



# Brainworx bx\_digital Mastering M/S Equalizer Plug-In

by [Barry Rudolph](#)

**FIELD TEST**

[Back To The Home Page](#)



This "mirrored" page is published through the kind permission of MIX Magazine and [Penton Media Incorporated](#).

Visit MIX Magazine's WEB Site at: [www.mixonline.com](http://www.mixonline.com)

[E-Mail A Link To This Page.](#)

February 2008 Issue



You Are Here: > [Users](#) > [barryrud](#) > [ADocuments](#) > [barryrudolph.com](#) > [mix](#) > [bxdigital.html](#)



[Learn More At Musician's Friend!](#)

[Download](#) A Printer-Ready Copy Of This Review. You'll Need A [Free Acrobat PDF Viewer Plug-In](#) For Your Browser.

The screenshot displays the Brainworx bx\_digital software interface. At the top, there are control buttons for 'dual\_gain', 'bypass', and 'TDM'. Below this, the interface is divided into several sections:

- bx1 show/hide**, **bx2 show/hide**, and **EQ Graphics show/hide** toggle buttons.
- Mono-Section**: Features a 'Modus Equalizer bx1' with multiple frequency sliders (4.9 dB, 0.0 dB, 5.5 dB, -3.6 dB, 0.0 dB) and shelving filters (Lo-Shelv, Hi-Shelv).
- Stereo-Section**: Includes similar frequency sliders and shelving filters for the stereo channel.
- Processing Section**: Contains 'Bass Shift', 'Pres. Shift', 'De-Esser', 'Mono-Maker', and 'S.F. DSR' modules with various knobs and switches.
- EQ Graphics**: Shows frequency response graphs for 'Mono-Section', 'bx1 & bx2', and 'Stereo-Section'. It also includes 'Pre EQ', 'Post EQ', and 'Output' level meters.

Brainworx's bx\_digital Audio Units/VST/RTAS/TDM plug-in is designed to emulate the company's 3U (10,000EU) phase-coherent M/S bx1 Modus EQ and bx2 Image Shifter hardware mastering units. The bx\_digital works in any of three modes: as a stereo/dual-mono EQ; an M/S matrix equalizer for applying level and EQ changes separately to mid- and side signals; and as an M/S recording processor for converting and equalizing mid and side microphone signals into a mono-capability conventional stereo.

## MEET BX1

The bx1 comprises two 5-band parametric equalizers, and two high and lowpass 12dB/octave filters, both with 20 to 20k Hz ranges. The EQs' high- and low-band sections are switchable to shelving filters and Q ranges from 0.3 to 15. The maximum boost/cut for each EQ band is 12 dB. The five bands are LF and LMF (both range from 20 to 1k Hz); MF (from 20 to 20k Hz); and HMF and HF (both span 400 to 20k Hz).

Each equalizer and filter section has Link buttons that unite operation and settings to the corresponding section on the other channel. Both channel equalizers are set the same when you adjust only one channel's controls. Click to unlink them, and if they are already unlinked, clicking on the Link button adjacent to a band's frequency control will update the opposing channel's band settings to that band. A global Link on/off button is provided.

## AND BX2

The bx2 Image Shifter has four processors. Presence Shift boosts at 12 kHz and, at the same time, cuts at 6 kHz. It has a range of +/-12 dB and puts "air" into the sound without exacerbating sibilance. Bass Shift boosts at 63 Hz and, at the same time, cuts at 315 Hz. With a range of +/-12 dB, Bass Shift can fatten the bottom end with less upper-bass puffiness or conversely, enlarge the low midrange without booming out the low bass. De-Esser is a 2-channel dynamic equalizer with an adjustable frequency range of 4.5 to 20 kHz, and an adjustable threshold range from 0 to -60 dB. A gain-reduction meter shows its operation.

All three of these dual-channel processors also have channel coupling/decoupling linking. Finally, Mono-Maker forces all frequencies, adjustable from 20 Hz up to 400 Hz, from stereo into mono. There are solo buttons for both channels, both De-Essers and a master EQ In/Out button but no individual I/O buttons for the De-Esser, Bass Shift or Presence Shift processors.

