

AP510

Modular Industrial PC for Factory Automation and Control

Product Overview

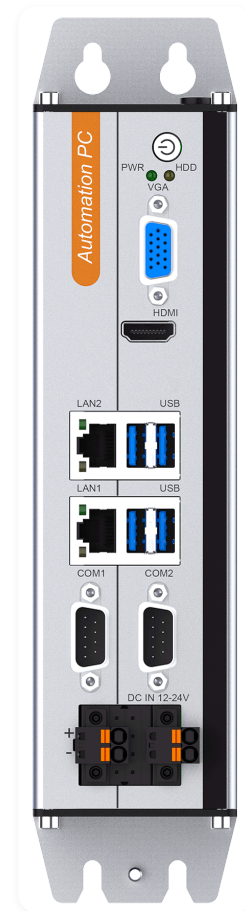
The AP510 is a modular industrial PC for factory automation, machine vision, production line control, and data acquisition. Powered by Intel 10th or 11th Gen Core processors - i3, i5, i7, or i9 - in a socketed LGA1200 configuration, it delivers desktop-class CPU performance without locking you into a fixed spec.

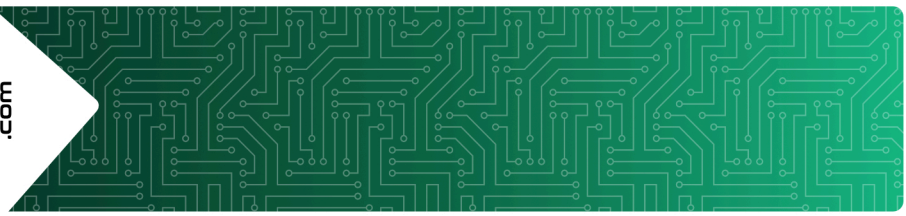
The base unit provides dual GbE LAN, four USB 3.0 ports, dual RS232/RS485 serial interfaces, HDMI and VGA display outputs, and a miniPCIe expansion slot for optional Wi-Fi or 4G. Choose from 11 expansion cards to add PoE, machine vision, CAN Bus, high-density serial, digital I/O, or additional networking - each shipped as a complete, factory-tested unit with its own model number.

Active cooling handles the full 65W TDP envelope across all CPU options. Operating range is -20°C to 60°C. Configured and tested in Norwich, with direct UK engineering support.

Product Highlights

- Intel 10th/11th Gen Core LGA1200 - i3, i5, i7 or i9, up to 65W TDP
- Socketed CPU
- Up to 32 GB DDR4 (2 x SO-DIMM)
- 1 x mSATA + 1 x M.2 2280 (SATA) storage slots
- 2 x Intel GbE LAN (base), up to 8 x with expansion
- 2 x RS232/RS485 (selectable per port, ESD protected)
- 4 x USB 3.0, 1 x USB 2.0 (internal, for dongle)
- HDMI (up to 3840 x 2160 @ 60Hz) and VGA (up to 1920 x 1200 @ 60Hz)





Product Highlights (cont.)

- 1 x miniPCIe slot with SIM holder (Wi-Fi / 4G / 5G)
- 11 expansion card options: PoE, vision, CAN Bus, serial, DIO, networking
- Programmable watchdog, 1-255 levels
- DC 12-24V input with overcurrent, overvoltage and polarity protection
- Active cooling - embedded fan
- Operating temperature: -20°C to 60°C
- Wall mount or DIN rail - 200 x 154.5 x 57.6 mm (base), 1.9 kg
- Windows 10 / 11, Linux (Ubuntu, Debian)
- CE / FCC Class A

