

深圳力先电子有限公司

# 液晶显示模块使用手册

型号：LX12864B 系列

版本：1.1

客户确认			
客户确 认：		盖章	
客户建议：			

编制		
拟制	确认	批准

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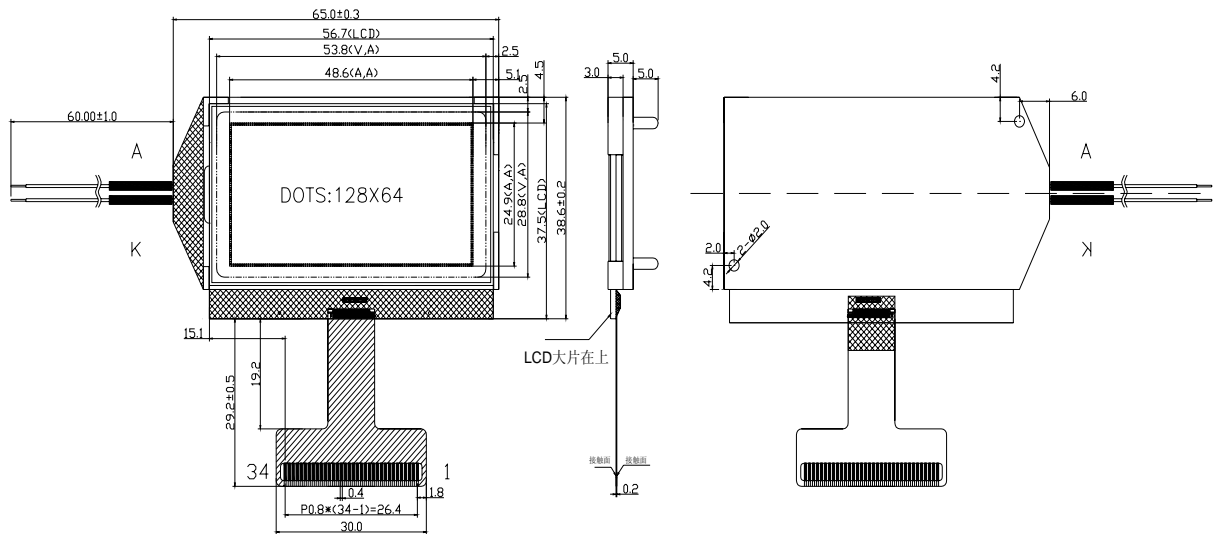
**RECORD OF REVISION**

<b>Version</b>	<b>Revision Date</b>	<b>Contents</b>	<b>Editor</b>
1.0	2012-11-20	New Release	YOU
1.1	2013-01-30	修改驱动电压和LCD BIAS	YOU

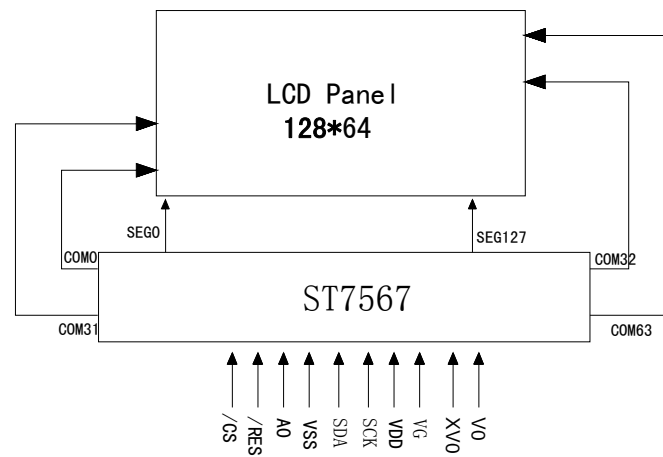
**1. PHYSICAL DATA**

Item	Contents	Unit
LCD type	STN	---
LCD duty	1/65	---
LCD bias	1/7	---
Viewing direction	6	o'clock
Module size (W×H×T)	65.0×38.6×5.0	mm
Number of dots(W×H)	128 × 64	dots
Dot Size(W×H)	0.35×0.36	mm
Dot Pitch(W×H)	0.38×0.39	mm

**2. EXTERNAL DIMENSIONS**



### 3. BLOCK DIAGRAM



PIN NO.	Symbol	Level	Description
1-10	NC	--	Not Used
11	VG	--	LCD driving voltage for segment circuits.
12-15	NC	--	Not Used
16	XV0	H	LCD driving voltage for common circuits at positive frame.
17	V0	H	LCD driving voltage for common circuits at negative frame.
18	NC	--	Not Used
19	VSS		GND
20	VDD		POWER 3.0V
21	SDA	H/L	serial data input (SI)
22	SCL	H/L	serial clock input (SCL).
23-30	NC	--	D0 to D5 should be connected to VDD or floating.
31	A0	H/L	A0="H": data. A0="L": Instruction command.
32	RST	H/L	Reset pin.
33	CS	H/L	Chip select.
34	NC	--	Not Used

## 4. ABSOLUTE MAXIMUM RATINGS

### (1)Electrical Absolute Ratings

Item	Symbol	Min.	Max.	Unit	Note
Power Supply for Logic	$V_{DD}-V_{SS}$	0	3.47	Volt	Note 1
Power Supply for LCD	$V_{LCD}$	0	13.0	Volt	
Input Voltage	$V_I$	0	$V_{DD}$	Volt	

Note 1 : Operator should be grounded during handling LCM

### (2) Environmental Absolute Maximum Ratings

Item	Normal Temperature				Wide Temperature			
	Operating		Storage		Operating		Storage	
	Min.	Max,	Min.	Max,	Min.	Max,	Min.	Max,
Ambient Temperature	0°C	+50°C	-10°C	+60°C	-20°C	+70°C	-30°C	+80°C
Humidity(without condensation)	Note 2,4		Note 3,5		Note 4,5		Note 4,6	

Note 2  $T_a \leq 50^\circ\text{C}$ : 80% RH max

$T_a > 50^\circ\text{C}$ : Absolute humidity must be lower than the humidity of 85%RH at 50°C

Note 3  $T_a$  at  $-20^\circ\text{C}$  will be <48hrs at  $70^\circ\text{C}$  will be <120hrs when humidity is higher than 75%.

