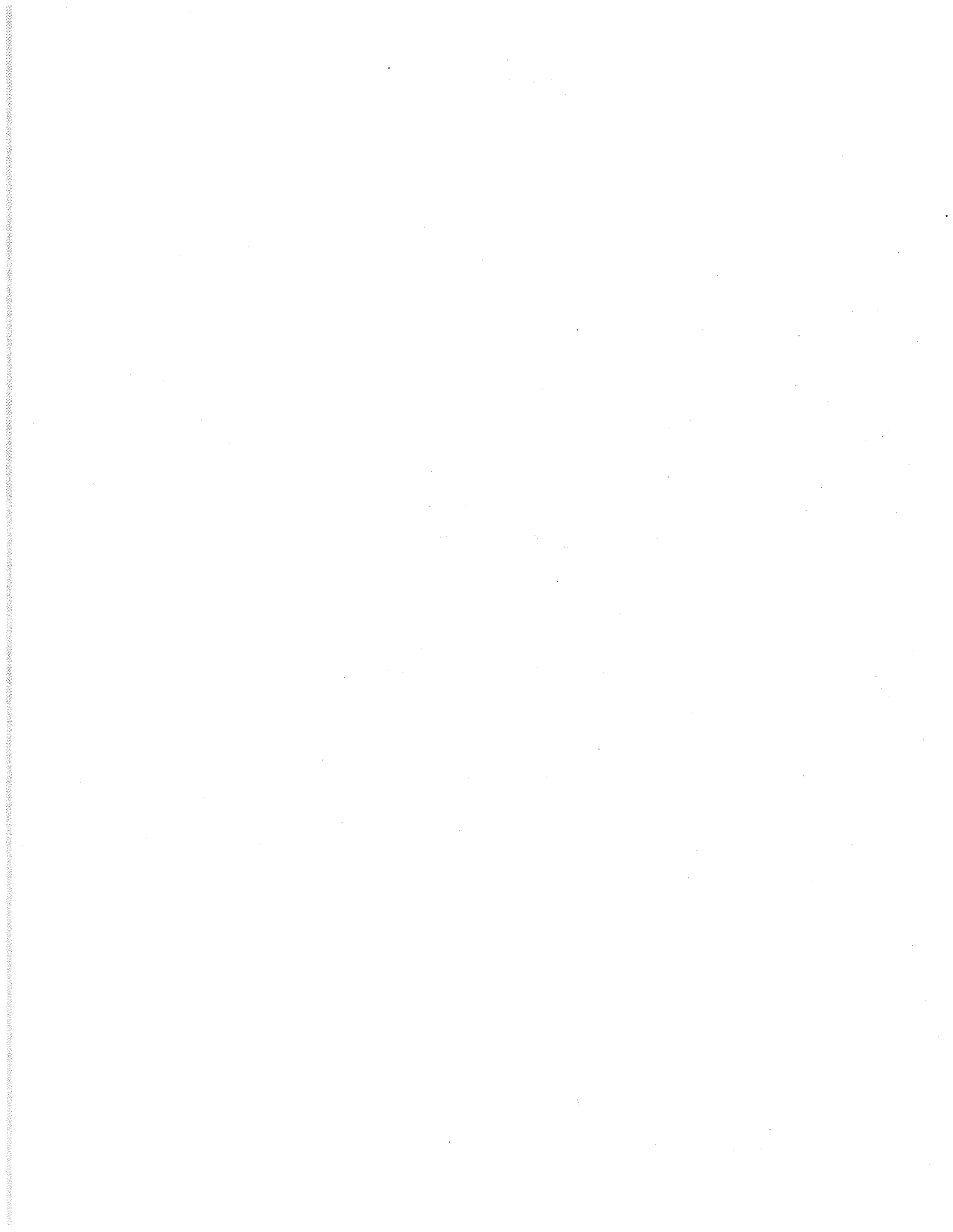


Frob-Coleco User's Manual

Appendix D.

COLECOVISION MONITOR DISASSEMBLY



D.1 ColecoVision Monitor Disassembly Listing

```

1          TITLE  CMON.MAC
2          .Z80
3          .RADIX 16
4          ;
5          ; THIS IS THE DISASSEMBLY OF THE 8K MONITOR ROM THAT RESIDES IN THE
6          ; COLECO VIDEO GAME UNIT.
7          ;
8          ;
9          ; COLECO      SYMBOLS
10         ;
11         ;
12         ; FIRST SOME RAM AREA DECLARATIONS
13         ;
14         7020      APOINT EQU    7020    ; ARRAY POINTER
15         ;
16         7022      NOISEP EQU    7022    ; POINTER TO PROGRAM FOR NOISE GENERATOR
17         7024      TONE1P EQU    7024    ; POINTER TO PROGRAM FOR TONE1 GENERATOR
18         7026      TONE2P EQU    7026    ; POINTER TO PROGRAM FOR TONE2 GENERATOR
19         7028      TONE3P EQU    7028    ; POINTER TO PROGRAM FOR TONE3 GENERATOR
20         702A      NOICSH EQU    702A    ; NOISE CONTROL REGISTER SHADOW
21         ;
22         73BA      P.AREA EQU    73BA    ; AREA USED BY PCOPY TO HOLD PARAMETERS
23         ;          ; PASSED TO MONITOR ROUTINES FROM EXTERNALS
24         ;
25         73C3      VDPOSH EQU    73C3    ; SHADOW OF VDP REGISTER #0
26         73C4      VDP1SH EQU    73C4    ; SHADOW OF VDP REGISTER #1
27         ;
28         73C6      STRFLG EQU    73C6    ; SOME SCRACH SPACE
29         73C7      CPFLAG EQU    73C7    ; IF 1, THEN RCOPY CAN DO RAM XFER ON A CODE=0
30         73C8      RNDSED EQU    73C8    ; 16 BIT SEED FOR THE PSEUDORANDOM NUMBER ROUTINE
31         ;
32         73D7      CSTATP EQU    73D7    ; POINTER TO GAME CONTROLLER STATE CONTROL TABLE
33         73FE      TEMP3  EQU    73FE
34         ;
35         73EB      PCNT1  EQU    73EB    ; PULSE COUNTER #1
36         73EC      PCNT2  EQU    73EC    ; PULSE COUNTER #2
37         ;
38         73EE      JS1SH  EQU    73EE    ; SHADOW FOR JOYSTICK #1
39         73EF      JS2SH  EQU    73EF    ; SHADOW FOR JOYSTICK #2
40         73F0      KP1SH  EQU    73F0    ; SHADOW FOR KEYPAD #1
41         73F1      KP2SH  EQU    73F1    ; SHADOW FOR KEYPAD #2
42         ;
43         73F2      BASESH EQU    73F2    ; SHADOW ARRAY FOR URAM BLOCK ADDRESSES
44         73F2      SATASH EQU    73F2    ; SPRITE ATTRIBUTE TABLE ADDRESS
45         73F4      SPGASH EQU    73F4    ; SPRITE PATTERN GENERATOR ADDRESS
46         73F6      NTASH  EQU    73F6    ; NAME TABLE ADDRESS
47         73F8      PGASH  EQU    73F8    ; PATTERN GENERATOR ADDRESS
48         73FA      CTASH  EQU    73FA    ; COLOR TABLE ADDRESS
49         ;
50         73B9      STACK  EQU    73B9    ; INITAL STACK POSITION
51         8021      NHISER EQU    8021    ; ADDRESS OF NMI INTERRUPT SERVICE ROUTINE
52         8000      STFADR EQU    8000    ; ADDRESS OF START FLAG IN CARTRIDGE
53         800A      CSTART EQU    800A    ; CARTRIDGE PROGRAM START ADDRESS
54         ;
55         0080      KEY    EQU    080    ; OUTPUT TO THIS PORT TO SELECT KEYPADS
56         00C0      JSTK   EQU    0C0    ; OUTPUT TO THIS PORT TO SELECT JOYSTICKS

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57 00FC          CTRL1 EQU 0FC ; READ THIS PORT FOR CONTROLLER # 1
58 00FF          CTRL2 EQU 0FF ; READ THIS PORT FOR CONTROLLER # 2
59 00FF          AUDIO EQU 0FF ; OUTPUT TO THIS PORT FOR SOUND CHIP
60 00BF          VDPR  EQU 0BF ; PORT ADDRESS TO SET VRAM ADDRESS
61 00BE          VRAM  EQU 0BE ; PORT ADDRESS TO SEND VRAM DATA
62 00BF          VSTAT EQU 0BF ; READ THIS PORT FOR VIDED STATUS
63 ;
64 ;
65 ;          ORG 0000
66 ;
67 ;
68 ;
69 ;          HERE IS THE Z80 MODE 0 INTERRUPT RST SERVICE AREA
70 ;
71 0000' 31 73B9  RST0: LD SP,STACK ; SET UP STACK
72 0003' C3 006E' JP CLDSTR ; THEN GOTO COLD START ADDRESS
73 ;
74 0006' FF FF    DB OFF,OFF
75 ;
76 0008' C3 800C  RST1: JP 0800C
77 ;
78 000B' FF FF FF FF DB OFF,OFF,OFF,OFF,OFF
79 000F' FF
80 ;
81 0010' C3 800F  RST2: JP 0800F
82 ;
83 0013' FF FF FF FF DB OFF,OFF,OFF,OFF,OFF
84 0017' FF
85 ;
86 0018' C3 8012  RST3: JP 08012
87 ;
88 001B' FF FF FF FF DB OFF,OFF,OFF,OFF,OFF
89 001F' FF
90 ;
91 0020' C3 8015  RST4: JP 08015
92 ;
93 0023' FF FF FF FF DB OFF,OFF,OFF,OFF,OFF
94 0027' FF
95 ;
96 0028' C3 8018  RST5: JP 08018
97 ;
98 002B' FF FF FF FF DB OFF,OFF,OFF,OFF,OFF
99 002F' FF
100 ;
101 0030' C3 801B  RST6: JP 0801B
102 ;
103 0033' FF FF FF FF DB OFF,OFF,OFF,OFF,OFF
104 0037' FF
105 ;
106 0038' C3 801E  RST7: JP 0801E
107 ;
108 ;
109 ; *****
110 003B' 2A 73CB  RNDX: LD HL,(RNDSED) ; DISPATCH # 34
111 003E' CB 7C    BIT 7,H ; RETURN RANDOM NUMBER IN A
112 0040' 28 06    JR Z,RND1

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113 0042' CB 44 BIT 0,H
114 0044' 28 06 JR Z,RND2
115 0046' 18 07 JR RND3
116 ;
117 0048' CB 44 RND1: BIT 0,H ; XOR BITS 15 AND 8
118 004A' 28 03 JR Z,RND3
119 ;
120 004C' 37 RND2: SCF
121 004D' 18 01 JR RND4
122 ;
123 004F' B7 RND3: OR A
124 0050' CB 15 RND4: RL L
125 0052' CB 14 RL H
126 0054' 22 73C8 LD (RNDSED),HL
127 0057' 7D LD A,L ; RETURN RESULT IN REG A
128 0058' C9 RET
129 ;
130 ;
131 ;
132 0059' FF FF FF FF DB OFF,OFF,OFF,OFF,OFF ; JUST THE LEFTOVER SPACE
133 005D' FF
134 005E' FF FF FF FF DB OFF,OFF,OFF,OFF,OFF
135 0062' FF
136 0063' FF FF FF DB OFF,OFF,OFF
137 ;
138 ;
139 0066' C3 8021 NMI: JP NMISER ; VECTOR THROUGH HERE ON NONMASKABLE INT
140 ;
141 ;
142 0069' 3C AB 16 23 DB 03C,0AB,016,023,016
143 006D' 16
144 ;
145 ;
146 006E' 2A 8000 CLDSTR: LD HL,(STFADR) ; THIS IS THE COLD START ENTRY POINT
147 0071' 7D LD A,L ; IF FIRST 16 BITS OF CARTRIDGE IS
148 0072' FE 55 CP 055 ; 0A55 THEN JUMP TO THE ADDRESS
149 0074' C2 0081' JP NZ,SLOSTR ; IN THE CARTRIDGE STORED AT 800A
150 0077' 7C LD A,H
151 0078' FE AA CP 0AA
152 007A' C2 0081' JP NZ,SLOSTR ; ELSE GO THROUGH SLOW START INTRO
153 007D' 2A 800A LD HL,(CSTART)
154 0080' E9 JP (HL)
155 ;
156 0081' CD 1FD6' SLOSTR: CALL QUIETV ; HERE IF NO FAST JUMP TO CARTRIDGE
157 0084' 21 0033 LD HL,00033
158 0087' 22 73C8 LD (RNDSED),HL
159 008A' CD 1105' CALL CLEAR ; CLEAR ALL SHADOW REGISTERS
160 008D' 3E 00 LD A,000
161 008F' 32 73C6 LD (STRFLG),A
162 0092' 32 73C7 LD (CPFLAG),A
163 0095' C3 1319' JP INTRO ; GO DO INTRODUCTION
164 ;
165 ;
166 ;
167 ;
168 ; *****

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191
192
193
194
195      0098'  E1      PCOPY: POP    HL          ; SWAP RET ADDR AND PARAMETER-
196      0099'  E3      EX      (SP),HL      ; ADDRESS-LIST-POINTER. (PALP)
197      009A'  E5      PUSH   HL
198
199      009B'  0A      LD      A,(BC)      ; HL=(BC), BC=BC+2, (FIRST
200      009C'  6F      LD      L,A          ; TABLE ENTRY, NUMBER OF
201      009D'  03      INC    BC          ; PARAMETER DESCRIPTORS. (NPD))
202      009E'  0A      LD      A,(BC)
203      009F'  03      INC    BC
204      00A0'  67      LD      H,A
205
206      00A1'  E3      EX      (SP),HL      ; SWAP PALP AND NPD
207      00A2'  D5      PUSH   DE          ; SAVE RAM AREA ADDRESS. (RAA)
208
209
210
211
212
213
214
215
216
217
218
219
220      00AA'  C2 00B7'
221
222
223
224

```

ROUTINE TO COPY PARAMETERS FOR THE DISPATCH SUBS

BC POINTS TO A PARAMETER DESCRIPTOR TABLE
DE POINTS TO AN AREA TO STORE THE PARAMETERS
BEFORE THE CALL, TOP OF STACK POINTS TO A LIST
OF ADDRESSES OF PARAMETERS TO BE COPIED

THE FIRST 16 BITS OF THE DESCRIPTOR TABLE HOLDS THE
NUMBER OF DESCRIPTORS (16 BITS EACH).

EACH DESCRIPTOR HOLDS THE NUMBER OF BYTES TO BE
APPENDED TO THE RAM AREA (POINTED TO BY DE)
FROM THE NEXT ADDRESS IN THE ADDRESS LIST.

IF A DESCRIPTOR IS NEGITIVE, THEN THE NEXT 16 BIT WORD
FROM THE ADDRESS LIST IS APPENDED TO THE RAM
AREA. THE VALUE OF THE NEGITIVE DESCRIPTOR MAKES
NO DIFFERENCE.

IF AN ADDRESS FROM THE ADDRESS LIST IS ZERO, THE NEXT
16 BITS IN THE LIST ARE TAKEN AS A POINTER
TO THE PARAMETER ADDRESS. (NOTE: THIS IS DONE BEFORE
THE CHECK FOR NEGITIVE DESCRIPTOR)

AT THIS POINT PALP IS IN HL AND THE STACK IS (RETADDR,NPD,RAA)
WHERE RAA IS ON TOP.

IF A PARAMETER ADDRESS IS ZERO, THEN PICK UP THEN NEXT NUMBER
AS A POINTER TO THE ADDRESS OF THE PARAMETER TO BE
COPIED TO RAM.

```

225      ;
226      00AD' E1      POP      HL
227      00AE' E5      LD        E,(HL)      ; DE=(PALP),PALP=PALP+2
228      00AF' 23      INC      HL
229      00B0' 56      LD        D,(HL)
230      00B1' 23      INC      HL
231      00B2' E5      PUSH     HL
232      ;
233      00B3' EB      EX        DE,HL      ; HL=DE
234      00B4' E5      LD        E,(HL)      ; DE=(HL)
235      00B5' 23      INC      HL
236      00B6' 56      LD        D,(HL)
237      ;
238      00B7' 03      PCPY2: INC     BC      ; A=UPPER 8 BITS FROM DESCRIPTOR
239      00B8' 0A      LD        A,(BC)
240      ;
241      00B9' 07      RLCA      ; JUMP IF DESCRIPTOR NOT NEGATIVE
242      00BA' D2 00DA' JP       NC,PCPY6
243      ;
244      ; IF A DESCRIPTOR IS NEGATIVE, THEN THE 16 BIT PARAMETER IS
245      ; IS IN THE ADDRESS LIST ITSELF (I.E. NOT ITS ADDRESS).
246      ;
247      ;
248      ; STACK=( RETADDR,NPD,RAA,PALP)
249      00BD' 03      INC      BC      ; POINT AT NEXT DESCRIPTOR IN TABLE
250      00BE' E1      POP      HL
251      00BF' E3      EX        (SP),HL      ; GET AREA ADDRES
252      00C0' 73      LD        (HL),E      ; SAVE P2 THERE
253      00C1' 23      INC      HL
254      00C2' 72      LD        (HL),D
255      00C3' 23      INC      HL
256      ;
257      ;
258      00C4' D1      PCPY3: POP     DE      ; DE=PALP
259      00C5' E3      EX        (SP),HL      ; PUT AREA POINTER BACK, GET NPD IN HL
260      00C6' 2B      DEC      HL      ; SEE IF WE ARE DONE WITH LIST
261      00C7' AF      XOR      A      ; A=0
262      00C8' BC      CP        H
263      00C9' C2 00D0' JP       NZ,PCPY4      ; JUMP TO PCPY4 IF NOT DONE
264      00CC' BD      CP        L
265      00CD' CA 00D6' JP       Z,PCPY5      ; ELSE JUMP TO PCPY5 TO EXIT
266      ;
267      00D0' E3      PCPY4: EX     (SP),HL      ; PUSH NPD UNDER RAA
268      00D1' E5      PUSH     HL
269      ;
270      00D2' EB      EX        DE,HL      ; PUT PALP BACK IN HL
271      00D3' C3 00A3' JP       PCPY1      ; GO PROCESS NEXT PARAMETER ADDRESS
272      ;
273      00D6' E1      PCPY5: POP     HL      ; HL GETS RAA
274      00D7' EB      EX        DE,HL      ; DE GETS RAA, HL GETS PALP
275      00D8' E3      EX        (SP),HL      ; HL GETS RETADDR, TOP OF STACK=PALP
276      00D9' E9      JP       (HL)      ; EXIT
277      ;
278      00DA' E1      PCPY6: POP     HL      ; HL GETS PALP, DE HAS PARAMETER ADDR
279      00DB' E3      EX        (SP),HL      ; HL GETS RAA, PLP GOES TO TOP
280      00DC' E5      PUSH     HL      ; NOW RAA ON TOP

```

```

281 ;
282 00DD' 0F RRC#A ; PUT UPPER 8 BITS OF DESCRIPTOR
283 00DE' 67 LD H,A ; IN H
284 00DF' 0B DEC BC ; THEN PICK UP LOWER IN L
285 00E0' 0A LD A,(BC)
286 00E1' 6F LD L,A
287 ;
288 00E2' E3 EX (SP),HL ; HL GETS RAA, DESCRIPTOR GOES TO TOP
289 00E3' 03 INC BC ; POINT BC AT NEXT DESCRIPTOR
290 00E4' 03 INC BC
291 ;
292 00E5' 1A PCPY7: LD A,(DE) ; (HL)=(DE),HL=HL+1,DE=DE+1
293 00E6' 77 LD (HL),A
294 00E7' 23 INC HL
295 00E8' 13 INC DE
296 ;
297 00E9' E3 EX (SP),HL ; GET DESCRIPTOR IN HL
298 00EA' 2B DEC HL ; DECREMENT IT
299 00EB' AF XOR A ; JUMP IF NOT ZERO TO PCPY8
300 00EC' BD CP L
301 00ED' C2 00F4' JP NZ,PCPY8
302 00F0' BC CP H
303 00F1' CA 00F8' JP Z,PCPY9 ; GOTO PCPY9 WHEN DONE WITH THIS PARAM
304 ;
305 00F4' E3 PCPY8: EX (SP),HL ; PUT DESCRIPTOR BACK ON STACK
306 00F5' C3 00E5' JP PCPY7 ; GO COPY ANOTHER BYTE
307 ;
308 00F8' E1 PCPY9: POP HL ; HL GETS RAA
309 00F9' C3 00C4' JP PCPY3 ; SEE IF DONE WITH PARAMETER LIST
310 ;
311 ;
312 ;
313 ; *****
314 00FC' DD 7E 07 SCHED2: LD A,(IX+007)
315 00FF' FE 00 CP 000 ; JUMP IF (IX+7) NOT 0
316 0101' 20 09 JR NZ,$+00B ; 0010C
317 ;
318 0103' DD 7E 05 LD A,(IX+005) ; DECREMENT (IX+5) UNLESS IT =1,
319 0106' 3D DEC A ; THEN EXIT
320 0107' C8 RET Z
321 0108' DD 77 05 LD (IX+005),A
322 010B' C9 RET
323 ;
324 010C' DD E5 PUSH IX ; HL=IX+6
325 010E' E1 POP HL
326 010F' 1E 06 LD E,006
327 0111' 16 00 LD D,000
328 0113' 19 ADD HL,DE
329 ;
330 0114' CD 0190' CALL DEC4BL ; DECREMENT THE LOWER 4 BITS OF (IX+6)
331 0117' 20 15 JR NZ,$+017 ; 0012E
332 0119' CD 01A6' CALL MV4BUL ; IF ZERO, RESTORE BITS FROM UPPER 4
333 ;
334 011C' 2B DEC HL ; EXIT IF (IX+5)=1
335 011D' 7E LD A,(HL)
336 011E' 3D DEC A
    
```



```

337 011F' C8          RET      Z
338
339 0120' 77          LD      (HL),A      ; ELSE DEC (IX+5)
340 0121' 2B          DEC      HL
341 0122' 2B          DEC      HL
342 0123' DD 7E 07    LD      A,(IX+007)    ; AND ADD (IX+7) TO (IX+3)
343 0126' CD 01B1'    CALL    MADD16
344 0129' 23          INC      HL
345 012A' CB 96       RES      2,(HL)      ; RESET BIT 2 OF (IX+4)
346 012C' F6 FF       OR      OFF          ; A=OFF CARRY=0
347 012E' C9          RET
348
349
350
351 012F' DD 7E 08    SCHED1: LD     A,(IX+008)
352 0132' FE 00       CP      000          ; IF (IX+8)=0, EXIT
353 0134' C8          RET      Z
354
355 0135' DD E5       PUSH    IX          ; ELSE HL=IX+9
356 0137' E1          POP     HL
357 0138' 16 00      LD      D,000
358 013A' 1E 09      LD      E,009
359 013C' 19          ADD     HL,DE
360
361 013D' CD 0190'    CALL    DEC4BL      ; DECREMENT THE LOWER 4 BITS OF (IX+9)
362 0140' 20 21      JR      NZ,$+023    ; 00163
363 0142' CD 01A6'    CALL    MV4BUL      ; IF ZERO, RESTORE FROM UPPER 4 BITS
364
365 0145' 2B          DEC     HL
366 0146' CD 0190'    CALL    DEC4BL      ; AND DECREMENT LOWER 4 BITS OF (IX+8)
367 0149' 28 16      JR      Z,$+018 ; 00161
368 014B' 7E          LD      A,(HL)      ; IF NOT ZERO PICK UP UPPER 4 BIST OF
369 014C' E6 F0      AND     OF0         ; (IX+8) AND PUT IN E
370 014E' 5F          LD      E,A
371
372 014F' 2B          DEC     HL          ; GET UPPER BITS OF (IX+4)
373 0150' 2B          DEC     HL
374 0151' 2B          DEC     HL
375 0152' 2B          DEC     HL
376 0153' 7E          LD      A,(HL)
377 0154' E6 F0      AND     OF0
378
379 0156' 83          ADD     A,E          ; ADD TO E
380 0157' 5F          LD      E,A
381
382 0158' 7E          LD      A,(HL)      ; THEN OR IN THE LOWER 4 OF (IX+4)
383 0159' E6 0F      AND     00F
384 015B' B3          OR      E
385
386 015C' 77          LD      (HL),A      ; PUT BACK IN (IX+4)
387 015D' F6 FF       OR      OFF          ; SET A=OFF, CARRY=1
388 015F' 18 02      JR      $+004 ; 00163
389 0161' 36 00      LD      (HL),000
390 0163' C9          RET
391
392

```

393
 394 0164' DD 7E 04
 395 0167' CB 61
 396 0169' 2B 04
 397 016B' 0F
 398 016C' 0F
 399 016D' 0F
 400 016E' 0F
 401 016F' E6 0F
 402 0171' B1
 403 0172' D3 FF
 404 0174' C9

```

; *****
AMP.NZ: LD    A,(IX+004)
        BIT   4,C
        JR   Z,SND1
        RRCA
        RRCA
        RRCA
        RRCA
SND1:  AND   00F
        OR   C
        OUT  (AUDIO),A
        RET
    
```

```

; IF C HAS THE UPPER CODE FOR AN
; ATTENUATION REGISTER THEN OR IN
; THE UPPER 4 BITS OF TABLE ENTRY
; (IX+4), ELSE IT IS A NOISE CONTROL
; BYTE SO SEND LOWER 4 BITS.
    
```

```

; REG C SUPPLIES THE UPPER BITS
    
```

405
 406
 407
 408 0175' DD 7E 03
 409 0178' E6 0F
 410 017A' B2
 411 017B' D3 FF
 412 017D' DD 7E 03
 413 0180' E6 F0
 414 0182' 57
 415 0183' DD 7E 04
 416 0186' E6 0F
 417 0188' B2
 418 0189' 0F
 419 018A' 0F
 420 018B' 0F
 421 018C' 0F
 422 018D' D3 FF
 423 018F' C9

```

; *****
SNDFRQ: LD    A,(IX+003)
        AND   00F
        OR   D
        OUT  (AUDIO),A
        LD   A,(IX+003)
        AND   0F0
        LD   D,A
        LD   A,(IX+004)
        AND   00F
        OR   D
        RRCA
        RRCA
        RRCA
        RRCA
        OUT  (AUDIO),A
        RET
    
```

```

; PUT OUT FREQUENCY FROM TABLE
; (IX+3),(IX+4) TO FREQ REGISTER ADDRESSED
; IN UPPER BITS OF D.
    
```

424
 425
 426
 427 0190' 3E 00
 428 0192' ED 67
 429 0194' D6 01
 430 0196' F5
 431 0197' ED 6F
 432 0199' F1
 433 019A' C9

```

; *****
DEC4BL: LD    A,000
        RRD
        SUB   001
        PUSH AF
        RLD
        POP  AF
        RET
    
```

```

; DECREMENT THE LOWER 4 BITS OF (HL)
; AND RETURN FLAGS
    
```

434
 435
 436
 437 019B' 3E 00
 438 019D' ED 6F
 439 019F' D6 01
 440 01A1' F5
 441 01A2' ED 67
 442 01A4' F1
 443 01A5' C9

```

; *****
DEC4BH: LD    A,000
        RLD
        SUB   001
        PUSH AF
        RRD
        POP  AF
        RET
    
```

```

; DECREMENT THE UPPER 4 BITS OF (HL)
; AND RETURN FLAGS
    
```

444
 445
 446
 447 01A6' 7E
 448 01A7' E6 F0

```

; *****
MV4BUL: LD    A,(HL)
        AND   0F0
    
```

```

; REPLACE THE LOWER 4 BITS OF RAM (HL)
; WITH THE UPPER 4 BITS OF SAME
    
```

```

449 01A9' 47          LD    B,A
450 01AA' 0F          RRCA
451 01AB' 0F          RRCA
452 01AC' 0F          RRCA
453 01AD' 0F          RRCA
454 01AE' B0          OR    B
455 01AF' 77          LD    (HL),A
456 01B0' C9          RET

```

```

; -----
;
; *****

```

```

460 01B1' 06 00      MADD16: LD    B,000          ; ADD A TO THE 16 BIT MEMORY
461 01B3' CB 7F          BIT    7,A              ; LOCATION @HL
462 01B5' 28 02          JR    Z,MADD1
463 01B7' 06 FF          LD    B,OFF            ; SIGN EXTEND FOR NEGITIVES
464 01B9' 86          MADD1: ADD    A,(HL)
465 01BA' 77          LD    (HL),A
466 01BB' 23          INC    HL
467 01BC' 7E          LD    A,(HL)
468 01BD' 88          ADC    A,B
469 01BE' 77          LD    (HL),A
470 01BF' 2B          DEC    HL
471 01C0' C9          RET

```

```

; -----
;
; *****

```

```

475 01C1' 2A 7020      AGET:  LD    HL,(APOINT)    ; GET A 16 BIT VALUE FROM AN ARRAY
476 01C4' 2B          DEC    HL                ; POINTED TO BY (APOINT), WITH INDEX
477 01C5' 2B          DEC    HL                ; IN REG B THAT STARTS AT 1 AND
478 01C6' 48          LD    C,B              ; INCREMENTS BY 1.
479 01C7' 06 00      LD    B,000            ; PUT THE RESULT IN IX
480 01C9' CB 01      RLC    C
481 01CB' CB 01      RLC    C
482 01CD' 09          ADD    HL,BC
483 01CE' 5E          LD    E,(HL)
484 01CF' 23          INC    HL
485 01D0' 56          LD    D,(HL)
486 01D1' D5          PUSH   DE
487 01D2' DD E1      POP    IX
488 01D4' C9          RET

```

```

; -----
;
; *****

```

```

492 01D5' DD 75 01      PSET1: LD    (IX+001),L    ; PARAMETER SET UP ROUTINE
493 01D8' DD 74 02      LD    (IX+002),H        ; LOAD HL @ (IX+1)
494 01DB' 1A          LD    A,(DE)           ; GET 6 BIT INTO B BY @ DE
495 01DC' E6 3F          AND    03F
496 01DE' 47          LD    B,A
497 01DF' DD 7E 00      LD    A,(IX+000)
498 01E2' E6 C0          AND    0C0
499 01E4' B0          OR    B                ; OR IN TWO UPPER BITS FROM @IX
500 01E5' DD 77 00      LD    (IX+000),A      ; THEN PUT BACK @IX
501 01E8' C9          RET

