Crystal Vision

DECODERS

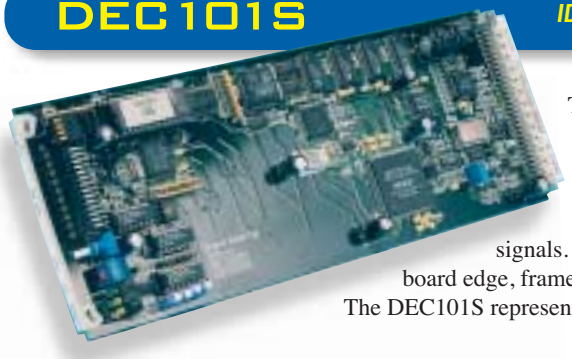
Crystal Vision offers a comprehensive range of composite to SDI decoders to suit all broadcast and non-broadcast applications

CHOOSING THE RIGHT DECODER FOR YOU

FEATURE	DEC101S	DEC102	DEC104S	DEC105S
Resolution	8 bit	10 bit	10 bit	10 bit
PAL/NTSC composite input	●	●	●	●
PAL Y/C input	●		●	●
NTSC Y/C input	●			
SDI input				●
SDI outputs (max)	2	2	4	4
8 bit robust decode mode	●		●	●
Proprietry 'bandsplit' PAL decode			●	●
Internal frame synchroniser	●		●	●
EDH on output	●		●	●
Audio follow output pulse			●	●
Remote control	●		●	●
Rear modules available	RM23	RM01	RM01, RM23, RM24, RM25, RM27	RM01, RM23, RM24, RM25, RM27

DEC101S

***IDEAL FOR:** General low-cost non-broadcast decoding, especially VHS to SDI*



The DEC101S is an 8 bit composite PAL/NTSC or Y/C to SDI decoder able to cope with any non-broadcast video source and particularly suitable for VHS. It offers a high quality, low-cost and extremely straightforward way of converting VHS to SDI and is particularly ideal for the post production market. It includes a frame synchroniser and will happily accept jittery or damaged signals. Timing, gains and levels are all adjustable. The flexible control options include board edge, frame active front panel, remote control panel and the Statesman PC Control System. The DEC101S represents an excellent combination of features and price.

DEC102

***IDEAL FOR:** Economical NTSC decoding where 10 bit resolution is a requirement*

Crystal Vision's most inexpensive decoder, the manually controlled 10 bit DEC102 is suitable for the low-cost conversion of non-broadcast feeds to SDI. The three line adaptive comb decoder converts stable composite PAL/NTSC signals to SDI, with broadcast performance available in NTSC.

DEC104S

***IDEAL FOR:** Exceptionally high quality broadcast decoding of any signals*

Aimed at broadcasters, OB facilities and high-end post production, the 10 bit DEC104S has two decoders making it ideal for the high quality conversion of any PAL/NTSC composite or PAL Y/C signals to SDI.

The 10 bit decoder is used for stable signals, while the DEC104S will automatically switch to a very tolerant 8 bit decoder when a non-stable damaged or jittery signal is received. The on-board frame synchroniser allows untimed inputs to be timed to the local syncs. In addition to the three line adaptive comb decoder, the DEC104S includes Crystal Vision's own 'bandsplit' processing which has been added to the decoder chip for exceptional quality PAL decoding. Timing, gains and levels are all adjustable, while the audio follow pulse allows an audio delay to track the video delay through the board.

The DEC104S can be used with five different frame rear modules to access the extensive range of outputs: up to four SDI, as well as both composite and Black and Burst rear module loop-throughs. The DEC104S offers the full range of control options: board edge, frame active front panel, remote control panel and the Statesman PC software.

