



**Stream Logo SDI 2.0**

# **User Manual**

Nov. 2004

## LOGO GENERATOR Stream Logo SDI v2.0

**Stream Logo SDI v2.0** is designed to work with 8 and 10 bit serial component SDI input signal and 10-bit output signal in full compliance with the CCIR656 and SMPTE259m recommendations. All service information is kept as the signal passes through the card; sound packets can be either kept or replaced, according to the conditions required. The input signal is checked for errors with the EDH checksum calculation. Output EDH packets are always formed anew in compliance with the SMPTE165 recommendation.



1. Open architecture and powerful Phillips Trimedia video processor.
2. Analog YUV/RGB, S-Video, and Composite outputs.
3. 9-bit treatment and separation of brightness and color saturation in composite PAL, SECAM, and NTSC signals based on the adaptive 'color combine filter'.
4. Pass-through and mixer operation modes. Alpha-channel (DSK) output is provided for mixer mode operation.
5. Control features using front panel buttons, LAN (TCP/IP protocol), or GPI.
6. In-built nonvolatile 32 MB hard disk with an option of inner memory extension.
7. Saving of static frames from a serial digital source to the in-built hard disk.
8. Replay of static and dynamic logos, analog and digital clocks.
9. Add-on modules for output of exact time and coordinates (satellite synchronization), temperature, pressure, and humidity readings.

Stream Logo SDI is a comprehensive device, a Logo Generator and an Inserter/Keyer combined. The system's open architecture and the in-built powerful

Phillips Trimedia video processor allow to extend the Stream Logo SDI functionality by improving inner algorithms, without any hardware changes. Stream Logo SDI allows to compress files inside the system, in order to provide a more economical storage. Phillips Trimedia computing power can be used, for instance, to make the hands of a clock inside the Stream Logo SDI move, by a simple specification of appearance of the hands and the background (which can also be dynamic).

External files are uploaded to the in-built nonvolatile hard disk via the network. Each point has a 32-bit representation: 24 bits are used to represent the dot's color (16 million hues); the remaining 8 bits specify one of the 256 transparency degrees (alpha-channel). Although the point color component has in the computer graphics a 24 bit representation ( $8 \times 8 \times 8$ ), a 30 bit representation ( $10 \times 10 \times 10$ ) is used for mixing, i.e. if a 10 bit input signal was used, it remains this way after the mixing.

Stream Logo SDI can run in pass-through or mixing operation modes. For mixer operation, and alpha-channel (DSK) is provided in digital and analog formats. Positive or negative key signal delay can be set within a broad diapason with regard to the produced graphics. The entire production of the superposed logo is carried out digitally.

### **Transformation of signal formats**

In addition to the serial digital input, the Stream LOGO SDI card has analog inputs: YUV/RGB, S-Video, and Composite. Independently of the input signal type, the card allows to form analog output signals (YUV/RGB, or S-Video and Composite ) simultaneously with the SDI signal. PAL, SECAM, and NTSC, inputs are allowed; PAL or NTSC only can be set as output standards. The frame frequency is constant, which means that an NTSC signal can only be transformed to, or produced from, another NTSC signal. The distinctive feature of the input decoder is the 9 bit treatment and the separation of brightness and color saturation in composite PAL, SECAM, and NTSC using the adaptive 'color combine filter'. It does not reduce the brightness channel bandwidth. The 9-bit treatment allows to keep at the digitization all 256 brightness grades, as compared to the 160-170 possible to keep with the 8-bit treatment.

A 10-bit digital-to-analog converter with a four-fold oversampling is used to form the analog output signals. It allows to ensure a full high-frequency noise filtration of output signals without reducing the bandwidth of their brightness channel.

### **Stream Logo SDI Control**

Stream Logo SDI can be controlled with the front panel buttons, which allow to change the logo position and the logo itself. Other functions are controlled using a dedicated program run on an external computer. It allows to specify the logos output

sequence, to display the sequence and the commands evocating other logos, or to run their own cycles to form continuous video sequences. The program can also be used to create a replay sequence for compositions, which can contain an arbitrary number of static or dynamic logos.

### **Logo Uploading and Storage**

Stream Logo SDI has an in-built network, which allows to upload logos of any size to the in-built nonvolatile hard disk, where they can be controlled using a dedicated program.

