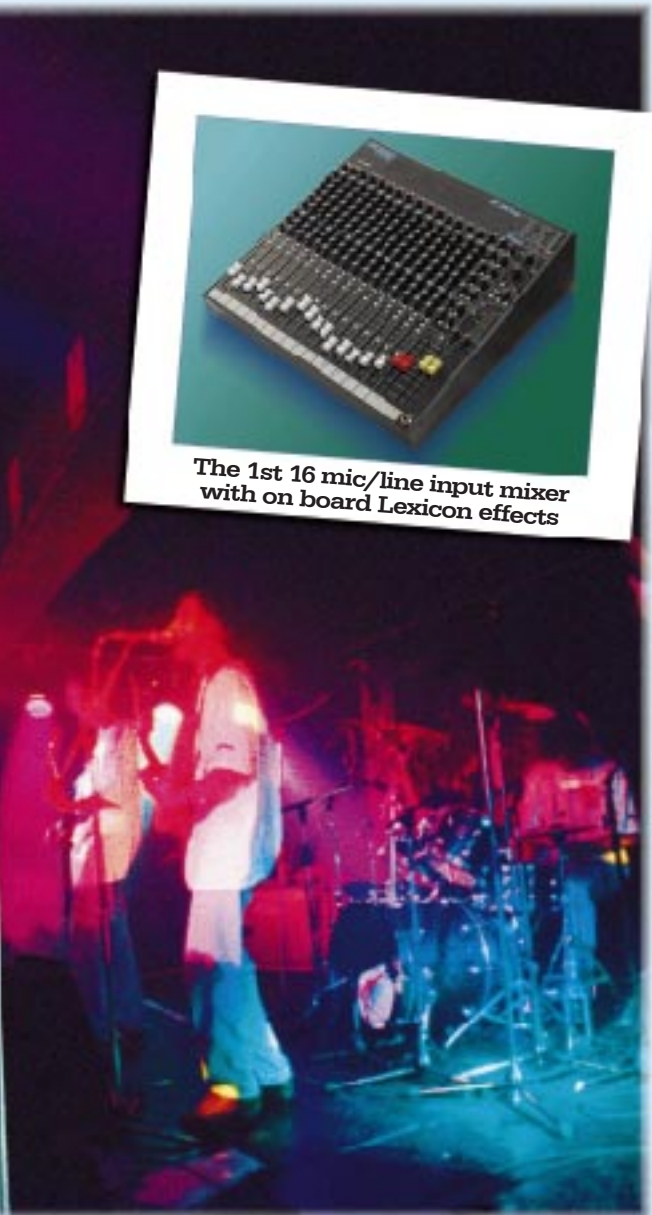


The 1st 16 mic/line input mixer with on board Lexicon effects



Folio FX16
16 mono mic/
line inputs
Lexicon Effects
Processor

MAIN FEATURES

- Digital Sound Quality - 26 Inputs to Mix as standard - 16 Mic/line inputs with bullet-proof studio grade UltraMic™ preamps - Built-in Lexicon Dual Effects Processor with editable programs and parameters
- 16 pre/post switchable Direct Outs for recording or FX sends
- 4 Auxes including pre/post fader configurability - 3-band British EQ with swept mid on mono inputs - Steep 18dB per Octave HPFs on mono ins - Real Solo-in-Place and PFL solo available - 4 Bus Structure with 2 subgroup outs - 4 Stereo Returns for effects units or stereo instruments - 100mm tapered faders throughout - +48V Phantom Power for condenser mics - Channel, Group and Mix Inserts
- 10 segment tri-coloured metering - Dedicated Mono Sum Output
- Relocatable connector field - Rackmount Option

APPLICATIONS

LIVE SOUND

- Bands
- Small venues
- Clubs
- Conferences
- Schools
- Places of worship

STUDIO RECORDING

- Digital and analogue multitrack setups (up to 16 tracks)
- Small studios
- Home studios
- Pre-production suites
- Video post production suites

ONLY MUSIC MATTERS

THE MIXER

MIC/LINE INPUTS

1-4 Connectors

Each channel includes a Direct Out for multitrack recording or individual effects feeds. A balanced XLR connector allows you to connect microphones, with Phantom Power available from the master section for condenser mics. The balanced 1/4" jack allows you to connect electronic instruments, such as keyboards, with balanced or unbalanced cables. Connect signal processors such as compressors or graphic EQs to each channel's insert point using a "Y" cable.

