Uniden WDECT2315 phone LCD initialisation sequence

Phone was manufactured 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

with Vbat = 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 power-up
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 programmable character patterns

```
    C0          Set CGRAM addr register to 0000000
    08ⅆ              .█...
    0Cⅆ              .██..
    0Eⅆ              .███.
    0Fⅆ              .████
    0Eⅆ              .███.
    0Cⅆ              .██..
    08ⅆ              .█...
    00ⅆ              .....
```

08d	. ■ . . .
0Cd	. ■■ . .
0Ed	. ■■■ .
0Fd	. ■■■■
0Ed	. ■■■ .
0Cd	. ■■ . .
08d	. ■ . . .
00d	. . . . .
08d	. ■ . . .
0Cd	. ■■ . .
0Ed	. ■■■ .
0Fd	. ■■■■
0Ed	. ■■■ .
0Cd	. ■■ . .
08d	. ■ . . .
00d	. . . . .
08d	. ■ . . .
0Cd	. ■■ . .
0Ed	. ■■■ .
0Fd	. ■■■■
0Ed	. ■■■ .
0Cd	. ■■ . .
08d	. ■ . . .
00d	. . . . .
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
```

400mS delay

```
31
```

6mS delay

```
31
31
06
```

2mS delay
Store programmable character patterns

```
C0          Set CGRAM addr register to 0000000
08d         . ■ . . .
0Cd         . ■ ■ . .
0Ed         . ■ ■ ■ .
0Fd         . ■ ■ ■ ■
0Ed         . ■ ■ ■ .
0Cd         . ■ ■ . .
08d         . ■ . . .
00d         . . . . .
08d         . ■ . . .
0Cd         . ■ ■ . .
0Ed         . ■ ■ ■ .
0Fd         . ■ ■ ■ ■
0Ed         . ■ ■ ■ .
0Cd         . ■ ■ . .
08d         . ■ . . .
```

```
00d    . . . . .
08d    . ■ . . .
0Cd    . ■ ■ . .
0Ed    . ■ ■ ■ .
0Fd    . ■ ■ ■ ■
0Ed    . ■ ■ ■ .
0Cd    . ■ ■ . .
08d    . ■ . . .
00d    . . . . .
08d    . ■ . . .
0Cd    . ■ ■ . .
0Ed    . ■ ■ ■ .
0Fd    . ■ ■ ■ ■
0Ed    . ■ ■ ■ .
0Cd    . ■ ■ . .
08d    . ■ . . .
00d    . . . . .

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 programmable character patterns

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

08d
0Cd
0Ed
0Fd
0Ed
0Cd
08d
00d
08d
0Cd
0Ed
0Fd
0Ed
0Cd
08d
00d
```

```
08d    . ...
0Cd    . ..
0Ed    . .
0Fd    .
0Ed    . .
0Cd    . ..
08d    . ...
00d    . . . . .

0C
```

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

Byte	Char
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