GRAPHIXSOURCE.ED

```
E7E9 ******     1 *          =*E7E9                 !SYS******=59648 TO 59650 FOR SY
S COMMANDS IE *E900-*E90
E7E9 ******     2 !******** 8000 VERSION **********
00B7 ******     3 CHARPOINT =*B7
87F7 ******     4 CHARSTORE =*87F7                  !*83F7 FAT40
00CB ******     5 MEMOFF    =*CB
E7E9 ******     6 !
E7E9 A207       7 MOVEBYTES   LDX #*07
E7EB A007       8             LDY #*07
E7ED B1B7       9 GETBYTE1    LDA (CHARPOINT),Y
E7EF 9DF787    10             STA CHARSTORE,X
E7F2 CA        11             DEX
E7F3 88        12             DEY
E7F4 10F7      13             BPL GETBYTE1
E7F6 24CB      14             BIT MEMOFF
E7F8 1003      15             BPL RETURNTEXT
E7FA 4CD6EC    16             JMP LATCHREPLACE
E7FD 4CDEEC    17 RETURNTEXT  JMP WRITETEXT
E800 ******    18
E900 ******    19 *          =*E900
E900 ******    20 !
E900 ******    21 !FLAG =%01000000 FOR XB>XE
E900 ******    22 !FLAG =%00000000 FOR XB<XE
E900 ******    23 !FLAG =%10000000 FOR YB>YE
E900 ******    24 !FLAG =%00000000 FOR YB<YE
BF00 ******    25 SYNTAXERROR =*BF00               !*CE03   2.0B
BD98 ******    26 EVALEXP    =*BD98                !*CC9F   2.0B
BD84 ******    27 TESTYPE    =*BD84                !*CC8B   2.0B
C92D ******    28 FLPINT     =*C92D                !*D6D2   2.0B
CD51 ******    29 ADJUSTACC1 =*CD51                !*DB27   2.0B
C2EA ******    30 EVALPOSINT =*C2EA                !*D09A   2.0B
C788 ******    31 DISCSTRING =*C788                !*D580   2.0B
C921 ******    32 GET2PARAMS =*C921                !*D6C6   2.0B
BD87 ******    33 TYPEMISMATCH =*BD87              !*CC9E   2.0B
C8D7 ******    34 GET1PARAM  =*C8D7                !*D67B   2.0B
C8D4 ******    35 GETNUMERIC =*C8D4                !*D678   2.0B
D399 ******    36 ROUTINE    =*D399                !*E0F9   2.0B
BEF5 ******    37 CHECKCOMMA =*BEF5                !*CDF8   2.0B
B883 ******    38 SCANBASIC  =*B883                !*C800   2.0B
E900 ******    39 !
E900 ******    40 !STACKSTART=*0100 DECLARED IN LINE 611
E455 ******    41 IRQVEC     =*E455                !*E62E !2.0B
E900 ******    42 !LOWTABLE=*E65B   !9" BASIC 4.0
E900 ******    43 !=*E798     12" BASIC 4.0
E900 ******    44 !=*E748     BASIC 2.0
E1E6 ******    45 LOWTABLE   =*E1E6                !FOR 80 COL TABLE TO BE INSERTE
D
00FF ******    46 FLAG       =*FF                  !ONE BYTE
93EA ******    47 XSTART     =*93EA                !TWO BYTE
93EC ******    48 XEND       =*93EC                !TWO BYTE
00C0 ******    49 XB         =*C0                  !TWO BYTE
00FB ******    50 XPLOT      =*FB                  !TWO BYTE
93EE ******    51 XPOINT     =*93EE                !TWO BYTE
93F0 ******    52 YSTART     =*93F0                !ONE BYTE
93F1 ******    53 YEND       =*93F1                !ONE BYTE
00CB ******    54 YB         =*CB                  !ONE BYTE
00B7 ******    55 YPLOT      =*B7                  !ONE BYTE
93F2 ******    56 YPOINT     =*93F2                !ONE BYTE
00BB ******    57 FLAG1      =*BB                  !ONE BYTE
00C9 ******    58 BYTE       =*C9                  !TWO BYTE
9000 ******    59 SCREENSTART =*9000               !LOCATION OF FIRST SCREEN BYTE
93F3 ******    60 TESTBYTE   =*93F3                !  BYTE TO TEST FOR RAM ON
00B4 ******    61 STACKCOPY  =*B4
00B1 ******    62 ONEBYTE    =*B1                  !ONE BYTE
00B2 ******    63 TWOBYTE    =*B2                  !TWO BYTE
00B4 ******    64 MULTIPLIER =*B4                  !ONE BYTE
00B5 ******    65 MULTIPLICAND =*B5                !TWO BYTE
00FD ******    66 RESULT     =*FD                  !TWO BYTE
0096 ******    67 STATUSWORD =*96
E900 ******    68 !
E900 ******    69 !TEXT VARIABLE STORES
00BC ******    70 CHARNUMBER =*BC
A7F8 ******    71 CHARBLOCKSTART =*A7F8            !STORE FOR POINTER TO USER DEFI
NED TEXT(43000)
EFFF **=***    72 LATCH      =*EFFF                !HR-40 LATCH AT *88FF
0279 ******    73 LATCHCOPY  =*0279                !COPY OF LATCH REGISTER (&33)
00CC ******    74 MASKONE    =*CC                  !TO MASK CHARACTER AND SCREEN
00FB ******    75 CHAR2      =*FB
00BD ******    76 PLOTDIR    =*BD                  !HOIZONTAL PLOT=*FF,VERTICAL PL
OT=0
0032 ******    77 STRINGPTR  =*32
00BE ******    78 TEXTYPE    =*BE                  !&40=OVERLAY,*FF=TEXT,00=FLIP
E900 ******    79 !
E900 ******    80 !MAP VARIABLES
00FF ******    81 MASKCOPY   =*FF
00FB ******    82 MAPTYPE    =*FB                  !00=CLEAR,FF=SET
00CE ******    83 XCOPY      =*CE
00C0 ******    84 BYTECOPY   =*C0
E900 ******    85 !
E900 EA        86             NOP
E901 EA        87             NOP
E902 BA        88             TSX
E903 86B4      89             STX STACKCOPY
E905 20F5BE    90             JSR CHECKCOMMA
E908 8496      91             STY STATUSWORD     !Y=0
E90A ******    92 !           LDX #LASTCOM-COMMAND
E90A A20D      93
E90C DD2AE9    94 COMMANDLOOP  CMP COMMAND,X
E90F F010      95             BEQ COMMANDFOUND
E911 CA        96             DEX
E912 10F8      97             BPL COMMANDLOOP
E914 ******    98 !NO COMMAND FOUND / DEFAULT TO SET LATCH
E914 20D4C8    99 POKER       JSR GETNUMERIC
E917 8A       100             TXA
E918 290F     101 LATCHMASK    AND #%00001111    !4 BIT LATCH
E91A 8DFFEF   102             STA LATCH
E91D 8D7902   103             STA LATCHCOPY
E920 60       104             RTS
E921 ******   105 !
E921 BD38E9   106 COMMANDFOUND  LDA HICOMMAND,X
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E924 48        107              PHA
E925 BD46E9    108              LDA LOCOMMAND,X
E928 48        109              PHA
E929 60        110              RTS
E92A ******    111 !
E92A 4F4B50    112 COMMAND      .B "OKP",$A4,$9B,"TMECIRFD"
E937 53        113 LASTCOM      .B "S"
E938 ******    114 !