```

```

; -----
;
; *****

```

```

502
503
504

```



```

561
562
563 023B' 3E 9F      QUIET: LD      A,09F      ; DISPATCH # 27
564 023D' D3 FF      OUT      (AUDIO),A
565 023F' 3E BF      LD      A,0BF
566 0241' D3 FF      OUT      (AUDIO),A
567 0243' 3E DF      LD      A,0DF
568 0245' D3 FF      OUT      (AUDIO),A
569 0247' 3E FF      LD      A,0FF
570 0249' D3 FF      OUT      (AUDIO),A
571 024B' C9          RET
572
573
574 024C' FF          SNDOFF: DB      OFF      ; THE NUL SOUND PROGRAM
575
576
577 024D' 0001 0001  DICDAT: DW      1,1
578
579
580 0251' 01 024D'   *NEWTB: LD      BC,DICDAT ; DISPATCH # 1C
581 0254' 11 73BA    LD      DE,P.AREA
582 0257' CD 0098'   CALL    PCOPY
583 025A' 3A 73BA    LD      A,(P.AREA)
584 025D' 47          LD      B,A
585
586
587 025E' C5          NEWTB: PUSH    BC      ; DISPATCH # 30
588 025F' CD 01C1'   CALL    AGET      ; GET CONTROL TABLE POINTER FROM
589 0262' DD 7E 00   LD      A,(IX+000) ; ARRAY BY INDEX IN B
590 0265' E6 3F      AND     03F      ; GET THE FUNCT CODE FIELD
591 0267' C1          POP     BC
592 0268' B8          CP      B
593 0269' C8          RET     Z      ; RETURN IF FUNCT FIELD MATCHES INDEX
594
595 026A' DD 70 00   LD      (IX+000),B ; ELSE MAKE IT MATCH
596 026D' 2B          DEC     HL      ; POINT HL AT PRIVIOUS TABLE POINTER
597 026E' 2B          DEC     HL
598 026F' 56          LD      D,(HL)   ; GET POINTER
599 0270' 2B          DEC     HL
600 0271' 5E          LD      E,(HL)
601 0272' DD 73 01   LD      (IX+001),E ; BACK LINK THIS TABLE
602 0275' DD 72 02   LD      (IX+002),D
603 0278' CD 035F'   CALL    SNDFN    ; GO DO ATTACHED SOUND TABLE FUNCTION
604 027B' CD 0295'   CALL    UPSTRM   ; UPDATE STREAM POINTERS
605 027E' C9          RET
606
607
608
609 027F' 06 01      UPTAB: LD      B,001   ; DISPATCH # 31
610 0281' CD 01C1'   CALL    AGET      ; GET POINTER TO SOUND TABLE AREA IN IX
611
612 0284' 3E 00      SPLDOP: LD     A,000   ; SEE IF AT END OF LIST
613 0286' DD BE 00   CP      (IX+000)
614 0289' C8          RET     Z      ; IF SO RETURN
615
616 028A' CD 02D6'   CALL    PROCTB   ; ELSE UPDATE TABLE

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617
618 028D' 1E 0A      LD      E,00A      ; ADVANCE 10. BYTES TO NEXT TABLE
619 028F' 16 00      LD      D,000
620 0291' DD 19      ADD     IX,DE
621 0293' 18 EF      JR      SPLOOP
622
623
624 0295' DD E5      UPSTRM: PUSH     IX      ; UPDATE THE SOUND STREAM POINTERS
625 0297' 21 024C'   LD      HL,SNDOFF    ; POINT AT OFF FOR NO SOUND
626 029A' 22 7022   LD      (NOISEP),HL
627 029D' 22 7024   LD      (TONE1P),HL
628 02A0' 22 7026   LD      (TONE2P),HL
629 02A3' 22 7028   LD      (TONE3P),HL
630
631 02A6' 06 01      LD      B,001      ; GET MASTER SOUND TABLE POINTER
632 02A8' CD 01C1'   CALL   AGET
633
634 02AB' DD 7E 00   USLP:  LD      A,(IX+000) ; GET FUNCT CODE FOR THIS TABLE
635 02AE' FE 00      CP      000        ; IF ZERO, END OF LIST
636 02B0' 28 21      JR      Z,USPXIT
637
638 02B2' FE FF      CP      OFF        ; IF OFF, TABLE IS EMPTY
639 02B4' 28 15      JR      Z,NXTAB    ; GO TO NEXT
640
641 02B6' DD 7E 00   LD      A,(IX+000) ; THE TOP 2 BITS OF THE FUNCT CODE
642 02B9' E6 C0      AND     0C0        ; SELECT ONE OF THE SOUND STREAM
643 02BB' 07          RLCA              ; POINTERS.
644 02BC' 07          RLCA
645 02BD' 07          RLCA
646 02BE' 5F          LD      E,A
647 02BF' 16 00      LD      D,000
648 02C1' 21 7022   LD      HL,NOISEP
649 02C4' 19          ADD     HL,DE
650
651 02C5' DD E5      PUSH   IX          ; PUT THE ADDRESS OF THIS TABLE IN
652 02C7' D1          POP    DE          ; THE SELECTED STREAM
653 02C8' 73          LD      (HL),E
654 02C9' 23          INC    HL
655 02CA' 72          LD      (HL),D
656
657 02CB' 1E 0A      NXTAB: LD      E,00A      ; ADD 10. TO ADDRESS TO GET TO NEXT
658 02CD' 16 00      LD      D,000      ; CONTROL TABLE.
659 02CF' DD 19      ADD     IX,DE
660 02D1' 18 D8      JR      USLP        ; LOOP THROUGH THE REST
661
662 02D3' DD E1      UPSXIT: POP     IX      ; RESTORE IX WHEN DONE
663 02D5' C9          RET
664
665
666
667 02D6' CD 01E9'   PROCTB: CALL   GETBAK ; GET BACKLINK IF POSSIBLE
668 02D9' FE FF      CP      OFF        ; EXIT IF TABLE EMPTY
669 02DB' C8          RET      Z
670 02DC' FE 3E      CP      03E        ; IF FUNCTION CODE IS NOT 3E
671 02DE' 20 06      JR      NZ,INCTIM  ; GO INCREMENT TABLE TIMERS
672

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673 02E0' 1E 07          LD      E,007          ; IF FUNCT CODE IS 3E, GO DO
674 02E2' 16 00          LD      D,000          ; ROUTINE AT (IX+1)+7
675 02E4' 19             ADD     HL,DE
676 02E5' E9            JP      (HL)          ; GO DO FUNCTION
677
678 02E6' CD 012F'       ;
INCTIM: CALL    SCHED1
679 02E9' CD 00FC'       CALL    SCHED2
680 02EC' 20 11          JR      NZ,TMEXIT
681
682 02EE' DD 7E 00       ;
LD      A,(IX+000)
683 02F1' F5            PUSH   AF
684 02F2' CD 035F'       CALL   SNDFN
685 02F5' C1            POP    BC          ; SEE IF FUNCT CODE CHANGED
686 02F6' DD 7E 00       LD      A,(IX+000)
687 02F9' B8            CP     B
688 02FA' 2B 03          JR     Z,TMEXIT
689 02FC' CD 0295'       CALL   UPSTRM      ; IF SO GO UPDATE STREAM POINTERS
690 02FF' C9            TMEXIT: RET
691
692
693 *****
694
695 THE SOUND ROUTINE UPDATES ALL REGISTERS IN THE SOUND CHIP
696 BY POINTERS TO TABLES. IF THE FIRST BYTE OF THE TABLE
697 IS OFF, THEN THE FUNCTION IS TURNED OFF.
698
699 SOUND: LD      A,09F          ; DISPATCH # 00
700 0302' 0E 90          LD      C,090          ; TONE 1 AMP
701 0304' 16 80          LD      D,080          ; TONE 1 FREQ
702 0306' DD 2A 7024     LD      IX,(TONE1P)
703 030A' CD 034E'       CALL   SNDOUT
704 030D' 3E BF          LD      A,0BF
705 030F' 0E B0          LD      C,0B0          ; TONE 2 AMP
706 0311' 16 A0          LD      D,0A0          ; TONE 2 FREQ
707 0313' DD 2A 7026     LD      IX,(TONE2P)
708 0317' CD 034E'       CALL   SNDOUT
709 031A' 3E DF          LD      A,0DF
710 031C' 0E D0          LD      C,0D0          ; TONE 3 AMP
711 031E' 16 C0          LD      D,0C0          ; TONE 3 FREQ
712 0320' DD 2A 7028     LD      IX,(TONE3P)
713 0324' CD 034E'       CALL   SNDOUT
714
715 0327' 3E FF          LD      A,0FF
716 0329' 0E F0          LD      C,0F0          ; NOISE AMP
717 032B' DD 2A 7022     LD      IX,(NOISEP)
718 032F' DD 5E 00       LD      E,(IX+000)    ; IF FLAG AT FF, TURN OFF
719 0332' 1C            INC     E
720 0333' 20 04          JR     NZ,NZAMP
721 0335' D3 FF          OUT    (AUDIO),A
722 0337' 18 14          JR     SINDEX        ; THEN EXIT
723
724 0339' CD 0164'       NZAMP: CALL    AMP.NZ      ; ELSE SET NOISE AMPLITUDE
725
726 033C' DD 7E 04       ;
LD      A,(IX+004)    ; SEE IF SAME CONTROL CODE AS
727 033F' E6 0F          AND    00F          ; LAST TIME
728 0341' 21 702A       LD      HL,NOICSH

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729 0344' BE CP (HL)
730 0345' 28 06 JR Z,SNDEX ; IF SO DON'T CHANGE IT
731 0347' 77 LD (HL),A ; ELSE SAVE CONTROL CODE
732 0348' 0E E0 LD C,0E0
733 034A' CD 0164' CALL AMP,NZ ; SET NOISE CONTROL
734 034D' C9 SNDEX: RET
735 ;
736 ;
737 ; *****
738 034E' DD 5E 00 SNDOUT: LD E,(IX+000) ; IF THIS FLAG IS NOT FF THEN
739 0351' 1C INC E ; UPDATE AMP AND FREQ
740 0352' 20 04 JR NZ,SNDCD ; GO USE UPPER BITS IN C AND D
741 0354' D3 FF OUT (AUDIO),A ; ELSE JUST SEND A OUT
742 0356' 18 06 JR SNDR ; EXIT
743 ;
744 0358' CD 0164' SNDCD: CALL AMP,NZ ; SEND AMP OR NOISE REG
745 035B' CD 0175' CALL SNDFRQ ; GO SET THE FREQUENCY
746 035E' C9 SNDR: RET
747 ;
748 ;
749 ; *****
750 035F' DD 7E 00 SNDFN: LD A,(IX+000) ; GET FUNCT FIELD AND SAVE IT
751 0362' E6 3F AND 03F
752 0364' F5 PUSH AF
753 ;
754 0365' DD 36 00 FF LD (IX+000),OFF ; MARK EMPTY
755 ;
756 0369' DD 6E 01 LD L,(IX+001) ; GET LAST FUNCT CODE IN B
757 036C' DD 66 02 LD H,(IX+002)
758 036F' 7E LD A,(HL)
759 0370' 47 LD B,A
760 ;
761 0371' CB 6F BIT 5,A
762 0373' 28 1C JR Z,B4TST
763 ;
764 0375' C5 PUSH BC
765 0376' E6 1F AND 01F
766 0378' 23 INC HL
767 0379' DD 75 01 LD (IX+001),L ; ADVANCE LINK
768 037C' DD 74 02 LD (IX+002),H
769 ;
770 037F' DD 36 04 F0 LD (IX+004),0F0 ; REINIT
771 0383' DD 77 05 LD (IX+005),A
772 0386' DD 36 07 00 LD (IX+007),000
773 038A' DD 36 08 00 LD (IX+008),000
774 038E' C3 0461' JP BXXIT
775 ;
776 0391' CB 67 B4TST: BIT 4,A
777 0393' 28 0F JR Z,NOB4
778 ;
779 0395' CB 5F BIT 3,A
780 0397' 28 05 JR Z,NOB3
781 ;
782 0399' C1 POP BC
783 039A' CD 025E' CALL NEWTB
784 039D' C9 RET

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785      ;
786      039E' 3E FF      NOB3: LD      A,OFF
787      03A0' F5          PUSH     AF
788      03A1' C3 0461'   JP       BXXIT
789      ;
790      03A4' E6 3C      NOB4: AND     03C
791      03A6' FE 04      CP       004
792      03A8' 20 28      JR       NZ,BSIV1
793      ;
794      03AA' FD E1      POP      IY          ; COPY CURRENT FUNCT CODE TO IY
795      03AC' FD E5      PUSH     IY
796      ;
797      03AE' C5          PUSH     BC          ; COPY BACKLINK FROM PRIEVIOUS
798      03AF' 23          INC     HL          ; TABLE
799      03B0' 5E          LD      E,(HL)
800      03B1' DD 73 01   LD      (IX+001),E
801      03B4' 23          INC     HL
802      03B5' 56          LD      D,(HL)
803      03B6' DD 72 02   LD      (IX+002),D
804      03B9' 23          INC     HL
805      ;
806      03BA' FD E5      PUSH     IY          ; GET CURRENT FUNCT CODE BACK
807      03BC' F1          POP      AF
808      ;
809      03BD' D5          PUSH     DE          ; MOVE FUNCT ADDRESS TO IY
810      03BE' FD E1      POP      IY
811      ;
812      03C0' 11 03C6'   LD      DE,BSIVRT   ; FAKE RETURN ADDRESS
813      03C3' D5          PUSH     DE
814      ;
815      03C4' FD E9      JP      (IY)        ; GO DO FUNCTION
816      ;
817      03C6' 16 00      BSIVRT: LD      D,000   ; THEN GO DO FUNCT ADDRESS +7
818      03C8' 1E 07      LD      E,007
819      03CA' FD 19      ADD     IY,DE
820      03CC' 11 0461'   LD      DE,BXXIT    ; RETURN TO EXIT CODE
821      03CF' D5          PUSH     DE
822      03D0' FD E9      JP      (IY)
823      ;
824      03D2' C5          BSIV1: PUSH    BC
825      03D3' 78          LD      A,B
826      03D4' E6 03      AND     003
827      03D6' FE 00      CP     000
828      03D8' 20 20      JR     NZ,BSIV2
829      ;
830      03DA' 23          INC     HL          ; ADVANCE LINK BY 4
831      03DB' 23          INC     HL
832      03DC' 23          INC     HL
833      03DD' 23          INC     HL
834      03DE' DD 75 01   LD      (IX+001),L
835      03E1' DD 74 02   LD      (IX+002),H
836      ;
837      03E4' 2B          DEC     HL          ; COPY 3 BYTES FROM (OLD LINK)
838      03E5' 11 0005   LD      DE,00005    ; TO (IX+3,+4,+5)
839      03EB' CD 0478'   CALL   ADDXD
840      03EB' 01 0003   LD      BC,00003

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841 03EE' ED B8 ; LDDR
842 ; LD (IX+007),000
843 03F0' DD 36 07 00 LD (IX+008),000
844 03F4' DD 36 08 00 LD BXXIT
845 03F8' 18 67 JR
846 ;
847 03FA' FE 01 BSIV2: CP 001
848 03FC' 20 1B JR NZ,BSIV3
849 ;
850 03FE' 1E 06 LD E,006 ; ADVANCE LINK BY 6
851 0400' 16 00 LD D,000
852 0402' 19 ADD HL,DE
853 0403' DD 75 01 LD (IX+001),L
854 0406' DD 74 02 LD (IX+002),H
855 ;
856 0409' 2B DEC HL ; COPY 5 BYTES FROM (OLD LINK)
857 040A' 1C INC E ; TO (IX+3 TO IX+7)
858 040B' CD 0478' CALL ADDXD
859 040E' 01 0005 LD BC,00005
860 0411' ED B8 LDDR
861 ;
862 0413' DD 36 08 00 LD (IX+008),000
863 0417' 18 48 JR BXXIT
864 ;
865 0419' FE 02 BSIV3: CP 002
866 041B' 20 28 JR NZ,BSIV5
867 ;
868 041D' 1E 06 LD E,006 ; ADVANCE HL BY 6
869 041F' 16 00 LD D,000
870 0421' 19 ADD HL,DE
871 ;
872 0422' F1 POP AF ; GET PREVIOUS FUNCT CODE
873 0423' F5 PUSH AF
874 ;
875 0424' E6 C0 AND OCO ; LOOK AT UPPER TWO BITS
876 0426' 20 01 JR NZ,BSIV4
877 0428' 2B DEC HL
878 0429' DD 75 01 BSIV4: LD (IX+001),L ; RESTORE BACK POINTER
879 042C' DD 74 02 LD (IX+002),H
880 042F' 2B DEC HL
881 0430' 1E 09 LD E,009
882 0432' CD 0478' CALL ADDXD
883 0435' 01 0002 LD BC,00002
884 0438' ED B8 LDDR
885 043A' 3E 00 LD A,000
886 043C' 12 LD (DE),A
887 043D' 1B DEC DE
888 043E' 1B DEC DE
889 043F' 0E 03 LD C,003
890 0441' ED B8 LDDR
891 0443' 18 1C JR BXXIT
892 ;
893 0445' 1E 08 BSIV5: LD E,008
894 0447' 16 00 LD D,000
895 0449' 19 ADD HL,DE
896 044A' DD 75 01 LD (IX+001),L

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897 044D' DD 74 02 LD (IX+002),H
898 0450' 2B DEC HL
899 0451' DD E5 PUSH IX
900 0453' FD E1 POP IY
901 0455' 1E 09 LD E,009
902 0457' FD 19 ADD IY,DE
903 0459' FD E5 PUSH IY
904 045B' D1 POP DE
905 045C' 01 0007 LD BC,00007
906 045F' ED B8 LDDR
907 ;
908 ;
909 0461' DD E5 BXXIT: PUSH IX
910 0463' E1 POP HL
911 0464' F1 POP AF
912 0465' C1 POP BC
913 0466' FE FF CP OFF
914 0468' C8 RET Z
915 0469' 57 LD D,A
916 046A' E6 3F AND 03F
917 046C' FE 04 CP 004
918 046E' 20 02 JR NZ,BSIV6
919 0470' 06 3E LD B,03E
920 0472' 7A BSIV6: LD A,D
921 0473' E6 C0 AND 0C0
922 0475' B0 OR B
923 0476' 77 LD (HL),A
924 0477' C9 RET
925 ;
926 ;
927 ; *****
928 0478' DD E5 ADDXD: PUSH IX ; ADD IX TO DE WITHOUT CHANGING
929 047A' FD E1 POP IY ; IX ( GOES THROUGH IY )
930 047C' FD 19 ADD IY,DE
931 047E' FD E5 PUSH IY
932 0480' D1 POP DE
933 0481' C9 RET
934 ;
935 ;
936 0482' 0002 FFFE D01DAT: DW 2,-2,1
937 0486' 0001
938 ;
939 ; *****
940 0488' 01 0482' LD BC,D01DAT ; DISPATCH # 01
941 048B' 11 73BA LD DE,P.AREA
942 048E' CD 0098' CALL PCOPY
943 0491' 2A 73BA LD HL,(P.AREA)
944 0494' 5E LD E,(HL)
945 0495' 23 INC HL
946 0496' 56 LD D,(HL)
947 0497' EB EX DE,HL
948 0498' 3A 73BC LD A,(P.AREA+2)
949 049B' FE 00 CP 000
950 049D' 28 03 JR Z,$+005 ; 004A2
951 049F' 37 SCF
952 04A0' 18 01 JR $+003 ; 004A3

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953 04A2' B7 OR A
954 ;
955 ;
956 04A3' 5E LD E,(HL) ; DISPATCH # 32
957 04A4' 23 INC HL
958 04A5' 56 LD D,(HL)
959 04A6' 23 INC HL
960 ;
961 04A7' 4E LD C,(HL)
962 04A8' 23 INC HL
963 04A9' 46 LD B,(HL)
964 04AA' 23 INC HL
965 ;
966 04AB' 3E 00 LD A,000
967 04AD' 02 LD (BC),A
968 ;
969 04AE' 1A LD A,(DE)
970 04AF' F5 PUSH AF
971 04B0' E6 0F AND 00F
972 04B2' CA 04E7 JP Z,004E7 ; JUMP ON CODE 0
973 04B5' 3D DEC A
974 04B6' CA 05F1 JP Z,005F1 ; JUMP ON CODE 1
975 04B9' 3D DEC A
976 04BA' CA 0600 JP Z,00600 ; JUMP ON CODE 2
977 04BD' 3D DEC A
978 04BE' CA 0600 JP Z,00600 ; JUMP ON CODE 3
979 04C1' 3D DEC A
980 04C2' 28 02 JR Z,$+004 ; 004C6 JUMP ON CODE 4
981 04C4' F1 POP AF
982 04CS' C9 RET ; RETURN IF CODE NOT 0-4
983 ;
984 04C6' 1A LD A,(DE)
985 04C7' 1F RRA
986 04C8' 1F RRA
987 04C9' 1F RRA
988 04CA' 1F RRA
989 04CB' E6 0F AND 00F
990 04CD' 47 LD B,A
991 04CE' 5E LD E,(HL)
992 04CF' 23 INC HL
993 04D0' 56 LD D,(HL)
994 04D1' 23 INC HL
995 04D2' B7 OR A
996 04D3' 28 10 JR Z,$+012 ; 004E5
997 04D5' F1 POP AF
998 04D6' F5 PUSH AF
999 04D7' E5 PUSH HL
1000 04D8' C5 PUSH BC
1001 04D9' EB EX DE,HL
1002 04DA' CD 04A3 CALL 004A3
1003 04DD' C1 POP BC
1004 04DE' E1 POP HL
1005 04DF' 5E LD E,(HL)
1006 04E0' 23 INC HL
1007 04E1' 56 LD D,(HL)
1008 04E2' 23 INC HL

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1009	04E3'	10 EC	DJNZ	\$-012 ; 004D5
1010	04E5'	F1	POP	AF
1011	04E6'	C9	RET	
1012	04E7'	CD 0572	CALL	00572
1013	04EA'	1A	LD	A,(DE)
1014	04EB'	6F	LD	L,A
1015	04EC'	13	INC	DE
1016	04ED'	1A	LD	A,(DE)
1017	04EE'	85	ADD	A,L
1018	04EF'	FD 77 05	LD	(IY+005),A
1019	04F2'	26 00	LD	H,000
1020	04F4'	F1	POP	AF
1021	04F5'	30 38	JR	NC,\$+03A ; 0052F
1022	04F7'	F5	PUSH	AF
1023	04FB'	3A 73C3	LD	A,(VDPOSH)
1024	04FB'	CB 4F	BIT	1,A
1025	04FD'	28 31	JR	Z,\$+033 ; 00530
1026	04FF'	EB	EX	DE,HL
1027	0500'	44	LD	B,H
1028	0501'	4D	LD	C,L
1029	0502'	6E	LD	L,(HL)
1030	0503'	26 00	LD	H,000
1031	0505'	E5	PUSH	HL
1032	0506'	29	ADD	HL,HL
1033	0507'	29	ADD	HL,HL
1034	0508'	29	ADD	HL,HL
1035	0509'	E5	PUSH	HL
1036	050A'	03	INC	BC
1037	050B'	0A	LD	A,(BC)
1038	050C'	6F	LD	L,A
1039	050D'	03	INC	BC
1040	050E'	0A	LD	A,(BC)
1041	050F'	67	LD	H,A
1042	0510'	C1	POP	BC
1043	0511'	FD E1	POP	IY
1044	0513'	F1	POP	AF
1045	0514'	CB 7F	BIT	7,A
1046	0516'	28 03	JR	Z,\$+005 ; 0051B
1047	0518'	CD 0594	CALL	00594
1048	051B'	CD 05EB	CALL	005EB
1049	051E'	CB 77	BIT	6,A
1050	0520'	28 03	JR	Z,\$+005 ; 00525
1051	0522'	CD 0594	CALL	00594
1052	0525'	CD 05EB	CALL	005EB
1053	0528'	CB 6F	BIT	5,A
1054	052A'	28 03	JR	Z,\$+005 ; 0052F
1055	052C'	CD 0594	CALL	00594
1056	052F'	C9	RET	
1057	0530'	EB	EX	DE,HL
1058	0531'	4E	LD	C,(HL)
1059	0532'	06 00	LD	B,000
1060	0534'	C5	PUSH	BC
1061	0535'	FD E1	POP	IY
1062	0537'	23	INC	HL
1063	0538'	7E	LD	A,(HL)
1064	0539'	23	INC	HL

1065 053A' 66
 1066 053B' 6F
 1067 053C' E5
 1068 053D' C5
 1069 053E' D5
 1070 053F' FD E5
 1071 0541' 3E 03
 1072 0543' CD 1C27'
 1073 0546' C1
 1074 0547' E1
 1075 0548' 5D
 1076 0549' 54
 1077 054A' 09
 1078 054B' 2B
 1079 054C' CB 3C
 1080 054E' CB 1D
 1081 0550' CB 3C
 1082 0552' CB 1D
 1083 0554' CB 3C
 1084 0556' CB 1D
 1085 0558' CB 2B
 1086 055A' CB 2B
 1087 055C' CB 2B
 1088 055E' B7
 1089 055F' ED 52
 1090 0561' 23
 1091 0562' E5
 1092 0563' FD E1
 1093 0565' E1
 1094 0566' 29
 1095 0567' 29
 1096 0568' 29
 1097 0569' C1
 1098 056A' 09
 1099 056B' 3E 04
 1100 056D' CD 1C27'
 1101 0570' F1
 1102 0571' C9
 1103
 1104
 1105
 1106 0572' C5
 1107 0573' FD E1
 1108 0575' D5
 1109 0576' 5E
 1110 0577' 23
 1111 0578' 56
 1112 0579' CB 7A
 1113 057B' 20 14
 1114 057D' 7A
 1115 057E' FE 70
 1116 0580' 38 06
 1117 0582' 3E 80
 1118 0584' 12
 1119 0585' 18 0A
 1120 0587' 80

LD H,(HL)
 LD L,A
 PUSH HL
 PUSH BC
 PUSH DE
 PUSH IY
 LD A,003
 CALL RCOPY
 POP BC
 POP HL
 LD E,L
 LD D,H
 ADD HL,BC
 DEC HL
 SRL H
 RR L
 SRL H
 RR L
 SRL H
 RR L
 SRA E
 SRA E
 SRA E
 OR A
 SBC HL,DE
 INC HL
 PUSH HL
 POP IY
 POP HL
 ADD HL,HL
 ADD HL,HL
 ADD HL,HL
 POP BC
 ADD HL,BC
 LD A,004
 CALL RCOPY
 POP AF
 RET

;
 ;
 ; *****
 ;

PUSH BC
 POP IY
 PUSH DE
 LD E,(HL)
 INC HL
 LD D,(HL)
 BIT 7,D
 JR NZ,\$+016 ; 00591
 LD A,D
 CP 070
 JR C,\$+008 ; 00588
 LD A,080
 LD (DE),A
 JR \$+00C ; 00591
 ADD A,B

1121	0588'	21 0587	LD	HL,00587	
1122	058B'	01 0001	LD	BC,00001	
1123	058E'	CD 1D01'	CALL	CPRTV	
1124	0591'	D1	POP	DE	
1125	0592'	13	INC	DE	
1126	0593'	C9	RET		
1127					
1128					
1129					
1130	0594'	F5	PUSH	AF	
1131	0595'	CS	PUSH	BC	
1132	0596'	FD E5	PUSH	IY	
1133	0598'	D5	PUSH	DE	
1134	0599'	E5	PUSH	HL	
1135	059A'	3E 03	LD	A,003	
1136	059C'	CD 1C27'	CALL	RCOPY	
1137	059F'	E1	POP	HL	
1138	05A0'	D1	POP	DE	
1139	05A1'	FD E1	POP	IY	
1140	05A3'	C1	POP	BC	
1141	05A4'	F1	POP	AF	
1142	05A5'	F5	PUSH	AF	
1143	05A6'	CS	PUSH	BC	
1144	05A7'	FD E5	PUSH	IY	
1145	05A9'	D5	PUSH	DE	
1146	05AA'	E5	PUSH	HL	
1147	05AB'	CB 67	BIT	4,A	
1148	05AD'	20 0D	JR	NZ,\$+00F ; 005BC	
1149	05AF'	09	ADD	HL,BC	
1150	05B0'	3E 04	LD	A,004	
1151	05B2'	CD 1C27'	CALL	RCOPY	
1152	05B5'	E1	POP	HL	
1153	05B6'	D1	POP	DE	
1154	05B7'	FD E1	POP	IY	
1155	05B9'	C1	POP	BC	
1156	05BA'	F1	POP	AF	
1157	05BB'	C9	RET		
1158	05BC'	09	ADD	HL,BC	
1159	05BD'	4D	LD	C,L	
1160	05BE'	44	LD	B,H	
1161	05BF'	FD E5	PUSH	IY	
1162	05C1'	E1	POP	HL	
1163	05C2'	E5	PUSH	HL	
1164	05C3'	0A	LD	A,(BC)	
1165	05C4'	CS	PUSH	BC	
1166	05C5'	01 0008	LD	BC,00008	
1167	05C8'	2A 8006	LD	HL,(08006)	
1168	05CB'	09	ADD	HL,BC	
1169	05CC'	06 08	LD	B,008	
1170	05CE'	2B	DEC	HL	
1171	05CF'	77	LD	(HL),A	
1172	05D0'	10 F8	DJNZ	\$-006 ; 005CE	
1173	05D2'	D5	PUSH	DE	
1174	05D3'	FD 21 0001	LD	IY,00001	
1175	05D7'	3E 04	LD	A,004	
1176	05D9'	CD 1C27'	CALL	RCOPY	

1177	05DC'	D1	POP	DE	
1178	05DD'	C1	POP	BC	
1179	05DE'	13	INC	DE	
1180	05DF'	03	INC	BC	
1181	05E0'	E1	POP	HL	
1182	05E1'	2B	DEC	HL	
1183	05E2'	7C	LD	A,H	
1184	05E3'	85	OR	L	
1185	05E4'	20 D8	JR	NZ,\$-026	; 005C2
1186	05E6'	18 C9	JR	\$-035	; 005B5
1187					
1188					
1189	05E8'	C5	PUSH	BC	
1190	05E9'	01 0100	LD	BC,00100	
1191	05EC'	EB	EX	DE,HL	
1192	05ED'	09	ADD	HL,BC	
1193	05EE'	EB	EX	DE,HL	
1194	05EF'	C1	POP	BC	
1195	05F0'	C9	RET		
1196					
1197					
1198					
1199	05F1'	CD 0572	CALL	00572	
1200	05F4'	13	INC	DE	
1201	05F5'	1A	LD	A,(DE)	
1202	05F6'	FD 77 05	LD	(IY+005),A	
1203	05F9'	13	INC	DE	
1204	05FA'	1A	LD	A,(DE)	
1205	05FB'	FD 77 06	LD	(IY+006),A	
1206	05FE'	F1	POP	AF	
1207	05FF'	C9	RET		
1208					
1209					
1210					
1211	0600'	03	INC	BC	
1212	0601'	03	INC	BC	
1213	0602'	03	INC	BC	
1214	0603'	03	INC	BC	
1215	0604'	03	INC	BC	
1216	0605'	EB	EX	DE,HL	
1217	0606'	23	INC	HL	
1218	0607'	7E	LD	A,(HL)	
1219	0608'	5F	LD	E,A	
1220	0609'	16 00	LD	D,000	
1221	060B'	D5	PUSH	DE	
1222	060C'	23	INC	HL	
1223	060D'	5E	LD	E,(HL)	
1224	060E'	23	INC	HL	
1225	060F'	56	LD	D,(HL)	
1226	0610'	23	INC	HL	
1227	0611'	86	ADD	A,(HL)	
1228	0612'	02	LD	(BC),A	
1229	0613'	4E	LD	C,(HL)	
1230	0614'	06 00	LD	B,000	
1231	0616'	C5	PUSH	BC	
1232	0617'	FD E1	POP	IY	


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1233 0619' EB EX DE,HL
1234 061A' D1 POP DE
1235 061B' F1 POP AF
1236 061C' D0 RET NC
1237 061D' 3E 01 LD A,001
1238 061F' CD 1C27' CALL RCOPY
1239 0622' C9 RET
1240 ; -----
1241 ;
1242 ; *****
1243 0623' DD E5 PSHIXB: PUSH IX ; SAVE IX,B BY POINTER AT 073CD
1244 0625' 2A 73CD LD HL,(073CD)
1245 0628' D1 POP DE
1246 0629' 73 LD (HL),E
1247 062A' 23 INC HL
1248 062B' 72 LD (HL),D
1249 062C' 23 INC HL
1250 062D' 70 LD (HL),B
1251 062E' 23 INC HL
1252 ;
1253 062F' EB EX DE,HL ; DE GETS POINTER, HL GETS IX
1254 0630' 3A 73CB LD A,(073CB)
1255 0633' 3C INC A
1256 0634' 21 73CA LD HL,073CA
1257 0637' BE CP (HL) ; JUMP IF (073CB) NOT = (073CA)-1
1258 0638' 20 0D JR NZ,$+00F ; 00647
1259 063A' 3E 00 LD A,000 ; IF (073CB)=(073CA)-1 THEN
1260 063C' 32 73CB LD (073CB),A ; (073CB)=0
1261 ;
1262 063F' 2A 73D1 LD HL,(073D1) ; (073CD)=(073D1) 16 BITS
1263 0642' 22 73CD LD (073CD),HL
1264 0645' 18 07 JR $+009 ; 0064E EXIT
1265 ;
1266 0647' 32 73CB LD (073CB),A ; ADVANCE COUNTER
1267 064A' ED 53 73CD LD (073CD),DE ; UPDATE POINTER
1268 064E' C9 RET
1269 ; -----
1270 ;
1271 ;
1272 064F' 0002 0001 DIADAT: DW 2,1,-2
1273 0653' FFFE
1274 ;
1275 ; *****
1276 0655' 01 064F' LD BC,DIADAT ; DISPATCH # 1A
1277 0658' 11 73BA LD DE,P.AREA
1278 065B' CD 0098' CALL PCOPY
1279 065E' 3A 73BA LD A,(P.AREA)
1280 0661' 2A 73BB LD HL,(P.AREA+1)
1281 ;
1282 ;
1283 0664' 32 73CA LD (073CA),A ; DISPATCH # 2C
1284 0667' 3E 00 LD A,000
1285 0669' 32 73CB LD (073CB),A
1286 066C' 32 73CC LD (073CC),A
1287 066F' 22 73D1 LD (073D1),HL
1288 0672' 22 73CD LD (073CD),HL
    
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1289 0675' 22 73CF          LD      (073CF),HL
1290 0678'  C9             RET
1291
1292
1293
1294 0679' 3A 73C6          LD      A,(STRFLG) ; DISPATCH # 2D
1295 067C'  F5             PUSH   AF
1296 067D' 3E 00          LD      A,000
1297 067F' 32 73C6          LD      (STRFLG),A
1298
1299 0682' 3A 73CC          LD      A,(073CC)
1300 0685' 21 73CB          LD      HL,073CB
1301 0688'  BE             CP      (HL)
1302 0689' 28 31          JR      Z,$+033 ; 006BC
1303
1304 068B' 2A 73CF          LD      HL,(073CF)
1305 068E'  5E             LD      E,(HL)
1306 068F'  23             INC     HL
1307 0690'  56             LD      D,(HL)
1308 0691'  23             INC     HL
1309 0692'  46             LD      B,(HL)
1310 0693'  23             INC     HL
1311 0694'  D5             PUSH   DE
1312 0695' DD E1          POP    IX
1313
1314 0697'  E5             PUSH   HL
1315 0698' CD 06E3          CALL   006E3
1316 069B' 3A 73CC          LD      A,(073CC)
1317 069E'  3C             INC     A
1318 069F' 21 73CA          LD      HL,073CA
1319 06A2'  BE             CP      (HL)
1320 06A3' 20 0E          JR      NZ,$+010 ; 006B3
1321
1322 06A5' 3E 00          LD      A,000
1323 06A7' 32 73CC          LD      (073CC),A
1324 06AA' 2A 73D1          LD      HL,(073D1)
1325 06AD' 22 73CF          LD      (073CF),HL
1326 06B0'  E1             POP    HL
1327 06B1' 18 07          JR      $+009 ; 006BA
1328
1329 06B3' 32 73CC          LD      (073CC),A
1330 06B6'  E1             POP    HL
1331 06B7' 22 73CF          LD      (073CF),HL
1332 06BA' 18 C2          JR      $-03C ; 006B2
1333
1334 06BC'  F1             POP    AF
1335 06BD' 32 73C6          LD      (STRFLG),A
1336 06C0'  C9             RET
1337
1338
1339
1340 06C1' 0002 0002        D02DAT: DW 2,2,1
1341 06C5' 0001
1342
1343
1344 06C7' 01 06C1'          LD      BC,D02DAT ; DISPATCH # 02

