ForwardTx Plugins

# SLIPInputLayer

Previewing and Capturing Audio and Video Content from MPEG-TS to Files



Revision as of: September 08, 2017

**Quick Start** 

© SoftLab-NSK

#### Notice

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

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

Copyright © 1997 - 2018 SoftLab-NSK Co., Ltd. All Rights Reserved.

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

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

#### FCC Information

FCC ID:

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

Reorient or relocate the receiving antenna.

Increase the separation between the equipment and receiver.

Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

Consult the dealer or an experienced radio/TV technician for help.

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

#### Limited Warranty

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

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

### **Table of Contents**

Introduction	.4
Plugin Registration	.5
Configuration	.6
1. Preliminary Remarks	.6
2. The FDConfig2 Program. Adding Virtual Input	.7
The FDPreview Program.	
Previewing Streaming Audio and Video Data	.10
The FDCapture Program. Capturing Stream Content to Files	. 11



#### Introduction

The SLIPInputLayer plugin is a program option additional to ForwardTN/TT/TA/TP/TS products designed by the SoftLab-NSK company.

The plugin is used to work with audio and video content received by server input in MPEG-TS stream, i.e. TV programs transmitted by the main broadcasting station via IP/ASI interface, video content from IP camera, etc.

The plugin allows:

- capturing audio and video content from input stream to files via the FDCapture program (capturing is executed only with data recompression);
- capturing audio and video content from input stream to PostPlay storages (via the PostPlayCapture program);
- previewing audio and video content from input stream in FDPreview program window (also in FDCapture, SLAdsRemover and other programs).
- Note: For example, the SLIPInputLayer plugin is required to capture stream data to files in the following solutions:
  - rebroadcast media data from MPEG-TS on a full screen see the <u>«IPInput. Rebroadcasting Streaming Audio/Video</u> <u>Data on Full Screen»</u> user's guide. The function is available in the Forward TT/TA/TP/TS products;
  - rebroadcast media data from MPEG-TS in a window over full-screen video background (PiP) – see the <u>«IPCamera.</u> <u>Rebroadcasting Streaming Audio/Video Data in the Form of</u> <u>Titles</u>» user's guide. The function is available if the Forward TT/TA/TP/TS product is used with the IPCamera plugin;
  - rebroadcast media data from MPEG-TS with a time shift – see the <u>«IP2PostPlay. Recording Streaming Audio and</u> <u>Video Into Postplay Storages</u>» user's guide. The function is available if the Forward TA/TP/TS product is used with the IP2PostPlay plugin;
  - rebroadcast media data from MPEG-TS with automatic removal of advertisement the SLAdsRemover product.

Also there are variants of the SLIPInputLayer plugin for SD, HD, 4K resolutions and for various quantity of channels for simultaneous data capturing: 1, 4, 16.

The present guide describes order of the SLIPInputLayer plugin registration and its configuration.



#### **Plugin Registration**

- 1. Work with the SLIPInputLayer plugin requires no additional installation of any other software components.
- 2. Be sure that software not earlier than 5.8.0 version for the main product and plugins is installed.
- Note: Installers for current software versions and instructions on their installation you may find at the SoftLab-NSK company site in the  $\underline{Download}$  section.
  - 3. Activate registration of the SLIPInputLayer plugin by double-clicking name of registration file (\*.reg). The file is received in set with plugin. Confirm adding information from the file to Windows registry. Reboot the PC.

#### **Important:** Registration of the plugin becomes active only after PC restart.

4. Open the FDConfig2 program via shortcut located on desktop. Be sure that in the All boards licenses info program section in the Board licenses list there is an item that corresponds to purchased product (1), i.e. SLIPInputLayer name, mark of cnahhels quantity and resolution.



Function of capturing to files and previewing of stream media data requires some additional configuration described below.



#### Configuration

#### **1. Preliminary Remarks**

- 1. Broadcasting scheme must be set up first.
- Note: For example, if it is necessary to broadcast video content from IP source on a full screen then follow the instructions given in the <u>«IPInput. Rebroadcasting Streaming Audio/Video Data on Full</u> Screen» user's guide.

Create graph (1) in the SLStreamer Pro program window. The graph is necessary to receive audio and video data from IP stream to named region of used board. The SL FDExtRegion type (2) is selected for the Output device node. Necessary board (3) and region name (4) are also specified in node settings.

Note: More information on work with graphs is given in the <u>«SLStreamer</u> Lite. SLStreamer Pro. Programs for Configuring, Monitoring & Managing Digital Broadcasting Schemes» user's guide.



2. Be sure that state of task with the graph is Running (5), i.e. the graph is started (the Graph was started PID=... message appears (6)).



