

**KUDOS+PLUS**

The **TBS190ADV** is a multi-standard broadcast quality synchronizer, aspect ratio converter, noise reducer and time base stabilizer with SDI, DV, composite and YC interfaces. Embedded audio is processed as well as providing analog audio interfaces. Featuring 12-bit sampling, 10-bit processing and rugged inputs, the TBS190ADV is equally suited to digitizing broadcast grade sources as with unstable, noisy sources.

**Full Product List**

**Base Model**

Kudos Plus TBS190ADV  
(3548605)

The TBS190ADV is a multi-standard broadcast quality synchronizer, noise reducer and time base stabilizer with SDI, DV, composite and YC interfaces, 12 bit sampling and 10 bit processing featuring embedded and analog audio

**Base Model**

Kudos Plus TBS190ADV  
(3548605-RM)

As above, with rack mount kit

**Option**

Rack mount kit  
(INSY-MNT-KIT)

Rack mount kit to mount one or two units in a 19" rack

# TBS190ADV SDI, DV & Composite synchronizer

Broadcast quality synchronizer and time base stabilizer with analog and embedded audio



**Features**

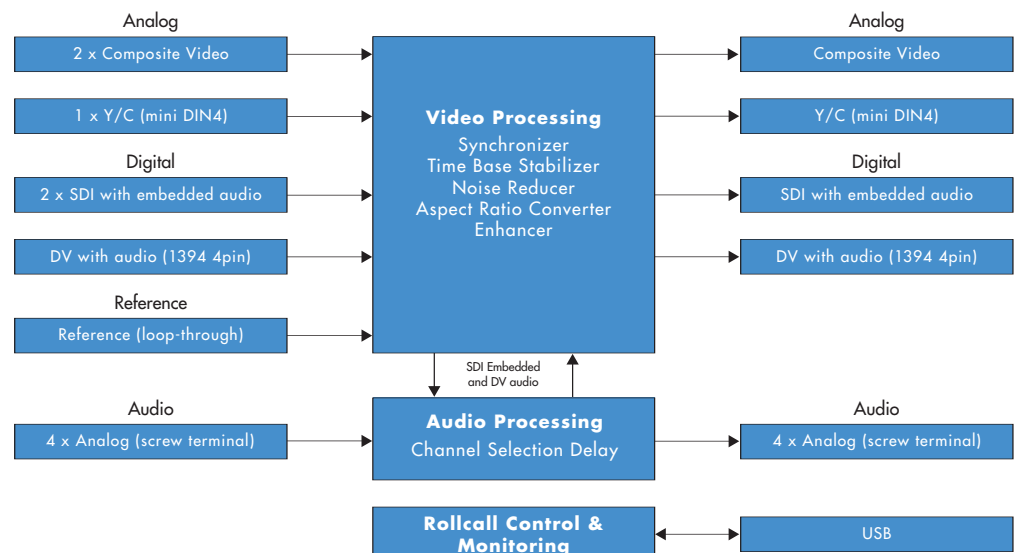
- SDI, DV, Composite & YC Synchronization
- Time base stabilization
- Aspect Ratio Converter (ARC) with presets and size controls
- Adaptive recursive Noise Reduction with automatic noise level detection
- 12-bit decoding with 5-line comb filter
- 12-bit encoding
- Inputs PAL, NTSC, NTSC-J, NTSC4.4, PAL-N, PAL-M, SECAM with automatic input detection
- Outputs PAL, NTSC, NTSC-J, PAL-N, PAL-M
- 4 channel (2 pair) embedded audio processing
- Seamless PCM audio tracking delay with manual offset – up to 2.5s

- Pass through for all HANC/VANC data
- Composite inputs tolerant to noise & errors
- Unique genlock 'Floating mode\*'
- RollCall compatible via USB link

**Applications**

- Universal Analog / Digital interface
- Audio embedding & extraction
- Satellite down-link & radio links
- Ingest / PC capture pre-processing
- Duplication
- VHS dubbing
- Format conversion

**TBS190ADV SDI, DV & Composite Synchronizer**



**Inputs and Outputs**

**Video Input**

2 x SDI	525/625 line with automatic detection(BNC)
2 x Composite	27MHz, 12-bit sampling PAL, NTSC, NTSC-J, NTSC4.4, PAL-N, PAL-M, SECAM with automatic detection(BNC)
1 x YC	27MHz, 12-bit sampling PAL, NTSC, NTSC-J, NTSC4.4, PAL-N, PAL-M with automatic detection (Mini DIN4)
Reference	Composite or Y (BNC loop-through)

