

Consumer | Smart TV

PURSUE A RADIANT REALITY FOR A MORE IMMERSIVE TV EXPERIENCE.

Samsung brings forward the next-generation display to life, with its supporting capability for brilliant color details and ultra-high definition.

SAMSUNG

Executive Summary

The future of Television lies in 4K high resolution and vibrant color reproduction technology

- New products pairing 4K with cutting-edge technology
- Smart TVs are not just for watching TV
- TV manufacturers continue to explore new markets

Taking the lead in future competition

- Witness the true beauty of 4K with rich color reproduction
- Smarter TVs without memory and storage bottlenecks
- Tap into the untapped market

▶ Read on to learn more ...

New products pairing 4K with cutting-edge technology.

More life-like than ever; delivering spectacular color, striking brightness, stunning contrast and superb detail.

Key features of the future ultra high definition (UHD) TV ¹

Spectacular color



Striking brightness



Stunning contrast



Super detail



1. Samsung UAE Website, Infographic: Conventional UHD TV vs Samsung SUHD TV, 2015

Smart TVs are not just for watching TV.

The heavy use of modern multimedia will eventually realize the limits of the slow and small memory and storage space in most Smart TVs.

Great usage of video streaming and various apps on Smart TVs ^{1, 2}



- “ Linear TV consumption remains high but anytime Over The Top services have become a key request. ”
- “ The Smart TV users are consuming various TV Apps. ”

HBO GO

4OD

NETFLIX

BBC
iPlayer

amazon
instant video

MLB.TV

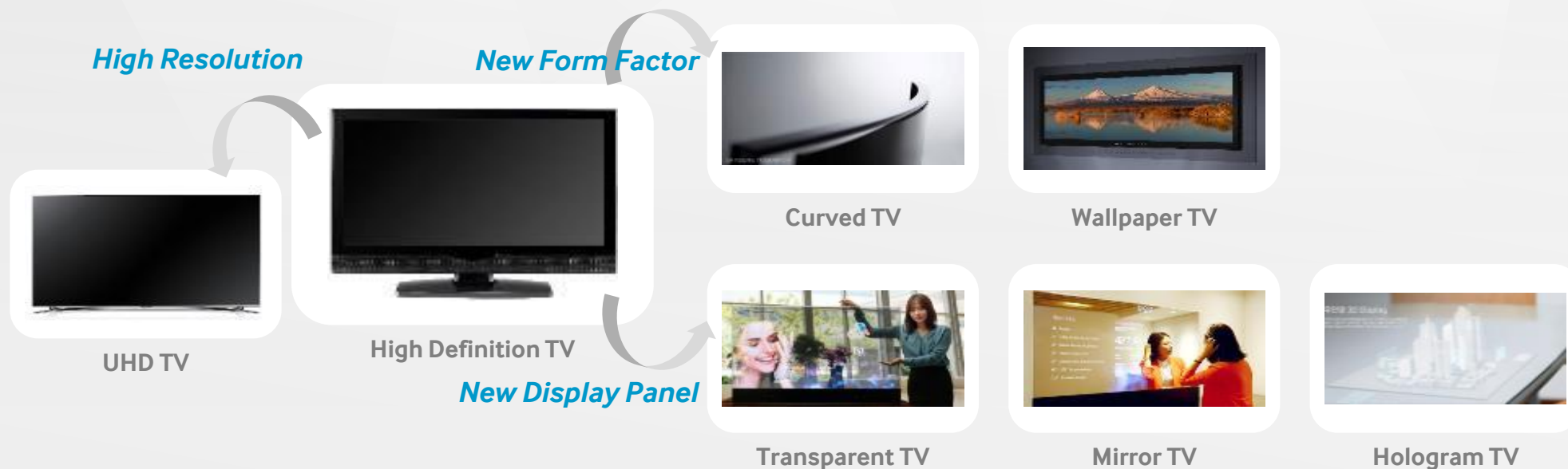
1. Samsung UK Website

2. Accenture, Forecast of devices for TV, Over the Top consumption on TV screen, 2012

TV manufacturers continue to explore new markets.

Become a market leader by rapidly responding to consumer needs.

Evolving variety of market needs for a new type of TV



Get the add-in

Our Solution For Smart TV



Watching 4K UHD videos with high color reproduction on TV is almost here.

Samsung is prepared to help you supersede the ever-increasing demand for high definition and colorful TV images. Experience the industry-leading display solution and cutting-edge memory technologies you need to lead your market.

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Witness the true beauty of 4K with rich color reproduction.

Take advantage of Samsung Panel DDI solution that supports a 10-bit interface for high color reproduction and up to 4K resolution within a single chip.



As a pioneer in the Panel DDI market with our advanced USI-T technology, Samsung proudly supports 10-bit high-color and 4K high-resolution standards.



Our consumer DRAM can support seamless data processing among the components through a high bandwidth of up to 3,200 Mbps.



Smarter TVs without memory and storage bottlenecks.

Allow users to flawlessly surf the web or enjoy a wide range of infotainment TV apps including Over The Top (OTT) services through Samsung consumer DRAM and eMMC.



Samsung consumer DRAM with DDR4 technology can impressively support Smart TV platforms through a bandwidth that is 2x higher than that of the DDR3.



eMMC

Samsung eMMC 5.1 provides a faster R/W speed in both random and sequential modes over its predecessors and also a better sustained performance.



Tap into the untapped market first with Samsung.

Utilize Samsung's advanced customization capabilities and diverse product portfolios to stay a step ahead of the competition.



Panel DDI/
TCON

Samsung's customization capabilities in Panel DDI and TCON offer the right solution based on your needs, including the settings of operating voltage and interface for various display types.



Consumer
DRAM

Samsung consumer DRAM provides solutions in a full range of technologies to fit all of your needs. The coverage starts from DDR2 to DDR4, and also in various densities (128Mb-8Gb).



