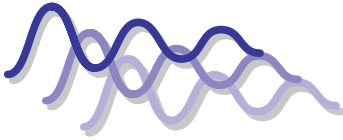## EFFECTS - IN EXCESS

Congratulations! By purchasing XS-FX you have joined an exclusive club of musicians, remixers and Djs who have discovered a new level of power and control over the effects in their music. Previously, to make effects happen in time with music was a matter of painstaking analysis of the source signal and time consuming tweaking of parameters on effects units to make sure that the tempo inherent in the effects did not clash with or break up the tempo of the music.

In one fell swoop XS-FX does away with all that tedious messing about (matching milliseconds to BPMs and hooking multiple effects units together) by assembling everything you need in one unit to filter, flange, gate, delay and pan in perfect synchronisation with your music.

At the heart of XS-FX is Red Sound's acclaimed 'V2' BPM Analysis Engine (developed through ground-breaking products like the Voyager 1, Micro-BPM and FEDERATION), which shoulders the responsibility of calculating the tempo of the music. This leaves you free to concentrate on the real-time controls of the simultaneous effects XS-FX offers.

Four of these effects have been available in various forms before, but never in such an easy-to-use and innovative form. By triggering the filter in time with the music, you can seriously alter the harmonic shape of the sound without destroying the beat, or perhaps choose the radical flanger, for a classic sweep that's right out there. The cutter makes gating and shaping the overall volume of the music in time a breeze but perhaps the greatest timesaving is in the automatic synchronization of delays to the tempo of the music. No more look-up tables for BPM equivalents in milliseconds, or complicated formulas that need a calculator. You just decide which beats you want to hear the delays coincide with and then you can move on to more creative decisions such as whether the delays should sound like a clinical 90's digital delay, a warm 60's tape delay or a more extreme 'grunge'.

But even the unique combination of these facilities is dwarfed by XS-FX's ability to split the audio input into three bands (Low, Mid and High) which can then be panned around independently in the stereo field. Patented under the name of Spatial Panning System (SPS), this is a genuine first and will enable entirely new effect textures and beat-related movements in the music of the future.
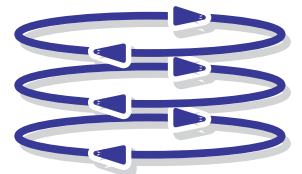
In addition, the 3-band isolator lets you choose which elements of the music pass through the effects.

This manual is designed to get you using the effects and sync'ing them to the music as quickly as possible. The simple real-time operation of the effects parameters and beat assignment is described in detail, but at no time does it try and define how these effects should be used. We tell you how XS-FX works but never how to use it.

From the really subtle to the most excessive effects imaginable, it's down to you!

OPERATING CRITERIA

This product has been designed to operate most effectively with dance music - i.e. music based on strong regular beats and patterns. However, as the range of pre-recorded dance material is virtually limitless (and the audio mix of individual tracks unknown) we cannot guarantee the performance of XS-FX with every style of dance music.

XS-FX's synchronisation performance may be affected if the beat information is either unavailable or indefinable within the audio track. Please consider this when selecting your audio material.

Top/Front Panels
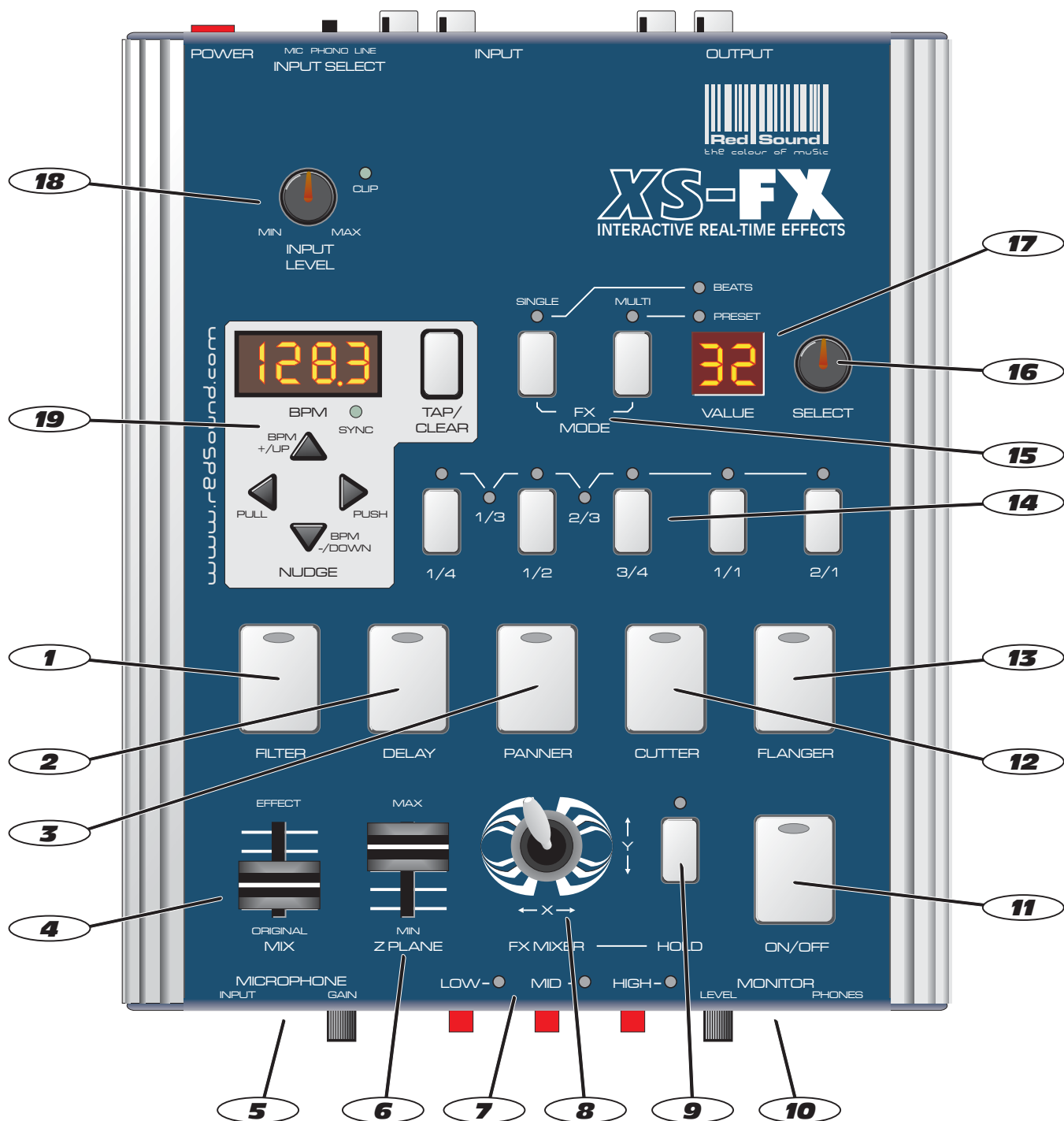
TOP PANEL FEATURES

1. **FILTER:** This button selects the FILTER effect. The [FX MIXER] joystick controls the filter [FREQUENCY] and [RESONANCE] parameters whilst the [Z PLANE] fader controls the [ENVELOPE MOD] depth. Press and hold this button to set the filter LFO [SHAPE].

2. DELAY: This button selects the DELAY or 'echo' effect. The [FX MIXER] joystick controls the analog tape modeller [SPEED] parameter whilst the [Z PLANE] fader controls the [REPEAT] depth. Press and hold this button to set the [REPRO], reproduction quality of the repeats.
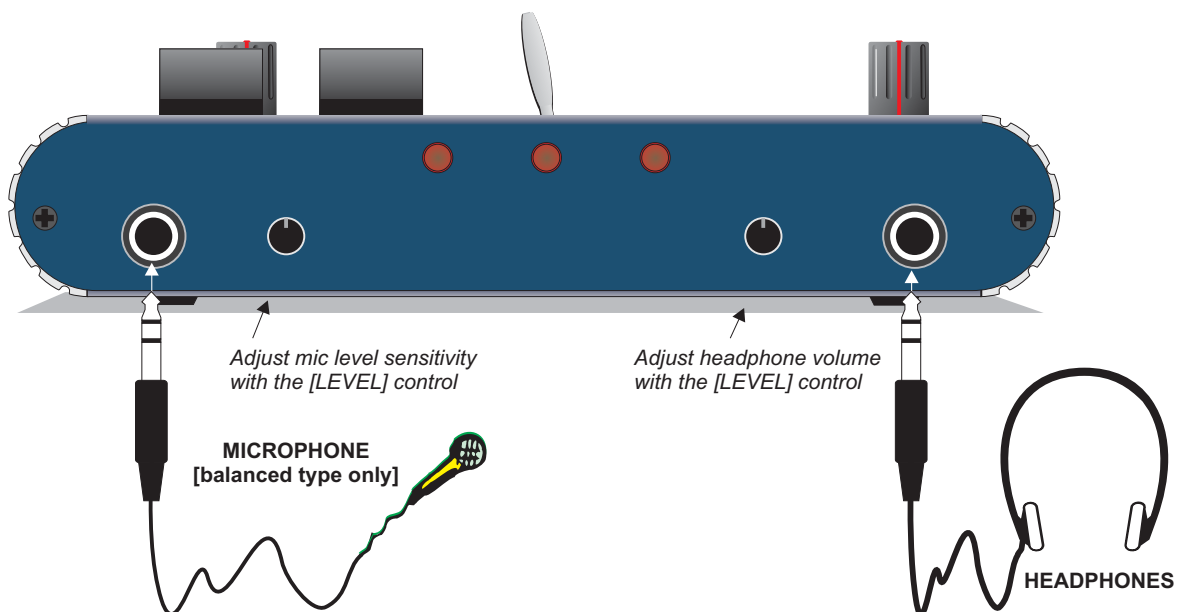
3. **PANNER:** This button selects the SPS PANNING effect. The [FX MIXER] joystick controls the panning [2-WAY SPLIT] and [DIRECTION] parameters whilst the [Z PLANE] fader controls the [SPS] depth.

4. **MIX:** This fader adjusts the balance between the processed and un-processed sound.

5. **MICROPHONE:** This section features the input jack and gain control for a balanced microphone signal.

6. **Z PLANE:** This fader adjusts a fixed parameter for each selected effect in [SINGLE] mode or any factory assigned parameter in [MULTI] mode.

7. **ISOLATOR:** The 3-band isolator allows you to choose which band of frequencies are passed through the effects.

8. **FX MIXER:** The joystick adjusts two fixed parameters for each selected effect in [SINGLE] mode or any two factory assigned parameters in [MULTI] mode.

9. **HOLD:** Used in conjunction with the [FX MIXER] joystick, this button is used to hold or 'freeze' the current joystick setting.

10. **MONITOR:** This section features the output jack and level control for the headphone monitor.

11. **MASTER ON/OFF:** This button is used to switch the effects on and off.

12. **CUTTER:** This button selects the CUTTER or 'gate' effect. The [FX MIXER] joystick controls the cutter [SLOPE] and [ENVELOPE] parameters whilst the [Z PLANE] fader controls the [DEPTH] of the waveform.

13. **FLANGER:** This button selects the FLANGER effect. The [FX MIXER] joystick controls the flanger [DEPTH] and [RESONANCE] parameters whilst the [Z PLANE] fader controls the [FREQUENCY]. Press and hold this button to set the flanger LFO [SHAPE].

14. **BEATS:** In [SINGLE] mode, use these buttons to instantly set the trigger rate for the selected effect. In [MULTI] mode, use these buttons as 'hot-keys' to set and instantly recall your favourite programs.

15. **FX MODE:** These two buttons select the operating modes. In [SINGLE] mode only one effect at a time can be activated. In [MULTI] mode the factory presets, which feature a wide spectrum of multiple effect combinations, can be accessed.

16. **SELECT:** In [SINGLE] mode this rotary encoder control can be used as a master [SPEED] control to override the [BEATS] settings and also access the longer trigger settings between 1 and 16 musical bars. In [MULTI] mode this control selects the factory presets.

17. **VALUE DISPLAY:** In [SINGLE] mode this two digit display shows the longer trigger settings between 1 and 16 musical bars. In [MULTI] mode this two digit display shows the factory preset program number.