Logos, including animation logos, designed for full-screen mode or to be displayed using any portion of the screen, are stored at the Stream Logo SDI hard disk.

Logos are stored at the hard disk and can be almost instantly copied to the video memory for further replay when it is required by the control program. The system also allows to save static frames provided by a serial digital source at the in-built hard disk.

In addition to the default version with a 32 MB memory in the in-built nonvolatile hard disk, Stream Logo SDI can be supplied with an extended memory option used to perform specific non-standard tasks.

Number of static logos to be stored at the Stream Logo memory simultaneously:

| In-built memory size | Full-screen | 1/2  | 1/3  | 1/4  | 1/9 (80x64) |
|----------------------|-------------|------|------|------|-------------|
| 32 MB (default)      | 26          | 52   | 78   | 105  | 234         |
| 128 MB               | 105         | 210  | 315  | 420  | 945         |
| 256 MB               | 210         | 420  | 630  | 840  | 1890        |
| 512 MB               | 420         | 840  | 1260 | 1680 | 3780        |
| 1 GB                 | 840         | 1680 | 2520 | 3360 | 7560        |

512 MB or 1 GB memory cards can be installed. The data provided concern uncompressed logos.

### **Dynamic Logos**

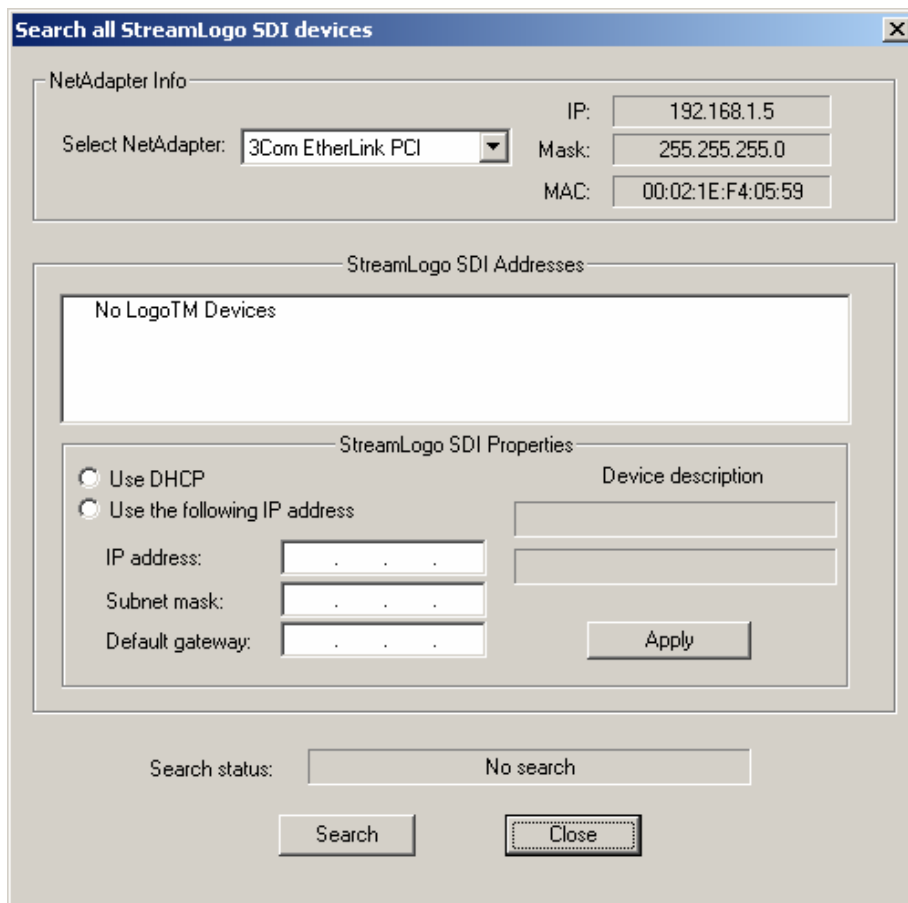
Dynamic logo replay duration is 2.3 seconds for a full-screen animation, and 21 seconds for a 70×70 pixel animation. This time can, however, be extended if the task of output of the animated logo from the video memory, and that of uploading of the compressed animation from the in-built hard disk to the video memory, are separated. However, this procedure is not yet implemented, and it is impossible to determine the duration limit for a full-screen dynamic logo.

