

**IS916D  
NAND Flash Performance List**

**Ver. 1.0.1**

**May 8 2012**

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*IS916D NAND Flash Performance List*

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*IS916D NAND Flash Performance List*

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## 1. Revision History

Date	Revision	Description
Mar 7 2012	1.0.0	Initial release.
May 8 2012	1.0.1	<ol style="list-style-type: none"><li>1. Update performance for some flash.</li><li>2. New support Samsung 21nm Toggle MLC flash.</li><li>3. New support SanDisk and Toshiba 19nm MLC flash.</li></ol>

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IS916D NAND Flash Performance List

## 2. NAND Flash Performance List

Table 1 : NAND Flash Performance List

Vendor	Process	Design Code	Flash PartNo.	CE	Toggle /DDR	FW	CDM(100MB/1 Time)				
							USB3.0		USB2.0		
							Read (MB/s)	Write (MB/s)	Read (MB/s)	Write (MB/s)	
Intel	20nm	L84A	JS29F64G08ACMF3 x1	1	X	1.09.5C.00	41	9	31	9	
				1	V	1.09.5D.00	82	10	32	10	
			JS29F64G08ACMF3 x2	1	V	1.08.1D.00	93	21	34	20	
	25nm	L74A	JS29F64G08AAME1 x1	1	X	1.06.18.00	40	11	31	11	
				1	V	1.09.5D.00	89	13	34	13	
			JS29F64G08AAME1 x2	1	X	1.06.18.00	45	22	33	20	
				1	V	1.06.19.00	98	26	33	21	
			JS29F16B08CAME1 x1	2	X	1.06.18.00	45	22	30	20	
				2	V	1.06.19.00	98	26	31	21	
			JS29F16B08CAME1 x2	2	X	1.07.1C.00	45	37	32	23	
				2	V	1.08.1D.00	98	51	34	25	
			JS29F32B08JAME1 x1	4	X	1.08.1C.00	45	35	33	23	
			JS29F64G08ACME2 x1	1	X	1.00.18.00	40	11	34	11	
				1	V	1.04.19.00	78	12	34	11	
			JS29F64G08ACME2 x2	1	X	1.06.18.00	45	20	32	19	
			1	V	1.04.19.00	94	23	34	20		
		B74A	JS29F64G08AATE1 x1	1	X	1.08.1C.00	33	5	30	5	
			JS29F64G08AATE1 x2	1	X	1.08.1C.00	41	9	32	9	
			L73A	JS29F32G08AAME1 x1	1	X	1.08.1C.00	34	6	31	6
				JS29F32G08AAME1 x2	1	X	1.08.1C.00	44	12	34	12
			34nm	L63B	JS29F16G08AAMDB x1	1	X	1.04.18.00	38	7	34
	JS29F16G08AAMDB x2				1	X	1.04.18.00	44	16	34	15
	JS29F32G08AAMDB x1	1			X	1.04.18.00	38	8	34	7	
	JS29F32G08AAMDB x2	1			X	1.04.18.00	44	15	34	15	
Micron	20nm	L84A	MT29F64G08CBABA x1	1	X	1.09.5C.00	40	9	34	9	
			MT29F64G08CBABA x2	1	X	1.08.1C.00	43	17	31	17	
			MT29F64G08CBABB x2	1	V	1.08.1E.00	80	21			
	25nm	L74A	MT29F64G08CBAAA x1	1	X	1.00.18.00	39	10	33	10	
			MT29F64G08CBAAA x2	1	X	1.06.18.00	45	20	32	19	

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Table 1 : NAND Flash Performance List (Continued)

Vendor	Process	Design Code	Flash PartNo.	CE	Toggle /DDR	FW	CDM(100MB/1 Time)				
							USB3.0		USB2.0		
							Read (MB/s)	Write (MB/s)	Read (MB/s)	Write (MB/s)	
Micron	25nm	L74A	MT29F64G08CBAAB x1	1	X	1.05.18.00	40	10	34	10	
				1	V	1.09.5D.00	89	12	34	12	
			MT29F64G08CBAAB x2	1	X	1.05.18.00	45	19	34	18	
				1	V	1.05.19.00	93	23	34	19	
			MT29F128G08CFAAB x1	2	X	1.04.18.00	46	22	34	20	
				2	V	1.04.19.00	95	23	35	20	
			MT29F128G08CFAAB x2	2	X	1.08.1C.00	45	36	34	23	
				2	V	1.08.1D.00	97	48	32	25	
			MT29F256G08CJAAB x1	2	X	1.04.18.00	45	19	34	18	
				2	V	1.04.19.00	98	23	34	20	
			MT29F256G08CJAAB x2	2	X	1.07.1C.00	45	35	31	22	
				2	V	1.07.1D.00	95	47	31	24	
			B74A	MT29F64G08EBAAA x1	1	X	1.08.1C.00	28	5	26	5
					1	X	1.08.1C.00	32	8	30	8
		MT29F128G08EFAAA x1		2	X	1.08.1C.00	33	9	30	8	
				2	X	1.08.1C.00	33	16	28	16	
		MT29F256G08EJAAA x1		2	X	1.08.1C.00	33	8	28	8	
				2	X	1.08.1C.00	33	15	28	16	
		MT29F64G08EBAAB x1		1	X	1.08.1C.00	28	4	28	4	
				1	V	1.08.1D.00	62	5	34	5	
		MT29F64G08EBAAB x2		1	X	1.08.1C.00	33	7	30	7	
				1	V	1.08.1D.00	89	9	34	8	
		MT29F128G08EFAAB x1		2	X	1.07.1C.00	41	9	33	9	
				2	V	1.07.1D.00	88	10	34	12	
		MT29F128G08EFAAB x2		2	X	1.08.1C.00	33	15	30	16	
				2	V	1.08.1D.00	88	23	32	17	
		L73A	MT29F32G08CBACA x1	1	X	1.04.18.00	34	6	32	6	
				1	X	1.03.18.00	45	11	34	12	
MT29F64G08CFACB x1	2		X	1.03.18.00	45	12	34	12			
	2		V	1.04.19.00	93	13	34	13			

