



APPENDIX A

Technical Specifications

This appendix describes the WAE models listed here:

Model	Product Number
Wide Area Application Engine 512	WAE-512-K9
Wide Area Application Engine 612	WAE-612-K9

This appendix contains the following sections:

- [Appliance Specifications, page A-1](#)
- [Adapter Specifications, page A-4](#)

Appliance Specifications



Note

Your system software might not support all of the WAE-supported hardware features.

[Table A-1](#) summarizes the features and specifications for the WAE-512 and WAE-612.

Table A-1 *Appliance Features and Specifications*

Specification	Description
Microprocessor	<ul style="list-style-type: none"> WAE-512—One Intel Pentium 4, 3.0-GHz processor 531, 800-MHz FSB¹, 1-MB level-2 cache WAE-612—One Intel Pentium D Smithfield 3.0 GHz, Dual Core, 800-MHz FSB, 2-MB level-2 cache
Memory	<ul style="list-style-type: none"> WAE-512—One, two, or four 1-GB RoHS compliant SDRAM RDIMMs The system comes with one 1-GB RDIMM. You have the option to add one or three additional 1-GB memory modules. WAE-612—Two or four 1-GB RoHS compliant SDRAM RDIMMs The system comes with two 1-GB RDIMMs. You have the option to add two additional 1-GB memory modules.
Expansion bays	Two 3.5-in. (8.89-cm) slim-height bays for hard disk drives
Expansion slots	Two 64-bit, 100 MHz PCI-X half-length slots (1 low profile, 1 full profile)
Hard disk controllers	<ul style="list-style-type: none"> WAE-512—Serial ATA (SATA) controller with integrated RAID (simple swap) WAE-612—Serial-attached SCSI (SAS) controller with integrated RAID (hot swap)
Hard disk drives	<ul style="list-style-type: none"> WAE-512—One or two 80-GB or 250-GB simple-swap serial advanced technology attachment (SATA) hard disk drives. Drive-type mixing is not allowed. WAE-612—Two 146-GB or 300-GB serial attached SCSI (SAS). Drive-type mixing is not allowed.
Adapters	<ul style="list-style-type: none"> 1-port Fibre Channel adapter 1-port MPEG A/V decoder adapter 4-port Ethernet inline network adapter <p>Note The WAE-512 and WAE-612 support full-height three-quarter-length adapter cards in PCI slot 1.</p>
Power supply	1 AC-input

Table A-1 Appliance Features and Specifications (continued)

Specification	Description
Dimensions	<ul style="list-style-type: none"> • Height: 1.75 in., 1 RU (43 mm) • Depth: 22 in. (559 mm) • Width: 17.32 in. (440 mm)
Weight	Maximum weight: 28 lb (12.7 kg) depending on your configuration
Electrical input	<ul style="list-style-type: none"> • Sine-wave input (47–63 Hz) required • Input voltage low range: <ul style="list-style-type: none"> – Minimum: 100 VAC – Maximum: 127 VAC • Input voltage high range: <ul style="list-style-type: none"> – Minimum: 200 VAC – Maximum: 240 VAC • Input kilovolt-amperes (kVA), approximately: <ul style="list-style-type: none"> – Minimum: 0.102 kVA – Maximum: 0.55 kVA
Ports Supported	<ul style="list-style-type: none"> • Two 1000BASE-TX, 100BASE-TX, 10BASE-T (dual) Ethernet ports • Serial port • Audio/video ports (on optional adapter): <ul style="list-style-type: none"> – 3 BNC connectors – 2 mini-XLR connectors
Temperature	<ul style="list-style-type: none"> • Operating: 50° to 95°F (10° to 35°C) • Nonoperating: –104° to 140°F (–40° to +60°C)
Heat Dissipation	<ul style="list-style-type: none"> • Minimum configuration: 307 Btu²/hr (90 Watts) • Maximum configuration: 850 Btu/hr (250 Watts)
Humidity	<ul style="list-style-type: none"> • Operating: 8 to 80% • Nonoperating: 8 to 80%

Table A-1 *Appliance Features and Specifications (continued)*

Specification	Description
Altitude	Maximum altitude: 6500 ft (2000 m)
Acoustical noise emissions	<ul style="list-style-type: none"> • Sound power, idling: 6.5 bel maximum • Sound power, operating: 6.5 bel maximum

1. FSB = front side bus
2. Btu = British thermal unit

Adapter Specifications

[Table A-2](#) describes the Fibre Channel adapter specifications.

