ForwardT Software Package

Webcasting and Broadcast Archiving





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User's Guide

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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.

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Table of Content

Introduction	4
Stream broadcasting schemes and general workflows for their realization	5
1. Broadcasting without alterations 2. Translation according to the schedule	5
DirectShow filters (for the FD300 board)	
1. To enable DirectShow filters 2. Names of filters	
DirectShow filters (for the FD322/FD422 board)	
1. FD322/FD422 Configuration Setting 2. Names of filters	
Launching and configuring FDOnAir	14
Workflow in WME	
 General workflow for broadcast setting and control Specifying and configuring sources of your audio and video 	
content for retranslation 3. Specifying and configuring sources of your audio and video	19
content for translation according to the schedule	
 Setting content distribution parameters Setting encoding parameters 	
Archiving broadcast using WME	25
Example of broadcast to network using WME	27
Workflow in FME	34
 General workflow for broadcast setting and control Specifying and configuring sources of your audio and video 	
content for retranslation 3. Specifying and configuring sources of your audio and video	
content for translation according to the schedule	36
4. Setting content distribution parameters	
5. Setting encoding parameters	39

Introduction

You can broadcast your audio and video content to network without any additional costs by using the ForwardT Software set and a stream broadcasting application (Windows Media Encoder or Adobe Flash Media Encoder).

Note: This User's Guide is valid for newer versions of the programs of similar functionality as well.

Windows Media Encoder (WME) is intended to encode audio and video content and to distribute it to network in Windows Media formats. In addition, the encoder can store the audio and video content to a file of the appropriate format that allows it to be used for archiving the translation.

Note: Windows Media format is useful for archiving as such files are rather small and can be played back in any computer with Windows Media Player.

The Adobe Flash Media Encoder (FME) is intended to encode audio and video content and to distribute it to network in Flash Video format.

In the solution we propose to capture video and audio from input/output of a board (FD300/FD322/FD422) to WME/FME stream DirectShow filters from the ForwardT Software set are used.

This document provides information about:

- possible stream broadcast schemes using the ForwardT Software set and a stream broadcasting application (Windows Media Encoder or Adobe Flash Media Encoder);
- how to customize encoders for stream broadcasting;
- how to customize WME for archiving of the content being broadcasted.

Tip: The current Windows Media Encoder and Adobe Flash Media Encoder are available through the following links:

- Windows Media Encoder;
- Adobe Flash Media Encoder.

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Stream broadcasting schemes and general workflows for their realization

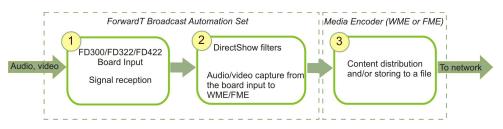
Here are two possible stream broadcasting schemes:

- Retranslation: signal reception and stream broadcasting to network without alterations or additions;
- Translation according to the schedule: signal reception and stream broadcasting (to television and/or computer network) according to the schedule you want to playback using the FDOnAir application.

1. Broadcasting without alterations

When broadcast is organized according to this scheme, the content may be received from an analog or SDI source and distribute to computer network without any alterations in the broadcast schedule.

The figure below presents this scheme.



- 1. To capture the signal the FD300/FD322/FD422 board (1) is used.
- Note: Both input lines of the board can be used simultaneously. Lines are designed as follows: Line A and Line B for FD300; Input 1 and Input 2 for FD322/FD422.
 - 2. DirectShow filters from the ForwardT Software set (2) capture audio and video from board input to stream.
 - 3. Media Encoder (WME/FME) processes the stream and transmits it to network (3). It is also possible to store the content to a file on the hard disk during the stream broadcasting.

To configure broadcast according to this scheme follow the steps below (for detailed information on each step see the appropriate subsections of this User's Guide; for more information on encoders, see their help files):

- 1. Connect sources of the signal to the board being used.
- 2. Configure the board parameters using the appropriate application:

- FDConfiguration for FD300 (see the <u>FDConfiguration</u> <u>- FD300 board settings User's Guide</u>);
- FDConfig2 for FD322/FD422 (see the FDConfig2 FDExt boards settings User's Guide).
- 3. If you use FD300, enable DirectShow filters from the ForwardT Software set using the FDConfiguration application.

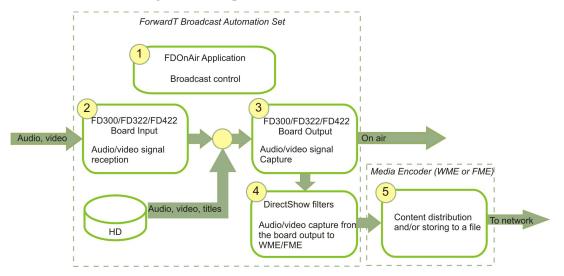
If you use FD322/422, DirectShow filters are enabled automatically when you finish board configuring in FDConfig2.

- Set broadcast parameters in WME/FME.
 Specify a source: DirectShow filter capturing audio/video from the input line being used.
- 5. Launch broadcast in WME/FME.

2. Translation according to the schedule

Using this scheme, you can broadcast according to your own schedule. You can insert content from hard disk to the signal (analog or SDI) received from external source, titling, etc. It is possible to broadcast either to computer network (local or Internet) only or to computer and television network simultaneously.

The figure below presents this scheme.



- 1. To manage the broadcast (scheduling, translation and broadcasting control) the FDOnAir application is used (1).
- 2. To capture, process and transmit audio and video to television network (3) the FD300/FD322/FD422 board is used (2).
- 3. DirectShow filters from the ForwardT Software set (2) capture audio and video from board output to stream.

4. Media Encoder (WME/FME) processes the stream and transmits it to network (5). It is also possible to store the content to a file on the hard disk during the stream broadcasting.

To configure broadcast according to this scheme follow the steps below (for detailed information on each step see the appropriate subsections of this User's Guide; for more information on encoders, see their help files):

- 1. Connect sources of the signal to the board being used.
- 2. Configure the board parameters using the appropriate application:
 - FDConfiguration for FD300 (see the <u>FDConfiguration</u> <u>– FD300 board settings User's Guide</u>);
 - FDConfig2 for FD322/FD422 (see the FDConfig2 FDExt boards settings User's Guide).
- 3. If you use FD300, enable DirectShow filters from the ForwardT Software set using the FDConfiguration application.

If you use FD322/422, DirectShow filters are enabled automatically when you finish board configuring in FDConfig2.

- 4. Launch and configure the FDOnAir application and create a broadcast schedule (see the <u>FDOnAir Broadcast</u> <u>Automation</u> and <u>FDOnAir Additional Sections</u> User's Guides).
- Set broadcast parameters in WME/FME.
 Specify a source: DirectShow filter capturing audio/video from the output line being used.
- 6. Start your schedule in the FDOnAir application.
- 7. Launch stream broadcast to network in WME/FME.

DirectShow filters (for the FD300 board)

This information is valid for the ForwardT Software 5.0.2 version and above for the FD300 board.

1. To enable DirectShow filters

Important: Enable DirectShow filters before configuring stream broadcast in WME/FME. If any broadcasting program is opened (FDOnAir, WME/FME), close it.

