



Small Form Factor for PCIe and SATA Devices



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Flash Memory Summit 2017
Santa Clara, CA



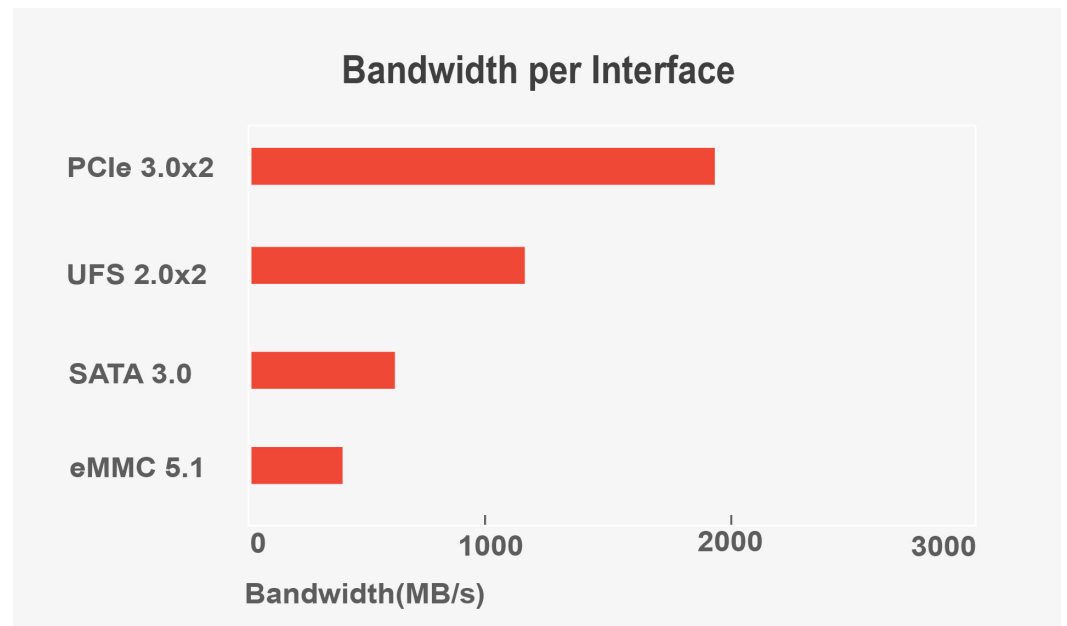
Agenda

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 - Host Memory Buffer
 - Boot Partitions
- SATA Disk in Package
 - Market Overview
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- Summary



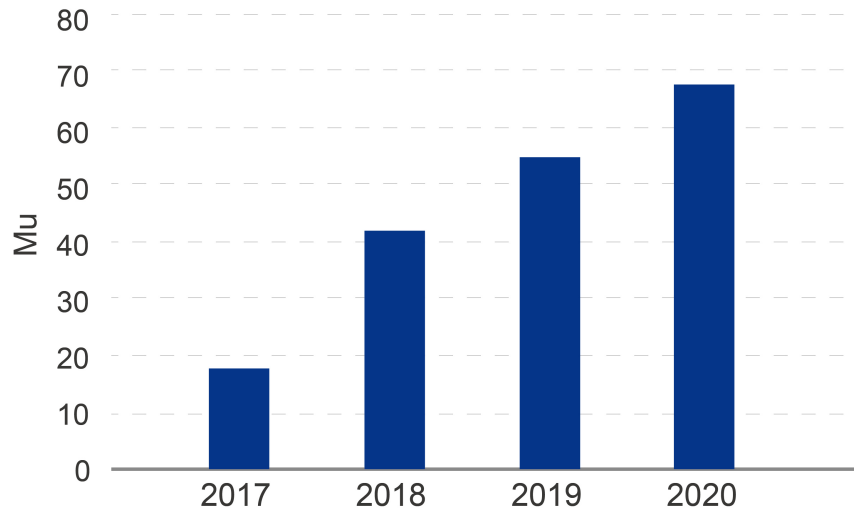
- Established in **1999**, Headquartered in Shenzhen
- For **18** years, Longsys focusing on **NAND flash** applications.
- **400+** employees, **50%** engineers
- Each year, Longsys sells more than **200 million** pieces of products and modules.
- **4** kinds of products: SSD, eMMC /eMCP /UFS, USB Drive and SD Card