Note 4 Background color changes slightly depending on ambient temperature. This phenomenon is reversible.

Note 5  $T_a \leq 70^\circ\text{C}$ : 75RH max

$T_a > 70^\circ\text{C}$ : absolute humidity must be lower than the humidity of 75%RH at 70°C

Note 6  $T_a$  at  $-20^\circ\text{C}$  will be <48hrs, at  $80^\circ\text{C}$  will be <120hrs when humidity is higher than 75%.

## 5. ELECTRICAL CHARACTERISTICS

### DC Characteristics

( $V_{DD}=3.0\text{V}; V_{SS}=0\text{V}; T_a=-20\sim 70^\circ\text{C}$ )

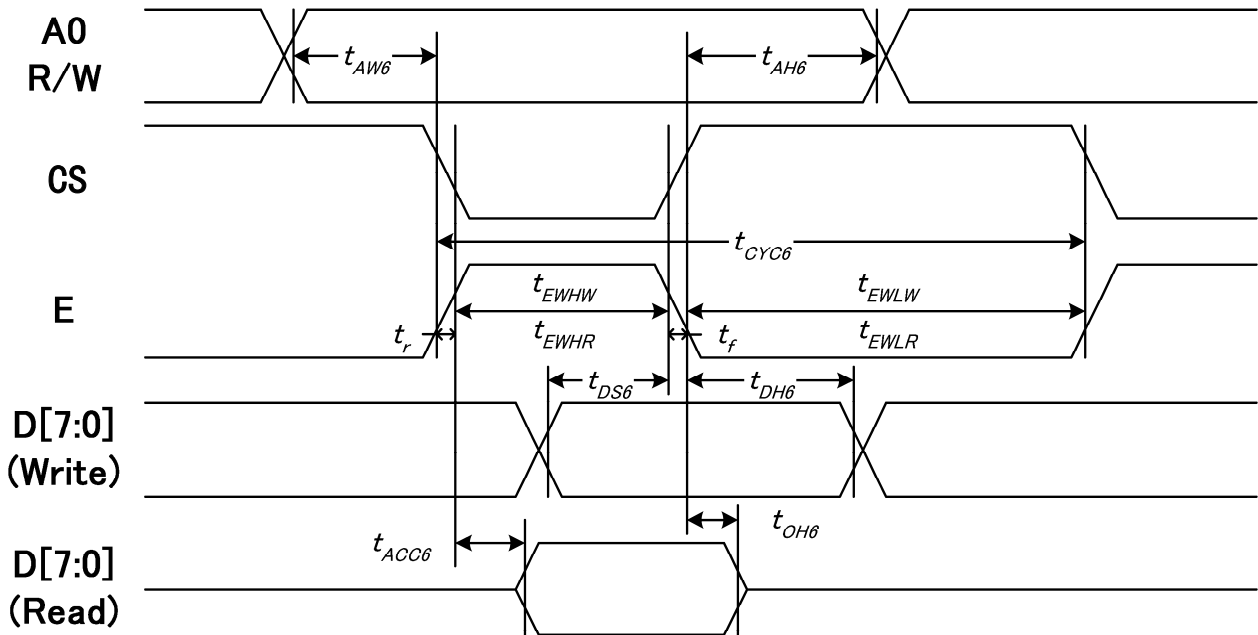
Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Power Supply for Logic	$V_{DD}-V_{SS}$	---	2.8	3.0	3.5	Volt
Input Voltage	$V_{IL}$	---	$V_{SS}$	---	$0.2V_{DD}$	Volt
	$V_{IH}$	---	$0.8V_{DD}$	---	$V_{DD}$	Volt
Output Voltage	$V_{OH}$	$I_{OL} = -0.5\text{mA}$	$0.8V_{DD}$	---	$V_{DD}$	Volt
	$V_{OL}$	$I_{OL} = +0.5\text{mA}$	$V_{SS}$	---	$0.2V_{DD}$	Volt
LCM Recommend LCD Module Driving Voltage	$V_{LCD}$	$T_a = 0^\circ\text{C}$	---	---	---	Volt
		$T_a = 25^\circ\text{C}$	8.5	8.7	8.9	
		$T_a = 50^\circ\text{C}$	---	---	---	
Power Supply Current for LCM	$I_{DD}(\text{B/L OFF})$	---	---	---	TBD	mA

**AC Characteristics**

**System Bus Timing for 6800 Series MPU**

(VDD=3.3V, Ta=25°C)