```

```

1345 06CA' 11 73BA LD DE,P.AREA
1346 06CD' CD 0098' CALL PCOPY
1347 06D0' DD 2A 73BA LD IX,(P.AREA)
1348 06D4' 3A 73BC LD A,(P.AREA+2)
1349 06D7' 47 LD B,A
1350 ;
1351 ;
1352 06DB' 3A 73C6 LD A,(STRFLG) ; DISPATCH # 33
1353 06DB' FE 01 CP 001
1354 06DD' 20 04 JR NZ,$+006 ; 006E3
1355 06DF' CD 0623' CALL PSHIXB
1356 06E2' C9 RET
1357 ;
1358 06E3' DD 66 01 LD H,(IX+001) ; GET LAST FUNCT CODE
1359 06E6' DD 6E 00 LD L,(IX+000)
1360 06E9' 7E LD A,(HL)
1361 06EA' 4F LD C,A
1362 06EB' E6 0F AND OOF
1363
1364 06ED' CA 06FF JP Z,006FF ; JUMP ON CODE 0
1365 06F0' 3D DEC A
1366 06F1' CA 0A87 JP Z,00A87 ; JUMP ON CODE 1
1367 06F4' 3D DEC A
1368 06F5' CA 08DF JP Z,008DF ; JUMP ON CODE 2
1369 06F8' 3D DEC A
1370 06F9' CA 0955 JP Z,00955 ; JUMP ON CODE 3
1371 ;
1372 06FC' C3 0EA2 JP 00EA2 ; JUMP ON ANY OTHER
1373 ;
1374 06FF' DD 56 03 LD D,(IX+003)
1375 0702' DD 5E 02 LD E,(IX+002)
1376 0705' D5 PUSH DE
1377 0706' FD E1 POP IY
1378 0708' FD 56 02 LD D,(IY+002)
1379 070B' FD 5E 01 LD E,(IY+001)
1380 070E' CD 07E8' CALL DIVLIN
1381 0711' 4B LD C,E
1382 0712' FD 56 04 LD D,(IY+004)
1383 0715' FD 5E 03 LD E,(IY+003)
1384 0718' CD 07E8' CALL DIVLIN
1385 071B' 43 LD B,E
1386 071C' FD 5E 00 LD E,(IY+000)
1387 071F' 16 00 LD D,000
1388 0721' 19 ADD HL,DE
1389 0722' 19 ADD HL,DE
1390 0723' 1E 05 LD E,005
1391 0725' 19 ADD HL,DE
1392 0726' 5E LD E,(HL)
1393 0727' 23 INC HL
1394 0728' 56 LD D,(HL)
1395 0729' EB EX DE,HL
1396 072A' C5 PUSH BC
1397 072B' D1 POP DE
1398 072C' 4E LD C,(HL)
1399 072D' 23 INC HL
1400 072E' 46 LD B,(HL)

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1401	072F'	23	INC	HL	
1402	0730'	DD 7E 05	LD	A,(IX+005)	
1403	0733'	CB 7F	BIT	7,A	
1404	0735'	28 04	JR	Z,\$+006 ; 0073B	
1405	0737'	CD 080B	CALL	0080B	
1406	073A'	C9	RET		
1407	073B'	C5	PUSH	BC	
1408	073C'	D5	PUSH	DE	
1409	073D'	E5	PUSH	HL	
1410	073E'	FE 70	CP	070	
1411	0740'	28 02	JR	Z,\$+004 ; 00744	
1412	0742'	38 07	JR	C,\$+009 ; 0074B	
1413	0744'	67	LD	H,A	
1414	0745'	DD 6E 04	LD	L,(IX+004)	
1415	0748'	7E	LD	A,(HL)	
1416	0749'	18 35	JR	\$+037 ; 00780	
1417	074B'	2A 8006	LD	HL,(08006)	
1418	074E'	DD 56 05	LD	D,(IX+005)	
1419	0751'	DD 5E 04	LD	E,(IX+004)	
1420	0754'	E5	PUSH	HL	
1421	0755'	D5	PUSH	DE	
1422	0756'	E5	PUSH	HL	
1423	0757'	01 0004	LD	BC,00004	
1424	075A'	CD 1D3E'	CALL	RDVRM	
1425	075D'	E1	POP	HL	
1426	075E'	7E	LD	A,(HL)	
1427	075F'	FE 80	CP	080	
1428	0761'	20 03	JR	NZ,\$+005 ; 00766	
1429	0763'	D1	POP	DE	
1430	0764'	18 19	JR	\$+01B ; 0077F	
1431	0766'	23	INC	HL	
1432	0767'	23	INC	HL	
1433	0768'	46	LD	B,(HL)	
1434	0769'	23	INC	HL	
1435	076A'	5E	LD	E,(HL)	
1436	076B'	16 00	LD	D,000	
1437	076D'	23	INC	HL	
1438	076E'	EB	EX	DE,HL	
1439	076F'	18 01	JR	\$+003 ; 00772	
1440	0771'	29	ADD	HL,HL	
1441	0772'	10 F9	DJNZ	\$-005 ; 00771	
1442	0774'	E5	PUSH	HL	
1443	0775'	C1	POP	BC	
1444	0776'	EB	EX	DE,HL	
1445	0777'	D1	POP	DE	
1446	0778'	13	INC	DE	
1447	0779'	13	INC	DE	
1448	077A'	13	INC	DE	
1449	077B'	13	INC	DE	
1450	077C'	CD 1D3E'	CALL	RDVRM	
1451	077F'	E1	POP	HL	
1452	0780'	7E	LD	A,(HL)	
1453	0781'	FE 80	CP	080	
1454	0783'	28 0F	JR	Z,\$+011 ; 00794	
1455	0785'	5E	LD	E,(HL)	
1456	0786'	23	INC	HL	

1457	0787'	56	LD	D,(HL)
1458	0788'	23	INC	HL
1459	0789'	4E	LD	C,(HL)
1460	078A'	23	INC	HL
1461	078B'	46	LD	B,(HL)
1462	078C'	23	INC	HL
1463	078D'	DD E5	PUSH	IX
1464	078F'	CD 080B	CALL	0080B
1465	0792'	DD E1	POP	IX
1466	0794'	E1	POP	HL
1467	0795'	D1	POP	DE
1468	0796'	C1	POP	BC
1469	0797'	C5	PUSH	BC
1470	0798'	D5	PUSH	DE
1471	0799'	E5	PUSH	HL
1472	079A'	DD 66 05	LD	H,(IX+005)
1473	079D'	DD 6E 04	LD	L,(IX+004)
1474	07A0'	3E 70	LD	A,070
1475	07A2'	BC	CP	H
1476	07A3'	38 03	JR	C,\$+005 ; 007A8
1477	07A5'	2A 8006	LD	HL,(08006)
1478	07A8'	73	LD	(HL),E
1479	07A9'	23	INC	HL
1480	07AA'	72	LD	(HL),D
1481	07AB'	23	INC	HL
1482	07AC'	71	LD	(HL),C
1483	07AD'	23	INC	HL
1484	07AE'	70	LD	(HL),B
1485	07AF'	23	INC	HL
1486	07B0'	DD E5	PUSH	IX
1487	07B2'	CD 0898	CALL	00898
1488	07B5'	DD E1	POP	IX
1489	07B7'	E1	POP	HL
1490	07B8'	D1	POP	DE
1491	07B9'	C1	POP	BC
1492	07BA'	DD E5	PUSH	IX
1493	07BC'	CD 080B	CALL	0080B
1494	07BF'	DD E1	POP	IX
1495	07C1'	DD 56 05	LD	D,(IX+005)
1496	07C4'	3E 70	LD	A,070
1497	07C6'	BA	CP	D
1498	07C7'	28 1E	JR	Z,\$+020 ; 007E7
1499	07C9'	38 1C	JR	C,\$+01E ; 007E7
1500	07CB'	DD 5E 04	LD	E,(IX+004)
1501	07CE'	D9	EXX	
1502	07CF'	2A 8006	LD	HL,(08006)
1503	07D2'	E5	PUSH	HL
1504	07D3'	23	INC	HL
1505	07D4'	23	INC	HL
1506	07D5'	5E	LD	E,(HL)
1507	07D6'	16 00	LD	D,000
1508	07D8'	23	INC	HL
1509	07D9'	46	LD	B,(HL)
1510	07DA'	EB	EX	DE,HL
1511	07DB'	18 01	JR	\$+003 ; 007DE
1512	07DD'	29	ADD	HL,HL

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1513 07DE' 10 F9          DJNZ  $-005 ; 007DD
1514 07E0' E5           PUSH  HL
1515 07E1' D9           EXX
1516 07E2' C1           POP   BC
1517 07E3' E1           POP   HL
1518 07E4' CD 1D01'     CALL  CPRTV
1519 07E7' C9           RET
1520 ; -----
1521 ;
1522 ; *****
1523 ;
1524 ; THIS ROUTINE ARITHMETICALLY DIVIDES DE BY 8 AND LIMITS
1525 ; THE RESULT TO THE RANGE -80 TO 7F INCLUSIVE.
1526 ;
1527 07EB' E5           DIVLIN: PUSH  HL          ; SAVE HL
1528 ;
1529 07E9' CB 2A         SRA   D            ; DE=DE/8
1530 07EB' CB 1B         RR    E
1531 07ED' CB 2A         SRA   D
1532 07EF' CB 1B         RR    E
1533 07F1' CB 2A         SRA   D
1534 07F3' CB 1B         RR    E
1535 ;
1536 07F5' CB 7A         BIT   7,D
1537 07F7' 20 09        JR    NZ,DENEG      ; JUMP IF DE NEGITIVE
1538 ;
1539 07F9' 21 FF80       LD    HL,OFF80      ; HL=-80
1540 07FC' 19           ADD   HL,DE         ; ADD DE (I.E. HL=DE-80)
1541 07FD' E1           POP   HL            ; RESTORE HL
1542 07FE' D0           RET   NC            ; RETURN IF DE<80
1543 ;
1544 07FF' 1E 7F        LD    E,07F        ; IF DE IS >=80, SET IT BACK TO 7F
1545 0801' C9           RET
1546 ;
1547 0802' 21 0080       DENEG: LD   HL,00080     ; CHECK FOR DE<-80
1548 0805' 19           ADD   HL,DE
1549 0806' E1           POP   HL
1550 0807' D8           RET   C            ; RETURN IF DE<= -80
1551 ;
1552 0808' 1E 80        LD    E,080        ; ELSE MAKE DE= -80
1553 080A' C9           RET
1554 ; -----
1555 ;
1556 ; *****
1557 080B' C5           PUSH  BC
1558 080C' D5           PUSH  DE
1559 080D' E5           PUSH  HL
1560 080E' D9           EXX
1561 080F' E1           POP   HL
1562 0810' D1           POP   DE
1563 0811' C1           POP   BC
1564 0812' CD 08C0'     CALL  DIVADD
1565 0815' D9           EXX
1566 0816' 7B           LD    A,E
1567 0817' CB 7F        BIT   7,A
1568 0819' 20 03        JR    NZ,$+005     ; 0081E

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1569	081B'	FE 20	CP	020
1570	081D'	D0	RET	NC
1571	081E'	81	ADD	A,C
1572	081F'	CB 7F	BIT	7,A
1573	0821'	C0	RET	NZ
1574	0822'	B7	OR	A
1575	0823'	C8	RET	Z
1576	0824'	CB 7B	BIT	7,E
1577	0826'	28 20	JR	Z,\$+022 ; 00848
1578	0828'	79	LD	A,C
1579	0829'	83	ADD	A,E
1580	082A'	D5	PUSH	DE
1581	082B'	FE 21	CP	021
1582	082D'	38 02	JR	C,\$+004 ; 00831
1583	082F'	3E 20	LD	A,020
1584	0831'	5F	LD	E,A
1585	0832'	16 00	LD	D,000
1586	0834'	D5	PUSH	DE
1587	0835'	FD E1	POP	IY
1588	0837'	D1	POP	DE
1589	0838'	7B	LD	A,E
1590	0839'	D9	EXX	
1591	083A'	C5	PUSH	BC
1592	083B'	ED 44	NEG	
1593	083D'	4F	LD	C,A
1594	083E'	06 00	LD	B,000
1595	0840'	09	ADD	HL,BC
1596	0841'	EB	EX	DE,HL
1597	0842'	09	ADD	HL,BC
1598	0843'	EB	EX	DE,HL
1599	0844'	C1	POP	BC
1600	0845'	D9	EXX	
1601	0846'	18 1C	JR	\$+01E ; 00864
1602	0848'	7B	LD	A,E
1603	0849'	81	ADD	A,C
1604	084A'	FE 1F	CP	01F
1605	084C'	28 0F	JR	Z,\$+011 ; 0085D
1606	084E'	38 0D	JR	C,\$+00F ; 0085D
1607	0850'	3E 20	LD	A,020
1608	0852'	93	SUB	E
1609	0853'	D5	PUSH	DE
1610	0854'	5F	LD	E,A
1611	0855'	16 00	LD	D,000
1612	0857'	D5	PUSH	DE
1613	0858'	FD E1	POP	IY
1614	085A'	D1	POP	DE
1615	085B'	18 07	JR	\$+009 ; 00864
1616	085D'	C5	PUSH	BC
1617	085E'	06 00	LD	B,000
1618	0860'	C5	PUSH	BC
1619	0861'	FD E1	POP	IY
1620	0863'	C1	POP	BC
1621	0864'	1E 00	LD	E,000
1622	0866'	7A	LD	A,D
1623	0867'	83	ADD	A,E
1624	0868'	CB 7F	BIT	7,A

1625	086A'	20 19	JR	NZ,\$+01B	; 00885
1626	086C'	FE 18	CP	01B	
1627	086E'	30 15	JR	NC,\$+017	; 00885
1628	0870'	C5	PUSH	BC	
1629	0871'	D5	PUSH	DE	
1630	0872'	D9	EXX		
1631	0873'	C5	PUSH	BC	
1632	0874'	D5	PUSH	DE	
1633	0875'	E5	PUSH	HL	
1634	0876'	FD E5	PUSH	IY	
1635	0878'	3E 02	LD	A,002	
1636	087A'	CD 1C27'	CALL	RCOPY	
1637	087D'	FD E1	POP	IY	
1638	087F'	E1	POP	HL	
1639	0880'	D1	POP	DE	
1640	0881'	C1	POP	BC	
1641	0882'	D9	EXX		
1642	0883'	D1	POP	DE	
1643	0884'	C1	POP	BC	
1644	0885'	D9	EXX		
1645	0886'	C5	PUSH	BC	
1646	0887'	06 00	LD	B,000	
1647	0889'	09	ADD	HL,BC	
1648	088A'	EB	EX	DE,HL	
1649	088B'	01 0020	LD	BC,00020	
1650	088E'	09	ADD	HL,BC	
1651	088F'	EB	EX	DE,HL	
1652	0890'	C1	POP	BC	
1653	0891'	D9	EXX		
1654	0892'	1C	INC	E	
1655	0893'	7B	LD	A,E	
1656	0894'	B8	CP	B	
1657	0895'	20 CB	JR	NZ,\$-033	; 00866
1658	0897'	C9	RET		
1659					
1660					
1661					
1662	0898'	CD 08C0'	CALL	DIVADD	
1663	089B'	C5	PUSH	BC	
1664	089C'	06 00	LD	B,000	
1665	089E'	C5	PUSH	BC	
1666	089F'	FD E1	POP	IY	
1667	08A1'	C1	POP	BC	
1668	08A2'	C5	PUSH	BC	
1669	08A3'	D5	PUSH	DE	
1670	08A4'	E5	PUSH	HL	
1671	08A5'	FD E5	PUSH	IY	
1672	08A7'	3E 02	LD	A,002	
1673	08A9'	CD 1BA3'	CALL	RVBLK	
1674	08AC'	FD E1	POP	IY	
1675	08AE'	E1	POP	HL	
1676	08AF'	D1	POP	DE	
1677	08B0'	C1	POP	BC	
1678	08B1'	C5	PUSH	BC	
1679	08B2'	06 00	LD	B,000	
1680	08B4'	09	ADD	HL,BC	


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1681 08B5' 01 0020          LD      BC,00020
1682 08B8' EB              EX      DE,HL
1683 08B9' 09             ADD     HL,BC
1684 08BA' EB              EX      DE,HL
1685 08BB' C1             POP     BC
1686 08BC' 05             DEC     B
1687 08BD' 20 DF          JR      NZ,$-01F      ; 00BA2
1688 08BF' C9             RET
1689
1690
1691 ; *****
1692 08C0' E5             DIVADD: PUSH  HL      ; FORM A 16 BIT NUMBER FROM THE
1693 08C1' CB 7A          BIT     7,D          ; SUM OF (DE AND OFF00)/8 SIGN EXT
1694 08C3' 28 04          JR      Z,DVA1       ; AND E SIGN EXT
1695 08C5' 26 FF          LD      H,OFF
1696 08C7' 18 02          JR      DVA2
1697
1698 08C9' 26 00          DVA1: LD      H,000
1699 08CB' 6A            DVA2: LD      L,D      ; HL HAS DE/100H SIGN EXTENDED
1700
1701 08CC' 29             ADD     HL,HL        ; MULTIPLY HL BY 20H
1702 08CD' 29             ADD     HL,HL
1703 08CE' 29             ADD     HL,HL
1704 08CF' 29             ADD     HL,HL
1705 08D0' 29             ADD     HL,HL        ; RESULT IS (DE AND OFF00)/8 SIGN EXT
1706
1707 08D1' CB 7B          BIT     7,E          ; SIGN EXTEND E
1708 08D3' 28 04          JR      Z,DVA3
1709 08D5' 16 FF          LD      D,OFF
1710 08D7' 18 02          JR      DVA4
1711
1712 08D9' 16 00          DVA3: LD      D,000
1713 08DB' 19            DVA4: ADD     HL,DE    ; ADD THEM
1714 08DC' EB              EX      DE,HL
1715 08DD' E1             POP     HL
1716 08DE' C9             RET
1717
1718
1719 ; *****
1720 08DF' FD 2A 8006      LD      IY,(08006)
1721 08E3' DD 6E 02      LD      L,(IX+002)
1722 08E6' DD 66 03      LD      H,(IX+003)
1723 08E9' 11 0001      LD      DE,00001
1724 08EC' 19             ADD     HL,DE
1725 08ED' 4E             LD      C,(HL)
1726 08EE' 23             INC     HL
1727 08EF' 46             LD      B,(HL)
1728 08F0' 78             LD      A,B
1729 08F1' FE 00          CP      000
1730 08F3' 28 08          JR      Z,$+00D ; 00900
1731 08F5' FE FF          CP      OFF
1732 08F7' C2 0A54      JP      NZ,00A54
1733 08FA' 79             LD      A,C
1734 08FB' FE F9          CP      0F9
1735 08FD' FA 0A54      JP      M,00A54
1736 0900' 23             INC     HL

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1737	0901'	4E	LD	C,(HL)
1738	0902'	23	INC	HL
1739	0903'	46	LD	B,(HL)
1740	0904'	78	LD	A,B
1741	0905'	FE 00	CP	000
1742	0907'	28 0B	JR	Z,\$+00B ; 00914
1743	0909'	FE FF	CP	OFF
1744	090B'	C2 0A54	JP	NZ,00A54
1745	090E'	79	LD	A,C
1746	090F'	FE F9	CP	OF9
1747	0911'	FA 0A54	JP	N,00A54
1748	0914'	2B	DEC	HL
1749	0915'	2B	DEC	HL
1750	0916'	7E	LD	A,(HL)
1751	0917'	FE 00	CP	000
1752	0919'	CA 09CA	JP	Z,009CA
1753	091C'	2B	DEC	HL
1754	091D'	4E	LD	C,(HL)
1755	091E'	23	INC	HL
1756	091F'	46	LD	B,(HL)
1757	0920'	21 0008	LD	HL,00008
1758	0923'	09	ADD	HL,BC
1759	0924'	7D	LD	A,L
1760	0925'	FD 77 01	LD	(IY+001),A
1761	0928'	DD 6E 00	LD	L,(IX+000)
1762	092B'	DD 66 01	LD	H,(IX+001)
1763	092E'	11 0005	LD	DE,00005
1764	0931'	19	ADD	HL,DE
1765	0932'	EB	EX	DE,HL
1766	0933'	1A	LD	A,(DE)
1767	0934'	6F	LD	L,A
1768	0935'	13	INC	DE
1769	0936'	1A	LD	A,(DE)
1770	0937'	67	LD	H,A
1771	0938'	E5	PUSH	HL
1772	0939'	DD 6E 02	LD	L,(IX+002)
1773	093C'	DD 66 03	LD	H,(IX+003)
1774	093F'	11 0000	LD	DE,00000
1775	0942'	19	ADD	HL,DE
1776	0943'	7E	LD	A,(HL)
1777	0944'	CB 27	SLA	A
1778	0946'	01 0000	LD	BC,00000
1779	0949'	4F	LD	C,A
1780	094A'	E1	POP	HL
1781	094B'	09	ADD	HL,BC
1782	094C'	7E	LD	A,(HL)
1783	094D'	F6 80	OR	080
1784	094F'	FD 77 03	LD	(IY+003),A
1785	0952'	C3 0A00	JP	00A00
1786	0955'	FD 2A 8006	LD	IY,(08006)
1787	0959'	DD 6E 02	LD	L,(IX+002)
1788	095C'	DD 66 03	LD	H,(IX+003)
1789	095F'	11 0001	LD	DE,00001
1790	0962'	19	ADD	HL,DE
1791	0963'	4E	LD	C,(HL)
1792	0964'	23	INC	HL

1793	0965'	46	LD	B,(HL)
1794	0966'	78	LD	A,B
1795	0967'	FE 00	CP	000
1796	0969'	28 0B	JR	Z,\$+00D ; 00976
1797	096B'	FE FF	CP	OFF
1798	096D'	C2 0A54	JP	NZ,00A54
1799	0970'	79	LD	A,C
1800	0971'	FE E1	CP	OE1
1801	0973'	FA 0A54	JP	M,00A54
1802	0976'	23	INC	HL
1803	0977'	4E	LD	C,(HL)
1804	0978'	23	INC	HL
1805	0979'	46	LD	B,(HL)
1806	097A'	78	LD	A,B
1807	097B'	FE 00	CP	000
1808	097D'	28 0B	JR	Z,\$+00D ; 0098A
1809	097F'	FE FF	CP	OFF
1810	0981'	C2 0A54	JP	NZ,00A54
1811	0984'	79	LD	A,C
1812	0985'	FE E1	CP	OE1
1813	0987'	FA 0A54	JP	M,00A54
1814	098A'	2B	DEC	HL
1815	098B'	2B	DEC	HL
1816	098C'	7E	LD	A,(HL)
1817	098D'	FE 00	CP	000
1818	098F'	CA 09CA	JP	Z,009CA
1819	0992'	2B	DEC	HL
1820	0993'	4E	LD	C,(HL)
1821	0994'	23	INC	HL
1822	0995'	46	LD	B,(HL)
1823	0996'	21 0020	LD	HL,00020
1824	0999'	09	ADD	HL,BC
1825	099A'	7D	LD	A,L
1826	099B'	FD 77 01	LD	(IY+001),A
1827	099E'	DD 6E 00	LD	L,(IX+000)
1828	09A1'	DD 66 01	LD	H,(IX+001)
1829	09A4'	11 0005	LD	DE,00005
1830	09A7'	19	ADD	HL,DE
1831	09AB'	EB	EX	DE,HL
1832	09A9'	1A	LD	A,(DE)
1833	09AA'	6F	LD	L,A
1834	09AB'	13	INC	DE
1835	09AC'	1A	LD	A,(DE)
1836	09AD'	67	LD	H,A
1837	09AE'	E5	PUSH	HL
1838	09AF'	DD 6E 02	LD	L,(IX+002)
1839	09B2'	DD 66 03	LD	H,(IX+003)
1840	09B5'	11 0000	LD	DE,00000
1841	09B8'	19	ADD	HL,DE
1842	09B9'	7E	LD	A,(HL)
1843	09BA'	CB 27	SLA	A
1844	09BC'	01 0000	LD	BC,00000
1845	09BF'	4F	LD	C,A
1846	09C0'	E1	POP	HL
1847	09C1'	09	ADD	HL,BC
1848	09C2'	7E	LD	A,(HL)

1849	09C3'	F6 80	OR	080
1850	09C5'	FD 77 03	LD	(IY+003),A
1851	09C8'	18 36	JR	#+038 ; 00A00
1852	09CA'	DD 6E 02	LD	L,(IX+002)
1853	09CD'	DD 66 03	LD	H,(IX+003)
1854	09D0'	11 0001	LD	DE,00001
1855	09D3'	19	ADD	HL,DE
1856	09D4'	7E	LD	A,(HL)
1857	09D5'	FD 77 01	LD	(IY+001),A
1858	09D8'	DD 6E 00	LD	L,(IX+000)
1859	09DB'	DD 66 01	LD	H,(IX+001)
1860	09DE'	11 0005	LD	DE,00005
1861	09E1'	19	ADD	HL,DE
1862	09E2'	EB	EX	DE,HL
1863	09E3'	1A	LD	A,(DE)
1864	09E4'	6F	LD	L,A
1865	09E5'	13	INC	DE
1866	09E6'	1A	LD	A,(DE)
1867	09E7'	67	LD	H,A
1868	09EB'	E5	PUSH	HL
1869	09E9'	DD 6E 02	LD	L,(IX+002)
1870	09EC'	DD 66 03	LD	H,(IX+003)
1871	09EF'	11 0000	LD	DE,00000
1872	09F2'	19	ADD	HL,DE
1873	09F3'	7E	LD	A,(HL)
1874	09F4'	CB 27	SLA	A
1875	09F6'	01 0000	LD	BC,00000
1876	09F9'	4F	LD	C,A
1877	09FA'	E1	POP	HL
1878	09FB'	09	ADD	HL,BC
1879	09FC'	7E	LD	A,(HL)
1880	09FD'	FD 77 03	LD	(IY+003),A
1881	0A00'	DD 6E 02	LD	L,(IX+002)
1882	0A03'	DD 66 03	LD	H,(IX+003)
1883	0A06'	11 0003	LD	DE,00003
1884	0A09'	19	ADD	HL,DE
1885	0A0A'	7E	LD	A,(HL)
1886	0A0B'	FD 77 00	LD	(IY+000),A
1887	0A0E'	DD 6E 00	LD	L,(IX+000)
1888	0A11'	DD 66 01	LD	H,(IX+001)
1889	0A14'	11 0005	LD	DE,00005
1890	0A17'	19	ADD	HL,DE
1891	0A18'	EB	EX	DE,HL
1892	0A19'	1A	LD	A,(DE)
1893	0A1A'	6F	LD	L,A
1894	0A1B'	13	INC	DE
1895	0A1C'	1A	LD	A,(DE)
1896	0A1D'	67	LD	H,A
1897	0A1E'	E5	PUSH	HL
1898	0A1F'	DD 6E 02	LD	L,(IX+002)
1899	0A22'	DD 66 03	LD	H,(IX+003)
1900	0A25'	11 0000	LD	DE,00000
1901	0A28'	19	ADD	HL,DE
1902	0A29'	7E	LD	A,(HL)
1903	0A2A'	CB 27	SLA	A
1904	0A2C'	01 0000	LD	BC,00000

1905	0A2F'	4F	LD	C,A
1906	0A30'	E1	POP	HL
1907	0A31'	09	ADD	HL,BC
1908	0A32'	23	INC	HL
1909	0A33'	7E	LD	A,(HL)
1910	0A34'	DD 6E 00	LD	L,(IX+000)
1911	0A37'	DD 66 01	LD	H,(IX+001)
1912	0A3A'	11 0001	LD	DE,00001
1913	0A3D'	19	ADD	HL,DE
1914	0A3E'	86	ADD	A,(HL)
1915	0A3F'	FD 77 02	LD	(IY+002),A
1916	0A42'	AF	XOR	A
1917	0A43'	16 00	LD	D,000
1918	0A45'	DD 5E 04	LD	E,(IX+004)
1919	0A48'	FD E5	PUSH	IY
1920	0A4A'	E1	POP	HL
1921	0A4B'	FD 21 0001	LD	IY,00001
1922	0A4F'	CD 1FBE'	CALL	RCOPYV
1923	0A52'	18 32	JR	\$+034 ; 00A86
1924	0A54'	FD E5	PUSH	IY
1925	0A56'	DD E5	PUSH	IX
1926	0A58'	FD E5	PUSH	IY
1927	0A5A'	FD E5	PUSH	IY
1928	0A5C'	AF	XOR	A
1929	0A5D'	16 00	LD	D,000
1930	0A5F'	DD 5E 04	LD	E,(IX+004)
1931	0A62'	E1	POP	HL
1932	0A63'	FD 21 0001	LD	IY,00001
1933	0A67'	CD 1FBB'	CALL	RVBLKV
1934	0A6A'	3E 00	LD	A,000
1935	0A6C'	FD E1	POP	IY
1936	0A6E'	FD 77 01	LD	(IY+001),A
1937	0A71'	3E 80	LD	A,080
1938	0A73'	FD 77 03	LD	(IY+003),A
1939	0A76'	AF	XOR	A
1940	0A77'	16 00	LD	D,000
1941	0A79'	DD E1	POP	IX
1942	0A7B'	DD 5E 04	LD	E,(IX+004)
1943	0A7E'	E1	POP	HL
1944	0A7F'	FD 21 0001	LD	IY,00001
1945	0A83'	CD 1FBE'	CALL	RCOPYV
1946	0A86'	C9	RET	
1947				
1948				
1949				
1950	0A87'	FD 2A 8006	LD	IY,(08006)
1951	0A8B'	3A 73C3	LD	A,(VDPOSH)
1952	0A8E'	CB 4F	BIT	1,A
1953	0A90'	20 04	JR	NZ,\$+006 ; 00A96
1954	0A92'	CB 88	RES	7,B
1955	0A94'	18 02	JR	\$+004 ; 00A98
1956	0A96'	CB FB	SET	7,B
1957	0A98'	FD 70 03	LD	(IY+003),B
1958	0A9B'	E5	PUSH	HL
1959	0A9C'	DD 66 03	LD	H,(IX+003)
1960	0A9F'	DD 6E 02	LD	L,(IX+002)

1961	OAA2'	7E	LD	A,(HL)	
1962	OAA3'	FD 77 04	LD	(IY+004),A	
1963	OAA6'	EE 80	XOR	080	
1964	OAA8'	77	LD	(HL),A	
1965	OAA9'	23	INC	HL	
1966	OAAA'	5E	LD	E,(HL)	
1967	OAA8'	7B	LD	A,E	
1968	OAAC'	E6 07	AND	007	
1969	OAAE'	ED 44	NEG		
1970	OAB0'	C6 08	ADD	A,008	
1971	OAB2'	FD 77 01	LD	(IY+001),A	
1972	OAB5'	23	INC	HL	
1973	OAB6'	56	LD	D,(HL)	
1974	OAB7'	CD 07E8'	CALL	DIVLIM	
1975	OABA'	FD 73 11	LD	(IY+011),E	
1976	OABD'	23	INC	HL	
1977	OABE'	5E	LD	E,(HL)	
1978	OABF'	7B	LD	A,E	
1979	OAC0'	E6 07	AND	007	
1980	OAC2'	FD 77 00	LD	(IY+000),A	
1981	OAC5'	23	INC	HL	
1982	OAC6'	56	LD	D,(HL)	
1983	OAC7'	CD 07E8'	CALL	DIVLIM	
1984	OACA'	FD 73 12	LD	(IY+012),E	
1985	OACD'	2A 8006	LD	HL,(08006)	
1986	OADO'	11 0013	LD	DE,00013	
1987	OAD3'	19	ADD	HL,DE	
1988	OAD4'	FD 56 12	LD	D,(IY+012)	
1989	OAD7'	FD 5E 11	LD	E,(IY+011)	
1990	ODA'	01 0303	LD	BC,00303	
1991	OADD'	CD 0898	CALL	00898	
1992	OAE0'	DD 56 05	LD	D,(IX+005)	
1993	OAE3'	DD 5E 04	LD	E,(IX+004)	
1994	OAE6'	DD 7E 06	LD	A,(IX+006)	
1995	OAE9'	DD E1	POP	IX	
1996	OAE8'	FD 2A 8006	LD	IY,(08006)	
1997	OAEF'	FD 77 05	LD	(IY+005),A	
1998	OAF2'	D5	PUSH	DE	
1999	OAF3'	2A 8006	LD	HL,(08006)	
2000	OAF6'	01 0006	LD	BC,00006	
2001	OAF9'	09	ADD	HL,BC	
2002	OAFA'	01 0008	LD	BC,00008	
2003	OAFD'	7A	LD	A,D	
2004	OAFE'	FE 70	CP	070	
2005	OB00'	30 05	JR	NC,\$+007 ; 00B07	
2006	OB02'	CD 1FE2'	CALL	RDVRMV	
2007	OB05'	18 03	JR	\$+005 ; 00B0A	
2008	OB07'	EB	EX	DE,HL	
2009	OB08'	ED 80	LDIR		
2010	OB0A'	2A 8006	LD	HL,(08006)	
2011	OB0D'	11 0013	LD	DE,00013	
2012	OB10'	19	ADD	HL,DE	
2013	OB11'	D9	EXX		
2014	OB12'	ED 5B 8006	LD	DE,(08006)	
2015	OB16'	21 0008	LD	HL,00008	
2016	OB19'	19	ADD	HL,DE	

2017	OB1A'	EB	EX	DE,HL
2018	OB1B'	D9	EXX	
2019	OB1C'	FD 2A 8006	LD	IY,(08006)
2020	OB20'	FD 4E 05	LD	C,(IY+005)
2021	OB23'	06 09	LD	B,009
2022	OB25'	7E	LD	A,(HL)
2023	OB26'	91	SUB	C
2024	OB27'	FE 12	CP	012
2025	OB29'	30 0E	JR	NC,\$+010 ; 00B39
2026	OB2B'	FE 09	CP	009
2027	OB2D'	38 02	JR	C,\$+004 ; 00B31
2028	OB2F'	D6 09	SUB	009
2029	OB31'	D9	EXX	
2030	OB32'	6F	LD	L,A
2031	OB33'	26 00	LD	H,000
2032	OB35'	19	ADD	HL,DE
2033	OB36'	7E	LD	A,(HL)
2034	OB37'	D9	EXX	
2035	OB38'	77	LD	(HL),A
2036	OB39'	23	INC	HL
2037	OB3A'	10 E5	DJNZ	\$-019 ; 00B25
2038	OB3C'	D1	POP	DE
2039	OB3D'	2A 8006	LD	HL,(08006)
2040	OB40'	01 0011	LD	BC,00011
2041	OB43'	09	ADD	HL,BC
2042	OB44'	01 000B	LD	BC,0000B
2043	OB47'	7A	LD	A,D
2044	OB48'	FE 70	CP	070
2045	OB4A'	30 05	JR	NC,\$+007 ; 00B51
2046	OB4C'	CD 1FDF'	CALL	CPRTVV
2047	OB4F'	18 02	JR	\$+004 ; 00B53
2048	OB51'	ED B0	LDIR	
2049	OB53'	DD E5	PUSH	IX
2050	OB55'	ED 5B 8006	LD	DE,(08006)
2051	OB59'	21 0013	LD	HL,00013
2052	OB5C'	19	ADD	HL,DE
2053	OB5D'	EB	EX	DE,HL
2054	OB5E'	01 0014	LD	BC,00014
2055	OB61'	09	ADD	HL,BC
2056	OB62'	06 09	LD	B,009
2057	OB64'	1A	LD	A,(DE)
2058	OB65'	13	INC	DE
2059	OB66'	D5	PUSH	DE
2060	OB67'	11 000B	LD	DE,0000B
2061	OB6A'	19	ADD	HL,DE
2062	OB6B'	E5	PUSH	HL
2063	OB6C'	5F	LD	E,A
2064	OB6D'	16 00	LD	D,000
2065	OB6F'	4F	LD	C,A
2066	OB70'	C5	PUSH	BC
2067	OB71'	3E 09	LD	A,009
2068	OB73'	90	SUB	B
2069	OB74'	06 00	LD	B,000
2070	OB76'	D6 03	SUB	003
2071	OB78'	38 03	JR	C,\$+005 ; 00B7D
2072	OB7A'	04	INC	B

2073	OB7B'	18 F5	JR	\$-009 ; 00B76
2074	OB7D'	78	LD	A,B
2075	OB7E'	FD 2A 8006	LD	IY,(08006)
2076	OB82'	FD 86 12	ADD	A,(IY+012)
2077	OB85'	FD CB 03 7E	BIT	7,(IY+003)
2078	OB89'	FD 21 0001	LD	IY,00001
2079	OB8D'	20 29	JR	NZ,\$+02B ; 00B88
2080	OB8F'	3E 03	LD	A,003
2081	OB91'	CD 1FBB'	CALL	RVBLKV
2082	OB94'	C1	POP	BC
2083	OB95'	2A 8006	LD	HL,(08006)
2084	OB98'	C5	PUSH	BC
2085	OB99'	11 0084	LD	DE,00084
2086	OB9C'	19	ADD	HL,DE
2087	OB9D'	59	LD	E,C
2088	OB9E'	CB 3B	SRL	E
2089	OBA0'	CB 3B	SRL	E
2090	OBA2'	CB 3B	SRL	E
2091	OBA4'	16 00	LD	D,000
2092	OBA6'	3E 09	LD	A,009
2093	OBA8'	90	SUB	B
2094	OBA9'	4F	LD	C,A
2095	OBAA'	06 00	LD	B,000
2096	OBAC'	09	ADD	HL,BC
2097	OBAD'	FD 21 0001	LD	IY,00001
2098	OBBI'	3E 04	LD	A,004
2099	OBBI'	CD 1FBB'	CALL	RVBLKV
2100	OBBI'	18 21	JR	\$+023 ; 00BD9
2101	OBBI'	CB 2F	SRA	A
2102	OBBI'	CB 2F	SRA	A
2103	OBBI'	CB 2F	SRA	A
2104	OBBI'	FE 03	CP	003
2105	OBBI'	30 17	JR	NC,\$+019 ; 00BD9
2106	OBBI'	57	LD	D,A
2107	OBBI'	D5	PUSH	DE
2108	OBBI'	E5	PUSH	HL
2109	OBBI'	3E 03	LD	A,003
2110	OBBI'	CD 1FBB'	CALL	RVBLKV
2111	OBBI'	E1	POP	HL
2112	OBBI'	11 0068	LD	DE,00068
2113	OBBI'	19	ADD	HL,DE
2114	OBBI'	D1	POP	DE
2115	OBBI'	FD 21 0001	LD	IY,00001
2116	OBBI'	3E 04	LD	A,004
2117	OBBI'	CD 1FBB'	CALL	RVBLKV
2118	OBBI'	C1	POP	BC
2119	OBBI'	E1	POP	HL
2120	OBBI'	D1	POP	DE
2121	OBBI'	10 82	DJNZ	\$-07C ; 00B64
2122	OBBI'	DD E1	POP	IX
2123	OBBI'	D9	EXX	
2124	OBBI'	DD 56 03	LD	D,(IX+003)
2125	OBBI'	DD 5E 02	LD	E,(IX+002)
2126	OBBI'	DD 46 05	LD	B,(IX+005)
2127	OBBI'	DD 4E 04	LD	C,(IX+004)
2128	OBBI'	D9	EXX	

2129	OBEE'	DD E5	PUSH	IX	
2130	OBFO'	E1	POP	HL	
2131	OBF1'	FD 2A 8006	LD	IY,(08006)	
2132	OBF5'	FD 7E 04	LD	A,(IY+004)	
2133	OBF8'	87	ADD	A,A	
2134	OBF9'	4F	LD	C,A	
2135	OBFA'	06 00	LD	B,000	
2136	OBFC'	11 0006	LD	DE,00006	
2137	OBFF'	19	ADD	HL,DE	
2138	OC00'	09	ADD	HL,BC	
2139	OC01'	5E	LD	E,(HL)	
2140	OC02'	23	INC	HL	
2141	OC03'	56	LD	D,(HL)	
2142	OC04'	2A 8006	LD	HL,(08006)	
2143	OC07'	01 007C	LD	BC,0007C	
2144	OC0A'	09	ADD	HL,BC	
2145	OC0B'	E5	PUSH	HL	
2146	OC0C'	C5	PUSH	BC	
2147	OC0D'	01 0005	LD	BC,00005	
2148	OC10'	7A	LD	A,D	
2149	OC11'	FE 70	CP	070	
2150	OC13'	30 05	JR	NC,\$+007 ; 00C1A	
2151	OC15'	CD 1FE2'	CALL	RDURMU	
2152	OC18'	18 03	JR	\$+005 ; 00C1D	
2153	OC1A'	EB	EX	DE,HL	
2154	OC1B'	ED B0	LDIR		
2155	OC1D'	FD 2A 8006	LD	IY,(08006)	
2156	OC21'	C1	POP	BC	
2157	OC22'	FD 09	ADD	IY,BC	
2158	OC24'	FD 7E 04	LD	A,(IY+004)	
2159	OC27'	FD 2A 8006	LD	IY,(08006)	
2160	OC2B'	FD 77 02	LD	(IY+002),A	
2161	OC2E'	D1	POP	DE	
2162	OC2F'	2A 8006	LD	HL,(08006)	
2163	OC32'	01 0064	LD	BC,00064	
2164	OC35'	09	ADD	HL,BC	
2165	OC36'	06 04	LD	B,004	
2166	OC38'	1A	LD	A,(DE)	
2167	OC39'	DD BE 01	CP	(IX+001)	
2168	OC3C'	D5	PUSH	DE	
2169	OC3D'	30 16	JR	NC,\$+018 ; 00C55	
2170	OC3F'	D9	EXX		
2171	OC40'	87	ADD	A,A	
2172	OC41'	87	ADD	A,A	
2173	OC42'	87	ADD	A,A	
2174	OC43'	6F	LD	L,A	
2175	OC44'	26 00	LD	H,000	
2176	OC46'	09	ADD	HL,BC	
2177	OC47'	E5	PUSH	HL	
2178	OC48'	D9	EXX		
2179	OC49'	D1	POP	DE	
2180	OC4A'	EB	EX	DE,HL	
2181	OC4B'	C5	PUSH	BC	
2182	OC4C'	01 0008	LD	BC,00008	
2183	OC4F'	ED B0	LDIR		
2184	OC51'	C1	POP	BC	

2185	0C52'	EB	EX	DE,HL
2186	0C53'	18 30	JR	\$\$+032 ; 00C85
2187	0C55'	DD 96 01	SUB	(IX+001)
2188	0C58'	D9	EXX	
2189	0C59'	87	ADD	A,A
2190	0C5A'	87	ADD	A,A
2191	0C5B'	87	ADD	A,A
2192	0C5C'	6F	LD	L,A
2193	0C5D'	26 00	LD	H,000
2194	0C5F'	19	ADD	HL,DE
2195	0C60'	E5	PUSH	HL
2196	0C61'	D9	EXX	
2197	0C62'	D1	POP	DE
2198	0C63'	7A	LD	A,D
2199	0C64'	FE 70	CP	070
2200	0C66'	30 14	JR	NC,\$+016 ; 00C7C
2201	0C68'	C5	PUSH	BC
2202	0C69'	E5	PUSH	HL
2203	0C6A'	D5	PUSH	DE
2204	0C6B'	01 0008	LD	BC,00008
2205	0C6E'	CD 1FE2'	CALL	RDVRMV
2206	0C71'	01 0008	LD	BC,00008
2207	0C74'	E1	POP	HL
2208	0C75'	09	ADD	HL,BC
2209	0C76'	EB	EX	DE,HL
2210	0C77'	E1	POP	HL
2211	0C78'	09	ADD	HL,BC
2212	0C79'	C1	POP	BC
2213	0C7A'	18 09	JR	\$\$+00B ; 00C85
2214	0C7C'	EB	EX	DE,HL
2215	0C7D'	C5	PUSH	BC
2216	0C7E'	01 0008	LD	BC,00008
2217	0C81'	ED B0	LDIR	
2218	0C83'	C1	POP	BC
2219	0C84'	EB	EX	DE,HL
2220	0C85'	D1	POP	DE
2221	0C86'	13	INC	DE
2222	0C87'	10 AB	DJNZ	\$\$-053 ; 00C38
2223	0C89'	FD 2A 8006	LD	IY,(08006)
2224	0C8D'	ED 5B 8006	LD	DE,(08006)
2225	0C91'	21 001C	LD	HL,0001C
2226	0C94'	19	ADD	HL,DE
2227	0C95'	FD 4E 00	LD	C,(IY+000)
2228	0C98'	06 00	LD	B,000
2229	0C9A'	09	ADD	HL,BC
2230	0C9B'	E5	PUSH	HL
2231	0C9C'	DD E1	POP	IX
2232	0C9E'	21 0064	LD	HL,00064
2233	0CA1'	19	ADD	HL,DE
2234	0CA2'	E5	PUSH	HL
2235	0CA3'	3E 10	LD	A,010
2236	0CA5'	08	EX	AF,AF'
2237	0CA6'	E1	POP	HL
2238	0CA7'	56	LD	D,(HL)
2239	0CA8'	23	INC	HL
2240	0CA9'	E5	PUSH	HL

2241	OCAA'	01 000F	LD	BC,0000F
2242	OCAD'	09	ADD	HL,BC
2243	OCAE'	5E	LD	E,(HL)
2244	OCAF'	EB	EX	DE,HL
2245	OCB0'	FD 46 01	LD	B,(IY+001)
2246	OCB3'	AF	XOR	A
2247	OCB4'	05	DEC	R
2248	OCB5'	FA 0CBC	JP	M,00CBC
2249	OCB8'	29	ADD	HL,HL
2250	OCB9'	17	RLA	
2251	OCBA'	18 F4	JR	\$-00A ; 00CB4
2252	OCBC'	5F	LD	E,A
2253	OCBD'	CD 0E2F	CALL	00E2F
2254	OCC0'	FD 7E 00	LD	A,(IY+000)
2255	OCC3'	3C	INC	A
2256	OCC4'	FD 77 00	LD	(IY+000),A
2257	OCC7'	FE 08	CP	008
2258	OCC9'	28 04	JR	Z,\$+006 ; 00CCF
2259	OCCB'	FE 10	CP	010
2260	OCCD'	20 05	JR	NZ,\$+007 ; 00CD4
2261	OCCF'	01 0010	LD	BC,00010
2262	OCD2'	DD 09	ADD	IX,BC
2263	OCD4'	DD 23	INC	IX
2264	OCD6'	08	EX	AF,AF'
2265	OCD7'	3D	DEC	A
2266	OCD8'	28 03	JR	Z,\$+005 ; 00CDD
2267	OCD A'	08	EX	AF,AF'
2268	OCD B'	18 C5	JR	\$-039 ; 00CA6
2269	OCD D'	E1	POP	HL
2270	OCD E'	FD CB 03 7E	BIT	7,(IY+003)
2271	OCE2'	20 1F	JR	NZ,\$+021 ; 00D03
2272	OCE4'	2A 8006	LD	HL,(08006)
2273	OCE7'	01 0084	LD	BC,00084
2274	OCE A'	09	ADD	HL,BC
2275	OCE B'	FD 56 02	LD	D,(IY+002)
2276	OCE E'	FD CB 03 4E	BIT	1,(IY+003)
2277	OCF2'	20 04	JR	NZ,\$+006 ; 00CF8
2278	OCF4'	0E 0F	LD	C,00F
2279	OCF6'	18 02	JR	\$+004 ; 00CFA
2280	OCF8'	0E 00	LD	C,000
2281	OCFA'	06 09	LD	B,009
2282	OCFC'	7E	LD	A,(HL)
2283	OCFD'	A1	AND	C
2284	OCFE'	B2	OR	D
2285	OCFF'	77	LD	(HL),A
2286	OD00'	23	INC	HL
2287	OD01'	10 F5	DJNZ	\$-009 ; 00CFC
2288	OD03'	FD 7E 05	LD	A,(IY+005)
2289	OD06'	FD CB 04 7E	BIT	7,(IY+004)
2290	OD0 A'	28 02	JR	Z,\$+004 ; 00D0E
2291	OD0 C'	C6 09	ADD	A,009
2292	OD0 E'	4F	LD	C,A
2293	OD0 F'	2A 8006	LD	HL,(08006)
2294	OD12'	11 0013	LD	DE,00013
2295	OD15'	19	ADD	HL,DE
2296	OD16'	06 09	LD	B,009

2297	0D18'	77	LD	(HL),A
2298	0D19'	3C	INC	A
2299	0D1A'	23	INC	HL
2300	0D1B'	10 F7	DJNZ	\$-007 ; 00D18
2301	0D1D'	FD CB 03 7E	BIT	7,(IY+003)
2302	0D21'	20 73	JR	NZ,\$+075 ; 00D96
