BIG BLUE COMPRESSOR
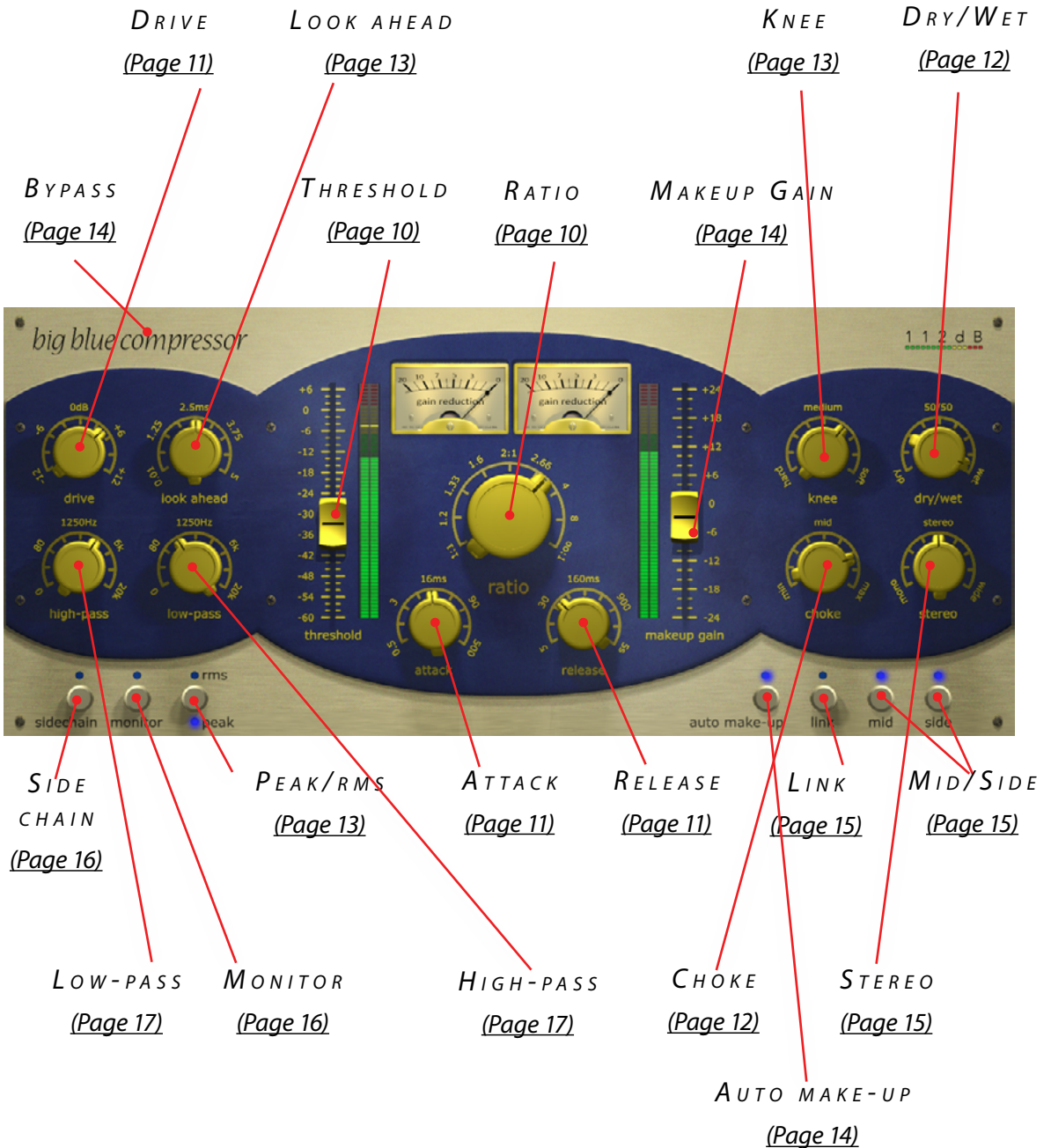# MANUAL

QUICK INDEX

The Big Blue Compressor is a modern compressor with vintage qualities. Although it can sound very transparent when required, it was designed to have character and warmth. Modern features from the digital world, including a Look Ahead function, are paired with qualities from the analog world, such as the saturation of transients that is typical of tube compressors. Far more than a tool to compress the dynamic range of sound, the Big Blue Compressor gives you unprecedented control over the character of the compression algorithm and the esthetics of the output sound. This enables you to vary from very clean and smooth results to dramatic reshaping of the sound transients.

