

# FDConfiguration

FD300 board settings



*Revision as of  
February 15, 2006*

User's Guide



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Increase the separation between the equipment and receiver.

Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

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## FDConfiguration main window

The FDConfiguration application (Figure 1) allows you to adjust the settings of the FD300 boards installed in the system and get some information about the features and the applications that are enabled on the FD300 boards by the current registration.

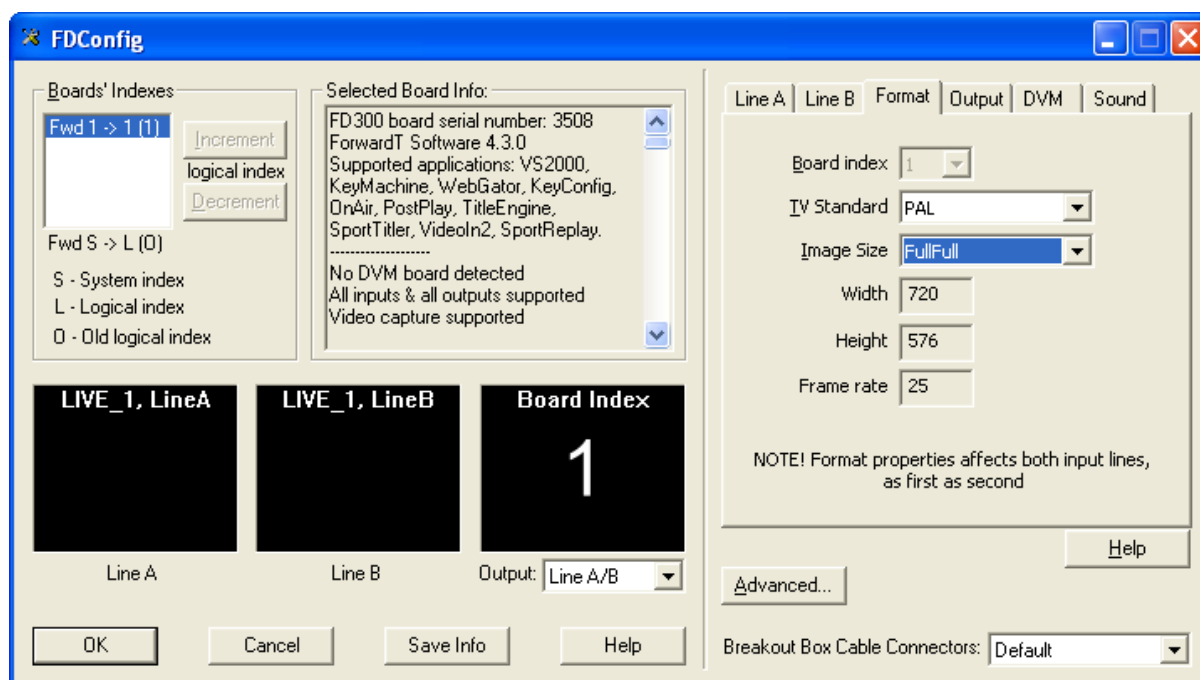


Figure 1. The FDConfiguration application main window

The Boards Indexes area allows you to change the logical indexes of the FD300 boards installed in the system. Select the required board in the list and click the Increment and the Decrement buttons to increase/decrease the logical index of the selected board. The System index (the first character) identifies the hardware index of the board. It is not changed until the board is moved to another PCI slot or one of the boards is unplugged. The Logical index identifies a new logical index of the board that is specified in the current application. The Old logical index means the previous logical index that was assigned to the board before the application was started.

The Selected board info area displays the following information about the selected board:

- Board serial number – the serial number of the board;
- ForwardT Software 4.3.0 – the software installer version;
- Supported applications – a list of the applications enabled on the board by the current registration: these can be VS2000 (the Focus virtual studio), KeyMachine, WebGator, KeyConfig etc;
- Supported modes – a list of the modes available on the board by the current registration:

- video inputs/outputs,
- color keying,
- video capture,
- video playback,
- DVM board;
- Version information – the board software versions information: Firmware version and board main program modules and services versions.