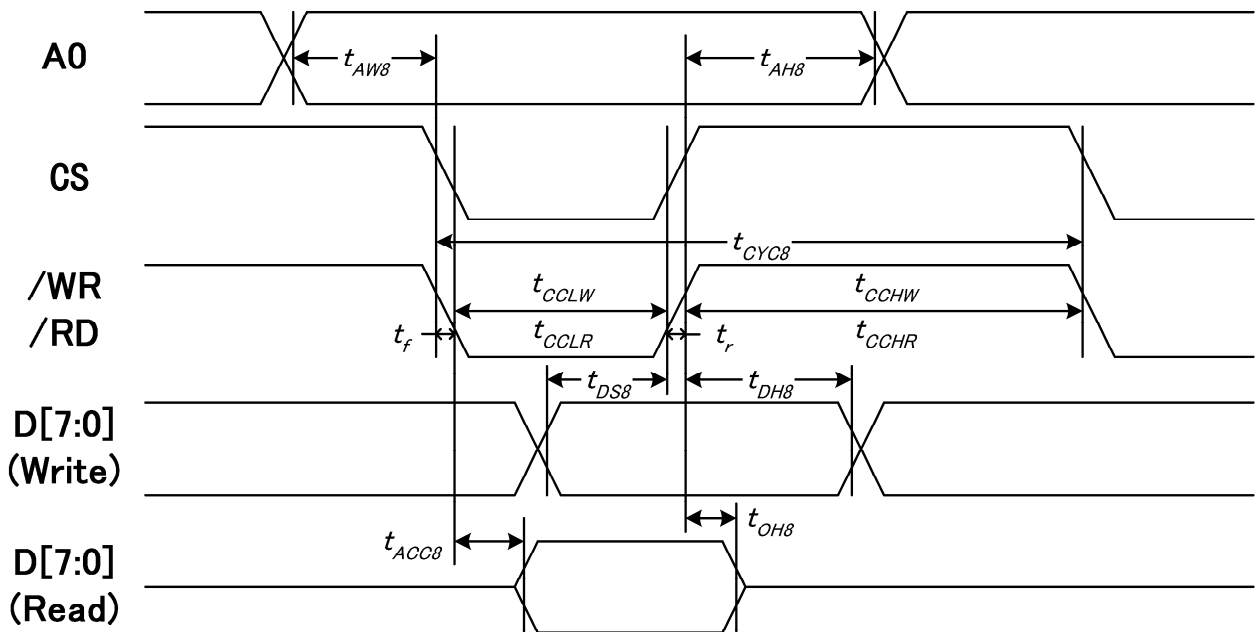
Item	Signal	Symbol	Condition	Min.	Max.	Unit
Address setup time	A0	tAW6		0	—	ns
Address hold time		tAH6		0	—	
System cycle time	E	tCYC6		240	—	
Enable L pulse width (WRITE)		tEWLW		80	—	
Enable H pulse width (WRITE)		tEWHW		80	—	
Enable L pulse width (READ)		tEWLR		80	—	
Enable H pulse width (READ)		tEWHR		80	—	
Write data setup time		D[7:0]	tDS6		30	
Write data hold time	tDH6			10	—	
Read data access time	tACC6		CL = 100 pF	—	70	
Read data output disable time	tOH6		CL = 100 pF	10	50	



System Bus Timing for 8080 Series MPU

(VDD=3.3V, Ta=25°C)

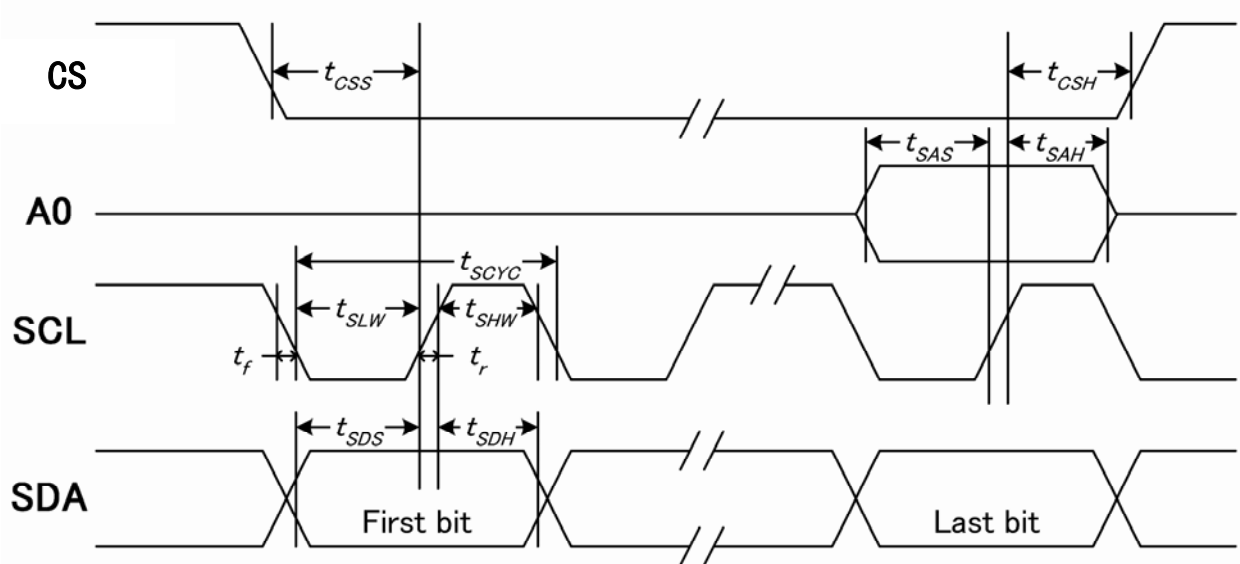
Item	Signal	Symbol	Condition	Min.	Max.	Unit
Address setup time	A0	tAW8		0	—	ns
Address hold time		tAH8		0	—	
System cycle time	/WR	tCYC8		240	—	
/WR L pulse width (WRITE)		tCCLW		80	—	
/WR H pulse width (WRITE)		tCCHW		80	—	
/RD L pulse width (READ)	RD	tCCLR		80	—	
/RD H pulse width (READ)		tCCHR		80	—	
WRITE Data setup time	D[7:0]	tDS8		30	—	
WRITE Data hold time		tDH8		10	—	
READ access time		tACC8	CL = 100pF	—	70	
READ Output disable time		tOH8	CL = 100pF	5	50	



System Bus Timing for 4-Line Serial Interface

(VDD=3.3V, Ta=25°C)

Item	Signal	Symbol	Condition	Min.	Max.	Unit
Serial clock period	SCLK	tSCYC		50	---	ns
SCLK "H" pulse width		tSHW		25	---	
SCLK "L" pulse width		tSLW		25	---	
Address setup time	A0	tSAS		20	---	
Address hold time		tSAH		10	---	
Data setup time	SDA	tSDS		20	---	
Data hold time		tSDH		10	---	
CS-SCLK time	CS	tCSS		20	---	
CS-SCLK time		tCSH		40	---	

