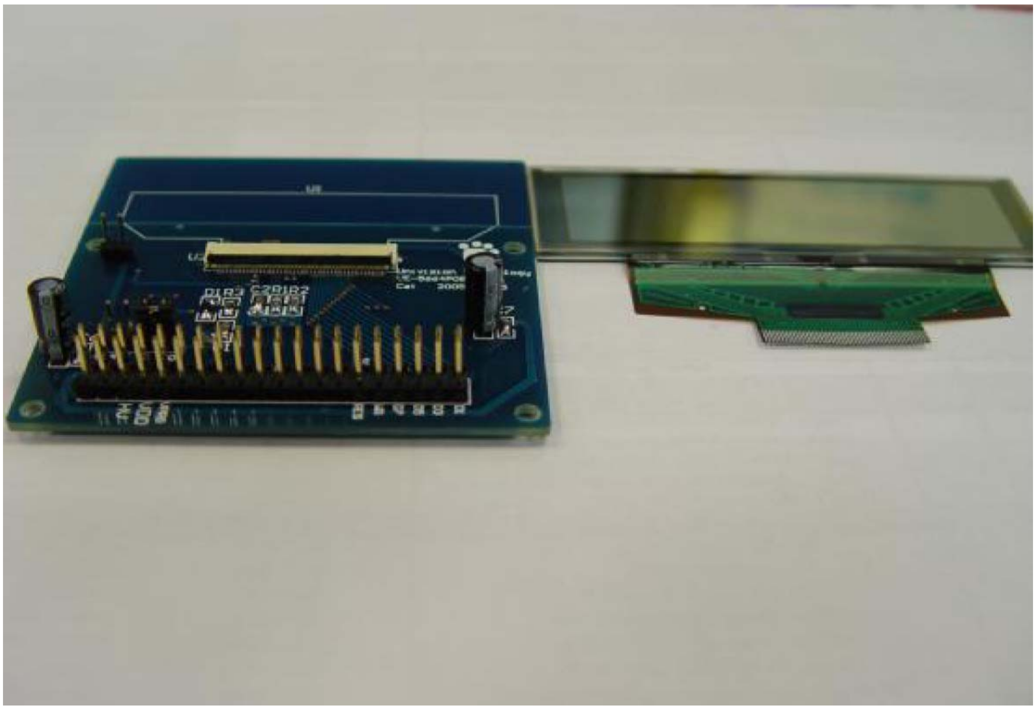
OLED DISPLAY MODULE

Application Notes

PRODUCT NUMBER	DD-25664YW-1A with EVK board



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1 EVK Schematic

2 Symbol Definition

D0-D7：These pins are 8-bit bi-directional data bus to be connected to the MCU’s data bus.

CS#: This pin is the chip select input. The chip is enabled for MCU communication only when CS is pulled low.

P/S: the pin is for the bus interface selector. The parallel interface is active when P/S = ‘H’ and serial interface when P/S = ‘L’. The serial input pads SIN and SCLI are hared with DIN7 and DIN6, respectively.

NOTE: The EVK board has been wired to 80xx-parallel 8-bits interface

WR：This pin is MCU interface input for display data and command write pulse.

SD/C：This pin is Data/Command control pin. When the pin is pulled high, the data at D0-D7 is treated as display data. When the pin is pulled low, the data at D0-D7 is transferred to the command register. For detail relationship to MCU interface signals, please refer to the timing characteristics diagrams at following pages and datasheet. **(The EVK only supports 80xx-parallel 8-bits interface).**

RES：This pin is reset signal input. When the pin is low, initialization of the chip is executed.

