NRU-154PoE-FT
NRU-156U3-FT

NVIDIA® Jetson Orin™ NX Edge AI Computer with 4x 2.5GbE PoE+/ 6x USB 3.2 ports and Flattop Heatsink

NRU-154PoE-FT

NRU-156U3-FT

Key Features

- **Powered by NVIDIA® Jetson Orin™ NX bundled with JetPack 5.1**
- **Flattop heatsink design for conduction-cooled, in-cabinet deployment**
- **Up to 100 TOPS AI inference performance**
- **Full-bandwidth ports for camera connectivity:**
  - **4x 2.5GbE PoE+ ports (NRU-154PoE-FT)**
  - **6x USB 3.2 ports (NRU-156U3-FT)**
- **1x RS-232 and 1x isolated RS-485**
- **1x M.2 2242 M key NVMe for BSP and data storage**
- **-25°C to 60°C fanless operating temperature (with heat spreader attachment. No throttling at 60°C with Orin NX 20W TDP mode)**

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Introduction

The NRU-150-FT series is a compact, fanless edge AI computer incorporating Jetson Orin NX and independent 2.5GbE PoE+ or USB 3 camera connectivity. Its special flattop heatsink is designed to be mounted inside a sealed enclosure to aid metal processing, food processing, smart agriculture, or roadside applications, where it can be protected from environments that contain dust, metal particles or fluid.

Benefiting from the power efficient NVIDIA® Jetson Orin™ NX, the NRU-150-FT series can deliver up to 100 TOPS inference performance in a 25W power package. Offering full bandwidth each port to complement versatile video inputs for edge inspection, NRU-154PoE-FT features 4x 2.5GbE PoE+ ports for IP cameras and industrial GigE cameras, and NRU-156U3-FT features 6x USB 3.2 ports for industrial USB3 cameras.

The flattop heatsink design further expands application senarios by allowing users to mount the NRU-150-FT series inside a sealed enclosure and conduct the heat to the outer surface, offering a -25 to 60°C wide-temperature fanless operation. It makes NRU-150-FT suitable for environments such as dusty roadsides, humidity farms, and harbors. Moreover, it is also applicable to versatile AI-based factory automation for metal, wood, food, and chemical processing.

By integrating full-bandwidth 2.5GbE PoE+/ USB3 ports for camera connectivity, 100 TOPS AI inference performance, unique flattop heatsink for enclosed installation, and a vast array of NVIDIA AI JetPack toolkits, the NRU-150-FT series presents more possibilities for edge inspection in harsh environments, where dustproof, waterproof, or flameproof protection is needed.

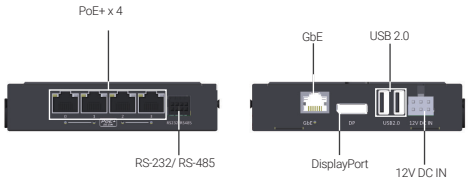
Specifications

	NRU-154PoE-FT	NRU-156U3-FT
System Core		
Processor	NVIDIA® Jetson Orin™ NX system-on-module (SoM), comprising NVIDIA® Ampere GPU and ARM Cortex CPU	
Memory	8GB/ 16GB LPDDR5 @ 3200 MHz on SoM	
Panel I/O Interface		
USB	2x USB 2.0 ports	2x USB 3.2 Gen2 (10 Gbps) ports with screw-lock 4x USB 3.2 Gen1 (5 Gbps) ports with screw-lock 2x USB 2.0 ports
Ethernet Port	Port 1: Gigabit Ethernet Port 2 to Port 5: 2.5 Gigabit Ethernet ports by Intel® I225 with screw-lock[1]	1x Gigabit Ethernet
PoE Capability	IEEE 802.3at PoE+ PSE for Port 2 to Port 5, 50W total power budget	-
Serial Port	1x RS-232 port and 1x isolated RS-485 port	
Video Port	1x DisplayPort, supporting 3840x2160 at 60Hz	
DC Input	12V DC power input	