Take a look over

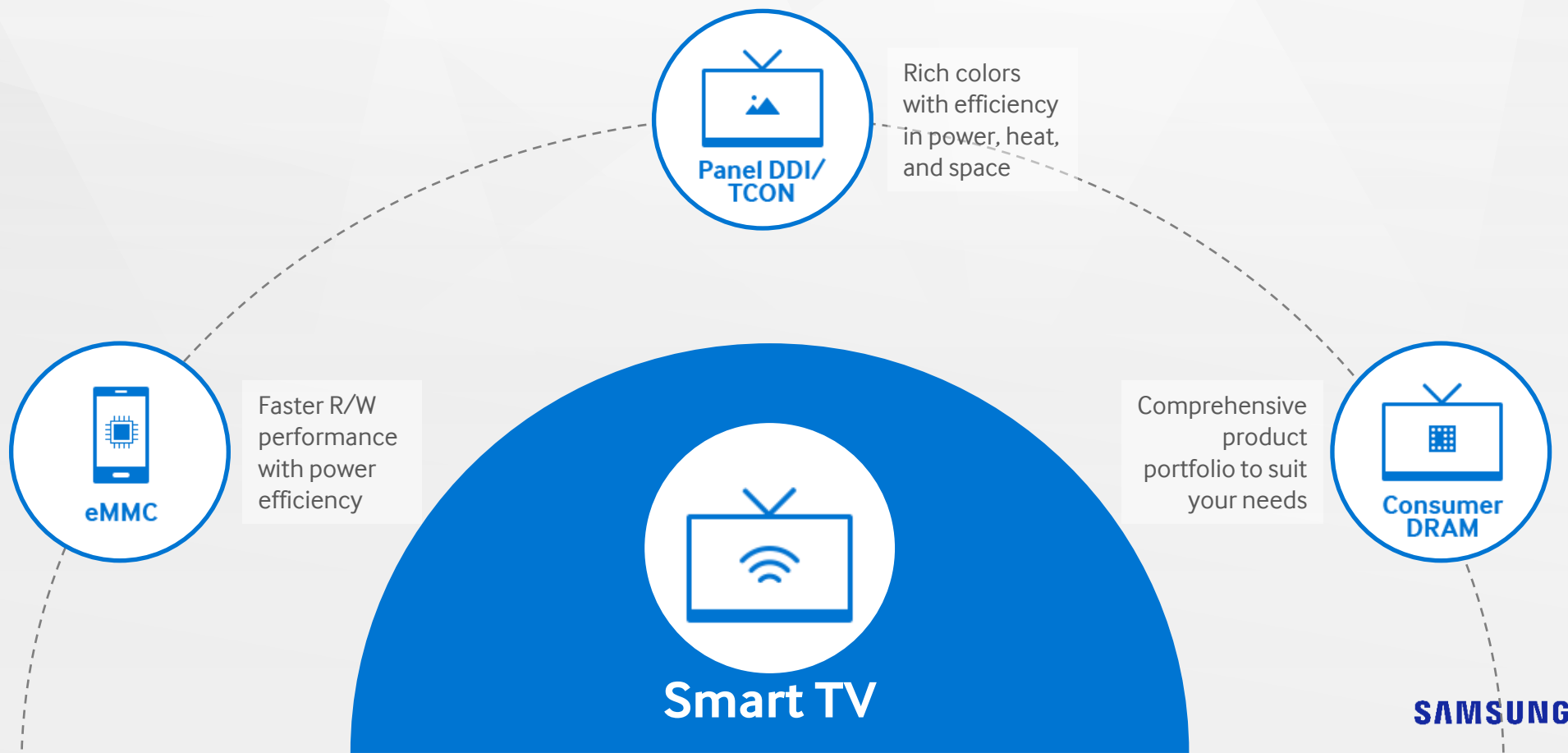
Our Featured Products For Smart TV



Tailored for your business

Explore products, solutions and resources that cater to your Smart TV

Featured Product Overview



Panel DDI/TCON

**ENJOY RICH AND
EFFICIENT COLOR
REPRODUCTION.**

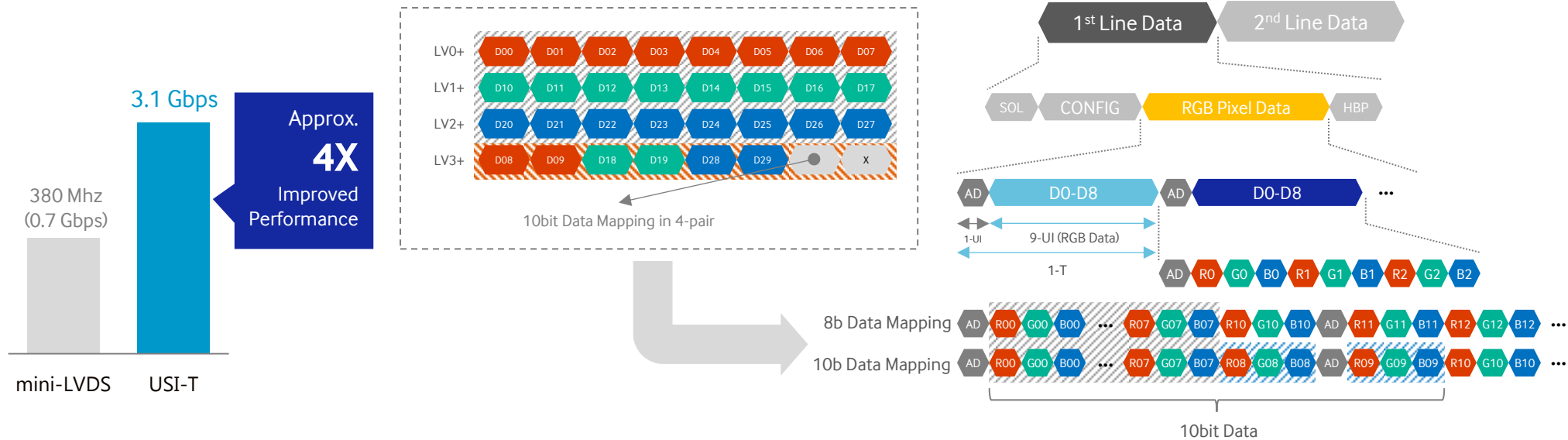


Samsung's expertise in panel DDI empowers panels with rich color spectrums, along with strong efficiency in power, heat, and space.

Panel DDI/TCON

The world leader in Panel DDI technology, Samsung has been the pioneer of the 10-bit S-IC design since we began production in 2014. USI-T is the best interface solution for 10-bit technology.

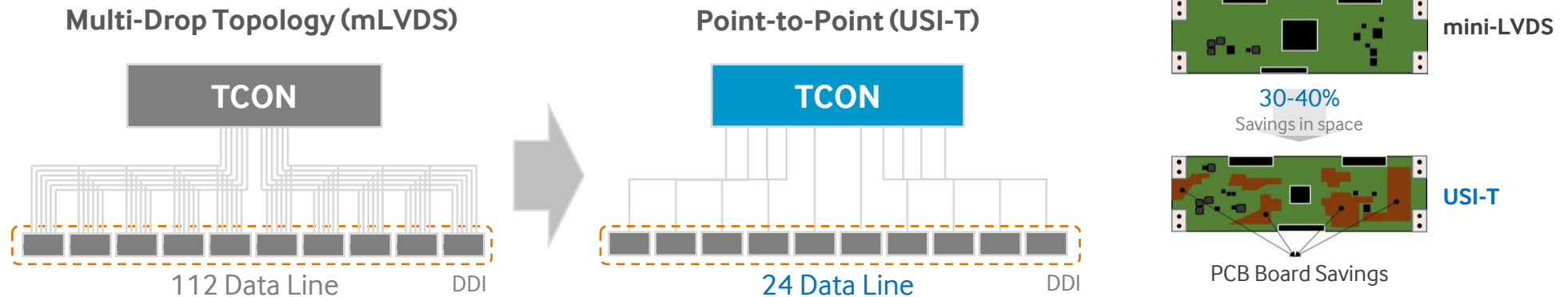
High speed of USI-T



Panel DDI/TCON

USI-T enables simpler communication when compared to the previous mLVDS technology, which allows for a board space saving.

