

# Digital Headend/CATV



## SVT-A Series Multi-Format Transcoder

- Simultaneous real-time transcoding of up to 8x SD or 4x HD channels of MPEG2 or H.264 video in a 1RU height chassis
- User selectable output video format, resolution, and bit rate
- Up to 8x ASI inputs and 8x ASI outputs
- Local or remote user access to configuration parameters and status information via integrated web browser graphical interface and front panel control
- PID Remapping

### Specifications

#### ASI INPUTS/OUTPUTS

|                            |                                       |
|----------------------------|---------------------------------------|
| I/O Density:               | 2x, 4x, 6x, or 8x I/O pairs per unit  |
| Connector:                 | 75Ω BNC                               |
| Packet Format Input:       | 188 or 204 byte                       |
| Packet Format Output:      | 188 byte                              |
| MPEG Transport:            | SPTS, MPTS                            |
| I/O Transport Stream Rate: | 54 Mbps max, 45 Mbps max payload rate |
| Output Null Stuffing:      | 27Mbps or 54 Mbps, Fixed Rate         |

#### IP VIDEO INTERFACE (Future Feature)

*Note: This interface should be used for functional evaluation only. Video quality evaluation should be reserved for the production release version.*

|                               |   |
|-------------------------------|---|
| Number of IP Video Ports:     | Single Duplex                                     |
| Connector Type:               | 1x RJ45, 10/100/1000Base-T, Full Duplex, Auto-Neg |
| Ethernet MTU Size:            | 1518 bytes max                                    |
| Addressing:                   | Unicast, Multicast (IGMP v1,2,3)                  |
| Transport Protocol:           | UDP   |
| Input MPEG Transport Format:  | SPTS, MPTS  |
| Output MPEG Transport Format: | SPTS  |
| Output Encapsulation:         | 4 to 7 TS packets per IP packet                   |

#### TRANSPORT STREAM PROCESSING

- PID Remapping
- MPTS Output Synchronization
- Bitrate Measurement of Input Services
- Integrated PSI Viewer

#### TRANSCODER

|                           |   |
|---------------------------|---|
| Transcode Module:         | Dual channel, 2x I/O pairs<br>2x SD or 1x HD output<br>4x modules max per unit<br>8x SD or 4x HD outputs max per unit |
| Formats/Profiles:         | MPEG-2, H.264/AVC   |
| Video Formats:            | 1920 x 1080i @ 29.97Hz, 30Hz<br>1280 x 720p @ 59.94Hz, 60Hz<br>720, 704, 544, 528 x 480i @ 29.97Hz                    |
| Audio Services:           | 1 Pass-through per transcode  |
| Audio Formats:            | AAC, MPEG1 Layer II, Dolby® Digital AC-3  |
| Video Bitrate:            | 20 Mbps max   |
| Video Output Rate Format: | Variable Bit Rate (VBR)   |
| Aspect Ratio:             | Pass-through, AFD   |

#### MANAGEMENT

|                 |                                   |
|-----------------|-----------------------------------|
| Connector:      | RJ-45 10/100BaseT, Auto Negotiate |
| Protocols:      | HTTP                              |
| User Interface: | Front Panel, Web Browser          |

#### DIMENSIONS

|        |  |
|--------|--|
| HxWxD: | 1RU, 1.75"(4.4 cm) x 17.4" (44.2 cm) x 17.5" (44.5 cm) |
| Power: | 100-240VAC 50/60Hz 75W                                 |

#### ENVIRONMENTAL CONDITIONS

|                              |                       |
|------------------------------|-----------------------|
| Operating Temp:              | 0° to 45°C            |
| Storage Temp:                | -40°C to 65°C         |
| Relative Operating Humidity: | <95% (non-condensing) |

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## Transcode Matrix

### SVT-A Supported Transcode Pairs

The transcoded output video is a Variable Bit Rate (VBR) Single Program Transport Stream (SPTS) programmed with the following data rates:

MPEG2 HD: 15-18 Mbps      H.264 HD: 7-10 Mbps  
 MPEG2 SD: 3.75-6 Mbps      H.264 SD: 1.5-4 Mbps

Note: The programmed video VBR data rate is the average over 15 frames and may peak at ~1.5x between PCR cycles.