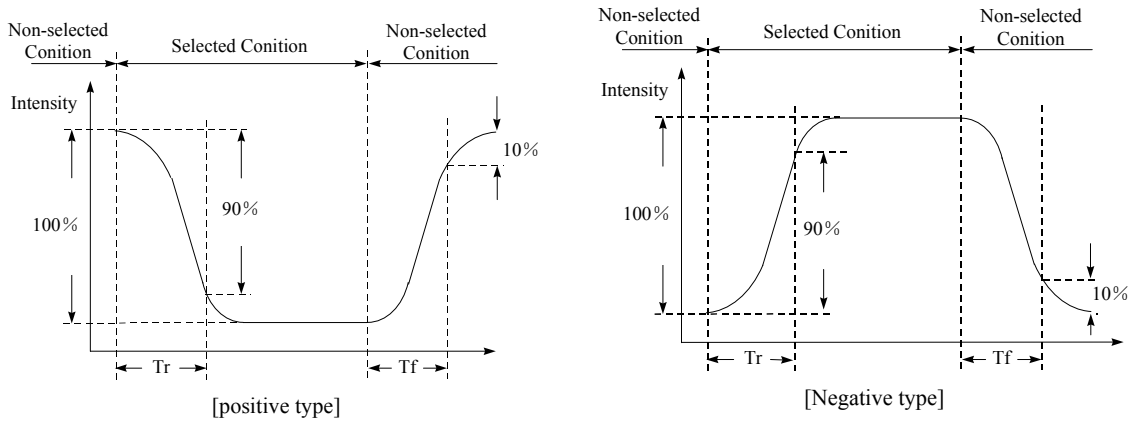




**6. ELECTRO-OPTICAL CHARACTERISTICS**

Item	Symbol	Condition	Min.	Typ.	Max.	Unit	note
Viewing angle range	$\theta_f$ (12 o'clock)	When $Cr \geq 2$	35	---	---	Degree	Note 2 Note 3 Note 4
	$\theta_b$ (6 o'clock)		30	---	---		
	$\theta_l$ (9 o'clock)		30	---	---		
	$\theta_r$ (3 o'clock)		30	35	---		
Rise Time	$T_r$	$V_{DD}-V_0=8.7V$ $T_a=25^\circ C$		112		mS	Note 1
Fall Time	$T_f$			250			
Contrast	Cr		---	5.4	---		

**[Note 1] Definition of Response Time ( $T_r$ ,  $T_f$ )**

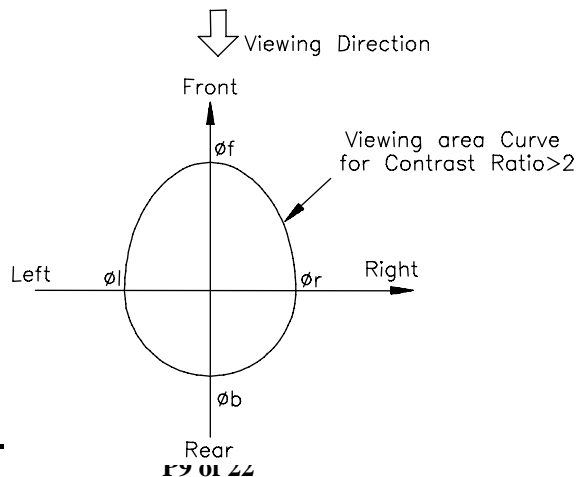


Conditions:

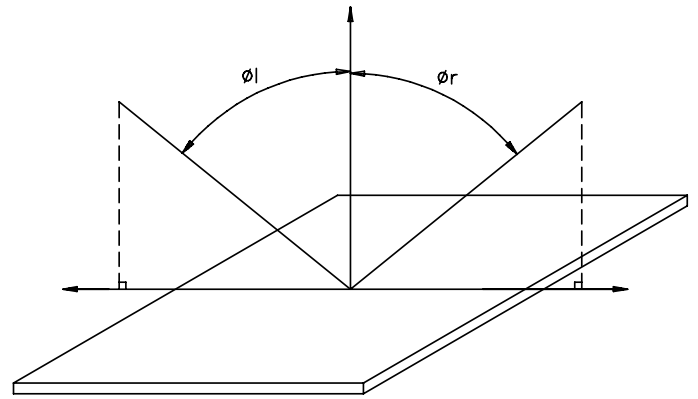
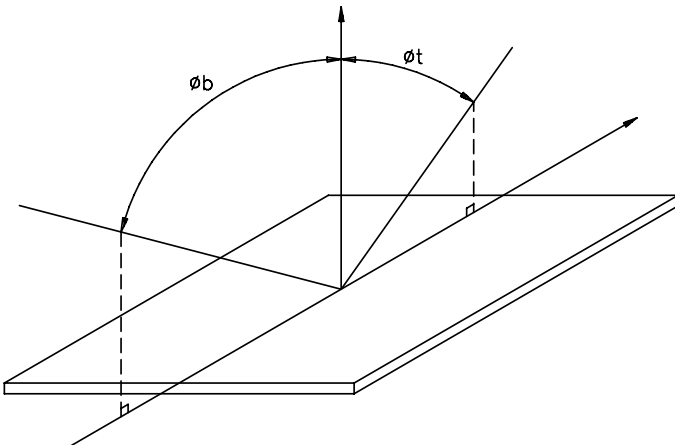
Operating Voltage :  $V_{op}$   
Frame Frequency : 64 Hz

Viewing Angle( $\theta, \varphi$ ):  $0^\circ, 0^\circ$   
Driving Wave form : 1/N duty, 1/a bias

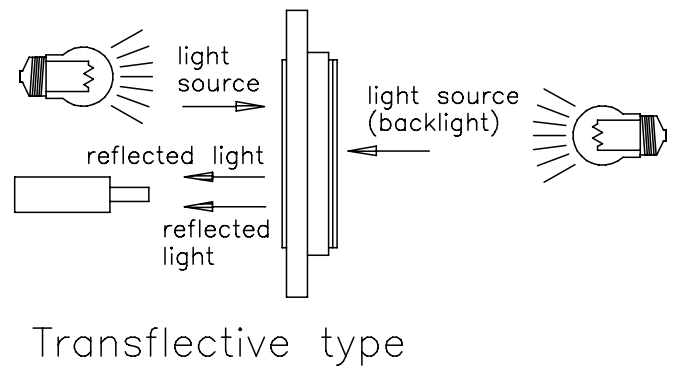
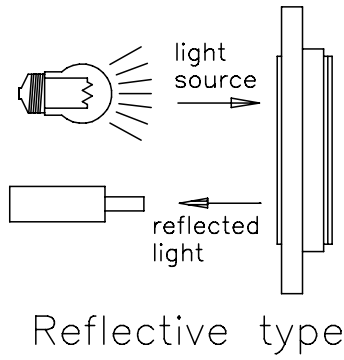
**[Note 2] Definition of Viewing Direction**