## Stream Logo SDI v2.0. Device Control Program Description

### **Software package: SL\_SdiTM.exe + SIAAlpha.dll + SL\_sdi.ini**

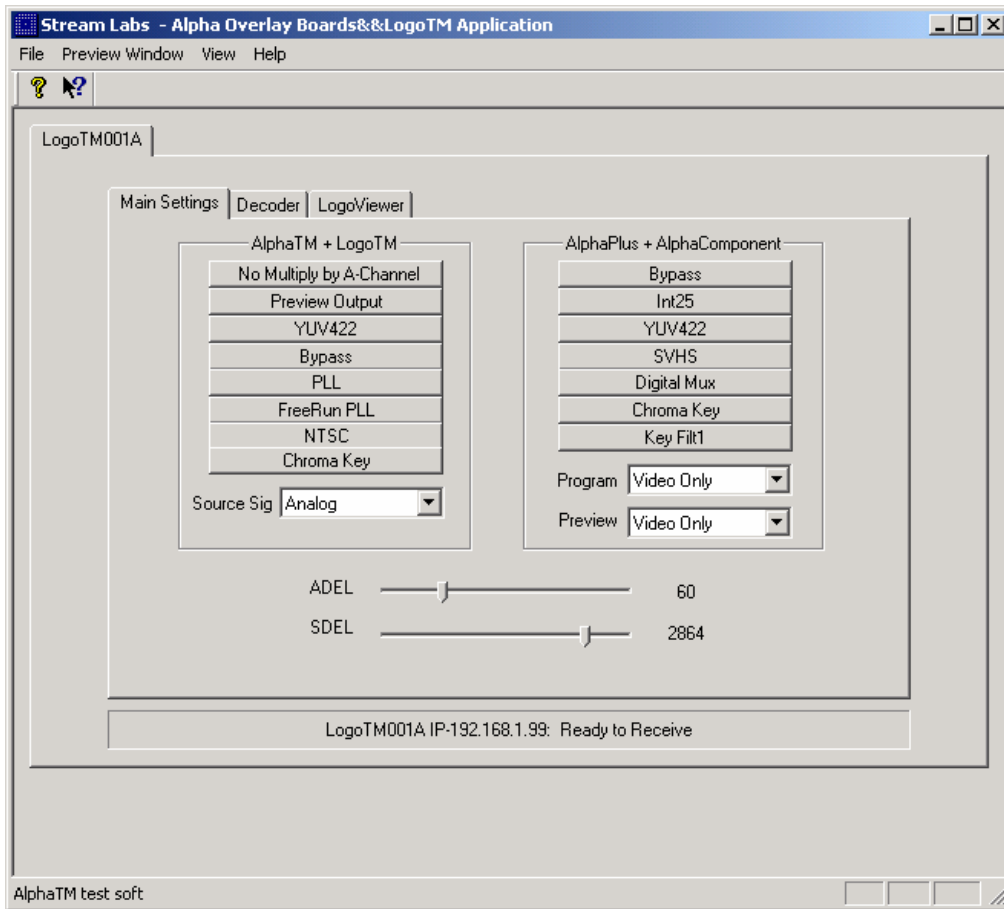
1. When the program (SL\_SdiTM.exe) is launched, a dialog box appears with a list of **Stream Logo SDI v2.0** devices present inside your LAN.

**Note:** Each **StreamLogo SDI** device is assigned its current IP address by a DHCP server. If no DHCP server is present in the network (i.e. the IP addresses are assigned manually), each device may be assigned a fixed IP address.



