RZBOARD V2L

TRIA AN AVNET COMPANY

RZBoard V2L is a power efficient, vision-AI accelerated development board in a popular single board computer format with well supported expansion interfaces. Based on the Renesas RZ/V2L processor, this platform is ideal for development of cost-efficient vision-AI and a range of energy-efficient edge AI applications. It's RZ/V2L processor has two 1.2GHz Arm® Cortex®-A55 cores plus a 200MHz Cortex-M33 core, a MALI 3D GPU and Image Scaling Unit. This processor SoC further differentiates itself with an on-chip DRP-AI accelerator plus H.264 video (1920 x 1080) encode/decode function, making it ideal for implementing cost-effective embedded-vision applications.

RZBoard V2L is engineered in a compact Raspberry Pi form-factor with a versatile set of expansion interfaces, including Gigabit Ethernet, 801.11ac Wi-Fi and Bluetooth 5, two USB 2.0 hosts and a USB 2.0 OTG interface, MIPI DSI and CSI camera interfaces, CANFD interface, Pi-HAT compatible 40-pin expansion header and Click Shuttle expansion header.

The board supports analog audio applications via it's audio codec and stereo headphone jack. It also provides five 12bit ADC inputs for interfacing with analog sensors. 5V input power is sourced via a USB-C connector and managed via a single-chip Renesas RAA215300 PMIC device.

Onboard memory includes 2GB DDR4, 32GB eMMC and 16MB QSPI flash memory, plus microSD slot for removable media.

Software enablement includes CIP Kernel based Linux BSP (maintained for 10 years+) plus reference designs that highlight efficient vision AI implementations using the DRP-AI core. Onboard 10-pin JTAG/SWD mini-header and 4-pin UART header enable the use of an external debugger and USB-serial cable.

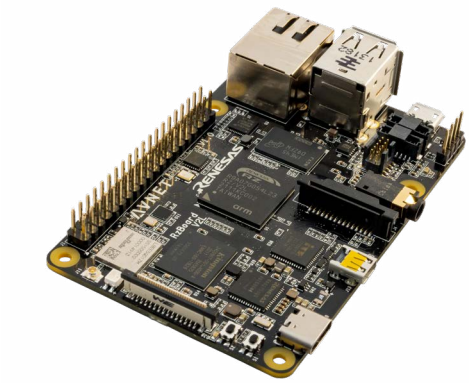
Available accessory options include a MIPI 7-inch display, MIPI CSI camera and 5V/3A USB Type C power supply.

Kit includes

- RzBoard V2L Single Board Computer
- Dual-band U.FL connected ext. antenna
- Quick Start Instruction Card

Target apps

- Vision Accelerated Artificial Intelligence
- Edge-AI Applications
- Machine Learning
- Entry Access-Control Systems
- Inventory and Asset Monitoring
- Surveillance Camera with Recognition
- Smart Home Appliances with AI
- Industrial Robotics



Features

Renesas RZ/V2L Processor

- 2x Arm Cortex A55 (1.2 GHz)
- 1x Arm Cortex M33 (200 MHz)
- 1x Arm MALI G31 3D-GPU (500MHz)
- DRP-AI Accelerator
- DRP Simple ISP (full HD)
- H.264 Hardware Video Enc/Dec (full HD)

Memory

- 2GB DDR4 (16-bit with ECC)
- 32GB eMMC memory
- Micro SD removable storage
- 16MB QSPI NOR Flash

Communications and User Interface

- 1G Ethernet port
- 801.11ac Wi-Fi and BT5
- U.FL Connected External Antenna
- 2x USB 2.0 Host and 1x OTG USB 2.0
- CANFD Interface and Transceiver
- MIPI DSI and HDMI Display (selectable)
- MIPI-CSI Camera Interface
- Audio Codec, Stereo Jack with Mic Input
- 1x User RGB LED and 2x Button Switches