5 Gain Control

Unlike the gain control on some manufacturers' mixers, the custom design of the gain control on the new UltraMic™ gives you an even spread of gain and a smooth response across its 60dB range.

6 High Pass Filter

FX 16's steep 18dB per Octave High Pass Filter is ideal for cutting out unwanted low frequency "muddiness" at live performances or in the studio. It is particularly recommended for vocals.

7 Equaliser Section

Spirit's genuine 3 band British EQ provides extra clarity and control over standard designs with the fixed high and low frequency points carefully chosen to add sizzle or punch to your sound. In addition, the swept mid section allows you to choose the frequencies that need to be altered for the optimum mix - something that is not possible with a fixed mid control. HF at 12kHz with 15dB of cut or boost. LF at 80Hz with 15dB of cut or boost. Mid EQ sweeps between 240Hz and 6kHz, with a Q of 1.5 and 15dB of cut or boost available.

8 Auxiliary Section

FX16 has 4 auxiliary controls, allowing it to be equally useful in live or recording situations. Aux 1 is set to pre-fader/post-EQ for stage monitoring or studio foldback applications, with Auxes 2 and 3 set post-fader/post-EQ as effects sends. However Aux 2 send is switchable pre-fader per channel, giving a maximum of 2 foldback sends if needed. Aux 4 is labelled FX and is a dedicated post-fade send to the internal Lexicon effects unit.

9 Pan

Governs the position of the input signal in the stereo Mix, and allows you to route to the left and right subgroup.

10 Routing Section

Each channel can be routed to MIX and SUB outputs at the same time.

11 Mute

Mutes the input signal to Aux, Mix and Direct Out when it is not required.

12 Solo

Normally FX16 offers a Pre-Fade Listen Solo allowing you to set the optimum gain for your input signal. However, when the SOLO IN PLACE button is pressed in the master section, your signal will be solo'd in its true stereo position, after the fader, and including any effects that have been added. All channels which are not solo'd are then muted. This type of solo is ideal for a studio mixdown situation where tracks need to be auditioned.

13 Peak LED

This dual function LED lights 4dB before clipping occurs or when the channel's solo is activated.

14 Direct Pre

Normally the channel's direct output is set post fader for use as a studio multitrack send or as an individual effects send in a live performance. Pressing the PRE switch sets the signal pre-fader, making the send ideal as a live multitrack feed, independent of the Front-of-House mix.

15 100mm Alps Fader

Provides more resolution than standard 60mm small-mixer designs, giving you more control in difficult mixes where fine tuning is required. An extra 10dB of gain above the zero mark is also provided for when you need a little extra boost for soloists.

GROUP/MASTER SECTION

Connectors

16 2-Track Return

Two phono connectors allow you to play back your master stereo recording.

17 Mono Sum Out

This output is extremely useful as an additional bass bin send or as a side fill feed. It may also be used for mono PAs or as an induction loop feed.

18 Monitor Outs

Connect these outputs to a pair of nearfield monitors via an amplifier.

19 Mix Outs

2 impedance-balanced male XLR connectors allow you to send the mix signal to a pair of PA speakers, or to a stereo mastering device if recording.

20 Mix Inserts

For processing the mix signal with a compressor/limiter or other device, using "Y" cables.

21 Subgroup Outs

2 impedance-balanced 1/4" jacks for sending the subgroup signal to a multitrack or additional set of speakers.

22 Subgroup Inserts

Allow you to process the subgroup signal with a compressor or graphic EQ, for example.

23 Auxiliary Outputs

3 impedance-balanced 1/4" jacks for sending signals to effects units or monitor/foldback amplifiers.

24 +48V Phantom Power

Provides DC power to the mic inputs for condenser mics. The adjacent LED illuminates when Phantom Power is on.

25 Power LED

Indicates when FX16 is powered up.