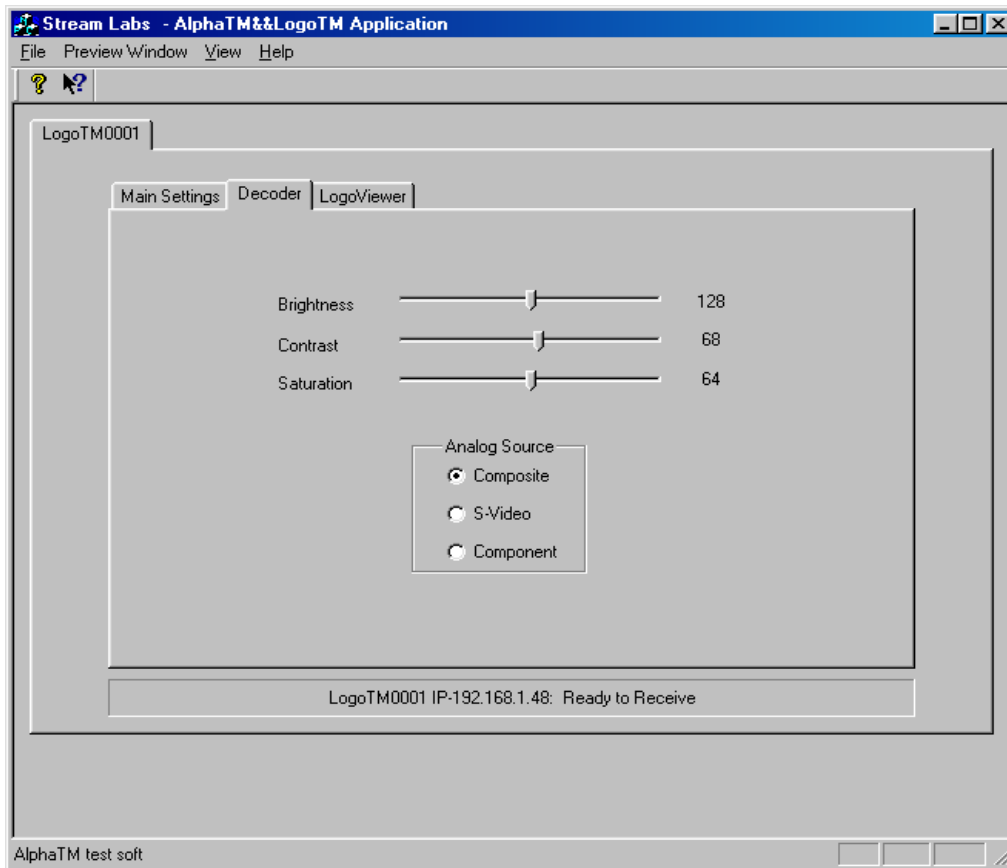
At the first program launch, the list is empty. Press **[Search]** if you wish to check the correctness of IP addresses or to find a new device. The program will then start looking for **Stream Logo SDI v2.0**, after which it displays the information on presence of these devices in the network, or their absence. The program can simultaneously support several **Stream Logo SDI v2.0** support. To continue the work, press **[Close]** to close this dialog box.

- If **Stream Logo SDI v2.0** devices are located inside the LAN, the program main window is displayed, which contains tabs for all found devices.



The window, which contains the tabs of the devices, also contains another range of tabs allowing to control the **Stream Logo SDI v2.0** parameters.