#### 2. The FDConfig2 Program. Adding Virtual Input

- 1. Configuring is executed when graph receives stream (see the section above).
- 2. Launch the FDConfig2 program.
- 3. Select board receiving the stream in the list (1). FDVrt Device 1 (2) is in our example.

✗ FDConfig2	-	
# Device Serial # 1 ED722 Board 1 70153	Change number of virtual boards	
2 FDVrt Device 1 1116	-2	
Mode: Virtual board V		
Virtual board. Output of the virtual board can be used as DirectShow capture filter.		
Video		
Video mode: 576I 50 (25 fps, 4:3) ~		
Width: 720 🔶		
Height: 576		
Aspect ratio: 4x3 V		
Frame rate: 25.0 X		
Progressive		
Show on output		
Watch Dog		
No external device V +IP	License present	
Audio	Audio processing	
Language number: 2 ~	Subtitles	
Language #1: eng V V Solo	Output	1L
Language #2: rus V Solo		
Language #3: eng 🗸 🗹 Solo	Registration info:	_
Language #4: eng V Solo	Found 1 valid key(s) {Key #114.Demo_TS} and 1 invalid key(s) {0x7BA54638D97908F9.FD422_Demo (lic: 3)} for selected board !!!	
Language #5: eng 🗸 🗸 Solo	Registered products:	
Language #6: eng V Solo	Demo_TS	
Language #7: eng 🗸 🗸 Solo	Software info: ForwardSoftware (Forward TS Broadcasting + PoetPlay s/w) 5.8, 115	
Language #8: eng V V Solo		
Device enabling		
Title mixer	Service Errors Show test signal Show board indexes OK	Can

4. Click Virtual inputs... (3).

5. Click Add layer... (1) in appeared window. Select necessary item with specified named region name in the drop-down list.

Additional	Virtual Inputs				<b>-X</b>		
In this wind	In this window you can add virtual inputs to be synchronized to the board.						
You can us Frame rate	e inputs and outp of these inputs/o	uts of other board utputs must be th	ds as virtua ne same as	al inputs. those on selected	board.		
Virtual inpu OnAir appli	its with different f	rame size or field	order will r	iot be available as	inputs in		
Also, you d	an create virtual i	nput for title laye	r with spec	ified name.			
Туре	Unique name	Friendly name	Picture				
Add input	Add layer.	Name	Pict	ure Up	Down		
Remove	e Remove A	, II	_				
Show w	varning about wror	ng inputs		ОК	Cancel		

Selected layer is added to list of virtual board inputs (2).

	Additional V	/irtual Inputs			×	
	In this window you can add virtual inputs to be synchronized to the board. You can use inputs and outputs of other boards as virtual inputs. Frame rate of these inputs/outputs must be the same as those on selected board. Virtual inputs with different frame size or field order will not be available as inputs in OnAir application. Also, you can create virtual input for title layer with specified name.					
	Туре	Unique name	Friendly name	Picture		
(2)-	Layer	Output/TV_Channel IP				
	Add input.	Add layer	Name Pic	ture	Up Down	
	Remove	Remove All				
	Show wa	arning about wrong inputs	[	OK	Cancel	

6. Click Name (3). Specify name of added virtual input (4). This name is displayed in device lists in the FDConfig2, FDPreview, FDCapture and other programs at selection of capturing data source.

Additional Virtual Inputs	Property for Output/TV_Channel IP X
In this window you can add vir You can use inputs and output Frame rate of these inputs/ou Virtual inputs with different fra OnAir application.	Set friendly name: TV_Channel IP —4
Also, you can create virtual inc Type Unique name	OK Cancel
Layer Output/TV_Chan	inel IP
Add input Add layer	Name Picture Up Down

7. Click Picture (5). Specify path to graphic file (6). Picture from this file will be used on input if some failure in receiving of stream from IP/ASI source occurs.

Additional V	irtual Inputs		×	
In this windo	ow you can add virtual inpu	uts to be synchroni	zed to the board.	
You can use Frame rate o	inputs and outputs of oth of these inputs/outputs mu	er boards as virtua Ist be the same as	l inputs. those on selected board.	
Virtual input OnAir applic	s with different frame size ation.	or field order will n	ot be available as inputs in	
Also, you ca	n create virtual input for t	itle layer with speci	ified name.	
Туре	Unique name Friendly name Picture			
Layer	Output/TV_Channel IP	TV_Channel_IP	D:\SoftLab-NSK\Data\SLAd <u>:</u>	-(6
<			>	
Add input.	Add layer	Name Pict.	ure 5 Down	
Remove	Remove All			

8. Close the Additional Virtual Inputs window. Then close the FDConfig2 main program window by clicking OK.

#### The FDPreview Program. Previewing Streaming Audio and Video Data

Launch the FDPreview program. More information on this program you may find in the <u>«FDPreview. Program for</u> <u>Previewing of Audio and Video on Boards Inputs/Outputs»</u> user's guide.

