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//

SYS-772 Ver.2.0 for S-750/770
Hard Disk/MO Disk/CD-ROM Format Manual

revision 1.00 May. 7, 1991

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[1] definitions

1 block = 512 bytes
1 cluster = 18 blocks (512 * 18 = 9216 bytes)

[2] table of areas of HD/MO/CD-ROM

	start block(Hex)
1. ID area	0000 -
2. Reserved area (work area for device check)	0001 - 0003
3. System Program area	0004 - 0403
4. FAT(file alocation table) area	0404 - 0503
5. Directory area - Volume files	0504 - 050B
- Performance files	050C - 052B
- Patch files	052C - 056B
- Partial files	056C - 086B
- Sample files	086C - 086B
6. Parameter area - Volume files	086C - 08AB
- Performance files	08AC - 0AAB
- Patch files	0AAC - 0EAB
- Partial files	0EAC - 12AB
- Sample files	12AC - 15AB
7. Wave Data area	15AC -

[3] ID area 0000 -

start: 0000_0000 block / length: 0000_0001 block

```
(block/offset)
  0000/ 000h:   .byte   00h,00h,00h,00h
  0000/ 004h:   .byte   'S770 MR25A',00h,20h
  0000/ 010h:   .byte   '           ',FEh
  0000/ 020h:   .byte   'S-770 Hard Disk  Ver. X.XX      ',FEh
  0000/ 040h:   .byte   '    Copyright   Roland          ',FEh
  0000/ 080h:   ( reserved FFh )                    (160 byte)
  0000/ 100h:   Hard Disk name ( Drive name )       ( 16 byte)
  0000/ 110h:   Hard Disk Capacity                  (  4 byte)
  0000/ 114h:   file number of volume               (  2 byte)
  0000/ 116h:   file number of performance          (  2 byte)
  0000/ 118h:   file number of patch                (  2 byte)
  0000/ 11Ah:   file number of partial              (  2 byte)
  0000/ 11Ch:   file number of sample               (  2 byte)
  0000/ 11Eh:   ( reserved FFh )                    (226 byte)
```

[4] Reserved area (work area for device check) 0001 - 0003

start: 0000_0001 block / length: 0000_0003 block

*) work area for device check (read or write)

[5] System Program area 0004 - 0403

start: 0000_0004 block / length: 0000_0400 block

*) You should not write this area without the S-770/S-750 !!

[6] FAT(file alocation table) area 0404 - 0503

start: 0000_0404 block / length: 0000_0100 block

```
FAT[    0] = FFFAh       (reverved) FAT ID
FAT[    1] = FAT remain  (*1)
FAT[    2] = next FAT or FFF8h(FAT end)
FAT[    3] = next FAT or FFF8h(FAT end)
                 !
FAT[FFF4] = next FAT or FFF8h(FAT end)
FAT[FFF5] = next FAT or FFF8h(FAT end)
FAT[FFF6] = FFF8h(FAT end)
FAT[FFF7] = FFFFh
FAT[FFF8] = FFFFh
FAT[FFF9] = FFFFh
FAT[FFFA] = FFFFh
FAT[FFFB] = FFFFh
FAT[FFFC] = FFFFh
FAT[FFFD] = FFFFh
FAT[FFFE] = FFFFh
FAT[FFFF] = FFF?h        (*2) Format type (Ver.1.0/Ver.2.0)
```

(65536 - 11) * 18 * 512 = 603,878,400 byte Max

(*) FAT entry

0000h	Free (Not use)
0001h	Reserved
0002h - FFF6h	FAT chain
FFF7h	Error Cluster
FFF8h - FFFFh	End Cluster

(*1) total number of Free (Not use) Clusters.

(*2) In case of 'FFFFh', Ver.1.0 Format.
In case of 'FFFEh', Ver.2.0 Format, using Link pointer in Directory area.

