W55FA92/95 SD and NAND Support List

Revision Date: 2018/01/15

SD Cards Support List

Brand Name	Type	Capacity	Test Result	Brand Name	Type	Capacity	Test Result
A-DATA	SD	1 GB	Pass	Kingston	SD	1GB	Pass
A-DATA	SD	2GB	Pass	Kingston	MicroSD	1GB	Pass
A-DATA	SDHC	8GB	Pass	Kingston	SD	2GB	Pass
A-DATA	MicroSDHC	32GB	Pass	Kingston	SDHC	4GB	Pass
Apacer	SD	128MB	Pass	Kingston	SDHC	8GB	Pass
Apacer	SD	1GB	Pass	Kingston	SDHC	32GB	Pass
Apacer	SD	2GB	Pass	Mio	SD	64MB	Pass
Apacer	SDHC	4GB	Pass	PQI	SD	256MB	Pass
Apacer	SDXC	64GB	Pass (FAT only)	PRETEC	SDHC	32GB	Pass
APOTOP	SDHC	8GB	Pass	RiData	SD	128MB	Pass
Gigaston	SDHC	16GB	Pass	RiData	SD	2GB	Pass
Kingmax	SD	64MB	Pass	SanDisk	SD	64MB	Pass
Kingston	SD	128MB	Pass	SanDisk	SD	256MB	Pass

SD Cards Support List

Brand Name	Type	Capacity	Test Result
SanDisk	SD	512MB	Pass
SanDisk	MicroSD	1GB	Pass
SanDisk	SD	2GB	Pass
SanDisk	MicroSD	2GB	Pass
SanDisk	SDHC	4GB	Pass
SanDisk	MicroSDHC	4GB	Pass
SanDisk	MicroSDHC	8GB	Pass
SONY	SDHC	8GB	Pass
SP	SDHC	16GB	Pass
TCELL	SDHC	16GB	Pass
Toshiba	SD	256MB	Pass
Toshiba	MicroSD	1GB	Pass
Toshiba	SDHC	8GB	Pass

Brand Name	Type	Capacity	Test Result
Toshiba	SDHC	16GB	Pass
Transcend	SD	256MB	Pass
Transcend	SD	512MB	Pass
Transcend	SD	1GB	Pass
Transcend	SD	2GB	Pass
Transcend	SDHC	4GB	Pass
Transcend	MicroSD	4GB	Pass
Transcend	SDHC	8GB	Pass
Transcend	SDHC	16GB	Pass

MMC Cards Support List

Brand Name	Type	Capacity	Test Result
Canon	MMC Plus	32MB	Pass
Kingston	eMMC v4.41 (KE44B-26BN/4GB)	4GB	Pass
Skymedi	eMMC v5.0 (SP18A4G751B-0003)	4GB	Pass
Skymedi	eMMC v5.0 (SP18A8G752B-0003)	8GB	Pass
Transcend	MMC Plus	512MB	Pass

NAND Flash Support List

► Test Result

  ▪ Pass :

    ▪ Data Access: Pass the data access test

    ▪ IBR Booting: Pass the IBR booting test that support less ECC bit

  ▪ D/A : Datasheet Applicable

  ▪ N/A : Not Applicable

► NAND flash brands that supported

  ▪ Samsung, Hynix, Micron, Toshiba

  ▪ ATO, Eon, ESMT, Maker Founder, Mira/Deutron, MXIC, Spansion, Winbond, Zentel

NAND Flash ECC

► All NAND flash need Error Correction Code (ECC) to make sure the data reliability. You can found the ECC bit length requirement in NAND flash datasheet like below.

FAILURE MODE		DETECTION AND COUNTERMEASURE SEQUENCE
Block	Erase Failure	Status Read after Erase → Block Replacement
Page	Programming Failure	Status Read after Program → Block Replacement
Single Bit	Programming Failure "1 to 0"	ECC

- ECC: Error Correction Code. 1 bit correction per 512 Bytes is necessary.

or

DATA RETENTION
- 100,000 Program/Erase cycles
  (with 1 bit / 528 byte ECC)
- 10 years Data Retention

NAND Flash ECC for Data Access

▶ FA92/95 support up to 24 bits ECC algorithm for data access

▶ FA92/95 NAND driver defined different ECC bit length for NAND flash according to page size.

