```
                        .Z80
0000'                   ASEG
                            ORG  2E6BH
                        ;
1FA5                        ALIST    EQU  1FA5H
1CC3                        STASEM   EQU  1CC3H
2E85                        VDINIT   EQU  2E85H
3A55                        VINT     EQU  3A55H
                        ;
2E6B  1CC3              P1JTBL::     DW STASEM
                        ;
2E6D  1FA5              DW ALIST
2E6F  2E85              DW VDINIT
                        END
```

A>

```
                        .Z80
0000'                   ASEG
                            ORG  2E71H
                        ;
                        ;
                C       INCLUDE SC5PORTS.INC
0002            C               PORTAO EQU 2;194
0002            C               PORTAI EQU 2;194
0001            C               PORTDO EQU 1;193
0001            C               PORTDI EQU 1;193
                        ;
0010                    RSTSCR EQU 10H
0020                    CCOUNT EQU 32
                        ;
                        ;
0010                    .RADIX 16

0E56                    ABS     EQU     0E56
FDCC                    ACC1    EQU     0FDCC
128F                    ACCSTA  EQU     128F
0E86                    ADD     EQU     0E86
35F9                    ADJDES  EQU     35F9
0C4F                    ADJVAL  EQU     0C4F
FDBE                    ADLABE  EQU     0FDBE
3C45                    AE      EQU     3C45
1FA5                    ALIST   EQU     1FA5
13F3                    ALOP1   EQU     13F3
3B87                    ALPHA   EQU     3B87
209A                    ANDACC  EQU     209A
FDB7                    APROG   EQU     0FDB7
FACC                    ARRTOP  EQU     0FACC
FDA8                    ASBYTE  EQU     0FDA8
3F4B                    ASC     EQU     3F4B
FD6D                    ASTACK  EQU     0FD6D
241D                    ATN     EQU     241D
2452                    ATNT2   EQU     2452
FD7B                    AUTOCT  EQU     0FD7B
FD77                    AUTOIN  EQU     0FD77
FD79                    AUTOST  EQU     0FD79
FAAA                    BASBOT  EQU     0FAAA
FACF                    BASELI  EQU     0FACF
FDC7                    BASEM   EQU     0FDC7
025D                    BASENT  EQU     025D
0259                    BASIC   EQU     0259
0244                    BASIC0  EQU     0244
0244                    BASIC1  EQU     0244
0250                    BASIC2  EQU     0250
024A                    BASIC4  EQU     024A
0205                    BASICS  EQU     0205
FAD1                    BASLNP  EQU     0FAD1
FAA7                    BASTOP  EQU     0FAA7
FAAC                    BASTP0  EQU     0FAAC
FAA9                    BASTP6  EQU     0FAA9
0D3C                    BAUDST  EQU     0D3C
0DD0                    BCDEC   EQU     0DD0
1C33                    BEGIN   EQU     1C33
```

```
0953                    BELL    EQU     0953
0DE4                    BIND1   EQU     0DE4
20FD                    BINTOA  EQU     20FD
35C9                    BLOCK   EQU     35C9
0CF3                    BREAIO  EQU     0CF3
FD81                    BREAK   EQU     0FD81
09B0                    BREAKK  EQU     09B0
09F2                    BREAKM  EQU     09F2
3A6F                    BSLOAD  EQU     3A6F
FE3F                    BSSTR   EQU     0FE3F
0679                    BSTPHL  EQU     0679
FA7F                    CALCBQ  EQU     0FA7F
FA81                    CALCST  EQU     0FA81
1B43                    CALLEN  EQU     1B43
3980                    CAPITA  EQU     3980
3D0B                    CARAC   EQU     3D0B
FD5F                    CASBAU  EQU     0FD5F
FE14                    CHAN    EQU     0FE14
3296                    CHKS30  EQU     3296
32A1                    CHKST1  EQU     32A1
3299                    CHKSTK  EQU     3299
1B6A                    CHOUT   EQU     1B6A
FF59                    CHPTR   EQU     0FF59
0A3A                    CHR$    EQU     0A3A
0A43                    CHR0    EQU     0A43
0A41                    CHR1    EQU     0A41
153A                    CHRDS   EQU     153A
FD57                    CLOCK   EQU     0FD57
1BE3                    CODETE  EQU     1BE3
FDBC                    COMAD   EQU     0FDBC
FDB2                    COMMAN  EQU     0FDB2
FDBB                    COMMEN  EQU     0FDBB
3F5B                    COMP$   EQU     3F5B
3F8A                    COMP5   EQU     3F8A
0FEA                    COMPAC  EQU     0FEA
115D                    COMPAO  EQU     115D
1163                    COMPAR  EQU     1163
11EC                    COMPBC  EQU     11EC
1BC4                    COMPST  EQU     1BC4
FD6A                    CONTAD  EQU     0FD6A
FD69                    CONTFL  EQU     0FD69
FD6C                    CONTPG  EQU     0FD6C
FDDE                    COPY    EQU     0FDDE
12F3                    COPYAC  EQU     12F3
04B0                    COPYDO  EQU     04B0
0EE3                    CORECS  EQU     0EE3
137D                    COSINE  EQU     137D
001B                    CRLF    EQU     001B
FAD3                    CRNTPG  EQU     0FAD3
FA52                    CTRBAD  EQU     0FA52
FB45                    CTYSLT  EQU     0FB45
FDC9                    CURLAB  EQU     0FDC9
FF5B                    CURSCR  EQU     0FF5B
FDA6                    DADD    EQU     0FDA6
FB46                    DATAAD  EQU     0FB46
FDC3                    DATALA  EQU     0FDC3
```

```
FB48                    DATAPG  EQU     0FB48
FDC6                    DBLABE  EQU     0FDC6
FDAA                    DBYTE   EQU     0FDAA
05D1                    DDBCM   EQU     05D1
06ED                    DECPG   EQU     06ED
06CF                    DELET1  EQU     06CF
06C7                    DELETE  EQU     06C7
FE52                    DELSPR  EQU     0FE52
FB49                    DESAVE  EQU     0FB49
1274                    DESTAC  EQU     1274
06E7                    DETPN   EQU     06E7
FDAF                    DETYPE  EQU     0FDAF
3B96                    DIGIT   EQU     3B96
08EB                    DIROUT  EQU     08EB
FDB1                    DISAD   EQU     0FDB1
0E3D                    DIV10   EQU     0E3D
0E28                    DIVBY1  EQU     0E28
109E                    DIVIDE  EQU     109E
0C9D                    DJVL4   EQU     0C9D
FE4F                    DLSPNO  EQU     0FE4F
331F                    DODIM   EQU     331F
3E38                    DOJUMP  EQU     3E38
0FBE                    DONIB   EQU     0FBE
FDB3                    DPROG   EQU     0FDB3
FDB0                    DTYPE   EQU     0FDB0
144B                    EDEND   EQU     144B
02D9                    EDENT   EQU     02D9
FDAD                    EDIT    EQU     0FDAD
1424                    EDIT1   EQU     1424
1429                    EDITOR  EQU     1429
02CB                    EFFENT  EQU     02CB
2CFE                    ENDLIN  EQU     2CFE
FDB9                    ENDTAB  EQU     0FDB9
1C03                    ENTER3  EQU     1C03
1C11                    ENTERI  EQU     1C11
2499                    ENUMBE  EQU     2499
20C0                    EQUAL   EQU     20C0
197B                    ERR34   EQU     197B
18AF                    ERROR   EQU     18AF
FD84                    ERRPOS  EQU     0FD84
3D84                    EVALAB  EQU     3D84
3E5B                    EVALFN  EQU     3E5B
3E7E                    EVALSE  EQU     3E7E
1183                    EXCHAN  EQU     1183
23EC                    EXP     EQU     23EC
1372                    EXP01   EQU     1372
23F2                    EXP2X   EQU     23F2
FA9E                    FEXPAN  EQU     0FA9E
19DD                    FIND    EQU     19DD
3FEC                    FIND$   EQU     3FEC
3FE9                    FIND1$  EQU     3FE9
0689                    FINDJP  EQU     0689
316E                    FINDLE  EQU     316E
061A                    FINDLI  EQU     061A
2E39                    FINDNO  EQU     2E39
1A19                    FINDNS  EQU     1A19
```

```
0BFE                    FINFF   EQU     0BFE
FD86                    FLAGS1  EQU     0FD86
FB44                    FORCOU  EQU     0FB44
112B                    FRAC    EQU     112B
033C                    FREESP  EQU     033C
FE16                    FREQ    EQU     0FE16
FE02                    GASH    EQU     0FE02
351A                    GETSVA  EQU     351A
0BC5                    GETBAS  EQU     0BC5
2FF3                    GETCHA  EQU     2FF3
2350                    GETDE1  EQU     2350
06DB                    GETLIN  EQU     06DB
06DE                    GETLN1  EQU     06DE
19E5                    GETLNE  EQU     19E5
24CC                    GETNEX  EQU     24CC
351D                    GETNVA  EQU     351D
2FE9                    GETSPA  EQU     2FE9
00BC                    GETSTR  EQU     00BC
3066                    GETVAL  EQU     3066
FB41                    GOPTR   EQU     0FB41
FB43                    GOSNUM  EQU     0FB43
FAD8                    GOSTAC  EQU     0FAD8
10A6                    GOTZER  EQU     10A6
20C8                    GREATE  EQU     20C8
20DB                    GREEQU  EQU     20DB
1541                    GRRDS   EQU     1541
3505                    GST5VA  EQU     3505
3508                    GSTNVA  EQU     3508
0A8C                    HIGH    EQU     0A8C
097F                    IJINIT  EQU     097F
FFF0                    IJTABL  EQU     0FFF0
1C73                    IMOVE   EQU     1C73
0A6B                    INBIT   EQU     0A6B
0ACB                    INBLK2  EQU     0ACB
0ABA                    INBLOC  EQU     0ABA
0A9A                    INBYTE  EQU     0A9A
35AC                    INCLRA  EQU     35AC
06F3                    INCPG   EQU     06F3
FDA8                    INDEX   EQU     0FDA8
FDC1                    INDEXL  EQU     0FDC1
3ECE                    INKEY$  EQU     3ECE
0AAE                    INOUT   EQU     0AAE
                        ;INSERT EQU     02FE
1B85                    INSTR   EQU     1B85
200A                    INT     EQU     200A
0996                    INT125  EQU     0996
121D                    INT64K  EQU     121D
119D                    INTEGE  EQU     119D
FD5E                    INTFFF  EQU     0FD5E
FDF2                    INTTAB  EQU     0FDF2
FA8F                    IOPL    EQU     0FA8F
FD76                    IQFR    EQU     0FD76
FD87                    ITYPE   EQU     0FD87
07B8                    JPHL    EQU     07B8
0079                    KBD     EQU     0079
FA83                    KBDBUF  EQU     0FA83
```

```
3618                    KBDPO   EQU     3618
FA91                    KBFLAG  EQU     0FA91
3622                    KEY1    EQU     3622
098A                    KILLIN  EQU     098A
27FB                    KILLVA  EQU     27FB
093A                    KILSND  EQU     093A
FDB5                    LABTAB  EQU     0FDB5
11C5                    LARGE1  EQU     11C5
11C8                    LARGEN  EQU     11C8
FD7D                    LASTAS  EQU     0FD7D
FD7E                    LASTDR  EQU     0FD7E
FD7C                    LASTKY  EQU     0FD7C
06AC                    LDBSBT  EQU     06AC
3F20                    LEFT$   EQU     3F20
3F95                    LEN     EQU     3F95
FDAE                    LENGTH  EQU     0FDAE
FF57                    LENHI   EQU     0FF57
FF56                    LENLO   EQU     0FF56
20E2                    LESEQU  EQU     20E2
20D2                    LESSTH  EQU     20D2
2680                    LEXFUN  EQU     2680
FDAC                    LINKER  EQU     0FDAC
0B40                    LOAD    EQU     0B40
089E                    LOAD2   EQU     089E
0891                    LOADER  EQU     0891
2D0C                    LOADSN  EQU     2D0C
2398                    LOG     EQU     2398
23A5                    LOG2X   EQU     23A5
2494                    LOGE2   EQU     2494
23BC                    LOGNX   EQU     23BC
0A82                    LOW     EQU     0A82
3593                    LRATOV  EQU     3593
FA7A                    LSTPG   EQU     0FA7A
FD91                    MAF     EQU     0FD91
FD89                    MAFD    EQU     0FD89
0351                    MAKESP  EQU     0351
FD93                    MBC     EQU     0FD93
FD8B                    MBCD    EQU     0FD8B
FD95                    MDE     EQU     0FD95
FD8D                    MDED    EQU     0FD8D
FDD9                    MEM1    EQU     0FDD9
FDA1                    MEMPOI  EQU     0FDA1
FD97                    MHL     EQU     0FD97
FD8F                    MHLD    EQU     0FD8F
3EDD                    MID$    EQU     3EDD
FD60                    MIDVAL  EQU     0FD60
FD99                    MIX     EQU     0FD99
FD9B                    MIY     EQU     0FD9B
297E                    MOREHE  EQU     297E
12B9                    MOVDED  EQU     12B9
224C                    MOVEAC  EQU     224C
12A7                    MOVEDE  EQU     12A7
1BDD                    MOVHL   EQU     1BDD
FD9F                    MPC     EQU     0FD9F
FD9D                    MSP     EQU     0FD9D
100B                    MULPLY  EQU     100B
```

```
FE4D                    MVDIST  EQU     0FE4D
FE51                    MVNO    EQU     0FE51
FAA4                    NBTOP   EQU     0FAA4
FAA6                    NBTPG   EQU     0FAA6
06F7                    NCP1    EQU     06F7
0F13                    NEGACC  EQU     0F13
0221                    NEWENT  EQU     0221
28C9                    NEWLIN  EQU     28C9
2F90                    NEWSCR  EQU     2F90
2D7C                    NODDY   EQU     2D7C
FA9B                    NODLOC  EQU     0FA9B
02C0                    NOGOOD  EQU     02C0
FE4E                    NOSPR   EQU     0FE4E
20AF                    NOTACC  EQU     20AF
20E9                    NOTEQU  EQU     20E9
08C6                    OFREQ   EQU     08C6
24F3                    OL1     EQU     24F3
29AF                    ONELIN  EQU     29AF
399E                    ONESP   EQU     399E
FDD2                    OP11    EQU     0FDD2
129E                    OP1STA  EQU     129E
2672                    OPS     EQU     2672
0D72                    OPTABL  EQU     0D72
20A6                    ORACC   EQU     20A6
0AFC                    OTBLK2  EQU     0AFC
0A7B                    OUTBIT  EQU     0A7B
0AE6                    OUTBLO  EQU     0AE6
0AA4                    OUTBYT  EQU     0AA4
1219                    OUTRAN  EQU     1219
39C1                    OUTSP   EQU     39C1
1907                    OUTSTR  EQU     1907
121B                    OVERFL  EQU     121B
3B73                    OVERHL  EQU     3B73
3B74                    OVERSP  EQU     3B74
0BF9                    OVOL    EQU     0BF9
FFED                    OVRLAY  EQU     0FFED
2E6B                    P1JTBL  EQU     2E6B
FAD2                    PAGE    EQU     0FAD2
2BE8                    PAU1    EQU     2BE8
0671                    PGCHK   EQU     0671
066E                    PGCHK1  EQU     066E
FAD4                    PGN1    EQU     0FAD4
FAD5                    PGN2    EQU     0FAD5
0647                    PGSLC1  EQU     0647
0644                    PGSLC2  EQU     0644
064A                    PGSLCT  EQU     064A
FAD6                    PGTOP   EQU     0FAD6
120B                    PIOP1   EQU     120B
FE50                    PLSPNO  EQU     0FE50
FDA5                    POINTE  EQU     0FDA5
13C1                    POLY2   EQU     13C1
13D2                    POLYNO  EQU     13D2
233F                    POWER   EQU     233F
0CAB                    PRINTX  EQU     0CAB
FD75                    PRORPL  EQU     0FD75
3037                    PSHNAM  EQU     3037
```

```
3534                    PST5VA  EQU     3534
3537                    PSTNVA  EQU     3537
3544                    PUT5VA  EQU     3544
3547                    PUTNVA  EQU     3547
2FCD                    PUTSTA  EQU     2FCD
34FE                    RAMPGC  EQU     34FE
2BD7                    RAND1   EQU     2BD7
FA90                    REALBY  EQU     0FA90
0FFA                    REMAIN  EQU     0FFA
2316                    REPDEC  EQU     2316
0B06                    RESINT  EQU     0B06
2C8D                    RESTEN  EQU     2C8D
12D1                    RETACC  EQU     12D1
FD61                    RETSAV  EQU     0FD61
07B5                    RETT    EQU     07B5
FD4B                    RICHJL  EQU     0FD4B
3F1A                    RIGHT$  EQU     3F1A
0697                    RMTPHL  EQU     0697
2048                    RND     EQU     2048
FD7F                    RNSEED  EQU     0FD7F
0FA1                    ROAHL   EQU     0FA1
0FBD                    ROTR    EQU     0FBD
0F2B                    ROUNAC  EQU     0F2B
2CFD                    RUN4    EQU     2CFD
2CF0                    RUN5    EQU     2CF0
2CDB                    RUN55   EQU     2CDB
2CEC                    RUN8    EQU     2CEC
26F7                    RWTAB   EQU     26F7
15FC                    SAANGL  EQU     15FC
15BB                    SADJSP  EQU     15BB
16CE                    SARC    EQU     16CE
15E2                    SATTR   EQU     15E2
0A07                    SAUTO   EQU     0A07
0B90                    SAVE    EQU     0B90
12BF                    SAVEAC  EQU     12BF
0D3B                    SBAUD   EQU     0D3B
1876                    SCENT   EQU     1876
188F                    SCENT4  EQU     188F
00CB                    SCENTR  EQU     00CB
180F                    SCIRCL  EQU     180F
1595                    SCLS    EQU     1595
00DA                    SCODE   EQU     00DA
15B3                    SCOLOU  EQU     15B3
FF5D                    SCRN0   EQU     0FF5D
FF6C                    SCRN1   EQU     0FF6C
FF7B                    SCRN2   EQU     0FF7B
FF8A                    SCRN3   EQU     0FF8A
FF99                    SCRN4   EQU     0FF99
FFA8                    SCRN5   EQU     0FFA8
FFB7                    SCRN6   EQU     0FFB7
FFC6                    SCRN7   EQU     0FFC6
15EA                    SCRV5   EQU     15EA
159B                    SCTLSP  EQU     159B
1583                    SCURSO  EQU     1583
1687                    SDRAW   EQU     1687
157C                    SDSI    EQU     157C
```

```
3C91                    SE      EQU     3C91
3EA1                    SEQ0    EQU     3EA1
2000                    SET1AC  EQU     2000
FD48                    SETCAL  EQU     0FD48
27B7                    SETINI  EQU     27B7
0B10                    SETINT  EQU     0B10
10A9                    SETZER  EQU     10A9
15A3                    SGENPA  EQU     15A3
00AD                    SHIF    EQU     00AD
FDD8                    SIGN    EQU     0FDD8
208F                    SIGNAC  EQU     208F
161F                    SINCOS  EQU     161F
1382                    SINE    EQU     1382
1590                    SINK    EQU     1590
29DA                    SLET    EQU     29DA
1574                    SLINE   EQU     1574
11B9                    SMALL1  EQU     11B9
11BB                    SMALLE  EQU     11BB
FF55                    SMBYTE  EQU     0FF55
15D1                    SMVSPR  EQU     15D1
27B3                    SNDBUF  EQU     27B3
0205                    SNEW    EQU     0205
09FD                    SOUT    EQU     09FD
158A                    SPAPER  EQU     158A
2BE4                    SPAUSE  EQU     2BE4
FE4C                    SPBASE  EQU     0FE4C
FE4B                    SPEED   EQU     0FE4B
1670                    SPLOT   EQU     1670
                        ;SPRINT EQU     2B8B
FE55                    SPRTBL  EQU     0FE55
236E                    SQROOT  EQU     236E
2391                    SQUA1   EQU     2391
100B                    SQUARE  EQU     100B
0A15                    SQUASH  EQU     0A15
160A                    SRANGL  EQU     160A
27AA                    SREM    EQU     27AA
009E                    SROM    EQU     009E
2CAF                    SRUN    EQU     2CAF
2D0C                    SSOUND  EQU     2D0C
15C4                    SSPRIT  EQU     15C4
FA96                    SSTACK  EQU     0FA96
1311                    STA     EQU     1311
1317                    STAC    EQU     1317
FD73                    STACCT  EQU     0FD73
FD4B                    STACK   EQU     0FD48
1286                    STACKA  EQU     1286
1298                    STACKO  EQU     1298
0744                    STACKS  EQU     0744
0F5B                    STAHLH  EQU     0F5B
FB4B                    START   EQU     0FB4B
1CC3                    STASEM  EQU     1CC3
1348                    STBC    EQU     1348
136B                    STHLHL  EQU     136B
315B                    STKLEN  EQU     315B
FA92                    STKLIM  EQU     0FA92
3EC9                    STKTES  EQU     3EC9
```

```
FA7A                    STKTOP  EQU     0FA7A
2D62                    STOP    EQU     2D62
2D56                    STOPPP  EQU     2D56
3FC6                    STR$    EQU     3FC6
02E7                    STRHL   EQU     02E7
0DBE                    STRJP   EQU     0DBE
02E8                    STROUT  EQU     02E8
3FCB                    STRSTA  EQU     3FCB
0E83                    SUBTRA  EQU     0E83
15F6                    SVS     EQU     15F6
15DA                    SWINDO  EQU     15DA
00F4                    SWITCH  EQU     00F4
3C40                    SYFAIL  EQU     3C40
398C                    SYN     EQU     398C
14B9                    SYNPRO  EQU     14B9
FA94                    SYSTOP  EQU     0FA94
3C38                    SYSUCC  EQU     3C38
FE04                    TEMP    EQU     0FE04
1A0C                    TEST1   EQU     1A0C
2A8D                    TEST2B  EQU     2A8D
1BB6                    TESTHL  EQU     1BB6
0344                    TESTSP  EQU     0344
3F38                    TIME$   EQU     3F38
2A7A                    TINSER  EQU     2A7A
FD71                    TMPA    EQU     0FD71
FD6F                    TMPHL   EQU     0FD6F
124F                    TOKMIN  EQU     124F
06BB                    TPCH1   EQU     06BB
FD68                    TYPE    EQU     0FD68
FFD5                    TYPTBL  EQU     0FFD5
3182                    UPDATE  EQU     3182
FA89                    USER    EQU     0FA89
FA98                    USERIN  EQU     0FA98
FD51                    USERIO  EQU     0FD51
FAA1                    USERNO  EQU     0FAA1
FD54                    USERRO  EQU     0FD54
203D                    USR     EQU     203D
FD4E                    USRRST  EQU     0FD4E
34A0                    UVITOS  EQU     34A0
3F9E                    VAL     EQU     3F9E
FA7D                    VALBOT  EQU     0FA7D
3580                    VALRA1  EQU     3580
FA7B                    VARNAM  EQU     0FA7B
357C                    VATOLR  EQU     357C
FD65                    VAZERO  EQU     0FD65
FE53                    VCOUNT  EQU     0FE53
2E85                    VDINIT  EQU     2E85
FE54                    VDPSTS  EQU     0FE54
FD67                    VERIF   EQU     0FD67
3A55                    VINT    EQU     3A55
FF58                    VINTFG  EQU     0FF58
FE18                    VOL     EQU     0FE18
FDA3                    WCHJUM  EQU     0FDA3
FE1A                    WKAREA  EQU     0FE1A
253B                    WORDLS  EQU     253B
FDD7                    YORN    EQU     0FDD7
```

```
OFAF                    ZERACC  EQU     OFAF
355D                    ZERONV  EQU     355D
                        ;
                        ;
000A                    .RADIX 10
                        ;
                        ;
2E71  02 C0 0F FF       G2VAL:  DEFB 2,192,15,255,3,126,7
2E75  03 7E 07
2E78  00 D0 07 00       TXVAL:  DEFB 0,208,7,0,3,126,7
2E7C  03 7E 07
2E7F  10                ROM1TBL:        DEFB 16
2E80  2EA1                      DEFW TYPTX
2E82  10                        DEFB 16
2E83  2EC7                      DEFW TYPG2
2E85  21 2E7F           VDINIT: LD HL,ROM1TBL
2E88  11 FFD5                   LD DE,TYPTBL
2E8B  01 0006                   LD BC,6
2E8E  ED B0                     LDIR
2E90  21 FF5D                   LD HL,SCRN0
2E93  22 FF5B                   LD (CURSCR),HL
2E96  3E C9                     LD A,201
2E98  32 FFED                   LD (OVRLAY),A
2E9B  D7                        RST RSTSCR
2E9C  83 1B 55 FF               DEFB 131,27,85,255
2EA0  C9                                RET
2EA1  3131              TYPTX:  DEFW HSZTX
2EA3  31D1                      DEFW CUFLTX
2EA5  31B9                      DEFW SUCUTX
2EA7  3157                      DEFW LNCOTX
2EA9  3189                      DEFW SPTX
2EAB  31DC                      DEFW PRCHTX
2EAD  3291                      DEFW INITTX
2EAF  3078                      DEFW SCOLTX
2EB1  3070                      DEFW TABAGT
2EB3  3BF4                      DEFW BPAPER
2EB5  3C1A                      DEFW BINK
2EB7  3BE3                      DEFW INATGT
2EB9  3B06                      DEFW DVDEGT
2EBB  3A2A                      DEFW TXSIZE
2EBD  352C                      DEFW CHRDTX
2EBF  3AF8                      DEFW DVSPTX
2EC1  3889                              DEFW VDCOLD
2EC3  3B1A                      DEFW VDBAS
2EC5  3813                      DEFW VDPAN
2EC7  3134              TYPG2:  DEFW HSZG2
2EC9  31E4                      DEFW CUFLG2
2ECB  31E4                      DEFW CUFLG2
2ECD  3175                      DEFW LNCOG2
2ECF  31A0                      DEFW SPG2
2ED1  3203                      DEFW PRCHG2
2ED3  32B8                      DEFW INITG2
2ED5  307C                      DEFW SCOLG2
2ED7  3070                      DEFW TABAGT
2ED9  3BF4                      DEFW BPAPER
2EDB  3C1A                      DEFW BINK
```

