NRU-120S Series

NVIDIA® Jetson AGX Xavier™ AI NVR for Intelligent Video Analytics

Key Features

· **Powered by NVIDIA® Jetson AGX Xavier™ SOM bundled with JetPack 4.4**
· **4x IEEE 802.3at Gigabit PoE+ ports with screw-lock**
· **2x front-accessible 2.5" HDD/SSD trays**
· **1x M.2 2280 M key socket for NVMe SSD**
· **1x mini PCIe socket for WIFI/4G module**
· **1x isolated CAN bus port and 1x RS232 port with flow control**
· **1x GPS PPS input, 3-CH isolated DI and 4-CH isolated DO**
· **8 to 35V wide-range DC input with built-in ignition power control**

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Introduction

NRU-120S series is a new rugged edge AI-based video analytics solution capable of video recording, transcoding, real-time inference, etc. Powered by NVIDIA® Jetson AGX Xavier™ system-on-module (SOM), it comprises of an 8-core ARM CPU and NVIDIA Volta GPU with 512 CUDA cores and 64 Tensor cores that offer 11 TFLOPS FP16 or 22 TOPS INT8 computing power.

Benefiting from the low-power design of NVIDIA® Jetson AGX Xavier™, NRU-120S offers significant inference performance while consuming only 30W of power. The efficient power design and the compact form factor make it the perfect edge AI solution for both stationary and mobile applications.
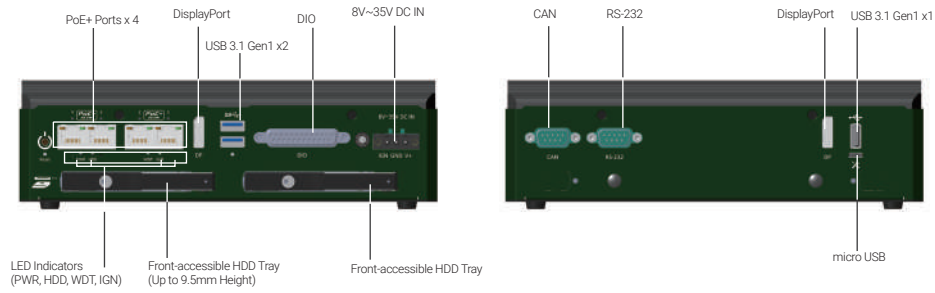
NRU-120S offers four 802.3at Gigabit PoE+ ports; each port can supply up to 25.5W of power to PD devices such as IP cameras and industrial cameras. In addition to 32GB eMMC on the Xavier module, NRU-120S further incorporates two front-accessible 2.5" HDD/ SSD trays for expanding storage capacity and an M.2 2280 NVMe socket for fast SSD read/write performance. It also has one mini-PCIe socket for WIFI and 4G module, as well as 1 GPS PPS input, 3-CH isolated DI and 4-CH isolated DO for communication with external devices.

By integrating PoE+ connectivity, a wide range of NVIDIA AI tools, and modern deep learning frameworks, NRU-120S pushes real-time image and video inference to the edge. It is a one-stop AI-based video analytics solution that offers 802.3at PoE+ camera connections, video decoding, video streaming, video recording, and edge AI inference. With Neousys' unique damping bracket design, ignition power control, and wide voltage power supply, NRU-120S is an ideal video inference platform for autonomous machines, predictive maintenance, law enforcement, and smart city applications.
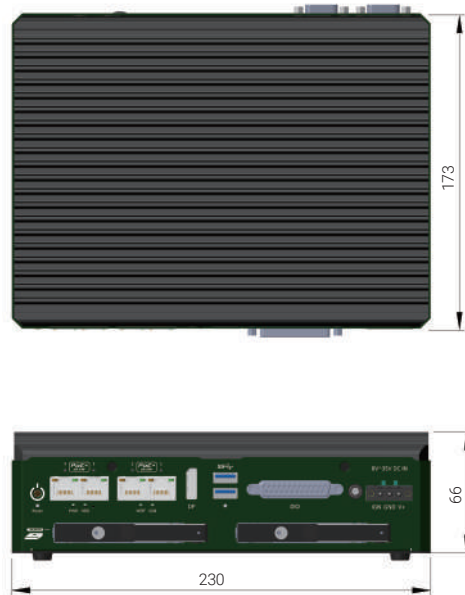
Specifications

System Core	
Processor	Supporting NVIDIA® Jetson AGX Xavier™ system-on-module, comprising of NVIDIA® Volta GPU and Carmel CPU
Memory	32GB LPDDR4x @ 2133 MHz on SOM
eMMC	32GB eMMC 5.1 on SOM

I/O Interface	
PoE+	4x IEEE 802.3at (25.5W) Gigabit PoE+ ports by Intel® I350
CAN	1x isolated CAN 2.0 port
Isolated DIO	1x GPS PPS input. 3-CH isolated DI and 4-CH isolated DO
USB	3x USB 3.1 Gen1 (5 Gbps) ports
Video Port	2x DisplayPort, supporting 3840x2160 at 60Hz
Serial Port	1x RS-232 port with flow control

Storage Interface	
SATA HDD	2x front-accessible HDD trays for 2.5" HDD/SSD installation (up to 9.5mm height)
M.2 NVMe	1x M.2 2280 M key socket (PCIe Gen3 x2) for NVMe SSD

Internal Expansion Bus	
Mini PCI Express	1x full-size mini PCI Express socket with internal SIM socket

Power Supply	
DC Input	1x 3-pin pluggable terminal block for 8 to 35V DC input (IGN/ GND/ V+)

Mechanical	
Dimension	230 mm (W) x 173 mm (D) x 66 mm (H)
Weight	2.7 kg (excluding damping bracket)
Mounting	Wall-mount with damping brackets (Standard)

Environmental	
Operating Temperature	-25°C ~ 50°C with passive cooling (MAX TDP mode) * -25°C ~ 70°C with passive cooling (30W TDP mode) * -25°C ~ 70°C with optional fan kit (all modes) *
Storage Temperature	-40°C ~ 85°C
Humidity	10% ~ 90%, non-condensing
Vibration	Operating, MIL-STD-810G, Method 514.7, Category 4
Shock	Operating, MIL-STD-810G, Method 516.7, Procedure I
EMC	CE/ FCC Class A, according to EN 55032 & EN 55035

* For sub-zero and over 60°C operating temperature, a wide temperature HDD or Solid State Disk (SSD) is required.

Appearance

PoE+ Ports x 4
USB 3.1 Gen1 x2
DisplayPort
DIO
8V~35V DC IN
CAN
RS-232
DisplayPort
USB 3.1 Gen1 x1
LED Indicators (PWR, HDD, WDT, IGN)
Front-accessible HDD Tray (Up to 9.5mm Height)
Front-accessible HDD Tray
micro USB

Dimensions

Unit : mm

173

66

230

Ordering Information

Model No.	Product Description
NRU-120S	NVIDIA® Jetson AGX Xavier™ AI NVR for Intelligent Video Analytics
NRU-120S-F	NVIDIA® Jetson AGX Xavier™ AI NVR for Intelligent Video Analytics with Fan Kit

Optional Accessories

PA-160W-OW	160W AC-DC power adapter, 20V/8A; 18AWG/120cm; cord end terminals for terminal block, operating temperature : -30 to 70°C.
PA-120W-OW	120W AC/DC power adapter, 20V/6A; 18AWG/120cm; cord end terminals for terminal block, operating temperature : -30 to 70°C.
Fan kit	Fan kit with 92mm x 92mm fan for NRU-120S series