

MEDICAL

INDUSTRIAL

FLEXON

AUTOMOTIVE



Leading Industrial NAND Storage Solutions Provider

About Us

FLEXXON, the world's leader in designs, manufactures and markets Industrial NAND Flash Storage Solution products with 100% focus on niche market. We apply our profound knowledge to serve and support tailored specifically for Industrial, Medical and Automotive (IMA) applications and customers globally who desire the highest level of reliability, endurance and wide operating temperature ranges.

At **FLEXXON**, our mission is to be your preferred & reliable partner for Flash Storage and Memory Solution provider. We guarantee the highest standard of quality and product reliability.



Full Product Qualification Test from Component, System to Production



Full Reliability Test includes Mechanical Test, Environmental Test, Packaging and Printing Test.



Industrial



Medical



Automotive

WHY FLEXXON



Long Product Life



Fixed BOM



Industrial Grade



Special Capacity & Customize Memory Solution



Strong Technical Support



Support HMLV (High-Mixed Low Volume)

Industrial Applications



Industrial Grade

Industrial Grade	Temperature
  <p>Automotive AEC - Q100 Grade 2 Automotive AEC - Q100 Grade 3 Diamond</p>	<p>-40° C ~ +105° C -40° C ~ +85° C -40° C ~ +85° C</p>
  <p>Gold Silver Commercial</p>	<p>-25° C ~ +85° C 0° C ~ 70° C 0° C ~ 70° C</p>

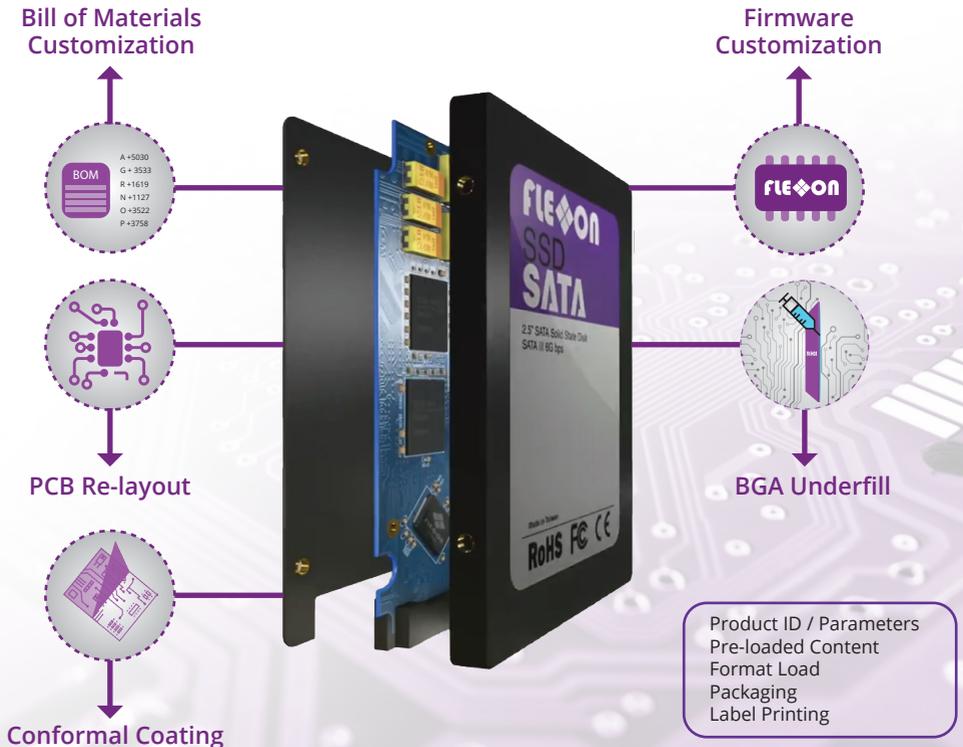
FLEXXON Product Feature

Interface		SATA	PATA	PCIe	USB	eMMC	SD/microSD
Industrial Wide Temperature		◆	◆	◆	◆	◆	◆
Vibration & Shock Resistance		◆	◆	◆	◆	◆	◆
EMI & ESD Safe		◆	◆	◆	◆	◆	◆
S.M.A.R.T		◆	◆	◆	◆	◆	◆
AES Security		◆	×	◆	×	×	×
Power Loss Protection		◆	○	◆	○	○	○
Pseudo SLC		◆	◆	×	◆	◆	◆

Standard
 Not Available
 Firmware Algorithm (Optional)

Customization Services

We are open to all other customization services which are not listed in here.



