock. There are 4 different sync modes : Master, Auto, Auto Lock and Slave.

The illuminated LOCK LED shows that the digital output is locked to the onboard master clock, incoming word clock or AES/EBU or S/PDIF compatible sync signal. The

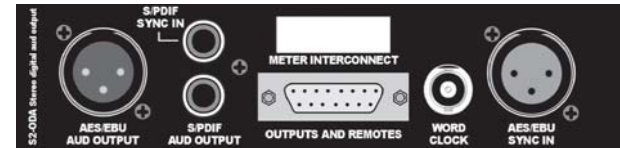
channel automatically searches for a sync signal on the Word Clock, or the selected digital input, and automatically locks to a valid sync clock. If sync is lost then the indicator will flash. Synchronisation can be jumper disabled.

The S2-ODAF channel also has a 100mm VCA output fader for production use which provides unity gain when fully open.

## S2-PG Penny & Giles Conductive Plastic Fader



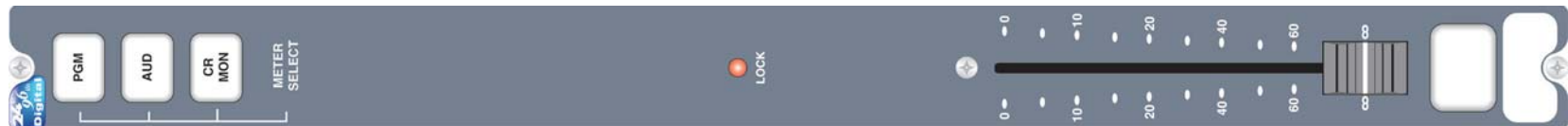
The input and output channels of an S2 mixer can optionally be fitted with high quality Penny & Giles faders.



S2-ODA Digital AUD Output Channel and S2-ODAF Digital AUD Output Channel with Master Fader Rear.



S2-ODA Digital AUD Output Channel.



S2-ODAF Digital AUD Output Channel with Master Fader.





## S2 Meterbridge Modules

In the meterbridge area you can choose from four styles of metering, a phase meter, a dual timer, a PFL/Talkback loudspeaker, 2 talkback modules, 3 switch panels and a range of blanking plates. S2's meterbridge modules are freely assignable so that you can position them exactly where you want them.

The dual meter panels are used for monitoring console signal levels. Up to three different meter panels can be housed in the meterbridge. The meters can be configured internally to be fed from one of three signal sources, the selected source indicated by a LED:

**Select** The output of the meter switch on the AUD output module which can show PGM, AUD, or CR MON, which is the selected monitor source on the control room monitor module, (EXT 1, EXT 2, PGM, or AUD) interrupted by PFL.

