

MICROPHONE INPUT MODULE

INPUT SECTION

This module accepts either a microphone or a balanced mono line input. A state of the art, electronically balanced microphone amplifier is used, achieving a noise performance at full gain which is typically less than 0.5dB from theoretical Johnsons noise when used in conjunction with microphones of 150 to 200 ohms.

This high performance is achieved by eliminating the need to employ an input transformer and offers improvements in frequency response, noise performance, distortion, signal handling and high frequency common mode rejection over typical transformer based designs. The impedance of the balanced microphone input is greater than 2k ohms and the balanced mono line input has an impedance greater than 20k ohms.

PAD

This control inserts a 20dB attenuator ahead of the microphone amplifier, allowing very high input levels to be accepted without overloading the input circuit.

LOCAL

Depressing the LOCAL button will cause the monitor loudspeaker output to be muted whenever the fader is opened with the microphone input selected. This allows microphones to be used in close proximity to the monitor loudspeakers – such as in broadcast applications – thus preventing howl round on the loudspeakers.

LINE

This button switches the input to the channel between the microphone or mono line inputs. With the button OUT the channel will operate in microphone mode; depressing the button selects the mono line input.

GAIN

This control varies the input gain of the channel. With the microphone input selected it provides a range from 20dB to 60dB (a further 60dB gain range is achieved when used in conjunction with the PAD button).

EQUALISER SECTION

This is a versatile 3 band arrangement which offers great flexibility. Centre detents are fitted to the cut/boost controls to allow easy setting of the "flat" position. An equaliser in/out switch is provided to isolate the equaliser section and enables instant comparison of the equalised and unequalised sound to be made.

High Pass Filter

This control activates a low frequency filter with a 3dB turnover point at 80 Hz and an eventual slope of 3dB per octave. This provides excellent rejection of 'P' popping, traffic noise and stage rumble.

HF (High Frequency)

Up to 15dB of boost or cut is provided at 10kHz with a shelving characteristic.

MID (Mid Frequency)

Up to 15dB of boost or cut is provided at any selected frequency between 0.5 and 8kHz, with a 'bell' response curve and a 'Q' of 1.5.

LF (Low Frequency)

Up to 15dB of boost or cut is provided at 60Hz with a shelving characteristic.

EQ (Equalisation)

This button inserts the equaliser section into the signal path of the channel with the exception of the high pass filter, which works independently.

AUX

Two independent post fader auxiliary sends are provided and either or both may be switched to pre fader by depressing the corresponding PRE button.

PAN

This control allows the channel output to be positioned at any point within the stereo output "image". A detent is provided to allow easy location of the centre position. The centre position presents a loss of 4.5dB giving a constant sound level wherever the signal is positioned.

PFL (Pre Fader Listen)

Depressing the PFL button allows the monitoring of the signal immediately pre the channel fader and post the insert point and channel ON switch.

ON (Channel Mute)

Depressing the ON button allows the signal to pass to the channel fader and auxiliary sends. The signal remains available to the insert send jack and PLF.

PEAK

This LED illuminates when the signal level present at the equaliser output approaches within 3dB of clipping.

CHANNEL FADER

A high quality 100mm unit incorporating VCA control providing an exceptionally smooth feel. Switching is incorporated for the monitor mute and red light functions.

STEREO LINE / RIAA INPUT MODULE

INPUT SECTION

This accepts either a stereo high level line level input or a stereo magnetic phono input. A switchable 14dB amplifier is included to enable domestic hi-fi equipment to be interfaced. The impedance of the stereo balanced line input is greater than 20k ohms. The impedance of the stereo magnetic phono input is 46k ohms unbalanced.

LEFT/RIGHT/MONO

Depressing the LEFT button will feed the left input to both the left and right channels. Depressing the right button feeds the right input to both the left and right channels. Depressing both LEFT and RIGHT buttons will mono the channel.

RIAA (Phono)

Depressing the RIAA button changes the input of the channel from stereo line to stereo phono.

GAIN

This varies the input gain of the channel from -10dB to +10dB. When used in conjunction with the 14dB domestic interface a 34dB gain range is achieved.

EQUALISER SECTION

This is a versatile 3 band arrangement which offers great flexibility. Centre detents are fitted to the cut/boost controls to allow easy setting of the "flat" position. An equaliser in/out switch is provided to isolate the equaliser section and enables instant comparison of the equalised and unequalised sound to be made.

HF (High Frequency)

Up to 15dB of boost or cut is provided at 10kHz with a shelving characteristic.

MID (Mid Frequency)

Up to 15dB of boost or cut is provided at any selected frequency between 0.5 and 8kHz, with a 'bell' response curve and a 'Q' of 1.5.

