

# MEMORY POWERS THE SMART WORLD



# Content

P2 About Nanya

P3 Consumer DRAM

P4 KGD

P5 Mobile DRAM

P7 Server Module  
PC Module

P9 Authorized Distributors

P10 Sales Representatives



Memory Powers the Smart Word

# Nanya Technology

Nanya is a dedicated DRAM manufacturer offering a diversified product portfolio. With almost 30 years of experience in the DRAM market, the strength of Nanya lies in the combination of innovation and in-time customer support.

Our newly developed 10nm-class process technology will enable more solutions of higher performance and energy efficiency. And we strive to create unrivalled partnership with solid expertise and a global sales network spanning across Europe, Americas and Asia.



## Comprehensive Product Portfolio



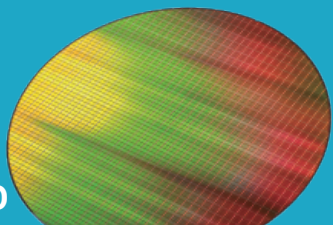
### Standard

SODIMM, UDIMM (ECC available)  
RDIMM  
DDR2, DDR3, DDR4, DDR5



### Low Power

LPDDR2, LPDDR3,  
LPDDR4/4X, LPDDR5/5X



### KGD

DDR2-DDR4  
LPDDR2-LPDDR4X



### MCP eMCP

SLC NAND+LPDDR  
2D MLC - 3D NAND+LPDDR

## Applications

### PC & Server

Reliability  
Power efficient



### Consumer

Flexibility  
Diversity



### Auto / IT

Stability  
Durability



Available Generation DDR5 | DDR4 | DDR3 | DDR2  
 Available Densities 16Gb | 8Gb | 4Gb | 2Gb | 1Gb | 512Mb



# Consumer DRAM

## DDR5 SDRAM

● Developing

Density	Org	Voltage	Package	Speed	Commercial	IT	Automotive	
							G2	G3
16Gb	x4/x8 x16	1.1V	82-ball BGA 106-ball BGA	4800/5600	Now	●	-	-

## DDR4 SDRAM

Density	Org	Voltage	Package	Speed	Commercial	IT	Automotive	
							G2	G3
4Gb	x4/x8 x16	1.2V	78-ball BGA 96-ball BGA	2666/3200	Now	Now	-	-
8Gb	x4/x8 x16	1.2V	78-ball BGA 96-ball BGA	2666/3200	Now	Now	-	-

## DDR3 SDRAM

Density	Org	Voltage	Package	Speed	Commercial	IT	Automotive	
							G2	G3
1Gb	x8 x16	1.5V 1.35V	78-ball BGA 96-ball BGA	1600/1866/2133	Now	Now	Now	Now
2Gb	x8 x16	1.5V 1.35V	78-ball BGA 96-ball BGA	1600/1866/2133	Now	Now	Now	Now
4Gb	x8 x16	1.5V 1.35V	78-ball BGA 96-ball BGA	1600/1866/2133	Now	Now	Now	Now
8Gb (DDP)	x16	1.5V 1.35V	96-ball BGA	1600/1866	Now	Now	Now	Now

## DDR2 SDRAM

Density	Org	Voltage	Package	Speed	Commercial	IT	Automotive	
							G2	G3
512Mb	x8 x16	1.8V	60-ball BGA 84-ball BGA	800/1066	Now	Now	Now	Now
1Gb	x8 x16	1.8V	60-ball BGA 84-ball BGA	800/1066	Now	Now	Now	Now

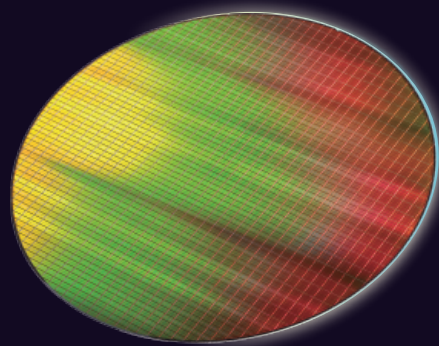


Consumer DRAM



Available Generation LPDDR4 | LPDDR3 | LPDDR2 | DDR4 | DDR3 | DDR2  
 Available Densities 16Gb | 8Gb | 4Gb | 2Gb | 1Gb | 512Mb

# KGD



KGD

● Developing

Density	Org	Voltage	Generation	Speed	Commercial
512Mb	x8/x16	1.8V	DDR2	1333	Now
1Gb	x8/x16	1.35V/1.5V	DDR3	2133	Now
2Gb					Now
4Gb					Now
4Gb	x8/x16	1.2V	DDR4	3200	Now
8Gb				3200	Now
1Gb	x16/x32	1.2V	LPDDR2	1066	Now
2Gb	x16/x32				Now
4Gb	x16/x32				Now
4Gb	x16/x32	1.2V	LPDDR3	2133	Now
8Gb	x16/x32				Now
2Gb	x16	1.1V	LPDDR4	4267	Now
4Gb					Now
8Gb				3733	Now
16Gb				4267	●
2Gb	x16	1.1V (VDDQ 0.6V)	LPDDR4X	4267	Now
4Gb					Now
8Gb					Now
16Gb					●
8Gb	x16	1.05V	LPDDR5/5X	7500	●
16Gb					●



