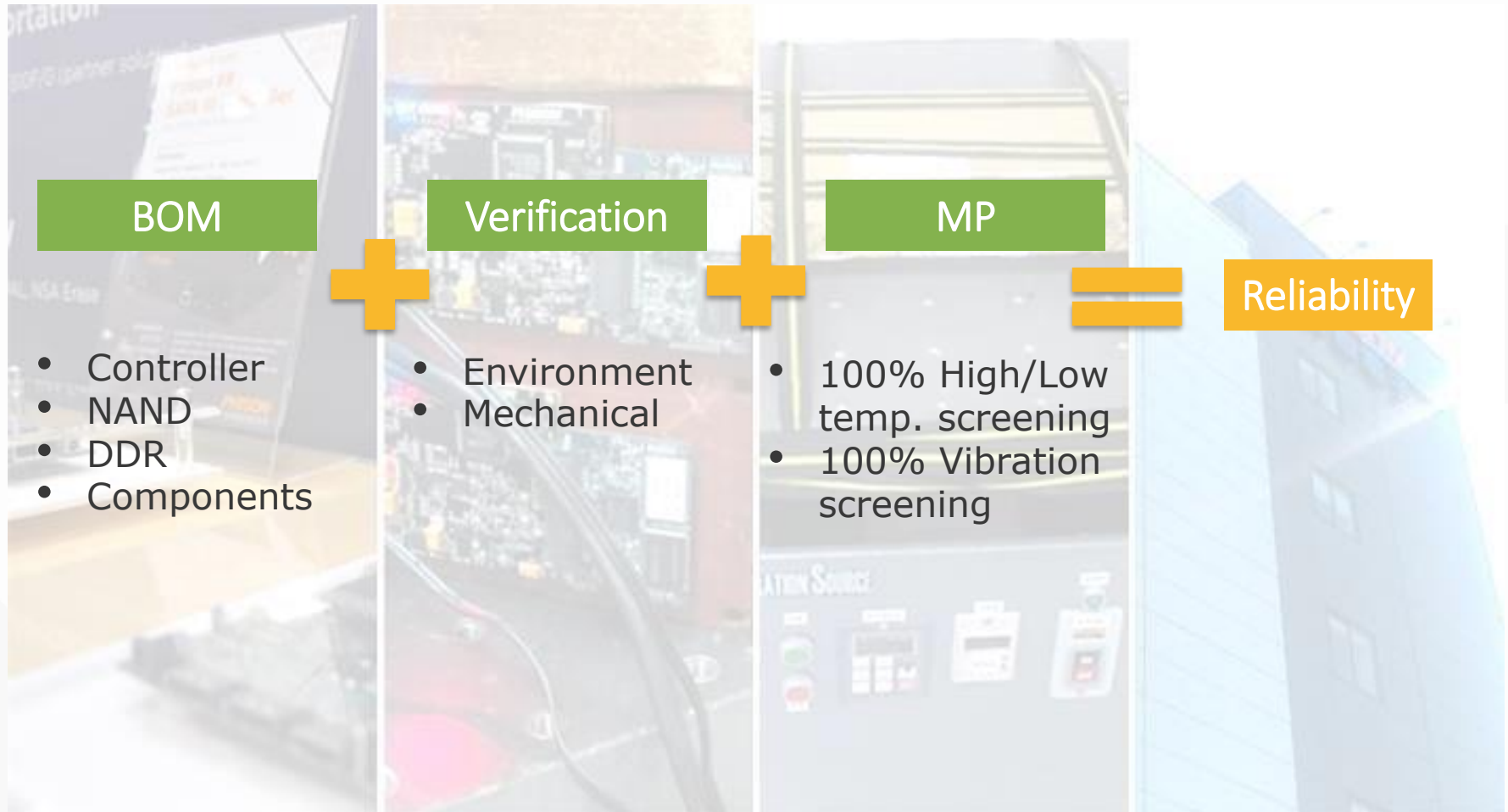


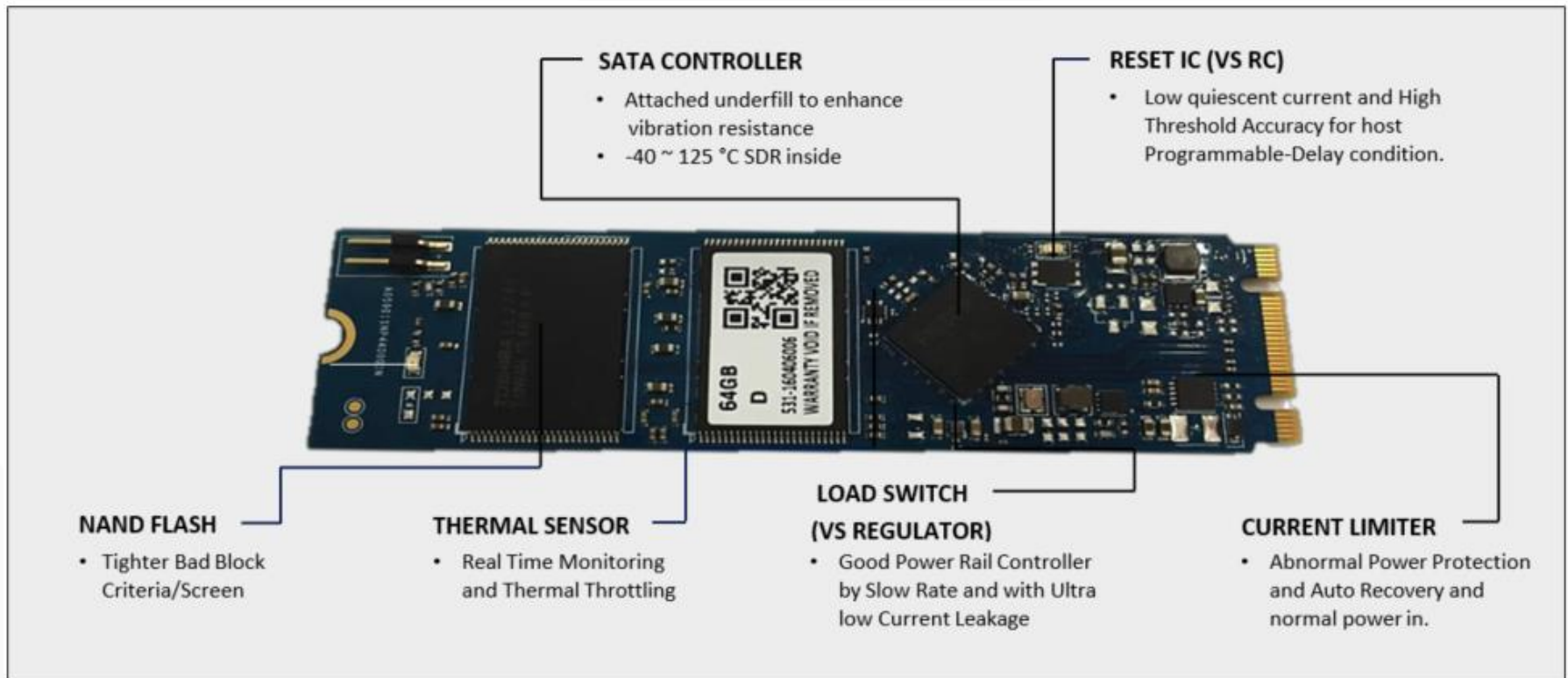
eMMC in Automotive Applications

Insignis Industrial Grade Storage



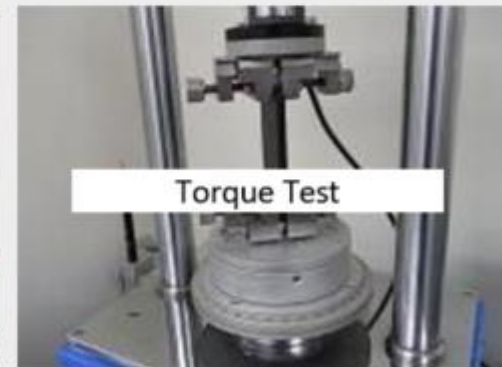
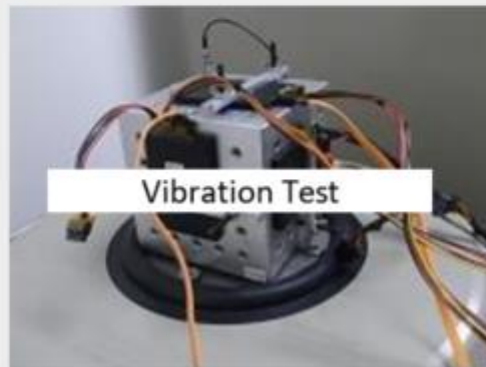