**Video Output**

2 x SDI	525/625 line(BNC)
2 x Composite	27MHz, 12-bit D to A. Output Formats PAL, NTSC, NTSC-J, PAL-N, PAL-M(BNC)
1 x YC	27MHz, 12-bit D to A. Output Formats PAL, NTSC, NTSC-J, PAL-N, PAL-M (Mini DIN4)

**Video Input/Output**

1 x DV	4 pin DV connector. (will not simultaneously decode and encode) with 32, 44.1 or 48kHz audio – one pair
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**Audio Inputs & Outputs**

4 x Analogue input	Balanced (2-part s crew terminal) +24 to +12dBu for 0dB FS
4 x Analogue output	Balanced (2-part s crew terminal) +24 to +12dBu from 0dB FS

**Remote control**

RollCall via USB link to a PC

**Control Features**

Input Select	SDI A,B; DV; Composite A, B; YC
Audio Source (1)	SDI pair 1-8; DV; External 1-2
Audio Source (2)	SDI pair 1-8; DV; External 1-2
Audio Destination	SDI group 1-4
DV Audio Encode	From processed pair 1-2
Add Audio Delay	0ms to +2.5s
Analogue Audio Level	+12 to +24dBu (in / out)
Noise Reduction	Y;C (Off; 1; 2; 3; Max)
Split Screen	Off/On (view noise reduction)
Vertical Enhance	Off; 1; 2; 3 (max)
Horizontal Enhance	-2; -1; 0; 1; 2; 3 (max)
ARC Enable Off/On	
ARC H Size	50% to 200% (0.5% steps)
ARC V Size	50% to 200% (0.5% steps)
ARC H Pan	+360 to -360 input pixels
ARC V Tilt	+150 to -150 input field lines
ARC Presets	Normal; 8 fixed presets

Input Standard	NTSC, NTSC-J
Composite Output	PAL, NTSC, NTSC-J, PAL-N, PALM
Freeze	Freezes next frame (sync mode)
Field Freeze	Freezes next field
Luminance Gain	Preset; ± 6dB
Chrominance Gain	Preset; ± 6dB
Black Level	Preset; ± 100mV
NTSC Hue	Preset; ± 30 degrees
Genlock Phase	Preset; approx. ±1 line
Genlock Mode	Lock to reference; Lock to input; Float (stabilized) - if same line standard; Free-run
Output Pattern	Black; Color Bars
Default Output	When input is lost; go to black; go to color bars
Decoder / Encoder	AGC, ACC, comb, DNR, CTI
DV features	Audio sample rate; AVC (play/record/stop/forward/rewind)

**Indication / Monitoring (also Logging / RollTrack)**

Input Standard	Present; Standard
Reference	Present; Error (Error indicated if the reference is not the same line standard as the input)
Power	Standby

**Rollcall**

All Control features available from rollcall via PC USBshare application. Indication/monitoring parameters are available for Logging and Rolltrack

**System Parameters**

Processing	≥10 bit
SDI Input Switch	Tolerant to SMPTE RP168 vertical interval switch.
SDI Data	All HANC & VANC data passed
Vertical Interval	All luminance data passed when input & output are the same standard
Reference Lock Range	Greater than ±80ppm
Analogue Audio ADC	24 bit; THD better than <0.004%

**Mechanical**

Dimensions	½ 1RU rack (44x220x250mm)
Temperature	0°C to 35 °C operating -20 °C to +70 °C storage

**Floating Mode** - Without a reference the output will either free-run or lock to a stabilized input sync if operating in synchronize mode. In this stabilized or 'floating mode' the output will always follow shortly after the input, so preventing lip-sync errors and frame drop / repeat. The inputs are highly tolerant to unstable and noisy sources, while the synchronizer always creates correctly aligned images, even during sync disturbances and asynchronous input switches

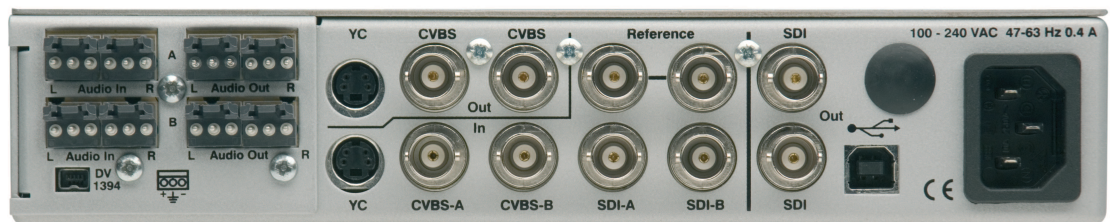
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