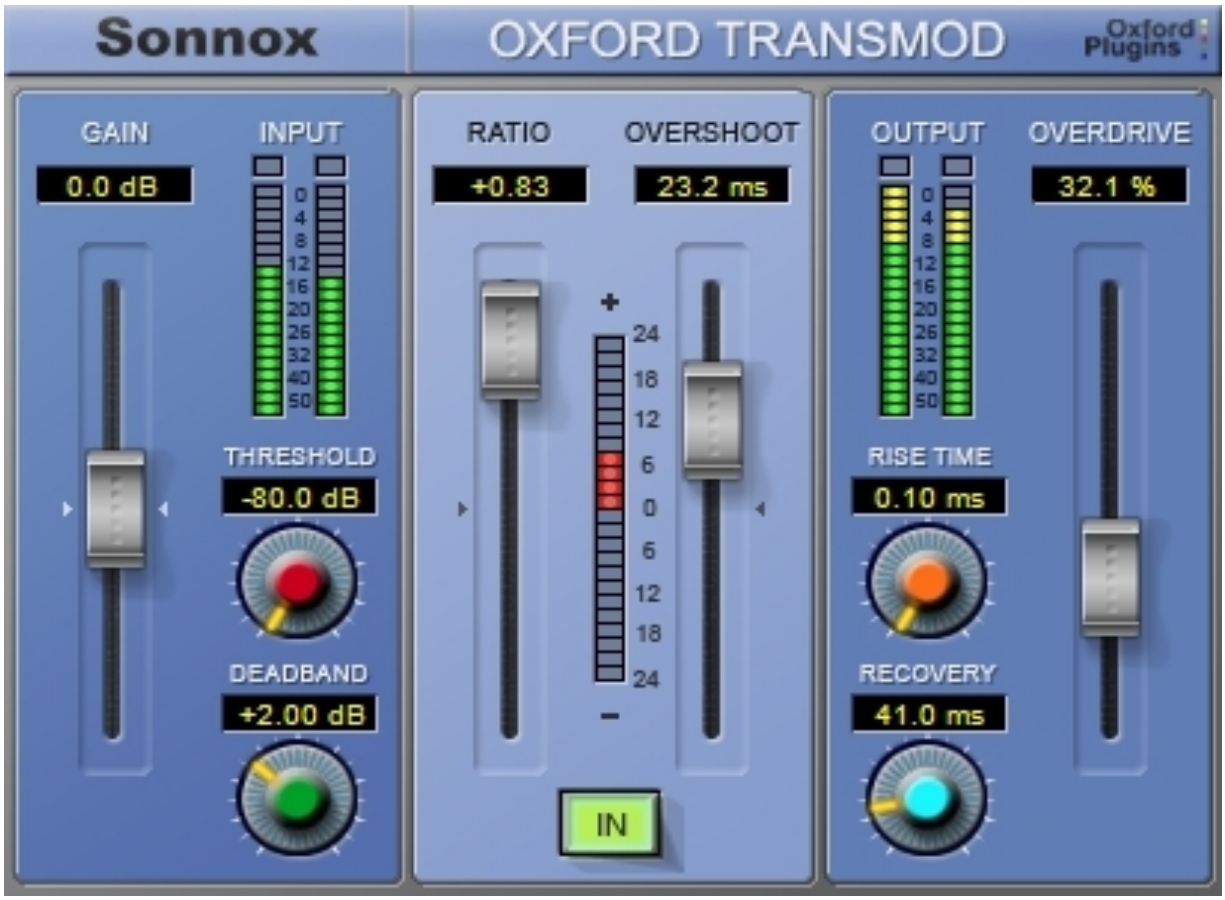
Sonnox



Sonnox Oxford TransMod

Operation Manual

Version 1.1 22nd November 2011

Oxford Plugins

1. Introduction

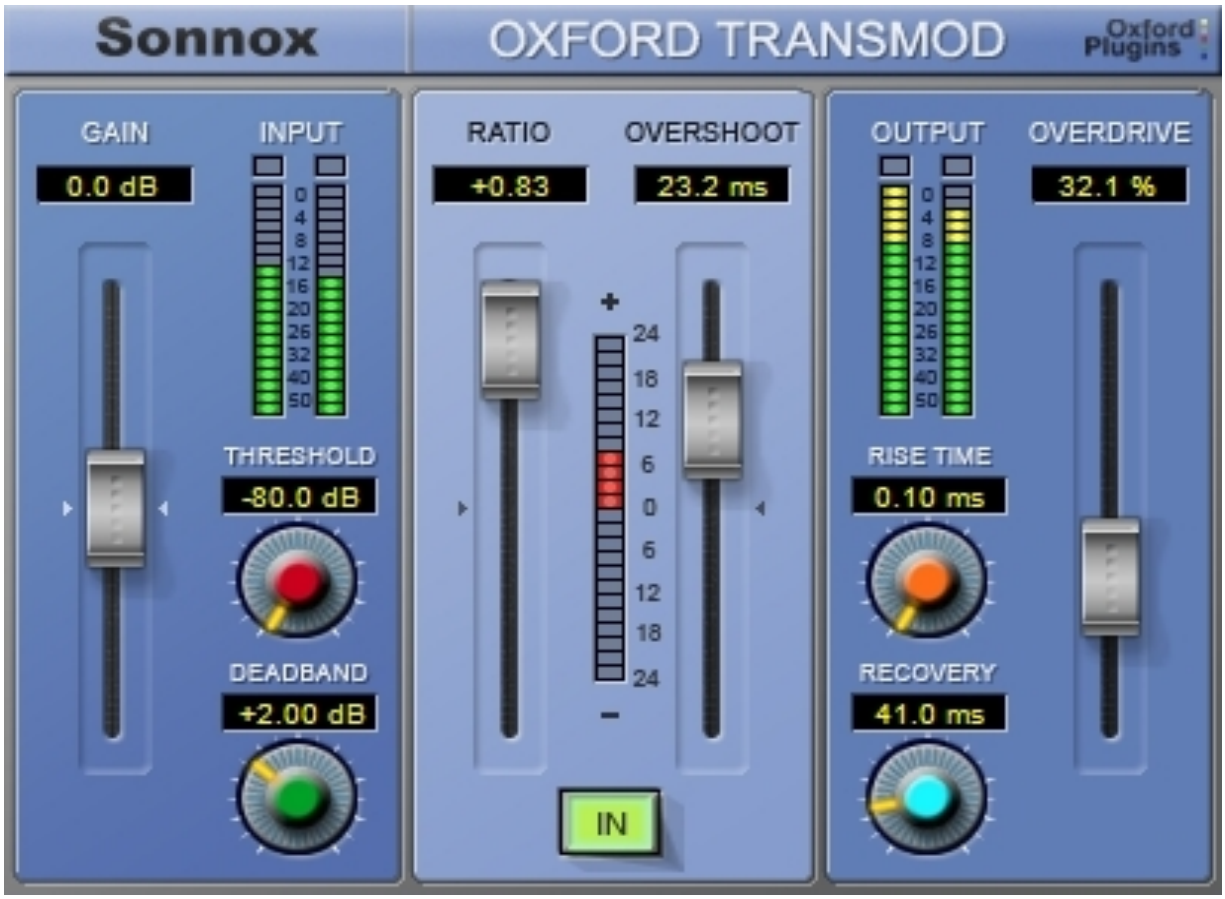
The Sonnox Oxford TransMod is an application that allows the dynamic level of signals to be modified, over time, by transients in the programme material. The effect is to bring transient events in the programme forward, or push them to the background, such that the attack of instruments can be accentuated or softened depending on the settings provided.

The application was developed to address a common situation where there is a need to selectively tighten up percussive instruments or soften the unwanted percussive effects of acoustic musical instruments. Such effects are easily achieved with the TransMod because its purpose designed adaptive processing acts on differential information in the programme, so that the overall long-term programme level is minimally affected, and sensitivity to control parameters is drastically reduced.

