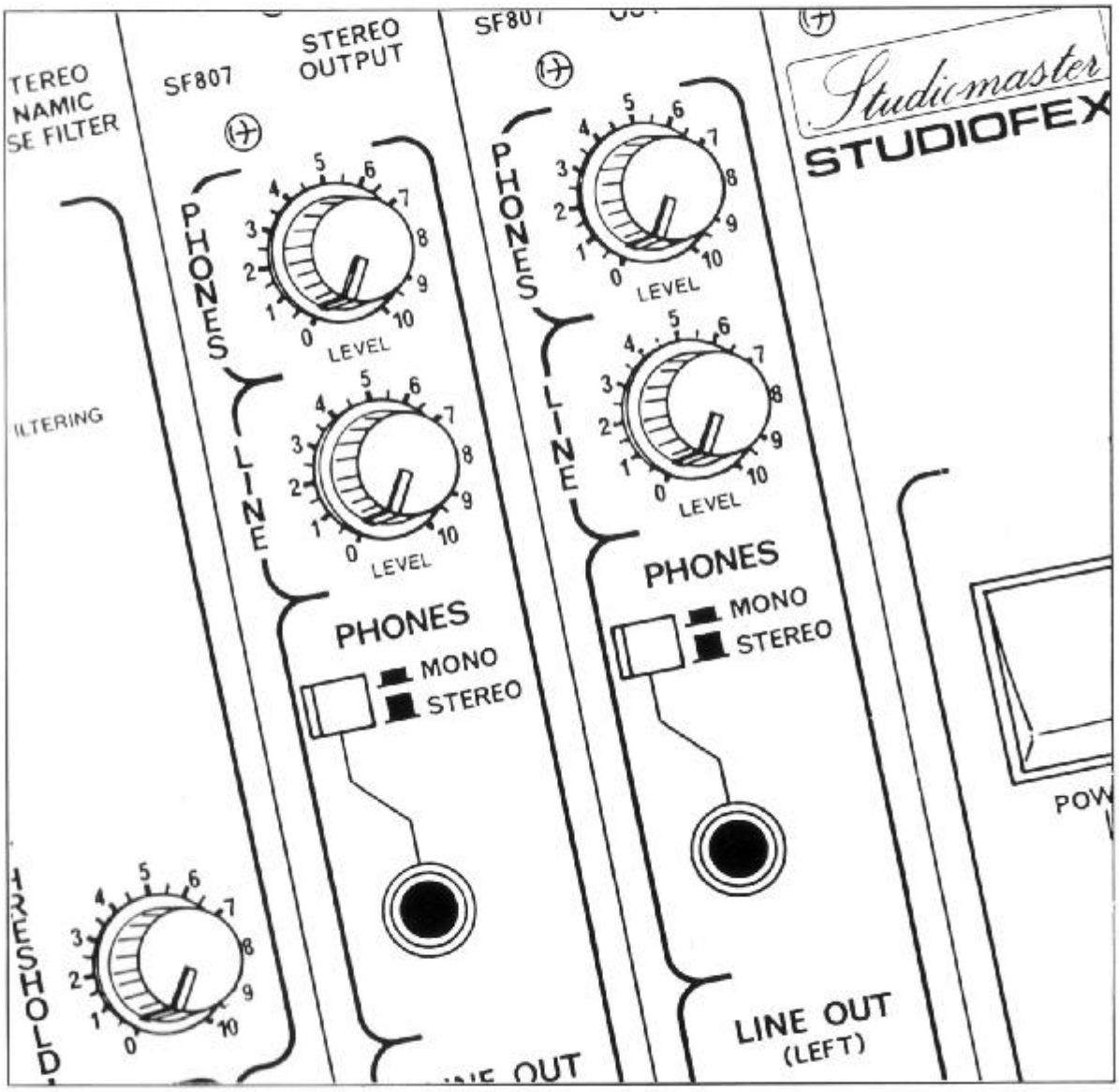
Studiomaster Studiofex SF800

Stereo Gate



Owners Manual

SF800 Stereo Gate

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STUDIOFEX is a fully modular studio effects system which brings together both the features and the performance which today's music demands. To get the best from the **STUDIOFEX SF800 STEREO GATE**, familiarise yourself with all of its features by reading these instructions thoroughly.