[7] Directory area 0504 - 086B

* Volume Directory. Volume: 128

start: 0000_0504 block / length: 0000_0008 block

```
0504/ 000h:   Volume -  1 directory   ( 32 byte)
0504/ 020h:   Volume -  2 directory   ( 32 byte)
0504/ 040h:   Volume -  3 directory   ( 32 byte)
0504/ 060h:   Volume -  4 directory   ( 32 byte)
0504/ 080h:   Volume -  5 directory   ( 32 byte)
                 !
050B/ 1E0h:   Volume -128 directory   ( 32 byte)
```

* Performanoe Directory. Performance: 512

```
start: 0000_050C block / length: 0000_0020 block
-------------------------------------------------------------
  050C/ 000h:   Performance -   1 directory      ( 32 byte)
  050C/ 020h:   Performance -   2 directory      ( 32 byte)
  050C/ 040h:   Performance -   3 directory      ( 32 byte)
  050C/ 060h:   Performance -   4 directory      ( 32 byte)
  050C/ 080h:   Performance -   5 directory      ( 32 byte)
                |
  052B/ 1E0h:   Performance -512 directory       ( 32 byte)
```

```
+ Patch Directory.                                  Patch:     1024
start: 0000_052C block / length: 0000_0040 block
-------------------------------------------------------------
  052C/ 000h:   Patch -   1 directory            ( 32 byte)
  052C/ 020h:   Patch -   2 directory            ( 32 byte)
  052C/ 040h:   Patch -   3 directory            ( 32 byte)
  052C/ 060h:   Patch -   4 directory            ( 32 byte)
  052C/ 080h:   Patch -   5 directory            ( 32 byte)
                |
  056B/ 1E0h:   Patch -1024 directory            ( 32 byte)
```

```
+ Partial Directory.                                Partial:   4096
start: 0000_056C block / length: 0000_0100 block
-------------------------------------------------------------
  056C/ 000h:   Partial -   1 directory          ( 32 byte)
  056C/ 020h:   Partial -   2 directory          ( 32 byte)
  056C/ 040h:   Partial -   3 directory          ( 32 byte)
  056C/ 060h:   Partial -   4 directory          ( 32 byte)
  056C/ 080h:   Partial -   5 directory          ( 32 byte)
                |
  066B/ 1E0h:   Partial -4096 directory          ( 32 byte)
```

```
+ Sample Directory.                                 Sample:    8192
start: 0000_066C block / length: 0000_0200 block
-------------------------------------------------------------
  066C/ 000h:   Sample -   1 directory           ( 32 byte)
  066C/ 020h:   Sample -   2 directory           ( 32 byte)
  066C/ 040h:   Sample -   3 directory           ( 32 byte)
  066C/ 060h:   Sample -   4 directory           ( 32 byte)
  066C/ 080h:   Sample -   5 directory           ( 32 byte)
                |
  086B/ 1E0h:   Sample -8192 directory           ( 32 byte)
```

(*) Directory Format.

```
      +---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+
000   |          Name          ( 16 byte )                            |
      +---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+
010   |(1)|(2)|  (5)  |  (6)  |  (7)  |    (X)    |(8)|  (3)  |  (4)  |
      +---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+
```

(1) = File type.
- 40h = Volume.
- 41h = Performance.
- 42h = Patch.
- 43h = Partial.
- 44h = Sample.

(2) - File attribution. (ignore)

- bit 0 ... write Protect.
- bit 1 ... read only.
- bit 2 ...
- bit 3 ...
- bit 4 ...

bit 5 ...
bit 6 ...
bit 7 ...

(3) = FAT entry. (only Sample file)

(4) = File capacity. (number of total Clusters, only Sample)

(5) = Forward Link pointer
0000h ; in case of Ver.1.0 format
8000h + N ; to #N file
FFFFh ; end of List (this file is the bottom of list)

(6) = Backward Link pointer
0000h ; in case of Ver.1.0 format
8000h + N ; to #N file
FFFFh ; end of List (this file is the top of list)

(7) = Link Number

(8) = Program Change number (for Volume and Performance)
00h ; in case of Ver.1.0 format
80h + N ; Program Change number = N

(X) = reserved 00h

(**) The top of the file name.
in case of '00h', this file is virginal one.
in case of 'FEh', this file was deleted.

