

# FDStreamServer

Network Streaming Program



*Revision as of May 22, 2008.*

User's Guide



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## 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.

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

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## Introduction

This program is intended to organize network streaming. Using the program allows you to stream video and audio data from the FD300 board output by the UDP or RTP protocol.

FDStreamServer is an additional program option used along with the FDO nAir program (Forward TA/Forward TP/Forward TP2 software package).



## FDStreamServer Installation Features

### 1. General Information

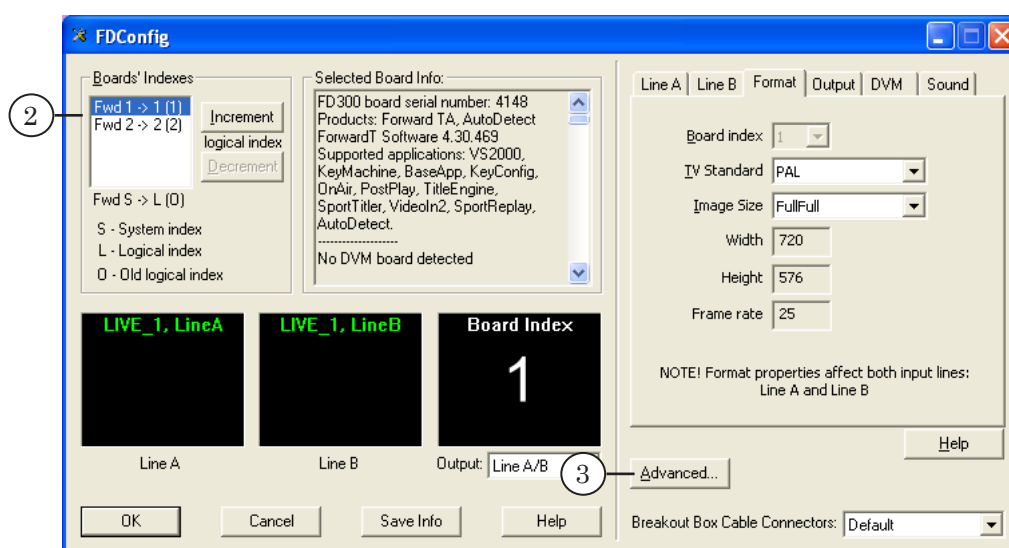
To install the FDStreamServer program, launch the FDStreamServer\_1\_2\_0\_9.exe file (where the numbers denote the release number) and follow further instructions.

For the FDStreamServer operation, a registration key is required. The registration file is supplied along with the FDStreamServer program. To insert the registration key into the registry, launch the registration file for execution.

### 2. DirectShow Filters Registration

DirectShow filters must be registered before working with FDStreamServer. For that:

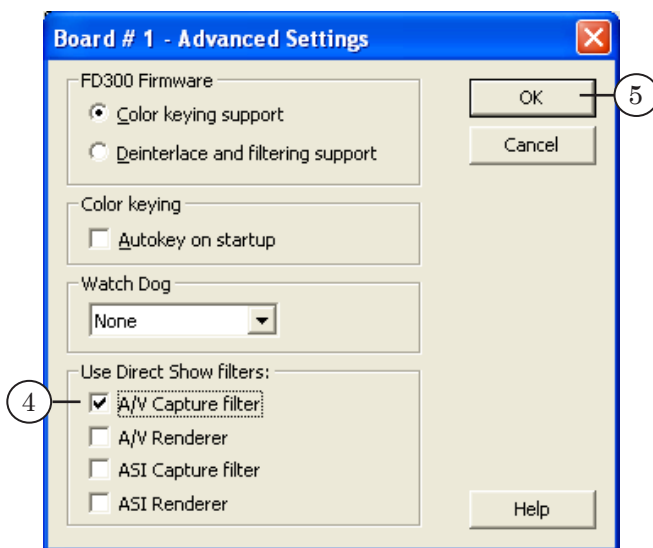
1. Launch the FDConfiguration application using the shortcut located on the desktop or via the Start menu: Programs > ForwardT Software > Board Setup > FD300 Configuration.
2. In the Boards' Indexes list, select the board for which the DirectShow filters are to be registered