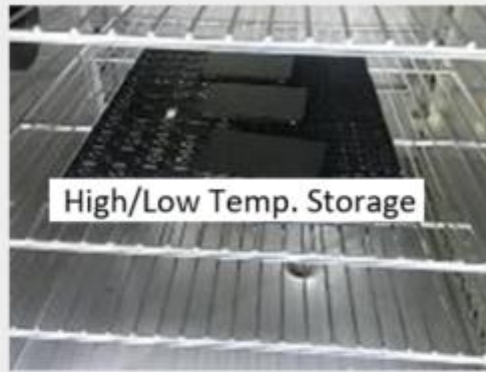
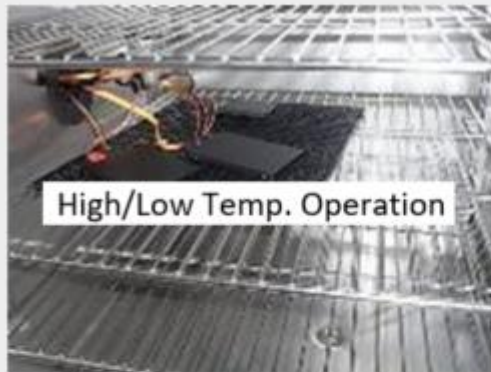
Delivering High Reliability Products

- 1) Selection of Industrial-grade Components
- 2) Industrial Grade Testing
- 3) Industrial Functionality Screen