E938 E9E9E9    115 HICOMMAND     .B >KILL-1,>KILL-1,>CHARSET-1,>OVERLAY
E93C EBEBED    116              .B >FLIPTEXT-1,>TEXT,>MAP-1,>EXAMINE-1
E940 EEEEE9    117              .B >CLEAR-1,>INVERT,>RESET,>FLIP,>DOT,>SET-1
E946 535371    118 LOCOMMAND     .B <KILL-1,<KILL-1,<CHARSET-1,<OVERLAY
E94A C4C773    119              .B <FLIPTEXT-1,<TEXT,<MAP-1,<EXAMINE-1
E94E 6F7287    120              .B <CLEAR-1,<INVERT,<RESET,<FLIP,<DOT,<SET-1
E954 ******    121 !
E954 A217      122 KILL         LDX #$17
E956 2C        123              .B $2C
E957 A206      124 MOVELOOP     LDX #$06
E959 BD99D3    125 MOVERTN      LDA ROUTINE,X
E95C 9570      126              STA $70,X
E95E E009      127              CPX #$9
E960 F0F5      128              BEQ MOVELOOP
E962 CA        129              DEX
E963 10F4      130              BPL MOVERTN
E965 78        131              SEI
E966 A955      132              LDA #<IRQVEC
E968 A0E4      133              LDY #>IRQVEC
E96A 8590      134              STA $90
E96C 8491      135              STY $91
E96E 58        136              CLI
E96F 4C7000    137              JMP $70
E972 ******    138 !
E972 207000    139 CHARSET      JSR $70
E975 20F5BE    140              JSR CHECKCOMMA
E978 2084BD    141              JSR TESTYPE
E97B 202DC9    142              JSR FLPINT
E97E 8CF8A7    143              STY CHARBLOCKSTART
E981 8DF9A7    144              STA CHARBLOCKSTART+1
E984 60        145              RTS
E985 ******    146 !
E985 A900      147 SET          LDA #$00            !SET FLAG1=0
E987 2CA901    148 RESET        BIT $01A9           !SET FLAG1=1
E98A 2CA902    149 FLIP         BIT $02A9           !SET FLAG1=2
E98D 2CA903    150 DOT          BIT $03A9           !SET FLAG1=3
E990 20F6EE    151              JSR CHECKRAMON2
E993 ******    152 !
E993 A900      153              LDA #$00
E995 85FF      154              STA FLAG
E997 207000    155              JSR $70
E99A C94C      156              CMP #'L
E99C F006      157              BEQ INPUT
E99E C6FF      158              DEC FLAG
E9A0 C950      159              CMP #'P
E9A2 D02F      160 SYNTAX2      BNE SYNTAX
E9A4 207000    161 INPUT        JSR $70
E9A7 20F5BE    162              JSR CHECKCOMMA
E9AA 203DEC    163              JSR NUMBERIN+3
E9AD F027      164              BEQ ONESET          !ONLY ONE PAIR ENTERED
E9AF 24FF      165              BIT FLAG
E9B1 3020      166              BMI SYNTAX          !TEST FOR ILLEGAL SECOND PARAME
TER$
E9B3 20BDEE    167 CHECK1       JSR JUST2
E9B6 24FF      168              BIT FLAG
E9B8 3035      169              BMI SETPOINT
E9BA ******    170 !
E9BA 203AEC    171              JSR NUMBERIN
E9BD 20D4EE    172 SECOND       JSR CHECKY
E9C0 20CAEE    173              JSR STOREND
E9C3 ADEE93    174              LDA XPOINT
E9C6 4DF293    175              EOR YPOINT
E9C9 2901      176              AND #%00000001
E9CB D034      177              BNE START
E9CD A901      178              LDA #%00000001
E9CF 85FF      179              STA FLAG
E9D1 D02E      180              BNE START
E9D3 ******    181 !
E9D3 4C00BF    182 SYNTAX       JMP SYNTAXERROR
E9D6 ******    183 !
E9D6 24FF      184 ONESET       BIT FLAG
E9D8 30D9      185              BMI CHECK1
E9DA 20D4EE    186              JSR CHECKY
E9DD ADF193    187              LDA YEND            !YPOINT FOR CONT FROM LAST POIN
T
E9E0 8DF293    188              STA YPOINT
E9E3 ADEC93    189              LDA XEND            !XPOINT FOR CONT
E9E6 ACED93    190              LDY XEND+1          !XPOINT+1 FOR CONT
E9E9 20C3EE    191              JSR STOREPOINT+3
E9EC 4CBDE9    192              JMP SECOND
E9EF ******    193 !
E9EF 20CAEE    194 SETPOINT     JSR STOREND
E9F2 20C0EE    195              JSR STOREPOINT
E9F5 4DF193    196              EOR YEND
E9F8 2901      197              AND #%00000001
E9FA F002      198              BEQ PLOTJMP
E9FC E6FF      199              INC FLAG
E9FE 4C2CEB    200 PLOTJMP      JMP PLOT1
EA01 ******    201 !
EA01 ******    202 !FIND GRADIENT OF LINE AND SET FLAG FOR SLOPE
EA01 A5FF      203 START        LDA FLAG            !CLEAR FLAG
EA03 2901      204              AND #%00000001      !EXCEPT FOR BIT 0
EA05 85FF      205              STA FLAG
EA07 38        206              SEC
EA08 ADEC93    207              LDA XEND
EA0B EDEE93    208              SBC XPOINT
EA0E 85C0      209              STA XG
EA10 ADED93    210              LDA XEND+1
EA13 EDEF93    211              SBC XPOINT+1
EA16 85C1      212              STA XG+1
EA18 B016      213              BCS YTEST
EA1A 49FF      214              EOR #$FF
```

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EA1C 85C1      215              STA XG+1          !TWO'S COMPLIMENT OF XG
EA1E A5C0      216              LDA XG
EA20 49FF      217              EOR £&FF
EA22 6901      218              ADC £&01
EA24 85C0      219              STA XG
EA26 D002      220              BNE YTESTA
EA28 E6C1      221              INC XG+1
EA2A A5FF      222 YTESTA       LDA FLAG          !SET FLAG
EA2C 0940      223              ORA £%01000000        !DECREMENTING X
EA2E 85FF      224              STA FLAG
EA30 ******    225 !
EA30 38        226 YTEST        SEC
EA31 ADF193    227              LDA YEND
EA34 EDF293    228              SBC YPOINT
EA37 85CB      229              STA YG
EA39 B00C      230              BCS GRADO
EA3B 49FF      231              EOR £&FF
EA3D 6901      232              ADC £&01
EA3F 85CB      233              STA YG
EA41 A5FF      234              LDA FLAG
EA43 0980      235              ORA £%10000000    !DEC Y
EA45 85FF      236              STA FLAG
EA47 ******    237 !
EA47 A5CB      238 GRADO        LDA YG
EA49 F010      239              BEQ PLOTHORIZ
EA4B A5C1      240              LDA XG+1
EA4D D033      241              BNE TILTX
EA4F A5C0      242              LDA XG
EA51 F014      243              BEQ PLOTVERT
EA53 C5CB      244              CMP YG
EA55 F01C      245              BEQ PLOT45
EA57 B029      246              BCS TILTX
EA59 9063      247              BCC TILTY
EA5B ******    248 !
EA5B 202CEB    249 PLOTHORIZ    JSR PLOT1         !SET BYTE FROM XPOINT & YPOINT
EA5E 20F6EA    250 TESTXH       JSR XCOMPARE
EA61 2078EB    251              JSR PLOT2
EA64 4C5EEA    252              JMP TESTXH
EA67 ******    253 !