18. **INPUT LEVEL:** This knob controls the input level. The bi-colour input indicator is used to check the audio input level status.

19. **BPM DISPLAY/ CONTROL:** The four digit BPM reading of the audio signal will be displayed here. Also, information will be displayed in the effect edit modes. The [SYNC] indicator lights when the BPM engine is locked-in to the beat. The 4-way keypad is used to make manual adjustments to the BPM value or shift the audio/effect synchronisation (also used for general data entry). The [TAP/CLEAR] button is used to manually 'tap' in a tempo or clear the current BPM reading.
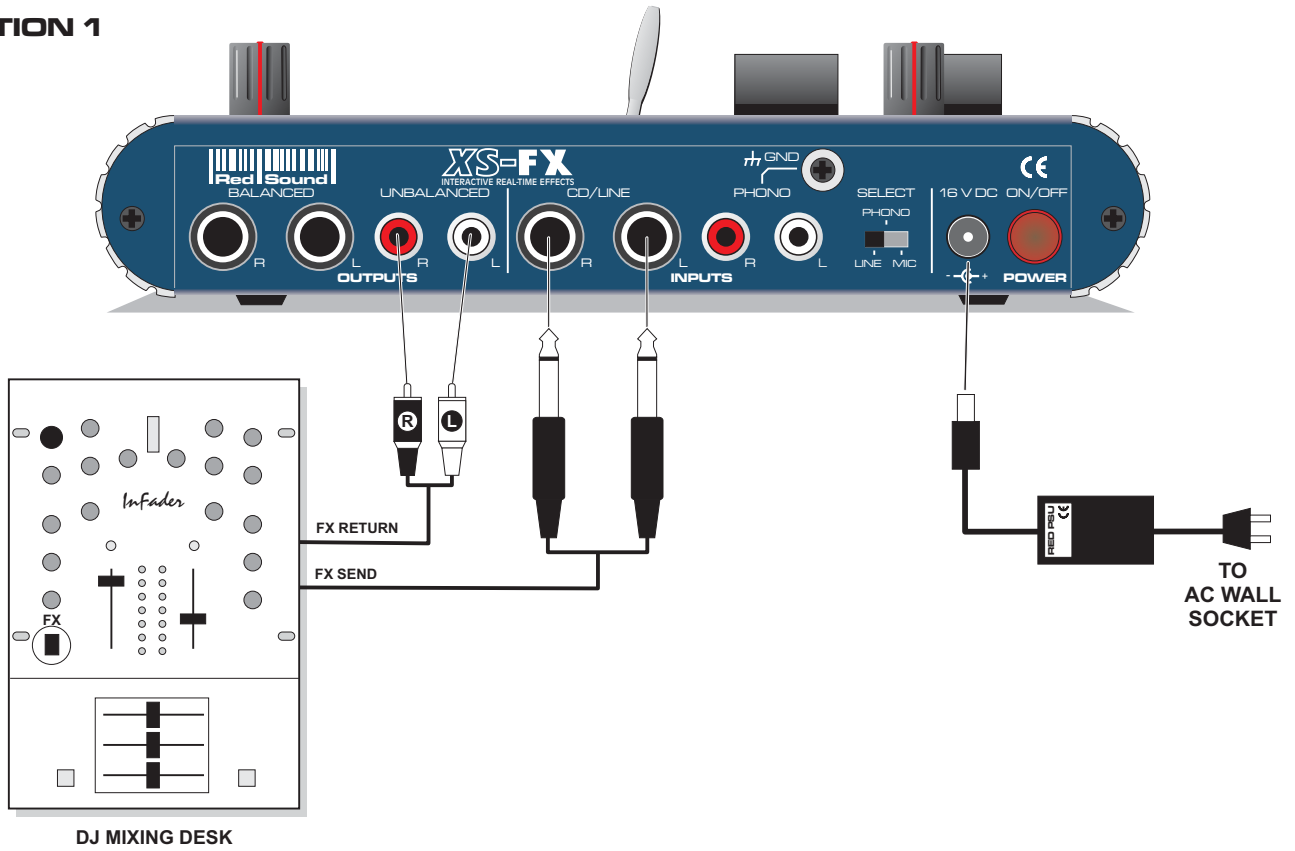
Rear Panel
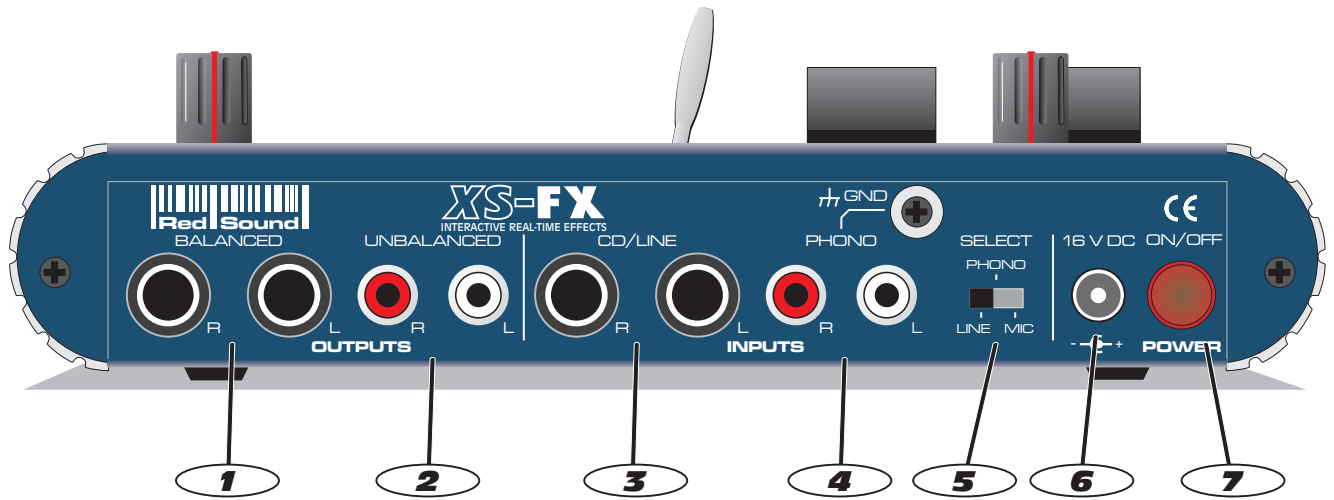
1. **BALANCED OUTPUTS - ¼ Jack Connectors:** Use these sockets to connect XS-FX to amplification systems supporting balanced input.

2. **UNBALANCED OUTPUTS - RCA Phono Connectors:** Use these sockets to connect XS-FX to amplification systems supporting unbalanced input.

3. **CD/LINE INPUT - ¼ Jack Connectors:** Use these sockets to connect a CD or other line level audio player to XS-FX.

4. **PHONO INPUT - RCA Phono Connectors:** Use these sockets to connect the analog turntable to XS-FX. Connect the ground wire from the turntable to the [GND] screw terminal.

5. **INPUT SELECT - 3-Way Switch:** Use this switch to select the input source - MIC/PHONO/LINE.

6. **DC POWER IN - Connector:** Only use the RED Sound PSU supplied with XS-FX to power the unit.

7. **POWER - Switch:** This turns the power on and off.

FRONT PANEL CONNECTIONS

Adjust mic level sensitivity with the [LEVEL] control

Adjust headphone volume with the [LEVEL] control

MICROPHONE [balanced type only]

HEADPHONES

Rear Panel Connections

OPTION 1

DJ MIXING DESK

FX RETURN

FX SEND

TO AC WALL SOCKET

OPTION 2

COLD
HOT
GND

Pin assignment

MASTER OUT

TO AC WALL SOCKET

POWER AMPLIFIER (BALANCED INPUT)

DJ MIXING DESK

OWNERS MANUAL
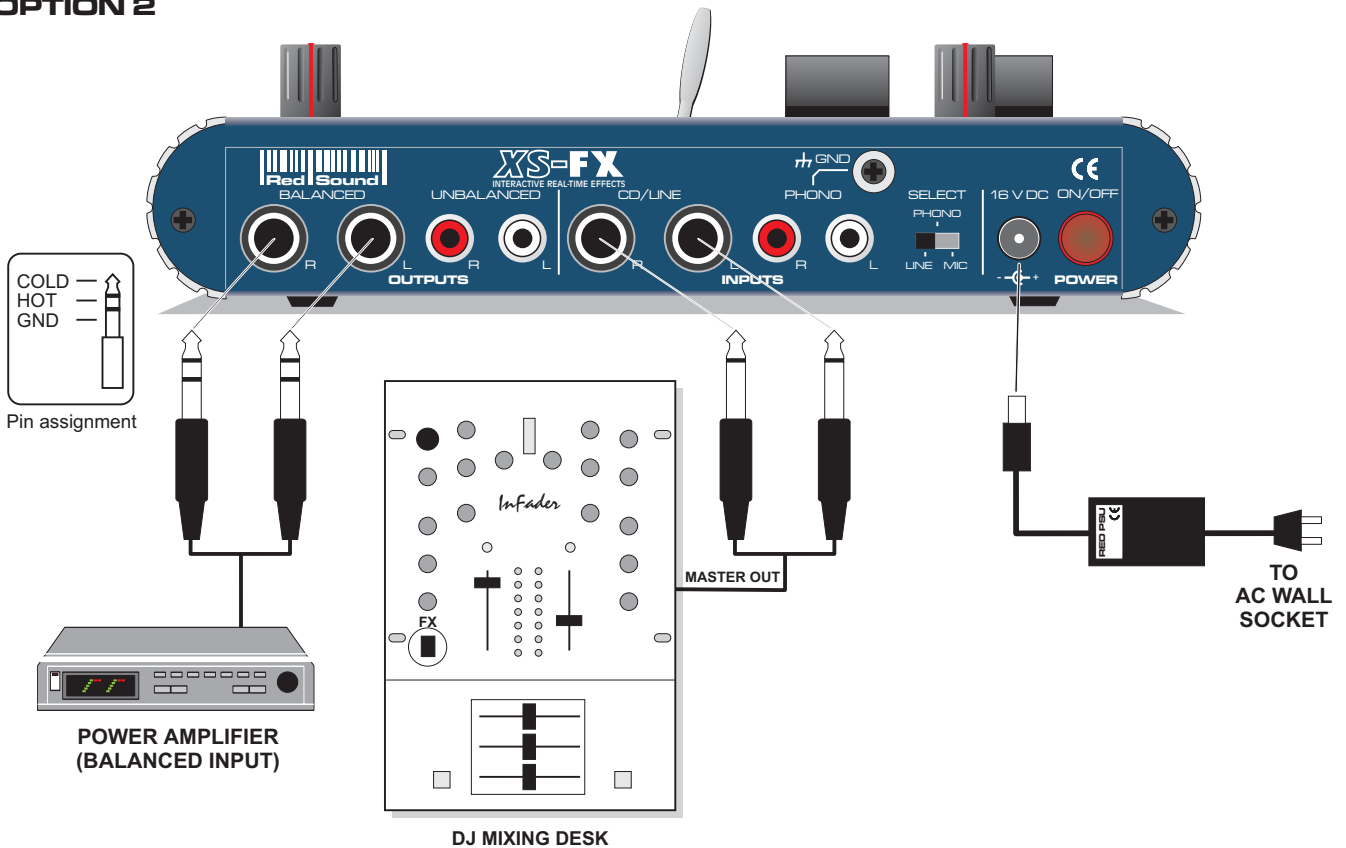
Mounting Options

OPTION 3

COLD —
HOT —
GND —

Pin assignment

XS=FX
INTERACTIVE REAL-TIME EFFECTS
Red Sound
BALANCED   UNBALANCED   CD/LINE   GND   PHONO   SELECT   16 V DC   ON/OFF
R   R   L   R   L   R   L   PHONO   PHONO   POWER
OUTPUTS   INPUTS   LINE   MIC

R   L   R   L

POWER AMPLIFIER
(BALANCED INPUT)

POWER AMPLIFIER
(UN-BALANCED INPUT)

CD / TAPE

ANALOG TURNTABLE

RED PSU

TO
AC WALL
SOCKET

MOUNTING OPTIONS

Rotate the chrome brackets to line-up with the 19" rack mounting holes on your mixing desk.

