

brainworx 

bx_control V2 manual





Index

1.0 What is the bx_control V2 plug-in?	3	5.11 Balance meter	8
2.0 What is M/S technology?	3	5.12 Correlation Meter	9
3.0 Why is M/S good for mixing & mastering?	3	5.13 Bypass	9
4.0 Features of bx_control V2:	4	5.14 Undo / Redo (32 steps)	9
5.0 Overview and details	4	5.15 Settings (A/B/C/D)	9
5.1 Input & Output switches	4	5.16 Manual	9
5.2 L/R flip - swaps left and right channels	5	5.17 Help section / general info	10
5.3 Phase Reverse (left & right):	5	6.0 How do I get started with bx_control V2	10
5.4 Solo buttons & solo in place	5	6.1 Recording M/S microphone signals with the bx_control V2:	11
5.5 Stereo image section	5	6.2 Using the bx_control V2 on various elements of your mix session:	11
5.6 Mono Maker	6	6.3 Using bx_control V2 in a standard L/R mastering session:	12
5.7 Stereo Width Control (via internal M/S technique!)	6	6.4 Using the bx_control V2 in an M/S mastering:	12
5.8 Input Gain	7	6.5 bx_control V2 as a pure "Control Listening Tool":	14
5.9 High resolution Peak, RMS and Dynamic Range LEDs	7	8.0 TROUBLESHOOTING	15
5.10 Clip LEDs	8		



1.0 What is the bx_control V2 plug-in?

bx_control V2 is a handy control listening tool with some built-in sophisticated M/S features for DAW (digital audio workstation) users. It 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_control V2.

V1 vs. V2:

bx_control V2 is a new development, improving many features of bx_control V1 and adding some new features as well (Pan M & Pan S, solo in place, meters in place, etc.).

Also you can now select from 2 different metering standards (AES 17 and Square), allowing you to integrate bx_control V2 seamlessly into your studio setup.

2.0 What is M/S technology?

Most engineers who are recording music know about the M/S microphone technique (2 different microphones for stereo recordings - an OMNI or CARDIOID microphone for the M (mid) signal and a “FIGURE-OF-8 microphone” for the S (side) signal).

Recording a signal with M/S microphone technique means to create a stereo (L/R) signal by mixing the M and the S signals together in a special way. This will result in a very mono-compatible stereo signal. To record in M/S you have to feed the M-signal to the Left and Right channel of your mix and the S-Signal will be fed phase-correct to the Left channel and phase-reversed to the Right channel. This means you will have to split the S-signal and use a total of 3 channels for only 2 microphones that will be mixed together to create a conventional stereo-signal. Quite confusing?

Well, bx_control V2 can do all that work for you, just feed it with the separate

M- and S- microphone signals and switch it to M/S input...

For additional details about this technique you may have a look into any decent audio book. Please do so if you want to learn more about this method to create very mono-compatible stereo-signals, e.g. when recording classical music, drums, choirs or acoustic instruments in general.

In addition to the possibilities mentioned above there also is a way of separating any stereo signal into its M (Mono Sum) and S (Stereo Difference) components, and this of course can be done with the bx_control V2 as well.

bx_control V2 can also be used to serve as an “M/S matrix” to use ANY other stereo (2-channel) plug-in in M/S technique while using the unique tools and features of bx_control V2, such as the Mono Maker, M/S Stereo Width Control, Solo Buttons, etc.

3.0 Why is M/S good for mixing & mastering?

Well, it may sound simple, but bx_control V2 has a built-in M/S matrix that will separate any stereo signal into its mono sum and the stereo difference signals. Thus you are able to separately control these 2 signals which can be very useful when you work on a stereo mix that has certain „problems“ - or if you simply want to enhance certain elements in the mix.

Ever tried to cut high frequencies of a mix to reduce the „essing“ of the lead vocals and at the same time boost high frequencies of your harmony instruments (guitars, keyboards, pianos, etc... most likely recorded or mixed in stereo)?

Well, if you use bx_control V2 to separate the M and the S parts of a mix and then use some additional tools (EQs, dynamics, etc.) you can do exactly that!



