Rugged Vision Platform (RVP) with Texas Instruments Automotive Processor

SPEED DEVELOPMENT OF VISION-BASED SYSTEMS

The DesignCore™ Advanced Driver Assistance Systems (ADAS) Development Kit shortens development time of vision-based systems for automotive, transportation, and materials handling applications.

The ADAS Development Kit is built on the DesignCore™ Rugged Vision Platform (RVP) family of reference design modules. The reference design modules contain advanced vision processors from Texas Instruments and run D3 Engineering’s advanced vision software frameworks.

READY TO USE

The ADAS Development Kit is ready to use right out of the box. It includes an RVP reference design module with TI processor (either TDA3x, TDA2Eco, or TDA2x), along with rugged camera modules, display, cables, software, and calibration tools.

Once verified on the wheeled test platform provided, the kit can be easily de-mounted and installed on your test vehicle.

FULL SUPPORT PACKAGE

The base support package includes optimized and verified hardware and software, providing a known-good launch point for design and development.

A single-use sublicense is included in the kit for all TI and D3 firmware and application libraries as well as frameworks that allow immediate development of ADAS applications. Software updates and access to releases are included for one year.

SURROUND VIEW USE CASE ON ADAS DEVELOPMENT KIT

FEATURES

D3 Rugged Vision Platform (RVP) with TI Automotive Processor

- Delivered running Surround View Application on wheeled test platform (can be easily de-mounted)
- Four FPD-Link III camera modules
- HD video display
- FPD-Link, CAN, Isolated IO, Gigabit Ethernet, Serial/USB, uSD Card, and JTAG connectivity interfaces
- Automotive 12VDC power
- Compact, rugged packaging for on-vehicle testing
- Ready for rapid development to your requirements

APPLICATIONS

- Advanced Driver Assistance Systems (ADAS)
- Front camera
- Surround View
- Surround View + car black box (CarBB)
- Smart rear camera
- Radar
- Driver monitoring
- Pedestrian detection
- Traffic sign recognition
- Traffic light detection
- Lane detection
- Camera monitoring systems (CMS)/mirror replacement
- Automotive In-Vehicle Infotainment and Telematics
- In-vehicle displays
- 3D navigation
- High-definition multimedia
- Autonomous Shipping and Transportation Systems
- Materials Handling Systems
- Video Analytics
- Sparse/dense optical flow
- Edge detection
- Structure from motion
- Forward collision warning
- Object classification
**SPECIFICATIONS**

<table>
<thead>
<tr>
<th></th>
<th>Minimum</th>
<th>Nominal</th>
<th>Maximum</th>
<th>Units</th>
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<tbody>
<tr>
<td><strong>SYSTEM INPUT CHARACTERISTICS</strong></td>
<td></td>
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<td></td>
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<tr>
<td>Input Voltage</td>
<td>8</td>
<td>12</td>
<td>20</td>
<td>Volts DC</td>
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<tr>
<td>Input Voltage Protection</td>
<td>40</td>
<td>60’</td>
<td></td>
<td>Volts DC</td>
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<tr>
<td>Input Reverse Voltage Protection</td>
<td></td>
<td>–20</td>
<td></td>
<td>Volts DC</td>
</tr>
<tr>
<td>Input Current (no cameras)</td>
<td>0.22</td>
<td>0.34</td>
<td></td>
<td>Amps</td>
</tr>
<tr>
<td>Input Current (cameras)</td>
<td></td>
<td>0.60</td>
<td></td>
<td>Amps</td>
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</tbody>
</table>

1 Time limited, see component rating.

<table>
<thead>
<tr>
<th></th>
<th>TDA3x (2GB DDR3)</th>
<th>TDA2Eco or J6Eco (2GB DDR3)</th>
<th>TDA2x or J6 (4GB DDR3)</th>
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<tbody>
<tr>
<td><strong>PROCESSOR</strong></td>
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<tr>
<td>Memory</td>
<td>512MB NOR, 512KB FRAM</td>
<td>8GB eMMC, 512MB NOR, 512KB FRAM</td>
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<tr>
<td>Camera Interface</td>
<td>4 × FPD Link III (CSI2)</td>
<td>4 × FPD Link III (CSI2)</td>
<td>8 × FPD Link III (Parallel)</td>
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<tr>
<td>Cameras</td>
<td>D3RCM line of Rugged Camera Modules. Other sensors integrated upon request.</td>
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<tr>
<td>Connectivity</td>
<td>UART, CAN, ISO GPIO, Gbit Ethernet, uSD card, JTAG, QSPI, USB (J6/J6Eco), SATA (J6/J6Eco)</td>
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<tr>
<td>Display</td>
<td>FPD Link III and HDMI</td>
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<td>Power</td>
<td>Automotive 12VDC</td>
<td></td>
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<tr>
<td>Environment</td>
<td>Rugged enclosure with mount points</td>
<td>Operating temperature –40C to 85C (105C option)</td>
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<tr>
<td>Firmware</td>
<td>TI Vision SDK, TI Processor SDK, and D3 application framework</td>
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*For additional details please refer to the DesignCore™ RVP-TDA3x, RVP-TDA2Eco, RVP-TDA2x, and D3RCM data sheets.*

**ACCELERATE TIME-TO-MARKET**

D3 Engineering will leverage our industry-proven DesignCore™ Platforms and Reference Designs to meet your unique product requirements, while minimizing technical- and schedule-risk for your development program.

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