26 Stereo Return Section

FX16 includes 4 stereo returns which may be used as returns from effects units or as additional stereo inputs for keyboards, CD players or other stereo sources. Each return may be routed to Mix or the Subgroup, with level being governed by a rotary control. Each return also has access to either Aux 1 or Aux 2, allowing the returns to be part of a foldback mix so that it may include reverb, or to have access to their own effects if they are being used as stereo inputs. A rotary control governs aux send level.

27 Auxiliary Master Section

4 rotary controls govern the master levels of auxes 1-4 and the Lexicon effects unit. Each master may be solo'd after the fader.

28 Subgroup Faders

Two 100mm faders control the left and right subgroup levels.

29 Sub to Mix

This switch routes the Subgroup to Mix.

30 2-Tk Ret

This rotary control sets the playback level of any mastering device (such as a DAT or cassette recorder) that you may have connected.

31 Monitor Source

By pressing the associated switches it is possible for FX16 to monitor either the Mix signal, the Subgroup signal or a combination of the two. When 2 Tk is pressed, the 2-track return signal replaces the mix or subgroup selection. This allows you to play back your master recordings without repatching.

32 2-Tk to Mix

The 2-track return may be routed to mix, giving you an extra stereo input or effects return if you run out of inputs. Alternatively this switch allows you to play pre-show or interval music through the Front-House PA without tying up precious line inputs or effects returns.



- 33 Solo-in-Place
Replaces PFL Solo with Solo-in-Place. The associated LED lights to show when SIP is activated.
- 34 Meters
Two 10-segment tri-coloured meters indicate your selection: control room, Mix, Subgroup, or 2-track levels. Alternatively, they switch to showing solo levels if any PFL, SIP or AFL switch is pressed.
- 35 Monitor
This rotary control governs the level of monitors outs.
- 36 Phones
This rotary control governs the level in your headphones.
- 37 Mix Faders
Two 100mm Alps faders control the level from the mix outputs.
- 38 Phones Socket
For connecting headphones of 200 Ohms or greater impedance.

CONNECTOR FIELD

- 39 Power Socket
Rugged 4 pin XLR connector for connecting FX16's external power supply.
- 40 Connector Panel
This may be relocated so that FX16's connectors are at the

rear of the console for tabletop operation or on the underside, saving space in rackmount operation and removing unsightly cables from view.

OPTION

- 41 Rack ears
These allow FX16 to be used in a 19" rack.



LEXICON EFFECTS SECTION

- 42 Effects controls
FX16's custom-developed Lexicon dual effects section provides a wide array of studio-quality effects including reverbs, choruses and delays. Several dual effects combinations such as delay and reverb, and chorus and reverb - specially formulated for Live performance - are also available. Each effect has

two editable parameters which may be stored as user programs, so that favourite settings may be retained. The Lexicon Effects table provides a description of the effects that are included.

- 43 Lexicon Effects Return
A rotary control sets the Lexicon effects return level with the effects routable either to Mix or to Sub. The internal effects also have access to either Aux 1 or Aux 2, allowing you to add

reverb to a foldback mix, or to mix external effects with the Lexicon to create unique combination effects.

- 44 Programme Select
Allows 16 pre-programmed effect combinations, listed in the table, to be selected.

- 45 Parameter Adjust
When either the PARAM 1 or PARAM 2 switches are held down the parameter adjust encoder will alter the level of these two effect

