



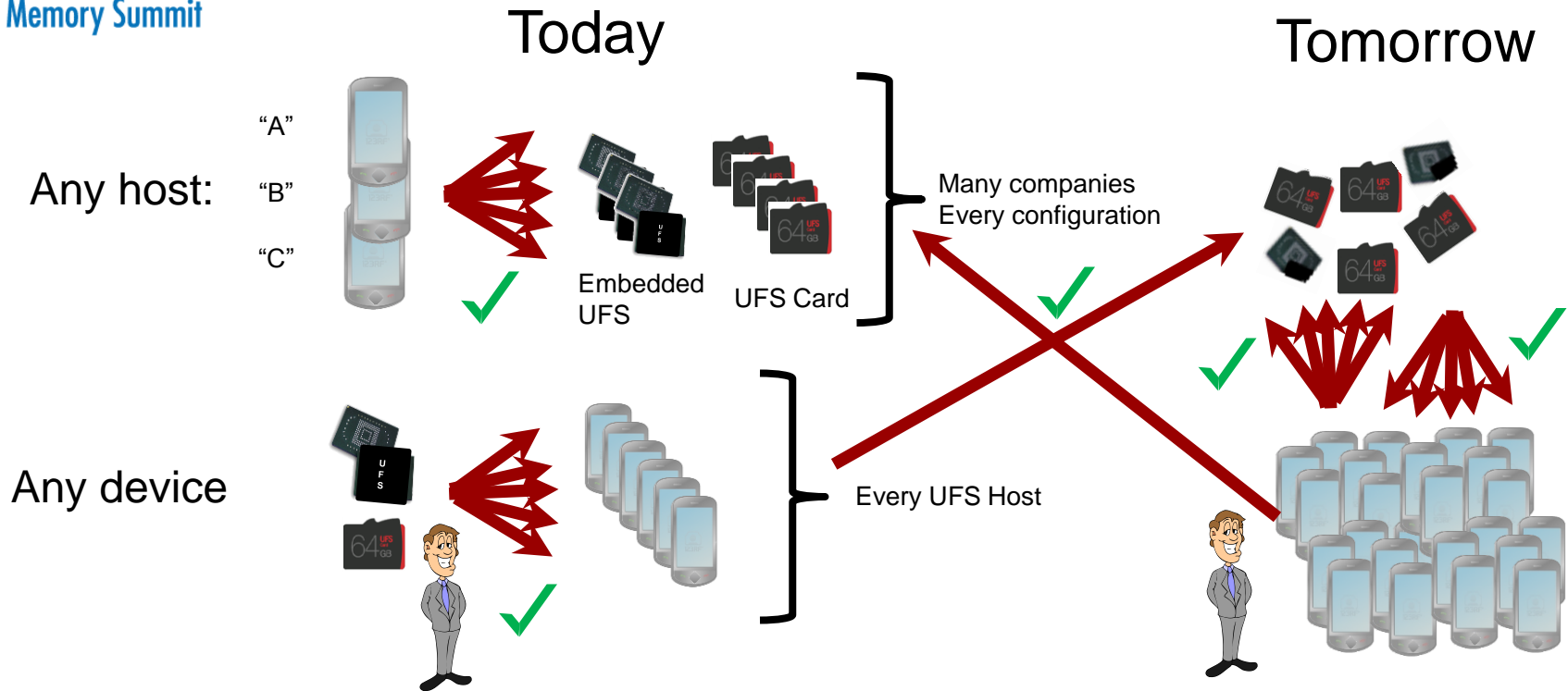
Flash Memory Summit

Q: What's in a Name?

UFSTM



A: Confidence





UFS: A Very Different Animal

- First new consumer mass-market technology in 15 years
- Combines technology from at least four independent SSOs and trade associations targeting very different markets
- The end user is the system integrator!
- Compliance program created from scratch by UFSA