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IS916D NAND Flash Performance List

Table 1 : NAND Flash Performance List (Continued)

Vendor	Process	Design Code	Flash PartNo.	CE	Toggle /DDR	FW	CDM(100MB/1 Time)			
							USB3.0		USB2.0	
							Read (MB/s)	Write (MB/s)	Read (MB/s)	Write (MB/s)
Micron	25nm	L73A	MT29F64G08CFACB x2	2	X	1.08.1C.00	44	17	34	16
				2	V	1.08.1D.00	88	22	34	17
		L72A	MT29F16G08CBACA x1	1	X	1.04.18.00	35	7	32	7
			MT29F16G08CBACA x2	1	X	1.04.18.00	44	13	34	13
	34nm	L63A	MT29F32G08CBAAA x1	1	X	1.04.18.00	30	8	28	8
			MT29F32G08CBAAA x2	1	X	1.04.18.00	34	16	32	16
		L63B	MT29F32G08CBABA x1	1	X	1.04.18.00	30	7	29	7
			MT29F32G08CBABA x2	1	X	1.04.18.00	34	14	32	14
Samsung	21nm	MLC	K9GCGD8U0A x1	1	V	1.09.5E.00	97	11	34	11
			K9LDGY8U1A x1	2	V	1.09.5E.00	97	22	34	18
			K9LDGY8U1A x2	2	V	1.09.5E.00	97	41	34	28
	27nm	MLC	K9GBGD8U0A x1	1	V	1.09.5E.00	94	11	34	10
			K9GBGD8U0A x2	1	V	1.06.1A.00	91	21	31	19
			K9GBG08U0A-SCB0 x1	1	X	1.09.5C.00	35	9	32	9
			K9GBG08U0A-SCB0 x2	1	X	1.00.18.00	34	17	30	17
			K9LCG08U0A-SCB0 x1	1	X	1.09.5C.00	35	8	32	8
			K9LCG08U0A-SCB0 x2	1	X	1.08.1C.00	35	18	32	17
			K9GAG08U0F x1	1	X	1.09.5C.00	34	9	31	9
			K9GAG08U0F x2	1	X	1.04.18.00	34	18	30	18
		TLC	K9ABGD8U0B x1	1	V	1.09.5E.00	89	6	34	6
			K9ABGD8U0B x2	1	V	1.04.1A.00	88	14	34	13
			K9ACGD8U0M x1	1	V	1.09.5E.00	89	5	34	5
			K9ACGD8U0M x2	1	V	1.08.1E.00	91	11	34	11
			K9BDGD8U0M x1	1	V	1.09.5E.00	84	4	32	4
			K9BDGD8U0M x2	1	V	1.06.1A.00	88	7	33	7
	3xnm	MLC	K9CFGD8U1M x1	2	V	1.05.1A.00	81	8	34	8
			K9CFGD8U1M x2	2	V	1.08.1E.00	90	15	34	13
			K9G8G08U0C-SCB0 x1	1	X	1.04.08.00	19	6	19	6
			K9G8G08U0C-SCB0 x2	1	X	1.04.08.00	30	12	28	11
			K9GAG08U0E-SCB0 x1	1	X	1.04.08.00	16	5	16	5

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IS916D NAND Flash Performance List

Table 1 : NAND Flash Performance List (Continued)