4.0 Features of bx_control V2:

- Individual Switches for input and output (L/R or M/S) let you determine how bx_control V2 will work
- L/R Flip – easily swap left and right channels of any stereo signal or master sum (mix).
- Individual Phase Reverse for L and R channels.
- Innovative Solo Buttons: listen to the essential “parts” of your stereo signals phase-corrected on both speakers.
→ Select Left channel (L), Right channel (R), Mono Sum (M) or Stereo Difference (S).
- Solo In Place lets you listen to the elements “as they appear” in the mix.
- Balance Control: balance out any mix so the mono signals that should be in the center are centered properly.
- Pan M & Pan S: pan the Mid and Side signals separately.
- Mono Maker: our unique tool to easily mono out your stereo signal in the bass frequencies, adjustable from 20Hz up to 22 kHz
- Stereo Width Control: M/S width, adjustable with 1 knob from “0” (mono) up to 400% (much wider than “regular stereo”).
- Balance Meter: will show you if your mix is well centered.
- Correlation Meter: will show you if the phases of your stereo signals are correct.
- Hi-Res LED Metering: Peak and RMS and Dynamic metering, switchable L/R or M/S, with switchable Peak Hold.

- Meters In Place will show you what you hear.

5.0 Overview and details



bx_control V2 – a complete screenshot

5.1 Input & Output switches



- Input L/R: bx_control V2 will assume that the signal fed into the unit is in L/R format
- Input M/S: bx_control V2 will assume that the signal fed into the unit is in M/S format
- Output L/R: bx_control V2 will output L/R format
- Output M/S: bx_control V2 will output M/S format

Always set the Input and Output switches to the proper format (the format you are actually using), unless you want to use bx_control V2 for sound design or effects.

→ Use bx_control V2 as an M/S MATRIX:

When you intend to use the bx_control V2 as an “M/S matrix” (to use other plug-ins in M/S mode), simply place any stereo plug-in (actually, double mono



units work best, so you can adjust M & S individually...) in between 2 (two!) instances of the bx_control V2.

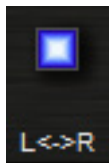
Plug-In No 1/Insert 1:
bx_control V2 as M/S ENCODER (set INPUT to L/R, OUTPUT to M/S)

Plug-In No 2/Insert 2:
any other stereo plug-in(s) - (double mono versions are best to adjust M & S individually)

Plug-In No 3/Insert 3:
bx_control V2 as M/S DECODER (set INPUT to M/S, OUTPUT to L/R)

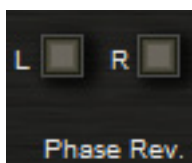
→ As long as input and output formats are set properly you can use any function of bx_control V2 in any combination as the internal signal flow will follow the settings logically. This will also work on either the encoder and/or decoder when 2 instances of bx_control V2 are used as an “M/S matrix”.

5.2 L/R flip - swaps left and right channels



When lit, the LED indicates that LEFT and RIGHT channels have been reversed (swapped). This way you can listen to your mix as it would sound on a stereo system with speakers connected to the wrong outputs.

5.3 Phase Reverse (left & right):



Individually change phases for left and right channels to check the cause of phase problems you might run into with stereo files, or to test speakers, etc.

5.4 Solo buttons & solo in place



- With the Solo buttons you can listen to any element of your stereo mix (stereo signal), mono-ed out (for L, R, M & S), phase-corrected (for “Solo S” only), and on both speakers (when “solo in place” is switched off).
- Solo in place will play you the elements “as they are” in your mix. No phase correction will be active for Solo S, and L and R channels can be monitored on one speaker only.
- You can also “extract” certain elements of your mix with these knobs easily, for example try recording or bouncing the Solo S signal for remix purposes... which will give you a phase-corrected mono-signal of only the stereo signal (keyboards, stereo, guitars, FX sounds, etc.).

5.5 Stereo image section (Balance control, Pan M & Pan S)



This is the “stereo image section” of bx_control V2. You can use it to balance out your stereo mix perfectly. While “Balance” tilts both channels, L and R, you may also Pan the M or S elements

of your mix to achieve a well balanced mix with a tight center image.



- Balance will tilt the whole stereo image conveniently, using the L and R signals. This is a nice feature to automate panning of stereo signals, for example.
- Pan M will only pan the M[id] signal of your stereo mix! Try moving lead vocals and drums (bass drums and snares) to the sides of your mix while the stereo elements (guitars, keys, effects, etc.) are still audible on both channels of your mix.
- Pan S will do the opposite... pan your stereo signal “behind” the mono elements of your mix (lead vocals, bass drum, snare, bass, etc.) and balance out uneven doubled guitars, piano sounds etc. in your final mix!

Pan M & Pan S are both taken from bx_digital V2, our M/S mastering EQ system.

To balance out a stereo mix perfectly you can monitor the balance meters (see 5.11) and adjust the balance control knob until your mix is centered.

- the easiest way to “center” a mix is to listen to “Solo S” while adjusting the Pan M. When all parts of the mix that are supposed to be centered (bass-drum, bass, lead vocals, etc.) are not audible during “Solo S” your mix IS centered properly!

Most mixes that come from analogue mixing consoles or went through analogue outboard equipment (summing amps, compressors, EQs, etc.) are not balanced perfectly. With bx_control V2 and its stereo image section (plus the corresponding meters, see 5.9) you can easily fix that.

5.6 Mono Maker (via internal M/S technique)



A true Brainworx invention... simply adjust the threshold frequency with the Mono Maker knob and your stereo mix/stereo 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_control V2 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 drum or keys subgroups...!

5.7 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% - 400%) 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 Stereo Width below 1% will display “Mono”. Now your mix/signal is completely mono.

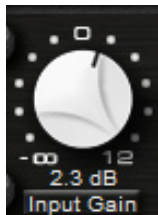




Tips for Stereo Width Control & Mono Maker use:

- 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 5.12) indicates phase problems (it goes into the red...). Now: turn the Mono Maker up to about 300 or 500 Hz (even higher if needed, this will depend on the actual signal being “played”) and watch the correlation meter go back to green, 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_control V2 is the “perfect weapon” to be inserted into any stereo sub-group of a mix session and will drastically improve your possibilities to increase your stereo width of any stereo signal.

5.8 Input Gain



To adjust the overall level of the stereo sound running through bx_control V2 use the input gain knob.

Since this is an input gain control turning it down a bit will “cure” any internal clippings that may occur when Mono Maker and Stereo Width Control are being used.

5.9 High resolution Peak, RMS and Dynamic Range LEDs



The new Dynamic Range metering is a value calculated from your peak and RMS metering. It shows you how “squashed” (aka “over compressed”) a mix is. To a degree this can indicate how “loud” your mix appears as well.

There have been a lot of debates about the pros and cons of loudness, and accepting the fact that today's music has a certain loudness level that fans and media have gotten used to we have decided to add this new metering method to bx_control V2.

Still we encourage all engineers to compress and limit the master bus with caution, nobody needs new records in volume – especially not if that means losing what was great about a mix before it is just being “killed” by limiters to achieve “that extra half dB”...

The metering in bx_control V2 depends on the general setting of the metering scale (AES 17 or Square), which can be found in a submenu of the HELP button. AES 17 is the default setting and displays 3dB more RMS level than the Square system.



A loud modern mix that is yet still “breathing” will have a Dynamic Range of about –12 to –6 dB (AES 17). Note that values smaller than –6 usually result in mixes that will have negative impact on the listeners’ attention as the human ear longs for a certain dynamic in music.

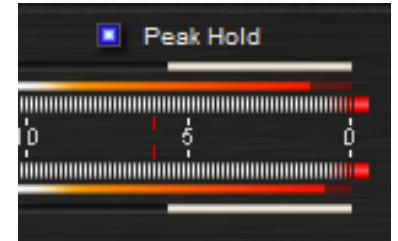
It is possible to go down to a dynamic range of –4 or even –3 dB with modern digital (multi-band) limiters, but try to be reasonable. A compressed rock or club mix sounds “heavier” than an uncompressed mix for most people, but an over-compressed mix can greatly reduce the overall enjoyment for the listeners.



- The meters will display Peak, RMS and Dynamic Range output levels of either the left & right channel (L/R mode) or the mono sum & stereo difference signal (M/S mode).
 - You may switch the meter between L/R mode and M/S mode with the “Meters M/S” knob. A blue LED will indicate the meters displaying M/S signals. This will also be shown by the labeling on the left side (next to the LEDs, L/R vs. M/S).
 - The meters will always display the full stereo output signals, unless you check Meters in place - which will actually show you what you hear (depending on the “Solo” and “Solo in place” settings this can be just one channel playing).
 - The Meters will follow the Output Switch (L/R or M/S, see 5.1) whenever the Output Switch is being toggled – but you can always change to the opposite metering manually.
 - Toggling between L/R and M/S metering will not affect the output signal. This way you can monitor M/S levels while listening to L/R mixes, monitor M/S while listening to M/S signals or any other possibility.
 - Peak Hold: when switched on (default setting) the LEDs will display the maximum values for 3 seconds before getting internally reset. Peak Hold can be switched off manually.
- The little red marks above and underneath the RMS meters are placed at -6 dBu (AES 17 metering) or -9 dBu (Square metering). Usually any stereo mix that is permanently louder (more compressed) than this level will sound very aggressive and in most cases too “squashed”. Even with the LOUDNESS WAR going on out there try to be reasonable with your overall levels. Sound first, please...
- It´s not about how loud you get it.. it´s about how you get it loud...

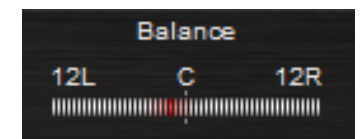
5.10 Clip LEDs (aka “over” LEDs)

- 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 when using the Mono Maker or Stereo Width controls with normalized signals [0dB], because these functions may boost levels, depending on their settings (see 5.6 & 5.7 for details).
- In case of clipping, turn down the Gain knob (see 5.8) and reset the Over LEDs.
- The upper LED is the Master Clip LED. It will be “glowing” when either the L or R clip LEDs show alerts. Resetting the master will also reset the other (L & R) clipping LEDs. L and R LEDs may also be reset individually.



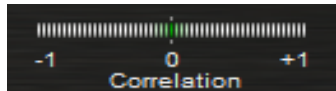
5.11 Balance meter

- The Stereo Balance Meter will indicate if your mix is well balanced – or louder on one channel (left or right).
- You can adjust the stereo balance with the Stereo image section (balance, Pan M, Pan S) - (see 5.5).






5.12 Correlation Meter



- A standard correlation meter tool to monitor the phases (and potential phase problems!) of your stereo mix/signal.
- -1 means your mix/signal is “out of phase” (180°).
- +1 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 mix will make the correlation meters oscillate between 0 and +1, and 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 seriously!
- Try the Mono Maker to cure any phase problems you might find listening to your mix or monitoring the correlation meter. 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 mix/signal.

5.13 Bypass

 With the bypass button you can bypass the whole bx_control V2 plug-in to compare your original mix and your corrections/improvements with the bx_control V2.

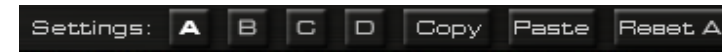
5.14 Undo / Redo (32 steps)



One of the new features of bx_control V2 is the 32 step Undo/Redo function.

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 next section), this is an engineers dream.

5.15 Settings (A/B/C/D)



You can now store up to 4

Settings of bx_control V2 without using the audio sequencers “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. You can also reset single settings.

Using Automation in mastering 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_control V2 will be stored with each Preset!

5.16 Manual



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



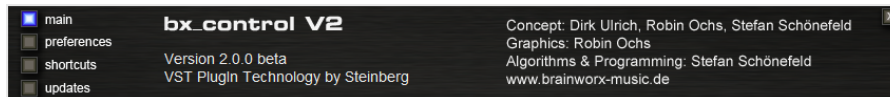
5.17 Help section / general info



Click here to get info about bx_control V2 (version no, shortcuts, etc.) and to adjust settings & preferences.

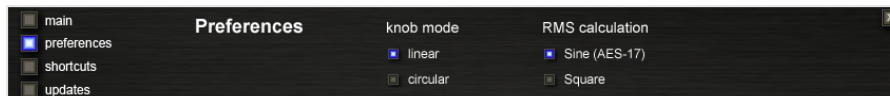
There are 4 “splash screens” to select from:

Main:



This window shows you the general credits and info about the plug-in, such as the plug-in format. You can also see the version number / release number in this window (the example shows 2.0.0 beta).

Preferences:

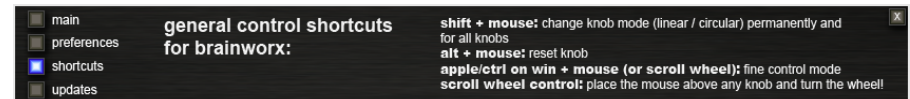


Here you can select the behavior of the knobs and how the meters of bx_control V2 work. You can choose from 2 metering systems:

Sine [AES 17] style: displays RMS levels 3 dB higher than the mathematical result. Therefore the the peak and RMS meters will show identical values with sine wave input signals.

Square style: displays the mathematical RMS value. Peak and RMS meters will show identical values with square wave input signals.

Shortcuts:



- Shift/Mouse Click on any knob will change the bx_control V2 `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_control V2 will not use any CPU power. (TDM systems work differently).

