

SES3200 HD/SD Blade Encoding System

The Telairity SES3200 is a robust, highly integrated solution for customers seeking to maximize encoding or transcoding density for SD or HD/SD video while minimizing cost. A completely modular 14 RU 14-slot design built around the industry-standard ATCA Chassis, the SES allows for easy scaling, from 4 to 32 channels, and easy upgradeability, from SD to dual auto-switching SD/HD capability. A fabric backplane



eliminates the need for external cables, routers, switches, and multiplexers, providing the ability to route any input to any output, and to multiplex all outputs over dual ASI and IP interfaces. Configurable redundancy, automatic fail-over, multiple power supplies, and extensive monitoring and alarm functions make the SES3200 blade encoding system one of the most reliable as well as one of the most flexible encode/transcode solutions.

Features and Options

Video Encoding Features

- H.264/AVC High, Main & Baseline Profiles to L3
- Input Video Formats: SD: 480i (NTSC), 576i (PAL); HD: 720p, 1080i
- Transcoding, Anamorphic scaling, De-interlacing
- Output Resolutions:
 - HD – 1080i x 1920 and 720p x 1280
 - PAL – 720x576i/p (full SD) to 176x144p (QCIF)
 - NTSC – 720x480i/p (full SD) to 320x240p (QVGA)
 - Other mobile resolutions including CIF, HVGA, HQVGA, QQVGA, SQCIF, etc.
- Rate Control: Constant Bit Rate (CBR) or Variable Bit Rate
- Scene change detection with fixed, open, closed, adaptive GOP structures
- Spatial preprocessing, Deblocking (Loop) filter

Audio Encoding Features (per channel)

- Embedded or External audio input; AC-3 pass-through
 - 4 or 8 programs (stereo pairs): Stereo, Dual Mono, Mono settable per channel
- Bit Rates: 12 to 128 Kbps; Sample Rates: 32, 44.1, 48 KHz
 - Audio Codecs: MPEG-1 Layer 2; MPEG-4 AAC-LC or –HE/HEv2

Control Features

- Telairity EMS and Configuration Software
- Industry Standard MIB supports interface with 3rd party SMS/NMS

Output

- Multiplexed MPEG-2 transport stream over DVB-ASI
- SPTS IP stream over Gigabit Ethernet
 - Pro-MPEG FEC (Forward Error Correction) with RTP transport protocol

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Applications

The Telairity SES3200 Encoding Platform offers state-of-the-art video compression in a dense 14U ATCA blade chassis form factor. The SES3200 is ideal for customers seeking the most cost-effective and reliable way to implement and deploy large numbers of channels while minimizing on-going maintenance costs and securing a simple path forward for future expansion and upgrades.

Benefits

Dense 14RU ATCA Chassis system

Based on the fully programmable Telairity video processor (TVP) architecture

Easy software upgrades to improve quality, lower bit rates, add new options.

Leading-edge technology for best video quality at the very lowest bit rates.

MPEG-4 AAC LC and HE options for high audio quality at very low compressed bit rates; Dolby Digital / AC-3 and Dolby E pass-through also supported

Flexible redundancy schemes from full dual to N+1.

Automatic fail-over capability

Multiple, redundant power supplies

Hot-swappable front-loaded boards

Built-in shelf manager for extensive system monitoring and alarm functions

“Instant on” startup and restart times

Transcode MPEG-2 to H.264/AVC

SDI or IP input; dual ASI and IP outputs

Mix or match low-cost SD-only boards with high-compression auto-switching SD/HD boards

Ordering Information

Part Number: **SES3200**

Contents

- SES3000-series Encoding Platform
- Power Cable: IEC to USA plug; optional Euro plug
- USB flash drive with backup copy of encoder firmware and manual

Requirements

- ATCA Chassis
- Useful minimum of 3 boards:
 - 1 input, 1 encoder, 1 output (4 channels)
- Telairity Network Management System or SNMP
- Cables (input & output)
 - 75 Ohm coaxial with BNC connector
 - Cat5/6 Ethernet with RJ-45 connector

About Telairity

Telairity, based in Santa Clara, California designs, manufactures and markets H.264/AVC and other advanced encoding and transcoding solutions for broadcast and professional video applications. Telairity's breakthrough video architecture (Telairity-1™) is the foundation for all its real time encoding products, which combine outstanding video quality with state-of-the-art, video compression based on the AVC (H.264 / MPEG-4.10) standard to achieve the lowest possible bitrates.

Telairity

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Video Inputs

Input Format:	SDI, ASI, or IP input <ul style="list-style-type: none"> ▪ Composite input option
Video Input Formats:	4:2:2 for PAL and NTSC SD, 720p or 1080i HD
Frame Rates:	Frames per second: progressive mode *720p only 23.98, 24, 25, 29.97, 30, 50*, 59.94*, 60*
Digital Video In:	Fields per second: interlaced mode: 50, 59.94, 60 Up to 32 BNCs for 75Ω cable (SDI, ASI, composite) Up to 32 RJ-45s for Cat5/6 Ethernet cable (IP)

Audio Input

Input Format:	Embedded per SMPTE 272M (SD-SDI); 299M (HD-SDI) Dolby Digital / AC-3 and Dolby-E pass-through
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Compressed A/V Output

Output Interface:	Dual Digital Video Broadcast – Asynchronous Serial Interfaces (DVB-ASI), 270Mbps, buffered non-inverting with MPTS of up to 32 channels Dual GigE IP Interfaces with SPTS of up to 32 channels <ul style="list-style-type: none"> ○ 2nd set of dual interfaces available on optional output card All channels fed to each output board. Optional 2 nd output card provides dual redundant ASI and IP outputs for the same network (primary and backup) or separate networks. Separate networks may be of the same or different types (e.g., broadband and broadcast)
Packet Format:	MPEG-2 188-byte Transport Stream packets in formats: TS/UDP/IP, TS/RTP/UDP/IP with optional FEC, RTCP
Compression Formats:	H.264/AVC (MPEG-4 Part 10) Baseline, Main, High profiles; MPEG-2 Main profile;
Compressed Bitrates:	User programmable: 150 Kbps to 15 Mbps, CBR

System

Network Management	Telairity EMS or standard SNMP for NMS/SMS
Input voltage:	-48VDC 100 to 242 VAC (auto-sensing) with 1RU AC/DC conversion unit
Line frequency:	47 to 63 Hz
Power consumption:	Less than 40W per channel
Dimensions & Weight:	14RU (H) x 19" (W) x 14" (D) rack-mountable Fully loaded with 14 boards, about 100 lbs
Cooling:	Forced air, inlets at front, outlets at back. Temperature-controlled fan speed
Temperature:	Operating: 10° to 55°C; Storage -20° to 60°C
Humidity & Pressure:	≤95% (non-condensing); 86kPa ~ 106kPa

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