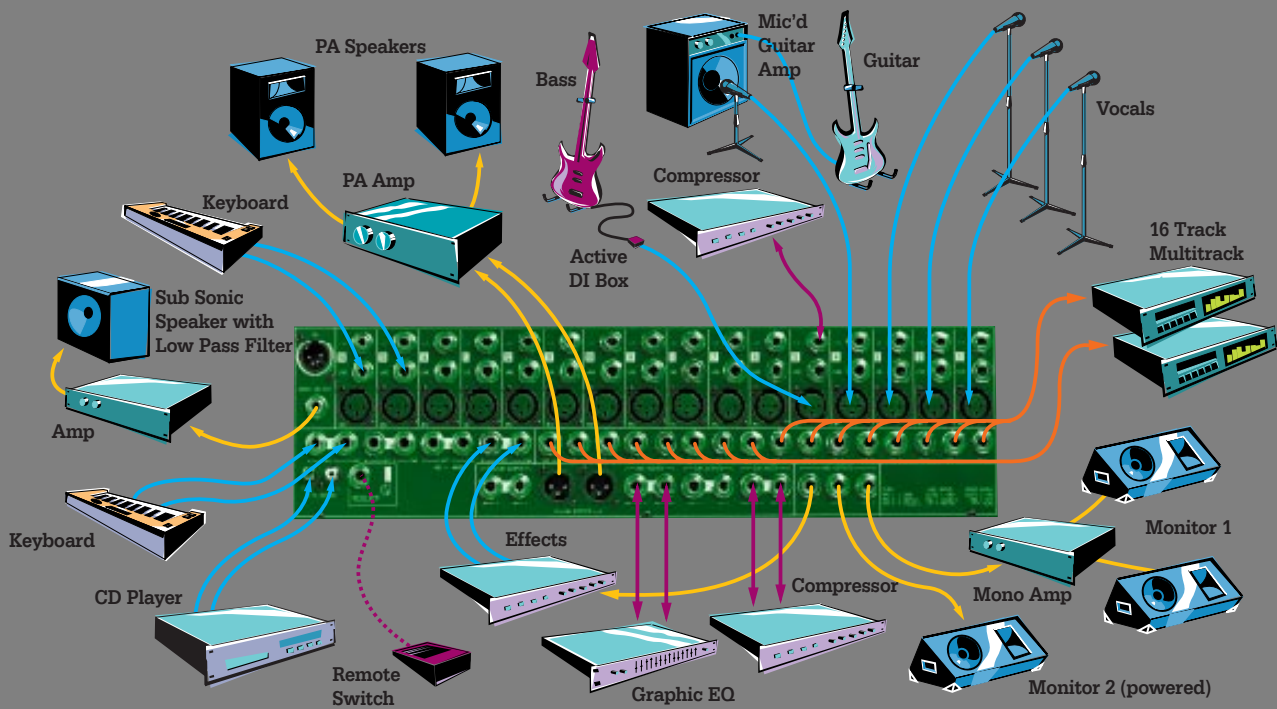
parameters. Any alteration will be held in memory soon as the PARAMETER switch is released, with User Mode LED indicating an alteration has been made to the factory preset. Each factory preset may be restored by holding down the Parameter switches.

- 46 Footswitch connector
(on rear of console) Allow you to mute your effects whilst on stage using a standard latching guitar foot-pedal.

