



bx_spredshread manual

Intelligent stereo width, panorama and tone control
for guitar and keyboard buss groups





bx_shredspread manual

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1.0 What is the bx_shredspread plug-in?

bx_shredspread is a stereo processor to be used on any stereo guitar subgroup or stereo guitar channels. Stereo-guitars that have been created by recording several mono tracks (aka “doubled” guitars) will benefit best from bx_shredspread and its auto-correcting features, but bx_shredspread will work on conventional stereo guitar sounds as well, of course.

Although mainly created for guitars bx_shredspread may also be used on keyboard groups, organs, choirs, etc.

bx_shredspread is a tool to control panning, stereo width and “tone” of your stereo guitar tracks/groups. It automatically avoids typical phase problems that can occur when using M/S technology via some sophisticated algorithms for stereo width, EQ and pan.

bx_shredspread’s main purpose is to make sure your stereo (“doubled”) guitar signals sound “wide and phatt” but there will be times when only ONE channel of your doubled guitars is actively playing.

Imagine a “live recording” of a band with 2 guitarists who play unisono “most of the time” (panned hard left and hard right) to make the sound nice and wide. Or 2 “doubled” mono metal guitar tracks on a rock CD production that are being panned hard left and right.

Use bx_shredspread to apply M/S stereo width and/or the Mono Maker to increase the stereo image and tighten the low end. If now ONE guitar stops to play (let’s choose the left guitar as an example) while the right channel guitar still plays on this “right” guitar (panned right) will still be “enhanced” in terms of stereo width. This will cause heavy phase problems.

You can even see this in the level LEDs: although only the right guitar channel is actively playing there will be audio level visible on the left channel LEDs indicated by the level meter. You won’t HEAR too much of this left channel signal as this would be “out of phase” signal generated by the M/S processing.

With bx_shredspread you can now relax and go on banging your head to the sound of your screaming amp... ;-)]

It will allow you to produce the biggest stereo sound you can imagine and deliver great rock “tone” with ease, while automatically switching off M/S Stereo Width and Mono Maker as soon as there is only one channel of audio playing – to automatically avoid the heavy phase problems we mentioned before!

bx_shredspread will work with any host program that supports TDM, RTAS, VST and/or AU plug-ins.

We will explain what “M/S technique” is in just a second – and then take a close look at the features of bx_shredspread.

2.0 What is M/S technology?

M/S means “mid & side”, which is a microphone recording and a Mastering technique. M/S is also known as “sum & difference”.

M is everything your mix contains of, L+R channels = the complete mono information in one channel = the SUM of L&R audio channels.

S is everything that is not on both channels of your mix, L-R channels = all the side information in your stereo guitar mix = the difference of your L&R audio channels.

3.0 What is M/S good for in mixing & mastering?

Well, it may sound simple, but bx_shredspread has a built-in M/S matrix and some clever automated algorithms that will help you get the best guitar sound as easy as turning a few knobs.

When mixing guitars (for example) you often aim for the widest and “biggest” sound possible, sound that surpasses the borders of your speaker system - as



heard on countless CDs of top acts but only quite a few demo CDs and smaller budget productions.

We have put the experience of pro audio engineers around the globe into bx_shredspread and have developed algorithms that will enable you to get the best and wide guitar sound right away. Easy. Fast. Reliable.

The M/S technology in bx_shredspread can help you get your stereo guitar groups (or tracks) and your keyboards or effects groups sound as wide as any professional CD project. In fact bx_shredspread is all pre-configured to make this a hassle-free and rather fun process.

The basic idea is to boost the S-signal (see explanation above) to get a wider sound, but this goes along with some technical problems that have to be taken care of.

bx_shredspread will do that automatically for you so you can concentrate on what's important: your [guitar/keyboard/effect] sounds!

4.0 Features of bx_shredspread :

- Intelligent stereo width, panorama and tone control
- Individual controls for “tone” (shred), “stereo width” (spread), “mono bass” (Mono Maker) and “Mono pan vs. Stereo pan” with auto phase correction mode.
- Phase correlation meter to control phases optically
- L/R stereo level LEDs
- Mono switch for control listening purposes
- SHRED/Tone control: an automated algorithm to balance out EQ settings and levels of stereo signals to be used with stereo width enhancement, based on experience of international pro audio engineers and artists.
- SPREAD/Stereo Width Control: M/S width, adjustable with 1 knob from “0” (mono) up to 150% (wider than “regular stereo”, makes your stereo sound sound “wider than your speakers”).
- Mono Maker: our unique tool to easily mono out your stereo signal in the bass frequencies, adjustable from 20Hz up to 22 kHz(!)
- 4 automatable settings (A/B/C/D) with copy and paste plus 32 steps of Undo/Redo
- Intuitive GUI – just slide the speakers for stereo width control



5.0 Overview and details



bx_shredspread - a complete screenshot

5.1 Gain (Input Gain)



Adjust the overall level of your signal using the input gain. If you experience clipping signals please turn down the gain knob until the red clipping LEDs stop flashing.

