



# THCV241-Q

SerDes transmitter with bi-directional transceiver

## General Description

THCV241-Q is designed to support 1080p60 2Mpixel uncompressed video data over 15m 100ohm differential STP or single-end 50ohm Coaxial cable with 4 in-line connectors between camera and processor by V-by-One<sup>®</sup> HS.

THCV241-Q supports a MIPI CSI-2. Each CSI-2 data lane can transmit up to 1.2Gbps/lane. Virtual channel is supported.

One high-speed V-by-One<sup>®</sup> HS lane can transmit up to 1080p60fps. The maximum serial data rate is 4Gbps/lane. 2nd output lane supports HDR large amount of data or data copy-and-distribution experience.

THCV241-Q is capable to control and monitor camera module from remote ECU via GPIO, UART or 1Mbps 2-wire serial interface.

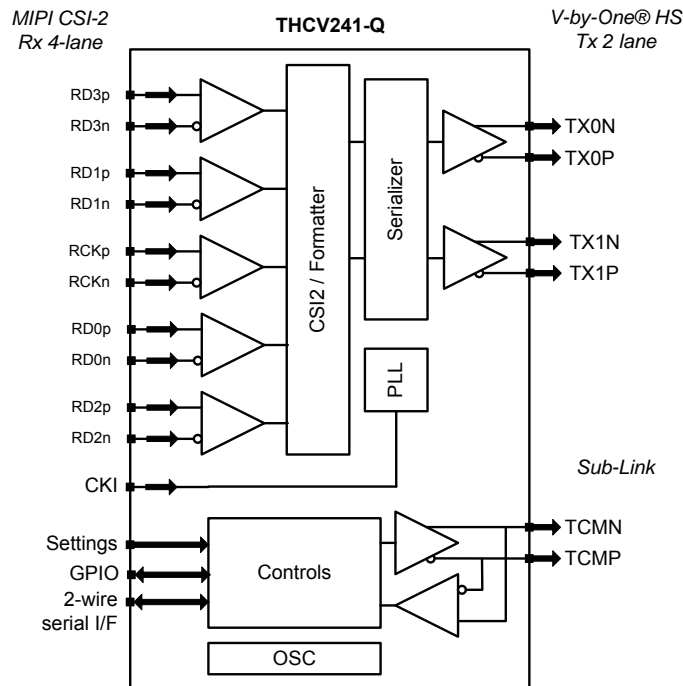
Several fault and error detection function including CRC provides vehicle hardware functional safety design.

## Features

- MIPI CSI-2 with 1,2 or 4-lane input
- MIPI D-PHY supports 80Mbps~1.2Gbps
- MIPI Virtual channel supported
- Video formats: RAW8/10/12/14/16/20, YUV422/420, RGB888/666/565, JPEG, User-defined generic 8-bit
- V-by-One<sup>®</sup> HS 400Mbps~4Gbps x2lane
- V-by-One<sup>®</sup> HS standard version1.5
- Reference clock input CKI range 10~40MHz shareable with video source CMOS sensor
- Wide range IO voltage from 1.7V to 3.6V
- Additional spread spectrum to reduce EMI
- 2-wire serial interface 1Mbps bridge function
- Remote GPIO/UART control and monitoring
- Error detection including CRC and notification
- QFN40 5x5mm 0.4mm pitch Exp-pad package
- AEC-Q100 Grade 2 (-40 to 105degC)

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## Block Diagram



## Notices and Requests

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5. Product Application
  - 5.1 Application of this product is intended for and limited to the following applications: audio-video device, office automation device, communication device, consumer electronics, smartphone, feature phone, and amusement machine device. This product must not be used for applications that require extremely high-reliability/safety such as aerospace device, traffic device, transportation device, nuclear power control device, combustion chamber device, medical device related to critical care, or any kind of safety device.
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7. Please note that this product is not designed to be radiation-proof.
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10. The product or peripheral parts may be damaged by a surge in voltage over the absolute maximum ratings or malfunction, if pins of the product are shorted by such as foreign substance. The damages may cause a smoking and ignition. Therefore, you are encouraged to implement safety measures by adding protection devices, such as fuses.

## ***THine Electronics, Inc.***

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