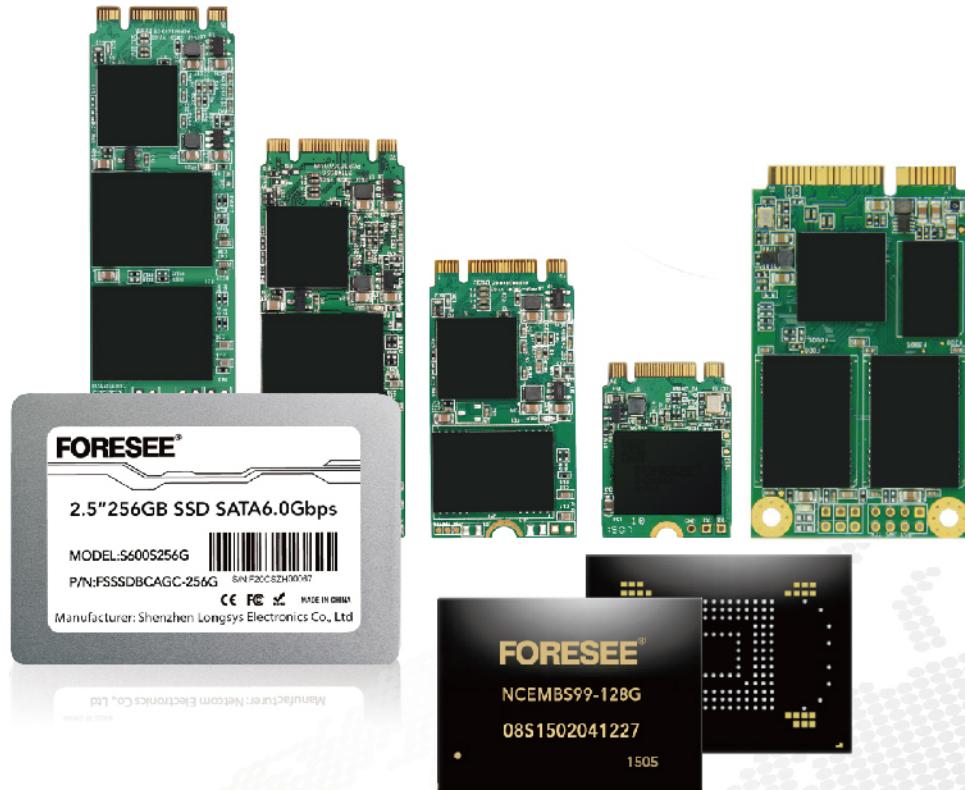


FORESEE®

Embedded Storage



About Us

Established in 1998, ShenZhen longsys Electronics Co ., Ltd is a chinese DMS company (Design,Module,Service)which focuses on NAND flash applications for software and hardware products, and globally applicable innovative technology products.

Longsys aims to combine market feedback with innovative concept design and application solutions. With our strength in R&D, IC fireware design, wafer packaging substrate design and mobile APP design, we are confident to deliver the best value products to our customers. Extending the applications of flash products from storage only to wireless storage, system storage and mobile payment products.

For more information, please visit our website www.foresee.cc

We are providing storage related products and services for end user, industrial user, mobile internet, wireless home network, customers easy to use informatization services.

Our Strengths

Investment in core technology and expertise.
Possession of intellectual property rights.
Apply the most advance fabrication technology.
Access to key technical resources and raw materials.

Design Module Service
D **M** **S**



FORESEE® eMMC product and service Introduction

(Note: FORESEE® is a registered trade mark owned by Longsys)

Longsys has ISO9001 certification and cooperates with the world's leading IC packaging and testing factories. The FORESEE® eMMC product is under strict quality-control management and has RoHS certification with JEDEC standard compatible.

- The controller in FORESEE® eMMC is developed by Longsys who has its own R&D team. Hence any request from customers could be handled efficiently.
- The BOM (Bill Of Material) and firmware version of FORESEE® eMMC in MP stage is locked to avoid any uncertain factor occurred.
- Longsys has an quality station which is independent from quality department to ensure every piece of product is out of question.
- Custom-built hardware security chip / Unique ID chip, customer specified package size can do 8.0 X 9.0 X 1.0mm or less.
- Customized Software Unique ID binding, grain production life detection, anti-copy, anti-delete, hidden cave.

