

# Pandora NX 8GB

YUAN  
Visualize Intelligent Planet

## Compact Edge AI

### Features

- Powered by NVIDIA™ Jetson Orin™ NX up to 70 TOPS
- Compact Size: 121mm×145mm×66mm
- 4×M.2, 8 Lanes MIPI CSI-2, and I2C / UART / GPIO / CAN Bus
- 2×USB3.2 Gen2, 2×USB2.0
- 1×HDMI2.0



### Specifications

| System                   |   |
|--------------------------|---|
| CPU                      | NVIDIA Jetson Orin™ NX 8GB<br>6-Core Arm® Cortex®-A78AE v8.2 64-Bit CPU<br>1.5MB L2 + 4MB L3  |
| GPU                      | 1024-Core NVIDIA Ampere Architecture GPU with 32 Tensor Cores   |
| AU Performance           | NVIDIA Jetson Orin™ NX 8GB 70 TOPS  |
| System Memory            | NVIDIA Jetson Orin™ NX 8GB 8GB LPDDR5   |
| Interface                |   |
| Storage                  | Supports External NVMe  |
| Display Interface        | 1×HDMI2.0   |
| Ethernet                 | 2×RJ45 for 10/100/1000Mbps Ethernet<br>DHCP Client  |
| Expansion Slot           | 1×M.2 2280 M Key PCIe Gen4×2 Slot ( with Pre-Installed 128GB SSD )<br>1×M.2 2280/3080 M Key PCIe Gen4×4 Slot, Support SSD or Video Capture Cards<br>1×M.2 2230 E Key PCIe Gen4×1+USB2.0 Slot, Support WiFi Module.<br>1×M.2 3042/3052 B Key USB3.2 Gen2 Slot, Support 5G/4G Wireless Module |
| USB                      | 2×USB3.2 Gen2 ( Type-A )<br>1×USB3.2 Gen2 ( Type-C ) (OTG)<br>2×USB2.0 ( Type-A )   |
| MIPI                     | 8-Lane MIPI CSI-2 ( D-PHY 2.1, Support MIPI Camera, Capture Card )  |
| Audio                    | 1×Line In ( 3.5mm or Pin Header )<br>1×Line Out ( 3.5mm or Pin Header )   |
| Peripheral Communication | 40 Pin Header<br>1×I2S<br>2×I2C<br>2×SPI<br>1×UART<br>3×GPIO<br><br>14 Pin Header<br>1×CAN Bus<br>1×UART with CTS/RTS<br>1×UART for Debug   |
| Misc. Features           | Firmware Upgradable<br>TPM Module ( Optional )  |

