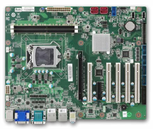
		IMB-M43H	IMB-M43
			
CPU	Socket	--	LGA1151
	CPU Support	6th Gen Intel® Core™ i7/i5/i3 processors support	6th Gen Intel® Core™ i7/i5/i3 processors support
Chipset	PCH	H110	Q170
Memory	DIMM Type	DDR4	DDR4
	Speed	2133/2400 MHz	2133 MHz
	DIMM Slots	2	4
	Max. Capacity	32GB	64 GB
	ECC/Reg	--	--
Form Factor	Dimensions	305 mm x 244 mm (W x L)	305 mm x 244 mm (W x L)
Display	Graphics	Intel® HD Graphics	Intel® HD Graphics
	VGA Support	1	1
	DVI-D Support	--	--
	HDMI Support	1	--
	DisplayPort	--	2
	No. of Displays Support	--	3
Ethernet	GbE port	2	2
	Controller	LAN1: Intel® I219-LM and LAN2: Intel® I211-AT	Intel® I219LM and Intel® I211-AT
Storage	Serial ATA	4x SATA 6.0 Gb/s	6x SATA 6 Gb/s
	RAID	--	SW RAID 0/1/5/10
I/O Ports	USB	4x USB 3.0 and 6x USB 2.0	8x USB 3.0
	LPT	--	1
	COM	2x RS-232/422/485	4x RS-232, 2x RS-232/422/485
	PS/2 KB/MS	1x PS/2 combo port	1x PS/2 combo port
	Audio	Realtek® ALC892-CG	Realtek® ALC262
Expansion Slots		1xPCIe x16 Gen3, 1xPCIe x4 Gen2, 5x PCI 2.2	1x PCIe x8, 4x PCIe x4, 2x PCI slots
Opearation System		Microsoft® Windows® 7 (only for 6th Gen Intel® Core™ processors) Microsoft® Windows® 8.1 Microsoft® Windows® 10 OpenSUSE Leap 42.1, Fedora, Ubuntu 16.04 LTS	Microsoft® Windows® 7 Microsoft® Windows® 8.1 Microsoft® Windows® 10 Ubuntu 15.10

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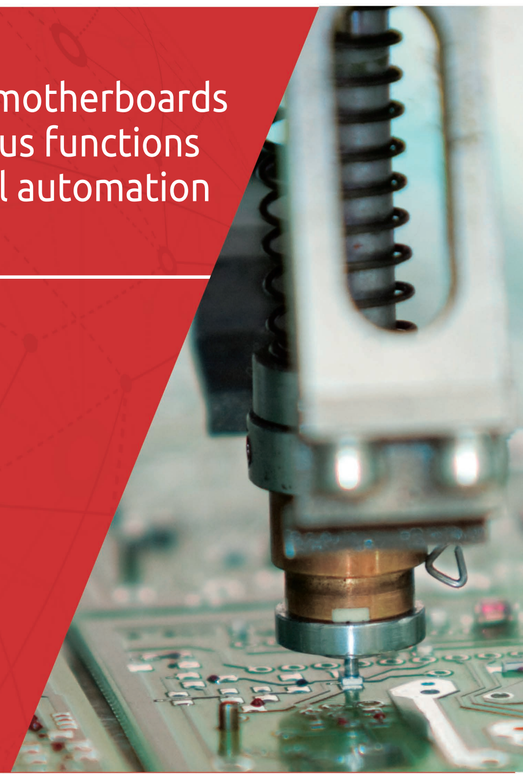
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Technical Article

ATX industrial motherboards empower various functions in the industrial automation solutions



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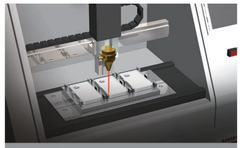
Our Solutions for Industrial Automation

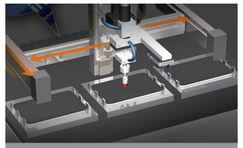
Overview

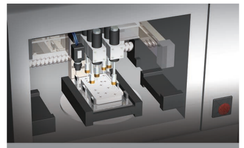
ADLINK was founded to deliver innovation, value and competitive edge to our customers, capitalizing on a rugged design pedigree and culture of creativity to develop smarter embedded technologies and platforms. Through proven embedded building blocks and single board computers, ADLINK continues to support and benefit customers with leading time-to-market capability and new applications that interconnect the world. For industrial contractors and integrators, ADLINK delivers complete dependability as a complete solution supplier of embedded products, with systems boasting robust, fault-free connectivity based on versatile high-speed I/O adaptability supporting the broad and ever-growing spectrum of industrial automation applications.

