Notice

The information in this document is subject to change without prior notice in order to improve reliability, design, or function and does not represent a commitment on the part of this company.

In no event will we be liable for direct, indirect, special, incidental, or consequential damages arising out of the use or the inability to use the product or documentation, even if advised of the possibility of such damages.

Copyright © 1997 - 2016 SoftLab-NSK Co., Ltd.
All Rights Reserved.

No part of this reference manual may be reproduced or transmitted in any form or by any means without the prior written permission of this company.

Throughout this manual, we make reference to product names that are trademarks of other companies. We are using these names for identification purposes only, with no intention of infringement of the trademarks.

FCC Information

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.

Shielded cables and I/O cards must be used for this equipment to comply with the relevant FCC regulations. Changes or modifications not expressly approved in writing by SoftLab-NSK Ltd. may void the user's authority to operate this equipment.

Limited Warranty

Our company warrants this product against defects in materials and workmanship for a period of one year from the date of purchase. During the warranty period, products determined by us to be defective in form or function will be repaired or replaced at our option, at no charge. This warranty does not apply if the product has been damaged by accident, abuse, misuse, or as a result of service or modification other than by us.

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.
Содержание

Introduction........................................................................................................................................... 5

General Information

Purpose and Functional Characteristics ................................................................................................. 7
Resulting Files ......................................................................................................................................... 8
Modes of Data Capturing ........................................................................................................................ 9
Result File (Log File) .............................................................................................................................. 10
Program Launch .................................................................................................................................. 11
  1. General Information .................................................................................................................... 11
  2. Launching Different Program Instances ...................................................................................... 12

Program Interface

Main Window ........................................................................................................................................ 14
  1. General Appearance ...................................................................................................................... 14
  2. Capture Control ............................................................................................................................ 15
  3. Timetable Control ......................................................................................................................... 16
    3.1. Elements .................................................................................................................................. 16
    3.2. Table with Tasks and Files ...................................................................................................... 17
  4. Preview Control ............................................................................................................................. 18
  5. Audio Control ............................................................................................................................... 19

Program Settings Window .................................................................................................................. 21
  1. Appearance ................................................................................................................................. 21
  2. FD300/FD422/FD322/FD842/FDVrt Boards Page ........................................................................ 22
  3. General Page .............................................................................................................................. 23
  4. General (2) Page ......................................................................................................................... 24
  5. Optimization Page ....................................................................................................................... 25
  6. Sequence of Files Page .................................................................................................................. 26
  7. Disk Management Page ................................................................................................................ 27
  8. Compression of Video Data Page ................................................................................................. 29
  9. Field Order Page .......................................................................................................................... 32
  10. Date/Time Typing Page ............................................................................................................... 33
  11. Text Typing Page ........................................................................................................................ 34
  12. Audio Capture Parameters Page ................................................................................................ 35
  13. Audio Level Meter Page ............................................................................................................. 37
  14. VTR Remote Control Page .......................................................................................................... 38
  15. GPI Control Page ........................................................................................................................ 38
Working With Program

General Workflow ........................................................................................................ 39

Customizing Capture Lines ........................................................................................ 41

Manual Capturing (Standard Mode). Control and Customizing .................. 47
   1. Features .................................................................................................................... 47
   2. Standard Tab and Timetable Control Pane ......................................................... 47
   3. Capture Customizing .......................................................................................... 48
   4. Control Over Capture ......................................................................................... 49
   5. Names of Files ...................................................................................................... 51
      5.1. Default Template ...................................................................................... 51
      5.2. Modifying Template ................................................................................ 51

Capturing According to Timetable (Timetable Mode). Control and Customizing .... 54
   1. Features .................................................................................................................... 54
   2. Timetable Mode and Timetable Control .............................................................. 54
   3. Timetable .............................................................................................................. 54
   4. Configuration of Capture .................................................................................... 55
   5. Control Over Capture and Monitoring .............................................................. 59
      5.1. Control ........................................................................................................... 59
      5.2. Monitoring ................................................................................................... 60
   6. Names of Files ..................................................................................................... 61
      6.1. Templates ....................................................................................................... 61
      6.2. Standard Template ..................................................................................... 62
      6.3. Name With Serial Index ............................................................................. 63
      6.4. Name With Date and Time ........................................................................ 63

Capturing From Video Tape Recorder (VTR). Control and Customizing ....... 65
   1. Features .................................................................................................................... 65
   2. VTR Tab and Timetable Pane .............................................................................. 65
   3. Work Order .......................................................................................................... 67
   4. Customizing Remote Control ............................................................................ 68
   5. Creation of Timetable ........................................................................................ 70

Control Over Capture Via GPI Signals ................................................................. 72
   1. General Information .......................................................................................... 72
   2. Customizing ......................................................................................................... 72
   3. Work Order ......................................................................................................... 73
      3.1. Task ............................................................................................................... 73
      3.2. Work Order ................................................................................................ 74

Capture of IP Media Data to Files ........................................................................ 79
Introduction

The FDCapture program is designed for capturing audio and video data from board input/output to files. The program is used in solutions based on FD300 or FDExt boards: FD322; FD422, FD842; FDVrt (virtual board). The FDCapture program is included into the standard software set of the most SoftLab-NSK products.

Note: More information on FDExt boards and their configuration you may find in the «FDConfig2: Program for Control and Customizing FDExt Boards Work Parameters» user's guide. For more information on customizing FD300 board see the «FDConfiguration: FD300 Board Settings» user's guide.

The FDCapture program is usually used in the following cases:

- if it is necessary to record signal from one or several cameras for video editing;
- if it is necessary to present archived records (AVI, MPG) of own channel programs of a good quality to Gosteleradiofond (see Note below). In this case you should customize capturing from output of board used for broadcasting in FDOnAir;
- if it is necessary to record programs broadcasted on air in order to rebroadcast them at another time again. In this case you should customize capturing from output of board used for broadcasting in FDOnAir;
- if it is necessary to capture signal with jingles and video fragments of advertisement blocks received from the main broadcasting station and customize advertisement insertion via AutoDetect software (for more information see the «AutoDetect: Broadcast Automation Based on Detecting Jingles and Video Fragments» user's guide).

Note: The SLStreamCapture program is used to archive data to WMV (Windows Media) files. See the «SLStreamCapture. Program for Audio and Video Data Capture to Files in Windows Media (WMV) Format» user's guide for more information.
You may select types of container (AVI/MPEG2 TS) and codec (for AVI files only) for resulting files. Overlay can be stored together with video fragments or in a separate file. There is also a possibility to insert date, time of capture and some arbitrary text to specific frames.

The program supports different modes of controlling data capturing: manual, according to schedule automatically, via GPI signals.

There is also a possibility of capturing several lines at the same time (for example, from the first and the second board inputs simultaneously). For this you should launch and customize several instances of the FDCapture program – each instance for each line (for more information see the «Program Launch» section, the «2. Launching Different Program Instances» subsection).
General Information

Purpose and Functional Characteristics

The FDCapture program is designed for capturing audio and video data from input/output of the FD300 or FDExt board to files (AVI or MPEG2 TS).

One program instance allows executing and controlling capture of one line with audio and video data. Other program instances can be launched to capture data from different lines at the same time.

Functional characteristics of the program are:

- ensuring execution of capturing audio and video data from selected source to files according to settings specified by user;
- providing the following functions:
  - customizing capture lines: selection of source and configuring resulting files;
  - controlling start and stop of capturing in different modes;
  - controlling capture procedure: preview windows, audio meters and different indicators of system resources load;
  - controlling results: previewing resulting files and results of executed tasks, playback of files by user request, creating work protocol (log file).
Resulting Files

Resulting files are created in the FDCapture program according to settings specified by user. Configure the following parameters:

- select container for video data: AVI, MPEG2 TS;
- select video codec and customize compression parameters for AVI files. In this case Video For Windows codecs installed in system are used;
- specify quantity of recorded audio channels (according to board settings);
- customize overlaying of date, time and some arbitrary information to frames;
- customize way of data saving:
  - splitting files: one file for the whole record or series of files splitted by time or size;
  - saving audio and video data: in combination or separate files;
  - disks and folders for saving files.

