

FD322 Board



Solution for Analog TV Broadcasting

*Revision as of
March 19, 2012*

Specification.
Instruction on Customizing
of Solution



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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.

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.

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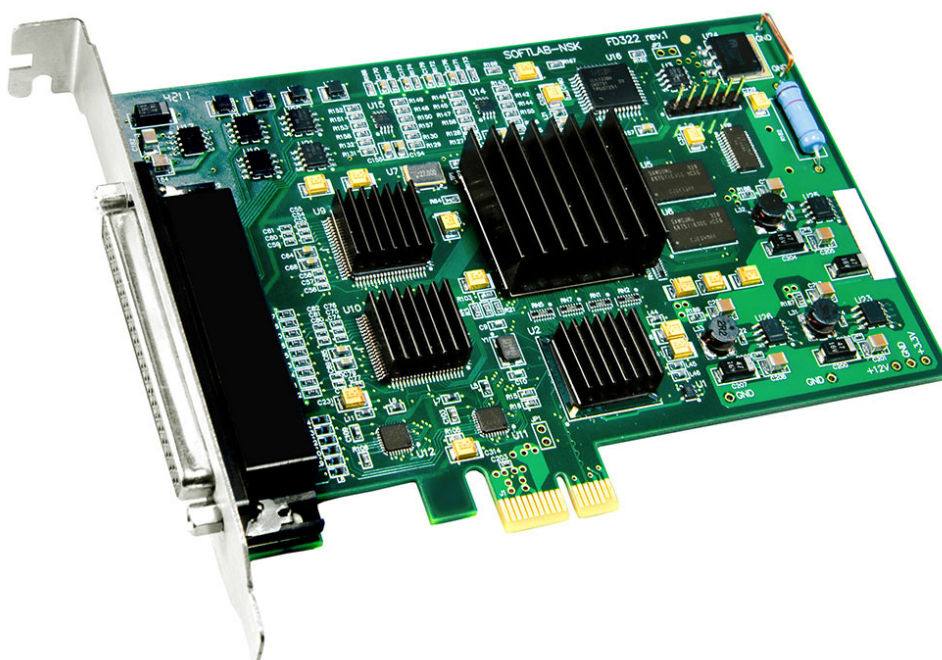


Introduction

The FD322 board is a hardware part of a product set designed for organizing analog TV broadcasting. The FD322 board deals with CVBS, Y/C (S-video), YUV and RGB signals.

You can organize broadcasting of up to 2 independent channels via one FD322 board (with corresponding licenses) as it has 2 input and 2 output lines. Mode of working is customized in the FDConfig2 program included into software set.

The board is plugged to PCI Express slot of PC mother board (see picture below). For commutation with external devices either a special cable (included into delivery product set) or a break-out box can be used (purchased separately).



FD322 Board



The FD322 Board Specification

Table 1. The FD322 Board Specification

Parameters	Specification
Bus	PCI Express 1x
Video	
Format of video data	PAL, PAL+, SECAM (input only): 720x576, 25 frames/sec, 4:3/16:9 NTSC: 720x480, 29.97 frames/sec
Internal video data processing	YUV 4:2:2 or YUV with 4:2:2:4 transparency, 8-bit per component.
Video inputs	Two independent video channels with a possibility of plugging: <ul style="list-style-type: none">• up to 9 composite sources;• up to 4 S-Video sources;• up to 3 YUV sources;• up to 2 RGB sources. Two channels of time-based correction (TBC).
Video outputs	Two outputs. Modes of working: <ul style="list-style-type: none">• the same signal on both outputs;• two independent signals;• fill + key (for dealing with external mixer). Possible combinations of signals for each output: <ul style="list-style-type: none">• Y/C + CVBS;• YUV;• RGB.
Genlock	Genlock of video output to one of the inputs.
Audio	
Audio inputs	4 mono- or 2 stereo channels.
Audio outputs	4 mono- or 2 stereo channels.
Audio data format	Uncompressed (PCM), 16 bite, 48 kHz.
Delay	Customized delay of sound for each input channel.
Genlock	Genlock of sound to the main video signal.
Volume level	Volume levels: <ul style="list-style-type: none">• 0 dBV non-balanced RCA (cable);• +4 dBu balanced XLR (break-out box).



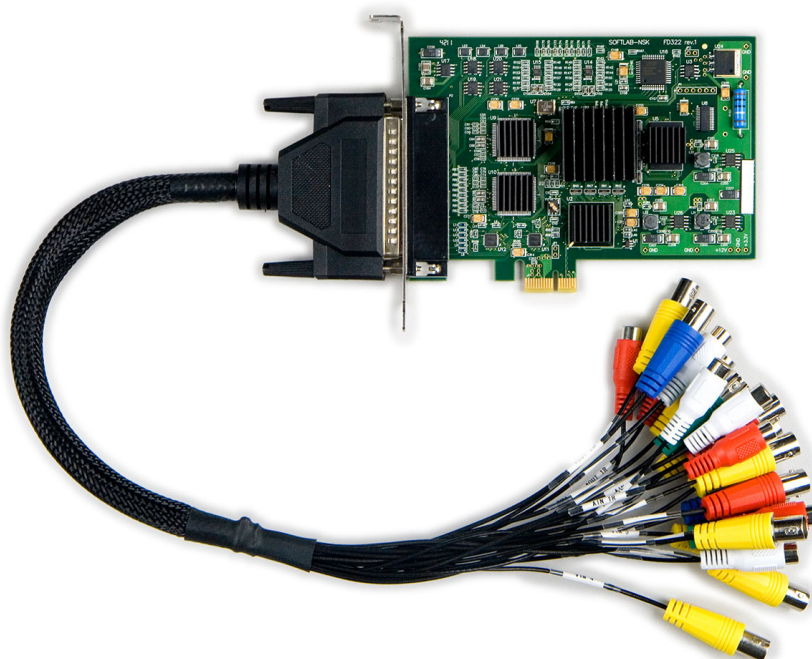
Commutation of the Board With External Devices

1. Ways of Commutation

For commutating of the board with external devices – sources and receivers of audio/video signal – either commutation cable or commutation panel (break-out box) are used.

1.1. Commutation Cable

Commutation cable has D-sub connector for connecting with FD322 board and a set of RCA connectors for connecting with external devices (see picture below). All connectors are marked correspondingly.



Commutation cable plugged to FD322 board

The following devices in different combinations can be plugged to the board by means of a cable:

- Sources of video signal: CVBS (up to 9), Y/C (up to 4), YUV (up to 3), RGB (up to 2);
- Sources of audio signal: 4 mono or 2 stereo lines, non-balanced signal;
- Receivers of video signals (up to 2 for each type of signal): CVBS, Y/C, YUV, RGB;
- Receivers of audio signals: 4 mono or 2 stereo lines, non-balanced signal.

✓ **Important:** Devices must be plugged in a strict correspondence to rules of commutation depending on used formats of video signals (for more information see sections below).

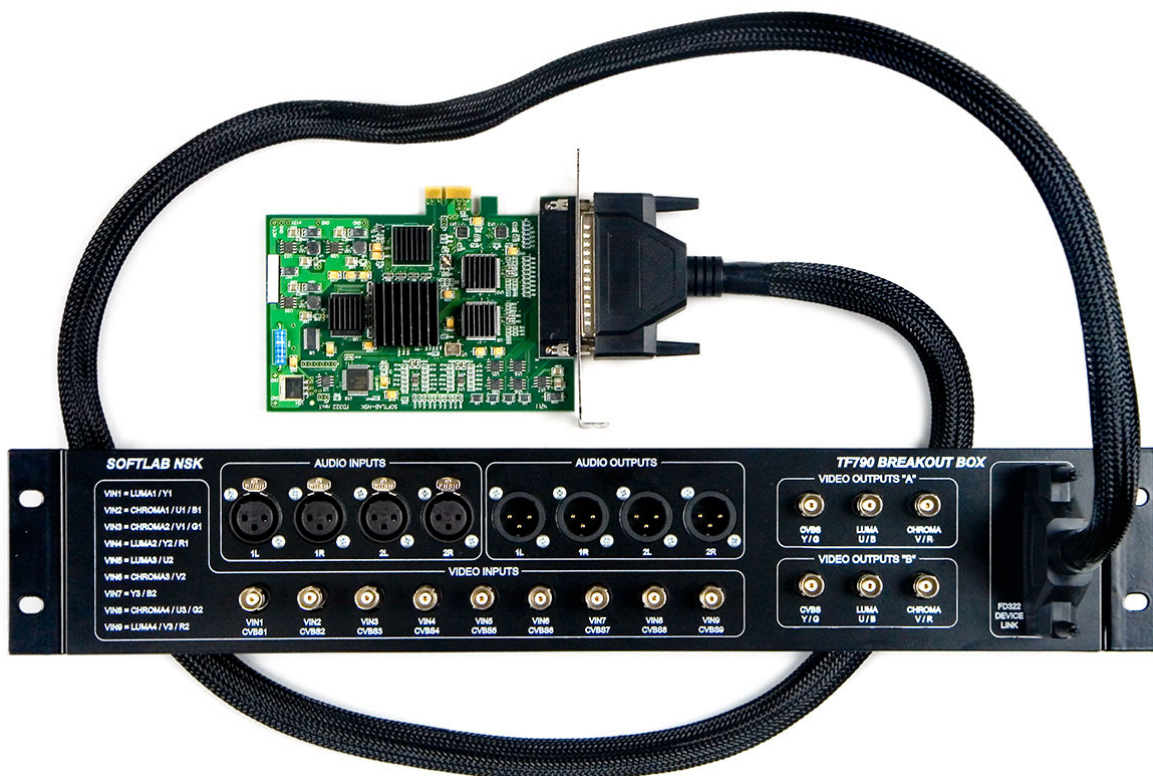


1.2. Commutation panel

Commutation panel (break-out box) is an external device that has 2U 19" dimensions. The breakout box is connected with the board by means of a special cable included into product delivery set. External devices are plugged to the panel by means of connectors that are marked and grouped according to their functions:

- video inputs – Video Inputs: VIn1–VIn9;
- audio inputs (XLR connectors) – Audio Inputs: 1L, 1R, 2L, 2R;
- video outputs of group A – Video Outputs “A”;
- video outputs of group B – Video Outputs “B”;
- audio outputs (XLR connectors) – Audio Outputs: 1L, 1R, 2L, 2R.

Some additional information about connectors you may find on the panel itself.



Commutation panel plugged to FD322 board

The following devices in different combinations can be simultaneously plugged to board by means of breakout box:

- Sources of video signal: CVBS (up to 9), Y/C (up to 4), YUV (up to 3), RGB (up to 2);
- Sources of audio signal: 4 mono or 2 stereo lines, balanced signal;
- Receivers of video signal (up to 2 for each type of signal): CVBS, Y/C, YUV, RGB;



- Receivers of audio signal: 4 mono or 2 stereo lines, balanced signal.

✓ **Important:** All devices must be plugged in a strict correspondence to rules of commutation depending on used formats of video signals (for more information see notes on commutation panel and in sections below).

2. Rules of Commutation

2.1. General Information

Sources and receivers of audio/video signal must be plugged strictly according to rules of commutation depending on used formats of signals. The rules specify what cable lines/panels are used to transmit signals.

➡ **Example:** For example, sources of video signal can be plugged to the board in the following combination (names of used cable lines/panel connectors are indicated in brackets):
1 CVBS (VIn9)+1 YUV (VIn1+VIn2+VIn3) +1 Y/C (VIn5+VIn6).

- Note:**
1. The following designations are used in tables with description of commutation rules below:
 - For plugging of signal sources – names of lines used in the FDConfig2 and FDO nAir applications;
 - For commutation connectors – names that correspond to mark on commutation cable.
 2. When you work with commutation panel follow explanations located on panel near connectors.

✓ **Important:** For correct work of the board and software set it is obligatory that configuration of board parameters specified in FDConfig2 exactly corresponds to used scheme of devices commutation.

2.2. CVBS Signal

Up to 9 CVBS signal sources can be plugged to board input (possible variants are designated as CVBS1–CVBS9): to each of the lines with the VIn1–VIn9 marking.

Up to 2 CVBS signal receivers can be plugged to board output: to lines marked as VOut A1 and VOut B1.



2.3. YUV Signal

Up to 3 YUV signal sources can be plugged to board input. Possible variants of commutation are given in the table below.

Variant	Connectors combination	Index of connector for plugging of signal component		
		Y	U	V
YUV1	VIn1+VIn2+VIn3	1	2	3
YUV2	VIn4+VIn5+VIn6	4	5	6
YUV3	VIn7+VIn8+VIn9	7	8	9

Up to 2 receivers of YUV signals can be plugged to board output. Possible variants of commutation are given in the table below.

Variant	Connectors combination	Index of connector for plugging of signal component		
		Y	U	V
1	VOut A1+VOut A2+VOut A3	1	2	3
2	VOut B1+VOut B2+VOut B3	1	2	3

2.4. Y/C Signal

Up to 4 sources of Y/C signal can be plugged to board input. Possible variants of commutation are given in the table below.

Variant	Connectors combination	Index of connector for plugging of signal component	
		Luma	Chroma
YC1	VIn1+VIn2	1	2
YC2	VIn4+VIn3	4	3
YC3	VIn5+VIn6	5	6
YC4	VIn9+VIn8	9	8



Up to 2 receivers of Y/C signal can be plugged to board output. Possible variants of commutation are given in the table below.

Variant	Connectors combination	Index of connector for plugging of signal component	
		Luma	Chroma
1	VOut A2+VOut A3	2	3
2	VOut B2+VOut B3	2	3

2.5. RGB Signal

Up to 2 sources of RGB signal can be plugged to board input. Possible variants of commutation are given in the table below.

Variant	Connectors combination	Index of connector for plugging of signal component		
		R	G	B
RGB1	VIn4+VIn3+VIn2	4	3	2
RGB2	VIn9+VIn8+VIn7	9	8	7

Up to 2 receivers of RGB signal can be plugged to board output. Possible variants of commutation are given in the table below.

Variant	Connectors combination	Index of connector for plugging of signal component		
		R	G	B
1	VOut A3+VOut A1+VOut A2	3	1	2
2	VOut B3+VOut B1+VOut B2	3	1	2

2.6. Audio Signals

Lines marked as AIN 1L, AIN 1R, AIN 2L, AIN 2R are used for commutation with sources of audio signals.

Lines marked as AOUT 1L, AOUT 1R, AOUT 2L, AOUT 2R are used for commutation with receivers of audio signals.

- ✓ **Important:** Types of plugging of audio signals differ depending on used commutation device:
for cable – non-balanced plugging is used,
for commutation panel – balanced plugging is used.



Customizing of Solution

This section provides with an advisable workflow of solution customizing. Pass to step 5 if the product was purchased as an assembled kit including video server with plugged board and necessary software.

1. Switch off PC. Plug the FD322 board to any PCI Express mother board slot.

✓ **Important:** Power down PC before plugging the board. Disconnect EPU and pull out a cable from 220 V socket.

2. Turn on PC. Refuse installing drivers for new hardware if a corresponding message appears.
The FD322 board drivers will be automatically installed later during installation of product software.
3. Activate product registration first by double-clicking name of REG file (registration key). All necessary information will be added into Windows Registry. Then reboot machine.

Note: Registration key is included into product delivery set. For the Forward Tx product REG file is a file with the **reg** extension that is located on setup disk in the **Registration** folder.

4. Install software in the following order (for more information on this issue see the [«Installation of ForwardT Software. User's Guide»](#)):
 1. Microsoft .Net Framework 3.5 SP1 (in case if this package is not installed on your PC).
 2. Microsoft DirectX Update (in case if this software is not installed on your PC).
 3. Software of purchased product.
For this you should first launch installation file: ForwardTxSoftware_Setup_n_n_n.exe, where n_n_n denotes number of version.
Then follow Setup Wizard instruction.
In the window where you have to select necessary components set marks only for purchased product components, for example, Forward TA.
Reboot PC after installation.

✓ **Important:** First plug FD322 into PC. Then install product software.



Note: All mentioned above files for software installation are located on setup disk. You may also download the files at the **Download** web page:
<http://www.softlab-nsk.com/forward/download.html>

We recommend installing the latest available updates of software.

5. Plug sources of signal, control monitor and device used for transmitting of a signal on air to the board.
Rules of FD322 and external devices commutation are given in the «Commutation of the Board with External Devices» section.
6. Customize parameters of the board using the FDConfig2 application. For more information on this issue see the «Customizing of Board Parameters in FDConfig2» section.
7. You may control broadcasting either automatically or manually via the FDO nAir application.
Customize the FDO nAir application for working with the FD322 board. Prepare broadcasting schedule.
To insert your own content into a passthrough signal create a schedule with 2 types of command blocks:
 1. For broadcasting of a signal coming from the main broadcasting station. The blocks include commands to control passthrough video from board inputs:
Video Input N (N is index from 1 – 6).
 2. For broadcasting of a signal coming from local station. If your own content is in the form of files and located on PC hard disk then the blocks will include commands for broadcasting of video from files (Play video clip).
For more details on workflow, see the «Configuration and Control Over Broadcasting in FDO nAir» section.
8. You can preview signal from FD322 board input or output on your PC via the FDPreview program.
FDPreview can be launched via either the Start menu:
Programs > ForwardT Software > Tools > FDPreview
or program shortcut located on desktop.
For more information on this program see the «[FDPreview. Program for Previewing of Audio and Video Data on Board Inpit/Output. User's Guide](#)».



Customizing of Board Parameters in FDConfig2

The section describes a workflow of customizing 1 broadcasting channel on the FD322 board.