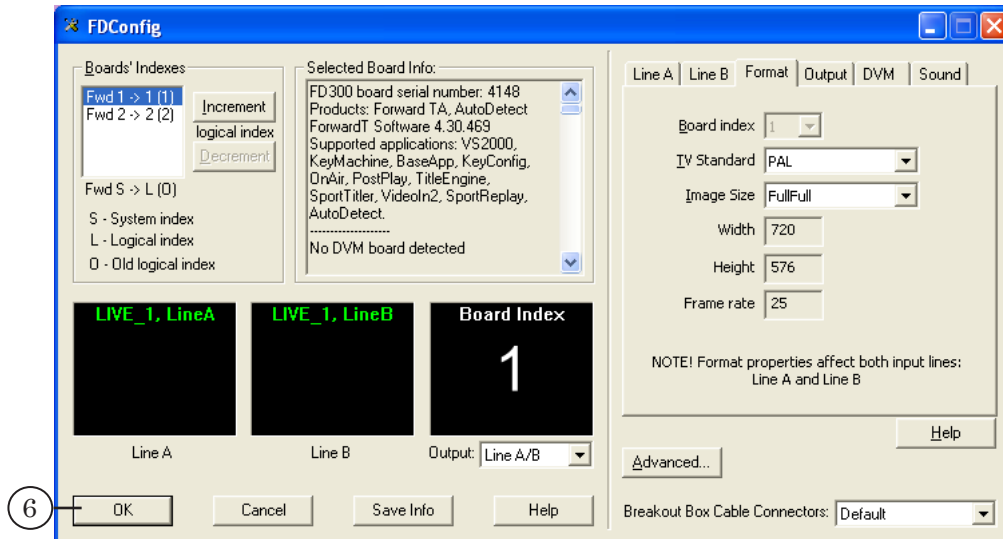
3. Press the Advanced... button.



- The window opens. Check the A/V Capture filter check box in the Use Direct Show filters area.



- Click OK.
- To save the settings and exit the FDConfiguration application, click OK in the main window.

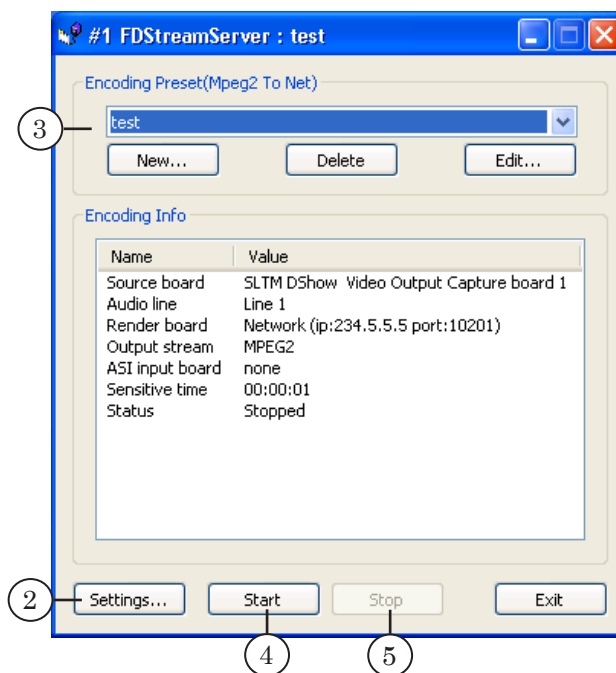




## Working with the Program

### 1. General Order of Operations

1. Launch FDStreamServer using the program shortcut located on the desktop or via the Start menu: Programs > FDStreamServer > FDStreamServer.