- 1. Launch the FDConfiguration application using its shortcut on the desktop or by clicking Start: Programs > ForwardT Software > Board Setup > FD300 Configuration.
- 2. Select in the Boards' Indexes list (1) the board that is used for audio and video capture and click Advanced... (2).

Boards' Indexes Fwd 1 ⇒ 1 (1) Increment logical index Decrement Fwd S ⇒ L (0) S - System index L - Logical index	Selected Board Info: FD300 board serial number: 4380 Products: VS2000 Analog, Forward TA SDI ForwardT Software 5.00.68 Supported applications: VS2000, KeyMachine, BaseApp, KeyConfig, DrAir, PostPlay, TitleEngine, SportTitler, Videoln2, SportReplay, AutoDetect.	Line A Line B Format Dutput DVM Sound Board index 1 - TV Standard PAL - Image Size FullFull - Width 720
0 - Old logical index	E_1, LineB Board Index	Height 576 Frame rate 25 NOTE! Format properties affect both input lines: Line A and Line B
Line A	Line B Output: Line A/B	Advanced+2

3. In the opened window select the A/V Capture filter check box. in the Use Direct Show filters group (3).

	Board # 1 - Advanced Settings	×	
	FD300 Firmware Color keying support Deinterlace and filtering support	OK Cancel	-(4)
	Color keying Autokey on startup Watch Dog None		
3	Use Direct Show filters: A/V Capture filter A/V Renderer ASI Capture filter		
	ASI Renderer	Help	

- 4. Click OK (4) to save the settings and to close the window.
- 5. In the main window click OK (5) to save the settings and exit FDConfiguration.

2. Names of filters

Table 1.List of filters for FD300

	Source	Device designation (N – board number, in most cases N=1)
Board	Line	$(\mathbf{N} - \text{board number, in most cases } \mathbf{N} = 1)$
FD300	video input, Line A	SLTM DShow Video Capture boardN
	video input, Line B	SLTM DShow Video Line B Capture boardN
	video output	SLTM DShow Video Output Capture boardN
	audio input, line #1	FD300 Input 1 BN
	audio input, line #2	FD300 Input 2 BN
	audio input, line #3	FD300 Input 3 BN
	audio output, line #1	FD300 Output 1 BN
	audio output, line #2	FD300 Output 2 BN
	audio output, line #3	FD300 Output 3 BN

DirectShow filters (for the FD322/FD422 board)

This information is valid for the ForwardT Software 5.3.5xx beta version and above for the FD322/422 board.

If you use FD322/422, DirectShow filters are enabled automatically when you finish board configuring in FDConfig2 (mode selection and device enabling). What filters are available depends on the current configuration.

Important: Enable DirectShow filters before configuring stream broadcast in WME/FME. If any broadcasting program is opened (FDOnAir, WME/FME), close it.

1. FD322/FD422 Configuration Setting

For more detailed information on FD322/FD422 Configuration Setting see the FDConfig2: FDExt boards settings User's Guide. This section presents steps on which list of available DirectShow filters depends.

- Launch the FDConfig2 application using its shortcut on the desktop or by clicking Start: Programs > ForwardT Software > Board Setup > FDConfig2.
- 2. In the list (1) select the board being used for signal capture and translation.



3. Make sure that in the Mode list (2) the required mode is selected.

c	Important:	When selecting mode, make sure that you have all necessary licenses.
		4. Make sure that all required check boxes are selected in the Device enabling group (3). To capture audio/video to WME/ FME stream from Input 1 select the Capture input #1 check box; to capture from Input 2 select the Capture input #2 check box. Capture from the board output is always enabled.
	Note:	Depending on board type and selected mode check boxes names can be slightly different.
v	Important:	When selecting the check boxes, be sure that all required licenses are available (for information on licenses for the product you bought, see its description).
		For example, the product may include only one license for capturing from the board input. Thus, at one moment you can use either Capture Input #1 or Capture input #2 but not simultaneously.
		If you have only one license and both check boxes of the Device enabling group are selected, only Capture Input #1 is enabled. If you need to capture audio/video from Input #2, deselect the Cap- ture Input #1 check box and select Capture Input #2.
	Note:	Information on licenses is kept in registration key and recorded into Windows Registry when the key is activated. If there are several boards in the system all corresponding licenses for products are taken into account.
		5. To save the settings and close the FDConfig2 program window click OK (4).
		After applying the settings, the list of available DirectShow filters is formed. If the Capture Input #1/ Capture input #2 check box are selected, names of the appropriate DirectShow filters are displayed in WME/FME in the list of sources.
ames o	of filters	
		Names of DirectShow filters for the FDExt boards look like this: Board_name Line_name Capture

where:

- Board_name denotes the system name of the board being used. E.g. FD322 Board 1, FD422 Board 2. The name indicates the board type and its number;
- Line_name denotes the board line from which audio/ video is captured. E.g. Input 1 Video is an input video line #1; Output Video is an output video line; Input Stereo 1 is an input stereo audio channel #1. Line name can include also the following indications:
 - Input/ Output denotes a line type: input or output;
 - index 1 or 2 denotes the number of the line (optional);
 - HD denotes high definition mode (optional);
 - Video/ Stereo 1/ Stereo 2 denotes type of the content: video or audio and stereo channel index (only for audio).
- Capture denotes the type of filter.

Table 2. List of fillers for FDEXt boards	Table 2.	List of filters for FDExt boards
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	Source	Device designation
Board	Line	(N - board number, in most cases N=1)
FD322	Input 1 video line	FD322 Board N Input 1 Video Capture
	Input 2 video line	FD322 Board N Input 2 Video Capture
	video output (for one channel mode)	FD322 Board N Output Video Capture
	Output 1 video line (for two separate channels mode)	FD322 Board N Output 1 Video Capture
	Output 2 video line (for two separate channels mode)	FD322 Board N Output 2 Video Capture
	audio input, Stereo channel 1LR	FD322 Board N Input Stereo 1 Capture
	audio input, Stereo channel 2LR	FD322 Board N Input Stereo 2 Capture
	audio output, Stereo channel 1LR	FD322 Board N Output Stereo 1 Capture
	audio output, Stereo channel 2LR	FD322 Board N Output Stereo 2 Capture
FD422	Input 1 video line	FD422 Board N Input 1 Video Capture
	Input 2 video line	FD422 Board N Input 2 Video Capture
	Input 1 video line for HD-SDI mode	FD422 Board N Input HD Video Capture
	video output (for one channel mode)	FD422 Board N Output Video Capture
	video output for HD-SDI mode	FD422 Board N Output HD Video Capture
	Output 1 video line (for two separate channels mode)	FD422 Board N Output 1 Video Capture

	-	
	Source	Device designation
Board	Line	(N - board number, in most cases N=1)
	Output 2 video line (for two separate channels mode)	FD422 Board N Output 2 Video Capture
	stereo channel #1 from SDI signal from Input 1 line	FD422 Board N Input 1 Stereo 1 Capture
	stereo channel #2, Input 1	FD422 Board N Input 1 Stereo 2 Capture
	stereo channel #1, Input 2	FD422 Board N Input 2 Stereo 1 Capture
	stereo channel #2, Input 2	FD422 Board N Input 2 Stereo 2 Capture
	stereo channel #1, Output (for one channel mode)	FD422 Board N Output Stereo 1 Capture
	stereo channel #2, Output (for one channel mode)	FD422 Board N Output Stereo 2 Capture
	stereo channel #1, Output 1 (for two separate channels mode)	FD422 Board N Output 1 Stereo 1 Capture
	stereo channel #2, Output 1	FD422 Board N Output 1 Stereo 2 Capture
	stereo channel #1, Output 2	FD422 Board N Output 2 Stereo 1 Capture
	stereo channel #2, Output 2	FD422 Board N Output 2 Stereo 2 Capture
FDVrt	video output	FDVrt Device N Output Video Capture
(virtual board)	stereo channel #1, output	FDVrt Device N Output Stereo 1 Capture
	stereo channel #2, output	FDVrt Device N Output Stereo 2 Capture
	stereo channel #3, output	FDVrt Device N Output Stereo 3 Capture

Launching and configuring FDOnAir

The FDOnAir application is used when broadcasting according to your own schedule.