Note: The SoftLab-NSK software products set includes Video For Windows codecs complianted with the most popular formats: DV, JPEG, JPEG+Alpha, Motion JPEG, MPEG2 I-frames. More information on video codecs designed by SoftLab-NSK see in the guide: «SoftLab-NSK. VFW Codecs. Properties and Settings».

Audio data is captured to files without compression in Linear PCM, 16-bit format.
Modes of Data Capturing

The program supports several modes of data capturing:

1. Standard mode.
   User controls start and stop of capturing data to files by clicking corresponding buttons in program window manually. Capturing can be stopped automatically when specified time interval (capture duration) is expired.

2. According to timetable.
   Timetable includes list of tasks: date and time of capturing start and date and time of capturing finish. The timetable can be created and edited in program window. Timetable can be saved to text file/loaded to program window from file.

3. According to GPI signals.
   The following commands can be executed via GPI signals: Start Capture; Stop Capture; Split Movie. Receiving of controlling GPI signals from external devices or other programs, for example, FDOnAir is also supported. Control via GPI signals may be combined with manual control.

4. Specific mode of input if source of audio and video data is a video tape recorder (VTR).

Note: More information on the modes you may find in the «Working With Program» subsequent section.
Result File (Log File)

The program provides with a possibility to log information on procedure of capturing data to log file.

Logging requires switching specific permission on. For this put the Write log file mark in the Program Settings window on the General page.

Log file is an ordinary text file with separators. The file can be opened in any text editor, for example, Notepad.

Names of log files are assigned automatically and have the following format (example is given above (1)):
FdCmessageLog_Date_Time.fcl, where:
  - FDCmessageLog is an obligatory substring;
  - Date is date of capturing in the YYYY_MM_DD format (year, month, day);
  - Time is time of start capturing in the hours:minutes:seconds format;
  - fcl is log files extension accepted in the FDCapture program.

Each line in log file includes information on name of created file, date (year, month, day) and time (hh:mm:ss) of capturing start, date and time of capturing stop.

Log files are recorded to folder that is selected for storing resulting audio and video files (see the Program Settings > Disk Management window).
Program Launch

1. General Information

If you work with FDExt boards then the FDCapture program can be launched at any time without depending on if other programs that work with these boards are launched or not.

If you work with FD300 board then the FDCapture program can be launched only when all other programs that work with this board are not launched.

Important: It is impossible to launch other programs that work with FD300 at the same time.

Executing file of the program is
~\Capture\FDCapture.exe
where ~ is a full path to folder where ForwardT Software set is installed (at standard installation the path is:
C:\Program Files\ForwardT Software).
You may also use:
- the Start menu command:
  All Programs > ForwardT Software > Video > Capture;
- program shortcut located on desktop:

The main program window appears.

Note: When the program is launched capturing to files can be started automatically. It happens if during the previous program sessions the Start recording on application start option turned on (the Program Settings window, the General page) and the Standard tab in the main program window is opened. Click Stop in the main program window if necessary to stop capturing.
Language of interface (Russian/English) is selected at first program launch automatically. Click the Settings button in the main program window on Capture Control if you want to change the language. Then pass to the General page in the appeared window.

2. Launching Different Program Instances

There is a possibility of launching different instances of the FD Capture program. The instances have different settings. For example, there can be a necessity to launch several program instances at the same time to capture audio and video data from several lines (board inputs/outputs).

Complete the following to work with different FD Capture program instances:

1. Customize shortcuts located on desktop to launch instances with specified indices by repeating the following steps:
   1. First create additional shortcut of the FD Capture program (1) on desktop.
   2. Then right-click shortcut and select Properties (2) in the appeared context menu.
3. Specify a full path to file of the program (in quotes) in the Properties: FDCapture.exe window in the Object field. Add space, then the # mark and instance index (3) finally. Click Apply (4).

2. Double-click corresponding shortcut and launch necessary program instance.

3. Customize parameters of program instance work (see the «Working With Program» section).

4. When you finish working with a concrete program instance its current settings are saved and will be restored at the next launch of this instance.
Program Interface

Main Window

1. General Appearance

The FDCapture main program window looks like:

![Main program window](image)

Main program window. Control elements:
1 is a group of elements used for customizing parameters of capturing files and controlling over them; 2 is a group of elements used to control procedure of data input; 3 is a group of elements used to display level of sound and customizing capturing sound; 4 is a group of elements used to work with timetable and display files list.

Title bar of the window displays name and index of program instance. Point mouse cursor to any control element to get service information on the instance.

The main program window has 4 panes (1–4). All panes except the Capture Control one can be hidden/restored independently of each other.
Put the Open/Close corresponding mark in order to hide/restore one of the panes:

- Show/Hide timetable pane (1);
- Show/Hide preview pane (2);
- Capture with/without sound (3).

You may also hide the pane by clicking Hide timetable pane (4).

2. Capture Control

Capture Control is used to customize and control capturing audio and video data.

Capture control. Control elements:
1, 7 are elements used to customize capture parameters (see table below); 2 are elements that display current settings; 3 displays information on free/occupied space on disk selected for capture; 4 is system time; 5 is counter of dropped frames; 6 are elements used to show/hide audio and video panes and schedule; 8 are control elements and tabs used to control data capturing in different modes.

The (1–5, 7) buttons and information fields are used to customize capturing parameters and control data input.

Elements located on the tabs in the (8) group of elements are used to control capturing audio and video data in different modes (for more information on this issue see corresponding subsections in the «Working With Program» section).
Selecting one of the tabs denotes selecting corresponding mode. You may pass from one tab to another only when capturing is stopped. Set and purpose of control elements of Capture Control depend on selected tab.

Table 1. Input pane elements

<table>
<thead>
<tr>
<th>Button</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="Image" alt="Folder" /></td>
<td>The button is used to set working folder.</td>
</tr>
<tr>
<td><img src="Image" alt="Settings" /></td>
<td>The button is used to open the Settings window.</td>
</tr>
<tr>
<td><img src="Image" alt="Video" /></td>
<td>The button is used to open the Video settings window.</td>
</tr>
<tr>
<td><img src="Image" alt="Audio" /></td>
<td>The button is used to open the Audio settings window.</td>
</tr>
<tr>
<td><img src="Image" alt="Codec" /></td>
<td>The button is used to open Video compression settings window.</td>
</tr>
</tbody>
</table>

Table 1. Input pane elements

3. Timetable Control

3.1. Elements

The Timetable Control is used to work with timetable of data capture and control results.

![Timetable control](Image)

Timetable control. Control elements:
1 are elements that display list with files and tasks; 2 is button used to clear elements in table with tasks/files; 3 is button used to delete selected task/file from table; 4 is button used to start playback of selected file in default player; 5 is button used to load earlier created timetable from the *.fct file; 6 is button used to save current timetable to the *.fct file; 7 is button used to close the pane.
Set and purpose of control elements depend on current mode of capture. The mode is specified on Capture Control pane:

1. If the Standard mode is selected then information on file (or sequence of files) captured during the last program session is displayed in the table.

2. If the Timetable or VTR mode is selected then table contains schedule of data input (tasks 1) and information on result files (2).

3. The (3) put mark in task line enables execution of task. If the mark is absent the task is not executed. Click any area in field with task to put/release the mark.