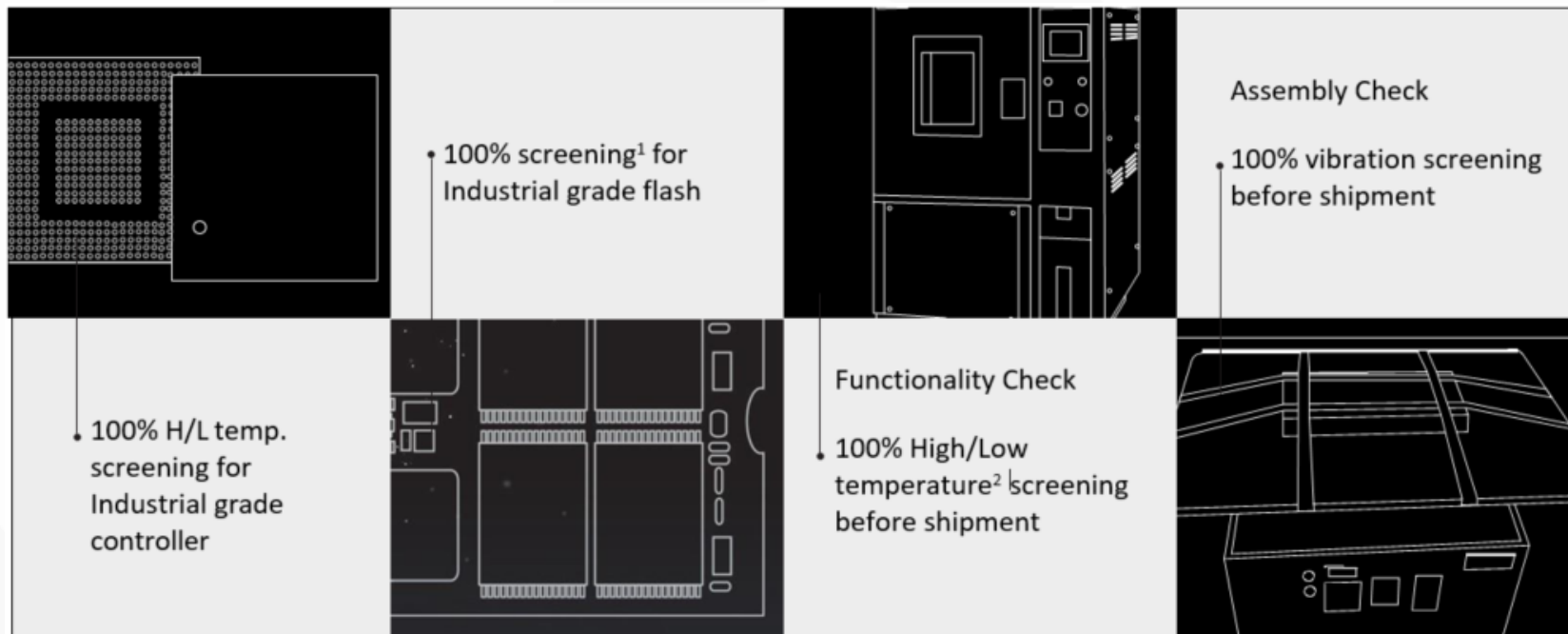
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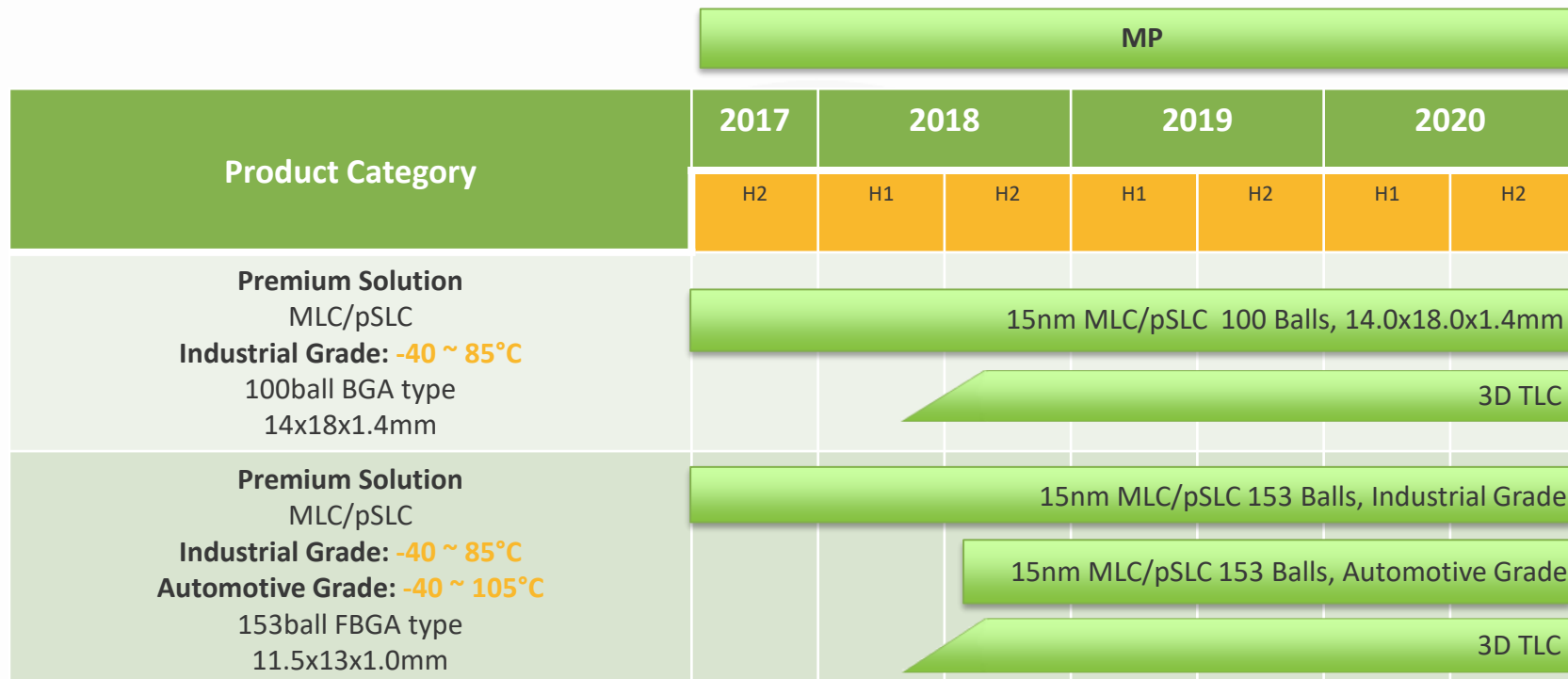


Delivering High Reliability Products

- 1) Selection of Industrial-grade Components
- 2) Industrial Grade Testing
- 3) Industrial Functionality Screen



