

# UFSA

## (UNIVERSAL FLASH STORAGE ASSOCIATION)

The Universal Flash Storage Association (UFSA) was founded in 2010 as an open Trade Association to promote widespread industry adoption and acceptance of the UFS and UFS Card standard.

### OUR MISSION

Our mission is UFS product compliance and logo certification, as well as promotion of UFS technology and infrastructure. UFSA also provides valuable input back to JEDEC and MIPI for future specification development.

### UFS TECHNOLOGY: SSD FOR MOBILE

#### Mobile Storage Advancement

#### Build on e.MMC heritage

- Incorporate e.MMC features adopted by mobile systems for a smooth transition in mobile applications

#### Leverage enterprise-class high speed, energy efficient serial interface

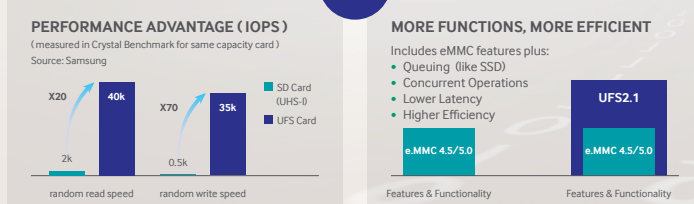
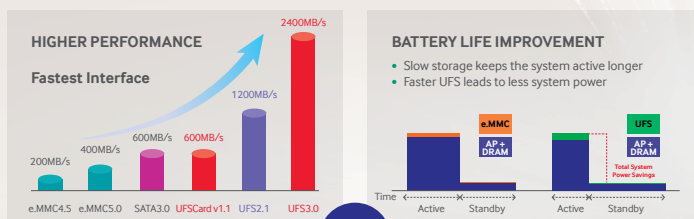
- MIPI M-PHY & UniPro standards (Physical & Link layers)

#### Industry proven software programming model

- SCSI command set and architecture model

#### Removable form factor, UFS Card

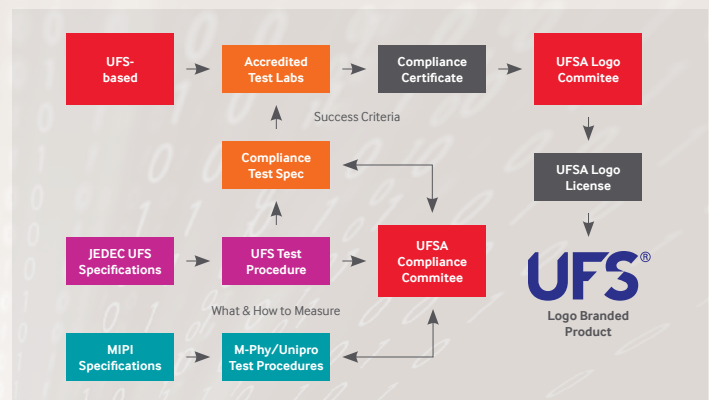
- End-consumer upgradeable storage with all the performance benefits of UFS



### UFSA COMPLIANCE CERTIFICATION PROGRAM

#### Principles of Certification

- Assure Devices and Hosts operate reliably in conformance with the UFS specification
- Maximize benefits to developers at minimum cost
- Promote completeness and advancement of UFS/MIPI specifications
- Assure ultimate integrity of the UFS brand



### JOIN UFSA

#### Benefits and Activities

#### Industry Enablement & Support

- Workshops and plugfests for early product compatibility and interoperability testing
- Marketing and promotion activities

#### UFS Product Compliance

- Compliance certification specifications & test guidelines
- Formal management of world class, worldwide compliance certification ecosystem
- Clear differentiation via UFS logo branding program

#### Membership Levels

- Executive – Board of Directors
- Contributor
- Adopter

Current members include: Amphenol, Astek, BitifEye, Cadence, DediProg, Hagiwara, Huawei, Integral Memory, JMicron, Keysight, Microsoft, Montage, Phison, Prodigy Technovations, Protocol Insight, Samsung, Silicon Motion, SK hynix, Synopsys, Tuxera, Western Digital

More information at: [www.ufsa.org](http://www.ufsa.org)