LF (Low Frequency)

Up to 15dB of boost or cut is provided at 60Hz with a shelving characteristic.

EQ (Equalisation)

This button inserts the equaliser section into the signal path of the channel with the exception of the high pass filter, which works independently.

AUX

Two independent post fader auxiliary sends are provided and either or both may be switched to pre fader by depressing the corresponding PRE button.

BAL (Balance)

The balance control allows the left and right signals to be fed to their corresponding mix busses in varying proportions. This allows a correction of stereo level imbalance or for special effect. A centre detent is fitted allowing easy setting of the calibrated setting.

PFL (Pre Fader Listen)

Depressing the PFL button allows monitoring of the channel signal immediately prior to the channel fader.

REM (Remote Start)

This button controls machine start commands to a jack socket on the rear panel of the module. On channels without fader start options depressing the REM button creates a machine start command and releasing the button cancels the command. On channels with fader start option a machine start command is created in the same manner providing the fader is open. However, depressing the REM button before opening the fader enables the fader start switch and a machine start command to be created upon opening of the fader and cancelled upon its closure.

NB. Modules are supplied with continuous start commands suitable for certain makes of turntables etc. A pulse command of normally 40ms duration suitable for certain makes of CD and cart machines can be selected by a simple, clearly marked, PCB link alteration.

CHANNEL FADER

A high quality 100mm Unit incorporating VCA control providing an exceptionally smooth feel. Switching is incorporated for fader start applications.

TELCO / LINE INPUT MODULE

This versatile module has been designed to allow the connection of the Soundtech Series A mixing console to telephone systems via a suitable hybrid. In addition, the cleanfeed and communication facilities make it the ideal module to control outside broadcast feeds.

AUDIO INPUTS

Two balanced, line level inputs are available on the 15-way D connector on the rear panel. Called "TEL" and "LINE" these inputs are technically identical but selection via the front panel switch creates differing control functions.

CHANNEL OUTPUT

In addition to feeding the internal busses (Mix; Aux 1; Aux 2) this channel also generates its own output on the 15-way D connector on the rear panel. This output carries either a cleanfeed or a mono desk output which may be overridden by a communications signal. In use as a telephone channel this could be used to provide a telephone hybrid unit with station output and two way off-air communication to the caller. Alternatively, cue and talkback to an outside broadcast source could be provided.

CONTROL CIRCUITS

In addition to the audio inputs and outputs the following control functions are available on the 15-way D connector:

1. Closing pair associated with each audio input via the TEL/LINE selector and CHANNEL ON switch. If the telephone hybrid in use has a remote control switching system it may be possible to use this function to bring either the telephone instrument or the hybrid into operation.
2. Incoming signal indication CALL. If a signal associated with incoming calls is available from the telephone system (or a "squelch" signal from a radio receiver for example) this may be used to drive the CALL LED to give a visual indication of status. The CALL SENSING input will register external AC or DC signals in the range of 5 to 100 volts. In certain countries the telephone authorities may allow direct connection of this facility across the telephone line. There are also voltage lines available on the 15-Way D connector which can be used in conjunction with any closing pair to activate this function.

IMPORTANT NOTE

If a telco module is added to a Soundtech Series A console after purchase Link LK-1 on the monitor board must be cut. Mixers fitted with telco channels from new will be suitably modified.

EQ (Equalisation)

This button inserts the equaliser section into the signal path of the channel with the exception of the filter, which works independently.

AUX

Two independent post fader auxiliary sends are provided and either or both may be switched to pre fader by depressing the corresponding PRE button.

PAN

This control allows the channel output to be positioned at any point within the stereo output "image". A detent is provided to allow easy location of the centre position. The centre position presents a loss of 4.5dB giving a constant sound level wherever the signal is positioned.

PFL (Pre Fader Listen)

Depressing the PFL button allows the monitoring of the signal immediately pre the channel fader. In addition it may be used in conjunction with the COMM button to activate the communicate facility as follows. With the COMM button depressed (this alone has no effect), depressing the PFL button cuts the cleanfeed or mono desk output being fed to the channel output and replaces it with a communicate signal. The communicate signal can be any line level signal fed into the COMM socket on the rear panel. It is suggested that a feed from the presenter mic insert point could be used. This arrangement allows two way off-air conversations with a telephone caller at the touch of a single button.

ON (Channel Mute)

Depressing the ON button allows the signal to pass to the channel fader and auxiliary sends. The signal remains available to PFL. In addition this switch makes or breaks one of the two DC closing pairs associated with the appropriate audio input. (LINE or TEL)

CALL

This LED illuminates when a suitable signal (5 – 100V AC / DC) is applied to the CALL contacts on the 15-way D connector. If direct connection across a telephone line is permitted by the telephone authority, a capacitor of typically 2.2uF 200VAC should be connected in series with either leg of the CALL SENSING input.