Introduction of FORESEE® SSD Service

- 1. Own FW to support customized requests
- 2. Own FW to support more Flash
- 3. Strong R&D ability to offer efficiently technical support
- 4. Additional Valued Service :
 - Ghost OS to SSD in advance to help customer improve production efficiency;
 - Support S.M.A.R.T. to supervise SSD status;
 - Support Trim and SSD 4K alignment to optimize SSD performance
- 5. Competitive price based on good quality
- 6. sufficient stock and system working control to delivery order fast



SSD

1. 2.5 inch SSD
2. mSATA SSD
3. M.2 SSD
4. SATA Disk in Package

eMMC

5. eMMC (Standard Product)
6. eMMC (Customized)
7. eMCP
8. fSD



2.5 inch SSD



| Features

FORESEE® 2.5 inch SSD supports from 8GB to 512GB capacity, divided into consumer and industrial grade. Consumers can use it in laptops and desktops; Industrial can be used in various industrial equipment, such as vehicle multimedia terminals, vehicle DVR and thin clients.



Part Number	Interface	type	Capacity	Sequential Performance	Production Status
NCSSDSA-008G	SATA II 3Gb/S	2.5"(7mmT)	8GB	Read :155MB/S Write :17MB/S	Mass Production
NCSSDSA-016G	SATA II 3Gb/S	2.5"(7mmT)	16GB	Read :194MB/S Write :50MB/S	Mass Production
NCSSDSA-032G	SATA II 3Gb/S	2.5"(7mmT)	32GB	Read :201MB/S Write :47MB/S	Mass Production
FSSSDCBCBC-064G	SATA III 6Gb/S	2.5"(7mmT)	64GB	Read :512MB/S Write :83MB/S	Mass Production
FSSSDCBCBAC-128G	SATA III 6Gb/S	2.5"(7mmT)	128GB	Read :540MB/S Write :159MB/S	Mass Production
FSSSDCBCBEC-256G	SATA III 6Gb/S	2.5"(7mmT)	256GB	Read :210MB/S Write :150MB/S	Mass Production
FSSSDACCAI-512G	SATA II 3Gb/S	2.5"(7mmT)	512GB	Read: 265MB/S Write: 240MB/S	Mass Production

| Application



Digital Video Recorder / Notebook / Desktops / Vehicle Multimedia Terminal / Thin Client

mSATA SSD



| Features

FORESEE® mSATA SSD supports 8GB to 256GB capacity, divided into consumer and industrial grade. Consumer can widely used in laptops and desktops; Industrial can used in various industrial equipment, such as vehicle multimedia terminals, vehicle DVR and thin clients.



Part Number	Interface	type	Capacity	Sequential Performance	Production Status
NCSSDMS-008G	SATA II 3Gb/S	mSATA MO-300	8GB	Read :188MB/S Write :25MB/S	Mass Production
NCSSDMS-016G	SATA II 3Gb/S	mSATA MO-300	16GB	Read :210MB/S Write :31MB/S	Mass Production
NCSSDMS-032G	SATA II 3Gb/S	mSATA MO-300	32GB	Read :201MB/S Write :47MB/S	Mass Production
NCSSDMS-064G	SATA II 3Gb/S	mSATA MO-300	64GB	Read :206MB/S Write :82MB/S	Mass Production
NCSSD3S-128G	SATA III 6Gb/S	mSATA MO-300	128GB	Read :539MB/S Write :319MB/S	Mass Production
NCSSD3S-256G	SATA III 6Gb/S	mSATA MO-300	256GB	Read :530MB/S Write :300MB/S	Mass Production

| Application



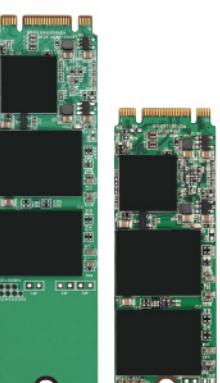
Digital Video Recorder / Notebook / Desktops / Vehicle Multimedia Terminal / Thin Client

M.2 SSD



| Features

FORESEE® M.2 SSD supports 32GB to 256GB capacity, including four form factors: M.2 2230, M.2 2242, M.2 2260, M.2 2280, mainly used in notebook, 2 in 1 computer.



