



**RTAS Plug-In for Pro Tools®**

# **OWNER'S MANUAL**

by





# SurCode for Dolby Pro Logic II Owner's Manual

## Table of Contents

<b>1 Overview</b> .....	<b>1</b>
<b>2 The Main Screen</b> .....	<b>2</b>
2.1 Encoding/Monitoring.....	3
2.2 Limiter button.....	3
2.3 Overload Indicator.....	4
2.4 Input Trims.....	5
2.5 Gang Faders button.....	6
2.6 Gain Trim Reset button.....	6
2.7 Decoder Mode.....	7
2.8 Channel Configuration.....	9
2.9 Decoder Output Scale.....	10
2.10 Information window.....	11
<b>3 Mac Installation</b> .....	<b>12</b>
3.1 iLok installation.....	12
<b>4 Windows Installation</b> .....	<b>15</b>





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## 1 Overview

**SurCode for Dolby Pro Logic II** converts your 5.1 surround soundfiles to the Dolby Pro Logic II format by matrix-encoding the Center, Surround, and LFE tracks into the Left and Right tracks. The L and R tracks then become Lt/Rt, which stands for Left total/Right total - meaning that Lt/Rt tracks also contain the matrix-encoded Center, Surround as well as LFE tracks. These Lt/Rt tracks can be distributed and played in stereo, and also decoded by a Dolby Surround/Pro Logic/Pro Logic II decoder and played back in surround.

This **SurCode** plug-in accepts a 6-channel surround sound input. **SurCode** outputs an Lt/Rt encoded stereo stream that can be recorded and used in any stereo transmission medium.

Audio files encoded by **Surcode for Dolby Pro Logic II** are fully compatible with all branded Dolby Surround, Pro Logic, and Pro Logic II decoders, either in software or hardware format.

**SurCode for Dolby Pro Logic II** contains a decoder, which is essential for properly setting the encode parameters. Also, the encoder/decoder in **SurCode** can work in real-time, enabling you to monitor the results of encoding and decoding.

**Note:** Dolby Pro Logic II matrix encoding is a creative process, unlike Dolby Digital (AC-3) or other discrete-channel digital data compression (lossy) encoding. Because the matrix encoder combines the center, LFE, and surround elements into the Lt/Rt channels by changing level, phase, and other parameters, the channel gain trim settings are quite important in assuring proper stereo and surround compatibility. When compared to AC-3-encoded soundfiles, matrix-encoded soundfiles are not as discrete in their surround decoding capability; however, Dolby Pro Logic II is the best way to distribute encoded surround mixes or elements within an existing stereo transmission medium, whether broadcast, cable, games, CDs, DVDs, or videotapes. Matrix-encoded soundfiles take up no extra space, and use no extra computer CPU resources.

## 2 The Main Screen

Figure 2-1 shows the SurCode for Dolby Pro Logic II RTAS plug-in Main Screen.



Figure 2-1

## 2.1 Encoding/Monitoring

The three buttons in the upper left corner set the modes for encoding and for monitoring (see Figure 2-2).

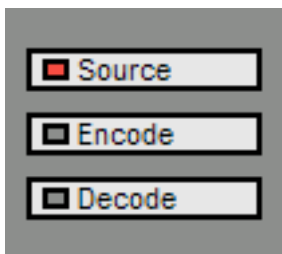


Figure 2-2

When the Source button is selected, the Pro Logic II encoder is turned off, and the inputs are connected directly to the outputs.

When the Encode button is selected, the Pro Logic II encoder is turned on, and the encoded stereo signal is sent to the first two channels of your Pro Tools output bus, typically L and R. The other four outputs are muted.

When the Encode button and Decode button are both selected, the Pro Logic II encoder is turned on, and the decoder is also turned on, so that you can hear what the end listener will hear in their home through their decoder (i.e. 6 channels of decoded audio). This is especially useful in tuning up the input levels for best encoding (see section 2.4, *Input Trims*).

## 2.2 Limiter button

This button engages the Limiter function (see Figure 2-3).

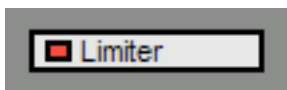


Figure 2-3

The Limiter function is useful if the Overload Indicator (see section 2.3, *Overload Indicator*) is only showing a few overloads for the entire

track. Instead of reducing the overall gain even further, the Limiter can catch the few peaks before they overload the matrix encoder.

The Limiter function is actually six ganged channel limiters that are active only if the matrix encoder has indicated an overload (“Saturation”). The block of audio that caused the overload is then re-encoded at a lower gain level for the duration of the overload condition, which makes it an effective peak limiter.