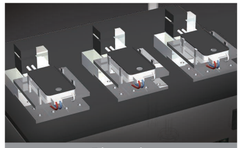
Speaking to Industrial automation, it is a key facet of global manufacturing industries, with enterprises facing enormous pressure to automate and integrate to maximize output, improve cost-efficiency, and generate tangible competitive value. ADLINK has proven itself solving these types of industrial computing challenges, providing proven platforms to optimize operations while enabling a long-term vision of sustainable, integrated manufacturing. As industrial computing evolves to embrace enterprise-level automation, ADLINK's flexible roster of system-, platform-, and product-based solutions overcomes the extreme environmental rigors of manufacturing deployment to deliver connected, fault-free performance on the factory floor. ADLINK industrial automation products speed time-to-market with standards-based, validated systems, purpose-built for high performance environments. Capitalizing on more than 15 years of expertise with highly evolved high-value preventive maintenance features and capabilities, ADLINK intelligent platforms and I/O devices, control panels, and management tools readily meet the networking, data processing, and mission-critical performance needs essential to integrated manufacturing operations, across a wide spectrum of manufacturing industries worldwide.

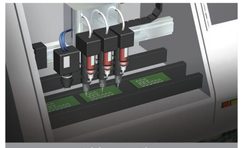
Market leadership demands quick reactions to stay ahead of the development curve with long-term deployable solutions. Industry-specific expertise is essential in these efforts, requiring proven knowledge of rugged design principles, environmental requirements, and standards and market trends, along with trusted partnerships that advance competitive design by building on engineering knowledge and expertise. As a Premier member of the Intel® Internet of Things Solutions Alliance, ADLINK works closely with Intel to develop products and platforms based on the latest high performance Intel technologies and processors. ADLINK assures ideal product lifecycles and a trusted supply line based on the Intel® Embedded Platform Roadmap, providing quality, performance, optimized time-to-market and longevity for development of next-generation designs.


Laser cutting

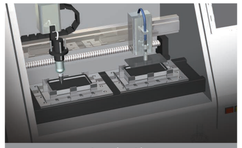

Touch panel testing

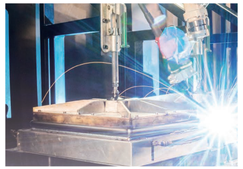

Screw fastening

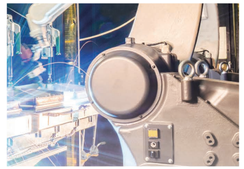

Dispensing


Video testing




Lamination

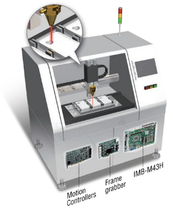




The solution provides 5x PCI port for frame grabbers, digitizers and high-resolution dynamic signal acquisition applications

The IMB-M43H supports integrated motion/vision application-based platforms with a competitive price/performance ratio. Combined high-bandwidth PCIe x16, PCIe x4 and conventional PCI slots, rugged I/O connectivity, and optimal design make the IMB-M43H an ideal solution for industrial automation applications.

The IMB-M43H's dedicated mainstream expansion slots include one PCI Express Gen3 x16 slot, one PCI Express Gen2 x4 slot and five PCI slots, providing limitless PCI Express expansion options for frame grabbers, digitizers and high-resolution dynamic signal acquisition and generation modules. Multiple PCI expansion options for motion and I/O control enable instant implementation of machine vision and industrial automation operations. From traditional machine automation applications in the semiconductor and Flat Panel Display (FPD) industries where motion control, machine vision and optical inspection operations are critical, to state-of-the-art Industrial IoT solutions where collaboration between machines, humans and enterprise systems is essential, the number of industrial automation applications that can benefit from the IMB-M43H is practically unlimited.



Laser cutting

Precision laser processing and cutting are common in silicon wafer slicing operations for solar cells, cell phone screens, semiconductor wafer, and CNC machines, among others.

High-end motion control products for laser equipment must accommodate micro-level precision in contour cutting and adjusting released energy to accommodate varying materials while maximizing yield.