Space saving of USI-T

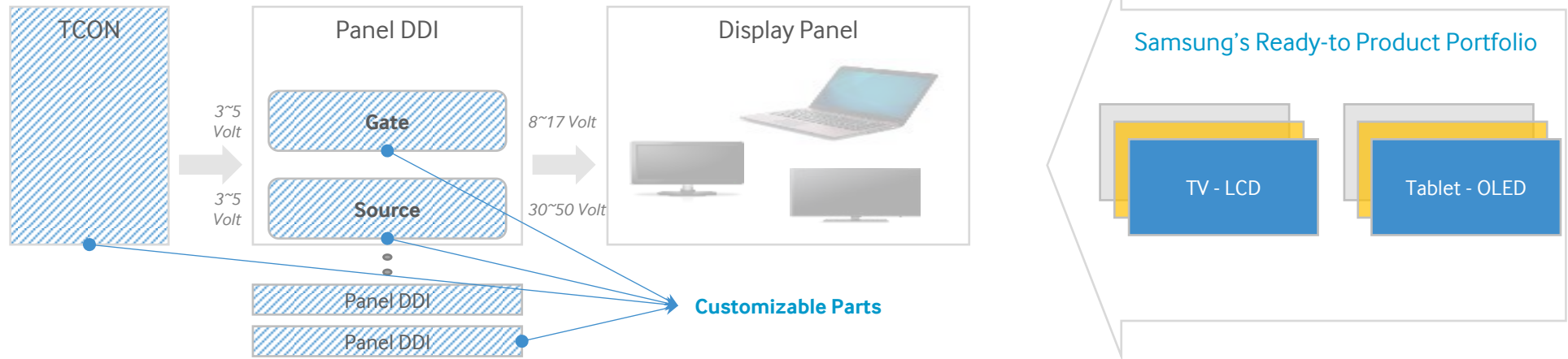


The USI-T processes data via a point-to-point method, whereas the mLVDS interface processes data via a multi-drop method. Therefore, the number of lines between the DDI and the TCON on the PCB can be significantly reduced. As a result, 30~40 % space can be saved.

Panel DDI/TCON

Samsung's top-notch panel DDI technology not only enables the most life-like display, it can also be customized faster than anything else out there.

Faster time to market



Various customization approaches are possible for resolution/operating voltage/interface

Samsung can speed up your time to market by offering R&D technology and products dedicated to specific devices, something made possible with our advancements in customization capabilities and years of experience.

eMMC

MAKE THE MOST OF THE MOBILE DEVICE.

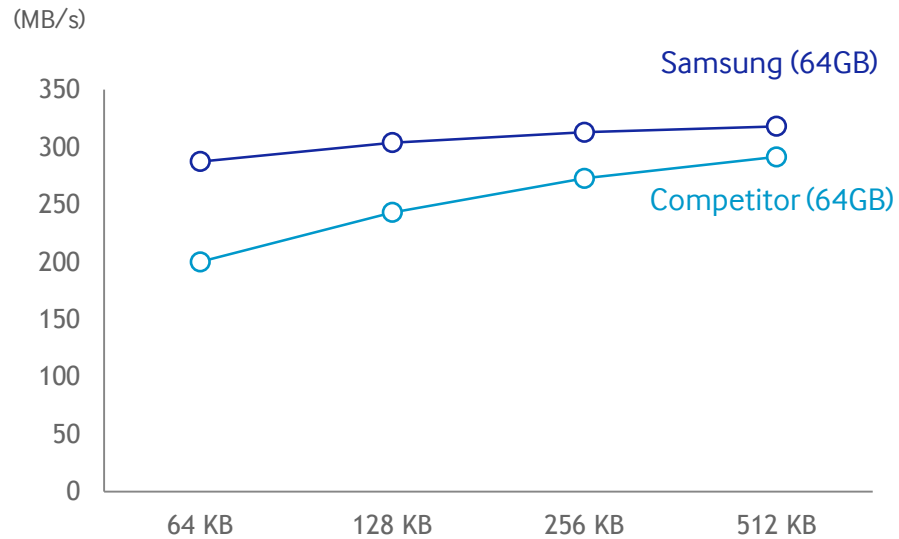


Today's mobile-connected world expects mobile devices to deliver seamless and long-lasting performance. Samsung expertise in flash storage gives you complete freedom to design smart phones, tablets and other mobile devices that boast faster speed and better power efficiency.

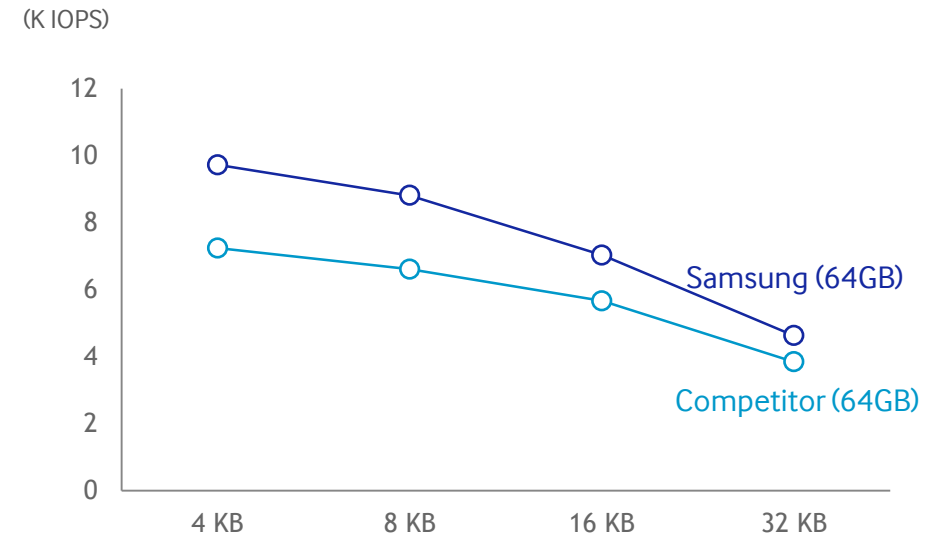
eMMC

Samsung eMMC provides better sustained performance compared to competitors.