For more information on working with the application, see the <u>FDOnAir – Broadcast Automation</u> and <u>FDOnAir – Additional</u> <u>Sections</u> User's Guides.

 Launch the FDOnAir application using its shortcut on the desktop or by clicking Start: Programs > ForwardT Software > OnAir.



2. Click Settings (1).

- 3. In the opened window select the Configuration tab (2).
- 4. In the drop-down lists of the Video device group select the following:
 - device type (3):
 - FD300 for the FD300 board;
 - FDExt for the FD322/FD422 board;
 - name of the line/board being used for broadcasting (4). The name looks like this:
 - BoardN for the FD300 board;
 - FD322 Board N Output K for the FD322 board;

• FD422 Board N Output K for the FD422 board; Where N denotes the board number and K denotes the line number (optional).

	🧟 Settings 🛛 🗙	
	Default pictures Title objects Time options RPM Video files preparation Mirroring CPU usage Schedule autoload Default command parameters GPI events External device events Autodetect events	
	2 erat Configuration Input settings Log-book Time synchronization	
	Configuration name	
	Configuration picture Clear	
<u>3</u> -	Video device	(4)
U	I Reconnect at failure	\bigcirc
	Use as background (video) server Audio output Sound1	
	Server memory 40 MB	
	Recommended: 40 MB (SD)/200 MB (HD)	
	✓ Use as foreground (title) server ○ Internal mixer	
	C External mixer (used with YUV/RGB+Key modes)	
	Fullscreen object memory 30 MB Recommended: 30 MB	
	Hecommendea: 30 MB	
	Apply changes 6 Cancel	
	Close ·	-7

- 5. If you use the FD300 board, in the Audio output drop-down list (5) select audio line on the FD300 board being used as sound output.
- 6. Click Apply changes (6) to validate the adjusted settings. Click Close (7) to exit the settings window.



Workflow in WME

This section provides information about how you can use WME (Windows Media Encoder) for broadcasting to network using the ForwardT Software set.

Tip: For more information on WME, see its user's guide.

1. General workflow for broadcast setting and control

- Launch WME using its shortcut on the desktop or by clicking Start: Programs > Windows Media > Windows Media Encoder.
- 2. If the New session dialog box appears, deselect Show this dialog box at startup (1) and click Cancel (2).

9 View Control Tools Help	
New Session	?
Wizards Quick Starts	Description
Custom Broadcast a session live event or video Capture screen	Broadcast a live event from attached devices or computer screen.
Show this dialog box at startup	2 DK Cancel

e View Control	Tools Help					
New Session	Generate Stream Format F	File	O Stop	Pause		
eo	Announce Broadcast					×
oom: 100% 🔽	Broadcast Security					×
	Configure Devices	Ctrl+D				
	Options		-3			
		Input				
		Input				
		Input				
		Input				
iitor		Input				×
						X
nitor General	Statistics Server	Input	ns Event L	og EDL	-	×
			ns Event L	erās di eseren	-	×
General	Input			Output		×
nitor General Videc Audio	Input		ns Event L File: Broadcast port:	erās di eseren		×

3. Open the Options window using Tools > Options... (3).

4. Select the required TV standard on the General tab in the Default video format group (4).

	General Performance
	Select general options for Windows Media Encoder.
	Automatically show panels needed for the current session
	Resize main window when video is zoomed too large
	Minimize encoder window during screen capture
	Warn before stopping encoding
	Show New Session dialog box at startup
	Show Encoding Results dialog box when encoding stops
	Show All Tips Click to re-enable all tips.
1)	- Default video format:
	O NTSC (29.97/30 fps) O PAL (25 fps)
	OK Cancel Help

5. To customize the session open the Session Properties panel: click Properties (5) on the toolbar (or click View > Properties Panel).

🧐 Windows Media I		$5 \qquad (1 \qquad 8)$		
File View Control To	ools Help			
🔮 New Session 🤌	🛃 🚺 Prope	rties 🛛 😧 Start Encoding 🖉 Stop	And the second	
Session Properties			×	Video 🔶
Sources Output Co	mpression Video	Size Attributes Processing Plug-	ins Security Advanced	Zoom: 100% 💌
Select the sources to	encode in this se	ssion.		Click Ap
Source		an Estatemente de la companya de la comp		
Source 1	Name:	Source 1	Remove	
	Source from:	Devices O File O Both de (default video device)	vice and file	
	🖌 Audio:	(default audio device)	Configure	
	Script:	Script Panel	Configure	
	At end:	Stop	~	
	Archiving:	(only available with multiple sources)		
Add 🔻 🔺				
		6	Apply Undo	
<u>< </u>		10		>
Encoder ready				

For the 6-9 steps use the Session Properties panel.

- 6. Specify sources of your audio and video content on the Sources tab:
 - See Specifying and configuring sources of your audio and video content for retranslation;
 - See Specifing and configure sources of your audio and video content for translation according to the schedule.
- 7. <u>Set content distribution parameters</u> on the Output tab (see the relevant section below).
- 8. <u>Set the encoding parameters</u> for your content on the Compression tab (see the relevant section below).
- 9. Click Apply (6) to validate the settings adjusted during steps 6-8.
- 10. To start the broadcast click Start Encoding (7).
- 11. To stop the broadcast click Stop (8).

2. Specifying and configuring sources of your audio and video content for retranslation

- 1. You can specify and configure sources of your audio and video content on the Sources tab (1) on the Session properties panel.
- 2. Select the Devices radio button on the Source from radio button group (2).

(1)-	Session Properties Sources Output Compression Video Size Attributes Processing Plug-ins Security Advanced	
	Select the sources to encode in this session. Source Source 1 Source from: Operation Devices	
	3 ✓ Video: (default video device) Configure Au 4 SLTM DShow Video Capture board 1 Configure Script: Script: Script: Script: Stop ✓ Archiving: (only available with multiple sources)	5
	Add V A	

- 3. Select the Video check box (3) and in the drop-down list on the right (4) select the DirectShow filter capturing video from the *input* line of the board being used. E.g.:
 - SLTM DShow Video Capture board1 for Line A of the FD300 board #1;
 - SLTM DShow Video Line B Capture board1 for Line B of the FD300 board #1;
 - FD322 Board 1 Input 2 Video Capture for the Input 2 video line of the FD322 board #1.