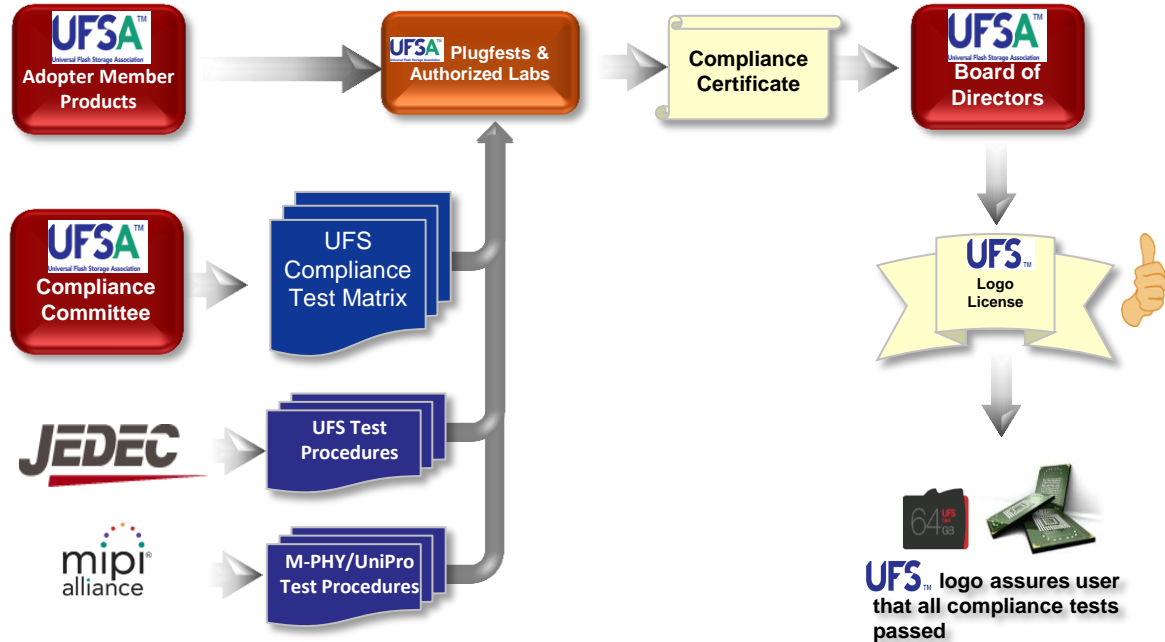


Flash Memory Summit

UFS Compliance Program Mission

- Verify adherence to UFS specification
- Assure devices and hosts interoperate reliably
- Maximize UFSA member benefits, minimize costs
- Accelerated “real world” feedback to JEDEC & MIPI
- Assure ultimate integrity of the **UFS™** logo
- Utilize an open process from start to finish

UFS Logo Certification Process



* JEDEC, MIPI Alliance and UFS logos are the property of their respective organizations



Flash Memory Summit

Keysight and UFSA

- Founding member of UFSA, Board of Directors
- Technical depth and broad organizational leadership
 - MIPI Alliance, JEDEC, PCI-SIG, USB-IF, SATA WG, VESA, HDMI LLC, SDA, IEEE, IEC
 - Unique insight into best practices for a broad range of technologies.
- Director of Compliance and Enablement
- Chairman: Compliance Committee



Flash Memory Summit

Reference / Backup

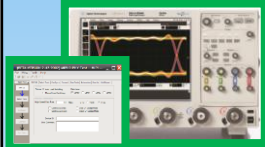


Flash Memory Summit

Keysight UFS Compliance: The Only Approved Total Solution

Transmitter Compliance

DSAQ93204A Infiniium



U7249B M-PHY
InfiniiMax Probes



Switch matrix
N5465A InfiniiSim
N2809A PrecisionProbe



Supports Gear 4 development

Receiver Compliance

N4903B/M8020A BERT



M8190 AWG



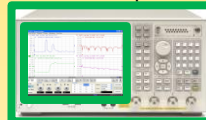
N5990A Automated
characterization



Supports Gear 4 development

Impedance/Return Loss Compliance

E5071C ENA Option TDR



DCA 86100D Wideband
sampling oscilloscope



N1055A 54754A TDR/TDT

Supports Gear 4 development

Protocol Compliance

U4431A M-PHY Analyzer (UFS,
UniPro, CSI-3, SSIC, M-PCIe)



Scope Protocol Decoder

N8818A UFS
N8808A UniPro

+

CSI-2 / DSI, DigRF v4, LLI,
SSIC, CSI-3, RFEE



Gear 4 protocol up to G3 rate

Officially approved
by UFSA for logo
certification test

Industry's highest analog
bandwidth, lowest noise
floor/sensitivity, jitter
measurement floor with
unique cable/probe correction

Highest precision jitter lab
source with automated
compliance software for
accurate, efficient, and
consistent measurement

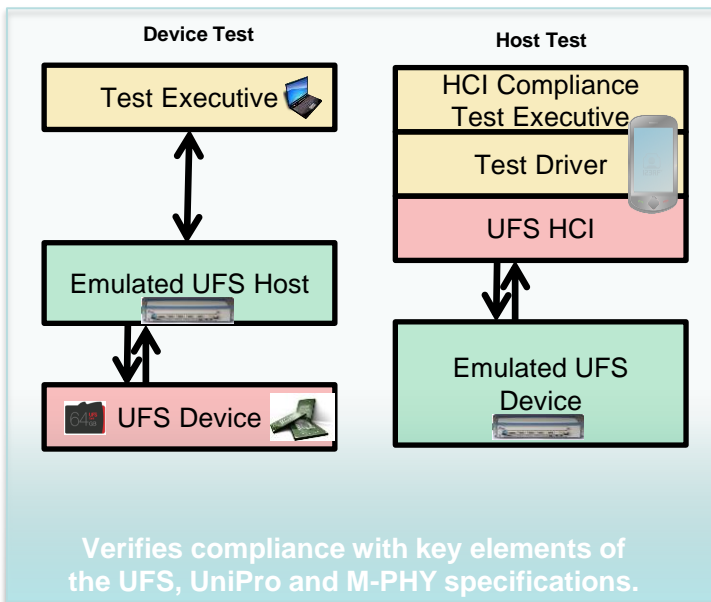
Precision impedance
measurements and
S-Parameter capability

Fast upload and display,
accurate capture, intuitive
GUI and customizable
hardware. Correlate physical
and protocol layer.

- JEDEC UFS 3.0 spec (which uses M-Phy Gear 4) currently under development
- M-Phy Gear 4 spec update possible based on Phy poweron learnings

UFS Compliance Test Architecture

Deterministic coverage of function points



Monte Carlo test of entire system

