DFI
Desire For Innovation

# Experience Reliable Quality for Superior Medical Solutions

Achieve Success with a Comprehensive Range of Innovations

Optimizing Medical Technologies with High-performance, High-quality Edge AI Solutions

Enhancing Healthcare with Reliable Edge AI Computing Solutions

DFI provides a diverse range of system on module (SOMs), industrial motherboards (IMBs), industrial PCs (IPCs), medical-grade monitors, and complete systems, all offering enhanced scalability, security, reduced latency, and cost-efficiency for edge AI applications. In the healthcare sector, our industrial PCs, monitors, and systems are increasingly adopted for their reliability and high-performance, making them ideal for patient monitoring, medical imaging, diagnostic devices, and telemedicine. Our solutions excel in real-time data processing, continuous uptime, and precise visual displays, key elements in modern healthcare environments.

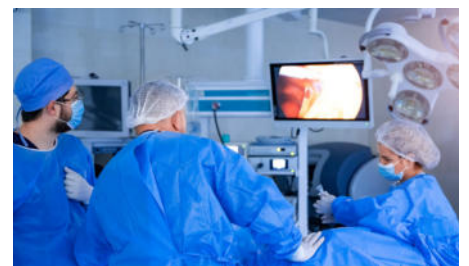## Proven Excellence : Success Stories Powered by DFI
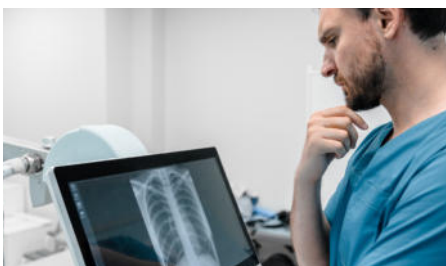
X- Ray

DFI has played a key role in assisting a leading U.S. company with the development of X-ray and bone density scanning equipment.

Learn more

Medical Computer

Our meticulous, customized service enable customers to seamlessly upgrade end-of-life medical computers.

Learn more

Medical Imaging

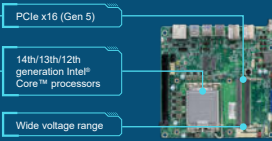Discover how DFI's Mini-ITX products are optimized for medical imaging.

Learn more

# Every Moment Matters – Leading Embedded IoT Solutions for Diverse Medical and Healthcare Applications

Surgery simulator
RPS101/RPS103

- PCIe x16 (Gen 5)
- 14th/13th/12th generation Intel® Core™ processors
- Wide voltage range

The RPS101/RPS103 supports 14th/13th/12th generation Intel® Core™ processors and features a PCIe (Gen 5) design, allowing the connection of dedicated graphics cards. The RPS103 also offers a wide input voltage range of 12-28V, and meets key medical standards and certifications, including CE, FCC Class B, and RoHS, making it ideal for use in surgery simulators.
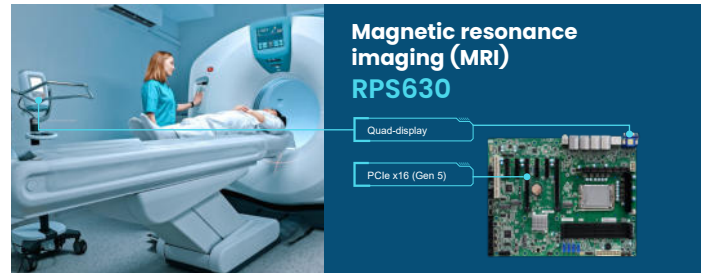
Magnetic resonance imaging (MRI)
RPS630

- Quad-display
- PCIe x16 (Gen 5)
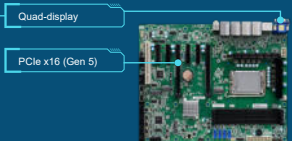
The RPS630 is compatible with 14th/13th/12th generation Intel® Core™ processors and features a flexible PCIe design with two PCIe x16 and four PCIe x4 slots, allowing connections for dedicated graphics cards or video capture cards. Furthermore, the RPS630 meets with multiple medical certifications, including CE, FCC Class B, RoHS, UKCA, and KC, making it ideal for use in magnetic resonance imaging (MRI) applications.

Mobile ultrasound equipment
MTU9A2

- High computing performance
- Mini Size
- Wide range power input

COMING SOON
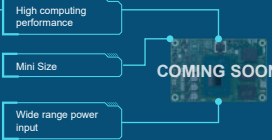
The DFI COM Express Mini MTU9A2 delivers high computing performance in a compact, miniaturized design, making it an ideal choice for mobile ultrasound equipment. Its wide power input range further enhances its versatility across various medical applications.

Endoscopy
RPP968

- Rich PCIe expansion
- High computing performance
- Compact size
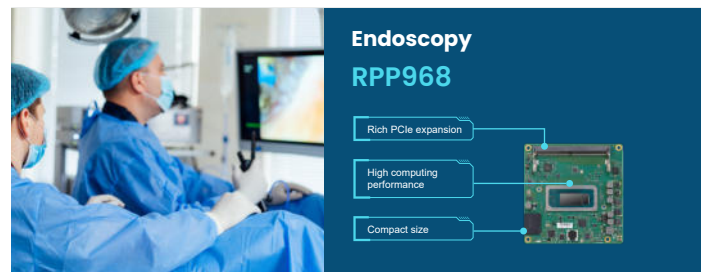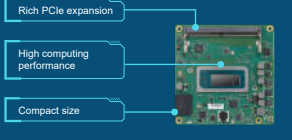
The RPP968 offers high computing performance with extensive PCIe expansion capabilities, featuring two x PCIe x4 (Gen4 PCH) and five x PCIe x1 (Gen3) slots. Its compact size makes it an ideal solution for endoscopy applications, while its wide range of power input range enhances versatility and adaptability across various medical environments.

DFI Advantage

ESD Protection
A full ESD design prevents malfunctions or disruptions caused by ESD (Contact 8K/Air 15K)

EMC & Safety
Designed with EMC Class B to avoid interference with other medical devices

Antibacterial Enclosure
Enhanced with antibacterial properties to minimize bacteria growth and resist various cleaning agents

Anti-Glare & Optical Bonding
An anti-glare solution with optical bonding ensures screen visibility and image' quality

Ingress Protection
The comprehensive waterproof design allows for easy cleaning of the medical product.

ISO13485:
DFI's factory is certified under the medical ISO 13485 standard, enabling the production of medical- grade mainboards

J-STD-001 Class 3:
Practices and requirements for the manufacture of soldered electrical and electronic assemblies to ensure high reliability

IPC-A-610 / IPC QML Class 3:
Acceptability of electronic assemblies at Class 3, as required and listed in the IPC Qualified Manufacturers Listing (QML)

DFI Product Lineup
IMB / ATX, Micro-ATX, Mini-ITX

RPS630 `ATX`

- 14th/13th/12th Gen Intel® Core Processors
- 4 DDR5 UDIMM up to 192GB
- Quad Displays: VGA, 2 DP++, HDMI
- Supports 4K resolution
- Multiple Expansion: 2 PCIe x16, 4 PCIe x4, 1 PCI, 2 M.2 M key, 1 M.2 E Key, 1 M.2 A Key
- Rich I/O: 4 Intel 2.5GbE, 6 COM, 4 USB 3.2 Gen2, 6 USB 3.2 Gen1, 3 USB 2.0

RAP310 `microATX`

- AMD® Ryzen™ 7000 Series with AMD B650 chipset
- 4 DDR5 UDIMM up to 128GB
- Triple displays: 1 VGA, 1 DP++, 1 HDMI
- Supports 4K resolution
- Multiple expansion: 2 PCIe x16, 2 PCIe x4, 1 M.2 E key, 1 M.2 M key, 4 SATA 3.0
- Rich I/O: 2 Intel 2.5GbE, 4 COM, 6 USB 3.2 Gen2, 2 USB 3.2 Gen1, 6 USB 2.0

