


```

61 X
62 X ON ENTRY X = co-ords XYYY
63 X      B = plot command ZERO = SET PIXEL
64 X      POS = CLEAR PIXEL
65 X      NEG = TEST PIXEL
66 X      after test Z flag clear = pixel set
67
F034 F7 DFD0      68 PIXPLOT STB  PLTCMD
F037 BF E7EC      69      STX  CURNTX
F03A 34 16      70 PIXPLT1 PSHS A,B,X
F03C 1F 10      71      TFR  X,D
F03E 81 A0      72      CMPA #160      check co-ord ranges.
F040 24 49      (F08B) 73      BHS  RET
F042 C1 4B      74      CMPB #75
F044 24 45      (F08B) 75      BHS  RET
76
77 XXX CALC LINE ADDR. FROM Y co-ord
78
F046 8E E799      79      LDX  #SCRBOT+1 first char space bottom line
F049 C1 03      80 PP2  CMPB  #3
F04B 25 07      (F054) 81      BLO  PP1
F04D C0 03      82      SUBB #3
F04F 30 88 AF      83      LEAX -$51,X      next line up
F052 20 F5      (F049) 84      BRA  PP2
F054 F7 DFDC      85 PP1  STB  COLL      save vert. pix posn.
F057 BF DFE8      86      STX  ADDHI     & line start
87
88 X NOW CALC COLUMN No. FROM X coord
89
F05A 1F 89      90      TFR  A,B
F05C 54      91      LSRB
F05D 34 01      92      PSHS CC      save carry flag
F05F 4F      93      CLRA
F060 F3 DFE8      94      ADDD ADDHI     add to address
F063 FD DFE8      95      STD  ADDHI
96
97 X now find pixel bit
98
F066 F6 DFDC      99      LDB  COLL
F069 30 8C 25      (F091) 100     LEAX BITTAB,PCR
F06C A6 05      101     LDA  B,X
F06E 35 01      102     PULS CC
F070 24 01      (F073) 103     BCC  PB5      was carry set
F072 48      104     ASLA      yes. move to right of char space
F073 85 20      105 PB5  BITA #20      IS IT BIT 5
F075 27 01      (F078) 106     BEQ  DOCMD
F077 48      107     ASLA      IF SO CHNGE BIT 5 TO 6
108
F078 BE DFE8      109 DOCMD LDX  ADDHI
F07B 7D DFD0      110     TST  PLTCMD
F07E 2B 00      (F08D) 111     BMI  TEST
F080 26 04      (F086) 112     BNE  WIPE
F082 AA 84      113     ORA  ,X      pixel on
F084 20 03      (F089) 114     BRA  MODIFY
F086 43      115 WIPE  COM A
F087 A4 84      116     ANDA ,X      pixel off
F089 A7 84      117 MODIFY STA  ,X
F08B 35 96      118 RET  PULS A,B,X,PC
F08D A4 84      119 TEST ANDA ,X      test pixel
F08F 35 96      120     PULS A,B,X,PC

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121
F091 100401 122 BITTAB FCB 16,4,1 pixel bit value table
123
124 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
125 XX LINE PLOT ROUTINE XX
126
127 X On entry X = next co-ords XXYX
128 X B = plot command NEG = move to XXYX
129 X ZERO = draw to XXYX
130 X POS = erase to XXYX
131 X
132
F094 5D 133 LINPLT TST B
F095 2A 04 (F09B) 134 BPL CARYON B neg (MOVE). so
F097 BF E7EC 135 STX CURNTX just update co-ords
F09A 39 136 RTS
137
F09B 34 16 138 CARYON PSHS A,B,X
F09D F7 DFD0 139 STB PLTCMD save command
F0A0 BF E7EE 140 STX NEXTX and next co-ords
F0A3 CC 0101 141 LDD £101
F0A6 FD DFE6 142 STD XDIR set both draw directions to +1
F0A9 5F4F 143 CLR
F0AB FD DFEB 144 STD XIND clear independent axis directions
145
F0AE B6 E7EE 146 LDA NEXTX
F0B1 B0 E7EC (F0BA) 147 SUBA CURNTX is X direction + or -
F0B4 24 04 (F0BA) 148 BCC LIN1
F0B6 40 149 NEG A is neg. make A pos
F0B7 70 DFE6 150 NEG XDIR and X direction neg.