The basic concept of a compressor is simple: it reduces (attenuates) the level of an audio signal whenever the signal exceeds a certain user-defined threshold. Despite its apparent simplicity, the compressor is one of the most powerful weapons in the audio arsenal. By altering the dynamic range of an audio signal, it can make it sound more coherent and its nuances much easier to hear. When properly set up, it can be used to 'tighten up' mixes and make audio more upfront, punchy, and solid.

The possibilities don't end there. In altering the dynamic range, compressors inevitably introduce some distortion. Normally, you would choose to prevent this by using our carefully designed Look Ahead function. But sometimes it's interesting to do the exact opposite: to maximize this distortion to create a certain desired effect. For example: an attack that is a bit too long and lets some transients pass through can make drums sound punchier, especially when used in combination with the Choke. The 'pumping and breathing' that results from long release times can make a rhythm section sound more 'energetic'. Combine this with the Sidechain to create those pumping house effects. Or make the sound really dirty and use the Dry/Wet knob for some New York compression, to let your drums really rock.

Of course, there's nothing to stop you using the Sidechain for more traditional purposes, like preventing one sound from masking another, ducking, or de-essing. For traditional and more creative uses of the Sidechain, you'll find the Big Blue Compressor's built in high-pass and low-pass filters very useful.

Some compressors make the signal sound warmer and fatter. This, too, is familiar territory for the Big Blue Compressor. Want more juice? Just add some extra 'vintage warmth' with the Choke knob. And if that isn't enough, the Big Blue Compressor also features an independent pre-amp that just loves to be overdriven. Whenever your sound needs more body or oomph, you'll find that the Big Blue Compressor has got exactly what it takes.

With its versatile sound, intuitive interface, easy operation, adjustable latency (all the way down to 6 samples), and negligible CPU load, the Big Blue Compressor feels equally at home during mix- and mastering sessions. But don't take our word for it – hearing is believing!

Big Blue Compressor comes in the form of a single installer for all available plugin formats: AAX, VST, and Audio Units.

MAC OSX

1. If you have not already done so, please download and run the latest Big Blue Compressor installer from www.112dB.com/download. Double click the Big Blue Compressor Installer. pkg file to start the installer.

2. It is recommended to have a quick look at the readme if this is a new installation or an update, as it may contain important last-minute information that was not available at the time of writing.

3. You will be asked to agree to the terms of the license agreement.

4. The installer installs all plugin formats (VST2, AAX, and Audio Units) by default.

5. You will be prompted for your Mac password to complete the installation.

6. If the installer detects you haven't activated your license yet, the 112dB license manager will be started.
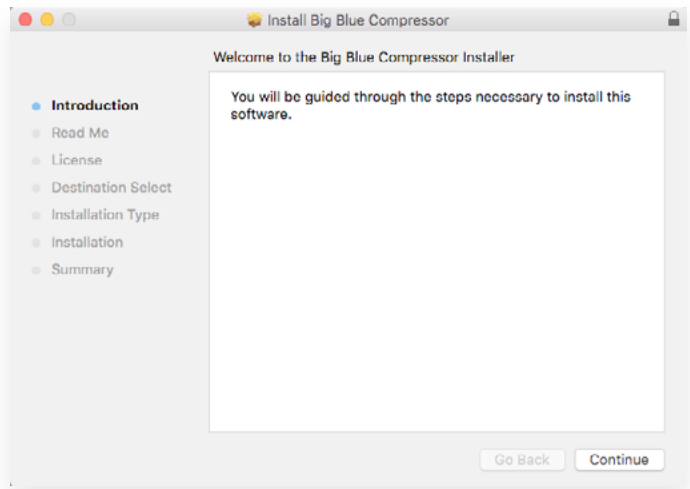
WINDOWS