|        |           | OUTPUTS          |                 |                |                |                |                |                |                |                  |                 |                |                |                |                |                |                |   |  |
|--------|-----------|------------------|-----------------|----------------|----------------|----------------|----------------|----------------|----------------|------------------|-----------------|----------------|----------------|----------------|----------------|----------------|----------------|---|--|
|        |           | MPEG2            |                 |                |                |                |                |                |                | H.264/AVC        |                 |                |                |                |                |                |                |   |  |
|        |           | 1920x<br>1080i30 | 1280x<br>720P60 | 720x<br>480i30 | 704x<br>480i30 | 640x<br>480i30 | 544x<br>480i30 | 528x<br>480i30 | 480x<br>480i30 | 1920x<br>1080i30 | 1280x<br>720P60 | 720x<br>480i30 | 704x<br>480i30 | 640x<br>480i30 | 544x<br>480i30 | 528x<br>480i30 | 480x<br>480i30 |   |  |
| INPUTS | H.264/AVC | 1920x 1080i30    | ✓               |                | ✓              | ✓              |                | ✓              | ✓              |                  |                 |                | ✓              | ✓              |                | ✓              | ✓              |   |  |
|        |           | 1280x 720P60     |                 |                | ✓              | ✓              |                | ✓              | ✓              |                  |                 | ✓              | ✓              |                | ✓              | ✓              |                |   |  |
|        |           | 720x 480i30      |                 |                | ✓              |                |                | ✓              |                |                  |                 |                |                |                | ✓              |                |                |   |  |
|        |           | 704x 480i30      |                 |                |                | ✓              |                |                | ✓              |                  |                 |                |                |                |                |                | ✓              |   |  |
|        |           | 640x 480i30      |                 |                |                |                |                |                |                |                  |                 |                |                |                |                |                |                |   |  |
|        |           | 544x 480i30      |                 |                |                |                |                |                | ✓              |                  |                 |                |                |                |                |                |                |   |  |
|        |           | 528x 480i30      |                 |                |                |                |                |                | ✓              |                  |                 |                |                |                |                |                |                |   |  |
|        |           | 480x 480i30      |                 |                |                |                |                |                |                |                  |                 |                |                |                |                |                |                |   |  |
| INPUTS | MPEG2     | 1920x 1080i30    |                 |                | ✓              | ✓              |                | ✓              | ✓              |                  | ✓               |                | ✓              | ✓              |                | ✓              | ✓              |   |  |
|        |           | 1280x 720P60     |                 |                | ✓              | ✓              |                | ✓              | ✓              |                  |                 | ✓              | ✓              |                | ✓              | ✓              |                |   |  |
|        |           | 720x 480i30      |                 |                |                |                |                | ✓              |                |                  |                 | ✓              |                |                | ✓              |                |                |   |  |
|        |           | 704x 480i30      |                 |                |                |                |                |                | ✓              |                  |                 |                | ✓              |                |                |                | ✓              |   |  |
|        |           | 640x 480i30      |                 |                |                |                |                |                |                |                  |                 |                |                |                |                |                |                |   |  |
|        |           | 544x 480i30      |                 |                |                |                |                |                |                |                  |                 |                |                |                |                | ✓              |                |   |  |
|        |           | 528x 480i30      |                 |                |                |                |                |                |                |                  |                 |                |                |                |                |                | ✓              |   |  |
|        |           | 480x 480i30      |                 |                |                |                |                |                |                |                  |                 |                |                |                |                |                |                | ✓ |  |

## Applications

### Digital Tier Distribution

The SVT Advanced Transcoder ASI and IP outputs can carry multiple transcoded video programs for efficient digital tier distribution.

### Network Reception and Backhaul

Receive network and live feeds via ASI and simultaneously transcode to the required digital video compression format for distribution. The ASI transport stream outputs can carry multiple transcoded programs for efficient distribution of services.

### HD to SD Down-Conversion

Convert HD broadcasts to SD for support of an existing distribution infrastructure.

## Ordering Information

- SVT200A** 2 Channel Advanced Multi-Format Transcoder
- SVT400A** 4 Channel Advanced Multi-Format Transcoder
- SVT600A** 6 Channel Advanced Multi-Format Transcoder
- SVT800A** 8 Channel Advanced Multi-Format Transcoder
- X-PS** External Redundant Power Supply