Embedded eMMC Roadmap



Capacity: 4GB to 64GB
eMMC 4.4/4.41/4.5/5.0, HS400
Seq R/W = 250/90 Mb/s

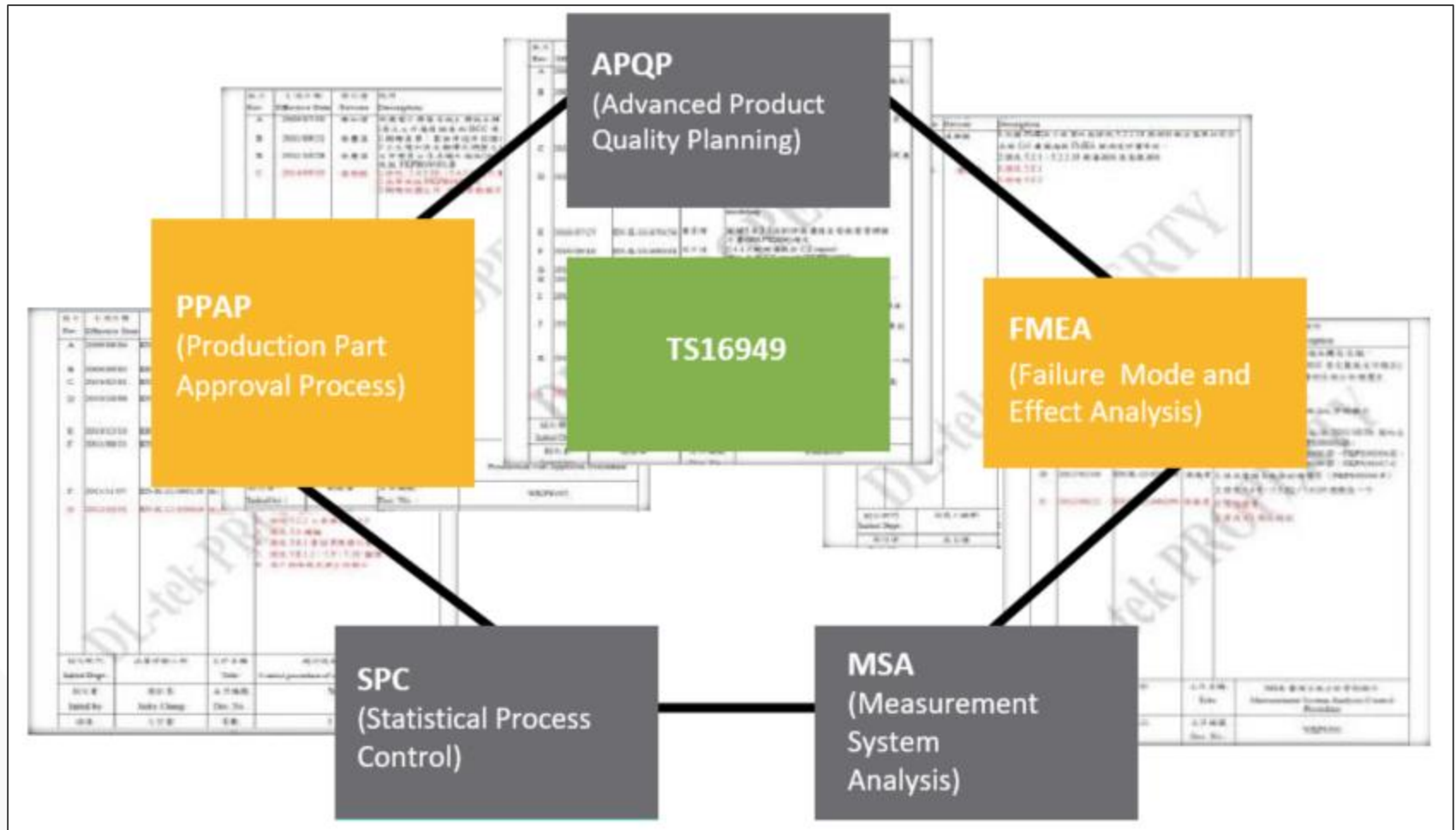


Capacity: 16GB to 512GB (TBD)
eMMC 5.0/5.1, HS400

Insignis Automotive Storage Overview



Insignis Automotive Process



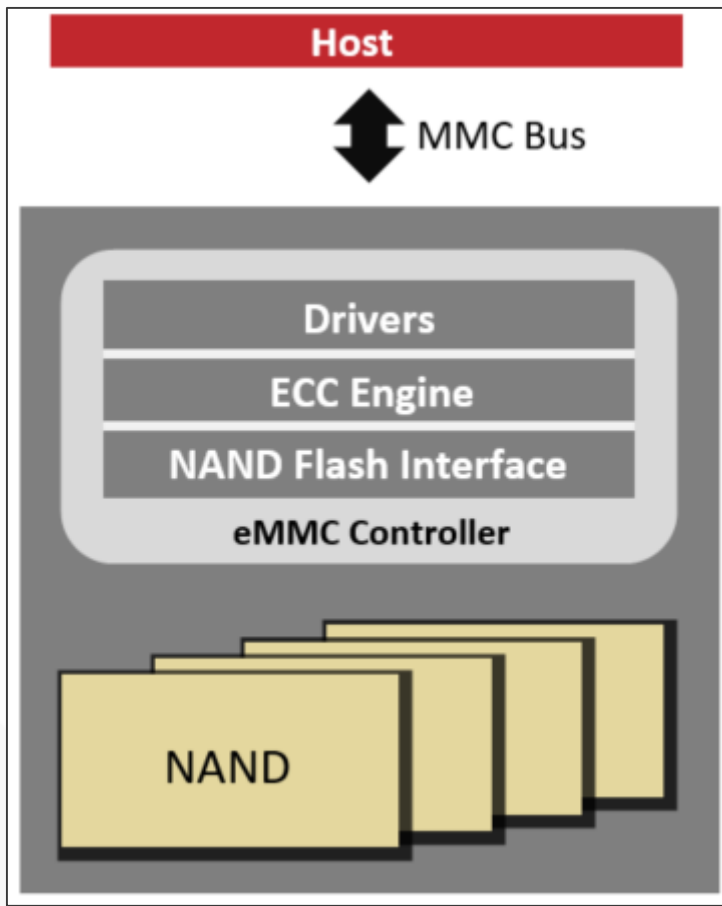
Dedicated Service for Automotive Market



The Insignis team provides what you expect.

- ✓ TS16949 Certification manufacturing
- ✓ AEC-Q100 Prod. Qualify and PPAP document support
- ✓ Dedicated team for Industrial/Automotive requests and services
- ✓ Auto Notification (ECN/PCN) and synchronization of project statuses
- ✓ Fix BOM and longer longevity for solution supply
- ✓ Full failure analysis procedures and TAT control

Automotive eMMC Introduction



Compact and Robust Design for Automotive Embedded Applications

- Insignis eMMC is based on JEDEC standard eMMC 4.5/5.0 with **100balls** and **153balls**. It can be mounted firmly on-board against vibration.
- **Page** based firmware reduces latency in system operation, enhancing endurance.
- Up to 64GB with **AEC Grade 1 (-40~105°C)** temp support. Compliant with **TS16949** and **AEC-Q100**.
