

XCode™ 2105 Product Brief



XCode™-2105 is a single stream PCI MPEG encoder integrated circuit (IC). It has the following highlights:

- ◆ PCI v2.3 interface
- ◆ Single D1 MPEG2 / 4 (ASP, SP) encode capable
- ◆ Mirror encode – single 656 stream can generate two streams with same content at different formats
- ◆ Pixel-based motion adaptive 3D comb-filter and temporal/spatial filter
- ◆ Transport stream I/O for ATSC, DVB-T, and ISDB-T support

Summary of Features

MPEGPerfection™ Encoding

- ◆ MPEG2 (up to ML@MP)
 - 525/60 NTSC up to 720 x 480 @ 30fps
 - 625/50 PAL up to 720 x 576 @ 25fps
- ◆ MPEG4 up to D1 (with PSP™, iPOD™, DivX™ remux)
 - ASP (L0 – L5)
 - SP (L0 – L3)
- ◆ VBR or CBR encoding up to 15 Mbps
- ◆ Programmable GOP structure
- ◆ Variable frame rate control
- ◆ Field/frame motion estimation
 - ± 300 pixel window
- ◆ Half pel accuracy
- ◆ 4:2:2 to 4:2:0 conversion
- ◆ Intelligent sharpness control
- ◆ Inverse telecine (3:2 pulldown)
- ◆ Scene change detection

Digital Video Filtering

- ◆ Pixel-based motion-adaptive 3D comb filter
- ◆ Pixel-based temporal/spatial filter
- ◆ Image edge rectification

Audio Encoding/Transcoding

- ◆ Programmable audio block:
 - AC3, AAC, MP3, MPEG-1 Layer II, G.726, PCM encoding and transcoding
- ◆ Sampling rates: 32, 44.1, 48, 96 kHz
 - Compressed bit rates up to 448 kbits/sec

Stream Formats Supported (In/Out)

- ◆ Elementary Stream (ES), Packetized Elementary Stream (PES), Program Stream, Transport Stream (TS), DVD-VR Program Streams
- ◆ YUV in/out stream support (uncompressed)

Technology

- ◆ Efficient low power design
- ◆ 0.13µm CMOS technology

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Interfaces

- ◆ Transport stream (2 serial or 2 parallel) inputs
- ◆ 16/32 bit DDR SDRAM memory controller:
 - Supports 512 Mb, 256 Mb, 128 Mb, 64 Mb DRAM densities
 - Supports 16, 32 bit wide memory parts
- ◆ PCI v2.3 32 bit / 33 MHz bus interface
- ◆ I²C – master and master/slave
- ◆ 8/10 bit CCIR 656 input
- ◆ I²S input
- ◆ Transport stream output with remultiplexer
- ◆ SPI EEPROM interface for self-boot
- ◆ JTAG interface port
- ◆ General Purpose I/O

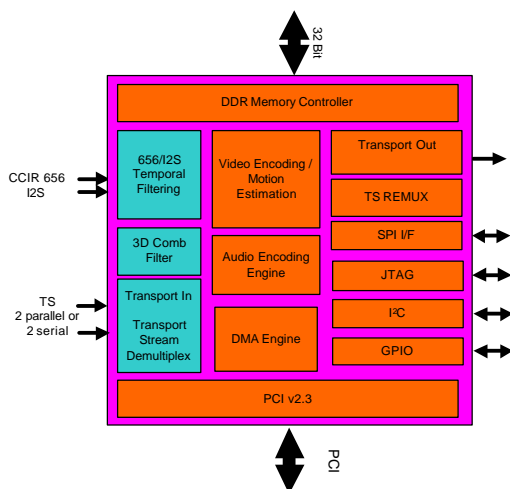
Typical Applications

- ◆ Analog TV tuner add-in boards
- ◆ Hybrid analog/digital TV tuner boards
- ◆ Media Center PCs
- ◆ Residential Gateways
- ◆ Personal Video Recorders (PVRs)
- ◆ DVD recorders
- ◆ Set-Top Boxes

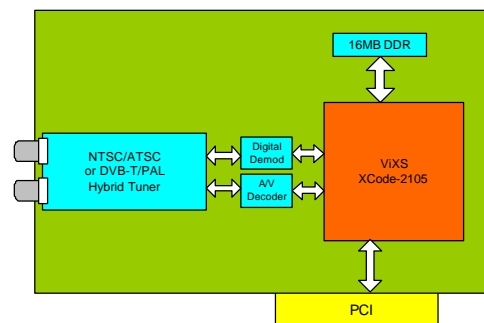
Core Technologies

- ◆ MPEGPerfection™ technology redefines low-bitrate compression giving DVD quality encoding at 1.5Mbps - less than a third of DVD video bitrates
- ◆ TurboMPEG™ technology allows users to convert formats, resolution, and frame rates of pre-compressed video, at 2X-12X faster than real-time, to fit video to any viewing device

XCode™ 2105 Block Diagram



Single Hybrid TV Tuner PCI Card



ViXS Systems, Inc.
245 Consumers Road, Suite 301
Toronto, ON, Canada, M2J 1R3

Phone: (416) 646-2000
Fax: (416) 646-1042
Web: www.vixs.com

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