## 2.3 Overload Indicator

This indicator shows when the matrix encoder is overloaded, which results in distortion (see Figure 2-4).

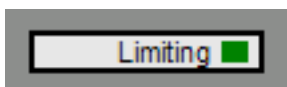


Figure 2-4

If the Overload Indicator is flashing often (more than three or four times per track), or remains lit, the overall gain must be reduced until the indicator no longer flashes, or until there are only a few flashes.

The Overload Indicator becomes the Limiter Function Indicator (showing that the Limiter is active) when the Limiter Button is engaged.

**Note:** The Overload Indicator will show Green when the limiter function is inactive. A dark Green indicates there is no audio signal, and a bright Green indicates that a signal is present. The indicator will display Orange when the Limiter is active (limiting), and Red if the signal is still overloading the matrix encoder. If the indicator shows Red when the Limiter is “On”, you **MUST** reduce the overall gain. The Limiter range is only 4 dB of Gain Reduction - it is meant to reduce short-duration peaks only, not long-term program material.



## 2.4 Input Trims

There are four faders to set the gain for the six input channels (see Figure 2-5).

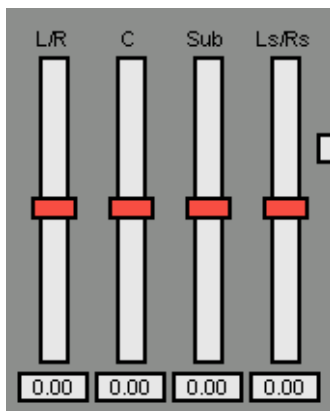


Figure 2-5

The numbers below the faders indicate the gain in dB. The input gain range is  $-\infty$  to +6.0 dB.

It is very important to correctly set the four Gain Trim faders (L/R Front, Center, LFE, and L/R Surround). Not only are the Gain Trim settings critical for compatible stereo and surround playback, they are also important in ensuring that the matrix encoder does not overload at the input, or when it mixes (“matrixes”) the multiple channels.

If, for example, the surround soundfiles have been Normalized (not recommended), the encoder will overload as soon as the channels are matrixed. Likewise, multi-channel peak level passages can overload the matrix encoder, even if the rest of the tracks are lower in level.

Therefore it is necessary to play back (monitor) the source files (“Source” selected in the Routing section), the matrix encoder output (“Encode” selected in the Routing section), and the decoder output (“Decode” selected in the Routing section) in order to set the Gain Trims for best (most compatible) results.

While the setup process is subjective, a simple guideline would be that the best results are those settings that sound best, i.e. when the Lt/Rt

sounds like the Center, Surround, and LFE tracks are present but not too loud, and the Decoded Lt/Rt sounds most like the Source playback.

We recommend that you read the Dolby Publication “Mixing with Dolby Pro Logic II Technology” that is included on the install disc in PDF format. You may also access it on the internet at:

[http://www.dolby.com/assets/pdf/tech\\_library/214\\_Mixing\\_with\\_Dolby\\_Pro\\_Logic\\_II\\_Technology.pdf](http://www.dolby.com/assets/pdf/tech_library/214_Mixing_with_Dolby_Pro_Logic_II_Technology.pdf)

## 2.5 Gang Faders button

This button (see Figure 2-6) gangs (groups) the four Channel Gain Trim faders together. The Left/Right Front fader becomes the Master Gain Trim fader. When you move this fader, the other three faders will move also, maintaining their relative values.

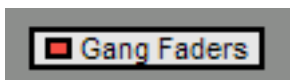


Figure 2-6

This is a useful feature if the overall levels are too high or too low after adjusting the Channel Gain Trims. If the Overload Indicator flashes during playback, the Channel levels must all be reduced, or the loudest Channel must be reduced. If, however, you have already adjusted the individual Channel Gain Trims for optimum results, the Gang button can allow you to reduce the overall levels into the matrix encoder so no overload indications occur.

## 2.6 Gain Trim Reset button

This button resets all four Channel Gain Trim values to their default value of “0.0” dB (see Figure 2-7).

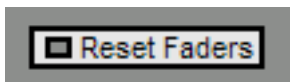


Figure 2-7

## 2.7 Decoder Mode

Figure 2-8 shows the Mode pull-down menu.



Figure 2-8

Pro Logic II allows for 4 different Decoder modes. Three of these modes (Pro Logic mode, Movie mode, and Matrix mode) are totally predefined, and no additional features are available. In Music mode, the Center Width control, Dimension control, and Panorama modes are available as options.