2303	0D23'	59	LD	E,C
2304	0D24'	16 00	LD	D,000
2305	0D26'	2A 8006	LD	HL,(08006)
2306	0D29'	01 001C	LD	BC,0001C
2307	0D2C'	09	ADD	HL,BC
2308	0D2D'	FD 21 0009	LD	IY,00009
2309	0D31'	3E 03	LD	A,003
2310	0D33'	CD 1FBE'	CALL	RCOPYV
2311	0D36'	FD 2A 8006	LD	IY,(08006)
2312	0D3A'	2A 8006	LD	HL,(08006)
2313	0D3D'	01 0084	LD	BC,00084
2314	0D40'	09	ADD	HL,BC
2315	0D41'	DD 2A 8006	LD	IX,(08006)
2316	0D45'	01 0013	LD	BC,00013
2317	0D48'	DD 09	ADD	IX,BC
2318	0D4A'	06 09	LD	B,009
2319	0D4C'	DD 7E 00	LD	A,(IX+000)
2320	0D4F'	DD 23	INC	IX
2321	0D51'	CB 3F	SRL	A
2322	0D53'	CB 3F	SRL	A
2323	0D55'	CB 3F	SRL	A
2324	0D57'	5F	LD	E,A
2325	0D58'	16 00	LD	D,000
2326	0D5A'	CS	PUSH	BC
2327	0D5B'	3E 09	LD	A,009
2328	0D5D'	90	SUB	B
2329	0D5E'	06 00	LD	B,000
2330	0D60'	FE 03	CP	003
2331	0D62'	38 05	JR	C,\$+007 ; 00D69
2332	0D64'	D6 03	SUB	003
2333	0D66'	04	INC	B
2334	0D67'	18 F3	JR	\$-00B ; 00D60
2335	0D69'	FD 86 11	ADD	A,(IY+011)
2336	0D6C'	FE 20	CP	020
2337	0D6E'	30 17	JR	NC,\$+019 ; 00D87
2338	0D70'	78	LD	A,B
2339	0D71'	FD 86 12	ADD	A,(IY+012)
2340	0D74'	FE 18	CP	018
2341	0D76'	30 0F	JR	NC,\$+011 ; 00D87
2342	0D78'	DB E5	PUSH	IX
2343	0D7A'	E5	PUSH	HL
2344	0D7B'	3E 04	LD	A,004
2345	0D7D'	FD 21 0001	LD	IY,00001
2346	0D81'	CD 1FBE'	CALL	RCOPYV
2347	0D84'	E1	POP	HL
2348	0D85'	DB E1	POP	IX
2349	0D87'	C1	POP	BC
2350	0D88'	23	INC	HL
2351	0D89'	13	INC	DE
2352	0D8A'	05	DEC	B

2353	OD8B'	78	LD	A,B	
2354	OD8C'	FE 00	CP	000	
2355	OD8E'	20 B8	JR	NZ,\$-046	; 00D4C
2356	OD90'	FD 2A 8006	LD	IY,(08006)	
2357	OD94'	18 54	JR	#+056	; 00DEA
2358	OD96'	06 00	LD	B,000	
2359	OD98'	C5	PUSH	BC	
2360	OD99'	79	LD	A,C	
2361	OD9A'	80	ADD	A,B	
2362	OD9B'	80	ADD	A,B	
2363	OD9C'	80	ADD	A,B	
2364	OD9D'	4F	LD	C,A	
2365	OD9E'	21 0000	LD	HL,00000	
2366	ODA1'	11 0018	LD	DE,00018	
2367	ODA4'	78	LD	A,B	
2368	ODA5'	3D	DEC	A	
2369	ODA6'	FA 0DAC	JP	M,00DAC	
2370	ODA9'	19	ADD	HL,DE	
2371	ODAA'	18 F5	JR	-\$-009	; 00DA5
2372	ODAC'	FD 2A 8006	LD	IY,(08006)	
2373	ODB0'	FD 7E 12	LD	A,(IY+012)	
2374	ODB3'	80	ADD	A,B	
2375	ODB4'	FE 18	CP	018	
2376	ODB6'	30 2B	JR	NC,\$+02D	; 00DE3
2377	ODB8'	CB 3F	SRL	A	
2378	ODBA'	CB 3F	SRL	A	
2379	ODBC'	CB 3F	SRL	A	
2380	ODBE'	57	LD	D,A	
2381	ODBF'	59	LD	E,C	
2382	ODC0'	D5	PUSH	DE	
2383	ODC1'	01 001C	LD	BC,0001C	
2384	ODC4'	09	ADD	HL,BC	
2385	ODC5'	ED 4B 8006	LD	BC,(08006)	
2386	ODC9'	09	ADD	HL,BC	
2387	ODCA'	E5	PUSH	HL	
2388	ODCB'	FD 21 0003	LD	IY,00003	
2389	ODCF'	3E 03	LD	A,003	
2390	ODD1'	CD 1FBE'	CALL	RCOPYV	
2391	ODD4'	E1	POP	HL	
2392	ODD5'	11 0068	LD	DE,00068	
2393	ODD8'	19	ADD	HL,DE	
2394	ODD9'	D1	POP	DE	
2395	ODDA'	FD 21 0003	LD	IY,00003	
2396	ODDE'	3E 04	LD	A,004	
2397	ODE0'	CD 1FBE'	CALL	RCOPYV	
2398	ODE3'	C1	POP	BC	
2399	ODE4'	04	INC	B	
2400	ODE5'	78	LD	A,B	
2401	ODE6'	FE 03	CP	003	
2402	ODEB'	20 AA	JR	NZ,\$-054	; 00D98
2403	ODEA'	FD 2A 8006	LD	IY,(08006)	
2404	ODEE'	FD 46 06	LD	B,(IY+006)	
2405	ODF1'	78	LD	A,B	
2406	ODF2'	FE 80	CP	080	
2407	ODF4'	28 21	JR	Z,\$+023	; 00E17
2408	ODF6'	FD 4E 07	LD	C,(IY+007)	

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2409 0DF9' FD 66 11 LD H,(IY+011)
2410 0DFC' FD 6E 12 LD L,(IY+012)
2411 0DFF' B7 OR A
2412 0E00' ED 42 SBC HL,BC
2413 0E02' 28 13 JR Z,$+015 ; 00E17
2414 0E04' 2A 8006 LD HL,(08006)
2415 0E07' 11 0008 LD DE,00008
2416 0E0A' 19 ADD HL,DE
2417 0E0B' FD 5E 06 LD E,(IY+006)
2418 0E0E' FD 56 07 LD D,(IY+007)
2419 0E11' 01 0303 LD BC,00303
2420 0E14' CD 080B CALL 0080B
2421 0E17' FD 2A 8006 LD IY,(08006)
2422 0E1B' 2A 8006 LD HL,(08006)
2423 0E1E' 11 0013 LD DE,00013
2424 0E21' 19 ADD HL,DE
2425 0E22' FD 5E 11 LD E,(IY+011)
2426 0E25' FD 56 12 LD D,(IY+012)
2427 0E28' 01 0303 LD BC,00303
2428 0E2B' CD 080B CALL 0080B
2429 0E2E' C9 RET
2430 ; -----
2431 ;
2432 ; *****
2433 0E2F' FD CB 03 46 BIT 0,(IY+003)
2434 0E33' 20 16 JR NZ,$+018 ; 00E4B
2435 0E35' DD B6 00 OR (IX+000)
2436 0E38' DD 77 00 LD (IX+000),A
2437 0E3B' 7C LD A,H
2438 0E3C' DD B6 08 OR (IX+008)
2439 0E3F' DD 77 08 LD (IX+008),A
2440 0E42' 7D LD A,L
2441 0E43' DD B6 10 OR (IX+010)
2442 0E46' DD 77 10 LD (IX+010),A
2443 0E49' 18 14 JR $+016 ; 00E5F
2444 0E4B' B7 OR A
2445 0E4C' 28 03 JR Z,$+005 ; 00E51
2446 0E4E' DD 77 00 LD (IX+000),A
2447 0E51' 7C LD A,H
2448 0E52' B7 OR A
2449 0E53' 28 03 JR Z,$+005 ; 00E58
2450 0E55' DD 77 08 LD (IX+008),A
2451 0E58' 7D LD A,L
2452 0E59' B7 OR A
2453 0E5A' 28 03 JR Z,$+005 ; 00E5F
2454 0E5C' DD 77 10 LD (IX+010),A
2455 0E5F' FD CB 03 7E BIT 7,(IY+003)
2456 0E63' 28 3C JR Z,$+03E ; 00EA1
2457 0E65' DD E5 PUSH IX
2458 0E67' 01 0068 LD BC,00068
2459 0E6A' DD 09 ADD IX,BC
2460 0E6C' FD 46 02 LD B,(IY+002)
2461 0E6F' FD CB 03 4E BIT 1,(IY+003)
2462 0E73' 20 04 JR NZ,$+006 ; 00E79
2463 0E75' 0E 0F LD C,00F
2464 0E77' 18 02 JR $+004 ; 00E7B

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2521	OEC4'	C1	POP	BC
2522	OEC5'	79	LD	A,C
2523	OEC6'	48	LD	C,B
2524	OEC7'	CB 3F	SRL	A
2525	OEC9'	CB 3F	SRL	A
2526	OECR'	CB 3F	SRL	A
2527	OECD'	CB 3F	SRL	A
2528	OECF'	47	LD	B,A
2529	OED0'	CS	PUSH	BC
2530	OED1'	DD E5	PUSH	IX
2531	OED3'	E5	PUSH	HL
2532	OED4'	D5	PUSH	DE
2533	OED5'	DD 6E 04	LD	L,(IX+004)
2534	OED8'	DD 66 05	LD	H,(IX+005)
2535	OEDB'	DD 23	INC	IX
2536	OEDD'	DD 23	INC	IX
2537	OEDF'	23	INC	HL
2538	OEE0'	23	INC	HL
2539	OEE1'	5E	LD	E,(HL)
2540	OEE2'	23	INC	HL
2541	OEE3'	56	LD	D,(HL)
2542	OEE4'	D5	PUSH	DE
2543	OEE5'	FD E1	POP	IY
2544	OEE7'	D1	POP	DE
2545	OEE8'	E1	POP	HL
2546	OEE9'	7E	LD	A,(HL)
2547	OEEA'	FD CB 00 7E	BIT	7,(IY+000)
2548	OEEE'	28 02	JR	Z,\$+004 ; 00EF2
2549	OEF0'	CB FF	SET	7,A
2550	OEF2'	FD 77 00	LD	(IY+000),A
2551	OEF5'	23	INC	HL
2552	OEF6'	1A	LD	A,(DE)
2553	OEF7'	D9	EXX	
2554	OEF8'	6F	LD	L,A
2555	OEF9'	26 00	LD	H,000
2556	OEFB'	09	ADD	HL,BC
2557	OEFC'	FD 75 01	LD	(IY+001),L
2558	OEFF'	FD 74 02	LD	(IY+002),H
2559	OF02'	D9	EXX	
2560	OF03'	13	INC	DE
2561	OF04'	1A	LD	A,(DE)
2562	OF05'	D9	EXX	
2563	OF06'	6F	LD	L,A
2564	OF07'	26 00	LD	H,000
2565	OF09'	19	ADD	HL,DE
2566	OF0A'	FD 75 03	LD	(IY+003),L
2567	OF0D'	FD 74 04	LD	(IY+004),H
2568	OF10'	D9	EXX	
2569	OF11'	13	INC	DE
2570	OF12'	10 BB	DJNZ	\$-043 ; 00ED3
2571	OF14'	FD E1	POP	IY
2572	OF16'	01 0004	LD	BC,00004
2573	OF19'	FD 09	ADD	IY,BC
2574	OF1B'	D1	POP	DE
2575	OF1C'	FD 6E 00	LD	L,(IY+000)
2576	OF1F'	FD 66 01	LD	H,(IY+001)

2465	0E79'	0E 00	LD	C,000
2466	0E7B'	7B	LD	A,E
2467	0E7C'	B7	OR	A
2468	0E7D'	28 08	JR	Z,\$+00A ; 00E87
2469	0E7F'	DD 7E 00	LD	A,(IX+000)
2470	0E82'	A1	AND	C
2471	0E83'	B0	OR	B
2472	0E84'	DD 77 00	LD	(IX+000),A
2473	0E87'	7C	LD	A,H
2474	0E88'	B7	OR	A
2475	0E89'	28 08	JR	Z,\$+00A ; 00E93
2476	0E8B'	DD 7E 08	LD	A,(IX+008)
2477	0E8E'	A1	AND	C
2478	0E8F'	B0	OR	B
2479	0E90'	DD 77 08	LD	(IX+008),A
2480	0E93'	7D	LD	A,L
2481	0E94'	B7	OR	A
2482	0E95'	28 08	JR	Z,\$+00A ; 00E9F
2483	0E97'	DD 7E 10	LD	A,(IX+010)
2484	0E9A'	A1	AND	C
2485	0E9B'	B0	OR	B
2486	0E9C'	DD 77 10	LD	(IX+010),A
2487	0E9F'	DD E1	POP	IX
2488	0EA1'	C9	RET	
2489				
2490				
2491				
2492	0EA2'	C5	PUSH	BC
2493	0EA3'	D9	EXX	
2494	0EA4'	DD 66 03	LD	H,(IX+003)
2495	0EA7'	DD 6E 02	LD	L,(IX+002)
2496	0EAA'	7E	LD	A,(HL)
2497	0EAB'	23	INC	HL
2498	0EAC'	4E	LD	C,(HL)
2499	0EAD'	23	INC	HL
2500	0EAE'	46	LD	B,(HL)
2501	0EAF'	23	INC	HL
2502	0EB0'	5E	LD	E,(HL)
2503	0EB1'	23	INC	HL
2504	0EB2'	56	LD	D,(HL)
2505	0EB3'	D9	EXX	
2506	0EB4'	87	ADD	A,A
2507	0EB5'	87	ADD	A,A
2508	0EB6'	5F	LD	E,A
2509	0EB7'	16 00	LD	D,000
2510	0EB9'	23	INC	HL
2511	0EBA'	19	ADD	HL,DE
2512	0EBB'	4E	LD	C,(HL)
2513	0EBC'	23	INC	HL
2514	0EBD'	46	LD	B,(HL)
2515	0EBE'	23	INC	HL
2516	0EBF'	5E	LD	E,(HL)
2517	0ECO'	23	INC	HL
2518	0EC1'	56	LD	D,(HL)
2519	0EC2'	60	LD	H,B
2520	0EC3'	69	LD	L,C

2577	0F22'	FD 23	INC	IY	
2578	0F24'	FD 23	INC	IY	
2579	0F26'	E5	PUSH	HL	
2580	0F27'	DD E1	POP	IX	
2581	0F29'	FD E5	PUSH	IY	
2582	0F2B'	D5	PUSH	DE	
2583	0F2C'	43	LD	B,E	
2584	0F2D'	CD 1FFA	CALL	01FFA	
2585	0F30'	D1	POP	DE	
2586	0F31'	FD E1	POP	IY	
2587	0F33'	15	DEC	D	
2588	0F34'	20 E2	JR	NZ,\$-01C	; 00F1C
2589	0F36'	C9	RET		
2590					
2591					
2592					
2593	0F37'	2A 73D3	LD	HL,(073D3)	; DISPATCH # 26
2594	0F3A'	CB 6E	BIT	5,(HL)	
2595	0F3C'	CC 0F49	CALL	Z,00F49	
2596	0F3F'	CB 66	BIT	4,(HL)	
2597	0F41'	20 05	JR	NZ,\$+007	; 00F48
2598	0F43'	23	INC	HL	
2599	0F44'	23	INC	HL	
2600	0F45'	23	INC	HL	
2601	0F46'	18 EE	JR	\$-010	; 00F3A
2602	0F48'	C9	RET		
2603					
2604					
2605					
2606	0F49'	E5	PUSH	HL	
2607	0F4A'	CB 5E	BIT	3,(HL)	
2608	0F4C'	28 2B	JR	Z,\$+02D	; 00F79
2609	0F4E'	CB 76	BIT	6,(HL)	
2610	0F50'	20 0D	JR	NZ,\$+00F	; 00F5F
2611	0F52'	23	INC	HL	
2612	0F53'	5E	LD	E,(HL)	
2613	0F54'	23	INC	HL	
2614	0F55'	56	LD	D,(HL)	
2615	0F56'	1B	DEC	DE	
2616	0F57'	7B	LD	A,E	
2617	0F58'	B2	OR	D	
2618	0F59'	20 34	JR	NZ,\$+036	; 00F8F
2619	0F5B'	E1	POP	HL	
2620	0F5C'	E5	PUSH	HL	
2621	0F5D'	18 2C	JR	\$+02E	; 00F8B
2622	0F5F'	23	INC	HL	
2623	0F60'	5E	LD	E,(HL)	
2624	0F61'	23	INC	HL	
2625	0F62'	56	LD	D,(HL)	
2626	0F63'	EB	EX	DE,HL	
2627	0F64'	5E	LD	E,(HL)	
2628	0F65'	23	INC	HL	
2629	0F66'	56	LD	D,(HL)	
2630	0F67'	1B	DEC	DE	
2631	0F68'	7B	LD	A,E	
2632	0F69'	B2	OR	D	

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2633 0F6A' 20 23      JR    NZ,$+025      ; 00F8F
2634 0F6C' 23        INC    HL
2635 0F6D' 5E        LD    E,(HL)
2636 0F6E' 23        INC    HL
2637 0F6F' 56        LD    D,(HL)
2638 0F70' 2B        DEC    HL
2639 0F71' 2B        DEC    HL
2640 0F72' 72        LD    (HL),D
2641 0F73' 2B        DEC    HL
2642 0F74' 73        LD    (HL),E
2643 0F75' E1        POP    HL
2644 0F76' E5        PUSH   HL
2645 0F77' 18 12     JR    $+014      ; 00F8B
2646 0F79' 23        INC    HL
2647 0F7A' 35        DEC    (HL)
2648 0F7B' 20 10     JR    NZ,$+012      ; 00F8D
2649 0F7D' E1        POP    HL
2650 0F7E' E5        PUSH   HL
2651 0F7F' CB 76     BIT    6,(HL)
2652 0F81' 28 08     JR    Z,$+00A      ; 00F8B
2653 0F83' 23        INC    HL
2654 0F84' 23        INC    HL
2655 0F85' 7E        LD    A,(HL)
2656 0F86' 2B        DEC    HL
2657 0F87' 77        LD    (HL),A
2658 0F88' 2B        DEC    HL
2659 0F89' E1        POP    HL
2660 0F8A' E5        PUSH   HL
2661 0F8B' CB FE     SET    7,(HL)
2662 0F8D' E1        POP    HL
2663 0F8E' C9        RET
2664 0F8F' 72        LD    (HL),D
2665 0F90' 2B        DEC    HL
2666 0F91' 73        LD    (HL),E
2667 0F92' 18 F5     JR    $-009      ; 00F8D
2668
2669
2670 0F94' 0002 0002  D13DAT: DW    2,2,2
2671 0F98' 0002
2672
2673
2674 0F9A' 01 0F94'   LD    BC,D13DAT      ; DISPATCH # 13
2675 0F9D' 11 73BA    LD    DE,P.AREA
2676 0FA0' CD 0098'   CALL PCOPY
2677 0FA3' 2A 73BA    LD    HL,(P.AREA)
2678 0FA6' ED 5B 73BC LD    DE,(P.AREA+2)
2679
2680
2681 0FAA' 22 73D3     LD    (073D3),HL      ; DISPATCH # 22
2682 0FAD' 36 30      LD    (HL),030
2683 0FAF' EB        EX    DE,HL
2684 0FB0' 22 73D5     LD    (073D5),HL
2685 0FB3' C9        RET
2686
2687
2688 0FB4' 0001 0001   D14DAT: DW    1,1

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2689
2690
2691 OFB8' 01 OFB4' LD BC,D14DAT ; DISPATCH # 14
2692 OFBB' 11 73BE LD DE,P.AREA+4
2693 OFBE' CD 0098' CALL PCOPY
2694 OFC1' 3A 73BE LD A,(P.AREA+4)
2695
2696
2697 OFC4' 4F LD C,A ; DISPATCH # 23
2698 OFC5' 2A 73D3 LD HL,(073D3)
2699 OFC8' 47 LD B,A
2700 OFC9' 11 0003 LD DE,00003
2701 OFCC' B7 OR A
2702 OFCD' 28 08 JR Z,$+00A ; 00FD7
2703 OFCF' CB 66 BIT 4,(HL)
2704 OFD1' 20 6A JR NZ,$+06C ; 0103D
2705 OFD3' 19 ADD HL,DE
2706 OFD4' 0D DEC C
2707 OFD5' 20 F4 JR NZ,$-00A ; 00FCF
2708 OFD7' CB 6E BIT 5,(HL)
2709 OFD9' 20 62 JR NZ,$+064 ; 0103D
2710 OFDB' CB EE SET 5,(HL)
2711 OFDD' CB 76 BIT 6,(HL)
2712 OFDF' 28 5C JR Z,$+05E ; 0103D
2713 OFE1' CB 5E BIT 3,(HL)
2714 OFE3' 28 58 JR Z,$+05A ; 0103D
2715 OFE5' 23 INC HL
2716 OFE6' 5E LD E,(HL)
2717 OFE7' 23 INC HL
2718 OFE8' 56 LD D,(HL)
2719 OFE9' D5 PUSH DE
2720 OFEA' 2A 73D3 LD HL,(073D3)
2721 OFED' E5 PUSH HL
2722 OFEE' CB 66 BIT 4,(HL)
2723 OFF0' 20 2E JR NZ,$+030 ; 01020
2724 OFF2' CB 6E BIT 5,(HL)
2725 OFF4' 20 23 JR NZ,$+025 ; 01019
2726 OFF6' 7E LD A,(HL)
2727 OFF7' E6 48 AND 048
2728 OFF9' FE 48 CP 048
2729 OFFB' 20 1C JR NZ,$+01E ; 01019
2730 OFFD' 23 INC HL
2731 OFFE' 23 INC HL
2732 OFFF' 7E LD A,(HL)
2733
2734
2735 ; THIS SHOULD BE LOCATION 1000H
2736
2737
2738 1000' BA CP D
2739 1001' 38 16 JR C,$+018 ; 01019
2740 1003' 20 08 JR NZ,$+00A ; 0100D
2741 1005' 2B DEC HL
2742 1006' 7E LD A,(HL)
2743 1007' BB CP E
2744 1008' 38 0F JR C,$+011 ; 01019

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2745	100A'	28 31	JR	Z,\$+033 ; 0103D
2746	100C'	23	INC	HL
2747	100D'	56	LD	D,(HL)
2748	100E'	2B	DEC	HL
2749	100F'	5E	LD	E,(HL)
2750	1010'	1B	DEC	DE
2751	1011'	1B	DEC	DE
2752	1012'	1B	DEC	DE
2753	1013'	1B	DEC	DE
2754	1014'	73	LD	(HL),E
2755	1015'	23	INC	HL
2756	1016'	72	LD	(HL),D
2757	1017'	18 00	JR	\$+002 ; 01019
2758	1019'	E1	POP	HL
2759	101A'	23	INC	HL
2760	101B'	23	INC	HL
2761	101C'	23	INC	HL
2762	101D'	E5	PUSH	HL
2763	101E'	18 CA	JR	\$-034 ; 00FEE
2764	1020'	06 00	LD	B,000
2765	1022'	B7	OR	A
2766	1023'	E1	POP	HL
2767	1024'	D1	POP	DE
2768	1025'	E5	PUSH	HL
2769	1026'	2A 73D5	LD	HL,(073D5)
2770	1029'	ED 52	SBC	HL,DE
2771	102B'	4D	LD	C,L
2772	102C'	6B	LD	L,E
2773	102D'	62	LD	H,D
2774	102E'	23	INC	HL
2775	102F'	23	INC	HL
2776	1030'	23	INC	HL
2777	1031'	23	INC	HL
2778	1032'	ED B0	LDIR	
2779	1034'	01 0008	LD	BC,00008
2780	1037'	ED 42	SBC	HL,BC
2781	1039'	22 73D5	LD	(073D5),HL
2782	103C'	E1	POP	HL
2783	103D'	C9	RET	
2784				
2785				
2786	103E'	0002 0001	D15DAT: DW	2,1,2
2787	1042'	0002		
2788				
2789				
2790	1044'	01 103E'	LD	BC,D15DAT ; DISPATCH # 15
2791	1047'	11 73BF	LD	DE,P.AREA+5
2792	104A'	CD 0098'	CALL	PCOPY
2793	104D'	2A 73C0	LD	HL,(073C0)
2794	1050'	3A 73BF	LD	A,(P.AREA+5)
2795				
2796				
2797	1053'	4F	LD	C,A ; DISPATCH # 24
2798	1054'	EB	EX	DE,HL
2799	1055'	2A 73D3	LD	HL,(073D3)
2800	1058'	AF	XOR	A

2801	1059'	47	LD	B,A
2802	105A'	CB 6E	BIT	5,(HL)
2803	105C'	28 3E	JR	Z,\$+040 ; 0109C
2804	105E'	E5	PUSH	HL
2805	105F'	7E	LD	A,(HL)
2806	1060'	E6 10	AND	010
2807	1062'	F6 20	OR	020
2808	1064'	77	LD	(HL),A
2809	1065'	AF	XOR	A
2810	1066'	B2	OR	D
2811	1067'	20 0B	JR	NZ,\$+00D ; 01074
2812	1069'	B1	OR	C
2813	106A'	28 02	JR	Z,\$+004 ; 0106E
2814	106C'	CB F6	SET	6,(HL)
2815	106E'	23	INC	HL
2816	106F'	73	LD	(HL),E
2817	1070'	23	INC	HL
2818	1071'	73	LD	(HL),E
2819	1072'	18 42	JR	\$+044 ; 010B6
2820	1074'	CB DE	SET	3,(HL)
2821	1076'	79	LD	A,C
2822	1077'	B7	OR	A
2823	1078'	28 1B	JR	Z,\$+01D ; 01095
2824	107A'	D5	PUSH	DE
2825	107B'	EB	EX	DE,HL
2826	107C'	2A 73D5	LD	HL,(073D5)
2827	107F'	EB	EX	DE,HL
2828	1080'	CB F6	SET	6,(HL)
2829	1082'	23	INC	HL
2830	1083'	73	LD	(HL),E
2831	1084'	23	INC	HL
2832	1085'	72	LD	(HL),D
2833	1086'	EB	EX	DE,HL
2834	1087'	D1	POP	DE
2835	1088'	73	LD	(HL),E
2836	1089'	23	INC	HL
2837	108A'	72	LD	(HL),D
2838	108B'	23	INC	HL
2839	108C'	73	LD	(HL),E
2840	108D'	23	INC	HL
2841	108E'	72	LD	(HL),D
2842	108F'	23	INC	HL
2843	1090'	22 73D5	LD	(073D5),HL
2844	1093'	18 21	JR	\$+023 ; 010B6
2845	1095'	23	INC	HL
2846	1096'	73	LD	(HL),E
2847	1097'	23	INC	HL
2848	1098'	72	LD	(HL),D
2849	1099'	23	INC	HL
2850	109A'	18 1A	JR	\$+01C ; 010B6
2851	109C'	CB 66	BIT	4,(HL)
2852	109E'	20 06	JR	NZ,\$+00B ; 010A6
2853	10A0'	23	INC	HL
2854	10A1'	23	INC	HL
2855	10A2'	23	INC	HL
2856	10A3'	04	INC	B

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2857 10A4' 18 B0      JR      $-04E ; 0105A
2858 10A6' D5        PUSH    DE
2859 10A7' E5        PUSH    HL
2860 10A8' 23        INC     HL
2861 10A9' 23        INC     HL
2862 10AA' 23        INC     HL
2863 10AB' 04        INC     B
2864 10AC' 36 30     LD      (HL),030
2865 10AE' EB        EX      DE,HL
2866 10AF' E1        POP     HL
2867 10B0' CB A6     RES     4,(HL)
2868 10B2' EB        EX      DE,HL
2869 10B3' D1        POP     DE
2870 10B4' 18 A0     JR      $-05E ; 0105A
2871 10B6' E1        POP     HL
2872 10B7' CB AE     RES     5,(HL)
2873 10B9' 78        LD      A,B
2874 10BA' C9        RET
2875 ; -----
2876 ;
2877 10BB' 01 00 01 00 DB      001,000,001,000
2878 ;
2879 ; *****
2880 10BF' 01 10BB     LD      BC,010BB ; DISPATCH # 16
2881 10C2' 11 73C2     LD      DE,073C2
2882 10C5' CD 0098'    CALL   PCOPY
2883 10CB' 3A 73C2     LD      A,(073C2)
2884 ;
2885 ;
2886 10CB' 4F          LD      C,A ; DISPATCH # 25
2887 10CC' 2A 73D3     LD      HL,(073D3)
2888 10CF' 47          LD      B,A
2889 10D0' 11 0003     LD      DE,00003
2890 10D3' B7         OR      A
2891 10D4' 28 08      JR      Z,$+00A ; 010DE
2892 10D6' CB 66      BIT     4,(HL)
2893 10D8' 20 0C      JR      NZ,$+00E ; 010E6
2894 10DA' 19        ADD     HL,DE
2895 10DB' 0D        DEC     C
2896 10DC' 20 F4      JR      NZ,$-00A ; 010D6
2897 10DE' CB 6E      BIT     5,(HL)
2898 10E0' 20 04      JR      NZ,$+006 ; 010E6
2899 10E2' CB 7E      BIT     7,(HL)
2900 10E4' 20 03      JR      NZ,$+005 ; 010E9
2901 10E6' AF        XOR     A
2902 10E7' 18 0A      JR      $+00C ; 010F3
2903 10E9' CB 76      BIT     6,(HL)
2904 10EB' 20 02      JR      NZ,$+004 ; 010EF
2905 10ED' CB EE      SET     5,(HL)
2906 10EF' CB BE      RES     7,(HL)
2907 10F1' 3E 01      LD      A,001
2908 10F3' B7        OR      A
2909 10F4' C9        RET
2910 ; -----
2911 ;
2912 10F5' 0F 06 01 03 KEYTAB: DB 00F,006,001,003,009

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2913 10F9' 09
2914 10FA' 00 0A 0F 02      DB 000,00A,00F,002,00B
2915 10FE' 0B
2916 10FF' 07 0F 05 04      DB 007,00F,005,004,008
2917 1103' 08
2918 1104' 0F      DB 00F
2919
2920
2921 1105' D3 C0      CLEAR: OUT (JSTK),A      ; SELECT JOYSTICKS
2922 1107' AF          XOR A      ; CLEAR A TO BE USED TO CLEAR OUT
2923 1108' DD 2A 8008  LD IX,(08008) ; SOME SPACE
2924 110C' DD 23      INC IX
2925 110E' DD 23      INC IX
2926 1110' FD 21 73D7 LD IY,CSTATP
2927 1114' 06 0A      LD B,00A
2928 1116' DD 77 00  CLR1: LD (IX+000),A ; CLEAR OUT A 10 BYTE AREA STARTING
2929 1119' DD 23      INC IX ; AT THE POINTER AT 8008 IN THE CARTRIDGE
2930 111B' FD 77 00  LD (IY+000),A
2931 111E' FD 23      INC IY ; AND ALSO A 10 WORD AREA STARTING
2932 1120' FD 77 00  LD (IY+000),A ; AT CSTATP, THE POINER TO THE CONTROLLER
2933 1123' FD 23      INC IY ; STATE TABLE
2934 1125' 05      DEC B
2935 1126' 20 EE     JR NZ,CLR1
2936
2937 1128' 32 73EB     LD (PCNT1),A ; CLEAR COUNTERS AND SHADOWS
2938 112B' 32 73EC     LD (PCNT2),A
2939 112E' 32 73EE     LD (JS1SH),A
2940 1131' 32 73EF     LD (JS2SH),A
2941 1134' 32 73F0     LD (KP1SH),A
2942 1137' 32 73F1     LD (KP2SH),A
2943 113A' C9          RET
2944
2945
2946 ; *****
2947 113B' 00          DELAY: NOP ; A VERY SHORT DELAY ROUTINE
2948 113C' C9          RET
2949
2950
2951 ; *****
2952 113D' 7C          RDPORT: LD A,H ; READ PORT BY FLAG IN H
2953 113E' FE 00      CP 000 ; RETURN COMPLIMENT IN A
2954 1140' 20 04      JR NZ,RDCT2
2955 1142' DB FC      IN A,(CTRL1)
2956 1144' 18 02      JR RDCT1
2957 1146' DB FF      RDCT2: IN A,(CTRL2)
2958 1148' 2F          RDCT1: CPL
2959 1149' C9          RET
2960
2961
2962 ; *****
2963 114A' DB FC      UDKJS: IN A,(CTRL1) ; DISPATCH # 07
2964 114C' 2F          CPL ; UPDATE THE KEYBOARD AND JOYSTICK
2965 114D' 32 73EE     LD (JS1SH),A ; SHADOW VARIABLES
2966 1150' DB FF      IN A,(CTRL2)
2967 1152' 2F          CPL
2968 1153' 32 73EF     LD (JS2SH),A

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2969 1156' D3 80          OUT (KEY),A          ; SELECT KEYPADS
2970 1158' CD 113B'      CALL DELAY
2971 115B' DB FC          IN A,(CTRL1)
2972 115D' 2F             CPL
2973 115E' 32 73F0        LD (KP1SH),A
2974 1161' DB FF          IN A,(CTRL2)
2975 1163' 2F             CPL
2976 1164' 32 73F1        LD (KP2SH),A
2977 1167' D3 C0          OUT (JSTK),A        ; SELECT JOYSTICKS
2978 1169' C9             RET
2979
2980
2981 ; -----
2982 116A' DB FC          UDPCR: IN A,(CTRL1)          ; DISPATCH # 0D
2983 116C' 21 73EB        LD HL,PCNT1          ; UP/DOWN PULSE COUNTER ROUTINE
2984 116F' CB 67          BIT 4,A              ; FOR ROLLER CONTROLLERS
2985 1171' 20 08          JR NZ,UDP2
2986 1173' CB 6F          BIT 5,A
2987 1175' 20 03          JR NZ,UDP1
2988 1177' 35             DEC (HL)
2989 1178' 18 01          JR UDP2
2990
2991 117A' 34             UDP1: INC (HL)
2992 117B' DB FF        UDP2: IN A,(CTRL2)
2993 117D' CB 67          BIT 4,A
2994 117F' 20 09          JR NZ,UDP4          ; EXIT
2995 1181' 23             INC HL
2996 1182' CB 6F          BIT 5,A
2997 1184' 20 03          JR NZ,UDP3
2998 1186' 35             DEC (HL)
2999 1187' 18 01          JR UDP4          ; EXIT
3000 1189' 34             UDP3: INC (HL)
3001 118A' C9             UDP4: RET
3002
3003 ; -----
3004 ; -----
3005 118B' 7D             SCANN: LD A,L          ; DISPATCH # 08
3006 118C' FE 01          CP 001              ; SCANN THE CONTROLLERS
3007 118E' 28 1A          JR Z,LOOKY          ; IF L IS 1 GO LOOKUP KEYPAD CODE
3008 1190' 01 73EB        LD BC,PCNT1        ; POINTER TO SCANN COUNT
3009 1193' 7C             LD A,H
3010 1194' FE 00          CP 000
3011 1196' 28 01          JR Z,SCN1          ; IF H=0 THEN DON'T INC SCANN COUNT
3012 1198' 03             INC BC
3013 1199' 0A             SCN1: LD A,(BC)        ; GET COUNT
3014 119A' 5F             LD E,A
3015 119B' AF             XOR A              ; CLEAR A
3016 119C' 02             LD (BC),A          ; CLEAR COUNT
3017 119D' CD 113D'      CALL RDPORT         ; GET JOYSTICK DATA
3018 11A0' 57             LD D,A
3019 11A1' E6 0F          AND 00F            ; ONLY LOOK AT LOWER 4 BITS
3020 11A3' 6F             LD L,A
3021 11A4' 7A             LD A,D
3022 11A5' E6 40          AND 040            ; SET BIT 6 IN H REG FORM
3023 11A7' 67             LD H,A
3024 11A8' 18 16          JR SCNNEX          ; EXIT

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3025 ;
3026 11AA' D3 80 LOOKY: OUT (KEY),A ; SELECT KEYPADS
3027 11AC' CD 113D' CALL RDPORT ; GET RAW KEY VALUE
3028 11AF' 57 LD D,A
3029 11B0' D3 C0 OUT (JSTK),A ; SELECT JOYSTICKS
3030 11B2' E6 0F AND 00F ; LOOK UP KEYPAD VALUE
3031 11B4' 21 10F5' LD HL,KEYTAB ; FROM A TABLE
3032 11B7' 06 00 LD B,000
3033 11B9' 4F LD C,A
3034 11BA' 09 ADD HL,BC
3035 11BB' 6E LD L,(HL)
3036 11BC' 7A LD A,D
3037 11BD' E6 40 AND 040
3038 11BF' 67 LD H,A ; RETURN KEY IN L WITH RAW B6 IN H
3039 11C0' C9 SCNNEX: RET
3040 ;
3041 ;
3042 ; *****
3043 11C1' CD 114A' CTABP: CALL UDKJS ; DISPATCH # 2E
3044 11C4' FD 21 73D7 LD IY,CSTATP ; PROCESSOR FOR THE GAME CONTROLLER TABLES
3045 11C8' DD 2A 8008 LD IX,(08008) ; TABLE POINER IN IY, RESULT POINER IN IX
3046 11CC' DD E5 PUSH IX
3047 11CE' DD 7E 00 LD A,(IX+000) ; GET CONTROL FLAGS
3048 11D1' CB 7F BIT 7,A ; IF NO BIT 7, DON'T USE THE STATE MACHINES
3049 11D3' 28 1E JR Z,CTAB2
3050 ;
3051 11D5' 47 LD B,A ; ELSE, POSITION IX FOR RESULT
3052 11D6' 11 0002 LD DE,00002
3053 11D9' DD 19 ADD IX,DE
3054 ;
3055 11DB' E6 07 AND 007
3056 11DD' 28 09 JR Z,CTAB1 ; IF ANY ENABLE BITS AT ALL,
3057 ;
3058 11DF' 3A 73EE LD A,(JS15H) ; GET LAST JOYSTICK SHADOW
3059 11E2' 21 73EB LD HL,PCNT1
3060 11E5' CD 1220' CALL JBITS ; AND GO PROCESS BITS
3061 11E8' 78 CTAB1: LD A,B
3062 11E9' E6 18 AND 018 ; NOW SEE IF BITS TO ENABLE KEYPADS
3063 11EB' 28 06 JR Z,CTAB2
3064 ;
3065 11ED' 3A 73F0 LD A,(KP15H) ; IF SO GO SEE IF ANYTHING NEW
3066 11F0' CD 123F' CALL KBITS
3067 11F3' DD E1 CTAB2: POP IX ; RESTORE IX
3068 11F5' DD 7E 01 LD A,(IX+001)
3069 11F8' CB 7F BIT 7,A
3070 11FA' 28 23 JR Z,CTXXIT
3071 ;
3072 11FC' 47 LD B,A
3073 11FD' 11 000A LD DE,0000A ; MOVE IY TO NEXT TABLE
3074 1200' FD 19 ADD IY,DE
3075 ;
3076 1202' 11 0007 LD DE,00007 ; MOVE IX TO NEXT TABLE
3077 1205' DD 19 ADD IX,DE
3078 ;
3079 1207' E6 07 AND 007 ; SAME AS ABOVE, BUT FOR OTHER CONTROLLER
3080 1209' 28 09 JR Z,CTAB3
    
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3137 1252' E5          PUSH HL          ; (IY+9) (IY+8) (IY+9) (IY+8) (IX+4)
3138 1253' E6 0F      AND  00F          ; <0 <A&0F  0   A&0F  ---
3139 1255' 5F         LD   E,A          ; <0 =A&0F  ---  ---  ---
3140 1256' FD 46 08   LD   B,(IY+008) ; =0 <A&0F  ---  A&0F  ---
3141 1259' FD 7E 09   LD   A,(IY+009) ; =0 =A&0F  1   ---  KEYCODE
3142 125C' FE 00      CP   000
3143 125E' 20 1A      JR   NZ,KSP2
3144
3145 1260' 7B         LD   A,E
3146 1261' B8         CP   B
3147 1262' 28 05      JR   Z,KSP1
3148
3149 1264' FD 73 08   LD   (IY+008),E
3150 1267' 18 1C      JR   KSXXIT
3151
3152 1269' 3E 01      KSP1: LD   A,001
3153 126B' FD 77 09   LD   (IY+009),A
3154 126E' 21 10F5'   LD   HL,KEYTAB
3155 1271' 16 00      LD   D,000
3156 1273' 19         ADD  HL,DE
3157 1274' 7E         LD   A,(HL)
3158 1275' DD 77 04   LD   (IX+004),A
3159 1278' 18 0B      JR   KSXXIT
3160
3161 127A' 7B         KSP2: LD   A,E
3162 127B' B8         CP   B
3163 127C' 28 07      JR   Z,KSXXIT
3164
3165 127E' FD 73 08   LD   (IY+008),E
3166 1281' AF         XOR  A
3167 1282' FD 77 09   LD   (IY+009),A
3168 1285' E1         KSXXIT: POP  HL
3169 1286' D1         POP  DE
3170 1287' C1         POP  BC
3171 1288' C9         RET
3172
3173
3174
3175 1289' C5         JFIRE: PUSH BC          ; JOYSTICK FIRE BUTTON STATE PROCESSOR
3176 128A' D5         PUSH DE
3177 128B' E6 40      AND  040          ; IN OUT
3178 128D' 5F         LD   E,A          ; (IY+0) (IY+1) (IY+0) (IY+1) (IX+0)
3179 128E' FD 46 00   LD   B,(IY+000) ; <A&40 <0   A&40  0   ---
3180 1291' FD 7E 01   LD   A,(IY+001) ; =A&40 <0   ---  ---  ---
3181 1294' FE 00      CP   000          ; <A&40 =0   A&40  ---  ---
3182 1296' 20 13      JR   NZ,JFR2     ; =A&40 =0   ---  1   A&40
3183
3184 1298' 7B         LD   A,E
3185 1299' B8         CP   B
3186 129A' 28 05      JR   Z,JFR1
3187
3188 129C' FD 73 00   LD   (IY+000),E
3189 129F' 18 15      JR   JFXXIT
3190
3191 12A1' 3E 01      JFR1: LD   A,001
3192 12A3' FD 77 01   LD   (IY+001),A

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3193 12A6' DD 73 00 LD (IX+000),E
3194 12A9' 18 0B JR JFXXIT
3195 ;
3196 12AB' 7B JFR2: LD A,E
3197 12AC' B8 CP B
3198 12AD' 28 07 JR Z,JFXXIT
3199 ;
3200 12AF' FD 73 00 LD (IY+000),E
3201 12B2' AF XOR A
3202 12B3' FD 77 01 LD (IY+001),A
3203 12B6' D1 JFXXIT: POP DE
3204 12B7' C1 POP BC
3205 12B8' C9 RET

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3206 ; -----
3207 ;
3208 ; *****

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3209 12B9' C5 JOYSP: PUSH BC ; JOYSTICK POSITION STATE PROCESSOR
3210 12BA' D5 PUSH DE ; IN OUT
3211 12BB' E6 0F AND 00F ; (IY+3) (IY+2) (IY+3) (IY+2) (IX+1)
3212 12BD' 5F LD E,A ; <0 <A&0F 0 A&0F ---
3213 12BE' FD 46 02 LD B,(IY+002) ; <0 =A&0F --- --- ---
3214 12C1' FD 7E 03 LD A,(IY+003) ; =0 <A&0F --- A&0F ---
3215 12C4' FE 00 CP 000 ; =0 =A&0F 1 --- A&0F
3216 12C6' 20 13 JR NZ,JYSP2

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3217 ;
3218 12C8' 7B LD A,E
3219 12C9' B8 CP B
3220 12CA' 28 05 JR Z,JYSP1
3221 ;
3222 12CC' FD 73 02 LD (IY+002),E
3223 12CF' 18 15 JR JYXXIT
3224 ;
3225 12D1' 3E 01 JYSP1: LD A,001
3226 12D3' FD 77 03 LD (IY+003),A
3227 12D6' DD 73 01 LD (IX+001),E
3228 12D9' 18 0B JR JYXXIT

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3229 ;
3230 12DB' 7B JYSP2: LD A,E
3231 12DC' B8 CP B
3232 12DD' 28 07 JR Z,JYXXIT
3233 ;
3234 12DF' FD 73 02 LD (IY+002),E
3235 12E2' AF XOR A
3236 12E3' FD 77 03 LD (IY+003),A
3237 12E6' D1 JYXXIT: POP DE
3238 12E7' C1 POP BC
3239 12EB' C9 RET

