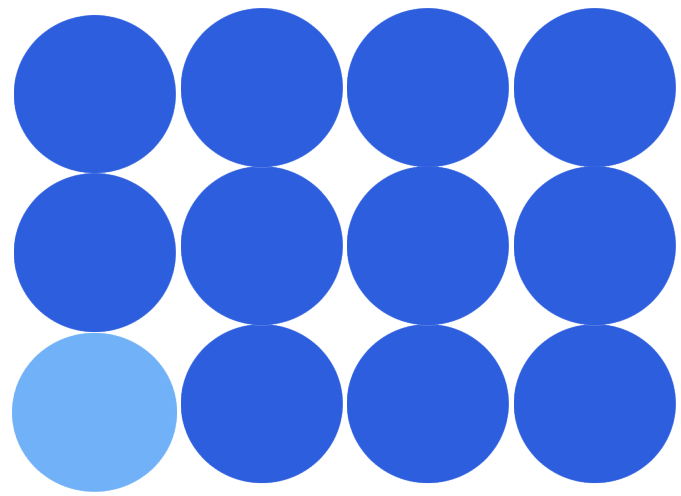


NTSC/PAL Encoder Datasheet



Features

- Supports NTSC (M & J), PAL-M, PAL (B,D,G,H,I) PAL-N(non-Argentina), PAL-N(Argentina), and PAL60 video outputs.
- Ping-pong dual input line buffers.
- Programmable sync generation.
- Peripheral interface with local registers to control all modes of operation.
- 75% Color Bar, modulated ramp, and red frame Test Pattern Generator.
- Conversion of the YCrCb input to 10 bit YUV color space using a programmable scalar and offset.
- Sync and pedestal insertion on the Y channel.
- 2x interpolation on Y channel and 4x interpolation on the Cr and Cb channels (assuming 4:2:2 input format) using zero insertion.
- Low pass filter on U and V channels.
- Low pass filter with optional notch filter on Y channel.
- Burst signal insertion on the chroma channels during the horizontal back porch.
- Subcarrier frequency generation.
- Chroma modulation on the U and V channels.
- Closed caption, and CGMS signal insertion during vertical blanking.
- Sin(x)/x correction filter.
- Programmable 6 bit DC offset on the output.
- Optional Output Inversion.

??
 ???

General Information

The NTSC/PAL Encoder accepts 720x480 and 720x576 YcrCb 4:2:2 input video and generates a 10 bit digital composite video signal that can be directly driven into an external D/A. The design uses a single 27Mhz clock to generate a 2x oversampled 10 bit digital output. The design can easily be modified to also provide S-Video and component video outputs if needed.

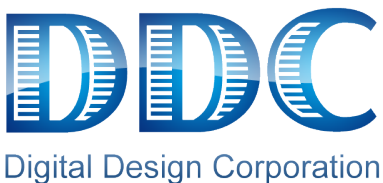
Specifications

Table 1. Size Breakdown

FPGA	LE/Slices	Memory	Multipliers
Altera Stratix II (EP1S25F780C5)	8593 LEs	36,864 bits	80 DSP 9-bit elements
Xilinx Virtex II Pro (XC2VP20)	3049 Slices	6 Brams (18kx1)	55 Mult18x18

Table 2 Sub-carrier Frequencies

Standard	Sub-carrier Frequency
NTSC-M, NTSC-J	3.57954545 Mhz
PAL_M	3.57561149 Mhz
PAL-B,D,G,H,I; PAL-N (non-Argentina); PAL60	4.43361875 Mhz
PAL-N (Argentina)	3.582055625 Mhz



Digital Design Corporation • 3820 Ventura Dr. Arlington Hts. IL
 60004 • Phone: 847-359-3828 • Fax: 847-359-5418
 Website: www.digidescorp.com • E-Mail: sales@digidescorp.com

For more information
 contact Digital Design Corporation
 sales at:
 + 1-847-359-3828
 or go to our website at:
 www.digidescorp.com