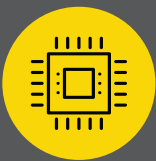# Ultron

Robust Multi-Modal Sensor Fusion System

Ultron is a Programmable Logic Controller (PLC) system based on NVIDIA® Jetson that brings high computing power to the edge for industrial applications requiring logic-based decisions for automated processes and machines.

It comes with three GPU variants, TX2 NX and Xavier NX, and Orin NX. Ultron delivers up to 100 TOPS for modern AI workloads and data processing from high-resolution sensors. Ultron is designed with a DIN-rail mounted and flexible system structure that allows for the expansion of up to seven I/O units under a single main unit. It is suitable for the building of smart factories, traffic signal controls, and smart buildings.

Compute
Compute platform that supports a variety of high-performance compute modules such as NVIDIA® Jetson Xavier NX™ and ORIN NX™

Modular
Expandable up to 7 I/O blocks for highly dynamic environments, reference designs are available to address future challenges.

Seamless Communication
5G/LTE/Wifi options for high speed data transmission.

Software-Defined Architecture
User-friendly SDK/APIs simplify human and machine interfaces, allowing users to build faster.

High Interoperability
Interoperable with standard industrial and machine vision cameras for real time AI-enabled inference.
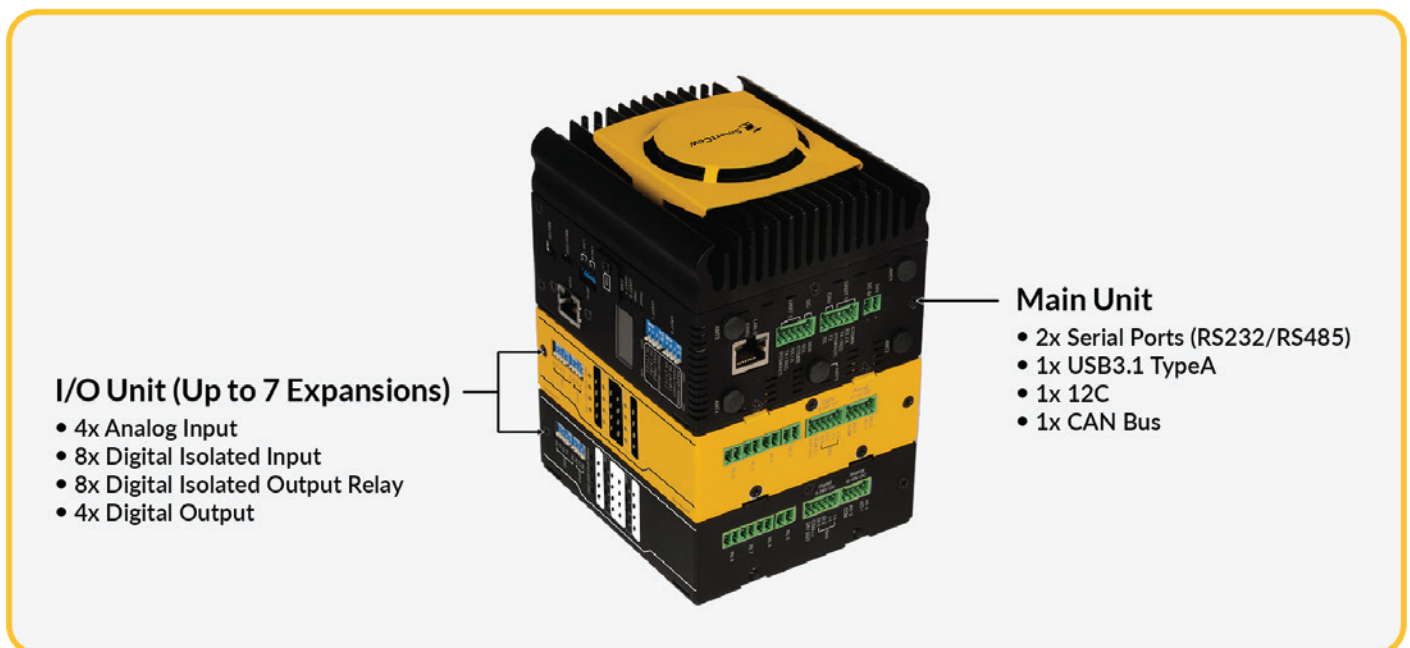
Advanced AI Capabilities
Easily integrate ML/DL models with higher detection and prediction accuracy into machinery and robotics automation processes.

Features of Ultron Control Software

Emulate analog and digital I/O and provide access to logic elements.	Query and monitor the status of each module.	Display module parameters and change them for testing purposes.	Access diagnostic information for CPU, GPU, DLA diagnostics, and details of system status and metrics.
Save the current configuration or load a previously saved configuration.	Deploy logic using an integrated visual flow-based programming tool.	Design a graphical web-based HMI for the application.	Coming soon: DeepStream plugin with I/O control for vision applications.

Hardware Specification

I/O Unit (Up to 7 Expansions)
- 4x Analog Input
- 8x Digital Isolated Input
- 8x Digital Isolated Output Relay
- 4x Digital Output

Main Unit
- 2x Serial Ports (RS232/RS485)
- 1x USB3.1 TypeA
- 1x 12C
- 1x CAN Bus

Main Unit

- 2x RJ45 ports -- the use of expandable IP cameras for video detection and analytics
- Supports 5G/LTE/Wi-Fi wireless alternatives for comprehensive network
- Equipped inertial measurement unit (IMU) sensor for device security
- Dimension: 100mm * 76mm * 112.5mm

I/O Unit

- Expandable up to 7 blocks
- Rich Inputs & Outputs Capabilities
  - 4x Analog input, 0-10V
  - 8x Digital isolated input, 5-24V
  - 8x Digital isolated output relay, AC 250V/5A
  - 4x Digital isolated phototransistor output, 5-24V
- Dimension: 100mm * 36.5mm * 112.5mm