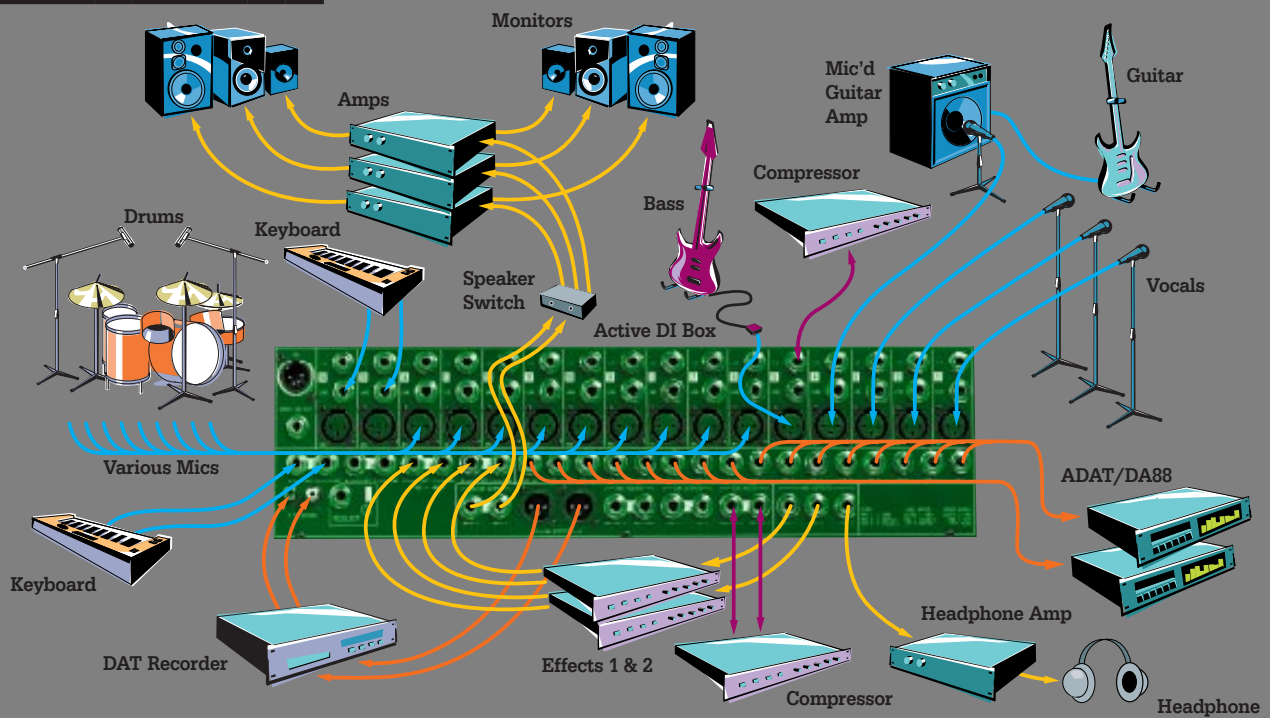
Lexicon Effects Table

Param 1 control	Minimum	Maximum	Program	Description	Param 2 control	Minimum	Maximum
Reverb decay	0.11 mSec	283 mSec	1	Gated Reverb	Timbre	420Hz	19kHz
Reverb time	0.25 Sec	6.5 Sec	2	Chorus + Reverb	Speed	OFF	16 glides
Delay time	No delay	977 mSec	3	Chorus + Delay	Speed	OFF	16 glides
Depth	0.34 mSec	5.8 mSec	4	Large Chorus	Speed	OFF	16 glides
Reverb time	0.25 Sec	6.5 Sec	5	Plate	Timbre	420Hz	19kHz
Reverb time	0.25 Sec	6.5 Sec	6	Room	Timbre	420Hz	19kHz
Reverb time	0.25 Sec	6.5 Sec	7	Chamber	Timbre	420Hz	19kHz
Reverb time	0.25 Sec	6.5 Sec	8	Hall	Timbre	420Hz	19kHz
Delay time	No delay	977 mSec	9	Delay + Bright Plate	Reverb time	0.25 Sec	6.5 Sec
Delay time	No delay	977 mSec	10	Delay + Dark Plate	Reverb time	0.25 Sec	6.5 Sec
Delay time	No delay	977 mSec	11	Echo + Plate	Regen	0%	94%
Delay time	No delay	977 mSec	12	Delay + Bright Room	Reverb time	0.25 Sec	6.5 Sec
Delay time	No delay	977 mSec	13	Delay + Dark Room	Reverb time	0.25 Sec	6.5 Sec
Delay time	No delay	977 mSec	14	Echo + Room	Regen	0%	94%
Delay time	No delay	977 mSec	15	Delay + Mono Regen	Regen	0%	94%
Delay time	No delay	977 mSec	16	Delay + Stereo Regen	Regen	0%	94%

LIVE APPLICATIONS



RECORDING



SPECIFICATIONS

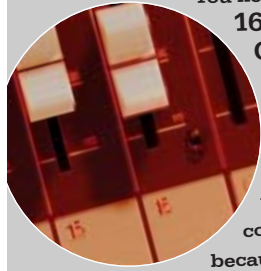
Noise	
Mic EIN @ max gain, 20Hz-20kHz bandwidth, 150Ω source impedance	-129dBu
Aux, Mix & Masters @ max, 16 inputs routed with faders/pots down	<80dB
Crosstalk (@1kHz)	
Channel Mute	<96dB
Fader Cut-off (rel. 0 mark)	<90dB
Routing Isolation	<90dB
Aux Send Pots offsets	<84dB

Frequency Response	
Mic/Line Input to any output, 20Hz-30kHz	<0.5dB
THD & Noise	
Mic sensitivity -30dBu, +14dBu @ all outputs @ 1kHz	<0.009%
Input & Output Impedances	
Mic Input	1.8kΩ
Line Input	10kΩ
2-Track Return (unbalanced RCA phono)	12kΩ
Stereo Return Input (balanced jack)	10kΩ
Mix, Aux & Inserts	75Ω

Input & Output Levels	
Mic Input max level	+22dBu
Line Input max level	>30dBu
Stereo Input max level	>30dBu
Headphones @ 200Ω	150mW

Dimensions (HxWxD, mm)	
Desktop	160 x 444 x 460 max
Rackmounted	443 (10U) x 482 x 160 max/64 min

EXCE Spirit by Soundcraft™ reserves the right to alter specifications without prior notice.