For best results adjust the gain so your level LEDs flash just underneath the clipping status.

5.2 Solo Pan - dynamic and automated panning system

(pls. also see 5.3 Threshold)



If bx_shredspread detects that there is only one channel of guitar (left or right) actively playing audio it will

automatically pan this mono signal to wherever you set the Solo Pan to.

All M/S features (Mono Maker and Spread) will be shut off in that case until there is a full stereo signal (2 guitars panned left/right for example) present at the input again.

Think of Solo Pan as an momentary pan for all mono guitar tracks.

5.3 Threshold

(works together with Solo Pan)



Threshold determines how big the level difference between left and right input must be for the Auto Mode to become activated.

The Auto Mode switches off the stereo width enhancement and the Mono Maker if there is only one channel playing audio (l or r) to avoid phase problems.

If a full stereo signal is present the Auto Mode and Solo Pan have no function at all.



5.4 Auto Pan (on/off)

[works together with Solo Pan and Threshold]



Auto Pan activates or deactivates the Solo Pan & Threshold circuit.

A blue LED indicates that Solo Pan and Threshold are active.

5.5 Mono Maker

[via internal M/S technique]

- a true Brainworx invention... simply adjust the threshold frequency with the Mono Maker knob and your stereo guitar signal will be mono up to that frequency automatically! The Mono Maker will get rid of all the stereo information below the frequency you set it to - and compensate for the potential overall bass sound loss in the mix automatically!
- In bx_shredspread the Mono Maker goes up to 22 kHz, so it is actually possible to make or even "blend" a mix mono completely and automate this.



→ What a nice effect for guitars or keys subgroups..!

5.6 Shred

[optimized EQ for stereo guitars]

- Turn to the right until things sound nice...
- Shred is an "intelligent" EQ to emphasize the tone in guitar sounds. It makes sure your heavy guitar sounds don't start sounding harsh when you crank them up, and it boosts that "rrrrroaring" sound of your rock guitar tracks.



5.7 Spread

Stereo width control [via internal M/S technique!]

- adjust the stereo width of any stereo mix or stereo signal.
- Leaving the stereo width at 100% will not change the width of your stereo signal at all (= "regular stereo").
- Increasing the value [101% - 150%] will make your mix/signal sound wider. Be careful: setting the stereo width control too high can cause serious phase problems! Always watch the correlation meter.
- Decreasing [99% - 1%] will make your mix/signal less wide.
- Setting the Mono Maker below 1% will display "Mono". Now your mix/signal is completely mono.





5.8 Tips for Spread (Stereo Width) Control & Mono Maker use:

- Try increasing the Stereo Width (see 5.7!) of a stereo signal (such as a guitar or keyboard sub-group or FX return!) until your correlation meter (see 5.9!) indicates phase problems (it goes into the red...). Now: turn the Mono Maker up to about 80 or 120 Hz (even higher if needed, this will depend on the actual signal being “played”) and watch the correlation meter go back to blue, indicating that your phases are ok again!
- This way it is actually possible to spread stereo images much further than with any other stereo expansion tool (that we knew of before inventing the Mono Maker ?) – but without running into the phase problems usually arising out of more or less “heavy” stereo image manipulations, or at least much less...
- bx_shredspread is the “perfect weapon” to be inserted into any stereo guitar track or group of a mix session and will drastically improve your possibilities to increase your stereo image of your complete mix session.

5.9 Correlation & Level LEDs




Optical tools to monitor phases and level

- Make sure your stereo signal doesn't clip or phase too heavily.
- Increasing stereo width and using Mono Maker can easily cause such problem.
- Blue LEDs: good
- Red LEDs: bad ;-)
- (red LEDs indicate clippings (distortions) or phasing signals)
- a standard correlation meter tool to monitor the phases (and potential phase problems!) of your stereo mix/signal.
- - 1 (left side, red) means your mix/signal is “out of phase” (180°).
- +1 (right side, blue) means your mix / signal is “in phase” (0°). “0” (zero) means that there is either:
 - no signal present
 - signal on only one channel
 - phases of L&R channels are shifted exactly 90°.



- a regular (and proper) stereo guitar mix will make the correlation meters oscillate between 0 and +1 while short flashes of the red LEDs (negative values) can usually be ignored.
- permanent red LEDs will indicate heavy phase problems in the mix/signal and should be taken serious!
- Try the Mono Maker to cure any phase problems you might find listening to your mix or monitoring the correlation meter LEDs. The higher you set the Mono Maker frequency the more mono your mix will be, and the less phase problems should occur in your stereo guitar sound.