Applications

Factory Automation

Production Line Control

Machine Vision

Data Acquisition

PLC Integration

Serial Gateway

HMI / Operator Panel

AGV & Robotics

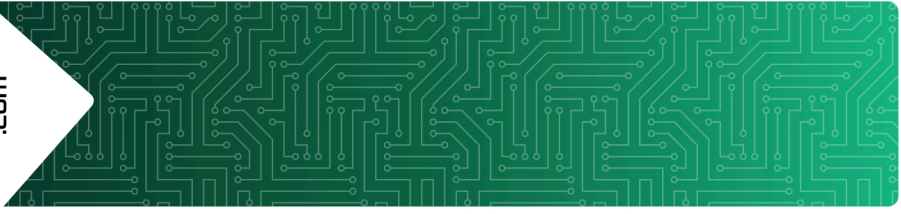
Remote SCADA

Edge Gateway

Embedded OEM

Technical Specifications

System	
Processor	<p>Intel Core 10th/11th Gen, LGA1200 socket, up to 65W TDP</p> <p>Comet Lake (10th Gen)</p> <ul style="list-style-type: none"> i3-10100 series, i5-10400 series, i5-10500 series, and more T-series (low-power) variants available <p>Rocket Lake (11th Gen)</p> <ul style="list-style-type: none"> i5-11400 series, i5-11500 series, i5-11600 series, and more T-series (low-power) variants available <p>CPU is socketed. Contact us for full compatibility list.</p>
Storage	<p>Two independent storage slots:</p> <ul style="list-style-type: none"> 1 x mSATA bay - 64, 128, 256, 512 GB & 1 TB 1 x M.2 (B Key, Type 2280) bay, SATA - 128, 256, 512 GB, 1 TB & 2 TB
USB	4 x USB 3.0, 1 x USB 2.0 Type A (internal, for USB dongle)
Serial	<p>2 x COM (DB-9), each selectable as RS232 or RS485 via hardware switch.</p> <ul style="list-style-type: none"> RS485 supports auto flow control ESD protection (RS232): Air gap ± 8 kV, Contact ± 6 kV
BIOS	AMI UEFI 64 Mbit
Ethernet	2 x Intel GbE LAN
RAM	2 x SO-DIMM DDR4, up to 32 GB (8, 16 or 32 GB options)
Display	<p>HDMI: up to 3840 x 2160 @ 60Hz</p> <p>VGA: up to 1920 x 1200 @ 60Hz</p>
Expansion Slot	1 x full-size miniPCIe slot with SIM card holder (USB signal)
Watchdog	1-255 levels programmable



Technical Specifications (cont.)

OS Support

Microsoft Windows Windows 10 / 11 (Pro, IoT, Enterprise LTSC)

RTOS Supports deployment with CODESYS-based control applications

Linux Ubuntu, Debian

Wireless Options

Wi-Fi Optional built-in Wi-Fi & Bluetooth module:

- 802.11a/b/g/n/ac/ax/be (Wi-Fi 7)
- 2.4 GHz, 5 GHz & 6 GHz operation
- Bluetooth 5.4
- Occupies miniPCIe slot
- 2 x SMA antenna connectors

Cellular (4G LTE) Optional built-in 4G (with GPS) module:

- Supports LTE/HSPA+/UMTS/EDGE/GPRS/GSM (4G with 3G fallback)
- 1 x externally accessible SIM card slot
- Occupies miniPCIe slot
- SIM card provisioning available

4G Module Specifications

- Bands: 700/800/900/1800/2100/2600 MHz (4G), 850/900/2100 MHz (3G)
- Max downlink: 300 Mbps (42 Mbps on HSPA+)
- Max uplink: 150 Mbps (5.76 Mbps on HSPA+)
- GPS & GLONASS receiver (Standalone & Assisted modes)
- 2 x SMA connectors for diversity/MIMO antennas
- 1 x SMA connector for GPS antenna

Technical Specifications (cont.)

Expansion Cards

Expansion Overview

11 expansion card options available. Each variant is a complete, factory-tested unit shipped with its own model number. The expansion card adds I/O to the base unit and extends the chassis height.

All expansion variants share the same 200 x 154.5 mm footprint. Chassis height is 57.6 mm (base) or 74.6 mm (with expansion card). Weight ranges from 1.9 kg (base) to 2.6 kg.

Machine Vision

AP510-JH2 - 2x PoE + Strobe + DIO

- 2x PoE GbE (15W/port)
- 4x PWM strobe output, 4x trigger input
- 8x DI + 8x DO (isolated)

AP510-H1 - 4x PoE + Strobe + DIO

- 4x PoE GbE (15W/port)
- 4x PWM strobe output, 4x trigger input
- 8x DI + 8x DO (isolated)