Expansion, Power, Mechanical

- 40-pin Pi-HAT expansion header
- 16-pin MikroE Click Shuttle header
- 8-pin WTB Header (ADC in, CAN-FD)
- 8-pin WTB Header (UART, USB, CAN-FD)
- 10-pin JTAG/SWD debugger header
- USB-Type C connector 5V power input
- Operating Temperature: 0~70°C
- 85mm x 56mm form factor

For more information, visit: avnet.me/rzboard

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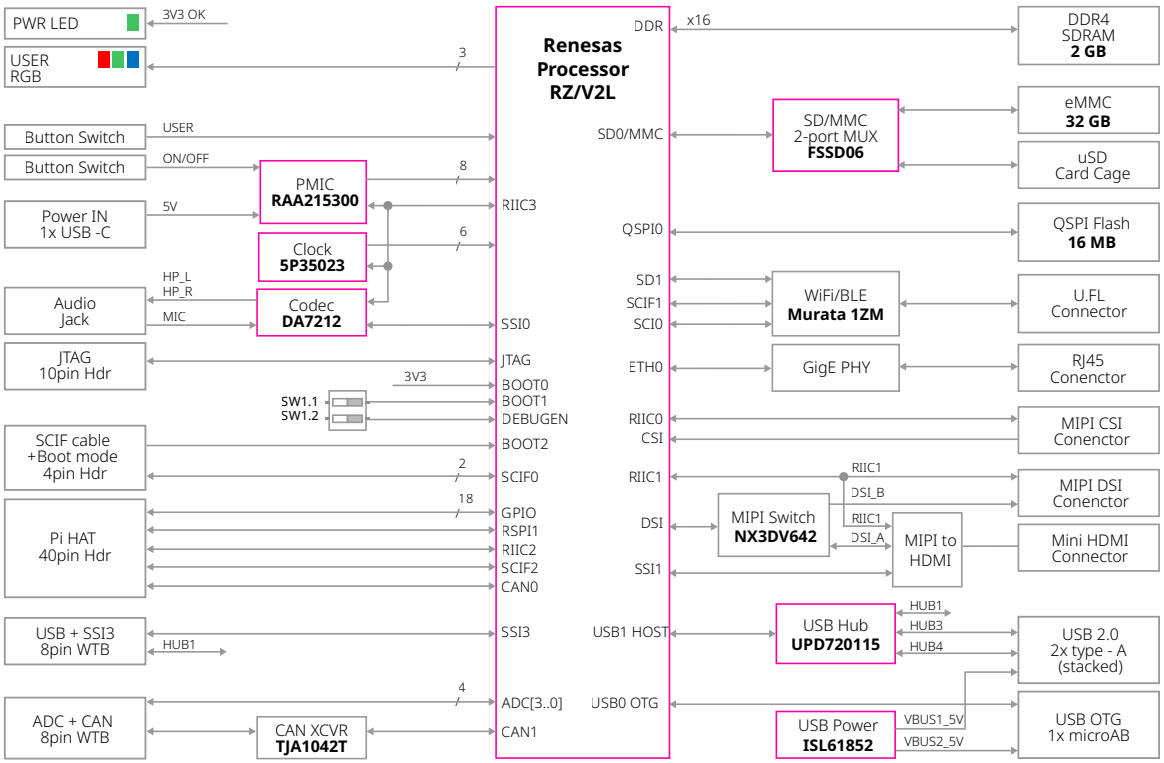
Block diagram



Featured manufacturers

Amphenol dialog SEMICONDUCTOR micron muRata RENESAS ISSI ECS INC INTERNATIONAL

Parts

Part number	Description	For More Information
AES-RZB-V2L-SK-G	RZBoard V2L	avnet.me/rzboard

Related parts

Part number	Description	For More Information
AES-ACC-MAAX-PWRUL	UL Certified 5V/3A USB Type-C Power Supply	avnet.me/maax-pwrul

Regions available for purchase: EMA, EMEA, Japan

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Worldwide Distributor: Avnet
Online sales: Farnell

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