



Empowering the Future of Robotics with Intelligent Edge Computing

The foundation for scalable, resilient,
and intelligent automation across evolving industries



Automatic Robot Solution

DFI Provides Reliable and Stable High-Performance Computing Engine for Various Robots and Remote Controllers

DFI supports its partners in capturing the growing opportunities in robotics, delivering proven results across AGV, AMR, material handling, SCARA, service robots, and robot management systems.

Global demand for mobile and industrial robots continues to accelerate, fueled by the rapid advancement of AI applications and the rise of 24/7 logistics operations. E-commerce and manufacturing remain the key adopters, leveraging automation to boost operational efficiency and meet increasing consumer expectations.

According to the STIQ 2024 AGV & AMR Robotics Report, robotics solution providers across the industry experienced a surge in adoption, with 80% reporting year-on-year growth. As part of this momentum, DFI continues to empower partners with high-performance, reliable platforms tailored for next-generation robotics applications.





Vital Features for Robots

Critical Elements Essential for Ensuring Stable and Continuous Robotic Productivity

Smarter robots require not only higher computing power and a wider range of sensors, but also the durability to operate reliably in diverse and demanding environments. At the heart of it all, the control unit must fulfill several critical requirements.

Industrial computers are indispensable in robotics. DFI offers a comprehensive lineup of embedded solutions designed to meet the rigorous demands of automation and robotics.

Unlike consumer-grade devices, only industrial-grade computers can deliver the reliability, connectivity, and longevity that robots depend on. These requirements may sound familiar—but achieving them consistently takes deep expertise and years of engineering experience.



High performance



Sophisticated I/O interface



Low power consumption



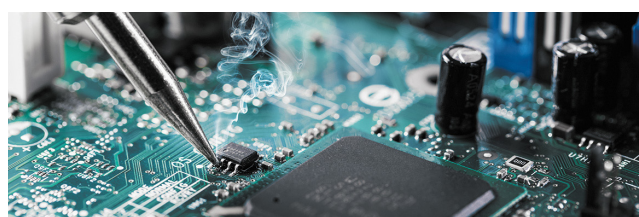
Resistance to harsh environments



Robust wireless network



Smaller form factor



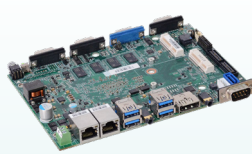
How can DFI help?

- High reliability and long life span.
- Provides RS-485, Ethernet, and USB 3.2 interfaces to support sensor integration.
- No performance loss caused by vibration and signal interference.

Our products power up robots



System-On-Modules



Industrial Motherboards



Embedded Systems



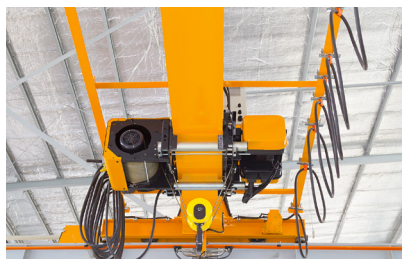
Industrial Panel PCs & Displays



Proven Record Does Matter

DFI empowers partners to seize robotics opportunities through proven capabilities and trustworthy, shareable evidence.

The computing core across diverse robot types and applications, Robot controllers must deliver high performance, support comprehensive I/O, operate with low power consumption, withstand harsh environments, ensure robust wireless communication, maintain a compact footprint, and offer a service life of over a decade.



By Industry

- Automotive
- Construction
- Defense
- Electrical & Electronics
- Food & Beverages
- Health & Pharmaceutical
- Logistics
- Rubber & Plastic
- Metal & Machinery



By Application

- Assembling
- Cutting & Processing
- Material Handling
- Painting
- Pick & Place
- Welding & Soldering



By Robot Type

- Articulated
- Cartesian/Linear
- Collaborative
- Cylindrical
- Parallel
- SCARA



AGV (Automated Guided Vehicle)

Automatic Guided Vehicles (AGVs) are mobile robots that navigate using floor markings, wires, radio signals, vision systems, magnets, or lasers. Commonly deployed in industrial environments, they transport heavy materials across large facilities such as factories and warehouses.