M.2 2280 M.2 2260

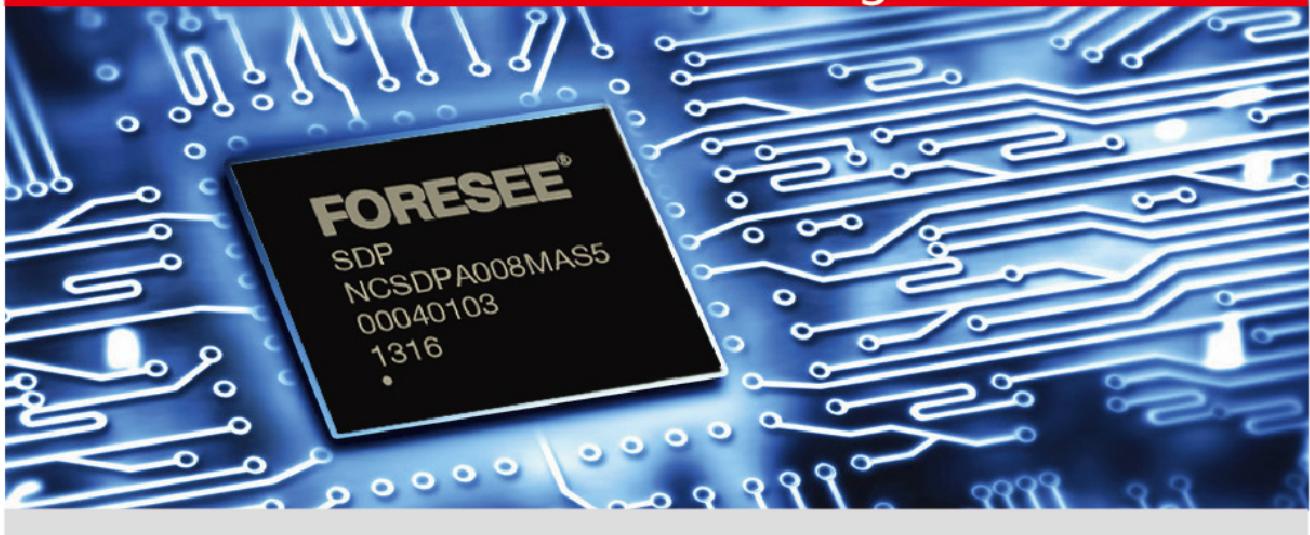
Part Number	Interface	type	Capacity	Sequential Performance	Production Status
M.2 2230 SSD					
FSSSDDBBG-064G	SATA III 6Gb/S	M.2 2230	64GB	Read : 330MB/S Write : 70MB/S	Engineering Sample
M.2 2242 SSD					
FSSSDBEBAC-032G	SATA III 6Gb/S	M.2 2242	32GB	Read : 330MB/S Write : 80MB/S	Mass Production
FSSSDBEBAC-064G	SATA III 6Gb/S	M.2 2242	64GB	Read : 540MB/S Write : 161MB/S	Mass Production
FSSSDBEBGC-128G	SATA III 6Gb/S	M.2 2242	128GB	Read : 514MB/S Write : 158MB/S	Mass Production
M.2 2260 SSD					
NCSSD3E-128G	SATA III 6Gb/S	M.2 2260	128GB	Read : 539MB/S Write : 319MB/S	Mass Production
M.2 2280 SSD					
NCSSD3F-128G	SATA III 6Gb/S	M.2 2280	128GB	Read : 539MB/S Write : 319MB/S	Mass Production

| Application



2 in 1 / Notebook / Tablet

SATA Disk in Package



| Features

FORESEE® SDP (SATA Disk in package) supports 4GB to 128GB capacity with integrated the SSD controller chip and flash chips. According to the guests needs, it becomes a secondary processing 2.5 inch SSD, mSATA SSD and M.2 SSD and other standard SSD Form factor. SDP is mainly used in high-tariff countries CKD needs to achieve easy and flexible local production and processing.