RPS310 `microATX`

- 14th/13th/12th Gen Intel® Core™ with Intel® R680E/Q670E chipset
- 4 DDR5 UDIMM up to 192GB
- Supports 4 independent displays: VGA, 2 DP++, HDMI
- Supports 4K resolution
- Multiple expansion: 2 PCIe x16, 2 PCIe x4, 1 M.2 E key, 2 M.2 M key, 4 SATA 3.0
- Rich I/O: 4 Intel 2.5GbE, 4 COM, 4 USB 3.2 Gen 2, 6 USB 3.2 Gen 1, 4 USB 2.0

RPS330 `microATX`

- 14th/13th/12th Gen Intel® Core™ with Intel® Q670E/H610E chipset
- 4 DDR5 UDIMM up to 192GB
- Supports 3 independent displays: VGA, DP++, HDMI
- Supports 4K resolution
- Multiple expansion: 1 PCIe x16, 1 PCIe x4, 2 PCI, 1 M.2 E key, 2 M.2 M key, 4 SATA 3.0
- Rich I/O: 1 Intel 2.5GbE, 1 Intel 1GbE, 6 COM, USB 3.2 Gen 2 (Q670E 4x), USB 3.2 Gen 1 (Q670E 2x, H610E 4x), USB 2.0 (Q670E 7x, H610E 6x)

ADS310 `microATX`

- 14th/13th/12th Gen Intel® Core™ with Intel® R680E/Q670E chipset
- 4 DDR4 UDIMM up to 128GB
- Supports 4 independent displays: VGA, 2 DP++, HDMI 2.0a
- Supports 4K resolution
- Multiple expansion: 1 PCIe x16, 3 PCIe x4, 1 M.2 E key, 2 M.2 M key, 4 SATA 3.0
- Rich I/O: 2 Intel 10GbE, 2 Intel 2.5GbE, 2 COM, 6 USB 3.2 Gen 2, 4 USB 3.2 Gen 1, 4 USB 2.0

CMS310 `microATX`

- 10th Gen Intel® Core™ with Intel® W480E/Q470E chipset
- 4 DDR4 DIMM up to 128GB
- Supports triple independent displays: VGA, DP++, HDMI 1.4b
- DP++ resolution up to 4096x2160 @ 60Hz, VGA resolution up to 1920x1200 @ 60Hz, HDMI resolution up to 4096x2160 @ 24Hz
- Multiple expansion: 2 PCIe x16 (1 x16 or 2 x8 signal), 2 PCIe x4, 1 M.2 E key, 1 M.2 M key (support Optane Memory), 4 SATA 3.0
- Rich I/O: up to 4 Intel GbE, 4 COM, 4 USB 3.2 Gen 2, 4 USB 3.2 Gen 1, 4 USB 2.0

CMS311 `microATX`

- 10th Gen Intel® Core™ with Intel® W480E/Q470E chipset
- 4 DDR4 UDIMM up to 128GB
- Supports triple independent displays: VGA, DP++, HDMI 1.4b
- DP++ resolution up to 4096x2160 @ 60Hz, VGA resolution up to 1920x1200 @ 60Hz, HDMI resolution up to 4096x2160 @ 24Hz
- Multiple expansion: 2 PCIe x16 (1 x16 or 2 x8 signal), 1 PCIe x4, 1 PCIe x1, 1 M.2 M key, 5 SATA 3.0
- Rich I/O: up to 4 Intel GbE, 2 COM, 4 USB 3.2 Gen 2, 6 USB 3.2 Gen 1, 4 USB 2.0, 2 COM

CMS330 `microATX`

- 10th Gen Intel® Core™ with Intel® Q470E/H420E chipset
- 4 DDR4 UDIMM up to 128GB
- Three display ports: VGA, DP++, HDMI
- VGA resolution up to 1920x1200 @ 60Hz, DP++ resolution up to 4096x2160 @ 60Hz, HDMI resolution up to 4096x2160 @ 24Hz
- Multiple expansion: 1 PCIe x16, 1 PCIe x4, 2 PCI, M.2 M & E key, 4 SATA 3.0
- Rich I/O: 2 GbE, 10 COM, 4 SATA, Q470E: up to 16 USB, H420E: up to 10 USB