EC700-ADN

- Intel® Processor N-series/Atom Processor X Series
- On Board OOB built-in
- Slim and fanless design for limited-space condition
- Intel® TCC within the system
- On Board DDR5 & eMMC Support
- Up to Quad Display Support via VGA/USB-C



Hanging Rail

EC70A-TGU

- 11th Gen Intel® Core™ i7/i5/i3 Processors
- On board memory 8GB and 1 SO-DIMM DDR4
- Triple Displays: 2 (4K@30Hz) + 1 VGA (2K@60Hz)
- Support M.2 B key 3042/3052 5G-NR module
- Up to 4 LAN or 6 USB



Warehouse Logistics

EC700-ADN

- Intel® Processor N-series/Atom Processor X Series
- On Board OOB built-in
- Slim and fanless design for limited-space condition
- Intel® TCC within the system
- On Board DDR5 & eMMC Support
- Up to Quad Display Support via VGA/USB-C



Warehouse Logistics

EC220

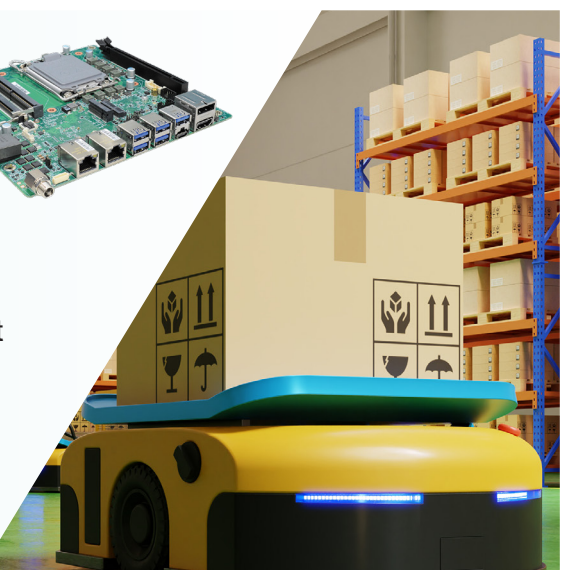
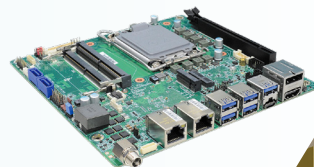
- Intel® Atom Processor E3800 Modular-Designed System
- Supports DDR3L SODIMM up to 8GB
- 2x 2.5" SATA drive bays
- 1 Vertical USB for securing data from unauthorized access (optional)
- 2 expansion slots: PCIe x16 (x1 signal) and PCI expansions
- 15-Year CPU Life Cycle Support Until Q4' 28



Warehouse Logistics

RPS103

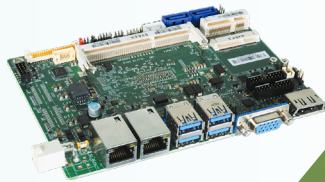
- 14th/13th/12th Generation Intel® Core™ Processors
- 2 DDR5 5600MHz SODIMM up to 64GB
- Supports 4 independent displays: 1 DP++, 1 USB Type C, 1 LVDS/eDP, 1 DFI display extension port (DP/VGA available)
- Supports up to 4K resolution
- Multiple expansion: 1 PCIe x16, 1 M.2 E Key, 1 M.2 M Key, 1 M.2 B Key
- Rich I/O: 2 Intel 2.5GbE, 2 COM, 6 USB 3.2 Gen2, 4 USB 2.0, 2 SATA 3.0
- Support EXT-OOB (Full)



Warehouse Logistics

SU551

- 7th/6th Gen Intel® Core™ 3.5" SBC
- Wireless communication: Mini PCIe
- Rich I/O: 2 Intel GbE, 4 COM, 4 USB 3.1 Gen 1, 2 USB 2.0
- 1 DDR3L SODIMM up to 8GB
- Three independent displays: VGA + LVDS + DP++
- 15-Year CPU Life Cycle Support Until Q3' 30



BenQ Business Solution

*Picture for reference purposes only.