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2EDD  3BE3                    DEFW INATGT
2EDF  3B06                    DEFW DVDEGT
2EE1  3A2F                    DEFW 62SIZE
2EE3  34FA                    DEFW CHRD62
2EE5  3B02                    DEFW DVSP62
2EE7  3889                          DEFW VDCOLD
2EE9  381A                    DEFW VDBAS
2EEB  3813                          DEFW VDPAN
2EED  2FD1              CTLTBL: DEFW NULL
2EEF  3112              CTL01:  DEFW DEVDEP
2EF1  3112              CTL02:  DEFW DEVDEP
2EF3  32E1              CTL03:  DEFW CURSXY
2EF5  310A              CTL04:          DEFW PAPER
2EF7  333A              CTL05:  DEFW EOL
2EF9  310E              CTL06:  DEFW INK
2EFB  0953              CTL07:  DEFW BELL
2EFD  3318              CTL08:  DEFW BACKSP
2EFF  3326              CTL09:          DEFW TABFWD
2F01  3304              CTL10:  DEFW LFEED
2F03  330A              CTL11:  DEFW CURSUP
2F05  326B              CTL12:  DEFW CLS
2F07  32FD              CTL13:  DEFW CARRTN
2F09  3112              CTL14:  DEFW DEVDEP
2F0B  3112              CTL15:  DEFW DEVDEP
2F0D  3112              CTL16:  DEFW DEVDEP
2F0F  3112              CTL17:          DEFW DEVDEP
2F11  3112              CTL18:  DEFW DEVDEP
2F13  3112              CTL19:  DEFW DEVDEP
2F15  3112              CTL20:  DEFW DEVDEP
2F17  33D0              CTL21:  DEFW INSERT
2F19  33A5              CTL22:  DEFW DLINLN
2F1B  3331              CTL23:  DEFW TABBCK
2F1D  39F4              CTL24:  DEFW INTATT
2F1F  32F7              CTL25:  DEFW FWARD
2F21  32F2              CTL26:  DEFW HOME
2F23  2FD2              CTL27:  DEFW ESCCTL
2F25  35A1              CTL28:  DEFW SMODE
2F27  35AE              CTL29:  DEFW PMODE
2F29  32D1              CTL30:  DEFW CURSON
2F2B  32D8              CTL31:  DEFW CURSOF
2F2D  01 C3 C5 03       CTLLEN: DEFB 1,195,197,3,2,1,2,1,1,1,1,1,1,1
2F31  02 01 02 01
2F35  01 01 01 01
2F39  01 01
2F3B  E3 EB C3 E4                DEFB 227,235,195,228,234,228,227,1,1,1
2F3F  EA E4 E3 01
2F43  01 01
2F45  01 01 01 01                DEFB 1,1,1,1,1,1,1,1
2F49  01 01 01 01
2F4D  3112              ESCTBL: DEFW DEVDEP
2F4F  3112              ESCB:   DEFW DEVDEP
2F51  3112              ESCC:   DEFW DEVDEP
2F53  3112              ESCD:   DEFW DEVDEP
2F55  3112              ESCE:   DEFW DEVDEP
2F57  3112              ESCF:   DEFW DEVDEP
2F59  3112              ESCG:   DEFW DEVDEP
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2F5B  3112          ESCH:  DEFW DEVDEP
2F5D  336A          ESCI:  DEFW INSLN
2F5F  3360          ESCJ:  DEFW DELLN
2F61  337E          ESCK:  DEFW DUPLN
2F63  3536          ESCL:  DEFW CHREAD
2F65  3112          ESCM:  DEFW DEVDEP
2F67  3112          ESCN:  DEFW DEVDEP
2F69  3112          ESCO:  DEFW DEVDEP
2F6B  33D4          ESCP:  DEFW AUTOSC
2F6D  3112          ESCQ:  DEFW DEVDEP
2F6F  3064          ESCR:  DEFW TABATT
2F71  3112          ESCS:  DEFW DEVDEP
2F73  3112          ESCT:  DEFW DEVDEP
2F75  3101          ESCU:  DEFW SCOLD
2F77  3101          ESCV:  DEFW SCOLD
2F79  3101          ESCW:  DEFW SCOLD
2F7B  2FD1          ESCX:  DEFW NULL
2F7D  3970          ESCY:  DEFW CRSCRN
2F7F  3A09          ESCZ:  DEFW SWCTL
2F81  C3 E2 C4 50   ESCLEN: DEFB 195,226,196,80,80
2F85  50
2F86  50 50 50 01           DEFB 80,80,80,1,1,1,1,80,80
2F8A  01 01 01 50
2F8E  50
2F8F  50 01 50 02           DEFB 80,1,80,2,80,80,2,2,2,1,8,2
2F93  50 50 02 02
2F97  02 01 08 02
2F9B  E5            GETCH:  PUSH HL;        GET NEXT CH OF COMMAND
2F9C  2A FF59               LD HL,(CHPTR)
2F9F  7E                    LD A,(HL)
2FA0  23                    INC HL
2FA1  22 FF59               LD (CHPTR),HL
2FA4  E1            GETCH1: POP HL
2FA5  C9                    RET
2FA6  C5            DISP1:  PUSH BC;        MAIN COMMAND LOOP
2FA7  DD E5                 PUSH IX
2FA9  CD FFED               CALL OVRLAY;    CHECK FOR USER DEF OVERLAY RTN
                            ;               FROM SYSTEM VARIABLE AREA
2FAC  3E FF                 LD A,255; STOP CURSOR FLASH INTERRUPTS
2FAE  32 FF58               LD (VINTF6),A
2FB1  DD 2A FF5B            LD IX,(CURSCR); IDENTIFY SCREEN TO CONTROL
2FB5  CD 2F9B               CALL GETCH;     GET FIRST CHARACTER
2FB8  21 2FC8       NXTINT: LD HL,CEND;     SET RETURN ADDRESS TO
2FBB  E5                    PUSH HL;        COMMAND END
2FBC  FE 20                 CP 32;          IS A CH. TO BE PRINTED?
2FBE  30 1B                 JR NC,PRTCH
2FC0  4F                    LD C,A
2FC1  21 2EED       NXTIN1: LD HL,CTLTBL;   FIND SUB ROUTINE FOR COMMAND
2FC4  CD 0689       NXTLVL: CALL FINDJP;    FIND & JUMP TO NEXT LEVEL
2FC7  E9                    JP (HL)
2FC8  AF            CEND:   XOR A;          RESTORE REGISTERS & EXIT
2FC9  32 FF58               LD (VINTF6),A
2FCC  DD E1                 POP IX
2FCE  C1                    POP BC
2FCF  D1                    POP DE
2FD0  E1                    POP HL
```

```
2FD1  C9              NULL:   RET
2FD2  CD 2F9B         ESCCTL: CALL GETCH;     COMMAND STARTS WITH ESCAPE
2FD5  4F              ESCCTA: LD C,A
2FD6  21 2ECB                 LD HL,ESCTBL-130; FIND SUB-ROUTINE FOR ESC.COM.
2FD9  18 E9                   JR NXTLVL
2FDB  F5              PRTCH:  PUSH AF;        PRINTS THE CH.SUPPLIED IN A
2FDC  DD CB 00 5E             BIT 3,(IX+0);   CHECK FOR INSERT MODE
2FE0  C4 33DC                 CALL NZ,ININLN
2FE3  CD 303C                 CALL CHKPOS;    GET PRINT POSITION
2FE6  F1                      POP AF
2FE7  5F                      LD E,A;         STORE CH IN E
2FE8  3E 05                   LD A,5;         PRINT TO SCREEN
2FEA  CD 1876                 CALL SCENT
2FED  DD 34 01        IPRTCU: INC (IX+1);     INCREMENT PRINT POSITION
2FF0  DD CB 08 BE     PRTCU:  RES 7,(IX+8);   IF CURSOR IS NEEDED,PRINT IT
2FF4  DD CB 00 4E             BIT 1,(IX+0);   IS CURSOR ON?
2FF8  C8                      RET Z
2FF9  CD 303C                 CALL CHKPOS;    GET PRINT POSITION
2FFC  3E 02                   LD A,2;         CALL RELEVANT SET-UP CURSOR
2FFE  CD 1876                 CALL SCENT;     ROUTINE
3001  DD CB 08 FE             SET 7,(IX+8);   INDICATE CURSOR IN + STATE
3005  C9                      RET
3006  DD 66 02        GETPOS: LD H,(IX+2);    GETS RELATIVE PRINT POSITION
3009  DD 6E 01                LD L,(IX+1)
300C  C9                      RET
300D  DD 74 02        SETPOS: LD (IX+2),H;    STORE RELATIVE PRINT POSITION
3010  DD 75 01                LD (IX+1),L
3013  C9                      RET
3014  CD 3006         GETABC: CALL GETPOS;    FIND ABSOLUTE CURRENT PRT.POS.
3017  F5              GETABS: PUSH AF;        FIND ABSOLUTE PRINT POS.
3018  DD 4E 07                LD C,(IX+7)
301B  06 00                   LD B,0
301D  7C                      LD A,H
301E  60                      LD H,B
301F  A7                      AND A
3020  28 04                   JR Z,GETAB2
3022  09              GETAB1: ADD HL,BC
3023  3D                      DEC A
3024  20 FC                   JR NZ,GETAB1
3026  DD 5E 04        GETAB2: LD E,(IX+4)
3029  57                      LD D,A
302A  BB                      CP E
302B  28 07                   JR Z,GETAB4
302D  CD 1876                 CALL SCENT;     A IS MEANT TO BE 0
3030  19              GETAB3: ADD HL,DE
3031  3D                      DEC A
3032  20 FC                   JR NZ,GETAB3
3034  7B              GETAB4: LD A,E
3035  DD 5E 03                LD E,(IX+3)
3038  19                      ADD HL,DE
3039  57                      LD D,A
303A  F1                      POP AF
303B  C9                      RET
303C  CD 3006         CHKPOS: CALL GETPOS;    ENSURES X,Y COORDS ARE VALID
303F  DD 5E 05        CHKP02: LD E,(IX+5);    ADJUSTING WHERE NECESSARY
3042  DD 56 06                LD D,(IX+6);    GET SCREEN VIRTUAL SIZE
```

```
3045  7D          CHKX:  LD A,L;          CHECKS X COORDINATE
3046  BB                 CP E
3047  38 03              JR C,CHKY
3049  2E 00              LD L,0
304B  24                 INC H
304C  7C          CHKY:  LD A,H;          CHECKS Y COORDINATE
304D  BA                 CP D
304E  38 0F              JR C,RWPOS
3050  26 00              LD H,0
3052  DD CB 00 46       BIT 0,(IX+0);   CHECK PAGE/SCR MODE
3056  20 07              JR NZ,RWPOS
3058  62                 LD H,D;         SCROLL MODE
3059  25                 DEC H
305A  E5                 PUSH HL
305B  CD 3087            CALL SCR
305E  E1                 POP HL
305F  CD 300D      RWPOS:  CALL SETPOS
3062  18 B3               JR GETABS
3064  CD 2F9B     TABATT: CALL GETCH;     DECODES THE FORMAT TYPE ATTRIBUTE
3067  C5          TABAT1: PUSH BC
3068  4F                  LD C,A
3069  3E 08               LD A,8
306B  CD 1876               CALL SCENT
306E  C1                    POP BC
306F  C9                    RET
3070  DD 71 0A    TABAGT: LD (IX+10),C
3073  DD 36 0B 00          LD (IX+11),0
3077  C9                    RET
3078  DD 7E 09    SCOLTX: LD A,(IX+9)
307B  C9                    RET
307C  CB D4        SCOLG2: SET 2,H
307E  CD 3127               CALL X80UTA
3081  CD 3078               CALL SCOLTX
3084  DB 01                 IN A,(PORTDI)
3086  C9                    RET
3087  CD 3137      SCR:     CALL REMCUR;    SCROLL RTN-1ST REMOVE CURSOR
308A  DD CB 00 4E          BIT 1,(IX+0);   IF INPUTTING SCROLL
308E  20 39                JR NZ,SCR2
3090  DD CB 00 56          BIT 2,(IX+0);   TEST AUTO-SCROLL BIT
3094  28 0B                JR Z,SCRA
3096  DD 7E 0E             LD A,(IX+14);   DECREMENT SCROLL COUNT
3099  3D                   DEC A
309A  20 31                JR NZ,SCR3
309C  18 0B                JR SCRB
309E  CD 0079      SCRA:   CALL KBD
30A1  28 26                JR Z,SCR2
30A3  E6 FE                AND 0FEH
30A5  FE 1C                CP 28
30A7  20 20                JR NZ,SCR2
30A9  CD 0953      SCRB:   CALL BELL
30AC  01 2000              LD BC,02000H
30AF  CD 0079      SCRC:   CALL KBD
30B2  20 07                JR NZ,SCRD
30B4  0B                   DEC BC
30B5  78                   LD A,B
30B6  B1                   OR C
```

