SLIngest

Products For Synchronous
Multichannel Capturing
Video Files

Quick Start

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FCC ID:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

Reorient or relocate the receiving antenna.
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.
Consult the dealer or an experienced radio/TV technician for help.

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This warranty is in lieu of any other warranty expressed or implied. In no event shall we be held liable for incidental or consequential damages, such as lost revenue or lost business opportunities arising from the purchase of this product.

Table of Contents

Introduction

The SLIngest software is designed for synchronous multichannel capturing audio and video data to files. The data is received from several sources via one/several FDExt boards: FD422, FD842.

This quick start provides with instruction on dealing with the SLIngest program from the software set.

General Information

1. Purpose. Scope of Application

The SLIngest products are designed for a synchronous multichannel capturing audio and video data to files.

Scope of products application is multicamera record of show, concerts, TV series and other events alike with a necessity of editing (montage) video content filmed from different angleshots.

Recorded material is synchronized with a frame accuracy. It simplifies further editing in any software.

For example, the «SLIngest 4 channels (FD842)» hardware/software complex allows recording synchronous video content received from 4 HD cameras (see the picture below).
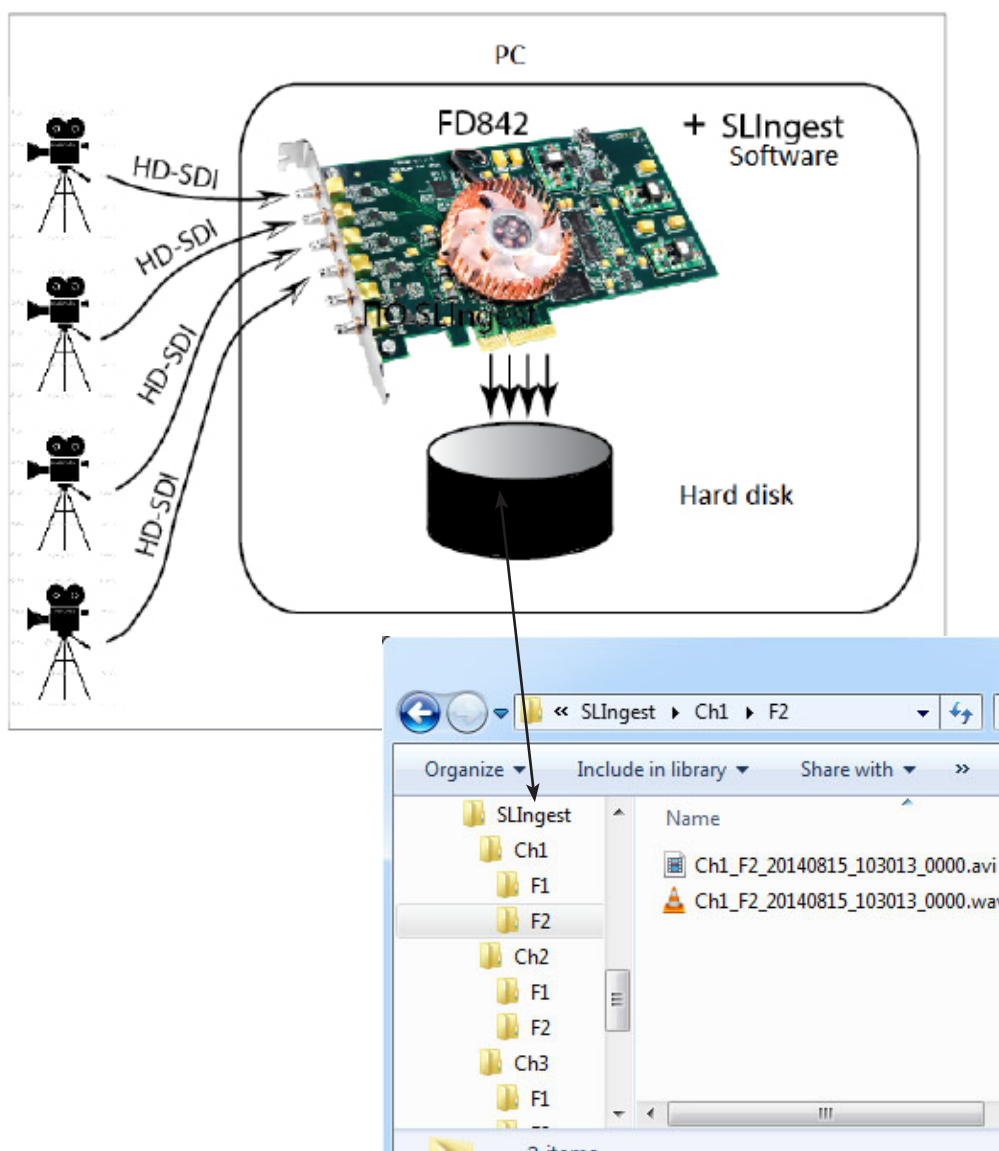
2. Specifications

The SLIngest software allows synchronous (with a frame accuracy) capturing audio and video data received from different (nonsynchronized) sources to files. Possible files containers here are:

- AVI;
- MPEG2 TS (MPEG2 I-Frames compression only).

AVI container allows selecting any codec installed in the system and adjusting compression parameters. Audio and video data can be recorded together or separately from each other (the WAV format is supported for audio files).

The software includes the SLIngest program. The program is designed as an interface for adjusting capture lines, operating capturing to files and controlling record procedure.

Capturing results generating one or several sets of files, i.e. files sets (for more information see the «3. Files Sets» item).

The SLIngest program provides with a possibility to select way of distributing resulting files to folders and way of generating file names.

Also there is a possibility of simultaneous launching several SLIngest program instances with different configurations of files distributing. For example, you can capture video and audio data from one camera to general file via one instance and capture video and audio data separately via another instance.

3. Files Sets

One set of files contains audio and video content received from different sources during the same time period (one file from each source at least). Files of one set have the same audio and video parameters.

Depending on settings each channel for capturing of files in set may correspond to:

- one file if audio and video data from one source are captured together;
- two files and more if audio and video data are captured separately (to different files);
- sequence of files (or separate sequences of audio and video) if content is split into parts according to duration.

Several sets of files with different parameters of audio and video data can be captured at the same time. For example, set of original files (with full frame size and high quality) and set of proxy files (with frames of smaller size) ready for quick editing.

Example: If capturing audio and video data from four sources into one set is adjusted without modifying default settings (August 21, 2014 at 15:30.42 is in example) then four files are generated:

- Ch1_F1_20140821_153042.avi;
- Ch2_F1_20140821_153042.avi;
- Ch3_F1_20140821_153042.avi;
- Ch4_F1_20140821_153042.avi.

One file contains record from one source;
names of files include names of corresponding channels
(Ch1, Ch2, Ch3, Ch4), name of set (F1), date (20140821) and time
(153042) of capturing start.

Adjusting Board Working Parameters

Complete the following steps to customize FD842 board parameters for receiving and processing four HD-SDI signals for SLIngest:

1. Launch the FDConfig2 program via the Start menu:
    All Programs > SLIngest > SLIngest
    or double-click program shortcut located on the desktop:
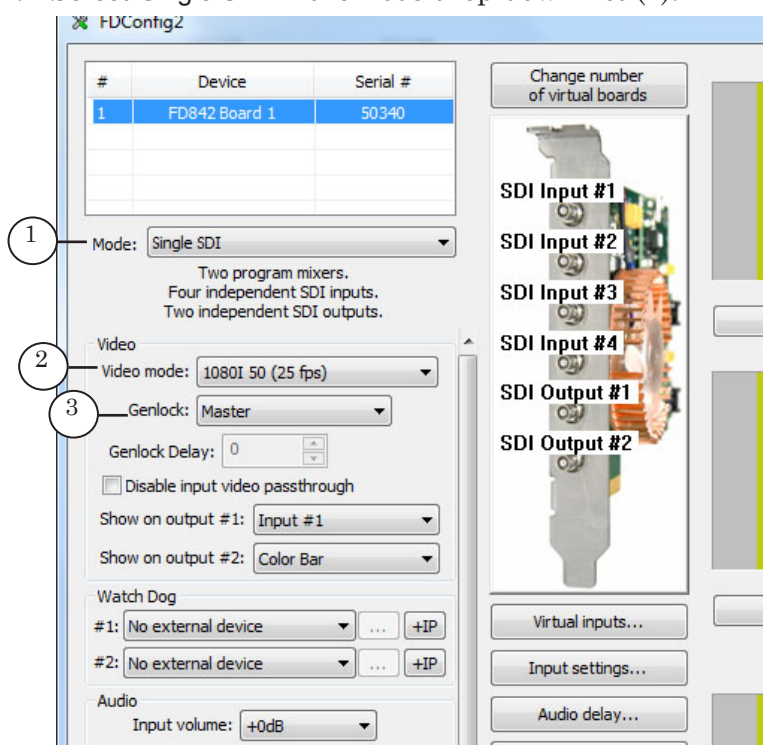