Step 1. Launch of the FDConfig2 Program and Selection of Board

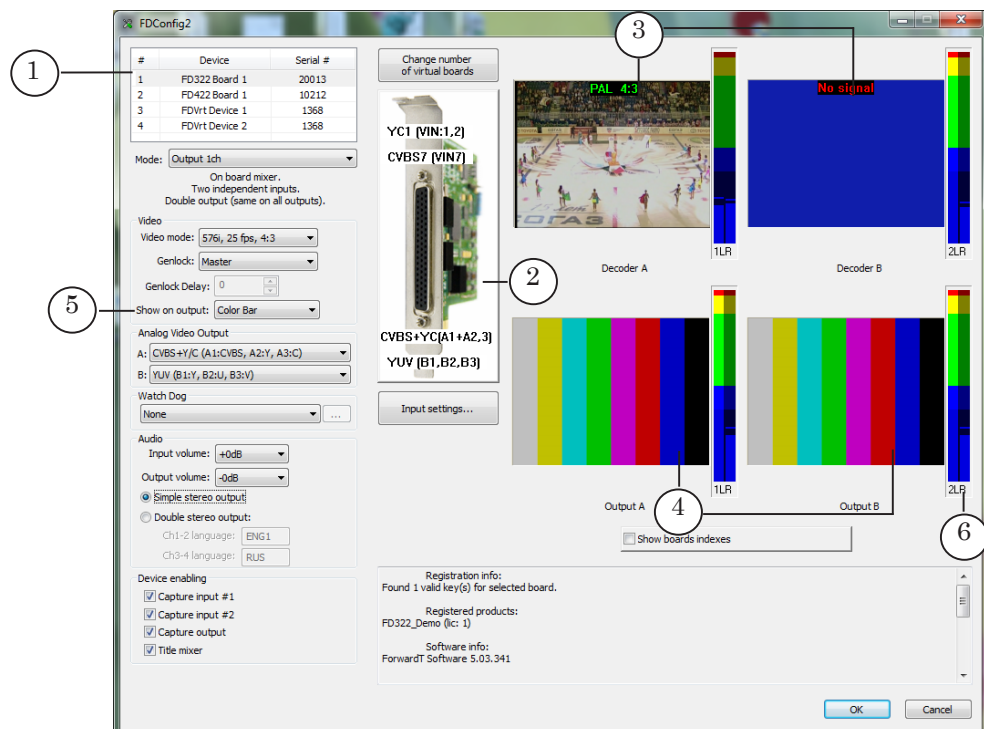
Configuration of the FD322 board is implemented via the FDConfig2 program. Program file is:

~\FDConfig2\FDConfig2.exe file, where ~ denotes a full path to the folder with ForwardT Software (if you install standardly C:\Program Files\ForwardT Software).

1. Open the Start menu to launch the FDConfig2 program:
Programs > ForwardT Software > Board Setup > FDConfig2
or double-click program shortcut located on desktop:



- Note:**
1. The FDConfig2 program can be launched at any time. There is no any difference either any other applications that also work with FD322 are launched or not.
 2. Close all applications that work with FD322 to apply any changes made during board configuration.
2. Be sure that necessary board is selected in the device list (1).





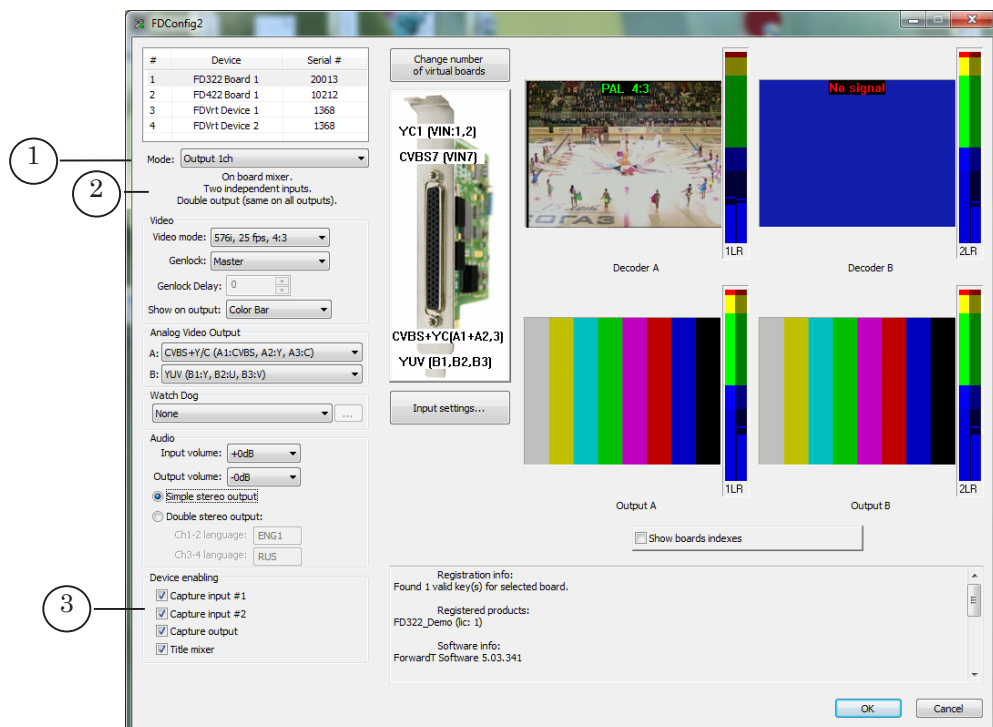
At first launch the program has default configuration. Information on current configuration is always displayed in program window (2). Picture above shows what sources and receivers of signals (according to names of commutation lines) are currently selected for input/output board lines: Input #1, Input #2, Output A, Output B (in top-down succession).

Input signal content from current sources is displayed in (3) preview windows. Output signal content is displayed in (4) preview windows. At first launch of the program displayed picture in output preview windows depends on value selected in the Show on output drop-down list (5). The picture in our example displays a color table. Audio meters (6) display audio level in signal of a corresponding line.

Step 2. Selection of Board Mode and Activation of Functions

1. Select the Output 1ch mode in the Mode drop-down list (1). The Output 1ch mode sets the following configuration of board parameters:

- 2 independent input lines;
- double output (the same content on both outputs);
- board mixer is on.



2. Be sure that all necessary check marks are put in the Device Enabling group (3). Put mark denotes enabling work of corresponding function in applications that use FD322 (for more information see the table below).



Table 2. Functions of board available in the Output 1 ch mode

Program	Functions (Name and Purpose)
	Capture Input 1/ Capture Input 2/ Capture Output
FDapture	Capturing and recording of audio and video data into video files from input #1/input #2/output of board. Capturing is not available if the function is off.
SLStreamCapture	Capturing and recording in the WMV format of streaming data from input #1/input #2/output of board. Capturing is not available if the function is off.
FDPreview	Previewing of data from input #1/input #2/output of board. Previewing is not available if the function is off.
FDReplayCapture/ FDPostPlayCap- ture	Capturing of data from input #1/input #2/output of board into storage (products of the Forward Goalkeeper/TP sets)
Video2 title element	Playback of data from input #1/input #2/output of board in title element of the Video2 type. Playback is not available if the function is off.
	Title Mixer
FDonAir	The application will not work if the function is off.

Note: A possibility of using any of these functions depends on either you have or do not have a corresponding license. For example, for the Forward TA product set you will have licenses for the following functions: Capture from Input, Capture from Output, Mixer.

If you purchased this product you can activate only one function at once: Capture Input 1 or Capture Input 2 (put only one necessary check mark in the Device Enabling group). Information on licenses is kept in registration key and recorded into Windows Registry when the key is activated. If there are several boards in system then total number of corresponding licenses for corresponding products is taken into account.