```

```

3240 ; -----
3241 ;
3242 ; *****

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3243 12E9' C5 KFIRE: PUSH BC ; STATE PROCESSOR FOR KEYPAD FIRE BUTTON
3244 12EA' D5 PUSH DE ; IN OUT
3245 12EB' E6 40 AND 040 ; (IY+7) (IY+6) (IY+7) (IY+6) (IX+3)
3246 12ED' 5F LD E,A ; <0 <A&40 0 A&40 ---
3247 12EE' FD 46 06 LD B,(IY+006) ; <0 =A&40 --- --- ---
3248 12F1' FD 7E 07 LD A,(IY+007) ; =0 <A&40 --- A&40 ---

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3249 12F4' FE 00          CP      000          ; =0 =A&40 1 --- A&40
3250 12F6' 20 13        JR      NZ,KF2
3251                               ;
3252 12F8' 7B           LD      A,E
3253 12F9' B8           CP      B
3254 12FA' 28 05        JR      Z,KF1
3255                               ;
3256 12FC' FD 73 06     LD      (IY+006),E
3257 12FF' 18 15        JR      KFXXIT
3258                               ;
3259 1301' 3E 01        KF1:   LD      A,001
3260 1303' FD 77 07     LD      (IY+007),A
3261 1306' DD 73 03     LD      (IX+003),E
3262 1309' 18 0B        JR      KFXXIT
3263                               ;
3264 130B' 7B           KF2:   LD      A,E
3265 130C' B8           CP      B
3266 130D' 28 07        JR      Z,KFXXIT
3267                               ;
3268 130F' FD 73 06     LD      (IY+006),E
3269 1312' AF           XOR     A
3270 1313' FD 77 07     LD      (IY+007),A
3271 1316' D1           KFXXIT: POP   DE
3272 1317' C1           POP     BC
3273 1318' C9           RET
3274                               ; -----
3275                               ;
3276                               ; *****
3277 1319' 21 0000      INTRO: LD     HL,00000      ; PUT UP THE INTRODUCTION SCREEN
3278 131C' 11 4000      LD     DE,04000
3279 131F' 3E 00        LD     A,000
3280 1321' CD 18D4'     CALL   FILVR      ; FILL ALL OF VRAM WITH 0
3281 1324' CD 18E9'     CALL   VINIT      ; SET UP THE VIDEO CHIP AND VRAM ADDRESSES
3282 1327' CD 1927'     CALL   FINIT      ; INIT THE FONT STORAGE
3283                               ;
3284 132A' 21 18A3'     LD     HL,GENTAB   ; NOW LOAD THE PATTERN GENERATOR VRAM
3285 132D' 11 0060     LD     DE,00060    ; WITH THE PATTERNS FOR THE BIG BLOCK
3286 1330' E5           BLKLD1: PUSH   HL      ; CHARACTERS
3287 1331' D5           PUSH   DE
3288 1332' 7E           LD     A,(HL)
3289 1333' FE FF       CP     OFF         ; WHEN WE GET OFF FROM TABLE,
3290 1335' 28 1B       JR     Z,LDDONE    ; IT MEANS WE ARE DONE
3291 1337' 47           LD     B,A
3292 1338' 04           INC    B
3293 1339' 21 14C3'     LD     HL,BLOCKS   ; PATTERNS FOR THE BIG BLOCK CHARACTERS
3294 133C' 11 0008     LD     DE,00008
3295 133F' 10 15       BLDLP: DJNZ   ADVHL
3296 1341' D1           POP     DE
3297 1342' D5           PUSH   DE
3298 1343' FD 21 0001  LD     IY,00001
3299 1347' 3E 03       LD     A,003
3300 1349' CD 1FBE'     CALL   RCOPYV
3301 134C' D1           POP     DE
3302 134D' E1           POP     HL
3303 134E' 13           INC     DE
3304 134F' 23           INC     HL

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3305 1350' 18 DE JR BLKLD1
3306 ;
3307 1352' D1 LDDONE: POP DE
3308 1353' E1 POP HL
3309 1354' 18 03 JR LDNAME
3310 ;
3311 1356' 19 ADVHL: ADD HL,DE ; ADVANCE HL BY DE
3312 1357' 18 E6 JR BLDLP
3313 ;
3314 ;
3315 1359' 21 144D' LDNAME: LD HL,NTAB1 ; NOW LOAD THE PATTERN NAME TABLES
3316 135C' 11 0085 LD DE,00085
3317 135F' FD 21 0016 LD IY,NTAB2-NTAB1 ; LENGTH
3318 1363' 3E 02 LD A,002 ; CODE FOR NAME TABLE BLOCK
3319 1365' CD 1FBE' CALL RCOPIV
3320 ;
3321 1368' 21 1463' LD HL,NTAB2
3322 136B' 11 00A5 LD DE,000A5
3323 136E' FD 21 0016 LD IY,TABEND-NTAB2 ; LENGTH
3324 1372' 3E 02 LD A,002
3325 1374' CD 1FBE' CALL RCOPIV
3326 ;
3327 1377' 21 14C1' LD HL,TMCHRS ; PUT IN THE SMALL TM CHARACTERS
3328 137A' 11 009B LD DE,0009B
3329 137D' FD 21 0002 LD IY,00002
3330 1381' 3E 02 LD A,002
3331 1383' CD 1FBE' CALL RCOPIV
3332 ;
3333 1386' 21 14B4' LD HL,CPRMSG ; THE COPYRIGHT MESSAGE
3334 1389' 11 02AA LD DE,002AA
3335 138C' FD 21 000D LD IY,0000D
3336 1390' 3E 02 LD A,002
3337 1392' CD 1FBE' CALL RCOPIV
3338 ;
3339 1395' 21 143B' LD HL,CLRTAB ; NOW THE COLOR TABLE
3340 1398' 11 0000 LD DE,00000
3341 139B' 3E 04 LD A,004
3342 139D' FD 21 0012 LD IY,00012
3343 13A1' CD 1FBE' CALL RCOPIV
3344 ;
3345 13A4' 06 01 LD B,001 ; UNBLANK THE SCREEN
3346 13A6' 0E C0 LD C,0C0
3347 13A8' CD 1FD9' CALL WRTRGV
3348 ;
3349 13AB' 21 8000 LD HL,STFADR ; IF THE FIRST 16 BITS OF THE
3350 13AE' 7E LD A,(HL) ; CARTRIDGE ARE 055AA, THEN
3351 13AF' FE AA CP OAA ; GO GET NAME STRING AND INTRODUCE,
3352 13B1' 20 4C JR NZ,PTEXT ; IF NOT THERE GO PRINT THE TEXT
3353 13B3' 23 INC HL ; TO TELL THE USER TO TURN THE
3354 13B4' 7E LD A,(HL) ; THE MACHINE OFF BEFORE INSERTING
3355 13B5' FE 55 CP 055 ; THE CARTRIDGE
3356 13B7' 20 46 JR NZ,PTEXT
3357 ;
3358 ;
3359 13B9' 21 8024 LD HL,08024 ; GO FIND THE NAME STRING
3360 13BC' CD 1946' CALL SCAN2F

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3361 138F' 11 8024 LD DE,08024
3362 13C2' 21 0201 LD HL,00201
3363 13C5' CD 1951' CALL NTBLKC
3364 13C8' 21 8024 LD HL,08024
3365 13CB' CD 1946' CALL SCAN2F
3366 13CE' 23 INC HL
3367 13CF' 54 LD D,H
3368 13D0' 5D LD E,L
3369 13D1' CD 1946' CALL SCAN2F
3370 13D4' 21 01C1 LD HL,001C1
3371 13D7' CD 1951' CALL NTBLKC
3372 13DA' 21 8024 LD HL,08024
3373 13DD' CD 1946' CALL SCAN2F
3374 13E0' 23 INC HL
3375 13E1' CD 1946' CALL SCAN2F
3376 13E4' 23 INC HL
3377 ;
3378 13E5' 11 02AC LD DE,002AC ; PUT STRING ON THE SCREEN
3379 13E8' FD 21 0004 LD IY,00004
3380 13EC' 3E 02 LD A,002
3381 13EE' CD 1FBE' CALL RCOPYV
3382 ;
3383 13F1' CD 1968' CALL WAIT ; THIS IS THE PREGAME WAIT EVERYBODY
3384 ; HATES TO SIT THROUGH
3385 ;
3386 13F4' 06 01 LD B,001 ; BLANK SCREEN BEFORE JUMP TO CARTRIDGE
3387 13F6' 0E 80 LD C,080
3388 13F8' CD 1FD9' CALL WRTRGV
3389 ;
3390 13FB' 2A 800A LD HL,(CSTART) ; PICK UP STARTING ADDRESS IN
3391 13FE' E9 JP (HL) ; CARTRIDGE AND GO TO IT.
3392 ;
3393 ;
3394 13FF' 21 1479' PTEXT: LD HL,MSG1 ; PUT UP THREE LINE MESSAGE
3395 1402' 11 01AA LD DE,001AA
3396 1405' FD 21 000D LD IY,0000D
3397 1409' 3E 02 LD A,002
3398 140B' CD 1FBE' CALL RCOPYV
3399 ;
3400 140E' 21 1486' LD HL,MSG2
3401 1411' 11 01E4 LD DE,001E4
3402 1414' FD 21 001A LD IY,0001A
3403 1418' 3E 02 LD A,002
3404 141A' CD 1FBE' CALL RCOPYV
3405 ;
3406 141D' 21 14A0' LD HL,MSG3
3407 1420' 11 0227 LD DE,00227
3408 1423' FD 21 0014 LD IY,00014
3409 1427' 3E 02 LD A,002
3410 1429' CD 1FBE' CALL RCOPYV
3411 ;
3412 142C' 21 8A00 LD HL,08A00 ; WAIT FOR USER TO GET THE MESSAGE
3413 142F' CD 196B' CALL TIMER
3414 ;
3415 1432' 06 01 LD B,001 ; TIME RAN OUT SO TURN OFF SCREEN
3416 1434' 0E 80 LD C,080

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3417 1436' CD 1FD9'          CALL WRTRGV
3418
3419 1439' 18 FE          ; FOREVR: JR      FOREVR      ; WAIT FOREVER
3420
3421
3422
3423 143B' 00 00 00 F0      CLRTAB: DB      000,000,000,0F0,0F0      ; COLOR TABLE
3424 143F' F0
3425 1440' F0 F0 F0 F0      DB      0F0,0F0,0F0,0F0,0F0
3426 1444' F0
3427 1445' F0 F0 D0 80      DB      0F0,0F0,0D0,080,090
3428 1449' 90
3429 144A' B0 30 40          DB      0B0,030,040
3430
3431 144D' 60 61 68 69      ;
3432 1451' 70          NTAB1: DB      060,061,068,069,070
3433 1452' 71 78 79 80      DB      071,078,079,080,081
3434 1456' 81
3435 1457' 88 89 64 65      DB      088,089,064,065,06C
3436 145B' 6C
3437 145C' 74 75 7C 84      DB      074,075,07C,084,085
3438 1460' 85
3439 1461' 8C 8D          DB      08C,08D
3440
3441 1463' 62 63 6A 6B      ;
3442 1467' 72          NTAB2: DB      062,063,06A,06B,072
3443 1468' 73 7A 7B 82      DB      073,07A,07B,082,083
3444 146C' 83
3445 146D' 8A 8B 66 67      DB      08A,08B,066,067,06D
3446 1471' 6D
3447 1472' 76 77 7D 86      DB      076,077,07D,086,087
3448 1476' 87
3449 1477' 8E 8F          DB      08E,08F
3450 1479'          TABEND:
3451
3452
3453          ; HERE COME THE STRINGS
3454
3455
3456 1479' 54 55 52 4E      MSG1:  DB      'TURN GAME OFF'
3457 147D' 20 47 41 4D
3458 1481' 45 20 4F 46
3459 1485' 46
3460
3461 1486' 42 45 46 4F      ;
3462 148A' 52 45 20 49      MSG2:  DB      'BEFORE INSERTING CARTRIDGE'
3463 148E' 4E 53 45 52
3464 1492' 54 49 4E 47
3465 1496' 20 43 41 52
3466 149A' 54 52 49 44
3467 149E' 47 45
3468
3469 14A0' 4F 52 20 45      ;
3470 14A4' 58 50 41 4E      MSG3:  DB      'OR EXPANSION MODULE.'
3471 14AB' 53 49 4F 4E
3472 14AC' 20 4D 4F 44

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3473	14B0'	55 4C 45 2E	
3474			
3475	14B4'	1D	; CPRMSG: DB 01D ; '(C)' NAME CODE
3476	14B5'	20 31 39 38	DB ' 1982 COLECO'
3477	14B9'	32 20 43 4F	
3478	14BD'	4C 45 43 4F	
3479			
3480	14C1'	1E 1F	; TMCHRS: DB 01E,01F ; CODES FOR THE SMALL 'TM'
3481			
3482	14C3'	00 00 00 00	; BLOCKS: DB 000,000,000,000,000,000,000,000 ; PATTERNS FOR THE BIG BLOCK
3483	14C7'	00 00 00 00	
3484	14CB'	3F 7F FF FF	DB 03F,07F,0FF,0FF,0F3,0F3,0F0,0F0 ; CHARACTERS
3485	14CF'	F3 F3 F0 F0	
3486	14D3'	00 80 C0 C0	DB 000,080,0C0,0C0,0C0,0C0,000,000
3487	14D7'	C0 C0 00 00	
3488	14DB'	3F 7F FF FF	DB 03F,07F,0FF,0FF,0F3,0F3,0F3,0F3
3489	14DF'	F3 F3 F3 F3	
3490	14E3'	00 80 C0 C0	DB 000,080,0C0,0C0,0C0,0C0,0C0,0C0
3491	14E7'	C0 C0 C0 C0	
3492	14EB'	F0 F0 F0 F0	DB 0F0,0F0,0F0,0F0,0F0,0F0,0F0,0F0
3493	14EF'	F0 F0 F0 F0	
3494	14F3'	FF FF FF F0	DB 0FF,0FF,0FF,0F0,0F0,0FF,0FF,0FF
3495	14F7'	F0 FF FF FF	
3496	14FB'	C0 C0 C0 00	DB 0C0,0C0,0C0,000,000,000,000,000
3497	14FF'	00 00 00 00	
3498	1503'	F1 F1 F1 7B	DB 0F1,0F1,0F1,07B,07B,07B,03F,03F
3499	1507'	7B 7B 3F 3F	
3500	150B'	E0 E0 E0 C0	DB 0E0,0E0,0E0,0C0,0C0,0C0,080,080
3501	150F'	C0 C0 80 80	
3502	1513'	1F 3F 7F 79	DB 01F,03F,07F,079,078,07F,07F,03F
3503	1517'	78 7F 7F 3F	
3504	151B'	80 C0 E0 E0	DB 080,0C0,0E0,0E0,000,080,0C0,0E0
3505	151F'	00 80 C0 E0	
3506	1523'	F3 F3 FB FB	DB 0F3,0F3,0FB,0FB,0FB,0FF,0FF,0FF
3507	1527'	FB FF FF FF	
3508	152B'	C0 C0 C0 C0	DB 0C0,0C0,0C0,0C0,0C0,0C0,0C0,0C0
3509	152F'	C0 C0 C0 C0	
3510	1533'	F3 F3 FF FF	DB 0F3,0F3,0FF,0FF,07F,03F,000,000
3511	1537'	7F 3F 00 00	
3512	153B'	C0 C0 C0 C0	DB 0C0,0C0,0C0,0C0,080,000,000,000
3513	153F'	80 00 00 00	
3514	1543'	F0 F0 FF FF	DB 0F0,0F0,0FF,0FF,0FF,0FF,000,000
3515	1547'	FF FF 00 00	
3516	154B'	00 00 C0 C0	DB 000,000,0C0,0C0,0C0,0C0,000,000
3517	154F'	C0 C0 00 00	
3518	1553'	3F 1F 1F 1F	DB 03F,01F,01F,01F,00E,00E,000,000
3519	1557'	0E 0E 00 00	
3520	155B'	80 00 00 00	DB 080,000,000,000,000,000,000,000
3521	155F'	00 00 00 00	
3522	1563'	F0 F0 F0 F0	DB 0F0,0F0,0F0,0F0,0F0,0F0,000,000
3523	1567'	F0 F0 00 00	
3524	156B'	1F 01 79 7F	DB 01F,001,079,07F,03F,01F,000,000
3525	156F'	3F 1F 00 00	
3526	1573'	E0 E0 E0 E0	DB 0E0,0E0,0E0,0E0,0C0,080,000,000
3527	1577'	C0 80 00 00	
3528	157B'	FF F7 F7 F7	DB 0FF,0F7,0F7,0F7,0F3,0F3,000,000

3529	157F'	F3 F3 00 00		
3530	1583'	C0 C0 C0 C0	DB	0C0,0C0,0C0,0C0,0C0,0C0,000,000
3531	1587'	C0 C0 00 00		
3532				;
3533				;
3534	158B'	7E 81 BD A1	CPYWT: DB	07E,081,0BD,0A1,0A1,0BD,081,07E ; (c)
3535	158F'	A1 BD 81 7E		
3536	1593'	1F 04 04 04	DB	01F,004,004,004,000,000,000,000 ; SMALL T FOR TM
3537	1597'	00 00 00 00		
3538	159B'	44 6C 54 54	DB	044,06C,054,054,000,000,000,000 ; SMALL M FOR TM
3539	159F'	00 00 00 00		
3540				;
3541				;
3542	15A3'	00 00 00 00	FONT: DB	000,000,000,000,000,000,000,000 ; SPACE
3543	15A7'	00 00 00 00		
3544	15AB'	20 20 20 20	DB	020,020,020,020,020,000,020,000 ; !
3545	15AF'	20 00 20 00		
3546	15B3'	50 50 50 00	DB	050,050,050,000,000,000,000,000 ; "
3547	15B7'	00 00 00 00		
3548	15BB'	50 50 F8 50	DB	050,050,0F8,050,0F8,050,050,000 ; #
3549	15BF'	F8 50 50 00		
3550	15C3'	20 78 A0 70	DB	020,078,0A0,070,028,0F0,020,000 ; \$
3551	15C7'	28 F0 20 00		
3552	15CB'	C0 C8 10 20	DB	0C0,0C8,010,020,040,098,018,000 ; %
3553	15CF'	40 98 18 00		
3554	15D3'	40 A0 A0 40	DB	040,0A0,0A0,040,0A8,090,068,000 ; &
3555	15D7'	A8 90 68 00		
3556	15DB'	20 20 20 00	DB	020,020,020,000,000,000,000,000 ; '
3557	15DF'	00 00 00 00		
3558	15E3'	20 40 80 80	DB	020,040,080,080,080,040,020,000 ; (
3559	15E7'	80 40 20 00		
3560	15EB'	20 10 08 08	DB	020,010,008,008,008,010,020,000 ;)
3561	15EF'	08 10 20 00		
3562	15F3'	20 A8 70 20	DB	020,0A8,070,020,070,0A8,020,000 ; *
3563	15F7'	70 A8 20 00		
3564	15FB'	00 20 20 F8	DB	000,020,020,0F8,020,020,000,000 ; +
3565	15FF'	20 20 00 00		
3566	1603'	00 00 00 00	DB	000,000,000,000,020,020,040,000 ; ,
3567	1607'	20 20 40 00		
3568	160B'	00 00 00 F8	DB	000,000,000,0F8,000,000,000,000 ; -
3569	160F'	00 00 00 00		
3570	1613'	00 00 00 00	DB	000,000,000,000,000,000,020,000 ; .
3571	1617'	00 00 20 00		
3572	161B'	00 08 10 20	DB	000,008,010,020,040,080,000,000 ; /
3573	161F'	40 80 00 00		
3574	1623'	70 88 98 A8	DB	070,088,098,0A8,0C8,088,070,000 ; 0
3575	1627'	C8 88 70 00		
3576	162B'	20 60 20 20	DB	020,060,020,020,020,020,070,000 ; 1
3577	162F'	20 20 70 00		
3578	1633'	70 88 08 30	DB	070,088,008,030,040,080,0F8,000 ; 2
3579	1637'	40 80 F8 00		
3580	163B'	F8 08 10 30	DB	0F8,008,010,030,008,088,070,000 ; 3
3581	163F'	08 88 70 00		
3582	1643'	10 30 50 90	DB	010,030,050,090,0F8,010,010,000 ; 4
3583	1647'	F8 10 10 00		
3584	164B'	F8 80 F0 08	DB	0F8,080,0F0,008,008,088,070,000 ; 5

3585	164F'	08 88 70 00		
3586	1653'	38 40 80 F0	DB	038,040,080,0F0,088,088,070,000 ; 6
3587	1657'	88 88 70 00		
3588	165B'	F8 08 10 20	DB	0F8,008,010,020,040,040,040,000 ; 7
3589	165F'	40 40 40 00		
3590	1663'	70 88 88 70	DB	070,088,088,070,088,088,070,000 ; 8
3591	1667'	88 88 70 00		
3592	166B'	70 88 88 78	DB	070,088,088,078,008,010,0E0,000 ; 9
3593	166F'	08 10 E0 00		
3594	1673'	00 00 20 00	DB	000,000,020,000,020,000,000,000 ; :
3595	1677'	20 00 00 00		
3596	167B'	00 00 20 00	DB	000,000,020,000,020,020,040,000 ; ;
3597	167F'	20 20 40 00		
3598	1683'	10 20 40 80	DB	010,020,040,080,040,020,010,000 ; <
3599	1687'	40 20 10 00		
3600	168B'	00 00 F8 00	DB	000,000,0F8,000,0F8,000,000,000 ; =
3601	168F'	F8 00 00 00		
3602	1693'	40 20 10 08	DB	040,020,010,008,010,020,040,000 ; >
3603	1697'	10 20 40 00		
3604	169B'	70 88 10 20	DB	070,088,010,020,020,000,020,000 ; ?
3605	169F'	20 00 20 00		
3606	16A3'	70 88 A8 B8	DB	070,088,0A8,0B8,0B0,080,078,000 ; e
3607	16A7'	B0 80 78 00		
3608	16AB'	20 50 88 88	DB	020,050,088,088,0F8,088,088,000 ; A
3609	16AF'	F8 88 88 00		
3610	16B3'	F0 88 88 F0	DB	0F0,088,088,0F0,088,088,0F0,000 ; B
3611	16B7'	88 88 F0 00		
3612	16BB'	70 88 80 80	DB	070,088,080,080,080,088,070,000 ; C
3613	16BF'	80 88 70 00		
3614	16C3'	F0 88 88 88	DB	0F0,088,088,088,088,088,0F0,000 ; D
3615	16C7'	88 88 F0 00		
3616	16CB'	F8 80 80 F0	DB	0F8,080,080,0F0,080,080,0F8,000 ; E
3617	16CF'	80 80 F8 00		
3618	16D3'	F8 80 80 F0	DB	0F8,080,080,0F0,080,080,080,000 ; F
3619	16D7'	80 80 80 00		
3620	16DB'	78 80 80 80	DB	078,080,080,080,098,088,078,000 ; G
3621	16DF'	98 88 78 00		
3622	16E3'	88 88 88 F8	DB	088,088,088,0F8,088,088,088,000 ; H
3623	16E7'	88 88 88 00		
3624	16EB'	70 20 20 20	DB	070,020,020,020,020,020,070,000 ; I
3625	16EF'	20 20 70 00		
3626	16F3'	08 08 08 08	DB	008,008,008,008,008,088,070,000 ; J
3627	16F7'	08 88 70 00		
3628	16FB'	88 90 A0 C0	DB	088,090,0A0,0C0,0A0,090,088,000 ; K
3629	16FF'	A0 90 88 00		
3630	1703'	80 80 80 80	DB	080,080,080,080,080,080,0F8,000 ; L
3631	1707'	80 80 F8 00		
3632	170B'	88 D8 A8 A8	DB	088,0D8,0A8,0A8,088,088,088,000 ; M
3633	170F'	88 88 88 00		
3634	1713'	88 88 C8 A8	DB	088,088,0C8,0A8,098,088,088,000 ; N
3635	1717'	98 88 88 00		
3636	171B'	70 88 88 88	DB	070,088,088,088,088,088,070,000 ; O
3637	171F'	88 88 70 00		
3638	1723'	F0 88 88 F0	DB	0F0,088,088,0F0,080,080,080,000 ; P
3639	1727'	80 80 80 00		
3640	172B'	70 88 88 88	DB	070,088,088,088,0A8,090,068,000 ; Q

3641	172F'	A8 90 68 00		
3642	1733'	F0 88 88 F0	DB	0F0,088,088,0F0,0A0,090,088,000 ; R
3643	1737'	A0 90 88 00		
3644	173B'	70 88 80 70	DB	070,088,080,070,008,088,070,000 ; S
3645	173F'	08 88 70 00		
3646	1743'	F8 20 20 20	DB	0F8,020,020,020,020,020,020,000 ; T
3647	1747'	20 20 20 00		
3648	174B'	88 88 88 88	DB	088,088,088,088,088,088,070,000 ; U
3649	174F'	88 88 70 00		
3650	1753'	88 88 88 88	DB	088,088,088,088,088,050,020,000 ; V
3651	1757'	88 50 20 00		
3652	175B'	88 88 88 A8	DB	088,088,088,0A8,0A8,0D8,088,000 ; W
3653	175F'	A8 D8 88 00		
3654	1763'	88 88 50 20	DB	088,088,050,020,050,088,088,000 ; X
3655	1767'	50 88 88 00		
3656	176B'	88 88 50 20	DB	088,088,050,020,020,020,020,000 ; Y
3657	176F'	20 20 20 00		
3658	1773'	F8 08 10 20	DB	0F8,008,010,020,040,080,0F8,000 ; Z
3659	1777'	40 80 F8 00		
3660	177B'	F8 C0 C0 C0	DB	0F8,0C0,0C0,0C0,0C0,0C0,0F8,000 ; [
3661	177F'	C0 C0 F8 00		
3662	1783'	00 80 40 20	DB	000,080,040,020,010,008,000,000 ; \
3663	1787'	10 08 00 00		
3664	178B'	F8 18 18 18	DB	0F8,018,018,018,018,018,0F8,000 ;]
3665	178F'	18 18 F8 00		
3666	1793'	00 00 20 50	DB	000,000,020,050,088,000,000,000 ; ^
3667	1797'	88 00 00 00		
3668	179B'	00 00 00 00	DB	000,000,000,000,000,000,000,0F8 ; _
3669	179F'	00 00 00 F8		
3670	17A3'	40 20 10 00	DB	040,020,010,000,000,000,000,000 ; `
3671	17A7'	00 00 00 00		
3672	17AB'	00 00 70 88	DB	000,000,070,088,0F8,088,088,000 ; a
3673	17AF'	F8 88 88 00		
3674	17B3'	00 00 F0 48	DB	000,000,0F0,048,070,048,0F0,000 ; b
3675	17B7'	70 48 F0 00		
3676	17BB'	00 00 78 80	DB	000,000,078,080,080,080,078,000 ; c
3677	17BF'	80 80 78 00		
3678	17C3'	00 00 F0 48	DB	000,000,0F0,048,048,048,0F0,000 ; d
3679	17C7'	48 48 F0 00		
3680	17CB'	00 00 F0 80	DB	000,000,0F0,080,0E0,080,0F0,000 ; e
3681	17CF'	E0 80 F0 00		
3682	17D3'	00 00 F0 80	DB	000,000,0F0,080,0E0,080,080,000 ; f
3683	17D7'	E0 80 80 00		
3684	17DB'	00 00 78 80	DB	000,000,078,080,088,088,070,000 ; g
3685	17DF'	88 88 70 00		
3686	17E3'	00 00 88 88	DB	000,000,088,088,0F8,088,088,000 ; h
3687	17E7'	F8 88 88 00		
3688	17EB'	00 00 F8 20	DB	000,000,0F8,020,020,020,0F8,000 ; i
3689	17EF'	20 20 F8 00		
3690	17F3'	00 00 70 20	DB	000,000,070,020,020,0A0,0E0,000 ; j
3691	17F7'	20 A0 E0 00		
3692	17FB'	00 00 90 A0	DB	000,000,090,0A0,0C0,0A0,090,000 ; k
3693	17FF'	C0 A0 90 00		
3694	1803'	00 00 80 80	DB	000,000,080,080,080,080,0F8,000 ; l
3695	1807'	80 80 F8 00		
3696	180B'	00 00 88 D8	DB	000,000,088,0D8,0A8,088,088,000 ; m

3697	180F'	AB 88 88 00		
3698	1813'	00 00 88 C8	DB	000,000,088,0C8,0A8,098,088,000 ; n
3699	1817'	AB 98 88 00		
3700	181B'	00 00 F8 88	DB	000,000,0F8,088,088,088,0F8,000 ; o
3701	181F'	88 88 F8 00		
3702	1823'	00 00 F0 88	DB	000,000,0F0,088,0F0,080,080,000 ; p
3703	1827'	F0 80 80 00		
3704	182B'	00 00 F8 88	DB	000,000,0F8,088,0A8,090,0E0,000 ; q
3705	182F'	A8 90 E0 00		
3706	1833'	00 00 F8 88	DB	000,000,0F8,088,0F8,0A0,090,000 ; r
3707	1837'	F8 A0 90 00		
3708	183B'	00 00 78 80	DB	000,000,078,080,070,008,0F0,000 ; s
3709	183F'	70 08 F0 00		
3710	1843'	00 00 F8 20	DB	000,000,0F8,020,020,020,020,000 ; t
3711	1847'	20 20 20 00		
3712	184B'	00 00 88 88	DB	000,000,088,088,088,088,070,000 ; u
3713	184F'	88 88 70 00		
3714	1853'	00 00 88 88	DB	000,000,088,088,090,0A0,040,000 ; v
3715	1857'	90 A0 40 00		
3716	185B'	00 00 88 88	DB	000,000,088,088,0A8,0D8,088,000 ; w
3717	185F'	A8 D8 88 00		
3718	1863'	00 00 88 60	DB	000,000,088,060,020,060,088,000 ; x
3719	1867'	20 60 88 00		
3720	186B'	00 00 88 50	DB	000,000,088,050,020,020,020,000 ; y
3721	186F'	20 20 20 00		
3722	1873'	00 00 F8 10	DB	000,000,0F8,010,020,040,0F8,000 ; z
3723	1877'	20 40 F8 00		
3724	187B'	38 40 20 C0	DB	038,040,020,0C0,020,040,038,000 ; {
3725	187F'	20 40 38 00		
3726	1883'	40 20 10 08	DB	040,020,010,008,010,020,040,000 ; >
3727	1887'	10 20 40 00		
3728	188B'	E0 10 20 18	DB	0E0,010,020,018,020,010,0E0,000 ; }
3729	188F'	20 10 E0 00		
3730	1893'	40 A8 10 00	DB	040,0A8,010,000,000,000,000,000 ; ~
3731	1897'	00 00 00 00		
3732	189B'	A8 50 A8 50	DB	0A8,050,0A8,050,0A8,050,0A8,000 ; CHECKER BLOCK
3733	189F'	A8 50 A8 00		
3734				;
3735				;
3736	18A3'	01 02 0E 0F	GENTAB: DB	001,002,00E,00F,008 ; POSITIONER CODES FOR BLOCK
3737	18A7'	08		
3738	18AB'	09 12 13 03	DB	009,012,013,003,004 ; CHARACTERS
3739	18AC'	04		
3740	18AD'	0E 0F 05 14	DB	00E,00F,005,014,000
3741	18B1'	00		
3742	18B2'	00 05 00 10	DB	000,005,000,010,011
3743	18B6'	11		
3744	18B7'	0A 0B 15 16	DB	00A,00B,015,016,006
3745	18BB'	06		
3746	18BC'	07 10 11 05	DB	007,010,011,005,014
3747	18C0'	14		
3748	18C1'	00 00 01 02	DB	000,000,001,002,00E
3749	18C5'	0E		
3750	18C6'	0F 03 04 0E	DB	00F,003,004,00E,00F
3751	18CA'	0F		
3752	18CB'	03 04 0E 0F	DB	003,004,00E,00F,00C

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3753 18CF' 0C
3754 18D0' 0D 17 18 FF          DB 00D,017,018,0FF
3755
3756
3757 18D4' 4F          FILVR: LD C,A          ; DISPATCH # 0B
3758 18D5' 7D          LD A,L          ; FILL VRAM. HL=START ADDR TO FILL
3759 18D6' D3 BF      OUT (VDPR),A      ; DE= # OF LOCATIONS TO FILL
3760 18D8' 7C          LD A,H          ; A= FILL VALUE
3761 18D9' F6 40      OR 040
3762 18DB' D3 BF      OUT (VDPR),A
3763 18DD' 79          LD A,C
3764 18DE' D3 BE      OUT (VRAM),A
3765 18E0' 1B          DEC DE
3766 18E1' 7A          LD A,D
3767 18E2' B3          OR E
3768 18E3' 20 F4      JR NZ,$-00A      ; 018DD
3769 18E5' CD 1FBC'   CALL RDVSTV
3770 18EB' C9          RET
3771
3772
3773
3774 18E9' 06 00      VINIT: LD B,000      ; DISPATCH # 0C
3775 18EB' 0E 00      LD C,000          ; INITIALIZE THE VIDEO CHIP
3776 18ED' CD 1FD9'   CALL WRTRGV       ; MODE 0, AND NO EXTERNAL VDP INPUT
3777 18F0' 06 01      LD B,001
3778 18F2' 0E 80      LD C,080
3779 18F4' CD 1FD9'   CALL WRTRGV       ; 16K,BLANKING,NO INTERRUPT,8X8 SPRITES
3780 18F7' 3E 02      LD A,002          ; MAGO SPRITES 1X
3781 18F9' 21 1800   LD HL,01800       ; NAME TABLE AT 1800
3782 18FC' CD 1FB8'   CALL BASLDV
3783 18FF' 3E 04      LD A,004
3784 1901' 21 2000   LD HL,02000       ; COLOR TABLE AT 2000
3785 1904' CD 1FB8'   CALL BASLDV
3786 1907' 3E 03      LD A,003
3787 1909' 21 0000   LD HL,00000       ; PATTERN GENERATOR AT 0
3788 190C' CD 1FB8'   CALL BASLDV
3789 190F' 3E 00      LD A,000
3790 1911' 21 1800   LD HL,01800       ; SPRITE ATTRIBUTE AT 1800
3791 1914' CD 1FB8'   CALL BASLDV
3792 1917' 3E 01      LD A,001
3793 1919' 21 3800   LD HL,03800       ; SPRITE PATTERN GENERATOR AT 3800
3794 191C' CD 1FB8'   CALL BASLDV
3795 191F' 06 07      LD B,007
3796 1921' 0E 00      LD C,000
3797 1923' CD 1FD9'   CALL WRTRGV       ; SET ALL COLORS TO 0
3798 1926' C9          RET
3799
3800
3801
3802 1927' 21 158B'   FINIT: LD HL,CPYWT ; DISPATCH # 0A
3803 192A' 11 001D   LD DE,0001D      ; COPY (C) TABLE INTO VRAM
3804 192D' FD 21 0060 LD IY,00060
3805 1931' 3E 03      LD A,003
3806 1933' CD 1FBE'   CALL RCOPYV
3807 1936' 21 15A3'   LD HL,FONT       ; NOW THE MAIN FONT
3808 1939' 11 0000   LD DE,00000

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3809 193C' FD 21 0001
 3810 1940' 3E 03
 3811 1942' CD 1FBE'
 3812 1945' C9
 3813
 3814
 3815
 3816 1946' 01 0000
 3817 1949' 7E
 3818 194A' FE 2F
 3819 194C' C8
 3820 194D' 23
 3821 194E' 03
 3822 194F' 18 F4
 3823
 3824
 3825
 3826 1951' C5
 3827 1952' FD E1
 3828
 3829 1954' 3E 20
 3830 1956' 99
 3831 1957' 1F
 3832 1958' 06 00
 3833 195A' 4F
 3834 195B' 09
 3835
 3836 195C' 44
 3837 195D' 4D
 3838 195E' 62
 3839 195F' 6B
 3840 1960' 50
 3841 1961' 59
 3842
 3843 1962' 3E 02
 3844 1964' CD 1FBE'
 3845 1967' C9
 3846
 3847
 3848
 3849 1968' 21 1700
 3850 196B' 11 00FF
 3851 196E' 1B
 3852 196F' 7A
 3853 1970' B3
 3854 1971' 20 FB
 3855 1973' 2B
 3856 1974' 7C
 3857 1975' B5
 3858 1976' 20 F3
 3859 1978' C9
 3860
 3861
 3862
 3863
 3864 1979' 21 0000

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LD IY,00001
LD A,003
CALL RCOPIV
RET
; -----
;
; *****
SCAN2F: LD BC,00000 ; ADVANCE POINTER HL UNTIL HL
LD A,(HL) ; POINTS TO 02F IN MEMORY.
CP 02F ; RETURN COUNT OF SCANN STEPS
RET Z ; IN BC
INC HL
INC BC
JR $-00A ; 01949
; -----
;
; *****
NTBLKC: PUSH BC ; ROUTINE USED TO COPY SHORT STRINGS
POP IY ; TO NAME TABLE MEMORY. IY=BC
;
LD A,020 ; HL=HL+(020-C)/2
SBC A,C
RRA
LD B,000
LD C,A
ADD HL,BC
;
LD B,H ; BC=HL
LD C,L
LD H,D ; HL=DE
LD L,E
LD D,B ; DE=BC
LD E,C
;
LD A,002 ; COPY BLOCK TO NAME TABLE
CALL RCOPIV
RET
; -----
;
; *****
WAIT: LD HL,01700 ; SET TIME WAIT
TIMER: LD DE,000FF ; WAIT HL LOOP TIMES
TIM1: DEC DE
LD A,D
OR E
JR NZ,TIM1
DEC HL
LD A,H
OR L
JR NZ,TIMER
RET
; -----
;
; *****
; DISPATCH # 09
SKLDS: LD HL,00000 ; PUT UP THE SKILL LEVEL AND

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3865	197C'	11 4000	LD	DE,04000	; OPTION SCREEN
3866	197F'	3E 00	LD	A,000	
3867	1981'	CD 1F82'	CALL	FILURV	
3868	1984'	CD 1F85'	CALL	VINITV	
3869					;
3870	1987'	06 0F	LD	B,00F	
3871	1989'	0E 04	LD	C,004	
3872	198B'	CD 1FD9'	CALL	WRTRGV	
3873					;
3874	198E'	CD 1F7F'	CALL	FINITV	
3875					;
3876	1991'	21 1A7C'	LD	HL,0PMSG1	
3877	1994'	11 0025	LD	DE,00025	
3878	1997'	FD 21 0016	LD	IY,00016	
3879	199B'	3E 02	LD	A,002	
3880	199D'	CD 1FBE'	CALL	RCOPYV	
3881					;
3882	19A0'	21 1A92'	LD	HL,0PMSG2	
3883	19A3'	11 0065	LD	DE,00065	
3884	19A6'	FD 21 0017	LD	IY,00017	
3885	19AA'	3E 02	LD	A,002	
3886	19AC'	CD 1FBE'	CALL	RCOPYV	
3887					;
3888	19AF'	11 00C5	LD	DE,000C5	
3889	19B2'	CD 1ACA'	CALL	DSPSKH	
3890					;
3891	19B5'	11 0105	LD	DE,00105	
3892	19B8'	CD 1ACA'	CALL	DSPSKH	
3893					;
3894	19BB'	11 0145	LD	DE,00145	
3895	19BE'	CD 1ACA'	CALL	DSPSKH	
3896					;
3897	19C1'	11 0185	LD	DE,00185	
3898	19C4'	CD 1ACA'	CALL	DSPSKH	
3899					;
3900	19C7'	11 01E5	LD	DE,001E5	
3901	19CA'	CD 1ACA'	CALL	DSPSKH	
3902					;
3903	19CD'	11 0225	LD	DE,00225	
3904	19D0'	CD 1ACA'	CALL	DSPSKH	
3905					;
3906	19D3'	11 0265	LD	DE,00265	
3907	19D6'	CD 1ACA'	CALL	DSPSKH	
3908					;
3909	19D9'	11 02A5	LD	DE,002A5	
3910	19DC'	CD 1ACA'	CALL	DSPSKH	
3911					;
3912	19DF'	11 0105	LD	DE,00105	
3913	19E2'	CD 1AD7'	CALL	DSP2	
3914					;
3915	19E5'	11 0145	LD	DE,00145	
3916	19E8'	CD 1ADC'	CALL	DSP3	
3917					;
3918	19EB'	11 0185	LD	DE,00185	
3919	19EE'	CD 1AE1'	CALL	DSP4	
3920					;

3921	19F1'	21 1AC2'	LD	HL,CHR5
3922	19F4'	11 01E5	LD	DE,001E5
3923	19F7'	CD 1AE4'	CALL	SH01
3924				
3925	19FA'	21 1AC3'	LD	HL,CHR6
3926	19FD'	11 0225	LD	DE,00225