The main program window appears.
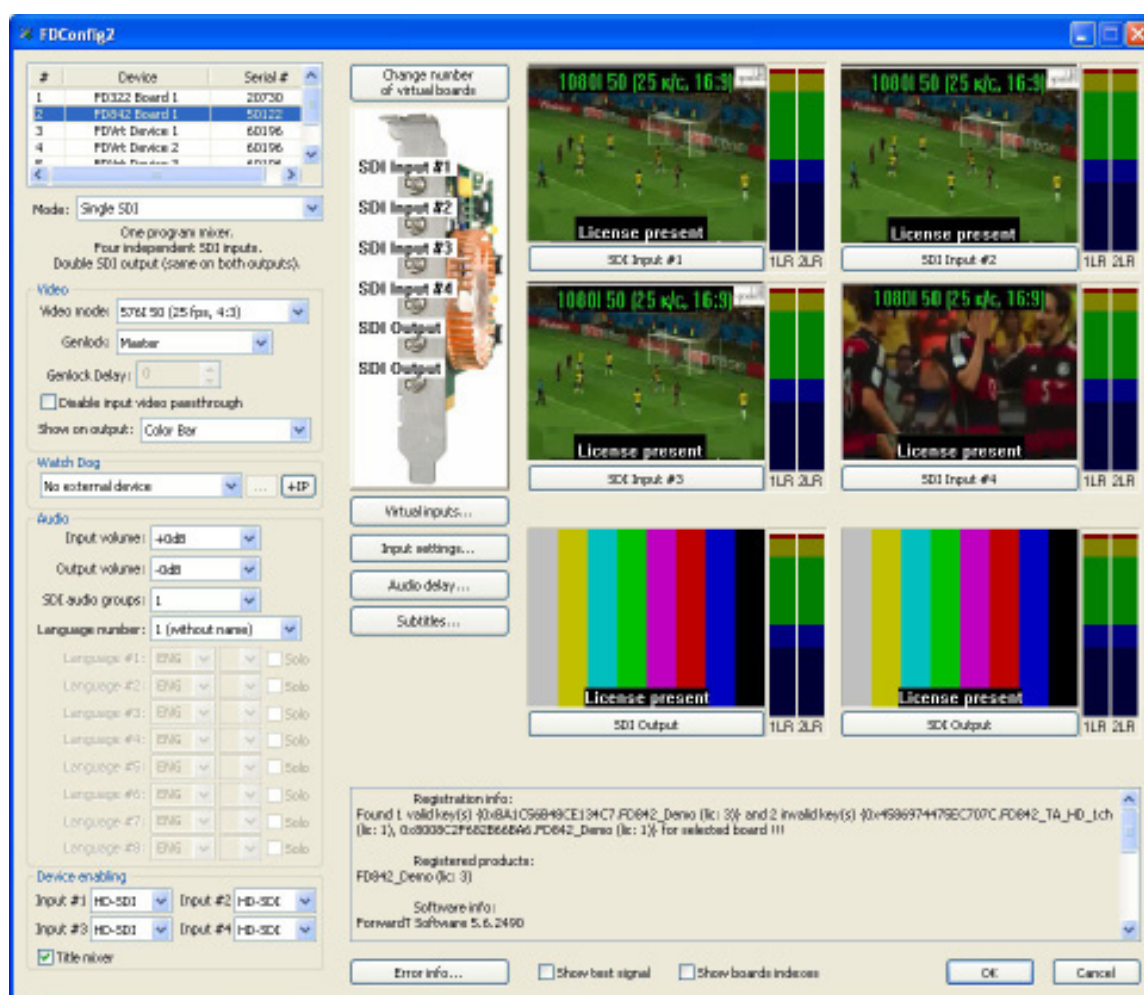
Note: Detailed instruction on working with the FDConfig2 program you can find in the «FDConfig2. Program for Control and Customizing FDExt Board Working Parameters» user's guide.
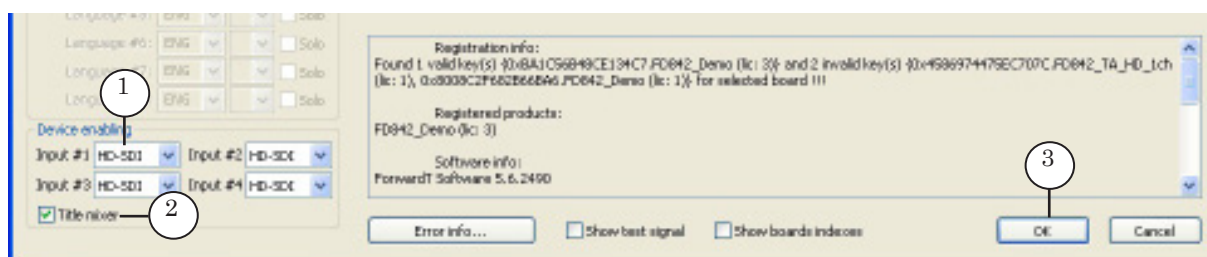
2. Select Single SDI in the Mode drop-down list (1).

3. Select video mode in the Video mode drop-down list (2), for example, 25 frames per second for HD signal – 1080I 50 (25 fps).

4. Select Master in the Genlock drop-down list (3).

5. In the Device enabling group of elements:
   1. Select HD–SDI (1) for each input.
   2. Put the (2) mark.

6. Remain other values default.

7. Click OK (3) to apply the settings and agree restarting board service.

Note: If you work with two (and more) FDExt boards to genlock signals from different boards then assign one board as the basic one and adjust inputs of other boards as virtual inputs of the basic one. For more information about customizing virtual inputs apply to the SoftLab-NSK Support department.
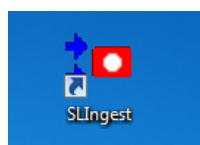
The SLIngest Program

1. Launch. Main Program Window

1. SLIngest program file is:
   ~\SLIngest\SLIngest.exe, where ~ is a full path to folder where the SLIngest software is installed (C:\Program Files at standard installation).

   Use the Start command menu: All Programs > SLIngest > SLIngest or double-click program shortcut located on the desktop.

2. The main program window appears. At first launch program language (Russian/English) is selected automatically according to active configuration of the system.
   Size of panels (7–9) in the main program window can be adjusted by pointing cursor to panel border, releasing left mouse button and dragging it to desired position.
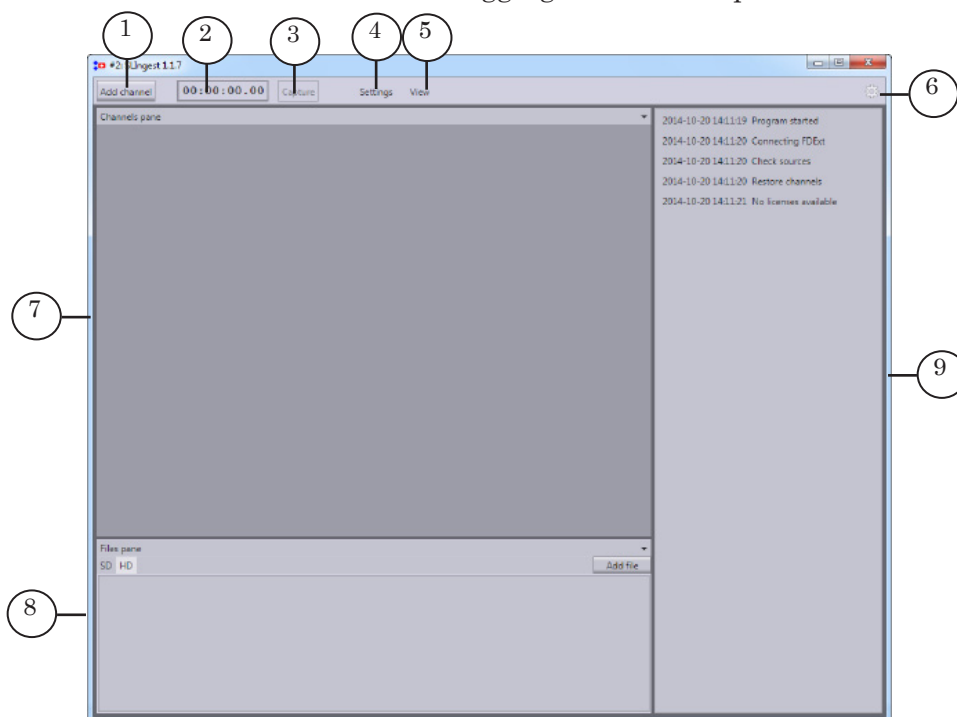
Main window. Control Elements:
1 – adding channel by specifying source of signal and folder for storing files;
2 – capture counter; 3 – start/stop capturing; 4 – open window for customizing parameters;
5 – control over window panels (activation); 6 – open windows for adjusting and getting information; 7 – operating and control over capture lines
(the Channels panel); 8 – operating and control over files (the Files panel); 9 – program log
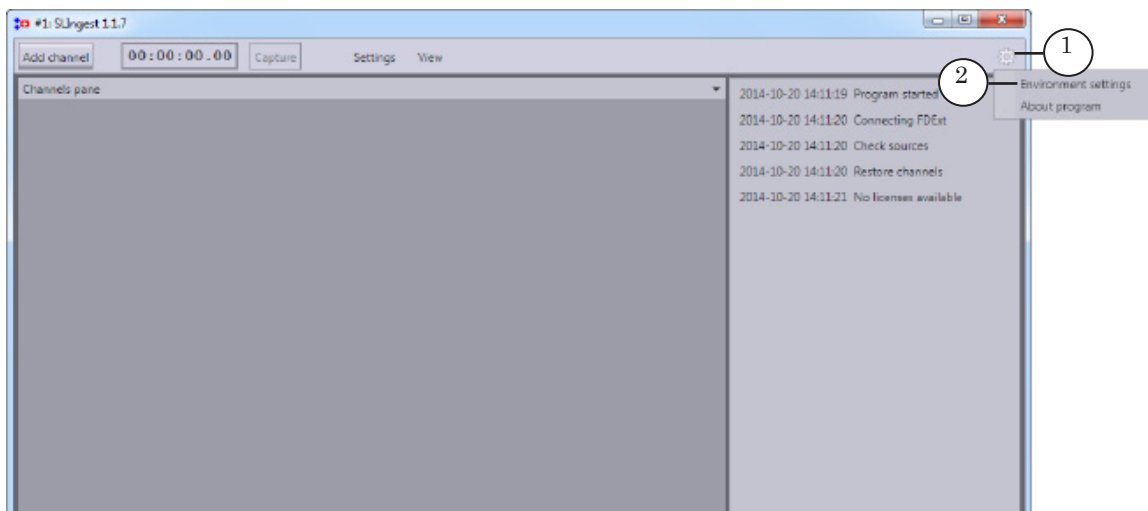(the Log panel).

