

DESCRIPTION

SmartSCAN™ is an innovative, patented technique developed by Genesis Microchip that enables conversion of input line rates to either a fixed or controlled output range. The gm7030 is the first device in the world to integrate this function for use in CRTs. Using the gm7030, CRT monitors are able to offer complete, multi-frequency compliance while taking advantage of the cost and image benefits offered by a fixed line rate chassis.

By adjusting the input line rate, the gm7030 also creates an Enhanced Vertical Resolution. This completely eliminates the visible scan line structure of low-resolution modes and increases the screen brightness.

Advanced digital RealColor™ processing enables the gm7030 to offer visually stunning results by transforming pictures into bright vibrant life-like images. CRTs utilizing the gm7030 demonstrate clear visible enhancements over all existing solutions.

With compatibility in mind, the gm7030 offers support for both analog and digital input formats. A 5 Giga-Hz (UXGA, 165 Mpps) Ultra-reliable DVI™ receiver with incorporated HDCP 1.0 ensures compatibility with all DVI 1.0 compliant sources. The 165MHz Analog to Digital Converter accepts analog RGB.

A host of other features such as an OSD controller, sync drop out protection, clock generator, internal test pattern generator have been integrated into the gm7030. These make the gm7030 an extremely low-cost, highly integrated and easy-to-use solution for visually superior fixed frequency or controlled line rate CRTs capable of supporting multi-frequency inputs.

FEATURES

- ◆ **5 Giga-Hz Ultra-Reliable DVI™ Receiver**
 - Supports pixel rates of 20 MHz to 165 MHz
 - Allows for longer, cheaper cables
 - Facilitates flexible industrial design
- ◆ **DVI-HDCP 1.0 Content Protection**
- ◆ **165MHz Triple ADC**
 - Jitter-free clock regeneration
 - Composite sync support

- ◆ **SmartSCAN™**
 - Patented technique for adjusting line rate, regardless of input format
- ◆ **Visually Superior Images**
 - Bright, vibrant life-like colors
 - Cinema quality video playback
 - Increased realism for games
- ◆ **Enhanced Vertical Resolution**
 - Eliminates visible scan lines
 - Increased image brightness
- ◆ **Simplified User Interface**
 - Image always centered, always square
 - TV like color controls
- ◆ **DTV Ready**
- ◆ **Precision 10-bit DAC**
 - RGB or YPrPb support
- ◆ **Built-in Sync Dropout Protection**
- ◆ **On Screen Display Controller**
 - Multi-language support
 - Fully programmable characters
 - 16 colors from a palette of 4096
 - Landscape (12x12) and portrait (12x18) OSD font character cell
- ◆ **Fully Integrated Solution**
 - All of the required clocks generated by a single external reference crystal 10 – 50MHz
 - Stand-alone mode - Internal test pattern can be displayed to the CRT for monitor burn-in, setup and testing

PACKAGE

- 144 PQFP

APPLICATIONS

- Fixed Frequency CRT Monitors
- Controlled Line Rate CRT Monitors
- Digital Television

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Figure 1: gm7030 Functional Block Diagram

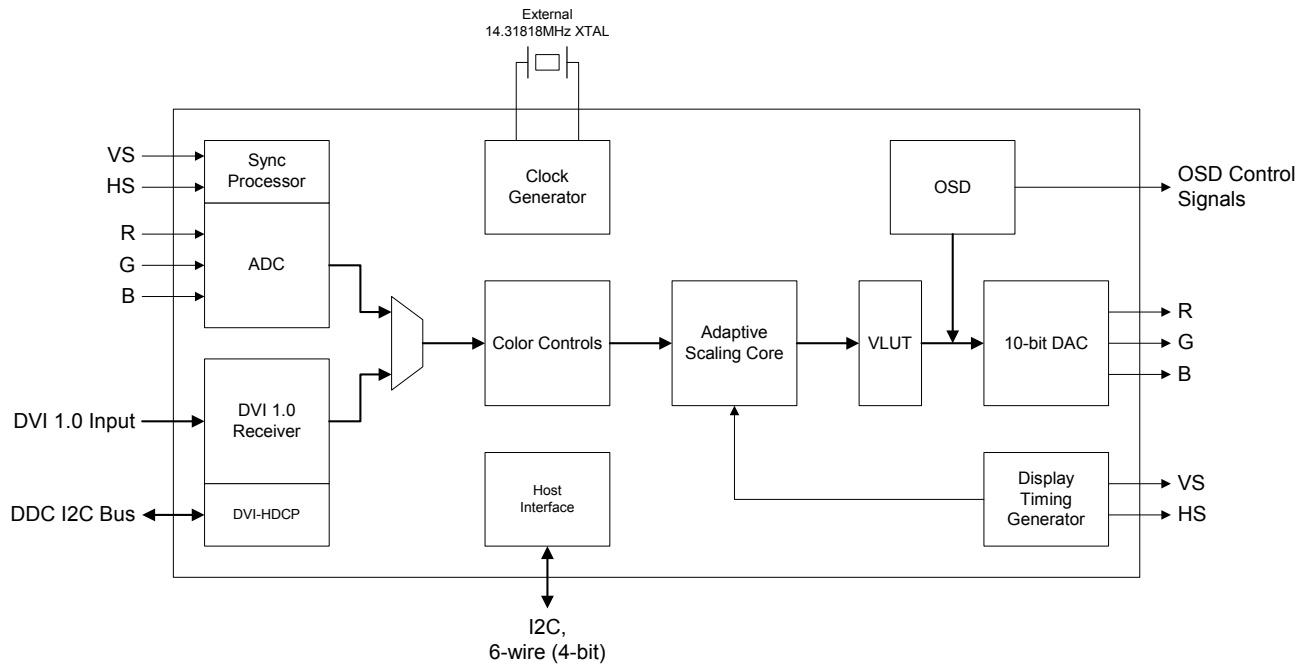


Figure 2: gm7030 Based System Design Example