SATA SERIES



SATA Series	XTREME	ACHIEVER	ELITE
Feature	High Performance & DRAM-less design Perfect for Embedded Applications	High Performance & High Density Suitable for Main Storage Applications	Ultimate Performance & High Density Best for Enterprise Applications
Interface	SATA III	SATA III	SATA III
Form Factor	2.5", Half Slim, mSATA, mSATA mini, M.2 2242/2260/2280, CFast, uSSD, SATA DOM	2.5", Half Slim, mSATA, M.2 2242/2260/2280, CFast, SATA DOM	2.5", M.2 2280, mSATA, Half Slim
Flash Type	SLC, MLC, pSLC, 3D TLC, 3D pSLC	SLC, MLC, pSLC	SLC, MLC, pSLC, 3D TLC
Capacity	SLC: 8GB ~ 128GB MLC: 4GB ~ 512GB pSLC: 2GB ~ 256GB 3D TLC: 16GB ~ 1TB 3D pSLC: 32GB ~ 128GB	SLC: 4GB ~ 128GB MLC: 8GB ~ 1TB pSLC: 4GB ~ 256GB	SLC: 32GB ~ 512GB MLC: 64GB ~ 2TB pSLC: 32GB ~ 1TB 3D TLC: 128GB ~ 2TB
Max. Performance	Read: 550 MB/s Write: 500 MB/s	Read: 510 MB/s Write: 430 MB/s	Read: 550 MB/s Write: 530 MB/s
Grade	Industrial / Commercial	Industrial	Industrial / Commercial

SATA Series	VALUE	XCEL	GALAXY
Feature	Low Cost & Low Density Ideal for Module and Embedded Applications	Ultra High Density & Ultimate Performance Competent for Enterprise Applications	Enhanced Reliability & Security Design for Military Application
Interface	SATA II	SATA III	SATA III
Form Factor	2.5", Half Slim, mSATA, CFast, SATA DOM	2.5", M.2	2.5", mSATA
Flash Type	SLC, MLC	3D TLC	SLC, MLC
Capacity	SLC: 512MB ~ 64GB MLC: 8GB ~ 128GB	256GB ~ 8TB	SLC: 8GB ~ 128GB MLC: 64GB ~ 1TB
Max. Performance	Read: 230 MB/s Write: 200 MB/s	Read: 550 MB/s Write: 530 MB/s	Read: 520 MB/s Write: 440 MB/s
Grade	Industrial	Industrial / Commercial	Military



PATA SERIES



PATA Series	LEGACY		LEGACY II	LEGACY III	PRESTO
Feature	Standard Performance Suitable for Embedded Applications		High Compatibility & High Reliability for Rigorous Applications	High Compatibility & High Performance Support Power Loss Protection	Ultra Performance Fit for DSLR and Industrial Applications Support VPG 65
Compliance	Ultra DMA Mode 7	CF Spec Ver. 6.x Ultra DMA Mode 7	CF Spec Ver. 4.1 Ultra DMA Mode 6	CF Spec Ver. 6.x Ultra DMA Mode 7	CF Spec Ver. 6.x Ultra DMA Mode 7
Form Factor	2.5" PATA SSD 1.8" PATA SSD PATA DOM	CF Card	CF Card	CF Card	CF Card
Flash Type	SLC, MLC, pSLC		SLC	SLC, MLC, pSLC	3D TLC, 3D pSLC
Capacity	SLC: 1GB ~ 256GB MLC: 4GB ~ 256GB pSLC: 2GB ~ 128GB	SLC: 128MB ~ 64GB MLC: 4GB ~ 128GB pSLC: 2GB ~ 64GB	SLC: 128MB ~ 32GB	SLC: 4GB ~ 32GB MLC: 8GB ~ 128GB pSLC: 4GB ~ 64GB	3D TLC: 16GB ~ 256GB 3D pSLC: 4GB ~ 64GB
Max. Performance	Read: 80 MB/s Write: 90 MB/s	Read: 80 MB/s Write: 80 MB/s	Read: 51 MB/s Write: 40 MB/s	Read: 106 MB/s Write: 80 MB/s	Read: 160 MB/s Write: 145 MB/s
Grade	Industrial	Industrial	Industrial	Industrial	Industrial / Commercial

