

# Powerful 4th Generation Intel<sup>®</sup> Core<sup>™</sup> i7 Processor-Based Fanless Embedded Computer



#### Features

- Equipped with 4th generation Intel® Core™ i7-4700EQ processor
- Intel® Quick Sync Video technology supported with ADLINK MSDK+
- Intel® vPro™ technology for security and manageability (iAMT™ 9.0. TPM 1.2. TXT. Intel® VT™)
- Built-in ADLINK SEMA 2.2 (Smart Embedded Management Agent)
- Rich I/O:
  - DVI-I+2x DisplayPorts, 6x USB 3.0, 4x GbE ports, 8x isolated DI/O
  - 2x SATA-III (6.0 Gb/s) ports, 2x mPCle slots (one supporting mSATA SSD)
- Rugged design for -20°C to 60°C fanless operation (w/ industrial SSD)

### Applications

- Intelligent Transportation Systems
- Digital Security & Surveillance
- Facility Management in Critical Infrastructures
- Building Automation Systems
- In-Vehicle Infotainment Systems
- Factory/Machine Automation

## Software Support

#### OS Information

- Windows® 7 / 7 Embedded / XP / XP Embedded
- Linux\*
- \*Linux Distribution by Request

#### ■ Easy Maintenance and High Flexible



• Ready-to-deploy wall mount kit

#### Introduction

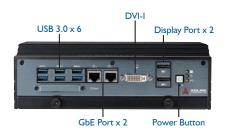
ADLINK's new Matrix MXE-5400 series of rugged designed quad-core fanless computers, featuring the latest 4th generation Intel® Core™ i7-4700EQ (codename: Haswell) delivers outstanding processor performance with minimum power consumption. Intel's Quick Sync Technology and Core IPG equip the MXE-5400 with market-leading performance boost in image/video related applications.

With the implementation of Intel® vPro™ (iAMT™ 9.0, TXT, TPM 1.2, Intel VT) technology and ADLINK's proprietary SEMA (Smart Embedded Management Agent) tool, the MXE-5400 maximises manageability and security for a world of applications. Together they provide efficient remote monitoring of system activity and health in real time, system control over a robust secured channel, and fully manageable complete utilization of system resources.

The MXE-5400 series accommodates rich I/O interfaces in a compact system size, offering versatile connection to a wide range of applications. Dual mini PCle slots and USIM socket empower the MXE-5400 to act as a communications hub for a variety of wireless connections, such as BT/WiFi and 3G. One of the two slots is configurable to a mini SATA interface, cooperating with internal SATA storage to deliver RAID 0/1/5 functionality.

Leveraging proprietary mechanical engineering, the MXE-5400 series continues to offer all the popular features of the Matrix E series, including cable-free construction, wide operating temperature ranges, and 5 Grms vibration resistance. The entire ADLINK Matrix line undergoes rigorous testing for operational verification.

Combing superior processor performance, security and manageability, superior wireless capability, and rich I/O, in a compact and robust package, the ADLINK MXE-5400 is an ideal choice for a wide range of applications supporting intelligent transportation, in-vehicle multimedia, and surveillance and factory automation applications.



DC Input (9-32 V) eSATA eSATA

MIC-In & Speaker-Out

MXF-5400 Series Front Panel

MXF-5400 Series Back Panel



MXE-5400 with Antenna



- Dual 2.5" SATA-III Storage capability
- One internal USB 2.0 for dongle



Two Mini PCI-e slots (one supporting mSATA SSD)