151
F0BA F6 E7EF 152 LIN1 LDB NEXTY
F0BD F0 E7ED (F0C6) 153 SUBB CURNTY is Y direction + or -
F0C0 24 04 (F0C6) 154 BCC LIN2
F0C2 50 155 NEG B is neg. make B pos
F0C3 70 DFE7 156 NEG YDIR and Y direction neg.
157
158 XX use axis with greatest move as independent axis
159
F0C6 34 04 160 LIN2 PSHS B
F0C8 A1 E0 (F0DC) 161 CMPA ,S+ which axis move is longer
F0CA 24 10 (F0DC) 162 BHS LIN3
F0CC F7 E7E9 163 STB PIXCNT Y is independent axis
F0CF B7 E7EB 164 STA DPCNT X is dependent
F0D2 B6 DFE7 165 LDA YDIR
F0D5 B7 DFEC 166 STA YIND
F0D8 1F 98 167 TFR B,A
F0DA 20 0C (F0EB) 168 BRA LIN4
169
F0DC B7 E7E9 170 LIN3 STA PIXCNT X is independent
F0DF F7 E7EB 171 STB DPCNT Y is dependent
F0E2 F6 DFE6 172 LDB XDIR
F0E5 F7 DFEB 173 STB XIND
174
F0E8 B0 E7EB 175 LIN4 SUBA DPCNT
F0EB B7 E7EA 176 STA DIFF
177
F0EE B6 E7E9 178 LDA PIXCNT
F0F1 27 3C (F12F) 179 BEQ EXIT (idiot trap)
F0F3 44 180 LSRA

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F0F4	B0 E7EA		181	SUBA	DIFF	
F0F7	B7 DFD1		182	STA	ERROR	set initial error value to 1/2 pixcnt
			183			
F0FA	BE E7EC		184	LDX	CURNTX	plot initial point
F0FD	17 FF3A	(F03A)	185	LBSR	PIXPLT1	
			186			
			187	X MAIN LINE PLOT LOOP		
			188			
F100	B6 DFD1		189	PLTLOP	LDA	ERROR
F103	28 08	(F110)	190	BMI	IND	if error neg move independent axis only
			191			
F105	B0 E7EA		192	SUBA	DIFF	else adjust error
F108	B7 DFD1		193	STA	ERROR	
F10B	FC DFE6		194	PLT1	LDD	XDIR
F10E	20 09	(F119)	195	BRA	MVPNT	and move both axes
			196			
F110	BB E7EB		197	IND	ADDA	DPCNT
F113	B7 DFD1		198	STA	ERROR	adjust error pos
F116	FC DFEB		199	PLT2	LDD	XIND
			200			move independent axis only
F119	BB E7EC		201	MVPNT	ADDA	CURNTX
F11C	B7 E7EC		202	STA	CURNTX	move to new position
F11F	FB E7ED		203	ADDB	CURNTY	
F122	F7 E7ED		204	STB	CURNTY	
			205			
F125	1F 01		206	TFR	D,X	get co-ords in X
F127	17 FF10	(F03A)	207	LBSR	PIXPLT1	go plot pixel
F12A	7A E7E9		208	DEC	PIXCNT	
F12D	26 D1	(F100)	209	BNE	PLTLOP	not finished so loop
F12F	35 96		210	EXIT	PULS	A,B,X,PC
			211			
			212	END		

ADDHI	DFE8	BITTAB	F091	CARYON	F09B	COLL	DFDC	CURNTX	E7EC
CURNTY	E7ED	DIFF	E7EA	DOCMD	F078	DPCNT	E7EB	DRAW	F008
EPMARK	F000	ERROR	DFD1	EXIT	F12F	GROFF	F00B	GRON	F002
IND	F110	INIT6	F00E	LIN1	F0BA	LIN2	F0C6	LIN3	F0DC
LIN4	F0E8	LINPLT	F094	MODIFY	F089	MVPNT	F119	NEXTX	E7EE
NEXTY	E7EF	P85	F073	PIXCNT	E7E9	PIXPLOT	F034	PIXPLT1	F03A
PLOT	F005	PLT1	F10B	PLT2	F116	PLTCMD	DFD0	PLTLOP	F100
PP1	F054	PP2	F049	QUIT	F024	RET	F00B	SCRBOT	E798
TEST	F08D	UCLRSC	F01E	WIPE	F086	XDIR	DFE6	XIND	DFEB
YDIR	DFE7	YIND	DFEC						