

# 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.

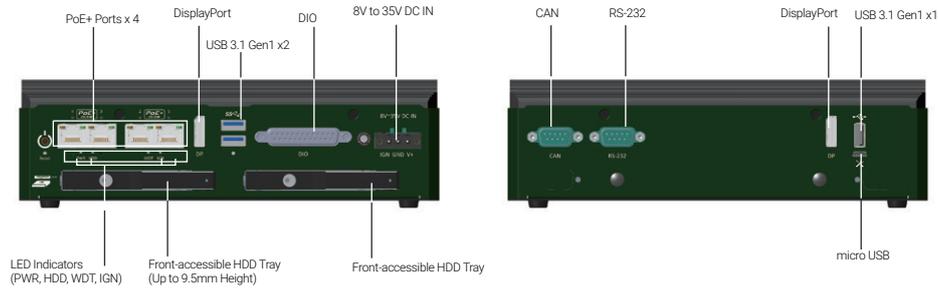
NRU-120S offers four 802.3at Gigabit PoE+ ports; each port can supply up to 25.5W of power to PD devices such as IP cameras and industrial cameras. In addition to 32GB eMMC on the Xavier module, NRU-120S further incorporates two front-accessible 2.5" HDD/ SSD trays for expanding storage capacity and 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 Neosys' 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                   |  | Power Supply  |   |
|-------------------------------|--|---|---|
| Processor                     | Supporting NVIDIA® Jetson AGX Xavier™ system-on-module, comprising of NVIDIA® Volta GPU and Carmel CPU | DC Input  | 1x 3-pin pluggable terminal block for 8 to 35V DC input (IGN/ GND/ V+)  |
| Memory                        | 32GB LPDDR4x @ 2133 MHz on SOM   | <b>Mechanical</b>   |   |
| eMMC                          | 32GB eMMC 5.1 on SOM   | Dimension   | 230 mm (W) x 173 mm (D) x 66 mm (H)   |
| <b>I/O Interface</b>          |  | Weight  | 2.7 kg (excluding damping bracket)  |
| PoE+                          | 4x IEEE 802.3at (25.5W) Gigabit PoE+ ports by Intel® I350  | Mounting  | Wall-mount with damping brackets (Standard)   |
| CAN                           | 1x isolated CAN 2.0 port   | <b>Environmental</b>  |   |
| Isolated DIO                  | 1x GPS PPS input, 3-CH isolated DI and 4-CH isolated DO  | Operating Temperature   | -25°C to 50°C with passive cooling (MAX TDP mode) *<br>-25°C to 70°C with passive cooling (30W TDP mode) *<br>-25°C to 70°C with optional fan kit (all modes) * |
| USB                           | 3x USB 3.1 Gen1 (5 Gbps) ports   | Storage Temperature   | -40°C to 85°C   |
| Video Port                    | 2x DisplayPort, supporting 3840x2160 at 60Hz   | Humidity  | 10% to 90%, non-condensing  |
| Serial Port                   | 1x RS-232 port with flow control   | Vibration   | Operating, MIL-STD-810G, Method 514.7, Category 4   |
| <b>Storage Interface</b>      |  | Shock   | Operating, MIL-STD-810G, Method 516.7, Procedure I  |
| SATA HDD                      | 2x front-accessible HDD trays for 2.5" HDD/SSD installation (up to 9.5mm height)                       | EMC   | CE/ FCC Class A, according to EN 55032 & EN 55035   |
| M.2 NVMe                      | 1x M.2 2280 M key socket (PCIe Gen3 x2) for NVMe SSD   | * For sub-zero and over 60°C operating temperature, a wide temperature HDD or Solid State Disk (SSD) is required. |   |
| <b>Internal Expansion Bus</b> |  |   |   |
| Mini PCI Express              | 1x full-size mini PCI Express socket with internal SIM socket  |   |   |

## Appearance



## Dimensions



## 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   |