



DUY Wide

User's Manual

January 2000 Revision

DUY Wide is a stereo and multichannel spatial enhancer.

Main features

- Spatial enhancing and widening of stereo image
- Sound placement outside of physical stereo speaker locations.
- Individual per channel phase inverter.
- Mono compatible.
- Does not add unwanted color to the signal.
- Range of effect from subtle to dramatic.
- High signal to noise ratio with internal 48-bit resolution.

Applications

- Music and film soundtracks. Multimedia and virtual reality.
- Spatial enhancing of existing mixes, both independent stereo tracks or final mixes.
- Remastering, rebalancing and spatial enhancing of stereo and multichannel mixes.
- Complex spatial processing of pairs of channels in multichannel mixes.

1. About DUY Wide

DUY Wide is a stereo and multichannel spatial enhancer. Its unique algorithms combine the best of existing technology allowing sound placement outside the normal field of range of stereo and multichannel speakers. It does this without adding unwanted colour to the signal. The amount of effect can be adjusted subtly or dramatically allowing the widest possible range of applications.

DUY Wide allows you to process any kind of stereo or multichannel sound source including music, voices or effects on both independent tracks or final mixes. It has a wide range of applications from music and film soundtracks to multimedia and virtual reality. Remastering, rebalancing and spatial enhancing of multichannel mixes is also possible (see chapter 5).

2. Configuration and system requirements

DUY Wide is an inherently stereo device. It will not appear on the list of plugins if you try to insert it into a mono channel. Thus its unique stereo mode is selected by default when it is inserted into a stereo track. For up to date information about resource allocation on your platform please refer to the ReadMe folder on the installation disk or visit DUY's website at <http://www.duy.com>.

3. External controls

DUY Wide's front panel is divided into two main parts: the top push button panel and the plugin's main display.

3.1. Top push button panel

The appearance of this panel varies according to the program on which you are running DUY Wide. One common button to all applications is the Bypass switch. By toggling the bypass you can make a comparison between direct and processed sound.

3.2. Input level slider

It ranges from -30 to 0 dB. Its default value is 0 dB. You can switch to the default value at anytime by clicking the "input level" area while at the same time holding the "Alt" key. You can also make fine adjustments by clicking the "Cmd" key while moving the slider. This procedure is applicable to all DUY Wide sliders.

3.3. Phase buttons

Two toggle switches permit left and right channels to be independently phase inverted. Toggling either switch independently produces a dramatic change in the overall sound. However when both switches are active no audible change is produced although the phase of the output signal has actually changed 180°.

3.4. "Boost" section

A "boost" section is provided in order to compensate for the possible low frequency losses due to the spatial processing. The "boost" section consists of two sliders and a switch, which can be activated by clicking into the boost "triangular" area. "Boost" is active when the triangle is red and marked "boost on". The two sliders adjust frequency and amount. The boost frequency ranges from 109 to 1088 Hz. Boost range is 0 to 100%. The optimal settings for the booster section depend on the sound source. As with all other sliders you can switch to the default value at anytime by clicking the appropriate slide area while at the same time holding the "Opt" key. You can also make fine adjustments by pressing the "Cmd" key while moving the slider.

3.5. "Amount" slider

The "Amount" slider sets the amount of spatial enhancing. Its range is 0 to 100%. Typical settings are 40% to 70% depending on the signal content. More than 70% produces a dramatic effect and an extremely out of phase output. That means that mono compatibility is not assured. More than 90% of effect means no mono compatibility at all.

3.6. Output level and phase meters

The output level meters measure the peak level of the plug-in's processed signal. They cover the full dynamic range with a high graphic resolution.

The phase meter allows a visual check of the side effects of the spatial processing. It also gives you a measure of mono compatibility. Average sustained readings of more than 120° can not be considered mono compatible.

