SmartMedia™

SmartMedia™ Physical Format Specifications

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SSFDC Forum Technical Committee

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Revision History

Version			Date
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Contents

0. Introduction

This Specification defines the physical format of the SmartMedia™ (SSFDC or Solid State Floppy Disk Card) which is being introduced by the SSFDC Forum.

1. SmartMedia™ Memory Configuration

There are two SmartMedia™ memory configurations that differ in page size depending on the memory type (Flash Memory or MASK ROM), and the memory card capacity. For these two memory configurations, two kinds of physical format specifications have been provided.

The SmartMedia™ memory configurations are shown below:

- Flash Memory: There are 8 redundancy bytes for 256 data bytes.
  Permits data writing or reading page-by-page, and enables data erasing block-by- block.
- MASK ROM: No redundancy area. Permits data reading page-by page.

Table 1-1 SmartMedia™ Memory Configurations (Flash Memory)

Model	Page Size	Block Size	Number of Blocks	Configuration	Device Code (3.3V model)	Device Code (5V model)
1 MBytes	256 + 8 Bytes	16 Pages	256 Blocks	Fig. 1-1	6Eh, E8h, ECh	6Eh
2 MBytes			512 Blocks		EAh	64h
4 MBytes	512 + 16 Bytes			Fig. 1-2	E3h, E5h	6Bh, E5h
8 MBytes			1,024 Blocks		E6h	—

Table 1-2 SmartMedia™ Memory Configurations (MASK ROM)

Model	Page Size	Block Size	Number of Blocks	Configuration	Device Code (3.3V model)
2 MBytes	512 + 16 Bytes (Note 1)	16 Pages	256 Blocks	Fig. 1-2	5Dh
4 MBytes			512 Blocks		D5h
8 MBytes			1,024 Blocks		D6h

Note 1: Outputs dummy data (all FFh) for data read (redundancy area).

Note 2: Block size is defined as 16 pages to keep Flash Memory compatibility.

Note 3: No 5 volt devices for Flash Memory (8 MBytes) and for all MASK ROMs, only 3.3 volt devices are available.

		0 — 255	256 — 263
Block 0	Page 0	Data area (256 Bytes)	Redundant area (8 Bytes)
	Page 1		
	:		
	Page End		
Block 1	Page 0		
	Page 1		
	:		
	Page End		
:	:	:	:
Block End	Page 0		
	Page 1		
	:		
	Page End		

Fig. 1-1 256+8 Bytes/Page Models

		0 — 511	512 — 527
Block 0	Page 0	Data area (512 Bytes)	Redundant area (16 Bytes)
	Page 1		
	:		
	Page End		
Block 1	Page 0		
	Page 1		
	:		
	Page End		
:	:	:	:
Block End	Page 0		
	Page 1		
	:		
	Page End		

Note: Outputs dummy data (all “FFh”) for MASK ROM redundancy area.

Fig. 1-2 512+16 Bytes/Page Models

2. Physical Format Specifications

The physical format specifications are summarized below:

Table 2-1 Summary of SmartMedia™ Physical Format Specifications (Flash Memory)

Model	Formatted (Bytes)	Unformatted (Bytes)	Max Logical Blocks	Logical Block Size	Page Size (Bytes)
1 MByte	1,024,000	1,048,576	250	4,096 Bytes	256+8
2 MBytes	2,048,000	2,097,152	500		
4 MBytes	4,096,000	4,194,304		8,192 Bytes	512+16
8 MBytes	8,192,000	8,388,608	1,000		

Note: Unformatted capacity and Formatted capacity does not include redundancy.

