ISL79987, ISL79988

4-Channel Differential Input Video Decoder with MIPI-CSI2/BT.656 Output for Around View Applications

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The ISL79987 and ISL79988 integrate four, high-quality NTSC/PAL/SECAM video decoders that convert analog composite video signals to digital component YCbCr data for automotive applications. Each channel contains a 10-bit ADC that supports single-ended, differential, and pseudo differential composite video inputs, and proprietary clamp and gain controllers. The ISL79987 and ISL79988 utilizes a 4H-comb filter for separating luminance and chrominance to reduce cross noise artifacts, and proprietary clamp and gain controllers. Integrated short-to-battery and short-to-ground detection, advanced image enhancement capabilities such as the programmable Automatic Contrast Adjustment (ACA), and the MIPI-CSI2/ITU-R BT.656 output interface make the ISL79987 and ISL79988 an ideal solution for the demands of automotive around view applications.

Applications

- Automotive around view

Related Literature

- For a full list of related documents, visit our website
  - ISL79987, ISL79988 product pages

Features

Analog Video Decoder

- Software-selectable analog input control allows for combinations of single-ended CVBS and differential CVBS
- Integrated, four-video analog anti-aliasing filters and 10-bit CMOS ADCs with differential and single-ended inputs
- Fully programmable static gain or automatic gain control for the Y-channel
- Programmable white peak control for the Y-channel
- 4-H adaptive comb filter Y/C separation
- PAL delay line for color phase error correction
- Digital sub-carrier PLL for accurate color decoding
- Digital horizontal PLL for synchronization processing and pixel sampling
- Advanced synchronization processing and sync detection for handling non-standard and weak signal
- Automatic color control and color killer
- Chroma IF compensation
- Programmable output cropping

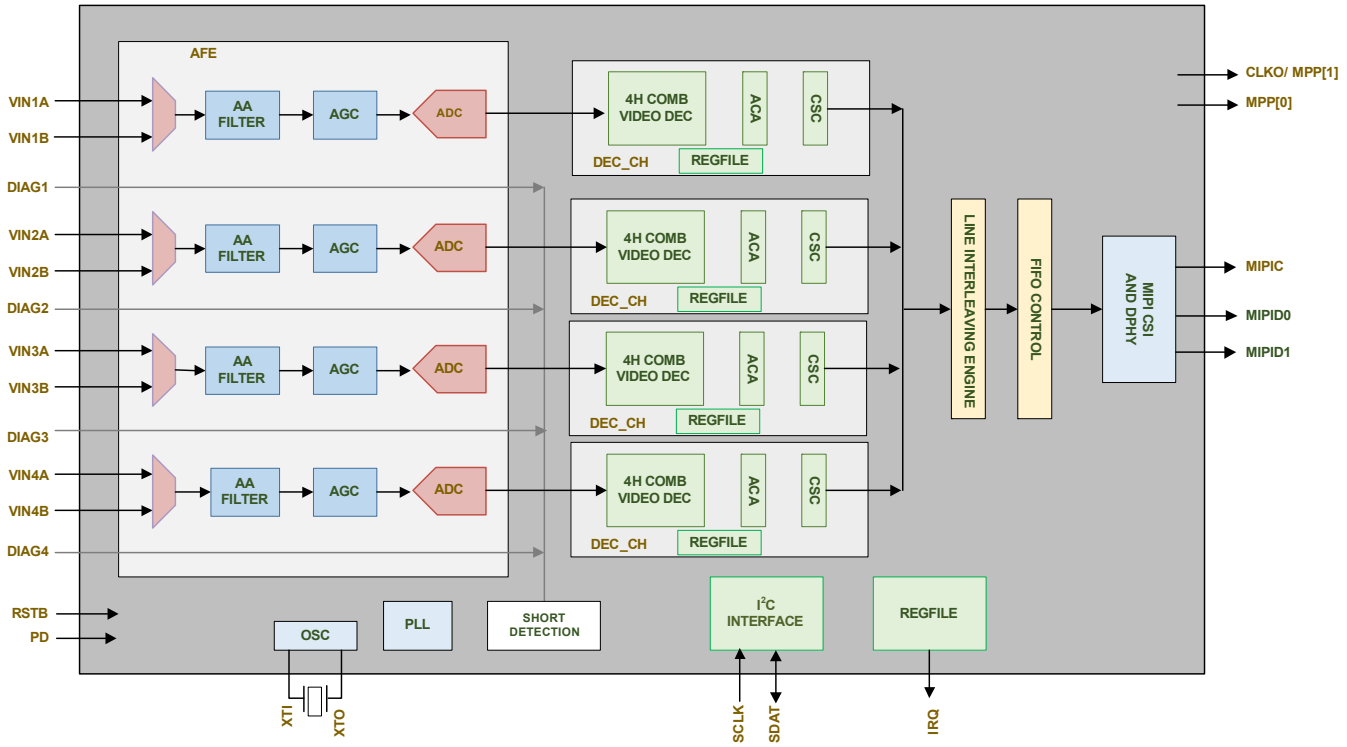

FIGURE 1. ISL79987 BLOCK DIAGRAM

Video Processing

- Automatic Contrast Adjustment (ACA)
- Programmable hue, brightness, saturation, contrast, and sharpness
- Image enhancement with peaking and CTI

