Uniden WDECT2315 phone LCD initialisation sequence

v1.0 24 Apr 2019

Phone was manufacturered about 2017.

Display is a character module, 3 lines of 16 character, but seems to be addressed as 1 line of 48 characters. Characters are formed from a 5x7 pixel grid.

LCD 8 pin, 4 wire SPI interface : CS, DATA, CLK, RS, , RESET, Vcc, GND, Vlcd

withVbat = 3.3V

CS	Chip select, active low asserted 7uS before first CLK pulse held low for duration of a byte until 583nS after last CLK rising
DATA	Data, write clocked on rising edge of CLK. Sent most-significant-bit first, 8 bit words, 1000uS delay between bytes.
CLK	Clock, 5uS (214kHz), only present when clocking data bits.
RS	Register select Low = command High = data asserted 333nS to 667ns before CS
RST	0V jumps to 3.24V after short delay on powerup
Vcc	3.24V
GND	0V (battery -ve)
Vlcd	-2.65V

LCD initialisation:
(each byte is a command, unless designated with a "d" as data)

```
31
```

6mS delay

```
31
31
08
01
```

4mS delay

```
06
```

Store programable character patterns

C0	Set CGRAM addr register to 0000000
08d	0 ▮000
0Cd	0 ▮▮00
0Ed	0 ▮▮▮0
0Fd	0 ▮▮▮▮
0Ed	0 ▮▮▮0
0Cd	0 ▮▮00
08d	0 ▮000
00d	00000
08d	0 ▮000
0Cd	0 ▮▮00
0Ed	0 ▮▮▮0
0Fd	0 ▮▮▮▮
0Ed	0 ▮▮▮0
0Cd	0 ▮▮00

```
08d        0█000
00d        00000
08d        0█000
0Cd        0██00
0Ed        0███0
0Fd        0████
0Ed        0███0
0Cd        0██00
08d        0█000
00d        00000
08d        0█000
0Cd        0██00
0Ed        0███0
0Fd        0████
0Ed        0███0
0Cd        0██00
08d        0█000
00d        00000

0C
```

Clear text display

" "
" "
" "

```
02         Home cursor
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
20d
20d
20d
20d
20d
20d
20d
```

```
20d
20d
20d
20d
20d
20d
20d
20d
20d
```

400mS delay

```
31
```

6mS delay

```
31
31
06
```

2mS delay

Store programable character patterns

```
C0          Set CGRAM addr register to 0000000
08d         0 000
0Cd         0  00
0Ed         0   0
0Fd         0    
0Ed         0   0
0Cd         0  00
08d         0 000
00d         00000
08d         0 000
0Cd         0  00
0Ed         0   0
0Fd         0    
0Ed         0   0
0Cd         0  00
08d         0 000
00d         00000
08d         0 000
0Cd         0  00
0Ed         0   0
0Fd         0    
0Ed         0   0
0Cd         0  00
08d         0 000
00d         00000
08d         0 000
0Cd         0  00
0Ed         0   0
0Fd         0    
0Ed         0   0
0Cd         0  00
08d         0 000
00d         00000

0C

"                "
"    Welcome!    "
" Please Wait... "
02          Home cursor
20d
20d
20d
```

```
20d
20d
20d
20d
20d
20d
20d
20d
20d
20d
20d
20d
20d

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
57d     W
61d     a
69d     i
74d     t
2Ed     .
2Ed     .
2Ed     .
20d

31
31
31
06
```

Store programable character patterns

```
C0      Set CGRAM addr register to 0000000
0Ed     0■■■0
11d     ■000■
13d     ■00■■
17d     ■0■■■
1Fd     ■■■■■
1Fd     ■■■■■
1Fd     ■■■■■
00d     00000
```

```
08d       0▐000
0Cd       0▐▌00
0Ed       0▐▌▌0
0Fd       0▐▌▌▐
0Ed       0▐▌▌0
0Cd       0▐▌00
08d       0▐000
00d       00000
08d       0▐000
0Cd       0▐▌00
0Ed       0▐▌▌0
0Fd       0▐▌▌▐
0Ed       0▐▌▌0
0Cd       0▐▌00
08d       0▐000
00d       00000
08d       0▐000
0Cd       0▐▌00
0Ed       0▐▌▌0
0Fd       0▐▌▌▐
0Ed       0▐▌▌0
0Cd       0▐▌00
08d       0▐000
00d       00000

0C

"   SUN 12:00A  ▒"
"  BUS STUD #1   "
"                "
```

02 Home cursor

```
20d
20d
20d
53d       S
55d       U
4Ed       N
20d
31d       1
32d       2
3Ad       :
30d       0
30d       0
41d       A
20d
20d
00d       battery symbol

20d
20d
42d       B
55d       U
53d       S
20d
53d       S
54d       T
55d       U
44d       D
20d
23d       #
31d       1
20d
20d
```

20d

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