Table 2-2 Summary of SmartMedia™ Physical Format Specifications (MASK ROM)

Model	Formatted (Bytes)	Unformatted (Bytes)	Max Logical Blocks	Logical Block Size	Page Size (Bytes)
2 MBytes	2,048,000	2,097,152	250	8,192 Bytes	512 (+16)
4 MBytes	4,096,000	4,194,304	500		
8 MBytes	8,192,000	8,388,608	1,000		

Note: Since there is no defective blocks in MASK ROM, the Max Logical Block number can be greater than that of the Flash Memory. However, for format compatibility, the Max Logical Block and Flash Memory numbers are set to the same value.

2.1. Memory Space

- **Flash Memory**

In the SmartMedia™ (Flash Memory)'s memory space, data is configured as shown in Table 2-3 for 1-16 MBytes and in Table 2-4 for 32–128 MBytes.

Table 2-3 Data Arrangement (Flash Memory: 1–16 MBytes)

Physical block No.	Usage
0	CIS/IDI Field
First to final block	Storing Area

Note: The CIS/IDI Field is placed in physical block 0.

If physical block 0 is found to be a defective block, the area is placed in the first normal block that is found after physical block 0.

Irrespective of the page size, only one block is assigned.

Normal blocks other than the CIS/IDI Field may be used as data areas.

The indication of a defective block and logical block arrangement in the data area will be set in the redundancy area as described hereinafter.

Regarding defective blocks:

- In the case of the 256+8 bytes/page models, the 6th byte (byte address 261st) in all odd-numbered pages in the redundant section contains two or more "0" bits to indicate a defective block.
- In the case of the 512+16 bytes/page models, the 6th byte (byte address 517th) in all pages in the redundant section contains two or more "0" bits to indicate a defective block.

- **MASK ROM**

In the SmartMedia™ (MASK ROM)'s memory space, data is configured as shown in Table 2-4.

Table 2-4 Data Arrangement (MASK ROM)

Physical block No.	Usage
0	CIS/IDI Field
First to final block	Storing Area
Final block +1 to Last block	Reserved Area

Note: The CIS/IDI Field is placed in physical block 0.

The relation of physical block and logical block is as follows;

(logical block number) = (physical block number) – 1

The data area is between physical block number 1 and the last data block number (the same value as Maximum logical blocks). The other areas are reserved and should be filled by FFh.

2.2. CIS/IDI Field

For the 256+8 Bytes/page models (Flash Memory):

CIS/Identify Drive Information data is stored on the first two pages of the CIS/IDI Field. The configuration of this data is shown in Fig. 2-1.

The data that is referenced is written on page 0 and page 1. If the data on page 0 and page 1 is invalid, valid data may be written on page 2, 3 or on subsequent pages.

In the CIS/IDI Field, both the data and redundant areas are set to "FFh" for pages on which data has not yet been written.

• Data area

Byte No.	Page 0	Page 1
0-127	CIS Field-1	CIS Field-2
128-255	IDI Field-1	IDI Field-2

• Redundant area

<table>
<tr><th>Byte No.</th><th>Page 0</th><th>Page 1</th></tr>
<tr><td>256</td><td rowspan="3">Function Select Information Field</td><td rowspan="3">ECC Field-2</td></tr>
<tr><td>257</td></tr>
<tr><td>258</td></tr>
<tr><td>259</td><td rowspan="2">Invalid Data Flag (Information Validity)</td><td rowspan="2">0000h (fixed)</td></tr>
<tr><td>260</td></tr>
<tr><td>261</td><td>FFh (fixed)</td><td rowspan="3">ECC Field-1</td></tr>
<tr><td>262</td><td rowspan="2">0000h (fixed)</td></tr>
<tr><td>263</td></tr>
</table>

Fig.2-1 CIS/Identify Drive Information Data (256+8 Bytes/Page Models - Flash Memory)

For the 512+16 Bytes/page models (Flash Memory):

CIS/Identify Drive Information data is written on the first page of the CIS/IDI Field. The configuration of this data is shown in Fig. 2-2.

The data that is referenced is written on page 0. If the data on page 0 is invalid, valid data may be written on page 1 or on subsequent pages.