### 2.7.1 Pro Logic

This is the Pro Logic II system reproduction of the original Pro Logic decoding system. Because consumer decoders now offer Pro Logic II as the default Dolby Surround decoding system, this emulation mode is available to reproduce the original Pro Logic decoding if the consumer wishes to hear it. (This option is not available on all consumer decoders made with Pro Logic II.)

### 2.7.2 Music

This mode is the most versatile feature of Pro Logic II. It activates the settings on the Panorama, Dimension, and Center Width menus; those settings can help a consumer make a stereo (Lo/Ro) recording into one that takes advantage of a multichannel listening environment. Particularly attractive for automotive entertainment systems, this can be used in home theaters as well.

### 2.7.2.1 Dimension

This adjusts the focus of the signal from the front speakers to the rear speakers. If the Pro Logic II mode is anything other than Music, the Dimension setting is read as 0 (Neutral) (see Figure 2-9).

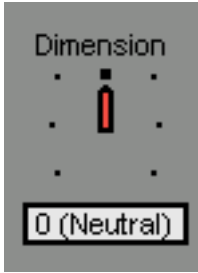


Figure 2-9

### 2.7.2.2 Center Width

This steers the Center output signal between the Center, Left, and Right outputs. At the “-3” setting, there is no center width. At the “L/R”, there is maximum width (phantom center) (see Figure 2-10).



Figure 2-10

### 2.7.2.3 Panorama Mode

This mode sends the stereo signal to the surround speakers as well as the front Left and Right. The Panorama setting is disregarded if the Pro Logic II mode is anything other than Music (see Figure 2-11).

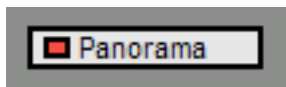


Figure 2-11

### 2.7.3 Movie

This mode is the standard setting for programs with video. This decoding is based on the original Pro Logic decoding scheme, but with the Pro Logic single Surround channel separated into Left and Right Surround channels.

### 2.7.4 Matrix

This is primarily for radio reception in cars. It is essentially the same as the original passive Dolby Surround decoder without the directional steering provided by Pro Logic.

## 2.8 Channel Configuration

Figure 2-12 shows the Channel Configuration pull-down window in the Decoder Options window. This sets the Decoder to your playback speaker configuration.

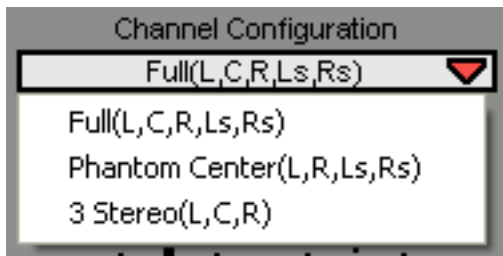


Figure 2-12

## 2.9 Decoder Output Scale

This fader on the right side of the window sets the output attenuation of the Decoder (see Figure 2-13). The numbers under the fader indicate the output attenuation in a linear scale from 0.00 to 1.00, where 0.00 is maximum attenuation (off) and 1.00 is no attenuation.



Figure 2-13

## 2.10 Information window

There is a red triangle in the lower right corner of the plug-in window. When you click on this triangle, it brings up the Information window (see Figure 2-14).

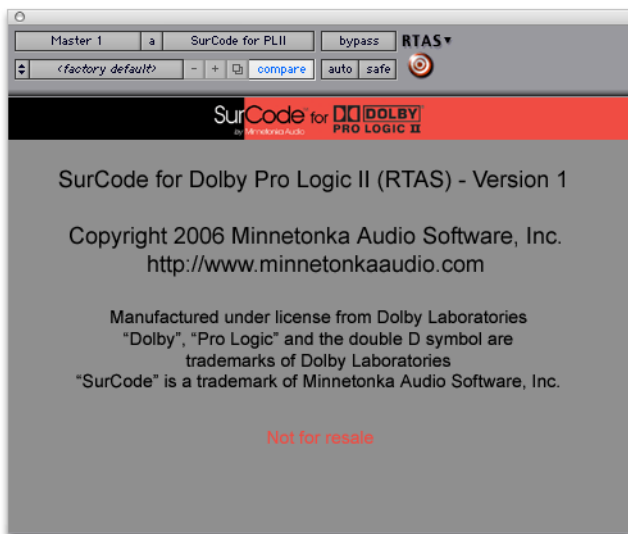


Figure 2-14

## 3 Mac Installation

The installation CD contains two folders - - pt69\_mac and pt72\_mac. If you are using Pro Tools 6.9, you will use the installation in the pt69\_mac folder. If you are using Pro Tools 7.2 or later, you will use the installation in the pt72\_mac folder.

