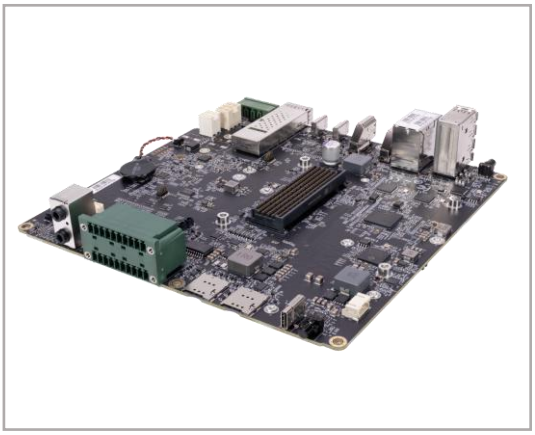
# D331 Carrier Board



## Feature

- Embedded NVIDIA Jetson T5000 / Jetson T4000
- 2x GbE RJ-45
- 1x QSFP (4x 10 GbE for T5000, 3x 10 GbE for T4000)
- 1x M.2 Key E 2230 for WIFI 6
- 1x M.2 Key B 3042/3052 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)
- 4x USB 3.2 Type-A
- 1x 120pin for GMSL camera board

## Specifications

| | |
|---|---|
| **Model** | D331 |
| **NVIDIA Module Compatibility** | NVIDIA Jetson T5000 & Jetson T4000 |
| **Networking** | 2x GbE RJ-45 (1 × port supports OOB NCSI for optional OOB module)<br>1x QSFP (4 x 10 GbE for T5000, 3 x 10 GbE for T4000)<br>1 x M.2. key E 2230 for Wi-Fi 6<br>1x M.2 Key B 3042/3052 for 4G/5G |
| **SIM Slot** | 2 × SIM slots for 4G/5G module; dual SIM capability depends on the installed cellular module |
| **Display Output** | 2 x HDMI output (3840 x 2160 at 60Hz) |
| **Temperature** | Operating temperature: -40 to 85°C (carrier board, W/O audio)<br>Operating temperature: -25 to 85°C (carrier board, W/ audio)<br>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<br>1x USB 3.2 Type-C (usage limitations apply; refer to User Manual for details)<br>4x USB 3.2 Type-A (5Gbps x2 ; 10Gbps x2)<br>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<br>1x NVMe M.2 Key M 2280 PCIe Gen4 x2 (8xPoE, 8xUSB board, either one)<br>1x NVMe M.2 Key M 2280 PCIe Gen4 x4 |
| **TPM** | TI SLB9672XU2.0 on board |
| **Expansion** | 2x10 Euro Terminal Block<br>1x CAN-FD (Isolated 3KV), 3x CAN-FD with Transceiver, +5V output 1A , +3.3V output 1A,UART, I2C (Isolation, Support for T5000 only)<br>20pin expansion header-1:1x5V(Maximum 1A), 1x3.3V(Maximum 1A) power Output, UARTH1, I2C, GPO(4), GPI(5), PWM(2)<br>20pin expansion header-2:1x5V(Maximum 1A), 1x3.3V(Maximum 1A) power Output, UARTH2, I2C, GPO(4), GPI(5), PWM(2)<br>2x 5-pin JTAG connector<br>1x 40pin coaxial connector for PCIe expansion (daughter board 8xPSE/8xUSB ) |
| **GPS** | 1x mPCIe for Optional Dual-RTK GNSS support (via daughter board) |
| **Sensor** | Temperature sensor for PCB top/bot Temperature measure |

**All specifications are subject to change without prior notice.**

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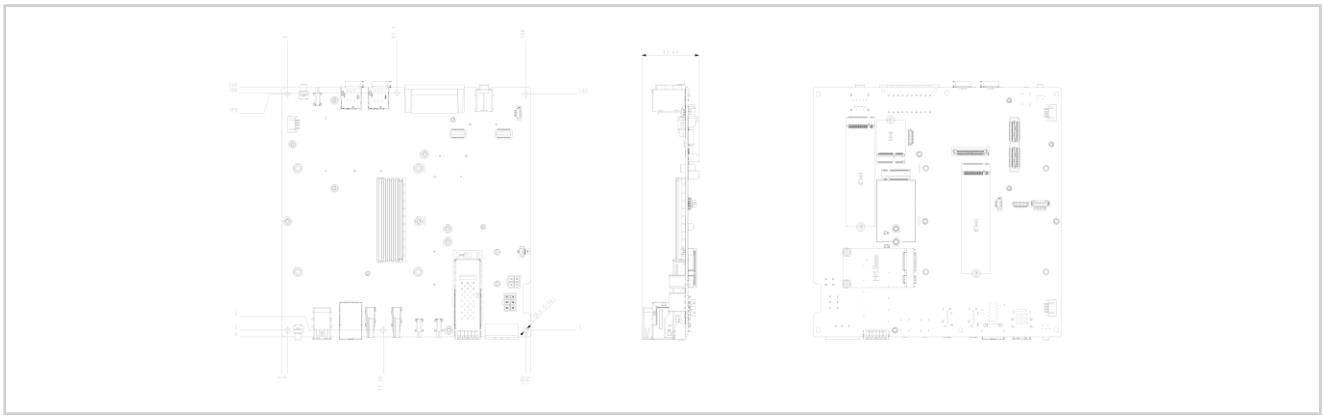
## Specifications