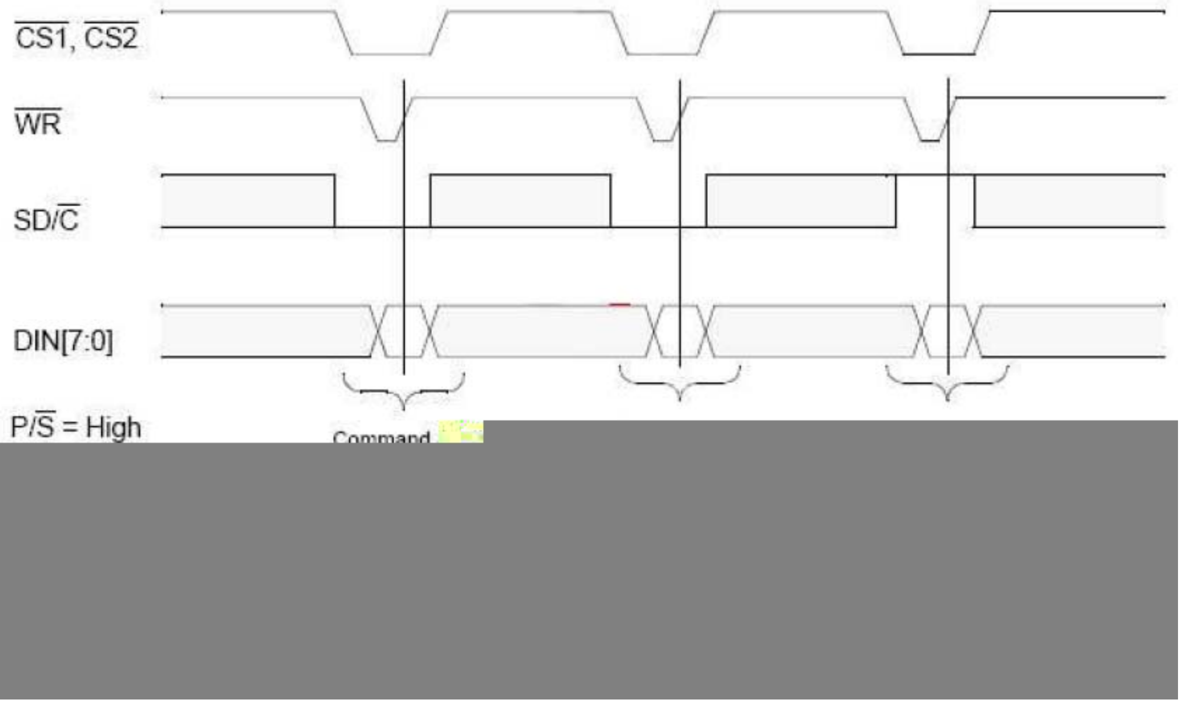
HV：This is the most positive voltage supply pin of the chip.

LV：Power supply pin for logic operation of the driver.

GND：Power supply ground.