3. Wait till Ready on the Logr panel (9) appears. All is checked, you may work.
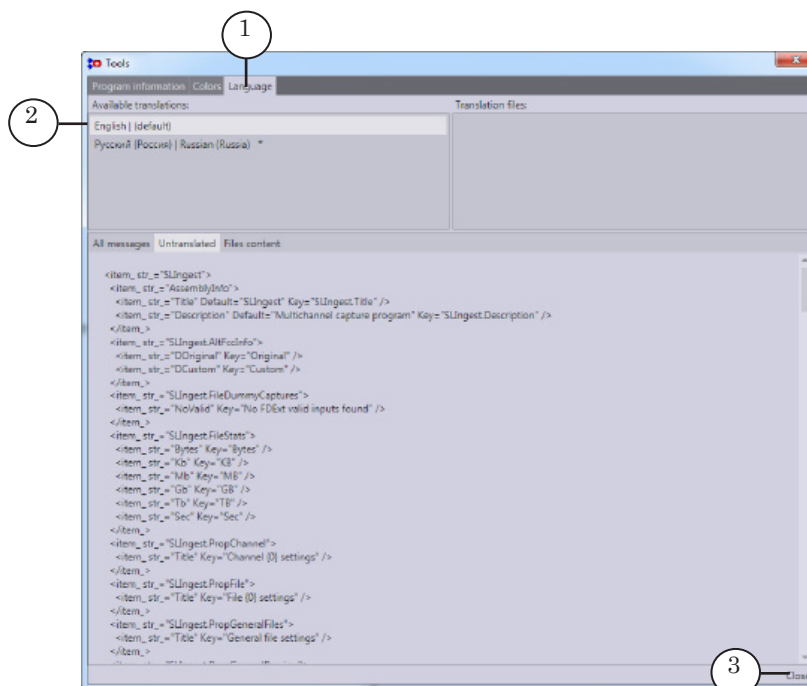
2. Language

Complete the following steps if you want to change language (Russian/English):

1. Click the (1) button. Select the Environment settings (2) in the appeared menu.

2. Pass to the Language tab (1) in the Tools window. Select line with desired language (2) in the Available translations list. Language is changed.

3. Click Close (3) to close the window.

3. Working With Several Program Instances

There is a possibility of launching several SLIngest program instances. It can be useful if needed to capture audio and video data received from different sources at different time (for example, for different companies that use various equipment (cameras)). In this case the first program instance is customized for working with one group of sources, the second instance – for working with other sources. Depending on goal you can just use corresponding program instance without adjusting settings each time.

The second program instance is needed when different TV shows are produced at one studio.
In this case different program instances have different parameters of capturing video content to files (though used cameras can be the same). Different folders for files storing are specified too.

Complete the following steps to customize the second program instance:

1. Create the second program shortcut at the desktop for launching the SLIngest program. Rename it, for example, SLIngest_2.
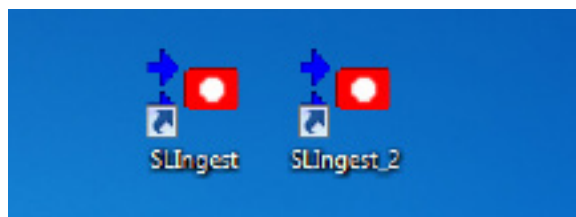

2. Select Properties in context menu by right-clicking the icon.

3. Add space and #N symbols (N is index of program instance, #2 is in our case) to existing text in the appeared window in the Target field.

4. Click Apply (1). Close the window by clicking OK (2).
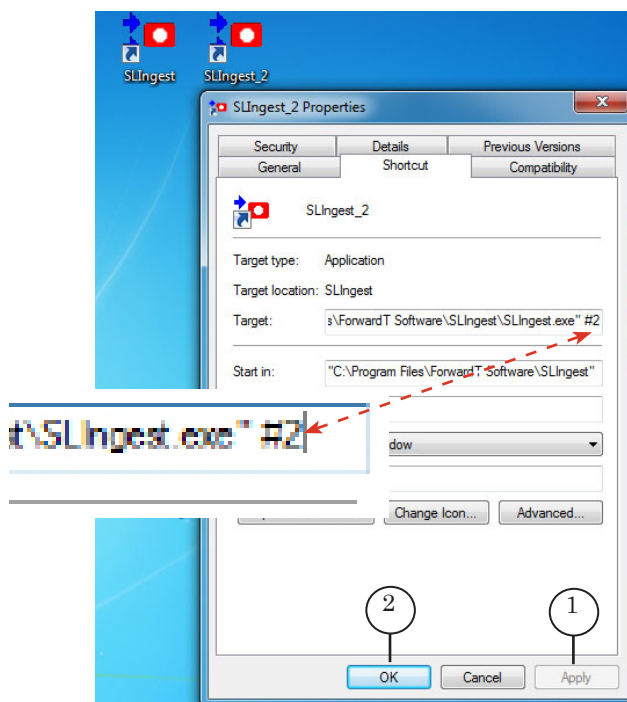
5. Double-click created shortcut. Launch the second program instance (1). Customize it according to assigned task (see the subsequent section about customizing program).
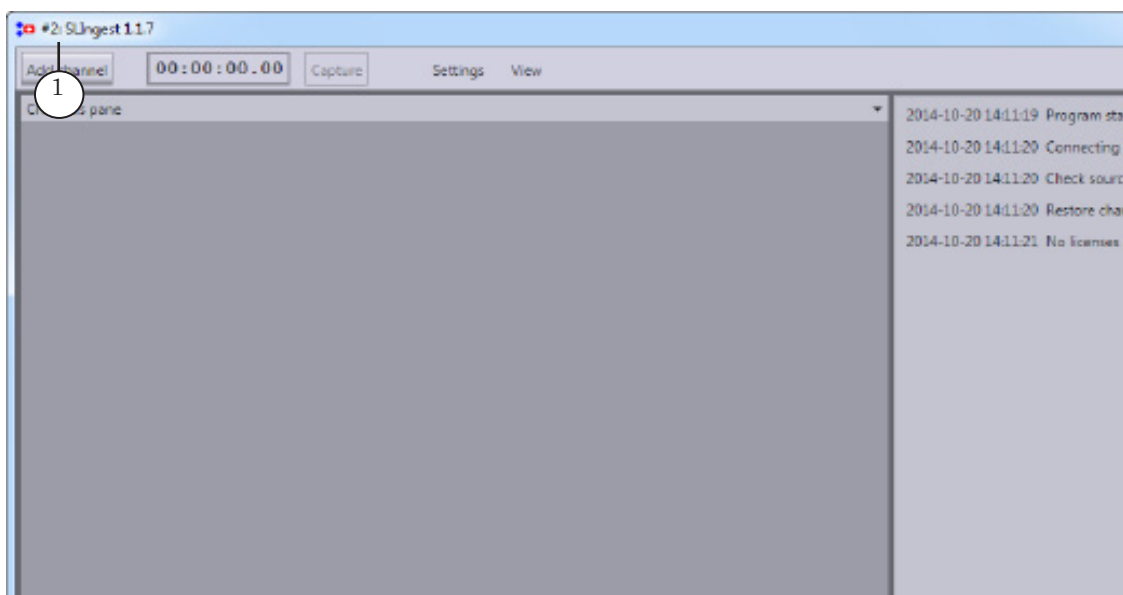
Customizing Capture

1. Capture Line

1.1. Adding Channles

✔ **Important:** All operations on adding and customizing channels are executed when capturing to files is stopped. Customizing is impossible at capturing.

Customize each channel for each used source of audio and video data. Complete the following steps in the SLIngest program window to add channel:

1. Click Add channel (1).
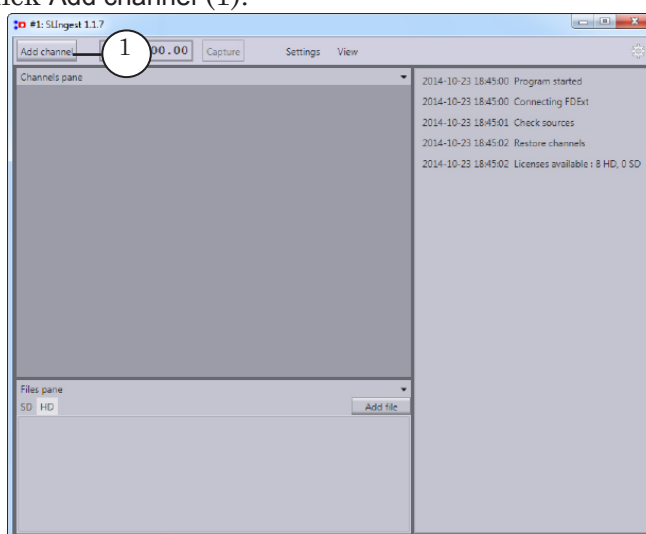
One more channel with the ChN name is added, N is index of order (name can be changed). Added channel on the Channels panel appears.
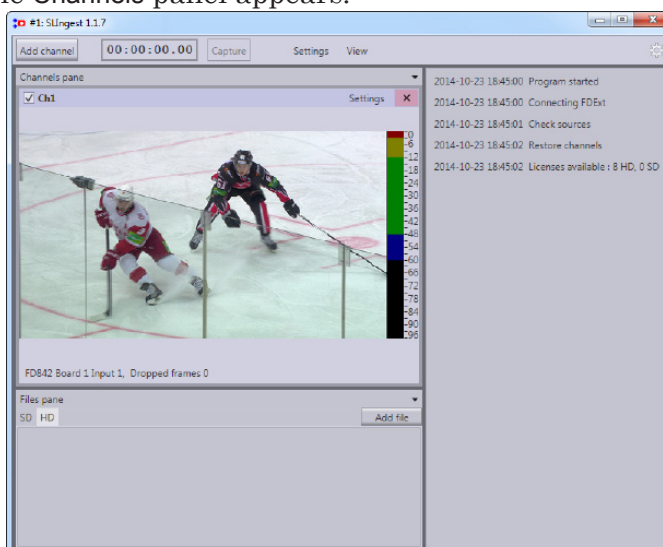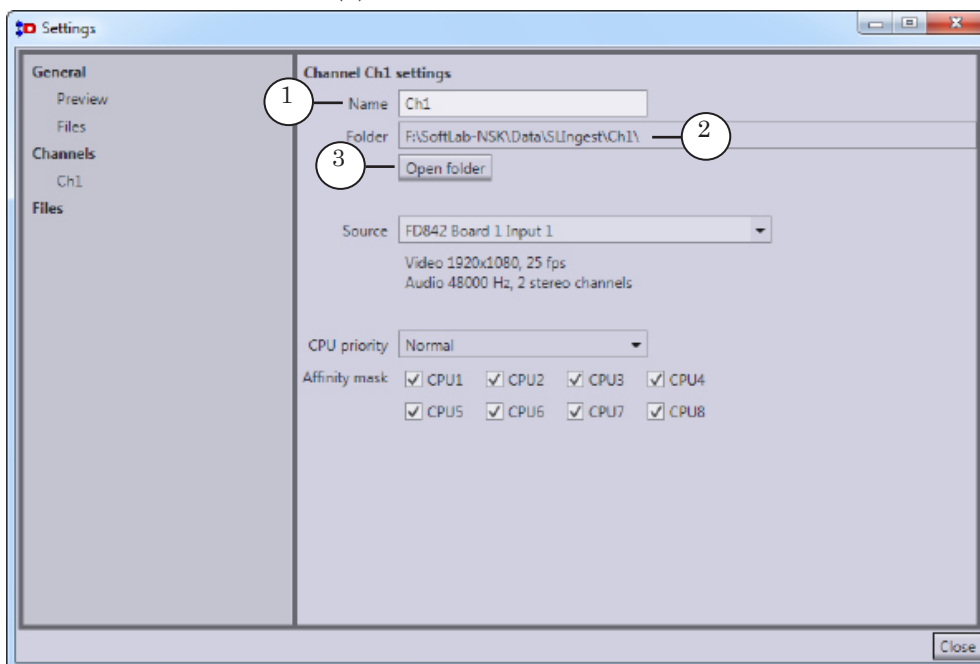
Note: Channels windows are scaled automatically so that all of them are placed on the Channels panel with maximally occupied space.