In the CIS/IDI Field, both the data and redundant area are set to "FFh" for pages on which data has not yet been written.

• Storing Area

Byte No.	Page 0
0-127	CIS Field-1
128-255	IDI Field-1
256-383	CIS Field-2
384-511	IDI Field-2

• Redundant area

Byte No.	Page 0
512	Function Select Information Field
513	
514	
515	
516	Invalid Data Flag (Information Validity)
517	FFh (fixed)
518	0000h (fixed)
519	
520	ECC Field-2
521	
522	
523	0000h (fixed)
524	
525	ECC Field-1
526	
527	

Fig. 2-2 CIS/Identify Drive Information Data (512+16 Bytes/Page Models – Flash ROM)

For the 512+16 Bytes/page models (MASK ROM):

CIS/Identify Drive Information data is written on the first page of the CIS/IDI Field. The configuration of this data is shown in Fig. 2-3.

The data that is referenced is written on page 0.

Both the data and redundant areas in the CIS/Identify Drive Information area, other than on page 0, are set to "FFh".

• Storing Area

Byte No.	Page 0
0-127	CIS Field-1
128-255	IDI Field-1
256-383	CIS Field-2
384-511	IDI Field-2

• Redundant area

Byte No.	Page 0
512	FFh (fixed)
513	FFh (fixed)
514	FFh (fixed)
515	FFh (fixed)
516	FFh (fixed)
517	FFh (fixed)
518	FFh (fixed)
519	FFh (fixed)
520	FFh (fixed)
521	FFh (fixed)
522	FFh (fixed)
523	FFh (fixed)
524	FFh (fixed)
525	FFh (fixed)
526	FFh (fixed)
527	FFh (fixed)

Fig. 2-3 CIS/Identify Drive Information Data (512+16 Bytes/Page Models - MASK ROM)

1. CIS Field

These fields store the data that is necessary to judge whether the formatting has been carried out in accordance with this Physical Format Specification.

To ensure the reliability of the data, the same data is stored in the following two areas: CIS Field-1 and CIS Field-2. The contents of the data are shown in Appendix 1.

The first 10 Bytes of this data serves as the basis on which a judgment is made on whether or not formatting has been done in accordance with this Format Specification.

If formatting has been done in accordance with this Format Specification, the values of the first 10 Bytes are as follows:

01h, 03h, D9h, 01h, FFh, 18h, 02h, DFh, 01h, 20h

2. IDI Field (Identify Drive Information Field)

The data shown in Appendix 2 is stored.

To ensure the reliability of the data, the same data is stored in the following two areas: Identify Drive Information-1 and Identify Drive Information-2

3. Function Select Information Field

This field is provided for extensions. No data has been written yet.

The default value is "FFFFFFFFh" (fixed).

4. Invalid Data Flag

The purpose of this flag is to prove the validity of the CIS/Identify Drive Information data.

If the data is valid, "FFh" is written. If the data is invalid, "00h" is written and the CIS/Identify Drive Information data is stored on the next page.

In general, "FFh" is written. If correct data is not written in the data area, "00h" is set. If four or more bits are "0," the data shall be assumed to be synonymous with "00h."

5. ECC Field-1

In the case of the 256+8 bytes/page models, this area holds 3-byte ECCs (Error Correction Codes) for even-numbered page data (made up of 256 bytes).

In the case of the 512+16 bytes/page models, this area holds 3-byte ECCs for page data from byte 0 through byte 255 (made up of 256 bytes). For details on ECCs, see Appendix 3.

6. ECC Field-2

In the case of the 256+8 bytes/page models, this area holds 3-byte ECCs for odd-numbered page data (made up of 256 bytes).

In the case of the 512+16 bytes/page models, this area holds 3-byte ECCs for page data from byte 256 through byte 511 (made up of 256 bytes). For details on ECCs, see Appendix 3.