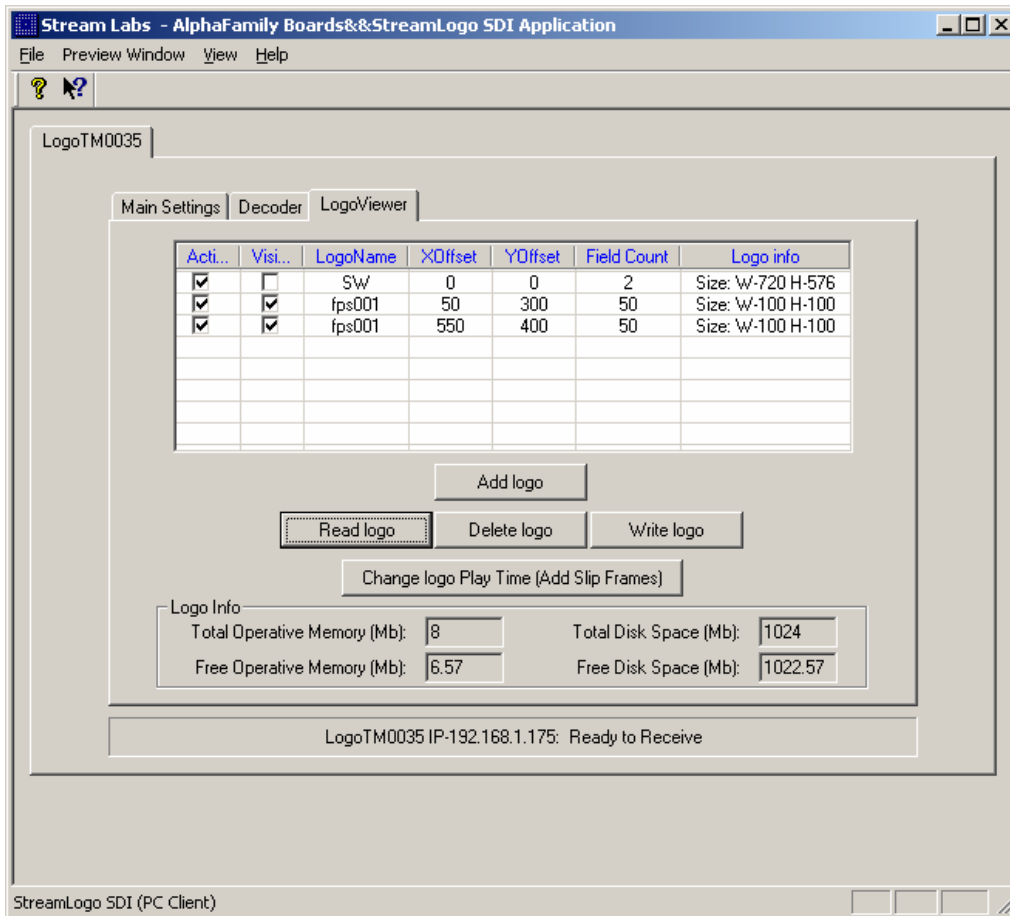
- Switching to the **[Main Settings]** tab allows to control the following device parameters:
  - Input commutation **[Select Source]: Analog/SDI**. An analog and digital format alpha-channel (DSK) is provided for operations with a mixer, activated with the selection of the **Analog Synch/SDI Synch** input.
  - Switching on/off of Alpha-channel multiplication **[No Multiply by A-Channel]**. When the alpha-channel multiplication mode is activated, logos are superposed on the passing-through video signal.



4. Switching to the **[Decoder]** tab allows to control the following device parameters (for active analog input only):
  - Brightness / contrast / color saturation adjustment **[Brightness]** / **[Contrast]** / **[ Saturation]**
  - Analog input commutation: **[Composite]** / **[S-Video]** / **[Component]**. Note that the default input signal is Composite, so if you connect an S-Video or Component YUV signal to the **Stream Logo SDI v2.0** input, the output will only contain the signal formed by the device itself. The device's analog outputs are always active simultaneously.
  
5. Switching to the **[LogoViewer]** tab allows to control the logos displayed by the device.
  - 5.1. Press **[Read logo]** to get the information on the logos stored at the device hard disk. If the operation is completed successfully, a detailed list of logos and their parameters (active / displayed / name / position X / position Y / number of fields / size) is displayed at the table; otherwise, a message is displayed stating the absence of logos.

**Note: Active logo** is a logo loaded to the device RAM;

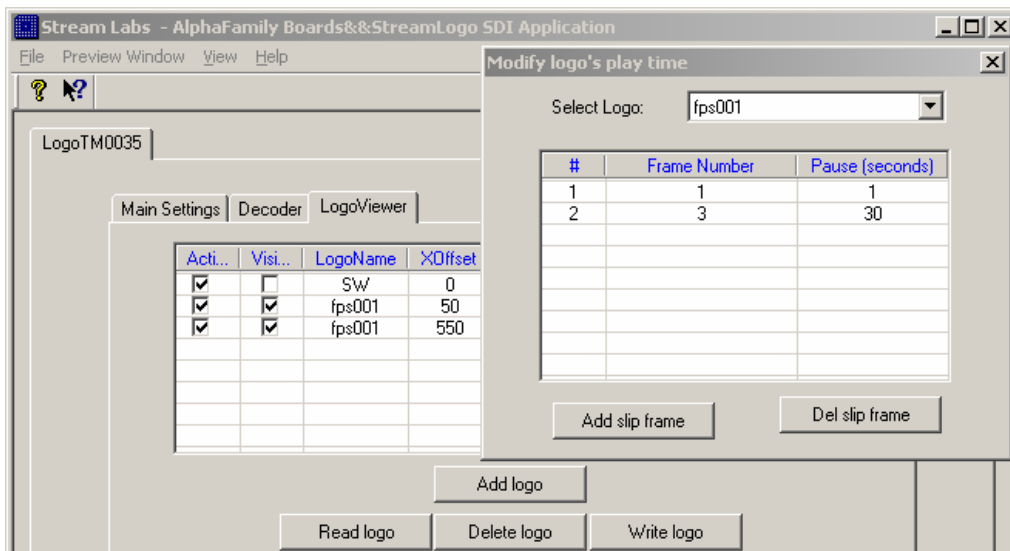
**Displayed logo** is an active logo displayed by the device. This attribute of a logo can be used for its quick display/hiding.