**[Note 3] Definition of viewing angle**



**[Note 4] Description of Measuring Equipment**



## 7. OPERATING PRINCIPLES & METHODS

INSTRUCTION	A0	R/W	COMMAND BYTE								DESCRIPTION
			D7	D6	D5	D4	D3	D2	D1	D0	
(1) Display ON/OFF	0	0	1	0	1	0	1	1	1	D	D=1, display ON D=0, display OFF
(2) Set Start Line	0	0	0	1	S5	S4	S3	S2	S1	S0	Set display start line
(3) Set Page Address	0	0	1	0	1	1	Y3	Y2	Y1	Y0	Set page address
(4) Set Column Address	0	0	0	0	0	1	X7	X6	X5	X4	Set column address (MSB)
	0	0	0	0	0	0	X3	X2	X1	X0	Set column address (LSB)
(5) Read Status	0	1	0	MX	D	RST	0	0	0	0	Read IC Status
(6) Write Data	1	0	D7	D6	D5	D4	D3	D2	D1	D0	Write display data to RAM
(7) Read Data	1	1	D7	D6	D5	D4	D3	D2	D1	D0	Read display data from RAM
(8) SEG Direction	0	0	1	0	1	0	0	0	0	MX	Set scan direction of SEG MX=1, reverse direction MX=0, normal direction
(9) Inverse Display	0	0	1	0	1	0	0	1	1	INV	INV =1, inverse display INV =0, normal display
(10) All Pixel ON	0	0	1	0	1	0	0	1	0	AP	AP=1, set all pixel ON AP=0, normal display
(11) Bias Select	0	0	1	0	1	0	0	0	1	BS	Select bias setting 0=1/9; 1=1/7
(12) Read-modify-Write	0	0	1	1	1	0	0	0	0	0	Column address increment: Read:+0 , Write:+1
(13) END	0	0	1	1	1	0	1	1	1	0	Exit Read-modify-Write mode
(14) RESET	0	0	1	1	1	0	0	0	1	0	Internal reset
(15) COM Direction	0	0	1	1	0	0	MY	-	-	-	Set output direction of COM MY=1, reverse direction MY=0, normal direction
(16) Power Control	0	0	0	0	1	0	1	VB	VR	VF	Control built-in power circuit ON/OFF
(17) Regulation Ratio	0	0	0	0	1	0	0	RR2	RR1	RR0	Select regulation resistor ratio
(18) Electronic volume mode set Electronic volume register set	0	0	1	0	0	0	0	0	0	1	Set the V0 output voltage electronic volume register
	0	0	0	0	EV5	EV4	EV3	EV2	EV1	EV0	
(19) Static indicator ON/OFF Static indicator Register set	0	0	1	0	1	0	1	1	0	0/1	0: OFF, 1: ON
	0	0	0	0	0	0	0	0	0	Mode	Set the flashing mode
(20) Page Blink Page selection	0	0	1	1	0	1	0	1	0	1	P7 - 0: 1 - blinking page 0 - no blinking, normal display
	0	0	P7	P6	P5	P4	P3	P2	P1	P0	
(21). Driving Mode Set Mode selection	0	0	1	1	0	1	0	0	1	0	Set the driving mode register Driving capability (D0): (1)>(0)
	0	0	0	0	0	0	0	0	0	D0	
(22) Power Save	0	0	Compound Command								Display OFF + All Pixel ON
(23) NOP	0	0	1	1	1	0	0	0	1	1	No operation
(24) Test	0	0	1	1	1	1	-	-	-	-	Do NOT use. Reserved for testing.
	0	0	1	1	0	1	0	1	0	0	
(25) Oscillator Frequency selection	0	0	1	1	1	0	0	1	0	0/1	20KHz/33KHz (Default) 16.4KHz/ 27.06KHz