EA67 202CEB    254 PLOTVERT     JSR PLOT1         !SET BYTE FROM XPOINT & YPOINT
EA6A 2019EB    255 TESTYV       JSR YCOMPARE
EA6D 2078EB    256              JSR PLOT2
EA70 4C6AEA    257              JMP TESTYV
EA73 ******    258 !
EA73 202CEB    259 PLOT45       JSR PLOT1
EA76 2019EB    260 TESTXY       JSR YCOMPARE
EA79 20F9EA    261              JSR ALTERX
EA7C 2078EB    262              JSR PLOT2
EA7F 4C76EA    263              JMP TESTXY
EA82 ******    264 !
EA82 A5C1      265 TILTX        LDA XG+1
EA84 4A        266              LSR A             !DIVIDE XG BY 2
EA85 85B3      267              STA TWOBYTE+1
EA87 A5C0      268              LDA XG
EA89 6A        269              ROR A
EA8A 85B2      270              STA TWOBYTE
EA8C 202CEB    271 PLOTX        JSR PLOT1
EA8F 20F6EA    272 TESTXX       JSR XCOMPARE
EA92 18        273              CLC
EA93 A5B2      274              LDA TWOBYTE
EA95 65CB      275              ADC YG
EA97 85B2      276              STA TWOBYTE
EA99 9002      277              BCC NOINCTB1
EA9B E6B3      278              INC TWOBYTE+1
EA9D 38        279 NOINCTB1     SEC
EA9E A5B2      280              LDA TWOBYTE
EAA0 E5C0      281              SBC XG
EAA2 A5B3      282              LDA TWOBYTE+1
EAA4 E5C1      283              SBC XG+1
EAA6 9010      284              BCC PLOTX2
EAA8 201CEB    285              JSR ALTERY
EAAB 38        286              SEC
EAAC A5B2      287              LDA TWOBYTE
EAAE E5C0      288              SBC XG
EAB0 85B2      289              STA TWOBYTE
EAB2 A5B3      290              LDA TWOBYTE+1
EAB4 E5C1      291              SBC XG+1
EAB6 85B3      292              STA TWOBYTE+1
EAB8 2078EB    293 PLOTX2       JSR PLOT2
EABB 4C8FEA    294              JMP TESTXX
EABE ******    295 !
EABE A5CB      296 TILTY        LDA YG
EAC0 4A        297              LSR A             !DIVIDE YG BY 2
EAC1 85B2      298              STA TWOBYTE
EAC3 A900      299              LDA £0
EAC5 85B3      300              STA TWOBYTE+1
EAC7 202CEB    301 PLOTY        JSR PLOT1
EACA 2019EB    302 TESTYY       JSR YCOMPARE
EACD 18        303              CLC
EACE A5B2      304              LDA TWOBYTE
EAD0 65C0      305              ADC XG
EAD2 85B2      306              STA TWOBYTE
EAD4 A5B3      307              LDA TWOBYTE+1
EAD6 65C1      308              ADC XG+1
EAD8 85B3      309              STA TWOBYTE+1
EADA D006      310              BNE INCXPLOT
EADC A5B2      311              LDA TWOBYTE
EADE C5CB      312              CMP YG
EAE0 900E      313              BCC PLOTY2
EAE2 20F9EA    314 INCXPLOT     JSR ALTERX
EAE5 38        315              SEC
EAE6 A5B2      316              LDA TWOBYTE
EAE8 E5CB      317              SBC YG
EAEA 85B2      318              STA TWOBYTE
EAEC B002      319              BCS PLOTY2
EAEE C6B3      320              DEC TWOBYTE+1
EAF0 2078EB    321 PLOTY2       JSR PLOT2
EAF3 4CCAEA    322              JMP TESTYY
EAF6 ******    323 !
EAF6 201CEF    324 XCOMPARE     JSR CMPXEND
EAF9 24FF      325 ALTERX       BIT FLAG
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EAFB 700E      326              BVS DECX              !NEGATIVE X
EAFD 46CC      327              LSR MASKONE
EAFF 9007      328              BCC INCX1
EB01 A980      329              LDA £%10000000
EB03 85CC      330              STA MASKONE
EB05 20?0EF    331              JSR UPBYTEX
EB08 4C77EF    332 INCX1        JMP UPPOINTX
EB0B 06CC      333 DECX         ASL MASKONE
EB0D 9007      334              BCC DECXO
EB0F A901      335              LDA £%00000001
EB11 85CC      336              STA MASKONE
EB13 2080EF    337              JSR DOWNBYTEX
EB16 4C89EF    338 DECXO        JMP DOWNPOINTX
EB19 ******    339 !
EB19 2013EF    340 YCOMPARE     JSR CMPYEND
EB1C 24FF      341 ALTERY       BIT FLAG
EB1E 3006      342              BMI DECY              !NEGATIVE Y
EB20 202DEF    343              JSR COMPAREY
EB23 4C53EF    344              JMP UPBYTEY           !INC YPOINT
EB26 ******    345 !
EB26 202DEF    346 DECY         JSR COMPAREY
EB29 4C34EF    347              JMP DOWNBYTEY
EB2C ******    348 !
EB2C ******    349 !CONVERT POINT TO BYTE AND SET BIT
EB2C ADEF93    350 PLOT1        LDA XPOINT+1          !((199-YPOINT)/8)*40+X/8+SCREEN
START+(OTO7)*1024
EB2F 85CA      351              STA BYTE+1
EB31 ADEE93    352              LDA XPOINT
EB34 48        353              PHA
EB35 46CA      354              LSR BYTE+1
EB37 6A        355              ROR A
EB38 4A        356              LSR A
EB39 4A        357              LSR A
EB3A 85C9      358              STA BYTE
EB3C 202DEF    359              JSR COMPAREY
EB3F 48        360              PHA
EB40 4A        361              LSR A
EB41 4A        362              LSR A
EB42 4A        363              LSR A
EB43 A8        364              TAY
EB44 B9E6E1    365              LDA LOWTABLE,Y
EB47 48        366              PHA
EB48 A203      367              LDX £3
EB4A C014      368              CPY £20
EB4C B00B      369              BCS FOUNDY
EB4E CA        370              DEX
EB4F C00D      371              CPY £13
EB51 B006      372              BCS FOUNDY
EB53 CA        373              DEX
EB54 C007      374              CPY £7
EB56 B001      375              BCS FOUNDY
EB58 CA        376              DEX
EB59 68        377 FOUNDY       PLA
EB5A 2009EF    378              JSR ADDBYTE
EB5D 68        379              PLA
EB5E 2907      380              AND £%00000111
EB60 A8        381              TAY
EB61 B9B9EF    382              LDA HITABLE,Y
EB64 18        383              CLC
EB65 200EEF    384              JSR ADDHIBYTE
EB68 68        385              PLA
EB69 2907      386              AND £%00000111
EB6B A8        387              TAY
EB6C C8        388              INY
EB6D A5BB      389              LDA FLAG1
EB6F C904      390              CMP £*04
EB71 F017      391              BEQ RETURN1
EB73 2095EF    392              JSR LSRMASK
EB76 85CC      393 SETBYTE      STA MASKONE
EB78 A5CC      394 PLOT2        LDA MASKONE
EB7A A6BB      395              LDX FLAG1
EB7C F00D      396              BEQ SETLINE
EB7E E001      397              CPX £*01
EB80 F020      398              BEQ RESETLINE
EB82 E003      399              CPX £*03
EB84 F00C      400              BEQ DOTLINE
EB86 ******    401 !