The Settings window of added channel is automatically opened.

2. Specify name of channel in the appeared window in the Name field (1).

Note: User may customize so that name of channel is added to names of resulting files automatically. For more information on this issue see the «3. General Parameters of Files» section.

3. The (2) field displays a full path to folder where all recorded files with audio and video data of the channel are stored. Click Open folder (3) if you want to explore content of folder.

Note: Selection of folder and adjusting subfolders for channels are implemented at customizing general parameters (for more information see the «3. General Files Parameters» section).

4. Select board input in the Source drop-down list. Necessary camera must be plugged to this input (for more information on connectors idications see the picture below).
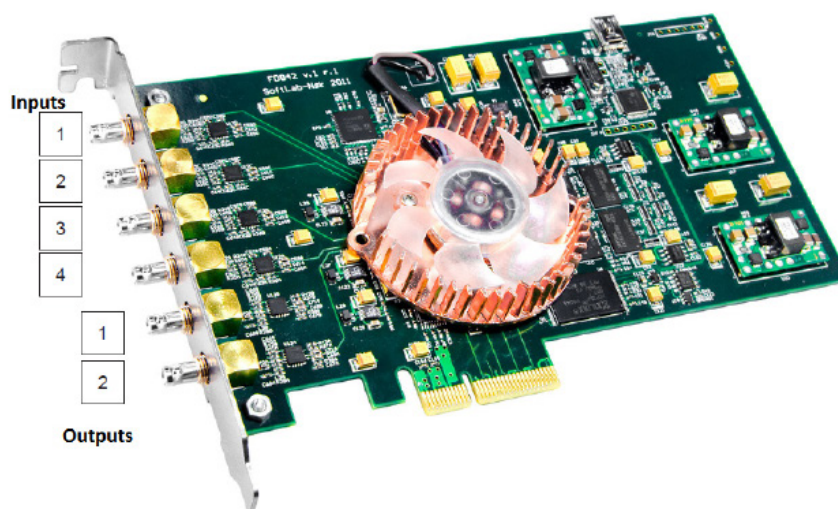
The (1) area displays active board signal parameters (the FDConfig2 program is used for customizing parameters).
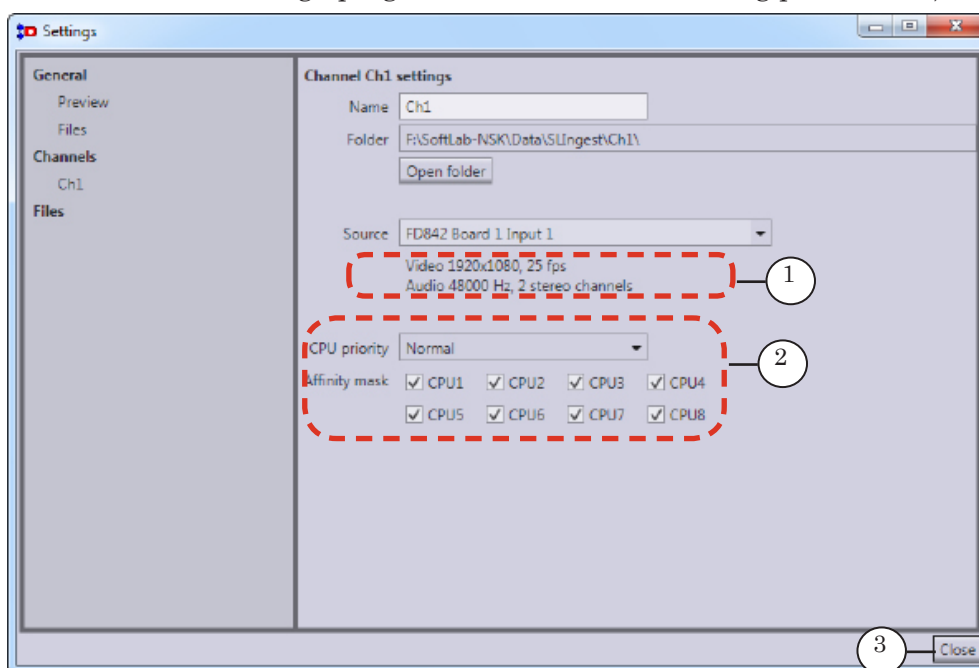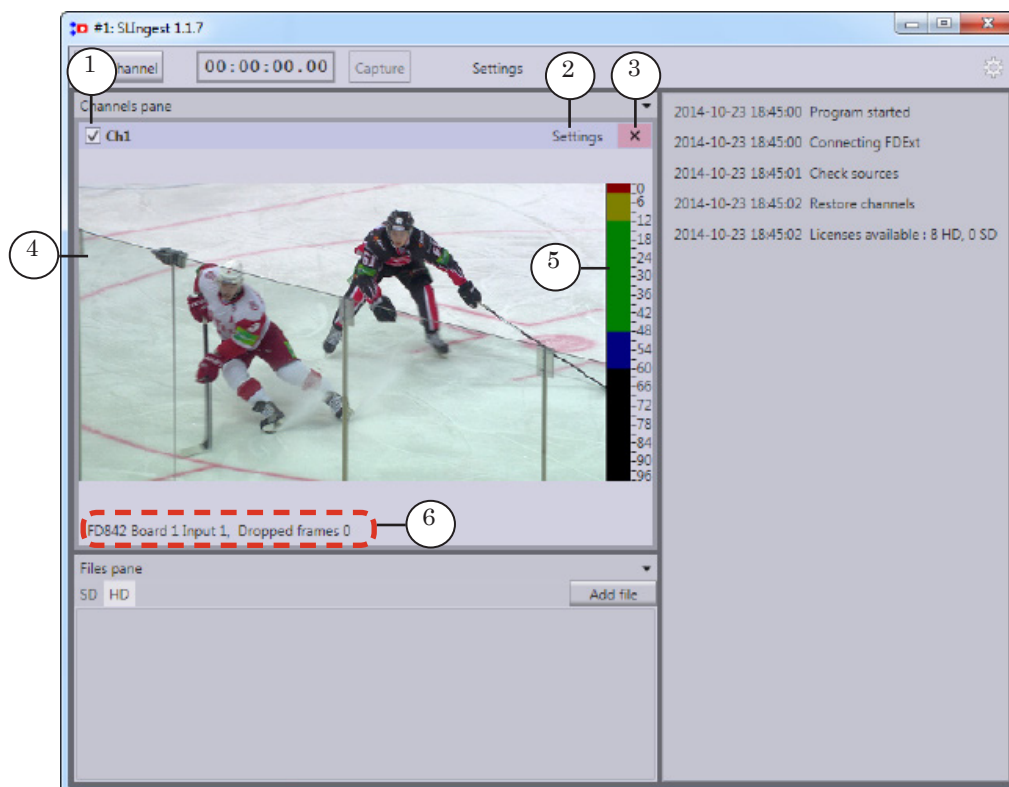

6. Adjust CPU priority if necessary (Normal is specified by default). Put marks for CPUs enabled for execution of the program (all are selected by default) (2).

✔ **Important:** Do not change CPU priority if there is no necessity.

7. Close the window by clicking Close (3).

8. Channel window has elements for controlling use of channel and monitoring capture.
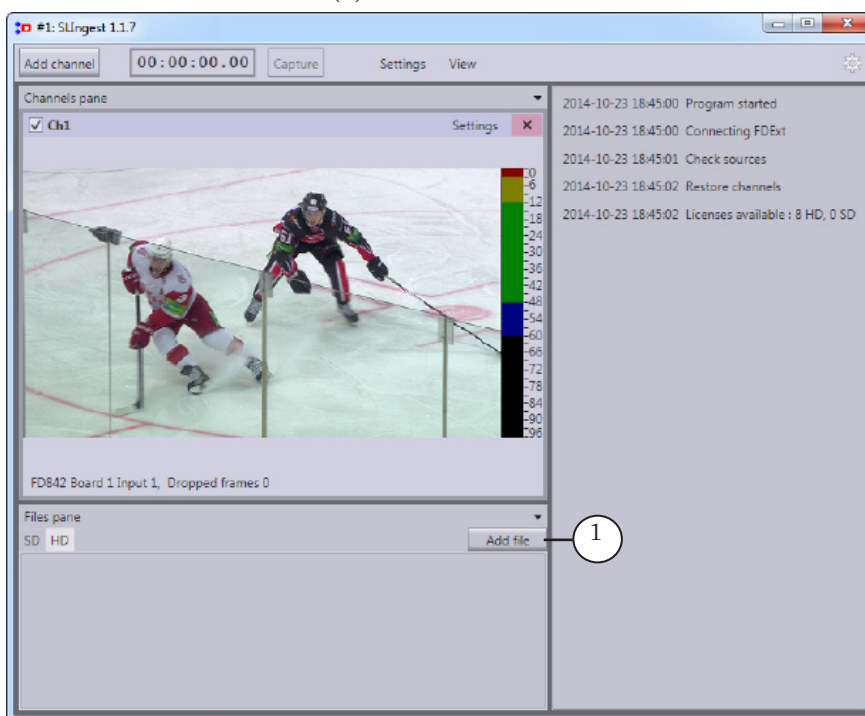
Channel window. Control elements:
1 – enable/disable channel; 2 – open the Settings window of selected channel; 3 – remove channel;
4 – viewing video received from source; 5 – audio meter; 6 – information about capture procedure.

1.2. Adding File Series

Complete the following steps to customize files of one set:

1. Click Add file (1).

Note: As the result of synchronous capturing audio and video data via different channels a set of several files is generated, i.e. sets of files. Quantity of files in set corresponds to quantity of channels. Files of one set have the same audio and video parameters.

Also you may capture files with different parameters to several sets simultaneously. For example, sets of original files (with full frame size and high quality) and sets of proxy files (with frames of smaller size) ready for a quick editing.

The Settings window on the File F1 settings page appears, 1 is a serial index of file set.

2. Specify new name of file set in the Name field (1) if necessary.

   You can add other parameters of video or «Large»/«Small»/«proxy» value to name. It helps searching necessary files quicker.
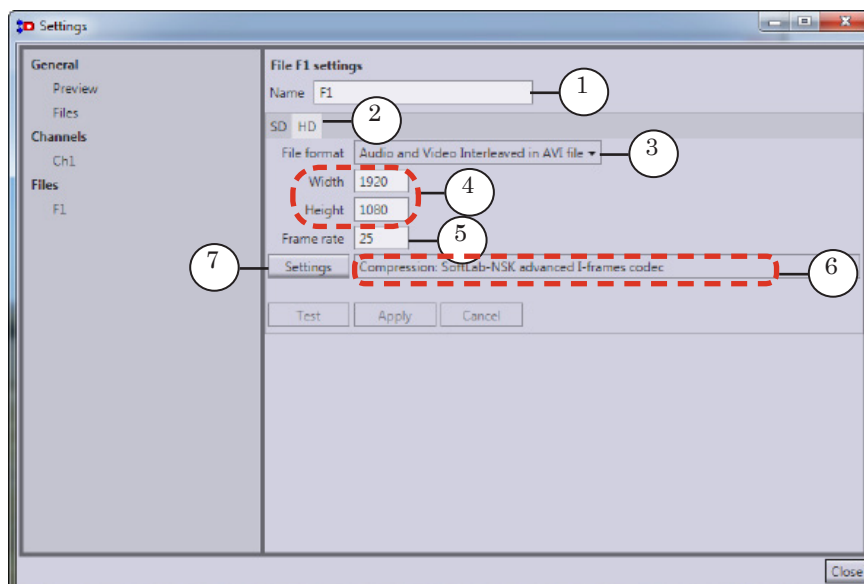
Note: User can adjust parameters so that name of file set is added to name of resulting files automatically. For more information see the «3. General Parameters of Files» section.

3. Select necessary tab (2) depending on used resolution – SD/HD.

4. Select necessary format in the File format drop-down list (3):

5. Specify values of frame parameters: Width and Height (4). Note that original frame ratio must be kept in any way (it corresponds to board mode specified in FDConfig2).

6. Adjust frame rate of captured files from set if necessary (5). Possible values are: from 1 up to frame rate of activated board mode. Value that corresponds to board mode is specified by default.

7. Name of current codec is displayed in the (6) line. Click the Settings button (7) to select another codec or change compression parameters. The Video Compression Settings window appears.

8. Adjust settings in the appeared window. Then click OK (1) to close the window.
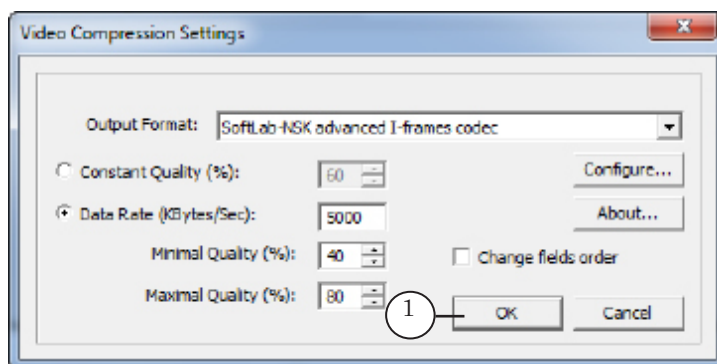
9. If some changes are made at steps 5–8 then the Test (1) and the Cancel buttons (2) become enabled. Click Test to check made adjustings automatically:

1. If adjusted settings are incorrect then message in the (3) area appears. Click Cancel or change settings. Then check made adjustings again.

2. If adjusted settings are correct then the Apply button (4) becomes enabled. Click it to apply new settings.
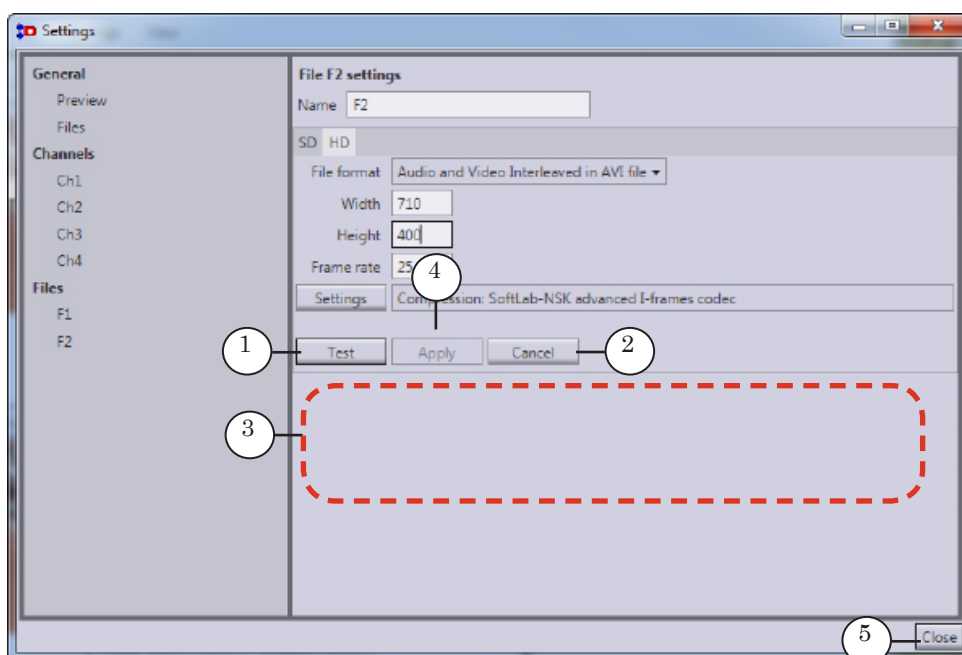
10. Click Close (5) to close the window.
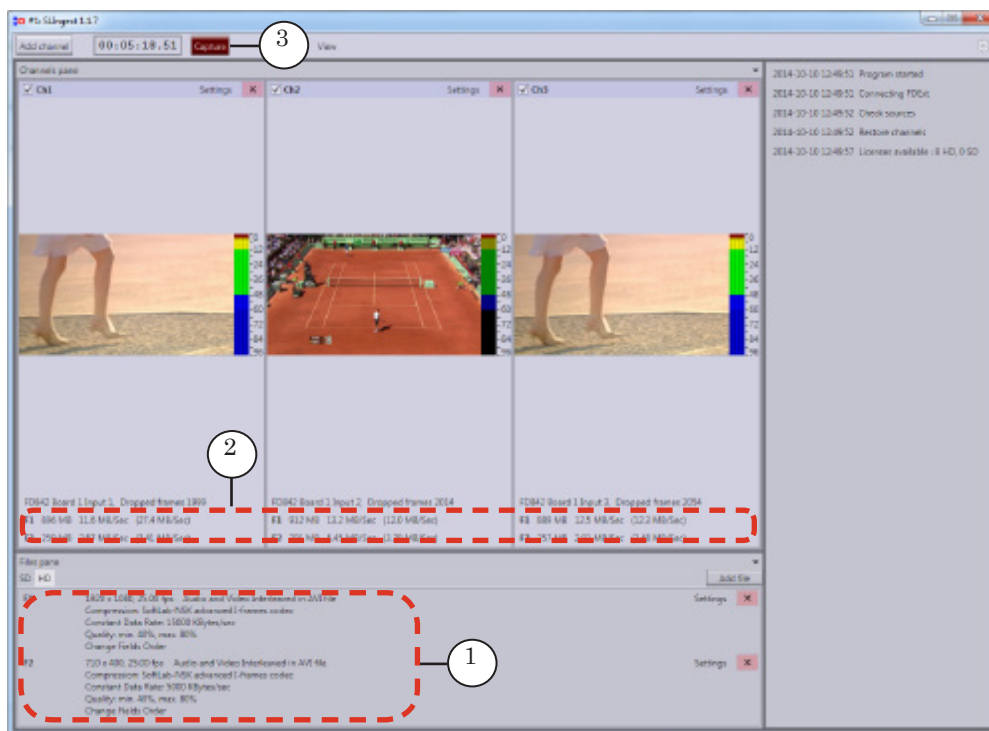
11. In the main program window:

- record with a detailed information on parameters of added file sets (1) on the Files panel appears;

- lines with information on capturing adjusted files sets (2) on the Channels panel appear;

- if at least one capture line is adjusted (sources and resulting files are specified) then the Capture button (3) is enabled. It becomes dark red.

