

# AVA-5500 Series

*Rugged, Fanless AIoT Platform with NVIDIA Quadro® GPU Embedded for Real-time Video/Graphics Analytics*

## Features

- 6th/7th Gen Intel® Core™ i7 Processors
- NVIDIA Quadro® GPU MXM 3.1 Type A/B module on PCI Express x16
- 8x M12 GbE (4x PoE), 4x RS-422, 4x USB 3.0, 1x DVI-I, 4x DisplayPort with lockable connectors
- Multiple storage options: 2x 2.5" SATA 6.0 Gb/s drive bays, 1x M.2 2280 slot, 1x CFAST socket
- GNSS/3G/4G/WLAN support via 2x Mini PCIe slots and 2x USIM slots
- 4x isolated DI and 4x isolated DO
- MVB/CAN bus support through Mini PCIe add-on module
- Wide range DC input: 24VDC, 36VDC, 72VDC and 110VDC
- EN50155-compliant, rugged, fanless design for harsh operating environments

## Specifications

### System

#### Processor

6th/7th Gen Intel® Core™ i7 processors (formerly Skylake and Kaby Lake)  
 Intel® Core™ i7-6820EQ CPU, 2.8GHz  
 Intel® Core™ i7-7820EQ CPU, 3.0GHz

#### Memory

Dual channel DDR4-2133 SDRAM with dual SODIMM sockets, up to 32GB

#### BIOS

AMI UEFI

### Storage

Up to 4x 2.5" SATA drive bays  
 (two for AVA-5500 series, four for AVA-5510 series)  
 1x CFAST slot, externally accessible  
 1x M.2 2280 (SATA)

### Graphics

2x DisplayPort from Intel processor  
 4x DisplayPort with lockable design from GPU MXM (SKU dependent)  
 1x DVI-I from Intel processor

### Connectivity

#### Ethernet

2x RJ-45 1000BASE-T Ethernet ports  
 4x M12 X-coded 1000BASE-T Ethernet ports with PoE Class 2 (7W), 1.5kV isolation  
 4x M12 A-coded 1000BASE-T Ethernet ports, 1.5kV isolation

#### USB

4x USB 3.0 Type A ports  
 Additional 2x M12 USB ports in AVA-5510 series

#### Serial Port

4x DB-9 RS-232/422/485 ports (RS-422 by default)  
 2kVrms isolation



### Digital I/O (optional)

4x isolated DI and 4x isolated DO via two DB-9 connectors, supported by add-on module (occupies one 2.5" drive space)  
 DI: 0-24V input voltage with 1500VDC isolation  
 DO: 3.3V-35VDC output voltage, 250mA/ch sink current, 1500VDC isolation

### Audio

Mic-in/ Line-out ports

### CAN/MVB

Supported by Mini PCIe card with two DB-9 outputs

### Wireless

2x Mini PCIe card slots are available for cellular modem or WLAN modules  
 Compliant to Mini PCIe card spec v1.2 (PCIe and USB 2.0)  
 Each Mini PCIe slot supports one micro-SIM  
 4x RP-SMA antenna connector cutouts

### In-system Expansion I/O

2x full size Mini PCI Express slots  
 1x Type A/B MXM slot on PCI Express x16 (P1000, P3000)  
 1x USB 2.0 wafer connector

### External I/O

2x USIM slots  
 4x M12 GbE with PoE ports  
 4x M12 GbE ports  
 2x RJ-45 GbE ports  
 6x DisplayPorts  
 1x DVI-I port  
 4x USB 3.0 Type A ports  
 2x M12 USB 2.0 ports (in AVA-5510)  
 2x DB-9 connectors reserved for MVB or CAN Mini PCIe module  
 1x Mic-in port  
 1x Line-out port  
 Four antenna cutouts reserved  
 Reset button  
 Power button

## Specifications

### • Miscellaneous

#### LEDs

1x diagnostics, 1x storage, 1x WDT, 3x user defined

#### Battery

Coin cell CR2032 (change to rechargeable golden cap by request)

#### Board Management

ADLINK SEMA 3.0:

- Watch Dog
- Hardware monitor
- Runtime statistics
- Failsafe dual BIOS

#### Power Supply

One 4-pin S-coded M12 connector

+24V/+36V/+72V/+110VDC nominal power input (16.8V to 137.5V, EN50155 compliant)