Note:
1. Use buttons located on the Timetable tab of Capture Control to create/edit schedule of input (for more information see the «Capture According to Timetable (Timetable Mode)» subsection in the «Working With Program» section).
2. Use corresponding buttons located on the Timetable tab to save schedule to file or load schedule from file to table.

3.2. Table with Tasks and Files

Table with tasks and files is used to control capture.

Elements of table with Timetable:
1 is element with name of task or resulting file; 2 is indicator of current state of task/file (see table below); 3 is bar that displays the first frame of video file; 4 are indicators of start and stop of capture to file; 5 is element that displays duration of capture; 6 is mark used to enable/disable execution of task; 7 is area that displays description of task/file.
Table 2. Indicators of current state of task.

<table>
<thead>
<tr>
<th>Mark</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>🟢</td>
<td>Task is complete, input of data to file is stopped.</td>
</tr>
<tr>
<td>🟡</td>
<td>Task is being executed, data is being input.</td>
</tr>
<tr>
<td>🟠</td>
<td>Task is at stage of expecting start of capture.</td>
</tr>
<tr>
<td>🟦</td>
<td>Task is not complete because, for example, PC system time is greater than time of start and finish of capturing.</td>
</tr>
<tr>
<td>🟤</td>
<td>Task is complete partially, for example, time of fragment capture start (specified at schedule creation) is skipped.</td>
</tr>
</tbody>
</table>

4. Preview Control

Preview Control is used to control data capturing.

Preview control. Control elements:
1 is drop-down list used to select rate of frames update; 2 are marks used to display/hide preview windows; 3 is preview window; 4–6 are indicators that display load of system at capture; 7 is button used to hide preview pane.

Indicators of system load at data capture display approximate writing load (4), compression load (5) and load of internal buffer (6).

If the Preview in Window mode is on (the (1) mark is put) then a separate preview window appears (2).

Size of additional window can be modified. Picture displayed in the preview window always occupies entire working area.
You can select the Always on Top mode for this window. Use context menu commands (3) to adjust size and mode of window displaying. The menu is opened by right-clicking title area.

5. Audio Control

Audio Control is used to control audio data. The pane can be opened/closed if data capture is stopped.

**Important:** If the pane is closed then audio data is not captured to files.

Audio control. Control elements:
1 is button used to open window with settings; 2 is mark used to hide/show meters; 3 are audio level meters; 4 are identifiers of audio tracks; 5 is button used to close the pane.

Quantity of displayed meters on the pane corresponds to specified quantity of audio languages for capturing files. Quantity of laungages is specified in the Settings > Audio capture parameters window. Identifiers of the languages (4) are displayed near meters.

**Note:** Audio channels (languages) processed via board are specified in the FDConfig2 program. For more information on this issue see the «FDConfig2: Program For Control and Customizing FDExt Board Work Parameters» user’s guide.
Appearance and properties of audio meters are customized in the Settings > Audio level meter window. Use command of the Audio level meter context menu (6) or the Settings button (7) to open the window.

Note:  
1. Right-click meter to open context menu.  
2. Description of customizing input of audio data see in the «Program Settings Window» section, in the «12. Audio Input Parameters Page» subsection.
Program Settings Window

1. Appearance

The program window settings has elements for customizing different groups of parameters. List of pages (1) or buttons (2, 3) are used to pass from one page to another one.

Settings window. Control elements:
1 are elements used to start customizing parameters of definite group of elements;
2 is button used to pass to the previous page with elements in list; 3 is button used to pass to the next page with elements in list; 4 is button used to close the window with applying changes; 5 is button used to close the window without applying changes.

All pages with elements are described in detail in the subsequent sections.
2. FD300/FD422/FD322/FD842/FDVrt Boards Page

The page is used to select source of capturing audio and video data to files.

FD300/FD422... board. Control elements:
1 is area that displays board parameters (video format, frame size, capture source);
2 is mark that enables/disables update of information in (1) area; 3 is drop-down list used to select capture device; 4 is button used to open window with FD300 board settings (the button is active if the FD300 Input device in the (3) list is selected).

The Capture device drop-down list includes all available devices. Set of the list depends on boards installed in system and what mode is selected for each of the boards.

Names of devices in the list have the following format:

Board type_Board index_Line

For example: FD422 Board 1 Input 2 denotes input line #2 of the FD422 board with serial index 1;
FDVrt Device 1 Output denotes output line of virtual board with serial index 1.

Note: Work modes of FDExt boards are customized in the FDConfig2 program. For more information see the «FDConfig2: Program for Control and Customizing FDExt Boards Work Parameters» user's guide.

The FD300 board is customized in the FDConfiguration program. For more information see the «FDConfiguration: FD300 Board Settings» user’s guide.
3. General Page

The General page is used to customize general work parameters. If any mark is put it denotes that corresponding function is enabled, if marks are absent – the functions are disabled.

General page. Control elements:
1 are elements used to select type of video file container; 2 is mark used to enable/disable mode of automatic file index incrementing for the Standard capture mode; 3 is drop-down list used to select language; 4 is mark used to enable/disable mode of remote control over capture; 5 is mark used to enable/disable keeping prefix of a file name for the next program launch. If it is disabled then default prefix is kept; 6 is mark used to enable/disable writing log file; 7 is check box used to enable/disable displaying output of prompt messages about procedure of exporting schedule to file; 8 is check box used to enable/disable start of capturing on program start automatically. It is enabled if at exiting the program the Standard mode is selected automatically; 9 is check box used to enable/disable creating time code XML file for the Avid Liquid system.

Remote control mode (4) can be used if the SLRemoteCapture plugin is present. Appeal to the Support department of the «SoftLab-NSK» company to get more information on the plugin.

Comments on use of the (2, 5) marks you may find at customizing names of files in the «Working With Program» section of the «Capture Manually Mode (Standard). Control and Customizing» subsection, the «5. Names of Files» item.

More information on log file (6) you may find in the above «General Information» section, the «Result File (Log File)» subsection.
4. General (2) Page

The General (2) page is used to select way of ordering files when working in the Standard mode.

If the (1) mark is put it denotes that new folder is created each day automatically. The folder contains all files captured during one day. Names of folders contain corresponding date (2) in the following format: YYYY-MM-DD (year, month, day).

Folders are located in general folder specified in the Settings window on the Disk Management page (see the «7. Disk Management Page» item below).
5. Optimization Page

The Optimization page is used to customize mode of system resources use.

Optimization page. Control elements:
1 is drop-down list used to select application priority; 2 are elements used to specify CPUs used by application; 3 is list used to specify size of buffer for transitional data storing (only for the FD300 board).

Important: Do not modify default settings specified. Incorrect distribution of CPUs between applications may lead to extreme decreasing of system performance.
6. Sequence of Files Page

The AVI/TS files page is used to select way of splitting files with audio and video data during capture.

Captured files with audio and video data can be split in one of the following ways:

1. **AVI/TS files sequence (size)** – splitting files by specified size. The size is specified in list near button. Default value is 100 Mbytes.

2. **AVI/TS files sequence (time)** – splitting files by fragments of specified duration. The duration is specified in field near check box. Default value is 15 seconds.

3. **Max size AVI/TS files sequence** – splitting by fragments so that it is possible to obtain files of maximal possible size for used file system (see service information in the (2) window).
7. Disk Management Page

The Disk Management page is used for distributing disk space for storing files with captured data.

The table contains folders used for storing resulting files. List may include several folders. Only one folder can be specified for storing files instantly. If free space on specified disk overflows then the next disk in list is selected automatically.