Example: Picture below displays screenshot of program window with 3 customized capture channels. The channels are customized for capturing data from different FD842 board inputs and 2 sets of resulting files. Series of files are used to capture content with the following parameters:

- F1 – set of original files with full frame size (1920x1080);
- F2 – set of proxy files with reduced frame size (710x400).

Frame rates in F1 and F2 sets are the same. It allows to execute capturing original and proxy files synchronously with a frame accuracy. Proxy files are generated for searching and arranging material quickly.
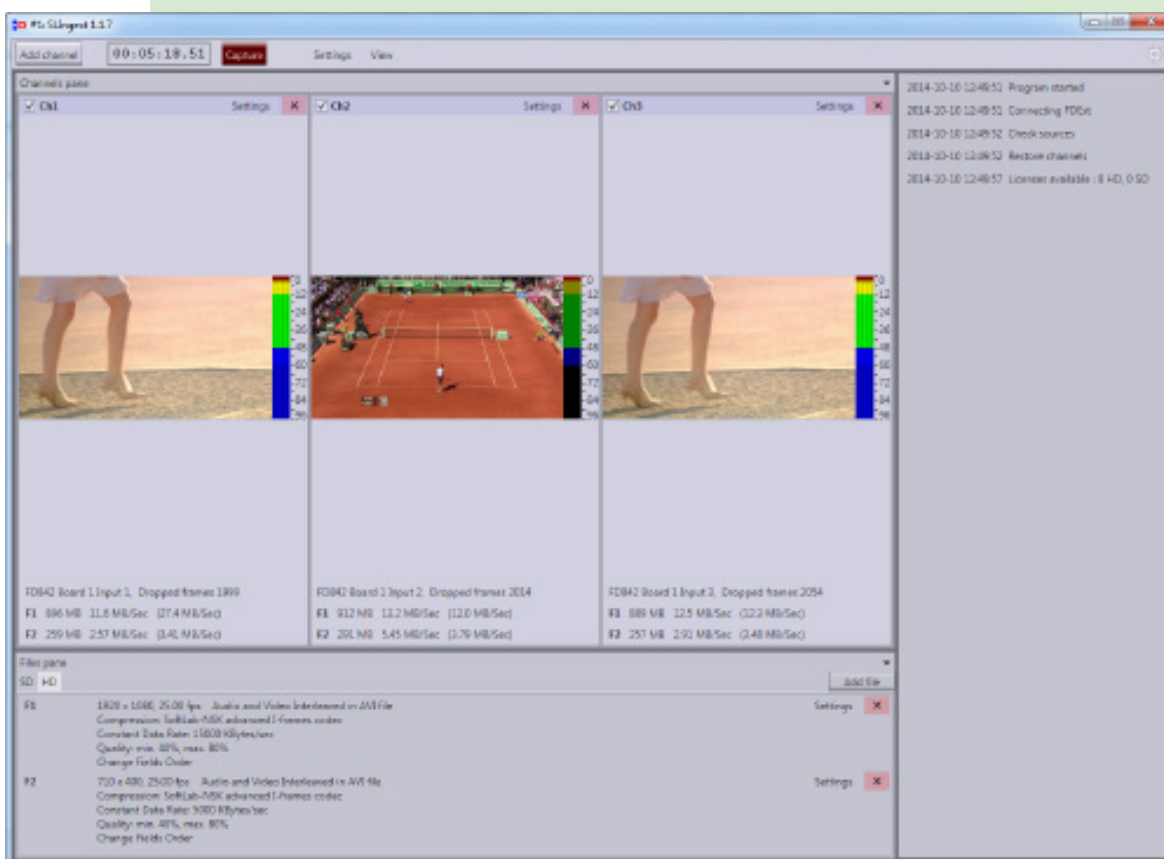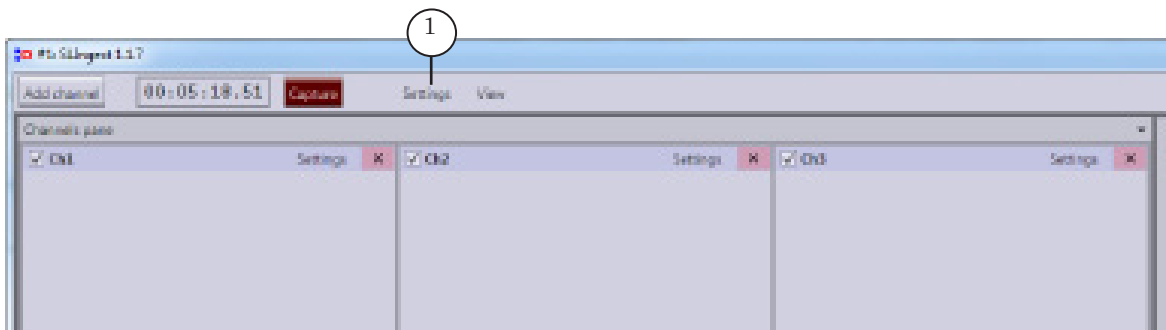
2. Parameters of Search

All channels in one SLIngest program instance have the same settings of previewing. To change the settings:

1. Click the Settings button (1) in the main program window.

2. Pass to the General > Preview page (1) in the appeared window.
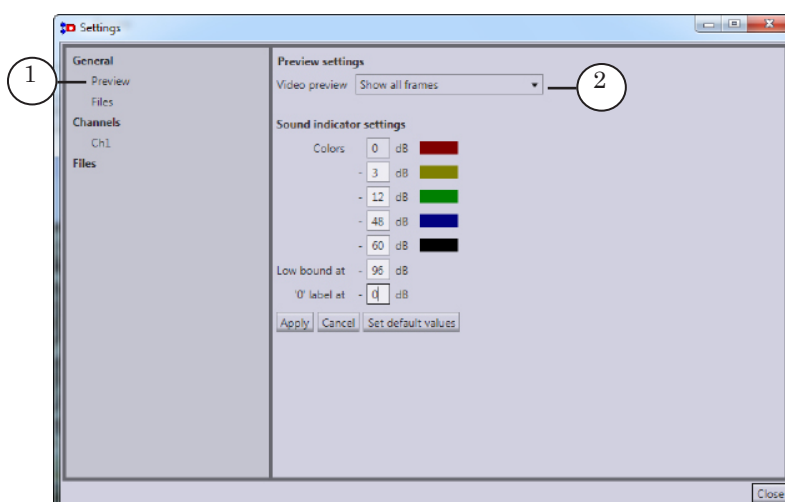
3. Specify rate of image update in preview windows in the Video preview drop-down list (2).

Note: The Show all frames value is specified by default. Decrease the rate to reduce processor load by selecting, for example, the Show every 4th frame item in the list.

4. Change settings in the Sound indicator settings group of elements if necessary:

- customize correspondence between audio level and color identifiers in the Colors group of elements (1);
- specify range of color indicator from «0» down to «–N», where N is specified value («96» is by default) in the Low bound at field (2);
- specify quantity of scales needed to be down from «0» in the "0" label at field (3). The mark is on the upper level by default. Range (quantity of scales) remains the same. For example, if «16» is specified then indicator scale displays from «+16» down to «–80» on the Channels panel.

Note: Changes made in colors fields do not influence level of sound.
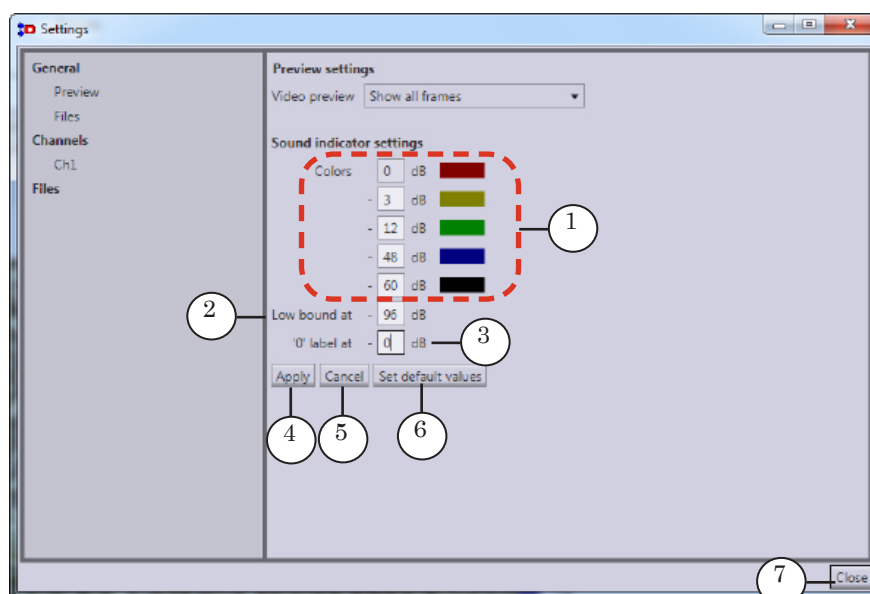
5. If settings are changed then the Apply (4), Cancel (5) and Set default values buttons (6) become available in the upper part of window. Click necessary button. Then click Close (7) to close the window.

3. General Parameters of Files

3.1. Files Names

Names of files sets in one SLIngest program instance are generated identically basing on settings specified in the Settings window.