CHANNEL FADER

A high quality 100mm unit incorporating VCA control providing an exceptionally smooth feel.

CONTROL FUNCTIONS

INPUT SECTION

This accepts two line level signals and each input has an impedance greater than 20k ohms.

+20dB

Depressing this button adds all extra 20dB gain to either input to accommodate low level signals.

COMM (Communicate)

See PFL.

TEL / LINE

This button selects either the Tel or line input to the channel and also controls the channel output signal. In the TEL input mode (switch out) the TEL input is fed into the channel and the channel output is given desk cleanfeed for use with an external telephone hybrid. In the LINE mode (switch in) the LINE input is fed into the channel and the channel output is given mono desk output which may be more useful than a cleanfeed in OB situations. If a clean feed is required this can be achieved by the removal of link LK-1 on the circuit board.

GAIN

This control varies the input gain from -10dB to +10dB. (a gain range of 40dB is achieved when used in conjunction with the +20dB button)

FILTER

Depressing this button inserts a 300Hz to 3kHz bandpass filter to remove extraneous noise from telephone calls. This filter may be used in conjunction with the line input to simulate telephone line audio effects for production purposes.

EQUALISER SECTION

This is a versatile 3 band arrangement which offers great flexibility. Centre detents are fitted to the cut / boost controls to allow easy setting of the "flat" position. An equaliser in / out switch is provided to isolate the equaliser section and enables instant comparison of the equalised and unequalised sound to be made.

HF (High Frequency)

Up to 15dB of boost or cut is provided at 10kHz with a shelving characteristic.

MID (Mid Frequency)

Up to 15dB of boost or cut is provided at any selected frequency between 0.5 and 8kHz, with a 'bell' response curve and a 'Q' of 1.5.

LF (Low Frequency)

Up to 15dB of boost or cut is provided at 60Hz with a shelving characteristic.

OUTPUT MODULE

The left hand side of the output module contains the two master faders for the main mix outputs, two high quality VCA limiters and the auxiliary master send and return controls. The right hand side contains the monitoring and talkback / oscillator control sections. Two W or PPM meters are also included.

LIMITER SECTION

Two independent limiters are provided which may be used separately or linked together to form a stereo pair. The attack time is 1ms. and the release time is programme controlled to avoid "pumping" effects.

LINK

Depressing the LINK button couples the side chains of the limiters, thus preventing left / right imaged shifting on stereo programme material.

THRESHOLD

This control adjusts the point at which limiting commences; thus any further increases in input level will be held back by the limiter. An LED is provided to indicate the on-set of limiting.

IN

This button inserts the limiter into the output chain of the mixer.

AUX RETURNS

Independent left and right AUX RETURN controls are provided allowing separate control of effects returns to the mix busses.

AUX SENDS

Two AUX SEND master controls are provided which control the overall level of each of the two auxiliary outputs. Each output can be monitored by depressing the corresponding AFL button.

MASTER FADERS

Independent left and right master faders are provided which allow control of the final output of the mixer. To preserve the headroom of the mixer these should normally be operated at the 0dB calibration point. Certain versions of the Soundtech Series A (especially broadcast versions) have the master faders omitted and replaced by internal pre-sets which are factory calibrated.

MONITOR SECTION

Separate level controls are provided for monitor loudspeakers and headphones. Normally the mixer output is monitored, but this can be switched to a B input so that a tape machine return or an off air tuner can be monitored. Both of the sources are overridden by PFL or AFL or reverse talkback (if selected- see RTB).

The monitor loudspeaker output is automatically muted when the talkback send button TB is depressed or when a local microphone is operated.

B.MON

Depressing the B.MON button changes the monitoring from mixer output to the B input of the mixer.

B GAIN

This control allows adjustment for non-standard levels from a tape machine or other external source. A centre detent is provided to enable the unity gain position to be easily found.

MON (Monitor)

This control sets the level of the the monitor loudspeakers.

DIM

Depressing this button reduces the output level of the monitor loudspeaker output by 20dB, allowing easy resetting of the original monitor level setting.

MONO

Depressing the mono button switches the headphone and loudspeaker outputs from stereo to mono for quick phase checks. This does not mono the main mixer output.

HPH (Headphones)

This control sets the level of headphone output.

TALKBACK / OSCILLATOR SECTION

This section contains send and return talkback, a 4 frequency oscillator and a routing system.

TALKBACK MIC

This unbalanced XLR type socket is designed to accept a low impedance gooseneck or stub microphone.

TB (Talkback)

This control adjusts the gain of the talkback amplifier.