| | |
|---|---|
| **PCB/Electronics Mechanical Info** | 90mm (L) x 56mm (W) x 30.7mm (H) (Stacking with SOM) |
| **Power requirement** | Terminal block 3Pin & Mini-fit 6pin (Internal)<br>9~36V DC Input, 90~180W (36V absolute maximum), DC IN terminal block: 10A Max, ATX 6pin: 10A MaxACC IN / IGN Control (ACC optional, via switch)<br>USB-C 9V~28V 40W-130W<br><br>Note: If there is more than one power supply (e.g., Terminal block or USB Type-C) connected, then the USB PD Controller (CYPD8225) will let the first power supply through, also known as First come first serve. |
| **Thermal Solution** | 1x SOM FAN (Box PC or Devkit)<br>2x Chassis Fan (Box PC, 12V fan wafer) |
| **Buttons** | Power and Recovery |
| **LED** | 1x System Power<br>1x Input Power |
| **MISC** | 1x Mini-fit 4Pin DC output for PSE expansion (Pass-through 10A)<br>1x DC output wafer (9~12V) for GMSL<br>1x USB-C for Debug_UART (Share with OOB)<br>DIP Switch for function controlAT/ATX Mode selectACC 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<br>Weight: 250g |
| **Certifications** | CE, FCC,VCCI, KC |
| **Package** | 1x Carrier board<br>2x GPIO Board<br>1x 240W Power Adapter (without Power cord)<br>Screws<br>Nuts |

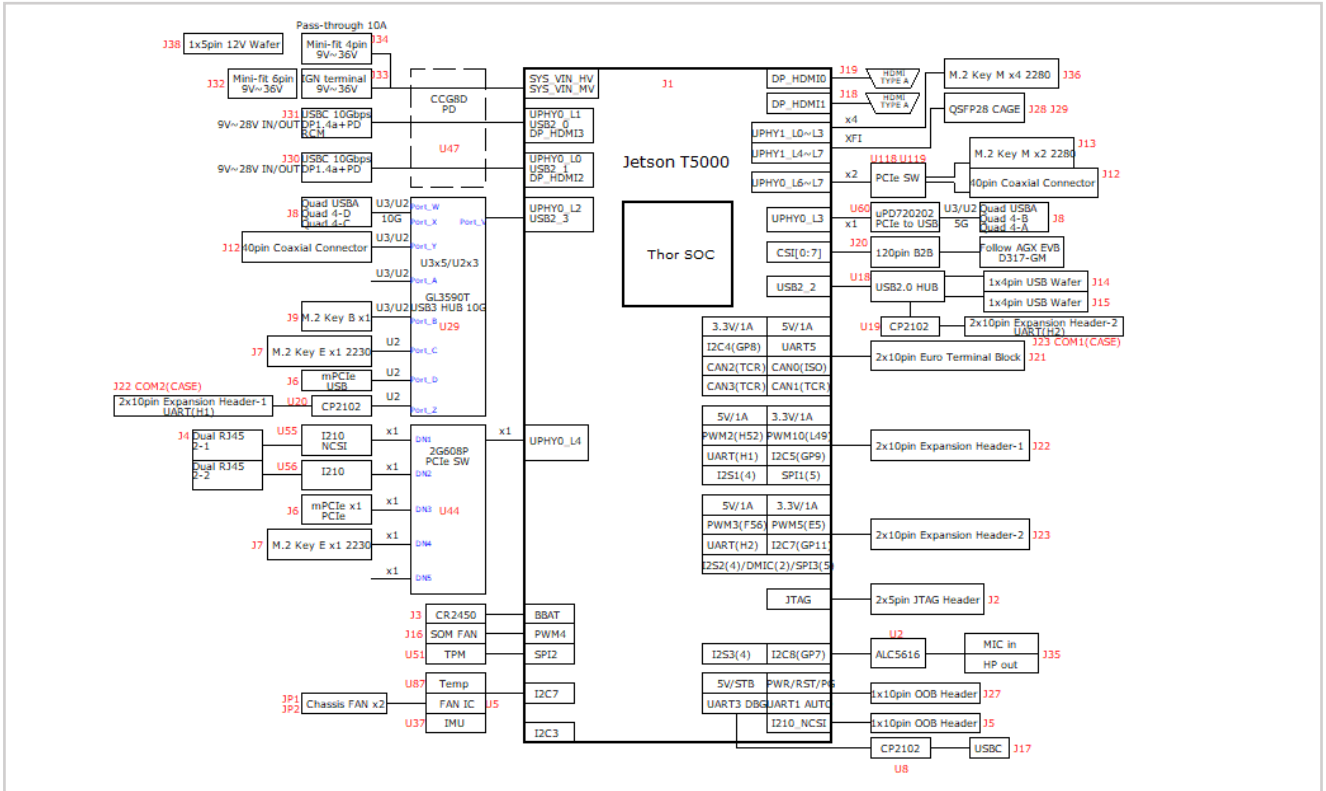
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## Dimensions (190 x 190 x 43.64 mm)