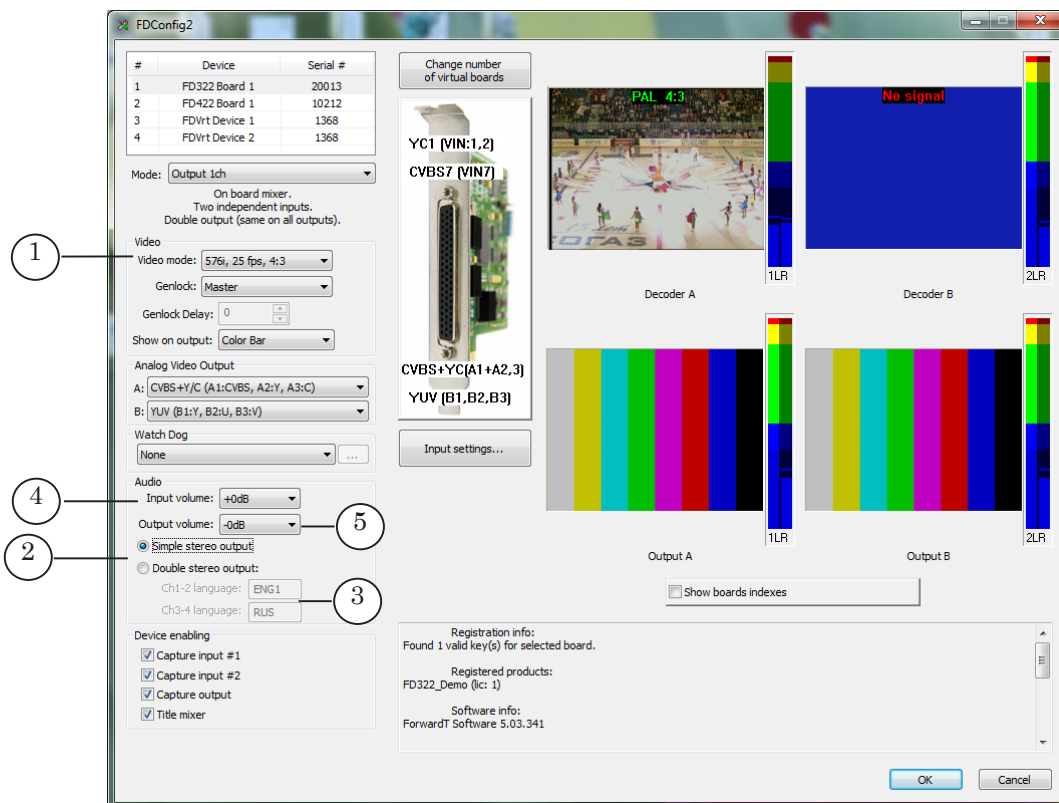
Tip: We recommend doing the following when working with the Device enabling group of elements:

1. Leave automatically put marks if there is one FD322 board in system.
2. If there are several boards in system make sure that necessary check marks for corresponding boards are put. Automatically the marks can be distributed among boards in another way.
3. If there are several boards in system you can manually redirect part of licenses (accessible functions) of one board to another one by taking off and putting on check marks correspondingly.



Step 3. Customizing of Video and Audio Modes

1. Select necessary format of video: frame rate, aspect ratio in the Video mode drop-down list (1). For example, 576i, 25 fr/sec, 4:3 corresponds to PAL standard.



2. The FD322 board can process up to 4 audio channels: 4 mono channels or 2 stereo pairs. Specify number of signal audio lines in the Audio group of elements (2):
 - Simple stereo output – one stereo pair (in this mode sound is duplicated on both output stereo pairs);
 - Double stereo output – two stereo pairs.

If the Double stereo output mode is selected then customize correspondence between channels numbers and output audio lines by entering corresponding language identifiers in text fields (3).

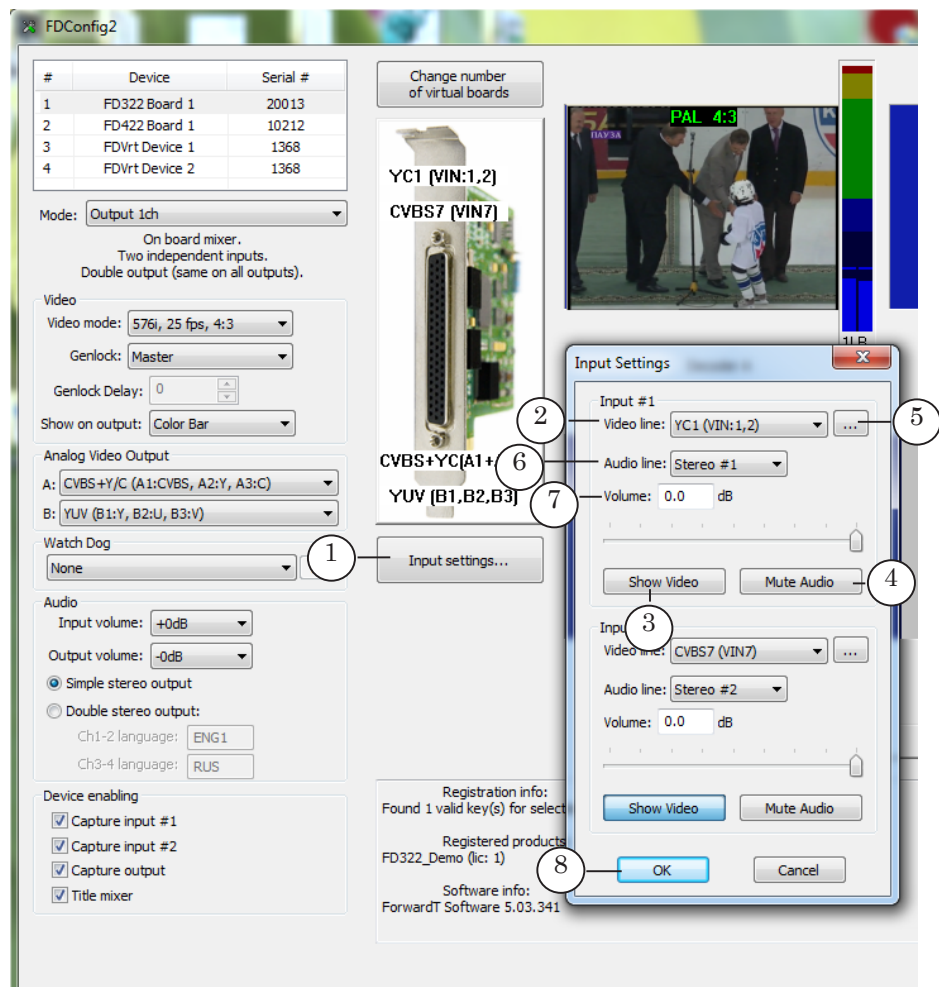
3. You may vary input volume by increasing/decreasing it in the Input volume field (4).
4. You may vary output volume by increasing/decreasing it in the Output volume field (5).



Step 4. Customizing of Input Lines

Two input video lines can be processed at the same time on the FD322 board. The lines are marked as Input #1 and Input #2 in programs from the ForwardT Software set. Click the Input Settings... button (1) to specify sources of input signal and customize some other parameters.

Made configuration of input lines will be operated till switching to other sources is implemented in FDO nAir.

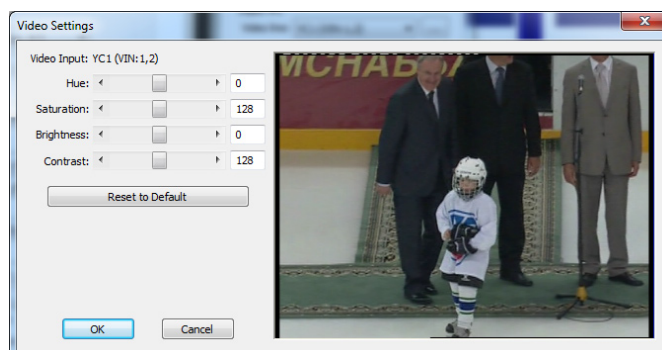


Customize line #1 and line #2 in the Input #1 and Input #2 groups of elements correspondingly in appeared Input Settings window. The groups have identical set of elements.

1. Select commutation line (lines) in the Video line drop-down list (2) that connects the board and necessary video signal source. Click Show Video (3) to start signal transmitting on board output. Click Mute Audio (4) if it is needed to remove sound on output.



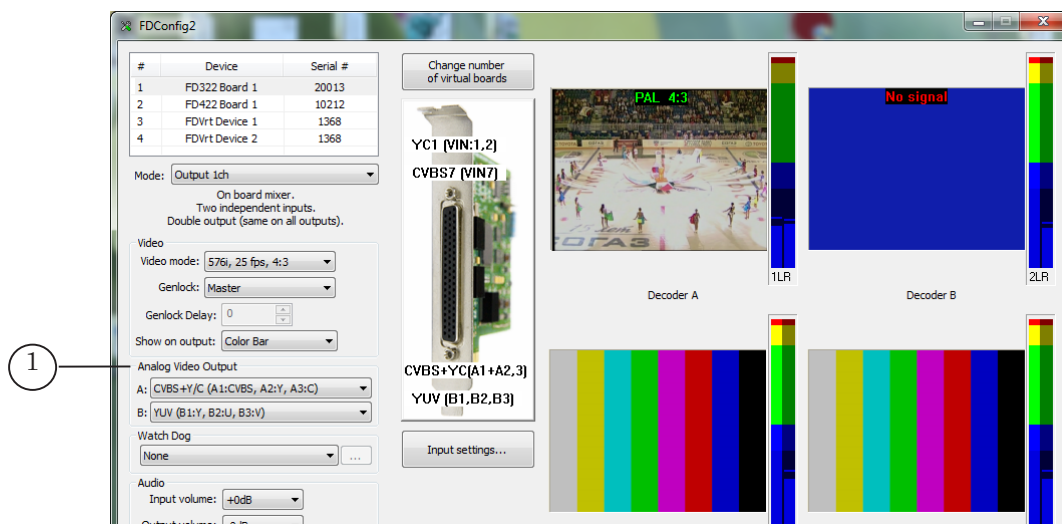
- Click (5) to adjust parameters of image (hue, saturation, brightness, contrast).