2.3. Storing Area

For the 256+8 Bytes/page models (Flash Memory):

To manage data in 512-byte units, pages are handled in pairs. The internal data configurations of the data area are shown in Fig. 2-4.

Both the data and redundant sections in normal blocks on which no data has been written yet are set to "FFh".

• Data area

Byte No.	Even-numbered page	Odd-numbered page
0-255	Storing Area-1	Storing Area-2

• Redundant area

Byte No.	Even-numbered page	Odd-numbered page
256	Reserved Field	ECC Field-2
257		
258		
259		Block Address Field-2
260	Data Status Byte	
261	Block Status Byte	ECC Field-1
262	Block Address Field-1	
263		

Fig. 2-4 Page Data in the Data Area (256+8 Bytes/Page Models, Flash Memory)

For the 512+16 Bytes/page models (Flash Memory):

The internal data configurations of the data area are shown in Fig. 2-5.

Both the data and redundant areas in normal blocks on which no data has been written yet are set to "FFh".

• Storing Area

Byte No.	All pages
0-255	Storing Area-1
256-511	Storing Area-2

• Redundant area

Byte No.	All pages
512	Reserved Field
513	
514	
515	
516	Data Status Byte
517	Block Status Byte
518	Block Address Field-1
519	
520	ECC Field-2
521	
522	
523	Block Address Field-2
524	
525	ECC Field-1
526	
527	

Fig. 2-5 Page Data in the Data Area (512+16 Bytes/Page Models, Flash Memory)

For the 512+16 Bytes/page models (MASK ROM):

The internal data configurations of the data area are shown in Fig. 2-6.

• Storing Area

Byte No.	All pages
0-255	Storing Area-1
256-511	Storing Area-2

• Redundant area

Byte No.	All pages
512	FFh (fixed)
513	FFh (fixed)
514	FFh (fixed)
515	FFh (fixed)
516	FFh (fixed)
517	FFh (fixed)
518	FFh (fixed)
519	FFh (fixed)
520	FFh (fixed)
521	FFh (fixed)
522	FFh (fixed)
523	FFh (fixed)
524	FFh (fixed)
525	FFh (fixed)
526	FFh (fixed)
527	FFh (fixed)

Fig. 2-6 Page Data in the Storing Area (512+16 Bytes/Page Models, MASK ROM)

1. Storing Area-1

Of the 512-byte data, the first half (which is made up of byte 0 through byte 255) is stored.

2. Storing Area-2

Of the 512-byte data, the second half (which is made up of byte 256 through byte 511) is stored.

3. Reserved Field

This field is reserved for extensions. The default value is "FFFFFFFFh".

4. Data Status Byte

This area indicates that "Storing Area-1" and "Storing Area-2" are not correct.
Under correct conditions, this is set to "FFh". If correct data is not written in the data area, "00h" is set.
If four or more bits are "0", the data shall be assumed to be synonymous with "00h".

5. Block Status Byte

The data in this area indicates whether the block is in order or in error.
Normally, "FFh" is written. If the block is defective, "00h" (indicative of an early-failure block) or "F0h" (indicative of a late-failure block) is set. If two or more bits are "0", the block shall be judged to be a defective block.
Within the same block, the same value is written for this data.

Note: "Block Status Byte" shows whether the block is physically valid while the "Data Status Byte" shows whether the data that is written is correct.

6. Block Address Field-1

The data in this area indicates address information for the conversion table to be consulted for block-logical-address to physical-address conversions.
Within the same block, the same value is written for this data.