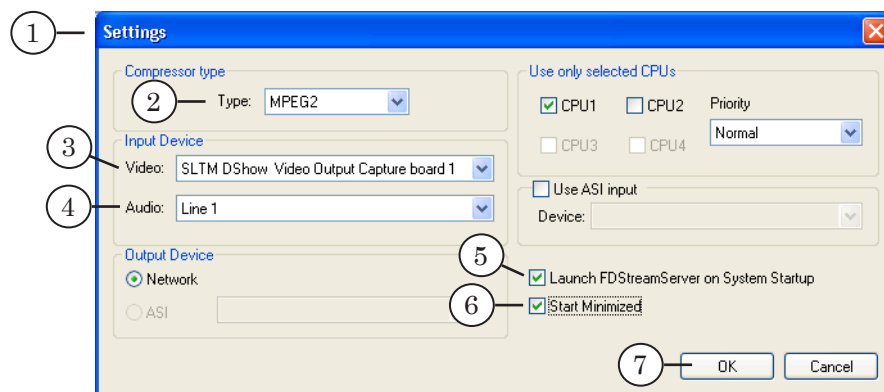


2. To [set the program parameters](#), press the Settings... button.
3. Select the configuration of streaming. If necessary, [change the configuration or create a new one](#) (the Edit... or New... button respectively).
4. To start streaming, press the Start button.
5. To stop streaming, press the Stop button.



## 2. Setting the Program Parameters

1. Setting the program parameters is performed in the Settings window. To open the window, press the Settings... button in the main program window.
2. Select a type of compression in the Type drop-down list – MPEG2.



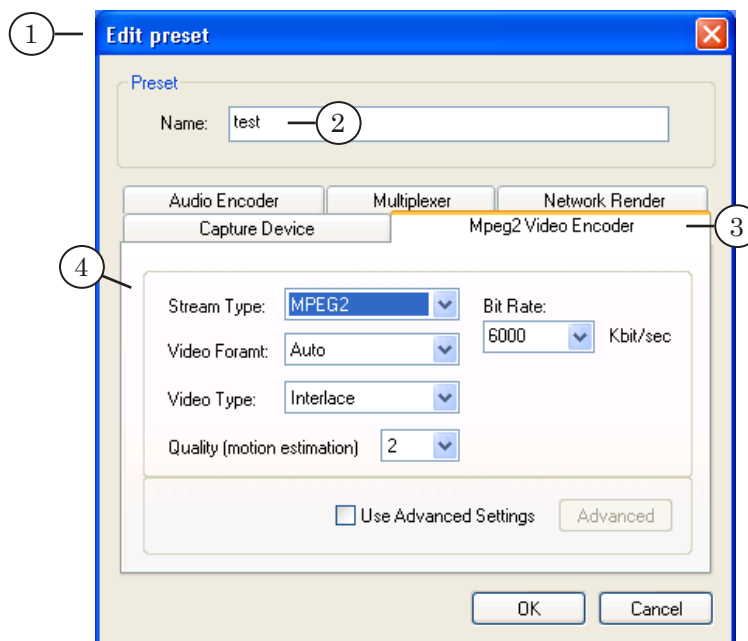
3. In the Video drop-down list, select a video device the data from which are to be streamed via the network, – an output of the corresponding FD300 board.

✓ **Important:** Pay attention to the board number and presence of the word Output in the device name.  
If a device corresponding to the output of the required board is absent in the list, make sure the corresponding DirectShow filters are registered (see [DirectShow Filters Registration](#)).

4. In the Audio drop-down list, select an audio device the data from which are to be streamed via the network, – a sound channel of the FD300 board.
5. To set launching the FDSStreamServer program automatically on Windows startup, check the Launch FDSStreamServer on System Startup check box. In this case, FDSStreamServer is automatically launched on the system rebooting, streaming data with the last selected configuration.
6. Check the Start Minimized check box for FDSStreamServer to be launched in the background.
7. Click OK.

### 3. Setting the Streaming Parameters

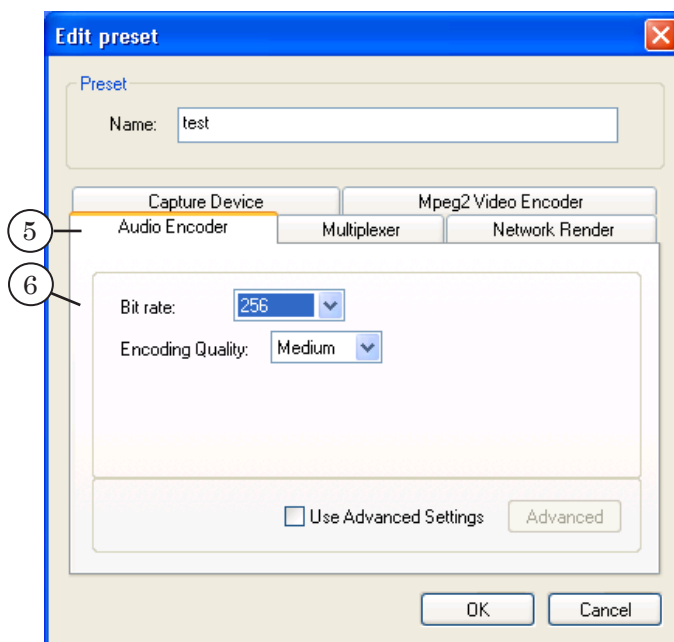
1. Adjusting the current or a new configuration of streaming is performed in the Edit preset window. To open the window, press the Edit... or New... button respectively in the main program window.
2. If necessary, change the configuration name.