POWER   MIC PHONO LINE   INPUT   OUTPUT
INPUT SELECT

XS=FX
INTERACTIVE REAL-TIME EFFECTS

MIN. MAX
INPUT
LEVEL

CLIP

SINGLE   MULTI   BEATS
PRESET

1283   TAP/   32   SELECT
CLEAR
BPM   FX
SYNC   MODE   VALUE

PULL   PUSH

1/4   1/2   3/4   1/1   2/1
NUDGE

FILTER   DELAY   PANNER   CUTTER   FLANGER

EFFECT   MAX

ORIGINAL   MIN
MIX   Z PLANE   FX MIXER   HOLD   ON/OFF

MICROPHONE   LOW   MID   HIGH   MONITOR
INPUT   GAIN   LEVEL

19" RACK
Hole pitch
range =
Min 90mm
Max 240mm

MIXING DESK

PLAN VIEW

M6 SCREW

BRACKET

M3 SCREW
(LENGTH = 6mm MAX)

19" RACK MOUNT HOLE

DJ MIXING DESK TOP PANEL

M6 NUT

SIDE VIEW

Alternatively, you can use the supplied rubber feet or double-sided sticky pads to flat-mount XS-FX in any convenient location.

Avoid applying excessive pressure to unit at opposite side to mountings (add support beneath this end for extra stability if required)

QUICK START

If you want to quickly try out the performance of XS-FX, please read the following points carefully:

CONNECTIONS: Before making any connections, make sure that the power on all your equipment is turned OFF. Connect the power supply (included) to the 'power in' socket on the rear panel of XS-FX and plug it into a suitable AC outlet. Connect the audio cables for a basic system setup as shown on page 5 (ensure rear panel [SELECT] switch is set to LINE position if connecting XS-FX directly to a CD player or mixing desk).

TURNING ON THE POWER: Make sure all connections have been made correctly and the volume controls on XS-FX, the mixing desk and amplifier system are all turned completely down. Press IN the rear panel power switch on XS-FX. Turn on the power of the mixing desk and then turn on the power of the amplifier system.

START UP INDICATIONS: When XS-FX is powered up, the BPM display will briefly show the software version and then change to show four illuminated centre bars. If this does not happen, check the power supply is of the correct type and the unit is switched on as above.

SETTING UP: Select a suitable audio track (dance orientated music with defined beat information), start the playback on the connected sound source and bring up the XS-FX [INPUT LEVEL] control, checking the status of the bi-colour [CLIP] level indicator. Set the input level where the [CLIP] indicator lights green, occasionally flashing red. If the indicator is off or constantly red the performance may be affected. The main display should now show the BPM reading of the audio track and the [SYNC] indicator should be flashing on the beat.

ACTIVATING THE EFFECTS: On power-up [SINGLE] mode is automatically selected, with the [FILTER] set at 2 bars trigger rate as the default effect. Set the [MIX] fader to the mid position and press the [ON/OFF] button to hear the filter effect. Try adjusting the [FX MIXER] joystick, [Z PLANE] fader and [MIX] fader to change the sound.

To change the [BEATS] trigger setting, simply press one of the five buttons labelled [¼] - [2/1]. The timing of the effect triggering will change instantly to the new setting. Try the whole range of preset timings to hear the way they change the feel or 'groove' of the music. Use the [VALUE] encoder to access the longer musical bar settings [1 - 16bars]. Change the effect by pressing the other effect select buttons and repeat the above.

To select [MULTI] mode, press the [MULTI] button and use the [VALUE] encoder to scroll through the 50 programs. In multi programs the active effects are indicated by the indicators in the main effect select buttons. You can turn these off/on at random whilst adjusting the preset parameters assigned to the [FX MIXER] joystick and [Z PLANE] fader.
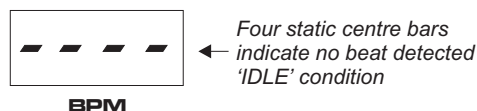
Please read the following "OPERATION" section fully to appreciate the range of features and facilities XS-FX has to offer.

GETTING STARTED

After connecting XS-FX to your system as detailed on pages 5/6, press IN the power switch on the rear panel to turn the power on. The version of software fitted to your unit will now be shown briefly on the main BPM display:

$$51.01 \quad \leftarrow \textit{Software version = S 1.01}$$

BPM
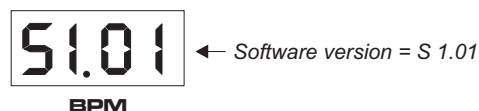
Afterwards, the four centre bars will illuminate to indicate the 'IDLE' status of the BPM engine.

$$- - - - \quad \leftarrow \begin{array}{l}\textit{Four static centre bars}\\\textit{indicate no beat detected}\\\textit{'IDLE' condition}\end{array}$$

BPM

XS-FX is now ready to use.

Operation

INPUT SOURCE

The rear panel [INPUT SELECT] switch is used to select the input sound source. There are 3 switch positions as follows:

SELECT

PHONO

LINE   MIC

MIC - Select this position when using a connected microphone (use the front panel [TRIM] control to pre-adjust the microphone level). Use the [TAP] feature to activate the effects when microphone input is selected - see page 12 for further details.

PHONO - Select this position when using a connected analog turntable (vinyl recordings).

LINE - Select this position when using any line level source such as CD player, mixing desk output or send/return loop.

INPUT LEVEL

The [INPUT LEVEL] control adjusts the gain of the input signal. At the 12 o'clock position the gain will be 0dB. As the control is moved anti-clockwise the gain will be progressively reduced until, at the fully anti-clockwise [MIN] position the signal will be at infinity (∞) or off. As the control is moved clockwise from the centre position the gain will be progressively increased until, at the fully clockwise position [MAX] the maximum gain setting will be applied (+6dB).

CLIP

MIN   MAX

INPUT
LEVEL
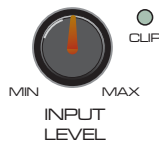
CLIP INDICATOR - The bi-colour [CLIP] indicator is used to detect overload conditions in the gain section before the A/D (analog-to-digital)convertor. When the correct signal level is detected, the indicator will light GREEN. When the signal level becomes too high for the A/D convertor the indicator will change colour to RED and the audio sound may become distorted. If this occurs, back-off the [INPUT LEVEL] control until a GREEN indication (with occasional RED flashes) is shown.

NOTE: If the input level is set incorrectly, the performance of the BPM engine and audio quality may be affected.

BPM DISPLAY & CONTROL
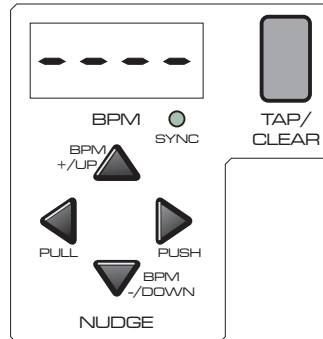
This section features the BPM display and it's associated controls. You can set the BPM range, adjust the synchronisation point and manually override the BPM engine with these controls.
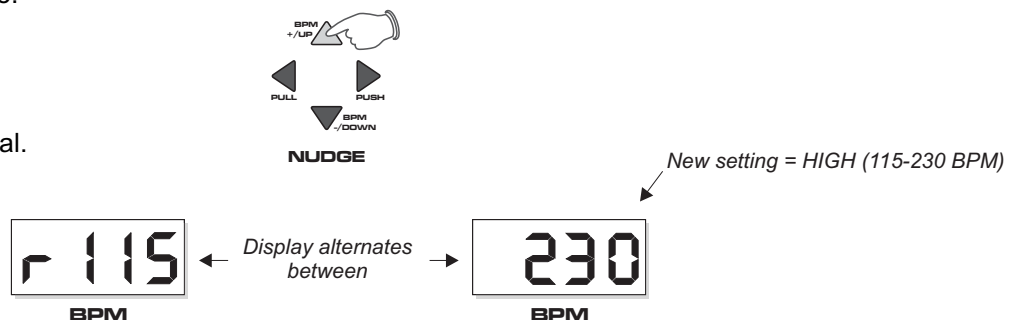
BPM RANGE

This is where you set the working range of the BPM engine. There are three operating bands specifically designed to complement styles of music from slow ballads to the fastest 'Speed Garage'. The range setting can only be accessed when the BPM engine is in the 'Idle' condition (four center bars in main display). To check the current range setting, whilst in idle mode, press the [NUDGE] control's [BPM+/UP] or [BPM-/DOWN] button once. The display will alternate between:

'r' = range → **⌐ 90** ← *Display alternates between* → **180** ← *Default setting = MED (90-180 BPM)*
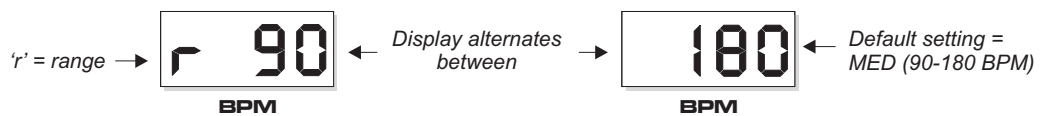
RANGES = LOW (60 to 120BPM), MED (default, 90 to 180BPM), HIGH (115 to 230BPM)

This display will cancel automatically after 5 seconds duration, the display reverting to the idle condition ready to commence BPM calculations (For quick exit, press the [TAP/CLEAR] button once to cancel BPM RANGE mode). To adjust the BPM range press the [BPM+/UP] button once to view the current setting and then, during the 5 second display 'window', use the NUDGE control [BPM +/UP] or [BPM -/DOWN] buttons to change the setting, as shown in the following example:

The BPM range setting is global.

New setting = HIGH (115-230 BPM)

⌐ 115 ← *Display alternates between* → **230**

NOTE 1: BPM's outside of the selected range limit cannot be analysed. Always check the general tempo of the music you are playing falls well within the selected BPM range. For most applications we recommend the MID BPM range of 90-180BPM.

NOTE 2: This setting is not memorised. Each time XS-FX power is turned on, the default setting of 90-180 BPM will be restored.

Operation

BPM DISPLAY

Using the [PHONO] or [LINE] input source, start the playback of a suitable audio track (containing definable beat information). The BPM display should show the tempo of the track in beats per minute, as in the following example:

Example reading = 138.2 BPM →

SYNC indicator flashes on beat
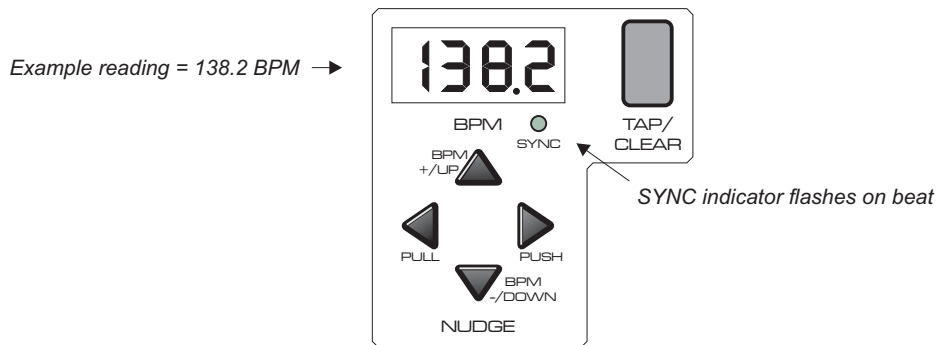
The [SYNC] indicator and the master ON/OFF button indicator will now flash at the detected BPM rate.

During tempo analysis of the audio track, the right-hand digit in the display may fluctuate slightly as the BPM reading is constantly updated in real-time. Any major shift in tempo (changing the audio playback speed using a CD/vinyl deck's pitch control) will be tracked and displayed by XS-FX.

IMPORTANT NOTE: The BPM engine will continue triggering the effects indefinitely at the last detected BPM rate if the strong regular beats in the audio track become unavailable. This feature allows the effects to continue operating through quite passages in the audio track.