DEC105S

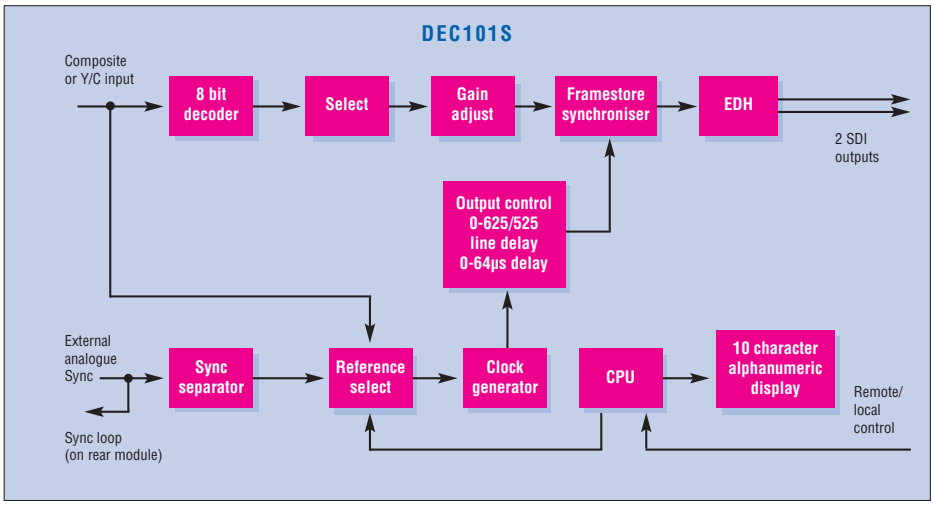
***IDEAL FOR:** People who need both a top broadcast decoder and an SDI synchroniser*

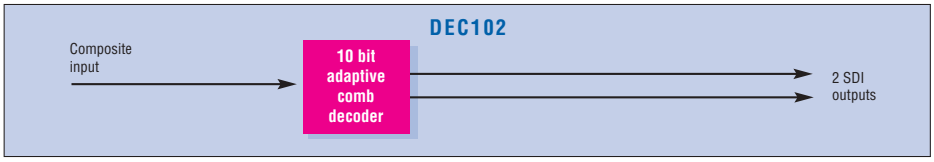
Designed for people who regularly work with both analogue and digital sources, the 10 bit DEC105S is a combined broadcast decoder and SDI synchroniser. Engineers who need to either decode an analogue source or synchronise an SDI source only have to buy one board, saving them both money and rack space.

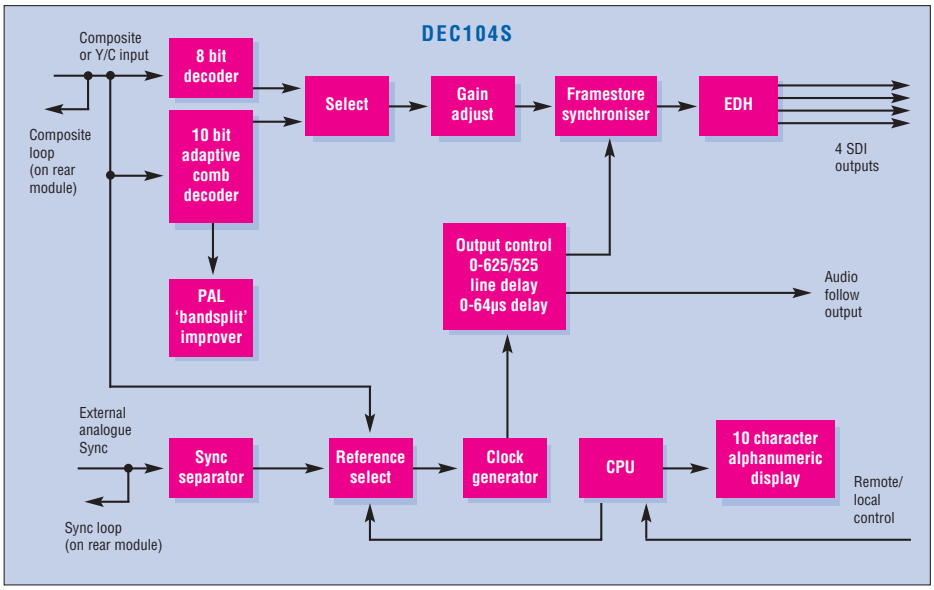
The DEC105S has both composite PAL/NTSC and SDI inputs as standard, with PAL Y/C additionally available with the RM27 frame rear module. It can either be switched manually between the two inputs or can be set to auto switch.

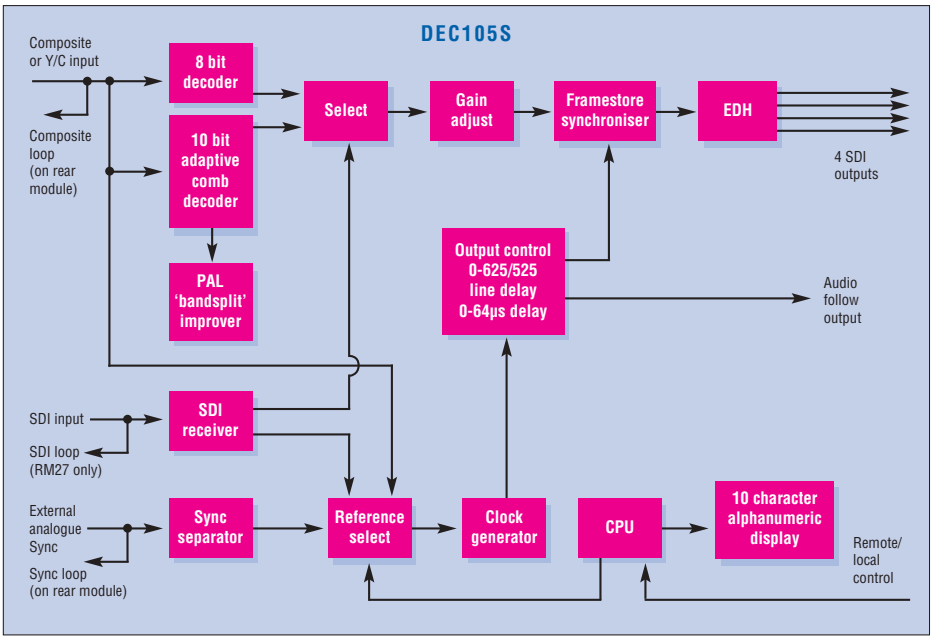
Sharing the excellent features of the DEC104S, the DEC105S has two decoders making it suitable for all composite sources, with the 8 bit decoder used for jittery inputs including VHS and the 10 bit decoder used for stable signals. The decoder chip features Crystal Vision's special 'bandsplit' processing to give excellent PAL decoding. Timing, gains and levels are all adjustable, while the audio follow pulse allows an audio delay to track the video delay through the board. Synchroniser features include full horizontal and vertical adjustments of output timing.

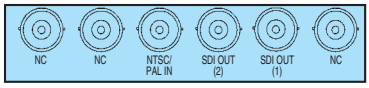
The DEC105S can be used with five different frame rear modules and gives up to four SDI outputs, as well as SDI, composite and Black and Burst loop-throughs. Control is available from board edge, frame active front panel, remote control panel and from any PC on a network using Statesman. The DEC105S is ideal for SDI environments - especially mobile installations - where inputs come from outside sources that can either be analogue or digital.