- 5.2. To edit the parameters of a specific logo, click with the mouse at the corresponding field of the table (**logo sizes cannot be edited**).
- 5.3. If some of the logo parameters are changed, the program re-calculates the free space available in the device RAM and disk memory (**Warning: the maximum size of available RAM is 8 MB, that of disk memory, 32 MB**). If you see status fields display negative values of available memory size, saving logos with the current parameters can cause a device error.
- 5.4. To add a new logo, press **[Add logo]**. The program can add the following types of logos:
  - \*.TGA files (separate files or file sequences)
  - \*.d1 / \*.422 files in YUV format.
- 5.5. To change the replay duration for a dynamic logo (the number of frames in the sequence > 2) press **[Change logo Play Time (Add Sleep Frames)]**.

The displayed dialog box allows to choose the dynamic logo, select the frames (up to 8), and specify the duration of stoppage (Freeze) during the replay. Note that to ensure the correct replay in (Freeze) mode, it is important that:

- Sleep-frames have odd numbers (1, 3, 5, ...);
- A Sleep-frame and the frame which follows it in the sequence are doubled.



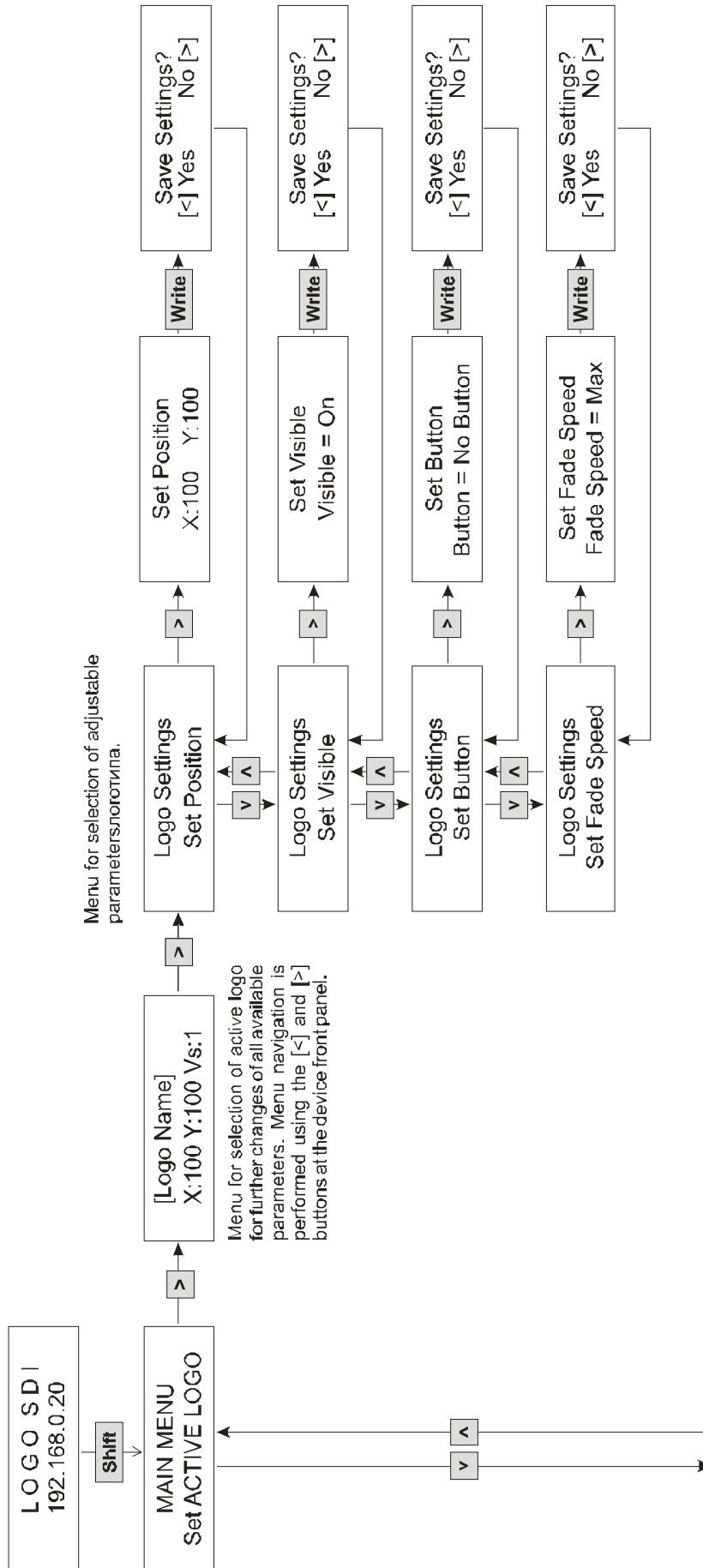
To save the changes made to the duration of dynamic logos replay, press **[Write Logo]**.