The three small video windows at the bottom of the dialog show the frames of video signal on the two input lines (Line A and Line B) and on the output line (Output) of the board. The images on these screens are updated every two seconds and allow you to check whether video signal is available in the board input/output lines.

Pressing the Save Info button opens the Save As system dialog, with the help of which you can save the current information about the board and the software versions from the Selected Board Info window to a text file.

The Advanced... button is intended for users working with the ForwardTK and ForwardTS software packages. Pressing the button opens the Advanced Settings dialog (Figure 2) with the board optional settings.

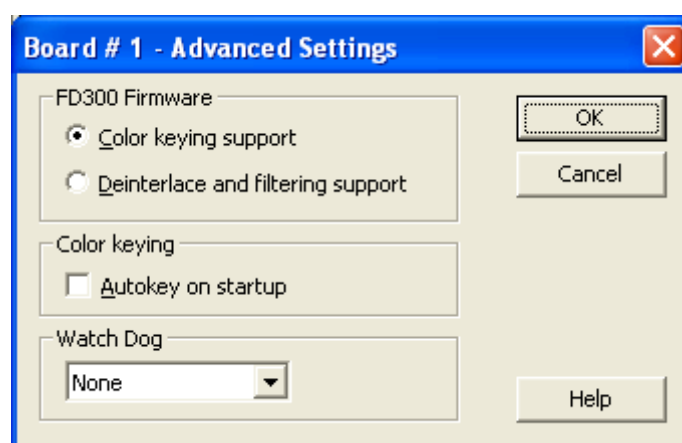


Figure 2. The Advanced Settings dialog

The Color keying support option allows you to support the keying mode. At the installation of the ForwardT Software this option is set by default.

✓ **Important:** The Color keying support option must be enabled for work with the ForwardTK software package!

The Deinterlace and filtering support option allows you to support the modes of the input signal de-interlacing and filtering. This option is recommended to users working with the ForwardTS software package for convenient broadcasting in the Internet.



The Autokey on startup option allows you to automatically create a keying table for the current image received on the board input line from a video camera at every computer start. Before the computer start, a video camera should be already connected to the board and pointing to a blue or green evenly alight background.

- ✓ **Important:** It is not recommended to set the Autokey on startup option without absolute necessity as the automatic keying adjusting process takes plenty of time.

In the Breakout Box Cable Connectors list you can select a configuration of the breakout box cable connector.

- ✓ **Important:** Most of the changes are applied only after restart of the system or board program service!

Note: The **Help** button at the central bottom part of the application main window opens the application help window. The **Help** button at the right bottom part of the application main window opens the respective help windows for the settings dialog pages of the SLTM modules (Line A/B, Format, Output, DVM, Sound).

## Settings dialogs

In the right part of the application main window are parameters settings dialog pages of the current board: Line A/ Line B (input lines), Format (video format), Output (video output line), DVM (DVM digital board), Sound (audio mixing and settings).

✓ **Important:** Some settings in the dialogs can be disabled by the current registration of the selected FD300 board or by a running application. In that case you cannot change these settings.

Note: At the setting adjusting of Line A/Line B, a certain output line (A or B) is displayed on the output line of the board. At the setting adjusting of the Format (video format), Output (video output), DVM (DVM digital board), Sound (audio mixing and settings) parameters, the image in the preview windows is changed alternately from line A to line B on the output line of the board.

### 1. Input line A/B settings

This page (Figure 3) allows you to adjust the input video line settings of the FD300 board. Here you can select a video source and adjust its imaging parameters: brightness, contrast etc.