```
30B7  20 F6                    JR NZ,SCRC
30B9  18 EE                    JR SCRB;        BELL SOUNDS EVERY 5 SECS
30BB  E6 FE            SCRD:   AND     0FEH
30BD  FE 1C                    CP      28
30BF  DD CB 00 D6              SET 2,(IX+0)
30C3  20 04                    JR NZ,SCR2
30C5  DD CB 00 96              RES 2,(IX+0)
30C9  DD 7E 06         SCR2:   LD A,(IX+6);    RESET SCROLL COUNT
30CC  3D                       DEC A
30CD  DD 77 0E         SCR3:   LD (IX+14),A
30D0  21 0000                  LD HL,0
30D3  DD 7E 06                 LD A,(IX+6);    NO OF LINES TO ROLL UP
30D6  CD 3017          SCR4:   CALL GETABS;    ENTRY FOR DELETE LINE
30D9  47                       LD B,A
30DA  DD 7E 05         SCR5:   LD A,(IX+5);    EACH LINE LOOP SET CHS/LINE
30DD  05                       DEC B
30DE  28 1B                    JR Z,SCR6
30E0  C5                       PUSH BC
30E1  54                       LD D,H
30E2  5D                       LD E,L
30E3  06 00                    LD B,0
30E5  09                       ADD HL,BC
30E6  DD CB 00 66              BIT 4,(IX+0);   CHK UP/DOWN SCROLL
30EA  28 04                    JR Z,SCR5A
30EC  ED 42                    SBC HL,BC
30EE  ED 42                    SBC HL,BC
30F0  E5               SCR5A:  PUSH HL
30F1  4F                       LD C,A
30F2  3E 03                    LD A,3;         COPY INDIVIDUAL LINE
30F4  CD 1876                  CALL SCENT
30F7  E1                       POP HL
30F8  C1                       POP BC
30F9  18 DF                    JR SCR5
30FB  4F               SCR6:   LD C,A
30FC  3E 04                    LD A,4;         PRT LINE OF SPACES
30FE  C3 1876          KSCENT: JP SCENT
3101  D6 45            SCOLD:  SUB 69;         COLD SCREEN/BAS.SCREENS/PANEL START
3103  F5                              PUSH AF
3104  CD 3137                  CALL REMCUR
3107  F1                       POP AF
3108  18 F4                    JR KSCENT
310A  3E 09            PAPER:  LD A,9
310C  18 F0                    JR KSCENT
310E  3E 0A            INK:    LD A,10
3110  18 EC                    JR KSCENT
3112  3E 0C            DEVDEP: LD A,12
3114  18 EB                    JR KSCENT;      DEVICE DEPENDENT & SHOULD BE
                       ;                       HANDLED BY SCREEN TYPE.
3116  29               TIMES8: ADD HL,HL;      CONVERTS TX VALS TO 6II VALS
3117  29                       ADD HL,HL
3118  29                       ADD HL,HL
3119  EB                       EX DE,HL
311A  29                       ADD HL,HL
311B  29                       ADD HL,HL
311C  29                       ADD HL,HL
311D  EB                       EX DE,HL
```

```
311E  C5                      PUSH BC
311F  E3                      EX (SP),HL
3120  29                      ADD HL,HL
3121  29                      ADD HL,HL
3122  29                      ADD HL,HL
3123  E3                      EX (SP),HL
3124  C1                      POP BC
3125  C9                      RET
3126  6F              X8OUT:  LD L,A;         HL X 8 & OUT
3127  29              X8OUTA: ADD HL,HL
3128  29                      ADD HL,HL
3129  29                      ADD HL,HL
312A  7D              ADDOUT: LD A,L;         SETS UP ADDRESS FOR VDP I/O
312B  D3 02                   OUT (PORTA0),A
312D  7C                      LD A,H
312E  D3 02           ADDOU1: OUT (PORTA0),A
3130  C9                      RET
3131  3E 28           HSZTX:  LD A,40;  SIZE OF TX LINE
3133  C9                      RET
3134  3E 20           HSZG2:  LD A,32;        SIZE OF G2 LINE
3136  C9                      RET
3137  DD CB 00 4E     REMCUR: BIT 1,(IX+0);   TEXT/GII COMMON CURS REMOVAL
313B  C8                      RET Z;          RETURN IF NO CURSOR
313C  DD CB 08 7E             BIT 7,(IX+8);   TEST IF CURSOR -
3140  C8                      RET Z
3141  DD CB 00 4E     CUFLSH: BIT 1,(IX+0);   CHANGES CURSOR STATE
3145  C8                      RET Z
3146  CD 3014                 CALL GETABC
3149  3E 01                   LD A,1;         SET CURSOR +
314B  CD 1876                 CALL SCENT
314E  DD 7E 08                LD A,(IX+8);    SWITCH CURSOR STATE BIT
3151  EE 80                   XOR 128
3153  DD 77 08                LD (IX+8),A
3156  C9                      RET
3157  7A              LNCOTX: LD A,D;         COPY A LINE OF TEXT
3158  C6 5C                   ADD A,92
315A  57                      LD D,A
315B  7C                      LD A,H
315C  C6 1C                   ADD A,28
315E  67                      LD H,A
315F  CD 312A           COTX62: CALL ADDOUT;          COMMON TEXT/GII COPY RTN
3162  23                      INC HL
3163  0B                      DEC BC
3164  EB                      EX DE,HL
3165  DB 01                   IN A,(PORTDI)
3167  F5                      PUSH AF
3168  CD 312A                 CALL ADDOUT;    WRITE TO BYTE
316B  F1                      POP AF
316C  EB                      EX DE,HL
316D  13                      INC DE
316E  D3 01                   OUT (PORTDO),A
3170  78                      LD A,B
3171  B1                      OR C
3172  20 EB                   JR NZ,COTX62
3174  C9                      RET
3175  CD 3116         LNCO62: CALL TIMES8;    COPY A GII LINE
```

```
3178  CB F2                 SET 6,D
317A  E5                    PUSH HL
317B  C5                    PUSH BC
317C  D5                    PUSH DE
317D  CD 315F               CALL COTX62;   COPY THE PATTERNS
3180  D1                    POP DE
3181  C1                    POP BC
3182  E1                    POP HL
3183  CB EA                 SET 5,D
3185  CB EC                 SET 5,H
3187  18 D6                 JR COTX62;     COPY THE COLOURS
3189  DD CB 0D 66     SPTX: BIT 4,(IX+13); PRT BC SPACES
318D  C0                    RET NZ;        RETURN IF OVER MODE
318E  1E 20                 LD E,32
3190  7C              PTCHA1: LD A,H
3191  C6 5C                 ADD A,92
3193  67                    LD H,A
3194  CD 312A         PTCHA2: CALL ADDOUT
3197  7B              PTCHA3: LD A,E
3198  D3 01                 OUT (PORTDO),A
319A  0B                    DEC BC
319B  78                    LD A,B
319C  B1                    OR C
319D  20 F8                 JR NZ,PTCHA3
319F  C9                    RET
31A0  CD 3116           SPG2: CALL TIMES8;   PRT BC SPACES GII MODE
31A3  1E 00                 LD E,0
31A5  CB F4                 SET 6,H
31A7  DD CB 0D 66           BIT 4,(IX+13)
31AB  20 05                 JR NZ,SPG2A;   IF OVER DO NOT PRINT SPACES
31AD  C5                    PUSH BC
31AE  CD 3194               CALL PTCHA2
31B1  C1                    POP BC
31B2  CB EC             SPG2A: SET 5,H
31B4  DD 5E 0C              LD E,(IX+12);  NON-PRINTABLE COLOUR
31B7  18 DB                 JR PTCHA2
31B9  E5                SUCUTX: PUSH HL;       SET UP INVERSE CH.FOR TEXT
31BA  7C                    LD A,H;        CURSOR
31BB  C6 1C                 ADD A,28
31BD  67                    LD H,A
31BE  CD 312A               CALL ADDOUT
31C1  CD 3BB7               CALL IN130;    FIND CH. AT CURS POSITION
31C4  DD 77 08              LD (IX+8),A;   STORE CHARACTER
31C7  26 03                 LD H,3
31C9  6F                    LD L,A
31CA  11 0B00               LD DE,0B00H
31CD  CD 31EB               CALL SUCUTA
31D0  E1                    POP HL
31D1  DD 5E 08          CUFLTX: LD E,(IX+8);   FLASH TEXT MODE CURSOR
31D4  CB 7B                 BIT 7,E;       CHECK CURRENT STATE
31D6  CB BB                 RES 7,E;       FIND BASE CHARACTER
31D8  20 02                 JR NZ,PRCHTX;  IF + PRINT BASE CH.
31DA  1E 00                 LD E,0;        OTHERWISE PRT INVERSE
31DC  CD 3289           PRCHTX: CALL GRCHK;    PRT TEXT CH./CHECK UDG
31DF  01 0001               LD BC,1
31E2  18 AC                 JR PTCHA1;     JUMP TO OUTPUT CH
```

```
31E4  54              CUFLG2: LD D,H
31E5  CB DA                   SET 3,D
31E7  5D                      LD E,L
31E8  CD 3116         SUCUTA: CALL TIMES8
31EB  06 08                   LD B,8
31ED  CD 312A         SUCUT1: CALL ADDOUT;    LOOP TO SET UP INVERSE CH.
31F0  EB                      EX DE,HL
31F1  CD 3BB7                 CALL IN130
31F4  2F                      CPL
31F5  F5                      PUSH AF
31F6  CD 312A                 CALL ADDOUT
31F9  F1                      POP AF
31FA  EB                      EX DE,HL
31FB  CD 3BB2                 CALL OUT128
31FE  23                      INC HL
31FF  13                      INC DE
3200  10 EB                   DJNZ SUCUT1
3202  C9                      RET
3203  E5              PRCHG2: PUSH HL;        PRINT CH. TO GII SCREEN
3204  CD 3289                 CALL GRCHK;     SEE IF UDG
3207  16 03                   LD D,3
3209  F5                      PUSH AF
320A  CD 3116                 CALL TIMES8
320D  CB F4                   SET 6,H
320F  06 08                   LD B,8
3211  EB              PRCG2A: EX DE,HL;       COPY PATTERN LOOP
3212  CD 312A                 CALL ADDOUT
3215  EB                      EX DE,HL
3216  DD CB 0B 66             BIT 4,(IX+11);  SEE IF OVER BIT SET
321A  DB 01                   IN A,(PORTDI)
321C  28 0C                   JR Z,PRCG2B
321E  4F                      LD C,A
321F  CB B4                   RES 6,H
3221  CD 312A                 CALL ADDOUT
3224  CD 3BB7                 CALL IN130;     GET EXISTING BYTE
3227  A9                      XOR C;          COMBINE WITH NEW PATTERN
3228  CB F4                   SET 6,H
322A  4F              PRCG2B: LD C,A
322B  CD 312A                 CALL ADDOUT
322E  79                      LD A,C
322F  CD 3BB2                 CALL OUT128
3232  23                      INC HL
3233  13                      INC DE
3234  10 DB                   DJNZ PRCG2A
3236  F1                      POP AF
3237  E1                      POP HL
3238  CD 3116         ATG2:   CALL TIMES8;    SET UP GII COLOUR PATTERN
323B  CB F4                   SET 6,H
323D  01 0008                 LD BC,8
3240  FE 13                   CP 19
3242  38 12                   JR C,ATG2A
3244  FE 1B                   CP 27
3246  30 0E                   JR NC,ATG2A
3248  C6 05                   ADD A,5
324A  87                      ADD A,A
324B  87                      ADD A,A
```

```
324C  87                    ADD A,A;        CODE IS COLOURED UDG
324D  5F                    LD E,A
324E  CB EC                 SET 5,H
3250  16 1F                 LD D,31;        NOTE THAT INV.FLAG IS
3252  EB                    EX DE,HL;       NOT CONSIDERED
3253  C3 315F               JP COTX62
3256  CB EC          AT62A: SET 5,H
3258  DD 5E 0A              LD E,(IX+10);   PRINTABLE COLOUR
325B  DD CB 0B 5E           BIT 3,(IX+11);  REVERSE COLS IF INVERSE
325F  CA 3194               JP Z,PTCHA2
3262  7B                    LD A,E
3263  07                    RLCA
3264  07                    RLCA
3265  07                    RLCA
3266  07                    RLCA
3267  5F                    LD E,A
3268  C3 3194               JP PTCHA2
326B  CD 3137          CLS: CALL REMCUR;    CLEAR VIRTUAL SCREEN
326E  21 0000          CLSA: LD HL,0
3271  CD 3017               CALL GETABS;    FIND TOP LHS
3274  DD 7E 06              LD A,(IX+6);    NO OF LINES
3277  59                    LD E,C
3278  DD 4E 05              LD C,(IX+5);    NO OF COLUMNS
327B  57               CLS1: LD D,A
327C  3E 04                 LD A,4
327E  CD 3544               CALL PSCENT;    CLEAR LINE
3281  7A                    LD A,D
3282  50                    LD D,B
3283  19                    ADD HL,DE
3284  3D                    DEC A
3285  20 F4                 JR NZ,CLS1
3287  18 69                 JR HOME
3289  CB 7B          GRCHK: BIT 7,E;        CHECKS FOR UDG
328B  C8                    RET Z
328C  3E 1F                 LD A,31;        FINDS PROPER PATTERN POS.
328E  A3                    AND E
328F  5F                    LD E,A
3290  C9                    RET
3291  21 2E78        INITTX: LD HL,TXVAL;    INITIALISES TEXT TI SCREEN
3294  01 0280        INITTG: LD BC,0280H;    COMMON INITIALISE RTN
3297  7E             INTTGA: LD A,(HL)
3298  CD 312E               CALL ADDOUI
329B  79                    LD A,C
329C  D3 02                 OUT (PORTAO),A
329E  10 F7                 DJNZ INTTGA
32A0  06 06                 LD B,6
32A2  3A FF55               LD A,(SMBYTE);  SZ/MAG BYTE
32A5  0C              INTGLP: INC C
32A6  23                    INC HL
32A7  B6                    OR (HL)
32A8  D3 02                 OUT (PORTAO),A
32AA  79                    LD A,C
32AB  D3 02                 OUT (PORTAO),A
32AD  AF                    XOR A
32AE  10 F5                 DJNZ INTGLP
32B0  0C                    INC C
```

```
32B1  DD 6E 09              LD L,(IX+9);   PICK UP OVERALL COLOURS
32B4  61                    LD H,C
32B5  C3 312A               JP ADDOUT
32B8  21 2E71         INIT62: LD HL,62VAL; INITIALISE 6II TI SCREEN
32BB  CD 3294               CALL INITTG
32BE  21 7C00               LD HL,7C00H
32C1  CD 312A               CALL ADDOUT;   SET UP NAME TABLE ENTRIES
32C4  01 0000               LD BC,0
32C7  79              ING2LP: LD A,C
32C8  D3 01                 OUT (PORTDO),A
32CA  03                    INC BC
32CB  78                    LD A,B
32CC  FE 03                 CP 3
32CE  20 F7                 JR NZ,ING2LP
32D0  C9                    RET
32D1  CD 32D8         CURSON: CALL CURSOF; CURSOR ON RTN
32D4  CB CE                 SET 1,(HL)
32D6  18 76                 JR EOL6
32D8  CD 3137         CURSOF: CALL REMCUR; CURSOR OFF ROUTINE
32DB  DD E5                 PUSH IX
32DD  E1                    POP HL
32DE  CB 8E                 RES 1,(HL)
32E0  C9                    RET
32E1  CD 34BA         CURSXY: CALL GET2CH
32E4  EB                    EX DE,HL
32E5  E5              MVPPOS: PUSH HL;     MOVES PRT.POS TO HL CO-ORDS
32E6  CD 3137               CALL REMCUR
32E9  E1                    POP HL
32EA  CD 300D               CALL SETPOS
32ED  CD 303C               CALL CHKPOS
32F0  18 5C                 JR EOL6
32F2  21 0000         HOME:   LD HL,0;     MOVES CURSOR TO HOME POSITION
32F5  18 EE                 JR MVPPOS
32F7  CD 3006         FWARD:  CALL GETPOS; ADVANCES PRT POS
32FA  2C                    INC L
32FB  18 E8                 JR MVPPOS
32FD  CD 3006         CARRTN: CALL GETPOS; CARRIAGE RETURN RTN
3300  2E 00                 LD L,0
3302  18 E1                 JR MVPPOS
3304  CD 3006         LFEED:  CALL GETPOS; LINE FEED RTN
3307  24                    INC H
3308  18 DB                 JR MVPPOS
330A  CD 3006         CURSUP: CALL GETPOS; CURSOR UP RTN
330D  7C              CURUP1: LD A,H
330E  25                    DEC H
330F  A7                    AND A
3310  20 D3                 JR NZ,MVPPOS
3312  DD 66 06              LD H,(IX+6)
3315  25                    DEC H
3316  18 CD                 JR MVPPOS
3318  CD 3006         BACKSP: CALL GETPOS; BACK SPACE RTN
331B  7D                    LD A,L
331C  2D                    DEC L
331D  A7                    AND A
331E  20 C5                 JR NZ,MVPPOS
3320  DD 6E 05              LD L,(IX+5)
```

```
3323  2D                    DEC L
3324  18 E7                 JR CURUP1
3326  CD 3006         TABFWD: CALL GETPOS
3329  7D              TABFWA: LD A,L
332A  C6 08                 ADD A,8
332C  E6 F8             TABFW1: AND 248
332E  6F                    LD L,A;       CHKPOS RTN WILL SORT
332F  18 B4                 JR MVPPOS;    REST OF ARITHMETIC
3331  CD 3318           TABBCK: CALL BACKSP;  TAB BACK RTN
3334  CD 3006               CALL GETPOS
3337  7D                    LD A,L
3338  18 F2                 JR TABFW1
333A  CD 33C5           EOL:  CALL ONSCRN;  ERASE TO END OF LINE
333D  C8                EOL3: RET Z;        NOTHING ON LINE TO
333E  D8                      RET C;        ERASE
333F  ED 44                   NEG
3341  4F                     LD C,A
3342  C5                    PUSH BC
3343  CD 303C               CALL CHKPOS
3346  C1                    POP BC
3347  06 00             EOL4: LD B,0
3349  3E 04                 LD A,4
334B  CD 1876           EOL5: CALL SCENT
334E  C3 2FF0           EOL6: JP PRTCU
3351  CD 3137           LNINDE: CALL REMCUR;  COMMON PROCESS FOR INS/DEL LN
3354  CD 3006               CALL GETPOS
3357  DD 7E 06              LD A,(IX+6)
335A  94                    SUB H
335B  D1                    POP DE
335C  C8                    RET Z
335D  D8                    RET C
335E  D5                    PUSH DE
335F  C9                    RET
3360  CD 3351           DELLN: CALL LNINDE;  DELETE LINE RTN
3363  2E 00             DELLN1: LD L,0
3365  CD 30D6                 CALL SCR4;    ENTRY IN SCROLL RTN
3368  18 E4                 JR EOL6
336A  CD 3351           INSLN: CALL LNINDE;  INSER BLANK LINE RTN
336D  DD 66 06                LD H,(IX+6)
3370  25                      DEC H
3371  C8                      RET Z
3372  DD CB 00 E6             SET 4,(IX+0); INDICATES SCROLL DOWN MODE
3376  CD 3363                 CALL DELLN1
3379  DD CB 00 A6             RES 4,(IX+0)
337D  C9                      RET
337E  CD 3351           DUPLN: CALL LNINDE;  DUPLICATES CURRENT LINE
3381  3D                      DEC A
3382  20 0C                   JR NZ,DUPLN1; AT BOTTOM LINE?
3384  DD 7E 06                LD A,(IX+6)
3387  3D                      DEC A
3388  C8                      RET Z
3389  CD 30C9                 CALL SCR2;    SCROLL REGARDLESS
338C  CD 3006                 CALL GETPOS
338F  25                      DEC H
3390  24                DUPLN1: INC H;        SET NEW PPOS
3391  CD 300D                 CALL SETPOS
```

```
3394  2E 00              LD L,0
3396  CD 3017            CALL GETABS;   GET DUP POSITION
3399  54                 LD D,H
339A  5D                 LD E,L
339B  A7                 AND A
339C  ED 42              SBC HL,BC
339E  DD 4E 05           LD C,(IX+5)
33A1  3E 03              LD A,3
33A3  18 A6              JR EOL5
33A5  CD 33C5     DLINLN: CALL ONSCRN;   DELETE IN LINE RTN
33A8  D8                 RET C
33A9  C8                 RET Z
33AA  1D                 DEC E
33AB  6B                 LD L,E
33AC  2F                 CPL;           LAST CH?
33AD  A7                 AND A
33AE  28 0E              JR Z,DLINL2
33B0  E5                 PUSH HL
33B1  CD 3014            CALL GETABC
33B4  54                 LD D,H
33B5  5D                 LD E,L
33B6  23                 INC HL
33B7  4F                 LD C,A
33B8  3E 03              LD A,3
33BA  CD 1876            CALL SCENT
33BD  E1                 POP HL
33BE  CD 3017     DLINL2: CALL GETABS;   SPACE AT LAST CH
33C1  0E 01              LD C,1
33C3  18 82              JR EOL4
33C5  CD 3351     ONSCRN: CALL LNINDE;   ENSURE PRT POS ON SCRN
33C8  DD 7E 05           LD A,(IX+5)
33CB  5F                 LD E,A
33CC  7D          ONSCR2: LD A,L
33CD  93                 SUB E
33CE  3F                 CCF
33CF  C9                 RET
33D0  3E 08       INSERT: LD A,8;        SWICHES INSERT MODE
33D2  18 02              JR INAUCO
33D4  3E 04       AUTOSC: LD A,4;        SWTCHES AUTOSCROLL MODE
33D6  DD E5       INAUCO: PUSH IX
33D8  E1                 POP HL
33D9  AE                 XOR (HL)
33DA  77                 LD (HL),A
33DB  C9                 RET
33DC  CD 33C5     ININLN: CALL ONSCRN;   MAKE SPACE FOR INSERT IN LINE
33DF  C8                 RET Z
33E0  D8                 RET C
33E1  2F                 CPL;           LAST CH?
33E2  A7                 AND A
33E3  C8                 RET Z
33E4  CD 3014     ININL2: CALL GETABC
33E7  4F                 LD C,A
33E8  09                 ADD HL,BC
33E9  54                 LD D,H
33EA  5D                 LD E,L
33EB  2B          ININL3: DEC HL
```