MIPI Output

- MIPI CSI-2 version 1.1 compliant unidirectional output
- Standard virtual identification channel support
- Non-standard pseudo virtual channel support
- One or two data lanes
- YUV422 or RGB565 output format

Digital Output

- Supports standard ITU-R BT.656 format or time multiplexed output with 27/54/108MHz
- Output voltage 1.8V to 3.3V

Miscellaneous

- Low power consumption
- Power save and power-down mode
- Short-to-battery detection
- Short-to-ground detection
- Two wire MPU serial bus interface
- Supports real time control interface
- Single 27MHz crystal for all operations
- 1.2V/3.3V power supply
- 48 Ld QFN package
- ISL79987ARZ and ISL79988ARZ are AEC-Q100 qualified

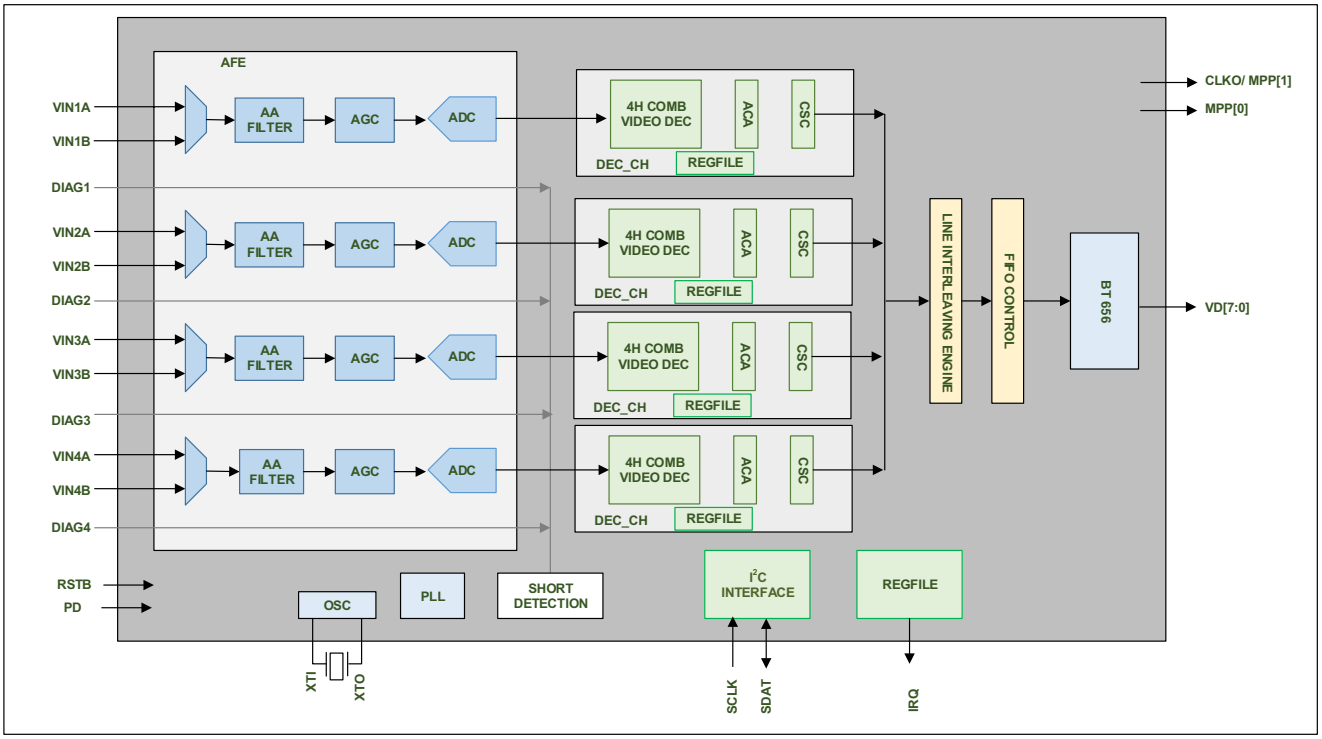

FIGURE 2. ISL79988 BLOCK DIAGRAM