Bars of the table include the following information:

- Path bar (1) displays full paths to folders. If mark near name of folder is put then folder is enabled to be used. If the mark is absent then the folder is not used;

- Size bar (2) displays information on size of disk where specified folder is located;

- Limit bar (3) displays limit of free space on disk at which it is possible to capture files.

- Overflow when disk space below (MB) 100 button (4) sets disk space limit;

- Set Limit button (6) sets disk space limit;

- Free space bar (5) displays comments on indicators of the Free space bar in the table.

Disk management page. Control elements:

1 is button used to add folder to list; 2 is button used to remove selected folder from list; 3, 4 are buttons used to move selected folder one position down/up; 5 is table that displays distribution of disk space; 6 is button used to set disk space limit; 7 is area that displays comments on indicators of the Free space bar in the table.

The (5) table contains folders used for storing resulting files. List may include several folders. Only one folder can be specified for storing files instantly. If free space on specified disk overflows then the next disk in list is selected automatically.

Bars of the table include the following information:

- Path bar (1) displays full paths to folders. If mark near name of folder is put then folder is enabled to be used. If the mark is absent then the folder is not used;

- Size bar (2) displays information on size of disk where specified folder is located;

- Limit bar (3) displays limit of free space on disk at which it is possible to capture files.
For different disks different limits can be specified. Select from table folder on disk which limit must be adjusted. Specify desired value in the (4) field and click the Set Limit button (5). Value is adjusted for selected disk;

- Free space bar (6) are graphical meter and numerical (in percent) presentations of free space on disks. Colour of meter can be:
  - green, it denotes that folder is available for data input, there is enough free space on disk;
  - yellow, it denotes that folder is available for data input, free space on disk approaches to limit value displayed in the Limit bar;
  - red, it denotes that folder is not available for data input because free space is absent. Limit of free space is less than size specified in Limit bar. In this case capture is continued to the next folder available for capture automatically.

Tip: We insistently recommend implementing the following when distributing disk space for data input:

1. Do not select system disk for capturing.
2. Do not occupy all free space for capturing – leave some space for some service purposes.
8. Compression of Video Data Page

The Video data compression page is used to select and customize video codec used at capturing audio and video data to AVI files and adjust some other parameters also.

Take into account the following items when customizing capture parameters:

1. Complete the following to add FourCC code with which codec may work to list of codes (decoding AVI files with such code is allowed here):
   1. Select codec in the list (1).
   2. Click Settings... (2).

Video data compression page. Control elements:
1 is area used to select codec and customize its parameters; 2 are elements used to customize quality of compression and data rate; 3 is check box used to enable/disable use of DivX, XviD, etc. types of codecs; 4 is drop-down list used to specify aspect ratio if DV files are captured; 5 is mark used to show/hide information message for codecs with alpha-channel.
3. Type symbols of FourCC code in the appeared window in the field of the Supported AVI types group of elements (3).

4. Click Add (4). Code is added to the (5) list.
5. Click OK (6).

2. In some cases there can be a necessity to specify another code, not standard FourCC code.

Note: For example, in order that Mac OS coders/decoders could work with AVI files created via the SoftLab-NSK DV codec it is necessary to record dvsd to FourCC code files (not standard sldv).

Complete the following to assign FourCC code:
1. Select codec in drop-down list (1).
2. Select necessary value in the list with codes (2): one of the standard variants or if necessary code is absent then select the Custom item.

3. Type code symbols in field near list (3) if Custom is selected.

3. There is a possibility to specify data rate (1), minimal (2) and maximal (3) quality of compression for codecs that support compression with variable quality. At output of data to files application changes current value of compression quality parameter in specified limits dynamically in order to support specified data rate. Starting value of compression level is specified in the Start field (4).
4. There is a possibility to use codecs of the DivX type at capturing. Put the Allow use of such codecs as DivX, XviD etc. mark (1) in this case.

If the Codecs list... button (2) is clicked then window (3) for working with FourCC codes list for XviD/DivX codecs appears.

**Important**: Install the DivX codecs at PC in advance.

9. Field Order Page

The Field order page is used to specify ordering of fields at output of data to files.

Put corresponding mark (1) to select desired order. We recommend using default value.
10. Date/Time Typing Page

The Date/Time Typing page is used to customize function of typing date and/or time to video frames.

The order of customizing is the following:

1. Put the (1) and/or (2) marks to enable typing of corresponding information to frames.

2. Use the Date format drop-down list to select format of date.
   The following symbols are used:
   - YYYY, YY denote year, 4 or 2 last numbers correspondingly;
   - MM denotes month;
   - DD denotes day.

3. To select format of time use the Time format drop-down list:
   - HH denotes hours;
   - MM denotes minutes;
   - SS denotes seconds.

4. Use the Text group of elements to customize location of field with date/time in frame, font and color of text:
   1. Specify coordinates of the left upper corner with date/time relatively the left upper frame corner (in pixels):
      X-position (1) denotes horizontal offset (to the right);
      Y-position (2) denotes vertical offset (from up to down).
   2. Specify font (3).
   3. Specify color of symbols (4).
5. Select transparent/non-transparent type of background (5) in the Background group of elements.

11. Text Typing Page

The Text Typing page is used to customize function of typing arbitrary text to video frames.

Text typing page. Control elements:
1 is check box used for enabling/disabling text typing to frames over image; 2 is field where text is specified; 3 are elements used to customize location of text in frame; 4 are elements used to select font and color of symbols; 5 are elements used to specify background under text.
The order of customizing is the following:

1. Put the (1) mark to enable typing of corresponding information to frames.
2. Enter the text itself (2).
3. Use the Text group of elements to customize location, font and color of text in frame:
   1. Specify coordinates (3) of the left upper corner of field with text relatively to left upper frame corner (in pixels): X-position denotes horizontal offset; Y-position denotes vertical offset.
   2. Select font and color of symbols (4).
4. Select transparent/non-transparent type of background in the Background group of elements (5).

12. Audio Capture Parameters Page

The Audio capture parameters page is used to customize parameters of capturing audio data to files.

Audio capture parameters page. Control elements:
1 is check box used to enable/disable capture with audio; 2 is information on current settings; 3 are elements used to customize capture of normal audio (one mono or stereo channel); 4 are elements used to customize capture of multichannel audio (many channels).

Elements for customizing audio parameters are active only if the Capture with audio mark is put (1).
Note: Take into account quantity of audio channels (1) selected for FDExt/FD300 board and enabled for processing at customizing parameters of audio capturing. Board of the FDExt type is customized in the FDConfig2 program. For more information on this program see the «FDConfig2: Program for Control and Customizing FDExt Boards Work Parameters» guide. The FD300 board is customized in the FDConfiguration program. For more information on this program see the «FDConfiguration: FD300 Board Settings» guide.

Customize the following parameters if mode of one audio channel (1) is selected:

1. Select audio line from which data is captured (2).
2. Select way of storing audio data:
   - with video – the Save audiodata to a separate WAV file mark (3) is released in this case;
   - to a separate file – the Save audiodata to a separate WAV file mark (3) is put in this case.
3. Customize interleaving audio and video data in file (4) if audio and video are captured together to one file.
4. Audio and video data are captured as separate files (files sequence) in the Multichannel audio mode: there is own WAV file for each audio channel. Names of WAV files contain names of corresponding languages.

Note: Languages are selected in the FDConfig2 program. For more information on this program see the: «FDConfig2: Program for Control and Customizing FDExt Boards Work Parameters» guide.

13. Audio Level Meter Page

The Audio level meter page is used to customize appearance and properties of audio level meters. Meters are displayed on the Audio pane of the main program window.