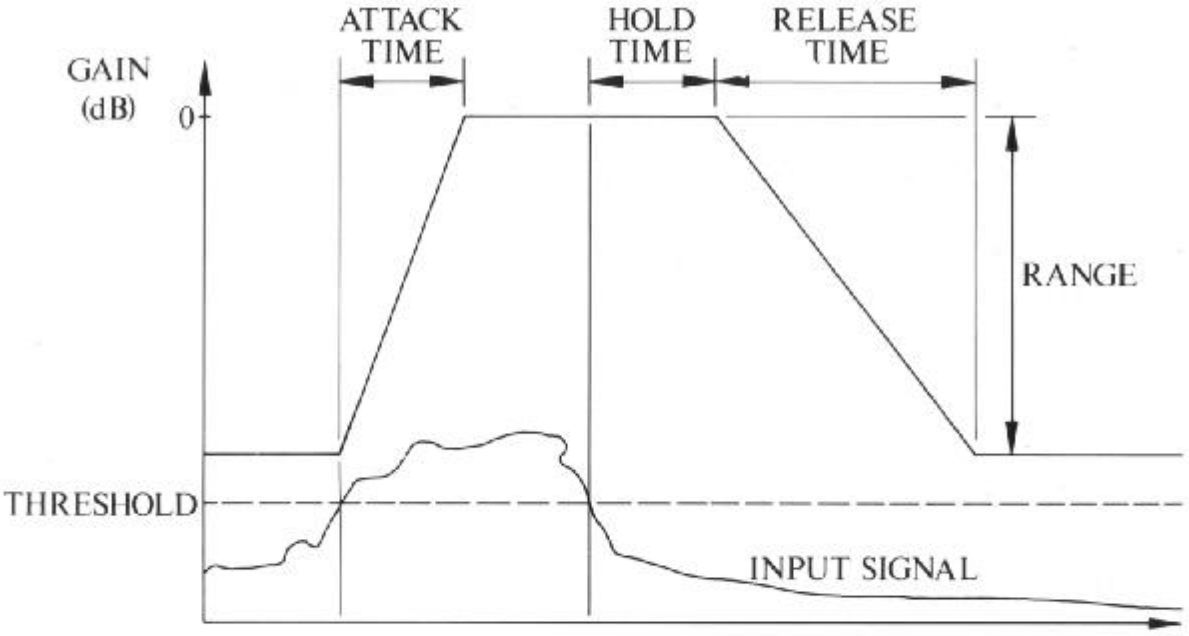
Please also read the instructions which are supplied with the STUDIOFEX MOTHER UNIT.

Function

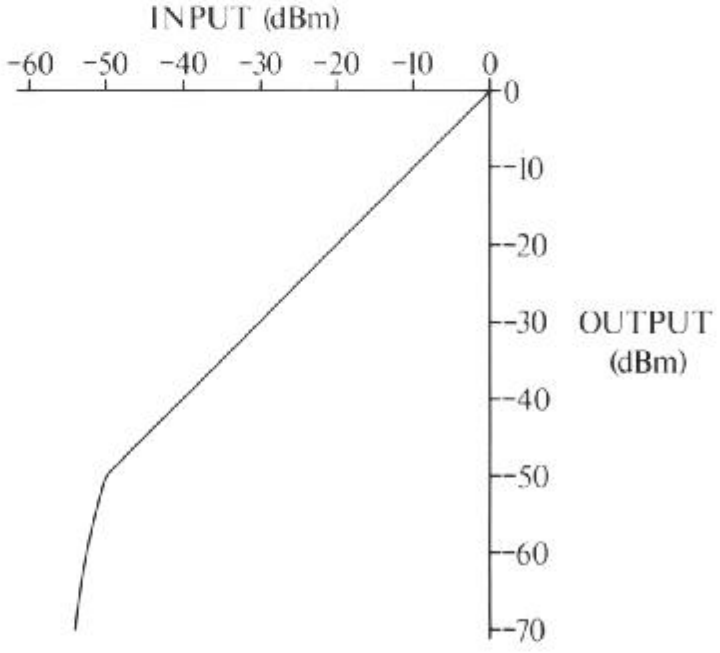
The **GATE**, or **NOISE GATE** as it is often called, is like an automatic gain control which lowers gain when the signal level is very low. The benefit of this is that any extremely low level unwanted sounds such as hum or tape hiss are eliminated at a time when, otherwise, they would be most noticable. The gating action takes place only below a pre-determined level called the **THRESHOLD**, above which the signal is unaffected.