Table A-2 *Fibre Channel Adapter Specifications*

Fibre Channel adapter	<ul style="list-style-type: none"> • Bus type: Fiber-optic media (shortwave 50-micron) • Bus transfer rate: 2 gigabits per second (Gbps) maximum at half duplex and 4 Gbps at full duplex • Protocols: Supports FCP¹-SCSI protocol
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1. FCP = Fibre Channel Protocol

[Table A-3](#) describes the MPEG A/V decoder adapter specifications.

Table A-3 MPEG A/V Decoder Adapter Specifications

MPEG A/V decoder adapter	<p>Video specifications</p> <ul style="list-style-type: none"> • S/N:¹ 10 kHz to 4.2 MHz; Y: 65 dB rms²; Pb: 70 dB rms; Pr: 70 dB rms • Frequency response: 0 to 4.0 MHz \pm 2 dB • Sync tip: 40 IRE³ \pm 4 • Luma nonlinearity: 5% • Audio specifications • S/PDIF⁴ <ul style="list-style-type: none"> – PCM⁵ or compressed audio coding 3 (AC-3) bitstream out – 75-ohm, 0.5-V p-p⁶ \pm 20% – Rise and fall time: > 0.4 microseconds measured from 10 to 90% • Analog <ul style="list-style-type: none"> – Jumper-selectable balanced or unbalanced audio (balanced = +4 dBm) – Frequency response: 20 Hz to 22 kHz \pm 0.5 dB – Reference level: 0.5-V p-p \pm 10% – THD⁷_{+n}: @20 Hz to 22 kHz < 0.5%
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1. S/N = signal-to-noise ratio
2. rms = root mean square
3. IRE = Institute of Radio Engineers
4. S/PDIF = Sony/Philips Digital Interface
5. PCM = pulse-coded modulation
6. p-p = peak to peak
7. THD = total harmonic distortion

Table A-4 describes the inline network adapter technical and general specifications.

**Note**

The minimum software release required for the inline network adapter is WAAS 4.0.7.

Table A-4 *Inline Network Adapter Specifications*

Specification	Description
Copper Gigabit Ethernet Specifications	
IEEE standard	Gigabit Ethernet, 1000BASE-T Fast Ethernet, 100BASE-T Ethernet, 10BASE-T
Full duplex and half duplex	Supports both half-duplex and full-duplex operation in all operating speeds
Autonegotiation	Autonegotiates between full-duplex and half-duplex operations and between 1000-Mbps, 100-Mbps, and 10-Mbps speeds
Data transfer rate	1000-Mbps, 100-Mbps, and 10-Mbps speeds per port in half-duplex mode 2000-Mbps, 200-Mbps, and 20-Mbps speeds per port in full-duplex mode
General Technical Specifications	
Interface standard	PCI v2.2 32/64 bit, 33/66 MHz PCI-X v1.0 32/64 bit, 66/100/133 MHz
Size	6.6 in. x 4.2 in. (167.64 mm x 106.68 mm)
PCI connector	Universal 64-bit connector
PCI voltage	+12V (minimum 11.4V, maximum 12.6V) +3.3V (minimum 3.0V, maximum 3.6V)
Weight	6.18 oz (175 grams)
Operating humidity	0 to 90 percent, noncondensing
Operating temperature	32° to -122° F (0° to 50° C)
Storage temperature	-4° to -149° F (-20° to -65° C)