## Block Diagram





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## Ordering information

| Model Name | Part Number | Description |
|---|---|---|
| D331 | 61D3310001AK | Carrier Board only, with 240W Adapter without Power Cord. |

## Packing List

| Part Number | Description | Quantity | Notes |
|---|---|---|---|
| 065AMC421ACG | PLUG_TERMINAL BLOCK_1*10PIN | 2 | - |
| 041318GOYAN3 | @ADAPT_AC/DC_100~240V_24V_10.41A_TB3P/F | 1 | - |
| 041318GOZAN4 | @ADAPT_AC/DC_100~240V_24V_12.75A_ATX6P/F | 1 | If use 8x POE board, please choose this. |

## Optional Accessory

| Item | Part Number | Product Name | Type | Description |
|---|---|---|---|---|
| 1 | 61D317USB1AJ | USB board | Board | Support 8xUSB port and 1xM.2 Key B for 4G/5G Module |
| 2 | 61F8P1M001AB | PoE board | Board | Support 8xPoE port and 1xM.2 Key B for 4G/5G Module |
| 3 | 51D331RS01AD | Serial & DIO Expansion Board | Board | RS232/422/485 and 4DIDO |
| 4 | 61D1350001AK | RTK GNSS module | Board | U-blox ZED-F9P+F9H |
| 5 | 61D317OB01AK | ERMI module | Board | Support Out-Of-Band (OOB) remote device management |
| 6 | 61D317GM01AF | GMSL Board | Board | Support 8x GMSL camera via mini fakra cable |
| 7 | 60D3170001AB | Mini FAKRA cable | Cable | Support standard FAKRA x4 for connecting to GMSL board |
| 8 | 51D115SEX1AJ | 5G daughter board | Board | Support 1xM.2. M key for SSD and 1xM.2 B key for 4G/5G |
| 9 | 0700WLAN0AWX | Wi-Fi 6E AX210 set | Board | Wi-Fi 6E-intel AX210 (include 1xcable and 2xantennas) |
| 10 | 60D3150000AE | 4G set | Board | Quectel EM05_LTE Cat 4 M.2 Module+2xCable+2xAntenna |
| 11 | 60D3150001AD | 5G set | Board | Quectel RM520N Series_5G Sub-6 GHz M.2 Module+4xCable+4xAntenna |
| 12 | 064APOWERB32<br>064APOWERB3X | Power Cord (JP) | Cable | Support Jetson Thor Power Cord |
| 13 | 064APOWERBR2-IPD | Power Cord (USA) | Cable | Support Jetson Thor Power Cord |
| 14 | 064APOWERBRX-IPD | Power Cord (TW) | Cable | Support Jetson Thor Power Cord |
| 15 | 064APOWERBR4-IPD | Power Cord (CN) | Cable | Support Jetson Thor Power Cord |
| 16 | 064APOWERBR5-IPD | Power Cord (KR/EU) | Cable | Support Jetson Thor Power Cord |
| 17 | 064APOWERBRV-IPD | Power Cord (AU) | Cable | Support Jetson Thor Power Cord |
| 18 | 064APOWERBRW-IPD | Power Cord (UK) | Cable | Support Jetson Thor Power Cord |

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