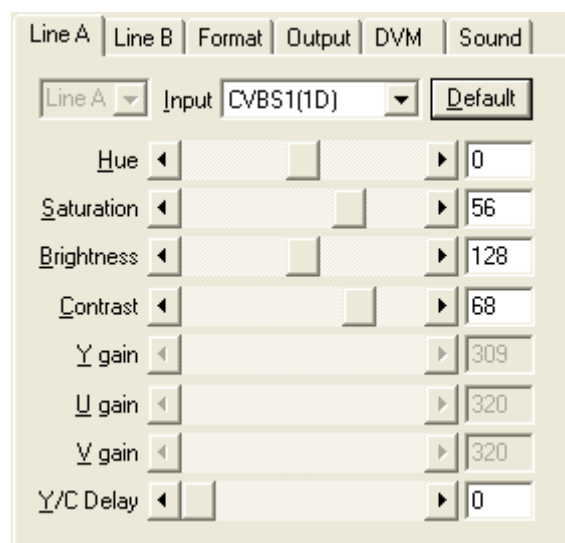


Figure 3. Input line settings

The Input drop-down list allows you to select a type of input signal (CVBS, Y/C, YUV, YUVS, RGB, RGBS, Digital) and a number of the input line. See the ForwardT Software Setup and FD300 Board Hardware Setup user's guides for more details.

The rest of the controls allow you to adjust the following input video parameters: Hue, Saturation, Brightness, Contrast, Y gain, U gain, V gain, Y/C delay.

Press the Default button to restore the video parameters to the

default values.

✓ **Important:** Some settings in the dialog can be disabled by the current registration of the selected FD300 board or by a running application. In that case you cannot change these settings.

## 2. Video format settings

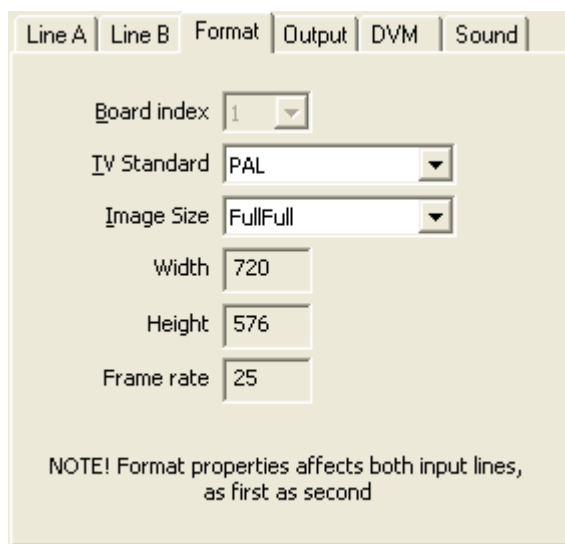


Figure 4. Video format settings

The Format page (Figure 4) allows you to specify the current FD300 board by selecting its index, input/output TV standard (PAL/NTSC), and image size on the output line:

- Board index – the index of the currently selected FD300 board.
- TV Standard – TV standard (PAL/NTSC).
- Image Size – the output image size (Half resolution or Full resolution).
- Width – the current width of the output image in pixels.
- Height – the current height of the output image in pixels.

Width and height depend on the selected TV standard and image size.

✓ **Important:** Some settings in the dialog can be disabled by the current registration of the selected FD300 board or by a running application. In that case you cannot change these settings.



### 3. Video output settings

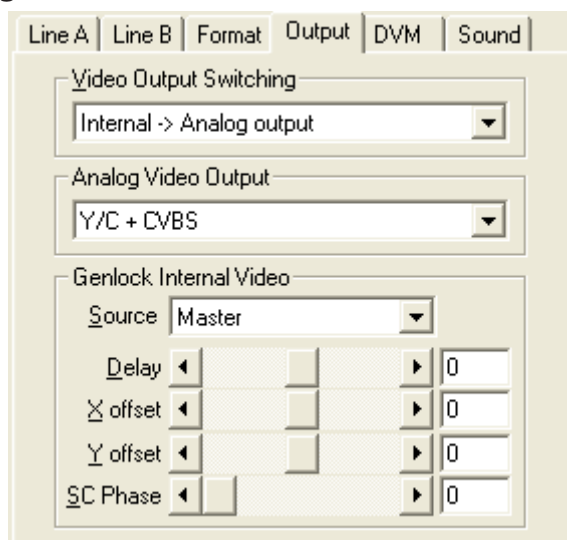


Figure 5. Video output line settings

The Output page (Figure 5) allows you to select a type of video output line, type of output signal and to specify the genlock parameters.

In the Video Output Switching drop-down list you can select the operation mode of the FD300 board output bus:

- Internal -> Analog output – analog output line only;
- Internal -> Analog output + Digital bus – analog output line + digital bus;
- Digital bus -> Analog output – receiving video data from the digital input line of the FD300 board and transferring them to analog output line.