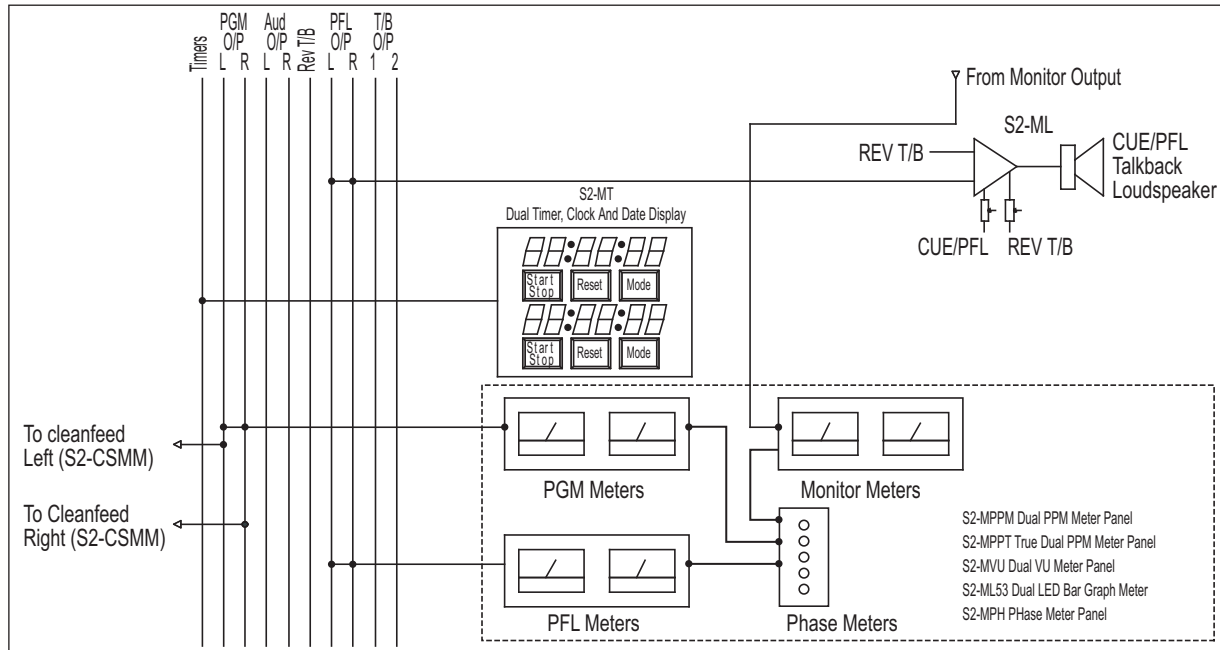
**Program** PGM output which can optionally be interrupted by PFL.

**PFL** The output of the PFL bus.

## S2 Without Meterbridge

The S2 is available without a meterbridge. This does affect some of the features available on the mixer. Contact sales@sonifex.co.uk for further information and pricing.

In the meterbridge area you can choose from four styles of metering, a phase meter, a dual timer, a PFL/Talkback loudspeaker, 2 talkback modules and a range of blanking plates. S2's meterbridge modules are freely assignable so that you can position them exactly where you want them.



S2-MPPM/T Meterbridge PPM Panel, S2-MVU Meterbridge VU Meter Panel, S2-ML53 Meterbridge LED Meter Panel, S2-MPH Meterbridge Phase Meter Panel, S2-MTBS Station Master and S2-MTB6 6 Way Talkback Panels, S2-MT Meterbridge Dual Timer Panel and S2-ML Meterbridge Loudspeaker Monitor and Talkback Panel.

## S2-MPPM Meterbridge PPM Meter Panel

The S2-MPPM panel has two fast-reading moving-coil meters with PPM-style scale.

The PPMs have a 1-7 scale and are configured such that a 1kHz signal, at 0dB at the PGM output, will indicate a meter reading of 4. Each mark on the PPM scale indicates a 4dB change in signal level.



## S2-MVU Meterbridge VU Meter Panel

The S2-MVU two moving coil VU meters are

configured such that a 1kHz signal, at +4dBu at the PGM output, will indicate a meter reading of 0VU.



## S2-ML53 Meterbridge LED Meter Panel

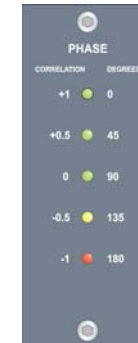
The LED meter consists of 53 LEDs showing both VU and peak representation. Both PPM and VU scales are shown, one on each side of the LED bar-graph.



## S2-MPH Meterbridge Phase Meter Panel

The S2-MPH is a phase meter which operates on the selected source to the meters. 5 LED indicators show the phase angle in 45 degree steps from 0 (in-phase) to 180 (out of phase).

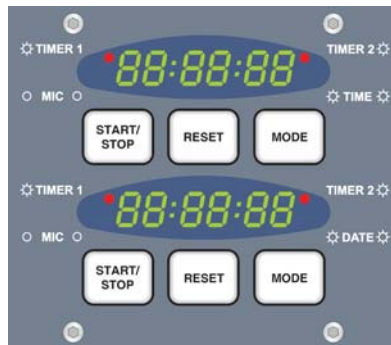
A separate phase meter can be linked to each meter in the meterbridge.