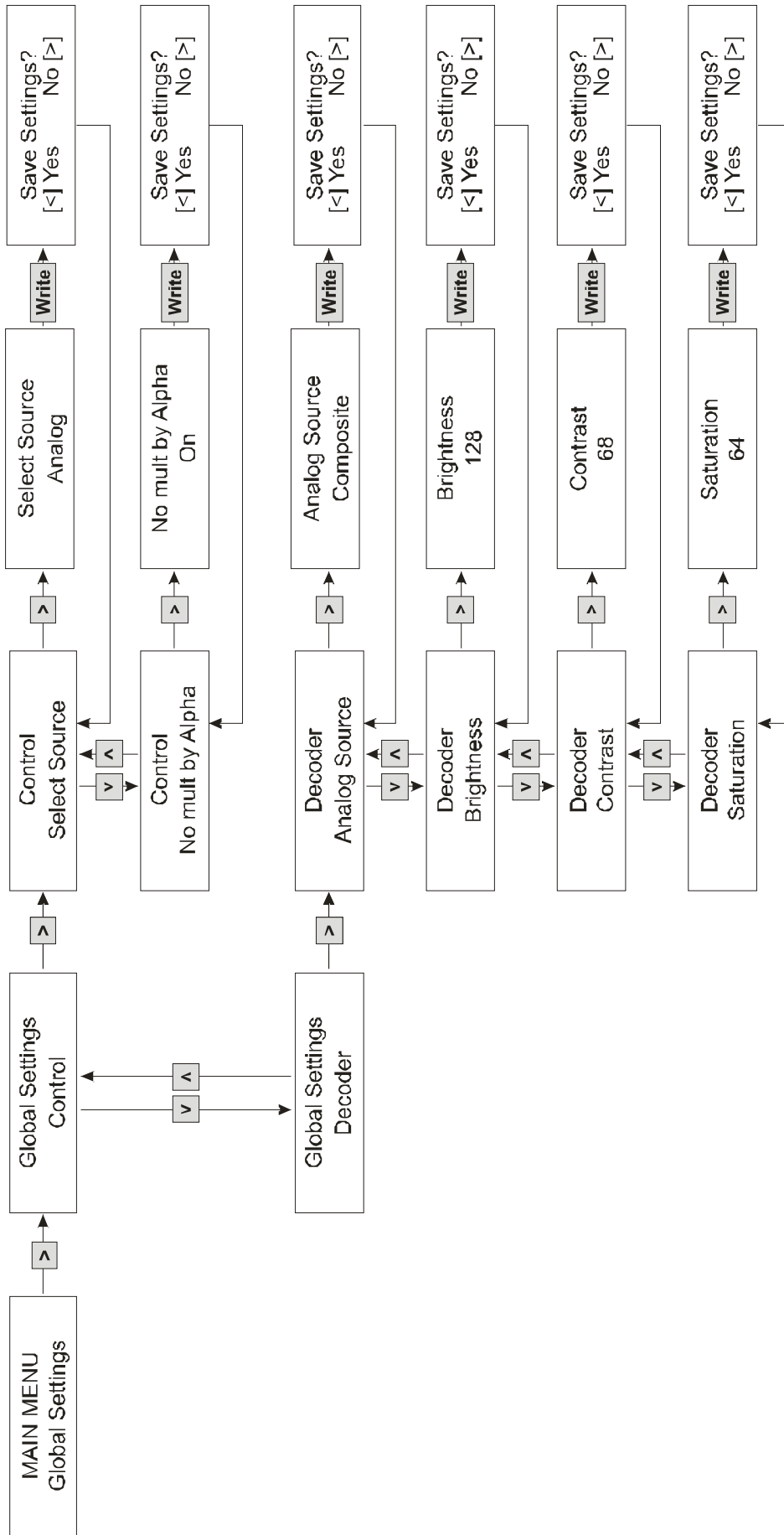
- 5.6. To delete a logo (**the last logo in the list**) press **[Delete logo]**
- 5.7. To save the changes made to the logos in the device after any Add / Edit / Delete operation, press **[Write Logo]**. The device then *reinitializes* the active logos display taking into account the performed changes.