1.1 Main Applications

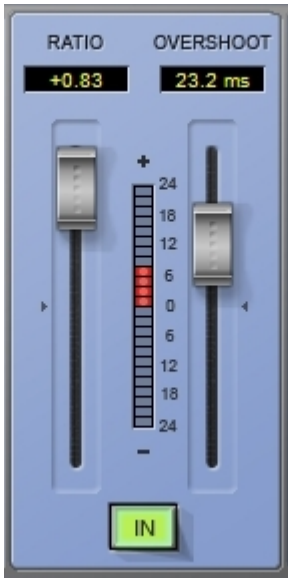
- Radically change the dynamics of instruments
- Accentuate or flatten attacks and transients
- Bring sounds forward or push them back
- Increase or reduce the effects of ambience
- Produce rounded and dynamic percussive effects
- Harden up and give life to dull or flat-sounding recordings and mixes, without the unwanted changes in overall timbre associated with multi-band compression techniques
- Increase overall modulation potential by the reduction of very short peaks

2. Operation



The **Sonnox** TransMod functions by producing a continuous value that is proportional to the dynamic level encountered at its input (ie. the programme level envelope). This value is then subjected to processing that extracts the rate of change of the programme level envelope, which is used to modify the forward gain of the output signal during periods of dynamic activity in the programme. In this way the resulting level envelope at the output of the TransMod can be modified dramatically to accentuate or attenuate aspects of the dynamic profile of the sound, whilst drawing from the natural characteristics of the original programme signal.

2.1 Ratio



The ratio value represents the linear dB ratio by which the output gain will be modified by instantaneous changes in the input level. Positive values will increase the gain of the signal during transients. So, for example, when the ratio control is set at +1, a drum 'thwack' that has a peak of 10dB above the average level will produce a level increase of twice that (20dB) at the output, because the gain during the transient will be increased by the same amount as its level difference.

For negative ratios the reverse is true, and for a negative ratio of -1 the drum attack transient would be reduced to the corresponding average level of the signal, and will therefore be removed. With the ratio control in its central position (0), the TransMod process does not affect the signal at all.

2.2 Overshoot

The overshoot time sets the period over which the dynamic changes occur, depending on the input programme dynamics. A short overshoot period will enhance (or reduce) transients for a very short time and cause only the leading edges of the transients to be modified. For example, a small overshoot time can accentuate short-term events in the programme for small percussion instruments such as bells, whilst largely ignoring large and softer transients from instruments such a drums etc.

Increasing the overshoot period allows transient enhancement to occur over longer periods, therefore providing a method to tune the action to suit the programme material and produce the required effect.

The adaptive nature of the processing, over both level and time, allows optimal settings of the timing value to be achieved for complete tracks and even complex final mixes. Because the TransMod process is so rapid, low settings may not be heard because the duration of the transients being affected are too short. Generally the most audible effects occur from the mid position of the overshoot control upwards.

2.3 Recovery

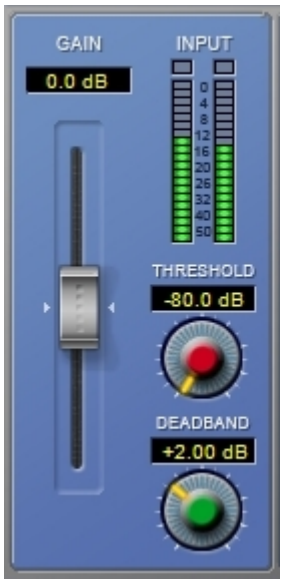
The recovery control modifies the long-term timing of the envelope processing. Small recovery values will allow action to almost each and every transient, even if they repeated very rapidly in the programme material. Longer recovery values will gently and progressively reduce the action depending on the rate at which transients occur in the programme. So, for example, setting a long recovery value can prevent excessive action on small rapid transients in the signal (ie. hi-hat spill), which directly follow large transients (ie. a bass or snare drum). The recovery time is adaptive such that after a period of absence for large transients, small transients in quieter sections of the programme will be progressively included once more into the process, in the normal way. The effects of changing the recovery are usually quite subtle, and for the most part small to midrange settings will work best for most typical material.

2.4 Rise Time

The rise time value modifies the response of the envelope detector to fast transients and provides a method to decrease the sensitivity of the process to short term events in the programme. With the control set at minimum, all transients, however short, will be processed. Increasing the rise time value reduces the overall speed of the envelope detector, such that short-term transients will be progressively ignored as they fall beneath the value of the rise time setting.

This control can be used to prevent unwanted action from fast, largely inaudible transients, or it can be used as a sound effect. For example, a rise time value can be set such that the initial attack of an instrument is excluded during an overall transient reduction or increase. This allows you to ‘model’ the sound of the overshoot to soften or harden the effect.