Audio level meter page. Control elements:
1 are elements used to specify colors of different audio levels; 2 is element used to set audio level that corresponds to «0»; 3 is element used to set audio level that corresponds to lower bound; 4 is button used to restore default values.
14. VTR Remote Control Page

The VTR Remote Control page is used to customize remote control over used tape recorder. For more information see the «Working With Program» section, the «Capture From Video Tape Recorder (VTR). Control and Customizing» subsection.

VTR Remote Control page. Control elements:
1 is drop-down list used to select protocol; 2 are elements used to customize work mode; 3 are elements used to customize COM port settings; 4 is button used to test connection.

15. GPI Control Page

The GPI Control page is used to customize control over data input via GPI signals. For more information see the «Working With Program» section, the «Control Over Capture Via GPI Signals» subsection.

GPI control page. Control elements:
1 are elements that enable input GPI for «Start capture» command; 2 are elements that enable input GPI for «Stop capture» command; 3 are elements that enable input GPI for «Split movie» command.
Working With Program

General Workflow

1. Launch the FDCapture program, for example, via the Start menu:
   ForwardT Software > Video > Capture.

Note: Stop capture by clicking Stop capture (1) if the program is opened in capture mode.
2. Specify mode of capturing by clicking tab title with corresponding name: Standard, Timetable, VTR (1).

3. Click Settings (2) to customize capture line: select source of audio and video data, customize parameters of files where data is captured and some other parameters. General order of customizing is the same in any of the modes (for more information on this issue see «Customizing Capture Lines» subsequent subsection).


5. Use control elements (3,4,5) located in the main program window to control work process.

6. Stop capturing (if necessary to implement manually) or execution of schedule. Close program window.
Customizing Capture Lines

Click Settings (1) on the Capture Control pane to open window with settings.

Customize all necessary parameters of capturing in the appeared window by completing steps given below.

Click name of page in list (2) to pass to necessary page in settings window. Use the Forward (3) and Back (4) buttons to list pages with settings.

1. On the FD300/FD422/FD322/FD842/FDVt Board page:
   Select device from which data must be captured to files in the list (1), FD422 board input is in our example.
Note: For example, if it is necessary to capture archive instance of own channel programs select in the list device for work with which broadcasting server is configured (see the (1) field of FDOnAir program, the Settings window, the Configuration tab).

2. On the General page:
   1. Select type of container (1) by putting corresponding mark.
   2. If Standard mode is selected be sure that the Automatic file index incrementing for standard capture mode mark is put (2). It is needed for captured files to be sequentially numerated automatically.
   3. Put the Start recording on application start mark (3) if necessary to start capturing to files at each program start automatically (active only for the Standard mode).
3. On the General page (2):
   Put the (1) mark if the Standard mode is selected. The mark ensures creating new folders with date of records. Each folder has name that corresponds to current date.

4. On the AVI/TS files page:
   Select way of splitting record by putting corresponding mark, 10 minutes (1) is specified in our example.
5. On the Disk Management page:
   1. Click the Add folder button (1). Select folder or create new one via standard dialog.
   2. If there are several folders in the list put the (2) mark near folder which must be used for files capturing.

   ![Disk Management Page](image)

   **Tip:** Pay attention that there is enough free space on disks.

6. On the Video data compression page:
   1. Select necessary codec (1).
   2. Click the Settings... button (2) if necessary to check/modify codec parameters. The Settings window appears.
   3. If VBR codec is selected then fields for editing compression parameters become available.
      Specify maximal (3) and minimal (4) available compression quality values in the Quality group of elements. Application changes quality in specified limits at input of data to files dynamically. It allows matching specified data rate (5). Specify start value of compression quality in the Start field (6).
**Important:** Take into account performance of used PC at modifying coding parameters.

**Note:** Detailed description of SoftLab-NSK video codecs see in the «SoftLab-NSK VFW Codecs. Properties and Settings» user's guide.

7. On the Field order page:
   - If necessary change field order at data capturing. It is recommended to remain default order for selected codec.
   - Fields order for SoftLab-NSK codecs is described in the «SoftLab-NSK VFW Codecs. Properties and Settings» user’s guide.
8. On the Audio capture parameters page:
   1. Put the (1) mark to enable capturing with audio.
   2. Then select one of the following cases by putting mark (2):
      normal audio (mono or stereo channel) or multichannel
      audio (several channels).

   Capturing of several audio streams (Multichannel audio)
   is supported if board (source of audio and video data) is
   configured correspondingly.

   Note: Use the FDConfig2 program to customize board (for more information
   on this issue see the «FDConfig2. Program for Control and
   Customizing FDExt Boards Working Parameters» guide).

   3. If Normal audio is specified then select audio channel for
      capturing (3), in case of Multichannel audio put marks for
      streams that must be captured.
   4. For Normal audio: put the (4) mark if necessary to save
      audio data to separate WAV files.
Manual Capturing (Standard Mode). Control and Customizing

1. Features

The Standard mode denotes start of capturing audio and video data to files by clicking manually Start in program window. Capturing is stopped in this mode in two ways:

1. By clicking Stop manually.
2. Automatically when time specified from start is expired.

Working in this mode is recommended for cases when it is necessary to capture initial video material selectively by splitting it to fragments (for example, in order to reduce large volume) and when you decide what to capture during procedure of capturing directly.

2. Standard Tab and Timetable Control Pane

Pass to the Standard tab on Capture Control to switch the mode on. Information on file or sequence of files from the last program session is displayed on the Capture Control in this mode. At each new start of capture via the Start button all records in table are deleted automatically.

Standard tab and Capture Control. Control elements:
1 is information on duration of current record; 2 is button used to start/stop capture; 3 is button used to split movie to fragments; 4 is element used to preview and edit files names; 5 is button used to delete the last captured file; 6 are elements used to customize mode of automatic stop of capture; 7 is table with results; 8 is button used to clear timetable list; 9 is button used to delete selected file; 10 is button used to start playback of selected file via default player.
### Table 1. Buttons of the Standard tab

<table>
<thead>
<tr>
<th>Button</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>🎬 🎬</td>
<td>Start/stop input of data.</td>
</tr>
<tr>
<td>🔨</td>
<td>Split movie: close current file and continue capturing to new file. Splitting is available only at capturing.</td>
</tr>
<tr>
<td>💥</td>
<td>Apply the changes in name of file. Is possible only after modifying name of file in the text field located near.</td>
</tr>
<tr>
<td>🗑️</td>
<td>Delete the last captured file. Is possible only when capture is stopped. New record is captured to file with the previous name.</td>
</tr>
</tbody>
</table>

### 3. Capture Customizing

Work order:

1. Pass to the Standard tab (1).
2. Customize capture parameters: click the Settings button (2) and follow instructions given in the «Customizing Capture Lines» subsection above.
3. Customize mode of automatic stop of capturing if necessary:
   1. Put the Limit capture duration mark (3).
   2. Specify maximal available duration of record in the Duration field (4).
   3. Put corresponding mark (5) if necessary to shut PC down after stop of capturing.
4. If necessary to change template of files names with audio and video records (6) make the changes following the rules described in the «5. Names of Files» subsection below. Click the (7) button.
4. Control Over Capture

1. If source of audio and video data is plugged and settings are configured correctly then current video frames received from source are displayed in window on Preview Control pane (1) and in additional window (if opened) without depending if capture is executed or not. Frames received from source are updated in specified time (2). Meter on Audio Control pane (3) displays current level of sound.

2. Click Start capture (4) to start capturing. When audio and video data are captured to files the Stop capture button (5) on the Standard tab appears. The Split movie button (6) becomes available.

3. Information on how much time elapses from start of capturing is displayed on counter (7).
4. Sequence of files is generated during all procedure of capturing depending on selected way of splitting record to parts automatically: according to size or time (see step 4 in the «Customizing Capture Lines» subsection).