#### Power Consumption

149W on AVA-5500/6820/8G/P1000; 158W on AVA-5500/6820/8G/P3000 at

1. +24VDC in
2. CPU 100% loading
3. P1000 or P3000 100% loading

### • Mechanical

#### Dimension (WxDxH)

360mm x 225.1mm x 88.8mm (for AVA-5500)

360mm x 225.1mm x 105.4mm (for AVA-5510)

#### Weight

6.3 kg

#### Mounting

Wall mount

### • Environmental

#### Operating Temperature

Convection cooled

Class OT1: -25°C to 55°C with P3000 MXM module (supported by condition)

Class OT3: -25°C to 70°C with P1000 MXM module

#### Storage Temperature

-40°C to +85°C

#### Humidity

EN 50125-1, compliance EN 60068-2-78: 2012 Edition 2.0, Clause 4.2 at 40°C

#### Vibration

EN50155 standard, method EN61373: 2010, Category 1 Class B

#### Shock

EN50155 standard, method EN61373: 2010, Category 1 Class A & Class B

#### Safety

EN 50153

EN50124-1

#### Fire Protection

EN 45545-2:2013+A1:2015

#### EMC

EN 50121-3-2, EN50155

### • Operating System

Windows 8, Windows 10

Ubuntu 16.04

## Ordering Information

- **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/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)  
\*Please contact your sales representative for P3000 support condition.
- **AVA-5510/6820/16G/P1000**  
Fanless railway computer with Intel® Core™ i7-6820EQ and 16GB DDR4 with P1000 MXM module and four SATA bays (conformal coating by request; external cables and power adapter are excluded)