1. Double click the Setup program to launch the installer.

2. The setup program detects whether you already have VST or AAX plugins on your system and selects the plugin formats it installs accordingly. If you wish you may override this choice and manually select your desired plugin formats.
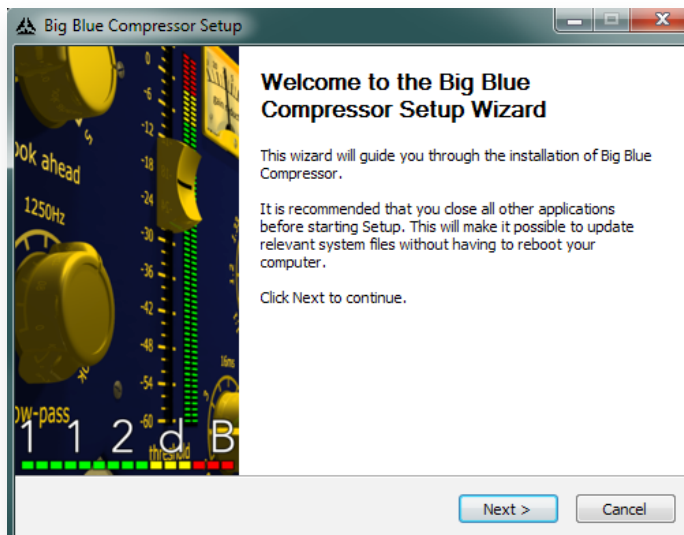
3. By default Big Blue Compressor installs to \Program Files\112dB\ Big Blue Compressor. In general, it is not recommended to change this but if you have a compelling reason to do so, either type in the desired directory in the *Destination Folder* box, or click on the *Browse* button to the right of the *Destination Folder* box and select the directory within which you would like Big Blue Compressor installed.

4. If you opted to install the VST plugin, the *Choose VST Location* step is one you should pay attention to. The setup program *should* detect your default plugin folder, but you may prefer another directory for your plugins—particularly if you use multiple hosts—in which case you will need to manually direct the installer to the desired directory. The process for this is identical to that in the previous step.

5. The *Start Menu Folder* step is for convenience and for quick access to troubleshooting files. Currently, it points to the readme, the error log, this manual, and the uninstaller executable. It should be noted that all of these files are directly accessible in the Big Blue Compressor program folder (wherever the installer was directed in Step 6. In addition the uninstaller for Big Blue Compressor will be listed under *Control Panel » Add/Remove Programs*, so if you like to keep your start menu clean, you can safely select *Do Not Create Shortcuts*.

6. After Big Blue Compressor installs, Setup is complete and you may click the *Finish* button. It is recommended to view the readme if this is a new installation or an update, as it may contain important last-minute information that was not available at the time of writing.

Authorization

Our plugins do not rely on a dongle or challenge/response authorization for copy protection, as these schemes place an unnecessary burden on the customer. Instead we protect our plugins by means of a *keyfile* – a text file that holds your personal authorization. Unlike challenge/response authorization our keyfiles are *not* tied to a specific computer system. Thus you can use the same keyfile for authorizing a copy of our plugins on any system, now and at any point in the future.

Unlike most challenge/response authorization schemes, you do not need our permission to change your hardware, upgrade to a new operating system, or even to install the plugin on your studio setup, your home computer, *and* your travel notebook all at the same time. You will find that this is one of the least intrusive forms of copy protection you are likely to encounter.