**Important:** If no digital source of video signal is connected to the FD300 board, use the first mode only!

The Analog Video Output drop-down list allows you to select a type of analog video signal. For example, you should choose the YUV+CVBS or Y/C+CVBS type to display composite signal on the TV monitor. In the following table you can see possible types of video signal and the correspondences between the video signal components and the board video output lines.

Types of video signal	Video output lines			
	RED V/C	BLUE U/CVBS	GREEN Y	CVBS CSYNC
<b>Y/C+CVBS</b> The Y/C signal (Luma/Chroma) and two composite signals	Chroma	CVBS	Luma	CVBS



<b>YUV+CVBS</b> The YUV component signal and composite signal	V	U	sY	CVBS
<b>YUV+Sync</b> The YUV component signal with a synchro impulse in a separate channel	V	U	Y	Sync
<b>nsRGB+Sync</b> The RGB component signal with a synchro impulse in a separate channel	R	B	G	Sync
<b>YUV+sKey</b> Fill and mask are displayed. Fill signal in the YUV component signal format without synchronization in Y Mask signal is in the composite signal format	V Fill	U Fill	Y Fill	sKey Mask
<b>ns(Key onY)UV+sY</b> Fill and mask are displayed. Fill signal in the YUV component signal format with synchronization in Y Mask signal is in the composite signal format without synchro impulse	V Fill	U Fill	Key Mask	sY Fill
<b>nsRGB+Key</b> Fill and mask are displayed. Fill signal in the RGB component signal format without synchronization in G Mask signal is in the composite signal format	R Fill	B Fill	G Fill	sKey Mask
<b>ColorBarY/C+CVBS</b> Colored stripes chart is displayed. The Y/C signal (Luma / Chroma) and two composite signals	Chroma	CVBS	Luma	CVBS
<b>ColorBar YUV+CVBS</b> Colored stripes chart is displayed. The YUV component signal and composite signal	V	U	sY	CVBS
<b>ColorBar nsRGB+Sync</b> Colored stripes chart is displayed. The RGB component signal with a synchro impulse in a separate channel	R	B	G	Sync

Note:

- Luma, Chroma – the Y/C signal constituents (S-video);
- Y, U, V – the YUV component signal constituents;
- R, G, B – the RGB component signal constituents;
- Sync – synchro impulse signal;
- s – presence of synchro impulse in the corresponding component;
- ns – absence of synchro impulse in the corresponding component.

The Genlock Internal Video area allows you to select a genlock mode:

- The Source parameter allows you to select a synchro signal source:
  - Master – synchronization by the internal generator of the FD300 board (it does not guarantee synchronization with external video signal source);
  - Line 1 – synchronization by input line 1;
  - Line 2 – synchronization by input line 2.
- The Delay parameter sets signal delay value in milliseconds (default value is 0) and is used for compensation of video signal delay at its transmission through the cable.
- The X offset parameter sets horizontal image offset relative to synchro signal, default value is 0.
- The Y offset parameter sets vertical image offset relative to synchro signal, default value is 0.
- The SC Phase parameter sets phase delay of the synchro signal color flash, default value is 0. This parameter is used for composite signal synchronization.

✓ **Important:** Some settings in the dialog can be disabled by the current registration of the selected FD300 board or by a running application. In that case you cannot change these settings.

#### 4. DVM digital board settings

This dialog page (Figure 6) allows you to adjust the parameters of digital video conversion on the DVM board.