- Customize parameters of corresponding audio line:
 - Select audio channel (channels) that will be transmitted to board output during broadcasting of a signal in the Audio line drop-down list (6): one of mono channels, one of stereo channels or both stereo channels (possible only for the Double stereo output channel mode).
 - You can decrease volume on specified line if needed (7).
- Click OK (8) to close the Input Settings window.

Step 5. Customizing of Output Lines

Customize board output lines depending on used scheme of plugging of signal receivers to the board. Use for this drop-down lists of the Analog Video Output group (1) in the main application window.



Select item that corresponds to used scheme of devices plugging to board in the Analog Video Output group:

- Output A in the A drop-down list (cable connectors with VOutA prefix or commutation panel connectors indicated as Video Outputs “A”);



- Output B in the B drop-down list (cable connectors with VOutB prefix or commutation panel connectors indicated as Video Outputs “B”).

Both output board lines transmit signal with the same content in the Output 1ch mode.

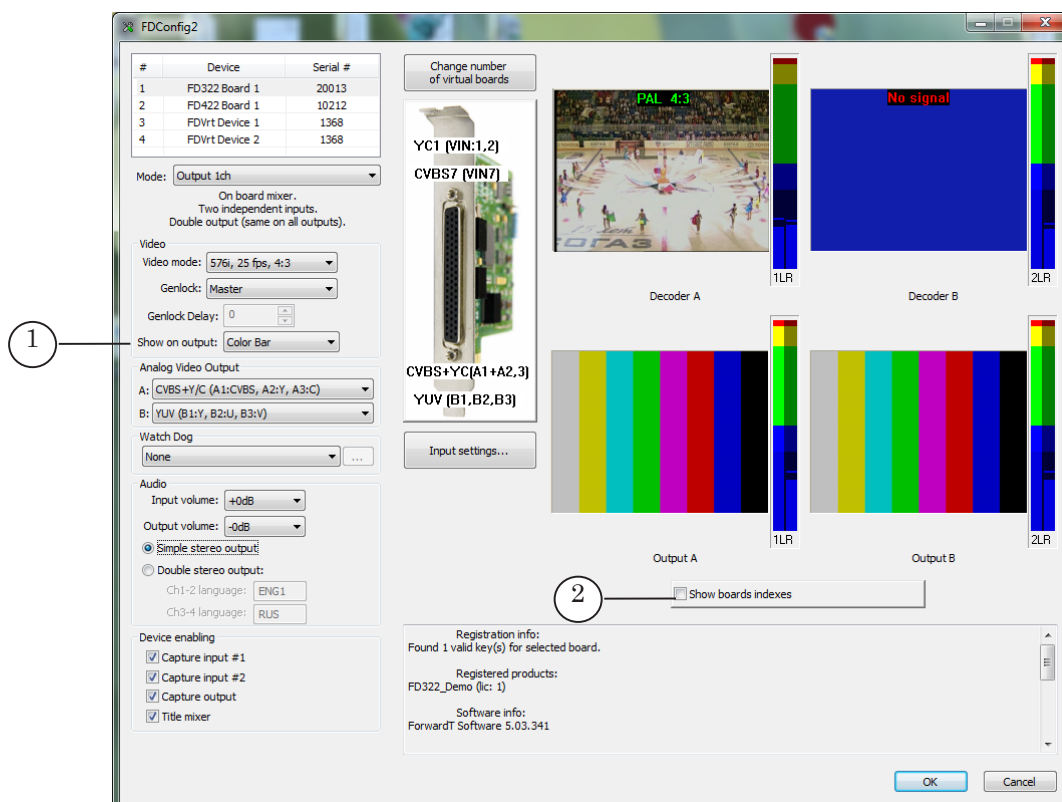
Step 6. Content of Output Signal

The FDConfig2 program provides with the following possibilities of controlling video data in signal on board output:

1. You can select video data that will be output in the Show on output drop-down list (1) after start of the FDExt board service: color bar, passthrough video from Input #1 or passthrough video from Input #2.

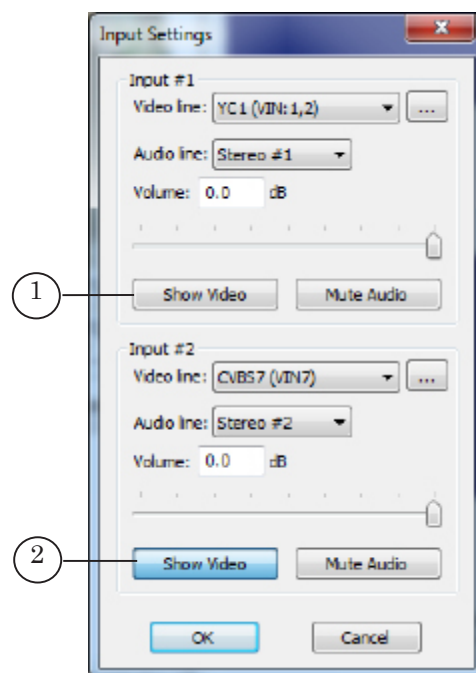
The setting is active till another configuration is made, for example, till the Show Video button (see item 3 below) in the Input Settings window is clicked or the VideoInput N (N is index from 1 to 6) command is activated in FDOntAir.

Note: The FDExt service of the FD322 board starts automatically at switching on/restarting of PC and automatically restarted when the FDConfig2 program (with new applied settings) is closed. The service can be also stopped and started manually.



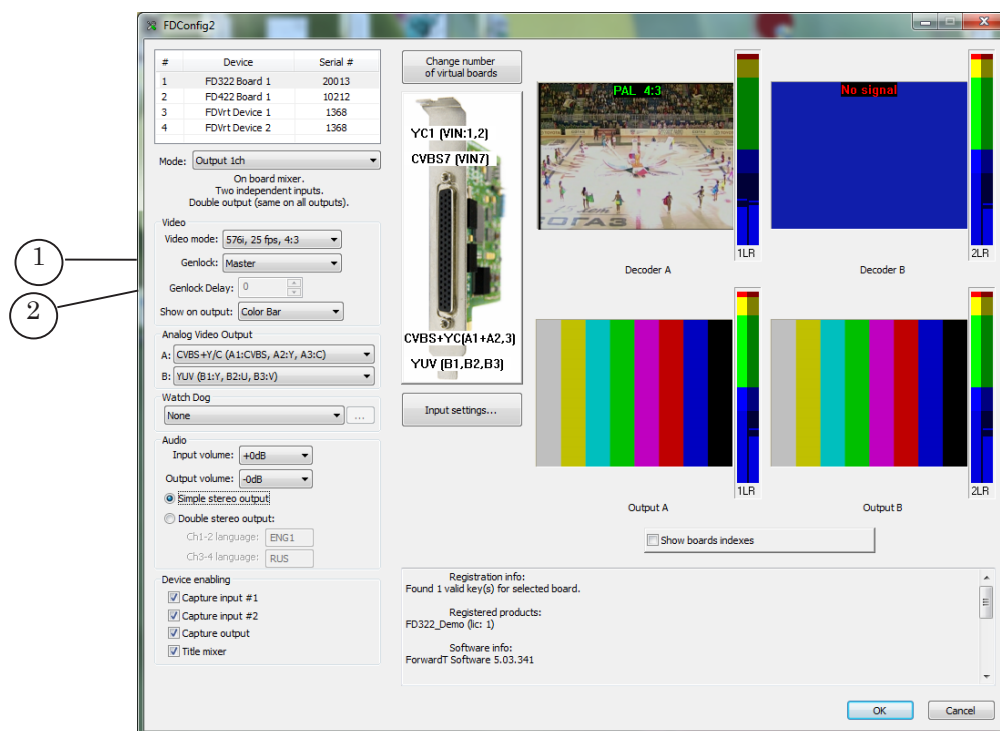


2. The Show board indexes button (2) is used to transmit service information to board output while the FDConfig2 program window is opened. If the button is pressed corresponding board index is on output. If the button is released signal from the current source is transmitted on input.
3. The Show Video buttons (1, 2) in the Input Settings window. If one of the buttons is clicked signal from corresponding line will be output. The parameter is active till another command of control over board output content is activated, for example, the VideoInput N command in FDO nAir.



Step 7. Customizing of Genlock

1. Select genlock source in the Genlock drop-down list (1). Possible sources are:
 - Master – internal board generator;
 - Input 1 – external source plugged to input 1;
 - Input 2 – external source plugged to input 2.
2. If needed specify value of signal delay (selected experimentally) in the Genlock Delay field (2). The field is available if external genlock source is used. Specified value compensates video signal delay that appears at passing of the signal by cable (default value is 0).