2.5 Deadband



The deadband value provides a method to exclude less significant transient modifications from the final processing output. For example, if a deadband of 3dB is set, changes resulting from the TransMod processing below a total differential gain change of 3dB are excluded from the process, and the signal is unaffected under these conditions.

The deadband control can be used to prevent action from small level changes or insignificant transients, which may otherwise adversely affect the programme. In this case, it is best to start with the deadband set to zero and increase it only if unwanted action becomes evident, particularly during quiet sustained passages.

The deadband control may also be used to produce dramatic effects by focussing the TransMod action on only the loudest transients in the programme. In this case, it's best to set low thresholds and high ratios to get the maximum action, before progressively increasing the deadband to exclude smaller events from the effect.

2.6 Threshold

The threshold control causes the process to operate only on programme material above the set level, ignoring all signals below that value. Unlike all the other TransMod processing, the threshold is related to absolute input levels, and therefore care must be taken to set a low enough threshold value to allow action on the required range of programme.

Careful threshold setting may be used to focus only on the louder events in the programme. This may be particularly useful when aiming for compression sounds with negative ratio settings. To generate increased attack with positive ratios, the TransMod process works most effectively when operating on the majority of the programme range, ie. the lower the threshold the greater the possible effect may be.

Note: Care must be taken with very low threshold settings since programme material starting from silence may be subjected to a large initial overshoot.

2.7 Level Control and Overdrive

Although the TransMod process works to maintain constant average signal levels in the programme, the process can produce significantly larger peak levels if positive ratio values are used. With highly percussive sounds and long overshoot settings, the peak levels can potentially increase up to +24dB greater than in the original programme. This effect will be seen on the peak meters provided in the output section of the plug-in.

Since most workstation applications provide no headroom above the peak level operating target that most users aim for, the extra transient information provided by the TransMod is highly susceptible to clipping in the application environment. If this occurs, the transients are lost forever and cannot be recovered in the mix by level control further down line (ie. your mix faders etc.). Therefore care must be taken to set appropriate gain settings to avoid clipping.

2.7.1 Overdrive Processing

The overdrive process is included to allow a degree of relief from premature clipping if high modulation levels are required, by providing a method for the harmonic content of peak information above digital max to be included in the final output of the TransMod process.

When set to maximum (100%) the overdrive process will allow peak information up to 6dB greater than max to be included without the sound of hard clipping, whilst avoiding digital overloads entirely. Overdrive processing will also change the harmonic content of the programme to provide warmth and richness to many programme types.

