

# KUDOS PLUS TBS150D

## SDI & Composite Synchronizer

Broadcast quality synchronizer and time base stabilizer

The **TBS150D** is a multi-standard broadcast quality synchronizer and timebase stabilizer with SDI, composite and Y/C interfaces. Featuring 12-bit sampling, 10-bit processing and rugged inputs, the TBS150D is equally suited to digitizing broadcast grade sources as with unstable, noisy sources.



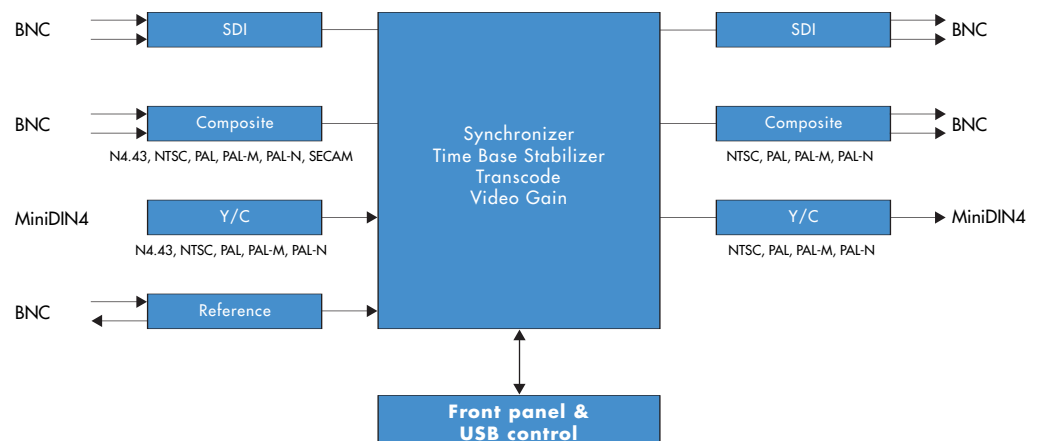
### Features

- SDI Composite & Y/C synchronization
- Timebase stabilization
- 12-bit decoding with 5-line comb filter
- 12-bit encoding
- Inputs NTSC, N4.43, PAL, PAL-M, PAL-N, SECAM with automatic input detection
- Outputs NTSC, NTSC-J, PAL, PAL-N, PAL-M
- Unique 'Floating mode'\* for no lip-sync error
- Video gain, black level, chroma gain, NTSC hue
- USB Remote control
- Compact ½ rack width with rack mount kit

### Applications

- Analog / Digital interface
- Incoming feeds
- Ingest / PC capture pre-processing
- Satellite down-link & radio links
- Duplication
- VHS dubbing

### TBS150D Synchronizer



**Full Product List**

**Base Model**

Kudos Plus TBS150D multi-standard synchronizer and timebase stabilizer with SDI and analog composite and YC interfaces, with 12-bit sampling and 10-bit processing. (3548601)

**Base Model**

Kudos Plus TBS150D as above, with rack mount kit (3548601-RM)

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**Inputs and Outputs**

**Video Input**

|               |   |
|---------------|---|
| 2 x SDI       | 525/625 line with automatic detection   |
| 2 x Composite | 27MHz, 12-bit sampling PAL, NTSC, NTSC-J, N4.43, PAL-N, PAL-M, SECAM with automatic detection     |
| 1 x Y/C       | 27MHz, 12-bit sampling NTSC, NTSC-J, N4.43, PAL, PAL-M, PAL-N with automatic detection (MiniDIN4) |
| Reference     | Composite or Y (BNC loop-through)   |

**Video Output**

|                |   |
|----------------|---|
| 2 x SDI        | 525/625 line  |
| 2 x Composite  | 27MHz, 12-bit D to A. Output Formats NTSC, NTSC-J, PAL, PAL-M, PAL-N            |
| 1 x Y/C        | 27MHz, 12-bit D to A. Output Formats NTSC, NTSC-J, PAL, PAL-M, PAL-N (MiniDIN4) |
| Remote control | USB   |

**Control Features**

|                   |   |
|-------------------|---|
| Input Select      | SDI A,B; Composite A, B; YC   |
| Output Standard   | PAL, PAL-N for 625 line inputs (input standards NTSC, NTSC-J, PAL, PAL-N, SECAM) NTSC, NTSC-J, PAL-M for 525 line inputs (NTSC, NTSC4.4, PAL-M) |
| Frame Freeze      | Freezes next frame  |
| Field Freeze      | Freezes next field  |
| Luminance Gain    | Preset; + 6dB   |
| Chrominance Gain  | Preset; + 6dB   |
| Black Level       | Preset; + 100mV   |
| NTSC Hue          | Preset; + 30 deg  |
| Genlock Phase     | Preset; + 1 line  |
| Genlock Mode      | Lock to reference; Lock to input (stabilized); Free-run   |
| Output Pattern    | Black; Colour Bars  |
| Default Output    | When input is lost: go to black; go to colour bars  |
| Decoder / Encoder | AGC, ACC, comb, pedestal, DNR, CTI  |

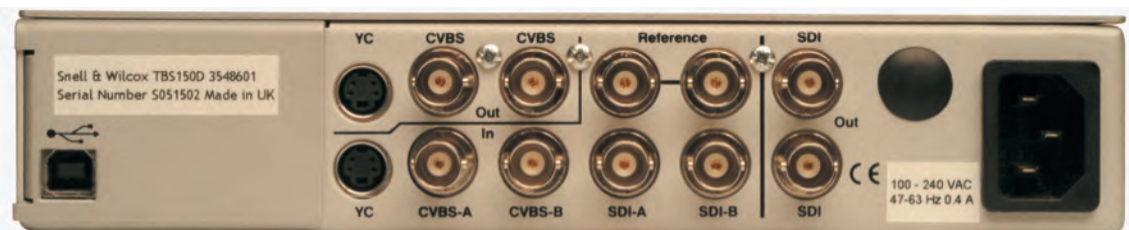
**Indication / Monitoring (also Logging / RollTrack)**

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

**System Parameters**

|                   |   |
|-------------------|---|
| Processing        | 10 bit  |
| SDI input switch  | Tolerant to SMPTE RP168 vertical interval switch. Tolerant to missing / repeated vertical interval lines in 625 |
| SDI Data          | All VANC & HANC data passed   |
| Vertical Interval | All luminance data passed   |
| Data lock range   | Greater than ±80ppm   |
| Dimensions        | 1/2 1 RU rack (44 x 220 x 250mm)  |
| Temperature       | 0 °C to 35 °C operating<br>-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 stabilised 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.



KP14 03/06 V1