Installing a New Authorization

The authorization process itself is equally simple. With your purchase or demo download you should have received an email containing a license (in the form of an XML keyfile). To authorize, save this keyfile to your desktop, fire up your preferred host, and load the plugin. Big Blue Compresssor now prompts you to locate a license file. Navigate to the folder where you saved the keyfile and click **Ok**. That's all there is to it, Big Blue Compresssor is now fully functional.

Upgrading an Existing Authorization

To upgrade your authorization from a time-limited demo to a purchased full license, first save the permanent XML license from your purchase confirmation email to your desktop as described above. To replace the demo license with the permanent license, open a Big Blue Compressor plugin window in your favorite host and right click anywhere in the window and select **Load existing license file...**

Should you encounter any problems during the authorization process please contact our support staff by email at **<support@112dB.com>**. We will accommodate you as soon as humanly possible.

The Big Blue Compresssor interface has been designed to be as intuitive and easy to operate as possible. However, in the interest of innovation, some functions operate in ways that may be initially unfamiliar. This section will cover the less obvious aspects of the interface.

T O O L T I P S

If you're lost, hovering over any item of the interface for approximately one second brings up a floating tooltip window with a brief description of that control's function. These tooltips can be disabled by right-clicking anywhere on the interface and deselecting **Show Tooltips** from the popup menu that, well... pops up.
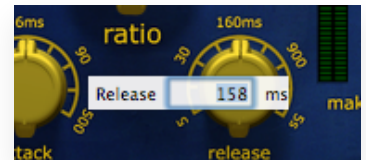
R E S E T   T O   D E F A U L T   V A L U E

<Ctrl>-clicking knobs and sliders will reset them to their default value. This is handy if you would like to undo some programming you have done.

N U M E R I C A L   V A L U E   E N T R Y

Double-clicking knobs will open a small edit window that allows you to type the desired value from the keyboard for maximal value control. To dispose of the edit window hit *<Enter>* .

M O U S E W H E E L

All interface controls – knobs, sliders, even buttons – support mousewheel control. If your mouse is equipped with a scrollwheel simply hover the mouse pointer above the control you want to adjust and move the wheel up (to increase its value) or down (to decrease it).

KNOB MODES

By default all knobs are in *Linear* mode: clicking and moving the mouse up (or down) turns the knob clockwise (or counterclockwise). Moving either left or right also turns the knob but in a slower fashion for more precise control.

If you prefer you can change the knob control mode to either **Circular Absolute** or **Circular Relative** mode by right-clicking a knob and opening the **Knob Mode** menu. In either of the circular modes knobs function like hardware knobs; click and drag clockwise or counterclockwise to turn the knob accordingly. The difference between the two circular modes is that in circular absolute mode the knob turns to the exact same position of the mouse pointer – for example, moving the mouse pointer to a 3 o'clock position also moves the knob to the same position.

In contrast, in circular relative mode the knob turns from its initial position (from before you clicked it) by the amount that you move the mouse clockwise or counterclockwise. For example, clicking a knob with the mouse pointer at the 12 o'clock position and moving the mouse pointer to the 3 o'clock position – or one quarter turn – will also turn the knob by one quarter turn relative to its initial position. This is more confusing to read than to see it in action!
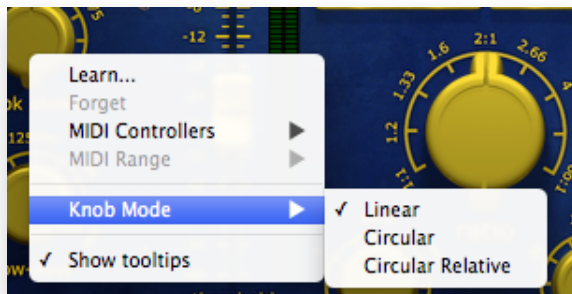
DETENTS

Sliders and knobs have a built-in detent that remembers their previous position. For example, assume that a knob is at its 12 o'clock position before you click it. Once you click and move the knob back and forth you will notice that it snaps to its previous (the 12 o'clock) position. This allows you to easily try simple adjustments and still revert to the previous position in case the adjustment turns out not to be an improvement.