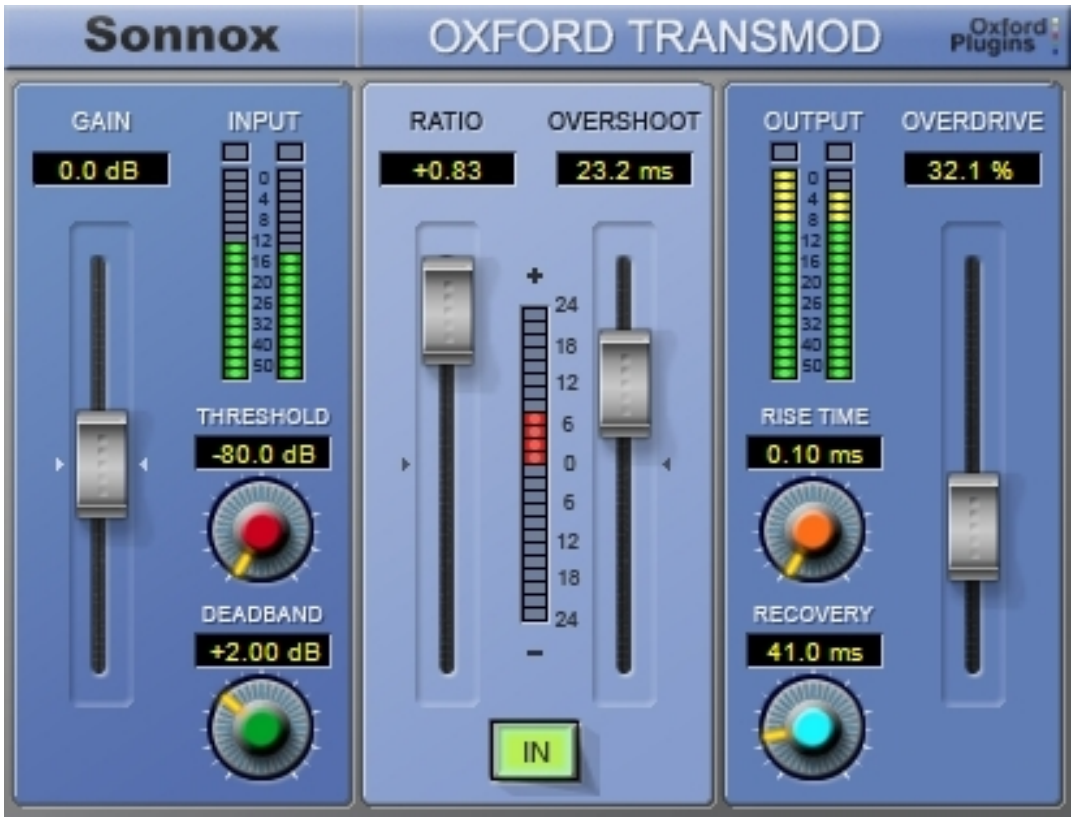
2.7.2 Loudness Enhancement

When used with negative ratios, the TransMod can provide an efficient method to increase the loudness of programme by reducing very short transients that may otherwise cause overloads. In many cases, very short transients may not be a prominent part of the programme sound, and can be reduced without damaging the sonic character of the results. If very short-term peaks are reduced, more modulation gain can be achieved without overloads. Since the look-ahead process timing can act on the signal before it appears at the output of the plug-in, short-term peaks can be effectively reduced without apparent loss of overall sonic character.

To achieve this effectively, very small overshoot and recovery values should be used with a minimum rise time setting, in order to catch the fastest transients only. A negative ratio coupled with a suitable dead band setting can be obtained that reduces transients by the required amount, allowing the overall level of the programme to be increased before limiting occurs.

Note: Since the TransMod is an adaptive process that constantly changes with programme content, the peak limiting function will not be as predictable and accurate as that provided by a programme limiter.

3. Description of Controls



Note that the parameter settings provide continuous feedback of settings values, and have type-in fields so you can change values directly from your keyboard.

Input Section

INPUT meter – displays Input drive levels.

GAIN – provides adjustment of gain from –24 to +24dB.

THRESHOLD – adjusts the level threshold for the onset of processing.

DEADBAND – controls the range of transient programme change that is ignored by the TransMod process, from 0dB to 6dB.

Effect Section

RATIO – controls the overall effect of the TransMod process. Positive settings produce transient enhancement and negative settings cause reduction.

Effect meter – (above the **IN** button) displays the peak overall gain and loss of transients in the programme material resulting from the TransMod process between + 24dB and -24dB.

IN button – switches effect in and out, maintaining constant delay and gain for comparison purposes.

OVERSHOOT– controls the timing profile of the transient modification.

Output Section

RECOVERY – controls the response of the TransMod process to long-term programme level changes, from 3 to 200mS.

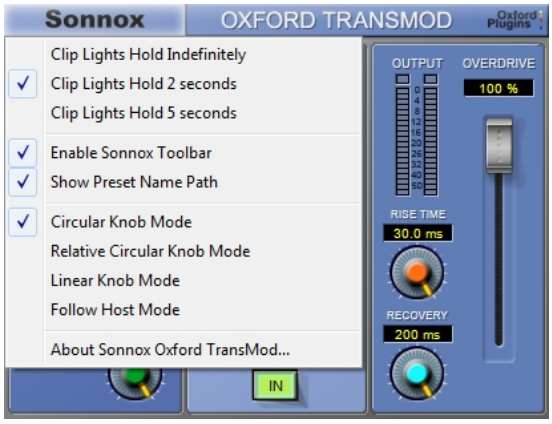
OVERDRIVE – provides additional harmonic and overload enhancement effects to the TransMod output signal, from 0% to 100%.

RISE TIME – controls the response speed of the TransMod process to short duration envelope transients, from 100uS to 30mS.

OUTPUT meter – displays output drive levels.

Options Menu

Clicking the **Sonnox** button produces a drop-down options menu (see right).



Clip Lights… – can be set to hold for **2 seconds**, **5 seconds**, or **Indefinitely**.