PCIe SERIES



PCIe Series	VELOX	VELOX-T	HIX	RAPIX
Feature	High Speed & Density Suitable for Main Storage & Client Applications	DRAM-Less Design Best for Embedded Applications	Ultimate Performance & Density Perfect for Enterprise Applications	DRAM-Less Design Idea for Embedded & Client Applications
Interface	PCIe Gen 3x2, NVMe 1.3	PCIe Gen 3x2, NVMe 1.3	PCIe Gen 3x4, NVMe 1.3	PCIe Gen 3x4, NVMe 1.3
Form Factor	M.2 2242/2280, AIC	M.2 2242/2280, uSSD, CFX	M.2 2280/22110, U.2, AIC	M.2 2280, uSSD, CFX
Flash Type	3D NAND	3D NAND	3D NAND	3D NAND
Capacity	128GB ~ 1TB	32GB ~ 512GB	128GB ~ 8TB	128GB ~ 2TB
Max. Performance	Read: 1600 MB/s Write: 1100 MB/s	Read: 1500 MB/s Write: 950 MB/s	Read: 3200 MB/s Write: 3000 MB/s	Read: 2100 MB/s Write: 1800 MB/s
Grade	Industrial / Commercial	Industrial / Commercial	Industrial / Commercial	Industrial / Commercial
Security	Pyrite/AES/OPAL	-	Pyrite/AES/OPAL	Pyrite/AES/OPAL



USB SERIES



USB Series	FxU2 I	FxU2 III	FxU3 I		FxU3 II
Feature	Standard Performance	Standard Performance Support 3D NAND	Enhance Reliability: Crystal Solution		High Performance
Interface	USB 2.0	USB 2.0	USB 2.0	USB 3.1 GEN 1	USB 3.1 GEN 1
Form Factor	Pen Drive	Pen Drive	USB Flash Module	Pen Drive	Pen Drive
Flash Type	SLC, MLC	MLC, 3D TLC	SLC, pSLC, MLC		MLC, pSLC
Capacity	SLC: 128MB ~ 32GB MLC: 4GB ~ 64GB	MLC: 4GB ~ 64GB 3D TLC: 16GB ~ 128GB	SLC: 1GB ~ 16GB MLC: 4GB ~ 64GB pSLC: 2GB ~ 32GB	SLC: 1GB ~ 16GB MLC: 4GB ~ 128GB pSLC: 2GB ~ 64GB	MLC: 4GB ~ 256GB pSLC: 2GB ~ 128GB
Max. Performance	Read: 30 MB/s Write: 20 MB/s	Read: 30 MB/s Write: 20 MB/s	Read: 30 MB/s Write: 25 MB/s	Read: 190 MB/s Write: 95 MB/s	Read: 140 MB/s Write: 100 MB/s
Grade	Commercial	Commercial	Industrial		Commercial

USB Series	FxU3 III	FxUT	FxUA	
Feature	Ultra High Performance High IOPS Solution	High Performance Solution with 3D NAND	High Reliability Solution with 3D NAND High IOPS Solution	
Interface	USB 3.1 GEN 1	USB 3.1 GEN 1	USB 2.0	USB 3.1 GEN 1
Form Factor	Pen Drive	Pen Drive	USB Flash Module	Pen Drive
Flash Type	MLC	3D TLC	3D TLC, 3D pSLC	
Capacity	32GB ~ 512GB	16GB ~ 512GB	3D TLC: 32GB ~ 256GB 3D pSLC: 8GB ~ 64GB	3D TLC: 16GB ~ 512GB 3D pSLC: 8GB ~ 64GB
Max. Performance	Read: 400 MB/s Write: 300 MB/s	Read: 130 MB/s Write: 100 MB/s	Read: 30 MB/s Write: 24 MB/s	Read: 220 MB/s Write: 100 MB/s
Grade	Commercial	Commercial	Industrial	Industrial / Commercial