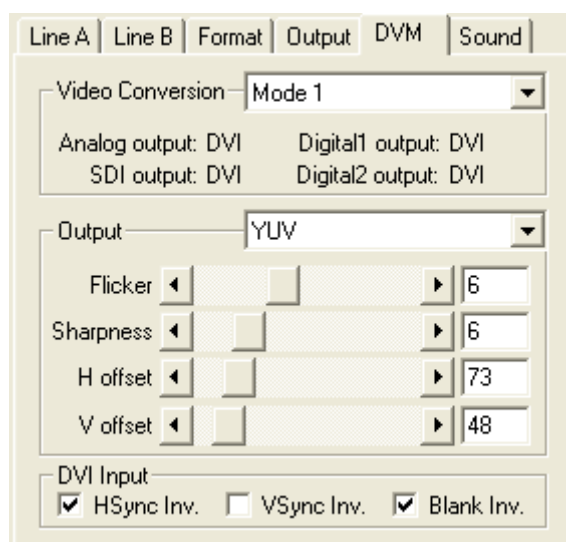


Figure 6. The DVM digital board settings

The Video conversion area allows you to select a mode of digital



video transmission in the drop-down list (Mode 1 to Mode 7 are possible). Depending on the selected mode, you can see what input signal (DVI, SDI, Digital1, Digital2 or ----- (none)) is transmitted to the corresponding output line (Analog, SDI, Digital1, Digital2).

The Output area allows you to adjust the parameters of the analog video output line:

- The Flicker parameter sets the level of eliminating the flicker by a vertical filter. When this parameter equals 0, the vertical filter is off.
- The Sharpness parameter sets image sharpness determined by use of the horizontal smoothing filter. Specify value 0 for the maximum smoothing of the image.
- The H offset parameter sets horizontal image offset in digital converter, the recommended value is 64.
- The V offset parameter sets vertical image offset in digital converter, the recommended value is 48.

✓ **Important:** Image offset influences all the digital video signals transmitted via the DVM board, not the analog output line only!

The DVI input area allows you to select a polarity of synchro detection:

- The HSync Inv. option is on to select negative-going horizontal syncro, is off to select positive-going syncro.
- The VSync Inv. option is on to select negative-going vertical syncro, is off to select positive-going syncro.
- The Blank Inv. option is on to select negative-going black syncro, is off to select positive-going syncro.



**Tip:** It is not recommended to change the default status of the following settings: HSync Inv. – on, VSync Inv. – off, Blank Inv. – on.

✓ **Important:** Some settings in the dialog can be disabled by the current registration of the selected FD300 board or by a running application. In that case you cannot change these settings.

## Audio mixer sound settings

In the Sound page (Figure 7) the FD300 board audio subsystem settings are specified. The controls of this dialog are available only if there is an audio subsystem on the selected board.

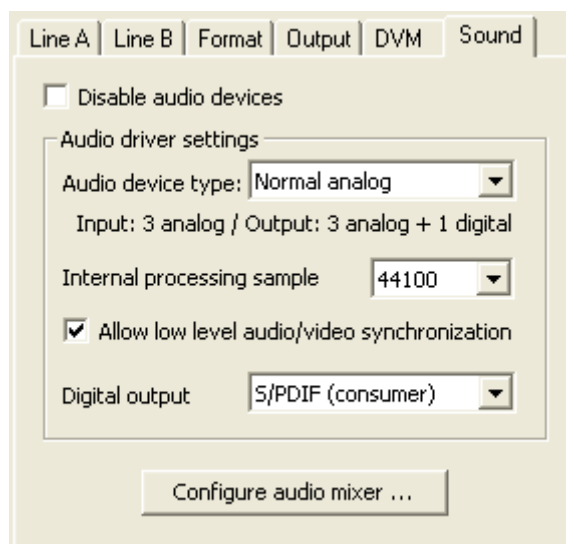


Figure 7. Sound mixer settings

You may enable/disable audio devices on the selected board with the help of the Disable audio devices option. If this option is on, the audio devices on the current board will be disabled at the restart of the system or board program service.

The Audio driver settings area allows you to adjust low-level settings of an audio subsystem. In the Audio device type drop-down list you can select a number and type of the input and output system audio devices working via the FD300 board:

- In the Normal mode (3 analog+1 digital output/3 analog input) a user can work with three input and three output audio devices; the first output device plays back audio both on the analog and digital output lines.
- In the Single mode (1 analog+1 digital output/1 analog input) a user can work with one input and one output audio device. As well as in the Normal mode, in the Single mode the first output device plays back audio both on the analog and digital output lines.
- In the Single Digital In mode (1 analog output/1 digital input) a user can work with one input and one output audio device. The output device uses only the first analog output line, and the input device – the digital input line.