Names of resulting files look like:

Pref1_Pref2_YYYYMMDD_HHMMSS_index.ext
where:

- Pref1_ is title of channel to which record is related (line specified on the Channel settings page in the Name field, the «_» symbol follows). The substring is not obligatory, user specifies it if needed;
- Pref2_ is name of files sets (line specified on the File settings page in the Name field, the «_» symbol follows). The substring is not obligatory, user specifies it if needed;
- YYYYMMDD_HHMMSS is date and time of capture start. Substring is obligatory and is generated automatically;
- _index is a serial index of part of record in a sequence (four numbers starting from 0000, then with 1 point step; the «_» symbol is added before). The substring is not obligatory and is generated automatically. The substring is present if the Split by time mode is on;
- .ext is extension of file name according to specified file format.

Note: Names of resulting files look like it is described below if two or more audio languages are selected in board settings in the FDConfig2 program and the Several value (general settings of files in the Separate audio files drop-down list) is specified:
Pref1_Pref2_YYYYMMDD_HHMMSS_index_language.wav
where language is a standard identifier or corresponding language:
RUS, RUS1, ENG.

3.2. Folders For Storing

All resulting files can be stored in one common folder or can be distributed to its subfolders automatically – according to channels and sets. User specifies way of distribution.

Common folder is a folder specified in the Settings window on the General file settings page, default path to the folder is ~\Data\ SLIngest, where ~ is a full path to folder where data is stored. The folder is specified when installing ForwardT Software, for example, D:\SoftLab-NSK.

✔ **Important:** When specifying folder remember that captured files can be of large size.
For example, if duration of HD video content is 1 minute and it is compressed by Softlab-NSK advanced I-frames codec then up to 1 Gb or even more space can be required.
So we insistently recommend to specify disk for storing files with audio and video content:
1. Avoid locating folder on system disk.
2. Estimate required space in advance and specify folder with enough space on disk (see Tip).

✿ **Tip:** As in each concrete case size of captured original and proxy files depend on used equipment and captured content then we insistently recommend to:
1. Test capture of channels via SLIngest (not shorter than one hour) when they are customized.
2. Calculate approximate volume of captured content per minute considering received sizes of full and proxy files.
3. Calculate necessary free size basing on assumed time.
4. Be sure that disk used for capture has enough space (we recommend that space exceeds calculated space in 1,5–2 times).
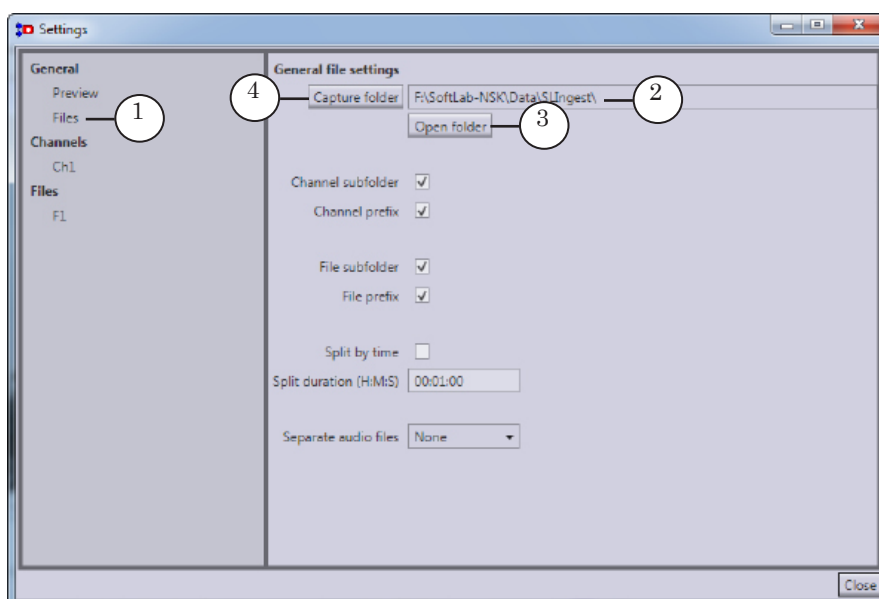
3.3. Customizing Folders and Names of Files

1. Click Settings (1) in the main program window.
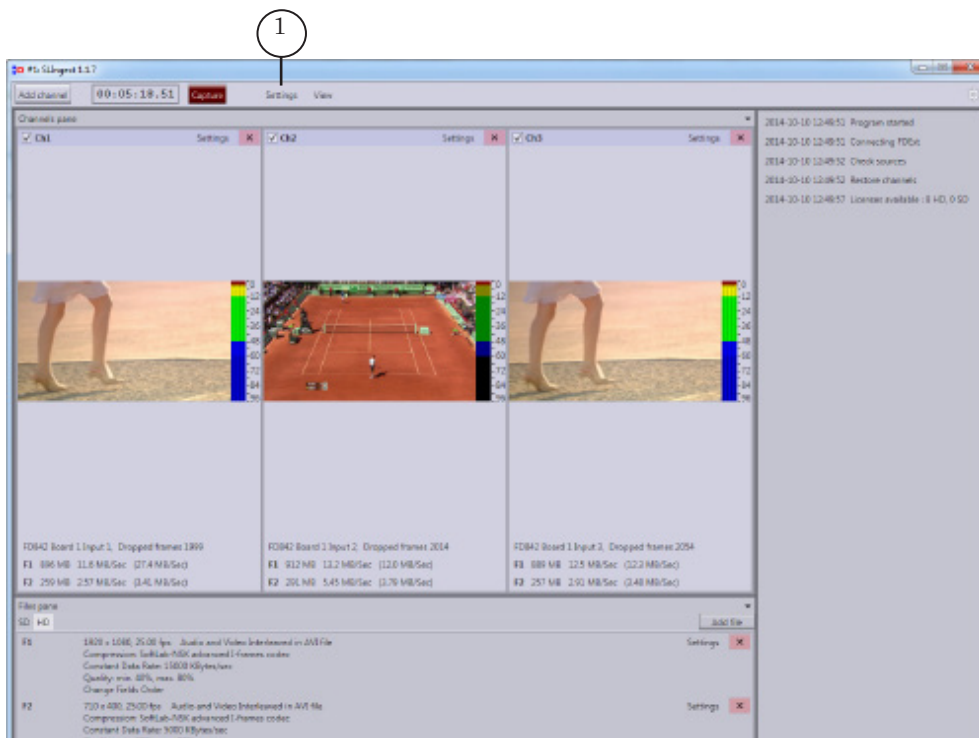
2. Pass to the General > Files page (1) in the appeared window.

3. Path to folder with files is specified in the (2) field.

4. Click the Open folder button (3) to open folder for viewing.

5. Click the Capture folder button (4) to specify a new folder for storing. Specify path to the folder in the appeared window.

6. Adjust way of generating names of resulting files and their distribution according to folders:

- Channel subfolder (1) – if the mark is put then subfolders are created for each channel in common folder. Names of subfolders correspond to names of channels;
- Channel prefix (2) – if the mark is put then names of files include substring with name of corresponding channel (see Pref1 above);

Note: Both marks (1, 2) are put by default. One of the marks can be removed. You can not remove both marks at the same time.

- File subfolder (3) – if the mark is put then subfolders for each set in common folder are created (in folder of each channel – if the (1) mark is put). Names of subfolders correspond to names of sets;
- File prefix (4) – if the mark is put then names of files contain substring with name of corresponding set (see Pref2 above).

Note: Both marks (3, 4) are put by default. One of the marks can be removed. You can not remove both marks at the same time.
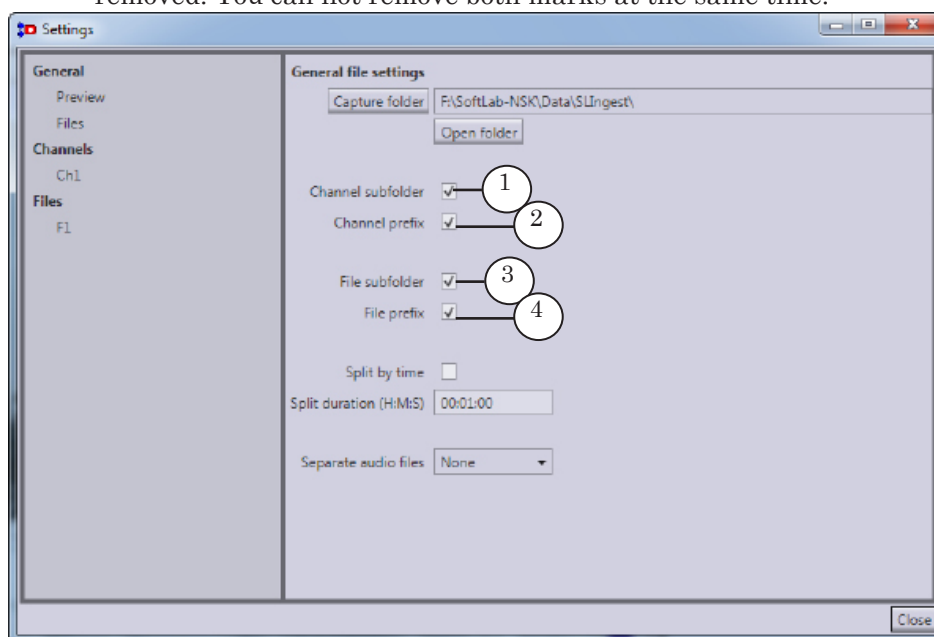
4. If you need to cut record into parts (in order to avoid dealing with large and/or long files) during capture:

1. Put the Split by time mark (1).

2. Specify necessary duration in the Split duration field (2).

Audio and video material captured from different sources is cut into parts synchronously and automatically with a frame accuracy. New files are created for each new part. Names of new files include serial index of the part (see _index above).
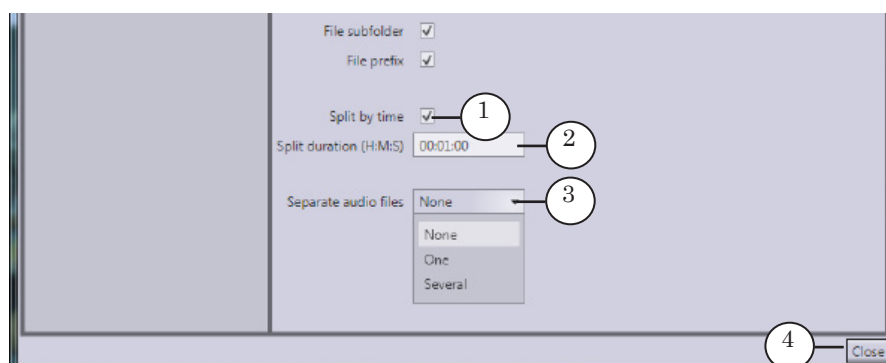

5. Specify way of storing audio track: either together with video track or separately. Select one of the values in the Separate audio files drop-down list (3):

- None denotes that audio (one track) and video data is recorded to file together.
  If two or more languages are specified in the settings of board in FDConfig2 application then the first track in the list is captured;

- One denotes that audio content (one track) is captured to a separate file (or sequence of files – when the Split by time mode is on). This file is stored with video file, it has the same name and the wav extension.
  If two or more languages are specified in the board settings in FDConfig2 application then the first track in the list is captured;

- Several is used when two/more languages are specified in the board settings in FDConfig2 application.
  Each track is captured separately in this case. Also standard language identifier is added to name of each WAV file (see Note in «3.1. Files Names» item).