You need a **16 CHANNEL CONSOLE** for live and studio mixing, but you also need an effects unit. FX16 gives you all this in a rugged, compact 10U frame, because it's a dedicated

live/recording mixer from SPIRIT and a programmable LEXICON effects unit. Now who said you can't have it all? Take FX16 to a venue and its 16 MIC PREAMPS, subgroup, mono out, HPFs and up to 3 pre-fade aux sends make it a versatile FOH console. Back in the studio, its 16 pre/post fade direct outs, SIP and 3-band swept mid EQ make it the perfect mixing tool. But what makes FX16 so special is its internal LEXICON EFFECTS UNIT with 16 editable programs, which saves you the cost of an external unit that ties up valuable rack space. Choose an FX16 and see what EFFECT it can have on your mixes.

PROFESSIONAL SOUND AND BUILD QUALITY

Balanced Connections

All main inputs (except 2-track return) on FX16 are balanced, cancelling out potential hum and keeping interference to a minimum. In addition, outputs are impedance balanced so that long cable runs are possible without the worry of interference from electrical equipment - important in those live situations where you can end up with spaghetti-like trails of leads!

UltraMic™ Preamps

FX16 uses Spirit's patented UltraMic™ Preamps. These represent a revolution in low cost mixer electronics with the ability to handle +22dBu of input level, a high CMRR and an EIN figure that's as close to the theoretical noise floor as it's possible to get. In other words they are **virtually silent!** In addition, the mic and line inputs offer up to 60dB of gain range, meaning you can **plug in anything** from the feeblest of keyboard inputs to the hottest of mics without any worries.

Custom Designed Controls

For cost effectiveness, some manufacturers use off-the-shelf rotary potentiometers. These are not specifically designed for their tasks, so that a small move often causes a huge leap in level at one point and hardly any change at another. In contrast, all Spirit controls are **custom-specified** especially for their task. This ensures that they provide a **consistent, accurate response**, even during the most complex mixes.

Extra Fader Resolution where you need it

It's quite logical really. The **longer the fader, the smaller the change in level between each fader movement**. Therefore, FX16's custom-designed 100mm faders have a great advantage over 60mm small-mixer faders when making fine changes during a mix.

Roadworthy Construction

FX 16 may fit into a 19" rack space, but it's built to the same roadproof specifications as the largest Soundcraft FOH consoles. 21st century **surface mount manufacturing** techniques ensure accurate consistent insertion of all components onto PCBs, whilst an all metal wedge shaped chassis protects the console in transit, **and an all-metal jackfield** achieves the best possible connections.

MULTIPURPOSE DESIGN

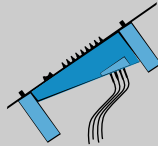
With low cost mixers the term "multipurpose" often seems like a dirty word. That's because to achieve their price point many leave off dedicated live or studio features, making them useless for at least one of the applications they are supposed to fulfill. In contrast, FX16 has been **built from the ground up with both Live and Studio tasks in mind**. Below are just a few examples:

Relocatable Connector Field

FX16's relocatable jackfield means that if you are using the console in a rack you can connect your leads to the "underside" of the console - **saving rack space and unsightly trails of cables.**



FREESTANDING



RACK-MOUNTED

SIP and PFL Solo

FX16 provides both types of Solo allowing you to use **PFL solo for gain setting** and checking levels during a Live performance. Back in the Studio, Solo in Place allows you to hear your channel signal in its true stereo position, at its real fader level and including any effects you have added - **ideal for multitrack mixdown.**

Switchable Auxiliaries

2 of FX16's auxiliary sends are pre/post fader switchable in pairs per channel, giving you a **maximum of 3 pre fade or 3 post fade feeds** (including the Lexicon send). This means that the auxiliary section is equally useful for **foldback-intensive applications** such as live performances, as well as for **multitrack mixdown** where plenty of effects feeds are required.