EB86 51C9      402 FLIPLINE     EOR (BYTE),Y
EB88 91C9      403              STA (BYTE),Y
EB8A 60        404 RETURN1      RTS
EB8B ******    405 !
EB8B 49FF      406 SETLINE      EOR £*FF
EB8D 31C9      407              AND (BYTE),Y
EB8F 91C9      408              STA (BYTE),Y
EB91 60        409              RTS
EB92 ******    410 !
EB92 48        411 DOTLINE      PHA                   !SAVE BYTE
EB93 A5FF      412              LDA FLAG
EB95 4901      413              EOR £%00000001        !TOGGLE BIT O
EB97 85FF      414              STA FLAG
EB99 68        415              PLA                   !GET BYTE FOR DISPLAY
EB9A 66FF      416              ROR FLAG              !TEST FOR BIT O SET OR RESET
EB9C 08        417              PHP
EB9D 26FF      418              ROL FLAG              !RESTORE FLAG
EB9F 28        419              PLP                   !RETURN CARRY FLAG
EBA0 90E9      420              BCC SETLINE           !SET POINT
EBA2 11C9      421 RESETLINE     ORA (BYTE),Y
EBA4 91C9      422              STA (BYTE),Y
EBA6 60        423              RTS
EBA7 ******    424 !
EBA7 ******    425 ! EXAMINE FOR POINT SET OR RESET
EBA7 20F4EE    426 EXAMINE      JSR CHECKRAMON
EBAA 207000    427              JSR $70               !SKIP ','
EBAD 203AEC    428              JSR NUMBERIN
EBB0 D03C      429              BNE SYNTAX18K
EBB2 20BDEE    430              JSR JUST2
EBB5 20CAEE    431              JSR STOREND
EBB8 202CEB    432 EXAMINEIN     JSR PLOT1
EBBB 2095EF    433              JSR LSRMASK
EBBE 31C9      434 OUTMASK1     AND (BYTE),Y
EBC0 D002      435              BNE NOTSET
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EBC2 E696      436                INC STATUSWORD
EBC4 60        437 NOTSET         RTS
EBC5 ******    438 !
EBC5 ******    439 !TEXT ROUTINE
EBC5 A900      440 FLIPTEXT       LDA &00              !TEXT FLIP
EBC7 2CA9FF    441 TEXT           BIT &FFA9            !TEXT STRAIGHT
EBCA 2CA940    442 OVERLAY        BIT &40A9            !OVERLAY TEXT
EBCD 85BE      443                STA TEXTYPE
EBCF 20F4EE    444                JSR CHECKRAMON
EBD2 A9FF      445                LDA &FF
EBD4 85B1      446                STA ONEBYTE
EBD6 85BD      447                STA PLOTDIR
EBD8 207000    448                JSR &70
EBDB C952      449                CMP &'R              !REVERSE TEXT
EBDD F006      450                BEQ IPBYTE
EBDF C94E      451                CMP &'N              !NORMAL TEXT
EBE1 D00B      452                BNE SYNTAX1BK
EBE3 E6B1      453                INC ONEBYTE          !SET TO ZERO
EBE5 207000    454 IPBYTE         JSR &70
EBE8 C948      455                CMP &'H
EBEA F006      456                BEQ IPBYTE1
EBEC C956      457                CMP &'V
EBEE D074      458 SYNTAX1BK      BNE SYNTAX1
EBF0 E6BD      459 SAVECHAR       INC PLOTDIR
EBF2 207000    460 IPBYTE1        JSR &70
EBF5 207000    461                JSR &70
EBF8 2098BD    462                JSR EVALEXP          !I/P & EVALUATE STRING OR NUMER
IC EXPRESSION
EBFB 2407      463                BIT &07
EBFD 1057      464                BPL NUMERIC
EBFF 20B8C7    465                JSR DISCSTRING
EC02 C900      466                CMP &00              !TEST FOR NULL STRING
EC04 F02F      467                BEQ NUMBERIN1        !NULL STRING SO CLEAR TXTPTR
EC06 85B2      468                STA TWOBYTE          !LENGTH OF STRING
EC08 8632      469                STX STRINGPTR
EC0A 8433      470                STY STRINGPTR+1
EC0C 207600    471                JSR &76
EC0F F005      472                BEQ CONTEXT1
EC11 20BAEE    473                JSR ALL3
EC14 C696      474 CONTEXT        DEC STATUSWORD
EC16 2046ED    475 CONTEXT1       JSR GETSTRCHAR
EC19 900E      476                BCC NEXTEXT
EC1B 2496      477                BIT STATUSWORD
EC1D 1007      478                BPL UPTEXT
EC1F 209FEC    479                JSR BACKIN2
EC22 E696      480                INC STATUSWORD
EC24 F003      481                BEQ NEXTEXT
EC26 2072EC    482 UPTEXT         JSR CONTLINE
EC29 C6B2      483 NEXTEXT        DEC TWOBYTE
EC2B F097      484 NOTSKIP        BEQ NOTSET           !RTS
EC2D E632      485                INC STRINGPTR
EC2F D0E5      486                BNE CONTEXT1
EC31 E633      487                INC STRINGPTR+1
EC33 D0E1      488                BNE CONTEXT1
EC35 ******    489 !
EC35 ******    490 !
EC35 A2FD      491 NUMBERIN1      LDX &256-3
EC37 4CDAEE    492                JMP ERROREXIT
EC3A 207000    493 NUMBERIN       JSR &70
EC3D 20B1EE    494                JSR GETINT+3         !INPUT X
EC40 A561      495                LDA &61
EC42 A462      496                LDY &62
EC44 8512      497                STA &12
EC46 8411      498                STY &11
EC48 20AEEE    499                JSR GETINT           !INPUT Y
EC4B A662      500                LDX &62
EC4D A561      501                LDA &61
EC4F F002      502                BEQ YOK
EC51 A2FF      503                LDX &FF
EC53 4C7600    504 YOK            JMP &76
EC56 ******    505 !
EC56 2087BD    506 NUMERIC        JSR TYPEMISMATCH
EC59 20D7C8    507                JSR GET1PARAM        !I/P BYTE
EC5C 86BC      508                STX CHARNUMBER
EC5E F012      509                BEQ CONTLINE
EC60 C92C      510                CMP &2C
EC62 F035      511                BEQ CONT1
EC64 4C00BF    512 SYNTAX1        JMP SYNTAXERROR
EC67 ******    513 !
EC67 ACF293    514 VERTICAL       LDY YPOINT
EC6A F0BF      515                BEQ NOTSKIP
EC6C CEF293    516                DEC YPOINT
EC6F 4C9FEC    517                JMP BACKIN2
EC72 ******    518 !
EC72 A5BD      519 CONTLINE       LDA PLOTDIR
EC74 F0F1      520                BEQ VERTICAL
EC76 18        521 HORIZ          CLC
EC77 ADF293    522                LDA YPOINT
EC7A 6907      523                ADC &07              !RESET YPOINT
EC7C 8DF293    524                STA YPOINT
EC7F 18        525                CLC
EC80 ADEE93    526                LDA XPOINT
EC83 ACEF93    527                LDY XPOINT+1
EC86 6908      528                ADC &08
EC88 9001      529                BCC SKIPY
EC8A C8        530                INY
EC8B C000      531 SKIPY          CPY &00
EC8D F00D      532                BEQ BACKIN
EC8F C001      533                CPY &01
EC91 D0A2      534                BNE NUMBERIN1
EC93 C939      535                CMP &320-256-7       !TO PREVENT WRAP AROUND
EC95 B09E      536                BCS NUMBERIN1
EC97 9003      537                BCC BACKIN
EC99 ******    538 !