3927	1A00'	CD 1AE4'	CALL	SH01
3928				
3929	1A03'	21 1AC4'	LD	HL,CHR7
3930	1A06'	11 0265	LD	DE,00265
3931	1A09'	CD 1AE4'	CALL	SH01
3932				
3933	1A0C'	21 1AC5'	LD	HL,CHR8
3934	1A0F'	11 02A5	LD	DE,002A5
3935	1A12'	CD 1AE4'	CALL	SH01
3936				
3937	1A15'	11 010F	LD	DE,0010F
3938	1A18'	CD 1AD7'	CALL	DSP2
3939				
3940	1A1B'	11 014F	LD	DE,0014F
3941	1A1E'	CD 1ADC'	CALL	DSP3
3942				
3943	1A21'	11 018F	LD	DE,0018F
3944	1A24'	CD 1AE1'	CALL	DSP4
3945				
3946	1A27'	11 01F1	LD	DE,001F1
3947	1A2A'	CD 1AEE'	CALL	DSPTWO
3948				
3949	1A2D'	11 0231	LD	DE,00231
3950	1A30'	CD 1AEE'	CALL	DSPTWO
3951				
3952	1A33'	11 0271	LD	DE,00271
3953	1A36'	CD 1AEE'	CALL	DSPTWO
3954				
3955	1A39'	11 02B1	LD	DE,002B1
3956	1A3C'	CD 1AEE'	CALL	DSPTWO
3957				
3958	1A3F'	11 022F	LD	DE,0022F
3959	1A42'	CD 1AD7'	CALL	DSP2
3960				
3961	1A45'	11 026F	LD	DE,0026F
3962	1A48'	CD 1ADC'	CALL	DSP3
3963				
3964	1A4B'	11 02AF	LD	DE,002AF
3965	1A4E'	CD 1AE1'	CALL	DSP4
3966				
3967	1A51'	11 01FB	LD	DE,001FB
3968	1A54'	CD 1AFB'	CALL	DSP5
3969				
3970	1A57'	11 023B	LD	DE,0023B
3971	1A5A'	CD 1AFB'	CALL	DSP5
3972				
3973	1A5D'	11 027B	LD	DE,0027B
3974	1A60'	CD 1AFB'	CALL	DSP5
3975				
3976	1A63'	11 02BB	LD	DE,002BB

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3977 1A66' CD 1AFB'          CALL  DSPTS
3978                                     ;
3979 1A69' 2A 73FA          LD    HL,(CTASH)
3980 1A6C' 11 0020          LD    DE,00020
3981 1A6F' 3E F4           LD    A,0F4
3982 1A71' CD 1FB2'          CALL  FILVRV
3983                                     ;
3984 1A74' 06 01           LD    B,001          ; UNBLANK THE SCREEN
3985 1A76' 0E C0           LD    C,0C0
3986 1A78' CD 1FD9'          CALL  WRTRGV
3987 1A7B' C9              RET
3988                                     ;
3989                                     ;
3990                                     ;
3991                                     ;   HERE ARE THE STRINGS FOR THE SKILL LEVEL SCREEN
3992                                     ;
3993                                     ;
3994 1A7C' 54 4F 20 53       OPMSG1: DB  'TO SELECT GAME OPTION,'
3995 1A80' 45 4C 45 43
3996 1A84' 54 20 47 41
3997 1A88' 4D 45 20 4F
3998 1A8C' 50 54 49 4F
3999 1A90' 4E 2C
4000                                     ;
4001 1A92' 50 52 45 53       OPMSG2: DB  'PRESS BUTTON ON KEYPAD.'
4002 1A96' 53 20 42 55
4003 1A9A' 54 54 4F 4E
4004 1A9E' 20 4F 4E 20
4005 1AA2' 4B 45 59 50
4006 1AA6' 41 44 2E
4007                                     ;
4008 1AA9' 31 20 3D 20       SKMSG:  DB  '1 = '
4009 1AAD' 53 4B 49 4C       SKILL:  DB  'SKILL '
4010 1AB1' 4C 20
4011 1AB3' 31               CHR1:   DB  '1'
4012 1AB4' 2F               CHRSLH: DB  '/'
4013 1AB5' 4F 4E 45 20     ONESP:  DB  'ONE '
4014 1AB9' 50 4C 41 59     PLAYER: DB  'PLAYER'
4015 1ABD' 45 52
4016 1ABF' 32               CHR2:   DB  '2'
4017 1AC0' 33               CHR3:   DB  '3'
4018 1AC1' 34               CHR4:   DB  '4'
4019 1AC2' 35               CHR5:   DB  '5'
4020 1AC3' 36               CHR6:   DB  '6'
4021 1AC4' 37               CHR7:   DB  '7'
4022 1AC5' 38               CHR8:   DB  '8'
4023 1AC6' 54 57 4F        TWO:    DB  'TWO'
4024 1AC9' 53               CHRS:   DB  'S'
4025                                     ;
4026                                     ;
4027                                     ;
4028                                     ; *****
4029 1ACA' 21 1AA9'          DSPSKN: LD  HL,SKMSG
4030 1ACD' FD 21 0016        LD      IY,00016
4031 1AD1' 3E 02           LD      A,002
4032 1AD3' CD 1FBE'          CALL    RCPYV

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4033      1AD6'  C9                RET
4034
4035
4036      ; *****
4037      1AD7'  21 1ARF'          DSP2: LD   HL,CHR2      ; PUT '2' UP AT LOC DE
4038      1ADA'  18 08              JR     SH01
4039      1ADC'  21 1ACO'          DSP3: LD   HL,CHR3      ; PUT '3' UP AT LOC DE
4040      1ADF'  18 03              JR     SH01
4041      1AE1'  21 1AC1'          DSP4: LD   HL,CHR4      ; PUT '4' UP AT LOC DE
4042
4043      1AE4'  FD 21 0001          SH01: LD   IY,00001     ; COPY ONE CHARACTER TO DISPLAY
4044      1AE8'  3E 02              LD   A,002
4045      1AEA'  CD 1FBE'          CALL  RCOPYV
4046      1AED'  C9                RET
4047
4048
4049      ; *****
4050      1AEE'  21 1AC6'          DSPTWO: LD  HL,TWO      ; PUT 'TWO' UP AT LOC DE
4051      1AF1'  FD 21 0003          LD   IY,00003
4052      1AF5'  3E 02              LD   A,002
4053      1AF7'  CD 1FBE'          CALL  RCOPYV
4054      1AFA'  C9                RET
4055
4056
4057      ; *****
4058      1AFB'  21 1AC9'          DSPS: LD  HL,CHRS      ; PUT 'S' UP AT LOC DE
4059      1AFE'  FD 21 0001          LD   IY,00001
4060      1B02'  3E 02              LD   A,002
4061      1B04'  CD 1FBE'          CALL  RCOPYV
4062      1B07'  C9                RET
4063
4064
4065      1B08'  0002 0001          DOEDAT: DW  2,1,2
4066      1B0C'  0002
4067
4068      ; *****
4069      1B0E'  01 1B08'          $BASLD: LD  BC,DOEDAT  ; DISPATCH # 0E
4070      1B11'  11 73BA          LD   DE,P.AREA
4071      1B14'  CD 0098'          CALL  PCOPY
4072      1B17'  3A 73BA          LD   A,(P.AREA)
4073      1B1A'  2A 73BB          LD   HL,(P.AREA+1)
4074
4075
4076      ;
4077      ; THIS ROUTINE CONVERTS VRAM ADDRESSES TO BASE ADDRESSES
4078      ; AND LOADS THE SPECIFIED VDP REGISTER.
4079      ; A SHADOW ARRAY OF ADDRESSES IS KEPT AT 73F2
4080      ;
4081      ; A=REGISTER CODE (SEE SHIFT TABLE BELOW)
4082      ; HL=RAW VRAM ADDRESS
4083      1B1D'  4F                BASLD: LD  C,A        ; DISPATCH # 1D
4084      1B1E'  06 00              LD   B,000
4085      1B20'  DD 21 73F2          LD   IX,BASESH
4086      1B24'  DD 09              ADD  IX,BC
4087      1B26'  DD 09              ADD  IX,BC
4088      1B28'  DD 75 00          LD   (IX+000),L

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4089 1B2B' DD 74 01 LD (IX+001),H
4090 1B2E' 3A 73C3 LD A,(VDPOSH)
4091 1B31' CB 4F BIT 1,A
4092 1B33' 28 27 JR Z,BSHIFT ; IF NOT IN GRAPHICS II GO SHIFT
4093 1B35' 79 LD A,C
4094 1B36' FE 03 CP 003 ; ELSE CHECK FOR DOING PATTERN GEN
4095 1B38' 28 06 JR Z,PGENII
4096 1B3A' FE 04 CP 004 ; ELSE CHECK FOR DOING SPRITE PATTERN
4097 1B3C' 28 10 JR Z,SPGII
4098 1B3E' 18 1C JR BSHIFT ; GO SHIFT OUT BASE ADDRESS AND WRITE
4099 ; VIDEO REGISTER
4100 ;
4101 1B40' 06 04 PGENII: LD B,004 ; IF HL<>0 THEN SET PATTERN GENERATOR
4102 1B42' 7D LD A,L ; ADDRESS TO 7 (THE MAXIMUM) ELSE
4103 1B43' B4 OR H ; SET IT TO 3.
4104 1B44' 20 04 JR NZ,PMAX
4105 1B46' 0E 03 LD C,003
4106 1B48' 18 28 JR WRTIT
4107 ;
4108 1B4A' 0E 07 PMAX: LD C,007
4109 1B4C' 18 24 JR WRTIT
4110 ;
4111 1B4E' 06 03 SPGII: LD B,003 ; IF HL<>0 THEN SET COLOR TABLE BASE
4112 1B50' 7D LD A,L ; ADDRESS TO OFF (THE MAXIMUM) ELSE
4113 1B51' B4 OR H ; SET IT TO 07F
4114 1B52' 20 04 JR NZ,CMAX
4115 1B54' 0E 7F LD C,07F
4116 1B56' 18 1A JR WRTIT
4117 ;
4118 1B58' 0E FF CMAX: LD C,OFF
4119 1B5A' 18 16 JR WRTIT
4120 ;
4121 1B5C' FD 21 1B76' BSHIFT: LD IY,SHFTTB ; SHIFT RAW ADDRESS IN HL BY THE
4122 1B60' FD 09 ADD IY,BC ; NUMBER OF BITS GIVEN IN THE SHIFT
4123 1B62' FD 09 ADD IY,BC ; TABLE IN ORDER TO SET UP THE BASE
4124 1B64' FD 7E 00 LD A,(IY+000) ; ADDRESS FOR THE VIDEO REGISTER
4125 1B67' FD 46 01 LD B,(IY+001)
4126 1B6A' CB 3C SHFTLP: SRL H
4127 1B6C' CB 1D RR L
4128 1B6E' 3D DEC A
4129 1B6F' 20 F9 JR NZ,SHFTLP
4130 1B71' 4D LD C,L
4131 1B72' CD 1CCA' WRTIT: CALL WRTRG ; GO WRITE THE VIDEO REGISTER
4132 1B75' C9 RET
4133 ;
4134 ;
4135 ; SHIFT TABLE FOR LOADING BASE ADDRESSES OF VIDEO REGISTERS
4136 ; (NUMBER OF BITS TO SHIFT),(REGISTER NUMBER)
4137 1B76' 07 05 SHFTTB: DB 007,005 ; A=0, SPRITE ATTRIBUTE TABLE BASE
4138 1B78' 0B 06 DB 00B,006 ; A=1, SPRITE PATTERN GENERATOR BASE
4139 1B7A' 0A 02 DB 00A,002 ; A=2, NAME TABLE BASE
4140 1B7C' 0B 04 DB 00B,004 ; A=3, PATTERN GENERATOR BASE
4141 1B7E' 06 03 DB 006,003 ; A=4, COLOR TABLE BASE
4142 ;
4143 ;
4144 1B80' 0005 0001 DOFDAT: DW 5,1,1,1,-2,2

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4145 1884' 0001 0001
4146 1888' FFFE 0002
4147
4148 ; *****
4149 188C' 01 1880' $RVBLK: LD BC,DOFDAT ; DISPATCH # OF
4150 188F' 11 73BA LD DE,P.AREA
4151 1892' CD 0098' CALL PCOPY
4152 1895' 3A 73BA LD A,(P.AREA)
4153 1898' ED 5B 73BB LD DE,(P.AREA+1)
4154 189C' FD 2A 73BF LD IY,(P.AREA+5)
4155 18A0' 2A 73BD LD HL,(P.AREA+3)
4156 ;
4157 ;
4158 ; ROUTINE TO GET A BLOCK FROM VIDEO RAM
4159 ;
4160 18A3' CD 18AA' RVBLK: CALL PADJ ; DISPATCH # 1E
4161 18A6' CD 1D3E' CALL RDVRM
4162 18A9' C9 RET
4163 ;
4164 ;
4165 ; *****
4166 ;
4167 ; THIS ROUTINE ADJUSTS ADDRESS POINTERS TO
4168 ; REFLECT THE BLOCK SIZE FORCED BY BASE ADDRESS
4169 ;
4170 ; A=0 TO 4 FOR: SPRITE ATTRIBUTE, SPRITE PATTERN, NAME TABLE,
4171 ; PATTERN GEN AND COLOR TABLE
4172 ;
4173 ; IY=NUMBER OF BYTES TO BE TRANSFERED
4174 ; DE=BLOCK RELATIVE ADDRESS IN VRAM
4175 ; HL=MAIN MEMORY POINTER
4176 ;
4177 18AA' FD 22 73FE PADJ: LD (TEMP3),IY ; SAVE IY
4178 18AE' DD 21 73F2 LD IX,BASESH ; GET ADDR OF BASE ADDR ARRAY
4179 18B2' 4F LD C,A
4180 18B3' 06 00 LD B,000
4181 18B5' FE 04 CP 004 ; COLOR ADDRESS?
4182 18B7' 20 07 JR NZ,LOOKSH ; IF NOT GO LOOK UP SHIFT COUNT
4183 18B9' 3A 73C3 LD A,(VDPOSH)
4184 18BC' CB 4F BIT 1,A
4185 18BE' 28 2C JR Z,NOSHFT ; JUMP IF NOT GR MODE II
4186 18C0' FD 21 18FF' LOOKSH: LD IY,STAB
4187 18C4' FD 09 ADD IY,BC
4188 18C6' FD 7E 00 LD A,(IY+000) ; LOOKUP SHIFT COUNT: 2,3,0,3,3
4189 18C9' FE 00 CP 000 ; IF ZERO, DO NOT SHIFT
4190 18CB' 28 1F JR Z,NOSHFT
4191 18CD' CB 23 SLP1: SLA E ; SHIFT DE LEFT BY THAT MANY BITS
4192 18CF' CB 12 RL D
4193 18D1' 3D DEC A
4194 18D2' 20 F9 JR NZ,SLP1
4195 ;
4196 18D4' C5 PUSH BC
4197 18D5' ED 4B 73FE LD BC,(TEMP3) ; SET BC TO WHAT WAS IN IY
4198 18D9' FD 7E 00 LD A,(IY+000)
4199 18DC' FE 00 CP 000 ; IF NAME TABLE, DO NOT SHIFT
4200 18DE' 28 0B JR Z,NOSH2

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4201 1BE0' CB 21          SLP2:  SLA  C
4202 1BE2' CB 10          RL   B
4203 1BE4' 3D            DEC   A
4204 1BE5' 20 F9         JR    NZ,SLP2
4205                      ;
4206 1BE7' ED 43 73FE    LD    (TEMP3),BC    ; PUT SHIFTED FORM OF IY BACK
4207 1BEB' C1           NOSH2: POP   BC
4208 1BEC' E5           NOSHFT: PUSH  HL    ; SAVE HL
4209 1BED' DD 09        ADD   IX,BC
4210 1BEF' DD 09        ADD   IX,BC
4211 1BF1' DD 6E 00     LD    L,(IX+000)
4212 1BF4' DD 66 01     LD    H,(IX+001)    ; GET VRAM ADDRESS FROM SHADOW
4213 1BF7' 19           ADD   HL,DE    ; ADD OFFSET
4214 1BF8' EB           EX    DE,HL
4215 1BF9' E1           POP   HL    ; RESTORE HL
4216 1BFA' ED 4B 73FE    LD    BC,(TEMP3)
4217 1BFE' C9           RET
4218                      ; -----
4219                      ;
4220 1BFF' 02 03 00 03   STAB:  DB    002,003,000,003,003
4221 1C03' 03
4222                      ;
4223                      ;
4224 1C04' 0005 0001    D10DAT: DW   5,1,1,1,-2,2
4225 1C08' 0001 0001
4226 1C0C' FFFE 0002
4227                      ;
4228                      ; *****
4229 1C10' 01 1C04'     $RCOPY: LD    BC,D10DAT    ; DISPATCH # 10
4230 1C13' 11 73BA     LD    DE,P.AREA
4231 1C16' CD 0098'    CALL  PCOPY
4232 1C19' 3A 73BA     LD    A,(P.AREA)
4233 1C1C' ED 5B 73BB    LD    DE,(P.AREA+1)
4234 1C20' FD 2A 73BF    LD    IY,(P.AREA+5)
4235 1C24' 2A 73BD     LD    HL,(P.AREA+3)
4236                      ;
4237                      ;
4238 1C27' F5           RCOPY:  PUSH  AF    ; DISPATCH # 1F
4239 1C28' FE 00        CP    000
4240 1C2A' 20 22        JR    NZ,SETVR    ; IF NZ WRITE TO VIDEO RAM
4241 1C2C' 3A 73C7     LD    A,(CPFLAG)
4242 1C2F' FE 01        CP    001
4243 1C31' 20 1B        JR    NZ,SETVR    ; IF NZ WRITE TO VIDEO RAM
4244 1C33' F1           POP   AF
4245 1C34' E5           PUSH  HL
4246 1C35' 2A 8002     LD    HL,(08002)
4247 1C38' 7B           LD    A,E
4248 1C39' CB 27        SLA   A
4249 1C3B' CB 27        SLA   A
4250 1C3D' 5F           LD    E,A
4251 1C3E' 19           ADD   HL,DE
4252 1C3F' EB           EX    DE,HL
4253 1C40' FD E5        PUSH  IY
4254 1C42' C1           POP   BC
4255 1C43' 79           LD    A,C
4256 1C44' CB 27        SLA   A
    
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4257 1C46' CB 27          SLA  A
4258 1C48' 4F           LD   C,A
4259 1C49' E1           POP  HL
4260 1C4A' ED B0        LDIR          ; BLOCK TRANSFER
4261 1C4C' 18 07        JR   EXIT
4262
;
4263 1C4E' F1           SETVR: POP  AF
4264 1C4F' CD 1BAA'     CALL  PADJ
4265 1C52' CD 1D01'     CALL  CPRTV
4266 1C55' C9           EXIT:  RET
4267
; -----
4268
;
4269 1C56' 0001 0001    D11DAT: DW   1,1
4270
;
4271
; *****
4272 1C5A' 01 1C56'     $CNTM: LD   BC,D11DAT ; DISPATCH # 11
4273 1C5D' 11 73BA      LD   DE,P.AREA
4274 1C60' CD 0098'     CALL  PCOPY
4275 1C63' 3A 73BA      LD   A,(P.AREA)
4276
;
4277
;
4278 1C66' 47           CNTM:  LD   B,A ; DISPATCH # 20
4279 1C67' AF           XOR   A ; FILL MEMORY WITH COUNTS STARTING AT
4280 1C68' 2A 8004      LD   HL,(08004) ; (8004) UNTIL COUNT= A
4281 1C6B' 77           CLOOP: LD   (HL),A
4282 1C6C' 23           INC  HL
4283 1C6D' 3C           INC  A
4284 1C6E' B8           CP   B
4285 1C6F' 20 FA       JR   NZ,CLOOP
4286 1C71' C9           RET
4287
; -----
4288
;
4289 1C72' 0001 0001    D12DAT: DW   1,1
4290
;
4291
; *****
4292 1C76' 01 1C72'     $BXFR: LD   BC,D12DAT ; DISPATCH # 12
4293 1C79' 11 73BA      LD   DE,P.AREA
4294 1C7C' CD 0098'     CALL  PCOPY
4295 1C7F' 3A 73BA      LD   A,(P.AREA)
4296
;
4297
;
4298 1C82' DD 2A 8004    BXFR:  LD   IX,(08004) ; DISPATCH # 21
4299 1C86' F5           PUSH AF ; TRANSFER REG A NUMBER OF BLOCKS
4300 1C87' FD 21 73F2  LD   IY,BASESH ; FROM ARRAY @ (8002) WITH STARTING
4301 1C8B' FD 5E 00     LD   E,(IY+000) ; INDEX (8004) FROM MAIN MEM TO
4302 1C8E' FD 56 01     LD   D,(IY+001) ; VRAM
4303 1C91' 7B           LD   A,E
4304 1C92' D3 BF       OUT  (VDPR),A
4305 1C94' 7A           LD   A,D
4306 1C95' F6 40       OR   040
4307 1C97' D3 BF       OUT  (VDPR),A ; SET UP VRAM ADDRESS
4308 1C99' F1           POP  AF
4309 1C9A' 2A 8002     BXFLP1: LD  HL,(08002)
4310 1C9D' DD 4E 00    LD   C,(IX+000)
4311 1CA0' DD 23       INC  IX
4312 1CA2' 06 00       LD   B,000

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4313 1CA4' 09          ADD    HL,BC
4314 1CA5' 09          ADD    HL,BC
4315 1CA6' 09          ADD    HL,BC
4316 1CA7' 09          ADD    HL,BC
4317 1CAB' 06 04       LD     B,004
4318 1CAA' 0E BE       LD     C,URAM
4319 1CAC' ED A3       BXFLP2: OUTI
4320 1CAE' 00          NOP
4321 1CAF' 00          NOP
4322 1CB0' 20 FA       JR     NZ,BXFLP2
4323 ;
4324 1CB2' 3D          DEC    A
4325 1CB3' 20 E5       JR     NZ,BXFLP1
4326 1CB5' C9          RET
4327 ;
4328 ;
4329 1CB6' 0002 0001   D17DAT: DW    2,1,1
4330 1CBA' 0001
4331 ;
4332 ; *****
4333 1CBC' 01 1CB6'     $WRTRG: LD    BC,D17DAT    ; DISPATCH # 17
4334 1CBF' 11 73BA     LD     DE,P.AREA
4335 1CC2' CD 0098'     CALL   PCOPY
4336 1CC5' 2A 73BA     LD     HL,(P.AREA)
4337 1CC8' 4C          LD     C,H
4338 1CC9' 45          LD     B,L
4339 ;
4340 ;
4341 1CCA' 79           WRTRG: LD    A,C          ; DISPATCH # 28
4342 1CCB' D3 BF       OUT    (VDPR),A        ; WRITE VDP REGISTER
4343 1CCD' 78          LD     A,B            ; REG # IN B, DATA IN C
4344 1CCE' C6 80       ADD    A,080
4345 1CD0' D3 BF       OUT    (VDPR),A
4346 1CD2' 78          LD     A,B
4347 1CD3' FE 00       CP     000            ; IF WRITING TO REGISTER 0 OR
4348 1CD5' 20 04       JR     NZ,WRTR1       ; 1 THEN UPDATE THE CORRESPONDING
4349 1CD7' 79          LD     A,C            ; SHADOW IN RAM
4350 1CD8' 32 73C3     LD     (VDPOSH),A
4351 1CDB' 78          WRTR1: LD    A,B
4352 1CDC' FE 01       CP     001
4353 1CDE' 20 04       JR     NZ,WRTR2
4354 1CE0' 79          LD     A,C
4355 1CE1' 32 73C4     LD     (VDP1SH),A
4356 1CE4' C9          WRTR2: RET
4357 ;
4358 ;
4359 1CE5' 0003 FFFE    D18DAT: DW    3,-2,2,2
4360 1CE9' 0002 0002
4361 ;
4362 ; *****
4363 1CED' 01 1CE5'     $CPRTV: LD   BC,D18DAT    ; DISPATCH # 18
4364 1CF0' 11 73BA     LD     DE,P.AREA
4365 1CF3' CD 0098'     CALL   PCOPY
4366 1CF6' 2A 73BA     LD     HL,(P.AREA)
4367 1CF9' ED 5B 73BC  LD     DE,(P.AREA+2)
4368 1CFD' ED 4B 73BE  LD     BC,(P.AREA+4)

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4425 1D4D' C2 1D49' JP NZ,VINLP
4426 1D50' 15 DEC D
4427 1D51' FA 1D56' JP M,VIEXIT
4428 1D54' 20 F3 JR NZ,VINLP
4429 1D56' C9 VIEXIT: RET
4430 ; -----
4431 ;
4432 ; *****
4433 1D57' DB BF RDVST: IN A,(VSTAT) ; DISPATCH # 29
4434 1D59' C9 RET ; READ THE VIDE0 STATUS REGISTER
4435 ; -----
4436 ;
4437 ;
4438 ;
4439 ;
4440 ; *****
4441 1D5A' DD 21 1D96' RLFLP: LD IX,D3B0D ; DISPATCH # 03
4442 1D5E' 18 10 JR SAVR ; RIGHT/LEFT FLIP A LIST OF IMAGES
4443 ;
4444 ;
4445 1D60' DD 21 1DB7' UDFLP: LD IX,D4B0D ; DISPATCH # 04
4446 1D64' 18 0A JR SAVR ; UP/DOWN FLIP A LIST OF IMAGES
4447 ;
4448 ;
4449 1D66' DD 21 1DE5' ROTAT: LD IX,D5B0D ; DISPATCH # 05
4450 1D6A' 18 04 JR SAVR ; ROTATE EACH IMAGE IN A LIST BY 90 DEG
4451 ;
4452 ;
4453 1D6C' DD 21 1E07' EXPND: LD IX,D6B0D ; DISPATCH # 06
4454 ; ; BLOW UP A LIST OF 8X8 IMAGES TO 16X16
4455 ;
4456 ;
4457 1D70' D9 SAVR: EXX ; REGISTER SAVING ENTRY CODE
4458 1D71' 08 EX AF,AF' ; FOR THE IMAGE TRANSFORM ROUTINES
4459 1D72' DD E5 PUSH IX
4460 ;
4461 1D74' 08 SAVLP: EX AF,AF' ; WE CAN LOOP FOR SEVERAL TRANSFORMS
4462 1D75' F5 PUSH AF
4463 1D76' 08 EX AF,AF'
4464 1D77' F1 POP AF
4465 1D78' D9 EXX
4466 1D79' D5 PUSH DE
4467 1D7A' D9 EXX
4468 1D7B' D1 POP DE
4469 1D7C' FD 21 0001 LD IY,00001
4470 1D80' 2A 8006 LD HL,(08006)
4471 1D83' CD 1BA3' CALL RVBLK
4472 1D86' DD E1 POP IX
4473 1D88' DD E5 PUSH IX
4474 1D8A' DD E9 JP (IX)
4475 ;
4476 ;
4477 1D8C' 13 DEXIT: INC DE ; RESTORE AND EXIT
4478 1D8D' 08 DEC BC
4479 1D8E' 78 LD A,B
4480 1D8F' B1 OR C

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4481 1D90' D9          EXX
4482 1D91' 20 E1      JR      NZ,SAVLP      ; IF THROUGH LOOPING
4483 1D93' DD E1      POP      IX
4484 1D95' C9          RET
4485
4486
4487
4488 1D96' 2A 8006      D3B0D: LD      HL,(08006) ; DO A RIGHT/LEFT FLIP OF AN 8X8
4489 1D99' 01 0008      LD      BC,00008      ; IMAGE AND COPY ALL PARAMETERS
4490 1D9C' E5          PUSH     HL            ; SO IT IS READY TO DISPLAY
4491 1D9D' D1          POP      DE
4492 1D9E' 09          ADD     HL,BC
4493 1D9F' EB          EX      DE,HL
4494 1DA0' CD 1F00'      CALL    FLIP
4495 1DA3' CD 1E72'      CALL    IPOUT
4496 1DA6' CD 1E5D'      CALL    ADJA
4497 1DA9' FE 01        CP      001
4498 1DAB' 20 06        JR      NZ,D3EXX
4499 1DAD' CD 1E89'      CALL    CBREAD
4500 1DB0' CD 1E9A'      CALL    CBOUT
4501 1DB3' D9          D3EXX: EXX
4502 1DB4' 23          INC     HL
4503 1DB5' 18 D5        JR      DEXIT          ; DONE
4504
4505
4506 1DB7' 2A 8006      D4B0D: LD      HL,(08006) ; DO AN UP/DOWN FLIP OF AN 8X8
4507 1DBA' 01 0008      LD      BC,00008      ; IMAGE AND COPY ALL PARAMETERS
4508 1DBD' E5          PUSH     HL            ; SO IT IS READY TO DISPLAY
4509 1DBE' D1          POP      DE
4510 1DBF' 09          ADD     HL,BC
4511 1DC0' EB          EX      DE,HL
4512 1DC1' CD 1F4E'      CALL    UPSIDE
4513 1DC4' CD 1E72'      CALL    IPOUT
4514 1DC7' CD 1E5D'      CALL    ADJA
4515 1DCA' FE 01        CP      001
4516 1DCC' 20 13        JR      NZ,D4EXX
4517 1DCE' CD 1E89'      CALL    CBREAD
4518 1DD1' 2A 8006      LD      HL,(08006)
4519 1DD4' 01 0008      LD      BC,00008
4520 1DD7' E5          PUSH     HL
4521 1DD8' D1          POP      DE
4522 1DD9' 09          ADD     HL,BC
4523 1DDA' EB          EX      DE,HL
4524 1DDB' CD 1F4E'      CALL    UPSIDE
4525 1DDE' CD 1E9A'      CALL    CBOUT
4526 1DE1' D9          D4EXX: EXX
4527 1DE2' 23          INC     HL
4528 1DE3' 18 A7        JR      DEXIT
4529
4530
4531 1DE5' 2A 8006      D5B0D: LD      HL,(08006) ; ROTATE AN 8X8 IMAGE BY 90 DEG, AND
4532 1DE8' 01 0008      LD      BC,00008      ; COPY ALL PARAMETERS SO IT IS READY
4533 1DEB' E5          PUSH     HL            ; TO BE DISPLAYED
4534 1DEC' D1          POP      DE
4535 1DED' 09          ADD     HL,BC
4536 1DEE' EB          EX      DE,HL

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4537	1DEF'	CD 1F12'	CALL	ROT90	
4538	1DF2'	CD 1E72'	CALL	IPOUT	
4539	1DF5'	CD 1E5D'	CALL	ADJA	
4540	1DF8'	FE 01	CP	001	
4541	1DFA'	20 06	JR	NZ,D5EXX	
4542	1DFC'	CD 1E89'	CALL	CBREAD	
4543	1DFF'	CD 1E9A'	CALL	CBOUT	
4544	1E02'	D9	D5EXX: EXX		
4545	1E03'	23	INC	HL	
4546	1E04'	C3 1D8C'	JP	DEXIT	
4547			;		
4548			;		
4549	1E07'	2A 8006	D6BOD: LD	HL,(08006)	; BLOW UP AN 8X8 IMAGE TO A FULL
4550	1E0A'	01 0008	LD	BC,00008	; 16X16 AND COPY ALL PARAMETERS
4551	1E0D'	E5	PUSH	HL	; SO IT IS READY TO DISPLAY
4552	1E0E'	D1	POP	DE	
4553	1E0F'	09	ADD	HL,BC	
4554	1E10'	EB	EX	DE,HL	
4555	1E11'	CD 1EAB'	CALL	DWIDE	
4556	1E14'	08	EX	AF,AF'	
4557	1E15'	F5	PUSH	AF	
4558	1E16'	08	EX	AF,AF'	
4559	1E17'	F1	POP	AF	
4560	1E18'	D9	EXX		
4561	1E19'	E5	PUSH	HL	
4562	1E1A'	D9	EXX		
4563	1E1B'	D1	POP	DE	
4564	1E1C'	2A 8006	LD	HL,(08006)	
4565	1E1F'	01 0008	LD	BC,00008	
4566	1E22'	09	ADD	HL,BC	
4567	1E23'	FD 21 0004	LD	IY,00004	
4568	1E27'	CD 1C27'	CALL	RCOPY	
4569	1E2A'	CD 1E5D'	CALL	ADJA	
4570	1E2D'	FE 01	CP	001	
4571	1E2F'	20 24	JR	NZ,D6EXX	
4572	1E31'	CD 1E89'	CALL	CBREAD	
4573	1E34'	2A 8006	LD	HL,(08006)	
4574	1E37'	01 0008	LD	BC,00008	
4575	1E3A'	E5	PUSH	HL	
4576	1E3B'	D1	POP	DE	
4577	1E3C'	09	ADD	HL,BC	
4578	1E3D'	EB	EX	DE,HL	
4579	1E3E'	CD 1EEA'	CALL	DHIGH	
4580	1E41'	3E 04	LD	A,004	
4581	1E43'	D9	EXX		
4582	1E44'	E5	PUSH	HL	
4583	1E45'	D9	EXX		
4584	1E46'	D1	POP	DE	
4585	1E47'	2A 8006	LD	HL,(08006)	
4586	1E4A'	01 0008	LD	BC,00008	
4587	1E4D'	09	ADD	HL,BC	
4588	1E4E'	FD 21 0004	LD	IY,00004	
4589	1E52'	CD 1C27'	CALL	RCOPY	
4590	1E55'	D9	D6EXX: EXX		
4591	1E56'	23	INC	HL	
4592	1E57'	23	INC	HL	

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4593 1E58' 23          INC    HL
4594 1E59' 23          INC    HL
4595 1E5A' C3 1D8C'   JP     DEXIT
4596                                     ; -----
4597                                     ;
4598                                     ; *****
4599 1E5D' 08          ADJA:  EX    AF,AF'      ; ADJUST THE VDP REGISTER TYPE
4600 1E5E' F5          PUSH   AF              ; IN A TO THE NEXT IN THE TRANSFER
4601 1E5F' 08          EX     AF,AF'      ; PROGRESSION
4602 1E60' F1          POP    AF
4603 1E61' FE 03      CP     003
4604 1E63' 20 0A      JR     NZ,ADJAO
4605 1E65' 21 73C3    LD     HL,VDPOSH      ; CHECK FOR GRAPHICS MODE II
4606 1E68' CB 4E      BIT    1,(HL)
4607 1E6A' 28 03      JR     Z,ADJAO
4608 1E6C' 3E 01      LD     A,001
4609 1E6E' C9          RET
4610                                     ;
4611 1E6F' 3E 00      ADJAO: LD    A,000
4612 1E71' C9          RET
4613                                     ; -----
4614                                     ;
4615                                     ; *****
4616 1E72' 08          IPOUT: EX   AF,AF'      ; ROUTINE USED TO SEND IMAGE
4617 1E73' F5          PUSH   AF              ; PARAMETERS TO THE VDP
4618 1E74' 08          EX     AF,AF'      ; PARAMETER TYPE IN A
4619 1E75' F1          POP    AF
4620 1E76' D9          EXX
4621 1E77' E5          PUSH   HL
4622 1E78' D9          EXX
4623 1E79' D1          POP    DE
4624 1E7A' 2A 8006    LD     HL,(08006)
4625 1E7D' 01 0008    LD     BC,00008
4626 1E80' 09          ADD   HL,BC
4627 1E81' FD 21 0001 LD     IY,00001
4628 1E85' CD 1C27'   CALL  RCOPY
4629 1E88' C9          RET
4630                                     ; -----
4631                                     ;
4632                                     ; *****
4633 1E89' 3E 04      CBREAD: LD   A,004      ; GET COLOR BYTE FROM VDP MEM
4634 1E8B' D9          EXX
4635 1E8C' D5          PUSH   DE              ; SCREEN POSITION FROM DE
4636 1E8D' D9          EXX
4637 1E8E' D1          POP    DE
4638 1E8F' 2A 8006    LD     HL,(08006)
4639 1E92' FD 21 0001 LD     IY,00001
4640 1E96' CD 1BA3'   CALL  RVBLK
4641 1E99' C9          RET
4642                                     ; -----
4643                                     ;
4644                                     ; *****
4645 1E9A' 3E 04      CBOUT: LD   A,004      ; SEND COLOR BYTE TO VDP
4646 1E9C' D9          EXX
4647 1E9D' E5          PUSH   HL              ; SCREEN POSITION FROM HL
4648 1E9E' D9          EXX

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4649 1E9F' D1          POP  DE
4650 1EA0' 2A 8006     LD   HL,(08006)
4651 1EA3' FD 21 0001  LD   IY,00001
4652 1EA7' CD 1C27'    CALL RCOPY
4653 1EAA' C9          RET
    
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4654 ; -----
4655 ;
4656 ; *****
    
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4657 1EAB' E5          DWIDE: PUSH  HL          ; CONVERT 8X8 IMAGE TO DOUBLE WIDE
4658 1EAC' DD E1      POP   IX
4659 1EAE' D5         PUSH  DE
4660 1EAF' FD E1      POP   IY
4661 1EB1' 01 0008    LD   BC,00008
4662 1EB4' DD 7E 00  DW1:  LD   A,(IX+000)
4663 1EB7' DD 23      INC   IX
4664 1EB9' 57         LD   D,A
4665 1EBA' 1E 04      LD   E,004
4666 1EBC' CB 17      DW2:  RL   A
4667 1EBE' CB 14      RL   H
4668 1ECO' CB 12      RL   D
4669 1EC2' CB 14      RL   H
4670 1EC4' 1D         DEC   E
4671 1EC5' 20 F5      JR   NZ,DW2
4672 1EC7' 1E 04      LD   E,004
4673 1EC9' CB 17      DW3:  RL   A
4674 1ECB' CB 15      RL   L
4675 1ECD' CB 12      RL   D
4676 1ECF' CB 15      RL   L
4677 1ED1' 1D         DEC   E
4678 1ED2' 20 F5      JR   NZ,DW3
4679 1ED4' FD 74 00  LD   (IY+000),H
4680 1ED7' FD 75 10  LD   (IY+010),L
4681 1EDA' FD 23      INC   IY
4682 1EDC' FD 74 00  LD   (IY+000),H
4683 1EDF' FD 75 10  LD   (IY+010),L
4684 1EE2' FD 23      INC   IY
4685 1EE4' 0B         DEC   BC
4686 1EE5' 79         LD   A,C
4687 1EE6' B0         OR   B
4688 1EE7' 20 CB      JR   NZ,DW1
4689 1EE9' C9          RET
    
```