AP510-8POE - 8x PoE GigE

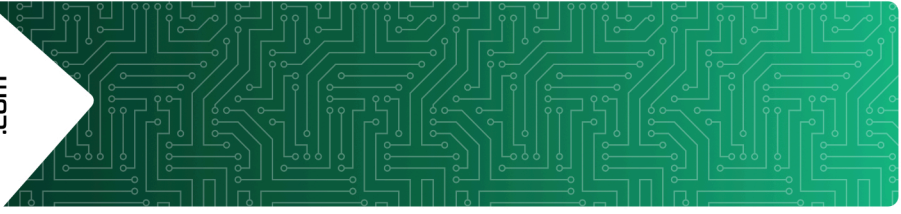
- 8x PoE GbE (15W/port)
- 120W aggregate PoE budget

AP510-H7 - 8x USB3 + Strobe + DIO

- 8x USB 3.0 Type A
- 4x PWM strobe output, 4x trigger input
- 8x DI + 8x DO (isolated)

AP510-H1BP - 4x PoE + Encoder + PWM

- 4x PoE GbE (15W/port)
- 16x DI (with encoder input), 16x DO (with PWM output)
- Quadrature encoder input for motion-synced inspection



Technical Specifications (cont.)

DIO & PoE Combo

AP510-JH2B - 2x PoE + 32 DIO

- 2x PoE GbE (15W/port)
- 16x DI + 16x DO (isolated)

AP510-H1B - 4x PoE + 32 DIO

- 4x PoE GbE (15W/port)
- 16x DI + 16x DO (isolated)

Heavy Industrial I/O

AP510-JH5 - 10x Serial + DIO + Relay

- 8x RS232/RS485
- 1x GbE additional (3 total including base)
- 2x CAN 2.0 A/B
- 16x DI + 8x DO (isolated)
- 8x Relay DO

Networking & CAN

AP510-L2 - 4x GbE LAN

- 2x Intel GbE additional (4 total including base)
- Multi-subnet routing, OT/IT segmentation

AP510-CAN2 - CAN Bus

- 2x CAN 2.0 A/B (DB9 connectors)
- CANopen, SAE J1939, DeviceNet

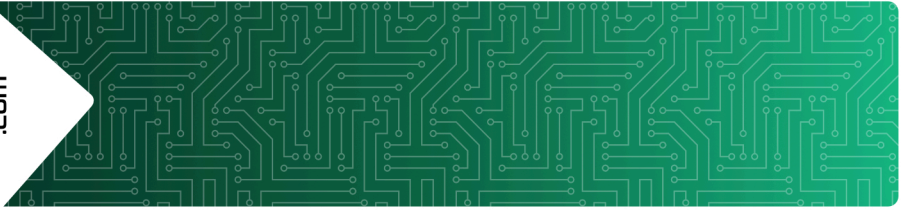
AP510-JH3 - USB + CAN + DIO

- 4x USB 3.0 (external, Type A)
- 2x CAN 2.0 A/B (DB9 connectors)
- 8x DI + 8x DO (isolated)

Power

Voltage Input

DC 12-24V \pm 10%, with overcurrent, overvoltage and polarity inverse protection



Technical Specifications (cont.)

Power Consumption

- Varies by expansion variant:
- Base unit / LAN / CAN: Max. 120W
 - USB + CAN + DIO / 2x PoE + Strobe: Max. 150W
 - USB3 Vision / 2x PoE + 32 DIO / Serial + Relay: Max. 200W
 - 4x PoE + Strobe / 4x PoE + 32 DIO / Encoder: Max. 250W
 - 8x PoE: Max. 300W

Watchdog

Optional watchdog timer generates automatic system reset if software becomes unresponsive

Chassis

Construction Aluminium-magnesium alloy

Cooling Active cooling - embedded fan

Mounting Wall mount or DIN rail

Dimensions 200 mm (L) x 154.5 mm (W) x 57.6 mm (H) base, 74.6 mm (H) with expansion card

Weight From 1.9 kg (base) to 2.6 kg (variant-dependent)

Environment

Operating Temperature -20°C to 60°C (-4°F to 140°F) with airflow (SSD)

