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TW2871

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Fisheye Distortion Correction LSI with Built-in Image Signal Processor, Motion Detector and DDR2 Controller

The TW2871 is a highly integrated fisheye distortion correction LSI with built-in Image Signal Processor, Motion detector and DDR2 Controller for both network and analog cameras. The TW2871 can pan, tilt and zoom without mechanical moving parts. The TW2871 supports one HD(1080i) digital output and four SD analog outputs.

Features

Host Interface

- 4-bit address and 8-bit parallel data interface
- 16 byte slave registers
- Supports two kinds of extended cycle access (external wait pin and register handshake mode)
- Auto address increment mode

Image Signal Processor

- Supports Bayer format and external ISP input
- Black level correction
- Gamma correction
- Lens shading correction
- Noise reduction
- Edge enhancement
- Wide dynamic range

Geometric Engine

- Digital Pan, Tilt and Zoom
- Up to 4 distortion corrected windows and one fisheye window
- Supports one HD digital output or 2 SD digital outputs
- Supports 4 SD analog outputs

DSP

- Harvard architecture (Instruction: 24-bit, Data: 24-bit)
- 24-bit multiplier, 56-bit ALU
- 144 instructions including SIMD and special purpose functions
- Branch predictor for high hit rate
- 56-bit accumulator file
- Power saving mode achieved by sleep instruction

Motion Detector

- Detection for Motion (MD), Blind (BD, such as covered by something on purpose)
- Large input size: 5M (2592x1944) or 8M (3264x2448) CIS
- Detection element 32x24, each mesh can be maskable
- Supports Motion detection speed control and manual strobe
- Fine adjustments by several thresholds programmed by internal registers

DDR2 Interface

- Compatible with JEDEC DDR2 specification (JESD79-2C)
- Speed bin from 250 to 667MHz at DDR
- Supports OCD calibration
- 64 Byte internal buffers, which follow MESI algorithm to utilize high data locality
- Supports data pre-fetch mechanism to maximize data throughput

OSD

- Embedded RAM based OSD
- Up to 8 OSD windows
- Up to 256 fonts

OSG

- External memory (DDR2) based OSG
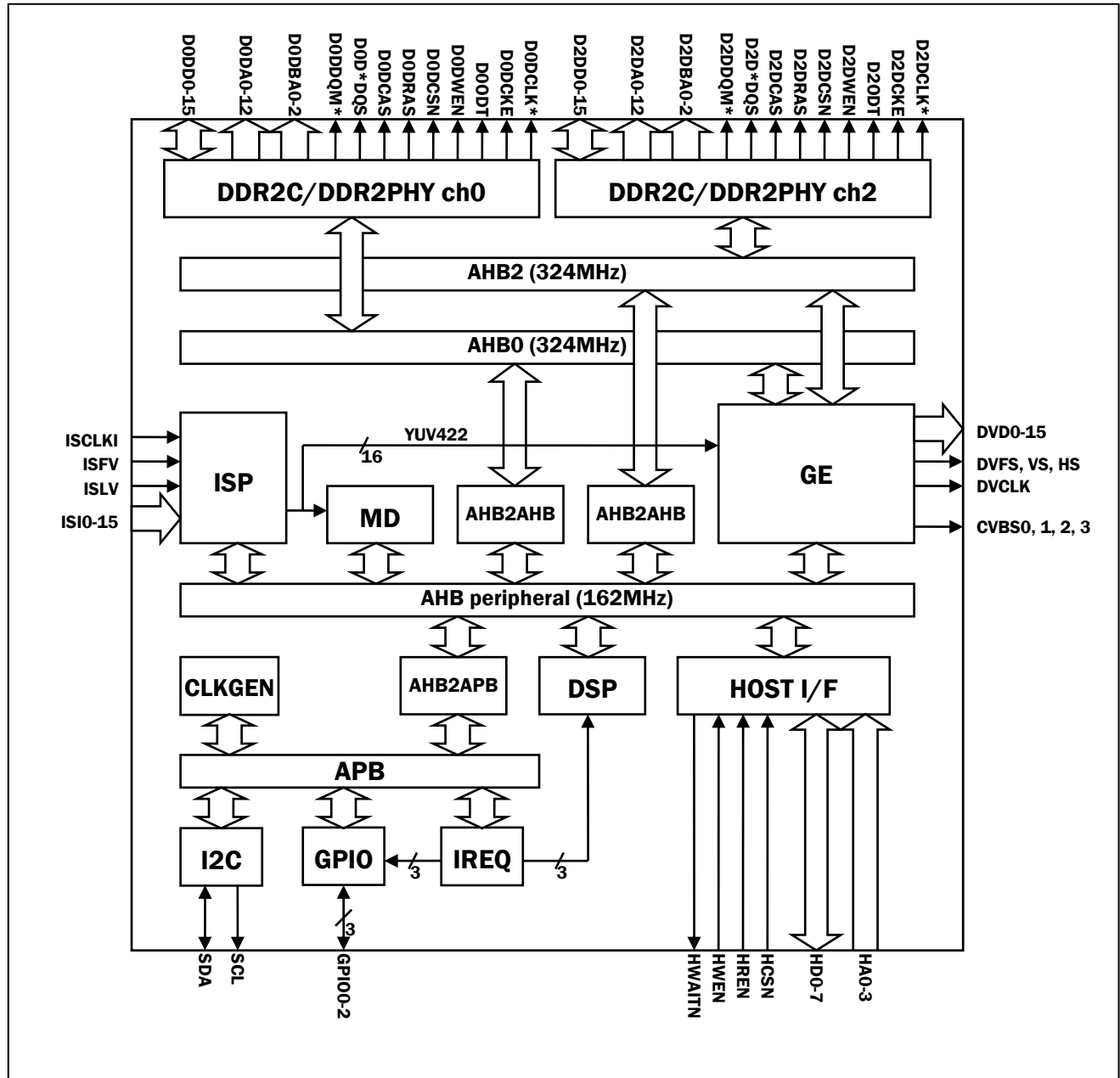- Up to 8 OSG windows
- Supports transparent color

Applications

- Security surveillance camera
- Drive monitor
- Drive recorder

Related Literature

- TW2871 Hardware Application Note
- TW2871 Software Application Note
- TW2871 Programmer Note
- TW2871 Command Manual

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Block Diagram

in the quality certifications found at http://www.intersil.com/en/support/qualandreliability.html

For information regarding Intersil Corporation and its products, see http://www.intersil.com