

DESIGNCORE[®] RVP-TDA2Px DEVELOPMENT KIT



A rugged Development Kit in a finalized product form-factor lets you evaluate Advanced Driver Assistance System (ADAS) technology under realistic on-vehicle conditions.

Rugged Vision Platform (RVP) with TI TDA2Px Automotive Processor

SPEED DEVELOPMENT OF AUTONOMOUS VISION-BASED NAVIGATION SYSTEMS

The DesignCore[®] RVP-TDA2Px Development Kit accelerates your development of autonomous systems and ADAS products for automotive, transportation, and materials-handling applications.

The Development Kit is based on advanced automotive processors from Texas Instruments and D3's advanced vision software framework. It enables synchronous acquisition of eight 4Gbps FPD-Link[™] III SerDes capture streams with real time processing and analytics.

Multiple displays can be connected to the RVP using the 1080P 60 FPS capable FPD-Link[™] III display ports. The system is designed to support IP64 environmental ratings with a path to IP67.

Developed using a design-for-manufacture (DFM) process, the Development Kit has an optimized layout and BOM. With D3's design services, this Development Kit lets you concentrate on your value-add and get to market faster.

FEATURES

Texas Instruments[®] SoC processor options

- TDA2Px SoC processor with internal ISP (default)
- DRA77Px SoC processor (option)

Peripherals for default SoC (may vary with SoC option)

- FPD-Link[™] III video inputs (8)
- HDMI and FPD-Link[™] III video display outputs
- Ethernet, CAN bus, USB 3.0, and serial connectivity

Compact, rugged packaging for on-vehicle testing

- Production-intent design
- Ready for rapid development with D3 Engineering design services

APPLICATIONS

Advanced Driver Assistance Systems (ADAS)

- Multi-camera/multi-display mirror replacement systems
- 3D surround view + car black box (CarBB)
- Front or rear camera with analytics
- Driver monitoring
- Stereo vision
- Sensor fusion
- Radar/ultrasonic/lidar
- Deep learning

In-vehicle infotainment and telematics

- In-vehicle displays
- 3D navigation
- High-definition multimedia

Autonomous shipping and transportation systems

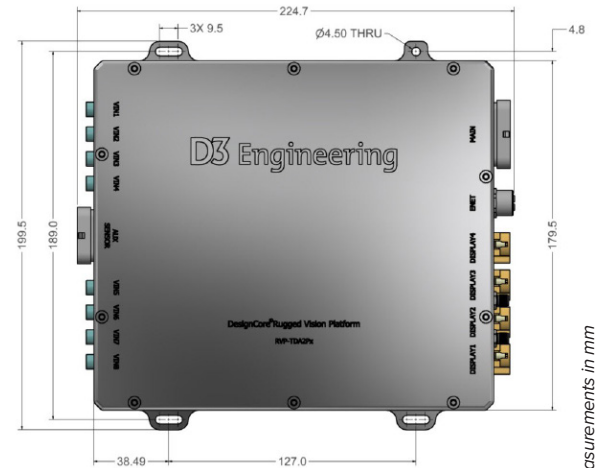
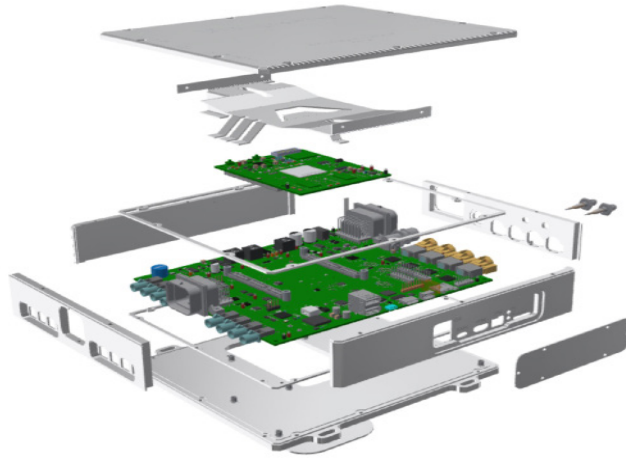
Autonomous guided vehicles (AGV)