Switchable Direct Outs

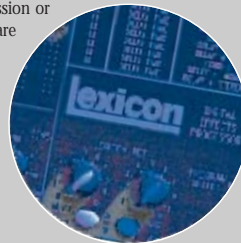
FX16 direct outs are configurable pre/post fader from each channel. This means you can use them **pre-fader as multitrack feeds** at a Live performance without them being affected by the Front of House Mix. Back in the Studio, you may want to switch the direct outs post-fade so you can **ride the faders during track laying.**

Inserts on Every Mono input, Subgroups and Mix

These allow you to patch in processors such as compressors, limiters or graphic EQs at any stage for really complex mixes.

Integrated Lexicon Effects

Spirit is the only low cost mixer brand that can offer you the leading name in studio effects - **Lexicon**. Specially created for Spirit, the Lexicon effects section offers a wide range of breathtaking treatments including **reverbs, delays and choruses** which put most outboard effects units to shame. Moreover **dual effects programs** such as delay & reverb and chorus & delay are possible - offering you greater flexibility in both Studio and Live situations. Each program is easily **editable and storable** so you can keep your favourite settings without having to set them up again before each session or performance. If you are playing live, an **external footswitch** (not supplied) allows you to switch the Lexicon effects.



CONTROL AND CREATIVITY

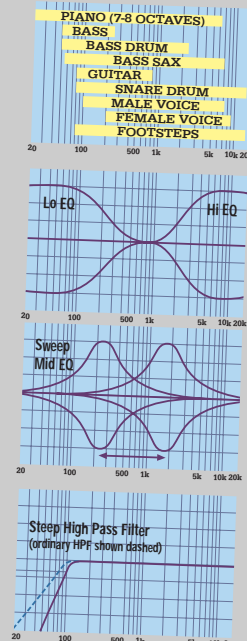
More Inputs

Up to 26 inputs as standard - with a **maximum of 16 mic/line inputs and 4 effects returns**, this gives plenty of scope for even the most input hungry bands with mic'd-up drumkits. Even the 2-track return can be routed to mix if things get really tight, providing a valuable extra stereo input.

Musical British EQ

While some manufacturers claim to have the "British Sound", FX16's EQ really is formulated exclusively in the UK by Graham Blyth, co-founder of Soundcraft and designer of their

mixers for 25 years. **Graham has over 3 million channels of EQ** bearing his name in the field, and firmly believes that many imitators lack the experience or time to obtain the right natural sounding combination he creates. FX16's **3 band EQ with swept mid frequency provides much finer control** than standard "fixed" designs allowing you to hone in on a particular characteristic of a sound and manipulate it. In addition the "Q" (the bandwidth of the bell curve around the frequency being treated) of the sweep EQ has been carefully chosen, so that a whole series of unwanted additional higher and lower frequencies around the EQ point are left untouched.



FX16's warm and natural EQ is also enhanced by the careful positioning of the of its fixed High and Low frequencies. This is important because mid frequencies will be affected if the shelving controls are set too low and with too gentle a slope. Inaccurate positioning by British EQ imitators means that **top end sizzle and extra low-end punch** is often masked by mid frequency mushiness.