A gate has two main parts; a variable gain amplifier and a detector, or **SIDECHAIN.** The sidechain takes some of the input signal, amplifies it, and depending on the signal level, applies a control signal to the variable gain amplifier.

The gate has many uses other than suppressing unwanted noises, and the SF800 STEREO GATE includes features which extend the creative possibilities.



Gate characteristics **Fig 1**



Transfer curve **Fig 2**

Features

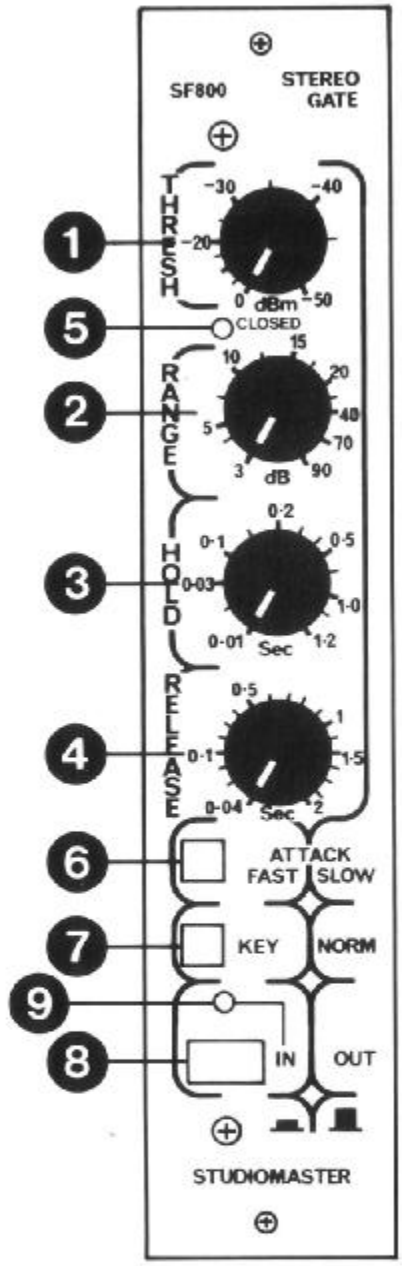
FRONT (see FIG 3)

1 The **THRESHOLD** control determines the sensitivity of the gate to signal level. The further clockwise it is turned, the lower the signal level must be to open the gate.
2 The **RANGE** control determines how much the signal level is reduced when the gate closes.
3 The **HOLD** control varies the time for which the gate is held open after the input signal drops below the **THRESHOLD.**
4 The **RELEASE** control determines how quickly the signal level reduces to the amount set by the **RANGE** control after the input signal drops below the **THRESHOLD.**
5 The **CLOSED** LED lights when the signal level has been reduced by the gate.
6 The **ATTACK** button gives the choice between a **FAST** action, where gain increases to normal rapidly when the input signal exceeds the **THRESHOLD,** or a **SLOW,** gentle increase in gain. Its normal "out" position is for a **SLOW ATTACK.**
7 The **KEY** button allows either an external treatment to be applied to the **SIDECHAIN,** or for an external sound source to trigger the gating action.
8 The **IN/OUT** button allows the gate to be in-circuit or bypassed. When depressed, the gate is in-circuit.
9 The **IN** LED lights when the gate is in-circuit.

REAR (see FIG 4.