5. If necessary you may continue capturing to new file manually without stopping capture. For this click Split movie (6).

6. If mode of automatic stop is on then data is captured till specified time is expired. Capture can be stopped manually at any moment by clicking Stop (5).

7. When capture is stopped any of the files listed in table can be viewed and if necessary deleted. For this:
   1. Select file by clicking corresponding line in table (8).
   2. Click the (9) button to start playback of the selected file. Default player window appears automatically, file starts to be played.
   3. Click the (10) button to delete selected item or file.

![Capturing Manually (Standard Mode)](image-url)
5. Names of Files

Names of files where capture is implemented in the Standard mode are generated according to template specified in the (1) field. Default template or template customized by user can be used here.

5.1. Default Template

Default template is:

rec#1_DD_MM_xx.ext

where:

- rec#1 is a standard prefix, invariable part (1 denotes program instance index);
- DD, MM denote day and month of capture according to system settings;
- xx is a serial index of file in sequence. The increment is 1 here;
- ext is extension of file name. Depending on selected type of container – avi or mpg.

5.2. Modifying Template

You can change template of file names only when capture is stopped. Edit line in the (1) field to adjust template. Then click the (2) button.

Follow the next rules when customizing template of files names.
Name has the following general format:
Prefix_DD_MM_xx.ext

where:

- Prefix is a line of symbols, invariable part in names of files sequence. The rec#1 line is by default (1 denotes index of program instance). User may specify another set of symbols or delete prefix from the template.
Changes are active during the current program session till closing the program or till some updates are implemented. During the next program launch prefix will depend on if the Keep prefix of a file name mark (1) in the Program Settings window, on the General page is put or not:

- if the mark is absent then prefix is changed to default value – rec#1;
- if the mark is put then line used at the moment of program closing substitutes the prefix;

● _DD_MM_ denote day and month of start capturing to file according to date and time of the system. Line is calculated by default automatically and placed instead of file name template. User may delete the whole line or its part from template. Changes are active during the current program session till closing the program or till some updates are implemented. During the next program launch line is added to template in any case;

● xx denotes number from 00 up to 99. The numbers are included to file name by default. The numbers denote serial index of file in a sequence. Serial index is calculated automatically and modified with increment equal to 1. User can delete the whole line or its part from template. Changes are active during the current program session till the Automatic file index incrementing for standard capture mode mark (2) is put. In this case two numbers (serial index of file) are added to the end of name automatically. During the next program launch substring consisted of two numbers is added to template in any case;
Note: Numbers are file index if the Automatic file index incrementing for standard capture mode mark in the Program Settings window on the General page is put.
If the mark is absent then numbers mean nothing.

- ext is extension of file name. It can be either avi or mpg depending on specified type of container.
Capturing According to Timetable (Timetable Mode)
Control and Customizing

1. Features
Start and stop of data capturing to files are implemented automatically according to schedule created by user.

Working in this mode is recommended in cases when time of broadcasting of audio and video data from source is known exactly. For example, when recording of TV programs broadcasted at a definite time.

2. Timetable Mode and Timetable Control
Pass to the Timetable tab on Capture Control to switch the Timetable mode on. Information on capture schedule and all resulting files are displayed in table on the Timetable Control in this mode.

3. Timetable
Timetable (schedule) is a set of tasks with indication of template with names of resulting files, start and stop of capture. One or several audio and video files (sequence) can be generated after execution of one task.

Note: Sequence of files is generated according to settings specified in the Program Settings window on the AVI/TS files page.

Click the Timetable editor button (1) in the main program window on the Timetable tab to create/edit schedule. The Timetable editor window appears (for more information on creation of schedule...

Schedule displayed in table on the Timetable control pane can be saved to text file. Extension of files names for the FDCapture program is fct. There is also a possibility to load schedule from *.fct text file to table.

Use the (3) button to save schedule to file, click the (2) button to load schedule from file. The picture below presents an example of file with schedule opened in Notepad.

4. Configuration of Capture

Workflow of configuration is the following:

1. Pass to the Timetable Control tab on Capture Control pane (1).

   ![Capture Control Panel](image)

   **Important:** All configuration is made only when capture is stopped.

2. Configure parameters of capture by clicking Settings (2). Follow instructions given in the «Customizing Capture Lines» subsection above.

   ![Settings Button](image)
3. If necessary modify template names of files with audio and video data:

Note: Editor of file name templates can be opened later, at creating schedule in the Timetable editor window.

1. Click Set file name template (1).

2. Put check box opposite desired template (2–4) in the appeared window;

3. If you select template 3 or 4 then customize the template taking into account information given in the «6. Names of Files» subsection below.

4. Click OK (5) to apply the changes and close the window.

5. If template is modified then names of all specified tasks and files are automatically changed in table (6). Note that names of resulting files where capture is finished are not modified.
4. Load schedule from file or create a new one. Customize the schedule then:
   1. Click the Timetable editor button located on the Timetable tab.

2. Click Add... (2) in the appeared window.

3. Specify time of start (3) and finish (4) of capture. Describe task (5). The comments may help to navigate in schedule quicker if necessary.

4. Click Add Record (6).
5. Add all desired records to schedule by completing the 2–4 steps.

**Important:** Interval among tasks (stop of the first task – start of the next task) must be not less than 10 seconds.
6. Click OK (7) to apply the changes and to close editor window.

Table with schedule displays list with tasks. If capture sessions are executed then resulting files are displayed in the list.

5. Be sure that all tasks that must be executed are enabled now, i.e. marks (1) are present.
   Click corresponding field to put/release mark for one task. Click the (2) button to put marks for all tasks at once or the (3) button – to release them.

**Important:** Only enabled tasks are executed.
5. Control Over Capture and Monitoring

5.1. Control

![Image of control panel]

**Important:** Start schedule to execute tasks on data capturing. Schedule is started and stopped manually.

1. Click **Start capture** (1) to start schedule execution.

2. When schedule is executed the **Stop capture** button (2) on the **Timetable** tab instead of **Start capture** appears, other buttons are disabled.

3. If source of audio and video data is plugged and settings are configured correctly then video frames are displayed in window on **Preview Control** pane (3) and in additional window (if opened) not depending if data is captured or not. Frames are updated in specified time periods (4). Meter on **Audio Control** pane displays current level of sound.
4. When mode of schedule execution is on capture to files starts according to marked tasks automatically. Capture is stopped according to tasks also.

5. Sequence of files is generated automatically depending on specified mode of splitting record to parts: by size or by time.

6. Execution of schedule can be stopped at any moment by clicking Stop.

5.2. Monitoring

You can monitor work via the following indicators:

1. Information on time expired from start of task execution is displayed on counter (1).

2. Information on captured files is displayed in table on Timetable Control pane (2): file names, indicator of current state, the first frame in movie, etc.

3. The Capture Control pane and the Dropped frames area (3) display total quantity of frames dropped at capture.

4. Indicators of load (4) display corresponding information on Preview Control pane.

5. When capture is stopped any of the files listed in table can be viewed and if necessary deleted:
1. Select file by clicking it in corresponding line in table (5).

2. Click the (6) button to start playback of selected file. Window of default player is opened automatically. File playback is started.

3. Click the (7) button to delete selected file(s).

6. Names of Files

6.1. Templates

Names of files where capture in the Timetable mode is implemented are generated according to template specified at creating schedule. Templates of task names in schedule and files names are the same. There are 3 formats of templates:

2. Name with serial index.
3. Name with date and time of capture.
6.2. Standard Template

Standard templates have the following format:

1. For names of tasks in schedule – ItemN.ext
2. For names of files – ItemN_xxxxx.ext

where:

- Item is a standard prefix, invariable substring;
- N is a serial index calculated automatically when adding new tasks to schedule. Start value is 1, increment is 1;
- _xxxxx is a serial index of file in sequence in the limits of one task. Start value is 0, increment is 1. The «_0» string is not displayed in name of file (see example below);
- ext is extension of file name. Depending on selected type of container – avi or mpg.