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4690 ; -----
4691 ;
4692 ; *****
    
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4693 1EEA' 01 0010     DHIGH: LD   BC,00010          ; CONVERT AN 8X8 IMAGE TO TWO
4694 1EED' E5          PUSH  HL          ; 8X16 IMAGES (DOUBLE HIGH)
4695 1EEE' 7E         DH1:  LD   A,(HL)
4696 1EEF' 23         INC   HL
4697 1EF0' 12         LD   (DE),A
4698 1EF1' 13         INC   DE
4699 1EF2' 12         LD   (DE),A
4700 1EF3' 13         INC   DE
4701 1EF4' 0B         DEC   BC
4702 1EF5' 79         LD   A,C
4703 1EF6' FE 08      CP   008
4704 1EF8' 20 01      JR   NZ,DH2
    
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4705 1EFA' E1          POP    HL
4706 1EFB' 79          DH2: LD    A,C
4707 1EFC' B0          OR    B
4708 1EFD' 20 EF      JR    NZ,DH1
4709 1EFF' C9          RET
4710
4711
4712
4713 1F00' 01 0008     FLIP: LD    BC,00008 ; ROUTINE TO RIGHT/LEFT FLIP AN 8X8 IMAGE
4714 1F03' 46          FLIP1: LD    B,(HL)
4715 1F04' 3E 80      LD    A,080
4716 1F06' CB 10      FLIP2: RL    B
4717 1F08' 1F          RRA
4718 1F09' 30 FB      JR    NC,FLIP2
4719 1F0B' 12          LD    (DE),A
4720 1F0C' 23          INC    HL
4721 1F0D' 13          INC    DE
4722 1F0E' 0D          DEC    C
4723 1F0F' 20 F2      JR    NZ,FLIP1
4724 1F11' C9          RET
4725
4726
4727
4728 1F12' E5          ROT90: PUSH  HL ; ROUTINE TO ROTATE AN 8X8 IMAGE
4729 1F13' DD E1      POP    IX ; BY 90 DEG
4730 1F15' EB          EX    DE,HL
4731 1F16' 01 0008     LD    BC,00008
4732 1F19' DD CB 00 16 ROT1: RL    (IX+000)
4733 1F1D' CB 1E      RR    (HL)
4734 1F1F' DD CB 01 16 RL    (IX+001)
4735 1F23' CB 1E      RR    (HL)
4736 1F25' DD CB 02 16 RL    (IX+002)
4737 1F29' CB 1E      RR    (HL)
4738 1F2B' DD CB 03 16 RL    (IX+003)
4739 1F2F' CB 1E      RR    (HL)
4740 1F31' DD CB 04 16 RL    (IX+004)
4741 1F35' CB 1E      RR    (HL)
4742 1F37' DD CB 05 16 RL    (IX+005)
4743 1F3B' CB 1E      RR    (HL)
4744 1F3D' DD CB 06 16 RL    (IX+006)
4745 1F41' CB 1E      RR    (HL)
4746 1F43' DD CB 07 16 RL    (IX+007)
4747 1F47' CB 1E      RR    (HL)
4748 1F49' 23          INC    HL
4749 1F4A' 0D          DEC    C
4750 1F4B' 20 CC      JR    NZ,ROT1
4751 1F4D' C9          RET
4752
4753
4754
4755 1F4E' 01 0007     UPSIDE: LD   BC,00007 ; ROUTINE TO DO AN UP/DOWN FLIP
4756 1F51' 09          ADD   HL,BC ; OF 8X8 IMAGE (HL) TO (DE)
4757 1F52' 03          INC   BC
4758 1F53' 7E          USIDL: LD   A,(HL)
4759 1F54' 12          LD   (DE),A
4760 1F55' 13          INC   DE