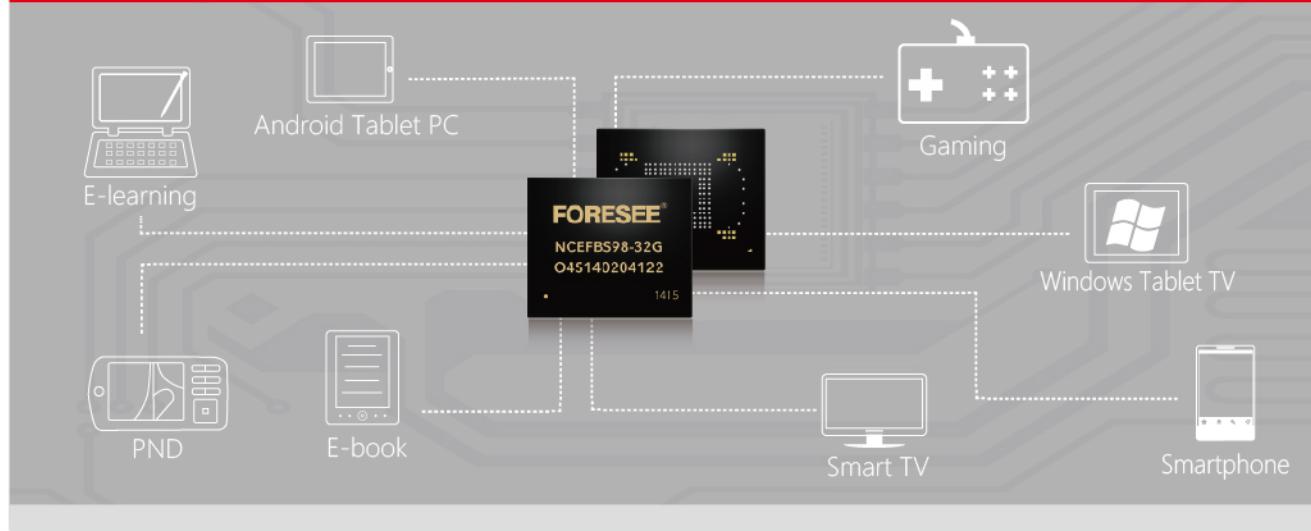
Part Number	Interface	Type	Capacity	Sequential Performance		Production Status
FSSSDAHEGI-004G	SATA II 3Gb/S	SATA Disk in Package	4GB	Read : 37MB/S	Write : 12MB/S	Mass Production
FSSSDAHEGI-008G	SATA II 3Gb/S	SATA Disk in Package	8GB	Read : 57MB/S	Write : 15MB/S	Mass Production
FSSSDAHEGI-016G	SATA II 3Gb/S	SATA Disk in Package	16GB	TBD	TBD	Engineering Sample
FSSSDAHEGI-032G	SATA II 3Gb/S	SATA Disk in Package	32GB	TBD	TBD	Engineering Sample
FSSSDAHEGI-064G	SATA II 3Gb/S	SATA Disk in Package	64GB	Read : 200MB/S	Write : 76MB/S	Mass Production
FSSSDAHEGI-128G	SATA II 3Gb/S	SATA Disk in Package	128GB	Read : 220MB/S	Write : 76MB/S	Engineering Sample

| Application

CKD (Completely Knocked Down)

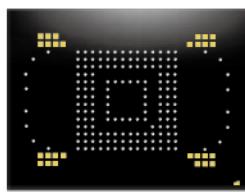


eMMC (Standard Product)



| Features

FORESEE® eMMC is an embedded storage solution designed in BGA package. FORESEE® eMMC, which equipped with original IDA (Initial Data Accelerating), Cache, Power-Loss safeguard, can effectively help customers reduce the cost of storage, improve customer experience and stability. FORESEE® eMMC has high performance at a competitive cost, high quality and low power consumption.