086C - 15AB

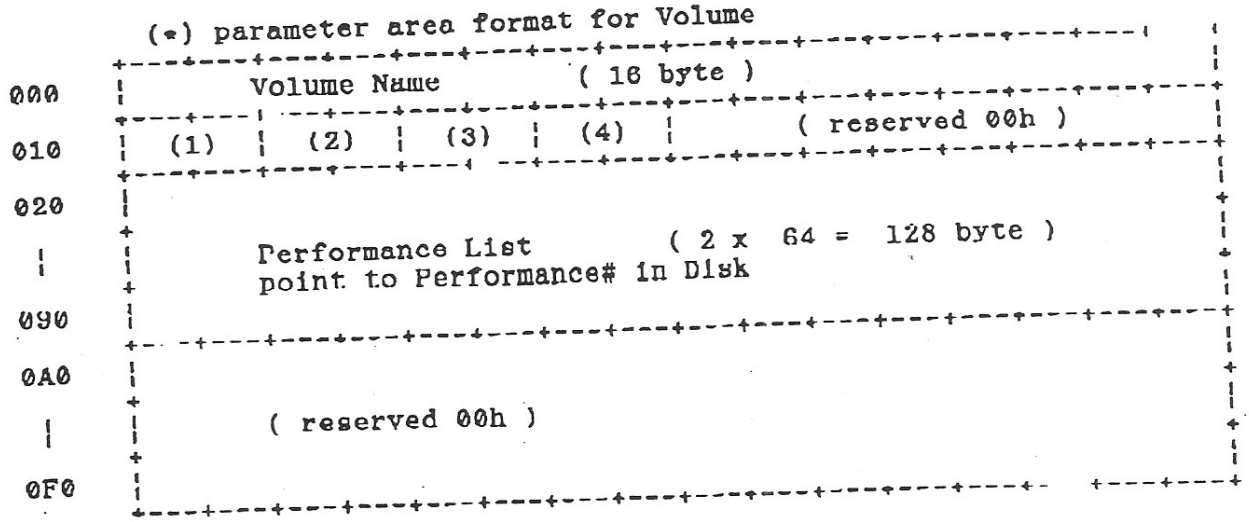
[8] Parameter area

Volume: 128

+ Volume Parameter.
start: 0000_086C block / length: 0000_0040 block

086C/ 000h:	Volume - 1 Parameter	(256 byte)
086C/ 100h:	Volume - 2 Parameter	(256 byte)
086D/ 000h:	Volume - 3 Parameter	(256 byte)
086D/ 100h:	Volume - 4 Parameter	(256 byte)
086E/ 000h:	Volume - 5 Parameter	(256 byte)
	:	
08AB/ 100h:	Volume -128 Parameter	(256 byte)

(*) parameter area format for Volume



(1) = Total number of Performance. (ignore)
(2) = Total number of Patch. (ignore)
(3) = Total number of Partial. (ignore)

(4) = Total number of Sample. (ignore)

+ Performance Parameter. Performance: 512
start: 0000_08AC block / length: 0000_0200 block

08AC/ 000h:	Performance - 1 Parameter	(512 byte)
08AD/ 000h:	Performance - 2 Parameter	(512 byte)
08AE/ 000h:	Performance - 3 Parameter	(512 byte)
08AF/ 000h:	Performance - 4 Parameter	(512 byte)
08B0/ 000h:	Performance - 5 Parameter	(512 byte)
	¦	
0AAB/ 000h:	Performance -512 Parameter	(512 byte)

(*) parameter area format for Performance

000	Performance Parameter (256 byte)
¦	(*) see [10] Parameter Map
0F0	
100	Patch List (2 x 32 = 64 byte)
¦	point to Patch# in Disk
130	
140	(reserved 00h)
¦	
1F0	

+ Patch Parameter. Patch: 1024
start: 0000_0AAC block / length: 0000_0400 block

0AAC/ 000h:	Patch - 1 Parameter	(512 byte)
0AAD/ 000h:	Patch - 2 Parameter	(512 byte)
0AAE/ 000h:	Patch - 3 Parameter	(512 byte)
0AAF/ 000h:	Patch - 4 Parameter	(512 byte)
0AB0/ 000h:	Patch - 5 Parameter	(512 byte)
	¦	
0EAB/ 000h:	Patch -1024 Parameter	(512 byte)

(*) parameter area format for Patch

000	Patch Parameter (256 byte)
¦	(*) see [10] Parameter MAP
0F0	
100	Partial List (2 x 88 = 176 byte)
¦	point to Partial# in Disk
1A0	
1B0	(reserved 00h)
¦	
1F0	

+ Partial Parameter. Partial: 4096
start: 0000 0EAC block / length: 0000_0400 block

