

Brother FAX-645 LCD initialisation sequence

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LCD 6 pin interface : DATA, CLK, STB, GND, +5V, GND

- DATA Data, write clocked on rising edge of CLK.
Sent least-significant-bit first, 8 bit words, 800uS
delay between bytes.
- CLK Clock, 28uS (35.714kHz), only present during STB
period.
- STB Strobe, active low, transitions on the falling edge of
CLK. Held low for duration of a byte, or
continuously for duration of a byte sequence.
- GND 0V
- VDD +5V

LCD initialisation:

```
08 20 F8 01

06 0C 40 0A 00 0E 01 0F 11 0F 00 0A 00 0E 11 11 11 0E 00 0A 00 11 11 11 13
0D 00 06 09 1C 80 1C 09 06 00

0C 80 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 80 0C

...

0C 80 50 4C 45 41 53 45 20 57 41 49 54 20 20 20 20 20 8F 0C

...

-----
```

Initial code, each byte written with a single pulse to the STB line,

08 - Display off, cursor off, blink off

20 - Mode 4 bit, 1 line, 5x7 font

F8 - Set Data cursor to 0x78 (but writes no data as strobe goes high again)

01 - Clear display. 20mS delay before next sequence.

Second initialisation sequence after 24mS, 800uS between bytes

06 - Right data entry, no scroll

0C - Display on, cursor off, blink off

The following bytes are written with STB held low for the duration

40 - Write to character generator (characters 0, 1, 2, 3 written)

```
0A 00 0E 01 0F 11 0F 00 -  .#.#.  
                          .....  
                          .###.  
                          .....#  
                          .####  
                          #...#  
                          .####  
                          .....
```

```
0A 00 0E 11 11 11 0E 00 -  .#.#.  
                          .....  
                          .###.  
                          #...#  
                          #...#  
                          #...#  
                          .###.  
                          .....
```

```
0A 00 11 11 11 13 0D 00 -  .#.#.  
                          .....  
                          #...#  
                          #...#  
                          #...#  
                          #...#  
                          .##.#  
                          .....
```

```
06 09 1C 80 1C 09 06 00 -  ..##.  
                          .#...#  
                          ###..  
                          .....  
                          ###..  
                          .#...#  
                          ..##.  
                          .....
```

First displayed data written at 100mS after initialisation start, then repeated again at 131mS and 165mS

0C - Display on, cursor off, blink off

The following bytes are written with STB held low for the duration

80 - Write characters to display starting at cursor position 0

20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 - " " , blank

The following two bytes are written with separate strobes and terminate the displayed character write

80 - Position cursor to position 0, but writes no characters as strobe goes high again

0C - Display on, cursor off, blink off

Text written at 198mS, then repeated sequence of blanking and rewriting again at 2.9S, 3.6S and 4.0S

0C - Display on, cursor off, blink off

The following bytes are written with STB held low for the duration

80 - Write characters to display starting at cursor position 0

50 4C 45 41 53 45 20 57 41 49 54 20 20 20 20 20 - "PLEASE WAIT "

The following two bytes are written with separate strobes and terminate the displayed character write

8F - Position cursor to position 15, but writes no characters as strobe goes high again

0C - Display on, cursor off, blink off

At 4.5S Display then blanked again and "TELEPHONE " displayed