



THCV241A-P

SerDes transmitter with bi-directional transceiver

1 General Description

THCV241A-P is designed to support 8Mpixel/4K 60fps RAW10 uncompressed video data over long length 100ohm differential STP or single-end 50ohm Coaxial cable with several in-line connectors between camera and processor by V-by-One® HS.

THCV241A-P supports a MIPI CSI-2. Each CSI-2 data lane can transmit up to 1.5Gbps/lane. Virtual channel is supported.

One high-speed V-by-One® 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.

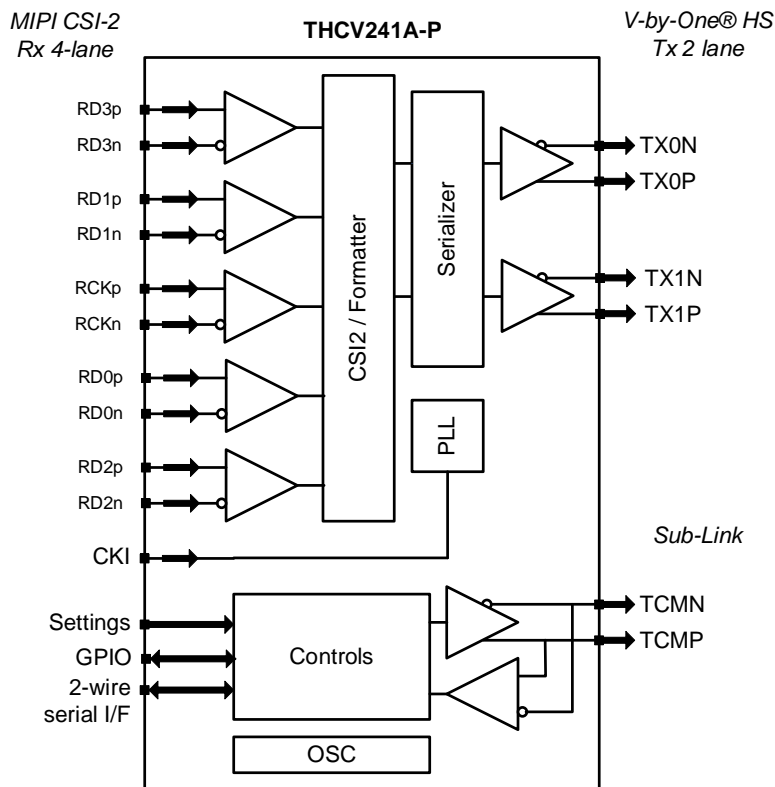
THCV241A-P is capable to control and monitor camera module from remote ECU via GPIO, UART or 1Mbps 2-wire serial interface.

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

2 Features

- MIPI CSI-2 with 1,2 or 4-lane input
- MIPI D-PHY supports 80Mbps~1.5Gbps
- 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® HS 400Mbps~4Gbps x2lane
- V-by-One® 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

3 Block Diagram



4 Notices and Requests

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 2. The circuit diagrams described in this material are examples of the application which may not always apply to the customer's design. THine Electronics, Inc. ("THine") is not responsible for possible errors and omissions in this material. Please note even if errors or omissions should be found in this material, THine may not be able to correct them immediately.
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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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6. Despite our utmost efforts to improve the quality and reliability of the product, faults will occur with a certain small probability, which is inevitable to a semi-conductor product. Therefore, you are encouraged to have sufficiently redundant or error preventive design applied to the use of the product so as not to have our product cause any social or public damage.
 7. Please note that this product is not designed to be radiation-proof.
 8. Testing and other quality control techniques are used to this product to the extent THine deems necessary to support warranty for performance of this product. Except where mandated by applicable law or deemed necessary by THine based on the user's request, testing of all functions and performance of the product is not necessarily performed.
 9. Customers are asked, if required, to judge by themselves if this product falls under the category of strategic goods under the Foreign Exchange and Foreign Trade Act.
 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.

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