If the strong regular beats in the audio track do become unavailable, the [SYNC] indicator will go out and the decimal point indicators in the BPM display will start to flash, as shown in the following example:

3 flashing decimal points indicate 'free-wheeling' condition →
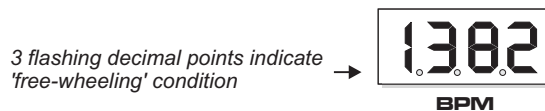
This will occur approximately 5 seconds after the last valid BPM reading was detected to warn you that XS-FX is now 'free-wheeling' and the BPM display is no longer being updated from the audio track. When the strong regular beats in the audio track return, the BPM engine will automatically detect the beat and make any necessary adjustments, at which time the flashing decimal point indicators will go out and the [SYNC] indicator will light once again to indicate a 'locked-in' condition.

NUDGE Control

The 4-button NUDGE control lets you make fine adjustments to the BPM rate and audio/effect synchronisation.

BPM adjustments using BPM+/UP and BPM-/DOWN buttons: During normal operation the BPM engine will automatically detect and adjust itself to the correct BPM value. However, if the BPM engine is 'free-wheeling' or you wish to adjust a 'tapped in' tempo, you can use the North/South positions of the NUDGE control to increase or decrease the BPM value in 0.1 BPM steps, as shown below:

*Press to increase BPM value* →

← *Press to decrease BPM value*

Press and hold down either button to scroll through the BPM values.

NOTE: Further valid beat information detected by the BPM engine may override any manual changes made with these buttons.

Operation

SYNC adjustments (using PULL and PUSH buttons): Under normal circumstances the BPM engine will automatically detect and adjust the audio/effect trigger point to either the on-beat or off-beat position depending on whichever is more prominent in the audio track. You can use the PUSH/PULL feature to make fine adjustments to the synchronisation (if the effects sound slightly ahead or behind the beat of the audio) or complete ½ beat steps (if the BPM engine has locked to the off-beat when you require synchronisation to be on the beat or vic-versa).

TIP: To ensure you get the desired result before applying the effects, always check the [SYNC] indicator to confirm the current beat lock position (flashing with ON beats or OFF beats).

To check the current trigger synchronisation setting, press either the [PULL] or [PUSH] button once. The main BPM display will now show the current setting, as in the following example:

← *Example: Trigger point = 'Synchronised'*
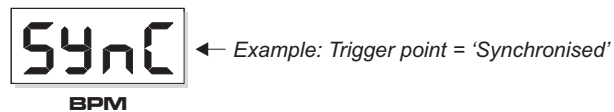
After 4 seconds the BPM display will revert to its normal operation.

To *adjust* the trigger synchronisation setting, again press one of the buttons marked [PULL] or [PUSH] and then, during the 4 second display period, press either button again to change the setting. Each half beat measure has 12 interim settings which allow very fine adjustments to be made to the synchronisation.
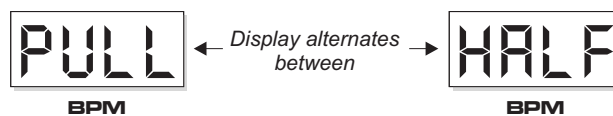
PULL: To 'Pull' the synchronisation point backwards, press the left button [PULL] during the 4 second display period.
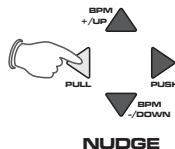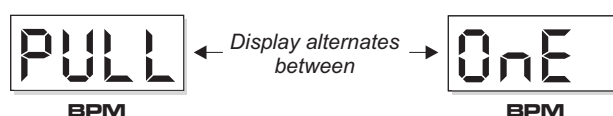

The display reading will change for each single press as follows:

Etc. down to -11 ←
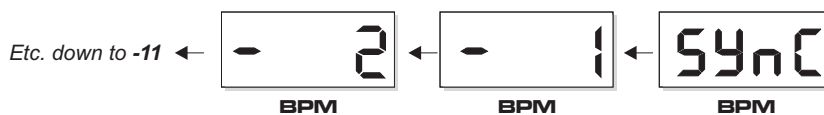
After the '-11' setting, the synchronisation will be pulled back exactly ½ beat, as indicated by the following display:

← *Display alternates between* →

Further adjustments can be made beyond the PULL [½ beat] point (display reads from '-13' down to '-23') until the synchronisation is pulled back by one complete beat (maximum PULL adjustment). For this setting the display will show the following:
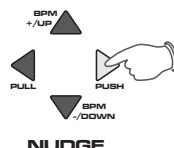

← *Display alternates between* →

½ BEAT ADJUSTMENTS: You can adjust the PULL setting in ½ beat steps by pressing and *holding down* the PULL button for 1 second.
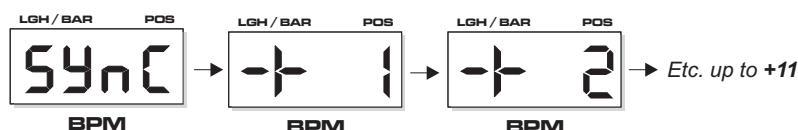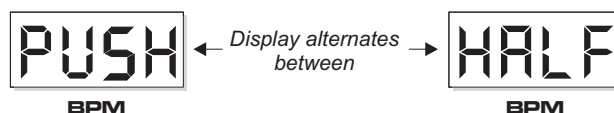
Operation

PUSH: To 'Push' the synchronisation point forwards, press the right button [PUSH] during the 4 second display period.


The display reading will change for each press as follows:

→ *Etc. up to +11*

After the '+11' setting, the synchronisation will be pushed forwards exactly ½ beat, as indicated by the following display:

Display alternates between

Further fine adjustments can be made beyond the PUSH '½ beat' point (display reads from '+13' up to '+23') until the synchronisation is pushed forwards by one complete beat (maximum PUSH adjustment). For this setting the display will show the following:
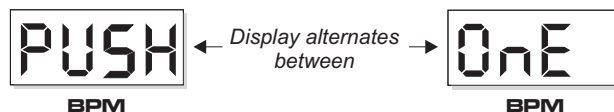
Display alternates between

½ BEAT ADJUSTMENTS: You can adjust the PULL setting in ½ beat steps by pressing and *holding down* the PULL button for 1 second.

TAP/CLEAR BUTTON

This multi-function button allows you to manually enter a tempo by hand or erase the current BPM reading. The TAP feature should be used to set the BPM rate when the [MIC] input is selected. It can also be used in [PHONO] or [LINE] input modes when there is no audio signal present or when the beat information becomes unavailable during a quite passage of the audio track (intro, middle eight etc). The CLEAR feature can be used to cancel the current BPM reading, which automatically de-activates the effects.

TAP - Tempo Edit: To enter a BPM rate from an 'IDLE' condition (no audio beat detected) use your finger to tap in a tempo on the TAP button (within the current BPM range). After 3-4 taps the tempo will be shown on the main BPM display. The [SYNC] indicator and the master ON/OFF button indicator will flash at the detected BPM rate.

The TAP feature can be used to override the BPM engine if it is in 'free-wheeling' mode only. Use a finger to tap in the new tempo. After 3-4 taps the updated tempo will be shown on the main BPM display and the effect triggering will immediately change to the new BPM rate. The TAP function can also be used to assist the BPM engine as it analyses more complex rhythm tracks. Tapping along with the tempo of the track can help the software recognise patterns within the music and so lock-in and adjust the BPM and/or synchronisation itself.

NOTE: Subsequent valid beat information detected by the BPM engine may override manual changes made with the TAP function.

CLEAR BPM: To clear a BPM reading and reset XS-FX to 'IDLE' mode, press and *hold down* this button for approximately 1 ½ seconds. Four centre bars will replace the BPM reading in the main display and any activated effects will be de-activated.
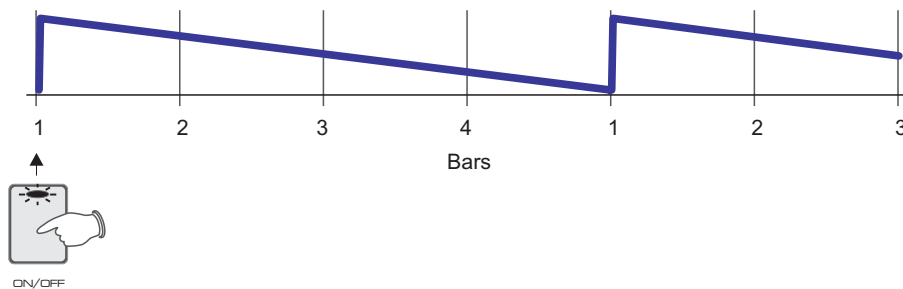
EFFECT CONTROLS

This section deals with the controls dedicated to adjusting and controlling the effect parameters. Elements of each effect can be altered in real-time using the FX MIXER joystick and Z PLANE fader whilst the 3-band filter section lets you choose which part of the sound is affected.

ON/OFF BUTTON

This button switches the effects on and off. In [IDLE] mode the indicator in the [ON/OFF] button will be off. In [PAUSE] mode (BPM detected) the indicator in the [ON/OFF] button will flash at the detected BPM rate. When the button is set to ON the indicator will stay on.
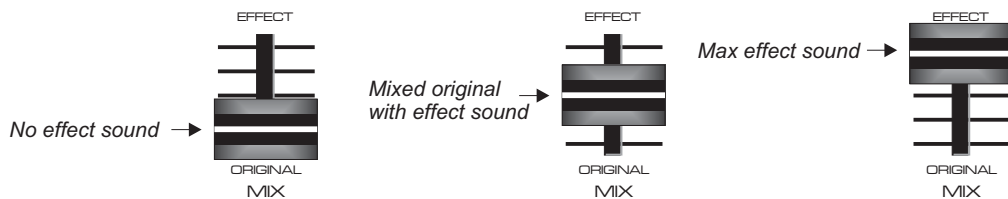
Flashing indicator = Pause mode →

← Indicator ON = Effects activated

ON/OFF

ON/OFF

Each time this button is set to ON the active effect will commence it's cycle from the start point. As an example, if the FILTER effect is selected with a [FALLING] type LFO shape and the trigger duration set to 4 bars, the following will occur when the [ON/OFF] button is pressed on or slightly before the first beat of the bar:

1   2   3   4   1   2   3

Bars

ON/OFF

If ON is selected after a beat has passed, the software will automatically start the effect cycle on the next beat of the bar.

MIX FADER

This mini-fader controls the balance between the un-processed and processed signal when the [ON/OFF] button is set to ON. At the end-stop marked [ORIGINAL] the effects will be completely bypassed and only the original sound will be heard. As the knob is moved away from this position the processed signal will be gradually introduced until, at the end-stop marked [EFFECT], the maximum processed sound will be heard.

EFFECT

No effect sound →

ORIGINAL

MIX

EFFECT

Mixed original with effect sound →

ORIGINAL

MIX

EFFECT

Max effect sound →

ORIGINAL

MIX

Operation

Z PLANE FADER

This mini-fader controls one of the sound shaping parameters of the active effect. At the end-stop marked [MIN] the assigned parameter value will be at its lowest. As the knob is moved away from the [MIN] position the sound will start to change, the sound element being gradually introduced until, at the end-stop marked [MAX], it will be at its highest.
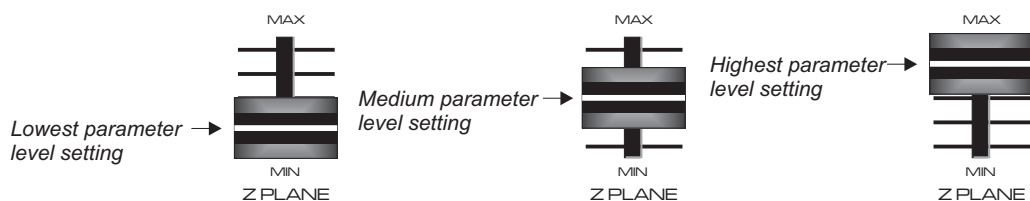

NOTE: See individual effect sections for full information on parameter assignments.