```
33EC  C5                  PUSH BC
33ED  0E 01               LD C,1
33EF  3E 03               LD A,3
33F1  CD 3544             CALL PSCENT;   COPIES 1 CH
33F4  C1                  POP BC
33F5  1B                  DEC DE
33F6  0D                  DEC C
33F7  20 F2               JR NZ,ININL3
33F9  C9                  RET
33FA  CD 34BA       COORD:  CALL GET2CH;   CONVERT TO ABS FROM TOP LHC
33FD  DD 66 06      DOTO62: LD H,(IX+6);   FIND PLOT POS OF ORIGIN GII
3400  DD 6E 05              LD L,(IX+5);   MODE
3403  25                    DEC H
3404  2D                    DEC L
3405  01 0707               LD BC,0707H
3408  29                    ADD HL,HL
3409  29                    ADD HL,HL
340A  29                    ADD HL,HL
340B  09                    ADD HL,BC
340C  7C                    LD A,H
340D  BA                    CP D
340E  DC 3B96       DOTOGE: CALL C,ERRA
3411  7D                    LD A,L
3412  BB                    CP E
3413  38 F9                 JR C,DOTOGE
3415  DD 7E 03              LD A,(IX+3)
3418  87                    ADD A,A
3419  87                    ADD A,A
341A  87                    ADD A,A
341B  4F                    LD C,A
341C  83                    ADD A,E
341D  5F                    LD E,A
341E  79                    LD A,C
341F  85                    ADD A,L
3420  4F                    LD C,A;        C CONTAINS MAX X DOT
3421  DD 7E 04              LD A,(IX+4)
3424  DD 86 06              ADD A,(IX+6)
3427  87                    ADD A,A
3428  87                    ADD A,A
3429  87                    ADD A,A
342A  3D                    DEC A
342B  47                    LD B,A;        B CONTAINS MAX Y DOT
342C  92                    SUB D
342D  57                    LD D,A
342E  C9                    RET
342F  7A            DOTBYT: LD A,D;        FIND DOT POS IN VRAM
3430  E6 F8                 AND 248;       X IS IN REG E
3432  0F                    RRCA;          Y IS IN REG D
3433  0F                    RRCA
3434  0F                    RRCA
3435  67                    LD H,A
3436  7A                    LD A,D
3437  E6 07                 AND 7
3439  47                    LD B,A
343A  7B                    LD A,E
343B  E6 F8                 AND 248
```

```
343D  80                    ADD A,B;        DE IS NOT CHANGED BY THIS ROUTINE
343E  6F                    LD L,A
343F  D3 02           DOTBYE: OUT (PORTA0),A
3441  7C                    LD A,H
3442  D3 02                 OUT (PORTA0),A
3444  CB F4                 SET 6,H
3446  7B                    LD A,E;         BYTE NOW IN HL
3447  E6 07                 AND 7;          FINDING BIT
3449  3C                    INC A
344A  47                    LD B,A
344B  DB 01                 IN A,(PORTDI)
344D  C9                    RET
344E  CD 33FA         POINT:  CALL COORD
3451  3A FE50         DOTG2:  LD A,(PLSPNO)
3454  A7                    AND A
3455  28 32                 JR Z,DOTG27
3457  D5                    PUSH DE
3458  21 FE4D               LD HL,SPRTBL-8
345B  01 0008               LD BC,8
345E  09              DOTG21: ADD HL,BC
345F  3D                    DEC A
3460  20 FC                 JR NZ,DOTG21
3462  E5                    PUSH HL
3463  60                    LD H,B
3464  6A                    LD L,D
3465  50                    LD D,B
3466  CD 3DF0               CALL XSPPOS;    FND DISPLACEMENT TO CRNR OF SPRITE
3469  EB                    EX DE,HL
346A  09                    ADD HL,BC
346B  E3                    EX (SP),HL
346C  CD 3E7D               CALL LDPOS
346F  D1                    POP DE
3470  CD 3E7D               CALL LDPOS
3473  23                    INC HL
3474  CB F6                 SET 6,(HL)
3476  2A FE4B               LD HL,(SPEED)
3479  AF                    XOR A
347A  32 FF58               LD (VINTFG),A
347D  25                    DEC H
347E  28 04                 JR Z,DOTG25
3480  44                    LD B,H
3481  76              DOTG24: HALT
3482  10 FD                 DJNZ DOTG24
3484  21 FF58         DOTG25: LD HL,VINTFG
3487  35                    DEC (HL)
3488  D1              DOTG26: POP DE
3489  CD 342F         DOTG27: CALL DOTBYT
348C  4F                    LD C,A
348D  3E 01                 LD A,1;         SET UP BIT MASK
348F  0F              DOTG2A: RRCA
3490  10 FD                 DJNZ DOTG2A
3492  47                    LD B,A
3493  CD 312A               CALL ADDOUT
3496  DD 7E 0D              LD A,(IX+13)
3499  FE 18                 CP 24
3498  C8                    RET Z;          IF BOTH FLAGS SET DO NOTHING
```

```
349C  79                LD A,C
349D  DD CB 0D 66       BIT 4,(IX+13);  OVER FLAG.NOTE THAT PLOTS
34A1  20 07             JR NZ,DOT62B;   USE NON-PRINT ATTRS
34A3  B0                OR B;           NOT OVER SET TO 1
34A4  DD CB 0D 5E       BIT 3,(IX+13);  INVERSE FLAG TEST
34A8  28 01             JR Z,DOT62C
34AA  A8             DOT62B: XOR B
34AB  D3 01          DOT62C: OUT (PORTD0),A
34AD  01 0001           LD BC,1
34B0  C3 31B2           JP SP62A;       JUMP TO SET UP COLOUR BYTE
34B3  CD 342F        GRRD62: CALL DOTBYT;    GRAPHICS READ GII MODE
34B6  07             GRRDGA: RLCA
34B7  10 FD             DJNZ GRRDGA
34B9  C9                RET;            CARRY FLAG SET IF DOT WAS THERE
34BA  CD 2F9B        GET2CH: CALL GETCH
34BD  5F                LD E,A
34BE  CD 2F9B           CALL GETCH
34C1  57                LD D,A
34C2  C9                RET
34C3  CD 312A        LDBUFF: CALL ADDOUT;    PUTS OUT ADDRESS & LDS B INTO WKAREA
34C6  21 FE1A        LDBUF1: LD HL,WKAREA
34C9  E5                PUSH HL
34CA  06 08             LD B,8
34CC  DB 01          LDBUF2: IN A,(PORTDI)
34CE  77                LD (HL),A
34CF  23                INC HL
34D0  10 FA             DJNZ LDBUF2
34D2  E1                POP HL
34D3  C9                RET
34D4  CD 33FA        GRREAD: CALL COORD;     READ N VERTICAL DOTS INTO WKAREA
34D7  CD 2F9B           CALL GETCH;     NO OF DOTS
34DA  4F                LD C,A
34DB  26 00             LD H,0;         SET UP H READY TO RECEIVE DOTS
34DD  E5             GRRD1:  PUSH HL
34DE  C5                PUSH BC
34DF  CD 34B3           CALL GRRD62
34E2  C1                POP BC
34E3  E1                POP HL
34E4  CB 14             RL H;           DOT STATUS WAS IN CARRY FLAG
34E6  0D                DEC C
34E7  28 0C             JR Z,GRRD3
34E9  7A                LD A,D
34EA  14                INC D;          CHECK NEXT DOT IS IN VIRTUAL SCRN
34EB  28 03             JR Z,GRRD2
34ED  B8                CP B
34EE  38 ED             JR C,GRRD1
34F0  CB 14          GRRD2:  RL H;          LOOP FOR DOTS OUTSIDE VIRT.SCRN.
34F2  0D                DEC C
34F3  20 FB             JR NZ,GRRD2
34F5  7C             GRRD3:  LD A,H
34F6  32 FE1A           LD (WKAREA),A
34F9  C9                RET
34FA  29             CHRD62: ADD HL,HL;      READ CH. GII MODE
34FB  29                ADD HL,HL;      NOTE EACH READ WILL TAKE CA.
34FC  29                ADD HL,HL;      10MS.
34FD  CD 34C3           CALL LDBUFF;    LOAD CHS INTO WKAREA
```

```
3500  0E 7F           CHR62B: LD C,127;       SET UP MATCH PARAMS
3502  21 1BF8                 LD HL,7160
3505  CD 312A          CHR62C: CALL ADDOUT;    CH.MATCH LOOP
3508  06 08                   LD B,8
350A  7D                      LD A,L
350B  90                      SUB B
350C  6F                      LD L,A
350D  9F                      SBC A,A
350E  84                      ADD A,H
350F  67                      LD H,A
3510  EB                      EX DE,HL
3511  21 FE1A                 LD HL,WKAREA
3514  DB 01          CHR62X: IN A,(PORTDI);  IND CH.MATCH LOOP
3516  BE                      CP (HL)
3517  20 0C                   JR NZ,CHR62F
3519  23                      INC HL
351A  10 F8                   DJNZ CHR62X
351C  79                      LD A,C
351D  17            CHR62D: RLA
351E  FE 3F                   CP 63
3520  1F                      RRA
3521  32 FE1A        CHR62E: LD (WKAREA),A
3524  C9                      RET
3525  EB              CHR62F: EX DE,HL
3526  0D                      DEC C
3527  20 DC                   JR NZ,CHR62C
3529  AF                      XOR A
352A  18 F5                   JR CHR62E
352C  7C              CHRDTX: LD A,H
352D  C6 1C                   ADD A,28;       READ CH.TEXT MODE
352F  67                      LD H,A
3530  7D                      LD A,L
3531  CD 343F                 CALL DOTBYE
3534  18 E7                   JR CHR62D
3536  CD 3137          CHREAD: CALL REMCUR;    READ CHARACTER RTN
3539  CD 303C                 CALL CHKPOS
353C  3E 0E                   LD A,14
353E  CD 1876                 CALL SCENT
3541  C3 2FED                 JP IPRTCU;      INCREMENT & PRT CURSOR
3544  E5              PSCENT: PUSH HL
3545  D5                      PUSH DE
3546  C5                      PUSH BC
3547  CD 1876                 CALL SCENT
354A  C1                      POP BC
354B  D1                      POP DE
354C  E1                      POP HL
354D  C9                      RET
354E  CD 33FA           VCT:  CALL COORD;     DRAW A LINE/1ST START POINT
3551  D5                      PUSH DE
3552  CD 3451                 CALL DOT62
3555  CD 33FA                 CALL COORD;     GET END COORDS
3558  EB                      EX DE,HL
3559  D1                      POP DE
355A  7A                      LD A,D
355B  D9                      EXX
355C  E5                      PUSH HL
```

```
355D  D5                  PUSH DE
355E  C5                  PUSH BC;              AFTER STORING EXCH.REGS
355F  67                  LD H,A;         SET UP ACCURATE Y IN HL
3560  2E 00               LD L,0
3562  45                  LD B,L
3563  D9                  EXX
3564  7C                  LD A,H
3565  92                  SUB D
3566  D9                  EXX
3567  5F                  LD E,A
3568  9F                  SBC A,A
3569  57                  LD D,A
356A  D9                  EXX
356B  63                  LD H,E
356C  7D                  LD A,L
356D  2E 00               LD L,0
356F  93                  SUB E
3570  4F                  LD C,A;         DELTA X
3571  9F                  SBC A,A
3572  47                  LD B,A
3573  D9                  EXX
3574  19            VCT1: ADD HL,DE;      MAIN LOOP FOR LINE PLOTTING
3575  7D                  LD A,L
3576  07                  RLCA
3577  9F                  SBC A,A
3578  85                  ADD A,L
3579  07                  RLCA
357A  E6 01               AND 1
357C  84                  ADD A,H
357D  D9                  EXX
357E  09                  ADD HL,BC
357F  BA                  CP D
3580  57                  LD D,A
3581  F5            VCTC: PUSH AF
3582  7D                  LD A,L
3583  07                  RLCA
3584  E6 01               AND 1
3586  84                  ADD A,H
3587  BB                  CP E
3588  5F                  LD E,A
3589  20 04               JR NZ,VCT4
358B  F1                  POP AF
358C  28 0B               JR Z,VCT5
358E  F5                  PUSH AF
358F  F1            VCT4: POP AF
3590  E5                        PUSH HL
3591  D5                  PUSH DE
3592  C5                  PUSH BC
3593  CD 3451             CALL DOT62
3596  C1                  POP BC
3597  D1                  POP DE
3598  E1                  POP HL
3599  D9            VCT5: EXX
359A  10 DB               DJNZ VCT1;      GO BACK FOR NEXT POINT
359C  C1                  POP BC
359D  D1                  POP DE
```

```
359E  E1                    POP HL
359F  D9                    EXX
35A0  C9                    RET
35A1  DD CB 00 86     SMODE: RES 0,(IX+0);  SET TO SCROLL MODE
35A5  DD CB 00 D6            SET 2,(IX+0);  SWITCHES TO SCR WT MODE
35A9  DD 36 0E 01            LD (IX+14),1
35AD  C9                     RET
35AE  DD CB 00 C6     PMODE: SET 0,(IX+0);  SWITCH TO PAGE MODE
35B2  C9                     RET
0010                  .RADIX 16
                      ;
35B3  00 00 00 00     CHART: DB    00,00,00,00,00
35B7  00
35B8  00 00 F2 00            DB    00,00,0F2,00,00
35BC  00
35BD  00 E0 00 E0            DB    00,0E0,00,0E0,00
35C1  00
35C2  28 FE 28 FE            DB    28,0FE,28,0FE,28
35C6  28
35C7  24 54 FE 54            DB    24,54,0FE,54,48
35CB  48
35CC  C6 CB 10 26            DB    0C6,0CB,10,26,0C6
35D0  C6
35D1  6C 92 6A 04            DB    6C,92,6A,04,0A
35D5  0A
35D6  00 A0 C0 00            DB    00,0A0,0C0,00,00
35DA  00
35DB  00 38 44 82            DB    00,38,44,82,00
35DF  00
35E0  00 82 44 38            DB    00,82,44,38,00
35E4  00
35E5  54 38 7C 38            DB    54,38,7C,38,54
35E9  54
35EA  10 10 7C 10            DB    10,10,7C,10,10
35EE  10
35EF  00 1A 1C 00            DB    00,1A,1C,00,00
35F3  00
35F4  10 10 10 10            DB    10,10,10,10,10
35F8  10
35F9  00 0C 0C 00            DB    00,0C,0C,00,00
35FD  00
35FE  06 08 10 20            DB    06,08,10,20,0C0
3602  C0
3603  38 44 82 44            DB    38,44,82,44,38
3607  38
3608  00 42 FE 02            DB    00,42,0FE,02,00
360C  00
360D  42 86 8A 92            DB    42,86,8A,92,62
3611  62
3612  84 82 A2 D2            DB    84,82,0A2,0D2,8C
3616  8C
3617  1C 24 44 FE            DB    1C,24,44,0FE,04
361B  04
361C  E4 A2 A2 A2            DB    0E4,0A2,0A2,0A2,9C
3620  9C
3621  7C 92 92 92            DB    7C,92,92,92,0C
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```
3625  0C
3626  80 86 88 90          DB    80,86,88,90,0E0
362A  E0
362B  6C 92 92 92          DB    6C,92,92,92,6C
362F  6C
3630  60 92 92 92          DB    60,92,92,92,7C
3634  7C
3635  00 36 36 00          DB    00,36,36,00,00
3639  00
363A  00 6D 6E 00          DB    00,6D,6E,00,00
363E  00
363F  10 28 44 82          DB    10,28,44,82,00
3643  00
3644  28 28 28 28          DB    28,28,28,28,28
3648  28
3649  00 82 44 28          DB    00,82,44,28,10
364D  10
364E  40 80 8A 90          DB    40,80,8A,90,60
3652  60
3653  7C 82 BA AA          DB    7C,82,0BA,0AA,7A
3657  7A
3658  3E 48 88 48          DB    3E,48,88,48,3E
365C  3E
365D  FE 92 92 92          DB    0FE,92,92,92,6C
3661  6C
3662  7C 82 82 82          DB    7C,82,82,82,44
3666  44
3667  FE 82 82 82          DB    0FE,82,82,82,7C
366B  7C
366C  FE 92 92 92          DB    0FE,92,92,92,82
3670  82
3671  FE 90 90 90          DB    0FE,90,90,90,80
3675  80
3676  7C 82 92 92          DB    7C,82,92,92,5C
367A  5C
367B  FE 10 10 10          DB    0FE,10,10,10,0FE
367F  FE
3680  00 82 FE 82          DB    00,82,0FE,82,00
3684  00
3685  0C 82 82 FC          DB    0C,82,82,0FC,80
3689  80
368A  FE 10 28 44          DB    0FE,10,28,44,82
368E  82
368F  FE 02 02 02          DB    0FE,02,02,02,02
3693  02
3694  FE 40 30 40          DB    0FE,40,30,40,0FE
3698  FE
3699  FE 20 10 08          DB    0FE,20,10,08,0FE
369D  FE
369E  7C 82 82 82          DB    7C,82,82,82,7C
36A2  7C
36A3  FE 90 90 90          DB    0FE,90,90,90,60
36A7  60
36A8  7C 82 8A 84          DB    7C,82,8A,84,7A
36AC  7A
36AD  FE 90 98 94          DB    0FE,90,98,94,62
```

```
36B1  62
36B2  64 92 92 92          DB    64,92,92,92,4C
36B6  4C
36B7  80 80 FE 80          DB    80,80,0FE,80,80
36BB  80
36BC  FC 02 02 02          DB    0FC,02,02,02,0FC
36C0  FC
36C1  F0 0C 02 0C          DB    0F0,0C,02,0C,0F0
36C5  F0
36C6  FC 02 1C 02          DB    0FC,02,1C,02,0FC
36CA  FC
36CB  C6 28 10 28          DB    0C6,28,10,28,0C6
36CF  C6
36D0  C0 20 1E 20          DB    0C0,20,1E,20,0C0
36D4  C0
36D5  86 8A 92 A2          DB    86,8A,92,0A2,0C2
36D9  C2
36DA  00 FE 82 82          DB    00,0FE,82,82,00
36DE  00
36DF  C0 20 10 08          DB    0C0,20,10,08,06
36E3  06
36E4  00 82 82 FE          DB    00,82,82,0FE,00
36E8  00
36E9  20 40 80 40          DB    20,40,80,40,20
36ED  20
36EE  02 02 02 02          DB    02,02,02,02,02
36F2  02
36F3  00 00 C0 A0          DB    00,00,0C0,0A0,00
36F7  00
36F8  04 2A 2A 1E          DB    04,2A,2A,1E,02
36FC  02
36FD  FE 22 22 1C          DB    0FE,22,22,1C,00
3701  00
3702  1C 22 22 22          DB    1C,22,22,22,00
3706  00
3707  1C 22 22 FE          DB    1C,22,22,0FE,02
370B  02
370C  1C 2A 2A 2A          DB    1C,2A,2A,2A,1A
3710  1A
3711  10 7E 90 80          DB    10,7E,90,80,00
3715  00
3716  12 29 29 29          DB    12,29,29,29,3E
371A  3E
371B  FE 20 20 1E          DB    0FE,20,20,1E,00
371F  00
3720  00 22 BE 02          DB    00,22,0BE,02,00
3724  00
3725  01 21 BE 00          DB    01,21,0BE,00,00
3729  00
372A  FE 08 14 22          DB    0FE,08,14,22,00
372E  00
372F  00 82 FE 02          DB    00,82,0FE,02,00
3733  00
3734  1E 20 1E 20          DB    1E,20,1E,20,1E
3738  1E
3739  3E 20 20 1E          DB    3E,20,20,1E,00
```

