Memory Technologies

Non-Volatile & Volatile

Memory Technologies

Rutronik is very pleased to offer you a comprehensive range of memory technologies from some of the world's leading suppliers. Whether it is standard commodity DRAM or leading edge technology like FRAM – we have the solution. In the tables shown technologies are split into "volatile" devices – data are lost when power is removed; fast access time – and "non-volatile" devices – data are retained without power; slow access speed. You can also see that products are divided between embedded devices, those which are soldered down, and removable "module devices". Whatever memory you are looking for Rutronik has the solution.
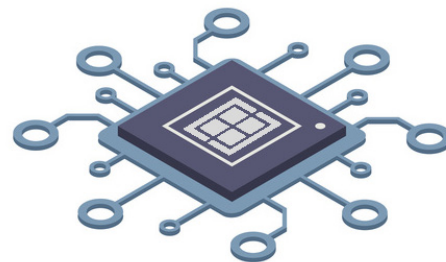
Volatile Memory

- SRAM: Low-power, fast and synchronous technologies from 64 Kbit to 144 Mbit
- NVRAM: from 64 Kbit to 16 Mbit
- SDRAM: a comprehensive range of technology from SDRAM through to DDR5 and mobile, low power devices from LPSDRAM to LPDDR4(X), LPDDR5X
- DDR Modules: a range from DDR through to DDR5
- Pseudo SRAM from 8 Mbit to 512 Mbit with ADMUX, QSPI or OPI interface

Non-Volatile Memory

- EEPROM: with I2C, SPI and microwire interfaces, 1 Kbit through to 1 Mbit
- ReRam: with SPI interface
- FRAM: with I2C, SPI and parallel interfaces, 4 Kbit to 16 Mbit
- NOR Flash: serial and parallel devices, 1 Mbit to 4 Gbit
- NAND Flash: serial, parallel and with integrated ECC devices, 1 to 256 Gbit
- e·MMC: 2 GByte to 512 GByte in 2D MLC, PSLC and 3D TLC

Removable Devices

- SD and micro SD card: 128 MByte to 512 GByte
- Compact Flash: 128 MByte to 64 GByte
- Modules: USB, PATA and SATA
- Solid State Drive (SSD): 2.5", mSATA, M.2, U.2, U.3 and EDSFF
- USB Stick

Volatile Memory Technologies

Technology	Type	Kbit 8	16	32	64	128	256	512	Mbit 1	2	4	8	16	32	64	128	256	512	Gbit 1	2	4	8	16	32	64	128	256	512	1024	
SRAM	Low Power																													Embedded Devices
	Fast			■																										
	Synchronous											18	36	72	144															
SDRAM	SDR																													
	DDR																													
	DDR2																													
	DDR3/3L																													
	DDR4																													
	DDR5																													
	LPSDR																													
	LPDDR																													
	LPDDR2																													
	LPDDR3																													
	LPDDR4																													
	LPDDR4X																													
	LPDDR5X																							*	*	*				
	Pseudo SRAM																													
Module	DDR																													Removable
	DDR2																													
	DDR3																													
	DDR4																													
	DDR5																													

	128	256	512	1	2	4	8	16	32	64	128
	MByte			GByte							

* under Development

Non-Volatile Memory Technologies

Technology	Type	bit 64	128	256	512	Kbit 1	2	4	8	16	32	64	128	256	512	Mbit 1	2	4	8	16	32	64	128	256	512	Gbit 1	2	4	8	16	32	64	128	256	512	1	2	4	8	Tbit 16	32	64	128	256	
EEPROM	I²C																																												Embedded Devices
	Serial																																												
	Microwire																																												
ReRAM	Serial															12	*	*																											
FRAM	I²C																																												
	Serial																																												
	Parallel																																												
NVSRAM	I²C																																												
	Serial																																												
	Parallel																																												
NOR	Serial																																												
	Parallel																																												
NAND	Serial																																												
	Parallel																																												
e·MMC	2D MLC																																												
	2D PSLC																																												
	3D PSLC																																												
	3D TLC																																												
UFS																																													
SD / micro SD																																													Removable Devices
Compact Flash																																												
CFast																																												
CFX	PCIe																																												
Module	USB																																												
	PATA																																												
	SATA																																												
2.5"	SATA																																												
	PCIe																																												
M.2	SATA																																												
	PCIe																																												
U.2	PCIe																																												
U.3	PCIe																																												
EDSFF	E1.S																																												
	E3.S																																												
mSATA	SATA																																												
USB Stick																																													

	64	128	256	512	1	2	4	8	16	32	64	128	256	512	1	2	4	8	16	32
	MByte				GByte										TByte					

* under Development

Linecard Memories

ADVANTECH — Enabling an Intelligent Planet · ALLIANCE MEMORY · Apacer · ATP · apmemory · ESMT / EliteMT · Giantec Semiconductor Corporation 聚辰半导体股份有限公司 · goodram industrial

Infineon · INSIGNIS TECHNOLOGY CORPORATION · KIOXIA · NANYA · RAMXEED · ROHM SEMICONDUCTOR · swissbit · Transcend · Zentel

Technology	Type	Advantechn	Alliance	Apacer	ATP	apmemory	ESMT / EliteMT	Giantec	Goodram	Infineon	Insignis	Kioxia	Nanya	Ramxeed	Rohm	Swissbit	Transcend	Zentel
EEPROM	Serial							●							●			
ReRAM	Serial									●				●				
FRAM	I2C / SPI / Parallel									●				●				
Flash	Serial NOR		●				●			●								
	Parallel NOR		●				●											
	Serial NAND		●				●											
	Parallel NAND		●				●					●						
	e·MMC™		●		●		●				●	●				●	●	
	UFS											●						
	SD / micro SD			○	○				○							○	○	
	Compact Flash / Cfast	○		○	○											○	○	
	Flash Module (USB/PATA/SATA)			○	○											○	○	
	Cfexpress	○		○	○											○	○	
	SSD (2.5"/mSATA/M.2)	○		○	○				○			○				○	○	
	EDSFF	○										○						
	Add-in Card																	
	USB Sticks			○	○				○							○	○	
SDRAM	SDR		●				●				●							●
	DDR		●				●				●							●
	DDR2		●				●				●		●					●
	DDR3/DDR3L		●				●				●		●					●
	DDR4		●				●				●		●					●
	DDR5																	
	LPSDR		●				●											
	LPDDR		●				●											
	LPDDR2		●										●					
	LPDDR3		●										●					
	LPDDR4										●		●					●
	LPDDR4X												●					●
	LPDDR5X												*					
	Pseudo SRAM		●			●				●								
	MCP / eMCP						●					●						
	SDRAM Module																○	
	DDR Module	○		○	○				○								○	
	DDR2 Module	○		○	○				○								○	
	DDR3 Module	○		○	○				○								○	
	DDR4 Module	○		○	○				○								○	
	DDR5 Module	○		○	○				○								○	
SRAM	Low Power		●							●								
	Fast		●							●								
	Synchronous		●							●								
	NVRAM									●								

* under Development

V4.0.1 | GB | HMB | Specifications subject to change without notice. Please note, there could be some limitations for some franchised product lines in several countries. For more information, please contact our sales team.

Contact