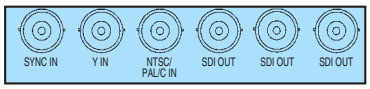




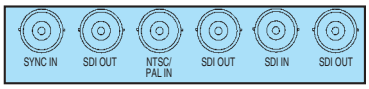




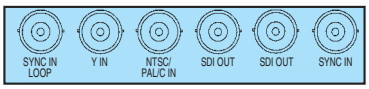
RM01 used with DEC102



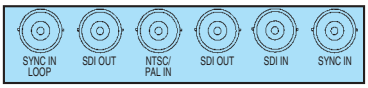
RM01 used with DEC104S



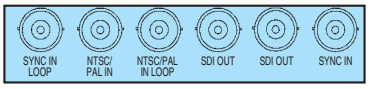
RM01 used with DEC105S



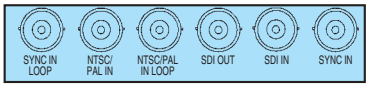
RM23 used with DEC101S & DEC104S



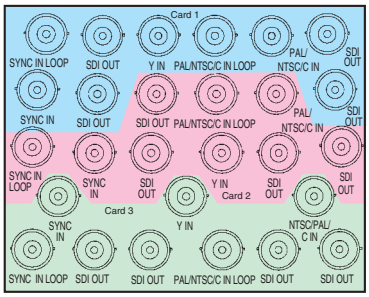
RM23 used with DEC105S



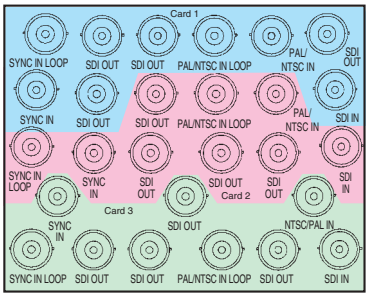
RM24 used with DEC104S



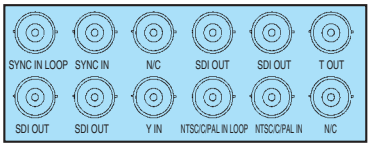
RM24 used with DEC105S



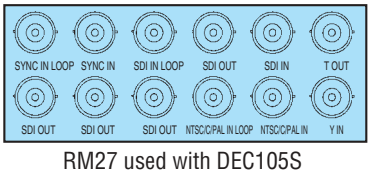
RM25 used with DEC104S



RM25 used with DEC105S



RM27 used with DEC104S



RM27 used with DEC105S

SPECIFICATION

MECHANICAL
Standard Crystal Vision modules 266mm x 100mm
Weight: 200g
Power consumption: 6.25 Watts (DEC101S and DEC102); 8 Watts (DEC104S); 9 Watts (DEC105S)

ANALOGUE INPUT
Composite video input, 1 volt with syncs
625 line PAL or 525 line NTSC
DEC101S: PAL and NTSC Y/C available with RM23 frame rear module
DEC104S: PAL Y/C available with RM01, RM23, RM25 and RM27
DEC105S: PAL Y/C available with RM27
Analogue Black and Burst, mixed syncs or video reference with DEC101S, DEC104S and DEC105S.
Amplitude of syncs 150mV to 4V

SDI INPUT (DEC105S ONLY)
SDI 270Mbit to EBU 3267-E and SMPTE 259M
One SDI input
Cable equalisation >200m Belden 8281 or equivalent
Auto 625/525 line selection
Input Return loss >-15dB 0 to 270MHz

VIDEO OUTPUTS
SDI 270Mbit to EBU 3267-E and SMPTE 259M
Inserted EDH on DEC101S, DEC104S and DEC105S
DEC101S: Maximum of two SDI outputs when using RM23 rear module
DEC102: Maximum of two SDI outputs when using RM01
DEC104S: Maximum of four SDI outputs when using RM25 and RM27 (three outputs with RM01 and two outputs with RM23 and RM24)
DEC105S: Maximum of four SDI outputs when using RM25 and RM27 (three outputs with RM01, two with RM23 and one with RM24)
Black and Burst rear module loop-through available on DEC101S, DEC104S and DEC105S when using RM23, RM24, RM25 and RM27 - loop does not need decoder to be fitted as rear module has passive circuitry required
Composite rear module loop-through on DEC104S and DEC105S when using RM24, RM25 and RM27 - loop does not need decoder to be fitted
SDI loop-through on DEC105S when using RM27
TTL audio follow on DEC104S and DEC105S. TTL output (0.7V to 5V). On BNC (RM27 only) or available from the D-Type on rear of frame. Pulse length shows delay through store (0 to 40mS)

ANALOGUE PERFORMANCE
Frequency response with comb active: +/- 0.5dB to 5.5MHz (DEC104S and DEC105S)
Gain error: <1%
Differential phase and gain in 10 bit mode: <1.5°, <1.5% (DEC104S and DEC105S)
Signal to Noise: <-60dB (DEC104S and DEC105S)
Sampling: 10 bit precision 13.5Mb/s (DEC102, DEC104S and DEC105S). 8 bit mode available for VHS style jittery input (DEC101S, DEC104S and DEC105S)
Blanking: To analogue PAL/NTSC specifications, with selectable VBI blanking PAL lines 7 to 22 and 319 to 335. NTSC lines 10 to 20 and 273 to 282
+/- 2us adjustment of picture position from syncs on DEC102; DEC104S and DEC105S in 10 bit mode
'Bandsplit' decoder for PAL input produces improvements in picture sharpness and reduction of comb artefacts (DEC104S and DEC105S)

DELAY THROUGH BOARD
DEC101S: 50us min
DEC102: 110us
DEC104S: 110us min
DEC105S: 50us min on SDI input; 110us min on composite input