PCIe BGA Device



Market Overview

BGA SSD SAM



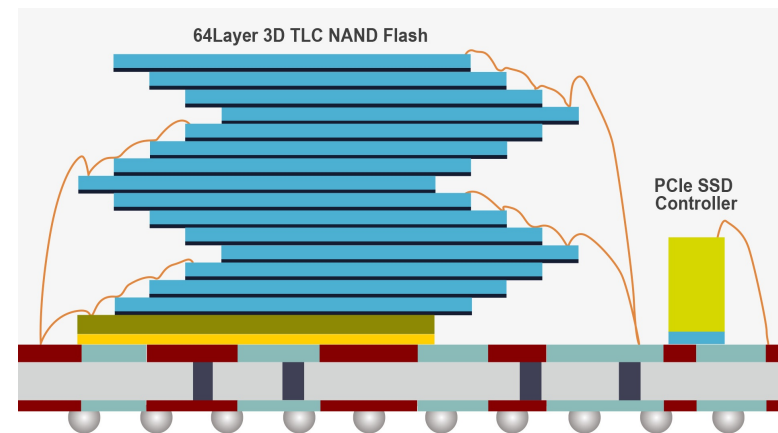
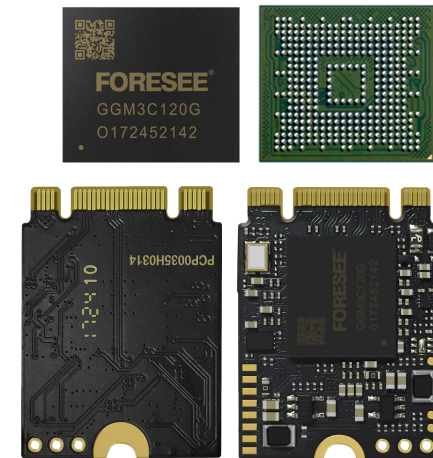
Source: Market Data



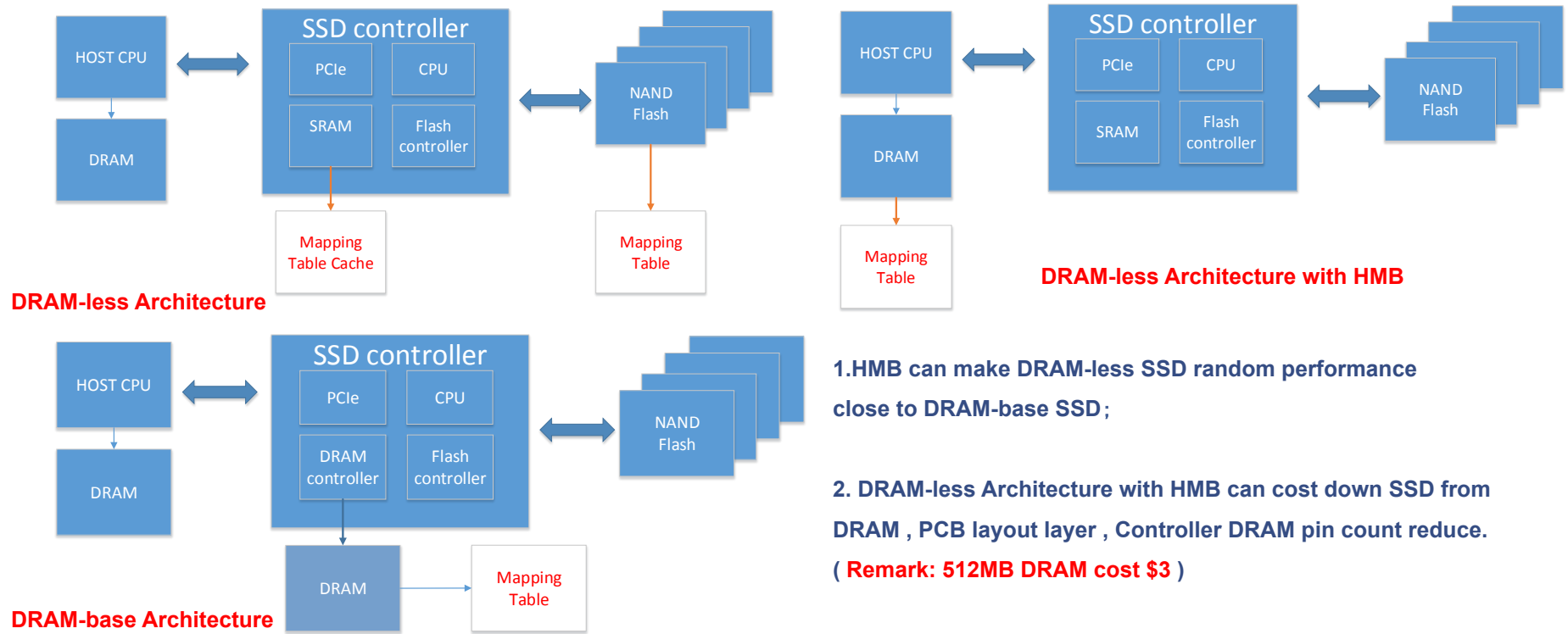
For 2-in-1 PC, Ultrathin Laptop,
VR(Visual Reality) & Smart Car.