```
373D  00
373E  1C 22 22 22        DB    1C,22,22,22,1C
3742  1C
3743  3F 24 24 18        DB    3F,24,24,18,00
3747  00
3748  00 18 24 24        DB    00,18,24,24,3F
374C  3F
374D  3E 10 20 20        DB    3E,10,20,20,00
3751  00
3752  12 2A 2A 2A        DB    12,2A,2A,2A,04
3756  04
3757  20 FC 22 22        DB    20,0FC,22,22,00
375B  00
375C  3C 02 02 3C        DB    3C,02,02,3C,02
3760  02
3761  30 0B 06 0B        DB    30,0B,06,0B,30
3765  30
3766  3C 02 0C 02        DB    3C,02,0C,02,3C
376A  3C
376B  22 14 0B 14        DB    22,14,08,14,22
376F  22
3770  00 39 05 05        DB    00,39,05,05,3E
3774  3E
3775  22 26 2A 32        DB    22,26,2A,32,22
3779  22
377A  00 10 6C B2        DB    00,10,6C,82,82
377E  82
377F  00 00 FF 00        DB    00,00,0FF,00,00
3783  00
3784  B2 B2 6C 10        DB    82,82,6C,10,00
3788  00
3789  60 B0 40 20        DB    60,80,40,20,0C0
378D  C0
378E  FF FF FF FF        DB    0FF,0FF,0FF,0FF,0FF
3792  FF
3793  04 AA 6A 1E        DB    04,0AA,6A,1E,02
3797  02
3798  00 40 A0 40        DB    00,40,0A0,40,00
379C  00
379D  18 25 27 24        DB    18,25,27,24,00
37A1  00
37A2  50 AA AA AA        DB    50,0AA,0AA,0AA,14
37A6  14
37A7  1C 2A 6A AA        DB    1C,2A,6A,0AA,1A
37AB  1A
37AC  3C B2 42 3C        DB    3C,82,42,3C,02
37B0  02
37B1  1C AA 6A 2A        DB    1C,0AA,6A,2A,1A
37B5  1A
37B6  7E B0 92 92        DB    7E,80,92,92,6C
37BA  6C
37BB  12 7E 92 B2        DB    12,7E,92,82,42
37BF  42
37C0  BA 44 44 44        DB    0BA,44,44,44,0BA
37C4  BA
37C5  3E 2A 6A AA        DB    3E,2A,6A,0AA,22
```

```
37C9  22
37CA  0E 94 24 94          DB    0E,94,24,94,0E
37CE  0E
37CF  0E 54 A4 54          DB    0E,54,0A4,54,0E
37D3  0E
37D4  3C 82 02 82          DB    3C,82,02,82,3C
37D8  3C
37D9  04 AA 2A 9E          DB    04,0AA,2A,9E,02
37DD  02
37DE  1C A2 22 A2          DB    1C,0A2,22,0A2,1C
37E2  1C
37E3  24 4A AA 5E          DB    24,4A,0AA,5E,02
37E7  02
37E8  BC 02 02 BC          DB    0BC,02,02,0BC,02
37EC  02
37ED  FE A0 48 1E          DB    0FE,0A0,48,1E,0A
37F1  0A
37F2  00 00 9E 00          DB    00,00,9E,00,00
37F6  00
37F7  5E 90 C8 44          DB    5E,90,0C8,44,9E
37FB  9E
37FC  0C 12 A2 02          DB    0C,12,0A2,02,04
3800  04
3801  00 80 00 80          DB    00,80,00,80,00
3805  00
3806  50 8E D0 50          DB    50,8E,0D0,50,8E
380A  8E
000A                       .RADIX  10
                           ;
380B  CD 2F9B              ENS255: CALL GETCH;     ENSURES THAT SCREEN SET UPS END IN FF
380E  3C                           INC A
380F  C8                           RET Z
3810  CD 3B9C                     CALL ERRD
3813  21 3875              VDPAN:  LD HL,SCOPAN
3816  06 FD                       LD B,0FDH
3818  18 05                       JR VDBAS2
381A  21 385C              VDBAS:  LD HL,SCOSTR
381D  06 F5                       LD B,245
381F  11 FF5D              VDBAS2: LD DE,SCRN0
3822  CD 380B                     CALL ENS255
3825  3C                         INC A
3826  CD 3838                    CALL MAPSCR
3829  11 FF6C                    LD DE,SCRN1
382C  CD 3838                    CALL MAPSCR
382F  11 FFC6                    LD DE,SCRN7
3832  CD 3838                    CALL MAPSCR
3835  11 FFA8                    LD DE,SCRN5
3838  12                 MAPSCR: LD (DE),A
3839  D5                         PUSH DE
383A  DD E1                      POP IX
383C  ED 53 FF5B                 LD (CURSCR),DE
3840  13                         INC DE
3841  13                         INC DE
3842  13                         INC DE
3843  78                         LD A,B
3844  01 0005                    LD BC,5
```

```
3847  ED B0           LDIR
3849  47              LD B,A
384A  EB              EX DE,HL
384B  AF              XOR A
384C  77              LD (HL),A
384D  23              INC HL
384E  70              LD (HL),B
384F  23              INC HL
3850  70              LD (HL),B
3851  23              INC HL
3852  77              LD (HL),A
3853  23              INC HL
3854  70              LD (HL),B
3855  23              INC HL
3856  77              LD (HL),A
3857  23              INC HL
3858  36 01           LD (HL),1
385A  EB              EX DE,HL
385B  C9              RET
385C  01 13 9F 01     SC0STR: DEFB    1,19,159,1,160
3860  A0
3861  01 00 27 13     SC1STR: DEFB    1,0,39,19,40
3865  28
3866  01 17 27 01     SC7STR: DEFB    1,23,39,1,40
386A  28
386B  01 00 27 18     SC5SCR: DEFB    1,0,39,24,40
386F  28
3870  00 00 20 18     SC4STR: DEFB    0,0,32,24,32
3874  20
3875  01 00 1C 11     SC0PAN: DEFB    1,0,28,17,40
3879  28
387A  1D 00 0B 09     SC1PAN: DEFB    29,0,11,9,40
387E  28
387F  01 17 27 01     SC7PAN: DEFB    1,23,39,1,40
3883  28
3884  06 11 1D 06     SC5PAN: DEFB    6,17,29,6,40
3888  28
3889  CD 3B1A         VDCOLD: CALL VDBAS;     INITIALISE VDP
388C  E5                      PUSH HL
388D  CD 3291                 CALL INITTX
3890  CD 326B                 CALL CLS
3893  E1                      POP HL
3894  11 FF99                 LD DE,SCRN4
3897  3E 20                   LD A,32
3899  06 F5                   LD B,245
389B  CD 383B                 CALL MAPSCR
389E  CD 32B8                 CALL INITG2
38A1  CD 326B                 CALL CLS
38A4  11 0002                 LD DE,2
38A7  CD 3C54                 CALL SPRCEN;    INITS SPRITE AREA
38AA  3E 05                   LD A,5
38AC  32 FE4C                 LD (SPBASE),A
38AF  21 5900           CRCHST: LD HL,5900H;    ENTRY FOR CNTRY INIT
38B2  CD 312A                 CALL ADDOUT
38B5  21 35B3                 LD HL,CHART
38B8  06 60                   LD B,96
```

```
38BA  C5              CRCHS1: PUSH BC
38BB  E5                      PUSH HL
38BC  4E                      LD C,(HL)
38BD  23                      INC HL
38BE  CF                      RST 8;DEHL
                      ;       LD E,(HL);      LOADING REGISTERS WITH 5 CHS
                      ;       INC HL
                      ;       LD D,(HL)
                      ;       INC HL
38BF  7E                      LD A,(HL)
38C0  23                      INC HL
38C1  66                      LD H,(HL)
38C2  6F                      LD L,A
38C3  06 08                   LD B,8
38C5  AF              CRCHS2: XOR A
38C6  CB 14                   RL H;           SETTING UP EACH BYTE OF PATTERN
38C8  1F                      RRA
38C9  CB 15                   RL L
38CB  1F                      RRA
38CC  CB 12                   RL D
38CE  1F                      RRA
38CF  CB 13                   RL E
38D1  1F                      RRA
38D2  CB 11                   RL C
38D4  1F                      RRA
38D5  D3 01                   OUT (PORTDO),A
38D7  10 EC                   DJNZ CRCHS2
38D9  E1                      POP HL
38DA  0E 05                   LD C,5
38DC  09                      ADD HL,BC;      ADVANCE 5 BYTES
38DD  C1                      POP BC
38DE  10 DA                   DJNZ CRCHS1
38E0  C9                      RET
38E1  CD 38AF         CNTRY:  CALL CRCHST;    SET INTERNATIONAL CODES
38E4  CD 2F9B                 CALL GETCH
38E7  E6 07                   AND 7
38E9  C8                      RET Z
38EA  FE 06                   CP 6
38EC  D0                      RET NC
38ED  47                      LD B,A
38EE  21 3927                 LD HL,CTABLE-1
38F1  3D                      DEC A
38F2  28 0A                   JR Z,CNTRY3
38F4  11 000C                 LD DE,12
38F7  21 3910                 LD HL,CTABLE-24
38FA  19              CNTRY2: ADD HL,DE
38FB  10 FD                   DJNZ CNTRY2
38FD  43                      LD B,E
38FE  11 3958         CNTRY3: LD DE,ADDVDP
3901  C5              CNTRY4: PUSH BC
3902  EB                      EX DE,HL
3903  7E                      LD A,(HL)
3904  23                      INC HL
3905  4E                      LD C,(HL)
3906  23                      INC HL
3907  E5                      PUSH HL
```

```
3908  6F                    LD L,A
3909  61                    LD H,C
390A  CD 312A               CALL ADDOUT
390D  1A                    LD A,(DE)
390E  13                    INC DE
390F  D5                    PUSH DE
3910  5F                    LD E,A
3911  16 00                LD D,0
3913  62                    LD H,D
3914  6F                    LD L,A
3915  29                    ADD HL,HL
3916  29                    ADD HL,HL
3917  19                    ADD HL,DE
3918  11 35B3               LD DE,CHART
391B  19                    ADD HL,DE
391C  06 01                 LD B,1
391E  CD 38BA               CALL CRCHS1
3921  E1                    POP HL
3922  D1                    POP DE
3923  C1                    POP BC
3924  10 DB                 DJNZ CNTRY4
3926  C9                    RET
3927  68                    DEFB 104
3928  03 04 60 61     CTABLE: DEFB 3,4,96,97,98,99,62,64,100,101,102,118
392C  62 63 3E 40
3930  64 65 66 76
3934  03 04 63 6B           DEFB 3,4,99,107,111,109,62,64,110,111,113,103
3938  6F 6D 3E 40
393C  6E 6F 71 67
3940  03 69 6A 6B           DEFB 3,105,106,107,111,108,109,100,110,111,112,113
3944  6F 6C 6D 64
3948  6E 6F 70 71
394C  72 04 20 73           DEFB 114,4,32,115,116,117,62,64,118,119,93,94
3950  74 75 3E 40
3954  76 77 5D 5E
3958  18 59 20 59    ADDVDP: DEFB 24,89,32,89,0,90,216,90,224,90,232,90,240,90
395C  00 5A D8 5A
3960  E0 5A E8 5A
3964  F0 5A
3966  00 5B D8 5B            DEFB 0,91,216,91,224,91,232,91,240,91
396A  E0 5B E8 5B
396E  F0 5B
3970  CD 3137       CRSCRN: CALL REMCUR
3973  CD 34BA               CALL GET2CH;    RTN TO SET UP PARMS FOR NEW SCREEN
3976  E6 07                 AND 7
3978  57                    LD D,A
3979  D5                    PUSH DE
397A  4F                    LD C,A
397B  06 00                 LD B,0
397D  21 FFD5               LD HL,TYPTBL
3980  09                    ADD HL,BC
3981  09                    ADD HL,BC
3982  09                    ADD HL,BC
3983  7E                    LD A,(HL)
3984  A7                    AND A
3985  CC 3B98               CALL Z,ERRB
```

```
398B  CD 34BA           CALL GET2CH
398B  01 399B           LD BC,CRSCR1
398E  C5                PUSH BC
398F  01 00CB           LD BC,SCENTR
3992  C5                PUSH BC
3993  E5                PUSH HL
3994  D5                PUSH DE
3995  3E 0D             LD A,13
3997  F5                PUSH AF
3998  C3 188F           JP SCENT4
399B  F5          CRSCR1: PUSH AF
399C  CD 34BA             CALL GET2CH
399F  CD 2F9B             CALL GETCH
39A2  A7                  AND A
39A3  47                  LD B,A
39A4  20 0A               JR NZ,CRSCR2
39A6  F1                  POP AF
39A7  F5                  PUSH AF
39AB  47                  LD B,A
39A9  E5                  PUSH HL
39AA  2A FF59             LD HL,(CHPTR)
39AD  2B                  DEC HL
39AE  77                  LD (HL),A
39AF  E1                  POP HL
39B0  F1          CRSCR2: POP AF
39B1  AF                  XOR A
39B2  BA                  CP D
39B3  28 FB               JR Z,CRSCR2
39B5  BB                  CP E
39B6  28 F8               JR Z,CRSCR2
39B8  E5                  PUSH HL
39B9  26 00               LD H,0
39BB  6B                  LD L,E
39BC  5A                  LD E,D
39BD  54                  LD D,H
39BE  1D                  DEC E
39BF  28 03               JR Z,CRSCR4
39C1  19          CRSCR3: ADD HL,DE
39C2  10 FD               DJNZ CRSCR3
39C4  EB          CRSCR4: EX DE,HL
39C5  E1                  POP HL
39C6  A7                  AND A
39C7  ED 52               SBC HL,DE
39C9  DC 3BA8             CALL C,ERRK
39CC  01 FFFB             LD BC,-5
39CF  2A FF59             LD HL,(CHPTR)
39D2  09                  ADD HL,BC
39D3  22 FF59             LD (CHPTR),HL
39D6  C1                  POP BC
39D7  79                  LD A,C
39D8  CD 39F9             CALL LOCSCR
39DB  78                  LD A,B
39DC  0F                  RRCA
39DD  0F                  RRCA
39DE  0F                  RRCA
39DF  77                  LD (HL),A
```

```
39E0  23                      INC HL
39E1  72                      LD (HL),D
39E2  23                      INC HL
39E3  72                      LD (HL),D
39E4  06 05                   LD B,5
39E6  CD 2F9B          CRSCR5: CALL GETCH
39E9  23                      INC HL
39EA  77                      LD (HL),A
39EB  10 F9                   DJNZ CRSCR5
39ED  79                      LD A,C
39EE  CD 3A0F                 CALL SWCTLA
39F1  CD 35A1                 CALL SMODE
39F4  3E 0B            INTATT: LD A,11
39F6  C3 1876          LSCENT: JP SCENT
39F9  E6 07            LOCSCR: AND 7;         CONVERTS SCREEN NO TO LOCATION
39FB  5F                      LD E,A
39FC  87                      ADD A,A
39FD  87                      ADD A,A
39FE  87                      ADD A,A
39FF  87                      ADD A,A
3A00  93                      SUB E
3A01  5F                      LD E,A
3A02  21 FF5D                 LD HL,SCRNO
3A05  16 00                   LD D,0
3A07  19                      ADD HL,DE
3A08  C9                      RET
3A09  CD 3137          SWCTL:  CALL REMCUR
3A0C  CD 2F9B                 CALL GETCH;     SWITCHES CONTROL TO VIRTUAL SCRN
3A0F  CD 39F9          SWCTLA: CALL LOCSCR
3A12  1E 07                   LD E,7
3A14  19                      ADD HL,DE
3A15  7E                      LD A,(HL)
3A16  ED 52                   SBC HL,DE
3A18  A7                      AND A
3A19  CC 3BA0                 CALL Z,ERRF;    SCREEN IS NOT DEFINED
3A1C  22 FF5B                 LD (CURSCR),HL
3A1F  E5                      PUSH HL;        SET UP IX AS POINTER
3A20  DD E1                   POP IX
3A22  3E 06                   LD A,6
3A24  DD CB 00 A6             RES 4,(IX+0)
3A28  18 CC                   JR LSCENT
3A2A  2A 3A51          TXSIZE: LD HL,(TSCRSZ); FND AVAILABLE SPACE TEXT SCREEN
3A2D  18 03                   JR SZCOM
3A2F  2A 3A53          G2SIZE: LD HL,(G5CRSZ); FND AVAILABLE SPACE GII SCREEN
3A32  7C               SZCOM:  LD A,H;         X/Y OF ORIGIN IN D/E
3A33  92                      SUB D
3A34  DC 3BA8                 CALL C,ERRK
3A37  47                      LD B,A
3A38  2C                      INC L
3A39  A7                      AND A
3A3A  4B                      LD C,E
3A3B  5D                      LD E,L
3A3C  21 0000                 LD HL,0
3A3F  54                      LD D,H
3A40  28 03                   JR Z,SZCOM3
3A42  19               SZCOM2: ADD HL,DE
```

```
3A43  10 FD                   DJNZ SZCOM2
3A45  7B              SZCOM3: LD A,E
3A46  F5                      PUSH AF
3A47  3D                      DEC A
3A48  91                      SUB C
3A49  DC 3BA8                 CALL C,ERRK
3A4C  3C                      INC A
3A4D  4F                      LD C,A
3A4E  09                      ADD HL,BC
3A4F  F1                      POP AF
3A50  C9                      RET
3A51  27 17           TSCRSZ: DEFB 39,23;     MAX COL/LN NO
3A53  1F 17           GSCRSZ: DEFB 31,23
3A55  CD 3CF1         VINT:   CALL SPRCYC
3A58  3A FF58                 LD A,(VINTFG)
3A5B  CB 7F                   BIT 7,A
3A5D  C0                      RET NZ
3A5E  CD 3D21                 CALL SPRCYM
3A61  21 FE53                 LD HL,VCOUNT
3A64  35                      DEC (HL)
3A65  C0                      RET NZ
3A66  36 16                   LD (HL),22
3A68  DD 2A FF5B              LD IX,(CURSCR)
3A6C  C3 3141                 JP CUFLSH
3A6F  E5              BSLOAD: PUSH HL;        ENTRY FOR CHS SUPPLIED IN A
3A70  D5                      PUSH DE
3A71  21 FF58                 LD HL,VINTFG
3A74  ED 5B FF59              LD DE,(CHPTR)
3A78  CB 46                   BIT 0,(HL);     IS IT 1ST CHARACTER
3A7A  20 03                   JR NZ,GETST1
3A7C  11 FE3F         GETSTA: LD DE,BSSTR
3A7F  12              GETST1: LD (DE),A
3A80  13                      INC DE
3A81  ED 53 FF59              LD (CHPTR),DE
3A85  CB 46                   BIT 0,(HL)
3A87  20 31                   JR NZ,CONSTR
3A89  FE 20                   CP 32
3A8B  38 09                   JR C,GETST3
3A8D  21 FE3F         GETST2: LD HL,BSSTR;    STRING COMPLETE
3A90  22 FF59                 LD (CHPTR),HL
3A93  C3 2FA6                 JP DISP1
3A96  A7              GETST3: AND A
3A97  28 08                   JR Z,GETST4;    CODE IS NULL
3A99  CB C6                   SET 0,(HL)
3A9B  FE 1B                   CP 27;          SEE IF CODE IS ESCAPE
3A9D  20 05                   JR NZ,GETST5
3A9F  CB CE                   SET 1,(HL)
3AA1  D1              GETST4: POP DE
3AA2  E1                      POP HL
3AA3  C9                      RET
3AA4  21 2F2D         GETST5: LD HL,CTLLEN
3AA7  5F              GETST6: LD E,A
3AA8  16 00                   LD D,0
3AAA  19                      ADD HL,DE
3AAB  7E                      LD A,(HL)
3AAC  67                      LD H,A
```