The Internal processing sample rate parameter allows you to select input/output audio sampling rate from the drop-down list. The default value is 44100 Hz. If most of the audio files played on



the board have another sampling rate, change the rate to the corresponding value. Remember that all the played sounds are resampled to the selected rate during playback, which can lead to sound quality deterioration.

The Allow low level audio/video synchronization option allows you to enable/disable low level synchronization of audio with video signal. This option is on by default.



**Tip:** Strongly recommended to keep the Allow low level audio/video synchronization option on.

In the Digital output type drop-down list you can select a type of signal on the digital output line (if available): S/PDIF (consumer) or AES/EBU (professional).

The settings described above can be adjusted in the FD300Audio settings Properties dialog as well (Figure 8). To open this dialog, press Start>Settings>Control Panel>FD300Audio settings.

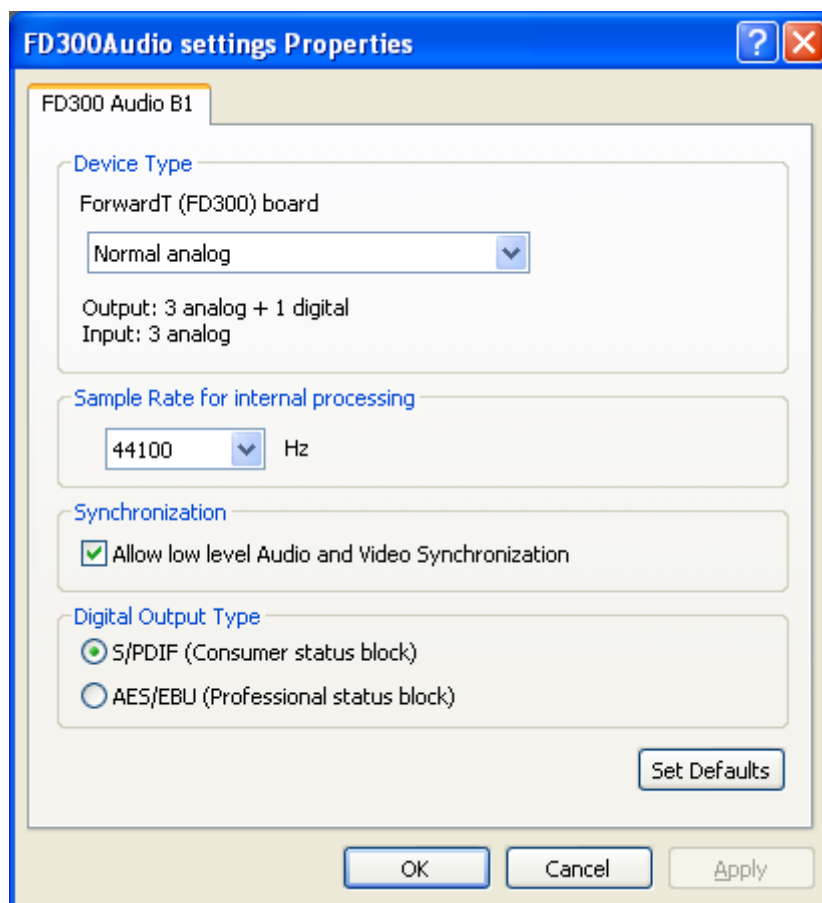


Figure 8. Audio settings properties

The changes of audio settings in both of these dialogs are equivalent. Changes in one of the dialogs are displayed in the parameters of the other. Remember to save the adjusted settings by clicking the OK button.



The Set Defaults button sets the default values of the parameters.

Pressing the Configure audio mixer button in the FDConfig>Sound dialog (Figure 7) opens the FDSoundControl application dialog (Figure 9) with the audio mixer settings.

The dialog (Figure 9) allows you to connect the audio input and output lines of the FD300 board and also to adjust volume and balance. Moreover, for the input lines it is possible to specify the delay value (in milliseconds) of sound transmitted from a certain input line to any output line of the FD300 board.

The board provides six mono input and six mono output lines (output lines are grouped in three stereo pairs). For each input line you can independently specify a delay value, input volume and output balance; also you can direct the sound from an input to any stereo output line. For every output stereo pair you can specify volume and balance.

The FDSoundControl application allows you to redirect logical audio streams (from the PC system devices) to different output lines.