Page Size	512B	2KB	4KB	8KB
ECC Bit Length	**4** bits per 512 bytes data	**8** bits per 512 bytes data	• **12** bits for 512 bytes data only for Hynix H27UAG8T2A • **24** bit for 1024 bytes data only for Micron MT29F16G08CBACA and MT29F32G08CBACA • **8** bits per 512 bytes data for others	**24** bits per 1024 bytes data

NAND Flash ECC for IBR Booting

► FA92/95 support up to 12 bits ECC algorithm for IBR booting
► FA92/95 IBR defined different ECC bit length for NAND flash according to page size.

Page Size	512B	2KB	4KB	8KB
ECC Bit Length	**4** bits per 512 bytes data	**4** bits per 512 bytes data	**8** bits per 512 bytes data	**12** bits per 1024 bytes data

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NAND Flash Support List

Manufacturer	Part Number	Type	Page Size	Capacity	Test Result Data Access	Test Result IBR Booting
Samsung	K9F5608B0D	SLC		32MB		
	K9F5608R0D	SLC		32MB		
	K9F5608U0D	SLC	512 + 16	32MB	Pass	Pass
	K9F1208B0C	SLC		64MB		
	K9F1208R0C	SLC		64MB		
	K9F1208U0C	SLC	512 + 16	64MB	Pass	Pass
	K9F1G08R0B	SLC		128MB		
	K9F1G08U0B	SLC	2K + 64	128MB	Pass	Pass
	K9F1G08U0D	SLC	2K + 64	128MB	Pass	Pass
	K9F1G08U0E	SLC	2K + 64	128MB	D/A	D/A
	K9F1G08U0F	SLC	2K + 64	128MB	Pass	Pass
	K9F2G08R0A	SLC		256MB		
	K9F2G08U0A	SLC		256MB		
	K9F2G08U0B	SLC	2K + 64	256MB	Pass	Pass
	K9F2G08U0D	SLC	2K + 64	256MB	D/A	D/A

NAND Flash Support List

Manufacturer	Part Number	Type	Page Size	Capacity	Test Result Data Access	Test Result IBR Booting
Samsung	K9G2G08B0M	MLC		256MB		
	K9G2G08U0M	MLC		256MB		
	K9F4G08U0A	SLC		512MB	D/A	D/A
	K9F4G08U0B	SLC		512MB		
	K9F4G08U0F	SLC	2K + 64	512MB	D/A	D/A
	K9WAG08U1D	SLC	2K + 64	512MB	Pass	Pass
	K9G4G08B0A	MLC		512MB		
	K9F8G08B0M	SLC		1GB		
	K9F8G08U0M	SLC		1GB		
	K9K8G08U0A	SLC		1GB		
	K9K8G08U0F	SLC	2K + 64	1GB	D/A	D/A
	K9K8G08U1A	SLC		1GB		
	K9G8G08B0A	MLC		1GB		
	K9G8G08U0A	MLC	2K + 64	1GB	Pass	N/A (MLC)
	K9G8G08U0M	MLC	2K + 64	1GB	Pass	N/A (MLC)

NAND Flash Support List

Manufacturer	Part Number	Type	Page Size	Capacity	Test Result Data Access	Test Result IBR Booting
Samsung	K9KAG08U0M	SLC		2GB		
	K9KAG08U1M	SLC		2GB		
	K9WAG08U1A	SLC		2GB		
	K9GAG08U0E	MLC	8K + 436	2GB	D/A	N/A (ECC 24)
	K9GAG08U0M	MLC		2GB		
	K9HBG08U1M	MLC	2K + 64	2GB	Pass	N/A (MLC)
	K9HCG08U1E	MLC	8K + 436	2GB	D/A	N/A (MLC)
	K9LBG08U0E	MLC	8K + 436	2GB	D/A	N/A (MLC)
	K9NBG08U5A	SLC		4GB		
	K9WBG08U1M	SLC		4GB		
	K9LBG08U0M	MLC		4GB		
	K9LBG08U1M	MLC		4GB		
	K9NCG08U5M	SLC		8GB		
	K9HCG08U1M	MLC		8GB		
	K9MDG08U5M	MLC		16GB		