Step 8. Customizing of Redundancy Mode

You can use the WatchDog function to organize a signal backup. There are 2 variants of realization of this function:

- Forward WatchDog Box (external device) – monitors current state of OS, board and used broadcasting application (FDOnAir/FDTimeShift). In case of air server failure it transmits to commutator signal to switch on a backup: passthrough video or reserve broadcasting server;
- Integrated FD322 board function – allows monitoring current state of broadcasting application. In case of a failure (absence of response during some time (1 sec by default)) reserve passthrough video from specified FD322 board input is automatically switched on.

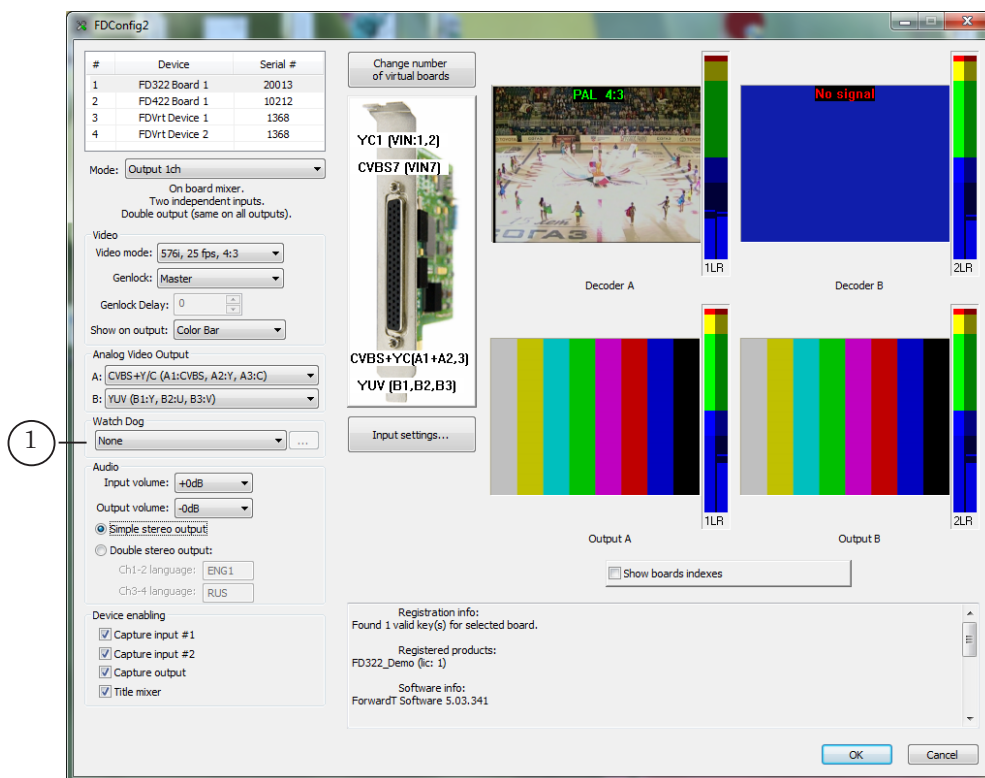
Customize the function in the Watch Dog drop-down list (1):

1. If you work with the Forward WatchDog Box device select identifier of port to which the device is plugged in the Watch Dog drop-down list (1) (for more information on this issue see the [«Forward WatchDog Box. Device for Monitoring of Video Servers. User's Guide»](#)).



2. Select one of the variants of integrated board function in the Watch Dog drop-down list:

- Internal (#1) – in case of a failure broadcasting of passthrough video from input 1 is switched on;
- Internal (#2) – in case of a failure broadcasting of passthrough video from input 2 is switched on.

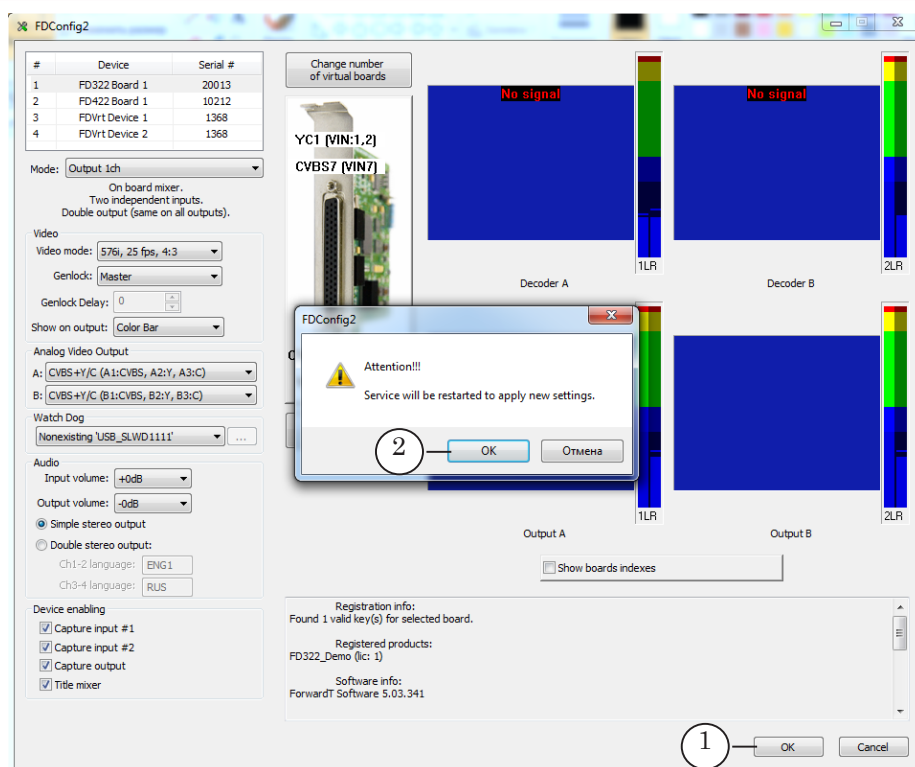




Step 9. Applying of New Settings and Finishing of Work with Applictaion

1. Close all applications that work with FD322.
2. Click OK (1) in the FDConfig2 program window.
3. Service message appears automatically. Restart board service (FDExt Service) to apply new settings.
Click OK (2) in appeared window to allow restarting.

✓ **Important:** Close all applications that use FD322 to restart board service.



4. After FDConfig2 program window is closed, service will be automatically restarted and new settings will be activated.

✓ **Important:** New settings will be activated only after restarting of board service.



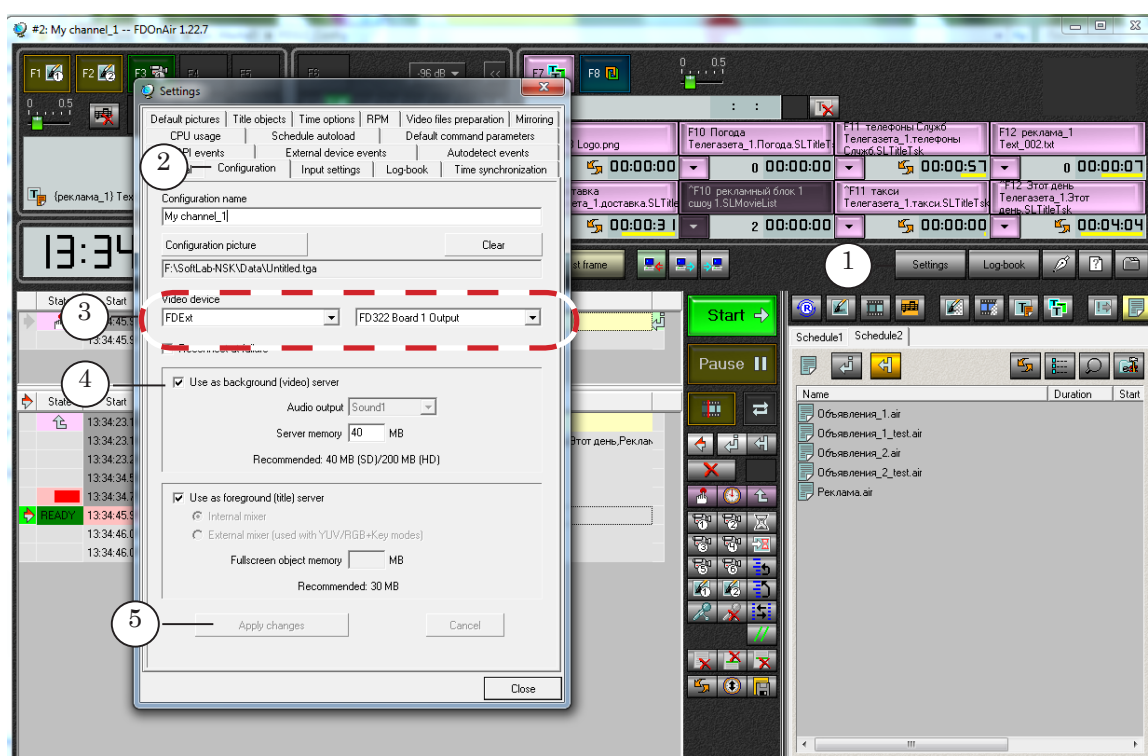
Configuration and Control over Broadcasting in FDO nAir