For more information on naming and list of filters see in the sections dedicated to DirectShow filters above.

4. Click Configure... (5) to open the device properties window. Make sure that required values of the parameters are selected.

- 5. Select the Audio check box (6) and in the drop-down list on the right (7) select the DirectShow filter capturing audio from the *input* line of the board being used. E.g.:
 - FD300 Input 1 B1 for audio input #1 of the FD300 board #1;
 - FD322 Board 1 Input Stereo 1 Capture for the 1L and 1R audio input lines (the 1st stereo channel) of the FD322 board #1.

For more information on naming and list of filters see in the sections dedicated to DirectShow filters above.

ssion Properties		
Sources Output Co	mpression Video	Size Attributes Processing Plug-ins Security Advanced
Select the sources to	encode in this se	ssion.
Source	Name:	Source 1 Bemove
Source 1	Name:	Source 1 Remove
	Source from:	
	Source from:	Oevices ○ File ○ Both device and file
	Video:	SLTM DShow Video Capture board 1 💌 Configure
6	— 🔽 Audio:	(default audio device)
U U	- Muulo.	(default audio device)
	Script:	Realtek HD Front Green Jack Configure
		FD300 Input 1 B1
	At end:	FD300 Input 3 B1
	Acena.	FD300 Output 1 B1 FD300 Output 2 B1
	Archiving:	FD300 Output 3 B1
		Realtek HD Audio rear input Realtek HD Front Pink Jack
Add 🗸 🔺		Multichannel WAV Source
		[blank]
		() Apply Undo

6. Click Apply (8) to validate the settings.

3. Specifying and configuring sources of your audio and video content for translation according to the schedule

- 1. You can specify and configure sources of your audio and video content on the Sources tab (1) on the Session properties panel.
- 2. Select the Devices radio button on the Source from radio button group (2).

	Session Properties	
(1)	Sources Output Compression Video Size Attributes Processing Plug-ins Security Advanced	
-	Select the sources to encode in this session.	
	Source Name: 2 rce 1 Remove	
	Source from: O Devices File O Both device and file	
	(4) (default video device) A (4) (SLTM DShow Video Capture board 1) Configure	5)
	SLTM DShow Video Line B Capture board Stript: Script: Script: Script: Configure [blank]	
	At end: Stop	
	Archiving: (only available with multiple sources)	
	Add V	
	Apply Undo	

- 3. Select the Video check box (3) and on the drop-down list (4) select the DirectShow filter capturing video from the *output* line of the board being used (chosen for broadcasting in FDOnAir, see point 4 of the Launching and configuring FDOnAir section). E.g.:
 - SLTM DShow Video Output Capture board1 for output of the FD300 board #1;
 - FD322 Board 1 Output Video Capture for the output of the FD322 board #1.

For more information on naming and list of filters see in the sections dedicated to DirectShow filters above.

4. Click Configure... (5) to open the device properties window. Make sure that required values of the parameters are selected.

- 5. Select the Audio check box (6) and in the drop-down list (7) select the DirectShow filter capturing audio from the *output* line of the board being used. E.g.:
 - FD300 Output 1 B1 for audio output #1 of the FD300 board #1(the board and line numbers is to be selected during configuration; for more information <u>see point 5</u> of the Launching and configuring FDOnAir section);
 - FD322 Board 1 Output Stereo 2 Capture for the 2L and 2R audio output lines (the 2nd stereo channel) of the FD322 board #1.

For more information on naming and list of filters see in the sections dedicated to DirectShow filters above.

Session Properties		×
Sources Output Cor	mpression Video	Size Attributes Processing Plug-ins Security Advanced
Select the sources to	encode in this se	ission.
Source Source 1	Name:	Source 1 Remove
	Source from:	⊙ Devices ○ File ○ Both device and file
	Video:	SLTM DShow Video Dutput Capture t 💟 Configure
(6)_	— 🔽 Audio:	FD 300 Input 1 B1
	Script:	(default audio device) Realtek HD Front Green Jack FD300 Input 1 B1 FD300 Input 2 B1
	At end:	FD300 Input 3 B1 FD300 Output 1 B1
	Archiving:	FD300 Output 2 B1 FD300 Output 3 B1 Packet US Automation
Add V 🔺		Realtek HD Audio rear input Realtek HD Front Pink Jack Multichannel WAV Source [blank]
		8 Apply Undo

6. Click Apply (8) to validate the settings.

4. Setting content distribution parameters

- 1. Open the Output tab (1) on the Session Properties panel.
- 2. Select how you want to distribute the content you want to encode by activating one of the check boxes:
 - Push to server (2) if you want the content distribution to be initialized by WME. In this case, enter the following:
 - Server name Windows Media server address;
 - Publishing point publishing point name;
 - Copy settings from name of the publishing point from which you want to copy the settings for new publishing point;
 - Pull from encoder (3) if you want the content distribution to be initialized by server (or servers).
 In this case, specify the port number for content distribution in the Port number text box. To find automatically the free port number click Find Free Port.

Se	ession Properties			×
ſ	1 Output Compressi	on Video Size	Attributes Processing	Plug-ins Security Advanced
	Select how you want to distri	bute your encode	d content. You can broad	dcast it, store it in a file, or both.
$\overline{2}$	Push to server (the conr	nection is initiated	by the encoder)	
\neg	Server name:	(Server name:F	Port) - Port is optional	
	Publishing point:	(Publishing poi	nt name)	Auto remove
	Copy settings from:	(Use default pu	ublishing point settings)	
3	Pull from encoder (the constraints) Port number:	onnection is initia	ted by the server or player Find Free Port	[5]
	Archive to file			
	File name:			Browse
	Limit by size:	1024 KB		
	Limit by duration:	00:30:00 🤹	(hh:mm:ss)	✓ Index file
	Warn on low disk space:	1024 KB		
			4—	Apply Undo

- 3. Click Apply (4) to validate the settings.
- ٢

Tip: Report the connection parameters (the port number and the IPaddress of the broadcasting server if you chose to distribute the stream directly from WME, or Windows Media server address if you chose to distribute the stream to the server) to the clients.

5. Setting encoding parameters

- 1. You can set the stream encoding parameters on the Compression tab (1) on the Session Properties panel.
- 2. Specify the settings configuration in the Destination dropdown list (2).

	Sources 01	Compression Vide	eo Size Attributes	Processing Plug-in	s Secu	urity Advanced
		ution method and end the settings that are		our content. The distri	bution m	ethod you
		-				
+	Destination:	Windows Media ser	rver (streaming)		-	Edit
-	– Video:	Multiple bit rates vid	leo (CBR)		~	
	_ Audio:	Multiple bit rates au	dio (CBR)		~	
	_ Bit rates:	Bit Rate	Frame Rate	Output Size	^	
		1128 Kbps	25 fps	384 x 288 384 x 288		
		764 Kbps 548 Kbps	25 fps 25 fps	384 x 288		
		340 Kbps	25 fps	384 x 288		
		🗹 282 Kbps	25 fps	384 x 288		
		148 Kbps	12.5 fps	384 x 288	<u> </u>	
	Two-pass er		ne compression	Properties	2	
	Two-pass er	ncoding 🗌 Tirr	ne compression	Properties	oply	Undo

- 3. Information on current parameters values is displayed in the following lists:
 - Video (3) image compression parameters;
 - Audio (4) sound compression parameters;
 - Bit rates (5) (Kbps).
- If it is necessary to edit the selected configuration or create a new one, open the properties editing window by clicking Edit... (6) or select necessary value on the Video, Audio and Bit rates lists.
- 5. Click Apply (7) to validate the settings.