```
3AAD  17                    RLA
3AAE  DC 3AEA               CALL C,DEVSP;   THE CODE IS DEVICE DEPENDENT
3AB1  6C                    LD L,H
3AB2  25              GETST7: DEC H;        SETTING UP LENGTHER
3AB3  22 FF56               LD (LENLO),HL
3AB6  28 D5                 JR Z,GETST2
3AB8  18 E7                 JR GETST4
3ABA  CB 4E           CONSTR: BIT 1,(HL);   CHECK IF CH AFTER ESC
3ABC  28 1D                 JR Z,PARTST
3ABE  CB 8E                 RES 1,(HL)
3AC0  CB AF                 RES 5,A;        ENSURE LETTER FOLLOWS ESC
3AC2  FE 5B                 CP 91
3AC4  D4 3B9A               CALL NC,ERRC
3AC7  FE 41                 CP 65
3AC9  DC 3B9A               CALL C,ERRC
3ACC  1B                    DEC DE;         PUT IN BSSTR
3ACD  12                    LD (DE),A
3ACE  CB D6                 SET 2,(HL)
3AD0  FE 58                 CP 88;          CHECK FOR ESC X
3AD2  28 CD                 JR Z,GETST4
3AD4  CB 96                 RES 2,(HL)
3AD6  21 2F40               LD HL,ESCLEN-65
3AD9  18 CC                 JR GETST6;      FIND LENGTH OF REM OF STRING
3ADB  CB 56           PARTST: BIT 2,(HL);   CHECK IF ESC X SEQUENCE
3ADD  28 06                 JR Z,CHST
3ADF  36 00                 LD (HL),0
3AE1  E6 1F                 AND 31
3AE3  18 97                 JR GETSTA
3AE5  2A FF56         CHST:   LD HL,(LENLO);  CH IS PART OF STRING
3AE8  18 C8                 JR GETST7
3AEA  DD E5           DEVSP:  PUSH IX
3AEC  DD 2A FF5B            LD IX,(CURSCR)
3AF0  3E 0F                 LD A,15
3AF2  CD 1876               CALL SCENT
3AF5  DD E1                 POP IX
3AF7  C9                    RET
3AF8  CB 6C           DVSPTX: BIT 5,H
3AFA  CC 3B9C         DVSPGT: CALL Z,ERRD
3AFD  7C                    LD A,H
3AFE  E6 0F                 AND 15
3B00  67                    LD H,A
3B01  C9                    RET
3B02  CB 74           DVSPG2: BIT 6,H
3B04  18 F4                 JR DVSPGT
3B06  79              DVDEGT: LD A,C
3B07  D6 37                 SUB 55
3B09  30 05                 JR NC,DVDGT2
3B0B  C6 2C                 ADD A,44
3B0D  38 01                 JR C,DVDGT2
3B0F  79                    LD A,C
3B10  21 3B14         DVDGT2: LD HL,DSTBL-2
3B13  C3 2FC4               JP NXTLVL
3B16  344E            DSTBL:  DEFW POINT
3B18  354E                    DEFW VCT
3B1A  3C51                    DEFW SPCTLB
3B1C  3B4E                    DEFW CRCGT
```

```
3B1E  3BBC                    DEFW SETCOL
3B20  3E3B                    DEFW SPPARM
3B22  3E09                    DEFW CRSPR
3B24  3E8C                    DEFW MVSPR
3B26  3FAF                    DEFW WINDOW
3B28  3C2D                    DEFW ATTR
3B2A  38E1                    DEFW CNTRY
3B2C  34D4                    DEFW GRREAD
3B2E  00 0B 20 80       CCHTBL: DEFB 0,11,32,128,128,10,129,155,101,11,147,155
3B32  80 0A 81 9B
3B36  65 0B 93 9B
3B3A  00 0F 00 80              DEFB 0,15,0,128,0,15,0,32,1,15,0,32,2,15,0,32,3,15,0,32
3B3E  00 0F 00 20
3B42  01 0F 00 20
3B46  02 0F 00 20
3B4A  03 0F 00 20
3B4E  CD 2F9B           CRCGT:  CALL GETCH;     CREATE CH.VDP
3B51  E6 07                     AND 7
3B53  16 00                     LD D,0
3B55  5F                        LD E,A
3B56  FE 03                     CP 3; SEE IF SPRITE PATTERN BLOCK
3B58  38 0F                     JR C,CRCGT2
3B5A  28 02                     JR Z,CRCGT1
3B5C  16 02                     LD D,2
3B5E  3A FF55           CRCGT1: LD A,(SMBYTE);  CHECK SIZE OF SPRITE
3B61  E6 02                     AND 2
3B63  92                        SUB D
3B64  C4 3BB0                   CALL NZ,ERRJ
3B67  57                        LD D,A
3B68  7B                        LD A,E
3B69  87                CRCGT2: ADD A,A
3B6A  87                        ADD A,A
3B6B  5F                        LD E,A
3B6C  21 3B2E                   LD HL,CCHTBL
3B6F  19                        ADD HL,DE
3B70  4E                        LD C,(HL)
3B71  23                        INC HL
3B72  46                        LD B,(HL)
3B73  23                        INC HL
3B74  CD 2F9B                   CALL GETCH
3B77  BE                        CP (HL);        CHECKING RANGE OF CH/PAT NO
3B78  DC 3B9E                   CALL C,ERRE;    0=NORMAL CH
3B7B  23                        INC HL;         1=UDG 2=UDG COLOUR 3=SZ 0 SPPAT
3B7C  BE                        CP (HL);        4=SZ 1 BLOCK 1 5=SZ 1 BLOCK 2
3B7D  D4 3B9E                   CALL NC,ERRE;   6=SZ 1 BLOCK 3 7=SZ 1 BLOCK 4
3B80  CB 7E                     BIT 7,(HL);
3B82  20 02                     JR NZ,CRCGT3;   NEED TO MULT PAT NO BY 4 FOR SIZE 1 SPPAT
3B84  87                        ADD A,A
3B85  87                        ADD A,A
3B86  5F                CRCGT3: LD E,A
3B87  EB                        EX DE,HL
3B88  09                        ADD HL,BC
3B89  06 08             CRCGT4: LD B,8
3B8B  CD 3127           CRCGT5: CALL X80UTA;    SETS UP VDP WRITE ADDRESS
3B8E  CD 2F9B           CRCGT6: CALL GETCH
3B91  D3 01                     OUT (PORTDO),A
```

```
3B93  10 F9                 DJNZ CRCGT6
3B95  C9                    RET
3B96  EF 32           ERRA: DEFB 239,50;   DOT OUTSIDE VIRTUAL SCREEN
3B98  EF 33           ERRB: DEFB 239,51;   SCREEN TYPE NOT IN TYPE TABLE
3B9A  EF 34           ERRC: DEFB 239,52;   INVALID ESC X CTRL SEQUENCE
3B9C  EF 39           ERRD: DEFB 239,57;   COMMAND NOT VALID FOR DEVICE
3B9E  EF 3B           ERRE: DEFB 239,59;   INVALID UDG/UDG TYPE
3BA0  EF 3A           ERRF: DEFB 239,58;   SWITCH TO ABSENT VIRT.SCRN.
3BA2  EF 22           ERRH: DEFB 239,34;   SPRITE NOT 1-32
3BA4  EF 22           ERRG: DEFB 239,34;   SPRITE PAT/FAM NOT IN RANGE
3BA6  EF 30           ERRI: DEFB 239,48;   SPRITE POS NOT IN RANGE
3BA8  EF 30           ERRK: DEFB 239,48;   INVALID SCREEN SIZE PARAM
3BAA  EF 30           ERRL: DEFB 239,48;   INVALID SCREEN POSITION PARAM
3BAC  EF 30           ERRM: DEFB 239,48;   INVALID PARAM
3BAE  EF 3C           ERRN: DEFB 239,60;   SPRITE NOT ALIVE
3BB0  EF 3B           ERRJ: DEFB 239,59;   VDP/SPRITE SZ MISMATCH
3BB2  07              OUT128: RLCA
3BB3  0F                      RRCA
3BB4  D3 01                   OUT (PORTDO),A
3BB6  C9                      RET
3BB7  07              IN130:  RLCA
3BB8  0F                      RRCA
3BB9  DB 01                   IN A,(PORTDI)
3BBB  C9                      RET
3BBC  CD 2F9B         SETCOL: CALL GETCH;    WHICH COLOUR
3BBF  E6 0F                   AND 15
3BC1  FE 05                   CP 5
3BC3  D4 3BAC                 CALL NC,ERRM
3BC6  21 3BD9                 LD HL,COLTBL
3BC9  CD 0689                 CALL FINDJP
3BCC  E5                      PUSH HL
3BCD  CD 2F9B         GET15E: CALL GETCH
3BD0  5F                      LD E,A
3BD1  DD E5           GET15X: PUSH IX;       ENTRY FROM SPTOBK
3BD3  E1                      POP HL
3BD4  01 000A                 LD BC,10
3BD7  09                      ADD HL,BC;     HL OVER IX+10
3BD8  C9                      RET
3BD9  3C07            COLTBL: DEFW PPAPER;   PARAM1=0
3BDB  3C28                    DEFW PINK;     PARAM1=1
3BDD  3BFA                    DEFW NPAPER;   PARAM1=2
3BDF  3C20                    DEFW NINK;     PARAM1=3
3BE1  3C02                    DEFW BORDER;   PARAM1=4
3BE3  AF              INATGT: XOR A;         STD ATTRBS. VDP CHIP
3BE4  DD 77 0B                LD (IX+11),A;  INV/OVER BITS
3BE7  DD 77 0D                LD (IX+13),A
3BEA  3E F1                   LD A,241;      WHITE ON BLACK
3BEC  DD 77 0A                LD (IX+10),A;  COLOUR BYTES
3BEF  DD 77 0C                LD (IX+12),A
3BF2  18 1C                   JR PPAP4;      SET BORDER & O/P TO VDP
3BF4  CD 3BCD         BPAPER: CALL GET15E;   BOTH PAPERS
3BF7  CD 3C07                 CALL PPAPER
3BFA  23              NPAPER: INC HL;        NON PRINT PAPER
3BFB  23                      INC HL
3BFC  ED 67           COLOUR: RRD
3BFE  7B                      LD A,E
```

```
3BFF  ED 6F                   RLD
3C01  C9                      RET
3C02  2B              BORDER: DEC HL;        BORDER COLOUR
3C03  01 3C0F                 LD BC,PPAP3A
3C06  C5                      PUSH BC
3C07  CD 3BFC         PPAPER: CALL COLOUR;   PRINT PAPER
3C0A  DD CB 00 6E     PPAP3:  BIT 5,(IX+0);  TEST FOR 62/TX SCREEN
3C0E  C0                      RET NZ
3C0F  7E              PPAP3A: LD A,(HL)
3C10  DD 77 09        PPAP4:  LD (IX+9),A
3C13  D3 02                   OUT (PORTA0),A
3C15  3E 87                   LD A,135
3C17  D3 02                   OUT (PORTA0),A
3C19  C9                      RET
3C1A  CD 3BCD         BINK:   CALL GET15E;   BOTH INKS
3C1D  CD 3C28                 CALL PINK
3C20  23              NINK:   INC HL;        NON-PRINT INK
3C21  23                      INC HL
3C22  ED 6F           NINK2:  RLD
3C24  7B                      LD A,E
3C25  ED 67                   RRD
3C27  C9                      RET
3C28  CD 3C22         PINK:   CALL NINK2;    PRINT INK
3C2B  18 DD                   JR PPAP3
3C2D  CD 3BCD         ATTR:   CALL GET15E;   PARAM 0=PINVERSE 1=POVER 2=NINVERSE
3C30  E6 0F                   AND 15;  3=NOVER
3C32  FE 04                   CP 4
3C34  D4 3BAC                 CALL NC,ERRM
3C37  23                      INC HL
3C38  FE 02                   CP 2
3C3A  38 02                   JR C,SRAT3
3C3C  23                      INC HL
3C3D  23                      INC HL
3C3E  0F              SRAT3:  RRCA
3C3F  3E 08                   LD A,8
3C41  30 01                   JR NC,SRAT4
3C43  87                      ADD A,A
3C44  4F              SRAT4:  LD C,A
3C45  B6                      OR (HL)
3C46  77                      LD (HL),A
3C47  CD 2F9B                 CALL GETCH
3C4A  E6 01                   AND 1
3C4C  C0                      RET NZ
3C4D  79                      LD A,C
3C4E  AE                      XOR (HL)
3C4F  77                      LD (HL),A
3C50  C9                      RET
3C51  CD 34BA         SPCTLB: CALL GET2CH;   HANDLES SPRITE CONTROL BYTES
3C54  7B              SPRCEN: LD A,E;        PARAM 1 IS BYTE TO CONTRL
3C55  E6 07                   AND 7;         0=SPEED 1=MVDIST 2=NO OF SPRITES
3C57  FE 06                   CP 6;          3=NO OF CIRCLING SPRITES
3C59  28 4D                   JR Z,SMGSZ;    6=MAG & SZ
3C5B  D4 3BAC                 CALL NC,ERRM;  4=PLOT SPRITE NO
3C5E  4F                      LD C,A;        5=NO OF AUTO MOVE SPRITES
3C5F  06 00                   LD B,0
3C61  21 FE4C                 LD HL,SPBASE
```

```
3C64  09                    ADD HL,BC
3C65  FE 03                 CP 3
3C67  38 09                 JR C,SPCTL3
3C69  3A FE4E               LD A,(NOSPR);  ENSURE CIRCLING/PLOT/AUTO SPRITES POSSIBLE
3C6C  BA                    CP D
3C6D  DC 3BB0               CALL C,ERRJ
3C70  72              SPCTL2: LD (HL),D
3C71  C9              MKSPCE: RET;         REMOVE LABEL WHEN ROBERT WRITES PROPER RTN
3C72  FE 02           SPCTL3: CP 2
3C74  20 FA                 JR NZ,SPCTL2
3C76  7A                    LD A,D
3C77  FE 21                 CP 33;         ALTER NO OF SPRITES
3C79  D4 3BAC               CALL NC,ERRM
3C7C  72                    LD (HL),D
3C7D  AF                    XOR A
3C7E  06 03                 LD B,3
3C80  23              SPCTL4: INC HL;      SET CIRCLING/PLOT/AUTO TO ZERO
3C81  77                    LD (HL),A
3C82  10 FC                 DJNZ SPCTL4
3C84  5A                    LD E,D
3C85  21 7F00         SPRINT: LD HL,7F00H
3C88  CD 312A               CALL ADDOUT
3C8B  21 FE55               LD HL,SPRTBL
3C8E  7B                    LD A,E
3C8F  A7                    AND A
3C90  28 0F                 JR Z,SPRINB
3C92  0E 06                 LD C,6
3C94  09                    ADD HL,BC
3C95  0C                    INC C
3C96  36 FC           SPRINA: LD (HL),252
3C98  23                    INC HL
3C99  70                    LD (HL),B
3C9A  CD 3CC2               CALL INDSPR
3C9D  09                    ADD HL,BC
3C9E  1D                    DEC E
3C9F  20 F5                 JR NZ,SPRINA
3CA1  3E D0           SPRINB: LD A,208
3CA3  CD 3BB2               CALL OUT128
3CA6  16 00                 LD D,0
3CA8  7A              SMGSZ:  LD A,D
3CA9  E6 03                 AND 3
3CAB  32 FF55         SMGSZ2: LD (SMBYTE),A
3CAE  2A FF5B               LD HL,(CURSCR)
3CB1  4F                    LD C,A
3CB2  7E                    LD A,(HL)
3CB3  E6 E0                 AND 224
3CB5  FE 20                 CP 32
3CB7  C0                    RET NZ
3CB8  3E C0                 LD A,192
3CBA  B1                    OR C
3CBB  D3 02                 OUT (PORTA0),A
3CBD  3E 81                 LD A,129
3CBF  D3 02                 OUT (PORTA0),A
3CC1  C9                    RET
3CC2  06 02           INDSPR: LD B,2;      INITIALISES VDP AREA
3CC4  3E C1                 LD A,193
```

```
3CC6  CD 3BB2          INDSP2: CALL OUT128
3CC9  AF                       XOR A
3CCA  CD 3BB2                  CALL OUT128
3CCD  3E FC                    LD A,252
3CCF  10 F5                    DJNZ INDSP2
3CD1  C9                       RET
3CD2  7E               CHKMSP: LD A,(HL);     SEE IF X OR Y MOVE FOR SPRITE
3CD3  23               CHKMS1: INC HL;        ENTRY FROM MOVE SPRITE
3CD4  56                       LD D,(HL)
3CD5  23                       INC HL
3CD6  5E                       LD E,(HL)
3CD7  23                       INC HL
3CD8  A7                       AND A
3CD9  C8                       RET Z
3CDA  E5                       PUSH HL
3CDB  6F                       LD L,A
3CDC  07                       RLCA
3CDD  9F                       SBC A,A
3CDE  67                       LD H,A
3CDF  19                       ADD HL,DE
3CE0  7B                       LD A,E
3CE1  AD                       XOR L
3CE2  E6 F0                    AND 240
3CE4  28 02                    JR Z,CHKMS2
3CE6  0E 01                    LD C,1
3CE8  EB               CHKMS2: EX DE,HL
3CE9  E1                       POP HL
3CEA  2B                       DEC HL
3CEB  73                       LD (HL),E
3CEC  2B                       DEC HL
3CED  72                       LD (HL),D
3CEE  23                       INC HL
3CEF  23                       INC HL
3CF0  C9                       RET
3CF1  2A FE4B          SPRCYC: LD HL,(SPEED); SPRITE MOVE INTERRUPT CYCLE RTN
3CF4  2D                       DEC L
3CF5  20 01                    JR NZ,SPRCY1
3CF7  6C                       LD L,H
3CF8  22 FE4B          SPRCY1: LD (SPEED),HL
3CFB  C0                       RET NZ
3CFC  3A FE51                  LD A,(MVNO);   THE NO OF SPRITES THAT ARE CONTROLLED
3CFF  A7                       AND A
3D00  C8                       RET Z
3D01  21 FE55                  LD HL,SPRTBL
3D04  47                       LD B,A
3D05  0E 00            SPRCY2: LD C,0
3D07  11 0006                  LD DE,6
3D0A  19                       ADD HL,DE
3D0B  CB 7E                    BIT 7,(HL)
3D0D  20 08                    JR NZ,SPRC2A
3D0F  ED 52                    SBC HL,DE
3D11  CD 3CD2                  CALL CHKMSP
3D14  CD 3CD2                  CALL CHKMSP
3D17  23               SPRC2A: INC HL
3D18  0D                       DEC C
3D19  20 02                    JR NZ,SPRCY3
```

```
3D1B  CB F6                   SET 6,(HL)
3D1D  23              SPRCY3: INC HL
3D1E  10 E5                   DJNZ SPRCY2
3D20  C9                      RET
3D21  DB 02           SPRCYM: IN A,(PORTAI);  VDP SPRITE UPDATE INTERRUPT
3D23  32 FE54                 LD (VDPSTS),A
3D26  3A FE4E                 LD A,(NOSPR)
3D29  A7                      AND A
3D2A  C8                      RET Z
3D2B  21 FE55                 LD HL,SPRTBL
3D2E  01 0007                 LD BC,7
3D31  09                      ADD HL,BC
3D32  47                      LD B,A
3D33  CB 76           SPRCY5: BIT 6,(HL)
3D35  28 52                   JR Z,SPRCY8
3D37  CB B6                   RES 6,(HL)
3D39  C5                      PUSH BC
3D3A  4E                      LD C,(HL)
3D3B  3A FE4E                 LD A,(NOSPR)
3D3E  90                      SUB B
3D3F  87                      ADD A,A
3D40  87                      ADD A,A
3D41  5F                      LD E,A
3D42  16 7F                   LD D,127
3D44  EB                      EX DE,HL
3D45  CD 312A                 CALL ADDOUT
3D48  EB                      EX DE,HL
3D49  E5                      PUSH HL
3D4A  2B                      DEC HL
3D4B  46                      LD B,(HL)
3D4C  2B                      DEC HL
3D4D  7E                      LD A,(HL)
3D4E  E6 F0                   AND 240
3D50  5F                      LD E,A
3D51  2B                      DEC HL
3D52  7E                      LD A,(HL)
3D53  FE 12                   CP 18
3D55  30 39                   JR NC,SPRCY9
3D57  D6 02                   SUB 2
3D59  30 04                   JR NC,SPRCY6
3D5B  C6 02                   ADD A,2
3D5D  CB F9                   SET 7,C
3D5F  B3              SPRCY6: OR E
3D60  07                      RLCA
3D61  07                      RLCA
3D62  07                      RLCA
3D63  07                      RLCA
3D64  5F                      LD E,A
3D65  2B                      DEC HL
3D66  2B                      DEC HL
3D67  7E                      LD A,(HL)
3D68  E6 F0                   AND 240
3D6A  57                      LD D,A
3D6B  2B                      DEC HL
3D6C  7E                      LD A,(HL)
3D6D  FE 0E                   CP 14
```