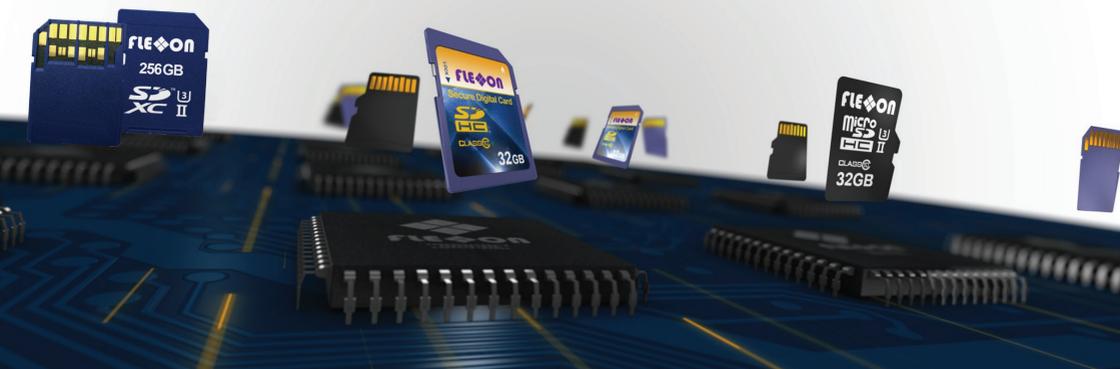


MEMORY CARD SERIES



Memory Card Series	FxPro I	FxPro I HighIOPS	FxPro II	FxPrem II
Feature	High Performance	High IOPS Solution	Extreme Performance	Embedded System Solution
Interface	SD 3.0/6.1	SD 6.1	SD 4.0/5.0	SD 3.0
Speed Class	up to Class 10	up to Class 10	up to Class 10	up to Class 10
UHS mode	UHS-I	UHS-I	UHS-II	UHS-I
Flash Type	SLC, MLC, pSLC	SLC, MLC, pSLC	MLC, pSLC	SLC, MLC, pSLC
Capacity	SLC: 128MB ~ 32GB MLC: 1GB ~ 128GB pSLC: 2GB ~ 64GB	SLC: 512MB ~ 16GB MLC: 4GB ~ 32GB pSLC: 2GB ~ 16GB	MLC: 16GB ~ 256GB pSLC: 16GB ~ 128GB	SLC: 4GB ~ 32GB MLC: 8GB ~ 256GB pSLC: 4GB ~ 128GB
Max. Performance	Read: 95 MB/s Write: 90 MB/s	Read: 95 MB/s Write: 90 MB/s	Read: 280 MB/s Write: 245 MB/s	Read: 95 MB/s Write: 80 MB/s
Grade	Industrial / Commercial	Industrial / Commercial	Commercial	Industrial
Function	Industrial Grade Support SMART Tool (SD Life Monitor Tool) Support Auto-Read Refreshment Support Power Loss Management			

Memory Card Series	FxPrem III	FxStd	FxAdv	FxMav
Feature	Small Capacity SLC Solution	Standard Performance	High IOPS Solution with 3D NAND	Advance High IOPS Solution
Interface	SD 2.0	SD 3.0	SD 6.x	SD 6.x
Speed Class	up to Class 6	up to Class 10	up to Class 10	up to Class 10
UHS mode	Non-UHS	UHS-I	UHS-I	UHS-I
Flash Type	SLC	MLC, pSLC	3D TLC, 3D pSLC	3D TLC, QLC
Capacity	256MB ~ 2GB	MLC: 4GB ~ 64GB pSLC: 4GB ~ 32GB	3D TLC: 16GB ~ 256GB 3D pSLC: 8GB ~ 64GB	16GB ~ 1TB
Max. Performance	Read: 23 MB/s Write: 19 MB/s	Read: 80 MB/s Write: 55 MB/s	Read: 95 MB/s Write: 90 MB/s	Read: 100 MB/s Write: 90 MB/s
Grade	Industrial	Industrial	Industrial / Commercial	Industrial / Commercial
Function	Industrial Grade Support SMART Tool (SD Life Monitor Tool) Support Auto-Read Refreshment Support Power Loss Management			