Updates:

Clicking here opens the Brainworx download website, so you can check if there is a newer version out than the one you are currently using.

6.0 How do I get started with bx_control V2 in a typical mastering, recording or mixing session?

Recording, mixing and/or mastering music is all about hearing objectively... and enhancing musical performances if possible... or it is (often enough...) about correcting mistakes that have been made in a prior stage of the production... this



sounds basic, but we do mean it literally.

We assume that most if not all people who have purchased bx_control V2 are familiar with using a standard dynamic tool or other tools as a plug-in in their sequencer host program, so we will skip the total basics of “how to use a plug-in” and go on with the possibilities of using this specific plug-in.

Inserting bx_control V2 into any “stereo plug-in-slot” of your sequencer or editor will be done slightly different depending on which host program you are using, and we are [well, at least “almost”!] sure that you already know how to do this with your host software...

6.1 Recording M/S microphone signals with the bx_control V2:

You may record the signals of your M (one or several M mics are possible!) & S (one S-mic only, please!) microphones individually and route them straight into the bx_control V2. Either do this in real-time with a proper routing or record the microphones individually and route them into bx_control V2 after you have recorded [e.g. during mixdown].

→ Check the latency of your system! bx_control V2 will not add extra latency for its operation! With most modern DAW systems you will be ok to record “through” bx_control V2 “on the fly”...

Routing for M/S recordings:

- The M microphone(s) is routed into the left input of the bx_control V2.
- The S-mic is routed into the right input of bx_control V2.

Input & Output switches for M/S recordings:

- Definitely switch the input switch to M/S!
- Set the output switch to L/R if you want to output a “regular” stereo signal.
- Set the output switch to M/S as well if you want to go on processing your signals in M/S mode [that is possible with any additional stereo plug-in chained

after bx_control V2!] before converting to L/R with a second instance of bx_control V2 at a later stage in your signal flow.

6.2 Using the bx_control V2 on various elements of your mix session:

bx_control V2 is a great tool to control the multiple elements that a stereo mix usually contains of:

- Try it on sub-groups [aux inputs, etc.] for controlling the stereo width of:
 - Guitar groups
 - Keyboard groups
 - FX returns, etc.
- Spread the stereo image of only some parts of your mix without affecting the phase correlation on the whole mix.

Routing in mix situations:

- Simply insert the bx_control V2 into any stereo insert slot of your host program and run it in “L/R in – L/R out” – mode.

Input & Output switches in mix sessions:

- Set both switches [input & output] to L/R
- The stereo image section controls [stereo width, balance, Pan M, Pan S] and the Mono Maker will still operate using M/S technique.
- No need to worry about anything at all... just monitor the phase correlation meter and balance meter, and use the Mono Maker to make sure you’re not overdoing the stereo imaging... and enjoy...



6.3 Using bx_control V2 in a standard L/R mastering session:

Mastering regular L/R stereo signals in L/R mode

- For mixing files or master bus groups
- ✓ bx_control V2 in “L/R in – L/R out” – mode

Basically, mastering stereo music in L/R mode is not much different from using the bx_control V2 on single elements of a mix sessions (sub-groups, etc., please check 6.2. above!).

Just insert bx_control V2 into the main stereo mastering signal path and leave input & output switches in L/R mode.

Mono Maker, Stereo Width, Pan M, Pan S and Balance will operate as you’d expect them to do, and the M/S technique is still being used internally due to the chosen L/R format of the inputs and outputs.

Routing in standard L/R Mastering Sessions

- ✓ bx_control V2 in “L/R in – L/R out” – mode

Simply insert bx_control V2 into any stereo insert slot of your host program and run it in “L/R in – L/R out” – mode. We suggest you put bx_control V2 as the second last plug-in into your plug-in chain, while the last plug-in would be a brick wall-limiter. This way you make sure to be able to use the Solo buttons after all other tools you might use are being processed and avoid clipping at the end of your signal-chain.

Input & output switches in mastering sessions:

- Set both switches (input & output) to L/R
- The stereo image section controls (stereo width, balance, Pan M, Pan S) and the Mono Maker will still operate using M/S technique.
- No need to worry about anything at all... just monitor the phase correlation

meter and balance meter, and use the Mono Maker to make sure you’re not overdoing the stereo imaging... and enjoy...