**Note:** If the **[Write Logo]** command is not used, changes made to parameters of an active logo display are only kept until the device power is switched off. In order to keep the changes made to the properties of active logos display after the device power is off, the **[Write Logo]** command must be used.

**Warning:** closing of the program window or switching between the tabs corresponding to different logos causes the appearance of a dialog box prompting to save the current parameters. This applies to modified parameters of the tabs **[Main Settings]** and **[Decoder]** and does not concern the changes performed in the **[LogoViewer]** tab.

Stream Logo SDI v2.0 Menu Navigation Flowchart





The **Set Position** menu:

The logo position X coordinate is adjusted with the [<] and [>] buttons; the Y coordinate, with the [^] and [v] buttons. The zero coordinate point is at the top left corner.

The **Set Visible** menu:

Default value: Visible=On.

Possible values: On/Off. Value selection in this and following menus is performed with the up/down arrows.

The **Set Button** menu:

Default value: No Button.

Possible values: Logo1, Logo2, GPI01, GPI02, GPI03, GPI04.

*Note: Several logos can be assigned to one button. Pressing of this button then causes all the logos to be broadcasted at once.*

The **Set Fade Speed** menu:

Default value: Max, corresponds to the Cut effect (a logo is displayed within one field).

Min – about 5 seconds; Mid about ½ second.

The **Select Source** menu (input signal selection):

Default value: Analog.

Possible values: Analog, SDI, Analog Sync, SDI Sync.

The **No mult by Alpha** menu (alpha-channel multiplication mode switching on/off):

Default value: alpha-channel multiplication mode is on.

The **Analog Source** menu (analog input signal selection):

Default value: Composite.

Possible values: Composite, S-Video, YUV.

**Brightness** menu (brightness adjustment):

Default value: 128

Possible values: 0-255

The **Contrast** menu (contrast adjustment):

Default value: 68

Possible values: 0-127

The **Saturation** menu (color saturation adjustment):

Default value: 64

Possible values: 0-127

Questions, remarks, and suggestions are to be submitted via e-mail to [support@stream-labs.com](mailto:support@stream-labs.com), or via the web-site at <http://www.stream-labs.com>. The Stream Labs Co. can also be consulted by phone at (095) 930-80-07/56 on weekdays from 10 a.m. to 6 p.m., Moscow time.

### **Warranty**

The Stream Labs Corporation provides a five-year warranty for all Stream Alpha series cards and the Stream Logo SDI v2.0 logo superposition device. A free-of-charge repair will be offered upon a malfunction due to our fault or that of the components providers.

This warranty does not cover any malfunction caused by an irregular use, or unauthorized opening of, or mechanical damage to the product.

This warranty does not cover defects caused by extensive deterioration of the product.

### **Copyright Notice**

Hardware and software making part delivery package of Stream Alpha cards and the Stream Logo SDI v2.0 logo superposition device cannot be copied or transferred in any form without a prior consent of the Stream Labs Corporation.

### **Contacts**

[support@stream-labs.com](mailto:support@stream-labs.com)

<http://www.stream-labs.com/>