Vendor	Process	Design Code	Flash PartNo.	CE	Toggle /DDR	FW	CDM(100MB/1 Time)			
							USB3.0		USB2.0	
							Read (MB/s)	Write (MB/s)	Read (MB/s)	Write (MB/s)
Samsung	3xnm	MLC	K9GAG08U0E-SCB0 x2	1	X	1.04.08.00	30	11	28	11
SanDisk	19nm	MLC	SDTNQFAMA-008G x1	1	X	1.09.4C.00	43	10	27	10
				1	V	1.09.4E.00	88	11	28	11
	24nm	MLC	SDTNPQAHEM-008G x1	1	X	1.09.5C.00	35	10	31	10
				1	X	1.07.1C.00	35	19	31	18
				1	X	1.07.1C.00	31	12		
				2	V	1.08.1E.00	102	23	26	18
				2	V	1.08.1E.00	102	45	31	26
4	V	1.08.1E.00	102	45	29	25				
Toshiba	19nm	MLC	TC58NVG6D2JTA00 x1	1	X	1.09.5C.00	43	10	34	10
			TC58NVG6DCJTA00 x1	1	X	1.09.4C.00	43	9	27	9
			TH58NVG7DCJTA20 x1	2	X	1.09.0C.00	44	19	26	18
			TH58NVG8DCJTA20 x1	2	X	1.09.0C.00	44	17	30	17
			TH58TEG7DCJBA4C x1	2	V	1.09.0E.00	101	22	34	18
			TH58TEG8DCJTA20 x1	2	V	1.09.0E.00	101	22	33	17
			TC58TEG6DDJTA00 x1	1	V	1.09.4E.00	94	10	32	9
	24nm	MLC	TC58NVG6D2GTA00 x1	1	X	1.00.18.00	26	9	24	9
			TC58NVG6D2GTA00 x2	1	X	1.04.18.00	34	17	30	16
			TH58NVG7D2GTA20 x1	2	X	1.04.18.00	45	19	35	17
			TH58TVG7D2GBA49 x1	2	V	1.06.1E.00	100	23	33	19
			TH58TVG9D2GBA89 x1	4	V	1.09.1E.00	101	44	34	23
			TC58NVG4D2HTA00 x1	1	X	1.09.4C.00	42	6	32	5
			TC58NVG4D2HTA00 x2	1	X	1.09.1C.00	44	11	34	11
			TC58NVG6D2HTA00 x1	1	X	1.09.5C.00	43	10	34	10
			TC58NVG6D2HTA00 x2	1	X	1.09.1C.00	44	21	34	19
			TC58TEG5D2HTA00 x1	1	X	1.09.5C.00	43	9	34	9
				1	V	1.09.5E.00	96	10	33	10
			TC58TEG5D2HTA00 x2	1	X	1.07.1C.00	45	19	33	17
				1	V	1.06.1E.00	89	22	34	20
TC58TEG6D2HTA00 x1	1	X	1.09.5C.00	43	10	34	10			



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IS916D NAND Flash Performance List

**Table 1 : NAND Flash Performance List (Continued)**

Vendor	Process	Design Code	Flash PartNo.	CE	Toggle /DDR	FW	CDM(100MB/1 Time)			
							USB3.0		USB2.0	
							Read (MB/s)	Write (MB/s)	Read (MB/s)	Write (MB/s)
Toshiba	24nm	MLC	TC58TEG6D2HTA00 x1	1	V	1.09.5E.00	95	12	34	11
			TC58TEG6D2HTA00 x2	1	X	1.06.1C.00	45	20	31	18
				1	V	1.06.1E.00	90	21	34	18
			TH58TEG7D2HTA20 x1	2	X	1.07.1C.00	45	19	22	16
				2	V	1.07.1E.00	102	22	33	19
					X	1.08.1C.00	44	31	34	28
				2	V	1.07.1E.00	102	47	31	23
			TH58TEG8D2HTA20 x1		2	X	1.08.1C.00	44	19	32
				2	V	1.08.1E.00	101	22	32	19
			32nm		MLC	TC58NVG4D2FTA00 x1	1	X	1.04.18.00	28
TC58NVG4D2FTA00 x2	1	X		1.04.18.00		34	19	30	18	
Hynix	26nm	MLC	H27UBG8T2BTR x1	1	X	1.09.5C.00	44	10	32	10
			H27UBG8T2BTR x2	1	X	1.08.1C.00	45	18	34	17
			H27UCG8T2MYR x1	1	X	1.09.5C.00	45	9	34	9
	32nm	MLC	H27UBG8T2ATR x1	1	X	1.08.1C.00	31	9	28	9
			H27UBG8T2ATR x2	1	X	1.08.1C.00	36	17	32	16
			H27UCG8U5ATR x1	2	X	1.04.18.00	34	17	30	17
			H27UCG8U5ATR x2	2	X	1.08.1C.00	36	25	32	23
			H27UDG8V5ATR x1	2	X	1.05.18.00	34	16	30	15
			H27UDG8V5ATR x2	2	X	1.08.1C.00	36	28	32	26

**Notes :**

(1). Benchmark Tool :

- A. Crystal Disk Mark v3.0d
- B. Test cycle : 1
- C. Size : 100MB

(2). Configuration of test platform (I) :

M/B : ASUS P5QL-EM  
 PCIe : PCIe Gen II  
 CPU : Pentium® Dual-Core CPU E5300 2.6GHz  
 RAM : 2GB

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USB 3.0 host controller : NEC by PCIe Gen II x 1

Configuration of test platform (II) :

M/B : ASUS P8H61 PRO

PCIe : PCIe Gen II

CPU : Intel(R) Core(TM) I3-2120

RAM : 2G

USB 3.0 host controller : ASMedia by PCIe Gen II

(3). The test result is error value in the + /-3MB.

(4). The test result is based on Flash DB V4.00.01\_M

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