Auto-solo makes touching any control solo that section's channel. When you're using bx as an M/S EQ, touching the MF boost/cut control on the side EQ will solo the side channel so you can hear what you're doing. There is full metering of pre/post-EQ and final L/R output level, but there's no way to adjust the L/R final output when you are in M/S mode. For external dynamic processing, an insert path for the mid and side channels would make a good update.

All bx1 and 2's processor actions are represented on a large, two channel graphical display. The bx\_digital GUI is super-sized--divided into bx1, bx2 and EQ graphic sections with show/hide buttons for each.

## WHY M/S PROCESSING?

M/S processing is mostly used in mastering suites as a kind of secret weapon--a good way to breath new life into recordings when a proper remix is out of the question. Equalizing or changing (compressing) the level of the Mid signal differently from the Side channel effectively remixes the record by changing the original mixer's stereo perspective and relative balances between the mono (mid) or center-panned tracks and all other tracks panned somewhere between the left and right sides. Stereo effects built into the original mix can be heightened or reduced with manipulation of the side channel. Mastering engineer and Brainworx Media's founder, Dirk Ulrich, has mastering demos of the bx at: [www.brainworx-music.de/demos.htm](http://www.brainworx-music.de/demos.htm)

## EASY M/S PROCESSING

As a stereo EQ for mixing, bx is amazing--it's almost overkill for individual instrument or vocal tracks. bx worked great for equalizing stereo stems such as strings, pads or pianos. In M/S mode, it works wonders for spreading out narrow synthesizer pads and other keyboard patches. I liked it on Fender Rhodes, sample stereo strings, a Hammond organ and any stereo effect like reverb, phasing, choruses and flanging.

In stereo mixing--especially without the benefit of a talented mastering engineer--bx is most useful as the "crowning touch" on

the stereo bus. Besides adding air with the Presence Shift, I could widen the stereo image out somewhat, knowing that the compromise is a reduced center image.

I found De-Esser excellent for processing a stereo mix of super bright backing vocals--although I think the Q of the notch could be slightly higher or perhaps adjustable.

## M/S APPLICATIONS

I set up an M/S pair using a Neumann U67 in figure-8 for the side mic and a Peluso 2247 SE cardioid for the mid. I recorded acoustic guitar, vocals and percussion into Pro Tools as separate mid and side tracks. After recording, I routed the mid and side to a TDM version of bx\_digital running on an aux channel. After recording I routed the Mid track to Bus 1 and the Side to Bus 2--the input paths to the TDM version of bx\_digital running on an Aux channel. It works out that the L/R orientation when facing the mics is the same as when listening to playback--handy when recording a musician or singer.

M/S recording an acoustic guitar produced results in a bigger sound stage than I normally get using one or even two mics. I found many ways to experiment in the mix using compression, EQ and other effects separately on the Mid and Side channels. Recording the main acoustic in M/S and any additional parts conventionally is a great way to gain clarity and separation in the mix.

With my singer (or any source), moving left and right and even behind the mic is audible. Also, the tracks are mono-compatible; in mono, all you hear is the mid-channel. If you raise the level of the side component, then the ambience of your recording space dramatically increases. Similarly, raising the mid-signal brings the center image forward and "dries" out the entire recording. Recording vocals, including all ambience information, on just two tracks is a tremendous mixing option. You can dial in as much or as little ambience as you like and if you compress the Side channel the ambience becomes more hearable. Most of the time just raising the Side channel and changing the EQ produced spectacular results.

## ADDING TO YOUR TOOLBOX

bx\_digital is a whole new set of mixing and recording tools that opens up the mastering engineer's world of M/S processing to any DAW user. I found all the processors powerful and easy to use, both when mixing and/or processing separately recorded M/S tracks. Prices: \$798, TDM; \$398, native.

Brainworx, 49/2173-911-563, [www.brainworx-music.de](http://www.brainworx-music.de).

Barry Rudolph is an L.A.-based recording engineer. Visit his Web site at: [WWW.BARRYRUDOLPH.COM](http://WWW.BARRYRUDOLPH.COM)



 [Click Here To Return To The Mix Directory](#)

This Review Is Copyright © 1995 Through 2008 By [Penton Media Inc.](#) All Rights Reserved.



[Back To Home Page](#)

[Back Up To The Top](#) 

[All Web Page Design Is Copyright © 1995 through 2008 By Barry Rudolph](#)