

# CyberPro™ 53xx series

CyberPro5300, 5305, 5350, 5355 Multi-Media Display Processors



## APPLICATIONS

- Digital Televisions
- Set-top Boxes
- Information Access Devices
- Applications requiring blending of multiple images or images with graphics

## FEATURES & BENEFITS

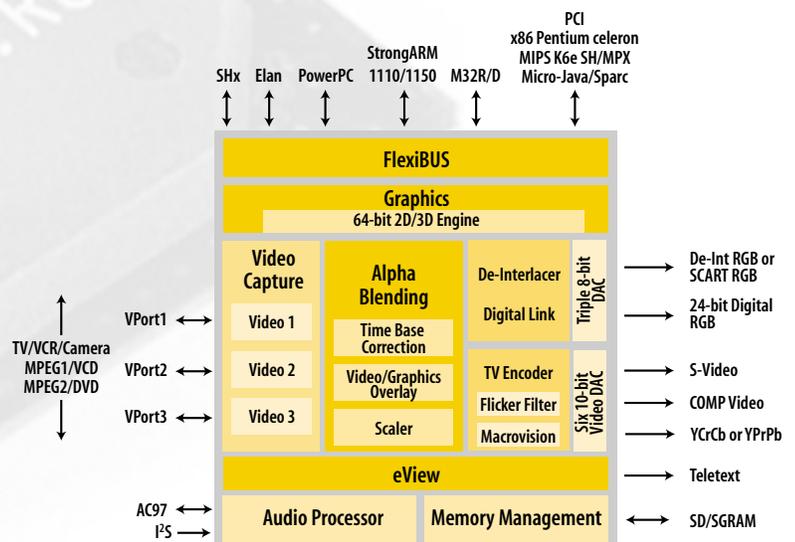
- Three video capture ports enable blending of sources from terrestrial broadcast, VCR, DVD or video camera
- 64-bit graphics overlay engine for integration of 2D graphics for system menuing such as electronic programming guides or 3D graphics for high quality photo realistic imaging or gaming
- Outstanding alpha blending capabilities for a seamless interactive experience
- Flexible interface architecture allowing OEMs to select the right CPU to meet system and technical requirements
- High level of OS integration for minimal software development time
- Supported by a full line of software development kits allowing for rapid time to market
- Offering four different processors in the CyberPro53xx product line to provide all the features you need, and none that you don't

Tvia's CyberPro53xx product line integrates a 2D /3D graphics engine for blending high quality graphics with up to three video sources and creates a multitude of advanced display options in digital set-top boxes, digital televisions and information access devices.

With an integrated video encoder and the highest quality video DACs, all video and graphics streams are displayed through flexible TV-outs. Various standard formats such as NTSC/PAL composite video, S-Video, YCrCb/YPrPb components and SCART RGB are supported. All of the processors in the CyberPro5300 product line offer 2D and 3D graphics, and a variety of audio processor and Macrovision options determine the best choice for each application.

Uncompromising quality and advanced display features are the foundation to Tvia's multi-media display processors. Additionally, the CyberPro family of processors supports all major industry-standard CPUs and a suite of proven operating system and real time operating system software.

CyperPro	3D Processor	2D Processor	Audio Processor	Macrovision Encoder
5300	X	X		
5305	X	X		X
5350	X	X	X	
5355	X	X	X	X