RPP171/RPP173 `Mini-ITX`

- 13th Gen Intel® Core Processors
- 2 DDR5 SODIMM up to 64GB
- Quad Displays: 2 DP/HDMI + 1 USB Type C + 1 M2A Display (eDP/LVDS/VGA/HDMI)
- Supports 4K resolution
- Multiple Expansion: 1 PCIe x4, 1 M.2 M key, 1 M.2 B key, 1 M.2 E Key, 1 M.2 A Key
- Rich I/O: Up to 3 Intel 2.5GbE, 4 USB 3.2 Gen2, 1 USB Type C and 4 USB 2.0 headers

RPS101/RPS103 `Mini-ITX`

- 14/13/12th Generation Intel® Core™ Processors
- 2 DDR5 5600MHz SODIMM up to 64GB
- Supports 4 independent displays: 1 DP++, 1 HDMI, 1 USB Type C, 1 LVDS/eDP, 1 DFI display extension port (DP/HDMI/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

ADS101/ADS103 `Mini-ITX`

- 14th/13th/12th Generation Intel® Core™ Processors
- 2 DDR4 3200MHz SODIMM up to 64GB
- Quad Displays: 1 DP++, 1 DP++/HDMI, 1 LVDS/eDP, 1 DFI display extension port (DP/HDMI/VGA available)
- Supports up to 4K/2K resolution
- Multiple expansion: 1 PCIe x16, 1 M.2 E Key (USB/PCIe), 1 M.2 M Key (PCIe/SATA), 1 M.2 B Key (PCIe/SATA/USB)
- Rich I/O: 1 Intel 2.5GbE, up to 2 Intel GbE, 2 COM, up to 6 USB 3.2 Gen2, 2 USB 3.2 Gen1, 4 USB 2.0, 2 SATA 3.0

CMS101/CMS103 `Mini-ITX`

- 10th Generation Intel® Core™ Processors
- 2 DDR4 2933MHz SODIMM up to 64GB
- Multiple Displays: 2 DP++, 1 LVDS/eDP
- Supports up to 4K/2K resolution
- Multiple Expansions: 1 PCIe x16, 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, 4 COM, 4 USB 2.0, W480/Q470: 4 USB 3.2 Gen2, H420: 4 USB 3.2 Gen1

DFI Product Lineup
SOM / COM Express Compact, Basic, COM-HPC

MTH968 — COM Express Compact
- Intel® Core™ Ultra Processor (Meteor Lake: U/H-series)
- Dual Channel DDR5 5600MHz SODIMM up to 64GB
- Multiple Displays: 1 VGA + 1 LVDS/eDP + 3 DDI
- Supports 4K / 2K resolution
- Multiple Expansion: 8 PCIe x1, 2 PCIe x4, 1 PCIe x8, 1 I2C, 1 SMBus, 1 LPC/eSPI, 2 UART Rich I/O: 1 Intel 2.5GbE, 2 USB 4.0, 3 USB 3.2, 8 USB 2.0, 2 SATA 3.0

RPP968 — COM Express Compact
- Intel® Core® Processor Raptor Lake Series
- DDR5 5200MHz SODIMM up to 64GB
- 1 LVDS/eDP, 1 VGA, 3 DDI (HDMI/DP++)
- Multiple expansions: 2 PCIe x4 (Gen4 PCH), 5 PCIe x1
- Rich I/O: 1 Intel GbE, 4 USB 3.2, 8 USB 2.0

ADP968 — COM Express Compact
- 12th Generation Intel® Processor COM Express® Compact
- DDR4 3200MHz SODIMM up to 64GB
- VGA/DDI + LVDS/eDP + DDI
- DP++ supports 4K x 2K resolution
- Multiple expansion: 8 PCIe x1, 1 I2C, 1 SMBus
- Rich I/O: 1 Intel 2.5GbE, 4 USB 3.2, 8 USB 2.0