Steep High Pass Filters

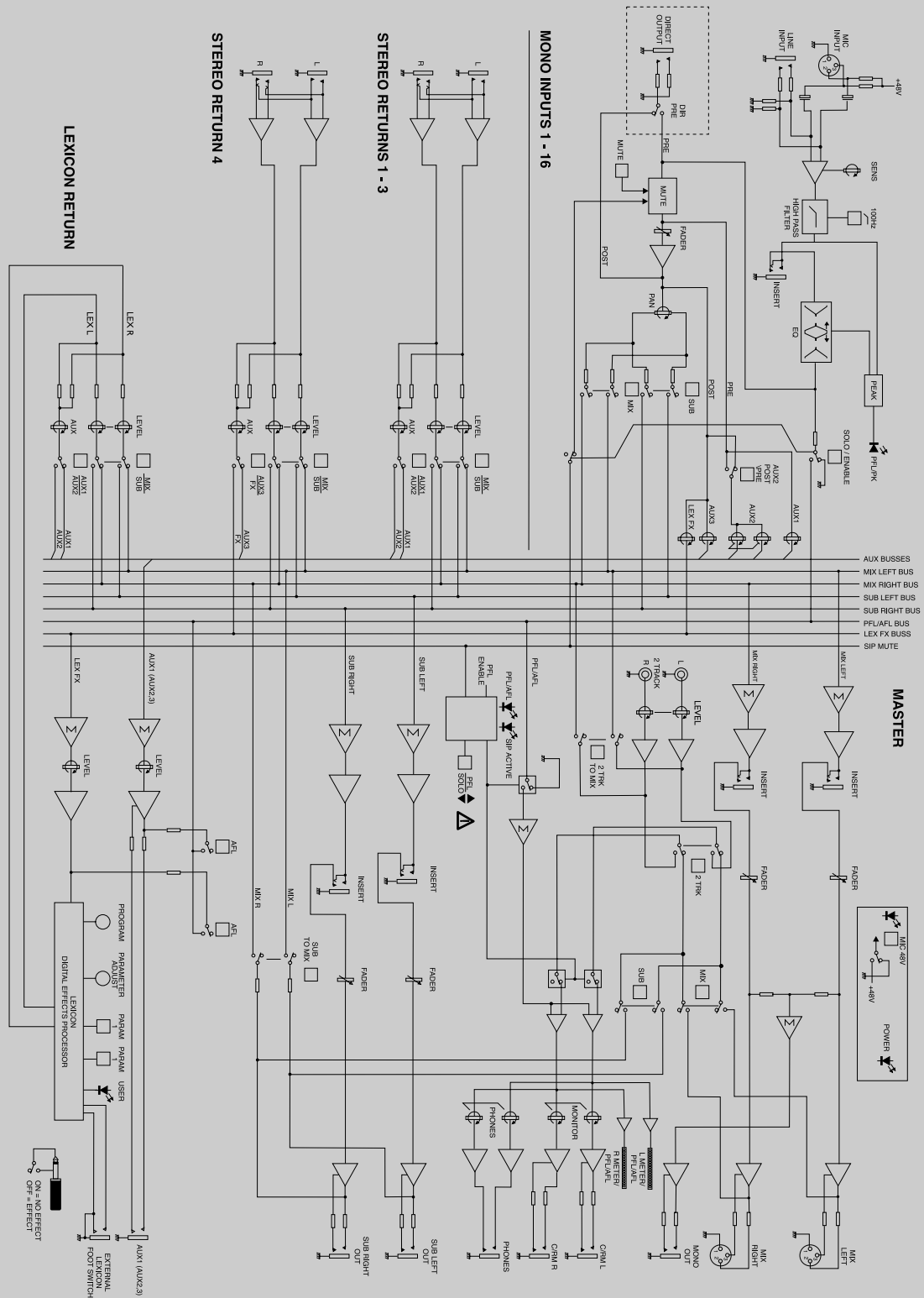
High Pass Filters are essential for Live performances reducing the low frequency stage rumble that can cause muffled mixes. However, some mixers do not include HPFs or use ineffective designs. With 25 years of Soundcraft design experience in Front of House consoles for large tours to call on, Spirit appreciates that over-subtle High Pass Filters may not give enough corrective control for live purposes. Often standard 12dB filter designs may not become effective until well below the frequencies where mushiness and rumble occur. Spirit's **18dB per Octave slope is faster than standard 12dB per octave filters**, guaranteeing **extra clarity** for your live mixes.

Real Subgroups

Virtually all small mixers have just a stereo output - difficult if you have to manipulate several inputs simultaneously. FX16 allows a fully mic'd drumkit or a group of vocalists to be routed to its stereo subgroup and **controlled from just one pair of faders**. Unlike some mixers that provide only alternate pairs of unroutable outputs, you can **send this stereo sub-bus to mix too**. Signals can appear at the group and mix outputs at the same time and instruments can appear as part of both mixes with separate level controls.

TRACK SHEET					Project Title:	Dev:
Track Number	Instrument	Sound Module	Tap Track	MN Channel	Tape Format:	
1					See this section to write your song structure	
2						
3						
4						

Block Diagram



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This equipment complies with the EMC Directive 89/336/EEC