Sequential read performance



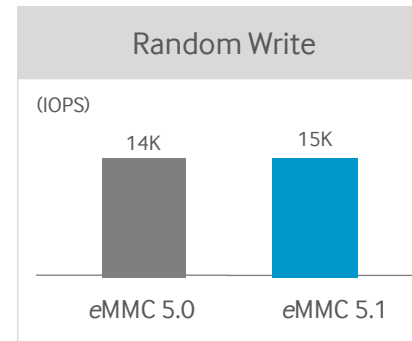
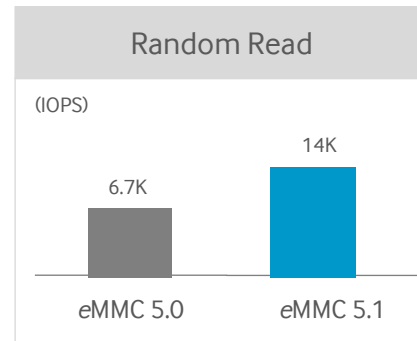
Random read performance



eMMC

eMMC 5.1 is faster than eMMC 5.0.

High speed of eMMC 5.1

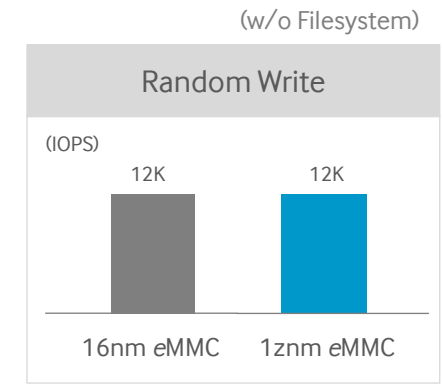
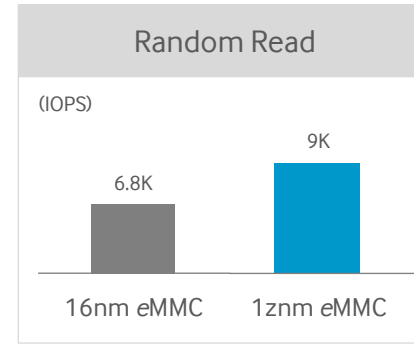
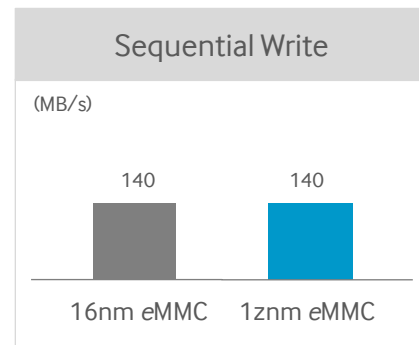
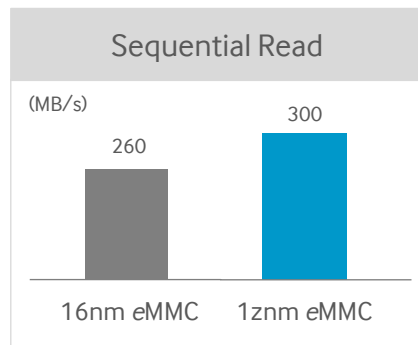


With its Command Queue feature, eMMC improved cache and data streaming, Samsung eMMC 5.1 provides faster speed in both random read and write compared to eMMC 5.0.

eMMC

1znm eMMC is faster than 16nm eMMC.

Faster speed of 1znm eMMC (32/64GB)

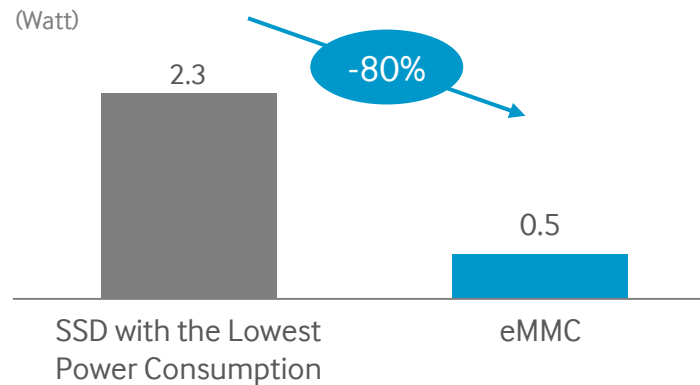


1znm MLC eMMC is faster than 16nm MLC eMMC in both sequential and random speed.

eMMC

eMMC consumes 80% less power than SSD.