EC70A-TGU / EC70A-ADP

As a flawless combination of impressive stylish design and excellent computing capability, the EC70A-TGU/ADP Series based on the high-end 11th Gen Intel® Core™ i7/i5/i3 Processors deliver outstanding processing capability in a fanless and compact enclosure. And it is designed for space-limited and compute-intensive solutions, such as the emerging Autonomous Mobile Robot (AMR).

EC70A-TGU

<https://www.dfi.com/product/index/1569>

EC70A-ADP

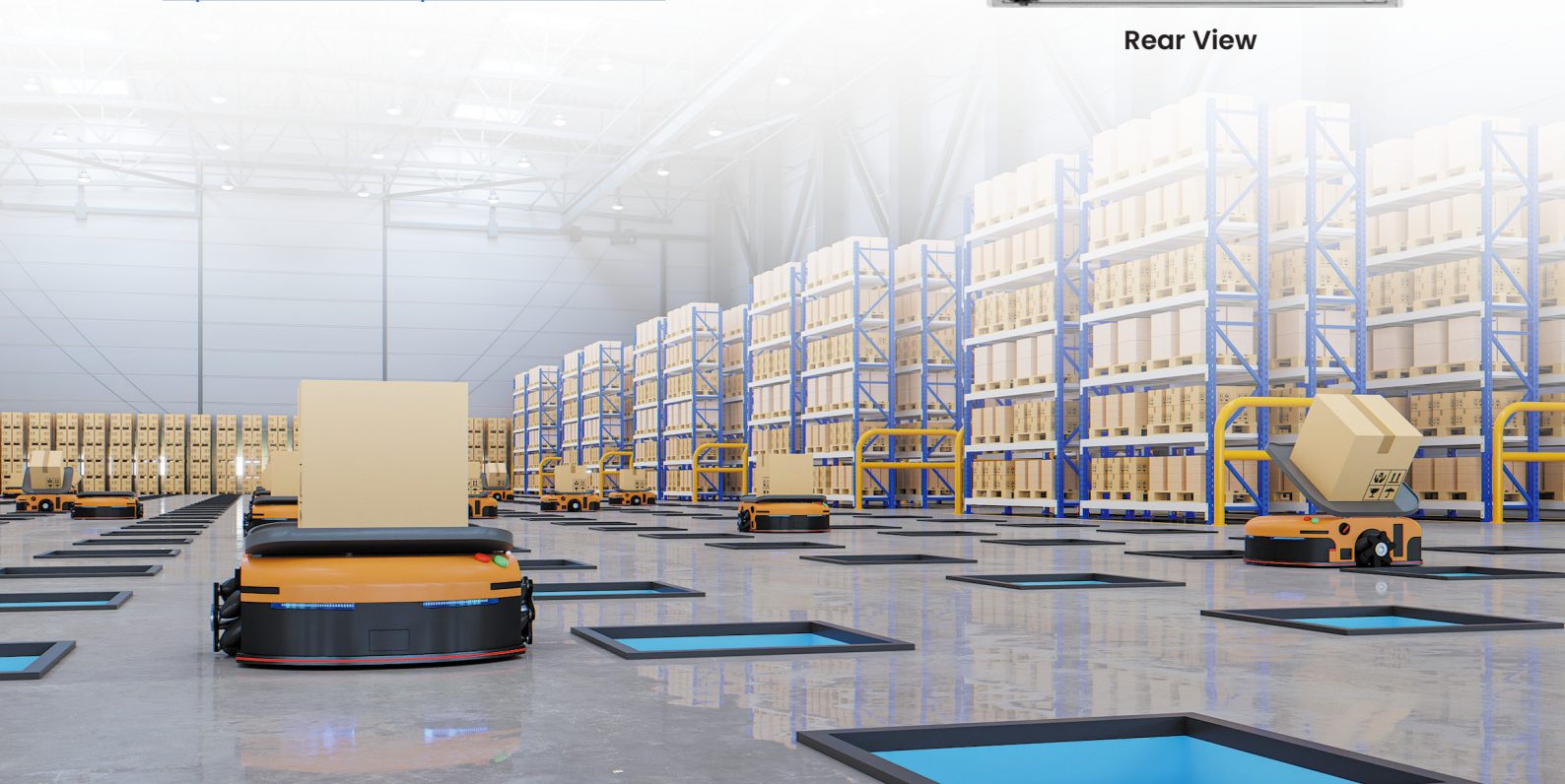
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Front View