TGU968 — COM Express Compact
- 11th Generation Intel® Processor COM Express® Compact
- DDR4 3200MHz SODIMM up to 64GB
- VGA/DDI + LVDS/eDP + DDI
- DP++ supports 4K x 2K resolution
- Multiple expansion: 8 PCIe x1, 1 I2C, 1 SMBus
- Rich I/O: 1 Intel 2.5GbE, 4 USB 3.1, 8 USB 2.0

ASL968 — COM Express Compact
- Intel® Atom® Processor Amston Lake Series
- Single Channel DDR5 4800MHz SODIMM up to 16GB
- Triple Displays: LVDS/eDP + 2 DDI
- Supports 4K / 2K resolution
- Multiple Expansion: Up to 7 PCIe x1
- Rich I/O: 1 Intel 2.5GbE, up to 4 USB 3.2, 2 SATA 3.0

TGH960 — COM Express Basic
- 11th Generation Intel® Processor COM Express® Basic
- DDR4 3200MHz SO-DIMM up to 96GB, up to 128GB by request.
- VGA + LVDS*/eDP + 3 DDI
- DP++ supports 4K resolution
- Multiple expansion: 1 PCIe x16, 8 PCIe x1, 1 LPC, 1 I2C, 1 SMBus
- Rich I/O: 1 Intel 2.5GbE, 4 USB 3.2 Gen2, 8 USB 2.0

ICD970 — COM Express Basic
- 3rd Gen Intel® Xeon® Processor D-1700 Family
- Default 2 260-pin DDR4 2666 SO-DIMM, dual channel mode up to 64GB, 3rd DIMM by request(SDPC mode by request to support DDR4 2933MHz)
- Support extended operating temperature: -40 to 85°C
- 10GBASE-KR: Support up to 4 x 10GbE Mac ports
- Multiple Expansion: 1 PCIe x16 (Gen4), 2 PCIe x8 (Gen3), 1 SMBus, 1 I2C, 1 LPC, 2 UART (TX/RX)
- Rich I/O: 2 Intel GbE, 4 USB 3.0, 4 USB 2.0, 2 SATA 3.0

RPS9HC — COM HPC
- 14th/13th Gen Intel® Core™ with Intel® R680E/Q670E/H610E Chipset
- 4 DDR5 SODIMM 3600MHz up to 192GB
- Quad Displays: eDP + 3 DDI
- DDI supports up to 8K
- Multiple Expansion: 1 PCIe x16 (Gen5), 4 PCIe x4 (Gen4), 2 PCIe x4 (Gen3), 2 PCIe x1 (Gen3)
- Rich I/O: 2 Intel 2.5GbE, 6 USB 3.2 Gen2, 8 USB 2.0

ASL9A2 — COM Express Mini
- Intel® Atom® Processor Amston Lake Series
- Dual Channel LPDDR5 4800MHz up to 16GB
- 1 LVDS/eDP, 1 DDI (HDMI/DP++)：Supports dual displays: DDI + LVDS/eDP
- Multiple expansions: 4 PCIe x1, 1 SMBus, 1 I2C, 1 eMMC
- Rich I/O: 2 USB 3.1, 8 USB 2.0
- High Speed Ethernet: Supports 100M/1000M/2.5Gbps

MTU9A2 — COM Express Mini
COMING SOON
- Intel® Core™ Ultra Processor (Meteor Lake: U-series)
- Single Channel LPDDR5 7467MHz up to 16GB
- Dual Displays: 1 DDI + 1 LVDS/eDP
- Supports 4K / 2K resolution
- Multiple Expansion: 4 PCIe x1, 1 I2C, 1 SMBus, 1 x LPC/eSPI, 2 x UART
- Rich I/O: 1 Intel 2.5GbE, 2 USB 3.2, 8 USB 2.0, 2 SATA 3.0

EHL9A2 — COM Express Mini
- Intel® Atom® Processor Elkhart Lake Series
- Dual Channel LPDDR4X 3200MHz/4267MHz up to 16GB
- 1 LVDS/eDP, 1 DDI (HDMI/DP++)：Supports dual displays: DDI + LVDS/eDP
- Multiple expansions: 4 PCIe x1
- Rich I/O: 1 Intel GbE, 2 USB 3.1, 8 USB 2.0