**8. RELIABILITY**

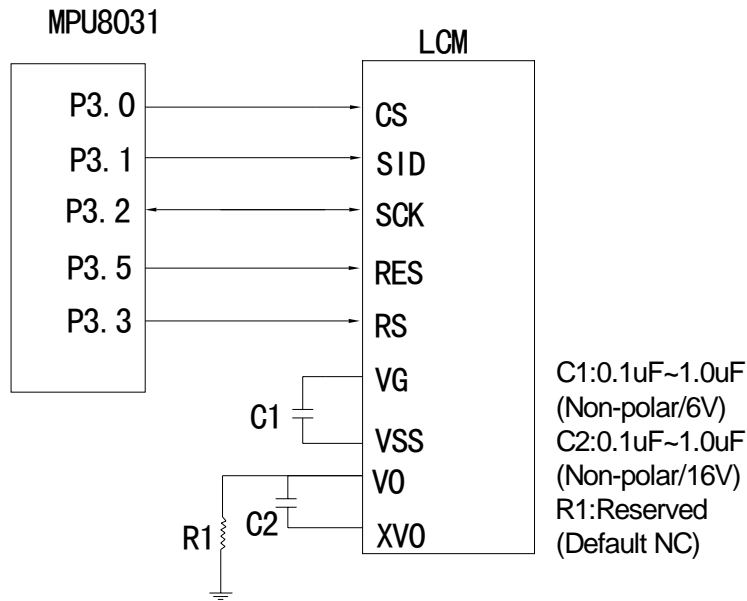
<b>Environmental Test</b>				
<b>No.</b>	<b>Test Item</b>	<b>Content of Test</b>	<b>Test Condition</b>	<b>Applicable Standard</b>
1	High temperature storage	Endurance test applying the high storage temperature for a long time.	80 °C 200 hrs	-----
2	Low temperature storage	Endurance test applying the low storage temperature for a long time.	-30 °C 200 hrs	-----
3	High temperature operation	Endurance test applying the electric stress (Voltage & Current) and the thermal stress to the element for a long time.	70 °C 200 hrs	-----
4	Low temperature operation	Endurance test applying the electric stress under low temperature for a long time.	-20 °C 200 hrs	-----
5	High temperature / Humidity storage	Endurance test applying the high temperature and high humidity storage for a long time.	70 °C , 90 %RH 96 hrs	MIL-202E-103B JIS-C5023
6	High temperature / Humidity operation	Endurance test applying the electric stress (Voltage & Current) and temperature / humidity stress to the element for a long time.	50 °C , 90 %RH 96 hrs	MIL-202E-103B JIS-C5023
7	Temperature cycle	Endurance test applying the low and high temperature cycle. $\begin{array}{c} -10^{\circ}\text{C} \quad \rightleftharpoons \quad 25^{\circ}\text{C} \quad \rightleftharpoons \quad 60^{\circ}\text{C} \\ 30\text{min} \quad \rightleftharpoons \quad 5\text{min.} \quad \rightleftharpoons \quad 30\text{min} \\ \leftarrow \hspace{10em} \rightarrow \\ \text{1 cycle} \end{array}$	-10°C / 60°C 10 cycles	-----
<b>Mechanical Test</b>				
8	Vibration test	Endurance test applying the vibration during transportation and using.	10~22Hz → 1.5mmp-p 22~500Hz → 1.5G Total 0.5hrs	MIL-202E-201A JIS-C5025 JIS-C7022-A-10
9	Shock test	Constructional and mechanical endurance test applying the shock during transportation.	50G half sign wave 11 msdc 3 times of each direction	MIL-202E-213B
10	Atmospheric pressure test	Endurance test applying the atmospheric pressure during transportation by air.	115 mbar 40 hrs	MIL-202E-105C
<b>Others</b>				
11	Static electricity test	Endurance test applying the electric stress to the terminal.	VS=800V , RS=1.5 kΩ CS=100 pF 10 time	MIL-883B-3015.1
Inspection after test: Inspection after 2~4 hours storage at room temperature ,the sample shall be free from defects: <ol style="list-style-type: none"> <li>1. Air bubble in the LCD.</li> <li>2. Sealleak</li> <li>3. Non-display.</li> <li>4. Missing segments.</li> <li>5. Glass crack.</li> <li>6. Current Idd is twice higher than initial value.</li> </ol>				

## 9. QUALITY GUARANTEE

No	Item	Criteria
1	inclusions (black spot, white spot, dust)	<p>(1)round type  diameter mm(a*)      no of defect*</p> <p><math>a \leq 0.20</math>                      neglect  <math>0.20 &lt; a \leq 0.35</math>                5max  <math>0.35 &lt; a</math>                          none</p> <p>(2)linear type  <b>length mm(l)</b>                <b>width mm(W)</b>                <b>no. of defect</b></p> <p>na                                      <math>W \leq 0.03</math>                      neglect  <math>1 \leq 3</math>                                <math>0.03 &lt; W \leq 0.08</math>                6  <math>3 &lt; l</math>                                  <math>0.08 &lt; W</math>                          none</p>
2	scratch	<p>1.scratch on protective film is permitted.  2.scratch on polarizer shall be as follow:  (1)round type  diameter mm(a*)      no of defect</p> <p><math>a \leq 0.15</math>                      neglect  <math>0.15 &lt; a \leq 0.20</math>                2 max  <math>0.20 &lt; a</math>                          none</p> <p>(2)linear type  be judged by 1.-(2) linear type</p>
3	dent	diameter < 1.5mm
4	bubble	not exceeding 0.5mm average diameter is acceptable between glass and polarizing film
5	pin hole	$(a+b)/2 \leq 0.15\text{mm}$ maximum number: ignored $0.15 < (a+b)/2 \leq 0.20\text{mm}$ maximum number:10
6	dot width	design width $\pm 15\%$
7	dot defect	$(a+b)/2 \leq 0.20\text{mm}$ maximum number: ignored $0.20 < (a+b)/2 \leq 0.30\text{mm}$ maximum number:5 x=width
8	contrast irregularity(spot)	diameter spec                no of defect $a \leq 0.50\text{mm}$ neglect $0.50 < a \leq 0.75$ 5 $0.75 < a \leq 1.00$ 3 $1.00 < a$ none
9	color tone and uniformity	obvious uneven color is not permitted

## 10. Interface circuit and driving programme on LCM of dots matrix series .

(1) Interface circuit:



```

//*****
//连线表: CPU=W78E54B
//CS=P3.0 SID=P3.1 SCK=P3.2 RS=P3.3 Fosc=12Mhz RST=P3.5
//*****
#include <reg52.h>
#include <intrins.h>

#define LcmXPixel 128 //横向宽度
#define LcmYPixel 64 //纵向高度
#define MIN(A,B) ((A)<(B)?(A):(B))
#define Uchar unsigned char
#define Uint unsigned int

sbit CS = P3^0; //片选
sbit SID = P3^1; //数据
sbit SCK = P3^2; //Clock 信号
sbit RS = P3^3; //数据指令选择
sbit Key = P3^4; //测试架锁定按键(测试架专用)
sbit RES = P3^5; //测试架复位是板载 RC 复位, 可以不需要 IO 口操作

Uchar code ASCIIchardot[];
Uchar code bmp1[];
Uchar code bmp2[];
Uchar code bmp3[];
Uchar code ComTable[]={3,2,1,0,7,6,5,4,};

//串口模式下只能写不能读,也不能查忙,因此用户要控制好速度不要太快
void WriteCommand( Uchar CommandByte )
{
    Uchar i;
    CS=0;
    RS=0; //Command
    for(i=0;i<8;i++)
    {
        SCK=1;
        SID=( (CommandByte)>>(7-i) ) &0x01;
        SCK=0;
        _nop_();
        SCK=1;
    }
}

void WriteData( Uchar DataByte )
{
    Uchar i;
    CS=0;
    RS=1; //Data
    for(i=0;i<8;i++)
    {
        SCK=1;
        SID=( (DataByte)>>(7-i) ) &0x01;
        SCK=0;
        _nop_();
        SCK=1;
    }
}

void DelayMS(unsigned int MS)
{
    unsigned char us, usn;

