

# MicroVideo

## HDS 201s seamless sdi video switch

### Features

Not to be confused with the industry standard 'clean switches', the Microvideo HDS 201s is a synchronous protection switch for HD/SD-SDI signals, providing automatic and **seamless** switching of critical digital video paths for broadcast applications. The HDS-201s will switch seamlessly between two mistimed input sources even on loss of primary feed.

In standard 2x1 switches available in the market today, switching is performed in line with the SMPTE specified switching point (SMPTE RP168-2002). With these units switchover occurs at a pre-determined point. Therefore, no matter where in the frame the physical switch takes place, the switch itself does not perform the operation until, in the example of a PAL signal, line 4 of the next frame. This works well when manually switching between two sources and a 'clean' manual switch over will always be achieved. However a clean switch cannot be achieved in this configuration when, for example, the primary input fails. The HDS-201s overcomes this problem and provides a clean switch even on the failure of the primary input. It does this by retiming the input signals and switching in response to incorrect or missing video signals (for example missing timing reference signal TRS).

Two modes of switching are provided; automatic and non-resetting. When set to automatic the HDS-201s will immediately switch back to the primary signal once that signal has been restored. In the non-resetting mode, the secondary input remains routed to the output, even after the primary input has recovered. Changeover can be triggered by signal loss, black or freeze.

Signals can be misaligned up to a complete HD frame, but alignment can be adjusted to as little as a single pixel to ensure no unnecessary delay is introduced by the card.

The unit has 2 Serial Digital (HD/SD-SDI) inputs, and 3 re-clocked SDI outputs. The signal is protected by a passive, fail-safe bypass relay that ensures there is an output even in the event of a total power failure.

The HDS 301s occupies a single card slot and can be housed in the FR1U frame which holds up to 6 modules with a single PSU or 4 with the dual mains option, the FR3U frame has a 15 slot capacity. The tally output gives status of the selected source allowing GPI's to be triggered.

### At a glance

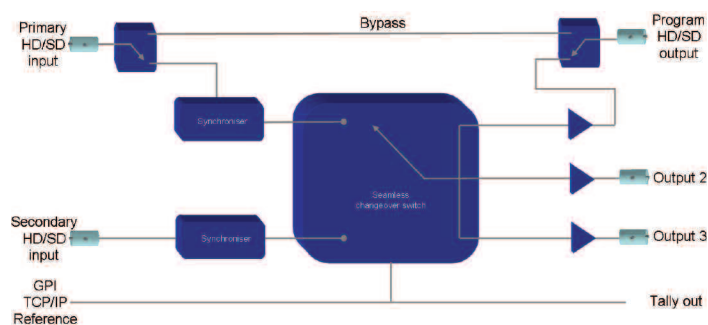
- HD-SDI or SD-SDI input (autosensing)
- 2 input 3 outputs
- Relay bypass maintains primary feed on loss of power
- Synchronization user adjustable up to full frame
- Automatic or manual switching via GPI
- Full control and status monitoring through card edge LED's
- Alarm generation
- Remote control and monitoring
- User selectable auto or manual (SMPTE RP168) or immediate switcing



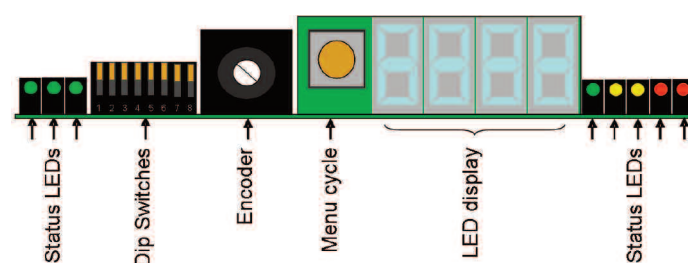
### Applications

- live broadcast
- satellite uplink
- cable headends
- mobile vehicle outputs
- live events

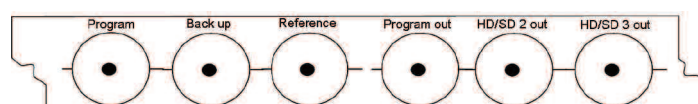
### Block Diagram



### Card-edge Controls



### Rear module



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## Input

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SD/HD Serial Video Standard	SMPTE 274M (3Gb/s) SMPTE 259M (270Mb/s) SMPTE 292M (1.5Gb/s) 1080p/59.94, 1080i/59.94, 1080i/50, 720p/50
Number of Inputs	2
Ref input	Normal SD syncs, Tri-level or black burst
Equalization	Automatic to 75m @ 1.5Gb/s with Belden 1694A or equivalent cable.
Return Loss	> 10dB up to 1.5GHz

## Output

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HD Serial Video Standard	As per input As per input
Number of Outputs	3 (1 relay bypass protected, 2 broadcast quality monitoring outputs)
Signal Level	800mV nominal
DC Offset	0V $\pm$ 0.5V
Rise and Fall Time	200ps nominal for HD, 750ps nominal for SD
Overshoot	< 10% of amplitude
Return Loss	> 15dB up to 1.0Gb/s, > 10dB up to 1.5Gb/s
Wideband Jitter	< 0.2UI

## Miscellaneous

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Weight Approx	250g
Operating Temp	0 °C to +50 °C
Dimensions	16 x 100 x 237 mm (HxWxD)
Electrical	Voltage +5Vdc

## Video

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	HD	SD
Loss of Video	✓	✓
Video Error	✓	✓
Black	✓	✓
Freeze	✓	✓

## Audio

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Presence	✓	✓
Silence	✓	✓

## Frames

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FR1U-10	Rack mounting 1U frame with single PSU and 6 slots for Series 300 cards
FR10-20	Rack mounting 1U frame with dual PSU and 4 slots for Series 300 cards
FR3U-10	Rack mounting 3U frame with single PSU and 15 slots for Series 300 cards
FR3U-20	Rack mounting 3U frame with dual PSU and 15 slots for Series 300 cards