The installation file in each folder is the file that ends in “.pkg.” Double-click on this file to start installation and follow the instructions on the screen.M

### 3.1 iLok installation

The first time you boot Pro Tools after installing the SurCode plug-in, a window comes up which will start the iLok license procedure (see Figure 3-1).

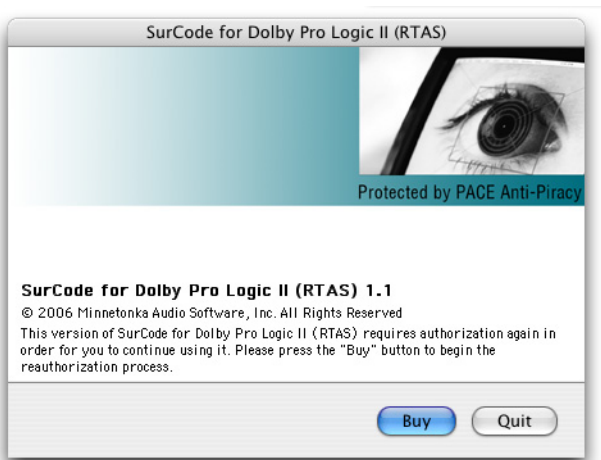


Figure 3-1



Before you proceed, you will want to install the license chip into your iLok key. The chip is a small plastic piece that is inside of a credit-card shaped piece (see Figure 3-2).

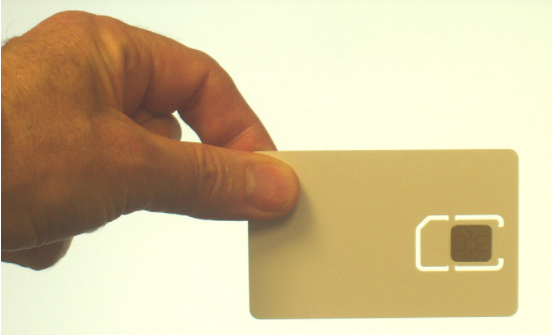


Figure 3-2

You must break the chip out of the card and insert it into your iLock (see Figure 3-3).

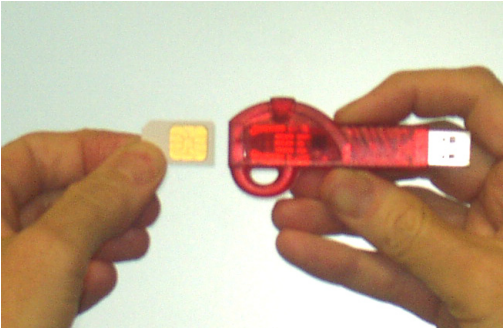


Figure 3-3

With the chip inserted into your iLock, plug the key back into the USB port and click the “Buy” button on the Surcode window. The next win-

dow will give you the option to “Use license card” (i.e, the chip)(see Figure 3-4).

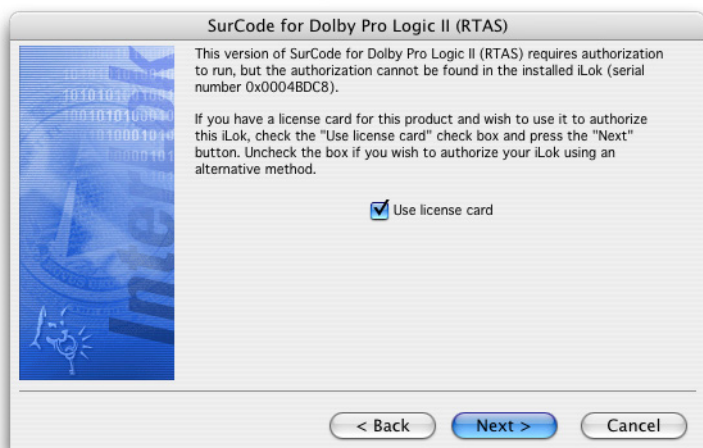


Figure 3-4

Make sure this box is checked, and then click Next.

The license will transfer from the chip to your iLok key. A screen will come up to tell you that the license transfer was successful (see Figure 3-5).



Figure 3-5

Follow the on-screen instructions to complete the authorization process.

## 4 Windows Installation

The installation CD contains two folders - - pt69\_win and pt72\_win. If you are using Pro Tools 6.9, you will use the installation in the pt69\_win folder. If you are using Pro Tools 7.2 or later, you will use the installation in the pt72\_win folder.

The installation file is “setup.exe”. Double-click on this file, and the installation will begin.

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