0EAC/ 000h:	Partial -	1 Parameter	(128 byte)
0EAC/ 080h:	Partial -	2 Parameter	(128 byte)
0EAC/ 100h:	Partial -	3 Parameter	(128 byte)
0EAC/ 180h:	Partial -	4 Parameter	(128 byte)
0EAD/ 000h:	Partial -	5 Parameter	(128 byte)
	!		
12AB/ 180h:	Partial -4096	Parameter	(128 byte)

(*) see [10] Parameter Map

+ Sample Parameter. Sample: 8192
start: 0000_12AC block / length: 0000_0300 block

12AC/ 000h:	Sample -	1 Parameter	(48 byte)
12AC/ 080h:	Sample -	2 Parameter	(48 byte)
12AC/ 060h:	Sample -	3 Parameter	(48 byte)
12AC/ 090h:	Sample -	4 Parameter	(48 byte)
12AC/ 0C0h:	Sample -	5 Parameter	(48 byte)
	!		
15AB/ 1D0h:	Sample -8192	Parameter	(48 byte)

(*) see [10] Parameter Map

[9] Wave Data area 15AC -

start: 0000_15AC block / length: xxxx_xxxx block

+ 40M hard disk. (total 82,755 blocks= 42,370,560 byte)
(82,755 - 5,548) / 18 = 4,289 (10C1h) Cluster

+ 80M hard disk. (total 156,370 blocks= 80,061,440 byte)
(156,370 - 5,548) / 18 = 8,379 (20BBh) Cluster

+ 300M MO disk. (total 542,618 blocks= 277,820,416 byte)
(542,618 - 5,548) / 18 = 29,837 (748Dh) Cluster

[10] Parameter Map

+ Performance Parameter. (256 byte)

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
000	Performance Name (16 byte in ASCII)															
010	Patch Sel (Part 1-32)															
020																
030	MIDI Ch (*1)															
040	Part Level (*1)															
050																
060	Part Zone Lower															
070																

080	Part Zone Upper							
090								
0a0	Lower Fade Width							
0b0								
0c0	Upper Fade Width							
0d0								
0e0	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
0f0	Vel Curve Type							

(1) = Program Change (0=Off/1=On, bit image)
(2) = Pitch Bend (0=Off/1=On, bit image)
(3) = Modulation (0=Off/1=On, bit image)
(4) = Hold Pedal (0=Off/1=On, bit image)
(5) = Bend Range (0=Off/1=On, bit image)
(6) = MIDI Volume (0=Off/1=On, bit image)
(7) = After Touch Switch (0=Off/1=On, bit image)
(8) = After Touch mode (0=Channel/1=Poly, bit image)

(*1) MIDI ch, Part Level

ADRS 030h lower 4 bit = Part - 1 MIDI Ch
ADRS 030h upper 4 bit = Part - 2 MIDI Ch
.....
ADRS 03fh lower 4 bit = Part -31 MIDI Ch
ADRS 03fh upper 4 bit = Part -32 MIDI Ch

ADRS 040h bit7 = Part - 1 MIDI Ch Off/On switch (0.. Off/1.. On)
ADRS 040h lower 7 bit = Part - 1 Level
ADRS 041h bit7 = Part - 2 MIDI Ch Off/On switch
ADRS 041h lower 7 bit = Part - 2 Level
.....

+ Patch Parameter. (256 byte)

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
000	Patch Name (16 byte in ASCII)															
010	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(a)	(b)	(c)	(d)	(i)	(j)	(X)
020	Partial Sel (88key)															
030																
070	(reserved)															
080	Assign Type (88key)															
090																
0d0	(reserved)															
0e0	Bender(c)				After Touch (f)						Modulation (g)					(X)
0f0	Controller (h)								(reserved)							

(1) = Program Change #
(2) = Stereo MIX Level
(3) = Total Pan
(4) = Patch Level
(5) = Output Assign (6outs Mode)
(6) = Priority
(7) = Cutoff
(8) = Vel Sens
(9) = Oct.Shift
(a) = Coarse Tune
(b) = Fine Tune
(c) = SMT Ctrl sel
(d) = SMT Ctrl Sens
(e) = Bender
- 0E0: = Pitch Ctrl Up
- 0E1: = Pitch Ctrl Down
- 0E2: = TVA Ctrl
- 0E3: = TVF Ctrl