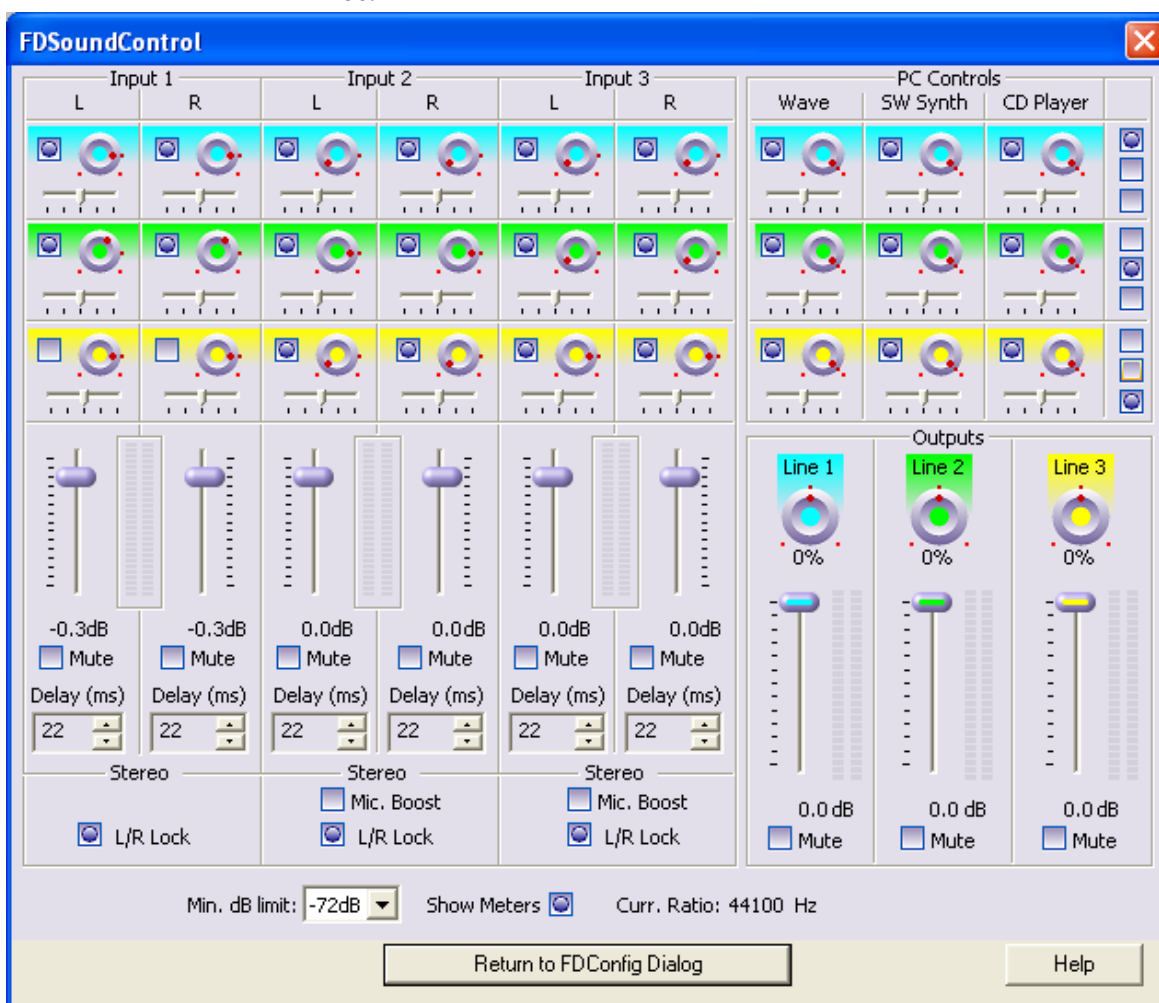




Figure 9. Sound mixing dialog

In the left part of the dialog you can see the input lines controls (Figure 10). Each of the six mono inputs has the following controls (bottom-up):

- Delay (in milliseconds).
- Mute check box is checked to disable an input line.
- The vertical sliding volume controller is moved upwards/downwards to change volume.
- Three round controllers of the output volume with check boxes. The volume is set with the circular motion of the mouse with the left button pressed. The farther from the controller center the mouse pointer, the finer the adjustment. The mouse pointer changes from  to  when working with the round controller.
- The horizontal sliding controller sets the sound stereo balance.