eMMC SERIES

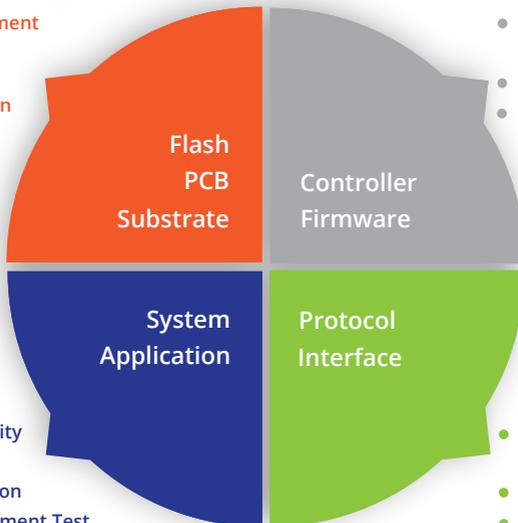


eMMC Series	XTRA III	XTRA IV	XTRA V
Interface	eMMC 5.0/4.x	eMMC 5.0	eMMC 5.1
Flash Type	MLC, pSLC	MLC, pSLC	3D TLC, 3D pSLC
Pin Count	153-ball/ 100-ball	153-ball/ 100-ball	153-ball
Capacity	MLC: 4GB ~ 64GB pSLC: 2GB ~ 32GB	MLC: 4GB ~ 64GB pSLC: 2GB ~ 32GB	3D TLC: 16GB ~ 256GB 3D pSLC: 4GB ~ 64GB
Max. Performance	Read: 270 MB/s Write: 150 MB/s	Read: 270 MB/s Write: 150 MB/s	Read: 270 MB/s Write: 150 MB/s
Grade	Industrial	Automotive	Industrial



FLEXXON INDUSTRIAL QUALITY SOLUTIONS

- Advanced Flash Management
- Endurance Life Test
- Industrial PCB/Substrate Layout Compliance Design



- Endurance and Stability of Wear Leveling
- Data Integrity
- Performance Gradation and Latency

- BIOS/Chipset Compatibility
- Performance & Power Consumption Optimization
- Mechanical Test/Environment Test

- Protocol & Signal Integrity and Reliability
- Electrical Noise & Interface Test
- Temperature Sensitiveness

FLEXXON SSD DATA SECURITY TECHNOLOGY



FLEXXON SSD DATA PROTECTION TECHNOLOGY

- 01** **xFlush**
Avoid data loss at SPOR
- 02** **INTELLIGENTFlush**
Avoid pair-page effect of flash
- 03** **Power Loss Protection**
With super cap/tantalum cap
- 04** **RAID ECC + LDPC**
Advanced error correction to fight against errors caused by NAND.
- 05** **SRAM SEC**
Single bit error correct in SRAM.
- 06** **End to End Data Protection**
Data is defensive in the path of data transfer.
- 07** **SmartRefresh**
ECC scan to against read disturb.

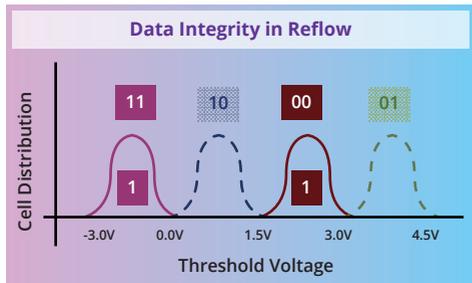
FLEXXON SD/microSD DATA RELIABILITY TECHNOLOGY

 **Auto-Read Refresh Management**
Reduce the chances of uncorrectable errors, resulting from repeated read.

 **Power Loss Management**
UECC may occur during power interrupted writes, due to pair page issue of MLC. FW moves the valid data before UECC page to new block, minimizing data loss.