3 Timing characteristics

3.1 Parallel Interface timing chart



3.2 MPU 8-Bit Parallel Interface

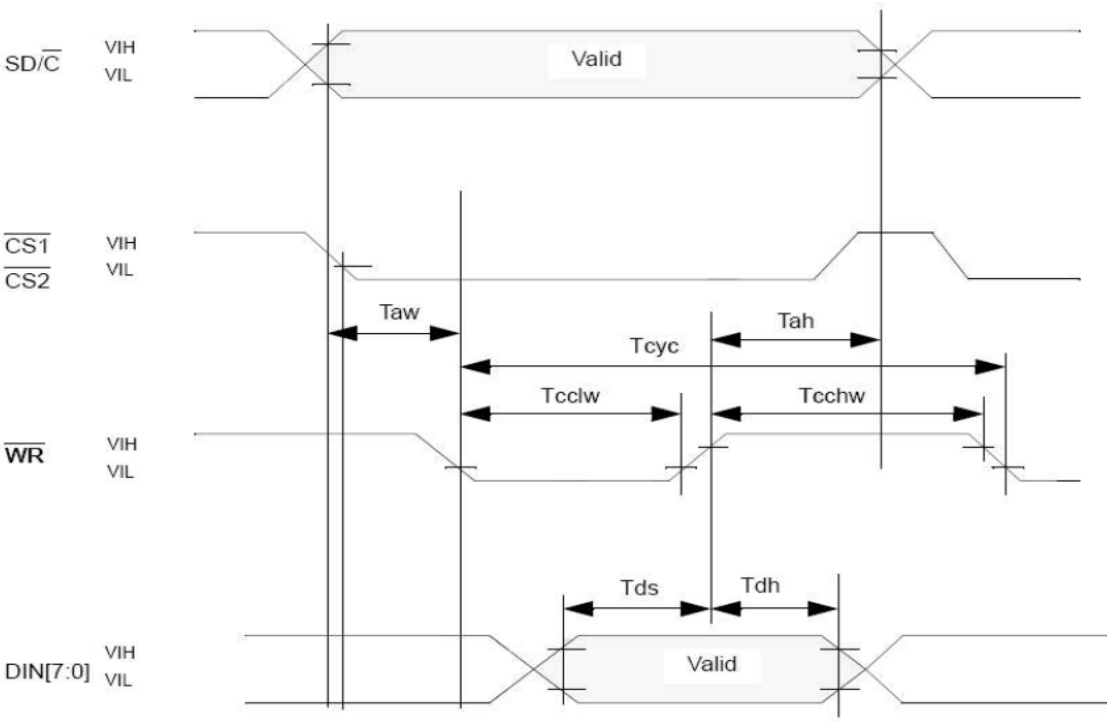


Figure 2 MPU 8-bit parallel Interface timing diagram

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Units
Tah	Address Hold Time	$\overline{\text{WR}}$	10			ns
Taw	Address Setup Time	$\overline{\text{WR}}$	0			ns
Tcyc	System Cycle Time	$\overline{\text{CS1}}$, $\overline{\text{CS2}}$	200			ns
Tcclw	Write Pulse Width	$\overline{\text{WR}}$	60			ns
Tds	Data Setup Time	DIN[7:0]	60			ns
Tdh	Data Hold Time	DIN7:0]	10			ns
Tdsdc	SD/C Output Delay	SD/$\overline{\text{C}}$OUT			30	ns
Tdcs	CS Output Delay	$\overline{\text{CSOUT1}}$, $\overline{\text{CSOUT2}}$			30	ns
Tdwr	WR Output Delay	$\overline{\text{WR}}$OUT			30	ns
Tdd	DATA Output	DOUT[7:0]			30	ns