The picture below shows an example of names of tasks and files based on standard template. The first task in list has the Item1. avi name (1). Names of resulting files are: Item1.avi (instead of Item1_0 because the «_0» substring is not displayed in name), Item1_1.avi, Item1_2.avi, etc. (2).

It is impossible to modify standard template. Select another template if needed to assign names in another format (template).
6.3. Name With Serial Index

Templates of the Name with serial index type have the following format:

1. For names of tasks in schedule – PrefixN.ext
2. For names of files – PrefixN_xxxxx.ext

where:

- **Prefix** is a string of symbols (any letters, characters, specific marks), invariable part of tasks and files names. User can specify any set of symbols or delete prefix from template;
- **N** is a string of numbers, obligatory string. The numbers are considered as start value at calculating indices of tasks in schedule;
- **_xxxxx** is a serial index of file in sequence in the limits of one task. The index is calculated automatically and is placed in files names. Start value is 0, increment is 1. The «_0» string in name of file is not included;
- **ext** is extension of file name, depending on type of container is either avi or mpg.

The picture below displays example of tasks and file names based on the Name with serial index template.

The rec# prefix and start value «1» are used by default at the first program launch. The first task in the list is marked as rec#1.avi (1). Names of files are: rec#1.avi (substring «_0» in name is not included), rec#1_1.avi, rec#1_2.avi, etc. (2).

6.4. Name With Date and Time

Templates of the Name with date and time type have the following format:

1. For names of tasks in schedule – Prefix_Date_Time.ext
2. For names of files – **Prefix_Date_Time_xxxxx.ext**

where:

- **Prefix** is string with symbols (any letters, numbers, specific marks), invariable part in names of tasks and files. User may specify any set of symbols or delete prefix from template;
- **_Date** is date of task start. User can select one of the formats of string with date. The following designations are used in list: YYY, YY, MM, DD – four numbers denote year, then the numbers denote year, month and day correspondingly;
- **_Time** is time of task start. User can select what components to include in string with time: hours (hh), minutes (mm), seconds (ss);
- **_xxxxx** is a serial index of file in sequence in the limits of one task. The index is calculated automatically and is placed into files names. Start value is 0, increment is 1. The «_0» string in name of file is not displayed;
- **ext** is extension of file name, depending on type of container is either avi or mpg.

Picture below displays example of names of tasks and files based on the *Name with date and time* template.

The **rec1#** prefix is used at first program launch. The string with date in the *year_month_day* format follows, then comes substring (two numbers) with time of start – minutes only. Task started on August, 13 in year 2014 at 16:20:25:09 has the **rec#1_2014_08_13_20.avi** name (1). Names of files are: **rec#1_2014_08_13_20.avi** (substring «_0» in name is not included), **rec#1_2014_08_13_20_1.avi**, **rec#1_2014_08_13_20_2.avi**, etc. (2).
Capturing From Video Tape Recorder (VTR). Control and Customizing

1. Features

The FDCapture program supports function of remote control over VTR (source of audio and video data) at customizing and capturing data to files. The function is available when the VTR mode is available.

Exchange by signals between PC and VTR is implemented via COM port using RS-232 or RS-422 interface. The following protocols are supported: Sony Betacam RS-422, Sony RS-232 and JVC RS-232.

Start and finish of capture are implemented in the VTR mode automatically according to schedule specified by user.

Schedule is a set of tasks with indication of template resulting files names, start and stop of capture. Time of start and stop is specified according to timecode of capture source (unlike the Timetable mode where daily time is used).

Schedule may be kept in a text file. Extension of files with schedules for the VTR mode is fcv.

Note: Plug VTR to PC first. Then connect audio and video signals to used board and connect port of VTR control with PC COM port.

2. VTR Tab and Timetable Pane

Select VTR (1) on the Capture Control pane to switch mode of capture via VTR with remote control on.
The VTR tab and Timetable pane. Control elements:
1 is information on duration of current capture; 2 is button used to start/stop capture; 3 is timetable editor; 4 is button used to set file name template; 5 are elements to control VTR (see note below); 6 is button used to select all records («marks» are put); 7 is button used to deselect all records («marks» are released); 8 is button used to add record to schedule; 9 is table with schedule and capture results; 10 is button used to clear timetable list; 11 is button used to delete selected item or file; 12 is button used to start capture using default player; 13 is button used to load schedule from *.fcv file; 14 is button used to save schedule to the *.fcv file.

Note: Buttons to control VTR are active only when the VTR recorder is plugged to PC and when parameters of remote control are customized (the Program Settings window, the VTR Remote Control page). For more information see the «3.Work Order» subsection below.

Control over VTR. Control elements:
1 is button used to start capture; 2 is button used to stop capture; 3 is button used to roll tape back; 4 is button used to roll tape forward; 5 is button used to eject cassette from VTR; 6 is button used to return one frame back; 7 is button used to pass one frame forward; 8 is button used to roll back with a specified speed; 9 is button used to roll forward with a specified speed; 10 is slider used to control speed.
3. Work Order

Complete the following to capture data from VTR to files via remote control:

1. Plug recorder to PC: assign audio and video signals to board and connect control port of recorder with PC COM port (RS-232 or RS-422 interface).

2. Customize capture line. Instructions are given in the «Customizing Capture Lines» subsection.

3. Customize parameters of remote control over VTR. Instructions are given in the «4. Customizing Distant Control» subsection below.

4. Click (1) if you want to select another template of file names.

Note: When working with templates of file names the same rules as in the Timetable mode are active. Instructions are given in the «6. Names of Files» subsection of the «Capture According to Timetable (Timetable Mode). Control and Customizing» subsection.

5. See the «5. Creation of Timetable» subsection below to create schedule of capture.

6. Be sure that all tasks that must be complete are marked (2).

7. Switch mode of files capture on by clicking Start (3). Capture is implemented according to specified parameters and created schedule automatically.

8. Capture can be stopped at any time by clicking Stop.

9. To control capture procedure use indicators in table with schedule and other elements in the main program window.
4. Customizing Remote Control

1. Plug VTR to PC: connect audio and video signals to board and connect VTR control port with PC COM port (RS-232 or RS-422 interface).

2. Open the Program Settings window by clicking Settings (1) in the main program window.

3. Select the VTR Remote Control page (2).

4. Select protocol (3) supported by VTR.

5. Specify way of positioning: by Counter or by Timecode (4).

6. Specify time of «preroll» in the Preroll field (5). Preroll is an advanced start of capture. In this case capture starts not from starting point (specified in schedule) but from earlier moment (earlier point is specified as «distance»).

7. Specify maximal available time of searching error in the Search Error Timeout field (6). If during this timeout start of fragment is not found (for example, necessary timecode is absent) then search is stopped and the next fragment starts to be processed.
8. Select mode of sorting tasks in schedule in the Sort Timetable At Start drop-down list (7). Tasks can be added to schedule in VTR mode arbitrarily. If sorting is started then tasks are ordered according to start values of fragments timecodes automatically. It allows minimizing time for searching next fragment at capture from VTR. Possible modes here are:
   - **Always** denotes switching mode of automatic sorting on;
   - **Ask** denotes displaying corresponding request at start of schedule execution and switching sorting on only after user’s additional confirmation;
   - **Never** denotes never switching mode of automatic tasks sorting on.