FX MIXER JOYSTICK

This mini joystick controls two further sound shaping parameters of the active effect. In the centre sprung position the X and Y parameters will be at their neutral or off values (s*ee individual effect sections for full information on parameter assignments).*

Y AXIS - As the joystick is moved away from the centre 'parked' position in a Northerly direction the Y parameter will be gradually increased in a *positive* manner until, at the top edge of the aperture, it will be at maximum. As the joystick is moved away from the centre position in a Southerly direction the Y parameter will be gradually increased in a *negative* manner until, at the bottom edge of the aperture, it will be at maximum.
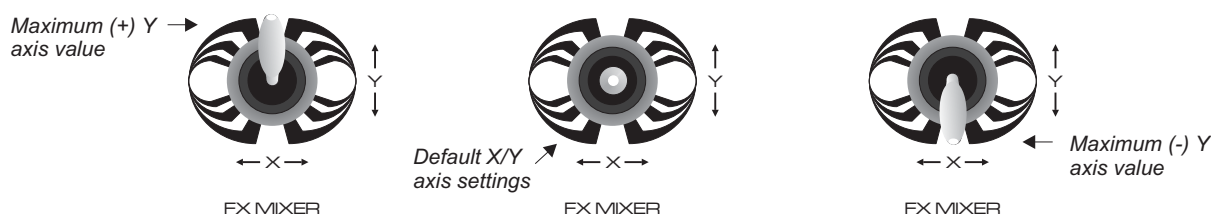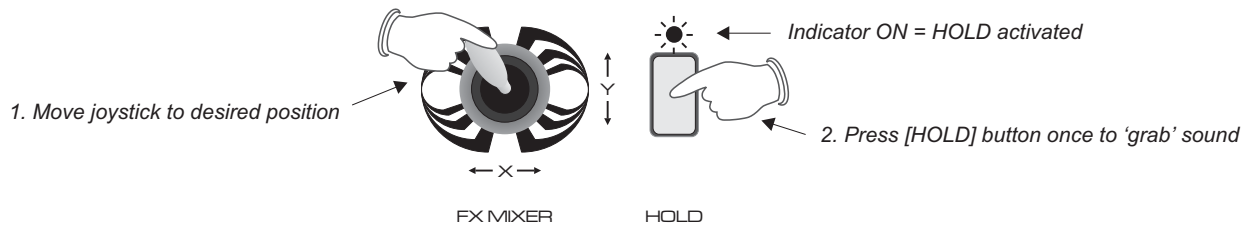

X AXIS - As the joystick is moved away from the centre 'parked' position in an Easterly direction the X parameter will be gradually increased in a *positive* manner until, at the right edge of the aperture, it will be at maximum. As the joystick is moved away from the centre position in a Westerly direction the X parameter will be gradually increased in a *negative* manner until, at the left edge of the aperture, it will be at maximum.
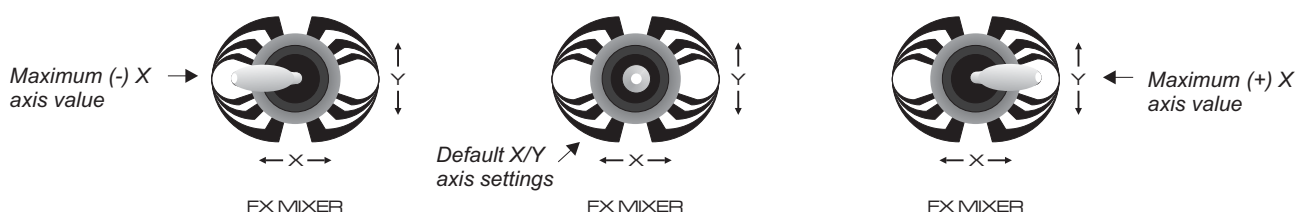
Both X and Y parameters can be adjusted simultaneously when the joystick is moved into areas between the two axis.

HOLD - The [HOLD] feature can be used to 'grab' and hold the sound from any given joystick position away from the centre spring-return point. Simply move the joystick until you hear the sound you want, then press the [HOLD] button once. You can now release the joystick. The indicator above the [HOLD] button will light to show that this function is activated and will remain on until the [HOLD] button is pressed again to cancel the hold operation.
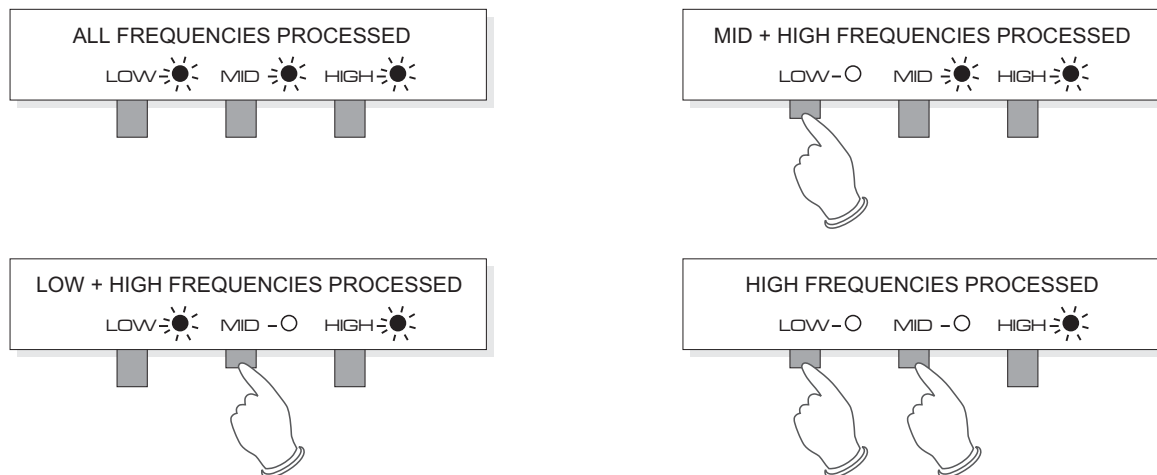
1. Move joystick to desired position

Indicator ON = HOLD activated

2. Press [HOLD] button once to 'grab' sound

FX MIXER   HOLD

NOTE: The joystick [HOLD] function is memorised between programs whilst power is ON e.g. If [HOLD] is applied to an effect/preset and then another effect/preset selected, the [HOLD] function will still be active upon returning to the first selection. This applies to both [SINGLE] and [MULTI] mode operation.

3-BAND ISOLATOR

The 3-band isolator section allows you to apply the effects to certain frequency bands or the complete audio signal. As an example, effects applied to just the HIGH frequencies will sound very subtle whilst passing the sound through all three bands simultaneously will offer more extreme results.

The three front panel switches control the ON/OFF status of the LOW, MID and HIGH frequency bands respectfully.

To select/de-select the frequency bands simply press the relevant momentary switch once. The indicators show when the frequency band is active [ON] or bypassed [OFF], as shown in the following examples:

ALL FREQUENCIES PROCESSED

LOW   MID   HIGH

MID + HIGH FREQUENCIES PROCESSED

LOW   MID   HIGH

LOW + HIGH FREQUENCIES PROCESSED

LOW   MID   HIGH

HIGH FREQUENCIES PROCESSED

LOW   MID   HIGH

NOTE 1: To avoid total effect bypass, the last remaining frequency band cannot be turned off. As an example, if the LOW and MID bands are switched off leaving the HIGH band on, pressing the [HIGH] button will have no affect. To re-enable the HIGH band, first switch ON another band and then de-select the HIGH band.

NOTE 2: The ISOLATOR function is memorised whilst switching between effects in [SINGLE] mode operation ONLY.
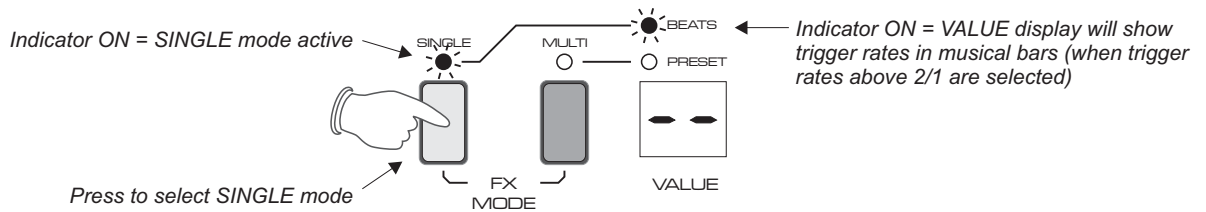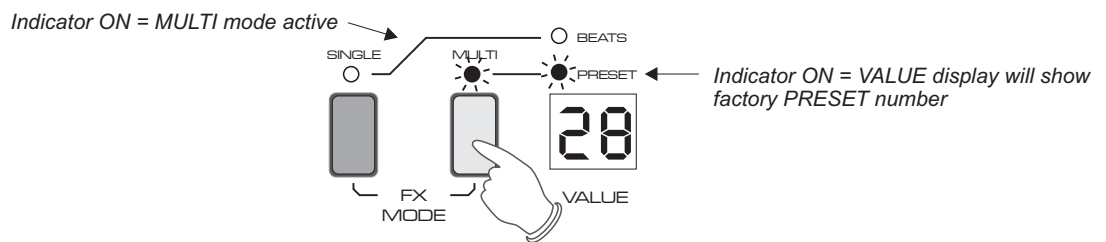
Operation

SINGLE/MULTI MODE OPERATION

This is where you choose the basic operating mode for XS-FX. In [SINGLE] mode only one of the five effects can be applied at a time. The beat select buttons and rotary encoder can be used to set the trigger rate for each effect. In [MULTI] mode, combinations of the five effects can be applied simultaneously from a selection of factory presets.

FX MODE Buttons

These two buttons 'toggle' (one automatically de-selects the other) to select single and multi modes. To select single mode, press the [SINGLE] button once, as shown below:

Indicator ON = SINGLE mode active

Press to select SINGLE mode

Indicator ON = VALUE display will show trigger rates in musical bars (when trigger rates above 2/1 are selected)

To select multi mode, press the [MULTI] button once, as shown below:

Indicator ON = MULTI mode active

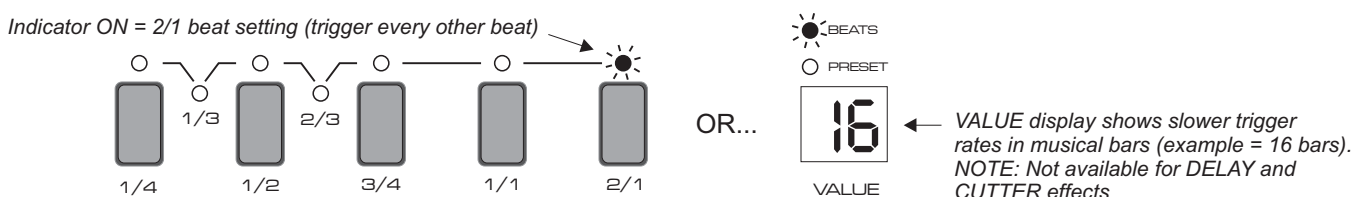*Indicator ON = VALUE display will show factory PRESET number*

Having dealt with single/multi mode selection, here are the specific functions for each mode.

SINGLE MODE

The five main effects buttons are used to select the active effect. Only one effect at a time can be activated in single mode. After power-up the default effect (FILTER) will be automatically activated. To select a new effect, press any of the other effect buttons once, as shown in the following example:

FILTER = default effect

FILTER   DELAY   PANNER   CUTTER   FLANGER

Press once to select new effect
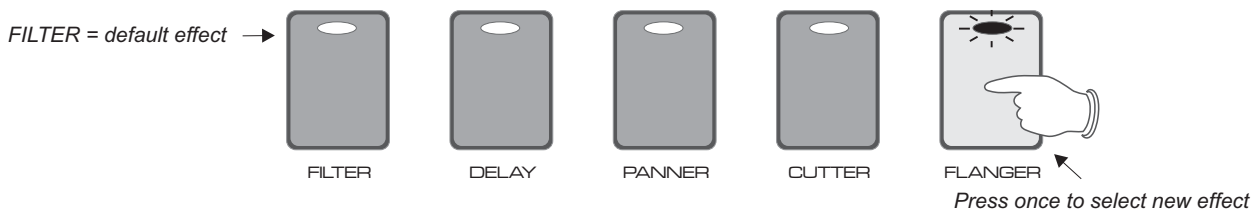
After selecting the new effect you can check the current trigger rate or 'beats' setting that will be applied to the sound. This will be shown in either BEATS or BARS, as shown in the following example:

Indicator ON = 2/1 beat setting (trigger every other beat)

1/4   1/3   1/2   2/3   3/4   1/1   2/1

OR...