MIDI AUTOMATION

In addition to host-based automation, all useful controls can be controlled by an external MIDI keyboard or MIDI controller. To assign a MIDI control simply right-click on the control in question and a menu will pop up. You can either directly choose a MIDI control from the MIDI Controllers submenu, or choose Learn... and move the control you want to assign on your external MIDI keyboard or controller within ten seconds. Big Blue Compresssor will automatically assign the control (and remember it from now on, even for new plugin instances). To remove a previously established MIDI mapping choose **Forget** from the popup menu.

ALTERNATIVE SKINS

Big Blue Limiter supports custom skins that modify the appearance of the plugin. At present it comes with two additional skins. *Modern* by Scott Kane gives the plugin a completely different look & feel. **XL** will make the whole plugin larger. Additional skins may be made available as downloads from the 112dB site. To load a skin right (cmd)-click anywhere on the plugin interface and select a skin from the Skins submenu. You will be asked to close en re-open the plugin window for the change to take effect.

This section describes the various interface controls and how to get the most out of Big Blue Compresssor. If nothing else we recommended that you at least skim through this section for an idea of what's on offer.

B A S I C S

T H R E S H O L D   (-60 ᴅʙ ... +6ᴅʙ)

The Threshold slider sets the level at which the compressor kicks in. An input signal below the threshold passes unaltered, but if the signal exceeds the threshold its volume is reduced. (NB: Actually, it's a little more complicated: if the compressor is set to use a knee, a signal slightly below the set threshold level is also compressed, although to a lesser extent than the signal that exceeds it.)

To the right of the Threshold slider is a green/red LED meter showing the input level, which makes it easy to visually set the threshold level.
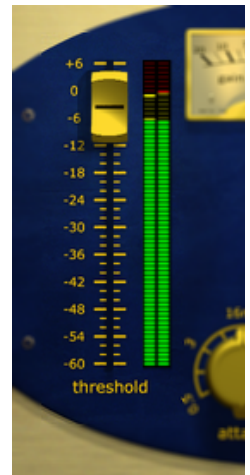
R A T I O   (1:1 ... Iɴꜰ:1)

The large Ratio knob determines the amount of compression (gain reduction) that is applied. To be more specific, it determines how much the gain will be reduced if the input signal exceeds the threshold. 1:1 means no compression at all. A ratio of 3:1 means that a signal exceeding the threshold by 3 dB will result in a signal only 1 dB over the threshold – that is, a gain reduction of 2 dB in this case. Inf:1 means maximal compression: any signal exceeding the threshold will be brought down to the threshold level. This is also known as limiting – although, in practice, any ratio equal to or greater than 10:1 effectively prevents the input signal from exceeding the threshold level and is therefore considered as limiting. However,

to make the Big Blue Compressor work as a limiter in the true sense, you have to combine a high compression ratio with a short attack.

The two 'VU meters' above the Ratio knob indicate the amount of gain reduction (in dB) currently being applied. No prizes for guessing that the left meter is for the left stereo channel, while the right meter is for the right channel. This is true except when

Mid or Side mode is turned on, in which case the left meter indicates Mid and the right one Side.

Release (0.5 ms ... 500 ms)

The Release knob sets the time it takes for the signal to return to its original level once it has

dropped below the threshold level. If the release time is set too short for the current signal, too much gain is restored each time the signal falls below the threshold. This results in audible 'pumping' and 'breathing' artifacts and, at extreme settings, distortion of low-frequency components. Generally speaking, higher release settings are more suitable for complex audio sources and provide for more transparent compression. However, if the release time is set too long, the gain reduction caused by loud peaks may persist through the softer sections that follow them.

Attack (0.5 ms ... 500 ms)

The Attack knob sets the time it takes to attenuate (reduce) the sound level once the input signal has exceeded the threshold. The longer the attack time, the longer it takes for the

attenuation to reach the required level and the smoother the transition is. Therefore, longer attack times allow the initial part of transients to pass through. Sometimes this is exactly what you want; for example, to create a more prominent initial click in a kick drum sound. But if this is not desirable, use shorter attack times in combination with the Look Ahead and

Choke knobs [see below].

