

# AVA-5500 Series

Rugged, Fanless AIoT Platform for Real-time Video/Graphics Analytics

**BRESSNER**  
A ONE STOP SYSTEMS COMPANY

## Features

- Intel® Core™ i7 6th/7th Gen. CPU
- DDR4 2,133 SDRAM SODIMM, up to 32GB
- NVIDIA® Quadro® GPU MXM 3.1
- 8x M12 GbE (4x PoE), 4x RS-422, 4x USB 3.0, 1x DVI-I and 4x DisplayPorts
- Operating temperature: -25 ° ~ 70 °C



## AVA-5500 Series – Robust, fanless AIoT platform for real-time video/graphics analysis

The EN50155 certified AVA-5500 AIoT platform, powered by an Intel® Core™ i7 processor and NVIDIA® Quadro® MXM integrated module, with its wide-range DC input and isolated I/O design, is not only rugged and suitable for both track and on-board use, but also provides an ideal solution for real-time video/graphics analysis applications critical to the increasingly complex railway operations. Target applications include:

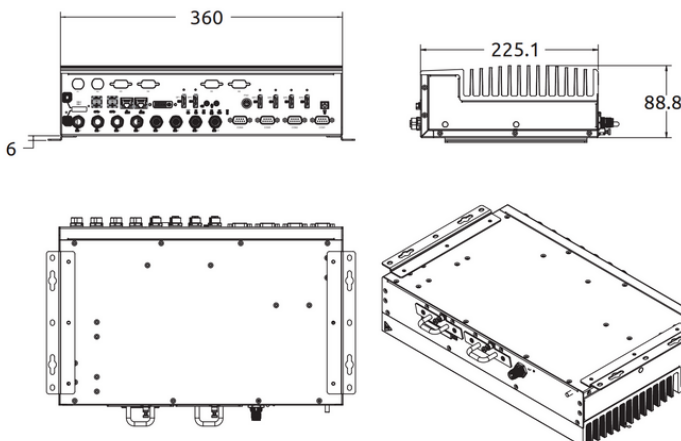
- Passenger Information Systems
- Web break detection
- Monitoring of railway stations
- Video security on board
- Detection of railway hazards

The AVA-5500 is currently being tested and commercially deployed by leading railway system integrators worldwide. In one application, the intelligent platform will be installed on dedicated rail inspection trains to process captured images of key track equipment in real time. Using a sophisticated algorithm controlled by parallel data processing and in-depth learning, the application can effectively identify potential equipment faults at a train speed of 120 km/h and trigger the alarm to notify maintenance personnel. In another application, the AVA-5500 is used in a station control room to analyze the real-time video stream received from the platform. The application is able to not only detect suspicious behavior and trigger alarms, but also perform post-event analysis.

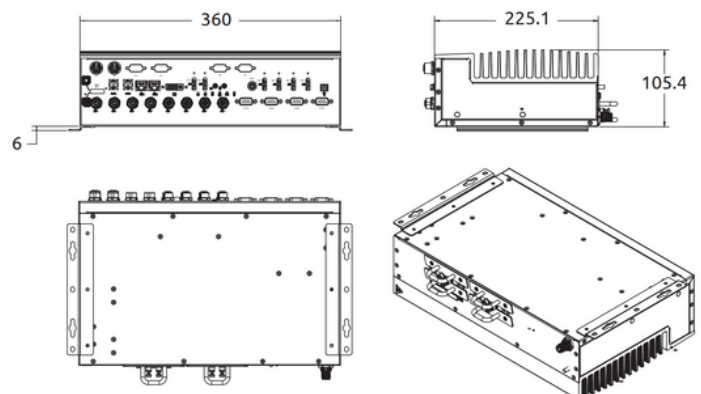
To meet different application requirements, the AVA-5500 is also available in versions with two additional USB 2.0 via M12 connectors and two 2.5-inch 6Gb/s SATA drive bays, as well as a version that supports only +12VDC power.

The AVA-5500 series can also be used for AI-enabled surveillance and video/graphics processing applications in a variety of adjacent markets including Mil/Aero, Public Safety, Energy and Industrial Automation.

