

RAA279974

4-Channel Automotive High Definition Link Decoder

The [RAA279974](#) is a 4-channel high-definition analog video decoder designed for automotive applications. It supports single-ended, differential, and pseudo-differential analog composite high-definition AHL video inputs. Four high-quality 10-bit video ADCs convert the analog signals to digital, and a proprietary AHL adaptive comb filter separates the Luma and Chroma data to output a YUV422 digital video signal over a MIPI-CSI2 interface. The RAA279974 also supports a single traditional NTSC standard definition input, and it has a BT.656 secondary output port that can output the video from any of the four inputs. In addition, the RAA279974 has integrated short-to-battery and short-to-ground detection and image enhancement capabilities, making it an ideal solution for demanding high-resolution automotive camera applications. This device works in conjunction with the RAA279971 AHL analog video encoder, which sits in the camera module.

Applications

- Automotive multi-camera systems such as Surround View

Features

Four AHL Video Decoders

- Software-selectable analog input control allows for combinations of single-ended and differential AHL/CVBS
- Built-in programmable analog anti-alias filter
- 10-bit ADCs and analog clamping circuit with up to 150MHz sampling frequency
- Fully programmable static gain or automatic gain control
- Programmable white peak control for the Y channel
- 4-H adaptive comb filter Y/C separation
- Digital sub-carrier PLL for accurate color decoding
- Digital horizontal PLL for synchronization processing and pixel sampling
- Automatic color control and color killer
- Programmable output cropping

Video Processing

- Programmable hue, brightness, saturation, contrast, and sharpness.
- Image enhancement with peaking and CTI
- Black/White stretch

MIPI Output

- MIPI 1.1 compliant unidirectional output format
- YUV 422 output format
- Up to 1.2Gbps
- 1-lane to 4-lane

Pseudo BT.656 Output

- 8-bit parallel output with embedded sync
- Separate HREF and VREF
- Simultaneous output with MIPI

Miscellaneous

- Related devices include the [RAA279971](#) and [RAA279972](#)
- Power-save and power-down mode
- Two-wire host serial bus interface
- Single 27MHz crystal for all operations
- 1.8 ~ 3.3V I/O operation
- 1.2V/3.3V power supply
- 68 Ld SCQFN
- [AEC-Q100](#) qualified

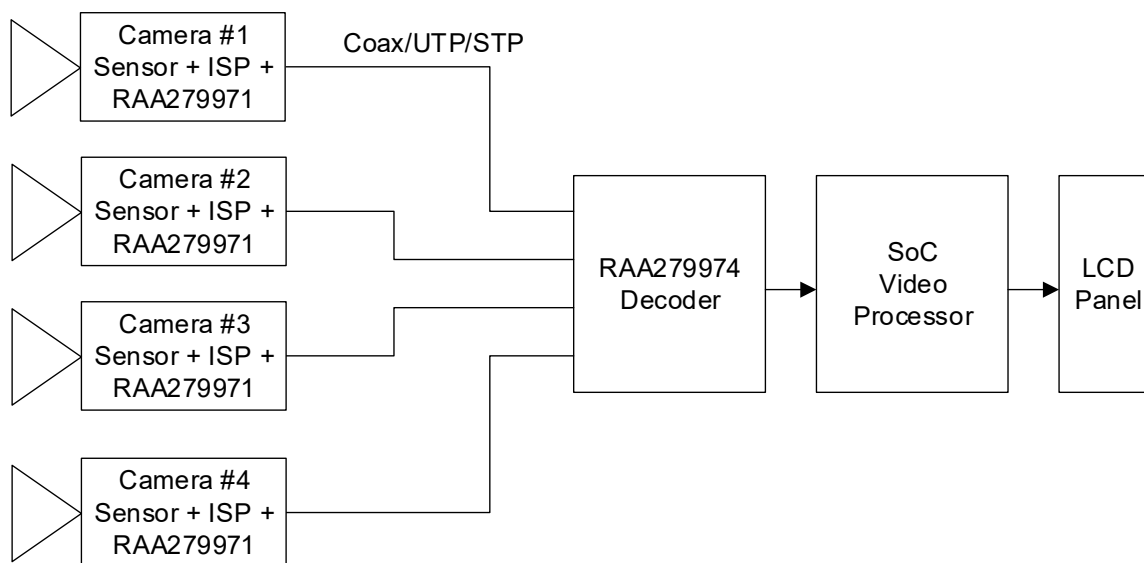


Figure 1. Typical Application Diagram

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