(f) = After Touch
- 0E4: = Pitch Ctrl
- 0E5: = TVA Ctrl
- 0E6: = TVF Ctrl
- 0E7: = LFO Rate Ctrl
- 0E8: = LFO Pitch Depth
- 0E9: = LFO TVA Depth
- 0EA: = LFO TVF Depth

(g) = Modulation
- 0EB: = LFO Rate Ctrl
- 0EC: = LFO Pitch Depth
- 0ED: = LFO TVA Depth
- 0EE: = LFO TVF Depth

(h) = Contoroller
- 0F0: = Control #
- 0F1: = Pitch Ctrl
- 0F2: = TVA Ctrl
- 0F3: = TVF Ctrl
- 0F4: = LFO Rate Ctrl
- 0F5: = LFO Pitch Ctrl
- 0F6: = LFO TVA Depth
- 0F7: = LFO TVF Depth

(i) = Out Assign (8outs Mode)
(j) = Analog Feel

(X) = 00h

+ Partial Parameter. (128 byte)

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
000	Partial Name (16 byte in ASCII)															
010	Sample 1 (c)											(X)	(1)	(2)	(3)	(4)
020	Sample 2 (c)											(X)	(5)	(6)	(7)	(8)
030	Sample 3 (c)											(reserve)				
040	Sample 4 (c)															
050	TVF (9)															
060	TVA (a)															

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
070	LFO Generator (b)												(reserved)			

(1) = Output Assign (8outs Mode)
(2) = Stereo MIX Level
(3) = Partial Level
(4) = Output Assign (6outs Mode)
(5) = Pan
(6) = Coarse Tune
(7) = Fine Tune
(8) = Breath Ctrl
(9) = TVF

- 04B: = Filter Mode
- 04C: = Cutoff
- 04D: = Resonance
- 04E: = Vel Curve Type
- 04F: = Vel Curve Ratio
- 050: = Time Vel Sens
- 051: = Cutoff Vel Sens
- 052: = Level 0,4
- 053: = Level 1
- 054: = Level 2
- 055: = Level 3(S)
- 056: = Time 1
- 057: = Time 2
- 058: = Time 3
- 059: = Time 4(R)
- 05A: = ENV TVF Depth
- 05B: = ENV Pitch Depth
- 05C: = TVF KF Point
- 05D: = ENV Time KF
- 05E: = ENV Depth KF
- 05F: = Cutoff KF

(a) = TVA

- 060: = Vel Curve Type
- 061: = Vel Curve Ratio
- 062: = Time Vel Sens
- 063: = Level 0,4
- 064: = Level 1
- 065: = Level 2
- 066: = Level 3
- 067: = Time 1
- 068: = Time 2
- 069: = Time 3
- 06A: = Time 4
- 06B: = (reserve)
- 06C: = TVA KF Point
- 06D: = ENV Time KF
- 06E: = (reserve)
- 06F: = Level KF

(b) = LFO Generater

- 070: = Wave Form
- 071: = Rate
- 072: = Key Sync
- 073: = Delay
- 074: = Delay KF
- 075: = Detune
- 076: = Pitch Mod Depth
- 077: = TVF Mod Depth
- 078: = TVA Mod Depth

(c) = Sample 1 - 4

- offset 000: = Sample Sel (word)
- offset 002: = Pitch KF
- offset 003: = Sample Level
- offset 004: = Pan
- offset 005: = Coarse Tune
- offset 006: = Fine Tune
- offset 007: = SMT Vel Lower
- offset 008: = SMT Lower Fade Width
- offset 009: = SMT Vel Upper
- offset 00A: = SMT Upper Fade Width

(X) = 00h

+ Sample parameter. (48 byte)

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
000	Sample Name (16 byte)															
010	Start Point				S-Loop start				S-Loop end				R-Loop start			
020	R-Loop end			(1)	(2)	(3)	(4)	seg top		seg len		(5)	(6)	(7)		

(1) = Loop Mode
(2) = S-Loop Enable

(3) = S-Loop Tune
(4) - R-Loop Tune
(5) = Sample Frequency / Sample Mode
(6) = Original Key
(7) = (ignore)

* start/loop1/end1/loop2/end2
  offset 000: fine
  offset 001: address LSB
  offset 002: address
  offset 003: address MSB

* seg top: 0-... segment top number
* seg len: 1-... segment length