VALUE display shows slower trigger rates in musical bars (example = 16 bars). NOTE: Not available for DELAY and CUTTER effects

There are seven defined BEATS settings (with interim values) available for each of the five effects and a further seven music BAR settings for the FILTER, PANNER and FLANGER effects only. The shorter duration BEATS trigger settings are as follows:

1/4 = Four times every beat
1/3 = Every third of a beat
1/2 = Twice every beat
2/3 = Every two thirds of a beat
3/4 = Every three quarters of a beat
1/1 = Every beat
2/1 = Every other beat

To change the BEATS trigger setting, use the five buttons to instantly set a new 'groove', as shown in the following example:
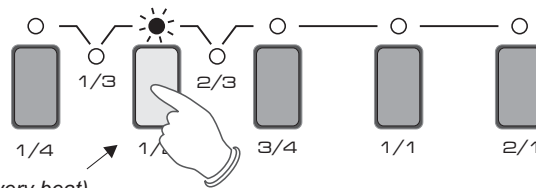
*Press to change beat trigger to ½ (twice every beat)*

The [SELECT] knob can be used to manually scroll up and down the range of BEATS settings. Use this knob to set the less popular [1/3] and [2/3] values, as shown below:

Settings track across in direction of rotation
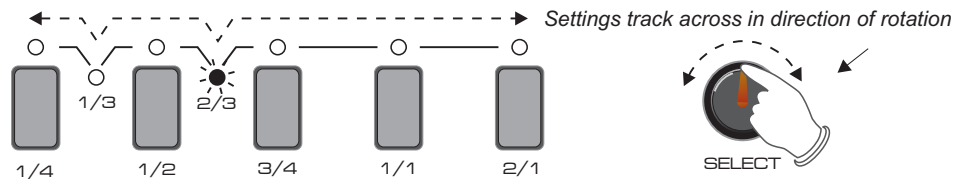
The longer duration BAR trigger settings are as follows:

01 = one bar cycle
02 = two bar cycle
03 = three bar cycle
04 = four bar cycle
08 = eight bar cycle
12 = twelve bar cycle
16 = sixteen bar cycle

With either the FILTER, PANNER or FLANGER effect selected, use the [SELECT] knob to access the BAR settings. These slower cycle triggers are available above the [2/1] BEATS trigger setting, as shown in the following example:

Etc. up to max setting 16 bars
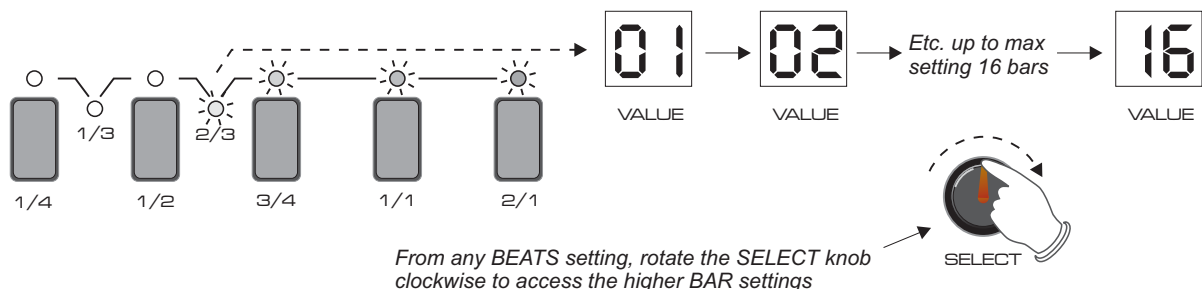
*From any BEATS setting, rotate the SELECT knob clockwise to access the higher BAR settings*

NOTE: At the upper and lower 'end-stops' (min and max settings) the [SELECT] knob will continue to rotate with no further changes being applied to the value.
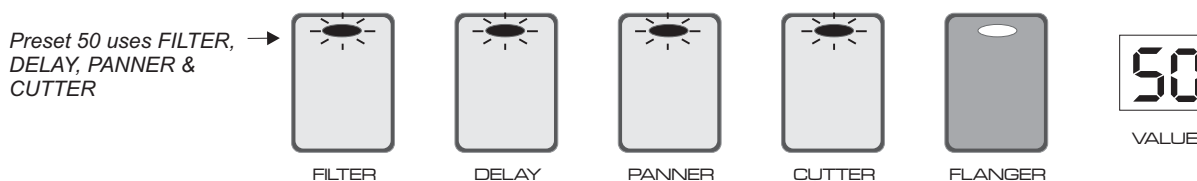
Operation

MULTI MODE

Multi mode consists of 50 factory preset programs where combinations of the five effects have been carefully setup to offer maximum multi-effects power. The ability to modify the presets in real-time gives added flexibility and allows the user to create customised variations.

The [SELECT] knob is used to recall the factory presets from 01 to 50. After power-up the default preset (01) will be automatically activated. To select a new preset, move the [SELECT] knob in a clockwise direction, as shown in the following example:
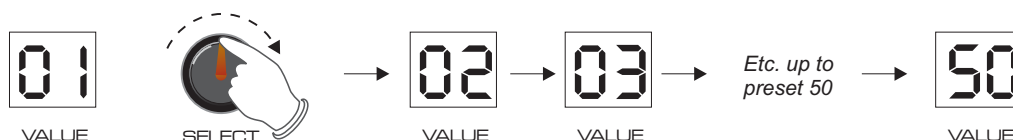
Each 'click' position of the rotary [SELECT] knob will increase/decrease the value by one.

The effects used in each preset can be turned on and off to customise the sound. When a preset is recalled, the main effect button indicators show the active effects in the multi preset, as shown in the following example:

Preset 50 uses FILTER, DELAY, PANNER & CUTTER

To de-activate any effect, press the relevant button once:

Indicators flash to show 'de-activated' effect condition

Preset 50 now only using FILTER & CUTTER effects

Press once to de-select effects
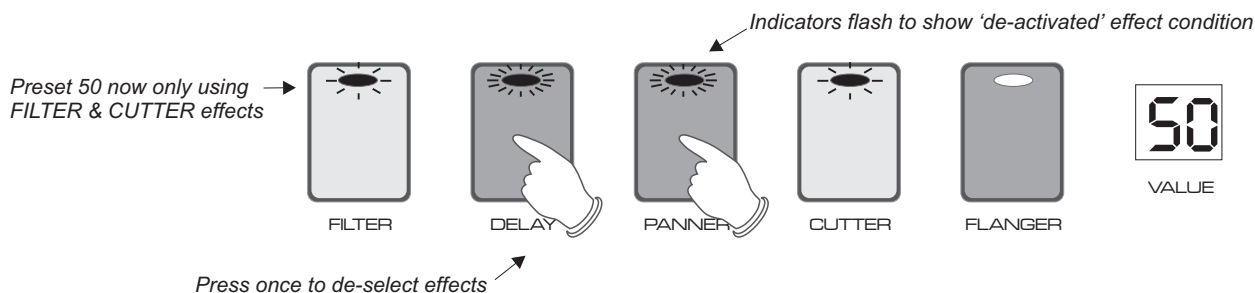
See the attached VOICE SHEET for specific preset program parameters.

NOTE: Edited presets are memorised between multi preset selection whilst power remains ON.

To restore the original factory preset program at any time simply press the [MULTI] mode button once, as shown in the following example:
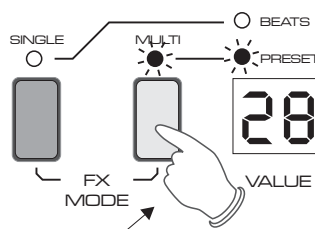
In MULTI mode, press once again to restore original factory preset (after editing Z PLANE setting or de-selecting effects)

In multi mode the five BEATS buttons can be used as short-cut 'hot keys' to store and recall your favourite presets. After power-up the default preset assignment will be as follows:

BUTTON   PRESET
 [1/4]   recalls   10
 [1/2]   recalls   20
 [3/4]   recalls   30
 [1/1]   recalls   40
 [2/1]   recalls   50
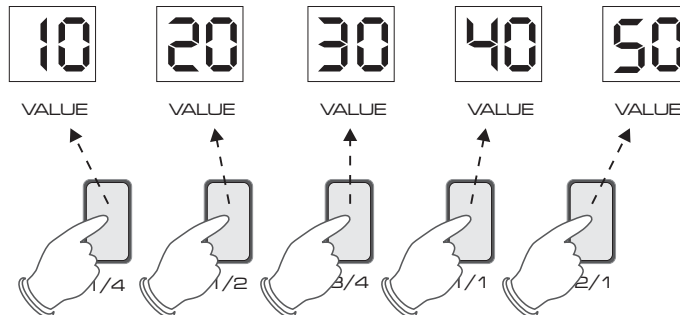
To store your own personal favourites, *press and hold down* a button, then use the [SELECT] knob to find the desired preset, as shown in the following example:

2.Turn to find desired preset '39'

1.Press & hold to store favourite → preset '39' on this button

3.Release button after preset is displayed
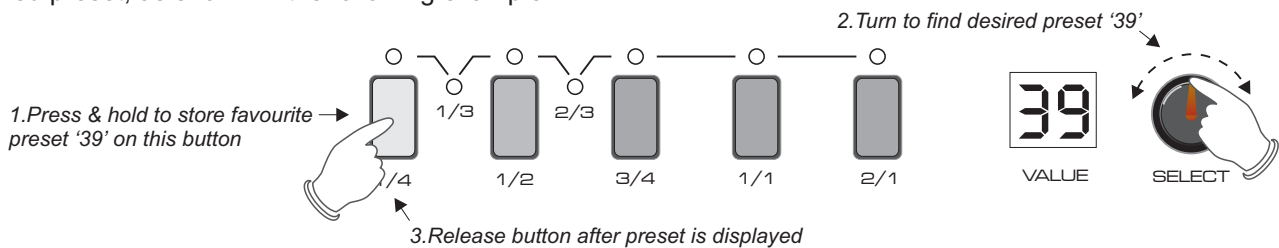
Once you have chosen the preset number, *release the button* to store the selected preset in memory. Any preset number can be stored in any of the five buttons. As an example, the following presets could be stored:

Customised 'hoy-key' → presets 41,02,27,49,13
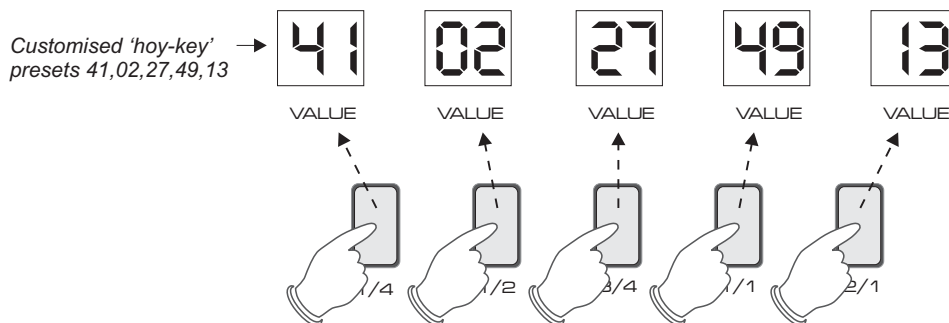
NOTE: The stored preset configuration will be lost when power is switched OFF. After powering-up, re-congigure your favourite presets before a performance.

The Effects

This effect recreates the most essential part (for many dance music producers and remixers) of a classic analogue synthesizer, the filter, and puts it under the direct control of the tempo of the source music via the synchronised Low Frequency Oscillator (LFO).

The Filter allows you to remove or accentuate frequencies in the source signal, the [FREQUENCY] parameter controlling the frequencies to which the changes will be applied. [RESONANCE] allows you to boost the frequencies around the current cut-off frequency, accentuating the action of the filter, especially under the control of the LFO. This can be set to subtly emphasise the movement or exaggerate it into a squealing monster. [ENVELOPE MOD] controls the amount of change to the cut-off frequency when under LFO control. The greater the envelope mod amount, the more the filter is quickly opened and closed back to the frequency parameter setting at each trigger from the BPM analyser. If the [FREQUENCY] parameter is set closed and the [ENVELOPE MOD] to max this will produce the most marked effect, especially if [RESONANCE] is set fairly high as well.