NAND Flash Support List

Manufacturer	Part Number	Type	Page Size	Capacity	Test Result Data Access	Test Result IBR Booting
Hynix	HY27US08281A	SLC	512	16MB		
	HY27US08561A	SLC	512	32MB		
	H27U518S2CTP	SLC	512	64MB	Pass	Pass
	HY27US08121A	SLC	512	64MB	D/A	D/A
	HY27US08121B	SLC	512	64MB		
	HY27US08121M	SLC	512	64MB	D/A	D/A
	HY27US16121B	SLC	512	64MB		
	H27US1G8S2A	SLC	512	128MB		
	HY27US081G1M	SLC	512	128MB		
	HY27US161G1M	SLC	512	128MB		
	HY27SF081G2A	SLC	2K	128MB		
	HY27SF161G2A	SLC	2K	128MB		
	HY27UF161G2A	SLC	2K	128MB		
	H27U1G8F2BTR	SLC	2K + 64	128MB	Pass	Pass
	HY27UF081G2A	SLC	2K + 64	128MB	Pass	Pass

NAND Flash Support List

Manufacturer	Part Number	Type	Page Size	Capacity	Test Result Data Access	Test Result IBR Booting
Hynix	HY27SF082G2B	SLC	2K	256MB		
	HY27SF162G2B	SLC	2K	256MB		
	HY27UF082G2A	SLC	2K	256MB		
	HY27UF082G2B	SLC	2K	256MB		
	HY27UF162G2A	SLC	2K	256MB		
	HY27UF162G2B	SLC	2K	256MB		
	HY27UF162G5A	SLC	2K	256MB		
	HY27UF084G2M	SLC	2K	512MB		
	HY27UF084G2B	SLC	2K	512MB	Pass	Pass
	HY27UF164G2B	SLC	2K	512MB		
	HY27UT084G2A	MLC	2K + 64	512MB	Pass	N/A (MLC)

NAND Flash Support List

Manufacturer	Part Number	Type	Page Size	Capacity	Test Result Data Access	Test Result IBR Booting
Hynix	HY27UG088G5B	SLC	2K	1GB		
	HY27UG088G5M	SLC	2K	1GB		
	HY27UG088GDB	SLC		1GB		
	HY27UG088GDM	SLC	2K	1GB		
	HY27UH08AG5B	SLC		2GB		
	HY27UH08AG5M	SLC		2GB		
	H27UAG8T2A	MLC	4K + 224	2GB	Pass	N/A (ECC 12)
	H27UAG8T2B	MLC	8K + 448	2GB	Pass	N/A (ECC 24)
	HY27UK08BGFM	SLC	2K + 64	4GB	D/A	D/A
	H27UBG8T2A	MLC	8K + 448	4GB	D/A	N/A (ECC 24)
	H27UBG8T2BTR	MLC	8K + 640	4GB	N/A (ECC 40)	N/A (ECC 40)
	H27UBG8T2CTR	MLC	8K + 640	4GB	N/A (ECC 40)	N/A (ECC 40)

NAND Flash Support List

Manufacturer	Part Number	Type	Page Size	Capacity	Test Result Data Access	Test Result IBR Booting
Hynix	H27UCG8T2ATR	MLC	8K + 640	8GB	N/A (ECC 40)	N/A (ECC 40)
	H27UCG8T2BTR	MLC	16K + 1280	8GB	N/A (ECC 40 & 16KB page)	N/A (ECC 40 & 16KB page)

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NAND Flash Support List

Manufacturer	Part Number	Type	Page Size	Capacity	Test Result Data Access	Test Result IBR Booting
Micron	MT29F1G08ABxDA	SLC	2K + 64	128MB	D/A	D/A
	MT29F2G08ABAEA	SLC	2K + 64	256MB	D/A	D/A
	MT29F16G08CBABx	MLC	4K + 224	2GB	D/A	N/A (MLC)
	MT29F16G08CBACA	MLC	4K + 224	2GB	Pass	N/A (ECC 24)
	MT29F32G08CBACA	MLC	4K + 224	4GB	Pass	N/A (ECC 24)

NAND Flash Support List

Manufacturer	Part Number	Type	Page Size	Capacity	Test Result Data Access	Test Result IBR Booting
Toshiba	TC58BVG0S3HTA00	SLC	2K + 64	128MB	Pass	N/A (ECC 8)
	TC58DVG02D5TA00	SLC	2K + 64	128MB	D/A	D/A
	TC58NVG0S3ETA00	SLC	2K + 64	128MB	D/A	D/A
	TC58NVG0S3ETA0B	SLC	2K + 64	128MB	Pass	Pass
	TC58NVG0S3HTA00	SLC	2K + 64	128MB	Pass	N/A (ECC 8)
	TC58NVG1S3ETA00	SLC	2K + 64	256MB	Pass	Pass
	TC58NVG1S3HTA00	SLC	2K + 128	256MB	Pass	N/A (ECC 8)
	TC58NVG2S0HTA00	SLC	4K + 256	512MB	D/A	D/A
	TC58DVG3S0ETA00	SLC	4K + 128	1GB	Pass	Pass
	TC58NVG3S0FTA00	SLC	4K + 232	1GB	Pass	Pass
	TC58NVG3D1DTG00	MLC	4K + 218	1GB	Pass	N/A (MLC)
	TC58NVG4D2FTA00	MLC	8K + 448	2GB	Pass	N/A (ECC 24)
	TH58NVG4S0FTA20		4K + 232	2GB	N/A (2 busy pins)	N/A (2 busy pins)