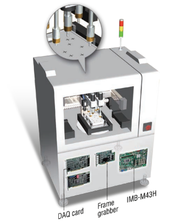
- Precise trajectory tracing
- Automatic velocity planning
- On-the-fly laser intensity control



Touch panel testing

Automated touch panel testing calls for high integration and synergy among the major functions--vision, motion and measurement. Machine vision is used to detect the position of the workpiece (touch panel), and gives the position information to the motion system, so that the motion system can align the workpiece to the right position for the vision system to implement measurement and analysis. Meanwhile, Precision load cell input card is used to give pressing force instead of less precise manual practice.

- Optical precision to µm scale
- Wide range field of view (FOV) and high resolution
- Maximum integration for reduced TCO



Screw fastening

Screw fastening machines are deployed on assembly lines to automatically fix component parts together. With increasing miniaturization of mobile devices, the machines require more precise position alignment, auto-adjusted torque, high-speed movement, and dynamic locking to flexibly and quickly perform from different heights and angles. A screw locking solution thus demands integration of motion, vision and I/O functions.

- Program download synchronizes onboard analog input and motion in ms
- E-gearing function maximizes motion control synch
- Precise position comparison and high speed trigger functions

The Industrial ATX Motherboard Maximizes PCIe Connectivity for motion and vision integrated applications

The IMB-M43 provides the most cost-competitive solution anywhere in embedded computing, fulfilling the specific needs of all users requiring 5 PCIe add-on cards. Featuring flexible PCIe configuration and optimal placement for industrial automation applications, the ADLINK IMB-M43 carries significant competitive advantage in the market. Leading rugged I/O design enhances user experience with robust device compatibility, durable connectivity, and extreme environment readiness.

The IMB-M43 supports up to 5 PCIe slots and fully utilizing PCIe/PCI configuration, providing maximum bandwidth in a single system, resulting in an ideal embedded computing platform solution, dramatically lowering TCO. With unique and flexible PCIe configuration, the PCIe slots can be assigned to 4 PCIe 3.0 x4 lanes plus 1 PCIe 3.0 x8 lane, 2 PCIe 3.0 x4 lanes plus 2 PCIe 3.0 x8 lanes, and 2 PCIe 3.0 x4 lanes plus 1 PCIe 3.0 x16 lane, for optimal placement to fulfill different tasking requirements. To facilitate integration, ADLINK provides a complete roster of off-the-shelf motion, vision and I/O cards that are fully pre-verified to guarantee maximum compatibility and convenience.

Performance, I/O ruggedness, and rich PCI Express connectivity, the ADLINK IMB-M43 provides an optimal platform for industrial automation applications such as multimedia testing, dispensing and lamination for mobile devices.



Dispensing

Dispensing machines are widely used in mobile device assembly. With increasing miniaturization of components, precise and efficient dispensing is crucial for quality and productivity. To implement precise dispensing, digital camera-based alignment of workpieces and high-performance motion control are needed to trigger dispensers according to planned trajectories. A well-rounded dispensing solution integrates vision, I/O motion control, and related software.

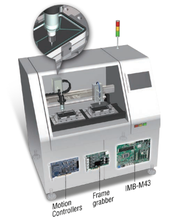
- Precise control
- High productivity



Video testing

Quality requirements for video display in mobile devices are increasing constantly in step with the sophistication and performance of the devices themselves. Video testing must, accordingly, satisfy a full range of testing criteria, including input interface, display resolution, color space adjustment, and others. Increased complexity dictates that formerly acceptable manual-based testing can no longer meet testing requirements, such that automatic testing is becoming the standard, reducing costs while improving efficiency, consistency, accuracy and yield.

- Multi PCIe expansion for multiple monitor function capability
- Video Properties Detection, including Resolution, Frame Rate, Color Space, and others
- Frozen or dropped Video Frame Detection
- Video Content Analysis using SSIM (Structural Similarity Index) and PSNR (Peak Signal-to-Noise Ratio)
- Video Malfunction Detection, including Macroblocking, Pixelation, Synch Failure



Lamination

OCA lamination in touch screen manufacturing is pivotal for optical performance and reliability but is also a major source of product defects. Automatic OCA laminator solutions usually combine machine vision, motion control, and I/O control in a single apparatus, requiring equipment vendors to integrate these functions in the most efficient way possible, to maximize performance. Precision in glue dispensing and OCA laminating is widely recognized as a key factor in manufacturing success.

- Automatic vision positioning 0.005mm
- Position control over glue and OCR
- Glue dispensing trajectory control
- Pattern matching
- Synchronous control
- Contouring control

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