

RAA279972

Automotive High Definition Link Decoder

The [RAA279972](#) is a high-definition analog video decoder designed for automotive applications. It supports single-ended, differential, and pseudo-differential analog composite high-definition AHL video inputs. The high-quality 10-bit video ADC converts the signal to digital, and a proprietary AHL adaptive comb filter separates Luma and Chroma data to output a YUV422 digital video signal over a two-lane MIPI-CSI2 interface, DVP, or a BT.656 parallel interface. The RAA279972 has integrated short-to-battery and short-to-ground detection and image enhancement features, making it an ideal solution for demanding high-resolution automotive camera applications. When paired with the [RAA279971](#) encoder, an analog video link is established over a single wire pair.

Applications

- Automotive backup camera display

Features

- AHL Video Decoder
  - 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 subcarrier 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 1.0Gbps, 1-2 lane
- Pseudo BT.656 Output
  - 8-bit parallel output with embedded sync
  - Separate HREF and VREF
  - Simultaneous output with MIPI
- Miscellaneous
  - Power save and Power-down mode
  - Short-to-battery, Short-to-ground detection test
  - Two-wire host serial bus interface
  - Single 27MHz crystal for all operations
  - 1.8 ~ 3.3V I/O operation
  - 1.8V/3.3V power supply
  - Configurable GPIOs
  - Bidirectional digital control channel over same 2 wires
  - 48 Ld QFN
  - [AEC-Q100](#) qualified

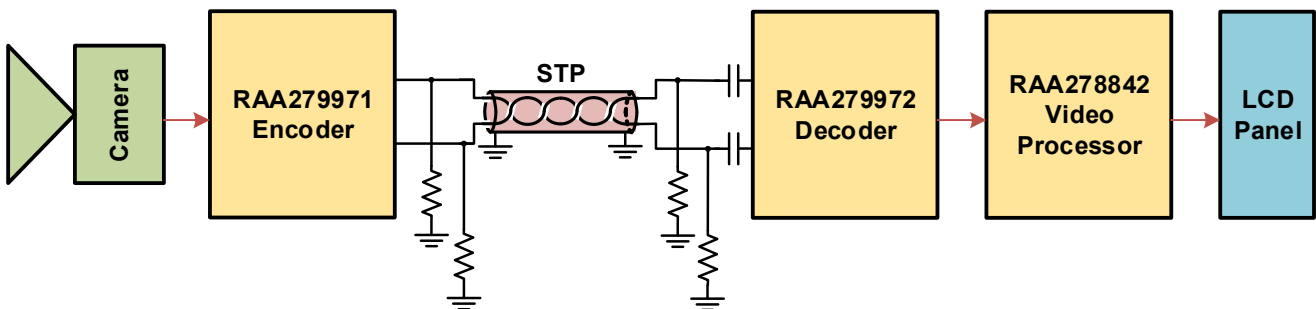


Figure 1. Typical Application Diagram

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