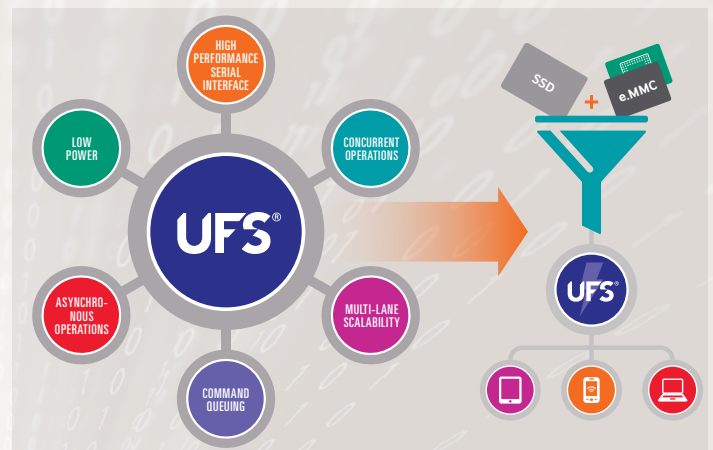
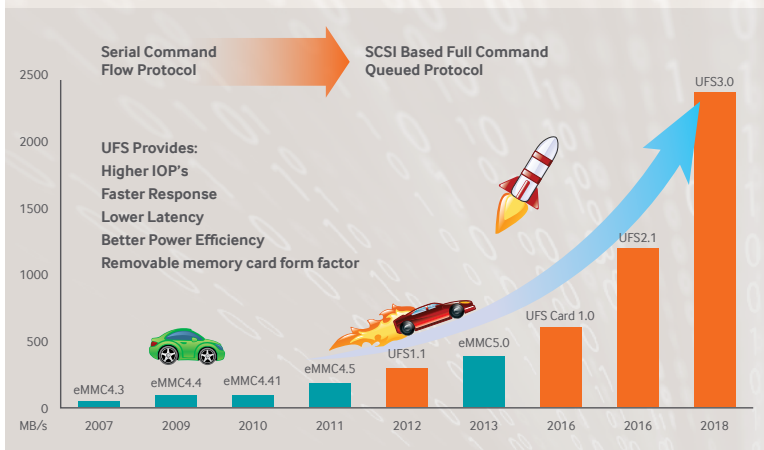
## UFS™ FREQUENTLY ASKED QUESTIONS (FAQ)

### What is UFS?

UFS (Universal Flash Storage) is a high performance storage interface designed for use in computing and mobile systems requiring low power consumption such as smartphones and tablets. Its high speed serial interface and optimized SCSI protocol enable significant improvements in throughput and system performance. UFS 3.0 defines bandwidth of up to 2.4 GB/s over two data lanes.

### Where will UFS be used?

UFS has already enabled a new level of performance in high-end smartphones and tablets. UFS adoption is expected to migrate to mid-range phones and tablets, as well as other devices in which high-performance and low-power storage is desirable. For example, in ultra-portable laptops, UFS devices could improve battery life, while maintaining the same level of high performance, and reducing weight and size. UFS 1.1 is a new state-of-the-art removable memory card form factor that leverages the existing UFS embedded device specifications to expand support for the needs of the mobile market.



### Performance improvement in real products

Standard	Introduced	Sequential Read (MB/s)	Sequential Write (MB/s)	Random Read (IOPS)	Random Write (IOPS)
UFS 2.1	2016	880	200	40,000	40,000
UFS 2.0	2014	480	170	25,000	17,700
eMMC 5.1	2014	330	150	14,500	14,400
eMMC 5.0	2013	260	140	6,500	13,000

(Note: Performance Measurement Density: 128 GB)  
Source: Samsung

### What is the UFS A Compliance Certification Program?

The UFS A Compliance Certification Program assures that any product licensed to use the UFS logo is compliant with the UFS Specification and will work properly with other compliant UFS products. Compliance certification by independent 3rd party "Authorized Test Centers" (ATCs) is required to assure the evaluation is unbiased, accurate and repeatable.

Where to join?

[www.ufsa.org/join](http://www.ufsa.org/join)