D7	D6	D5	D4	D3	D2	D1	D0	256+8 Byte/page	512+16 Byte/page
0	0	0	1	0	BA9	BA8	BA7	262 Bytes (Even-numbered page) 259 Bytes (Odd-numbered page)	518, 523 Bytes
BA6	BA5	BA4	BA3	BA2	BA1	BA0	P	263 Bytes (Even-numbered page) 260 Bytes (Odd-numbered page)	519, 524 Bytes

1–16 MBytes: BA9–BA0: Block Addresses (Value = 0–"Max Logical Blocks - 1")

32–128 MBytes: BA9–BA0: Block Addresses (Value = 0–999)

P: Even parity bit

Block addresses referred to here represent addresses in the form of data segments after logical addresses have been separated by individual erasure blocks. A 4 kByte separation is adopted for the 256+8 Bytes/page models, while an 8 kByte separation is adopted for the 512+16 Bytes/page models of 4 and 8 MBytes, and a 16 kByte separation is adopted for models of 16MBytes.

7. Block Address Field-2

The data written in this area is identical to the contents of the Block Address Field- 1.

8. ECC Field-1

For the 256+8 bytes/page models, this area contains a 3-byte ECC for the even-numbered page data (made up of 256 bytes).
For the 512+16 bytes/page models, this area contains a 3-byte ECC for page data from byte 0 through byte 255 (made up of 256 bytes). For details on ECCs, see Appendix 3.

9. ECC Field-2

For the 256+8 bytes/page models, this area contains a 3-byte ECC for the odd-numbered page data (made up of 256 bytes).
For the 512+16 bytes/page models, this area contains a 3-byte ECC for page data from byte 256 through byte 511 (made up of 256 bytes). For details on ECCs, see Appendix 3.

Notes:

In a Flash Memory device, there might be a logical block that is not allocated to a physical block due to the block not being used. All data returned should be set to "FFh" when accessing this logical block.

<Appendix 1>

- **CIS Fields**

These areas store the data necessary to judge whether the formatting has been carried out in accordance with this Physical Format Specification. The data is based on the CIS (Card Information Structure) of PC cards.

* 0000h–0054h: These values should not be changed by users. (fixed) (0000h–0009h are used to judge the format specification.)

* 0055h–007Fh: Some of these values can be changed by users.

Table A-1 shows default values that have been set in CIS fields. Actual on-memory addresses can be calculated by adding the start address of a given CIS field to each individual address shown in the table below.

Table A-1 CIS Area Default Values

Addr	+0	+1	+2	+3	+4	+5	+6	+7
0000h	01h	03h	D9h	01h	FFh	18h	02h	DFh
0008h	01h	20h	04h	00h	00h	00h	00h	21h
0010h	02h	04h	01h	22h	02h	01h	01h	22h
0018h	03h	02h	04h	07h	1Ah	05h	01h	03h
0020h	00h	02h	0Fh	1Bh	08h	C0h	C0h	A1h
0028h	01h	55h	08h	00h	20h	1Bh	0Ah	C1h
0030h	41h	99h	01h	55h	64h	F0h	FFh	FFh
0038h	20h	1Bh	0Ch	82h	41h	18h	EAh	61h
0040h	F0h	01h	07h	F6h	03h	01h	EEh	1Bh
0048h	0Ch	83h	41h	18h	EAh	61h	70h	01h
0050h	07h	76h	03h	01h	EEh			

(Note 1), (Note 2)

0055h	15h	***14h***	05h	00h

- Name of Manufacture (‘ ’ 7 characters is preferable)

.....	***20h***	***20h***	***20h***	***20h***	***20h***	***20h***	***20h***	00h

- Name of Product (‘ ’ 4 characters is preferable)

.....	***20h***	***20h***	***20h***	***20h***	00h

- Product Version (‘0.0’ 3 characters is preferable)

.....	***30h***	***2Eh***	***30h***	00h	FFh

.....	14h	00h	FFh	00h	00h 00h
007Fh	00h				

Note 1: Only the half-toned areas can be changed.

Note 2: The values change due to the number of characters in Manufacturer Name, Product Name, and Product Version.
“The number of characters within the area surrounded by broken lines + 2” is set.

Note 3: Only the contents and the number of characters can be changed for the Manufacturer Name, Product Name, and Product Version.

<Appendix 2>

• Identify Drive Information Field

These areas are specified as the accessible data area to the ATA-interface-equipped host system. The default value is "00h."

