

```
1 #Picaxe 14M2
2 #Com 3
3 '#Freq m8
4 #Terminal 38400
5 #No_Data
6 '#No_Table
7 'Disconnect
8
9 Power_On_Reset:
10 GOSUB InitialiseLcd
11
12 Electroflash_Splash_Screen:
13 GOSUB Power_Up
14
15 Overclock:
16 setfreq m32
17
18 Loopa:
19
20 Buffer_Serial_In:
21 serin C.3, N4800_32, b12
22 poke 21,b12
23 for b0 = 22 to 38
24 serin [100,Jumpa],C.3, N4800_32, b12
25 poke b0,b12
26 next
27 Jumpa:
28
29 Display:
30 for b0 = 21 to 38
31
32 peek b0,b12
33 if b12 = 0 then Jumpb
34 'read the bytes back out of RAM until a 0 NULL byte is detected
35
36 Command_Byte:
37 if b12 = 254 then
38 inc b0
39 peek b0,b12
40
41 Command_Ext:
42 if b12 = 254 then
43 inc b0
44 peek b0,b12
45
46 Command_Lite_On:
47 if b12 = 1 then
48 high C.0
49 endif
50
51 Command_Lite_Off:
52 if b12 = 2 then
53 low C.0
54 endif
55
56 b12 = 2
57 endif
58
59 gosub SendCmdByte
60
61 poke b0,0
62
63 Data_Byte:
64 else
65 'Go and print the byte if it is NOT a command byte or NOT a zero (NULL) byte
66 gosub SendDataByte
67 'Go display the txt
68 endif
69
70 poke b0,0
71 next
```

```

72
73 Jumpb:
74 'sertxd (13,10)
75
76 goto Loopa
77
78 '+++++
79
80 Power_Up:
81
82 Back_Light_On:
83 high C.0
84
85 First_Row:
86 b12 = 128
87 GOSUB SendCmdByte
88
89 Display_EEPROM_Message:
90 for b0 = 0 to 15
91 lookup b0, ("Hi Young Guns..."), b12
92 gosub SendDataByte
93 next b0
94
95 pause 500
96
97 Second_Row:
98 b12 = 192
99 GOSUB SendCmdByte
100
101 for b0 = 0 TO 15
102 lookup b0, ("Electroflash LCD"), b12
103 gosub SendDataByte
104 next
105
106 pause 2000
107
108 Clear_Screen:
109 b12 = 1
110 GOSUB SendCmdByte
111
112 Back_Light_Off:
113 low C.0
114
115 return
116
117 '+++++
118
119 InitialiseLcd:
120 for b0 = 0 TO 5
121 lookup b0, ($33, $32, $28, $0C, $06, $01), b12
122 gosub SendInitCmdByte
123 next
124 return
125 'Send initial 6 configuration control bytes to display
126
127 SendInitCmdByte:
128 dirsB = %11111111
129 'Set all port pins as Outputs
130 pinsB = %00000000
131 'Set all port pins to 0
132 pause 15
133 'pause a bit to allow the LCD to respond
134
135 SendCmdByte:
136 b13 = %00000000
137 'Preset the LCD RS to Command register mode by setting RS pin 9 to a 0
138
139 SendDataByte:
140 pinsB = b12 & %11110000 / 4 | b13
141 'AND mask high nibble, shift 2 places to Right, OR with RS Mask b13, place byte
    out to Pins

```

```

142 pulsout B.1,1
143 'Clock Pins data into LCD module with a 10uS pulse on pin 1 E line for 10uS
144 pinsB = b12 & %00001111 * 4 | b13
145 'AND mask low nibble, shift 2 places to Left, OR with RS Mask b13, place byte out
    to Pins
146 pulsout B.1,1
147 'Clock Pins C data into LCD module with a 10uS pulse on pin 1 E line for 10uS
148 b13 = %00000001
149 'Always reset the RS b13 mask back to nominal data register mode by setting C.4
    RS bit 4 to a 1
150 return
151
152
153 ;
;
;
; Nibble commands - To initialise 4-bit mode
155 ; 0,( $33 )      ; %0011---- %0011----    8-bit / 8-bit
156 ; 1,( $32 )      ; %0011---- %0010----    8-bit / 4-bit
157 ;
; Byte commands - To configure the LCD
158 ; 2,( $28 )      ; %00101000 %001LNF00    Display Format
159 ; 3,( $0C )      ; %00001100 %00001DCB    Display On
160 ; 4,( $06 )      ; %00000110 %000001IS    Cursor Move
161 ;
; L : 0 = 4-bit Mode    1 = 8-bit Mode
162 ; N : 0 = 1 Line      1 = 2 Lines
163 ; F : 0 = 5x7 Pixels  1 = N/A
164 ; D : 0 = Display Off 1 = Display On
165 ; C : 0 = Cursor Off  1 = Cursor On
166 ; B : 0 = Cursor Steady 1 = Cursor Flash
167 ; I : 0 = Dec Cursor  1 = Inc Cursor
168 ; S : 0 = Cursor Move 1 = Display Shift
169 ; 5,( $01 )      ; Clear Screen
170 ;
171 ;
172 ;
;
; Comand Bytes
173 ; =====
174 ; 1 Clear display          '2 Move the cursor to the start of the
    first line
175 ; 4 Set 'right to left printing' mode '5 Set 'scroll printing to the left'
    mode
176 ; 6 Set 'left to right printing' mode '7 Set 'scroll printing to the right'
    mode
177 ; 10 Turn visual LCD screen off      '12 Hide cursor
178 ; 13 Make cursor flash                '14 Turn visual LCD screen (and
    cursor) on
179 ; 16 Move cursor left one position     '20 Move cursor right one position
180 ; 24 Scroll display left one position  '28 Scroll display 'window' right one
    position
181 ; 128 Move cursor to start of first line '192 Move cursor to start of second
    line
182 ;
183 ;
184 ;
185 ;
;
; PICAXE 14M
186 ; =====
187 ; NC->| 16 | Optional LED Back Light -ve
188 ; NC->| 15 | Optional LED Back Light +ve
189 ; Pin 5 ----->| 14 | DB7
190 ; Pin 4 ----->| 13 | DB6
191 ; Pin 3 ----->| 12 | DB5
192 ; Pin 2 ----->| 11 | DB4
193 ; ,--->| 10 | DB3
194 ; |--->| 9 | DB2
195 ; |--->| 8 | DB1
196 ; |--->| 7 | DB0
197 ; Pin 1 ----->| 6 | E
198 ; .. |--->| 5 | W/R
199 ; Pin 0 ----->| 4 | RS
200 ; |--->| 3 | Vo
201 ; +V ----->| 2 | Vcc

```

```
202 ; 0V -----^--->| 1 | Vss
203 ; -----'
204 ;
205 ; .....
206 ;
207
```