```
3D6F  30 1F           JR NC,SPRCY9
3D71  B2              OR D
3D72  07              RLCA
3D73  07              RLCA
3D74  07              RLCA
3D75  07              RLCA
3D76  D6 21           SUB 33
3D78  CD 3BB2         CALL OUT128
3D7B  7B              LD A,E
3D7C  CD 3BB2         CALL OUT128
3D7F  78              LD A,B
3D80  CD 3BB2         CALL OUT128
3D83  79              LD A,C
3D84  CD 3BB2         CALL OUT128
3D87  E1            SPRCY7: POP HL
3D88  C1              POP BC
3D89  11 0008       SPRCY8: LD DE,8
3D8C  19              ADD HL,DE
3D8D  10 A4           DJNZ SPRCY5
3D8F  C9              RET
3D90  CD 3CC2       SPRCY9: CALL INDSPR;    DELETE SPRITE SEE IF TOTALLY OR JUST FR VDP
3D93  21 FE4E         LD HL,NOSPR
3D96  7E              LD A,(HL)
3D97  23              INC HL
3D98  96              SUB (HL)
3D99  E1              POP HL
3D9A  C1              POP BC
3D9B  B8              CP B
3D9C  38 EB           JR C,SPRCY8
3D9E  2B              DEC HL
3D9F  36 FC           LD (HL),252
3DA1  23              INC HL
3DA2  18 E5           JR SPRCY8
3DA4  3A FE4E       GVSPNO: LD A,(NOSPR);   GET VALIDATE SPRITE NUMBER
3DA7  47              LD B,A
3DA8  CD 2F9B         CALL GETCH
3DAB  3D              DEC A
3DAC  B8              CP B
3DAD  D4 3BA2         CALL NC,ERRH
3DB0  87              ADD A,A
3DB1  87              ADD A,A
3DB2  87              ADD A,A
3DB3  4F              LD C,A
3DB4  06 00           LD B,0
3DB6  21 FE55         LD HL,SPRTBL
3DB9  09              ADD HL,BC
3DBA  C9              RET
3DBB  CD 3DA4       CRSPR1: CALL GVSPNO;    COMMON CREATE SPRITE/PICK UP RTN
3DBE  CD 2F9B       CRSP2A: CALL GETCH
3DC1  47              LD B,A
3DC2  3A FF55         LD A,(SMBYTE);  ENSURE SPR.PATTERN IS VALID FOR THIS SZ
3DC5  E6 02           AND 2
3DC7  3E 7F           LD A,127
3DC9  28 02           JR Z,CRSPR2
3DCB  3E 1F           LD A,31
3DCD  B8            CRSPR2: CP B
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```
3DCE  DC 3BA4              CALL C,ERRG
3DD1  FE 1F                CP 31
3DD3  C0                   RET NZ
3DD4  CB 00                RLC B
3DD6  CB 00                RLC B
3DD8  C9                   RET
3DD9  CD 34BA        GISPC0: CALL GET2CH;    GET INPUT SPRITE COORDS
3DDC  FE 10                CP 16
3DDE  D4 3BA6              CALL NC,ERRI;   NOT CORRECT PAGE
3DE1  EB                   EX DE,HL
3DE2  C9                   RET
3DE3  01 0020        YSPPOS: LD BC,32
3DE6  09                   ADD HL,BC;      CALCULATES Y SPRITE COORD FROM
3DE7  7D                   LD A,L;         COORD FROM ORIGIN IN HL
3DE8  2F                   CPL
3DE9  6F                   LD L,A
3DEA  7C                   LD A,H
3DEB  2F                   CPL
3DEC  67                   LD H,A
3DED  24                   INC H
3DEE  ED 42                SBC HL,BC
3DF0  CD 3DFB        XSPPOS: CALL GSMDIS;    X SP COORD FROM ORIGIN IN HL
3DF3  79                   LD A,C
3DF4  ED 44                NEG
3DF6  C6 20                ADD A,32
3DF8  4F                   LD C,A
3DF9  09                   ADD HL,BC
3DFA  C9                   RET
3DFB  01 0204        GSMDIS: LD BC,516;      GET DISP FOR SZ & MAG
3DFE  3A FF55              LD A,(SMBYTE)
3E01  0F             GSMDI1: RRCA
3E02  30 02                JR NC,GSMDI2
3E04  CB 01                RLC C
3E06  10 F9          GSMDI2: DJNZ GSMDI1
3E08  C9                   RET
3E09  CD 3DBB        CRSPR:  CALL CRSPR1;    CREATE SPRITE ROUTINE
3E0C  CD 3DD9        CRSPR3: CALL GISPC0
3E0F  C5                   PUSH BC
3E10  CD 3DF0              CALL XSPPOS
3E13  E3                   EX (SP),HL
3E14  E5                   PUSH HL
3E15  EB                   EX DE,HL
3E16  CD 3DD9              CALL GISPC0
3E19  CD 3DE3              CALL YSPPOS
3E1C  EB                   EX DE,HL
3E1D  C1                   POP BC
3E1E  CD 2F9B              CALL GETCH
3E21  4F                   LD C,A
3E22  CD 2F9B              CALL GETCH
3E25  ED 44                NEG;            REVERSE Y DIRECTION
3E27  77                   LD (HL),A
3E28  CD 3E7D              CALL LDPOS
3E2B  D1                   POP DE
3E2C  71                   LD (HL),C
3E2D  CD 3E7D              CALL LDPOS
3E30  70                   LD (HL),B
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```
3E31  23           CRSPR4: INC HL
3E32  CD 2F9B              CALL GETCH
3E35  E6 0F                AND 15
3E37  CB F7                SET 6,A
3E39  77                   LD (HL),A
3E3A  C9                   RET
3E3B  CD 2F9B      SPPARM: CALL GETCH;     CHANGE INDIVIDUAL SPRITE PARAM
3E3E  E6 0F                AND 15
3E40  FE 06                CP 6;           0=PATTERN 1=COLOUR 2= XPOS 3=YPOS
3E42  D4 3BAC              CALL NC,ERRM;   4=XSPEED 5=YSPEED
3E45  57                   LD D,A
3E46  CD 3F5D              CALL SPWELL;    ENSURE SPRITE ALIVE
3E49  CB F6                SET 6,(HL)
3E4B  2B                   DEC HL
3E4C  7A                   LD A,D
3E4D  A7                   AND A
3E4E  20 05                JR NZ,SPPAR2
3E50  CD 3DBE              CALL CRSP2A
3E53  70                   LD (HL),B
3E54  C9                   RET
3E55  3D           SPPAR2: DEC A
3E56  28 D9                JR Z,CRSPR4
3E58  01 FFFD              LD BC,-3
3E5B  0F                   RRCA
3E5C  38 02                JR C,SPPAR3
3E5E  0E FA                LD C,250
3E60  09           SPPAR3: ADD HL,BC
3E61  CD 2F9B              CALL GETCH
3E64  5F                   LD E,A
3E65  7A                   LD A,D
3E66  FE 04                CP 4
3E68  38 07                JR C,SPPAR5
3E6A  7B                   LD A,E
3E6B  28 02                JR Z,SPPAR4
3E6D  ED 44                NEG
3E6F  77           SPPAR4: LD (HL),A
3E70  C9                   RET
3E71  16 00        SPPAR5: LD D,0
3E73  EB                   EX DE,HL
3E74  FE 03                CP 3
3E76  C4 3DF0              CALL NZ,XSPPOS
3E79  CC 3DE3              CALL Z,YSPPOS
3E7C  EB                   EX DE,HL
3E7D  23           LDPOS:  INC HL;         LOADS A POSITION INTO SPRTBL
3E7E  23                   INC HL
3E7F  73                   LD (HL),E
3E80  AF                   XOR A
3E81  ED 6F                RLD
3E83  2B                   DEC HL
3E84  ED 67                RRD
3E86  7A                   LD A,D
3E87  ED 67                RRD
3E89  23                   INC HL
3E8A  23                   INC HL
3E8B  C9                   RET
3E8C  CD 2F9B      MVSPR:  CALL GETCH;     MOVE ROTATE REDIRECT SPRITE RTN
```

```
3E8F  E6 0F          AND 15;         BIT 3=PLOT AT CENTRE
3E91  57             LD D,A
3E92  CD 3F5D        CALL SPWELL
3E95  CB F6          SET 6,(HL)
3E97  2B             DEC HL
3E98  CD 2F9B        CALL GETCH
3E9B  E6 07          AND 7
3E9D  CB 4A          BIT 1,D
3E9F  28 15          JR Z,MVSPR4
3EA1  5F             LD E,A
3EA2  3A FF55        LD A,(SMBYTE)
3EA5  E6 02          AND 2
3EA7  7E             LD A,(HL)
3EA8  28 07          JR Z,MVSPR2
3EAA  E6 E0          AND 224
3EAC  83             ADD A,E
3EAD  83             ADD A,E
3EAE  83             ADD A,E
3EAF  18 02          JR MVSPR3
3EB1  E6 F8    MVSPR2: AND 248
3EB3  83       MVSPR3: ADD A,E
3EB4  77               LD (HL),A
3EB5  7B               LD A,E
3EB6  87       MVSPR4: ADD A,A
3EB7  0E 06            LD C,6
3EB9  ED 42            SBC HL,BC
3EBB  4F               LD C,A
3EBC  7A               LD A,D
3EBD  EB               EX DE,HL
3EBE  21 3F3C          LD HL,DIRSTR
3EC1  09               ADD HL,BC
3EC2  46               LD B,(HL)
3EC3  23               INC HL
3EC4  4E               LD C,(HL)
3EC5  EB               EX DE,HL
3EC6  57               LD D,A
3EC7  CB 52            BIT 2,D
3EC9  28 34            JR Z,MVSP11
3ECB  7E               LD A,(HL)
3ECC  23               INC HL
3ECD  23               INC HL
3ECE  23               INC HL
3ECF  A7               AND A
3ED0  20 01            JR NZ,MVSPR5
3ED2  7E               LD A,(HL)
3ED3  A7       MVSPR5: AND A
3ED4  28 25            JR Z,MVSP10
3ED6  CB 7F            BIT 7,A
3ED8  28 02            JR Z,MVSPR6
3EDA  ED 44            NEG
3EDC  CB 78    MVSPR6: BIT 7,B
3EDE  36 00            LD (HL),0
3EE0  28 07            JR Z,MVSPR7
3EE2  ED 44            NEG
3EE4  77               LD (HL),A
3EE5  ED 44            NEG
```

```
3EE7  18 05              JR MVSPR8
3EE9  CB 60        MVSPR7: BIT 4,B
3EEB  28 01              JR Z,MVSPR8
3EED  77                 LD (HL),A
3EEE  CB 79        MVSPR8: BIT 7,C
3EF0  28 04              JR Z,MVSPR9
3EF2  ED 44              NEG
3EF4  18 05              JR MVSP10
3EF6  CB 61        MVSPR9: BIT 4,C
3EF8  20 01              JR NZ,MVSP10
3EFA  AF                 XOR A
3EFB  2B           MVSP10: DEC HL
3EFC  2B                 DEC HL
3EFD  2B                 DEC HL
3EFE  77                 LD (HL),A
3EFF  CB 42        MVSP11: BIT 0,D
3F01  28 20              JR Z,MVSP12
3F03  3A FE4D            LD A,(MVDIST)
3F06  E6 07              AND 7
3F08  28 19              JR Z,MVSP12
3F0A  E5                 PUSH HL
3F0B  D5                 PUSH DE
3F0C  F5                 PUSH AF
3F0D  58                 LD E,B
3F0E  47                 LD B,A
3F0F  AF                 XOR A
3F10  81           MVSPA:  ADD A,C
3F11  10 FD              DJNZ MVSPA
3F13  43                 LD B,E
3F14  CD 3CD3            CALL CHKMS1
3F17  58                 LD E,B
3F18  F1                 POP AF
3F19  47                 LD B,A
3F1A  AF                 XOR A
3F1B  83           MVSPB:  ADD A,E
3F1C  10 FD              DJNZ MVSPB
3F1E  CD 3CD3            CALL CHKMS1
3F21  D1                 POP DE
3F22  E1                 POP HL
3F23  CB 5A        MVSP12: BIT 3,D;        TRAIL PRINT!
3F25  C8                 RET Z
3F26  01 0007            LD BC,7
3F29  09                 ADD HL,BC
3F2A  CD 3F4C            CALL FSPCOO
3F2D  D5                 PUSH DE
3F2E  CD 3F4C            CALL FSPCOO
3F31  CD 3DF8            CALL GSMDIS;    FINDING DISP TO CENTRE
3F34  EB                 EX DE,HL
3F35  09                 ADD HL,BC
3F36  EB                 EX DE,HL
3F37  E1                 POP HL
3F38  09                 ADD HL,BC
3F39  C3 3F6B            JP PLOTS1
3F3C  10 00 10 10  DIRSTR: DEFB 16,0,16,16,0,16,240,16,240,0
3F40  00 10 F0 10
3F44  F0 00
```

```
3F46  F0 F0 00 F0          DEFB 240,240,0,240,16,240
3F4A  10 F0
3F4C  2B            FSPCOO: DEC HL;        FINDS A SPRITE COORDINATE
3F4D  2B                    DEC HL
3F4E  AF                    XOR A
3F4F  ED 6F                 RLD
3F51  2B                    DEC HL
3F52  ED 6F                 RLD
3F54  5E                    LD E,(HL)
3F55  57                    LD D,A
3F56  ED 67                 RRD
3F58  23                    INC HL
3F59  ED 67                 RRD
3F5B  2B                    DEC HL
3F5C  C9                    RET
3F5D  CD 3DA4       SPWELL: CALL GVSPNO;   CHECK SPRITE IS VALID &ALIVE
3F60  0E 06                 LD C,6
3F62  09                    ADD HL,BC
3F63  7E                    LD A,(HL)
3F64  FE FC                 CP 252
3F66  23                    INC HL
3F67  C0                    RET NZ
3F68  CD 3BAE               CALL ERRN
3F6B  E5            PLOTS1: PUSH HL
3F6C  21 3451               LD HL,DOT62
3F6F  18 04                 JR COPLFN
3F71  E5            FNDPT:  PUSH HL;       FINDS A SPECIFIC DOT ON SCREEN
3F72  21 34B3               LD HL,GRRD62
3F75  E3            COPLFN: EX (SP),HL;    COMMON PLOT/FIND ROUTINE
3F76  F1                    POP AF
3F77  C5                    PUSH BC
3F78  E5                    PUSH HL
3F79  D5                    PUSH DE
3F7A  F5                    PUSH AF
3F7B  01 3F9B               LD BC,COEND
3F7E  C5                    PUSH BC
3F7F  01 0020               LD BC,32
3F82  A7                    AND A
3F83  ED 42                 SBC HL,BC
3F85  3F                    CCF
3F86  D0                    RET NC
3F87  7C                    LD A,H
3F88  A7                    AND A
3F89  C0                    RET NZ
3F8A  EB                    EX DE,HL
3F8B  ED 42                 SBC HL,BC
3F8D  3F                    CCF
3F8E  D0                    RET NC
3F8F  7C                    LD A,H
3F90  A7                    AND A
3F91  C0                    RET NZ
3F92  7D                    LD A,L
3F93  57                    LD D,A
3F94  FE C0                 CP 192
3F96  D0                    RET NC
3F97  E1                    POP HL
```

```
3F98  23                    INC HL
3F99  E3                    EX (SP),HL
3F9A  E9                    JP (HL)
3F9B  D1              COEND:  POP DE
3F9C  D1              COEND1: POP DE
3F9D  E1                    POP HL
3F9E  C1                    POP BC
3F9F  C9                    RET
3FA0  42              WINADD: LD B,D;       THIS RTN UPDATES THE SPRTBL X,Y DURING
3FA1  4B                    LD C,E;         WINDOWING
3FA2  56                    LD D,(HL)
3FA3  23                    INC HL
3FA4  5E                    LD E,(HL)
3FA5  EB                    EX DE,HL
3FA6  09                    ADD HL,BC
3FA7  EB                    EX DE,HL
3FAB  73                    LD (HL),E
3FA9  2B                    DEC HL
3FAA  72                    LD (HL),D
3FAB  23                    INC HL
3FAC  23                    INC HL
3FAD  23                    INC HL
3FAE  C9                    RET
3FAF  CD 2F9B         WINDOW: CALL GETCH;   SPRITE WINDOW RTN
3FB2  EE 04                 XOR 4
3FB4  E6 07                 AND 7
3FB6  87                    ADD A,A
3FB7  4F                    LD C,A
3FB8  06 00                 LD B,0
3FBA  21 3F3C               LD HL,DIRSTR;  GET DIRECTION AND REVERSE IT
3FBD  09                    ADD HL,BC
3FBE  7E                    LD A,(HL)
3FBF  23                    INC HL
3FC0  5F              WIND2:  LD E,A
3FC1  07                    RLCA
3FC2  9F                    SBC A,A
3FC3  57                    LD D,A
3FC4  7E                    LD A,(HL)
3FC5  6F              WIND3:  LD L,A
3FC6  07                    RLCA
3FC7  9F                    SBC A,A
3FC8  67                    LD H,A
3FC9  E5                    PUSH HL
3FCA  60                    LD H,B
3FCB  68                    LD L,B
3FCC  CD 2F9B               CALL GETCH
3FCF  47                    LD B,A
3FD0  19              WIND4:  ADD HL,DE
3FD1  10 FD                 DJNZ WIND4
3FD3  D1                    POP DE
3FD4  E5                    PUSH HL
3FD5  60                    LD H,B
3FD6  68                    LD L,B
3FD7  47                    LD B,A
3FD8  19              WIND5:  ADD HL,DE;    THESE LAST TWO CONVERT DIR TO DISTANCE
3FD9  10 FD                 DJNZ WIND5
```

```
3FDB  EB                      EX DE,HL
3FDC  21 FE54                 LD HL,SPRTBL-1
3FDF  3A FE4E                 LD A,(NOSPR)
3FE2  3C                      INC A
3FE3  C1              WIND6:  POP BC
3FE4  3D              WIND7:  DEC A
3FE5  C8                      RET Z
3FE6  C5                      PUSH BC
3FE7  23                      INC HL
3FE8  01 0006                 LD BC,6
3FEB  09                      ADD HL,BC
3FEC  CB 7E                   BIT 7,(HL)
3FEE  23                      INC HL
3FEF  20 F2                   JR NZ,WIND6
3FF1  CB F6                   SET 6,(HL)
3FF3  ED 42                   SBC HL,BC
3FF5  CD 3FA0                 CALL WINADD
3FF8  D1                      POP DE
3FF9  C5                      PUSH BC
3FFA  CD 3FA0                 CALL WINADD
3FFD  D1                      POP DE
3FFE  18 E4                   JR WIND7