The Identify Drive Information (Identify Device Information) is an ATA-interface command. The Identify Drive Information Area stores portions of the data that is returned to the host system using this command.

Table A-2 Identify Drive Information Field

Identify Drive Information Word Address	Identify Drive Information	256+8 Bytes/Page	512+16 Bytes/Page
7,8,9 Word Address	Vendor Unique	128–133 Bytes (Even-numbered page) 128–133 Bytes (Odd-numbered page)	128–133 Bytes 384–389 Bytes
10-19 Word Address	Serial Number	134–153 Bytes (Even-numbered page) 134–153 Bytes (Odd-numbered page)	134–153 Bytes 390–409 Bytes
27-46 Word Address	Model Number	154–193 Bytes (Even-numbered page) 154–193 Bytes (Odd-numbered page)	154–193 Bytes 410–449 Bytes
128-158 Word Address	Vendor Unique	194–255 Bytes (Even-numbered page) 194–255 Bytes (Odd-numbered page)	194–255 Bytes 450–511 Bytes

<Appendix 3>

• ECC scheme

In the case of the ECC scheme adopted for this Format Specification, 22 bits of ECC (Error Correction Code) are added for every 256 bytes of the Storing area. ECC Field-1 and ECC Field-2 are used for Storing Area-1 and Storing Area-2, respectively.

The ECC scheme is capable of single-bit correction and 2-bit random-error detection. ECCs are generated only for data areas and no ECC is generated for page-data redundant areas containing ECCs. This is because the data in the page-data redundant area is duplicated for reliability and this duplication (redundancy) provides a means of checking the integrity of the data. For ECC calculations, 256 bytes are handled in the form of 2048-bit serial data. In the event of an error, the error-correction feature can detect the bit location of the error that has occurred based on the results of a parity check and correct the data.

• Definition of the Location Addresses of 2048-Bit Serial Data

256 bytes are arranged in a serial-data format or a single stream of bits.

	bit 7	bit 6					bit 1	bit 0
1st Byte	00000000 111	00000000 110					00000000 001	00000000 000
2nd Byte	00000001 111	00000001 110					00000001 001	00000001 000
255th Byte	11111110 111	11111110 110					11111110 001	11111110 000
256th Byte	11111111 111	11111111 110					11111111 001	11111111 000

In the above diagram, the top row represents the first byte input and the bottom row represents the 256th byte input. In other words, Bit 0 of the first byte becomes the first bit (whose address is 00000000 000) of the 2048-bit stream while bit 7 of the 256th byte becomes the 2048th bit (address = 11111111 111) of the 2048-bit stream.

• Generation of Parity Data

There are a total of 22 bits of parity data (6 bits for column parity and 16 bits for line parity) as follows: CP0, CP1, CP2, CP3, CP4, CP5, LP00, LP01, LP02, LP03, ..., LP14, and LP15. The parity data that have been generated are stored in the page-data redundant area in the order shown below:

Table A-3 ECC Data Arrangement

bit7	bit6	bit5	bit4	bit3	bit2	bit1	bit0	256+8 Bytes/Page	512+16 Bytes/Page
LP07	LP06	LP05	LP04	LP03	LP02	LP01	LP00	256, 261 Bytes	520, 525 Bytes
LP15	LP14	LP13	LP12	LP11	LP10	LP09	LP08	257, 262 Bytes	521, 526Bytes
CP5	CP4	CP3	CP2	CP1	CP0	“1”	“1”	258, 263 Bytes	522, 527Bytes

Line parity (LP) and column parity (CP) represent 1024-bit odd parity. Each parity data satisfies the corresponding condition shown below:

LP00 = D (*******0 , ***)
LP01 = D (*******1 , ***)
LP02 = D (******0* , ***)
LP03 = D (******1* , ***)
LP04 = D (*****0** , ***)
LP05 = D (*****1** , ***)
LP06 = D (****0*** , ***)
LP07 = D (****1*** , ***)
LP08 = D (***0**** , ***)
LP09 = D (***1**** , ***)
LP10 = D (**0***** , ***)
LP11 = D (**1***** , ***)
LP12 = D (*0****** , ***)
LP13 = D (*1****** , ***)
LP14 = D (0******* , ***)
LP15 = D (1******* , ***)

CP0 = D (******** , **0)
CP1 = D (******** , **1)
CP2 = D (******** , *0*)
CP3 = D (******** , *1*)
CP4 = D (******** , 0**)
CP5 = D (******** , 1**)

Where * represents “0” or “1”.

<Appendix 4>

Default values that are set in the CIS/IDI Field are shown in Tables A-4 and A-5.

Table A-4 CIS/Identify Drive Information Default Data for the 256+8 Bytes/page models

• Even-numbered page

```
Data Adr 000h |01|03|d9|01|ff|18|02|df|01|20|04|00|00|00|00|21|
Data Adr 010h |02|04|01|22|02|01|01|22|03|02|04|07|1a|05|01|03|
Data Adr 020h |00|02|0f|1b|08|c0|c0|a1|01|55|08|00|20|1b|0a|c1|
Data Adr 030h |41|99|01|55|64|f0|ff|ff|20|1b|0c|82|41|18|ea|61|
Data Adr 040h |f0|01|07|f6|03|01|ee|1b|0c|83|41|18|ea|61|70|01|
Data Adr 050h |07|76|03|01|ee|15|14|05|00|20|20|20|20|20|20|20|
Data Adr 060h |00|20|20|20|20|00|30|2e|30|00|ff|14|00|ff|00|00|
Data Adr 070h |00|00|00|00|00|00|00|00|00|00|00|00|00|00|00|00|
Data Adr 080h |00|00|00|00|00|00|00|00|00|00|00|00|00|00|00|00|
Data Adr 090h |00|00|00|00|00|00|00|00|00|00|00|00|00|00|00|00|
Data Adr 0a0h |00|00|00|00|00|00|00|00|00|00|00|00|00|00|00|00|
Data Adr 0b0h |00|00|00|00|00|00|00|00|00|00|00|00|00|00|00|00|
Data Adr 0c0h |00|00|00|00|00|00|00|00|00|00|00|00|00|00|00|00|
Data Adr 0d0h |00|00|00|00|00|00|00|00|00|00|00|00|00|00|00|00|
Data Adr 0e0h |00|00|00|00|00|00|00|00|00|00|00|00|00|00|00|00|
Data Adr 0f0h |00|00|00|00|00|00|00|00|00|00|00|00|00|00|00|00|
Data Adr 100h |ff|ff|ff|ff|ff|ff|00|00|
```

• Odd-numbered page

```
Data Adr 000h |01|03|d9|01|ff|18|02|df|01|20|04|00|00|00|00|21|
Data Adr 010h |02|04|01|22|02|01|01|22|03|02|04|07|1a|05|01|03|
Data Adr 020h |00|02|0f|1b|08|c0|c0|a1|01|55|08|00|20|1b|0a|c1|
Data Adr 030h |41|99|01|55|64|f0|ff|ff|20|1b|0c|82|41|18|ea|61|
Data Adr 040h |f0|01|07|f6|03|01|ee|1b|0c|83|41|18|ea|61|70|01|
Data Adr 050h |07|76|03|01|ee|15|14|05|00|20|20|20|20|20|20|20|
Data Adr 060h |00|20|20|20|20|00|30|2e|30|00|ff|14|00|ff|00|00|
Data Adr 070h |00|00|00|00|00|00|00|00|00|00|00|00|00|00|00|00|
Data Adr 080h |00|00|00|00|00|00|00|00|00|00|00|00|00|00|00|00|
Data Adr 090h |00|00|00|00|00|00|00|00|00|00|00|00|00|00|00|00|
Data Adr 0a0h |00|00|00|00|00|00|00|00|00|00|00|00|00|00|00|00|
Data Adr 0b0h |00|00|00|00|00|00|00|00|00|00|00|00|00|00|00|00|
Data Adr 0c0h |00|00|00|00|00|00|00|00|00|00|00|00|00|00|00|00|
Data Adr 0d0h |00|00|00|00|00|00|00|00|00|00|00|00|00|00|00|00|
Data Adr 0e0h |00|00|00|00|00|00|00|00|00|00|00|00|00|00|00|00|
Data Adr 0f0h |00|00|00|00|00|00|00|00|00|00|00|00|00|00|00|00|
Data Adr 100h |0c|cc|c3|00|00|0c|cc|c3|
```