Enable Sonnox Toolbar – displays or hides the Sonnox Preset Manager Toolbar.

Show Preset Name Path – can display or hide the preset name path in the Preset Manager Toolbar.

Knob Modes – Four options determine how the rotary controls (knobs) behave:

With **Circular Knob Mode** the control is set to the value at which it is first clicked, and the value then increases or decreases with circular mouse movement.

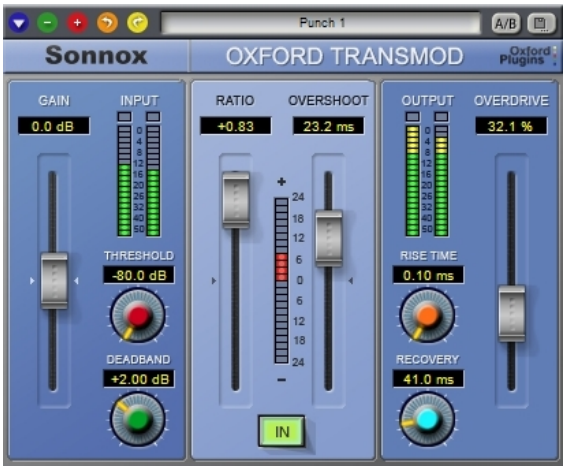
In **Relative Circular Knob Mode** a control's value increases or decreases with circular mouse movement relative to its initial value.

Linear Knob Mode increases or decreases a control's value with up and down mouse movements respectively. Fine adjustments to any control setting can be achieved by pressing the 'Apple command' (Macintosh version) or 'Shift' (PC version) key ***before*** clicking on the control to be adjusted, and holding this key down during the operation. This rescales the control rate with the mouse movement, so that very fine adjustments can be made.

In some host applications the user is given the option to use one of several mouse modes. **Follow Host Mode** enables the plug-in to follow the mode selected in the application.

About Sonnox Oxford TransMod – displays the date, version and build number of the plug-in.

4. Preset Manager Toolbar



The Oxford TransMod plug-in comes equipped with its own onboard Preset Manager, which is displayed as a toolbar at the top of the plug-in window, just as if the host created it (see above). The reasoning behind this is to allow increased portability of your presets across all the host applications, while also providing a consistent and versatile interface. While most host platforms allow creation and loading of presets, those host-created preset files are not portable between different host applications. With the preset manager from Oxford plug-ins, you can create a named preset in one host application and load it while using an alternative application.

The **Sonnox** Preset Manager is fully described in a companion document — 'Sonnox Toolbar and Preset Manager Operation Manual' — available for download on the Support Documentation page of the **Sonnox** website: www.sonnox.com

5. Copyright and Acknowledgements

This Product is manufactured and supplied by Sonnox Ltd. under licence from Sony UK Ltd.

The following patents protect this Product: GB2330747, GB2310984, GB2354139

6. Manual Revision History

Version 1.0 date 1st April 2007 – Generic Sonnox version

Version 1.1 date 22nd November 2011 – Updated to reflect current software version

Platform Specific Supplement

S1. Supported Platforms

Avid Pro Tools (LE, RTAS, M-Powered, Pro Tools HD) and Pro Tools 10 (HDX & Native)

VST Native

Audio Units Native

S2. System Requirements

These requirements are current at this revision of manual. For latest system requirements, please see the website www.sonnox.com

Pro Tools

Pro Tools 7, 8, 9 & 10

Approved Pro Tools CPU, OS and hardware configuration (see www.avid.com)

Mac OSX 10.4 or higher

Windows XP / Vista 32 & 64 bit / Windows 7 32 & 64 bit

Ram 1GB minimum

iLok USB key with latest drivers

Audio Units

Audio Units compliant host application (e.g. Logic, Digital Performer etc.)

Mac OSX 10.4 or higher

Ram 1GB minimum

iLok USB key with latest drivers

2nd generation iLok required for 64-bit plug-ins

VST

VST compliant host application (e.g. Nuendo, Cubase, WaveLab etc.)

Mac OSX 10.4 or higher

Windows XP / Vista 32 & 64 bit / Windows 7 32 & 64 bit

Ram 1GB minimum

iLok USB key with latest drivers

2nd generation iLok required for 64-bit plug-ins