Open menu by clicking program title bar. Select item with board indication (FDVrt (1) is in our case). Select device in the appeared submenu. The device is a source of audio and video data for previewing. The FDVrt Device 1 TV\_Channel\_IP device (2) is in our example.



# Double-click work area of the window to start audio and video data previewing.



#### The FDCapture Program. Capturing Stream Content to Files

Configuration of audio and video data capturing to files and control over capturing are executed according to instructions given in the <u>«FDCapture. Program For Capturing Audio and</u> <u>Video Data to Files»</u> user's guide. If additional configuration is made (see the «Configuration» section above) then the FDCapture program has configured virtual input in the list of input devices.

1. Launch the FDCapture program. Click Settings (1) on the Capture Control pane.

🐕 FDCap	oture #1								×
Capture	Control D:\SoftLab-NSK\D	368,1/306	9 GB 13 : 10 : 16	Timetable Control	$\geq$				×
Video	720 x 576, 25,0	00, FD322 Board 1 Input 1, Low	Dropped frames: 0	File		Start	Stop	Duration	De
Audio	Capture without	t audio	Settings	(1)					
Codec	Uncompressed	(RGBA)	Security Security S	$\sim$					
S	Standard	Timetable	VTR						
	rec#1_13_10_0	0.avi C Initia Shutdown wi	apture duration h:mm:ss) 01:00:00 hen finished						
Preview C	Control	Undata times Every 1 cocor							
		Preview in: Preview in: Pane Window Buffer I	Load: 0% sssion Load: 0% .oad: 0%						Þ

2. Open Hardware section (2) by clicking its name in list. Select device in the Capture device list (3) which data must be captured to files, FDVrt Device 1 TV\_Channel\_IP (4) is in our case. Complete other configuration steps. Click OK (5) to return to the main program window.



3. Video frames from input IP stream (6) are displayed in the preview windows.

🔁 FDCapture #1	-	□ ×
Capture Control	Timetable Control	
931,5 / 77,2 GB 17 : 12 : 47		×
Video 1920 x 1080, 25,00, FDVrt Device 1 TV_Chann Dropped frames: 0	File Start Stop	Duration
Audio Stereo 1 - 48000/16/Stereo Settinas	rec#1 12 10 0	09 00:00:16:1
Codec SoftLab-NSK advanced I-frames, 50-80/65, 10		05 00.00.10.1
Standard Timetable VTR		
98 : 98 : 98 : 98 × 98		
rec#1_12_10_01.avi		
Shutdown when finished		
Preview Control		
233 Update time: Real time ▼ ×   Preview in: ▼ Bane ▼ Writing Load: 0%   ✓ ✓ ✓ ✓		
₩ F Buffer Load: 0%		
- Audio Control		
Settings V Show Meters		
-96'-84'-72'-60'-48'-36'-24'-12'0	<	>



# PDPreview #1, FDVt Device 1 TV\_Channel JP (TV\_Channel IP): 1920 x 1080, 25 fps

4. Control over capturing of data from virtual input does not differ anyhow from control over other content and use of other audio and video data sources (for more information see the <u>«FDCapture. Program For Capturing Audio and Video</u> <u>Data to Files</u>» user's guide).

## **Useful Links**

ForwardT Software Set: description, download, documentation, solutions http://www.softlab-nsk.com/forward/index.html

#### Support

e-mail: forward@sl.iae.nsk.su forward@softlab-nsk.com

#### Forum

http://www.softlab-nsk.com/forum

#### **Additional Documentation**

1. «SLStreamer Lite, SLStreamer Pro. Programs for Configuring, Monitoring and Managing Digital Broadcasting Schemes» user's guide.

2. «FDConfig2. Program for Control and Customizing of FDExt Boards Work Parameters» user's guide.

3. «IPInput. Rebroadcasting Streaming Audio/Video Data on Full Screen» user's guide.

<u>4. «IPCamera. Rebroadcasting Streaming Audio/Video Data in the Form of Titles» user's guide.</u>

5. «IP2PostPlay. Recording Streaming Audio and Video Into Postplay Storages» user's guide.

<u>6. «FDPreview. Program for Previewing of Audio and Video on Boards Inputs/Outputs»</u> <u>user's guide.</u>

7. «FDCapture. Program for Capturing Audio and Video Data to Files» user's guide.

Translation from November 28, 2017

© SoftLab-NSK