3. Select the Mpeg2 Video Encoder tab.
4. Select the required values in the corresponding drop-down lists:
  - Stream Type – MPEG2 is recommended;
  - Video Format – Auto is recommended;
  - Video Type – the video signal type. Interlace is recommended;
  - Bit Rate – the required video data rate;
  - Quality (motion estimation) – the compression quality. The more value, the more qualitative image at the same output stream.

✓ **Important:** The compression quality affects the processor workload. When setting the parameter, note that the processor workload at network streaming must be no more than 60 – 70%, which can be checked via the Windows Task Manager.

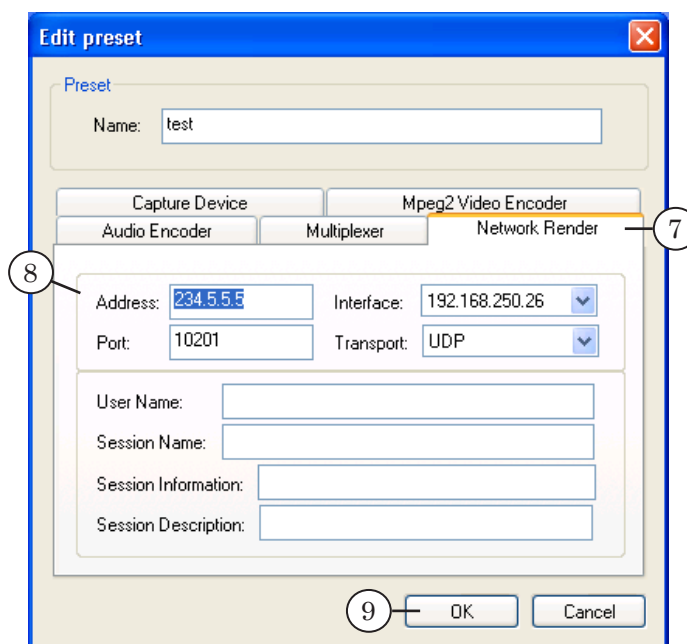
5. Select the Audio Encoder tab.



6. Select the required values in the corresponding drop-down lists:

- Bit rate – the audio data rate;
- Encoding Quality – the audio compression quality.

7. Select the Network Render tab.





8. Specify the network parameters in the corresponding fields and drop-down lists:
  - Address – the IP address of the receiver or multicast group;
  - Interface – the IP address of the streaming computer (the network card via which the streaming is performed);
  - Port – port used to stream data;
  - Transport – the network protocol.
9. Click OK.

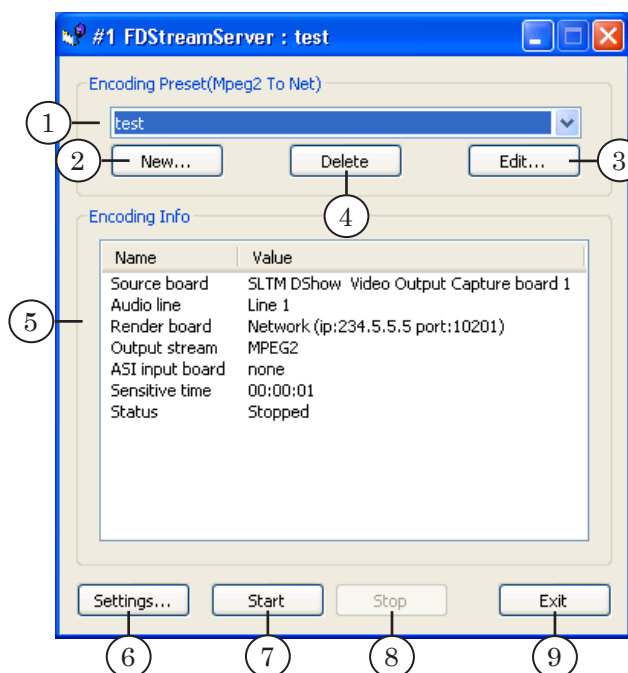


## The Main Program Window

To launch FDStreamServer, use:

- the shortcut located on the desktop;
- the Start menu: Programs > FDStreamServer > FDStreamServer.