### AVA-5500



### AVA-5510



# AVA-5500 Series

Rugged, Fanless AIoT Platform for Real-time  
Video/Graphics Analytics

| Specifications               | AVA-5500 Series  |
|------------------------------|--|
| <b>SYSTEM</b>                |  |
| CPU                          | Intel® Core™ 6th/ 7th-Gen. CPU<br>– i7-6820EQ CPU, 2.8GHz<br>– i7-7820EQ CPU, 3.0GHz   |
| RAM                          | Up to 32GB DDR4 2.133 SDRAM (1x SODIMM slot)   |
| Storage                      | Up to 4x 2.5" SATA drive bays(two for AVA-5500 series, four for AVA-5510 series)<br>1x CFAST slot, externally accessible<br>1x M.2 2280 (SATA)   |
| BIOS                         | AMI UEFI   |
| Expansion                    | 2x Mini PCIe card slots<br>2x full size Mini PCI Express slots<br>1x Type A/B MXM slot on PCI Express x16 (P1000, P3000)<br>1x USB 2.0 wafer connector   |
| Operating System             | Windows 10<br>Windows 8<br>Ubuntu 16.04  |
| <b>INTERFACE</b>             |  |
| Ethernet                     | 2x RJ-45 1000BASE-T Ethernet ports<br>4x M12 X-coded 1000BASE-T Ethernet ports with PoE Class 2 (7W), 1.5kV isolation<br>4x M12 A-coded 1000BASE-T Ethernet ports, 1.5kV isolation   |
| USB                          | 4x USB 3.0 Type A ports<br>Additional 2x M12 USB ports in AVA-5510 series  |
| COM                          | 4x DB-9 RS-232/422/485 ports (RS-422 by default)<br>2kVrms isolation   |
| Digital I/O                  | 4x isolated DI and 4x isolated DO via two DB-9 connectors, supported by add-on module (occupies one 2.5" drive space)<br>DI: 0 ~ 24V input voltage with 1500V DC isolation<br>DO: 3.3 ~ 35V DC output voltage, 250mA/ch sink current, 1500V DC isolation |
| Video                        | 2x DisplayPort from Intel processor<br>4x DisplayPort with lockable design from GPU MXM (SKU dependent)<br>1x DVI-I from Intel processor   |
| Audio                        | 1x Mic-in and 1x Line-out  |
| Power                        | One 4-pin S-coded M12 connector  |
| Other                        | 2x USIM slots<br>4x antenna cutouts reserved<br>1x Reset button<br>1x Power button   |
| <b>ENVIRONMENTAL</b>         |  |
| Cooling                      | Fanless  |
| Power Supply                 | +24V/+36V/+72V/+110VDC nominal power input (16.8V to 137.5V, EN50155 compliant)<br>149W on AVA-5500/6820/8G/P1000;<br>158W on AVA-5500/6820/8G/P3000 at<br>1. +24VDC in<br>2. CPU 100% loading<br>3. P1000 or P3000 100% loading                         |
| Remote Control & LED         | 1x diagnostics, 1x storage, 1x WDT, 3x user defined  |
| Operating Temperature        | Convection cooled<br>Class OT1: -25° ~ 55°C with P3000 MXM module (supported by condition)<br>Class OT3: -25° ~ 70°C with P1000 MXM module   |
| Storage Temperature          | -40° ~ 85°C  |
| Vibration / Shock Resistance | Vibration: EN50155 standard, method EN61373: 2010, Category 1 Class B<br>Shock: EN50155 standard, method EN61373: 2010, Category 1 Class A & Class B   |
| Humidity                     | EN 50125-1, compliance EN 60068-2-78: 2012 Edition 2.0, Clause 4.2 at 40°C   |
| Dimensions                   | AVA-5500: 360 (W) x 225.1 (D) x 88.8 (H) mm<br>AVA-5510: 360(W) x 225.1 (D) x 105.4 (H)mm  |
| Weight                       | 6.3kg  |
| Mounting                     | Wallmount  |
| Certifications               | Fire Protection: EN 45545-2:2013+A1:2015<br>Safety: EN 50153, EN50124-1<br>EMC: EN 50121-3-2, EN50155  |

# AVA-5500 Series

Rugged, Fanless AIoT Platform for Real-time Video/Graphics Analytics



## Ordering Information

| Model No.                 | Description   |
|---------------------------|---|
| AVA-5500/6820/16G         | Fanless railway computer with Intel®Core™ i7-6820EQ and 16GB DDR4 and two SATA bays (conformal coating by request; external cables and power adapter are excluded)                          |
| AVA-5500/7820/32G/RTX3000 | Fanless railway computer with Intel® Core™ i7-7820EQ and 32GB DDR4 with RTX3000 MXM module and two SATA bays (conformal coating by request; external cables and power adapter are excluded) |
| AVA-5500/7820/32G/P3000   | Fanless railway computer with Intel®Core™ i7-7820EQ and 32GB DDR4 with P3000 MXM module and two SATA bays (conformal coating by request; external cables and power adapter are excluded)    |
| AVA-5510/6820/16G/PI000   | Fanless railway computer with Intel®Core™ i7-6820EQ and 16GB DDR4 with PI000 MXM module and four SATA bays (conformal coating by request; external cables and power adapter are excluded)   |

| Optional Accessories                        | Description  |
|---|--|
| Factory-installed industrial grade SSD      |  |
| Mini PCIe card 3G/Wi-Fi/BT/GPS wireless kit |  |
| Mini PCIe card CAN bus Kit                  |  |
| Starter cable kit for AVA-5500              | 4x PoE M12(X) to RJ-45 cable, 4x Ethernet M12 A(M) to RJ-45(F) cable, 1x PS/2 KB/MS Y cable and 1x M12(S) to DC power cable                                    |
| Starter cable kit for AVA-5510              | 4x PoE M12(X) to RJ-45 cable, 4x Ethernet M12 A(M) to RJ-45(F) cable, 2x M12(A) to USB 2.0 type A cable, 1x PS/2 KB/MS Y cable and 1x M12(S) to DC power cable |