

C6010-PBR-01H

May 2002

### Digital TV Controller

## DESCRIPTION

The Genesis Microchip gm6010 and gm6015 digital television controller ICs are low-cost, full-featured image processors for progressive TV, digital TV and high-definition TV applications. The gm6010 and gm6015 ICs provide superior image quality by integrating Genesis Crystal Cinema Plus™ video scan conversion with dual digital video inputs (MAIN, PIP), SDRAM controller, color controls, look up table, mixer, multi-image PIP and analog (gm6010) or digital (gm6015) video outputs.

## FEATURES

- Genesis industry leading Crystal Cinema Plus™ video scan conversion with:
  - i. Motion adaptive de-interlacing/interlacing
  - ii. 2:2/3:2 film processing
  - iii. Directional Interpolation
  - iv. Arbitrary shrink/zoom scaling
  - v. Aspect ratio conversion
  - vi. Frame rate conversion
  - vii. Spatial, temporal and 3D noise reduction
- Dual-channel MAIN/PIP inputs:
  - i. Up to four 8/16/24-bit 4:2:2/4:4:4 YCbCr/RGB digital video inputs
  - ii. 480/576i, 480/576p, 720p and 1080i
  - iii. VGA, SVGA, XGA, WXGA PC graphics
  - iv. Separate, composite or sync on Y/G
- Display output:
  - i. 8/16/18/20/24/30-bit 4:2:2/4:4:4 YCbCr/RGB digital or analog outputs
  - ii. Triple 256x10 bit output look up table (LUT)
  - iii. Triple 10-bit D/A converters (gm6010)
  - iv. 480/576i, 480/576p, 720p and 1080i HD
  - v. VGA, SVGA, XGA, WXGA PC graphics
  - vi. Separate, composite or sync on Y/G
  - vii. CGMS/A support

## FEATURES cont'd

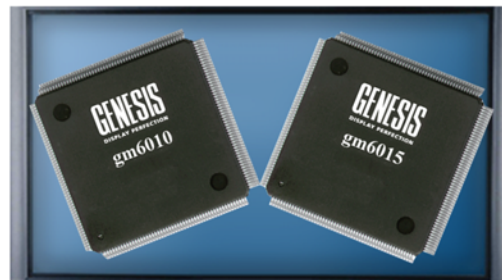
- Frame Rate Conversion:
  - i. Arbitrary frame rate conversion
  - ii. 50/60 Hz → 100/120 Hz field doubling
  - iii. 50 Hz ← 60 Hz scan conversion
- Comprehensive PIP Processing:
  - i. PIP/POP with arbitrary size and position
  - ii. Twin Picture/Double Wide support
  - iii. Multi-PIP processing (up to 16 windows)
  - iv. Alpha mixing/overlay between MAIN, PIP and external OSD
- Other Features:
  - i. Integrated SDRAM controller
  - ii. Single external 2Mx32-bit 100 MHz SDRAM
  - iii. Color controls
  - iv. Serial host interface
  - v. Integrated clock generator and PLLs

## PACKAGE

- Low-cost 208-pin PQFP

## APPLICATIONS

- CRT, LCD, PDP and LCOS based televisions
- Progressive TV/DTV/HDTV/PTV



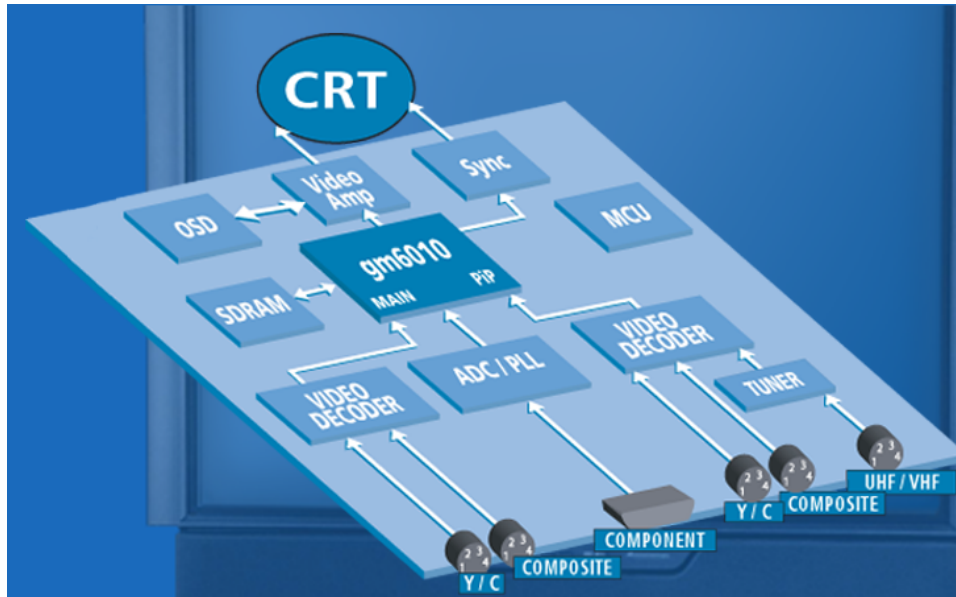
## NOTES

1. Genesis Display Perfection is a trademark of Genesis Microchip.
2. Crystal Cinema Plus is a trademark of Genesis Microchip.

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### APPLICATION EXAMPLE – HD-READY TV



### APPLICATION EXAMPLE – LCD TV