4. How to use DUY Wide

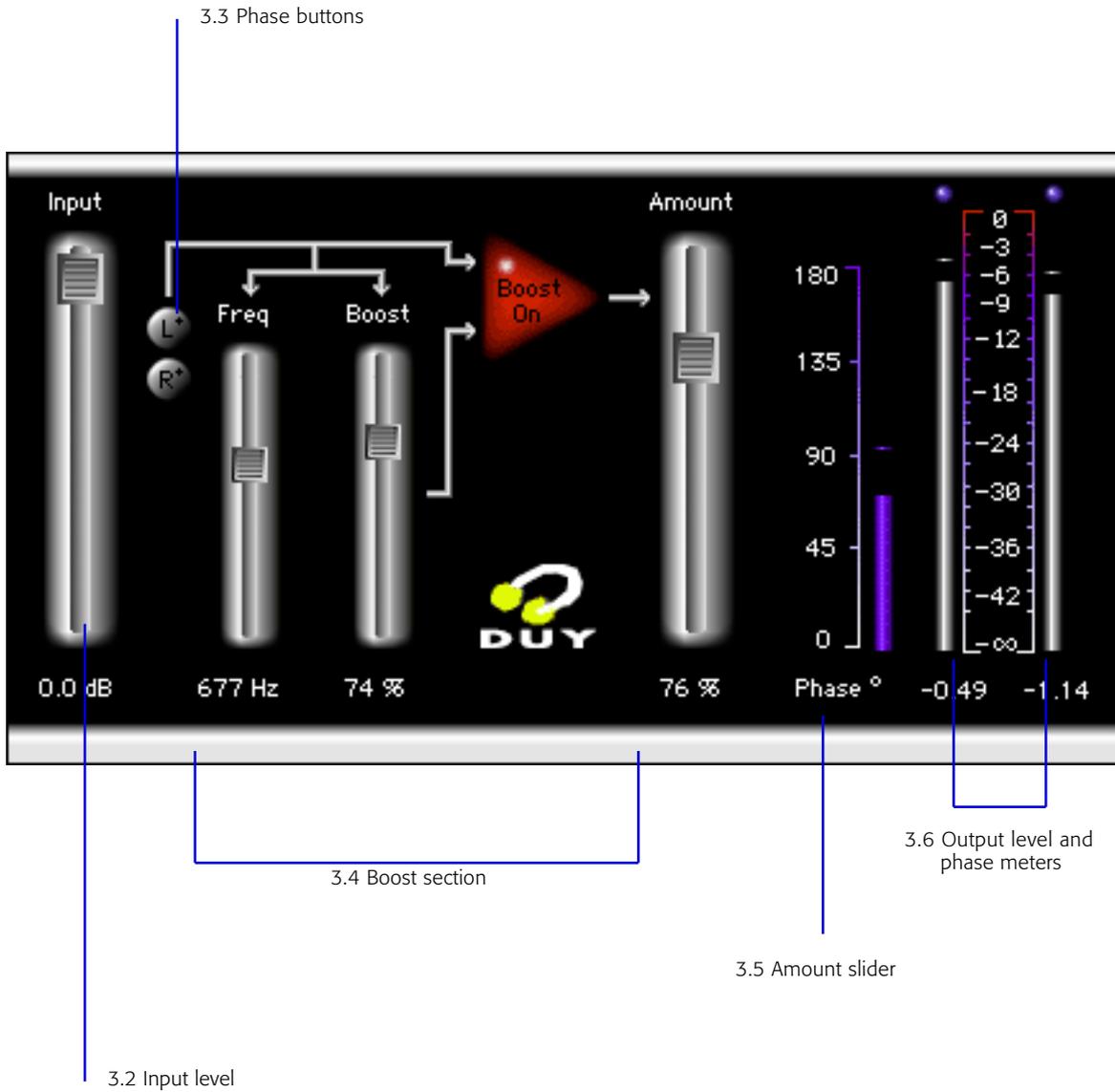
DUY Wide's adjustment is straightforward. Input level should initially be set to around -4dB, and the boost "on". As you turn up the "amount" slider the stereo image will be progressively widened. Settings up to about 40% are subtle and more than 80% dramatic. You should avoid higher than 80% setting if you wish to maintain full mono compatibility. If on the other hand mono compatibility is not a primary concern, more than 80% settings can produce interesting and useful effects.

For most of the applications it is highly recommended to use the booster section. Once the desired widening effect amount is set-up, it is time to decide on how much boost is needed, and at what frequency setting. The most straightforward way to do this is to start with the optimum frequency, which is done as follows. Set the boost level to about 50%. Switching the bypass back and forth while at the same time sweeping the frequency slider will allow you to identify the right frequency. Apart from the obvious changes in stereo width, both processed and bypassed signals should sound as similar as possible. A final adjustment to the boost level will make the perfect match. When moving the boost level, a change in the input level slider might be necessary to match the original and processed level.

The above adjustment procedure doesn't apply for creating any strange and radical processing effects. In such cases you may freely adjust boost, frequency and even the channel phase inverters (see 3.3.)

DUY Wide is especially suitable for final mixes. Even mixes you are entirely happy with will be given an added sense of panoramic width when DUY Wide is used. The same applies to separate instruments, voices or sound effects, the only condition being that they have to be in stereo. The range and quality of DUY Wide is impossible to achieve using conventional processors.

Max DUY must be inserted after any other processing effect. This rule is applicable to DUY's or any other third party plug-ins.



5. DUY Wide in multichannel systems

Impressive effects can also be obtained by applying DUY Wide to multichannel mixes. The processing must be applied in pairs of channels. In four channel surround mixes the most typical configuration would be to insert the effect in the front L and R speakers before matrix encoding. A center-surround processing is also possible alternatively or simultaneously.

An interesting spatial effect can also be obtained by directly processing the two channel matrix encoded signal. Further decoding into four channels produces amazingly unexpected results.

In 5.1 or even 7.1 formats there are even more possible combinations, the most typical being the processing of front or back left/right pairs. Front-back pairs processing is also possible with similar results. As usual experimentation is our best advice.

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