9. In the COM Port Settings group of elements:
   1. Select COM port (8) where VTR is plugged.
   2. Customize parameters of transmitting data via drop-down lists of the group. Click Set Default to keep default values.
   3. Click Test (9) to check if parameters are configured and plugging is customized correctly. If all is correct then type of plugged VTR with is displayed in field near the button.

10. Click OK (10) to close window with saving all settings.
5. Creation of Timetable

Add task to schedule in one of the following ways:

1. Click the Add button (1). Add necessary tasks to list specifying start and end of capture fragments. Order of work is the same as when adding tasks in mode of input according to schedule (for more information see in the «Capture According to Timetable (Timetable Mode). Control and Customizing» subsection, step 4 in the «4. Configuration of Capture» subsection).

2. Select necessary fragments via buttons of control over VTR and add tasks to schedule one by one repeating the following steps:
   1. Pass to position of fragment start by rolling a tape via buttons. Current position is displayed on meter (1).
   2. Click Add (2). New record in schedule appears. Mark in is specified in the Mark in bar (3) is displayed. The 00:00:00:00 value in the Mark out bar is displayed.
   3. Pass to end of necessary fragment via buttons of control over VTR. Click Add. Mark out is added to the Mark out bar (4).
3. Specify mark in and mark out if the marks are known manually:
   1. Click **Add** (1). Line with new task is added to schedule.
   2. Click the **Mark in** field (2) and type time that corresponds to fragment start (start of capture in format: hours:minutes:seconds:frames).
   3. Click the **Mark out** field (3) and type time that corresponds to fragment end (stop of capture in format: hours:minutes:seconds:frames).
Control Over Capture Via GPI Signals

1. General Information

The following commands can be executed in the FDCapture program via GPI signals:

- “Start capture” command;
- “Stop capture” command;
- “Split movie” command.

For this can be used:

- program GPI signals;
- GPI signals received from external device.

Note:

1. There is the SLGPISoftConfig program included into the SoftLab-NSK company products set designed for configuring program GPI signals. More information on the program see in the «Use of SoftGPI Signals. Exchange of Control Signals Between Programs» user’s guide.
2. More information on working with the SLControlBox101 device see in the «SLControlBox 101: Interaction With External Devices Via GPI» user’s guide.

Control via GPI is possible in the Standard mode only.

Important: Use different GPI signals for different commands. Control over GPI signals is possible if signals for corresponding commands are assigned and the Standard tab in the main window on Capture Control is selected.

2. Customizing

Control over GPI signals is configured in the FDCapture program in the Program Settings window on the GPI Control page. Signals for Enable input GPI for “Start capture”, Enable input GPI for “Stop capture” and Enable input GPI for “Split movie” commands are configured in the same way via corresponiding groups of elements.

Important: If program GPI signals are used then they must be configured in the SLGPISoftConfig program in advance, before launch of the FDCapture program.
For example, complete the following to assign control signal for the Enable input GPI for “Start capture” command:

1. Put the Enable input GPI for “Start capture” mark to enable the command (1).

2. Select identifier of input GPI signal (2).

3. Select type of command (3) if GPI signals received from external devices are used. Possible variants here are:
   - On Closing – on closing of contacts;
   - On Opening – on opening of contacts.

3. Work Order

The present subsection describes general workflow on customizing automated control over start and stop of capture to files on example of GPI program signals. More information on this issue see in the «Use of GPI Signals» user's guide.

3.1. Task

Let it is necessary to capture an archive of own TV programs of broadcasted on air channel. Control over start/stop of capture can be automated. To automate it you must add commands of sending control signals (Start input and Stop input correspondingly) to the FDCapture program. The commands must be added to start and end of schedule with blocks commands for own programs in FDOnAir.

Start and stop of capture is executed in the FDCapture program at desired time as schedule is being executed automatically, without user action.
3.2. Work Order

1. Configure two output (1) and two input GPI events (2) in the SLGPISoftConfig program. Make two pairs of the events: the first pair is for the Start record command (3), the second pair is for the Stop record command (4).

Note: Output events are used in FDOnAir program schedule for sending signals of start and finish of own blocks of programs. Input events are used in the FDCapture program for automatic launch of the Start record, Stop record commands.
2. Launch the FDOnAir program. Customize transmitting signals of start and finish of own programs:

1. Configure two commands (Send signal: “Start Input”, “End Input” (1)) in the Settings window on the GPI events tab. Output events customized at the previous step are used in these commands.
2. Insert the Send signal commands (2) to schedule.

3. Launch the FDCapture program. Customize capture:
   1. Pass to the Standard tab (1) in the main program window. Control via GPI is active in the Standard mode only. Click Settings (2).
2. Customize capture parameters. Specify source of audio and video data on the FD300/FD422/FD322/FD842/FDVrt Board page, i.e. select output board line for which air FDOnAir program instance is configured.

3. Customize signals in the Program Settings window on the GPI Control page. Select paired input signals for corresponding commands in FDOnAir. Close window with settings by clicking OK.

4. Minimize the FDCapture program window. Capture is executed only if the program is launched.
4. Start execution of schedule in FDOnAir.
5. Be sure that files with air records at definite time in specified folder appear.
Capture of IP Media Data to Files

The present subsection describes working without board on example of organizing capture of IP media data to files.

It can be needed, for example, to capture examples of advertisement block jingles (necessary for AutoDetect software work) received from IP input stream to files.

1. Be sure that there is a stream with audio and video data at a specified address.
   You may use, for example, the VLC player. Specify network address (1) of media stream source and click Play (2).

If protocol and address are specified correctly and IP stream has media data then corresponding video is displayed in player preview window. Close media player.
2. Launch the FDConfig2 program. Be sure that list of devices includes one virtual board (FDVrt Device) at least and be sure that you have a license for it. Check settings.

3. Customize graph (1) for receiving stream from IP network to virtual board.

For more information on graphs customizing see the «SLStreamer Lite, SLStreamer Pro: Programs For Customizing, Monitoring and Control Over Digital_broadcastings» user's guide. The present subsection describes the main features that must be taken into account when customizing graphs.

Graph must contain four nodes at least (see the picture below).
1. The Input Device node (2) specifies parameters of stream source.

![Diagram of Input Device node]

2. The Output Device node (3) specifies parameters of stream receiver: index of virtual board and name of region where data is received.

![Diagram of Output Device node]

3. Start task with graph for execution. Be sure that Running in the State bar is displayed.
5. Open the FDCapture program. Open window with settings. Customize parameters of capture lines. Select corresponding virtual board (1) (specified in graph) on page where you specify audio and video data source. Then close settings window.

6. You may control data capturing manually, according to schedule and via GPI signals.
   Click Start capture (2) to start capturing audio and video data to files manually. Data is captured till the Stop capture button is released. Also capture is stopped automatically if time specified from start of the procedure is expired.
Table with results displays list of files after capture.
Useful Links

Forward T product line: description, software delivery, documentation, solutions
http://www.softlab.tv/forward/index.html

Support
e-mail: forward@softlab.tv
forward@sl.iie.nsk.su
forward@softlab-nsk.com

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

Additional documentation:
1. FDConfig2: Program For Control and Customizing FDExt Board Work Parameters
2. FDConfiguration: FD300 Board Settings
3. SoftLab-NSK. VFW Codecs. Properties and Settings
4. Use of SoftGPI Signals. Exchange of Control Signals Between Programs
5. SLControlBox 101: Interaction With External Devices Via GPI
6. SLStreamCapture. Program for Audio and Video Data Capture to Files in Windows Media (WMV) Format user’s guide for more information.
7. SLStreamer Lite, SLStreamer Pro: Programs for Customizing, Monitoring and Control Over Digital Broadcasting
8. AutoDetect Software: Automation of Broadcasting Basing Jingles and Video Fragments Recognition

Translation from
February 15, 2016

© SoftLab-NSK