EC99 20BAEE    539 CONT1          JSR ALL3
EC9C 20C3EE    540 BACKIN         JSR STOREPOINT+3
EC9F A900      541 BACKIN2        LDA &00
ECA1 85B8      542                STA CHARPOINT+1
ECA3 A5BC      543                LDA CHARNUMBER
ECA5 0A        544                ASL A
ECA6 26B8      545                ROL CHARPOINT+1
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ECA8 0A       546              ASL A
ECA9 26B0     547              ROL CHARPOINT+1
ECAB 0A       548              ASL A
ECAC 26B0     549              ROL CHARPOINT+1
ECAE 18       550              CLC
ECAF 6DF8A7   551              ADC CHARBLOCKSTART
ECB2 85B7     552              STA CHARPOINT
ECB4 A5B0     553              LDA CHARPOINT+1
ECB6 6DF9A7   554              ADC CHARBLOCKSTART+1
ECB9 85B0     555              STA CHARPOINT+1
ECBB ******   556 !
ECBB A000     557              LDY £*00
ECBD 84CB     558              STY MEMOFF
ECBF 2CF9A7   559              BIT CHARBLOCKSTART+1
ECC2 100F     560              BPL SETXY
ECC4 C6CB     561              DEC MEMOFF
ECC6 BA       562 RETRACE      TSX
ECC7 98       563              TYA
ECC8 9DFE00   564              STA STACKSTART-2,X
ECCB BDFE00   565 STACKLOOP    LDA STACKSTART-2,X
ECCE F0FB     566              BEQ STACKLOOP
0100 ******   567 STACKSTART   =*0100
ECD0 8CFFEF   568              STY LATCH
ECD3 4CE9E7   569 SETXY        JMP MOVEBYTES
ECD6 AD7902   570 LATCHREPLACE LDA LATCHCOPY
ECD9 0901     571              ORA £*01
ECDB 8DFFEF   572              STA LATCH
ECDE 202CEB   573 WRITETEXT    JSR PLOT1
ECE1 84FF     574              STY FLAG
ECE3 A900     575              LDA £*00
ECE5 AA       576              TAX
ECE6 88       577 LOOPDEC1     DEY
ECE7 F004     578              BEQ MASK1
ECE9 38       579              SEC
ECEA 6A       580              ROR A
ECEB 90F9     581              BCC LOOPDEC1
ECED 85CC     582 MASK1        STA MASKONE
ECEF B1C9     583 LOOPCHAR     LDA (BYTE),Y
ECF1 49FF     584              EOR £*FF
ECF3 24BE     585              BIT TEXTYPE
ECF5 1002     586              BPL STOREBYTE1
ECF7 25CC     587              AND MASKONE
ECF9 85B3     588 STOREBYTE1   STA TWOBYTE+1
ECFB 84FB     589              STY CHAR2
ECFD BDF787   590              LDA CHARSTORE,X
ED00 45B1     591              EOR ONEBYTE
ED02 A4FF     592              LDY FLAG
ED04 88       593 LOOPDEC2     DEY
ED05 F00E     594              BEQ MASK2
ED07 4A       595              LSR A
ED08 66FB     596              ROR CHAR2
ED0A 90F8     597              BCC LOOPDEC2
ED0C ******   598 !
ED0C EA       599              NOP
ED0D 45B3     600 FLIPTEXT1    EOR TWOBYTE+1
ED0F 500A     601              BVC BIT8                    !UNCONDITIONAL
ED11 45FB     602 FLIPTEXT2    EOR CHAR2
ED13 5019     603              BVC INVERT2
ED15 ******   604 !
ED15 24BE     605 MASK2        BIT TEXTYPE
ED17 50F4     606              BVC FLIPTEXT1      !FLIP TEXT ONLY
ED19 05B3     607              ORA TWOBYTE+1
ED1B 49FF     608 BIT8         EOR £*FF
ED1D 91C9     609              STA (BYTE),Y
ED1F C8       610              INY
ED20 B1C9     611              LDA (BYTE),Y
ED22 24BE     612              BIT TEXTYPE
ED24 1002     613              BPL INVERTBYTE
ED26 05CC     614              ORA MASKONE          !STRAIGHT TEXT ONLY
ED28 49FF     615 INVERTBYTE   EOR £*FF
ED2A 50E5     616              BVC FLIPTEXT2        !FLIP TEXT ONLY
ED2C 05FB     617              ORA CHAR2
ED2E 49FF     618 INVERT2      EOR £*FF
ED30 91C9     619              STA (BYTE),Y
ED32 88       620              DEY
ED33 E8       621              INX
ED34 E008     622              CPX £*08
ED36 D002     623              BNE NEXTLINE
ED38 60       624 END1         RTS
ED39 EA       625              NOP
ED3A 202DEF   626 NEXTLINE     JSR COMPAREY
ED3D C9C7     627              CMP £199
ED3F F0F7     628              BEQ END1            !BOTTOM OF SCREEN
ED41 2034EF   629              JSR DOWNBYTEY
ED44 D0A9     630 LOOPBACK     BNE LOOPCHAR
ED46 ******   631 !
ED46 A000     632 GETSTRCHAR   LDY £0
ED48 B132     633              LDA (STRINGPTR),Y
ED4A 297F     634              AND £*7F
ED4C C912     635              CMP £*12
ED4E D008     636              BNE CONCONT
ED50 A9FF     637 RVSFLIP      LDA £*FF
ED52 45B1     638              EOR ONEBYTE
ED54 85B1     639              STA ONEBYTE
ED56 18       640              CLC
ED57 60       641 FLIPBACK     RTS
ED58 ******   642 !
ED58 C920     643 CONCONT      CMP £*20
ED5A 90FB     644              BCC FLIPBACK
ED5C B132     645              LDA (STRINGPTR),Y   !RE-GET CHAR
ED5E C940     646              CMP £*40
ED60 900E     647              BCC STORE
ED62 C9C0     648              CMP £*C0
ED64 9008     649              BCC SUBTRACT40
ED66 C9FF     650              CMP £*FF            !CHAR = PI
ED68 9002     651              BCC SUBTRACT80
ED6A E922     652              SBC £*22
ED6C E940     653 SUBTRACT80   SBC £*40
ED6E E93F     654 SUBTRACT40   SBC £*3F
ED70 85BC     655 STORE        STA CHARNUMBER
ED72 38       656              SEC
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ED73  60        658          RTS
ED74  *******   659 !
ED74  *******   660 !MAP OR FILL IN AREA BOUNDED BY LINES OR SCREEN EDGE
ED74  20F4EE    661 MAP         JSR CHECKRAMON
ED77  A9FF      662             LDA £*FF
ED79  85FB      663             STA MAPTYPE
ED7B  207000    664             JSR *70
ED7E  C946      665             CMP £'F              !FILL AREA
ED80  F009      666             BEQ MAPIN
ED82  C945      667             CMP £'E              !ERASE AREA
ED84  F003      668             BEQ RESMAP
ED86  4C00BF    669             JMP SYNTAXERROR
ED89  E6FB      670 RESMAP      INC MAPTYPE
ED8B  207000    671 MAPIN       JSR *70
ED8E  F003      672             BEQ MAPOLDSET        !PRE-DEFINED POINT
ED90  20BAEE    673             JSR ALL3
ED93  ADEE93    674 MAPOLDSET    LDA XPOINT
ED96  ACEF93    675             LDY XPOINT+1
ED99  85CE      676             STA XCOPY
ED9B  84CF      677             STY XCOPY+1
ED9D  202CEB    678             JSR PLOT1
EDA0  209EEF    679             JSR BYTETOCOPY
EDA3  2095EF    680             JSR LSRMASK
EDA6  *******   681 !
