



Car Camera Bus Receiver with MIPI CSI-2 or Parallel Video Output

Data Sheet

ADV7382/ADV7383

FEATURES

Car camera bus (C²B) receiver capable of receiving video data and bidirectional control data over a differential pair or single-ended cable

The ADV7382 features a mobile industry processor interface (MIPI) camera serial interface-2 (CSI-2) transmitter supporting 2-lane operation at up to 1 Gbps per lane
1-lane operation at up to 1 Gbps

The ADV7383 parallel video output formats supported include 8-bit and 10-bit interleaved Y/C data up to 148.5 MHz
2 × 8-bit separate Y/C data up to 74.25 MHz
Embedded (start of active video (SAV)/end of active video (EAV) codes), separate horizontal sync/vertical sync/data enable (HS/VS/DE), or image signal processor (ISP) line/frame valid type external timing signals

HD video formats supported up to 2 megapixels at 30 Hz or 1 megapixel at 60 Hz

Bidirectional control channel embedded in the C²B link for control and status data between the C²B receiver and the C²B transmitter

Enables remote configuration of the C²B transmitter

Bidirectional GPIO with either local or remote interfacing possibilities

On-chip high resolution, high speed analog-to-digital converter (ADC), buffer and anti-aliasing filter blocks for video and control channel path

Transmission of frame count data from ISP to enable the back-end electronic camera unit (ECU) or the head unit (HU) to detect stuck or skipped frames

Video test pattern generator for simplified system testing

Cable equalizer capable of compensating for cable and connector insertion loss, equivalent to a 30 m twisted pair cable

On-chip echo cancellation scheme to prevent visual impact caused by impedance mismatch between cables and connectors

Protection from and diagnosis of high voltages encountered during short to battery fault condition

Tested to industry standards for automotive electromagnetic compatibility (EMC), electromagnetic interference (EMI), and electrostatic discharge (ESD) robustness

General

2-wire serial interface (I²C compatible) for configuration of the C²B receiver and for communication with a remote C²B transmitter and image signal processors

Connected I²C master must support clock stretching to support remote I²C communication over the C²B link
−40°C to +105°C temperature range

48-lead lead frame chip scale package (LFCSP)

AEC-Q100 qualified for automotive applications

APPLICATIONS

Automotive infotainment HUs

Automotive camera ECUs

SIMPLIFIED FUNCTIONAL BLOCK DIAGRAM

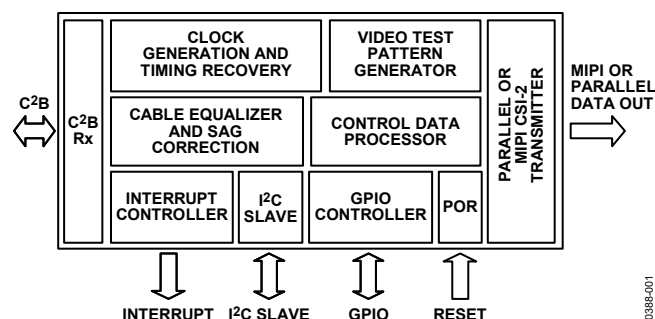


Figure 1.

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Complete technical specifications are available for the C²B transmitters and receivers. Contact c2b_web_support@analog.com to complete the nondisclosure agreement (NDA) required to receive additional product information.

C²B has patents pending.



Rev. Sp0

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NOTES

I²C refers to a communications protocol originally developed by Philips Semiconductors (now NXP Semiconductors).