

# JMF61X

## **NAND Flash And SDRAM Support List & Performance List**

For F/W (091102)

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### Revision History

Revision	Effect Date	Description of Revision		Author
		Reference	Description of the Change	
0.0.1	09-08-2009	--	First release.	M
0.0.2	09-12-2009		Add Flash part.	M
0.0.3	10-02-2009		Add Flash performance list and support list.	M
0.0.4	11-02-2009		Modify performance table.	M

This document is valid until ☐ the date [09-08-0229](#) ☒ the next revision has been effective.

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## 1 Introduction

JMF61X is a single chip, supports external SDRAM, SATA II to NAND flash interface. It is native design to provide higher bandwidth for flash memory access.

JMF61X can support the maximum read and write speed to drive the limit of flash memory. JMF612 has the best supporting to the latest NAND flash memory, including Samsung, Toshiba, Hynix, Micron and IM Flash. It also provides the embedded hardware error correction code (ECC), wear leveling, and bad block management technology in this chip. In order to resolve compatibility issue, JMF612 provides the on line firmware upgrade ability.

## 2 Features

### 2.1 Flash Features

- Support 5x/4x/3x nm Flash.
- Supports 4K/8K bytes page size.
- Supports 8 bits Flash interface.
- Supports BCH 16/24 bits ECC.

### 2.2 SDRAM Features

- Supports DDR/DDR2.
- Support 128Mbits to 2Gbits.

### 3 Support List

#### 3.1 NAND Flash support list

Vendor	NAND Flash part number	Process	JMF612 Support / pcs		
			8	16	32
<b>Samsung</b>	<b>SLC</b>	512Mx8bit K9F4G08U0A/B (CEx1)	<del>2K</del>	can't support(2K page)	
		1Gx8bit K9F8G08U0M (CEx1)	4K	O	O
		4Gx8bit <del>K9K8G08U0A/B (CEx1)</del>	<del>2K</del>	can't support(2K page)	
		<del>2Gx8bit K9WAG08U1A/B (CEx2)</del>	<del>2K</del>	can't support(2K page)	
		2Gx8bit K9KAG08U0M (CEx1)	4K	O	O
		2Gx8bit K9KAG08U1M (CEx2)	4K	O	O
		4Gx8bit K9WBG08U1M (CEx2)	4K	O	O
		8Gx8bit K9NCG08U5M (CEx4)	4K	O	
	<b>MLC</b>	<del>4Gx8bit K9G8G08U0A (CEx1)</del>	<del>2K</del>	can't support(2K page)	
		<del>4Gx8bit K9G8G08U0B (CEx1)</del>	<del>2K</del>	can't support(2K page)	
		2Gx8bit K9GAG08U0M (CEx1)	4K	O	O
		2Gx8bit K9GAG08U0D (CEx1)	4K	O	O
		<del>2Gx8bit K9LAG08U0A (CEx1)</del>	<del>2K</del>	can't support(2K page)	
		<del>2Gx8bit K9LAG08U1A (CEx2)</del>	<del>2K</del>	can't support(2K page)	
		<del>4Gx8bit K9HBC08U1A (CEx2)</del>	<del>2K</del>	can't support(2K page)	
		4Gx8bit K9LBG08U0M (CEx1)	4K	O	O
		4Gx8bit K9LBG08U0D (CEx1)	4K	O	O
		4Gx8bit K9LBG08U1M (CEx2)	4K	O	O
		8Gx8bit K9HCG08U1M (CEx2)	4K	O	O
		8Gx8bit K9HCG08U1D (CEx2)	4K	O	O
		8Gx8bit K9HCG08U5M (CEx4)	4K	O	
		16Gx8bit K9MDG08U5M (CEx4)	4K	O	
		16Gx8bit K9MDG08U5D (CEx4)	4X	O	
<b>Toshiba</b>	<b>SLC</b>	2Gx8bit TH58NVG4S0DTG20(CEx2)	4K	O	O
	<b>MLC</b>	1Gx8bit TC58NVG3D1DTG00(CEx1)	4K	O	O
		2Gx8bit TC58NVG4D1DTG00(CEx1)	4K	O	O
		4Gx8bit TH58NVG5D1DTG20(CEx2)	4K	O	O