## S2-MT Meterbridge Dual Timer Panel

Each of the dual timers can be used for timing events triggered by Timer 1, Timer 2, or the Mic fader open signal. In addition the upper timer is used for displaying the time of day and the lower timer for displaying the date. The illumination pattern of the red LEDs indicates the timer display mode.

The date and time can be synchronised to a very accurate internal clock or optionally from an external source, MSF, DCF, SMPTE, or RS232 time code string.



## S2-ML Meterbridge Loudspeaker Monitor Panel

The S2-ML speaker is used for monitoring PFL and reverse talkback in the control room directly from the mixer. Two control knobs are provided for adjusting the levels of the PFL and Talkback signals from cut-off at 0 to unity gain at 10. The speaker is muted automatically when the control room mute is active, to prevent feedback.



## S2-MSB1 S2 Meterbridge Switch Panel With 1 Button

This is a meterbridge panel, 1 channel wide, with 1 button which can be used for bespoke control of the S2, or for your own purposes, e.g. equipment control.

Contact Sonifex with your particular mixer control requirements.



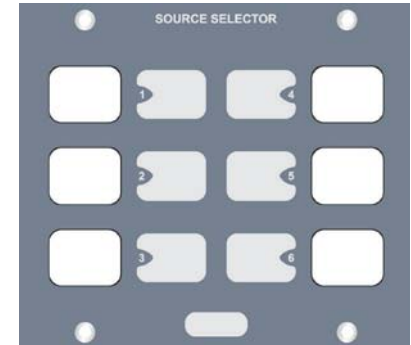
## S2-MSB3 S2 Meterbridge Switch Panel With 3 Buttons

This is a meterbridge panel, 1 channel wide, with 3 buttons which can be used for bespoke control of the S2, or for your own purposes, e.g. equipment control linked to an RB-OA3 on-air switcher.

Contact Sonifex with your particular mixer control requirements.



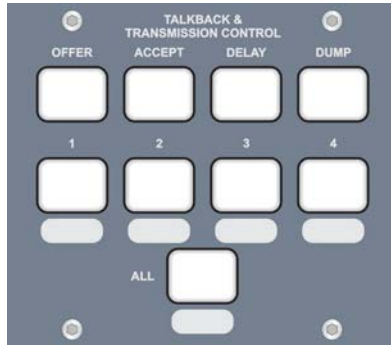
## S2-M6SS Meterbridge 6 Way Source Select Panel



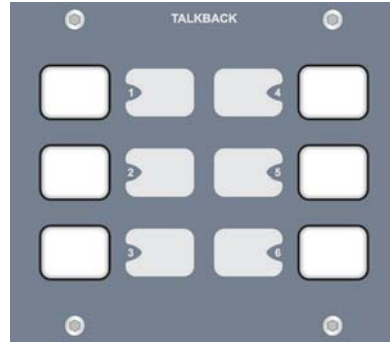
The meterbridge source selector panel produces a stereo analogue audio output from 6 selectable stereo analogue sources, which can be connected to a stereo input channel within the mixer, or the EXT 1 and EXT 2 monitor inputs, to provide up to 12 external monitor inputs. There are 6 illuminated push buttons, which select and indicate the current channel selection. The 6 stereo sources are connected on the rear of the panel via a connector, which uses exactly the same pin configuration as the stereo audio source input connector on the S2-C6SS channel.

## S2-MTBS Meterbridge Station Master Talkback Panel

This is used for interfacing with a Sonifex Station Master studio switcher and talkback router, or the RB-OA3 on-air switcher, and has buttons for talkback, Offer and Accept switching and profanity delay control.