Archiving broadcast using WME

To archive the content being broadcasted you can use the builtin WME function that allows storing the content to a Windows Media file. Content may be stored during broadcasting to network or independently.

For customizing the storing of the content being broadcasted follow the same workflow as for broadcast setting and control (see the Workflow in WME section).

On the Output tab (1) on the Session Properties panel follow the additional steps below:

🖲 Windows Media Encod	ler	
<u>File Yiew Control Tools F</u>	<u>t</u> elp	
🔮 New Session 🏾 🦻 📄	Properties 🛛 😒 Start Encoding 🔘 Stop 🕕	
Session Properties		¥ Video
1 Ces Output Compress	sion Video Size Attributes Processing Plug-ins	Security Advanced
Select how you want to dist	ribute your encoded content. You can broadcast it, sto	click
Select now you want to dist	indute your encoded content. Tou can broadcast it, stu	Jie k in a file, of both.
Push to server (the cor	nnection is initiated by the encoder)	
Server name:	(Server name:Port) - Port is optional	
Publishing point:	(Publishing point name)	Auto remove
Copy settings from:	(Use default publishing point settings)	
Port number:	8080 Find Free Port	
Encode to file		Inpu
File <u>n</u> ame: (3)		Br <u>o</u> wse 4
Limit by size:	1024 KB	
Limit by duration:	00:30:00 🌎 (hh:mm:ss)	✓ Inde <u>x</u> file
Warn on low disk space:	1024 KB	
Warn on low disk space:	1024 KB	y Undo

1. Select the Encode to file check box (2).

If you chose to store content during broadcasting (i.e. one of the Push to server or Pull from encoder check boxes located on the same tab is selected) the check box is called Archive to file.

- Enter to the File name text box (3) the full path to the file where you want to store broadcasted content. Click Browse... (4) to open the default browse dialog box.
- 3. If you need to limit the size of the file being stored, select the Limit by size check box (5) and enter the maximum allowable file size to the text box on the right.
- 4. If you need to limit the duration of the file being stored, select the Limit by duration check box (6) and specify the maximum allowable duration in the HH:MM:SS format.

- 5. Enter to the text box (7) the limit of the minimum allowable free space on the hard drive. When free space on the hard drive reaches this minimum a message that there is not enough space appears.
- 6. Click Apply (8) to validate the settings.

Example of broadcast to network using WME

Let us consider an example of WME use for broadcasting to network based on the ForwardT Software set (the FD300 board). For examination of content being broadcasted to network we will use Windows Media Player.

Tip: For more information on WME, see its user's guide.

Let we have the FDOnAir application customized to broadcast according to a schedule. For broadcasting we use the FD300 board #1 (1). For sound output we have selected the Sound1 board audio output (2).

🦞 Settings 🛛 🗙	
Default pictures Title objects Time options RPM Video files preparation Mirroring CPU usage Schedule autoload Default command parameters GPI events External device events Autodetect events General Configuration Input settings Log-book	
Configuration name	
Configuration picture Clear	
Video device FD300 FD300 F	(1)
✓ Reconnect at failure ✓ Use as background (video) server	
Audio output Sound1	
Recommended: 40 MB (SD)/200 MB (HD)	
Use as foreground (title) server Internal mixer	
C External mixer (used with YUV/RGB+Key modes)	
Fullscreen object memory 30 MB	
Recommended: 30 MB	
Apply changes Cancel	
Close	

To customize and launch broadcast to network follow these steps:

- 1. Make sure that DirectShow filters are enabled for the FD300 board #1. To do this, launch the FDConfiguration application (the FDOnAir application must be closed) and do the following:
 - In the Boards' Indexes list select the FD300 #1 board;
 - Click Advanced...;
 - Make sure that the A/V Capture filter check box (1) is selected on the Board #1 Advanced Settings window.

🕷 FDConfig			
Boards' Indexes Fwd 1 > 1 (1) Increment Iogical index Decrement Fwd S -> L (0) S - System index L - Logical index 0 - Old logical index LIVE_1, LineA	Selected Board Info FD300 board seric Product: Forward Forward Softwar Supported applica KeyMachine, Basi Dnåir, PosiPlay, T Sport Tiller, Videol AutoDetect. No DVM board de	Board # 1 - Advanced Settings FD300 Firmware Color keying support Color keying Autokey on startup Watch Dog None	OK Cancel
Line A	1 Line B	Use Direct Show filters: A/V Capture filter A/V Renderer ASI Capture filter ASI Renderer	th input lines:
OK Cancel	Save Info	Help Breakout Box C	Cable Connectors: Default

- Launch WME (2) by clicking Start: Programs > Windows Media > Windows Media Encoder.
- 3. Click Properties (3) on the toolbar to open the Session Properties panel.

🥺 Windows Media Encoder <u>File View Control Tools H</u>elp 🔮 New Session 📊 📝 Properties 🛛 💽 Start Encoding 🔘 Stop 🕕 Pause 3 Zoom: 100% 🔽 Display: Both ~ Preview: Click Apply to update video preview Input Output General Statistics Server Connections Event Log EDL Input Output Video: Audio: Script: File: Broadcast port: Server URL:

Steps 4-7 are to be followed on the Session Properties panel.

- 4. On the Sources tab (4) do the following:
 - Select the Devices radio button (5);
 - Select the Video check box (6), select the SLDTM DShow Output Capture board1 video device on the drop-down list on the right (7);
 - Select the Audio check box (8), select the FD300 Output 1B1 audio device on the drop-down list on the right (9).

_	Session Properties		×
(4)-	Sources Output	Compression Video	Size Attributes Processing Plug-ins Security Advanced
	Select the sources	s to encode in this se	ssion.
	Source Source 1	Name:	Source 1 Remove
	6	Sou 5 r	Devices File Both device and file SLTM DShow Video Output Capture t - (7)e
	(8	Audio:	FD 300 Input 1 B1
		Script:	Realtek HD Front Green Jack FD300 Input 1 B1 FD300 Input 2 B1
		At end:	FD300 Input 3 B1 FD300 Output 1 B1 FD300 Output 2 B1
		Archiving:	FD300 Output 3 B1 Realtek HD Audio rear input
	Add		Realtek HD Front Pink Jack Multichannel WAV Source [blank]
			Apply Undo

- 5. On the Output tab (10) do the following:
 - Select the Pull from encoder check box (11);
 - Click Find Free Port (12) to find a free port number automatically. Found number is displayed in the Port number field (13).

