

Model D10CE 10 Bit Serial Digital to NTSC/PAL, RGB/YPbPr Converter

Introduction

The D10CE converts Component Serial Digital (SDI) to analog Composite and Component simultaneously. The D10CE provides 4 analog outputs. In addition, two equalized and re-clocked SDI loop-through outputs are provided. The D10CE automatically configures to 525 or 625 line component digital inputs and outputs analog NTSC (525 line input), PAL (625 line input) or component as configured by the dip switches. The D10CE encodes the full dynamic range of input component video – values below black and above white are not clipped. In the NTSC mode, the 7.5 IRE pedestal can be disabled by dip switch selection.

Specifications

Serial Input	SMPTE 259M 270mb, (SDI)
SDI Cable Equalization	300 meter 8281 typical
Serial Outputs	Equalized, Re-clocked
Frequency Response	+/- .15db to 5.5Mhz (Y) +/- .15db to 2.5Mhz (Chroma – Component, RGB) +/- .15db to 1.3Mhz (Chroma – Composite)
2T K factor	<0.5% (Y)
Diff. Gain	<1.5%
Diff. Phase	<1.5 degree
Y/C delay	10ns max
D/A Converters	10 bits, 4X oversampling
Signal Path	10 bits
Delay (input to output)	2.5us
Output level adjustment	+/-20% (internal)
Output level matching	1.5% or 10mv (All outputs are separately buffered)
Power	5v DC regulated, 4 watt (AJA power supply model DWP)
Size	147 x 79 x 25 mm

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Dip Switch Functions

All dip switch are accessible through a cut-out in the bottom of the unit.

Switch 1 thru 3 control the output of Composite or Sync output 1 BNC

SW 1 VIDEO SYNC (Output selection)

VIDEO: Composite out
SYNC: Sync output for Component output (use when the device being feed the component signal requires a separate sync signal)

SW 2 Pedestal

ON: 7.5 IRE pedestal for NTSC (also selects BETA 525 levels for YPbPr)
OFF: No pedestal (also selects SMPTE levels for YPbPr)

NOTE; No effect with 625 input

SW 3 Blank

NAR: Vertical (line numbers indicate where video starts)
line 13, field 1; line 12, field 2 (525 line)
line 10, field 1; line 322, field 2 (625 line)
Horizontal (active video lineduration's)
ITU-R.470 (270 pixels PAL/NTSC)
WIDE: Vertical (line numbers indicate where video starts)
line 20, field 1; line 20, field 2 (525 line)
line 23, field 1; line 336, field 2 (625 line)
Horizontal (active video line duration)
ITU-R/SMPTE (710 pixels NTSC, 702 pixels PAL)

Switch 4 thru 8 control the video format of output 2 (the remaining three output BNC's)

SW 4 CMPSTE COMPNT (Output selection)

COMPNT: Component output
CMPSTE: Composite output



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SW 5 RGB YUV/YC (Output selection)

YPbPr/YC: Output YPbPr, if SW1 is COMPNT,
RGB: Output RGB, if SW1 is COMPNT,

SW 6 Pedestal

ON: 7.5 IRE pedestal for NTSC (also selects BETA 525 levels for YPbPr)
OFF: No pedestal (also selects SMPTE levels for YPbPr)

NOTE: No effect with 625 input

SW 7 Blank

NAR: Vertical (line numbers indicate where video starts)
line 13, field 1; line 12, field 2 (525 line)
line 10, field 1; line 322, field 2 (625 line)
Horizontal (active video line duration's)
ITU-R.470 (720 pixels PAL/NTSC)
WIDE: Vertical (line numbers indicate where video starts)
line 20, field 1; line 20, field 2 (525 line)
line 23, field 1; line 336, field 2 (625 line)
Horizonral (active video line duration)
ITU-R/SMPTE (710 pixels NTSC, 702 pixels PAL)

SW 8 DNR

ON: Enables Digital Noise Reduction on input.
OFF: Disables Digital Noise Reduction

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OUTPUT SELECTION MATRIX

OUTPUT FORMAT FOR OUTPUT 2

DIP SWITCH SETTING

	<u>SW4</u>	<u>SW5</u>	<u>SW6</u>
1 composite & 1 Y/C (pedestal)	CMPSTE	N/A	ON
1 composite & 1 Y/C (no pedestal)	CMPSTE	N/A	OFF
RGB	COMPNT	RGB	OFF
RGB with Pedestal	COMPNT	RGB	ON
SMPTE component (BETA 625)/ EBU N10	COMPNT	YPbPr/YC	OFF
BETA 525 component	COMPNT	YPbPr/YC	ON