RTB (Reverse Talkback)

Depressing this button allows reverse talkback to override the monitoring system when an external DC control signal is received

RTB (Reverse Talkback)

This control adjusts the level of the reverse talkback system.

Hz (Hertz)

These two buttons select the 4 frequency options of the oscillator; 50Hz, 100Hz, 1KHz, 10KHz are available.

OSC (Oscillator)

Depressing this button enables the oscillator.

OSC (Oscillator)

This control adjusts the output level of the oscillator.

OSC / TB ASSIGN

These 3 destination buttons allow the oscillator and talkback to be routed to the mixer output or either of the two auxiliary outputs.

RTB (Reverse Talkback)

This LED illuminates whenever a ground is presented to the reverse talkback control input of the mixer. Since this control signal and reverse talkback should be simultaneous this LED indicates the presence of reverse talkback.

TB (Talkback)

Depressing this button routes talkback to any of the selected destinations. If the oscillator is operative TB will override this. A simultaneous DC ground is produced which is available as an output on the mixer.

NB

Please be aware that, in a situation where the talkback facilities of two Soundtech Series A mixers have been connected, if the MIX button is left depressed talkback and/or calibration tones will appear on the main mixer output. Where mixers are used in a broadcast environment care should be taken to highlight this fact to your operators. Our factory will advise on methods of over-riding this function switch if required.

VCA FADER UPGRADE

The Soundtech Series A is now fitted with VCA controlled faders as factory standard. As a consequence noise and stereo tracking problems have been minimised, whilst at the same time the life expectancy of the units has been considerably improved.

The VCA upgraded modules are backward compatible and can therefore be fitted to existing mixers, although, since certain modifications are required to the main channel board, modules will need to be returned to our factory for upgrading – please telephone for current prices. The upgrade board itself is constructed using surface mount technology and therefore not user serviceable – no diagram is provided.

SERIES A MIXING CONSOLE CONNECTION DETAILS

MIC/LINE INPUT MODULE

Function	Connector	Type	Connections
MIC	3 Way XLR-F	B	1=Screen; 2=Hot; 3=Cold
LINE	1/4" Jack A-type	B	Tip=Hot; Rng=Cold; Slv=Scn
INS	1/4" Jack A-type	U	Tip=Recv; Rng=Send; Slv=Comm

STEREO LINE / RIAA INPUT MODULE

Function	Connector	Type	Connections
LINE (L&R)	3-Way XLR-F	B	1=Screen; 2=Hot; 3=Cold
RIAA (L&R)	Phono	U	Tip=Hot; Sleeve=Screen
REM	3 5mm Jack	CP	2 pole closing pair

TELCO MODULE – 15 Way D Type Connector

Pin No.	Function
1....	- 17V via 1k resistor
....9	CALL SENSING input
2....	CALL SENSING input
....10	+ 17V via 1k resistor
3....	Ground
....11	+ audio channel output\
4....	- audio channel output/ Balanced
....12	Closing pair LINE contact
5....	Closing pair COMMON contact
....13	Closing pair TEL contact
6....	+ audio LINE input\
....14	- audio LINE input/ Balanced
7....	audio input ground
....15	+ audio TEL input\
8....	- audio TEL input/ Balanced

1/4" "COMM" JACK SOCKET (Balanced)

Tip = Comm + audio input

Rng = Comm - audio input

Slv = Screen

OUTPUT BLOCK

Function	Connector	Type	Connections
OUTPUT (L&R)	3-Way XLR-M	B	1=Screen; 2=Hot; 3=Cold
AUX 1&2	1/4" Jack A-Type	B	Tip=Hot; Rng=Cold; Sl=Scrn
RET L&R	1/4" Jack A-Type	B	Tip=Hot; Rng=Cold; Sl=Scrn
B MON (L&R)	1/4" Jack A-Type	B	Tip=Hot; Rng=Cold; Sl=Scrn
TB / OSC OUT	1/4" Jack A-Type	B	Tip=Hot; Rng=Cold; Sl=Scrn
RTB	1/4" Jack A-Type	B	Tip=Hot; Rng=Cold; Sl=Scrn
MON OUT	1/4" Jack A-Type	SU	Tip=Left; Rng=Right; Sl=Comm
TB DC	1/4" Jack A-Type	DC	Tip=Receive; Rng=Send; Sl=Comm
RED LIGHT	3.5 mm Jack	CP	2 pole closing pair
TB MIC	3-Way XLR-F	U	1+3=Screen; 2=Hot
HEADPHONES	1/4" Jack A-Type	SU	Tip=Left; Rng=Right; Sl=Comm

KEY

B = Balanced

U = Unbalanced

SU = Stereo Unbalanced

CP = Closing Pair

DC = DC Control – Tip to Sleeve=Receive; Ring to Sleeve=Send.