EDA6  85CC      682 TESTBIT1    STA MASKONE
EDA8  85FF      683             STA MASKCOPY
EDAA  20B2EF    684 TESTBIT2    JSR EORMAP
EDAD  D012      685             BNE NEXTLINECHECK
EDAF  202DEF    686             JSR COMPAREY
EDB2  C9C7      687             CMP £199
EDB4  F032      688             BEQ LOOPMASK1A       !BOTTOM LINE REACHED
EDB6  20A7EF    689 DOWNY       JSR COPYTOBYTE
EDB9  2034EF    690             JSR DOWNBYTEY
EDBC  209EEF    691             JSR BYTETOCOPY
EDBF  D0E9      692             BNE TESTBIT2
EDC1  *******   693 !
EDC1  A5CE      694 NEXTLINECHECK   LDA XCOPY
EDC3  8DEE93    695             STA XPOINT
EDC6  A5CF      696             LDA XCOPY+1
EDC8  8DEF93    697             STA XPOINT+1
EDCB  202DEF    698             JSR COMPAREY
EDCE  F012      699             BEQ RETFILL          !TOP OF SCREEN REACHED
EDD0  20A7EF    700             JSR COPYTOBYTE
EDD3  2053EF    701             JSR UPBYTEY
EDD6  209EEF    702             JSR BYTETOCOPY
EDD9  A5FF      703 SECONDCHECK   LDA MASKCOPY
EDDB  85CC      704             STA MASKONE
EDDD  20B2EF    705             JSR EORMAP
EDE0  F006      706             BEQ LOOPMASK1A
EDE2  60        707 RETFILL     RTS
EDE3  *******   708 !
EDE3  20B2EF    709 LOOPMASK1    JSR EORMAP
EDE6  D056      710             BNE SKIPSKIP1
EDE8  ADEF93    711 LOOPMASK1A   LDA XPOINT+1
EDEB  D005      712             BNE DECX1
EDED  ADEE93    713             LDA XPOINT
EDF0  F038      714             BEQ LHWALL           !LEFT HAND SCREEN EDGE
EDF2  2089EF    715 DECX1       JSR DOWNPOINTX
EDF5  06CC      716             ASL MASKONE
EDF7  90EA      717             BCC LOOPMASK1
EDF9  2080EF    718 LEFTLOOP    JSR DOWNBYTEX
EDFC  B1C9      719             LDA (BYTE),Y
EDFE  C5FB      720             CMP MAPTYPE
EE00  D01C      721             BNE MASKOUT
EE02  ADEF93    722             LDA XPOINT+1
EE05  D007      723             BNE DECX2
EE07  ADEE93    724             LDA XPOINT
EE0A  C907      725             CMP £*7
EE0C  F016      726             BEQ LHWALL1
EE0E  38        727 DECX2       SEC
EE0F  ADEE93    728             LDA XPOINT
EE12  E908      729             SBC £*08
EE14  8DEE93    730             STA XPOINT
EE17  B0E0      731             BCS LEFTLOOP
EE19  CEEF93    732             DEC XPOINT+1
EE1C  F0DB      733             BEQ LEFTLOOP
EE1E  A901      734 MASKOUT     LDA £%00000001
EE20  85CC      735             STA MASKONE
EE22  D0BF      736             BNE LOOPMASK1
EE24  *******   737 !
EE24  8CEE93    738 LHWALL1     STY XPOINT
EE27  *******   739
EE27  B1C9      740 LHWALL      LDA (BYTE),Y
EE29  C5FB      741             CMP MAPTYPE
EE2B  F02D      742             BEQ SETWHOLEBYTE
EE2D  *******   743 !
EE2D  A980      744 SETBYTE1    LDA £%10000000
EE2F  85CC      745             STA MASKONE
EE31  20B2EF    746 LOOPMASK2    JSR EORMAP
EE34  F003      747             BEQ SKIPSKIP
EE36  4CC1ED    748 NLCSKIP     JMP NEXTLINECHECK
EE39  A5CC      749 SKIPSKIP    LDA MASKONE
EE3B  2086EB    750             JSR FLIPLINE
EE3E  2077EF    751 SKIPSKIP1    JSR UPPOINTX
EE41  46CC      752 XUP         LSR MASKONE
EE43  90EC      753             BCC LOOPMASK2
EE45  *******   754 !
EE45  2070EF    755 LOOPMASK2END   JSR UPBYTEX
EE48  ADEF93    756 BYTEUP      LDA XPOINT+1
EE4B  F007      757             BEQ CONTLOOP
EE4D  ADEE93    758             LDA XPOINT
EE50  C940      759             CMP £320-256
EE52  B0E2      760             BCS NLCSKIP
EE54  B1C9      761 CONTLOOP    LDA (BYTE),Y
EE56  C5FB      762             CMP MAPTYPE
EE58  D0D3      763             BNE SETBYTE1
EE5A  A9FF      764 SETWHOLEBYTE   LDA £*FF
EE5C  45FB      765             EOR MAPTYPE
EE5E  91C9      766             STA (BYTE),Y
EE60  18        767             CLC
EE61  ADEE93    768             LDA XPOINT
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```
EE64 6908     768              ADC #$08
EE66 8DEE93   769              STA XPOINT
EE69 90DA     770              BCC LOOPMA8K2END
EE6B EEEF93   771              INC XPOINT+1
EE6E D0D8     772              BNE LOOPMA8K2END
EE70 ******   773 !
EE70 ******   774 !CLEAR OR INVERT SCREEN
EE70 A900     775 CLEAR        LDA #$00
EE72 2CA9FF   776 INVERT       BIT $FFA9
EE75 85FF     777              STA FLAG
EE77 207000   778              JSR $70
EE7A 20F8EE   779              JSR CHECKRAMON3
EE7D A900     780 CLEARIN      LDA #<SCREENSTART
EE7F A090     781              LDY #>SCREENSTART
EE81 85C9     782              STA BYTE
EE83 84CA     783              STY BYTE+1
EE85 A919     784              LDA #25
EE87 85FD     785              STA RESULT
EE89 A208     786 LOOP8K       LDX #$08
EE8B A000     787 LOOP1K       LDY #$00
EE8D A9FF     788 LOOPLINE     LDA #$FF
EE8F 24FF     789              BIT FLAG
EE91 5002     790              BVC CLEARSCREEN
EE93 51C9     791              EOR (BYTE),Y
EE95 91C9     792 CLEARSCREEN  STA (BYTE),Y
EE97 C8       793              INY
EE98 C028     794              CPY #40
EE9A D0F1     795              BNE LOOPLINE
EE9C 203DEF   796              JSR ADD1K
EE9F CA       797              DEX
EEA0 D0E9     798              BNE LOOP1K
EEA2 2045EF   799              JSR NOT1K
EEA5 E904     800              SBC #$04
EEA7 85CA     801              STA BYTE+1
EEA9 C6FD     802              DEC RESULT
EEAB D0DC     803              BNE LOOP8K
EEAD 60       804              RTS
EEAE ******   805 !
EEAE 207000   806 GETINT       JSR $70
EEB1 2084AD   807              JSR TESTYPE          !CHECK NUMERIC AND EVAL EXP.