10	Properties	on Video Size Attributes Processing Plu	g-ins Security Advanced
Sel		oute your encoded content. You can broadcast ection is initiated by the encoder)	t it, store it in a file, or both.
	Server name:	(Server name:Port) - Port is optional	
	Publishing point:	(Publishing point name)	Auto remove
	Copy settings from:	(Use default publishing point settings)	
1	Port number: 13-	8080 Find Free Port)
	File <u>n</u> ame:		Browse
	Limit by size:	1024 KB	
	Limit by d <u>u</u> ration:	00:30:00 🌔 (hh:mm:ss)	✓ Inde <u>x</u> file
	am on low disk space:	1024 KB	
			Apply Undo

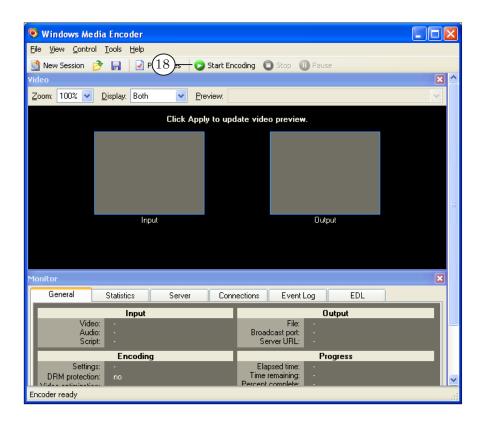
6. Specify the broadcast settings configuration in the Destination drop-down list (15) on the Compression tab (14).

5	Session Propertie	s			×							
	Sources 14	Compression Vide	o Size Attributes	Processing Plug-in	s Security Advanced							
		ution method and enc s the settings that are		our content. The distri	bution method you							
(15)-	<u>D</u> estination:	Windows Media serv	ver (streaming)		<u>►</u> dit							
	Vide <u>o</u> :	Multiple bit rates video (CBR)										
	A <u>u</u> dio:	Multiple bit rates audio (CBR)										
	<u>B</u> it rates:	Bit Rate	Frame Rate	Output Size	<u> </u>							
		🔲 1128 Kbps	25 fps	384 x 288								
		764 Kbps	25 fps	384 x 288								
		548 Kbps	25 fps	384 x 288								
		340 Kbps	25 fps	384 x 288								
		282 Kbps	25 fps	384 x 288								
		148 Kbps	12.5 fps	384 x 288								
	T <u>w</u> o-pass e	ncoding 📃 Tim	e co <u>m</u> pression	Properties								
				A	pply Undo							

7. Click Apply (16) to validate the adjusted settings. Click the close button (17) to exit the settings window.

Windows Me	dia Encoder				
<u>File V</u> iew <u>C</u> ontro	ol <u>T</u> ools <u>H</u> elp				
S New Session	🏂 🔒 🚺 Prop	erties 🛛 🜔 Start	Encoding 🔘 Stop	Pause	0
Session Propertie	:5				🛛(17) 🗠
Sources Output	Compression Vide	eo Size Attributes	Processing Plug-in	s Security Advance	d <u>Zoom:</u> 100% ►
	bution method and en es the settings that are		your content. The distri	ibution method you	Click
<u>D</u> estination:	Windows Media se	ver (streaming)		<u>E</u> dit	=
Vide <u>o</u> :	Multiple bit rates vic	leo (CBR)		*	
Audio:	Multiple bit rates au	dio (CBB)		~	
n <u>a</u> alo.	malapic bit rates da				
<u>B</u> it rates:	Bit Rate	Frame Rate	Output Size	<u>^</u>	
	🔲 1128 Kbps	25 fps	384 x 288		
	764 Kbps	25 fps	384 x 288		Inpu
	548 Kbps	25 fps	384 x 288		
	340 Kbps	25 fps	384 x 288		
	282 Kbps 148 Kbps	25 fps 12.5 fps	384 x 288 384 x 288	~	
	<	12.51ps	304 X 200		
Two-pass e	encoding Tin	ne compression	Properties		
		ie co <u>m</u> pression			
			(16)	pply Undo	v
<		IIII			>
Encoder ready					

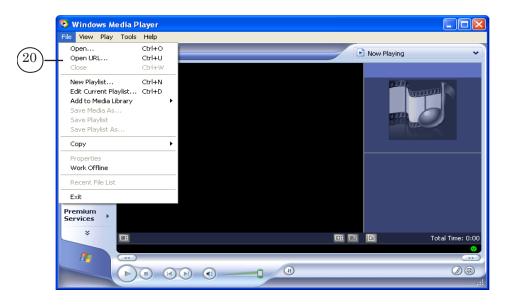
8. Click Start Encoding (18) on the toolbar to start stream broadcast to network.



9. Click Start (19) to start the schedule playback.

F1 F2 F3 😽	' F4 😼' F5 😽'	F6 -96 d8 ▼	F7 🎦 F8 🔃	0 0.5	
0 05 🙀 m					1
about_programmers.mpg	0 <u>0:00:53</u>		F9 F10	i F11	F12
	: :			::	::
	::		1F9 1F1	0 °F11	^F12
	- n 00:00:06				:::
10:55:9			Show 1st frame	Settings	Log-book 🖉 🕐
State Start 住	, Length 🗙 🔃 T	Name		1 📧 🔳 🗰	🖉 🐷 📊 📅
10:56:52.25	-0.00.00.00	****	9 Start ->	Movie1	
10.00.02.20	-0.00.00.00		Pause II		5 0.10 D
					Duration Start Fini
State Start 🟦	, Length 🔀 🖪 🔳	Name	≒	100grand_ef000000	
10:55:52.13		****	. 🔶 टां स		0:19:51.16
10:55:51.98	0:01:00.26 0.10 T	about_programmers.mpg		2100000.mpg	0:11:47.12
READY 10:56:52:15	0:00:20.04 0.10 T	Apteka Leo.mp2			0:01:00.26
10:57:12.19	=0:01:20.20	****	🔁 🕙 🖆		0:00:21.20
			<u>7</u>		0:00:20.04
					0:00:30.00 0:00:16.32
					0:00:16.32
				Domostroy New Ye	
				Domositoy New Te	0.00.04.00

- 10. Launch Windows Media Player.
- 11. Open the dialog box to connect with the stream by clicking File > Open URL... (20).



12. In the Open URL window (21) enter the broadcasting server URL and click OK.

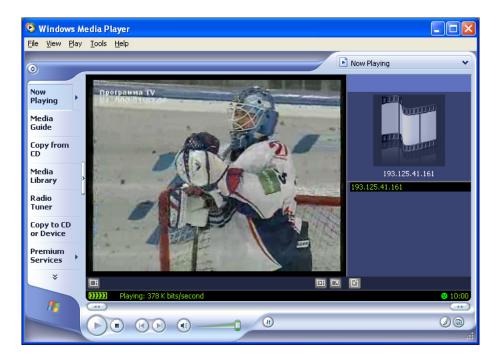
Open U	irl ? 🔀
⊘	Enter the URL or path to a multiputer of the file on the Internet, your computer, or you work that you want to play.
Open:	http://193.125.41.161:2744
	OK Cancel Browse

The address line looks like this: http://IP-address:port number

where:

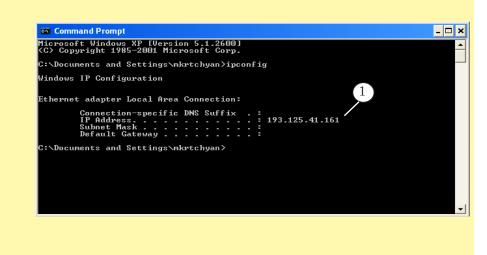
- IP-address denotes the broadcasting server IP-address;
- : is an obligatory separator;
- port number denotes the broadcasting server port number (see Step 5).

