

# 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. The ISL79987 and ISL79988 use 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 device 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 subcarrier 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 signals
- · Automatic color control and color killer
- · Chroma IF compensation
- · Programmable output cropping

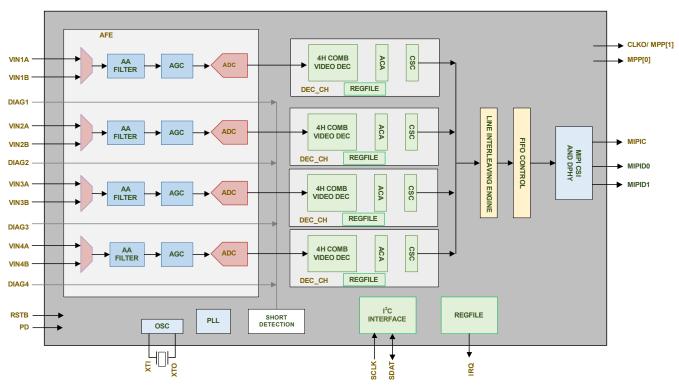


FIGURE 1. ISL79987 BLOCK DIAGRAM

## **Features (continued)**

#### **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

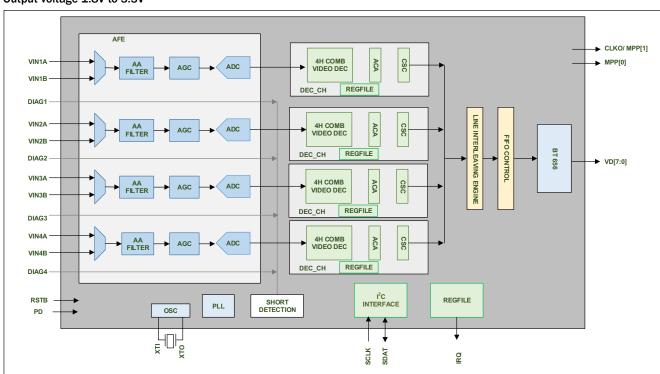


FIGURE 2. ISL79988 BLOCK DIAGRAM

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