5.10 Clip LEDs (aka “over” LEDs)

- red lights will indicate internal clipping.
- reset them by clicking red LEDs
- bright red LED: signal is clipping right now 
- dark red LED: one or more clippings have occurred since last LED reset. 
- all LEDs grey: no clipping has occurred, signal level is fine. 
- clipping may occur by Mono Maker or Stereo Width use with normalized signals (0dB) because these functions eventually boost levels, depending on their settings.
- in case of clippings turn down the Gain knob (5.1) and reset the Over LEDs by clicking on the red LEDs.




6.0 The Master Panel

6.1 Bypass

 With the Bypass button you can bypass the whole bx_shredspread plug-in to compare your original mix and your corrections/improvements with the bx_shredspread.

6.2 Undo / Redo (32 steps)

 One of the new features of bx_shredspread is the 32 steps Undo/Redo functionality.

Now you can just experiment and Undo whatever you don't like. Together with the new A/B/C/D settings and Copy/Paste (see "6.3") this is an engineer's dream.

6.3 Settings (A/B/C/D)



You can now store up to 4 Settings of bx_shredspread without using the audio sequencer's "Preset window" (most of them are not really fast and intuitive to use...).

Start with one Setting (A by default), copy it to B (press "copy", click "B", click "Paste", done!), then compare A and B. The same goes for C and D, of course. Also, you can reset single settings.


Using Automation can be helpful to get the maximum out of your mixes. Maybe your mix needs different Stereo Width settings for various parts of the song?

Settings are the way to go... you don't have to do it.. but you can...


Presets: (in your audio sequencer host program)

All 4 Settings of bx_shredspread will be stored with each Preset!

6.4 Manual

 Press Manual to open the PDF version of the manual which will be saved on your computer during installation.

6.5 Help / general info

 Click here to get info about bx_shredspread (version no, credits, etc.). This "splash screens" will also explain the most common shortcuts to operate bx_shredspread with ease.

→ Please see "7.0" for these shortcuts and some tips.



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7.0 Brainworx keyboard shortcuts

- Shift/Mouse Click on any knob will change the bx_shredspread's knob behaviour (toggle between linear and circular)
 - Alt/Mouse Click: will reset any knob to its initial value
 - Apple key (MAC) or Ctrl key (PC) plus Mouse Click (or Scroll Wheel Use above any parameter!) will allow for fine tuning of any knob.
 - Scroll Wheel Control: place your mouse above any knob and turn the mouse wheel to increase/decrease values.
 - Typing In Values into your plug-ins will save you some time:
General Typing:
10.000 Hz can be typed in as "10k", 12.000 Hz would be "12k", etc.
 - Individual bypass: click on any feature label to switch it on (white letters) or off (grey letters). This is a very useful feature for comparing your settings with the unprocessed signal, e.g. to monitor the meter tools while adjusting/comparing your settings.
- Also, any bypassed feature of bx_shredspread will not use any CPU power.

8.0 How do I get started with bx_shredspread in a typical mixing or recording session?

Insert bx_shredspread into a stereo subgroup and route 2 (or more) mono guitar tracks that you have recorded into this group.

Pan all tracks hard left or hard right. You can control the panorama of your stereo tracks (from Mono to "wider than stereo") from the bx_shredspread GUI easily.

Set Shred to a setting that gives you the best "tone" for your guitar sound.

Set Spread to a value above 100% if you want to get that extra wide stereo sound. Monitor the Correlation meter and make sure you don't run into phase issues.

If there are parts in your song where only ONE channel of guitar plays (left or right)

adjust Solo Pan and Threshold to determine where the mono track should be placed panorama-wise...

Also try bx_shredspread on keyboard subgroups or other elements of your mix if you like.

9.0 Troubleshooting

- ? Incomplete signals
 - ✓ You might have clicked on one or (or more) Solo-buttons of one section (L/R or M/S), so you only hear parts of your signal. Make sure all Solo buttons are switched off to hear your stereo mix. Click reset!
- ? Your signal sounds mono?
 - ✓ Stereo Width set to very low values?
 - ✓ Mono Maker set to very high values?
 - ✓ Is Solo M active?
- ? Wrong panoramas
 - ✓ If you hear parts of your stereo signal not properly in place panorama-wise you might want to check the Solo Pan features. Switch Auto Pan off to check your panoramas first.
- ? No sound
 - ✓ Do you feed any sound into bx_shredspread at all???? :-]



ENJOY WORKING WITH bx_shredspread!

→ For more information and a video demo please visit:

www.brainworx-music.de

www.brainworx-usa.com

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