NAND Flash Support List

Manufacturer	Part Number	Type	Page Size	Capacity	Test Result Data Access	Test Result IBR Booting
ATO	AFND1G08U3	SLC	2K + 64	128MB	D/A	D/A

NAND Flash Support List

Manufacturer	Part Number	Type	Page Size	Capacity	Test Result Data Access	Test Result IBR Booting
Eon	EN27LN1G08	SLC	2K + 64	128MB	Pass	Pass
	EN27LN2G08	SLC	2K + 64	256MB	Pass	Pass
	EN27LN4G08	SLC	2K + 64	512MB	Pass	Pass

NAND Flash Support List

Manufacturer	Part Number	Type	Page Size	Capacity	Test Result Data Access	Test Result IBR Booting
ESMT	F59L1G81A	SLC	2K + 64	128MB	Pass	Pass
	F59L1G81LA	SLC	2K + 64	128MB	D/A	D/A
	F59L2G81A	SLC	2K + 64	256MB	Pass	Pass
	F59L4G81A	SLC	2K + 64	512MB	D/A	D/A

NAND Flash Support List

Manufacturer	Part Number	Type	Page Size	Capacity	Test Result Data Access	Test Result IBR Booting
Maker Founder	MP4G08KAA	SLC	2K + 64	512MB	D/A	D/A
	MP4G08JAA	SLC	4K + 256	512MB	D/A	D/A
	MP8G08KAA	SLC	2K + 64	1GB	D/A	D/A

NAND Flash Support List

Manufacturer	Part Number	Type	Page Size	Capacity	Test Result Data Access	Test Result IBR Booting
Mira/Deutron	PSU12A30BT	SLC	2K + 64	64MB	D/A	D/A
	PSU1GA30HT	SLC	2K + 64	128MB	D/A	D/A

NAND Flash Support List

Manufacturer	Part Number	Type	Page Size	Capacity	Test Result Data Access	Test Result IBR Booting
MXIC	MX30LF1208AA	SLC	2K + 64	64MB	Pass	Pass
	MX30LF1G08AA	SLC	2K + 64	128MB	Pass	Pass
	MX30LF1G18AC	SLC	2K + 64	128MB	Pass	Pass
	MX30LF1GE8AB	SLC	2K + 64	128MB	N/A (conflict with built-in ECC)	N/A (conflict with built-in ECC)
	MX60LF8G18AC	SLC	2k + 64	1GB	Pass (must floating pin #38)	Pass (must floating pin #38)

NAND Flash Support List

Manufacturer	Part Number	Type	Page Size	Capacity	Test Result Data Access	Test Result IBR Booting
Spansion	S34ML01G1	SLC	2K + 64	128MB	D/A	D/A
	S34ML01G2	SLC	2K + 64	128MB	Pass	Pass
	S34ML02G1	SLC	2K + 64	256MB	D/A	D/A
	S34ML02G2	SLC	2K + 128	256MB	D/A	D/A
	S34ML04G1	SLC	2K + 64	512MB	D/A	D/A
	S34ML04G2	SLC	2K + 128	512MB	D/A	D/A

NAND Flash Support List

Manufacturer	Part Number	Type	Page Size	Capacity	Test Result Data Access	Test Result IBR Booting
Winbond	W29N01GV	SLC	2K + 64	128MB	Pass	Pass
	W29N01HV	SLC	2K + 64	128MB	Pass	Pass

NAND Flash Support List

Manufacturer	Part Number	Type	Page Size	Capacity	Test Result Data Access	Test Result IBR Booting
Zentel	A5U1GA31ATS	SLC	2K + 64	128MB	Pass	Pass
	A5U1GA31BTS	SLC	2K + 64	128MB	Pass	Pass
	A5U2GA31BTS	SLC	2K + 64	256MB	Pass	Pass
	A5U4GA31ATS	SLC	2K + 64	512MB	Pass	Pass