13. In the Windows Media Player window content will be displayed according to the schedule being played back in the FDOnAir.



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Tip: To see the computer IP-address open a command prompt window by clicking Start: Programs > Accessories > Command Prompt. In the command prompt window type ipconfing and press Enter. The network configuration details will appear in the window, including IP address (1).



Workflow in FME

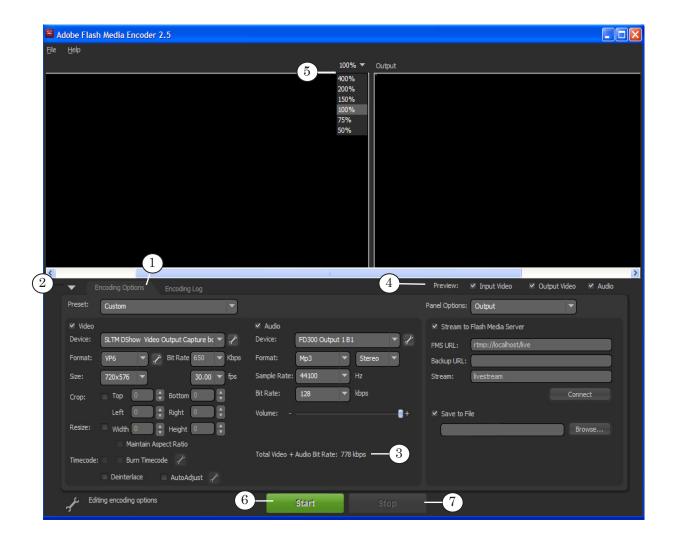
٢

This section provides information about how you can use the FME (Adobe Flash Media Encoder) when broadcasting to network using the ForwardT Software set.

Tip: For more information on FME, see the help files of the encoder.

1. General workflow for broadcast setting and control

- 1. Launch FME using its shortcut on the desktop or by clicking Start: Programs > Adobe > Adobe Flash Media Encoder.
- 2. Customize the session on the Encoding Options panel (1): steps 4–7.
- 3. Use 🔽 / 🔼 to minimize/maximize the panel (2).



- 4. Specify sources of your audio and video content:
 - See Specifying and configuring sources of your audio and video content for retranslation;
 - See Specifying and configuring sources of your audio and video content for translation according to the schedule.
- 5. <u>Set the parameters of stream distribution (see the relevant</u> section below).
- 6. <u>Set the content encoding parameters (see the relevant</u> <u>section below)</u>.
- 7. Audio and video bit rate according to the current settings are displayed in the Total Video+Audio Bit Rate field (3).
- 8. Select the following check boxes in the **Preview** group (4) to display the relevant information in the preview window:
 - Input Video;
 - Output Video;
 - Audio input audio stream.
- 9. Select the preview window size in the Preview Size drop-down list (5).
- 10. To start the broadcast click Start (6).
- 11. To stop the broadcast click Stop (7).

2. Specifying and configuring sources of your audio and video content for retranslation

- 1. You can specify and configure sources of your audio and video content on the Encoding Option tab (1) on the settings panel.
- 2. Select the Video check box. In the Device drop-down list (1) specify the relative DirectShow filter capturing video from the *input* line of the board being used as the source of your video content.

_	✓ Video		✓ Audio				
(1)—	Device:	SLTM DShow Video Capture board 1 🔻 🦯	Device: FD300 Input 1 B1 💌 🥜				
_	Format:	VP6 VP6 Bit Rate 650 VKbps	Format: Mp3 Mono				
	Size:	720x576 🔻 15.00 🕶 fps	Sample Rate: 11025 💌 Hz				
	Crop:	Top 0 🔹 Bottom 0	Bit Rate: 20 💌 kbps				
		Left 0 🚔 Right 0 🗮	Volume: +				
	Resize:	🗕 Width 🚺 🍨 Height 🚺 🝨					
		Maintain Aspect Ratio					
	Timecode:	Burn Timecode 🥜	Total Video + Audio Bit Rate: 670 kbps				
		Deinterlace AutoAdjust 🖌					

E.g.:

• SLTM DShow Video Capture board1 for Line A of the FD300 board #1;

- SLTM DShow Video Line B Capture board1 for Line B of the FD300 board #1;
- FD322 Board 1 Input 2 Video Capture for the Input 2 video line of the FD322 board #1.

For more information on naming and list of filters see in the sections dedicated to DirectShow filters above.

3. Select the Audio check box. In the Device drop-down list (2) of the Audio group specify the relative DirectShow filter capturing audio from the *input* line of the board being used as the source of your audio content.

					(2))				
✓ Video					Ĭ	🗹 Audio				
Device:	SLTM DShov	v Video C	apture boa	ard 1	 ✓ 	Device:	FD300 Input	181	4	▼ 🖍
Format:	VP6	• 7	Bit Rate	650 ·	Kbps	Format:	Мр3		Mono	
Size:	720x576	-		15.00	fps	Sample Rate:	11025		Hz	
Crop:	Тор 0		Bottom		A V	Bit Rate:	20		kbps	
	Left 0		Right	• [A V	Volume: -				
Resize:	Width 0		Height	•	A V					
	Main	ntain Aspe	ect Ratio							
Timecode:	Burn	n Timecod	e 🦯			Total Video +	Audio Bit Rate:	670	kbps	
	Deinterlad	e 🛛	AutoAdj	ust 🦯						



- FD300 Input 1 B1 for audio input #1 of the FD300 board #1;
- FD322 Board 1 Input Stereo 1 Capture for the 1L and 1R audio input lines (the 1st stereo channel) of the FD322 board #1.

For more information on naming and list of filters see in the sections dedicated to DirectShow filters.

3. Specifying and configuring sources of your audio and video content for translation according to the schedule

- 1. You can select and configure sources of your audio and video content on the Encoding Option tab (1) on the settings panel.
- 2. In the Device drop-down list (1) of the Video group specify the relative DirectShow filter capturing video from the *output* line of the board being used (chosen for broadcasting in FDOnAir, see <u>point 4 of the Launch and configuring</u> <u>FDOnAir section</u>) as the source of your video content.

Device:	SITM DEbau Video	o Output Capture bo 🤊		Audio Device:	FD300 Out	-out 1 D1	
Device.		o output Capture pt	4	Device,	FD300 Out		
Format:	H.264 🔻 🖌	🖈 Bit Rate 650 📑	Kbps	Format:	МрЗ	💌 Stereo	-
Size:	720x576 💌	25.00	fps	Sample Rate:	44100	Hz	
Crop:	Top 0	🗧 Bottom 🚺		Bit Rate:	96	👻 kbps	
	Left	🗧 Right 🛛 🗌	•	Volume: -			_
Resize:	🗏 width 💽	🗧 Height 🚺	÷				
	🔲 Maintain As	spect Ratio					
Timecode	Burn Timec	ode 🦯		Total Video +	Audio Bit Ra	ite: 746 kbps	

E.g.:

- SLTM DShow Video Output Capture board1 for output of the FD300 board #1;
- FD322 Board 1 Output Video Capture for the output of the FD322 board #1.