Key Features

- PCIe 3.0 x2 Interface
- Form Factor: 11.5x13mm BGA / M.2 2230
- Capacity: 60GB / 120GB / 240GB / 480GB
- Support Host Memory Buffer
- Support Boot Partitions
- 64Layer 3D TLC NAND Flash
- MP Schedule : Q1.2018

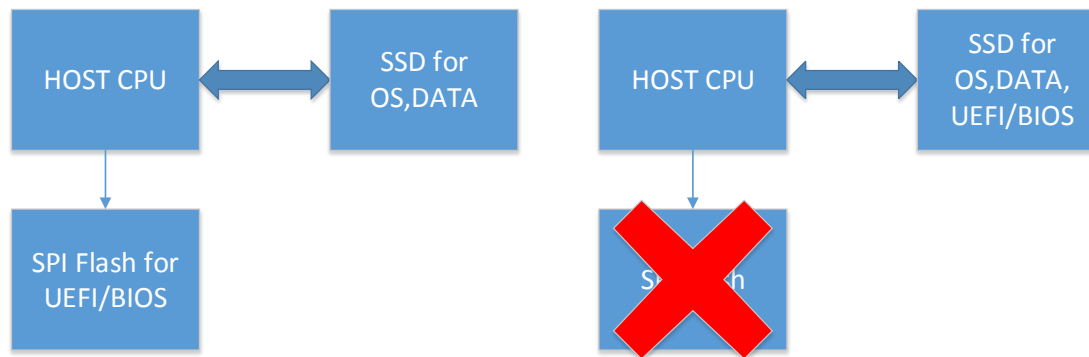


Host Memory Buffer



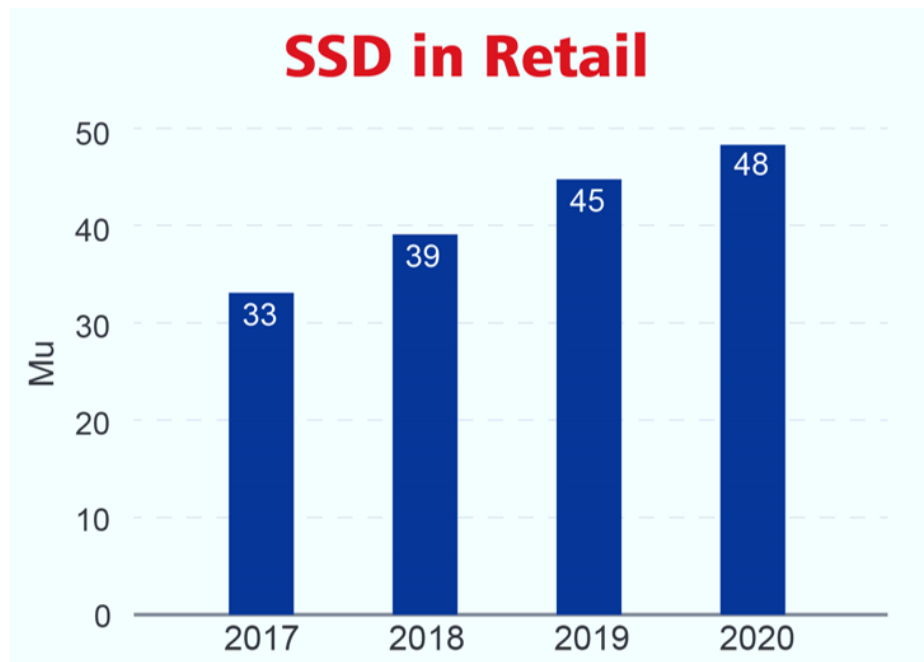
- 1.HMB can make DRAM-less SSD random performance close to DRAM-base SSD;
2. DRAM-less Architecture with HMB can cost down SSD from DRAM , PCB layout layer , Controller DRAM pin count reduce.
(Remark: 512MB DRAM cost \$3)

Boot Partitions



Boot Partitions provide an optional area of NVM storage that may be read without the host initializing queues or enabling the controller. The simplified interface to access Boot Partitions may be used for platform initialization code (e.g., a bootloader that is executed from host ROM) to boot to a pre-OS environment (e.g., UEFI) instead of storing the image on another storage medium (e.g., SPI flash).

