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
- **Video Processing**
  - 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
- **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**

[Diagram showing the connection of Camera to RAA279971 Encoder, STP, RAA279972 Decoder, RAA278842 Video Processor, and LCD Panel]
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