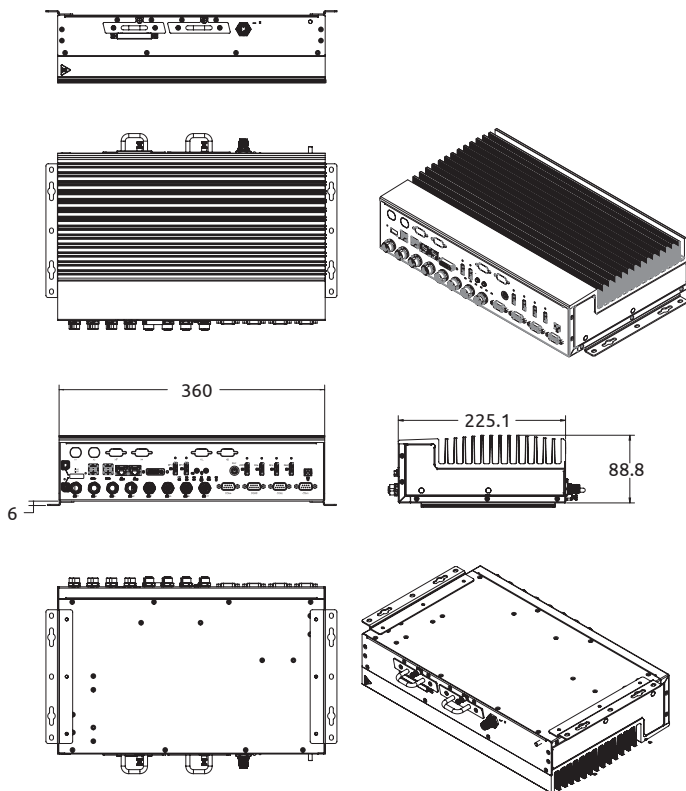
## Optional Accessories

- **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

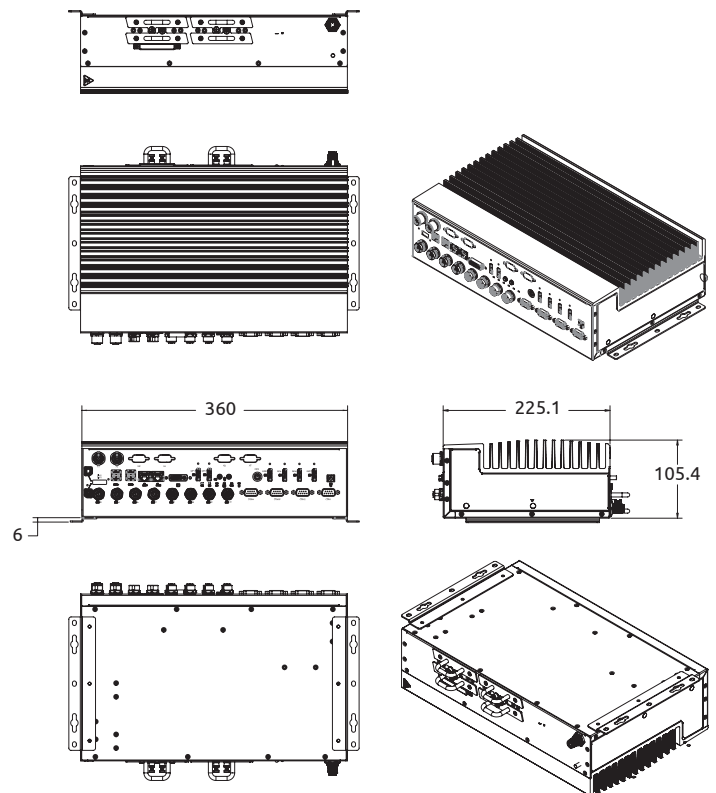
## Dimensions

(Units: mm)

AVA-5500



AVA-5510



# AVA-5520

## *Rugged, Fanless AIoT Platform with NVIDIA Quadro® GPU Embedded for Real-time Video/Graphics Analytics*

### Features

- 6th/7th Gen Intel® Core™ i7 Processors, up to 32GB
- NVIDIA Quadro® GPU MXM 3.1 Type A/B module on PCI Express x16
- 8x M12 GbE (4x PoE), 4x RS-422, 4x USB 3.0, 1x DVI-I, 4x DisplayPort with lockable connectors
- Multiple storage options: 2x 2.5" SATA 6.0 Gb/s drive bays, 1x M.2 2280 slot, 1x CFAST socket
- GNSS/3G/4G/WLAN support via 2x Mini PCIe slots and 2x USIM slots
- 4x isolated DI and 4x isolated DO
- +12VDC power input



### Specifications

#### • System

##### Processor

6th/7th Gen Intel® Core™ i7 processors (formerly Skylake and Kaby Lake)  
 Intel® Core™ i7-6820EQ CPU, 2.8GHz  
 Intel® Core™ i7-7820EQ CPU, 3.0GHz

##### Memory

Dual channel DDR4-2133 SDRAM with dual SODIMM sockets, up to 32GB

##### BIOS

AMI UEFI

#### • Storage

2x 2.5" SATA drive bays  
 1x CFAST slot, externally accessible  
 1x M.2 2280 (SATA)

#### • Graphics

2x DisplayPort from Intel processor  
 4x DisplayPort with lockable design from GPU MXM (SKU dependent)  
 1x DVI-I from Intel processor

#### • Connectivity

##### Ethernet

2x RJ-45 1000BASE-T Ethernet ports  
 4x M12 X-coded 1000BASE-T Ethernet ports with PoE Class 2 (7W), 1.5kV isolation  
 4x M12 A-coded 1000BASE-T Ethernet ports, 1.5kV isolation

##### USB

4x USB 3.0 Type A ports

##### Serial Port

4x DB-9 RS-232/422/485 ports (RS-422 by default)  
 2kVrms isolation

#### Digital I/O (optional)

4x isolated DI and 4x isolated DO via two DB-9 connectors, supported by add-on module (occupies one 2.5" drive space)  
 DI: 0-24V input voltage with 1500VDC isolation  
 DO: 3.3V-35VDC output voltage, 250mA/ch sink current, 1500VDC isolation

#### Audio

Mic-in/ Line-out ports

#### Wireless

2x Mini PCIe card slots are available for cellular modem or WLAN modules  
 Compliant to Mini PCIe card spec v1.2 (PCIe and USB 2.0)  
 Each Mini PCIe slot supports one micro-SIM  
 4x RP-SMA antenna connector cutouts

#### In-system Expansion I/O

2x full size Mini PCI Express slots  
 1x Type A/B MXM slot on PCI Express x16 (MXM P1000, P3000, P5000)  
 1x USB 2.0 wafer connector

#### External I/O

2x USIM slots  
 4x M12 GbE with PoE ports  
 4x M12 GbE ports  
 2x RJ-45 GbE ports  
 6x DisplayPorts  
 1x DVI-I port  
 4x USB 3.0 Type A ports  
 1x Mic-in port  
 1x Line-out port  
 Four antenna cutouts reserved  
 Reset button  
 Power button

## Specifications

### • Miscellaneous

#### LEDs

1x diagnostics, 1x storage, 1x WDT, 3x user defined

#### Battery

Coin cell CR2032

#### Board Management

ADLINK SEMA 3.0:

- Watch Dog
- Hardware monitor
- Runtime statistics
- Failsafe dual BIOS

#### Power Supply

One 4-pin S-coded M12 connector  
+12VDC nominal power input

#### Power Consumption

177W on AVA-5520/6820/32G/P5000 at

1. +12VDC in
2. CPU 100% loading
3. P5000 100% loading

### • Mechanical

#### Dimension (WxDxH)

360mm x 225.1mm x 88.8mm

#### Weight

6.3 kg

#### Mounting

Wall mount

### • Environmental

#### Operating Temperature

Convection cooled

-25°C to 70°C with P1000 MXM module

0°C to 55°C with P3000/P5000 MXM module

#### Storage Temperature

-40°C to +85°C

#### Humidity

EN 50125-1, compliance EN 60068-2-78: 2012 Edition 2.0, Clause 4.2 at 40°C

#### Vibration

1 m/s<sup>2</sup> @ 5 Hz – 150 Hz operating, according to EN61373

#### Shock

EN50155 standard, method EN61373: 2010, Category 1 Class A & Class B

#### Safety

EN 50153

UL 94V-0

#### Fire Protection

EN 45545-2:2013+A1:2015

#### EMC

EN 50121-3-2, EN50155

### • Operating System

Windows 8, Windows 10

Ubuntu 16.04

## Ordering Information

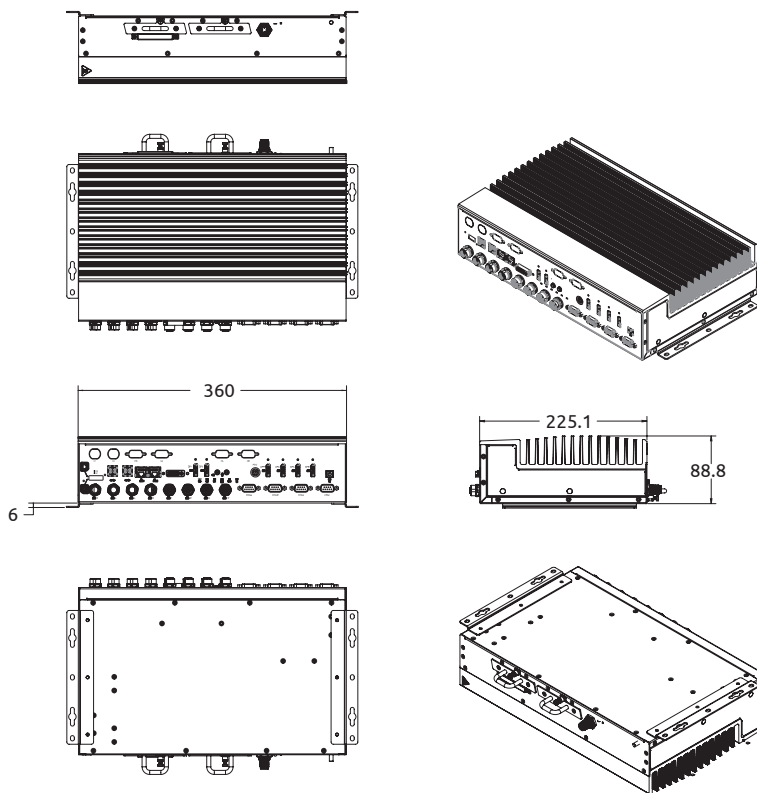
- **AVA-5520/7820/32G/P5000**  
Fanless computer with Intel® Core™ i7-7820EQ and 32GB DDR4 with P5000 MXM module and two SATA bays (external cables and power adapter are excluded)
- **AVA-5520/6820/16G/P3000**  
Fanless computer with Intel® Core™ i7-6820EQ and 16GB DDR4 with P3000 MXM module and two SATA bays (external cables and power adapter are excluded)

## Optional Accessories

- **Factory-installed industrial grade SSD, single or dual 256GB options**
- **Starter cable kit for AVA-5520**  
4x PoE M12(X) to RJ45 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

## Dimensions

(Units: mm)



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