Rear View



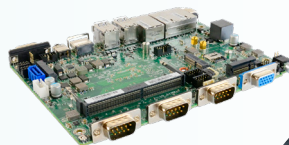


AMR (Autonomous Mobile Robot)

Compared to AGVs, Autonomous Mobile Robots (AMRs) are significantly more advanced. Equipped with a range of sensors and powerful onboard computing, AMRs can perceive and adapt to their environment in real time. Unlike AGVs, AMRs require no pre-defined paths and instead use cameras, laser scanners, built-in sensors, and intelligent software to navigate dynamically and select the most efficient route to their destination.

ADP253

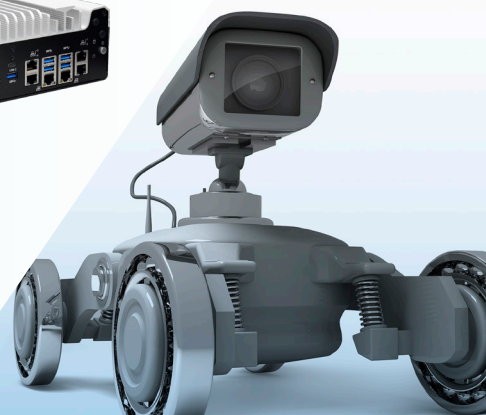
- 12th Gen Intel® Core™ Processors
- On board memory and 1 DDR4 SO-DIMM
- Multiple Displays: 1 VGA/DP, 2 Type-C DP Alt. Mode
- Supports 4K/2K resolution
- Multiple Expansion: 1 M.2 M Key, 1 M.2 B Key, 1 M.2 E Key
- Rich I/O: 1 Intel 2.5GbE, 2 Intel GbE, 6 COM, 4 USB 3.2, 2 USB 2.0, 1 SATA 3.0



Fire Fighting

EC622-RPS

- 14th/13th/12th Generation Intel® Core™ with Intel® R680E
- Supports DDR5 SODIMM up to 64GB
- Rich I/O connectivity: 2 2.5GbE, 4 GbE, 5 USB3.2 Gen2, 1 USB type-C, 1 VGA, 1 DP++, 9 com port
- Multiple Expansion: 5 M.2 slots, 1 mini-PCIe slot (full size)
- Support 5G Communication
- Operating Temperature: -20 to 70°C
- Support M2A-OOB



Autonomous Patrolling

EC70A-TGU

- 11th Gen Intel® Core™ i7/i5/i3 Processors
- On board memory 8GB and 1 SO-DIMM DDR4
- Triple Displays: 2(4K@30Hz) + 1 VGA (2K@60Hz)
- Support M.2 B key 3042/3052 5G-NR module
- Up to 4 LAN or 6 USB