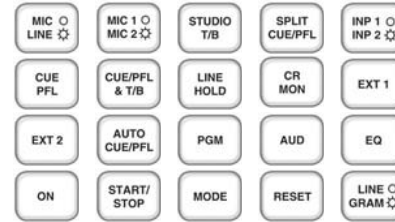
## S2-MTB6 Meterbridge 6 Way Talkback Panel



This is used for communicating with up to 6 other locations, studios or mixers, and with the Sonifex TB-6D and TB-6R talkback intercoms. While a button is pressed, the switch is illuminated and the talkback is active. The buttons work with both a momentary and latched operation - if held down, the selection is cancelled on release. Otherwise the button is alternate action.

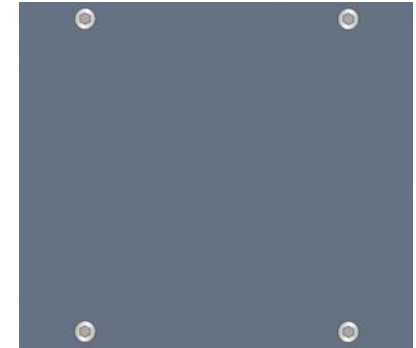
## Alternative Button Text

For meterbridge panels, the buttons can be supplied with different printed script. A few examples are shown here, but for a full list, please go to the Sonifex website: [www.sonifex.co.uk/s2/s2-buttons.shtml](http://www.sonifex.co.uk/s2/s2-buttons.shtml)



## S2-MB1-5 Meterbridge Blanking Plates 1-5

Meterbridge blanking plates are available in channel widths from 1 to 5 inclusive and are used to fill areas in the meterbridge not occupied by active modules.





## S2 Chassis Sizes

The S2 chassis is available in 5 channel width sections, allowing 5, 10, 15, 20, 25 and 30 channel width mixers. This means S2 can be used for small newsrooms or large on-air situations.

### S2-05 Chassis

Chassis with 5 channel width sections.



### S2-15 Chassis

Chassis with 15 channel width sections.



### Chassis Sizes

Model No.	Number of Channels
S2-05	5
S2-10	10
S2-15	15
S2-20	20
S2-25	25
S2-30	30

### S2-25 Chassis

Chassis with 25 channel width sections.



### S2-10 Chassis

Chassis with 10 channel width sections.



### S2-20 Chassis

Chassis with 20 channel width sections.



### S2-30 Chassis

Chassis with 30 channel width sections.



## S2-7SS Script Space

The script space occupies an area of 7 channel widths, and is designed to hold documents or scripts for the mixer operator when desk space is at a premium. The S2-7SS Script Space is 266mm wide x 390mm deep.



## S2-10SS Script Space

This script space is 10 channels wide and is large enough for a small keyboard. The S2-10SS Script Space is 380mm wide x 390mm deep.



## S2 Mixer Weights and Boxed Dimensions

Mixer Type	Width (cm)	Width (inches)	Depth (cm)	Depth (inches)	Height (cm)	Height (inches)	Gross Weight (kg)	Gross Weight (lbs)	Nett Weight (kg)	Nett Weight (lbs)
S2-30	137cm	53.9"	70cm	27.6"	45cm	17.7"	36kg	79lbs	32kg	70lbs
S2-25	117cm	46.0"	70cm	27.6"	45cm	17.7"	35kg	77lbs	31kg	68lbs
S2-20	100cm	39.4"	70cm	27.6"	45cm	17.7"	33kg	73lbs	29kg	64lbs
S2-15	80cm	31.5"	70cm	27.6"	45cm	17.7"	27kg	59lbs	24kg	53lbs
S2-10	60cm	23.6"	70cm	27.6"	45cm	17.7"	25kg	55lbs	22kg	48lbs
S2-05	60cm	23.6"	70cm	27.6"	45cm	17.7"	22kg	48lbs	20kg	44lbs