The Figure below shows the FDStreamServer main window.



The window caption displays the instance number, program name, and the name of the selected streaming configuration.

The main program window contains the following controls:

- Encoding Preset (Mpeg2 To Net) area contains a drop-down list (1) to select the current streaming configuration and buttons to control configurations:
  - New... (2) – to set a new configuration;
  - Edit... (3) – to edit the selected configuration;
  - Delete (4) – to delete the selected configuration;
- Encoding Info area (5) contains an information field, where information of the current streaming configuration and streaming process is displayed;
- the Settings... button (6) – to open the window for setting the program parameters;
- buttons to control streaming:
  - Start (7);
  - Stop (8).

The Close (X) button is intended to switch the program to the



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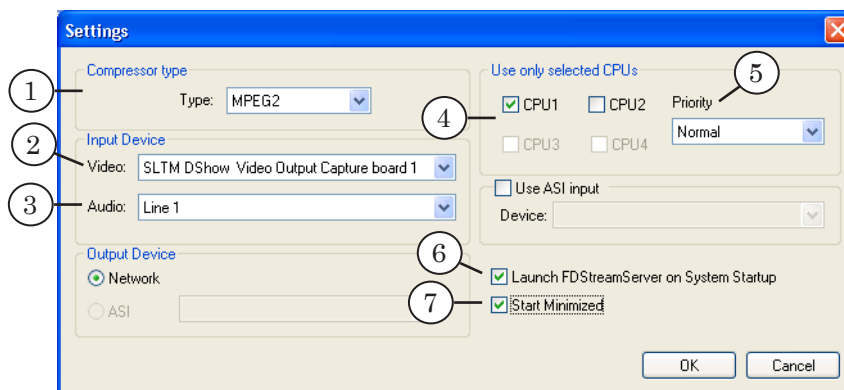
background (resident) mode: the main window is minimized, and the program icon is located in the system tray, the streaming being not stopped.

To exit the program, use the Exit button (9).

## The Settings Window

The Settings window is intended to select a type of compression and devices used when streaming via the net and set the parameters of the program operation.

To open the window, use the Settings... button located in the main program window. When launching the program the first time, the Settings window is opened automatically.



To adjust the streaming process, use the drop-down lists in the following areas:

- Compressor type (1) – to select a type of compression;
- Input Device – to select the devices that are to be the sources of the video and audio data streamed via the net:
  - Video (2) – a video device, an output of the FD300 board;
  - Audio (3) – an audio device, an audio channel of the FD300 board.

✓ **Important:** As a video device, specify an output of the corresponding FD300 board, e.g., SLTM DShow Video Output Capture board 1. If the required device is not listed, make sure the DirectShow filters are registered for the corresponding board (see [DirectShow Filters Registration](#)).

To set the parameters of the FDStreamServer program execution, use the following controls:

- the Use only selected CPUs area, which contains:
  - Check boxes (4) – to select the processors that can be used by the program. The program is to be executed only on the processors whose check boxes are checked;



- The Priority drop-down list (5) – to select program execution priority. The priority recommended is Above Normal;
- Check boxes to set launching the program automatically:
  - Launch FDStreamServer on System Startup (6) – on Windows startup, the FDStreamServer program is automatically launched streaming data via the net;
  - Start Minimized (7) – launching the program in the background mode (the window is minimized, the program icon being located in the system tray).



