



# ONE SOURCE

## for Medical Memory and Storage Solutions

## Micron® Memory Supporting Medical Device Manufacturers

The integration of technology in healthcare practices has made patient care more advanced, reliable, and patient-centric. Conventional techniques of diagnosis and the resulting therapies are becoming less invasive and more effective. Intelligent, connected portable devices are helping patients stay out of hospitals, allowing them to be monitored in the comfort of their own homes.

It is estimated that more than 8 billion new medical devices will be deployed over the next five years.<sup>1</sup> The best devices will be those that enable reliable patient care, protect patient data, require the least amount of maintenance, and enable healthcare providers to run hospitals and clinics efficiently.

Micron memory and storage solutions support medical device manufacturers who provide products such as consumer medical equipment, portable telehealth monitoring systems, clinical diagnostics, medical imaging, and medical robotics solutions.

Micron has been a trusted advisor to our industrial customers for more than 25 years. We understand the unique needs of this market and bring a mindset to deliver sustainable value to our customers—because we firmly believe that IQ matters to our customers' success in the medical devices market.



Because IQ matters to the success of your medical device designs.

## What is Micron's Industrial Quotient (IQ)?

We bring to market a mindset and portfolio that deliver sustainable value to our customers with:

- **High Reliability**  
Design and testing processes that add a high level of endurance and reliability to align with needs of long-lifecycle embedded applications.
- **Security by Design**  
Integrating the latest Micron Authentica™ technology in memory to provide platform- and solution-level values that translate to reliable, safety conscious solutions with best-in-class time to market.
- **Extensive Quality Testing**  
Rigorous testing to deliver the consistent performance across products and processes necessary in embedded and mission-critical applications.
- **Product Longevity**  
Extended lifecycle support for eligible products via our Product Longevity Program, which goes a step beyond standard lifecycle support to suit long-life applications.
- **Ruggedized Products**  
Product enhancements that enable consistent performance across extreme environments: extended temperature, thermal cycling, shock, humidity, etc.
- **Application-Specific Tuning**  
Extensive collaboration with global customers to develop in-depth understanding of application use cases and deliver products and features to meet those specific application needs.

1. Databeans, Inc. 2020 IND-Medical report



# Micron® Memory and Storage in Medical Devices

Product Family	Voltage	Bus Width	Performance	Density Range	Temp Range <sup>2</sup>	Package Options
<b>Storage</b>						
SSDs	3V, 5V	x1	SATA III	128–256GB MLC, 64–128GB SLC	IT	2.5-inch, mSATA
	3.3/1.2/ 0.9V	x4	PCIe Gen3	64GB–1TB	AI	BGA
	3.3V	x4	PCIe Gen3	64GB–1TB	AI	M.2 (Type 2230)
Memory cards	3.3V	x4	SD3.0 UHS-I, U1/U3, Class 10	32GB–1TB	WT	microSD
e.MMC	3V	x1, x4, x8	MMC v5.0, MMC v5.1	2–128GB MLC	WT, IT	BGA
<b>eMCPs and MCPs</b>						
e.MMC + LPDDR4 MCPs	3.3V	x8 e.MMC, x32 LPDDR4	1866 MHz	8GB e.MMC, 16Gb LPDDR4	IT	BGA
NAND + LPDDR4 MCPs	1.8V	x8 NAND, x16 LPDDR4	2133 MHz 8-bit ECC	4Gb 100K SLC NAND, 2–4Gb LPDDR4	IT	BGA
NAND + LPDDR2 MCPs	1.8V	x8 NAND x16, x32 LPDDR2	533 MHz 4-bit ECC	1–4Gb 100K SLC NAND 512Mb–4Gb LPDDR2	IT	BGA
<b>DRAM and Modules</b>						
DDR5 SDRAM (MT60)	1.1V	x8, x16	4800–7200 MT/s	16–24Gb; 8–128GB	IT, AT	FBGA, SODIMM, UDIMM, ECC SODIMM, ECC UDIMM, RDIMM
DDR4 SDRAM (MT40)	1.2V	x8, x16	2133–3200 MT/s	8–16Gb; 2–32GB	IT, AT	BGA, ECC SODIMM, ECC UDIMM, RDIMM
DDR3 SDRAM (MT41)	1.35V	x8, x16	1600–2133 MT/s	1–8Gb; 8GB	IT, AT	BGA, SODIMM
DDR2 SDRAM (MT47)	1.8V	x8, x16	800 MT/s	512Mb–2Gb; 512MB–2GB	IT, AT	BGA
SDRAM (MT48)	3.3V	x8, x16	133–167 MT/s	64–256Mb	IT, AT	BGA, TSOP
<b>Mobile DRAM</b>						
LPDDR5 (MT62)	0.5V, 1.05V	x16, x32, x64	6400 MT/s	16–128Gb	WT, IT, AIT, AAT, AUT	BGA
LPDDR4 SDRAM (MT53)	1.1V	x16, x32, x64	4266 MT/s	4–128Gb	WT, IT, AT	BGA, PoP
LPDDR3	1.2V	x32, x64	1066 MT/s	8–32Gb	WT	BGA, PoP
LPDDR2 SDRAM	1.2V	x32	1066 MT/s	512Mb–2Gb	IT, AT	BGA
<b>SLC NAND</b>						
Serial SLC NAND LP/VLP	1.8V, 3V	x1, x2, x4	Up to 133 MHz, on die (zero) ECC	1–8Gb 100K SLC NAND	IT	DFN, BGA, wafer
Parallel SLC NAND LP/VLP	1.8V, 3V	x8, x16	8-bit or on-die (zero) ECC	1–8Gb 100K SLC NAND	IT	TSOP, BGA, wafer
<b>Parallel NOR Flash</b>						
MT28EW	3V	x8, x16	Async	128Mb–2Gb	IT	TSOP, BGA
<b>Serial NOR Flash</b>						
MT35X Xccela™ Flash	1.8V, 3V	x1, x8	200 MHz DDR	256Mb–2Gb	IT, AT	BGA, SOIC, KGD
MT25Q	1.8V, 3V	x1, x2, x4	108–166 MHz	128Mb–2Gb	IT, AT, UT	BGA, CSP, DFN, SOP
MT25Q Authentia™ Flash	1.8V, 3V	x1, x2, x4	133–166 MHz	128Mb	IT, AUT	DFN

1. This table contains design-in products only.

2. Typical temperature range: IT = –40°C to 85°C; AI/AIT = –40°C to 95°C; WT = –25°C to 85°C; AT/AAT = –40°C to 105°C; UT/AUT = –40°C to 125°C

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