## **Specifications**

Processor	Model Name	MXE-5401			
Chipset	System Core				
	Processor	Intel® Core™ i7-4700EQ 2.4 GHz processor			
Memory   DDR3L 1600 SODIMM 4GB (up to 16 GB)   Viol Interface	Chipset	Intel QM87			
Vol Interface	■ Video	Support for up to 3 independent displays, I*DVI-I + 2*Display port			
Ethernet	■ Memory				
Serial Ports	I/O Interface				
USB   6x USB3.0 + 1x USB2.0     DIO   8x D1 + 8x D0 w/ 1.5 kv isolation     Audio   1x Audio In + 1x Line Out	■ Ethernet	4x GbE (3x Intel® I210IT + 1x I217LM PHY)			
DIO	Serial Ports	4x COM (2x RS-232 + 2x RS-232/422/485)			
Audio   Ix Audio In + Ix Line Out	■ USB	6x USB3.0 + 1x USB2.0			
Expansions  ■ Mini PCIe 2x PCIe mini card slots w/ 1x mSATA support (jumper select)  ■ USIM 1x USIM slot for 3G communication  Manageability  ■ WDT 1 Hierarchical WDT supported  ■ SEMA	■ DIO	8x DI + 8x DO w/ I.5 kv isolation			
Mini PCle         2x PCle mini card slots w/ 1x mSATA support (jumper select)           USIM         1x USIM slot for 3G communication           Manageability         WDT           WDT         Hierarchical WDT supported           SEMA         SEMA 2.2 (Smart Embedded Management Agent)           Power Supply         DC Input         9-32 V <sub>oc</sub> B Cd Input         9-32 V <sub>oc</sub> B Cd Input         9-32 V <sub>oc</sub> Storage Device           SATA Storage         2 x onboard SATA-III, supporting 2.5" storage           B CompactFlash         1 x type II CFast slot           B cSATA         1 x eSATA           Mechanical         Weight           B Demension         230 (W) x 205 (D) x 75 (H) mm (9" x 8" x 2.9")           Mounting         3 Standard: 0"C to 50"C (32 °F to 122 °F) / [Extended temperature option*]:-20"C to 60"C (-4°F to 140°F)           Environmental         Storage Temperature           B Storage Temperature         A"O"C to 85"C (-40°F to 185°F)           Humidity         —959% @ 40°C (non-condensing)           Wibration         Operating 5Grms, 5-500 Hz, 3 axes w/ CF or SSD <th< td=""><td>Audio</td><td>Ix Audio In + Ix Line Out</td></th<>	Audio	Ix Audio In + Ix Line Out			
USIM	Expansions				
Manageability  ■ WDT Hierarchical WDT supported  ■ SEMA SEMA 2.2 (Smart Embedded Management Agent)  Power Supply  ■ DC Input 9-32 V <sub>oc</sub> ■ AC Input optional 160W AC-DC adapter  Storage Device  ■ SATA Storage 2 2x onboard SATA-III, supporting 2.5" storage  ■ CompactFlash 1x type II CFast slot 1x eSATA  Mechanical  ■ Demension 230 (W) x 205 (D) x 75 (H) mm (9" x 8" x 2.9")  ■ Weight 3.8 kg (8.39 lbs)  ■ Wounting Wall mount kit  Environmental  ■ Operating Temperature* Standard: 0°C to 50°C (32 °F to 122 °F) / [Extended temperature option*]:-20°C to 60°C (-4°F to 140°F)  ■ Storage Temperature* 95% @ 40°C (non-condensing)  ■ Wibration Operating 5Grms, 5-500 Hz, 3 axes w/ HDD  ■ ESD Contact +/- 4kV, Air +/- 8kV  Operating 100G, half sine II ms duration w/ CF or SSD  Operating 100G, half sine II ms duration w/ HDD  ■ EMC  ■ EMC  ■ EMC  ■ EMC  ■ CE & FCC Class A	■ Mini PCle	2x PCle mini card slots w/ 1x mSATA support (jumper select)			
WDT	■ USIM	Ix USIM slot for 3G communication			
■ SEMA  SEMA 2.2 (Smart Embedded Management Agent)  Power Supply  ■ DC Input  9-32 V <sub>DC</sub> AC Input  Optional 160W AC-DC adapter  Storage Device  ■ SATA Storage  ■ CompactPlash  ■ ESATA  Ix eSATA  Mechanical  ■ Demension  ■ Weight  ■ Mounting  ■ Mounting  ■ Operating Temperature*  Standard: 0°C to 50°C (32°F to 122°F) / [Extended temperature option*]:-20°C to 60°C (-4°F to 140°F)  ■ Storage Temperature  ■ Uperating Temperature  ■ Operating Scrims, 5-500 Hz, 3 axes w/ Ep or SSD  Operating 0.5Grms, 5-500 Hz, 3 axes w/ HDD  ■ ESD  ■ Contact +/- 4kV, Air +/- 8kV  Operating 20G, half sine I I ms duration. w/ HDD  ■ EMC  EMC  EMC  CE & FCC Class A	Manageability				