```

```

while (MS!=0)
{
    usn = 2;    //for 12M
    while (usn!=0)
    {
        us=0xf6;
        while (us!=0) {us--};
        usn--;
    }
    MS--;
}

void DelayKey(unsigned int Second , unsigned int MS100)
{
    unsigned int i;
    for(i=0;i<Second*100+MS100*10;i++)
    {
        if(Key==0)
        {
            DelayMS(20);
            while (Key==0) {DelayMS(20);}
            break;
        }
        else DelayMS(10);
    }
}

void LcmClear( Uchar FillData )
{
    Uint i, j;
    for(i=0;i<8;i++)
    {
        WriteCommand(0xB0|ComTable[i]);    //Set Page Address
        WriteCommand(0x10);    //Set Column Address = 0
        WriteCommand(0x01);    //Colum from S1 -> S128 auto add
        for(j=0;j<128;j++)
        {
            WriteData( FillData );
        }
    }
}

void LcmInit( void )
{
    WriteCommand(0xAE);    //Display OFF
    WriteCommand(0xA2);    //1/64 Duty 1/9 Bias
    WriteCommand(0xA0);    //ADC select S0->S131(玻璃设计用 S1-S128)
    WriteCommand(0xC0);    //com1 -> com64
    WriteCommand(0x24);    //对某些模块没用,用的外部 Rb/Ra
    WriteCommand(0x81);    //Sets V0
    WriteCommand(48);    //内部电位器调节对比度
    WriteCommand(0x2F);    //voltage follower ON regulator ON booster ON
    WriteCommand(0xA6);    //Normal Display (not reverse display)
    WriteCommand(0xA4);    //Entire Display Disable
    WriteCommand(0x40);    //Set Display Start Line = com0
    WriteCommand(0xB0);    //Set Page Address = 0
    WriteCommand(0x10);    //Set Column Address 4 higher bits = 0
    WriteCommand(0x01);    //Set Column Address 4 lower bits = 1 , from IC SEG1 -> SEG128
    LcmClear(0);
    WriteCommand(0xAF);    //Display ON
}

//显示 ASCII 字符的函数
void LcmPutChar(Uchar col,Uchar page,Uchar Order)
{
    Uchar i;
    Uint x;
    x = (Order-0x20)*0x10;    //ASICC 字符从 0x20 开始, 每个 16 byte
    WriteCommand(ComTable[page&0x07]|0xB0);    //Set Page Address
    WriteCommand( ((col+1)>>4) | 0x10);    //Set Column Address High Byte
    WriteCommand( (col+1)&0x0F );    //Low Byte Colum from S128 -> S1 auto add

    for(i=0;i<8;i++)
    {
        WriteData( ASCIIchardot[x] );
        x++;
    }
    page++;    //下半字符 page+1

    WriteCommand(ComTable[page&0x07]|0xB0);    //Set Page Address
    WriteCommand( ((col+1)>>4) | 0x10);    //Set Column Address High Byte
    WriteCommand( (col+1)&0x0F );    //Low Byte Colum from S128 -> S1 auto add

    for(i=0;i<8;i++)
    {
        WriteData( ASCIIchardot[x] );
        x++;
    }
    page--;    //写完一个字符 page 还原
}

//显示字符串的函数
void LcmPutStr(Uchar col,Uchar page,Uchar *puts)
{
    while(*puts != '\0')    //判断字符串时候显示完毕
    {
        if(col>(LcmXPixel-8))    //判断行末空间是否足够放一个字符, 自动换行
        {

```

```

        page=page+2;
        col=0;
    }
    if (page>(LcmYPixel/8-2)) //到了屏幕最下角,自动返回左上角
    {
        page=0;
        col=0;
    }
    LcmPutChar(col, page, *puts);
    puts++;
    col=col+8; //下一个字符 8 列之后
}

//显示 3 位数的数值(0-255)
void LcmPutNum(Uchar col,Uchar page,Uchar Num)
{
    Uchar a,b,c;
    a=Num/100;
    b=(Num%100)/10;
    c=Num%10;
    if(a==0) ; //也不写空格,直接跳过去//PutChar(col, page, 0x20);
    else LcmPutChar(col, page, a+0x30);

    if(a==0 && b==0) ; //也不写空格,直接跳过去//LcmPutChar(col, page, 0x20);
    else LcmPutChar(col+8, page, b+0x30);

    LcmPutChar(col+16, page, c+0x30);
}

void LcmPutBmp( Uchar *puts )
{
    Uchar i,j;
    Uint X=0;
    for(i=0;i<(LcmYPixel/8);i++)
    {
        WriteCommand(0xB0|ComTable[i]); //Set Page Address
        WriteCommand(0x10); //Set Column Address = 0
        WriteCommand(0x01); //Column from S1 -> S128 auto add
        for(j=0;j<LcmXPixel;j++)
        {
            WriteData( puts[X] );
            X++;
        }
    }
}

void main( void )
{
    Uchar i;
    Uchar contrast=48; //对比度=48(根据我们常用的外部电阻参数来的)
    DelayMS(10);
    RES = 0;
    DelayMS(200);
    RES = 1;
    DelayMS(50);
    LcmInit();
    while(1)
    {
        LcmPutBmp(bmp1);
        DelayKey(1,0);

        for(i=(contrast-5);i<(contrast+5);i++)
        {
            WriteCommand(0x81); //Sets V0
            WriteCommand(0x3F&i); //内部电位器调节对比度
            LcmPutNum(10,2,i);
            DelayKey(0,1);
        }

        WriteCommand(0x81); //Sets V0
        WriteCommand(contrast); //恢复对比度
        LcmPutNum(10,2,contrast);

        LcmClear(0xff);
        DelayKey(1,0);

        LcmClear(0);
        LcmPutStr(0,0,"CA12864I2 Program");
        LcmPutStr(0,2,"SunSon ELEC-TECH");
        LcmPutStr(0,4,"TEL:755-29970110");
        LcmPutStr(0,6,"By LJ 2009.04.08");
        DelayKey(1,0);
    }
}

/* ASICC 字库代码 8x16 点阵 */
unsigned char code ASCIIchardot[16*96] = {
/*-- 文字: --*/
/*-- Fixedsys12; 此字体下对应的点阵为: 宽 x 高=8x16 --*/
0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,
/*-- 文字: ! --*/
/*-- Fixedsys12; 此字体下对应的点阵为: 宽 x 高=8x16 --*/
0x00,0x00,0x0E,0x1F,0x1F,0x0E,0x00,0x00,0x00,0x00,0x00,0xB0,0xB0,0x00,0x00,0x00,
/*-- 文字: " --*/
/*-- Fixedsys12; 此字体下对应的点阵为: 宽 x 高=8x16 --*/
0x00,0x1C,0x1C,0x00,0x00,0x1C,0x1C,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,

