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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