Power Supply  DC Input  Post put  P	■ WDT	Hierarchical WDT supported			
■ DC Input  9-32 V <sub>DC</sub> AC Input  Optional 160W AC-DC adapter  Storage Device  SATA Storage  CompactFlash  CompactFlash  ESATA  Storage  Demension  Weight  Mounting  Mounting  Environmental  Operating Temperature*  Standard: 0°C to 50°C (32 °F to 122 °F) / [Extended temperature option*]:-20°C to 60°C (-4°F to 140°F)  Storage Temperature  Humidity  Operating Sorms, 5-500 Hz, 3 axes w/ CF or SSD  Operating 100G, half sine 11 ms duration w/ HDD  EMC  EMC  EMC  Operating 200G, half sine 11 ms duration. w/ HDD  EMC  EMC  EMC  CE & FCC Class A	■ SEMA	SEMA 2.2 (Smart Embedded Management Agent)			
■ AC Input       optional 160W AC-DC adapter         Storage Device         ■ SATA Storage       2x onboard SATA-III, supporting 2.5" storage         ■ CompactFlash       1x type II CFast slot         ■ eSATA       1x eSATA         Mechanical         ■ Demension       230 (W) x 205 (D) x 75 (H) mm (9" x 8" x 2.9")         ■ Weight       3.8 kg (8.39 lbs)         ■ Mounting       Wall mount kit         Environmental       Storage Temperature*         ■ Opertating Temperature*       Standard: 0°C to 50°C (32 °F to 122 °F) / [Extended temperature option*]:-20°C to 60°C (-4°F to 140°F)         ■ Storage Temperature       -40°C to 85°C (-40°F to 185°F)         ■ Humidity       ~95% @ 40°C (non-condensing)         ■ Vibration       Operating 5Grms, 5-500 Hz, 3 axes w/ CF or SSD Operating 0.5Grms, 5-500 Hz, 3 axes w/ HDD         ■ ESD       Contact +/- 4kV, Air +/- 8kV         ■ Shock       Operating 100G, half sine 11 ms duration w/ CF or SSD Operating 20G, half sine 11 ms duration. w/ HDD         ■ EMC       CE & FCC Class A	Power Supply				
■ AC Input       optional 160W AC-DC adapter         Storage Device         ■ SATA Storage       2x onboard SATA-III, supporting 2.5" storage         ■ CompactFlash       1x type II CFast slot         ■ eSATA       1x eSATA         Mechanical         ■ Demension       230 (W) x 205 (D) x 75 (H) mm (9" x 8" x 2.9")         ■ Weight       3.8 kg (8.39 lbs)         ■ Mounting       Wall mount kit         Environmental       Storage Temperature*         ■ Opertating Temperature*       Standard: 0°C to 50°C (32 °F to 122 °F) / [Extended temperature option*]:-20°C to 60°C (-4°F to 140°F)         ■ Storage Temperature       -40°C to 85°C (-40°F to 185°F)         ■ Humidity       ~95% @ 40°C (non-condensing)         ■ Vibration       Operating 5Grms, 5-500 Hz, 3 axes w/ CF or SSD Operating 0.5Grms, 5-500 Hz, 3 axes w/ HDD         ■ ESD       Contact +/- 4kV, Air +/- 8kV         ■ Shock       Operating 100G, half sine 11 ms duration w/ CF or SSD Operating 20G, half sine 11 ms duration. w/ HDD         ■ EMC       CE & FCC Class A	■ DC Input	9-32 V <sub>DC</sub>			
■ SATA Storage  CompactFlash Ix type II CFast slot Ix eSATA Ix eSATA  Mechanical  Demension Weight Mounting Mounting  Environmental Operating Temperature* Standard: 0°C to 50°C (32 °F to 122 °F) / [Extended temperature option*]:-20°C to 60°C (-4°F to 140°F) Humidity Vibration Operating 5Grms, 5-500 Hz, 3 axes w/ CF or SSD Operating 0.5Grms, 5-500 Hz, 3 axes w/ HDD  ESD Contact +/- 4kV, Air +/- 8kV  Semicrope Additional Addit	■ AC Input				
■ CompactFlash       Ix type II CFast slot         ■ eSATA       Ix eSATA         Mechanical         ■ Demension       230 (W) x 205 (D) x 75 (H) mm (9" x 8" x 2.9")         ■ Weight       3.8 kg (8.39 lbs)         ■ Mounting       Wall mount kit         Environmental         ■ Opertating Temperature*       Standard: 0°C to 50°C (32 °F to 122 °F) / [Extended temperature option*]:-20°C to 60°C (-4°F to 140°F)         ■ Storage Temperature       -40°C to 85°C (-40°F to 185°F)         ■ Humidity       ~95% @ 40°C (non-condensing)         ■ Vibration       Operating 5Grms, 5-500 Hz, 3 axes w/ CF or SSD         Operating 0.5Grms, 5-500 Hz, 3 axes w/ HDD         ■ ESD       Contact +/- 4kV, Air +/- 8kV         ■ Shock       Operating 100G, half sine 11 ms duration w/ CF or SSD         Operating 20G, half sine 11 ms duration. w/ HDD         ■ EMC       CE & FCC Class A	Storage Device				