FREQUENCY [FX MIXER JOYSTICK **X** AXIS (left-right)]
This parameter sets the basic cut-off frequency of the filter which, in [SINGLE] mode, is fixed as a LOW PASS type (LOW, BAND & HIGH pass filter types are used in [MULTI] mode - see VOICE SHEET for further details). When the [FX MIXER] joystick is in the centre position the frequency will be at its mid point. As the joystick is moved to the left of centre the frequency will decrease. As the joystick is moved to the right of centre the frequency will increase.

RESONANCE [FX MIXER JOYSTICK **Y** AXIS (up-down)]
This parameter sets the boost level of the frequencies around the cut-off point as set by the [FREQUENCY] control. When the [FX MIXER] joystick is in the centre position the resonance will be at its mid point. As the joystick is moved downwards from the centre position the resonance level will decrease. As the joystick is moved upwards from the centre position the resonance level will increase until, at the edge position the resonance will reach self-oscillation producing a new pitched element similar to acoustic feedback.

ENVELOPE MOD [Z PLANE FADER]
This parameter sets the amount of change (depth) of the cut-off frequency as set by the [FREQUENCY] control. At the [MIN] end-stop position there will be no change to the filter cut-off frequency, which is useful for making 'manual' sweeps with the filter's [FREQUENCY] and [RESONANCE] controls. As the fader is moved towards the centre position the filter will be increasingly opened by the audio modulation until, at the [MAX] end-stop the modulation will be at its maximum.

SUB-MENU [PRESS & HOLD FILTER BUTTON]
A special sub-menu for the filter effect lets you choose the LFO (low frequency oscillator) waveshape. There are four types to choose from, each having their own individual characteristics and subsequent affect on the music.

To access the filter sub-menu, *press and hold down* the [FILTER] effect button. The main display will now show the current setting, as shown in the following example:

Press & Hold to view LFO shape setting →

FILTER

rISE

BPM

← *Default setting = RISING*

RANGE: Triangle:[∧] Falling:[⟍] Rising:[⟋] Pulse:[⊓]

To select a different LFO waveshape, first *press and hold down* the [FILTER] effect button, then use the [Z PLANE] fader to change the value, as shown in the following example:

1.Press & Hold

FILTER

2.Move fader to change LFO shape setting

MAX

MIN

Z PLANE

3.Main display shows settings

tr┐	→	FALL	→	r┐SE	→	PULS
BPM		BPM		BPM		BPM
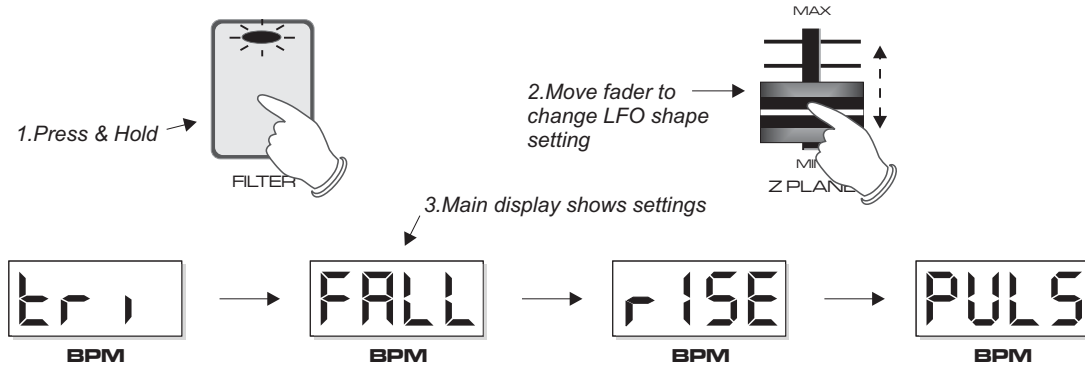
When the display shows the desired waveshape, release the FILTER button to store the change.

NOTE: The stored LFO waveshape will be lost when power is switched OFF. After powering-up, re-congigure the effects before a performance.

THE DELAY

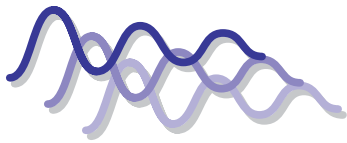This effect makes a copy of the source signal and then adds it back into the signal after a period of time as set by the BPM analyser. The fidelity and number of repeats can be set to determine how much this affects the original signal. The delayed signal can be a perfect copy of the original, thanks to the high quality of digital technology in XS-FX, but this is not always what the user wants. A reproduction parameter is provided to allow the fidelity of the delayed signal to be reduced to that of a classic tape echo machine of the sixties/seventies or beyond to extreme 'grunge'. The number of repeats can be varied from one to increasingly numerous repeats which, although decaying in volume, will still threaten to drown out the source signal (which may be exactly what you want). Use the Max repeat position with caution!

[FX MIXER JOYSTICK **X** AXIS (left-right)] - NO FUNCTION

SPEED [FX MIXER JOYSTICK **Y** AXIS (up-down)]
This parameter can be used to manually adjust the speed of the DELAY effect. It's operation models the classic tape echo machines of the past, smoothly changing the speed up and down (without a digital glitch) as would the motor driven machines of the 60's and 70's. The inherent speed control time lag of these older tape echo units has also been included. Try moving the joystick control quickly from top to bottom (with multiple repeats set) to hear the delay repeats catch up in a lazy, fluid manner.

When the [FX MIXER] joystick is in the centre position the delay speed will always be at the rate as set by the BEATS trigger buttons. As the joystick is moved downwards from the centre position the delay speed will smoothly decrease. As the joystick is moved upwards from the centre position the delay speed will smoothly increase.

The Effects

REPEATS [Z PLANE FADER]

This parameter sets the number of times the delayed signal is repeated. At the [MIN] end-stop position there will be just a single repeat or echo of the signal (no feedback). As the fader is moved towards the centre position the delayed signal will be increasingly fed back into the delay to create more and more repeats, the multiple repeats slowly decaying in volume over a period of time until, at the [MAX] end-stop position, the number of repeats feeding back into the delay will be sufficient to maintain the looped section indefinitely.

SUB-MENU [PRESS & HOLD DELAY BUTTON]

A special sub-menu for the delay effect lets you adjust the audio reproduction quality of the delayed signal. At the DIGITAL setting the reproduction quality will be at its highest (44.1kHz CD quality). At the VINTAGE TAPE position the high and low frequency content will be limited whilst harmonic distortion and speed variations (chorus) are also introduced to create the classic sound of a vintage analogue tape machine. At the GRUNGE position all these elements are exaggerated to an extreme of decay.

To access the delay sub-menu, *press and hold down* the [DELAY] effect button. The main display will now show the current setting, as shown in the following example:

Press & Hold to view
REPRO setting

DELAY

Default setting = DIGITAL

RANGE: DIGITAL, VINTAGE TAPE, GRUNGE

When the button is released the main display will revert to normal BPM readout.

To select a different reproduction quality, first *press and hold down* the [DELAY] effect button, then use the [Z PLANE] fader to change the value, as shown in the following example:

MAX

2.Move fader to
change REPRO
setting

1.Press & Hold

DELAY

MIN
Z PLANE

3.Main display shows settings
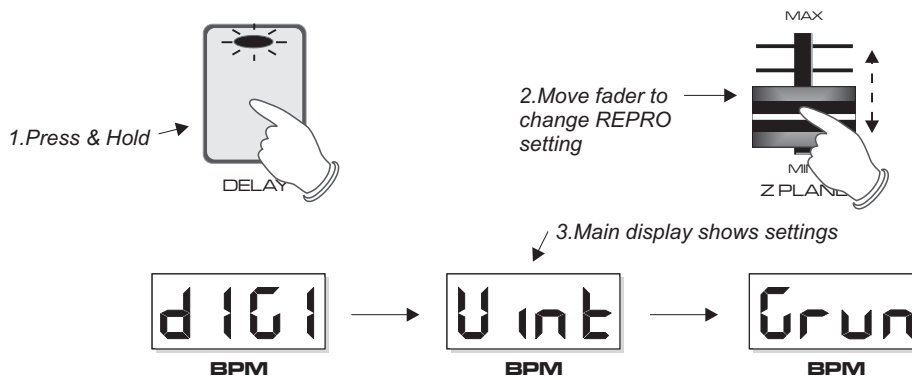
When the display shows the desired setting, release the DELAY button to store the change.

NOTE: The stored REPRO setting will be lost when power is switched OFF. After powering-up, re-congigure the effects before a performance.

THE PANNER

SPATIAL PANNING SYSTEM
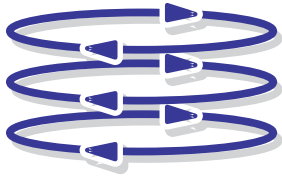
This part of XS-FX is quite revolutionary. There have of course been auto-panning devices before, which could use an LFO to move a signal around the stereo field, but none which could trigger the LFO from a BPM analyser and certainly none which could move different frequency bands to different pan positions at the same time. The unique Spatial Panning System (SPS) featured in XS-FX can actually split the incoming signal into three bands (low, mid and hi - as normally used by DJs) and then move these bands' pan positions independently.

With SPS Off, the Panner works in a more conventional fashion on the entire signal, moving it around the stereo position at the determined speed, giving you a standard auto-pan controlled by the BPM analyser. As you increase the SPS amount, it will start to move two bands around in the stereo field whilst holding the third user-definable band stationary and as SPS reaches full, all three bands will be constantly cycled to different places in the stereo field.

DIRECTION [FX MIXER JOYSTICK **X** AXIS (left-right)]
This parameter sets the directional movement of Spatial Panning (when SPS is set to 'Full'). When the [FX MIXER] joystick is in the centre position the pan direction will be at its default setting, *left-to-right*. As the joystick is moved momentarily to the right of centre the pan direction will change, now moving from *right-to-left*, at which point the joystick can be released to return to the centre position. Move the joystick momentarily to the left of centre position to change the direction back to *left-to-right* movement.
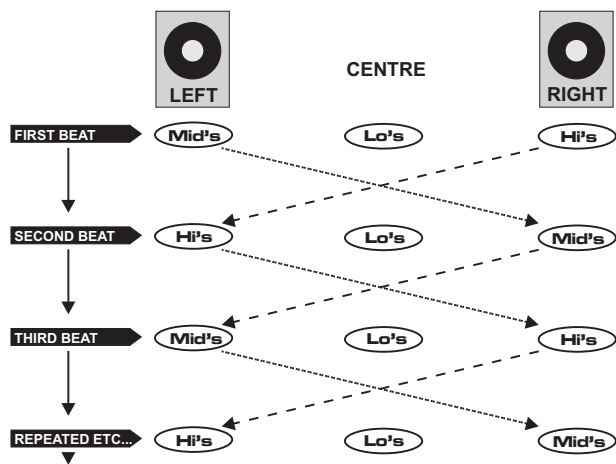
2-WAY SPLIT [FX MIXER JOYSTICK **Y** AXIS (up-down)]
This parameter sets the configuration of 2-Way Spatial Panning when the [Z PLANE] fader is in the mid position only. When the [FX MIXER] joystick is in the centre position the MID frequency band will be held in a central position with the *low and high* frequencies panning from left to right in opposing directions. As the joystick is moved downwards from the centre position the configuration will change so that the HIGH frequency band is now held in a central position with the *low and mid* frequencies panning from left to right in opposing directions. As the joystick is moved upwards from the centre position the configuration will change so that the LOW frequency band is held in a central position with the *mid and high* frequencies panning from left to right in opposing directions. *See example 1 over.*

SPS [Z PLANE FADER]
This parameter sets the amount of Spatial Panning and how the split frequencies are moved about the stereo field. At the [MIN] end-stop position all audio frequencies are locked together and are panned as one. As the fader is moved towards the centre position the audio signal will become increasingly split into high, mid and low frequency elements until, at the centre position, the separation will be at its maximum. This '2-Way' setting of SPS shifts two frequency bands from left to right whilst holding the third in a central position (see [2-WAY SPLIT] section above). As the control is moved further towards the [MAX] end-stop the movement of the split frequency bands increasingly changes, the three bands now starting to 'chase' each other in a left, right, centre, left, right, centre... pattern (or opposite direction - see [DIRECTION] control above) on each triggered pulse until, at the [MAX] end-stop position the Spatial Panning effect will be at it's maximum. *See example 1 & 2 over.*

NOTE: There is no SUB-MENU function for the PANNER effect.

