



Initialisation Codes for the 4D Systems **4DLCD-28QA** Display

Command Defines:

```
#def READ_DISPLAY_PIXEL_FORMAT          0x0C
#def SLEEP_OUT                          0x11
#def GAMMA_SET                           0x26
#def DISPLAY_OFF                         0x28
#def DISPLAY_ON                          0x29
#def SET_COLUMN_ADDRESS                  0x2A
#def SET_PAGE_ADDRESS                    0x2B
#def WRITE_MEMORY                        0x2C
#def READ_MEMORY                         0x2E
#def MEMORY_ACCESS_CONTROL               0x36
#def WRITE_MEMORY_CONTINUE                0x3C
#def READ_MEMORY_CONTINUE                 0x3E
#def PIXEL_FORMAT_SET                    0x3A
#def FRAME_RATE_CONTROL                  0xB1
#def DISPLAY_FUNCTION_CONTROL             0xB6
#def POWER_CONTROL_1                     0xC0
#def POWER_CONTROL_2                     0xC1
#def VCOM_CONTROL_1                      0xC5
#def VCOM_CONTROL_2                      0xC7
#def POWER_CONTROL_A                     0xCB
#def POWER_CONTROL_B                     0xCF
#def POSITIVE_GAMMA_CORRECTION            0xE0
#def NEGATIVE_GAMMA_CORRECTION           0xE1
#def DRIVER_TIMING_CONTROL_A              0xE8
#def DRIVER_TIMING_CONTROL_B              0xEA
#def POWER_ON_SEQUENCE_CONTROL            0xED
#def UNDOCUMENTED_0xEF                    0xEF
#def ENABLE_3G                            0xF2
#def INTERFACE_CONTROL                    0xF6
#def PUMP_RATIO_CONTROL                   0xF7
```

Init Code (Command, Data1, Data2... DataN)

```
INTERFACE_CONTROL, 0x01, 0x01, 0x00,
POWER_CONTROL_B, 0x00, 0xC1, 0x30,
POWER_ON_SEQUENCE_CONTROL, 0x64, 0x03, 0x12, 0x81,
DRIVER_TIMING_CONTROL_A, 0x85, 0x00, 0x7A,
POWER_CONTROL_A, 0x39, 0x2C, 0x00, 0x34, 0x02,
PUMP_RATIO_CONTROL, 0x20,
DRIVER_TIMING_CONTROL_B, 0x00, 0x00,
POWER_CONTROL_1, 0x26,
POWER_CONTROL_2, 0x11,
VCOM_CONTROL_1, 0x39, 0x37,
VCOM_CONTROL_2, 0xA6,
MEMORY_ACCESS_CONTROL, 0x08,
DISPLAY_FUNCTION_CONTROL, 0x0A, 0xA2,
FRAME_RATE_CONTROL, 0x00, 0x1B,
ENABLE_3G, 0x00,
GAMMA_SET, 0x01,
PIXEL_FORMAT_SET, 0x55,
POSITIVE_GAMMA_CORRECTION, 0x0f, 0x2D, 0x0E, 0x08, 0x12, 0x0A, 0x3D, 0x95, 0x31, 0x04, 0x10, 0x09, 0x09, 0x0D, 0x00,
NEGATIVE_GAMMA_CORRECTION, 0x00, 0x12, 0x17, 0x03, 0x0d, 0x05, 0x2c, 0x44, 0x41, 0x05, 0x0f, 0x0a, 0x30, 0x32, 0x0f,
WRITE_MEMORY,
SLEEP_OUT, 0x0006,
DelayMS(120),
DISPLAY_ON
```