Part Number	Capacity	eMMC Specificaion	Package	Dimensions	Miscellaneous
NCEFES88-04G	4GB	eMMC 4.51	FBGA153	11.5 X 13.5 X 1.0mm	-25°C~85°C
NCEFES78-08G	8GB	eMMC 4.51	FBGA153	11.5 X 13.5 X 1.0mm	-25°C~85°C
NCEFAH58-08G	8GB	eMMC 4.51	FBGA153	11.5 X 13.0 X 1.0mm	-25°C~85°C
NCEFBS98-16G	16GB	eMMC 4.51	FBGA169	12.0 X 16.0 X 1.2mm	-25°C~85°C
NCEMAH59-16G	16GB	eMMC 5.0	FBGA153	11.5 X 13.0 X 1.0mm	-25°C~85°C
NCEMAH58-16G	16GB	eMMC 4.51	FBGA153	11.5 X 13.0 X 1.0mm	-25°C~85°C
NCEMAH59-32G	32GB	eMMC 5.0	FBGA153	11.5 X 13.0 X 1.4mm	-25°C~85°C
NCEMAH58-32G	32GB	eMMC 4.51	FBGA153	11.5 X 13.0 X 1.4mm	-25°C~85°C
NCEMBS99-32G	32GB	eMMC 5.0	FBGA169	12.0 X 16.0 X 1.2mm	-25°C~85°C
NCEMBS99-64G	64GB	eMMC 5.0	FBGA169	12.0 X 16.0 X 1.4mm	-25°C~85°C
NCEMBS99-128G	128GB	eMMC 5.0	FBGA169	12.0 X 16.0 X 1.4mm	-25°C~85°C

| Application



Tablet / Smartphone / Smart TV / E-Book / PND / E-learning / Gaming

eMMC (Customized)



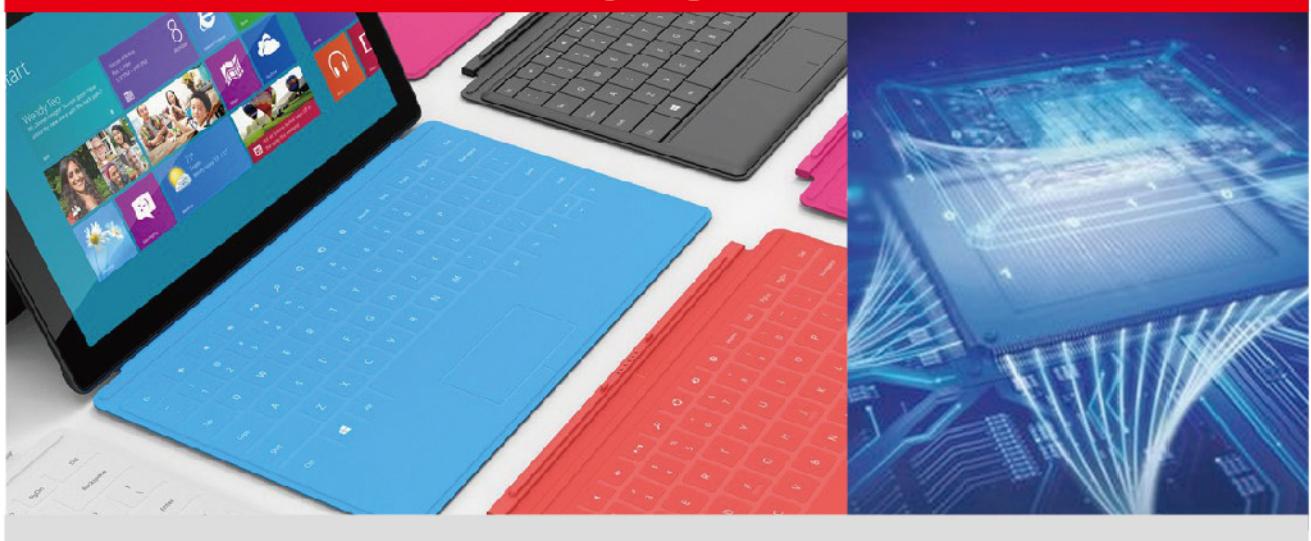
| Customized eMMC for various kinds of applications

Security Smart Phone / Smart Wearable Devices / IOT

| Product go to customize service is introduced: as below:

1. Custom-built hardware security chip / Unique ID chip, customer specified package size can do 8.0 X 9.0 X 1.0mm or less.
2. Customized Software Unique ID binding, grain production life detection, anti-copy, anti-delete, hidden cave.

eMCP



| Features

The FORESEE® eMCP offers a range of high-capacity storage and low power DRAM combinations.

FORESEE® eMCP, which equipped with original IDA (Initial Data Accelerating), Cache, Power-Loss safeguard, can effectively help customers reduce the cost of storage, improve experience and stability.