Autonomous Patrolling

EC70A-ADP

- 12th Gen Intel® Core™ Alder Lake-P Processor
- On board memory 8GB and 1 SO-DIMM DDR4
- Dual Displays: (4K@30Hz) + DP (4K@60Hz)
- Support M.2 B key 3042/3052 5G-NR module
- Rich I/O: up to 3 LAN & 4 USB3.2 (or 2 USB3.2 + 2 USB type-C)



Warehouse Logistics

KSM-AL Serie

- Power Management: Ignition On/Off and System On/Off
- Delay Time Control
- Auto Detect Boot-up & Shut-down Voltage for Low Power Protection
- Multiple Panel Sizes with Resistive/P-Capacitive Touch Screen
- 12V/24V/48V Ignition Power Control
- Support 12V/24V/48V DC Input
- Wide Operating Temperature
- IP65 Front Panel Protection



BenQ Business Solution

*Picture for reference purposes only.



Material Handling

With rising demand and a shortage of skilled labor, manufacturers are turning to automation. Innovations in end-of-arm tools now enable broader use of robots in supply chain and material handling tasks.

EC510-ADS / EC511-ADS

- 12th Generation Intel® Core™ with Intel® Q670E
- Supports DDR4 SODIMM up to 64GB
- Three independent displays: 1 VGA + 2 DP++ (auto detection)
- Support up to 4 PoE (EC51x-ADS62GA6E-Q)
- Support 5G communication
- Multiple Expansion: 3 M.2 and 1 PCIe or 1 PCI
- Operating Temperature: -20 to 60°C



Automatic Picking & Sorting



*Picture for reference purposes only.

EC510/EC511-HD will be regressed to EC510/EC511-SD, EC510 / EC511-KH, and upcoming EC510 / EC511-CS. For more details, please refer to the product pages on the DFI website.

EC510/EC511-SD

<https://www.dfi.com/product/index/127>

EC510 / EC511-KH

<https://www.dfi.com/product/index/1459>



Front View



Rear View



SCARA (Selective Compliance Assembly Robot Arm)

SCARA robots are designed to replicate the motion of a human arm, enabling fast and precise automation of assembly, loading, and unloading tasks. They offer the advantages of human labor—speed, repeatability, dexterity, and accuracy—while delivering reliable & higher throughput in a compact size.

WM130-RPS

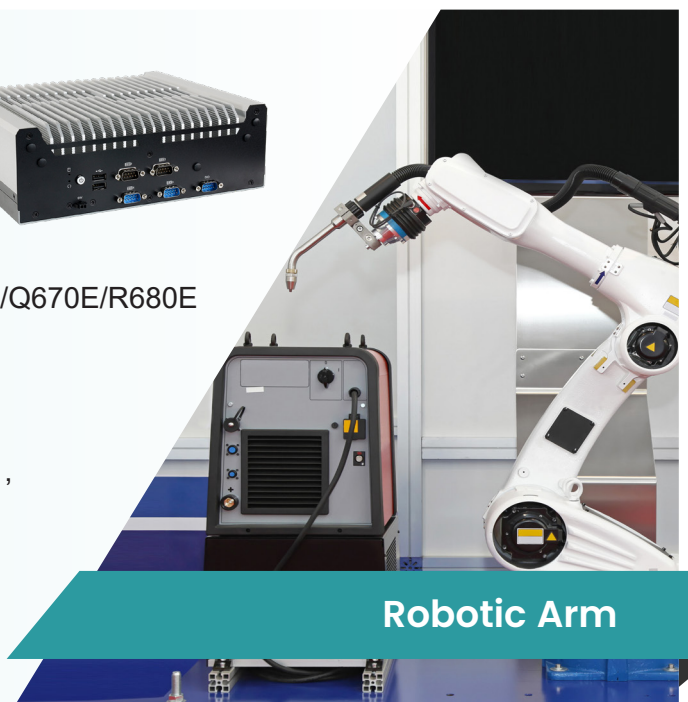
- Diverse Storage Support: 1x 2.5" SATA bay available
- 1 PCIe slot for single slot GPU/IO card expansion
- Optional reserved I/O opening for 4 USB and 3 DB9 ports
- Compact System: Optimized wall-mount Chassis design for mini-ITX MB



