# ST-Mux Transcoder Guide – For T16

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## 1. Introduction

## ST-Mux Transcoder T16 Transcoder - Spatio-Temporal Domain Statistical Multiplexing Transcoder

The T16 is a cutting-edge device that uses spatio-temporal domain statistical multiplexing encoding technology to deliver more TV programs with less bandwidth. By using the non-correlation between programs, each program in the channel shares the bandwidth of a channel, and the bitstream is dynamically allocated among programs, as shown in the figure, which enhances the coding efficiency by 2-3 times. This device can handle network UDP unicast and Multicast SPTS input and output network UDP multicast/MPTS and ASI, with a maximum processing capacity of 16 program channels. It also supports remote connection for operation and maintenance.

The core of this technology is the Spatio-Temporal Statistical Multiplexing Encoding technique, which exploits the non-correlation of multiple programs. It analyzes the current and future bitrate requirements of all programs frame by frame, and dynamically determines the encoding quality of each frame. All programs share the total physical bitstream, which is dynamically allocated among them. This technique enables us to use limited spectrum resources more efficiently, meeting the growing demand for high-definition video transmission.

The strategy of spatio-temporal domain statistical multiplexing has two aspects: time and space.

In terms of time, it uses a 'Look Ahead' approach, which pre-encodes the video in advance to obtain the necessary information. In terms of space, it uses a 'Look Around' approach, which monitors the pre-encoding situation of each video path in real time, and adjusts and controls the encoding of each video path.



#### Revolutionize Your Broadcasting with Ultra-Efficient HD Transmission - ST-Mux Transcoder T16 Transcoder

9 Only 21Mbps for 16 HD Channels – Unmatched bandwidth efficiency delivers stunning quality while slashing costs!

Advanced Statistical Multiplexing Encoding – Boost channel capacity 2-3X without sacrificing video quality, optimizing bandwidth and reducing transmission expenses.

Simplified Infrastructure – Fewer multiplexers mean less wiring, smaller equipment footprint, and lower failure risk – streamlining your entire front-end system.

**S** Massive Cost Savings – Eliminate redundant systems and cut annual electricity bills by reducing power-hungry devices.

## ST-Mux Transcoder T16 Hardware Specs

Motherboard: 14th Generation Ultra5 125H Memory: 16G/DDR5/5600HZ \* 2 Power supply: AC 100V~240V 50/60Hz System: Ubuntu 22.04.5 LTS

#### ST-Mux Transcoder T16 Main Specs

Input	Ethernet	10/100/1000mbps	
	Protocol	UDP/HTTP/RTSP/RTMP	
	Programs	16 SPTS 1080P/720P	
Output	ASI	8.0~ 50.0Mbps	
	IP	UDP multicast/MPTS	
	Programs	16 MPTS 1080P/720P	
	Video Codec	H265	
	Video Resolution	1080P/720P	
	Audio Codec	AAC/MP3	
General	Dimension (W*D*H)	43cm*25cm*4.5cm	
	Weight	3.87kg	
	Power	AC 100V~240V 50/60Hz	
	Power Consumption	100W	
	Temperature	0~45°C(Operation) ; -20~80°C(Storage)	
	Relative Humidity	5% to 90% non-condensing	

# 2. ST-Mux Transcoder T16 System Operation Instructions

2.1 The software runs automatically after the transcoding machine is turned on, and the interface is as follows:

a. Area 1 in the figure: Click the left mouse button on the preview program to display the information corresponding to the clicked program.

b. Area 2 in the figure:

set parameters. 🔛 It is to set the parameters related to ASI output.

c. Area 3 in the figure: The left displays the total bitrate, runtime, and current number of programs used by 16 programs. Restart the software.



2.2 Right click and select the program to set the parameters for the current program. The interface is as follows:

- a. Area 1: Decoding switch and encoding switch.
- b. Area 2: Display input resolution and set output resolution. 1080P/720P option for both.
- c. Area 3: Set the input IP stream address.
- d. Area 4: Set the UDP address for output.
- e. Select audio encoding format: AAC, MP3



2.3 Click the button with the pop up the ASI output settings, and the interface is as follows:

- a. Area 1: Set the total bit rate output by ASI.
- b. Area 2: Enabled and set the UDP multicast addresses for all programs to be multiplexed together.
- c. Area 3: Record all programs for 1 minute for engineers to analyze the programs.
- d. Area 4: Adjust and set the PCR delay time.
- e. Area 5: Set the GOP length in the program.



2.4 Click the button to export, save, and import all the parameters set by the user. The interface is as follows:

- a. Area 1: Select the path for exporting and importing.
- b. Area 2: Import and export and delete configuration function.



CH: 15 1080p 19Mbps 25ps L:145 R:133	N FALMARCEL OF 28 ALL DUDGA CO		The timing siperfect. They are just waking up.	udp://1.8.1.205:60001	looms
		CH: 15 1080p 1.9Mbps 1.9Mbps L:145 R:133	CH: 16 1080p 611Kbps 25fps L:114 R:132	Bitrate: 18/21.0Mbps Runtime: 03:07 16HD 0SD	Restart