Vendor	NAND Flash part number			Process	JMF612 Support / pcs		
					8	16	32
		8Gx8bit	TH58NVG6D1DTG20(CEx2)	4K	O	O	O
		4Gx8bit	TH58NVG5D2ETA20(CEx2)	8K	O	O	O
		8Gx8bit	TH58NVG6D2ETA20(CEx2)	8K	O	O	O
<b>Intel</b>	<b>SLC</b>	<del>4Gx8bit</del>	<del>JS29F08G08AANC1(CEx1)</del>	<del>2K</del>	can't support(2K page)		
		4Gx8bit	JS29F32G08FANC1(CEx2)		O	O	O
		<del>4Gx8bit</del>	<del>JS29F08G08AAMC1(CEx1)</del>	<del>2K</del>	can't support(2K page)		
	<b>MLC</b>	<del>4Gx8bit</del>	<del>JS29F08G08AAMB2(CEx1)</del>	<del>2K</del>	can't support(2K page)		
		2Gx8bit	JS29F16G08AAMC1(CEx1)	4K		O	O
		<del>2Gx8bit</del>	<del>JS29F16G08CAMB2(CEx2)</del>	<del>2K</del>	can't support(2K page)		
		4Gx8bit	JS29F32G08CAMC1(CEx2)	4K	O	O	O
		<del>4Gx8bit</del>	<del>JS29F32G08FAMB2(CEx2)</del>	<del>2K</del>	can't support(2K page)		
		4Gx8bit	JS29F32G08AAMD1(CEx1)	3x\1L63A		O	O
		8Gx8bit	JS29F64G08FAMC1(CEx2)	4K	O	O	O
		8Gx8bit	JS29F64G08CAMD1(CEx2)	3x\1L63A	O	O	O
		16Gx8bit	JS29F16B08JAMD1(CEx4)	3x\1L63A	O	O	
		4Gx8bit	JS29F32G08AAMDB(CEx1)	4K\3x\1L63B		O	O
		8Gx8bit	JS29F64G08CAMDB(CEx2)	4K\3x\1L63B	O	O	O
		16Gx8bit	JS29F16B08JAMDB(CEx4)	4K\3x\1L63B	O	O	
<b>Micron</b>	<b>SLC</b>	1Gx8bit	MT29F8G08AAA(CEx1)	4K		O	O
		<del>4Gx8bit</del>	<del>MT29F8G08DAA(CEx2)</del>	<del>2K</del>	can't support(2K page)		
		2Gx8bit	MT29F16G08DAA(CEx2)	4K	O	O	O
		4Gx8bit	MT29F32G08FAA(CEx2)	4K	O	O	O
		<del>2Gx8bit</del>	<del>MT29F16G08FAA(CEx2)</del>	<del>2K</del>	can't support(2K page)		
		8Gx8bit	MT29F64G08AJABA(CEx2)	3x\1L63x	O	O	O
	<b>MLC</b>	2Gx8bit	MT29F16G08MAA(CEx1)	4K		O	O
		4Gx8bit	MT29F32G08QAA(CEx2)	4K	O	O	O
		<del>4Gx8bit</del>	<del>MT29F32G08TAA(CEx2)</del>	<del>2K</del>	can't support(2K page)		
		4Gx8bit	MT29F32G08CBAAA(CEx1)	4K\3x\1L63A		O	O
		8Gx8bit	MT29F64G08TAA(CEx2)	4K	O	O	O

Vendor	NAND Flash part number			Process	JMF612 Support / pcs		
					8	16	32
		8Gx8bit	MT29F64G08CFAAA(CEx2)	4K\3x\L63A	O	O	O
		16Gx8bit	29F128G08CJAAA(CEx2)	4K\3x\L63A	O	O	O
		4Gx8bit	MT29F32G08CBABA(CEx1)	4K\3x\L63B		O	O
		8Gx8bit	MT29F64G08CEABA(CEx2)	4K\3x\L63B	O	O	O
		16Gx8bit	MT29F128G08CKABA(CEx2)	4K\3x\L63B	O	O	O
<b>Hynix</b>	<b>SLC</b>	2Gx8bit	HY27UH08AG5B(CEx2)		O	O	O
	<b>MLC</b>	2Gx8bit	H27UAG8BT2MTR(CEx1)			O	O
		2Gx8bit	H27UBG8U5MTR(CEx2)		O	O	O
		4Gx8bit	H27UV08BG5A(CEx2)		O	O	O
		4Gx8bit	H27UCG8V5MTR(CEx2)		O	O	O
		4Gx8bit	H27UBG8U5ATR(CEx2)	4x	O	O	O
		8Gx8bit	H27UCG8V5ATR(CEx2)	4x	O	O	O
<b>San Disk</b>	<b>MLC</b>	4Gx8bit	S092538004(CEx2)	4x\8K	O	O	O

\* O= already support.

\* JMF612 with 32 pcs Flash, F/W support but HW has not real application.