## Video Encode / Decode

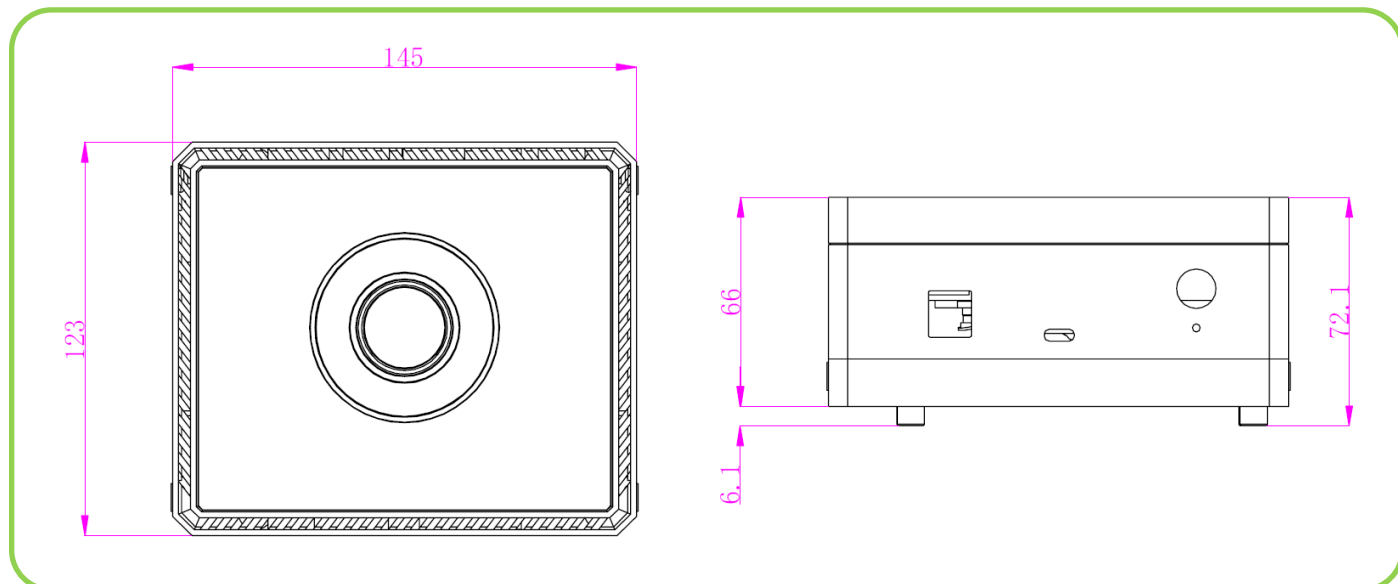
| Video Feature |  |
|---------------|--|
| Video Encode  | NVIDIA Jetson Orin™ NX :<br>AV1 ( UHP )<br>1×4K60   3×4K30   6×1080p60   12×1080p30                  |
|               | H.265 ( UHP )<br>1×4K60   3×4K30   6×1080p60   12×1080p30  |
| Video Decode  | H.264 ( UHP )<br>1×4K60   2×4K30   5×1080p60   11×1080p30  |
|               | NVIDIA Jetson Orin™ NX:<br>AV1 ( Main Profile )<br>1×8K30   2×4K60   4×4K30   9×1080p60   20×1080p30 |
|               | H.265 ( Main, Main10 )<br>1×8K30   2×4K60   4×4K30   9×1080p60   18×1080p30                          |
|               | H.264 ( Baseline, Main, High )<br>1×4K60   2×4K30   5×1080p60   11×1080p30                           |
|               | VP9 ( Profile 0, Profile 2 )<br>1×4K60   3×4K30   7×1080p60   15×1080p30                             |

## Environment

| Development Environment |  |
|-------------------------|--|
| OS                      | Ubuntu: 20.04                          |
| Kernel                  | 5.10.104-tegra or Higher               |
| BSP                     | Linux for Tegra(L4T) R35.3.1 or Higher |
| SDK                     | JetPack 5.1.1 or Higher                |
| Environment             |  |
| Power Supply            | DC input : 9~24V                       |
| Power Consumption       | Max: 27W                               |
| Operating Temperature   | Standard Version: 0~60° C with Airflow |
| Storage Temperature     | -20~80° C                              |