For more information on naming and list of filters see in the sections dedicated to DirectShow filters above.

- 3. In the Device drop-down list (2) of the Audio group specify the relative DirectShow filter capturing audio from the *output* line of the board being used as the source of your audio content. E.g.:
 - FD300 Output 1 B1 for audio output #1 of the FD300 board #1(the board and line numbers are to be selected during configuration; for more information see point 5 of the Launch and configuring FDOnAir section);
 - FD322 Board 1 Input Stereo 2 Capture for the 2L and 2R audio output lines (the 2nd stereo channel) of the FD322 board #1.

For more information on naming and list of filters see in the sections dedicated to DirectShow filters above.

				(2)	>				
🗸 Video	1.00				🗸 Audio	94 2			
Device:	SLTM DShow Video Output Capture bo 🔫 🥜				Device:	FD300 Output 1 B1			- 7
Format:	H.264 💌	🥕 Bit Rate	650 🔻	Kbps	Format:	МрЗ	-	Stereo	
Size:	720x576 💌		25.00 🔻	fps	Sample Rate:	44100	-	Hz	
Crop:	тор 0	Bottom [Bit Rate:	96	-	kbps	
	Left 0	🗧 Right 🚺			Volume: -				
Resize:	🗏 width 🚺	Height 🚺		Ē					
	🔲 Maintain i	Aspect Ratio							
Timecode:	: 📕 📕 Burn Time		Total Video + Audio Bit Rate: 746 kbps						
	Deinterlace	📕 AutoAdji	ust 🦯						

4. Setting content distribution parameters

- 1. Select the Stream to Flash Media Server check box (1) in the Panel Options group.
- 2. Specify the connection to the Flash Media Server parameters in the following text boxes:
 - FMS URL (2): Flash Media Server URL address;
 - Backup URL (3): backup Flash Media Server URL address;
 - Stream (4): stream name.
- 3. Click Connect (5) to connect to Flash Media Server.

	Preview:	✓ Input Video	Output V	ideo 🗹	Audio	
	Panel Options:	Output		•		
1)	✓ Stream to	Flash Media Server				
2—	FMS URL:	rtmp://localhost/lin	ve			
	Backup URL:					(3)
(4)	Stream:	livestream				
				Connect		(5)
6—	Save to F	ile				
				Browse	·	8
		7				

4. If needed, select the Save to File check box (6) and specify the full path to the file in the text box (7) to store your content to a file during its distribution.

Click Browse... (8) to open the default browse dialog box.

5. Setting encoding parameters

- 1. You can set the stream encoding parameters on the Encoding options tab.
- 2. Select the required configuration in the Preset drop-down list (1).

The configuration defines the following parameters: audio and video codec, bit rate, image size and frame frequency, sound reproduction mode (mono/stereo) and sample rate.

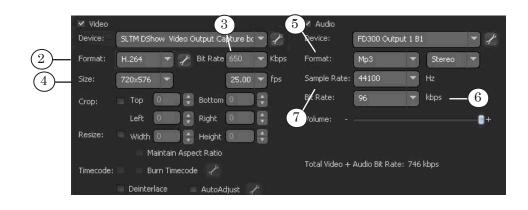
\bigcirc	Preset:	Custom 💌
-	✓ Video Device: Format: Size: Crop:	Low Bandwidth (150 Kbps) - VP6 Medium Bandwidth (300 Kbps) - VP6 High Bandwidth (800 Kbps) - VP6 Medium Bandwidth (300 Kbps) - H.264 High Bandwidth (800 Kbps) - H.264 Custom
	Resize:	Width O Height O
	Timecode:	Burn Timecode 🦯

If you need to customize a nonstandard configuration, select Custom in the list and specify the required parameters. In the Video group specify the following:

- Format (2) video codec name;
- Bit Rate (3);
- Size (4) image size and frame frequency.

In the Audio group specify the following:

- Format (5) audio codec name and sound reproduction mode;
- Bit Rate (6);
- Sample Rate (7).



3. Select frame size and required frame frequency using the Size group drop-down lists (8). Frame size can be 720x576 only.

	🛩 Video							🗸 Audio				
	Device:	SLTM DShow V	'ideo C	output Ca	pture bo	•	1	Device:	FD300 Output 1 B1			- 1
	Format:	H.264 💌	1	Bit Rate	650	-	Kbps	Format:	МрЗ		Stereo	
(8)—	Size:	720×576 💌			25.00	-	fps	Sample Rate:	44100	-	Hz	42-542°
C	Crop:	тор 0		Bottom	0			Bit Rate:	96	-	kbps	
		Left 0	De	Right	0			Volume: -				
	Resize:	🗏 width 🚺		Height	0							
		🔲 Maintai	n Aspe	ct Ratio								
	Timecode:	e: 💦 Burn Timecode 🥜						Total Video + Audio Bit Rate: 746 kbps				
		Deinterlace		AutoAc	ljust 🚽							

4. Select the Resize check box (9), if you need to change the size of the image being broadcasted. Specify the size using the Width and Height boxes.

Select the Maintain Aspect Ratio check box (10) if you need to keep the image proportions during scaling.

	🖌 Video				::			🗹 Audio	-			
	Device:	SLTM DShow Video Output Capture bc 🔻 🥕						Device:	FD300 Output 1 B1 🔷			- 1
	Format:	H.264	77	Bit Rate	650	-	Kbps	Format:	Мр3	-	Stereo	
	Size:	720x576			25.00	-	fps	Sample Rate:	44100		Hz	
	Crop:	Тор	0	Bottom	0			Bit Rate:	96	-	kbps	
		Left	0	Right	0			Volume: -				
(9)—	Resize:	🔲 Width		Height	0							
-	(10)	— м	aintain As	pect Ratio								
	Timecode:	B	urn Timeco	ode 🦯				Total Video +	Audio Bit Ra	te: 746	kbps	
		🔲 Deinter	lace	AutoAc	djust 🚽	۶						

5. Specify the volume level by moving the Volume slider.

🖌 Video	1.55	:		🗸 Audio	24			
Device:	SLTM DShow Video Output Capture bt 🔻		c ▼ /	Device:	FD300 Output 1 B1		 ✓ 2 	
Format:	H.264 💌 🖌	Bit Rate 650	Kbps	Format:	Мр3	👻 Stere	•	
Size:	720×576 🔻	25.00	🔻 fps	Sample Rate:	44100	Hz		
Crop:	Top	Bottom 0		Bit Rate:	96	👻 kbps		_
	Left 0	Right 0		Volume: -				(11)
Resize:	🗏 width 🚺 🕻	Height 0						\cup
	Maintain Aspect Ratio							
Timecode: Burn Timecode 🥜			Total Video + Audio Bit Rate: 746 kbps					
	Deinterlace	AutoAdjust ,	ł.					

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@sl.iae.nsk.su forward@softlab-nsk.com

Forum

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

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