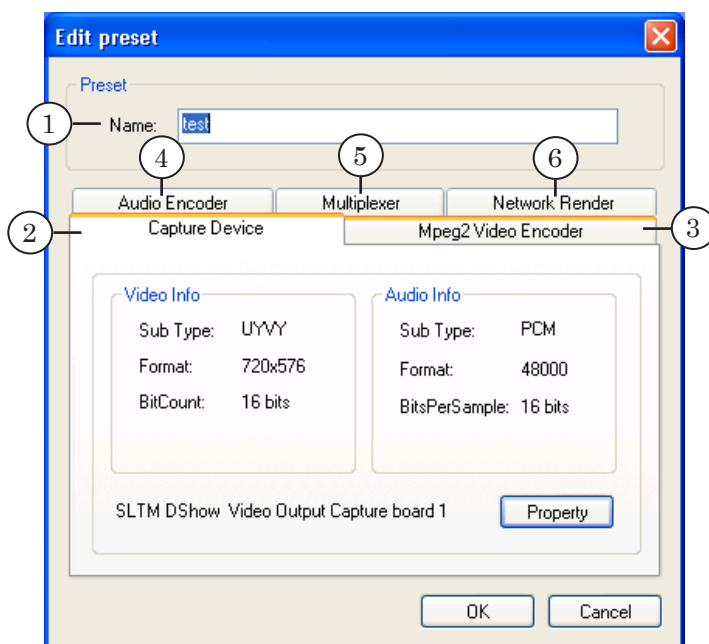
**Tip:** Select different processors for the execution of the FDStreamServer and FDOOnAir programs. For example, for FDStreamServer – CPU1, for FDOOnAir – CPU2.

## Setting the Streaming Parameters

### 1. The Edit Preset Window

To set the streaming parameters, use the Edit preset window. To proceed to setting the streaming parameters, use the following buttons in the main window:

- New... – to create a new configuration;
- Edit... – to edit the selected configuration.



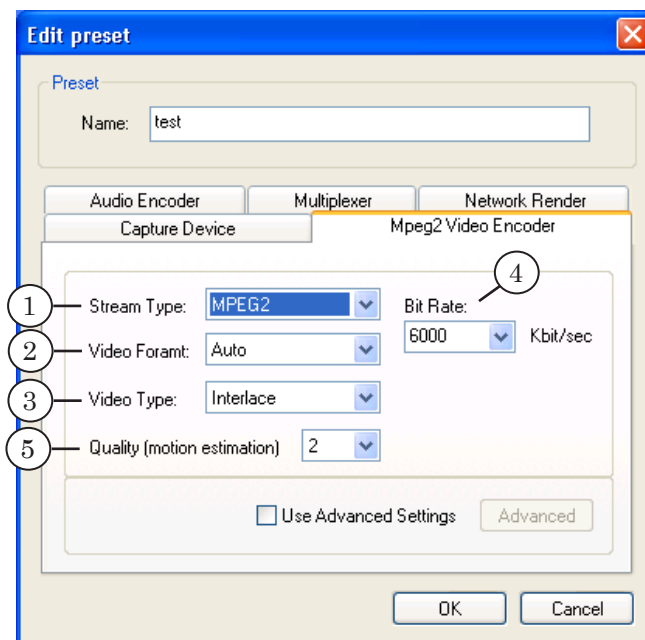
The configuration name is specified in the Name field (1).

The window contains the following tabs:

- Capture Device (2) – to display information of the video and audio data source and features;
- Mpeg2 Video Encoder (3) – to set the parameters of encoding video data;
- Audio Encoder (4) – to set the parameters of encoding audio data;
- Multiplexer (5) – to set the multiplexer;
- Network Render (6) – to set the network parameters.

## 2. Setting the Parameters of Encoding Video Data

The Mpeg2 Video Encoder tab is intended to set the parameters of encoding video data.



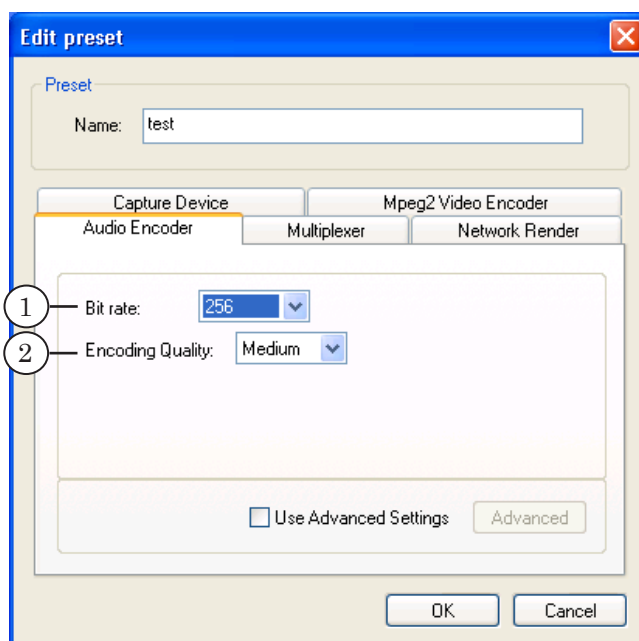
To set the parameters, use the following drop-down lists:

- Stream Type (1). The type recommended is MPEG2;
- Video Format (2). Auto is recommended;
- Video Type (3) – the scanning mode. The values available: Interlace (recommended) and Progressive;
- Bit Rate (4) – the video data stream rate;
- Quality (motion estimation) (5) – the compression quality. The more value, the more qualitative image at the same output stream.

✓ **Important:** The compression quality strongly affects the processor workload. When setting the parameter, note that the processor workload at network streaming must be no more than 60 – 70%, which can be checked via the Windows Task Manager.

### 3. Setting the Parameters of Encoding Audio Data

The Audio Encoder tab is intended to set the parameters of encoding audio data.

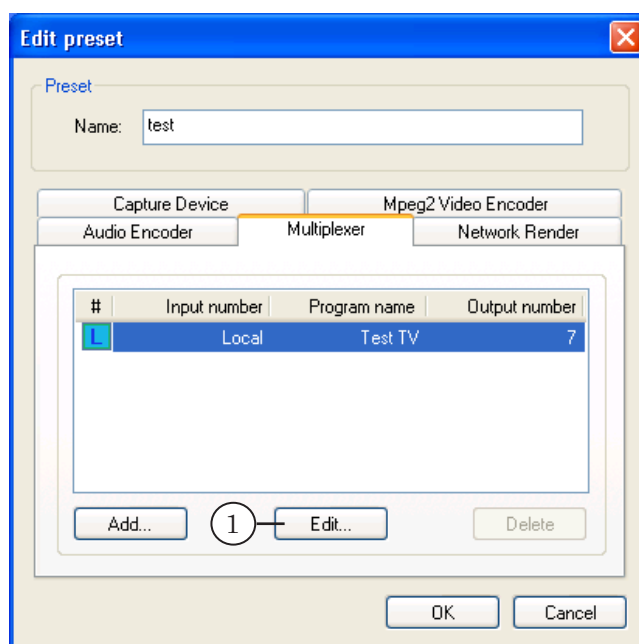


To set the parameters, use the following drop-down lists:

- Bit rate (1) – the audio data stream rate;
- Encoding Quality (2) – the audio compression quality.

### 4. Setting the Multiplexer

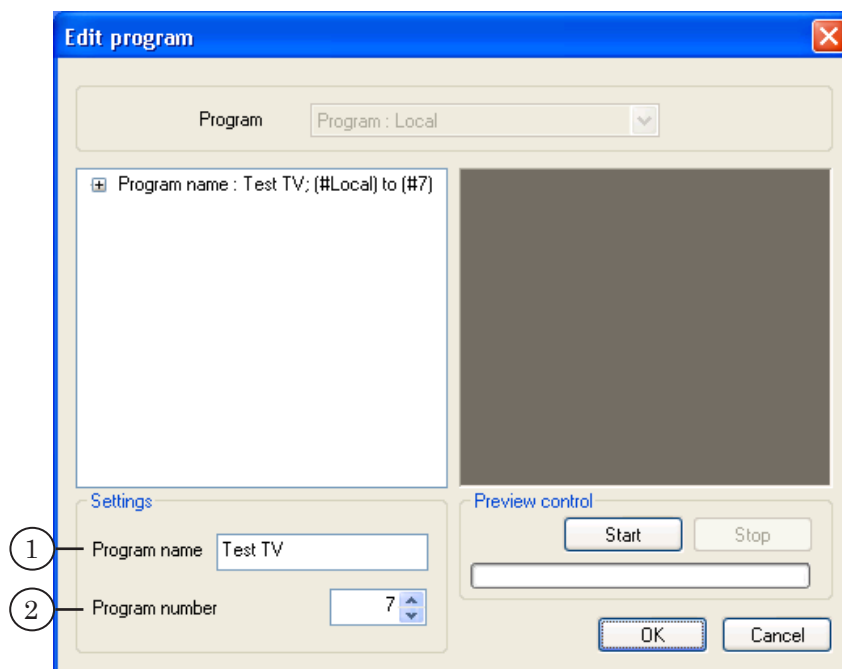
The Multiplexer tab is intended to set the Multiplexer.