Low power consumption

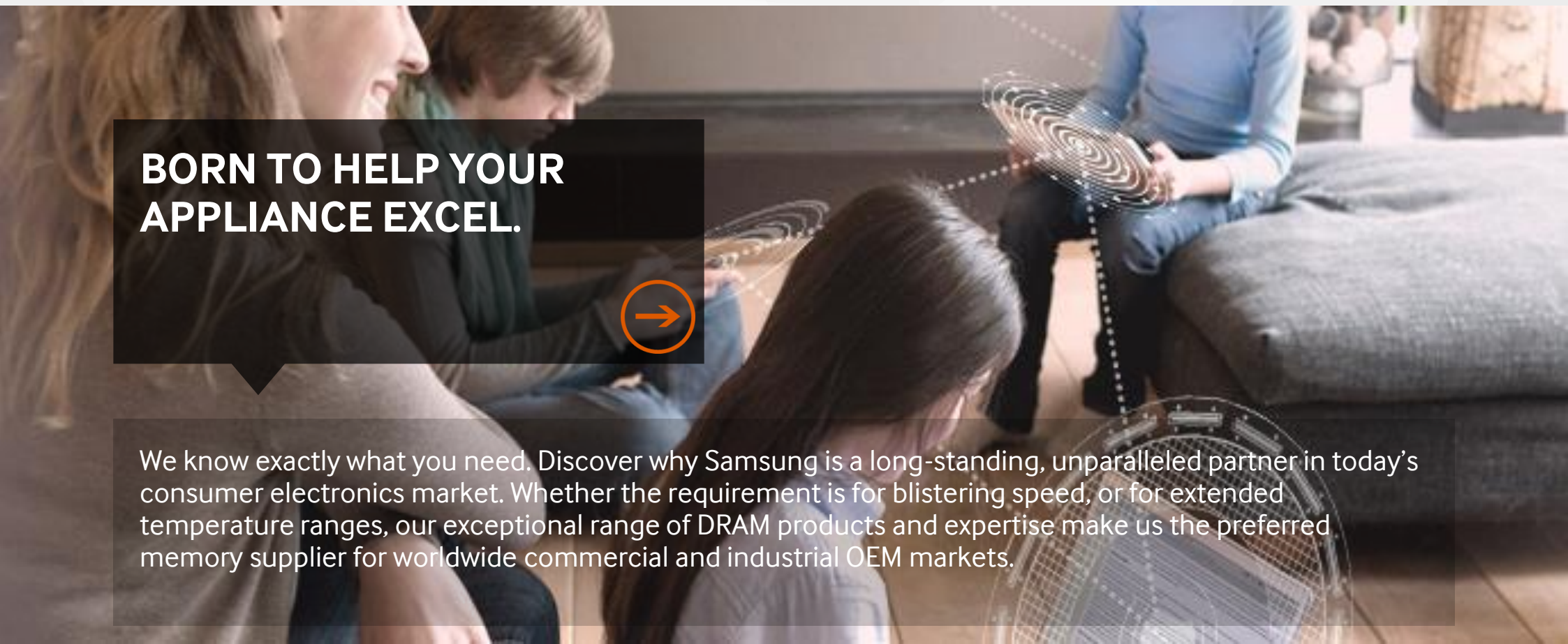


eMMC (128GB) consumes 0.5watt which is 80% lower than the SSD with lowest power consumption (256GB) in random read test

Watt is based on active typical power

SSD with the Lowest Power Consumption: 256GB, eMMC: 128GB.

Consumer DRAM



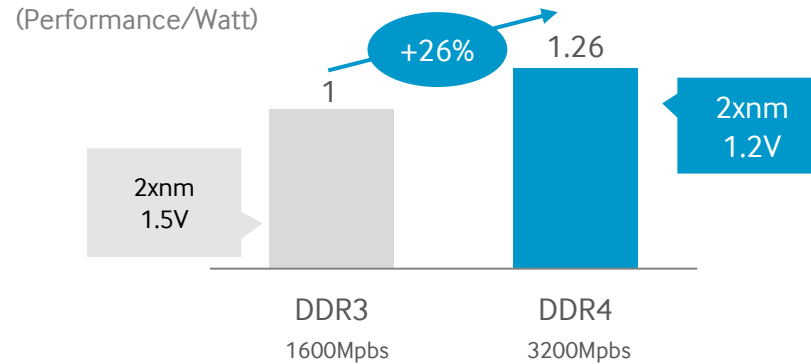
**BORN TO HELP YOUR
APPLIANCE EXCEL.**

We know exactly what you need. Discover why Samsung is a long-standing, unparalleled partner in today's consumer electronics market. Whether the requirement is for blistering speed, or for extended temperature ranges, our exceptional range of DRAM products and expertise make us the preferred memory supplier for worldwide commercial and industrial OEM markets.

Consumer DRAM

DDR4 has higher power efficiency.

High power efficiency



Samsung DDR4 consumes less power with its unique 2xnm technology. Samsung 2xnm DDR4 operating at 1.2V achieves 26% higher performance/watt compared to 2xnm DDR3 operating at 1.5V.

Consumer DRAM

Samsung offers a wide range of DRAM component products.

Diverse component product portfolio

	Organization	Density	Package	
DDR2	x8 x16	512Mb - 1Gb	60FBGA 84FBGA	
DDR3	x8 x16	1Gb - 8Gb	78FBGA 96FBGA	
LPDDR3	x32 x64	8Gb - 32Gb	168FBGA 178FBGA 216FBGA	253FBGA 256FBGA
DDR4	x8 x16	4Gb - 8Gb	78FBGA 96FBGA	
LPDDR4	x32 x64	16Gb - 32Gb	200FBGA 272FBGA	366FBGA

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Infinite Possibilities of IoT

Rediscover the wonder of technology with our latest breakthroughs, products, and solution as we continue to push limits of innovation.

Why Samsung

**Inspire The World,
Create The Future**



Leading the industry with technological innovation

Samsung's semiconductor business remains at the forefront of the market by constantly pushing the limits on innovation through sustained investment in R&D and corporate citizenship.

Technology Leader Making Global Contributions

1

Market Leadership

- ✓ Samsung's semiconductor business has been the memory leader for over 20 years, and is rapidly moving to the head of the LSI market.

2

Technology Innovations

- ✓ Samsung has made numerous technological innovations in the semiconductor industry since 1983, when we developed the world's 1st 64Kb DRAM.

3

Company Capability

- ✓ Samsung's semiconductor business never stops innovating within its comprehensive product portfolios, from semiconductors to end-products, and makes massive investments in R&D.