Part Number	Capacity	eMMC Specification	DRAM Interface	Package	Dimensions	Miscellaneous
eMCP	4GB+4Gb	eMMC 5.0	LPDDR2	FBGA162	11.5 X 13.0 X 1.0mm	-25°C~85°C
eMCP	4GB+8Gb	eMMC 5.0	LPDDR2	FBGA162	11.5 X 13.0 X 1.0mm	-25°C~85°C
eMCP	8GB+8Gb	eMMC 5.0	LPDDR2	FBGA162	11.5 X 13.0 X 1.0mm	-25°C~85°C
eMCP	16GB+16Gb	eMMC 5.0	LPDDR2	FBGA162	11.5 X 13.0 X 1.0mm	-25°C~85°C
eMCP	4GB+4Gb	eMMC 5.0	LPDDR3	FBGA221	11.5 X 13.0 X 1.0mm	-25°C~85°C
eMCP	8GB+8Gb	eMMC 5.0	LPDDR3	FBGA221	11.5 X 13.0 X 1.0mm	-25°C~85°C
eMCP	16GB+16Gb	eMMC 5.0	LPDDR3	FBGA221	11.5 X 13.0 X 1.0mm	-25°C~85°C

| Application



Smartphone / MID

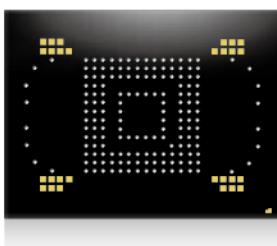
fSD



| Features



FORESEE® fSD with the interface as SD 2.0 protocol formed in the standard eMMC (BGA) package. FORESEE fSD has been qualified by the mainstream platform and widely used in the mainland market. FORESEE fSD, which equipped with original IDA (Initial Data Accelerating), Cache, Power-Loss safeguard, can effectively help customers reduce the cost of storage, improve experience and stability. The fSD can be customized to meet the changing requirements of market.



Part Number	Capacity	Interface	Package	Dimensions	Miscellaneous
NCFSESA8-08G	8GB	SD 2.0	FBGA153	11.5 X 13.5 X 1.0mm	-25°C~85°C

| Application



Android Tablet / Smart TV / TV-BOX / E-learning / E-Book / Game Console

HEAD OFFICE

Shenzhen Longsys Electronics Co.,Ltd

Address: 8F, 1 Building, Financial Base, No.8, Kefa Road, High-Tech Park, Shenzhen, China .
Post code: 518057
Tel: +86-0755-8616 8848
Fax: +86-0755-8616 9388
E-mail: sales@longsys.com

HONGKONG OFFICE

Longsys Electronics (HK) Co., Ltd

Netcom Technology (HK) Ltd

Address: 10F, China Aerospace Center, No.143, Hoi Bun Rd., Kwun Tong, Kowloon, Hong Kong
Tel: +852-2385 0111
Fax: +852-2385 1911

SHANGHAI OFFICE

Address: Room 312, GUANG Rong business center B, Kunming Rd.572, Shanghai, China .
Tel: +86-021-5275 6970
Fax: +86-021-5275 6971

BEIJING OFFICE

Address: Room 115, Tower C, Tianshun Renhe office Buildings, No30, BeiWa Rd, Hai Dian District, Beijing, China .
Tel: +86-010-5275 6970
Fax: +86-010-5275 6971

TAIWAN OFFICE

Longsys Electronics (Taiwan) Co., Ltd

Address: 6F-1, No.200, Gangqian Rd., Neihu Dist., Taipei City, Taiwan(R.O.C.)
Tel: +886-2-2657 7370
Fax: +886-2-2657 7103

CHENGDU OFFICE

Address: 15F, kailong wealth building, Block 2, No.2, Fuqing Rd., Chenghua District, Chengdu, Sichuan, China .
Post code: 610051
Tel: +86-028-8313 0048

THAILAND OFFICE

Longsys Electronics (Thailand) Co., Ltd

Address: 491/13 silom plaza 1st floor, silom road, bangkok 10500
Tel: +66-0263 50697-99
Fax: +66-0263 50695

United Kingdom Sales Representative

Tel: +44-7890 4317 00



After Sale Contacting Information

Tel: +86-755-8616 8848-340
E-mail: rma-jbl@longsys.com