6. Click Close (4) to close the window.

Example: Let on the General > Files page in the Settings window parameters are customized as it is shown on the pictures below.
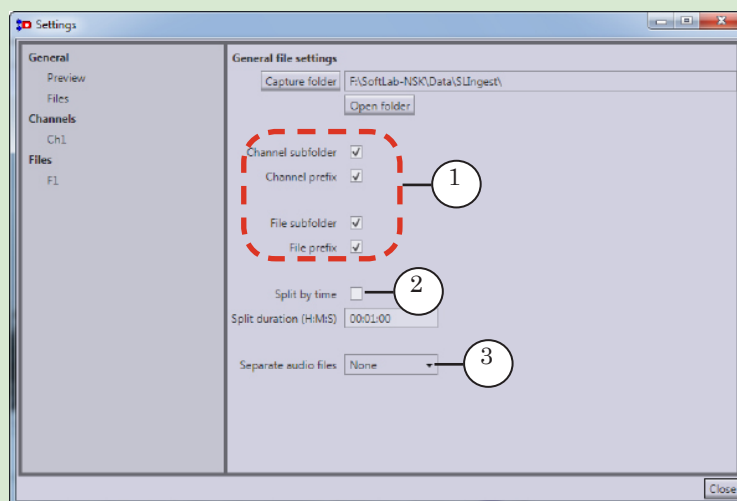
Subfolders for files set (1) are created in common channels folders as the result.
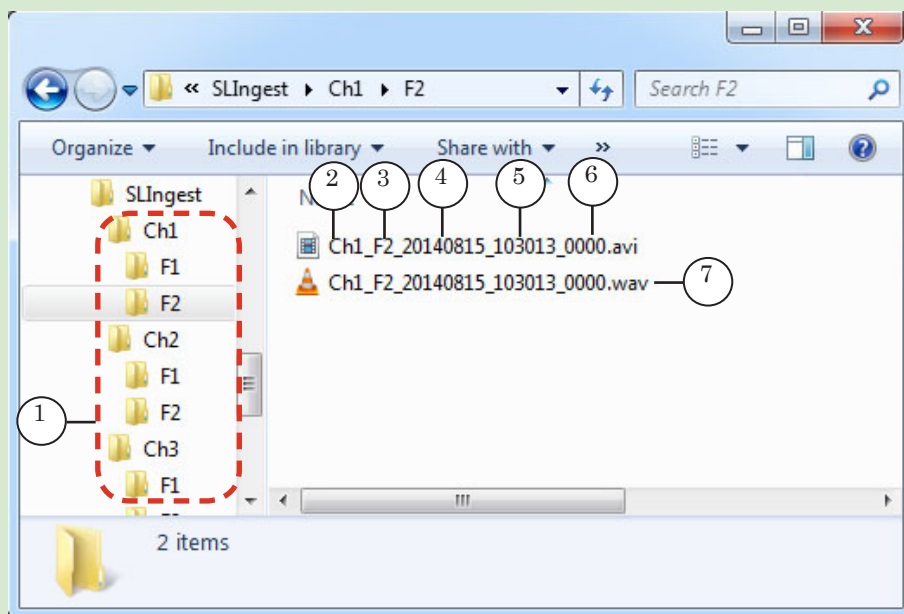
Names of files include: name of channel (2), name of set (3), date (4), time (5) when capturing starts and serial index of part in a sequence (6).

As mode of capturing audio data to separate files is specified then two files for each part of audio and video material are created: *.avi and *.wav. The files have identical names (7) and are stored in one subfolder.

Control Capturing

Capturing audio and video data to files is allowed if capture lines are adjusted: sources and necessary parameters of resulting files are specified (see the «Customizing Capture» section above).

It is impossible to adjust settings at capturing.

Complete the following steps in the SLIngest program window to capture audio and video data:

1. Be sure that signal for each channel is coming from source to specified input: corresponding image is updated in preview window (1) and audio level indicator (2) is changed.
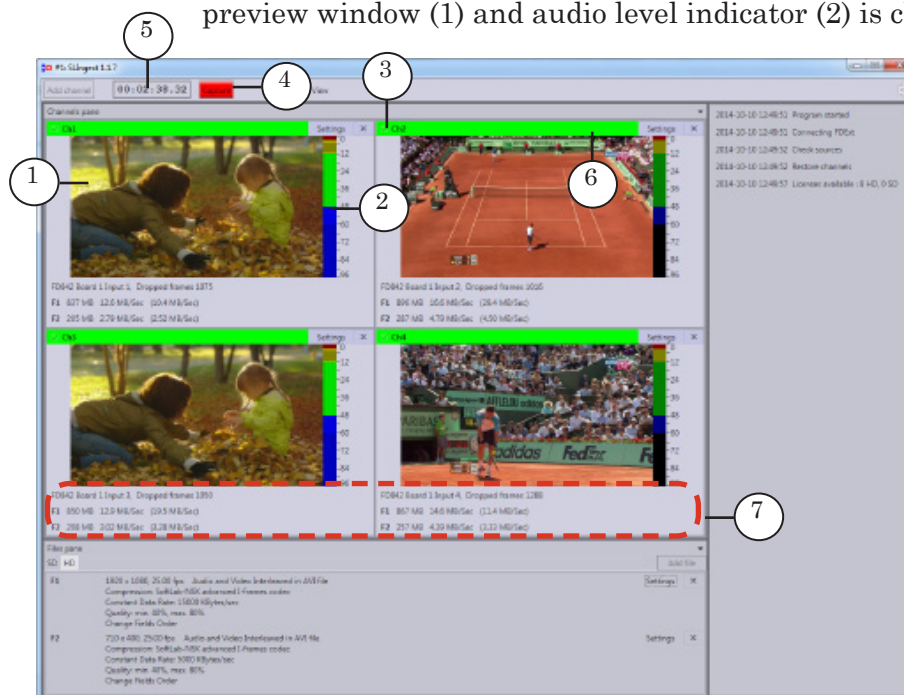
2. Enable capturing channels by putting the (3) marks. Release the marks for other channels.

3. Click Capture (4). Button becomes red, capturing is started.

4. Information on capture procedure is displayed in the main program window:

   1. Indicator (5) displays time passed from start of capturing.

   2. Names of captured channels are lightened by green (6).

   3. Information on capture procedure is output in specific fields of channels windows: size of data in files and quantity of dropped frames (7).

5. If video is not captured then colour of title in channel window becomes orange (1). Point mouse cursor to title for pop-up help to appear.
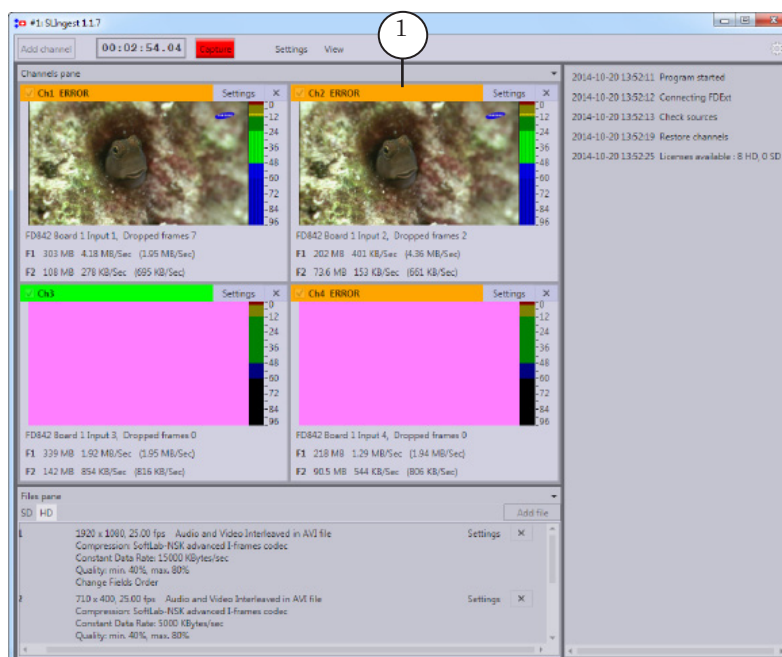
Note: Problems with one channel do not prevent capturing other channels.

6. Click Capture again to stop capturing. The button becomes dark red in this case.

Useful Links

ForwardT Software set: description, download, documentation, solutions

http://softlab.tv/index.html

Support

e-mail: forward@softlab.tv

forward@sl.iae.nsk.su

forward@softlab-nsk.com

Forum

http://www.softlab-nsk.com/forum (currently available in Russian only)

Additional Documentation:

1. ForwardT Software Setup. User's Guide
2. FDConfig2. Program for Control and Customizing FDExt Boards Work Parameters. User's Guide

Translation from
1 April, 2015

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