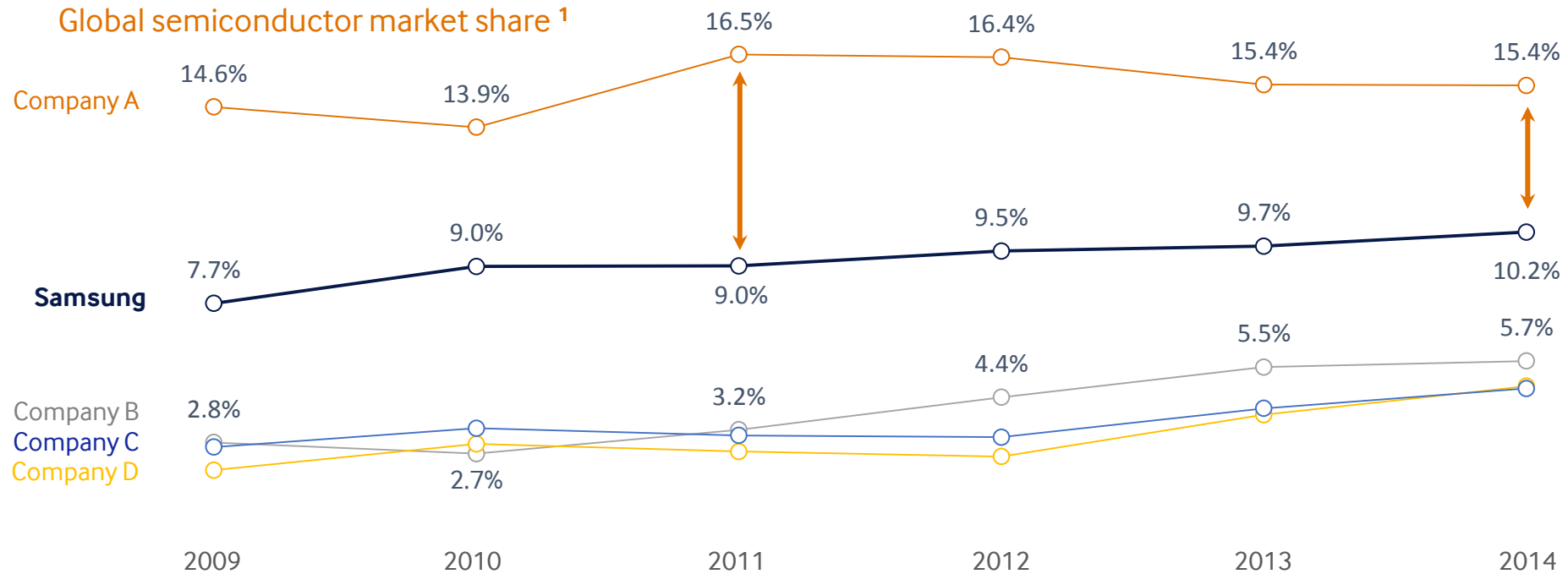
4

Corporate Citizenship

- ✓ Samsung's semiconductor business puts great value in our social responsibilities toward customers and partners, and in maintaining a green planet.

1 Market Leadership | A comprehensive view

Samsung's semiconductor business has held the 2nd largest global market share for over 12 years and it continues to grow its presence in the industry.



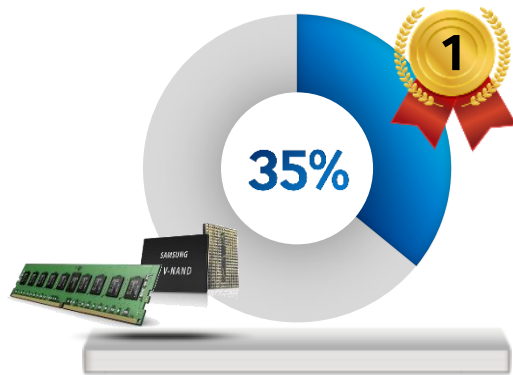
1. Gartner

1 Market Leadership | Memory business

Samsung has been the leader of the total memory market for 22 years running since 1993.

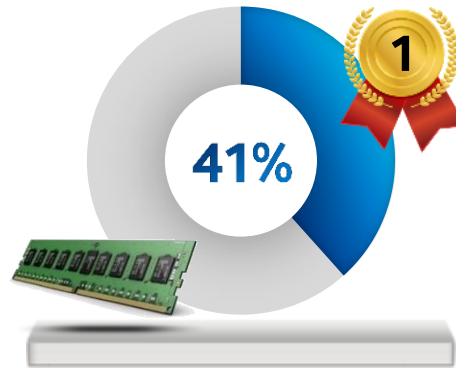
Memory market leadership (2014) ¹

Memory



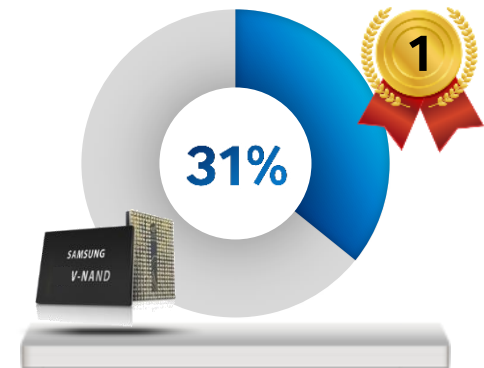
for **22 years** since 1993

DRAM



for **23 years** since 1992

NAND Flash

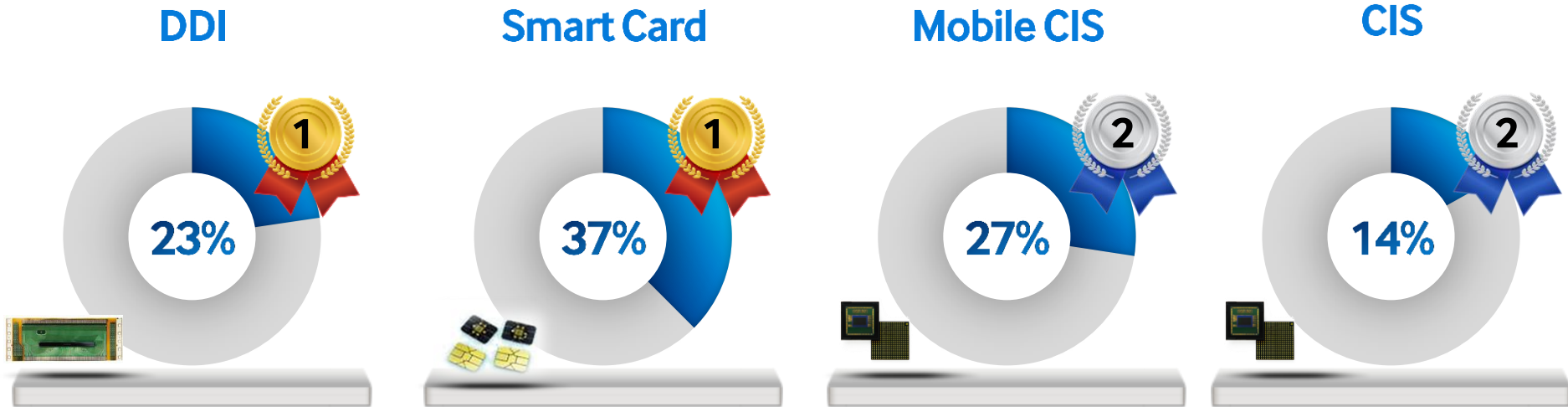


for **13 years** since 2002

1 Market Leadership | System LSI business

Samsung's semiconductor business took the DDI market lead in 2003 and never looked back, expanding to a leadership position for smart cards, CIS and other products.