 **Advanced Wear Leveling**
For special or customized OS, it could optimize wear leveling, and extend the life span.

FLEXXON eMMC INTELLIGENT TECHNOLOGY

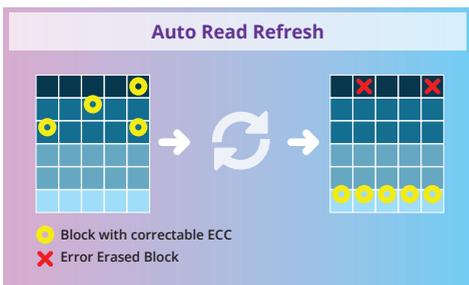
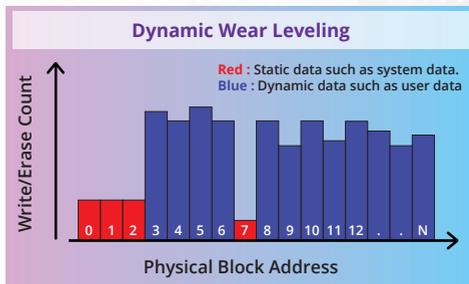


Data Integrity in Reflow

Leverage strong pages from NAND flash, and prevent data loss in reflow process.

Dynamic Wear Leveling

To keep important data without moving, dynamic wear leveling could concentrate the write/erase only on the dynamic block.

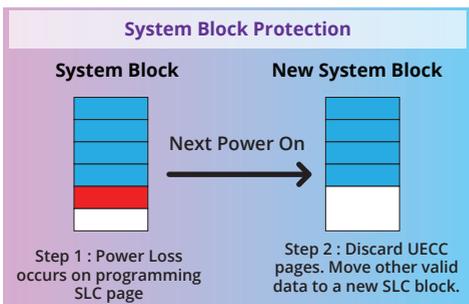
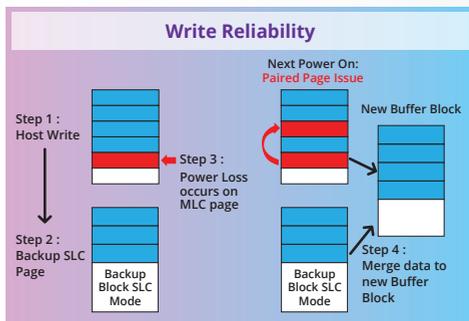


Auto Read Refresh

Good for read intensive applications. Firmware will auto-refresh the bit errors when they are approaching the pre-set threshold level.

Write Reliability

After sudden power loss and next power on, eMMC will scan buffer block until last programmed page. If ECC Uncorrectable or higher ECC error bit occurs, FW will stop scanning and discard these pages, then copy valid data to new buffer block in order to save the data.



System Block Protection

eMMC system information is stored in SLC area for better robustness. When FW finds UECC pages caused by sudden power loss, those pages would be discarded and move other valid data to a healthy block.

CONTACT US

Singapore

FLEXXON Pte Ltd.

28 Genting Lane, #08-07
Platinum 28, Singapore
349585

☎ +65-6493 5035

📞 +65-6493 5037

✉ flexxon@flexxon.com

Hong Kong

FLEXXON Global Ltd.

13-08, 13/F, Block E,
Wah Lok Industrial
Centre Nos. 31-35 Shan
Mei Street, Fotan, Shatin
Hong Kong.

☎ +852-2711 5886

📞 +852-3011 3058

✉ flexxon@flexxon.com

China

FLEXXON Global Ltd.

深圳市龙岗区南湾街道

☎ +86-755-8230 8012

📞 +86-755-6160 5039

✉ flexxon@flexxon.com

Malaysia

FLEXXON Pte Ltd.

Suite 12.1, 12th Floor,
Menara Penang Garden,
Jalan Sultan Ahmad Shah,
10500 Penang, Malaysia

☎ +6012-408 9590

📞 +65-6493 5037

✉ flexxon@flexxon.com

USA

FLEXXON USA

13575 58th St. North,
Suite 210, Clearwater,
FL 33760

☎ +1-(727)-429-4665

✉ flexxon@flexxon.com



Flexxon Pte Ltd
(ISO9001:2015)



www.flexxon.com



flexxon@flexxon.com