■ eSATA  Mechanical  Demension  230 (W) x 205 (D) x 75 (H) mm (9" x 8" x 2.9")  Weight  3.8 kg (8.39 lbs)  Mounting  Environmental  Opertating Temperature*  Standard: 0°C to 50°C (32 °F to 122 °F) / [Extended temperature option*]:-20°C to 60°C (-4°F to 140°F)  Storage Temperature  -40°C to 85°C (-40°F to 185°F)  Humidity  -95% @ 40°C (non-condensing)  Vibration  Operating 5Grms, 5-500 Hz, 3 axes w/ CF or SSD  Operating 0.5Grms, 5-500 Hz, 3 axes w/ HDD  ESD  Contact +/- 4kV, Air +/- 8kV  Shock  Operating 100G, half sine 11 ms duration w/ CF or SSD  Operating 20G, half sine 11 ms duration. w/ HDD  EMC	■ SATA Storage	2x onboard SATA-III, supporting 2.5" storage			
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■ Mounting       Wall mount kit         Environmental       Standard: 0°C to 50°C (32 °F to 122 °F) / [Extended temperature option*]:-20°C to 60°C (-4°F to 140°F)         ■ Storage Temperature       -40°C to 85°C (-40°F to 185°F)         ■ Humidity       ~95% @ 40°C (non-condensing)         ■ Vibration       Operating 5Grms, 5-500 Hz, 3 axes w/ CF or SSD         Operating 0.5Grms, 5-500 Hz, 3 axes w/ HDD         ■ ESD       Contact +/- 4kV, Air +/- 8kV         ■ Shock       Operating 100G, half sine 11 ms duration w/ CF or SSD         Operating 20G, half sine 11 ms duration. w/ HDD         ■ EMC       CE & FCC Class A	■ Demension	230 (W) × 205 (D) × 75 (H) mm (9" × 8" × 2.9")			
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■ Opertating Temperature*       Standard: 0°C to 50°C (32 °F to 122 °F) / [Extended temperature option*]:-20°C to 60°C (-4°F to 140°F)         ■ Storage Temperature       -40°C to 85°C (-40°F to 185°F)         ■ Humidity       ~95% @ 40°C (non-condensing)         ■ Vibration       Operating 5Grms, 5-500 Hz, 3 axes w/ CF or SSD         Operating 0.5Grms, 5-500 Hz, 3 axes w/ HDD         ■ ESD       Contact +/- 4kV, Air +/- 8kV         ■ Shock       Operating 100G, half sine 11 ms duration w/ CF or SSD         Operating 20G, half sine 11 ms duration. w/ HDD         ■ EMC       CE & FCC Class A	Mounting	Wall mount kit			
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■ ESD  Contact +/- 4kV, Air +/- 8kV  Shock  Operating 100G, half sine 11 ms duration w/ CF or SSD  Operating 20G, half sine 11ms duration. w/ HDD  ■ EMC  CE & FCC Class A					
Operating 20G, half sine I Ims duration. w/ HDD  ■ EMC CE & FCC Class A	■ ESD				
Operating 20G, half sine I Ims duration. w/ HDD  ■ EMC CE & FCC Class A	Shock	Operating 100G, half sine 11 ms duration w/ CF or SSD			
■ EMC CE & FCC Class A					
■ Safety UL, CB	■ EMC				
	■ Safety	UL, CB			

# Ordering Information

Model Name	Description	Storage	Memory	DIO	Expansion
MXE-5401	Intel® Core™ i7-4700EQ fanless embedded computer	2x 2.5" HDD/SSD	4 GB DDR3L	8DI+8DO w/ I.5kv isolation	2x mPCIe slots (one supporting mSATA SSD)

## **Optional Accessories**

8/16 GB DDR3L Upgrade	Upgrade to 8/16 GB DDR3L memory		
500 GB HDD Option	Factory-installed 500 GB SATA HDD (0 to 50°C) (32 to 122°F)		
32/64 GB SSD Option	Factory-installed 32/64 GB MLC industrial grade SSD (-20 to 70°C) (-4 to 158°F)		
160 W AC-DC Adapter	160 W industrial grade AC-DC adapter (-20 to $60^{\circ}$ C) (-4 to $140^{\circ}$ F)		
Wireless Kit Option	3G/WiFi/BT/GPS wireless kit		
Extended Temperature Option*	Optional screening to extend the operating temperature of MXE-5401 to -20 to $60^{\circ}\text{C}$ (-4 to $140^{\circ}\text{F}$ )		