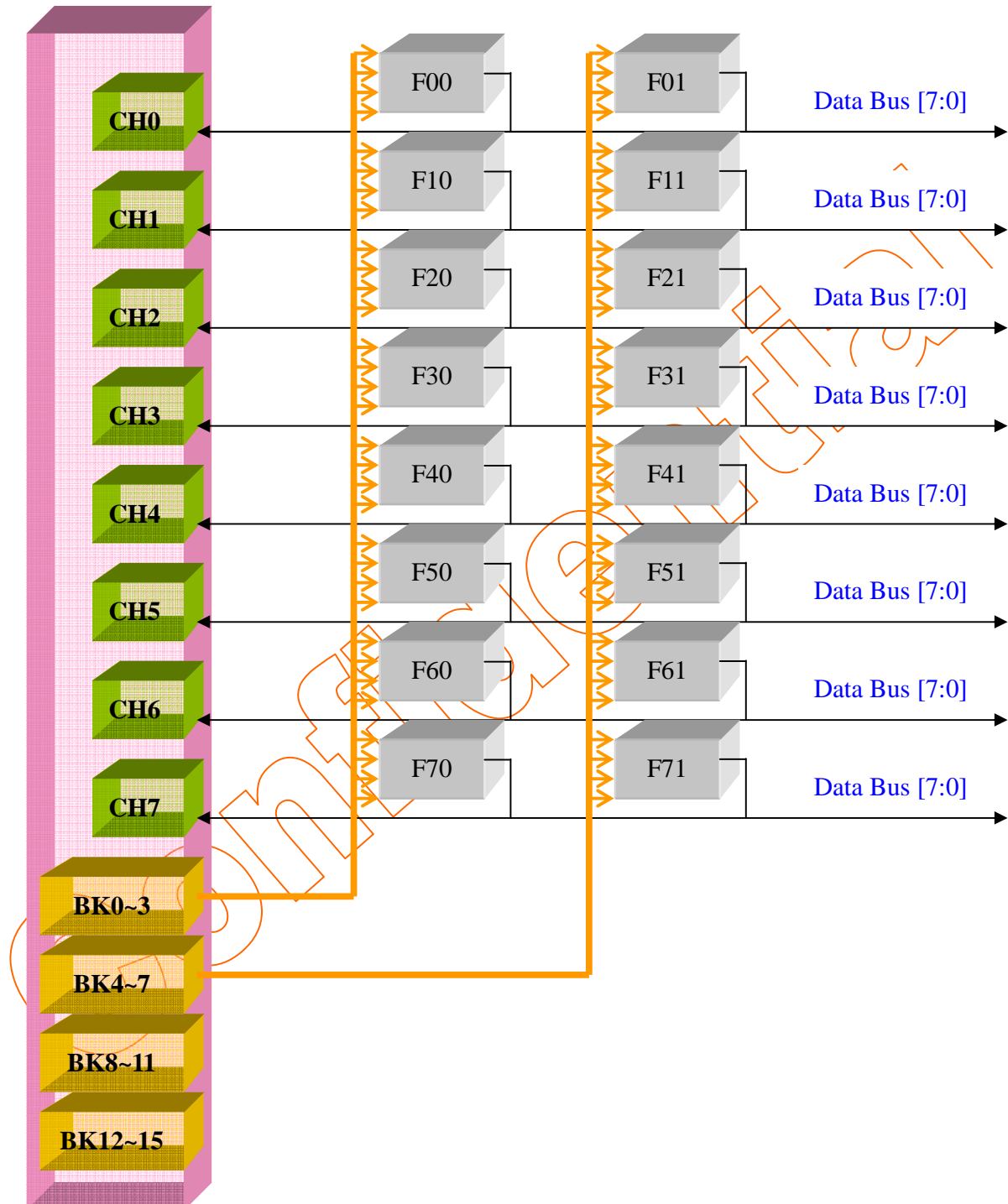
\* 64 Page Flash can't use USB function.

### 3.2 SDRAM support list

Vendor	DDRII SDRAM part number	Density	Organization	Drawing			PCBA	
				L	W	H	BA2	A13
<b>ELPIDA</b>	EDE5116AJBG-6E-E	512M bits	8Mx4banksx16 bits	12.5	10	1.2	X	X
<b>NANYA</b>	NT5TU32M16CG-3C	512M bits	8Mx4banksx16 bits				X	X
<b>Winbond</b>	W9751G6IB-3	512M bits	8Mx4banksx16 bits	12.5	10	1.2	X	X
<b>PROMOS</b>	V59C1512164QCF3	512M bits	8Mx4banksx16 bits	13	10.5	1.2	X	X



#### 4 NAND Flash Dispose



## 5 NAND Flash Performance List

2.5"SSD Demo Board		IC	PCBA	F/W Version	Nand Flash Type		Flash*	Cap. GB	CrystalMrk(Cycle5/1GB)					
									S.R	S.W	R.R512K	R.W512K	R.R4K	R.W4K
No.	DSSD38	612	JMF612-DB-01-01-1	091001	MLC	TH58NVG6D2ETA20(CEx2)	16ea	128	250.1	196.3	167.8	115.6	12.44	27.79
No.	NA	612	JMF612-DB-01-01-1	091102	MLC	TH58NVG5D2ETA20(CEx2)	16ea	64	250.2	196.4	176.5	113.2	12.62	24.21
No.	NA	612	JMF612-DB-01-01-1	091102	MLC	29F16B08JAMD1(CEx4)	16ea	256	226.1	145.4	180.5	108.7	15.98	29.82
No.	NA	612	JMF612-DB-01-01-1	091102	MLC	29F32G08AAMDB(CEx1)	16ea	64	235.1	101.3	186.9	74.93	16.51	23.55
No.	DSSD51	612	JMF612-DB-01-01-1	091102	MLC	K9HCG08U1D(CEx2)	16ea	128	241.2	143.3	190.0	104.0	16.99	32.67

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