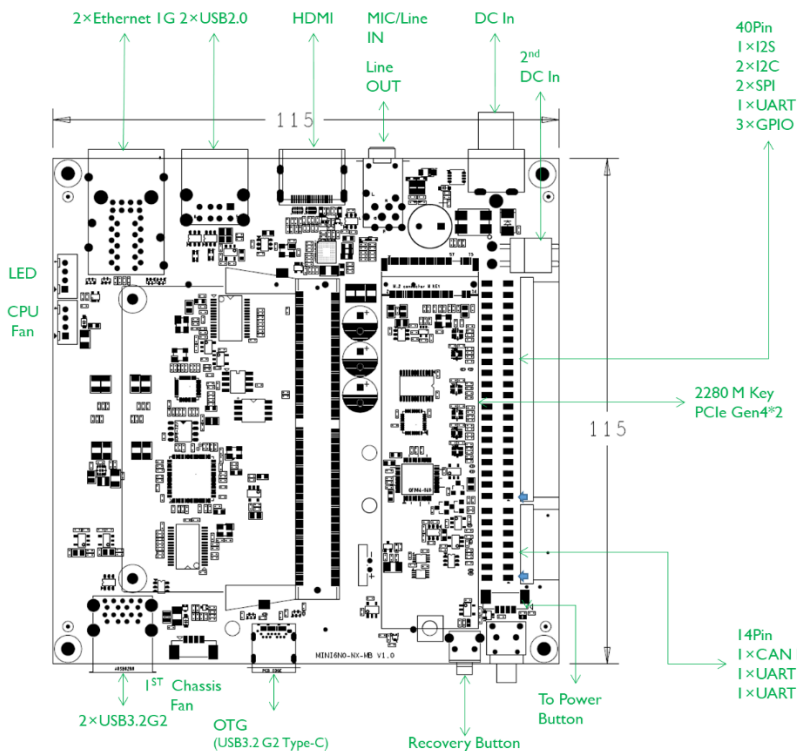
## Mechanical

- Dimension of case: 145mm×123mm×66mm
- Dimension of main Board: 115mm×115mm
- Weight: 470g

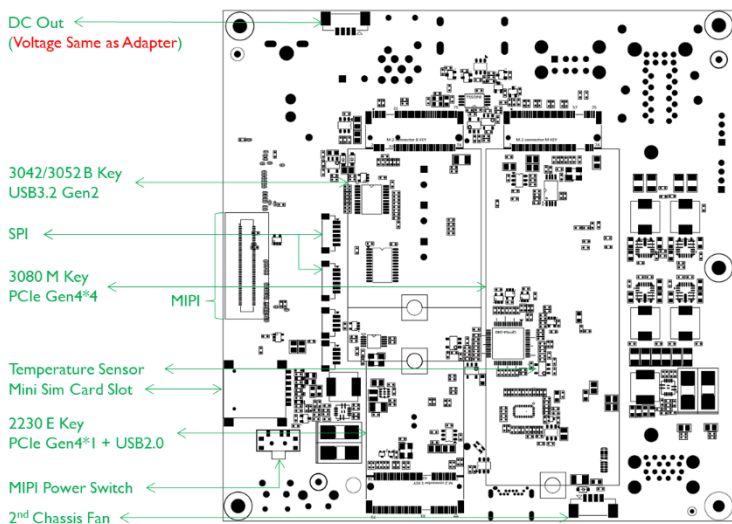


# I/O Layout

## Carrier Board



| Pin | Define     | Pin | Define    |
|-----|------------|-----|-----------|
| 1   | 3.3V       | 2   | 5.0V      |
| 3   | I2C1 DATA  | 4   | 5.0V      |
| 5   | I2C1 Clock | 6   | GND       |
| 7   | GPIO9      | 8   | UART1 TX  |
| 9   | GND        | 10  | UART1 RX  |
| 11  | UART1 RTS  | 12  | I2S0 SCLK |
| 13  | SPI1 SCK   | 14  | GND       |
| 15  | GPIO12     | 16  | SPI1 CS1  |
| 17  | 3.3V       | 18  | SPI1 CS0  |
| 19  | SPI0 MOSI  | 20  | GND       |
| 21  | SPI0 MISO  | 22  | SPI1 MISO |
| 23  | SPI0 SCK   | 24  | SPI0 CS0  |
| 25  | GND        | 26  | SPI0 CS1  |
| 27  | I2C0 SDA   | 28  | I2C0 SCL  |
| 29  | GPIO1      | 30  | GND       |
| 31  | GPIO11     | 32  | GPIO7     |
| 33  | GPIO13     | 34  | GND       |
| 35  | I2S0 FS    | 36  | UART1 CTS |
| 37  | SPI1 MOSI  | 38  | I2S0 DIN  |
| 39  | GND        | 40  | I2S0 DOUT |



| Pin | Define     | Pin | Define         |
|-----|------------|-----|----------------|
| 1   |            | 2   | CAN Tx         |
| 3   | RTS        | 4   | CAN Rx         |
| 5   | UART0 Rx   | 6   | GND            |
| 7   | UART0 Tx   | 8   | 3.3V           |
| 9   | Vcc (3.3V) | 10  | UART Rx (3.3V) |
| 11  | CTS        | 12  | GND            |
| 13  | GND        | 14  | UART Tx (3.3V) |

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