TGU9A2 — COM Express Mini
- 11th Generation Intel® Processor COM Express® Mini
- Single Channel LPDDR4X 4266MHz：Memory Down up to 16GB
- 1 eDP, 1 DDI (HDMI/DVI/DP++) , Dual Display：DDI + eDP
- DP++ supports 4K x 2K resolution
- Multiple expansion: 1 PCIe x4, 2 I2C, 1 SMBus
- Rich I/O: 1 Intel GbE, 2 USB 3.2, 8 USB 2.0
- 15-Year CPU Life Cycle Support Until Q2' 35 (Based on Intel IOTG Roadmap)

AL9A2 — COM Express Mini
- Intel Atom® E3900 Processor Series
- Rich I/O: 1 Intel GbE, 2 USB 3.0, 8 USB 2.0
- Multiple expansions: 4 PCIe x1
- 1 LVDS/eDP, 1 DDI (HDMI/DVI/DP) Supports dual displays: DDI + LVDS/eDP
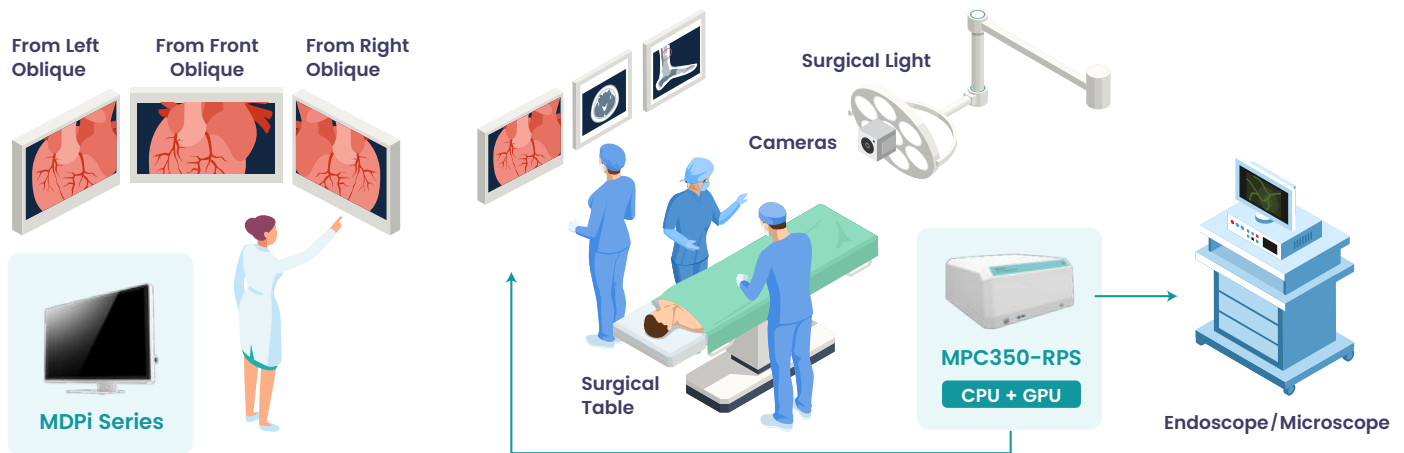- Dual Channel DDR3L 1600MHz Memory Down up to 8GB

WL9A3 — COM Express Mini
- Rich I/O: 1 Intel GbE, 2 USB 3.0, 8 USB 2.0
- Multiple expansions: 4 PCIe x1
- 1 LVDS/eDP, 1 DDI (HDMI/DP)：Supports dual displays: DDI + LVDS/eDP
- Dual Channel LPDDR3 2133MHz：Memory Down up to 16GB
- Intel® Core™ 8th Gen Processor

# Operating Room Video Solution – DFI's MPC350-RPS Server and MDPi Series Displays for Endoscope Integration

From Left Oblique | From Front Oblique | From Right Oblique

MDPi Series

Surgical Light

Cameras

Surgical Table

MPC350-RPS
CPU + GPU

Endoscope / Microscope

Medical-Grade Edge Device Everywhere – Connecting HIS, Ready for Medical Carts and Clinic Rooms

MDPi Series

The MDPi Series is a enclosure display designed for medical image and video infogram. The device features utilizing a IPS display mode with a full HD resolution of 1920x1080 at 60Hz, a typical brightness of 350 nits, and supports HDMI, VGA, and audio signal inputs., With a fastest response time of 12ms and a wide viewing angle of 178 degrees, the display is powered by a DC supply of 24V DC supply, making it ideal for healthcare applications.