Table 1 MPU 8-bit Parallel Interface Timing characteristics

4 Connection Between OLED and EVK

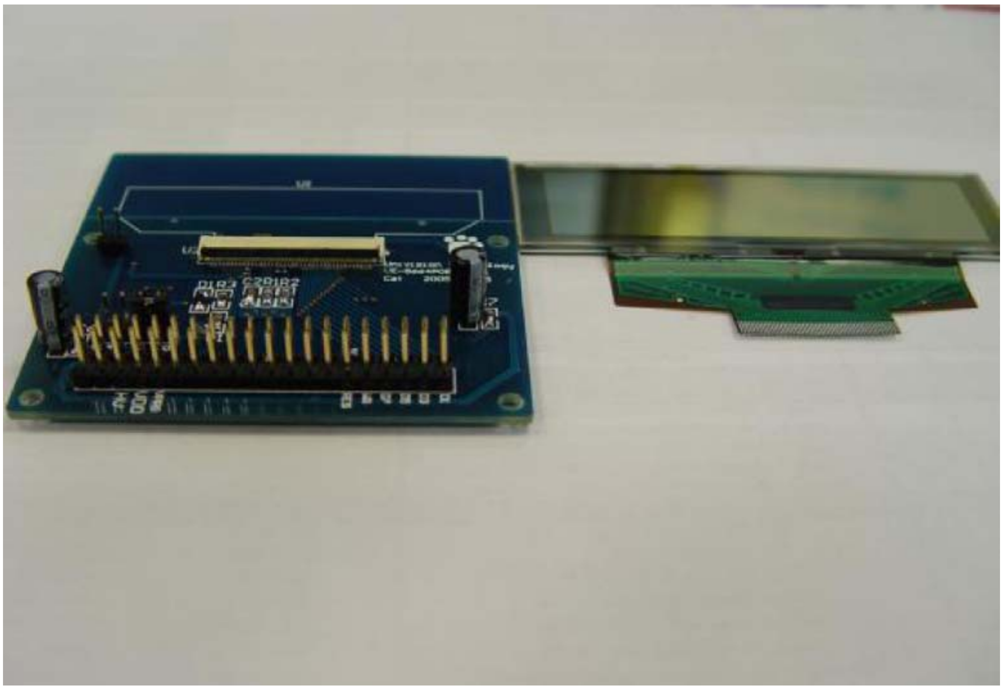


Figure 5: EVK PCB and DD-25664YW-1A Module

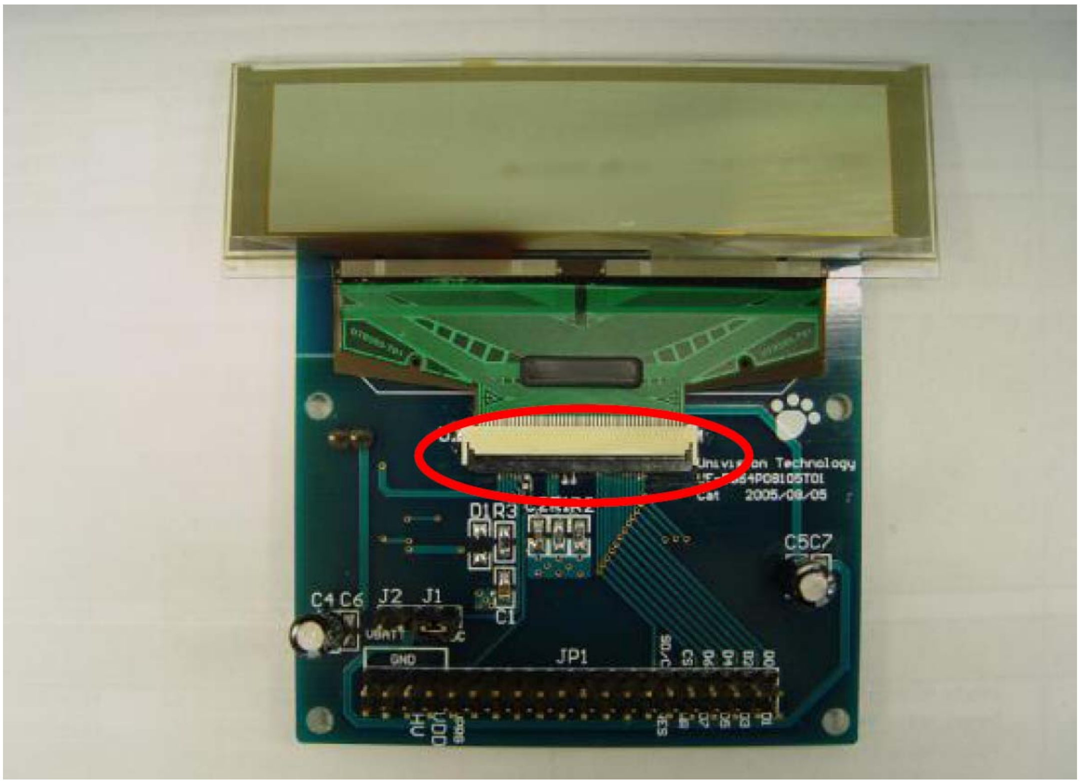


Figure 6: the DD-25664YW-1A and EVK assembled (Top view)