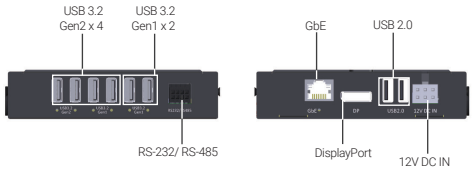
	NRU-154PoE-FT	NRU-156U3-FT
Internal I/O Interface		
M.2 NVMe	1x M.2 2242 M key socket (PCIe Gen4 x2) for NVMe SSD	
USB	1x micro USB (OTG)	
Mechanical		
Dimension	116 mm (W) x 171 mm (D) x 27 mm (H) (without wall-mount bracket)	
Weight	1.0 kg	
Mounting	Wall-mount (standard)	
Environmental		
Operating Temperature	-20°C to 60°C (20W TDP mode) fanless operating temperature while mounted on 50 x 50 x 0.2 cm metallic plate [2]/ [3]	
Storage Temperature	-40°C to 85°C	
Humidity	10% to 90%, non-condensing	
Vibration	Operating, MIL-STD-810H, Method 514.8, Category 4	
Shock	Operating, MIL-STD-810H, Method 516.8, Procedure I	
EMC	CE/FCC Class A, according to EN 55032 & EN 55035	

[1] Due to I225-IT specification limitation, for systems running 2.5G Ethernet link speeds, please limit the operating temperature to 60°C.
[2] For sub-zero and over 60°C operating temperature, a wide temperature NVMe is required.
[3] Without heat conduction from the flattop heatsink, the fanless operating temperature is -20°C to 45°C (20W TDP mode)

Appearance



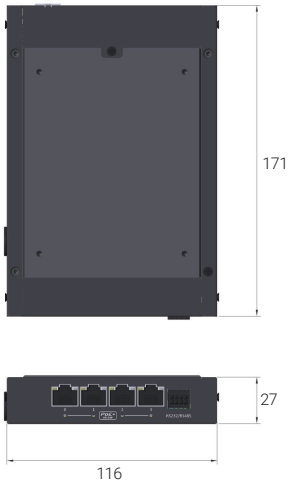
NRU-154PoE-FT



NRU-156U3-FT

Dimensions

Unit : mm



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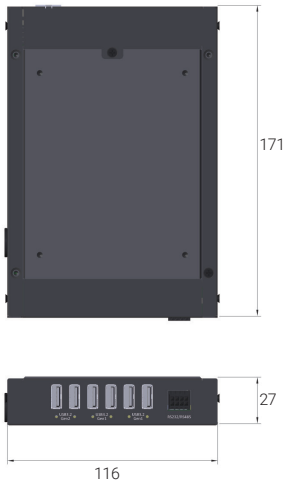

NRU-156U3-FT

Ordering Information

Model No.	Product Description
NRU-154-JON8	NVIDIA® Jetson Orin™ NX Edge AI Computer with 4x PoE+ GbE, flattop heatsink, Jetson Orin NX (8GB), and 128GB NVMe with pre-installed system image
NRU-154-JON16	NVIDIA® Jetson Orin™ NX Edge AI Computer with 4x PoE+ GbE, flattop heatsink, Jetson Orin NX (16GB), and 128GB NVMe with pre-installed system image
NRU-156-JON8	NVIDIA® Jetson Orin™ NX Edge AI Computer with 6x USB 3.2, flattop heatsink, Jetson Orin NX (8GB), and 128GB NVMe with pre-installed system image
NRU-156-JON16	NVIDIA® Jetson Orin™ NX Edge AI Computer with 6x USB 3.2, flattop heatsink, Jetson Orin NX (16GB), and 128GB NVMe with pre-installed system image

Optional Accessories

PA-60W-OW	60W AC/ DC power adapter 12V/ 5A; cord end terminals for terminal block, operating temperature: -30°C to 60°C