Table A-5 CIS/Identify Drive Information Default Data for the 512+16 Bytes/page models

Data Adr 000h	01	03	d9	01	ff	18	02	df	01	20	04	00	00	00	21
Data Adr 010h	02	04	01	22	02	01	01	22	03	02	04	07	1a	05	01	03
Data Adr 020h	00	02	0f	1b	08	c0	c0	a1	01	55	08	00	20	1b	0a	c1
Data Adr 030h	41	99	01	55	64	f0	ff	ff	20	1b	0c	82	41	18	ea	61
Data Adr 040h	f0	01	07	f6	03	01	ee	1b	0c	83	41	18	ea	61	70	01
Data Adr 050h	07	76	03	01	ee	15	14	05	00	20	20	20	20	20	20	20
Data Adr 060h	00	20	20	20	20	00	30	2e	30	00	ff	14	00	ff	00	00
Data Adr 070h	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
Data Adr 080h	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
Data Adr 090h	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
Data Adr 0a0h	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
Data Adr 0b0h	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
Data Adr 0c0h	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
Data Adr 0d0h	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
Data Adr 0e0h	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
Data Adr 0f0h	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
Data Adr 100h	01	03	d9	01	ff	18	02	df	01	20	04	00	00	00	21
Data Adr 110h	02	04	01	22	02	01	01	22	03	02	04	07	1a	05	01	03
Data Adr 120h	00	02	0f	1b	08	c0	c0	a1	01	55	08	00	20	1b	0a	c1
Data Adr 130h	41	99	01	55	64	f0	ff	ff	20	1b	0c	82	41	18	ea	61
Data Adr 140h	f0	01	07	f6	03	01	ee	1b	0c	83	41	18	ea	61	70	01
Data Adr 150h	07	76	03	01	ee	15	14	05	00	20	20	20	20	20	20	20
Data Adr 160h	00	20	20	20	20	00	30	2e	30	00	ff	14	00	ff	00	00
Data Adr 170h	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
Data Adr 180h	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
Data Adr 190h	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
Data Adr 1a0h	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
Data Adr 1b0h	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
Data Adr 1c0h	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
Data Adr 1d0h	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
Data Adr 1e0h	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
Data Adr 1f0h	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00

Data Adr 200h	ff	ff	ff	ff	ff	ff	00	00	0c	cc	c3	00	00	0c	cc	c3

(Flash Memory)

Data Adr 200h	ff	ff	ff	ff	ff	ff	ff	ff	ff	ff	ff	ff	ff	ff	ff	ff

(MASK ROM)

<Appendix 5>

The Technical Committee of the SSFDC Forum recommends the DOS format be used as the logical format that precedes the physical format layer. For the DOS format, please refer to the "SmartMedia™ Logical Format Specification," and others.

The parameters that are required for the DOS format are shown in Table A-6.

Table A-6 Logical Format Parameters

Model	Cylinders	Heads/track	Sectors/head	Total sector count
1 MByte	125	4	4	2,000
2 MBytes	125	4	8	4,000
4 MBytes	250	4	8	8,000
8 MBytes	250	4	16	16,000