D331 Carrier Board [Preliminary]

NVIDIA® Jetson Thor™

For Humanoid/VSS/AMR Applications

Overview

AVerMedia's carrier board D331 equips powerful NVIDIA Jetson T5000™/ Jetson T4000™. This efficient system-on-module (SoM) opens new worlds of embedded IoT applications with full analytic capabilities.

D331 is designed for the industry applications with spatial concern and feature a rich assortment of I/O ports for rapid AI-based solution development and seamless deployment as required by demanding business applications.

AVerMedia supports businesses of all sizes and offers customizable BSP services, flexible MoQ, in addition to NVIDIA's JetPack™ SDK.

Enterprise-Leading Features

- Embedded NVIDIA Jetson T5000™ / Jetson T4000™
- 2x GbE RJ-45
- 1x QSFP (4x 25 GbE)
- 1x M.2 Key E 2230 for WIFI 6
- 1x M.2 Key B 3350 for 4G/5G
- 2x M.2. key M 2280 for SSD
- 1x mPCIe for GNSS
- 4x CAN BUS & 4 x PWM
- 2x HDMI 2.0 (3840x2160 at 60Hz)
- 1 x USB-C (Remove DP Alt mode), USB-PD 3.1
- 4x USB 3.2 Type-A
- 1x 120pin for GMSL camera board
- 1x JTAG
- Optional 8x PoE & 8xUSB (via daughter board)
- Operating temperature: -40 to 85°C (W/O audio)
- Dimension: W: 190mm x L: 190mm

The AVerMedia Advantage

Video Processing Technology

Flexibility & Reliability

Dedicated After-Sales Support

AVerMedia understands that each business has a unique set of requirements that requires professional expertise and support. With AVerMedia, you are guaranteed to work with a proven global leader in video processing technology (200+ video capturing & streaming patents) with decades of experience processing multiple video signals for countless award-winning products.

A global leader that supports businesses of all sizes with comprehensive customization services (i.e., HW/PCB/BSP/etc.), flexible MoQ while ensuring a high-quality design and stable product. And for projects requiring additional security, we can provide customizable encryption hardware to support your privacy needs.

By partnering with us, a dedicated NVIDIA ELITE Partner, our support-driven team offers prompt after-sales support so that your company stays focused on what matters most, customer acquisition.

Specifications

Model	D331
Type	Carrier Board
NVIDIA Module Compatibility	NVIDIA Jetson T5000™ & Jetson T4000™
Networking	• 2x GbE RJ-45 (OOB on board, one port is NCSI) • 1x QSFP (4x 25 GbE) • 1 x M.2. key E 2230 for wifi 6 • 1x M.2 Key B for 5G
SIM Slot	2x SIM slot for 4G/5G module dual sim support
Display Output	2 x HDMI output (3840 x 2160 at 60Hz)
Temperature	Operating temperature: -40 to 85°C (carrier board, W/O audio) Operating temperature: -25 to 85°C (carrier board, W/ audio) Storage temperature -40°C ~ 85°C Relative humidity 40 °C @ 95%, Non-Condensing
Camera Inputs	1x 120pin for GMSL camera board
USB	• 1x USB 2.0 Type-C for BSP install • 1x USB 3.1 Type-C • 4x USB 3.2 Type-A • Optional 8x USB3.2 Type-A (via daughter board)
Audio	2x 3.5mm phone jack for Mic in & line out.
Storage	- 2x NVMe M.2 Key M 2280 - 1x NVMe M.2 Key M 2280 x2 PCIe Gen5 (8xPoE, 8xUSB board, either one) - 1x NVMe M.2 Key M 2280 x4 PCIe Gen5
TPM	TI SLB9672XU2.0 on board
Expansion	• 2x10 Euro Terminal Block 1x CAN-FD (Isolated 3KV), 3x CAN-FD with Transceiver, +5V output 1A , +3.3V output 1A,UART, I2C
	• 20pin expansion header-1: 1x5V(Maximum 1A), 1x3.3V(Maximum 1A) power Output, UARTH1, I2C, GPO(4), GPI(5), PWM(2)
	• 20pin expansion header-2: 1x5V(Maximum 1A), 1x3.3V(Maximum 1A) power Output, UARTH2, I2C, GPO(4), GPI(5), PWM(2)
	2x 5-pin JTAG connector
	• 1x 40pin coaxial connector for PCIe expansion (daughter board 8xPSE/8xUSB)
	Samtec 240P Board to Board PCIe x8 / RGMII /VDD_9~12V / USB 3.0/USB 2.0/GPIOs /I2C (Via Daughter board)
GPS	1xmPCIe for Optional Dual-RTK GNSS support (via daughter board)
Sensor	Temperature sensor for PCB top/bot Temperature measure
Power requirement	Terminal block 3Pin & Mini-fit 6pin (Internal) 9~36V DC Input ACC IN / IGN Control (ACC optional, via switch)

*All specifications are subject to change without prior notice.

Thermal Solution	1x SOM FAN 2x Chassis Fan (12V fan wafer)
Buttons	Power and Recovery
LED	1x system power 1x input power
MISC	1x Mini-fit 4Pin DC output for PSE expansion (Pass-through 10A)
	1x DC output wafer (9~12V) for GMSL
	1x USB-C for Debug_UART (Share with OOB)
	DIP Switch for function control AT/ATX Mode select ACC Enable / Ignore ACC for Development (default)
RTC Battery	Support RTC battery and Battery Life Monitoring by MCU
PCB/Electronics Mechanical Info	• W: 190mm x L: 190mm • Weight: 250g (TBD)
Certifications	CE, FCC,VCCI, KC (TBD)
Package	1x Carrier board Screws Nuts

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