KGD

Available Generation LPDDR5/5X | LPDDR4/4X | LPDDR3 | LPDDR2  
Available Densities 64Gb | 32Gb | 16Gb | 8Gb | 4Gb | 2Gb | 1Gb

# Mobile DRAM



## LPDDR5/5X

● Developing

Density	Org	Voltage	Package	Speed	Commercial	IT	Automotive		
							G1	G2	G3
8Gb	x16	1.05V	315-FBGA SDP	7500/8533	●	●	-	●	●
16Gb	x16	1.05V	315-FBGA SDP	7500/8533	●	●	-	●	●
	x32		315-FBGA DDP		●	●	-	●	●
32Gb	x32	1.05V	315-FBGA DDP	7500/8533	●	●	-	●	●
64Gb	x32	1.05V	315-FBGA QDP	7500/8533	●	●	-	●	●

## LPDDR4X

Density	Org	Voltage	Package	Speed	Commercial	IT	Automotive		
							G1	G2	G3
2Gb	x16	1.1V (VDDQ=0.6V)	200-FBGA SDP	4267	Now	-	-	Now	Now
4Gb	x16	1.1V (VDDQ=0.6V)	200-FBGA SDP	4267	Now	Now	-	Now	Now
	x32		200-FBGA DDP			Now	-	-	-
8Gb	x16	1.1V (VDDQ=0.6V)	200-FBGA SDP	4267	Now	Now	-	Now	Now
	x32		200-FBGA DDP		Now	Now	-	Now	Now
16Gb	x32	1.1V (VDDQ=0.6V)	200-FBGA DDP	4267	Now	Now	●	Now	Now
	x64		376-PoP QDP	4267	Now	-	-	-	-
32Gb	x32	1.1V (VDDQ=0.6V)	200-FBGA QDP	4267	Now	Now	●	Now	Now
	x32		200-FBGA DDP		●	●	-	●	●
	x64		376-PoP QDP	4267	Now	-	-	-	-
64Gb	x32	1.1V (VDDQ=0.6V)	200-FBGA QDP	4267	●	●	-	●	●
	x64		376-PoP QDP	4267	●	-	-	-	-

## LPDDR4

Density	Org	Voltage	Package	Speed	Commercial	IT	Automotive		
							G1	G2	G3
2Gb	x16	1.1V	200-FBGA SDP	4267	Now	-	-	Now	Now
4Gb	x16	1.1V	200-FBGA SDP	4267	Now	Now	-	Now	Now
	x32		200-FBGA DDP	4267/3733		Now	Now	Now	Now
8Gb	x16	1.1V	200-FBGA SDP	4267	Now	Now	-	Now	Now
	x32		200-FBGA DDP	4267/3733	Now	Now	Now	Now	Now
16Gb	x32	1.1V	200-FBGA DDP	4267	Now	Now	-	Now	Now
32Gb	x32	1.1V	200-FBGA QDP	3733	Now	Now	-	Now	Now



Mobile DRAM



MCP



eMCP



## LPDDR3

● Developing

Density	Org	Voltage	Package	Speed	Commercial	IT	Automotive	
							G2	G3
4Gb	x32/x16	1.2V	178-FBGA	1866/2133	Now	-	-	-
8Gb	x32	1.2V	178-FBGA SDP	1866/2133	Now	-	-	-
	x64		216-PoP DDP		Now	-	-	-
			256-PoP DDP		Now	-	-	-
16Gb	x32	1.2V	178-FBGA DDP	1866/2133	Now	-	-	-
			168-PoP DDP	1866	Now	-	-	-
	x64		256-PoP DDP		Now	-	-	-
			216-PoP DDP		Now	-	-	-
			253-PoP DDP		Now	-	-	-
32Gb	x32	1.2V	178-FBGA QDP	1866/2133	Now	-	-	-
	x64		256-PoP QDP	1866	Now	-	-	-
			216-PoP QDP		Now	-	-	-
			253-PoP QDP		Now	-	-	-

## LPDDR2

Density	Org	Voltage	Package	Speed	Commercial	IT	Automotive	
							G2	G3
1Gb	x32	1.2V	168-PoP	1066	Now	-	Now	-
			134-FBGA			-	Now	Now
2Gb	x32	1.2V	134-FBGA	1066	Now	Now	Now	Now
			168-PoP			-	-	-
			134-FBGA DDP			-	Now	-
4Gb	x32	1.2V	134-FBGA	1066	Now	Now	Now	Now
	x64		168-PoP			-	-	-
			216-PoP DDP			-	-	-
			220-PoP DDP			-	-	-
8Gb	x32	1.2V	168-PoP DDP	1066	Now	-	-	-
	x64		134-FBGA DDP			Now	-	-
			216-PoP DDP			-	-	-
			220-PoP DDP			-	-	-