## Technical Specification For S2

Input/Output Impedances	
Mic Input:	> 1k5Ω electronically balanced
Mono Line Input:	> 20kΩ electronically balanced
Stereo Line Input:	> 20kΩ electronically balanced
PGM & AUD Output:	< 75Ω electronically balanced
Mono Output:	< 75Ω electronically balanced
Monitor Outputs:	< 75Ω unbalanced
AES Input/Output:	110Ω
S/PDIF Input/Output:	75Ω
BNC Wordclock input:	50Ω
Input/Output Gain Range	
Mic Input:	Preset pot +13dB to +66dB ref -50dBu, TRIM pot ±12dB
Mono Line Input:	Preset pot -6dB to +10dB ref 0dBu, TRIM pot ±12dB
Stereo Line Input:	Preset pot -6dB to +10dB ref 0dBu, TRIM pot ±12dB
Telco Input:	Preset pot -6dB to +10dB ref 0dBu, TRIM pot ±12dB
Telco Output:	Preset pot -6dB to +4dB ref 0dBu
Mix Minus Input:	Preset pot -6dB to +10dB ref 0dBu, TRIM pot ±12dB
Mix Minus Output:	Preset pot -3dB to +3dB ref 0dBu
Digital Input:	0dBFS = +12dBu on input; TRIM pot ±12dB allowing 0dBu to +24dBu
Digital Output:	0dBFS = +18dBu
Frequency Response	
Mic Input:	40Hz to 20kHz, -1dB,+0dB (-3dB at 130Hz with HPF in)
Line Inputs:	20Hz to 20kHz, - 0.5dB,+0dB
RIAA Input:	30Hz to 16kHz ±1.5dB RIAA equalised
Noise (20Hz to 20kHz)	
Mic Input E.I.N.:	-129dB with 150Ω source
Stereo Inputs (fader down, no routing):	-89dB ref 0dB
Stereo Inputs (fader down, one channel routed):	-89dB

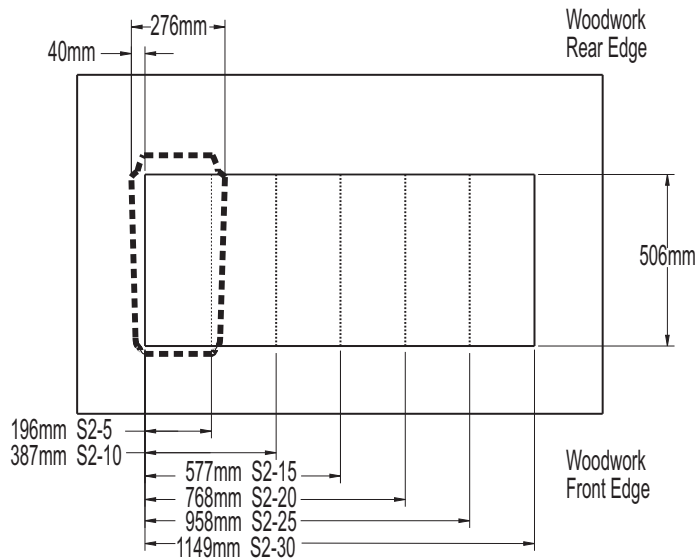
Stereo Inputs (unity gain, no routing):	-89dB
Stereo Inputs (unity gain, one channel routed):	-86dB
Stereo Inputs (unity gain, two channels routed):	-83dB
Distortion	
Total Harmonic Distortion:	0.015% at 1kHz, 0dB
	0.025% at 10kHz, 0dB
Crosstalk	
Inter-channel:	< -90dBu
Stereo:	-90dBu at 1kHz
Equalisation	
LF Shelving at 100Hz:	±7dB
HF Shelving at 6.5kHz:	±7dB
Range	
Pan Range:	Pot position: Fully clockwise, centre, fully anti-clockwise; Left: Off, 0dB, +3dB; Right: +3dB, 0dB, Off respectively.
Balance Range:	±6dB
Common Mode Rejection Ratio	
Mic Input:	> 100dB at 70dB gain
Digital I/O	
Sync Input Sample Rate:	30kHz - 100kHz
Output Sample Rates (Using Onboard Clock):	32kHz, 44.1kHz, 48kHz, & 96kHz
(Using Sync Input):	30kHz - 100kHz
Output Sample Width:	16, 20, 24 bit
Output	
Headphone Output Load:	>45Ω, 400Ω recommended
Maximum Output (Analogue):	+26dBu balanced into 2kΩ or greater
Power	
Power (S2-PSU):	Filtered IEC, switchable 115V, 230V, fused, 210W max.