Food & Beverages

EC500-ADS

- 12th Generation Intel® Core™ with Intel® H610E/Q670E/R680E
- Supports DDR4 SODIMM up to 64GB
- Three independent displays: 1 VGA + 2 DP++ (auto detection)
- Rich I/O connectivity: 2 GbE, 6 COM, 4 USB 3.1, 2 USB 2.0
- Multiple Expansion: 3 M.2 slots
- Support 5G Communication
- Operating Temperature: -20 to 70°C



Robotic Arm

EC700-ADN

- Intel® Processor N-series/Atom Processor X Series
- On Board OOB built-in
- Slim and fanless design for limited-space condition
- Intel® TCC within the system
- On Board DDR5 & eMMC Support
- Up to Quad Display Support via VGA/USB-C



Multi-Axis Robotic Arm

EC622-RPS

- 14th/13th/12th Generation Intel® Core™ with Intel® R680E
- Supports DDR5 SODIMM up to 64GB
- Rich I/O connectivity: 2 2.5GbE, 4 GbE, 5 USB3.2 Gen2, 1 USB type-C, 1 VGA, 1 DP++, 9 com port
- Multiple Expansion: 5 M.2 slots, 1 mini-PCIe slot (full size)
- Support 5G Communication
- Operating Temperature: -20 to 70°C
- Support M2A-OOB



Multi-Axis Robotic Arm

EC220

- Intel® Atom Processor E3800 Modular-Designed System
- Supports DDR3L SODIMM up to 8GB
- 2x 2.5" SATA drive bays
- 1 Vertical USB for securing data from unauthorized access (optional)
- 2 expansion slots: PCIe x16 (x1 signal) and PCI expansions
- 15-Year CPU Life Cycle Support Until Q4' 28



Multi-Axis Robotic Arm

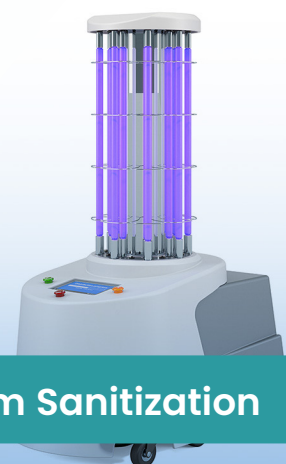


Service Robot

With labor shortages driven by declining birthrates, service robots are becoming essential in areas such as hospital waste disposal, hospitality, and logistics. Their roles continue to expand into room sanitization, restaurant operations, and healthcare support.

EC70A-TGU

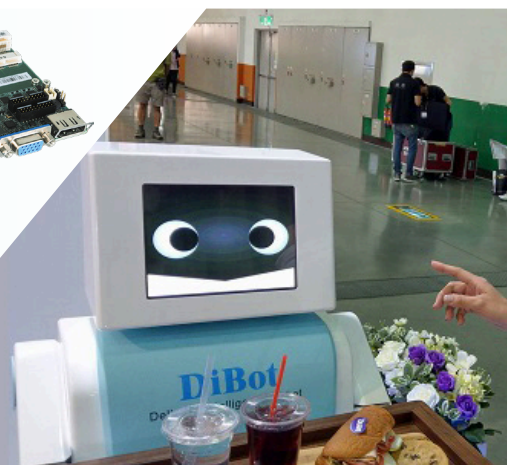
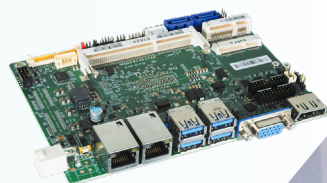
- 11th Gen Intel® Core™ i7/i5/i3 Processors
- On board memory 8GB and 1 SO-DIMM DDR4
- Triple Displays: 2 (4K@30Hz) + 1 VGA (2K@60Hz)
- Support M.2 B key 3042/3052 5G-NR module
- Up to 4 LAN or 6 USB