- Support **Customized Logo** on eMMC.

Automotive Product Grade Criteria

Item/Criteria	Automotive	Industrial	Consumer
Qual Standard	Per Insignis Automotive qual plan (Selected AEC-Q100 Reliability Items)	Per Insignis Industrial qual plan	Per insignis Consumer qual plan
Certification	TS16949	ISO9001	ISO9001
In-Line Monitoring	Cpk > 1.67	Cpk > 1.33	Cpk > 1.33
Assembly/Packaging	Standard	Standard	Standard
Sorting Flow	Test at +125°C and -40°C by Default Bin out based on the “LBB limit”	Test at +85°C and -40°C by Default Bin out based on the “LBB limit”	Test at 25°C
Customized Request	Customized logo/setting/features	Customized logo/setting/features	Not Available
Healthcare & Monitor	Available as tool or SDK Supported different OS	Available but with fixed feature and format. Only Supported different OS	Not Available
Technical Support & FA Analysis	- FA Report - Initial response within 24h1 - TAT < 10 working days¹ - Dedicated team for responsive service	- FA Report - TAT 10~15 working days¹	Not Available
Manufacturing Service Capacity	PPAP/SPC/MSA/FMEA	Standard	Standard
RMA Rate	Target < 10 dppm	Target < 10 dppm	Target < 10 dppm