6.4 Using the bx_control V2 in an M/S mastering:

- Insert other tools between 2 instances of the bx_control V2 to make them (the other tools) operate in M/S mode as well
- For mixing files or master bus groups

Mastering in M/S takes a little time to get used to because eq-ing 2 separate mono-sums is quite different from eq-ing conventional L&R-signals, but it’s a very musical way of working, and there IS a reason why some of the top mastering studios in the world have been working like this for years with custom-made M/S-boards - without really telling anybody...

M/S-mastering might be the key for your music to sound just as big yet still open and clear as productions often referred to as being „BIG“...

Many people who have used the M/S-mode for the first time told us that they had the impression of a “3D-like” depth in their mixes after processing the M- and the S-signals individually.

Although using the M/S-technique for mastering does affect your phases in the stereo-signal we do not see this as a big problem. In M/S mode altering phases is done intentionally. Of course, though, M/S mode works best if you want to correct small mistakes in your mixes... for adding or cutting away big amount of general bass or treble signals you might be better off working in L/R-mode...

- Do not let anybody tell you that changing stereo signals in M/S mode can’t be done or shouldn’t be done at all because of phase problems... it’s like somebody telling you your Marshall guitar amp is broken because it distorts your guitar sound... :-)

Anyway, just like you wouldn’t turn all the Marshall knobs to the right all the time be



sensitive and reasonable when using M/S technique with stereo mixes. Like many other audio effects, M/S must be used in differing amounts in different situations. Many beginners can use such effects excessively when they start learning to mix, and then later on use them in more subtle and appropriate ways.

Once you are used to the basics of M/S you might want to try more sophisticated functions... try balancing out a mix that is not centered 100% (most mixes that come from an analogue desk with inserted compressors, EQs, in the main stereo insert, etc. are not balanced 100%!), by soloing the S-section and adjusting the stereo image section until all the things that should be centered (like bass drums, snares, lead vocals, bass, etc.) in your mix disappear completely. If that 's the case you can be sure that your mix IS balanced!

Make your whole mix or elements of your mix (subgroups, stereo channels, etc.) sound wider than they originally were by increasing the Stereo Width control to more than 100% - without losing the center of your recordings! You will NOT lose bass drum power or vocals by making your mix wider this way... and it will not sound different played back in mono at all!

Routing and Input & Output Switches in M/S mastering sessions:

[2 instances of the bx_control V2 operate as a "M/S Matrix" for other stereo tools while still offering the internal M/S features].

When you intend to use bx_control V2 as an "M/S matrix" (to use other plug-ins in M/S mode), simply place any stereo plug-in (actually, double mono units work best, so you can adjust M & S individually...) in between 2 instances of bx_control V2.

Insert 1:

- bx_control V2 as an M/S Encoder
- ✓ Set Input to L/R, Output to M/S
The M-signal will be put out on the left channel of bx_control V2.
The S-signal will be put out on the right channel of bx_control V2.

Insert 2:

- Any other stereo plug-in(s)
- ✓ Double mono versions are best to adjust M & S individually
Apply all changes that should effect the M-signal to the left channel of the "inserted" plug-in(s).
Apply all changes that should effect the S-signal to the right channel of the "inserted" plug-in(s).

Insert 3:

- bx_control V2 as an M/S Decoder
- ✓ Set Input to M/S, Output to L/R
bx_control V2 will now "fold back" the M-signal (from the Left input) and the S-signal (from the Right input) to a regular stereo signal (L/R). Eventually turn down the Input gain on the second bx_control V2, as summing the M/S signals results in a higher level of your signal.

! As long as Input & Output formats are set properly you can use any feature of both of the 2 bx_control V2 instances used in this setup in any combination, as the internal signal flow will follow your Input / Output settings logically and automatically.



6.5 bx_control V2 as a pure “Control Listening Tool”:

Insert bx_control V2 into the Master buss of your DAW sessions all the time, and you´ll be able to check your overall phases, stereo balance, etc. of your mix anytime. Use the Solo buttons to check how small changes in your mix sessions effect the M, S, L, R of your main stereo mix, etc.

7.0 PRO TIP: GUI modes



switch the upper or lower unit of bx_control V2 on / off.

Switchable GUI windows:

! To save CPU power and/or screen place use units individually ...



OR



OR



! Bypassed functions or switched-off units will not use CPU power!



8.0 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 be working with the Input or Output switches set to wrong modes!

- ! No sound
- ? Check bx_control V2 is being given input

ENJOY WORKING WITH bx_control V2!

→ For more information and a video demo please visit:

www.brainworx-music.de

www.brainworx-usa.com

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