MPC350-RPS

The MPC350-RPS is a powerful medical IPC that supports 13th generation Intel® Core™ i3/i5/i7 processors (formerly Raptor Lake S) and features a sleek, antibacterial enclosure design. It accommodates NVIDIA PCIe GPU cards, including Quadro models up to the RTX 6000 Ada and GeForce models up to the RTX 4070. Additionally, the device supports a dual-channel full HD H.264 PCIe video capture cards with SDK capabilities. Fully compliant with IEC/EN 60601-1 and IEC/EN 60601-1-2 medical certifications, the MPC350 - RPS is an AI performance powerhouse designed for medical environments.

Medical Cart
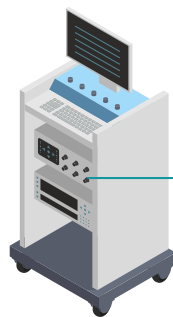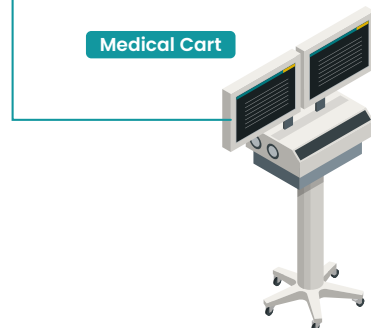
MD711-SU

The MD711-SU is a 6th generation Intel® Core™ medical computing system designed for mobile nursing workstation carts. The device supports up to 32GB of DDR4 SODIMM RAM and includes two 2.5" SATA 3.0 drive bays for ample storage. The system is equipped with one PCIe 16 slot, one full-size Mini PCIe slot, and one M.2 slot (2242 B key), providing flexible expansion options. Additionally, it features 4KV isolated I/O ports, including two Intel GbE ports, two COM ports, and two USB 2.0 ports, ensuring reliable connectivity in medical environments.

DFI Product Lineup – Medical System

intel. partner
Titanium IoT Solutions

MPC350-RPS   Medical System

- Powerful and Scalable Medical-Grade Server with high computing power, AI graphical capabilities and rich interfaces
- Supports 13th generation Intel® Core™ i3/i5/i7 processor (former Raptor Lake S)
- Stylish and antibacterial enclosure design
- Supports Nvidia PCIexpress GPU Card (Quadro up to RTX6000 ada) (GeForce up to RTX4070)
- Supports capture card (2-ch Full HD H.264 PCIe Video Capture Card with SDK)
- IEC60601-1/IEC60601-1-2 compliance

MD711-SU   Medical System

- 6th Generation Intel® Core™ Medical Computing System
- 2 DDR4 SODIMM up to 32GB
- 2 x 2.5" SATA 3.0 drive bay
- Supports 1 PCIe 16 slot, 1 Full-Size Mini PCIe slot, 1 M.2 slot (2242 B key)
- 4KV Isolated I/O ports: 2 Intel GbE, 2 COM, 2 USB 2.0

MDPi Series   Medical System

- Support DICOM grayscale and Gamma Correction
- Support internal AC power supply
- IP65 Rating Protection in front bezel & IPx1 in back cover
- Support different size screen with Full HD 1920 x 1080 resolution
- True Flat Screen with Capacitive Touch (AG) for easy clean

MDP156   Medical System

- 15.6" Enclosure Display
- Display Mode VA Type
- 1920x1080 @60Hz
- Brightness 250 nits (Typ.)
- HDMI / VGA / Audio signal Input
- Response time 25ms
- Viewing Angle 85/85/85/85
- Power DC 12V /3A