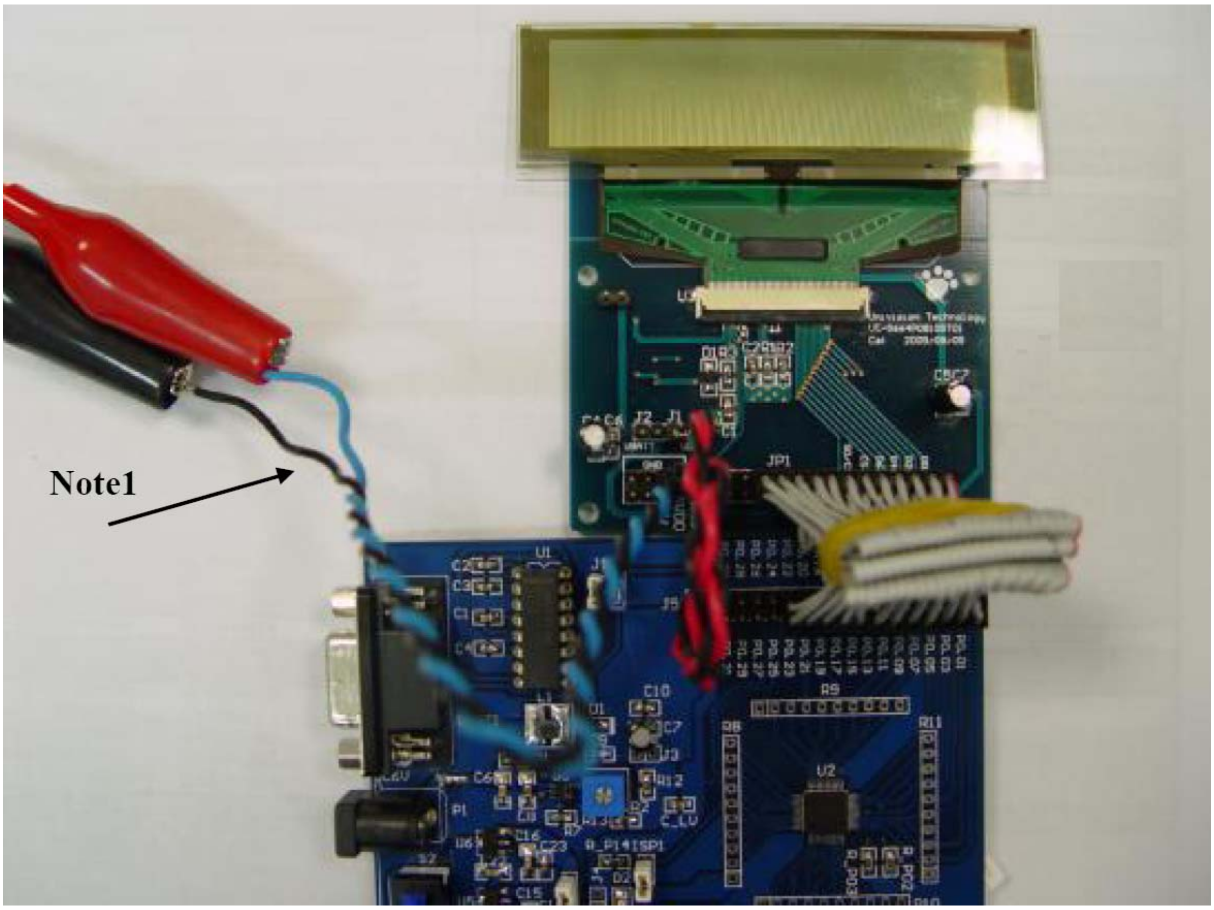
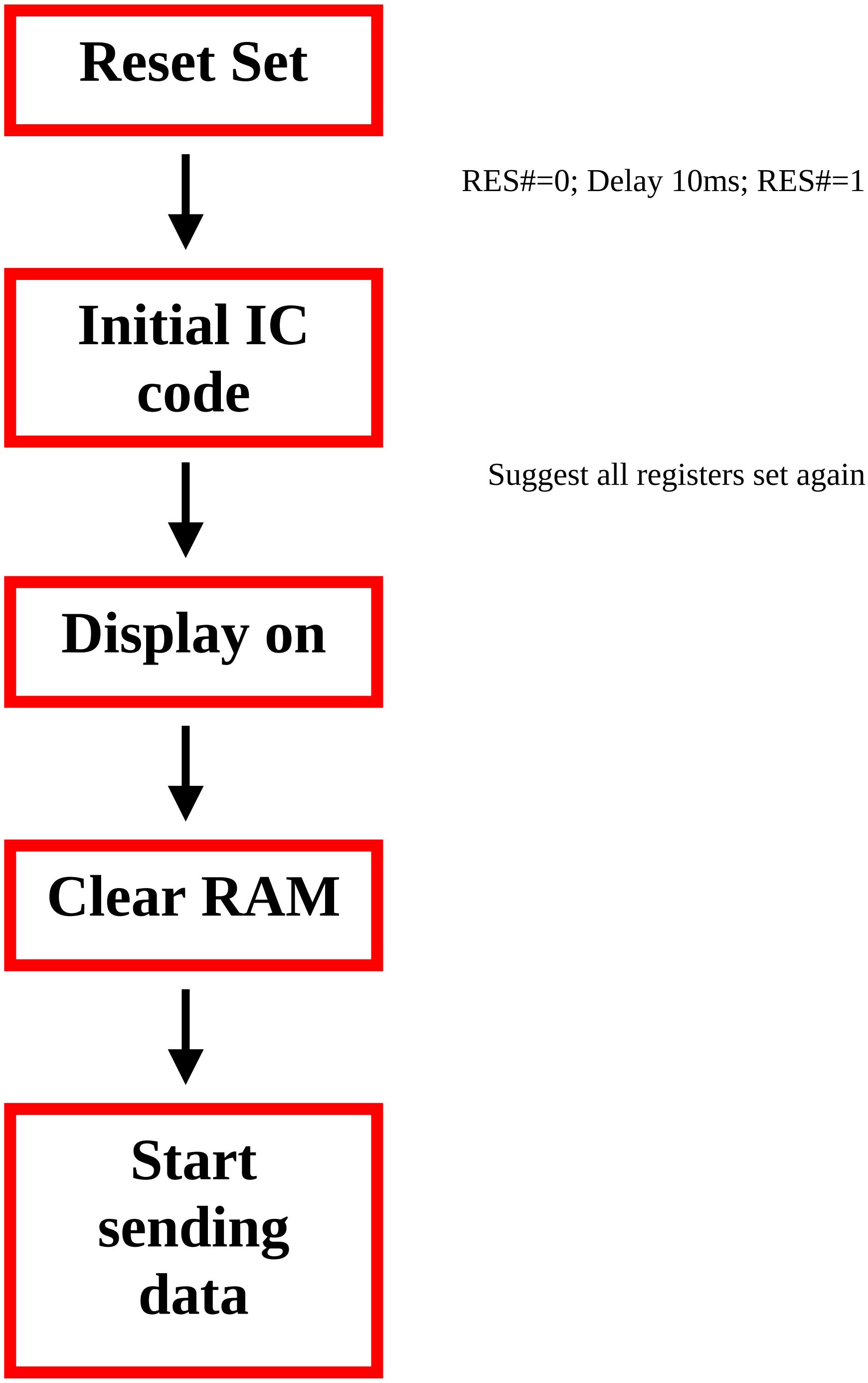


Figure 7: control MCU (not supplied) connected with EVK

Note 1：It is the external most positive voltage supply. In this sample is connected to power supply.

5 How to use the DD-25664YW-1A



5.1 Recommended Initial code

```
Reset_ST8105(); //hardware reset
DotScanLineSet(0x3f); //set scan line=64 lines
DotDirectionSet(0x00); //dummy line=1,vertical non-invert,horizontal non-invert
DividRatioSet(0x00); //set dividing ratio =1/1
XAddressSet(Column); //set X axial range
YAddressSet(Row); //set Y axial range
GrayScaleSet(0x03); //set 16 gray scale mode, X/Y axial increment On
IniLuminanceAdjA(0x80); //Data of D/A converter from Register A
IniLuminanceAdjB(0x80); //Data of D/A converter from Register B
DC2DCControl(0x00); //turn off DC2DC converter
VFDectionAddValue(0x00);//turn off VF dectection
LuminanceSet(0x1f); //set Luminance
AnodeOutputSet(0x00); //AVM off, ALL HiZ off, LSLZ=VL, OFLZ=VL
SetupPeriod1(0x0f); //16 sclk, VL mode
SetupPeriod2(0x00); //1 sclk, VL mode
SetupPeriod3(0x00); //1 sclk, VL mode
SetupPeriod4(0x88); //9 sclk, VM mode
Odd15GrayScaleSet(0xff);//Odd1~15 and Even1~15 <-- data sheet Reset value(default)
Odd14GrayScaleSet(0xaf);
Odd13GrayScaleSet(0x79);
Odd12GrayScaleSet(0x53);
Odd11GrayScaleSet(0x39);
Odd10GrayScaleSet(0x27);
Odd9GrayScaleSet(0x1a);
Odd8GrayScaleSet(0x12);
Odd7GrayScaleSet(0x0c);
Odd6GrayScaleSet(0x08);
Odd5GrayScaleSet(0x05);
Odd4GrayScaleSet(0x03);
Odd3GrayScaleSet(0x02);
Odd2GrayScaleSet(0x01);
Odd1GrayScaleSet(0x00);
Even15GrayScaleSet(0xff);
Even14GrayScaleSet(0xaf);
Even13GrayScaleSet(0x79);
Even12GrayScaleSet(0x53);
Even11GrayScaleSet(0x39);
Even10GrayScaleSet(0x27);
Even9GrayScaleSet(0x1a);
Even8GrayScaleSet(0x12);
Even7GrayScaleSet(0x0c);
Even6GrayScaleSet(0x08);
Even5GrayScaleSet(0x05);
Even4GrayScaleSet(0x03);
Even3GrayScaleSet(0x02);
Even2GrayScaleSet(0x01);
Even1GrayScaleSet(0x00);
CathodeDriverMode(0x12); //Line 72->1, Internal cathode driver(Single scan)
RCAOutputTiming(0x3f); //RCA output timing=64CLK
RCBOutputTiming(0x3f); //RCB output timing=64CLK
DotDisplaySet(0x01); //display on
```