To proceed to editing the settings, press the Edit... button (1).



The Edit program window opens.



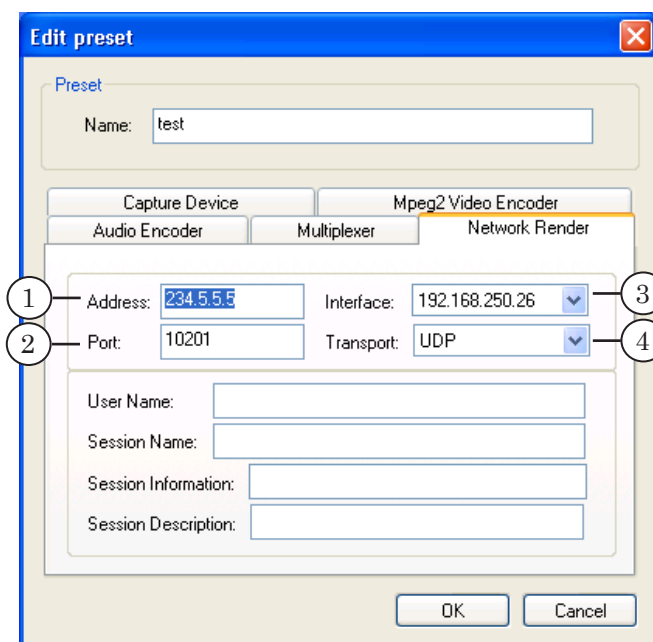
To make settings, use the following fields:

- Program name (1) – to enter the program name. It is a service name used only in the FDStreamServer program;
- Program number (2) – to select a number for the channel. The channel number is transferred in the MPEG stream and can be used by the receiver for the program identification.



## 5. Setting the Network Parameters

The Network Render tab is intended to set the network parameters.



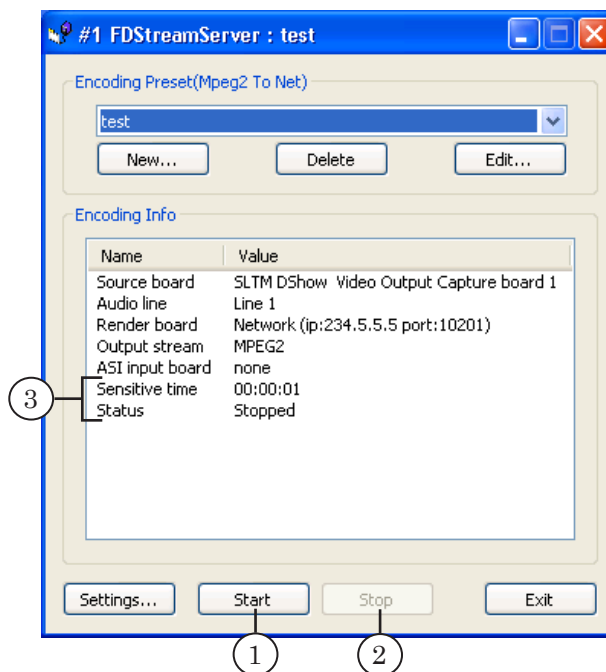
To make settings, use the following controls:

- the Address field (1) – to specify the IP address of the receiver or multicast group;
- the Port field (2) – to specify the port used to transfer data;
- the Interface drop-down list (3) – to select the IP address of the sender (the network card via which the streaming is performed);
- the Transport drop-down list (4) – to select the network protocol. UDP or RTP are recommended.

## Controlling the Streaming Process

To control the streaming process, use the following buttons:

- Start (1);
- Stop (2).



Information of the streaming status is indicated in the information field (3) and via the icons located in the system tray:

- running –
- stopped –

Launching the program automatically on the system startup being set, streaming data starts automatically after rebooting with the last selected configuration.



## Useful Links

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