Building character

Drive (-12 dB ... +12 dB)

The Drive knob controls the gain of the input signal. The Big Blue Compressor features a simulated tube pre-amp that you can overdrive using the Drive control. This boosts the input signal before it enters the pre-amp and compression stages, adding a healthy dose of character and harmonics to the signal. The pre-amp is only active when the Drive knob is set greater than 0 dB. Any setting less than 0 dB merely reduces the gain of the input signal.

12

Dry/Wet (0% ... 100%)

Using the Dry/Wet knob you can crossfade between the input signal and the compressed signal. This enables you to mix an unprocessed 'dry' signal with a (usually heavily) compressed version of the same signal. Known as parallel or New York compression, this is a technique to add 'oomph' to a sound (such as a kick drum) without destroying the dynamics. You get the benefits of the compressed signal but also keep the dynamics of the uncompressed signal. Wet + dry always adds up to 100%. 0% means completely dry (uncompressed signal); 100% means completely wet (compressed signal). 40% means you get a mix of 40% wet and 60% dry.

Choke (0% ... 100%)

If you've never heard of a choke in a compressor, there's nothing to be ashamed of – this feature is unique to the Big Blue Compressor. It's inspired by the typical way tube compressors reshape sound transients. Basically, the Choke is the analog equivalent of Look Ahead [see below]. As discussed in the Attack section [above], longer attack times allow transients to

pass through. Although this often adds something attractive to the sound, transients sometimes get undesirably loud. The way to solve this digitally is to use a look-ahead function. Analog compressors can't 'preview' the signal, so they have to do something else. In tube compressors, this is solved by saturating (choking) the transients during the attack time. If we imagine looking inside the tube of a tube compressor, we can visualize electrons being emitted by the cathode when the sound level exceeds a certain threshold. This results in a temporary shortage of electrons until the power supply recovers and recharges the cathode. During this period of electron shortage, the transients get 'choked'. This not only compresses the sound but also gives it a certain desirable esthetic. This esthetic is what we've tried to capture with the Choke knob.

The Choke knob allows you to set the saturation level relative to the measured level. The higher the choke value, the fewer transients pass through. Note that Choke has a different effect when Sidechain is enabled. In that case, you get dynamic saturation: the sidechain modulates the level at which the input signal gets choked.

NB: For clean operation of the sidechain, set Choke to min. (0%).

Finetuning

Knee (Hard vs. Soft Limiting) (1 dB ... 24 dB)

The Knee setting determines how quickly the compressor reaches its maximum gain reduction. The higher the value, the softer the knee. A soft knee causes a more gradual transition from zero to full compression and provides a gentler, more transparent sound. In contrast, a hard knee gives an abrupt transition, which slams down any signal peaks that exceed the threshold, resulting in a much more aggressive sound. For most kinds of audio, a relatively soft knee sounds more pleasing, but a hard knee is great for that 'in-your-face' sound.

Look Ahead (0.01 ms ... 5 ms)

Normally, after a transient peak has occurred, it takes the set attack time for the signal to be attenuated, which is why compressors are always too slow. This is where Look Ahead comes into play. It makes it possible to 'look ahead in time' and detect where peaks occur in the incoming digital audio signal stream. The set time determines how far the compressor looks ahead in the audio signal. Longer times make it possible to detect peaks well before they occur, allowing the compressor to start to kick in earlier.

Variable plug-in latency

Because compressor plugins need to 'look ahead' in the incoming digital audio signal stream in order to keep the signal below the desired output level for transparency, they introduce latency – and the Big Blue Compressor is no exception. However, unlike most compressor plugins, the latency introduced by the Big Blue Compressor is user-adjustable and can be as low as 6 samples. You can directly control the plugin latency simply by adjusting the Look Ahead control.

