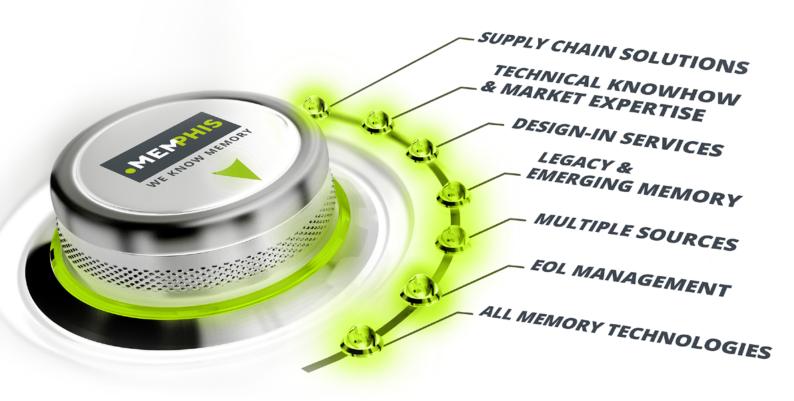


# MEMORY COMPETENCE CENTER



## **Enabling Industrial, Embedded and Specialty Markets for over 30 Years**

Tap into our memory competence and benefit from the broadest portfolio in the industry. From legacy to latest components and modules, from standard to exotic memories – if it's a memory, we can help.

## **WHY MEMPHIS**

- For more than 30 years we have specialized in semiconductor memory only. This makes us a unique expert in memory technologies ranging from legacy to the latest technologies, from best-selling products to exotic emerging memories.
- We know the products of almost every memory vendor in the world, even if they are not in our line card, and can recommend the memory components and modules that best fit your application.
- Focus on your application let us handle your memory needs.
   We provide tailored advice, product samples, data sheets, and ongoing assistance throughout your project and help you avoid bottlenecks.
- With 17 offices and 3 warehouses worldwide, we can support you from design-in to your manufacturing site – regardless of where those locations are – and deliver the products you need, when you need them.

## **MEMORY COMPETENCY**

- Memory products are standard, but each application has a different focus, and every memory has strengths and weaknesses. Thanks to our broad portfolio, we can find the best match for you, no matter the vendor.
- We know all the nuances of the memory products in our line card and can help you with our technical expertise during design-in, the qualification of multiple sources for components as well as with finding alternatives to end-of-life products.
- Due to our focus on memory, we keep our fingers on the pulse of the entire memory ecosystem and can give insights into manufacturer roadmaps, long-term product availability, and cross-reference information.
- What's more, with our help end-of-life is not a disaster, because we help you prepare with alternatives and our obsolescence management services.

## **UNMATCHED MEMORY LINECARD**



## **100% APPLICATION FOCUS**

Completely lead-free or leaded? Conformal coating or controlled BOM?

You can get all this from us and more. Thanks to our 100% focus on industrial and embedded applications we know the requirements of the different industry segments and can serve your needs.



### **MEMORY** COMPETENCE CENTER

## **MEMORY PORTFOLIO**

#### **VOLATILE MEMORY**

#### SDRAM

- DDR5 DDR4
- DDR3 DDR4
  DDR3 DDR2
  DDR SDRAM



#### **SRAM**

- Low Power SRAM
- Fast SRAM
- Synchronous SRAM
- Pseudo SRAM



#### DRAM (integrated ECC)

- DDR3. DDR2. DDR
- · LPDDR4, LPDDR
- Robust & extra robust



#### Graphic DRAM

- GDDR7



#### **Mobile DRAM**

- LPDDR5 & 5x LPDDR2
- LPDDR4 & 4x LPDDR
- I PDDR3 LPSDRAM



### **NON-VOLATILE MEMORY**

#### **NOR Flash**

Parallel & Serial



#### **Managed Flash**

- eMMC & UFS
- BGA SSD (SATA, PCIe)



- Op Volt: 1.6V-3.6V
- Dens: 8Mbit, 12Mbit (SPI)



#### NAND Flash

- SLC, MLC & TLC
- Parallel & Serial (SPI)



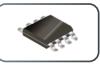
#### **MRAM**

- Op Volt: 1.5V-3.3V • Dens: 128Kbit to 16Mbit
- SPI: 50-104 MHz



#### **FeRAM**

- Op Volt: 1.7V-3.6V Dens: 16Kbit to 8Mbit
- (SPI/I2C/parallel)



#### SSD Drives

M.2 2242, M.2 2280, mSATA, 2.5", Half Slim,



## µMCP & eMCP PRODUCTS



## **DRAM MODULES**

#### Standards

- JEDEC and special customer designs
- Fixed BOM
- Buffered & unbuffered
- Registered & unregistered
- ECC & non-ECC

#### **Temperature**

· Commercial, Industrial, Automotive

#### Technology

DDR5, DDR4, DDR3, DDR2, DDR, SDRAM, SRAM

#### Configuration

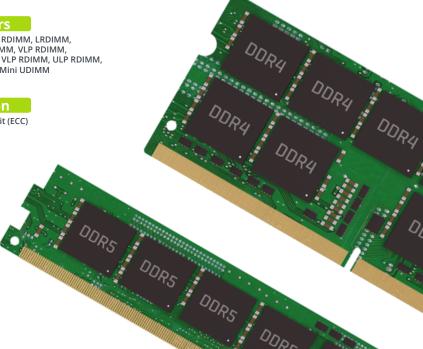
· Single, Dual & Quad Rank

#### **Form Factors**

UDIMM, FBDIMM, RDIMM, LRDIMM, SO-DIMM, SO-RDIMM, VLP RDIMM, Mini RDIMM, Mini VLP RDIMM, ULP RDIMM, Mini UDIMM, VLP Mini UDIMM

#### Organization

• 32 Bit, 64 Bit, 72 Bit (ECC)





## **MEMPHIS LOCATIONS**



#### **EMEA**

MEMPHIS Electronic GmbH sales@memphis.de

**Frankfurt am Main, DE**Corporate Headquarters

Phone: +49 6172 90 35 40

Copenhagen, DNK

Phone: +45 6013 7652

Geneva, CH

Phone: +41 795 693 480

Milan, IT

Phone: +39 02 87 1695 72

#### **AMERICA**

MEMPHIS Electronic Inc. usteam@memphis.de Toll Free: +1 877 600 6080

Houston, TX

US Headquarters

Phone: +1 713 600 6080

Boston, MA

Phone: +1 781 872 1366

Chicago, IL

Phone: +1 224 215 0206

Phoenix, AZ

Phone: +1 408 430 5770

San Jose, CA

Phone: +1 408 268 4002

Guadalajara, MEX

Phone: +1 713 574 7949

#### **APAC**

MEMPHIS Electronic Hong Kong Ltd. hksales@memphis.de

HongKong, HKG

APAC Headquarters Phone: +852 2111 1071

Shanghai, CN

Phone: +86 131 2261 1914

Taipei, TW

Phone: +886 2 2251 7648

Singapore, SGP

Phone: +65 68 99 3790

Penang, MY

Phone: +60 3 7651 7759

Kuala Lumpur, MY

Phone: +60 3 7651 7759

Bengaluru, IN

Phone: +91 9972741801

MEMPHIS complies with all major ISO and environmental regulations and follows ESG principles:











