Initialisation Codes for the 4D Systems **4DOLED-282815** Display

Command Defines:

#def SET_COLUMN_ADDRESS	0x15
#def SET_ROW_ADDRESS	0x75
#def WRITE_GRAM	0x5C
#def READ_GRAM	0x5D
#def STOP_MOVING	0x9E
#def START_MOVING	0x9F
#def REMAP_COLOUR_SETTINGS	0xA0
#def DISPLAY_START_LINE	0xA1
#def DISPLAY_OFFSET	0xA2
#def DISPLAY_OFF	0xA4 // Entire Display Off, All Pixels Turn Off
#def DISPLAY_ALL_ON	0xA5 // Entire Display On, All Pixels Turn On at GS Level 63
#def DISPLAY_NORMAL	0xA6 // Normal Display
#def DISPLAY_INVERSE	0xA7 // Inverse Display
#def FUNCTION_SELECTION	0xAB
#def DISPLAY_NOP	0xAD
#def DISPLAY_SLEEP_OFF	0xAE
#def DISPLAY_SLEEP_ON	0xAF
#def DISPLAY_NOP2	0xB0
#def PHASE_PRECHARGE	0xB1
#def DISPLAY_ENHANCE	0xB2
#def CLOCK_FREQUENCY	0xB3
#def SEGMENT_LOW_VOLTAGE	0xB4
#def SET_GPIO	0xB5
#def SECOND_PRECHARGE	0xB6
#def SET_GRAYSCALE_LUT	0xB8
#def RESET_GRAYSCALE_LUT	0xB9
#def PRECHARGE_VOLTAGE_RGB	0xBB
#def SET_VCOMH	0xBE
#def CONTRAST_RGB	0xC1
#def CONTRAST_MASTER	0xC7
#def DUTY_CYCLE	0xCA // same (set mux ration)
#def OLED_NOP2	0xD1
#def OLED_NOP3	0xE3
#def COMMAND_LOCK	0xFD

Init Code (Command, Data1, … DataN)

COMMAND_LOCK, 0x12,	// Unlock Driver IC (0x12/0x16/0xB0/0xB1)
COMMAND_LOCK, 0xB1,	// Unlock All Commands (0x12/0x16/0xB0/0xB1)
DISPLAY_OFF,	// Display Off (0x00/0x01)
CLOCK_FREQUENCY, 0xF1,	// Set Clock as 120 Frames/Sec
DUTY_CYCLE, 0x7F,	// 1/96 Duty (0x0F~0x7F)
DISPLAY_OFFSET, 0,	// Shift Mapping RAM Counter (0x00~0x7F)
DISPLAY_START_LINE, 0x00,	// Set Mapping RAM Display Start Line (0x00~0x7F)
REMAP_COLOUR_SETTINGS, 0x74,	// Set Horizontal Address Increment

    // Column Address 0 Mapped to SEG0
    // Color Sequence D[15:0]=[RRRRR:GGGGGG:BBBBB]
    // Scan from COM127 to COM0
    // Enable COM Split Odd Even
    // 65,536 Colors Mode (0x74)
    // * 262,144 Colors Mode (0xB4)

SET_GPIO, 0x00,	// Set Low Voltage Level of SEG Pin
FUNCTION_SELECTION, 0x01,	// Enable Internal VDD Regulator, Select 8-bit Parallel Interface
SEGMENT_LOW_VOLTAGE, 0xA0,0xB5,0x55,	// Enable External VSL, Set Segment Low Voltage
CONTRAST_RGB, 0xC8,0x80,0x8A,	// Set Contrast of Color A (Red)

    // Set Contrast of Color B (Green)

Porting of this Initialisation code to your chosen hosts language will be required. Please refer to the datasheet for the Driver IC used on the display, for more information. (SSD1351)

```
    // Set Contrast of Color C (Blue)
CONTRAST_MASTER, 0x0F,                  // Set Scale Factor of Segment Output Current Control (0-15)
RESET_GRAYSCALE_LUT,                    // just use internal table for Gray Scale Table
PHASE_PRECHARGE, 0x32,                  // Set Phase 1 as 5 Clocks & Phase 2 as 3 Clocks
PRECHARGE_VOLTAGE_RGB, 0x17,            // Set Pre-Charge Voltage Level as 0.50*VCC
DISPLAY_ENHANCE, 0xA4, 0x00, 0x00,      // UNDOCUMENTED COMMAND Enhance Display Performance
SECOND_PRECHARGE, 0x01,                 // Set Second Pre-Charge Period as 1 Clock
SET_VCOMH, 0x05,                        // Set Common Pins Deselect Voltage Level as 0.82*VCC
DISPLAY_NORMAL,                         // Normal Display Mode (0x02)
DISPLAY_SLEEP_ON,                       // not sleeping
```

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