

4 wire SPI interface, rs, cs, mosi, clk.

4.7uS clock (214kHz). Data clocked on rising edge of clock. cs active low, held low for 667nS after last clock rising edge. cs asserted 12uS before first clock pulse. rs asserted 333nS to 667ns before cs. rs low = command, high = data.

20 4bits, 1 line, 5x8 dots

0D Display ON, Cursor OFF, Cursor Blink ON

28 4bits, 2 lines, 5x8 dots

13 ?

50

12d

08

18

0E

24

100ms

26

10ms

27

15ms

1C

C0 Store programable character patterns

04d

0Ed

1Fd

11d

15d

15d

1Fd

00d

01d

1Fd

11d

11d

1Fd

1Fd

1Fd

00d

15d

0Ad

15d

0Ad

15d

0Ad

15d

00d

0Ad

15d

0Ad

15d

0Ad

15d

0Ad

00d

Clear icon display

40

00d

00d

00d

00d
00d
00d
00d
00d
00d
00d
00d
00d
00d
00d
00d
00d

Clear text display
80 Set DDRAM to 0000000

20d
20d
20d
20d
20d
20d
20d
20d
20d
20d
20d
20d
20d
20d
20d
20d
20d

20d
20d
20d
20d
20d
20d
20d
20d
20d
20d
20d
20d
20d
20d
20d

29
13
1C
50
12d
08
29
0E
27

C0 Store programable character patterns
04d 00100
0Ed 01110

1Fd 11111
11d 10001
15d 10101
15d 10101
1Fd 11111
00d 00000

01d 00001
1Fd 11111
11d 10001
11d 10001
1Fd 11111
1Fd 11111
1Fd 11111
00d 00000

15d 10101
0Ad 01010
15d 10101
0Ad 01010
15d 10101
0Ad 01010
15d 10101
00d 00000

0Ad 01010
15d 10101
0Ad 01010
15d 10101
0Ad 01010
15d 10101
0Ad 01010
00d 00000

40 Set Icon addr to 0

00d
00d
00d
00d
00d
00d
00d
00d
00d
00d
00d
00d
00d
00d
00d

03d battery icon?

08d
00d

80 Set DDRAM to 0000000

20d
20d
20d
20d
57d W
65d e
6Cd l
63d c
6Fd o
6Dd m

65d e
21d !
20d
20d
20d
20d

20d
50d P
6Cd l
65d e
61d a
73d s
65d e
20d SP
77d w
61d a
69d i
74d t
2Ed .
2Ed .
2Ed .
20d

4.5s
13
1C
50
12d
08
29
0E
27

C0 Store programable character patterns

04d
0Ed
1Fd
11d
15d
15d
1Fd
00d

01d 00001
1Fd 11111
11d 10001
11d 10001
1Fd 11111
1Fd 11111
1Fd 11111
00d 00000

15d
0Ad
15d
0Ad
15d
0Ad
15d
00d

0Ad

15d
0Ad
15d
0Ad
15d
0Ad
00d

40
00d
00d
00d
00d
00d
00d
00d
00d
10d bell icon?
00d
00d
00d
00d
03d battery icon?
08d
00d

80 Set DDRAM to 0000000

20d
20d
20d
20d
20d
20d
20d
20d
20d
20d
20d
20d
20d
20d
20d
20d
20d

20d
20d
4Fd O
75d u
74d t
20d
4Fd O
66d f
20d
52d R
61d a
6Ed n
67d g
65d e
20d
20d