# SPECIFICATIONS:

- **Zero-Z 3D and 64-bit 2D Graphic Accelerator**
  - Zero-Z architecture calculates Z on the fly and requires no Z-buffer which increases memory bandwidth and texture mapping memory
  - 32-bit dithering and raster ops, 16-bit Z visibility
  - Alpha Blending, Bilinear filtering
  - Transparency/Translucency, RGB lighting, Specular highlighting/shading, Fog (Table/Vertex)
  - Perspective-correct interpolation, Gouraud color interpolation
  - 100 Million textured pixels/sec, bi-linear
  - 1 Million polygons/sec, 10-pixel polygons, RGB lighting, alpha, floating point (API natural) input
  - 64-bit 2D GUI engine, 230MHz RAMDAC, dual clock
  - 80MHz SDRAM support up to 4MB, SGRAM up to 8MB
- **FlexiBus- Direct RISC/x86 Embedded CPU interface**
  - Direct glue-less interface to Hitachi SH-7750/SH-MPX, StrongARM 1110, PowerPC and AMD Elan
  - Direct PCI interface to MIPS (NEC, QED, IDT) and x86 (Intel, AMD, Transmeta, ZLinux, Rise, National) CPUs
  - CPU bus speeds up to 66MHz
- **Video Port - Versatile Video Processor**
  - Three video ports
  - Two simultaneous video ports up to 54Mhz and one at 27MHz
  - Two independently scalable video overlay windows
  - Direct interface to DVD, MPEG-2, MPEG-1 and video decoder through the video ports. ITU-BT.656 or 601
  - Teletxt and VBI encoder
  - Video ports can be configured as Master or Slave
  - VIP (Video Input Port) standard for all decoders
- **TVDirect - NTSC/PAL/SCART TV Encoder with High Quality Flicker Control**
  - Enhanced on-chip TV encoder with flicker free hardware
  - Six 10-bit video DACs with double sampling clock for broadcast TV display
  - Triple 8-bit RAMDACs for high quality SCART or de-interlaced RGB output
  - 24-bit digital RGB output for PanelLink type application
  - Direct output to worldwide TV formats NTSC-M, N(J), PAL-B, D, G, H, I, M, N
  - Enhanced 21-tap separate Y, U, V programmable anti-aliasing filters for the best TV quality
  - Multiple composite video outputs
  - S-Video (YC) outputs
  - Component video (YCrCb or YPrPb) outputs
  - Multiple or simultaneous TV outputs
  - Larger line buffer for 16:9 wide screen TV support
- **eView—Direct Broadcast Video to TV**
  - Direct pass through of broadcast/live video to TV by locking of Vsync, Hsync and clock from any external DVD/MPEG decoders
  - Supports real time control from line locked video decoders
  - No frame buffer memory or flicker reduction hardware required
  - Video in YUV formats displayed on TV without any conversion to RGB
  - Seamless graphics pop up window support for interactive TV applications
- **tView—Flexible Hardware Alpha Blending**
  - 61/2/4bpp indexed 8-bit fully programmable multi-type multi-source including video on video and video on text/graphics, or vice versa, for advanced interactive TV applications
- **Integrated Audio Processing**
  - MIDI, FM, 32 channel wave table synthesis
  - AC97 support with full duplex, PCM input, I 2 S Input
  - Digital and analog game port
- **MacroVision™ 7.01 Support**
  - On-chip digital TV encoder supports MacroVision 7.01
- **Tvia CyberPro™ 5XXX family Drivers and Sample Code Exclusively Available In:**
  - WindRiver VxWorks WindML / JWorks CD
  - Liberate TVPorter™
  - Microsoft® Window® CE Platform Builder 3.0 Add-On PAK CD (DxPAK)
  - Microsoft® TV CD
  - Microsoft® VENUS CD
  - Microsoft® embedded Window® NT
  - Tvia Linux™ CD with TV, audio, video, graphics, alpha and Video for Linux (V4L)
  - Microware™ OS-9 / DAVID™ CD
  - QNX / Neutrino Photon CD
  - ITRON
- **Package & Technology**
  - 208 PQFP or 256 PBGA
  - QNX / Neutrino Photon CD
  - Pin-to-pin compatible to the CyberPro 5200 (256PBGA)

## TVIA Inc, Headquarters

North America  
4001 Burton Drive  
Santa Clara, CA 95054  
Phone: (408) 982-8588  
Fax: (408) 982-8591  
Email: sales@tvia.com  
www.tvia.com

Taiwan  
7F-3, No. 164  
Sec. 2, Tun Hwa S. Rd  
Taipei, Taiwan  
Phone: 886-2-27383040  
Fax: 886-2-23781833

China  
Hefei Software Park Building 3  
669 Chang Jiang Road W.  
Hefei, Anhui, P.R. China 2388  
Phone: 86-551-531-8799  
Fax: 86-551-531-1620