Step 1. Launch and Configuration of Application

1. Launch the FDO nAir application via either the Start menu: Programs > ForwardT Software > OnAir or double-click application shortcut:



2. Click Settings in the main application window (1).



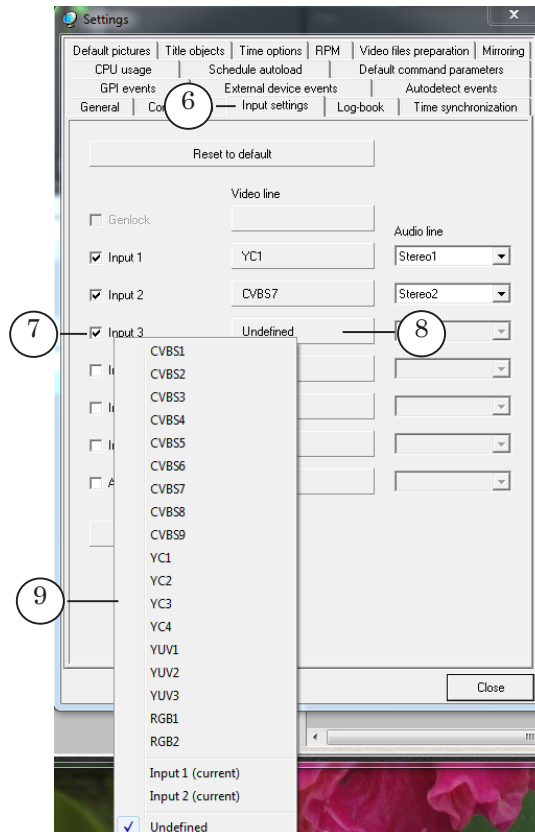
3. Pass to the Configuration tab (2) in the appeared window.
4. Select FDExt in the first list and FD322 Board N Output in the second list (3), N is a logical index of used board.
5. Be sure that the Use as background (video) server check mark (4) is put.
6. Click the Apply changes button (5).

✓ **Important:** It is obligatory to click the Apply changes button to apply new settings.

7. Pass to the Input Settings tab (6).



Note: On the Input settings tab you can customize schedule commands (Video Input 1 – Video Input 6) and buttons for interactive control (F3–F5, ^F3–^F5) located in FDO nAir main application window. The commands and the buttons are used to control broadcasting of passthrough video from inputs of used board. Specify board video line to customize the command.



Customize consistently all necessary VideoInput N commands, N is index from 1 to 6.

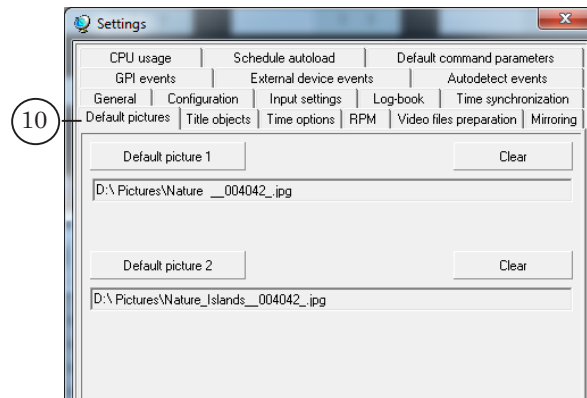
Example: to customize the VideoInput 3 command:

1. Put the Input 3 check mark (7).
2. Click the VideoLine button (8) located in the same line.
3. Select necessary video line in the drop-down list (9) to assign it to corresponding command. Select line according to used scheme of sources plugging. All commutation lines are given in the list.
4. Select audio channel in the Audio Line drop-down list that will be output at execution of the VideoInput 3 command.



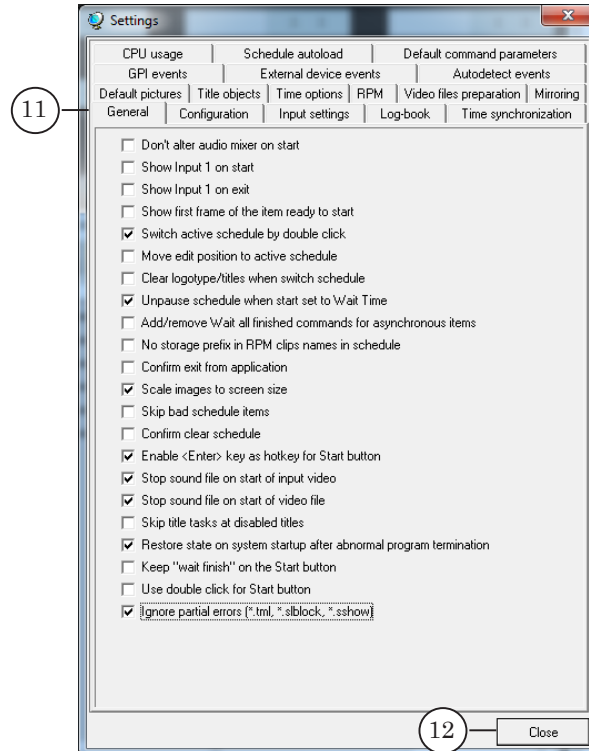
8. Pass to the Default pictures tab (10).

Note: The Default pictures tab is used for customizing of Default picture 1 and Default picture 2 schedule commands and buttons of interactive control corresponding to them – F1 and F2 located in FDO nAir main window. The commands are used to control displaying of full-screen still images.



Customize Default picture 1 and Default picture 2 by specifying paths to graphic files with images.

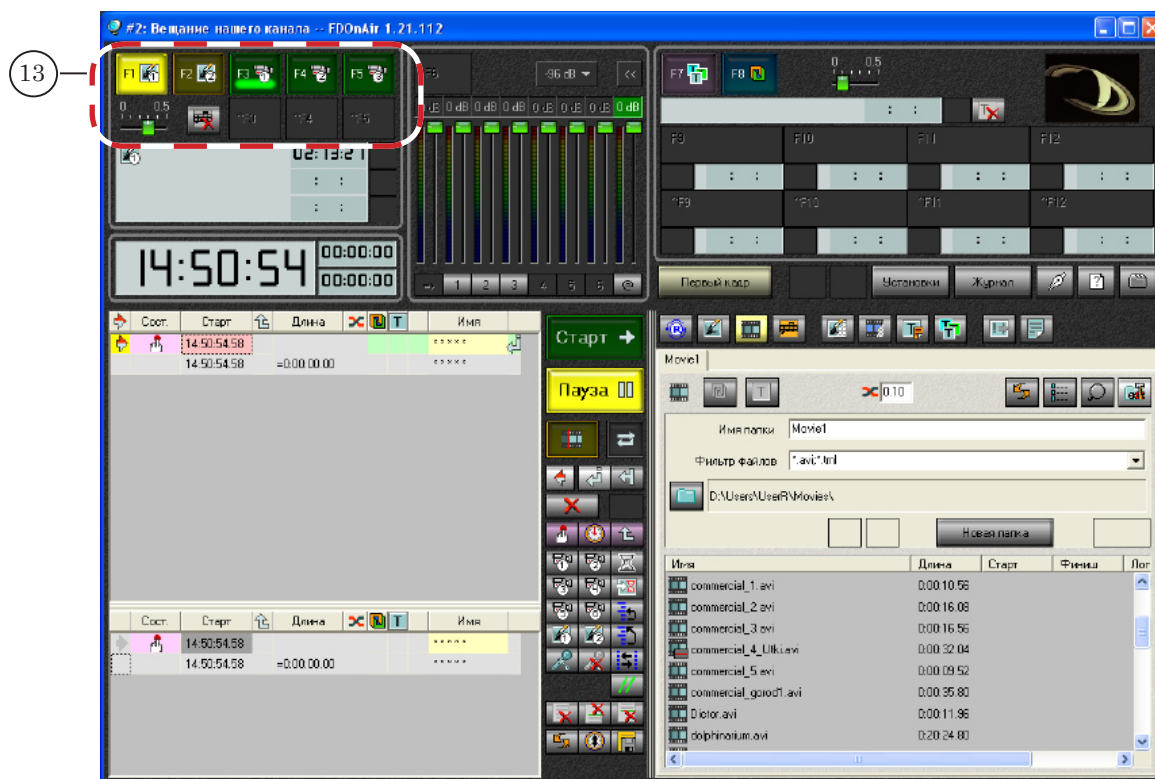
9. Pass to the General tab (11) to customize general parameters of FDO nAir. Be sure that check marks for all necessary options are put.



10. Click the Close button (12) to close the window after finishing configuration.



11. Only buttons to control default pictures and passthrough video (13) customized in the Settings window become active in the main application window.



For more information on working with the FDO nAir application, see «[FDO nAir. Broadcast Automation. Basic User's Guide](#)» and «[FDO nAir. Additional Sections. User's Guide](#)».