Room Sanitization

SU551

- 7th/6th Gen Intel® Core™ 3.5" SBC
- Wireless communication: Mini PCIe
- Rich I/O: 2 Intel GbE, 4 COM, 4 USB 3.1 Gen 1, 2 USB 2.0
- 1 DDR3L SODIMM up to 8GB
- Three independent displays: VGA + LVDS + DP++
- 15-Year CPU Life Cycle Support Until Q3' 30



BenQ DiBot (Restaurant Service)

Qisda MiBot (Medical Delivery Service)

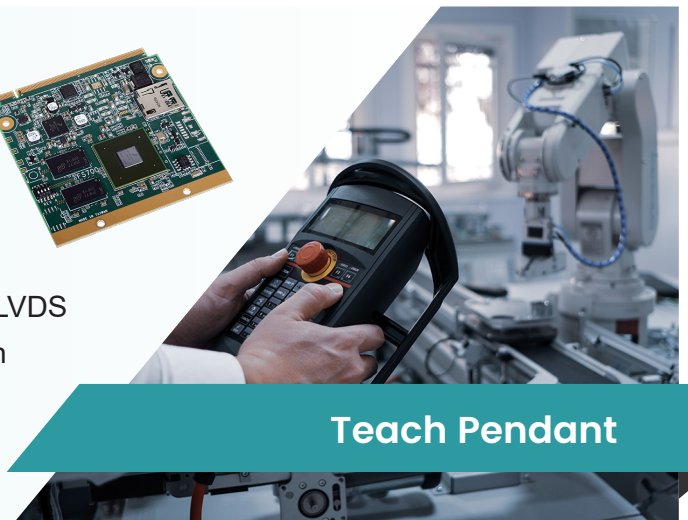
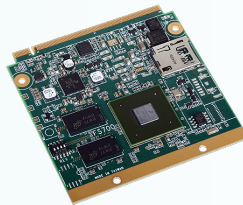


Robot Management System

Beyond the robot itself, the robot management system plays a critical role. For the remote controller, a compact design, lightweight build for fatigue-free operation, low power consumption for extended battery life, high performance to support future software upgrades, and a sophisticated I/O interface for versatile applications are all essential.

FS700

- NXP i.MX 6 Series
- Rich I/O: 1 Intel GbE, 4 USB 2.0, 1 USB OTG
- Multiple expansions: 1 PCIe x1, 1 SATA 2.0, 2 LVDS
- 1GB/2GB DDR3 Single Channel Memory Down
- CPU Life Cycle Support Until 2035



Teach Pendant

*Picture for reference purposes only.



DFI Invites You to Join Us in Exploring Robotics

In addition to industrial-grade hardware platforms, DFI offers comprehensive technical support, customized BIOS, and optimized hardware configurations; empowering customers to build robots tailored for the Industry 4.0 era.

Founded in 1981, DFI is a leading global provider of high-performance computing technology across multiple embedded industries.

With innovative design and rigorous quality management, DFI delivers industrial-grade solutions that help customers enhance system performance while ensuring long-term reliability, extended product lifecycles, and 24/7 durability. These solutions serve diverse markets including factory automation, medical, gaming, transportation, smart energy, mission-critical systems, and intelligent retail. Looking ahead, the rise of automated robotics presents a new frontier where DFI aims to deliver even greater value.



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DFI Desire
For
Innovation

Founded in 1981, DFI is a global leading provider of high-performance computing technology across multiple embedded industries. With its innovative design and premium quality management system, DFI's industrial-grade solutions enable customers to optimize their equipment and ensure high reliability, long-term life cycle, and 24/7 durability in a breadth of markets including Industrial Automation, Medical, Infotainment, Transportation, Energy, Mission-Critical, and Intelligent Retail.