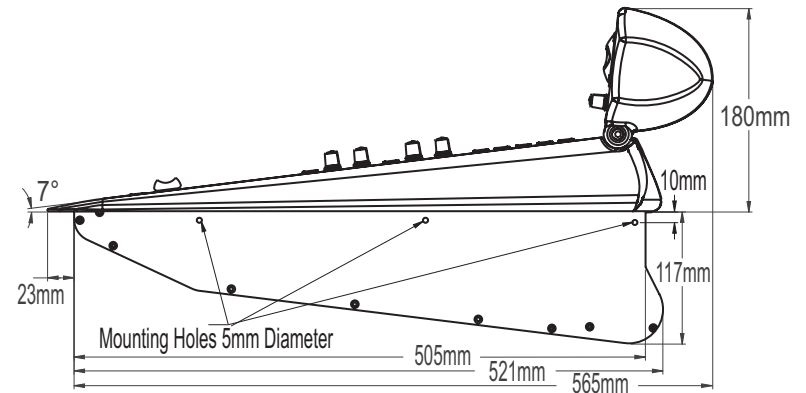
## S2 Mixer Placement In Furniture



*Solutions Single Mixer Furniture Package Showing an S2-25 Mixer.*



*S2 Placement in Cut-Out Viewed from Above.*



*S2 Mixer Viewed from Side Profile.*



## S2-PSU Power Supply



S2-PSU Front Panel.

The S2-PSU is a 1U high rack-mount unit, which supplies power to the entire range of S2 mixers. A lead with a special 9 pin D-Type socket on each end is used to connect the power supply to the S2-ODP PGM output channel on the mixer.

LEDs on the front of the unit indicate whether the power to the voltage rails is being supplied correctly.

### Dimensions (S2-PSU)

(Raw): 48cm (W) x 24.3cm (D) x 4.4cm (H)  
19" (W) x 10" (D) x 3.5" (H)

(Boxed): 54cm (W) x 41cm (D) x 16cm (H)  
21.3" (W) x 16.1" (D) x 6.3" (H)

### Weight (S2-PSU)

Nett: 6kg Gross: 7.8kg  
Nett: 13.2lbs Gross: 17lbs



S2-PSU Rear Panel.

## S2-BI Bus Interlink Cable

This is used to connect two S2 chassis so that they can function as one mixer. Note that a maximum total of 30 channels is allowed in a split mixer configuration.







## S2-PSUS Dual Power Supply Switcher



*S2-PSUS Front Panel.*

The S2-PSUS is a passive power switcher which takes the power feeds from 2 x S2-PSU units and switches between them in the event of failure. Two trailing leads 0.5m in length connect to 2 x S2-PSU units. With LED failure indicators and GPI alarms, the S2-PSUS is the perfect dual redundant power supply module.

### Dimensions (S2-PSUS)

(Raw):	48cm (W) x 23cm (D) x 4.4cm (H)
	19" (W) x 9" (D) x 1.7" (H)
(Boxed):	55cm (W) x 39.3cm (D) x 8.5cm (H)
	21.6" (W) x 15.5" (D) x 3.4" (H)

### Weight (S2-PSUS)

Nett: 1.58kg	Gross: 2kg
Nett: 3.5lbs	Gross: 4.4lbs



*S2-PSUS Back Panel.*

# **SONIFEX**

[www.sonifex.co.uk](http://www.sonifex.co.uk)

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