EEB4 2051CD   808              JSR ADJUSTACC1
EEB7 4CEAC2   809              JMP EVALPOSINT       !CONVERT TO FIXED POINT
EEBA ******   810 !
EEBA 203AEC   811 ALL3         JSR NUMBERIN
EEBD 20D4EE   812 JUST2        JSR CHECKY
EEC0 8EF293   813 STOREPOINT   STX YPOINT
EEC3 8DEE93   814              STA XPOINT
EEC6 8CEF93   815              STY XPOINT+1
EEC9 60       816              RTS
EECA ******   817 !
EECA 8EF193   818 STOREND      STX YEND
EECD 8DEC93   819              STA XEND
EED0 8CED93   820              STY XEND+1
EED3 60       821              RTS
EED4 ******   822 !
EED4 E0C8     823 CHECKY       CPX #200
EED6 900B     824              BCC CHECKX
EED8 A2FF     825 OUTOFRANGE   LDX #255
EEDA 8696     826 ERROREXIT    STX STATUSWORD
EEDC 2083B8   827              JSR $CANBASIC
EEDF A6B4     828 OKEXIT       LDX STACKCOPY
EEE1 9A       829              TXS
EEE2 60       830              RTS
EEE3 ******   831 !
EEE3 A511     832 CHECKX       LDA #$11
EEE5 A412     833              LDY #$12
EEE7 C000     834 CHECKX2      CPY #0
EEE9 F008     835              BEQ RETURN
EEEB C001     836              CPY #1
EEED D0E9     837              BNE OUTOFRANGE
EEEF C940     838              CMP #320-256
EEF1 B0E5     839              BCS OUTOFRANGE
EEF3 60       840 RETURN       RTS
EEF4 ******   841 !
EEF4 A904     842 CHECKRAMON   LDA #4
EEF6 85BB     843 CHECKRAMON2  STA FLAG1
EEF8 A2FE     844 CHECKRAMON3  LDX #254
EEFA ADF393   845              LDA TESTBYTE
EEFD 49FF     846              EOR #$FF
EEFF 8DF393   847              STA TESTBYTE
EF02 CDF393   848              CMP TESTBYTE
EF05 D0D3     849              BNE ERROREXIT
EF07 60       850 CHECKOK      RTS
EF08 ******   851 !
EF08 18       852 ADDBYTE      CLC
EF09 65C9     853              ADC BYTE
EF0B 85C9     854              STA BYTE
EF0D 8A       855              TXA
EF0E 65CA     856 ADDHIBYTE    ADC BYTE+1
EF10 85CA     857              STA BYTE+1
EF12 60       858              RTS
EF13 ******   859 !
EF13 ADF293   860 CMPYEND      LDA YPOINT
EF16 CDF193   861              CMP YEND
EF19 F0C4     862              BEQ OKEXIT
EF1B 60       863              RTS
EF1C ******   864 !
EF1C ADEF93   865 CMPXEND      LDA XPOINT+1
EF1F CDED93   866              CMP XEND+1
EF22 D008     867              BNE RETXEND
EF24 ADEE93   868              LDA XPOINT
EF27 CDEC93   869              CMP XEND
EF2A F0B3     870              BEQ OKEXIT
EF2C 60       871 RETXEND      RTS
EF2D ******   872 !
EF2D 38       873 COMPAREY     SEC
EF2E A9C7     874              LDA #199
EF30 EDF293   875              SBC YPOINT
EF33 60       876              RTS
EF34 ******   877 !
EF34 CEF293   878 DOWNBYTEY    DEC YPOINT
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```
EF37 2907     879                AND £%00000111
EF39 C907     880                CMP £&07
EF3B F008     881                BEQ NOT1K          !7 TO 0 MOVE
EF3D 18       882 ADD1K          CLC
EF3E A5CA     883                LDA BYTE+1
EF40 6904     884                ADC £&04
EF42 85CA     885                STA BYTE+1
EF44 60       886                RTS
EF45 38       887 NOT1K          SEC
EF46 A5C9     888                LDA BYTE
EF48 E9D8     889                SBC £&D8           ! <((7*1024)-40)
EF4A 85C9     890                STA BYTE
EF4C A5CA     891                LDA BYTE+1
EF4E E91B     892                SBC £&1B           !>((7*1024)-40)
EF50 85CA     893                STA BYTE+1
EF52 60       894                RTS
EF53 ******   895 !
EF53 EEF293   896 UPBYTEY        INC YPOINT
EF56 2907     897                AND £%00000111
EF58 F008     898                BEQ CROSSLINE2
EF5A 38       899                SEC
EF5B A5CA     900                LDA BYTE+1
EF5D E904     901                SBC £&4
EF5F 85CA     902                STA BYTE+1
EF61 60       903                RTS
EF62 18       904 CROSSLINE2     CLC
EF63 A5C9     905                LDA BYTE
EF65 69D8     906                ADC £&D8
EF67 85C9     907                STA BYTE
EF69 A5CA     908                LDA BYTE+1
EF6B 691B     909                ADC £&1B
EF6D 85CA     910                STA BYTE+1
EF6F 60       911                RTS
EF70 ******   912 !
EF70 E6C9     913 UPBYTEX        INC BYTE
EF72 D002     914                BNE BYTERET
EF74 E6CA     915                INC BYTE+1
EF76 60       916 BYTERET        RTS
EF77 ******   917 !
EF77 EEEE93   918 UPPOINTX       INC XPOINT
EF7A D003     919                BNE POINTRET
EF7C EEEF93   920                INC XPOINT+1
EF7F 60       921 POINTRET       RTS
EF80 ******   922 !
EF80 A5C9     923 DOWNBYTEX      LDA BYTE
EF82 D002     924                BNE DECBYTE
EF84 C6CA     925                DEC BYTE+1
EF86 C6C9     926 DECBYTE        DEC BYTE
EF88 60       927                RTS
EF89 ******   928 !
EF89 ADEE93   929 DOWNPOINTX     LDA XPOINT
EF8C D003     930                BNE DECPOINT
EF8E CEEF93   931                DEC XPOINT+1
EF91 CEEE93   932 DECPOINT       DEC XPOINT
EF94 60       933                RTS
EF95 ******   934 !
EF95 A980     935 LSRMASK        LDA £%10000000
EF97 88       936 LOOPDEC        DEY
EF98 F003     937                BEQ LSRRET
EF9A 4A       938                LSR A
EF9B 90FA     939                BCC LOOPDEC
EF9D 60       940 LSRRET         RTS
EF9E ******   941 !
EF9E ******   942 !
EF9E A5C9     943 BYTETOCOPY     LDA BYTE
EFA0 85C0     944                STA BYTECOPY
EFA2 A5CA     945                LDA BYTE+1
EFA4 85C1     946                STA BYTECOPY+1
EFA6 60       947                RTS
EFA7 ******   948 !
EFA7 48       949 COPYTOBYTE     PHA
EFA8 A5C0     950                LDA BYTECOPY
EFAA 85C9     951                STA BYTE
EFAC A5C1     952                LDA BYTECOPY+1
EFAE 85CA     953                STA BYTE+1
EFB0 68       954                PLA
EFB1 60       955                RTS
EFB2 ******   956 !
EFB2 ******   957 !
EFB2 B1C9     958 EORMAP         LDA (BYTE),Y
EFB4 45FB     959                EOR MAPTYPE
EFB6 24CC     960                BIT MASKONE
EFB8 60       961                RTS
EFB9 ******   962 !
EFB9 ******   963 !