- Collaborative robotics
- Industrial vehicle systems

SPECIFICATIONS

TDA2Px /J6P SoC

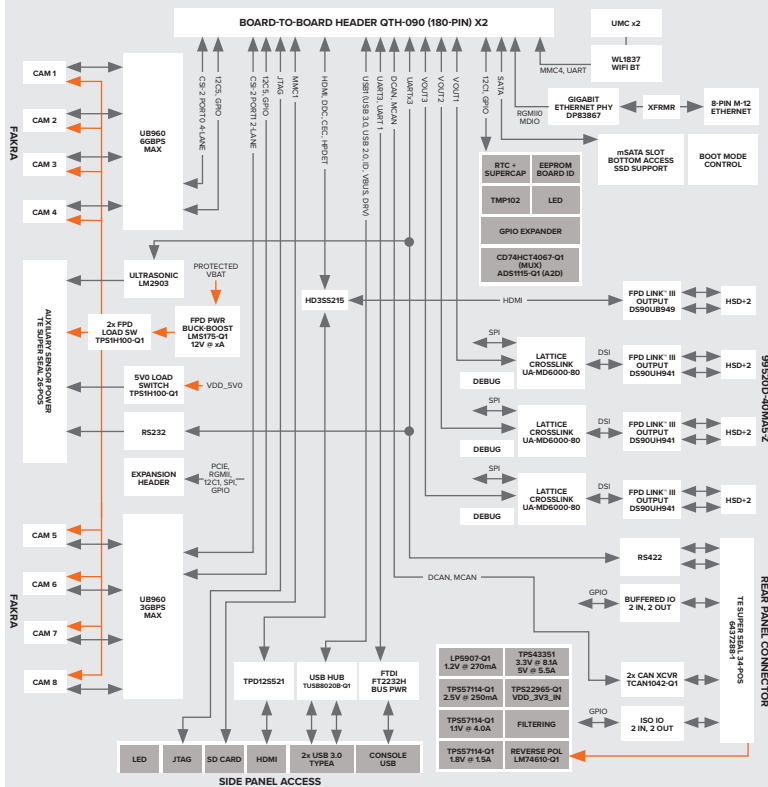
DDR	4GB + ECC
eMMC	16GB
QSPI	512Mbit
FRAM (EEPROM)	512Kbit
Ethernet Gbit (DP83867)	1
Video Ports Capture	8 FPD-Link [™] III (MIPI CSI-2)
Display	1 HDMI\FPD-Link [™] III and 3 FPD-Link [™] III
CAN	1 CAN FD, 1 DCAN
UART	2 through USB Bridge, 1 RS232, 1 RS422
uSD Card	1 external
External IO	Isolated: 2in/2out 5V tolerant buffered: 2in/2out
USB	2 USB 3.0/2.0
SATA	1 internal mSATA slot
WiFi and BT	WL1837
A15 Core(s)	2
DSP Core(s)	2
IPU/M4 Core(s)	2 with 2 CPUs
EVE Core(s)	2
ISS Core(s)	1
SGX 544 3D Accelerator(s)	2
GC320 2D Accelerator(s)	1
Ambient Temperature	-40C to 85C (enclosure)
Component Temperature	-40C to 85C (eMMC limited)
Power	9V to 40VDC with reverse bat
BSP	D3 software frameworks/ Linux + TI BIOS Vision SDK
Expansion	I2C, USB, PCIe, RGMII, SPI
JTAG	60 pin and 14 pin with adapter
Enclosure	Rugged aluminum
Access Panel	14 pin JTAG, USB/UART, uSD card, HDMI, USB 3.0/2.0



Measurements in mm

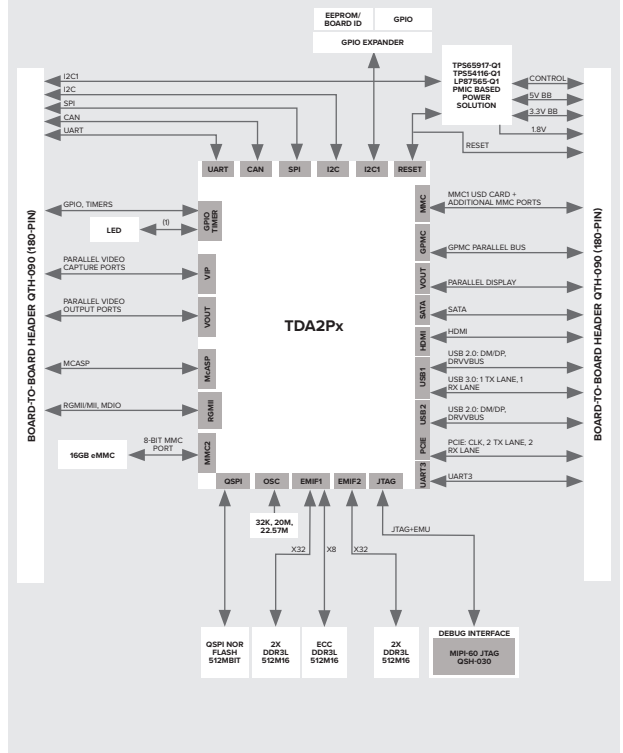
The RVP Development Kit features an optimized SOM board with advanced vision processor, firmware, and a customizable baseboard with IO, power, expansion interface, and more. We use the Development Kit to rapidly develop your Engineering Verification Test (EVT) unit or A-sample.

TDA2Px BASEBOARD



TDA2Px SOM

Signals going to baseboard not necessarily connected to board-to-board connectors as shown. Processor breakout will dictate which peripherals are on which connector. Peripheral availability is subject to application's pin mux. All processor signals are brought to the board-to-board interface.



ACCELERATE TIME TO MARKET WITH D3

This kit enables rapid evaluation of vision technology in the field. Contact us for cameras, sensors, and customization. The production-intent design accelerates further product development with D3 Engineering design services.

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