LED INDICATION OF:
Power supplies on board
Analogue input present
PAL/NTSC standard
Analogue reference absent (DEC101S, DEC104S and DEC105S)
10 bit decoder in operation (DEC104S and DEC105S)
SDI input present (DEC105S)
SDI input selected (DEC105S)

GPI INPUTS
DEC102: Set to bandsplit mode, setup off, VBI passed
DEC105S: Switch to SDI input

GPI OUTPUTS
DEC104S: No video input, no sync ref input, in NTSC mode, audio delay pulse
DEC105S: No video input, no sync ref input, in NTSC mode, audio delay pulse, no SDI input

LOCAL CONTROL
DEC101S, DEC104S and DEC105S: NTSC setup level, VBI blanked or passed, auto or manual PAL/NTSC standard selection, auto or manual selection of 10 bit or 8 bit decoding - automatic by amount of jitter on input (DEC104S and DEC105S only), framestore output timing (0 to 2 fields set as vertical and horizontal offset) and gain and black level settings
DEC102: Comb on/off, setup on/off (in NTSC only), VBI blanked or passed, cal or adjustable horizontal position, auto or manual PAL/NTSC standard selection

REMOTE CONTROL
Available on DEC101S, DEC104S and DEC105S
Control from frame active front panel and remote panel
Statesman allows control from any PC on a network

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ORDERING INFORMATION

DEC101S	8 bit PAL/NTSC or Y/C to SDI decoder with TBC/framestore
DEC102	10 bit PAL/NTSC to SDI decoder with adaptive comb
DEC104S	10 bit PAL/NTSC or Y/C to SDI broadcast decoder with TBC/framestore and additional 'bandsplit' decoding in PAL
DEC105S	Combined 10 bit PAL/NTSC or Y/C to SDI broadcast decoder and SDI synchroniser, with TBC/framestore and additional 'bandsplit' decoding in PAL
Indigo 4	4U frame with passive front panel for up to 24 Crystal Vision modules
Indigo 4S	4U frame with passive front panel fitted with Statesman CPU for up to 24 Crystal Vision modules
Indigo 2	2U frame with passive front panel for up to 12 Crystal Vision modules
Indigo 2A	2U frame with active front panel for up to 12 Crystal Vision modules
Indigo 2S	2U frame with passive front panel fitted with Statesman CPU for up to 12 Crystal Vision modules
Indigo 1	1U frame with passive front panel for up to six Crystal Vision modules
Indigo 1A	1U frame with active front panel for up to six Crystal Vision modules
Indigo 1S	1U frame with passive front panel fitted with Statesman CPU for up to six Crystal Vision modules
Indigo DT	Desk top box with passive front panel for up to two Crystal Vision modules
Indigo DTA	Desk top box with active front panel for up to two Crystal Vision modules
Indigo DTS	Desk top box with passive front panel fitted with Statesman CPU for up to two Crystal Vision modules
RM01	Single slot frame rear module. Allows maximum number of decoders in frame (24 in 4U, 12 in 2U, six in 1U, two in desk top box). Gives access to two SDI outputs with DEC102 and three SDI outputs with DEC104S and DEC105S
RM23	Single slot frame rear module. Allows maximum number of decoders in frame (24 in 4U, 12 in 2U, six in 1U, two in desk top box). Gives access to two SDI outputs and a rear module Black and Burst loop-through with DEC101S, DEC104S and DEC105S
RM24	Single slot frame rear module. Allows maximum number of decoders in frame (24 in 4U, 12 in 2U, six in 1U, two in desk top box). Gives access to two SDI outputs and composite and Black and Burst rear module loop-throughs on DEC104S. Gives access to one SDI output and composite and Black and Burst rear module loop-throughs on DEC105S. Y/C input not available
RM25	Four slot frame rear module. One rear module used for three decoders, allowing 18 decoders in 4U and nine in 2U. Gives access to four SDI outputs and composite and Black and Burst rear module loop-throughs on DEC104S and DEC105S. Y/C input not available on DEC105S
RM27	Two slot frame rear module. Allows 12 decoders in 4U, six in 2U, three in 1U and one in desk top box. Gives access to four SDI outputs and composite and Black and Burst rear module loop-throughs on DEC104S. Gives access to four SDI outputs, an SDI loop-through and composite and Black and Burst rear module loop-throughs on DEC105S
REMIND	19" remote control panel
Statesman	PC Control System