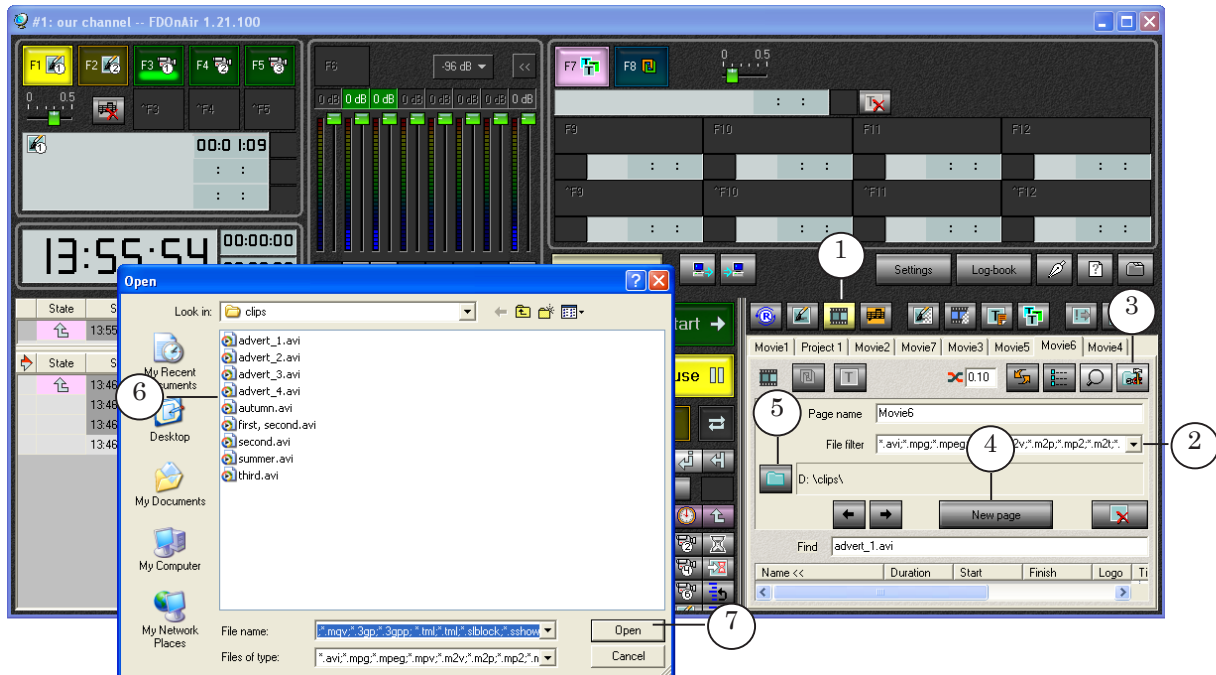
Step 2. Customizing of File Pages

Customize file pages in the main application window to add to schedule clips from PC hard disk:

1. Click the Movies button (1) to pass to file pages.
2. If pages' group of elements is hidden (2) click Customize (3) to make it visible.
3. There is at least one file page in the Movies group by default. Click New page (4) if you want to add some more pages.
4. Specify path to folder with clips by clicking the Set folder button (5), select necessary folder and file in the appeared window (6). Then click Open (7).



5. List of files in specified folder is displayed on selected file page.



Step 3. Creation of Schedule

Create a schedule with 2 types of blocks to insert your own content in passthrough signal automatically:

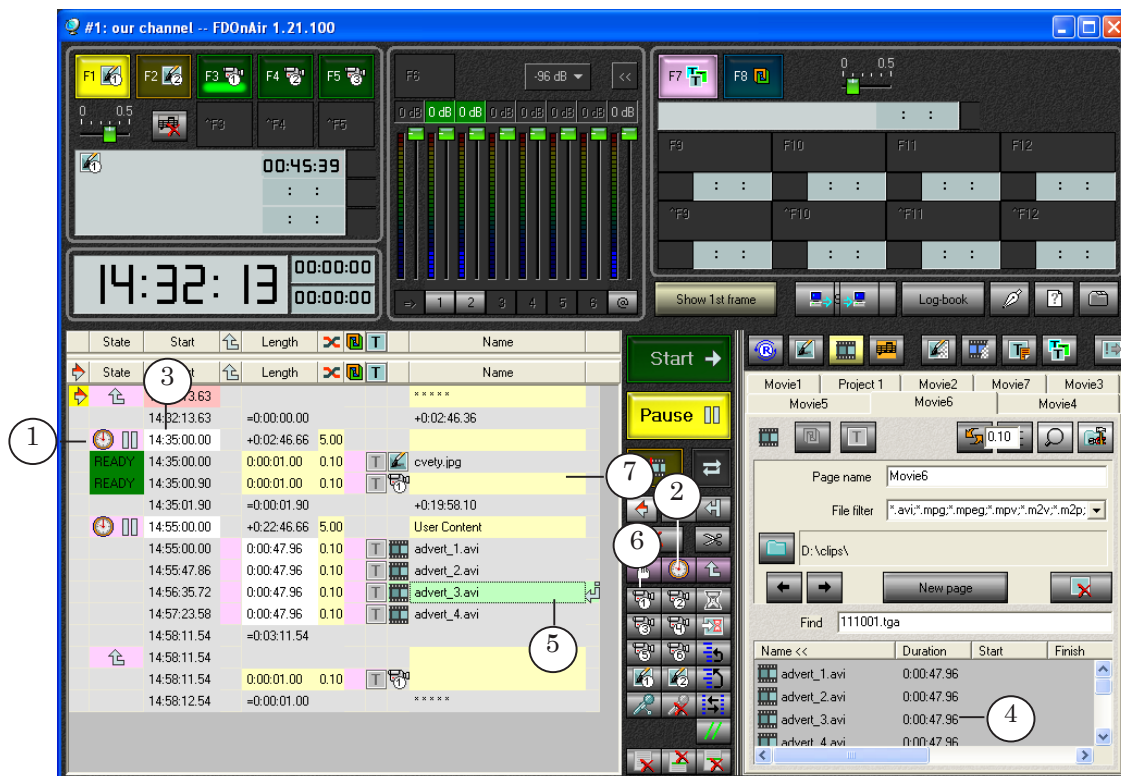
1. For broadcasting of a signal from the main broadcasting station. Such blocks contain commands to control passthrough video from board inputs:
VideoInput N, N is index from 1 to 6.
2. For broadcasting of a content from local station. If your content is in the form of files located on hard disk blocks will contain commands for broadcasting of video from files (Show clip).

Create schedule in the main FDO nAir application window using buttons located on customizing panel and control elements on file pages:

1. Firstly, add commands for blocks start, for example, the Passive Wait command (1) to schedule.
For this put a cursor to line where the command must be present. Double-click corresponding line in the Name column to put the cursor. Then click the Passive Wait button (2). The command is added at desirable position. After this specify start time of blocks by clicking time string in the Start field (3).



2. Secondly, add commands for clips playback to schedule.
For this double-click name of file in file page list (4).
Command for playback of a clip is added to schedule at the current edit position (5).
3. Add commands for switching on of a passthrough video from board inputs – VideoInput N (N is index from 1 to 6) to schedule.
For example, to add the VideoInput 1 command put a cursor to line where the command must be present by clicking. To put the cursor double-click corresponding line in the Name column. Then click the VideoInput 1 button (6). The command is added at desirable position (7).



For more information on FDO nAir commands see the «[FDO nAir Commands List. Broadcast Automation. User's Guide](#)».



Step 4. Control Over Broadcasting

Use created schedule to deal with automated control over broadcasting process and specific buttons in the main application window for interactive control.

1. To start schedule:
 1. Be sure that indicator of executable command (1) is in right line and in needed schedule table.
If needed to place indicator in necessary line double-click this line in the first column.
 2. Then click Start (2).
2. To control switching of a passthrough video in real-time mode use either the buttons in the main application window (F3–F5, ^F3–^F5 (3)) or corresponding hot keys (F3–F5, Ctrl+F3–Ctrl+F5).



3. Use the F1, F2 buttons (4) or corresponding hot keys to switch default pictures on operatively.



Useful Links

Forward T Product Line: Description, Software Delivery, Documentation, Ready Solutions

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

Support

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

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)

Documentation for Additional Information:

1. [ForwardTSoftware Setup. User's Guide](#)
2. [FDO nAir. Broadcast Automation. User's Guide](#)
3. [FDO nAir. Additional Sections. User's Guide](#)
4. [FDO nAir Commands List. Broadcast Automation. User's Guide](#)
5. [Forward WatchDog Box. Device for Monitoring of Video Servers. User's Guide](#)
6. [FDConfig2. Program for Customizing of Parameters of FDExt Boards. User's Guide](#)
7. [FDPreview Monitor. Program for Previewing of Audio/Video Data on Board Input/Output. User's Guide](#)

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