                      ;
                      END
```

Macros:

Symbols:

ABS	0E56	ACC1	FDCC	ACCSTA	128F	ADD	0E86
ADDOU1	312E	ADDOUT	312A	ADDVDP	3958	ADJDES	35F9
ADJVAL	0C4F	ADLABE	FDBE	AE	3C45	ALIST	1FA5
ALOP1	13F3	ALPHA	3B87	ANDACC	209A	APROG	FDB7
ARRTOP	FACC	ASBYTE	FDA8	ASC	3F4B	ASTACK	FD6D
ATG2	3238	ATG2A	3256	ATN	241D	ATNT2	2452
ATTR	3C2D	AUTOCT	FD7B	AUTOIN	FD77	AUTOSC	33D4
AUTOST	FD79	BACKSP	3318	BASBOT	FAAA	BASELI	FACF
BASEM	FDC7	BASENT	025D	BASIC	0259	BASIC0	0244
BASIC1	0244	BASIC2	0250	BASIC4	024A	BASICS	0205
BASLNP	FAD1	BASTOP	FAA7	BASTPO	FAAC	BASTPG	FAA9
BAUDST	0D3C	BCDEC	0DD0	BEGIN	1C33	BELL	0953
BIND1	0DE4	BINK	3C1A	BINTOA	20FD	BLOCK	35C9
BORDER	3C02	BPAPER	3BF4	BREAIO	0CF3	BREAK	FD81
BREAKK	09B0	BREAKM	09F2	BSLOAD	3A6F	BSSTR	FE3F
BSTPHL	0679	CALCBO	FA7F	CALCST	FA81	CALLEN	1B43
CAPITA	3980	CARAC	3D0B	CARRTN	32FD	CASBAU	FD5F
CCHTBL	3B2E	CCOUNT	0020	CEND	2FC8	CHAN	FE14
CHART	35B3	CHKMS1	3CD3	CHKMS2	3CEB	CHKMSP	3CD2
CHKP02	303F	CHKPOS	303C	CHKS30	3296	CHKST1	32A1
CHKSTK	3299	CHKX	3045	CHKY	304C	CHOUT	1B6A
CHPTR	FF59	CHR$	0A3A	CHR0	0A43	CHR1	0A41
CHRD62	34FA	CHRDS	153A	CHRDTX	352C	CHREAD	3536
CHRG2B	3500	CHRG2C	3505	CHRG2D	351D	CHRG2E	3521
CHRG2F	3525	CHRG2X	3514	CHST	3AE5	CLOCK	FD57
CLS	326B	CLS1	327B	CLSA	326E	CNTRY	38E1
CNTRY2	38FA	CNTRY3	38FE	CNTRY4	3901	CODETE	1BE3
COEND	3F9B	COEND1	3F9C	COLOUR	3BFC	COLTBL	3BD9
COMAD	FDBC	COMMAN	FD82	COMMEN	FDBB	COMP$	3F5B
COMP5	3F8A	COMPAC	0FEA	COMPAO	115D	COMPAR	1163
COMPBC	11EC	COMPST	1BC4	CONSTR	3ABA	CONTAD	FD6A
CONTFL	FD69	CONTPG	FD6C	COORD	33FA	COPLFN	3F75
COPY	FDDE	COPYAC	12F3	COPYDO	04B0	CORECS	0EE3
COSINE	137D	COTXG2	315F	CRCGT	3B4E	CRCGT1	3B5E
CRCGT2	3B69	CRCGT3	3B86	CRCGT4	3B89	CRCGT5	3B8B
CRCGT6	3B8E	CRCHS1	38BA	CRCHS2	38C5	CRCHST	38AF
CRLF	001B	CRNTPG	FAD3	CRSCR1	399B	CRSCR2	39B0
CRSCR3	39C1	CRSCR4	39C4	CRSCR5	39E6	CRSCRN	3970
CRSP2A	3DBE	CRSPR	3E09	CRSPR1	3DBB	CRSPR2	3DCD
CRSPR3	3E0C	CRSPR4	3E31	CTABLE	3928	CTL01	2EEF
CTL02	2EF1	CTL03	2EF3	CTL04	2EF5	CTL05	2EF7
CTL06	2EF9	CTL07	2EFB	CTL08	2EFD	CTL09	2EFF
CTL10	2F01	CTL11	2F03	CTL12	2F05	CTL13	2F07
CTL14	2F09	CTL15	2F0B	CTL16	2F0D	CTL17	2F0F
CTL18	2F11	CTL19	2F13	CTL20	2F15	CTL21	2F17
CTL22	2F19	CTL23	2F1B	CTL24	2F1D	CTL25	2F1F
CTL26	2F21	CTL27	2F23	CTL28	2F25	CTL29	2F27
CTL30	2F29	CTL31	2F2B	CTLLEN	2F2D	CTLTBL	2EED
CTRBAD	FA52	CTYSLT	FB45	CUFLG2	31E4	CUFLSH	3141
CUFLTX	31D1	CURLAB	FDC9	CURSCR	FF5B	CURSOF	32D8
CURSON	32D1	CURSUP	330A	CURSXY	32E1	CURUP1	330D
DADD	FDA6	DATAAD	FB46	DATALA	FDC3	DATAPG	FB48
DBLABE	FDC6	DBYTE	FDAA	DDBCM	05D1	DECPG	06ED
DELET1	06CF	DELETE	06C7	DELLN	3360	DELLN1	3363

DELSPR	FE52	DESAVE	FB49	DESTAC	1274	DETPN	06E7
DETYPE	FDAF	DEVDEP	3112	DEVSP	3AEA	DIGIT	3B96
DIROUT	08EB	DIRSTR	3F3C	DISAD	FDB1	DISP1	2FA6
DIV10	0E3D	DIVBY1	0E28	DIVIDE	109E	DJVL4	0C9D
DLINL2	33BE	DLINLN	33A5	DLSPNO	FE4F	DODIM	331F
DOJUMP	3E38	DONIB	0FBE	DOTBYE	343F	DOTBYT	342F
DOT62	3451	DOT621	345E	DOT624	3481	DOT625	3484
DOT626	3488	DOT627	3489	DOT62A	348F	DOT62B	34AA
DOT62C	34AB	DOTO62	33FD	DOTO6E	340E	DPROG	FDB3
DSTBL	3B16	DTYPE	FDB0	DUPLN	337E	DUPLN1	3390
DVDEGT	3B06	DVDGT2	3B10	DVSPG2	3B02	DVSPGT	3AFA
DVSPTX	3AF8	EDEND	1448	EDENT	02D9	EDIT	FDAD
EDIT1	1424	EDITOR	1429	EFFENT	02CB	ENDLIN	2CFE
ENDTAB	FDB9	ENS255	3B0B	ENTER3	1C03	ENTERI	1C11
ENUMBE	2499	EOL	333A	EOL3	333D	EOL4	3347
EOL5	334B	EOL6	334E	EQUAL	20C0	ERR34	197B
ERRA	3B96	ERRB	3B98	ERRC	3B9A	ERRD	3B9C
ERRE	3B9E	ERRF	3BA0	ERRG	3BA4	ERRH	3BA2
ERRI	3BA6	ERRJ	3BB0	ERRK	3BA8	ERRL	3BAA
ERRM	3BAC	ERRN	3BAE	ERROR	1BAF	ERRPOS	FD84
ESCB	2F4F	ESCC	2F51	ESCCTA	2FD5	ESCCTL	2FD2
ESCD	2F53	ESCE	2F55	ESCF	2F57	ESCG	2F59
ESCH	2F5B	ESCI	2F5D	ESCJ	2F5F	ESCK	2F61
ESCL	2F63	ESCLEN	2F81	ESCM	2F65	ESCN	2F67
ESCO	2F69	ESCP	2F6B	ESCQ	2F6D	ESCR	2F6F
ESCS	2F71	ESCT	2F73	ESCTBL	2F4D	ESCU	2F75
ESCV	2F77	ESCW	2F79	ESCX	2F7B	ESCY	2F7D
ESCZ	2F7F	EVALAB	3D84	EVALFN	3E5B	EVALSE	3E7E
EXCHAN	1183	EXP	23EC	EXP01	1372	EXP2X	23F2
FEXPAN	FA9E	FIND	19DD	FIND$	3FEC	FIND1$	3FE9
FINDJP	0689	FINDLE	316E	FINDLI	061A	FINDNO	2E39
FINDNS	1A19	FINFF	0BFE	FLAGS1	FD86	FNDPT	3F71
FORCOU	FB44	FRAC	112B	FREESP	033C	FREQ	FE16
FSPCOO	3F4C	FWARD	32F7	G2SIZE	3A2F	G2VAL	2E71
GASH	FE02	GET15E	3BCD	GET15X	3BD1	GET2CH	34BA
GET5VA	351A	GETAB1	3022	GETAB2	3026	GETAB3	3030
GETAB4	3034	GETABC	3014	GETABS	3017	GETBAS	0BC5
GETCH	2F9B	GETCH1	2FA4	GETCHA	2FF3	GETDE1	2350
GETLIN	06DB	GETLN1	06DE	GETLNE	19E5	GETNEX	24CC
GETNVA	351D	GETPOS	3006	GETSPA	2FE9	GETST1	3A7F
GETST2	3A8D	GETST3	3A96	GETST4	3AA1	GETST5	3AA4
GETST6	3AA7	GETST7	3AB2	GETSTA	3A7C	GETSTR	00BC
GETVAL	3066	GISPCO	3DD9	GOPTR	FB41	GOSNUM	FB43
GOSTAC	FAD8	GOTZER	10A6	GRCHK	3289	GREATE	20C8
GREEQU	20DB	GRRD1	34DD	GRRD2	34F0	GRRD3	34F5
GRRD62	34B3	GRRDGA	34B6	GRRDS	1541	GRREAD	34D4
GSCRSZ	3A53	GSMDI1	3E01	GSMDI2	3E06	GSMDIS	3DFB
GST5VA	3505	GSTNVA	3508	GVSPNO	3DA4	HIGH	0A8C
HOME	32F2	HSZG2	3134	HSZTX	3131	IJINIT	097F
IJTABL	FFF0	IMOVE	1C73	IN130	3BB7	INATGT	3BE3
INAUCO	33D6	INBIT	0A6B	INBLK2	0ACB	INBLOC	0ABA
INBYTE	0A9A	INCLRA	35AC	INCP6	06F3	INDEX	FDA8
INDEXL	FDC1	INDSP2	3CC6	INDSPR	3CC2	ING2LP	32C7
ININL2	33E4	ININL3	33EB	ININLN	33DC	INITG2	32B8
INITTG	3294	INITTX	3291	INK	310E	INKEY$	3ECE
INOUT	0AAE	INSERT	33D0	INSLN	336A	INSTR	1B85

INT	200A	INT125	0996	INT64K	121D	INTATT	39F4
INTEGE	119D	INTFFF	FD5E	INTGLP	32A5	INTTAB	FDF2
INTTGA	3297	IOPL	FA8F	IOPR	FD76	IPRTCU	2FED
ITYPE	FD87	JPHL	07B8	KBD	0079	KBDBUF	FA83
KBDP0	3618	KBFLAG	FA91	KEY1	3622	KILLIN	09BA
KILLVA	27FB	KILSND	093A	KSCENT	30FE	LABTAB	FDB5
LARGE1	11C5	LARGEN	11C8	LASTAS	FD7D	LASTDR	FD7E
LASTKY	FD7C	LDBSBT	06AC	LDBUF1	34C6	LDBUF2	34CC
LDBUFF	34C3	LDPOS	3E7D	LEFT$	3F20	LEN	3F95
LENGTH	FDAE	LENHI	FF57	LENLO	FF56	LESEQU	20E2
LESSTH	20D2	LEXFUN	2680	LFEED	3304	LINKER	FDAC
LNCOG2	3175	LNCOTX	3157	LNINDE	3351	LOAD	0B40
LOAD2	089E	LOADER	0891	LOADSN	2D0C	LOCSCR	39F9
LOG	2398	LOG2X	23A5	LOGE2	2494	LOGNX	23BC
LOW	0A82	LRATOV	3593	LSCENT	39F6	LSTPG	FA7A
MAF	FD91	MAFD	FD89	MAKESP	0351	MAPSCR	3838
MBC	FD93	MBCD	FD8B	MDE	FD95	MDED	FD8D
MEM1	FDD9	MEMPOI	FDA1	MHL	FD97	MHLD	FD8F
MID$	3EDD	MIDVAL	FD60	MIX	FD99	MIY	FD9B
MKSPCE	3C71	MOREHE	297E	MOVDE0	12B9	MOVEAC	224C
MOVEDE	12A7	MOVHL	1BDD	MPC	FD9F	MSP	FD9D
MULPLY	100B	MVDIST	FE4D	MVNO	FE51	MVPPOS	32E5
MVSP10	3EFB	MVSP11	3EFF	MVSP12	3F23	MVSPA	3F10
MVSPB	3F1B	MVSPR	3E8C	MVSPR2	3EB1	MVSPR3	3EB3
MVSPR4	3EB6	MVSPR5	3ED3	MVSPR6	3EDC	MVSPR7	3EE9
MVSPR8	3EEE	MVSPR9	3EF6	NBTOP	FAA4	NBTPG	FAA6
NCP1	06F7	NEGACC	0F13	NEWENT	0221	NEWLIN	2BC9
NEWSCR	2F90	NINK	3C20	NINK2	3C22	NODDY	2D7C
NODLOC	FA9B	NOGOOD	02C0	NOSPR	FE4E	NOTACC	20AF
NOTEQU	20E9	NPAPER	3BFA	NULL	2FD1	NXTIN1	2FC1
NXTINT	2FB8	NXTLVL	2FC4	OFREQ	08C6	OL1	24F3
ONELIN	29AF	ONESP	399E	ONSCR2	33CC	ONSCRN	33C5
OP11	FDD2	OP1STA	129E	OPS	2672	OPTABL	0D72
ORACC	20A6	OTBLK2	0AFC	OUT128	3BB2	OUTBIT	0A7B
OUTBLO	0AE6	OUTBYT	0AA4	OUTRAN	1219	OUTSP	39C1
OUTSTR	1907	OVERFL	121B	OVERHL	3B73	OVERSP	3B74
OVOL	08F9	OVRLAY	FFED	P1JTBL	2E6B	PAGE	FAD2
PAPER	310A	PARTST	3ADB	PAU1	2BE8	PGCHK	0671
PGCHK1	066E	PGN1	FAD4	PGN2	FAD5	PGSLC1	0647
PGSLC2	0644	PGSLCT	064A	PGTOP	FAD6	PINK	3C28
PIOP1	120B	PLOTS1	3F6B	PLSPNO	FE50	PMODE	35AE
POINT	344E	POINTE	FDA5	POLY2	13C1	POLYNO	13D2
PORTAI	0002	PORTAO	0002	PORTDI	0001	PORTDO	0001
POWER	233F	PPAP3	3C0A	PPAP3A	3C0F	PPAP4	3C10
PPAPER	3C07	PRCG2A	3211	PRCG2B	322A	PRCHG2	3203
PRCHTX	31DC	PRINTX	0CAB	PRORPL	FD75	PRTCH	2FDB
PRTCU	2FF0	PSCENT	3544	PSHNAM	3037	PST5VA	3534
PSTNVA	3537	PTCHA1	3190	PTCHA2	3194	PTCHA3	3197
PUT5VA	3544	PUTNVA	3547	PUTSTA	2FCD	RAMPGC	34FE
RAND1	2BD7	REALBY	FA90	REMAIN	0FFA	REMCUR	3137
REPDEC	2316	RESINT	0B06	RESTEN	2C8D	RETACC	12D1
RETSAV	FD61	RETT	07B5	RICHJL	FD4B	RIGHT$	3F1A
RMTPHL	0697	RND	2048	RNSEED	FD7F	ROAHL	0FA1
ROM1TB	2E7F	ROTR	0FBD	ROUNAC	0F2B	RSTSCR	0010
RUN4	2CFD	RUN5	2CF0	RUN55	2CDB	RUN8	2CEC
RWPOS	305F	RWTAB	26F7	SAANGL	15FC	SADJSP	15BB

SARC	16CE	SATTR	15E2	SAUTO	0A07	SAVE	0B90
SAVEAC	12BF	SBAUD	0D38	SC0PAN	3875	SC0STR	385C
SC1PAN	387A	SC1STR	3861	SC4STR	3870	SC5PAN	3884
SC5SCR	386B	SC7PAN	387F	SC7STR	3866	SCENT	1876
SCENT4	188F	SCENTR	00CB	SCIRCL	180F	SCLS	1595
SCODE	00DA	SCOLD	3101	SCOL62	307C	SCOLDU	15B3
SCOLTX	3078	SCR	3087	SCR2	30C9	SCR3	30CD
SCR4	30D6	SCR5	30DA	SCR5A	30F0	SCR6	30FB
SCRA	309E	SCRB	30A9	SCRC	30AF	SCRD	30BB
SCRN0	FF5D	SCRN1	FF6C	SCRN2	FF7B	SCRN3	FF8A
SCRN4	FF99	SCRN5	FFA8	SCRN6	FFB7	SCRN7	FFC6
SCRVS	15EA	SCTLSP	159B	SCURSO	1583	SDRAW	1687
SDSI	157C	SE	3C91	SEQ0	3EA1	SET1AC	2000
SETCAL	FD4B	SETCOL	3BBC	SETINI	27B7	SETINT	0B10
SETPOS	300D	SETZER	10A9	SGENPA	15A3	SHIF	00AD
SIGN	FDD8	SIGNAC	208F	SINCOS	161F	SINE	1382
SINK	1590	SLET	29DA	SLINE	1574	SMALL1	11B9
SMALLE	11BB	SMBYTE	FF55	SMGSZ	3CAB	SMGSZ2	3CAB
SMODE	35A1	SMVSPR	15D1	SNDBUF	27B3	SNEW	0205
SOUT	09FD	SPAPER	158A	SPAUSE	2BE4	SPBASE	FE4C
SPCTL2	3C70	SPCTL3	3C72	SPCTL4	3C80	SPCTLB	3C51
SPEED	FE4B	SPG2	31A0	SPG2A	31B2	SPLOT	1670
SPPAR2	3E55	SPPAR3	3E60	SPPAR4	3E6F	SPPAR5	3E71
SPPARM	3E3B	SPRC2A	3D17	SPRCEN	3C54	SPRCY1	3CF8
SPRCY2	3D05	SPRCY3	3D1D	SPRCY5	3D33	SPRCY6	3D5F
SPRCY7	3D87	SPRCY8	3D89	SPRCY9	3D90	SPRCYC	3CF1
SPRCYM	3D21	SPRINA	3C96	SPRINB	3CA1	SPRINT	3C85
SPRTBL	FE55	SPTX	3189	SPWELL	3F5D	SQROOT	236E
SQUA1	2391	SQUARE	1008	SQUASH	0A15	SRANGL	160A
SRAT3	3C3E	SRAT4	3C44	SREM	27AA	SROM	009E
SRUN	2CAF	SSOUND	2D0C	SSPRIT	15C4	SSTACK	FA96
STA	1311	STAC	1317	STACCT	FD73	STACK	FD48
STACKA	1286	STACKO	1298	STACKS	0744	STAHLH	0F58
START	FB4B	STASEM	1CC3	STBC	134B	STHLHL	136B
STKLEN	315B	STKLIM	FA92	STKTES	3EC9	STKTOP	FA7A
STOP	2D62	STOPPP	2D56	STR$	3FC6	STRHL	02E7
STRJP	0DBE	STROUT	02E8	STRSTA	3FCB	SUBTRA	0E83
SUCUT1	31ED	SUCUTA	31E8	SUCUTX	31B9	SVS	15F6
SWCTL	3A09	SWCTLA	3A0F	SWINDO	15DA	SWITCH	00F4
SYFAIL	3C40	SYN	398C	SYNPRO	14B9	SYSTOP	FA94
SYSUCC	3C38	SZCOM	3A32	SZCOM2	3A42	SZCOM3	3A45
TABAGT	3070	TABAT1	3067	TABATT	3064	TABBCK	3331
TABFW1	332C	TABFWA	3329	TABFWD	3326	TEMP	FE04
TEST1	1A0C	TEST2B	2A8D	TESTHL	1BB6	TESTSP	0344
TIME$	3F38	TIMES8	3116	TINSER	2A7A	TMPA	FD71
TMPHL	FD6F	TOKMIN	124F	TPCH1	06BB	TSCRSZ	3A51
TXSIZE	3A2A	TXVAL	2E78	TYPE	FD68	TYPG2	2EC7
TYPTBL	FFD5	TYPTX	2EA1	UPDATE	3182	USER	FA89
USERIN	FA98	USERIO	FD51	USERNO	FAA1	USERRO	FD54
USR	203D	USRRST	FD4E	UVITOS	34A0	VAL	3F9E
VALBOT	FA7D	VALRA1	3580	VARNAM	FA7B	VATOLR	357C
VAZERO	FD65	VCOUNT	FE53	VCT	354E	VCT1	3574
VCT4	358F	VCT5	3599	VCTC	3581	VDBAS	381A
VDBAS2	381F	VDCOLD	3889	VDINIT	2E85	VDPAN	3813
VDPSTS	FE54	VERIF	FD67	VINT	3A55	VINTFG	FF58
VOL	FE18	WCHJUM	FDA3	WINADD	3FA0	WIND2	3FC0

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WIND3   3FC5    WIND4   3FD0    WIND5   3FD8    WIND6   3FE3
WIND7   3FE4    WINDOW  3FAF    WKAREA  FE1A    WORDLS  253B
X80UT   3126    X80UTA  3127    XSPPOS  3DF0    YORN    FDD7
YSPPOS  3DE3    ZERACC  0FAF    ZERONV  355D

No  Fatal error(s)

A>
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