Peak/rms

This feature allows you to switch between peak and RMS compression.

In Peak mode, the maximum value of the look ahead buffer is used as the input to the compression algorithm, which calculates the amount of compression to be applied at any particular moment. Thus, the compressor reacts to high-level sounds no matter how short they are. In RMS mode, the root-mean-square value of the look-ahead buffer (the average level over a short time period) is used instead.

14

The advantage of RMS mode is that it treats levels in much the same way as the human ear – our ears perceive short-duration sounds as less loud than longer sounds of exactly the same average level. Therefore, RMS compression is often perceived as being more musical, though peak compression is better at detecting and attenuating short transients.

As a general rule: peak compression is more appropriate to drums and other short-duration sounds, while RMS is better suited to vocals and other more melodic sounds of long duration.

Makeup Gain   (-24 dB ... +24 dB)
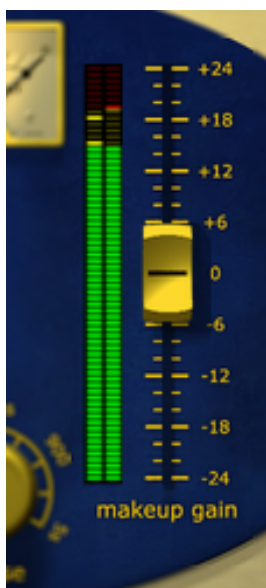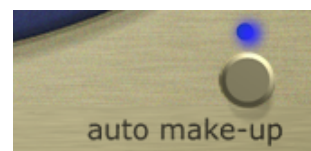

The Makeup Gain attenuates or boosts the output level. A compressor applies gain reduction to any signal peaks exceeding the threshold level. That means that, after compression, your signal will usually be considerably quieter than it was before. You can use Makeup Gain to boost the overall signal and compensate for this gain reduction: peaks are raised to their original level, while quieter sounds are made louder, so there's less difference in level between the loudest and quietest parts of a track.

To the left of the slider is a green/red LED meter showing the output level, which makes it easy to visually set the makeup gain. However, if you are monitoring the sidechain, this meter shows the level of that signal.

Auto make-up

Big Blue Compressor automatically attempts to estimate the level to which the compressed output signal needs to be raised in order to restore it to the original peak value of the input. If necessary, the Makeup Gain slider can be used to fine tune the result. If you prefer to adjust the gain completely by hand you can use this button to turn auto make-up off. Note that when the side chain is on, auto make-up is always off even if the button says differently.

Bypass

Clicking the Big Blue Compressor logo at the top left toggles bypassing of the entire compressor engine, allowing for convenient A/B comparison. This is important because it allows your ears (rather than your eyes) to decide whether you are actually improving the signal.
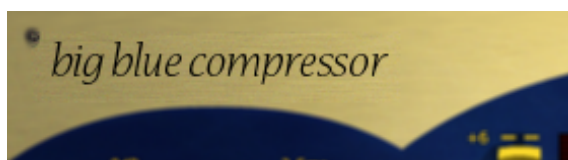
Spatiality

Stereo   (0 ... 2)

The Stereo knob controls the stereo width of the signal. A value of 1 leaves the stereo image unchanged; a value of 0 makes the signal mono; a value of 2 emphasizes the stereo image. This feature can be combined with the Dry/Wet knob above it for some interesting results. The ambience created by tweaking the Dry/Wet knob can be highlighted by the stereo width, giving the sound an almost reverb-like quality.

Link   (on/off)

When this button is on, Big Blue Compressor always applies exactly the same processing to both the left and the right stereo channels. In peak mode, the maximum value of the channels (left or right, whichever is greater) is used as the input to the compression algorithm, which calculates the amount of compression at any particular moment. In RMS mode, the average value is used for this purpose. This ensures that the stereo image remains intact and its centre is not shifted. Disabling this function allows for a slightly 'hotter' (higher) average output level, at the cost of a possibly unstable stereo image at moments when one channel of the stereo input contains loud peaks while the other does not.