Market leadership in the LSI business (2014) ¹

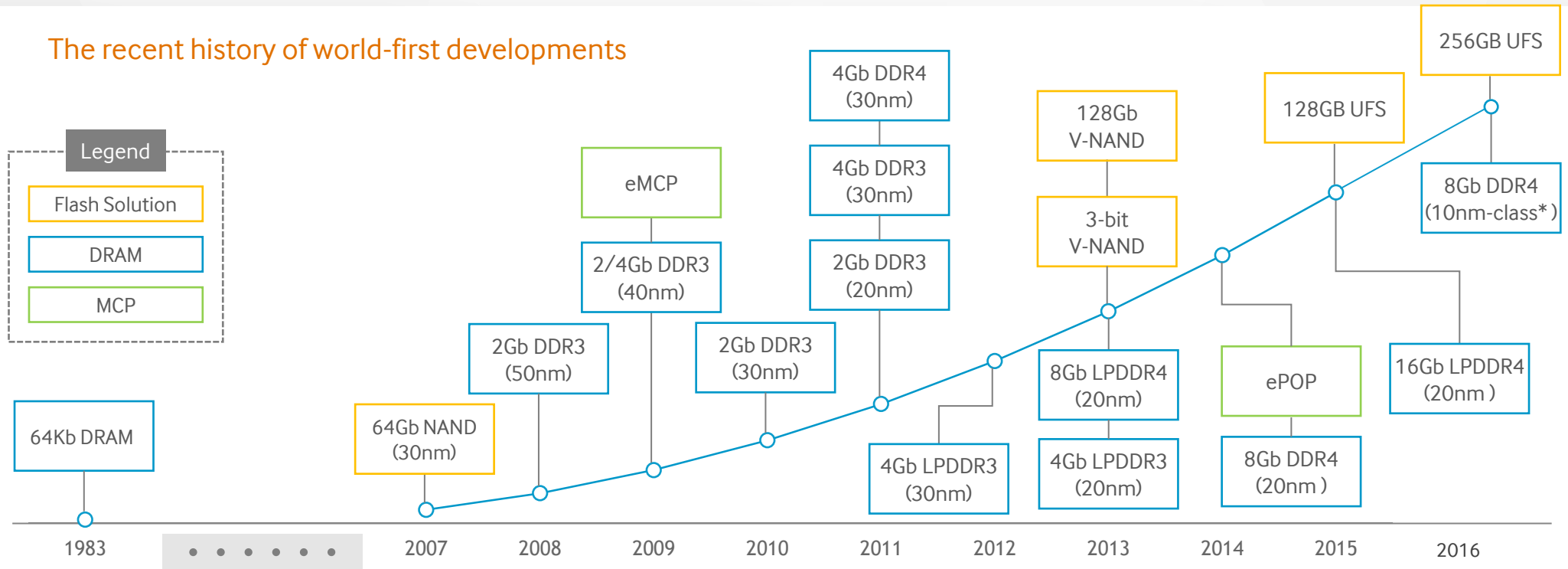


for **12 years** since 2003

2 Technological Innovations | Memory industry

Samsung has achieved numerous technological innovations in the memory field on an almost annual basis since first developing 64Kb DRAM in 1983.

The recent history of world-first developments

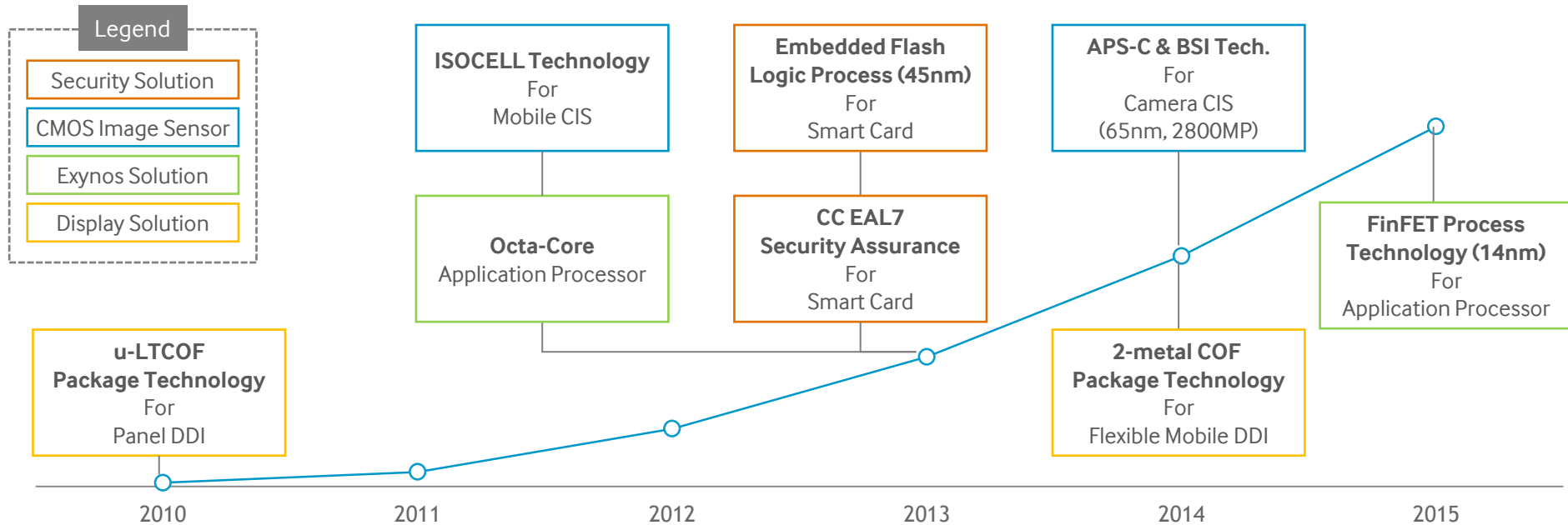


* Note : 10nm-class denotes a process technology node somewhere between 10 and 19 nanometers

2 Technological Innovations | System LSI industry

Samsung system LSI has grown significantly since its inception in 2001, making several technological innovations for each of its products.

The recent history of world-first developments



3 Company Capabilities | Semiconductor product portfolio

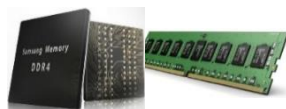
Samsung's semiconductor business offers nearly 25 memory and system LSI product portfolios that are essential in today's electronic appliances.

Samsung's 9 product categories



Memory

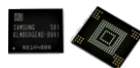
DRAM 



MCP

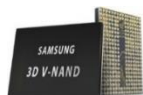


eMCP



ePOP

Flash Storage 



V-NAND



SSD



eMMC



UFS



System LSI

Exynos Solution



Application Processor
Modem/RF
ModAP


Display Solution 

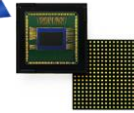


Mobile DDI
Panel DDI
Touch Controller

Power IC



CMOS Image Sensor 



Mobile CIS
Camera CIS
Industry CIS

Security Solution 



Smart Card
NFC

Bio Processor



3 Company Capabilities | Global presence

Samsung's semiconductor business operates in 18 international locations to better serve and collaborate with customers around the world.

Samsung Semiconductor Business



5

Regional Offices



7

R&D Centers



6

Production



3 Company Capabilities | Investment for growth and innovation

Our global business experts and continued R&D investments position us to provide the market with cutting-edge technology to maintain our leadership position.