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4761	1F56'	2B	DEC	HL
4762	1F57'	0B	DEC	BC
4763	1F58'	78	LD	A,B
4764	1F59'	B1	OR	C
4765	1F5A'	20 F7	JR	NZ,USIDL
4766	1F5C'	C9	RET	
4767			; -----	
4768				
4769	1F5D'	FF FF FF FF	DB	OFF,OFF,OFF,OFF
4770				
4771				
4772	1F61'	C3 0300'	SOUNDV: JP	SOUND
4773	1F64'	C3 0488	JP	00488
4774	1F67'	C3 06C7	JP	006C7
4775	1F6A'	C3 1D5A'	RLFLPV: JP	RLFLP
4776	1F6D'	C3 1D60'	UDFLPV: JP	UDFLP
4777	1F70'	C3 1D66'	ROTATV: JP	ROTAT
4778	1F73'	C3 1D6C'	EXPNDV: JP	EXPND
4779	1F76'	C3 114A'	UDKJSV: JP	UDKJS
4780	1F79'	C3 118B'	SCANNV: JP	SCANN
4781	1F7C'	C3 1979'	SKLDSV: JP	SKLDS
4782	1F7F'	C3 1927'	FINITV: JP	FINIT
4783	1F82'	C3 18D4'	FILVRV: JP	FILVR
4784	1F85'	C3 18E9'	VINITV: JP	VINIT
4785	1F88'	C3 116A'	UDPCR: JP	UDPCR
4786	1F8B'	C3 1B0E'	.BASLD: JP	\$BASLD
4787	1F8E'	C3 1B8C'	.RVBLK: JP	\$RVBLK
4788	1F91'	C3 1C10'	.RCOPY: JP	\$RCOPY
4789	1F94'	C3 1C5A'	.CNTM: JP	\$CNTM
4790	1F97'	C3 1C76'	.BXFR: JP	\$BXFR
4791	1F9A'	C3 0F9A	JP	00F9A
4792	1F9D'	C3 0FB8	JP	00FB8
4793	1FA0'	C3 1044	JP	01044
4794	1FA3'	C3 10BF	JP	010BF
4795	1FA6'	C3 1CBC'	.WRTRG: JP	\$WRTRG
4796	1FA9'	C3 1CED'	.CPRTV: JP	\$CPRTV
4797	1FAC'	C3 1D2A'	.RDVRM: JP	\$RDVRM
4798	1FAF'	C3 0655	JP	00655
4799	1FB2'	C3 0203'	.DINIT: JP	\$DINIT
4800	1FB5'	C3 0251'	.NEWTB: JP	\$NEWTB
4801	1FB8'	C3 1B1D'	BASLDV: JP	BASLD
4802	1FBB'	C3 1BA3'	RVBLKV: JP	RVBLK
4803	1FBE'	C3 1C27'	RCOPYV: JP	RCOPY
4804	1FC1'	C3 1C66'	CNTMV: JP	CNTM
4805	1FC4'	C3 1C82'	BXFRV: JP	BXFR
4806	1FC7'	C3 0FAA	JP	00FAA
4807	1FCA'	C3 0FC4	JP	00FC4
4808	1FCD'	C3 1053	JP	01053
4809	1FDO'	C3 10CB	JP	010CB
4810	1FD3'	C3 0F37	JP	00F37
4811	1FD6'	C3 023B'	QUIETV: JP	QUIET
4812	1FD9'	C3 1CCA'	WRTRGV: JP	WRTRG
4813	1FDC'	C3 1D57'	RDVSTV: JP	RDVST
4814	1FDF'	C3 1D01'	CPRTVV: JP	CPRTV
4815	1FE2'	C3 1D3E'	RDVRMV: JP	RDVRM
4816	1FE5'	C3 0664	JP	00664

4817	1FEB'	C3 0679		JP	00679
4818	1FEB'	C3 11C1'	CTABPV:	JP	CTABP
4819	1FEE'	C3 0213'	DINITV:	JP	DINIT
4820	1FF1'	C3 025E'	NEWTBV:	JP	NEWTB
4821	1FF4'	C3 027F'	UPTABV:	JP	UPTAB
4822	1FF7'	C3 04A3		JP	004A3
4823	1FFA'	C3 06D8		JP	006D8
4824	1FFD'	C3 003B'	RNDXV:	JP	RNDX
4825			:		
4826			:		
4827			:		END OF PROGRAM
4828			:		
4829			END		