When working in Mid/Side mode [see below], Link is best switched off, because in that case an unstable stereo image is likely to be precisely what you are trying to achieve.

Mid/side mode

Mid/Side mode allows you to separately control the dynamics of the mid (mono) and side (stereo) components of an audio track. It splits the audio signal into two components: that which is common to (equal in) the left and right channels – the mid component – and that which is different between the left and right channels – the side component. Thus, in the stereo image you can compress the central part of the track (for example, vocals) differently from the side (for example, guitars). Mid/side compression can be a neat trick to subtly enhance the space or 'air' in the stereo image of a mix.

Mid

When the Mid switch is on, the compressor works in mid/side mode [see above], with the mid signal going through the compressor while the side signal passes unchanged. The side signal only goes through the compressor when the Side switch [see below] is on.

Side

When the Side switch is on, the compressor works in mid/side mode [see above], with the side signal going through the compressor while the mid signal passes unchanged. The mid signal only goes through the compressor when the Mid switch [see above] is on.

Extra's

Sidechain

When Sidechain is on, you can use the level of an auxiliary signal – other than the main audio input signal – to control how much gain reduction the Big Blue Compressor applies to the audio. This opens up a whole new world of possibilities. You can use the sidechain for ducking (lowering the volume of the music when a voice-over is active), de-essing, or preventing sounds from masking another. Alternatively, you can use the sidechain to create a pumping house beat, whereby chords are pushed down in level in pulsating fashion by the kick drum. In order to use this feature, you have to route the auxiliary signal to the Big Blue Compressor's sidechain rather than to the main audio input. This works differently in each host application. For detailed instructions on setting up a sidechain, see our website: www.112dB.com/sidechain. Note that when Sidechain is on, for clean sidechain operation you should turn off the Choke to prevent distortion of the input signal – unless, of course, you want to use that distortion deliberately as an effect.

Monitor

This function allows you to monitor the signal currently being used to control the amount of compression applied. Depending on whether Sidechain is on or off [see above], you will hear either the input signal or the sidechain signal after going through the high-pass and low-pass filters [see below]..

High Pass & Low Pass Filters

The High-Pass and Low-Pass knobs allow you to control the frequency band that is actually affecting the compression amount. Frequencies outside this band do not affect the compression amount. Note that when Sidechain is off, the high-pass and low-pass filters operate on the main input signal. However, when Sidechain is on, the filters operate on the auxiliary input signal. If you want to hear how the filters are affecting the control signal – in other words, the signal that is being used by the compression algorithm – turn Monitor on.

17

H IGH - P ASS   (0 … 20000 Hz)

Using the High-Pass knob, you can cut out all frequencies lower than the set frequency before the input signal is compressed. For example, let only the hi-hat of a drum kit influence the amount of compression applied.

Raise this value if you want the compression to be influenced mainly by the higher frequencies. The neutral value is 0 Hz, which allows all frequencies to pass to the compression stage.

L OW - P ASS   (0 … 20000 Hz)

Using the Low-Pass knob, you can cut out all frequencies higher than the set frequency before the input signal is compressed. For example, let only the kick of a drum kit influence the amount of compression applied.

Lower this value if you want the compression to be influenced mainly by the lower frequencies. The neutral value is 20 kHz, which allows all frequencies to pass to the compression stage.

SYSTEM REQUIREMENTS

OPERATING SYSTEM

- Windows 7 or up (32 or 64-bit)
- Mac OS X 10.7 (Lion) or up (64 bit)

HOSTS

Big Blue Compressor is compatible with any host that understands the AAX, VST, and/or Audio Units protocol.

UPDATES AND SUPPORT

Updates for Big Blue Compressor will be made available at

https://112dB.com/download

For product support, questions, comments, feature suggestions, and anything you feel is worth sharing, please visit our forum at

https://112dB.com/userforum

Alternately, for more individual product support you may contact our support staff by email at

support@112dB.com