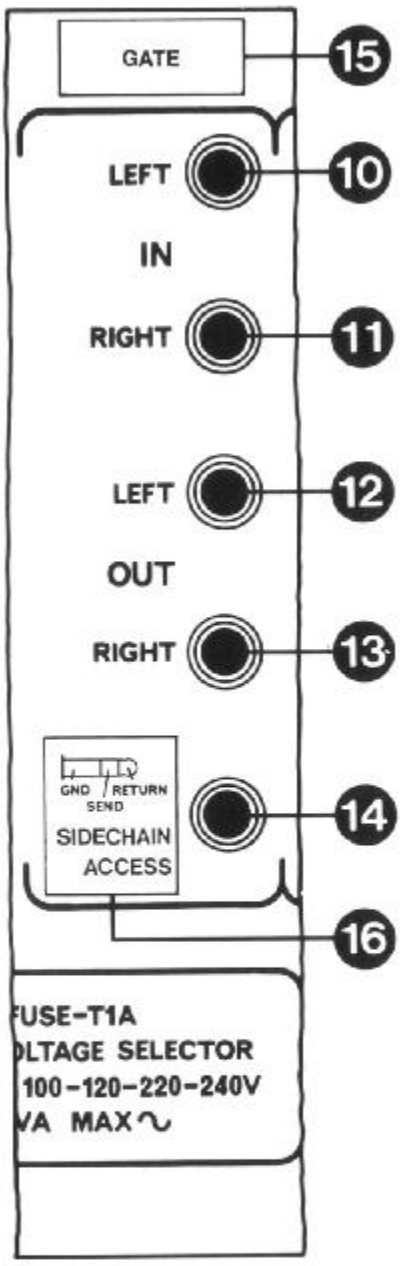
10 **LEFT** channel **INPUT** jack socket.
11 **RIGHT** channel **INPUT** jack socket.
12 **LEFT** channel **OUTPUT** jack socket.
13 **RIGHT** channel **OUTPUT** jack socket.
14 **SIDECHAIN ACCESS** jack socket.
15 Module identification label.

16 Sidechain access label.



Front

Fig 3



Rear

Fig 4

All jacks are wired Tip = Signal, Sleeve = Ground, with the exception of the **SIDECHAIN ACCESS** which is wired Tip = Return, Ring = Send, Sleeve = Ground.

Operation

MODULE IDENTIFICATION

A sheet of labels is supplied. Cut the **GATE** name from the label sheet and stick it above the modules's jack sockets at the rear of the mother unit (as shown in **FIG 4 - 15**). The KEY printing on the rear panel should be covered by applying the **SIDECHAIN ACCESS** label (as shown in **FIG 4 - 16**).

INSTALLATION

To install the SF800 STEREO GATE module into the mother unit, firstly make sure that the power is switched off. Then locate the circuit card of the module squarely into the top and bottom guide slots at the desired position in the mother unit. Gently slide it in. If the module comes to a stop part of the way in, gently move it from side to side so that the rear of the card is guided into the rear guide slots. Now push it fully in. If resistance is felt at this stage, remove the module, and check that the wafer connector has not become damaged. Once the module's front panel is located flush with the front of the mother unit, fix it in place with the special posidrive screws supplied with it. The bushes into which the screws are fitted are initially unthreaded, so when first used some resistance will be felt as the special screws cut a thread.

NOTE: Make sure the screws go in straight. DO NOT overtighten. Use only the screws provided: STUDIOMASTER Part No FX07018.

CONNECTIONS

The mother unit incorporates a signal routing system which routes the output from a module to the input of the module to its right. The

modules are therefore permanently connected in a "daisy-chain" fashion. If a signal is applied to a module left of the gate, and extracted from a module right of the gate, then simply pressing the **IN/OUT** button will bring gating into the daisy-chain. Alternatively, the input and output sockets may be connected via jack leads directly to mixing console insert points or to a patchbay. The SF800 is a stereo device, but it has a single sidechain, so it cannot be used as two separate gates. Single channel operation is possible simply by leaving the unused channel unconnected. Take care that the unused input does not receive any other signal (such as from the routing system) or the gating action will be disturbed. The best way of preventing this occurring is to insert a dummy jack plug in the unused input.

The **KEY** button brings the **SIDECHAIN ACCESS** socket into circuit. This is a stereo socket which allows the gate to be triggered by a signal applied to the Tip contact of the jack plug. The normal sidechain signal is an output on the Ring contact, so that some treatment can be incorporated into the sidechain.

SIGNAL LEVELS

The Studiofex SF800 has been designed with adequate headroom for operation at +4dBm, but has sufficient dynamic range to allow operation at -10dBV.

POSITION IN THE SIGNAL CHAIN

The gate will normally be patched into a mixing console insert point, although it may be required on an effects return or perhaps on the main console outputs. Generally, the gate is placed quite far down the signal chain as it will eliminate noise from all equipment placed

before it. However, if more than one mixing console channel is patched into it, then the controls of the gate need to be set very carefully if the gating action is to remain unobtrusive on all channels.