EFB9 ******   964 !TABLE OF SCREEN BYTES
EFB9 909498   965 HITABLE        .BYTE &90,&94,&98,&9C
EFBD A0A4A8   966                .BYTE &A0,&A4,&A8,&AC
EFC1 ******   967 !
EFC1 EA       968                NOP
EFC2 EA       969                NOP
EFC3 EA       970                NOP
EFC4 EA       971                NOP
EFC5 EA       972                NOP
EFC6 EA       973                NOP
EFC7 ******   974 !JUMP TABLE FOR ENTRY POINTS
EFC7 ******   975 !
EFC7 4C80EF   976 DECBYTEENTRY     JMP DOWNBYTEX
EFCA ******   977 !
EFCA 4C70EF   978 INCBYTEENTRY     JMP UPBYTEX
EFCD ******   979 !
EFCD 4C34EF   980 DOWNBYTENTRY     JMP DOWNBYTEY
EFD0 ******   981 !
EFD0 4C53EF   982 UPBYTENTRY       JMP UPBYTEY
EFD3 ******   983 !
EFD3 4C77EF   984 INCPTENTRY       JMP UPPOINTX
EFD6 ******   985 !
EFD6 4C89EF   986 DECPTENTRY       JMP DOWNPOINTX
EFD9 ******   987 !
EFD9 4CC0EE   988 STOREPTENTRY     JMP STOREPOINT
EFDC ******   989 !
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EFDC 4CCAEE   990 STORENDENTRY  JMP STOREND
EFDF ******   991 !
EFDF 4CF4EE   992 RAMCHECKENTRY  JMP CHECKRAMON !RAM TEST ENTRY(SET FLAG1=4)
EFE2 ******   993 !
EFE2 4C18E9   994 LATCHENTRY  JMP LATCHMASK      !LATCH ENTRY POINT
EFE5 ******   995 !
EFE5 4C72EC   996 CONTEXTENTRY  JMP CONTLINE     !SINGLE TEXT CHAR ENTRY(MODI
FY Y)
EFE8 ******   997 !
EFE8 4C2DEF   998 COMPYENTRY  JMP COMPAREY       !SEC,LDA £199,SBC YPOINT,RTS
EFEB ******   999 !
EFEB 4C01EA  1000 LINESENTRY  JMP START          !LINES ENTRY POINT
EFEE ******  1001 !
EFEE 4C2CE9  1002 POINTENTRY  JMP PLOT1          !POINT ENTRY POINT
EFF1 ******  1003 !
EFF1 4C93ED  1004 MAPENTRY  JMP MAPOLDSET        !MAP FILL & ERASE
EFF4 ******  1005 !
EFF4 4C7DEE  1006 CLEARENTRY  JMP CLEARIN        !CLEAR & INVERT ENTRY
EFF7 ******  1007 !
EFF7 4CB8E9  1008 EXAMENTRY  JMP EXAMINEIN       !EXAMINE ENTRY POINT
EFFA ******  1009 !
EFFA 4C14EC  1010 STRTEXTENTRY  JMP CONTEXT      !STRING TEXT ENTRY POINT
EFFD ******  1011 !
EFFD 4C9FEC  1012 NUMTEXTENTRY  JMP BACKIN2      !NUMERIC TEXT ENTRY POINT
F000 ******  1013 !
F000 ******  1014          .END
```

The source listing is the 80-column version. Where the addresses of ROM routines and tables differ for other machines this is noted in the listing. The main difference is in the text routine, which is considerably different for 9 inch screen machines: the 9 inch text listing is given below. Note that the routine at $E7E9 is not required for 9 inch machines.

```
ECBB ******   557 ! 9 INCH SCREEN TEXT ROUTINE
ECBB 202CE9   558          JSR PLOT1
ECBE 84FF     559          STY FLAG
ECC0 A900     560          LDA £0
ECC2 A208     561          LDX £*08
ECC4 88       562 LOOPDEC1  DEY                !SET UP MASK
ECC5 F004     563          BEQ MASK1
ECC7 38       564          SEC
ECC8 6A       565          ROR A
ECC9 90F9     566          BCC LOOPDEC1
ECCB 85CC     567 MASK1    STA MASKONE
ECCD B1C9     568 LOOPCHAR  LDA (BYTE),Y
ECCF 49FF     569          EOR £*FF            !NORMAL LOGIC
ECD1 24BE     570          BIT TEXTYPE
ECD3 1002     571          BPL STOREBYTE1      !OVERLAY OR FLIP TEXT
ECD5 25CC     572          AND MASKONE
ECD7 85B3     573 STOREBYTE1  STA TWOBYTE+1
ECD9 84FB     574          STY CHAR2           !SET TO 0
ECDB 84CB     575          STY MEMOFF        !SET TO 0
ECDD 2CF9A7   576          BIT CHARBLOCKSTART+1
ECE0 100C     577          BPL GETBYTE
ECE2 C6CB     578          DEC MEMOFF        !SET TO *FF
ECE4 AD40E8   579 RETRACE   LDA *E840
ECE7 2920     580          AND £*20
ECE9 D0F9     581          BNE RETRACE
ECEB 8CB888   582          STY LATCH
ECEE B1B7     583 GETBYTE   LDA (CHARPOINT),Y
ECF0 24CB     584          BIT MEMOFF
ECF2 100A     585          BPL EORONEBYTE
ECF4 48       586          PHA
ECF5 AD7902   587          LDA LATCHCOPY
ECF8 0901     588          ORA £%00000001      !ENSURE RAM ON
ECFA 8DB888   589          STA LATCH
ECFD 68       590          PLA
ECFE 45B1     591 EORONEBYTE  EOR ONEBYTE        !INVERT FOR REVERSE FIELD
ED00 A4FF     592          LDY FLAG
ED02 88       593 LOOPDEC2  DEY
ED03 F00D     594          BEQ MASK2
ED05 4A       595          LSR A
ED06 66FB     596          ROR CHAR2
ED08 90F8     597          BCC LOOPDEC2
ED0A ******   598 !
ED0A 45B3     599 FLIPTEXT1  EOR TWOBYTE+1
ED0C 500A     600          BVC BITS            !UNCONDITIONAL
ED0E 45FB     601 FLIPTEXT2  EOR CHAR2
ED10 5019     602          BVC INVERT2
ED12 ******   603 !
ED12 24BE     604 MASK2     BIT TEXTYPE
ED14 50F4     605          BVC FLIPTEXT1     !FLIP TEXT ONLY
ED16 05B3     606          ORA TWOBYTE+1
ED18 49FF     607 BITS      EOR £*FF
ED1A 91C9     608          STA (BYTE),Y
ED1C C8       609          INY
ED1D B1C9     610          LDA (BYTE),Y
ED1F 24BE     611          BIT TEXTYPE
ED21 1002     612          BPL INVERTBYTE
ED23 05CC     613          ORA MASKONE       !STRAIGHT TEXT ONLY
ED25 49FF     614 INVERTBYTE  EOR £*FF
ED27 50E5     615          BVC FLIPTEXT2     !FLIP TEXT ONLY
ED29 05FB     616          ORA CHAR2
ED2B 49FF     617 INVERT2   EOR £*FF
ED2D 91C9     618          STA (BYTE),Y
ED2F 88       619          DEY
ED30 CA       620          DEX
ED31 D001     621          BNE NEXTLINE
ED33 60       622 END1     RTS
ED34 E6B7     623 NEXTLINE  INC CHARPOINT
ED36 D002     624          BNE SETCARRY
ED38 E6B8     625          INC CHARPOINT+1
ED3A 202DEF   626 SETCARRY  JSR COMPAREY
```