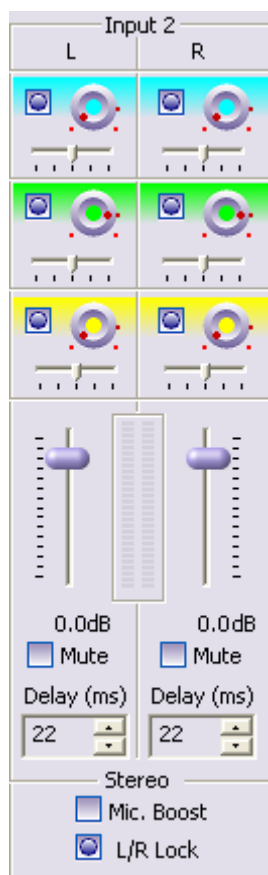


Figure. 10. Audio input lines controls

For example, if the topmost check box is checked, the sound from the selected input line is directed to stereo output line 1 with output volume specified by the round controller on the right of the check box. The middle (the second from above) check box and output volume controller direct the sound to





stereo output line 2, and so on.

Input check boxes:

- The L/R lock check boxes allow you to control the input lines as three stereo pairs. For example, checking the L/R lock for input lines 1/2 unites their volume, balance, and delay controls, and the parameters will be changed simultaneously.
- Input lines 3/4 and 5/6 have the Mic. Boost check boxes enabling subsidiary amplification (+20 dB). It can be useful when attaching a microphone.

In the right bottom part of the dialog are output lines controls (Figure 11). Each of the three stereo output lines has the following controls (bottom-up):

- The Mute check box is checked to disable a stereo output.
- The vertical sliding volume controller is moved upwards/downwards to change volume.
- Round balance controller. The balance value is set with the circular motion of the mouse with the left button pressed. The farther from the controller center the mouse pointer, the finer the adjustment. The mouse pointer changes from  to  when working with the round controller.

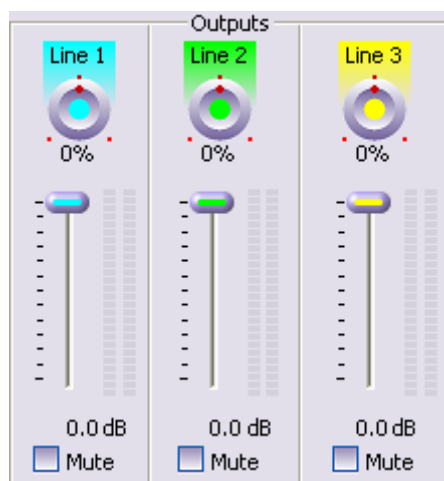


Figure 11. Sound output lines controls

In the right top part of the dialog are controls of the PC system audio devices. The audio subsystem of the FD300 board has a standard audio mixer, which can be controlled by the system volume controller. The mixer allows you to control volume of the following system audio devices of the FD300 board:

- a standard Wave device;
- a MIDI software synthesizer (SW Synth);
- digital playback of audio CD (CD Player is available if allowed in the system).



Figure 12. PC system audio devices controls

On the right of each channel are three check boxes for redirecting audio streams from the PC to any of the audio output lines. The check boxes are numbered top-down: the topmost check box corresponds to the first audio output line, the middle – to the second one, and the bottom – to the third output line. The default position of the check boxes is shown on Fig. 12.

The settings group at the bottom of the dialog contains the following controls:

- **Min.dB limit.** The drop-down list allows you to set the range of changing the volume with the sliders on all the input and output lines. 0 dB corresponds to the maximum volume level (the topmost position of the slider).
- **Show meters.** The option turns on the volume indicators that are located on the right of volume slider on each input/output line.
- **Curr.Ratio.** Shows the current audio sampling rate (Hz). The input audio signals are sampled with the same sampling rate as the output lines.



## Useful Links

<http://www.softlab-nsk.com/forward/docs.html>