Market Overview



Source: Market Data

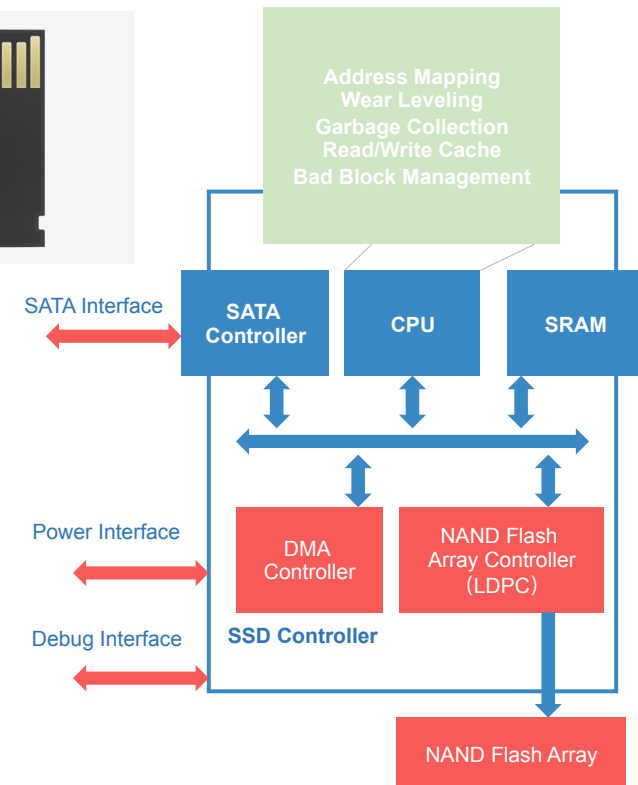
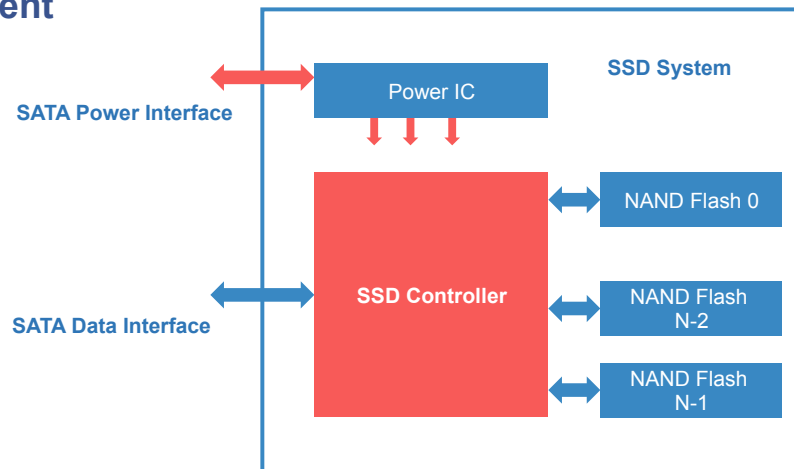
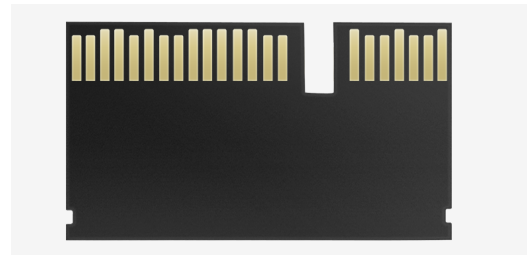
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SDP™ Introduction

- SDP™ :SATA Disk in Package
Size : 33.4x17.2mm
- SDP™ including following main component

- SSD controller
- NAND Flash
- Power IC
- Reset IC
- Crystal





Advantage about SDP™

Traditional 2.5 inch SSD production method **15 Day**



Final SMT, assembly, testing and other back-end work are undertaken in large-scale professional factory after all the modules, mechanisms and auxiliary materials are purchased.

SDP™ VS PCBA

Category	Quality	Flexibility	CKD	Inventory Management
Oduct	High	Good	Very suitable	Easy to be handled
	Medium-low	Not good	Not suitable	Difficult to be handled for complexity

Larger Scale, More Stable Quality, Shorter Delivery Time

longsys SDP™ **1 Day**

Half slim assembly



SDP™ assembly



Once SDP™ and supporting outer casing are purchased, an office can become a factory.



Summary

- Client SSD is moving to a higher level of integration, greater capacity, lower cost, smaller size.
- Longsys provides BGA NVMe 11.5x13mm solution to OEM customers.
- For Retail & CKD market, Longsys offers SATA Disk in Package 33.4x17.2mm solution, making customer finished product assembly more convenient and fast.



Thank You!

Welcome to visit us at Booth- #800.