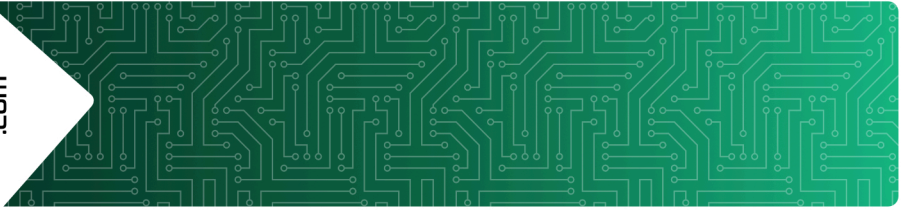
Storage Temperature -40°C to 80°C (-40°F to 176°F) with airflow (SSD)

Relative Humidity 5-95% (non-condensing)

Vibration 5-500 Hz, 1.5 Grms with SSD, per IEC 60068-2-64

Shock 20G peak acceleration (11 ms duration) with SSD, per IEC 60068-2-27

EMC CE / FCC Class A



Technical Specifications (cont.)

Certifications

- Certifications**
- CE
 - FCC Class A
 - RoHS Compliant
 - WEEE Compliance Scheme member

Warranty

Warranty 2 years RTB, extendable to 3 or 5 years

Model Numbers

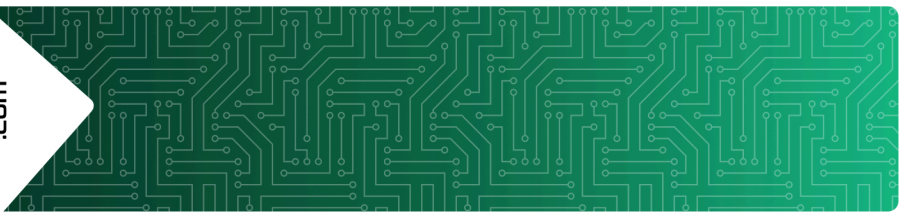
AP 5 1 X - YY

Code	Meaning
5	Modular platform (active cooling, expansion bay)
1	First generation (current hardware revision)
X	CPU class (3 = i3, 5 = i5, 7 = i7, 9 = i9)
YY	I/O expansion card fitted at factory (e.g. H1, JH2, 8POE, L2)

Example: AP515-H1 = Modular platform, Gen 1, Core i5, 4x PoE + Strobe + DIO expansion

Ordering Information

Part Number	Description
AP513	Base unit - Intel Core i3 (10th/11th Gen), 2x GbE, 4x USB 3.0, 2x RS232/RS485, VGA/HDMI, DC 12-24V
AP515	Base unit - Intel Core i5 (10th/11th Gen), 2x GbE, 4x USB 3.0, 2x RS232/RS485, VGA/HDMI, DC 12-24V
AP517	Base unit - Intel Core i7 (10th/11th Gen), 2x GbE, 4x USB 3.0, 2x RS232/RS485, VGA/HDMI, DC 12-24V
AP519	Base unit - Intel Core i9 (10th/11th Gen), 2x GbE, 4x USB 3.0, 2x RS232/RS485, VGA/HDMI, DC 12-24V
AP513-JH2	Intel Core i3 - 2x PoE + Strobe + DIO - 2-camera machine vision with light control



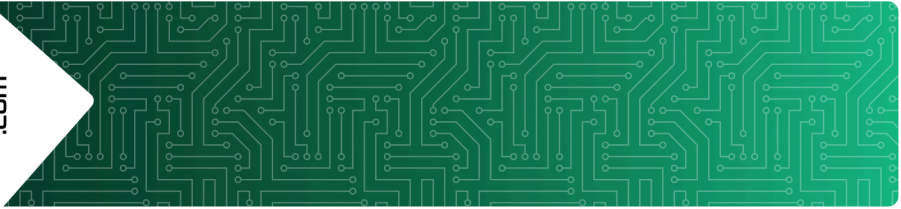
Ordering Information (cont.)

Part Number	Description
AP515-H1	Intel Core i5 - 4x PoE + Strobe + DIO - 4-camera machine vision with reject I/O
AP515-8POE	Intel Core i5 - 8x PoE GigE - up to 8 GigE Vision cameras, 120W PoE budget
AP517-H7	Intel Core i7 - 8x USB3 + Strobe + DIO - USB3 Vision camera systems
AP517-H7	Intel Core i7 - 8x USB3 + Strobe + DIO - USB3 Vision camera systems
AP517-H7	Intel Core i7 - 8x USB3 + Strobe + DIO - USB3 Vision camera systems

Specifications are subject to change without notice. E&OE.

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Product Gallery

