

Innovation Testing technology energize high-quality development of the storage industry

Presenter: Alex Xie

Suzhou OKN Technology



Topic

- OKN technology Introduction
- Current SSD & DIMM mass production test challenge
- GA300 - SSD One-Step FSLT solution
- SW400 - DIMM One-Step FSLT solution



OKN Introduction

Company profile

OKN was founded in **2005** and specializes in semiconductor memory testing systems. As a leading designer of Test Equipment for the semiconductor memory industry, it provides one-step memory testing equipment and testing services which presents added value to customers

Mission

Contribute “Chinese wisdom “ to the semiconductor memory industry

Vision

Leading Testing technology in semiconductor memory





OKN Product



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Early Spring

ES100

LPDDR

UFS

eMMC

SD / TF

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□ □ □ □

Mid Summer

MS200

NAND

DRAM

Nor Flash

SRAM

.....

□ □ □ □

Golden Autumn

GA300

SSD

BGASDD

CFe

.....

□ □ □ □

Severe Winter

SW400

RDIMM

UDIMM

SoDIMM

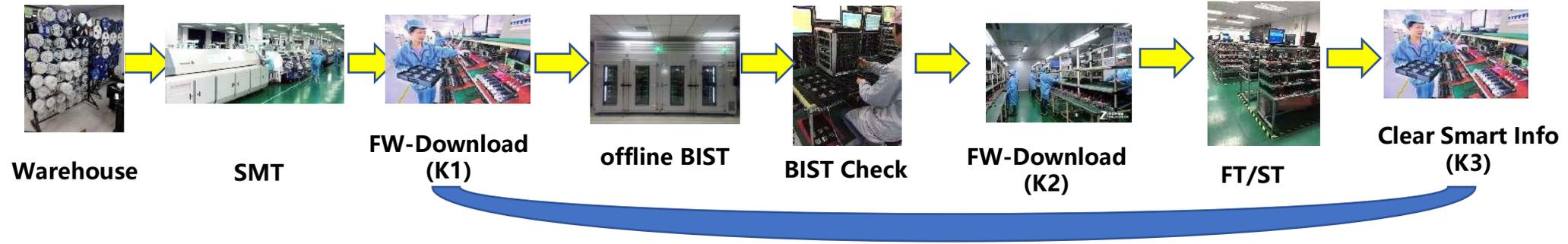
SPD/ET

.....



Application scenario – SSD Mass Production Testing

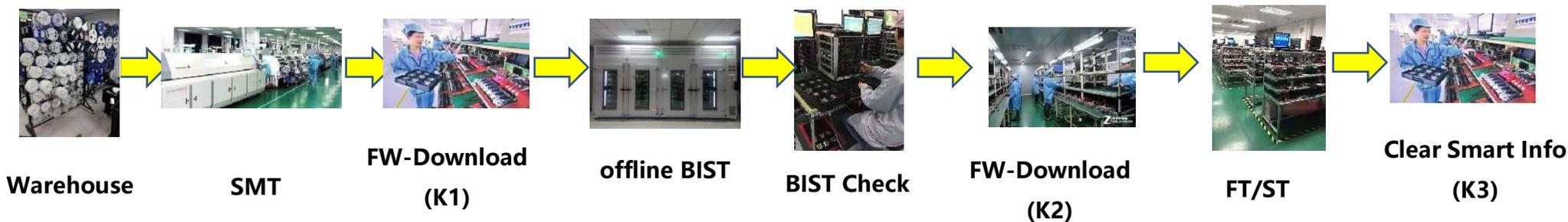
- ❑ **Misoperation Error** - Manual operation and the test results require manual intervention and judgment
- ❑ **Manpower Cost** - Products to be plugged in and out repeatedly, which increases manpower investment
- ❑ **Test effectiveness** - Using PC or Server for simple testing does not produce good test results;
- ❑ **Quality consistency** - It is difficult to ensure the testing consistency and be traced among different test equipment



Can we have an test platform which can meet
integrated process, low cost , high test effectiveness and quality performance ?

Application scenario – SSD Mass Production Testing

- ❑ **Misoperation Error** - Manual operation and the test results require manual intervention and judgment
- ❑ **Manpower Cost** - Products to be plugged in and out repeatedly, which not only increases manpower investment
- ❑ **Test effectiveness** - Using PC or Server for simple testing does not produce good test results;
- ❑ **Quality consistency** - It is difficult to ensure the testing consistency and be traced among different test equipment



OKN solution:
GA300 series
 Integrated mass
 production test system



Full process
 K1+BIST+K2+FT+K3

Thermal controlled
 environment



An Innovation SSD FSLT platform

OKN GA300 SSD tester – FSLT (Flexible System Level Test) platform



- Support **One Step** test solution – FW download, BIST, Functional test
- Support up to **256 DUTs** in parallel
- Support **multiple protocol** SATA/SAS/PCIe 5.0 & backward compatible
- Support **multiple form factor** AIC/U.2/U.3/M.2 and EDSFF
- Support **voltage margin shift** test (+_10%) and **SPOR/POR**
- Provide accurate **thermal controlled environment**
- Provide **out of band management** (SMBus, NVMe-MI)
- Provide **simulation test of end-user application**
- Provide **programming APIs** and **data collection and analysis service**

Application scenario – DIMM Mass Production Testing

Are you interested in minimizing server down time with a strength DIMM test coverage and effectiveness, also saving on the testing cost ?



Using a PC or server

Testing thermal environment control

PPR capabilities

Memory timing parameter adjustment

Eye Diagrams check

Optimize AMT, SPD

Those tests are NOT able to be done at PC or server level !!!

How to organize a test platform which can meet **Integrated those testing condition,**
Enhance the testing effectiveness,
A low cost solution and easy to use ?

An Innovation DIMM FSLT platform

OKN SW400 DIMM tester – FSLT (Flexible System Level Test) platform



- Support **One Step** test solution
- Support up to **64 DUTs** test in parallel
- Support **DDR5 RDIMM, LRDIMM, 3DS RDIMM**
- Support up to **5600MT/s** data rate
- Provide accurate **thermal controlled environment** and **individual DIMM temperature** capture
- Support **AMT** develop function and **RMT** function(intel)
- Support **DDR5 PMIC** test
- Support **Eye Diagrams** function
- Support **SPD R/W and verification** and **ET** function
- Support **Error DQ accurate locate**(BG, BA, Row, Column)
- Support **PPR** repair function
- Provide software customization services, such as data recording and analysis, Test Plan customization, test process control



OKN SSD & DIMM test solution

- **Satisfy Mass Production Test Demands** : OKN GA300/SW400 products provide a SSD/DIMM test system with supporting entire SSD/DIMM test operation to meet customer test requirement
- **High Integrated & Target Test Application** : OKN GA300/SW400 products provide customers with flexible testing solutions for the entire SSD/DIMM process from R&D, mass production, and reliability
- **Flexible & accurate controlled thermal/voltage environment** : OKN GA300/SW400 products provide a precise device thermal consistency also an independent device power control which is to more easy to capture those marginal SSD/DIMM
- **SMART Data service** : OKN GA300/SW400 products provide a SMART data capturing and analysis software, which helping customer to quick locate, diagnose via summarize all those key test parameters result to capture SSD/DIMM potential weakness



Welcome to OKN



Suzhou OKN
Technology CO. Ltd

Booth #1040

半导体存储器测试专家