Applications

ELIMINATING NOISE

For eliminating unwanted noise such as hiss, hum, rattles, squeaks etc., route the signal to be processed via the gate (ideally from the insert point on a mixing console). The **THRESHOLD** control should be set so that the gate is sufficiently sensitive to be triggered by the quietest WANTED signal, but not triggered by an unwanted signal. The **RANGE** control should be turned clockwise until the unwanted sound is adequately attenuated. When the **RANGE** is turned fully clockwise the gate will completely mute any signal below the **THRESHOLD**, but the gating action may become noticable. A slower **RELEASE** time will help in this instance, but if it is too slow, then the gain may not be reduced quickly enough to obscure the unwanted sound. If the gate acts irregularly then turning clockwise the the **HOLD** control slightly will help. The **HOLD** control is generally more useful in creative applications. While a **FAST ATTACK** will be needed to preserve initial transients of sources such as drums, this can (with other sources) lead to transient distortion, giving the effect of a click when the gate opens. Only use the **FAST ATTACK** setting where there is an attack transient to preserve.

SPILL REDUCTION

When a drum kit is "multi-miked" so that

treatments can be applied individually to the different percussion instuments, it is desirable to maintain good separation between them. This can be achieved by patching a gate into the insert point of each drum channel. Set the **THRESHOLD** controls so that each gate opens only when the drum on that channel is played. If it proves impossible to find a **THRESHOLD** setting which allows the gate to open on soft in-channel beats, and not on hard off-channel beats, then an equaliser such as the SF803 PARAMETRIC EQUALISER can be patched into the **SIDECHAIN ACCESS** socket to produce frequency conscious gating. The equaliser must be adjusted so that the gate responds only to the dominant frequency of the in-channel drum, and none of the other drums.

Drum sounds usually sound far better after being "cleaned-up" by a gate which has been set to "square-off" the decay characteristic.

A one-per-channel gating system permanently patched into all the channel insert points would allow not only good channel separation to always be available, but also automatic muting of channels which are not contributing to the mix.

Special Effects

The gated-reverb snare drum sound can be achieved by splitting the dry drum sound into both a reverb device and to the gate **SIDECHAIN ACCESS** socket. The reverb output is then passed through the gate and mixed with the dry drum sound. The gate is then set up with some **HOLD** time so that when the drum is played, the gate allows a burst of reverb through. An even more powerful effect is produced using a digital delay, so that the

reverb sound starts a little after the original, dry drum sound.

Another interesting effect can be achieved by keying the gate carrying one sound by applying another sound source to the **SIDECHAIN ACCESS** socket. A good example of this is to pass a bass guitar signal through the gate, and key it from the kick drum signal. This results in a very tight, punchy bass sound.

Specifications

Frequency Response	:	10Hz to 52kHz +/-1dB
T.H.D.	:	0.05% (1kHz, 0dBm)
Output Noise (open)	:	-80dBm (DIN Audio)
Output Noise (closed)	:	-105dBm (DIN Audio)
Maximum Output Level	:	+7.5dBm into 600ohm +16dBm into 10kohm
Input Impedance	:	15kohm
Crosstalk	:	-76dB (1kHz-10kHz)
Ratio	:	15:1
Attenuation Range	:	3 to 90dB
Threshold Range	:	0 to -50dBm
Attack Time	:	40µs or 1ms
Hold Time	:	15ms to 1.2s
Release Time	:	40ms to 2s

Notes

Notes

Service

Should your **STUDIOFEX SF800 STEREO GATE** develop a serious fault, DO NOT attempt to rectify it yourself. Service work should only be carried out by qualified and experienced Service Engineers.

For this work to be done, consult the dealer from who you purchased your SF800 or alternatively contact the Service Department at the address below:

The Service Department

STUDIOMASTER
Studiomaster House
Chaul End Lane
Luton
Bedfordshire LU4 8EZ
ENGLAND

TEL: 0582 570621
INTERNATIONAL TEL: +44582 570621
TELEX: 825612 STUDIO G
FAX: 0582 570242
INTERNATIONAL FAX: +44582 570242

Or in U.S.A. and Canada:

STUDIOMASTER INC.
1340-G Dynamics Street
Anaheim
CA-92806
U.S.A

TEL: (714) 524 2227
FAX: (714) 524 5096

The contents of this manual are correct at the time of going to press. The manufacturer reserves the right to change specifications and features without prior notice.

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Telex: 825612 STUDIO G
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