Global professionals as a core value

300,000+ talented employees in 80 countries around the world



36,900

Doctorate/Masters degrees



63,000

R&D Staff



1,700

Designers

Striving rigorously for innovation

\$ 14.6 B

R&D investments in 2014



Leading patent holder

SAMSUNG

Number of patents 2015

Over **100,000** Globally

No.2

in Europe
(2,366)

No.2

in the US
(5,072)

since 2006

3 Company Capabilities | Global recognition

Samsung has also been widely acclaimed for our reputability and innovative spirit.

Global recognition



TOP BRAND VALUE company
Interbrand



most INNOVATIVE company

BCG



most REPUTABLE company
Forbes



top global INNOVATOR

THOMSON
REUTERS



TOP GLOBAL company
FORTUNE

4 Corporate Citizenship

Samsung constantly strives to resolve community challenges, protect nature, create safe and healthy workplaces and share growth with our employees, partners and customers.

Corporate citizenship of Samsung

Social Contributions



Sharing and Volunteering
to Foster New Hope

Green Management



Green Management that
Protects the Planet

Health and Safety



Creating Safe and
Healthy Workplaces

Sharing Growth



Success Built on Helping
and Dreaming Together

4 Corporate Citizenship | Social contributions

Samsung has initiated 5 key programs for social contributions to address the leading social issues around the globe, including education, healthcare and employment.

5 global social contribution activities



SMART
School

384 schools
under operation
worldwide

- Supporting the development of creative talents in a smart education environment
- Resolving regional education gaps



Samsung
Tech Institute

23 institutes
under operation
worldwide

- Offering systematic vocational training & local employment
- Laying the foundation for financial independence



Samsung
Care Drive

8 programs
under operation
worldwide

- Offering a Smart Healthcare System accessible anywhere at any time
- Promoting better health and lifestyles of local citizens



Nanum
Village

2 digital villages
under operation
in Africa

- Providing healthcare and education support to low-income countries
- Offering citizens the chance to contribute to local communities



Solve for
Tomorrow

+2,300
participants in the 2014
competition

- Explored innovative ideas, putting them to practice in partnership with local communities
- Resolved local pending issues using STEM¹ skills

1. STEM: Science, Technology, Engineering, Mathematics

4 Corporate Citizenship | Green management

Samsung has launched a wide range of innovative eco-conscious products in an effort to protect the environment for all of us.

Certified green products



100% of products
achieved Good
Eco-Product ratings

3,027 products
certified green
by global institutes

Globally recognized for the [eco-friendliness of its products](#), Samsung received green certifications for a total of 3,027 product models from 11 nations including Korea, the US, China and European countries by the end of 2014.

Resource reuse and recycling (2014)



Samsung reduces environmentally hazardous elements by [reusing and recycling resources](#) such as recycled plastic throughout the life cycle of products, from the manufacturing of parts and products, to their distribution, use and disposal.

4 Corporate Citizenship | Health and safety

Samsung promotes and complies to safety regulations to establish a proactive culture of safety, both inside and outside worksites.

Health and safety management system



100% global certification for all of Samsung's health and safety management systems

Samsung complies with **OHSAS 18001**, a global standard for occupational health and safety management systems, in each of its workplaces around the world, striving to maintain on-site safety and protect employee health.

Employee healthcare and safety enhancement



Program to teach emergency CPR

39,968 employees participated in hands-on environmental and safety education programs in 2014

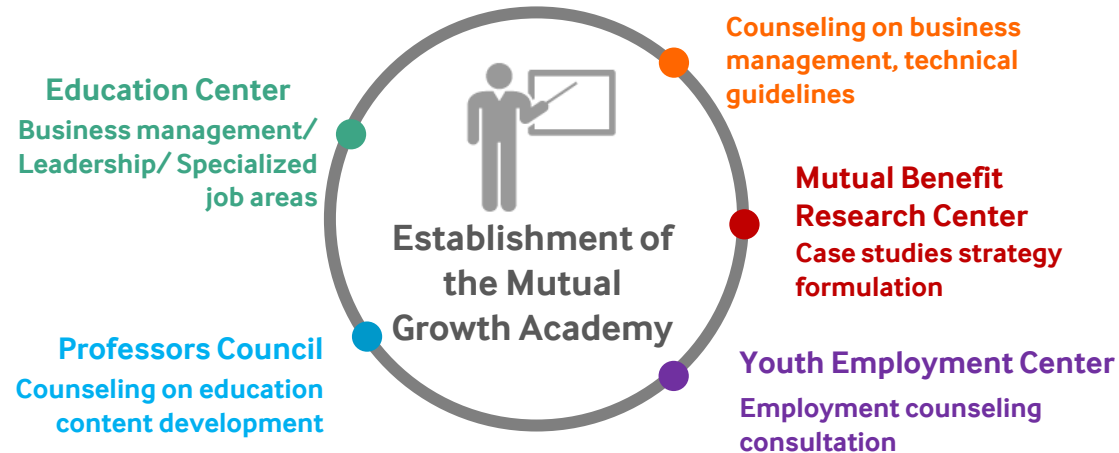
CPR: Cardiopulmonary Resuscitation

Samsung is committed to **improving employee healthcare and safety** by developing ergonomic adaptations in the workplace environment, prohibiting business trips to regions with a high risk of infectious disease and supporting employee medical checkups.

4 Corporate Citizenship | Sharing growth

Samsung has taken part in various shared-growth activities to create a mutually beneficial business ecosystem with its suppliers.

Mutual Growth Academy



Samsung Electronics set up the mutual Growth Academy in June 2013 to provide **comprehensive and systematic support for its primary and secondary suppliers.**

Mutual Growth Fund for suppliers

Samsung created a supplier support fund of **USD \$1 billion**, known as the 'Mutual Growth Fund' in collaboration with various financial institutes to support both primary and secondary suppliers.

ENABLING THE FUTURE OF LIFELOGGING.

Let's Get Started...

Samsung as a trusted partner

About Samsung's semiconductor business

The component businesses of Samsung Electronics come together under the title Device Solutions. As a leading company in the global electronics industry, Samsung Electronics has one of the widest range of products for its key component businesses Memory and System LSI, which are core elements of the company's well-balanced business portfolio.

Samsung initiated its semiconductor operations in 1974, mostly developing and producing ICs and peripherals for consumer electronics. The pivotal turning point in our evolution into a leading semiconductor manufacturer was the successful development of the 64Kb DRAM in 1983.

Samsung achieved and has maintained its market leadership position in the memory industry since 1993. Along with its success in the memory sector, the company signaled a long commitment to logic and analog chip development in 2001 with the expansion of its System LSI organization and the opening of its SoC Research Lab. Since then, Samsung's System LSI Business has scaled significantly upward, and is now one of the major players in the sector and also the largest provider in many product categories.

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For more information

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