The Effects

LEFT	CENTRE	RIGHT
FIRST BEAT → Mid's	Lo's	Hi's
SECOND BEAT → Hi's	Lo's	Mid's
THIRD BEAT → Mid's	Lo's	Hi's
REPEATED ETC... → Hi's	Lo's	Mid's

EXAMPLE 1

LEFT	CENTRE	RIGHT
FIRST BEAT → Mid's	Lo's	Hi's
SECOND BEAT → Lo's	Hi's	Mid's
THIRD BEAT → Hi's	Mid's	Lo's
REPEATED ETC... → Mid's	Lo's	Hi's
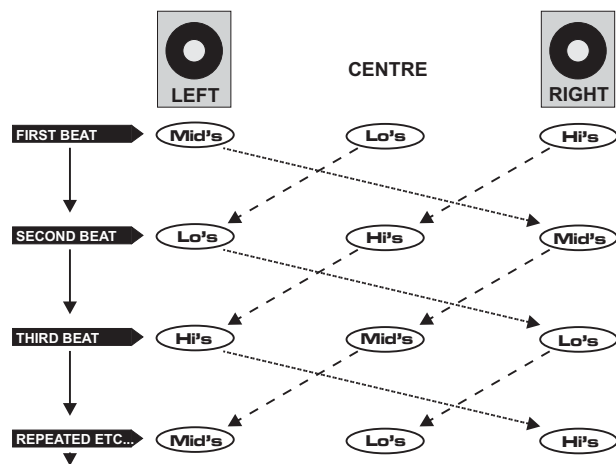
EXAMPLE 2

Example 1: *Frequency band movement when SPS = '2-Way' (Z PLANE fader set to mid position & FX MIXER joystick held in fully up position)*

Example 2: *Frequency band movement when SPS = 'Max', DIRECTION = 'Right-to-Left' (FX MIXER joystick Y axis '2-Way Split' has no function when SPS set to Max)*

THE CUTTER

This effect operates in a similar fashion to the filter but on the overall volume of the signal. The cutter can be set to operate either as a conventional 'gate' which, each time it is triggered, opens instantly to allow the signal through but then after a short period closes completely to cut off the signal. It will also work as a fade-in/fade-out control with a relatively short period of operation.

ENVELOPE [FX MIXER JOYSTICK **X** AXIS (left-right)]
This parameter sets the overall envelope of the cutter effect, transforming it from a rising sawtooth (⟋) to a triangle (⋀) to a falling sawtooth (⟍). When the [FX MIXER] joystick is in the centre position the envelope will be at its mid point (⋀). As the joystick is moved to the left of centre the envelope shape will become more acute on the *trailing* edge until, at the left-hand edge position it will be a rising sawtooth shape (⟋). This produces more subtle volume changes, the volume rising slowly and falling away quickly for a 'backwards' effect. As the joystick is moved to the right of centre the envelope shape will become more acute on the *leading* edge until, at the right-hand edge position it will be a falling sawtooth shape (⟍).

SLOPE [FX MIXER JOYSTICK **Y** AXIS (up-down)]
This parameter sets the shape of the cutter effect, transforming it from a falling sawtooth (⟍) to a square pulse (⊓) with interim settings in between. When the [FX MIXER] joystick is in the centre position the shape will be at its mid point (⟍⟋). As the joystick is moved downwards from the centre position the shape will become more sloped, the overall volume of the audio rising quickly and falling slowly until, at the edge position it will be a pure sawtooth shape (⟍). As the joystick is moved upwards from the centre position the shape will become more squared-off, quickly rising and falling to form a 'gated' effect until, at the edge position it will be a pure square wave (⊓).

DEPTH [Z PLANE FADER]
This parameter sets the length of the square pulse wave 'open' or 'on' period, the period in which the audio signal can be heard. At the [MIN] end-stop position the gate is open for its maximum duration, allowing most of the audio signal to pass. As the fader is moved towards the centre position the 'open' period becomes increasingly shorter, allowing less and less of the audio signal to pass until, at the [MAX] end-stop position the duration of the open period is extremely short, allowing through only a minimal burst of audio.

NOTE: There is no SUB-MENU function for the CUTTER effect.

The Effects

THE FLANGER ━━

The Flanging effect's name was derived from the way it was first produced back in the sixties, by manually slowing a tape spool (touching the sides or 'flanges' of the spool) on a delay tape machine. This produced the classic 'whooshing' sound, which has been reproduced digitally with a greater degree of reliability and flexibility in XS-FX. By feeding more or less of the signal back in to itself, the flanging effect can be exaggerated or made more subtle.

We have included two types of flanger in XS-FX. Flanger 1 accentuates notch frequencies across the range, the most obvious being from 0-250Hz resulting in a boost to low frequency sounds such as the bass drum. Flanger 2 accentuates the opposite frequency bands, resulting in a cut to the low frequencies. Flanger 1 is assigned to [SINGLE] mode operation whereas both Flanger 1 and 2 are featured in [MULTI] mode presets - see the VOICE SHEET for further details.

RESONANCE [FX MIXER JOYSTICK **X** AXIS (left-right)]
This parameter sets the amount of feedback present in the flange effect, which determines just how exaggerated it becomes. When the [FX MIXER] joystick is in the centre position the resonance will be at its mid point. As the joystick is moved to the left of centre the resonance will decrease. As the joystick is moved to the right of centre the resonance will increase until, at the edge position the feedback will be at its maximum resulting in some extreme flanging textures.

DEPTH [FX MIXER JOYSTICK **Y** AXIS (up-down)]
This parameter sets the overall depth of the flange effect. When the [FX MIXER] joystick is in the centre position the depth will be at its mid point. As the joystick is moved downwards from the centre position the depth will decrease making the flange effect more subtle. As the joystick is moved upwards from the centre position the flanging becomes more and more pronounced until, at the edge position the depth of flanging will be at it's greatest.

FREQUENCY [Z PLANE FADER]
This parameter sets the frequency of the 'sweeping' element modulated by the trigger setting. This lets you fine tune which frequencies the flanging process will bring out. At the [MIN] end-stop position only the lower frequencies will be affected. As the fader is moved towards the centre position the higher frequencies will be more affected until, at the [MAX] end-stop position only the higher frequencies will be affected.

SUB-MENU [PRESS & HOLD FLANGER BUTTON]
A special sub-menu for the flanger effect lets you choose the LFO (low frequency oscillator) waveshape. There are four types to choose from, each having their own individual characteristics and subsequent affect on the music.

To access the flanger sub-menu, *press and hold down* the [FLANGER] effect button. The main display will now show the current setting, as shown in the following example:
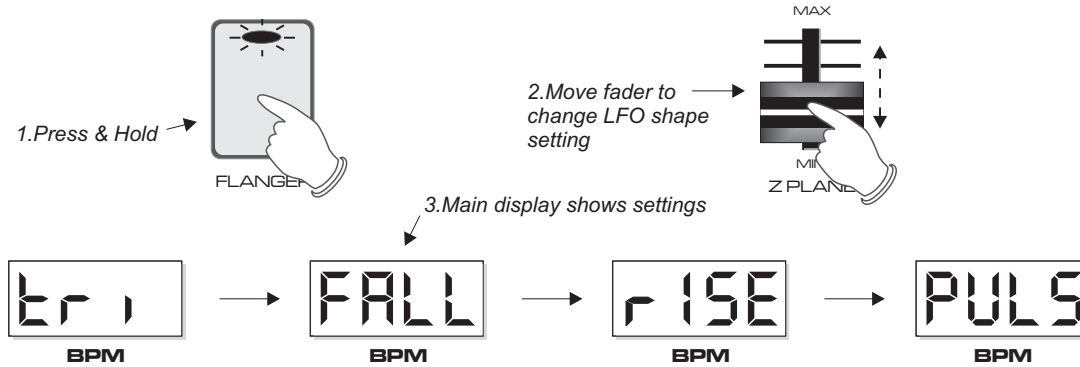

Press & Hold to view LFO shape setting

FLANGER

← *Default setting = TRIANGLE*

BPM

RANGE: Triangle:[∧] Falling:[↘] Rising:[↗] Pulse:[ᴨ]

When the button is released the main display will revert to normal BPM readout.

To select a different LFO waveshape, first *press and hold down* the [FLANGER] effect button, then use the [Z PLANE] fader to change the value, as shown in the following example:

1.Press & Hold

FLANGER

2.Move fader to change LFO shape setting

MAX

MIN

Z PLANE

3.Main display shows settings

tr ı	→	FALL	→	r ıSE	→	PULS
BPM		BPM		BPM		BPM

When the display shows the desired waveshape, release the FLANGER button to store the change.

NOTE: The stored LFO waveshape will be lost when power is switched OFF. After powering-up, re-congigure the effects before a performance.

HINTS & TIPS

Synchronisation and Tempo Changes:

1. Use the NUDGE feature to manually adjust any synchronisation errors during quite passages (when beat information is unavailable).

2. Always make slow changes when adjusting the sound source pitch control. This will allow the effects to remain in synchronisation during tempo changes.

3. Never make tempo changes during quite passages (when beat information is unavailable) as XS-FX will lose synchronisation.

TROUBLESHOOTING

Problem	Check
BPM engine will not read track	Check/reset BPM range Check mixing desk output level and XS-FX input level setting
Unable to hear effect	Check MIX fader setting Check ISOLATOR filter settings Check position of FX Mixer joystick (HOLD feature ON) Is the right effect activated? Check input level control
Effects out of synchronisation	Check NUDGE setting Check mixing desk output level and XS-FX input level setting

Specification

XS-FX MULTI-BPM EFFECTS PROCESSOR ━━━━━━━━━━━━━

Audio
Freq Response: 20Hz to 20kHz (+/-0.5dB)
S/N ratio: >85dB
THD: <0.015%
Input Levels: Phono 55dBV / 47k ohms
Line 14dBV / 22k ohms
Mic 55dBV / 3 k ohms
Output Levels: Balanced 4 dBm [1.20V] / 600 ohms
Unbalanced 0dBV [1V] / 1 k ohm

BPM engine
Ranges: Low (60 -120BPM), Mid (90 -180BPM), Hi (115 - 230BPM)
Lock-in time: Typically 1 - 4 sec's (from introduction of definable beat information)
Display accuracy: 0.1 BPM
Internal accuracy: 3-millisecond sample rate

Presets
Programs: 50 factory user editable multi-effect scenes

Filter
Type: Virtual analog modelled 12dB per octave
Controls: Frequency, Resonance, Envelope Mod
Sub-Menu: LFO shape (Triangle, Rising, Falling, Pulse)

Delay
Type: Modelled vintage tape delay
Controls: Speed, Repeats
Sub-Menu: Reproduction (Digital, Vintage tape, Grunge)

SPS Panning
Type: Multi pan of low, mid & high frequencies
Controls: SPS, 2-Way Split, Direction

Cutter
Type: Variable ramp gate
Controls: Slope, Depth, Envelope

Flanger
Type: Modelled analog tape flanging
Controls: Frequency, Resonance, Depth
Sub-Menu: LFO shape (Triangle, Rising, Falling, Pulse)

Main Features / Controls
Isolator: 3-band frequency isolation filter
Mix: Wet/Dry balance control
Z Plane: Parameter fader control
FX Mixer: 2 x parameter Joystick control
Select: Rotary encoder
Beats trigger: 5 x buttons (1/4 -1 /2 - 3/4 - 1/1 - 2/1)
Nudge: 4 x button rubber keypad
Input level: Analog gain control with CLIP indicator

Connectors
Input: Phono (RCA), CD/Line (1/4 jack), Mic (1/4 jack), DC Power In (2mm jack)
Output: Unbalanced (RCA), Balanced (1/4 jack), Headphone Monitor (1/4 jack)

Power Supply
External (16vDC 750mA)

Dimensions / Weight
202[H] x174[W] x30mm[D] (8x7x1.25 inches) 1.25kg

* Specification and /or appearance subject to change without prior notice due to product improvement.
Patent Pending.