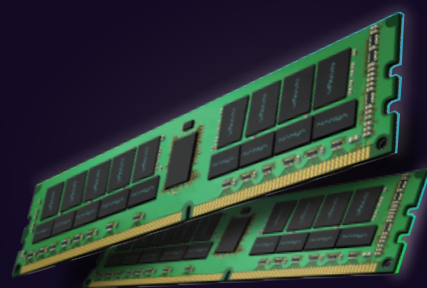
## MCP

Type	SLC NAND		Gen	DRAM		Package	Commercial	WT	IT	Automotive	
	Density	Org		Density	Org					G2	G3
2+1	2Gb	x8	LPDDR2	1Gb	x32	162b	Now	Now	-	-	-
2+2	2Gb	x8		2Gb	x16/x32	162b	Now	Now	-	-	-
4+2	4Gb	x8		2Gb	x16/x32	162b	Now	Now	-	-	-
4+4	4Gb	x8		4Gb	x32	162b	Now	Now	-	-	-
4+2	4Gb	x8	LPDDR4X	2Gb	x16	149b	Now	Now	Now	-	-
4+4	4Gb	x8		4Gb	x16	149b	Now	Now	Now	-	-
8+8	8Gb	x8		8Gb	x16	149b	Now	-	Now	●	●
8+8	8Gb	x8		8Gb	x32	254b	Now	-	Now	-	-

## eMCP

Type	MLC/3D TLC NAND		Gen	DRAM		Package	Commercial	WT	IT	Automotive	
	Density	Org		Density	Org					G2	G3
4+4	4GB	x8	LPDDR3	4Gb	x32	221b	Now	-	-	-	-
8+8	8GB	x8		8Gb	x32	220b	Now	-	-	-	-
16+8	16GB	x8		8Gb	x32	221b	Now	-	-	-	-
16+16	16GB	x8		16Gb	x32	221b	Now	-	-	-	-
8+8	8GB	x8	LPDDR4X	8Gb	x32	254b	Now	-	-	-	-
16+8	16GB	x8		8Gb	x32	254b	Now	-	-	-	-
16+16	16GB	x8		16Gb	x32	254b	Now	-	-	-	-
32+16	32GB	x8		16Gb	x32	254b	●	-	-	-	-
64+32	64GB	x8		32Gb	x32	254b	●	-	-	-	-

Available Generation DDR5 | DDR4  
Available Densities 64GB | 32GB | 16GB | 8GB



# Server Module

## DDR5 RDIMM

● Developing

Density	Org	Voltage	DRAM	Speed	Availability
16GB	1Rx8	1.1V	16Gb SDP	4800/5600	●
32GB	1Rx4	1.1V	16Gb SDP	4800/5600	●
	2Rx8				
64GB	2Rx4	1.1V	16Gb SDP	4800/5600	●

## DDR4 RDIMM

Density	Org	Voltage	DRAM	Speed	Availability
8GB	1Rx8	1.2V	8Gb SDP	3200	Now
16GB	1Rx4	1.2V	8Gb SDP	3200	Now
	2Rx8				
32GB	2Rx4	1.2V	8Gb SDP	3200	Now



Server Module

Available Generation DDR5 | DDR4  
Available Densities 32GB | 16GB | 8GB | 4GB

# PC Module

## DDR5 SODIMM

Density	Org	Voltage	DRAM	Speed	Availability
8GB	1Rx16	1.1V	16Gb SDP	4800/5600	Now
16GB	1Rx8	1.1V	16Gb SDP	4800/5600	Now
32GB	2Rx8	1.1V	16Gb SDP	4800/5600	●



DDR5 UDIMM

● Developing

Density	Org	Voltage	DRAM	Speed	Availability
8GB	1Rx16	1.1V	16Gb SDP	4800/5600	Now
16GB	1Rx8	1.1V	16Gb SDP	4800/5600	Now
32GB	2Rx8	1.1V	16Gb SDP	4800/5600	●

DDR4 SODIMM

Density	Org	Voltage	DRAM	Speed	Availability
4GB	1Rx16	1.2V	8Gb SDP	2666/3200	Now
8GB	1Rx8	1.2V	8Gb SDP	2666/3200	Now
16GB	2Rx8	1.2V	8Gb SDP	2666/3200	Now

DDR4 UDIMM

Density	Org	Voltage	DRAM	Speed	Availability
4GB	1Rx16	1.2V	8Gb SDP	2666/3200	Now
8GB	1Rx8	1.2V	8Gb SDP	2666/3200	Now
16GB	2Rx8	1.2V	8Gb SDP	2666/3200	Now

DDR4 ECC-SODIMM

Density	Org	Voltage	DRAM	Speed	Availability
8GB	1Rx8	1.2V	8Gb SDP	2666	Now

DDR4 ECC-UDIMM

Density	Org	Voltage	DRAM	Speed	Availability
8GB	1Rx8	1.2V	8Gb SDP	2666	Now



PC Module

# Authorized Distributors

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