SAF7115 NTSC/PAL/SECAM Video Decoder for Automotive and Industrial Applications

Making High-Quality Video Decoding Really Easy

In February 2010, Trident acquired the set-top box and TV product lines from NXP's BU Home. This product is now a part of Trident Microsystems' product offering for the television markets.

The SAF7115 from Trident Semiconductors provides the front-end digitalization and processing of analog video inputs for high quality car TV receivers, in-flight video entertainment, and video surveillance applications demanding extended ambient temperature conditions.

Key Features

- Fully programmable static gain or automatic gain control (AGC) for the selected CVBS or Y/C channel
- Automatic Clamp Control (ACC) for CVBS, Y and C
- Switchable white peak control
- Versatile VBI-data acquisition for
  - WST 525/625 Teletext and VPS
  - US/European Close Captioning (CC)
  - WSS 625 and CGMS
  - US NABTS and Moji Japanese Teletext
  - VITC 525/526
  - Gemstar® 1x/2x
- Superior performance in today's and tomorrow's video digitizers

Key Applications

- In-car video entertainment (TV receiver modules, head units supporting parking assistance systems, or general video connectivity)
- In-flight video entertainment
- Video surveillance applications designed for extended ambient temperature

The analog pre-processing circuit incorporates source selection, anti-aliasing filters, and two low-noise analog-todigital converters. This sub-system includes input clamps, white peak control and user-selectable automatic, or fully programmable, gain control to match specific signal properties. Decoding NTSC, PAL and SECAM signals using fully automatic standard detection, the SAF7115 also includes a pixel accurate H/V scaler to convert to a specific target resolution. Analog video input may be provided as differential (bi-phase) signals, improving robustness, e.g. against noise injected by operating engines.

The SAF7115 is also a perfect solution for general industrial applications requiring an extended operating temperature range of -40° to +85°C. The product is certified following the Automotive Electronics Council (AEC) Q100 standards.

The SAF7115 is available in HTQFP100 or TFBGA160 package.

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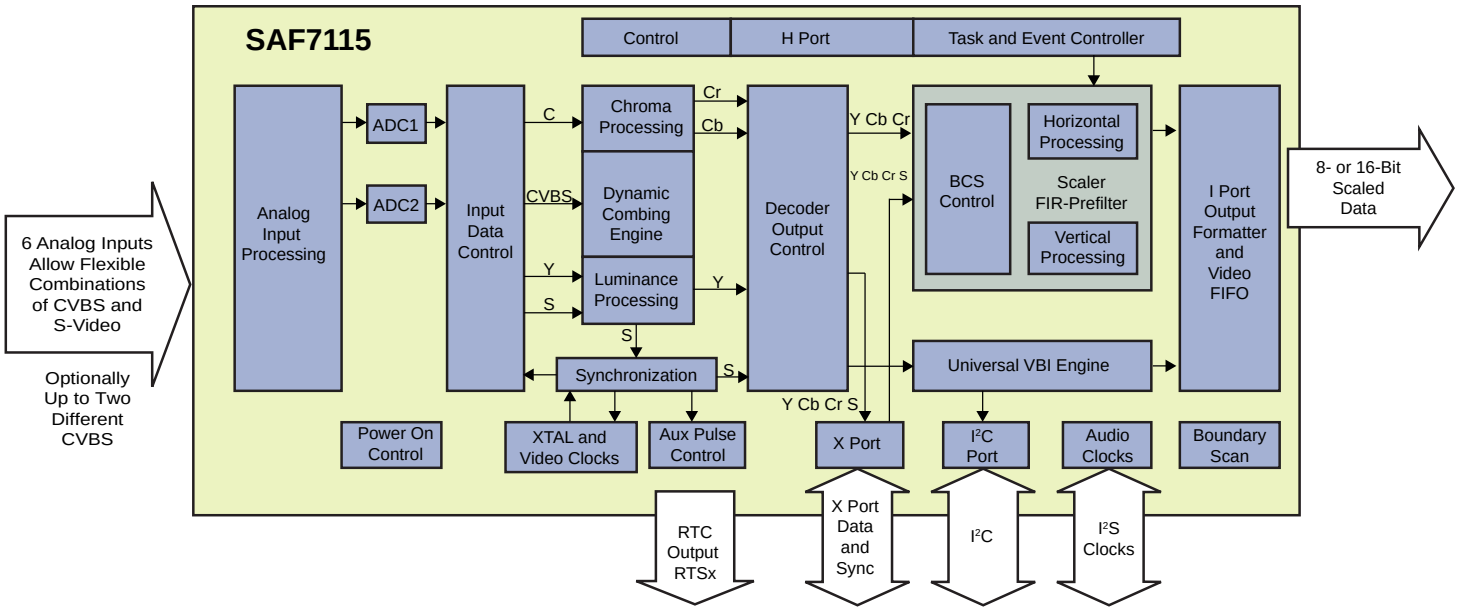
Multi-Standard Video Decoding, Scaling and Data Processing

When a video application demands high quality decoding, flexible scaling and robust data processing, the SAF7115 video decoder IC is the solution. Highly integrated and supporting worldwide video standards, the SAF7115 is designed to provide a digital video stream for any video application.

The SAF7115 features a two-channel analog pre-processing circuit, dual Clock Generation Circuits (CGCs), a digital multistandard decoder and a high performance pixel-accurate scaler. It accurately decodes all variations of PAL, SECAM and NTSC signals into standard ITU-601 compatible component color variations. It accepts CVBS, or S-Video (Y + C) from TV or VCR sources as analog inputs, including weak and distorted signals, as well as digital video via an integrated bi-directional expansion port (X Port). At its image port (I Port) the SAF7115 supports scaled 8- or 16-bit output data with auxiliary reference data for interfacing to graphics controllers.

Programmable on a line-by-line basis, to one of 15 data types, the versatile data slicer can output through the image port or via the industry-standard I²C-bus. The SAF7115 incorporates frame-locked audio clock generation, to ensure the same number of audio samples is always associated with a frame, or a set of fields. This prevents loss of synchronization between video and audio during capture or playback in multimedia storage systems. Furthermore the second integrated CGC can be optionally used to enhance this audio clock for an ultra-low jitter, frame-locked audio clock. Controlled via the I²C bus, the SAF7115 offers full write-read capability for all programming registers, at up to 400 kbits/s.



Trident Microsystems, Inc.
1170 Kifer Road
Sunnyvale, CA 94086 USA
408.962.5000 *phone*
408.991.9307 *fax*
www.tridentmicro.com

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