```



```

/*-- 文字: # --*/
/*-- Fixedsys12: 此字体下对应的点阵为: 宽 x 高=8x16 --*/
0x00, 0x04, 0x1F, 0x1F, 0x04, 0x1F, 0x1F, 0x04, 0x00, 0x40, 0xF0, 0xF0, 0x40, 0xF0, 0xF0, 0x40,

/*-- 文字: $ --*/
/*-- Fixedsys12: 此字体下对应的点阵为: 宽 x 高=8x16 --*/
0x00, 0x0C, 0x1E, 0x73, 0x71, 0x18, 0x08, 0x00, 0x00, 0x20, 0x30, 0x1C, 0x9C, 0xF0, 0x60, 0x00,

/*-- 文字: % --*/
/*-- Fixedsys12: 此字体下对应的点阵为: 宽 x 高=8x16 --*/
0x18, 0x3C, 0x24, 0x3D, 0x1B, 0x06, 0x0C, 0x00, 0x00, 0x60, 0xC0, 0xB0, 0x78, 0x48, 0x78, 0x30,

/*-- 文字: & --*/
/*-- Fixedsys12: 此字体下对应的点阵为: 宽 x 高=8x16 --*/
0x00, 0x0D, 0x1F, 0x12, 0x1E, 0x0C, 0x00, 0x00, 0x00, 0xE0, 0xF0, 0x10, 0x90, 0xE0, 0xF0, 0x90,

/*-- 文字: ' --*/
/*-- Fixedsys12: 此字体下对应的点阵为: 宽 x 高=8x16 --*/
0x00, 0x00, 0x00, 0x1C, 0x1C, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00,

/*-- 文字: ( --*/
/*-- Fixedsys12: 此字体下对应的点阵为: 宽 x 高=8x16 --*/
0x00, 0x00, 0x03, 0x0F, 0x1C, 0x10, 0x00, 0x00, 0x00, 0x00, 0xE0, 0xF8, 0x1C, 0x04, 0x00, 0x00,

/*-- 文字: ) --*/
/*-- Fixedsys12: 此字体下对应的点阵为: 宽 x 高=8x16 --*/
0x00, 0x00, 0x10, 0x1C, 0x0F, 0x03, 0x00, 0x00, 0x00, 0x00, 0x04, 0x1C, 0xF8, 0xE0, 0x00, 0x00,

/*-- 文字: * --*/
/*-- Fixedsys12: 此字体下对应的点阵为: 宽 x 高=8x16 --*/
0x00, 0x01, 0x05, 0x07, 0x03, 0x07, 0x05, 0x01, 0x00, 0x00, 0x40, 0xC0, 0x80, 0xC0, 0x40, 0x00,

/*-- 文字: + --*/
/*-- Fixedsys12: 此字体下对应的点阵为: 宽 x 高=8x16 --*/
0x00, 0x01, 0x01, 0x07, 0x07, 0x01, 0x01, 0x00, 0x00, 0x00, 0xC0, 0xC0, 0x00, 0x00, 0x00, 0x00,

/*-- 文字: , --*/
/*-- Fixedsys12: 此字体下对应的点阵为: 宽 x 高=8x16 --*/
0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x34, 0x3C, 0x38, 0x00, 0x00,

/*-- 文字: - --*/
/*-- Fixedsys12: 此字体下对应的点阵为: 宽 x 高=8x16 --*/
0x00, 0x01, 0x01, 0x01, 0x01, 0x01, 0x01, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00,

/*-- 文字: . --*/
/*-- Fixedsys12: 此字体下对应的点阵为: 宽 x 高=8x16 --*/
0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x30, 0x30, 0x30, 0x00, 0x00,

/*-- 文字: / --*/
/*-- Fixedsys12: 此字体下对应的点阵为: 宽 x 高=8x16 --*/
0x00, 0x00, 0x00, 0x01, 0x07, 0x1E, 0x18, 0x00, 0x00, 0x18, 0x78, 0xE0, 0x80, 0x00, 0x00, 0x00,

/*-- 文字: 0 --*/
/*-- Fixedsys12: 此字体下对应的点阵为: 宽 x 高=8x16 --*/
0x00, 0x00, 0x0F, 0x1F, 0x10, 0x16, 0x1F, 0x0F, 0x00, 0x00, 0xE0, 0xF0, 0xD0, 0x10, 0xF0, 0xE0,

/*-- 文字: 1 --*/
/*-- Fixedsys12: 此字体下对应的点阵为: 宽 x 高=8x16 --*/
0x00, 0x04, 0x04, 0x0C, 0x1F, 0x1F, 0x00, 0x00, 0x00, 0x00, 0x00, 0xF0, 0xF0, 0x00, 0x00,

/*-- 文字: 2 --*/
/*-- Fixedsys12: 此字体下对应的点阵为: 宽 x 高=8x16 --*/
0x00, 0x0C, 0x1C, 0x10, 0x11, 0x1F, 0x0E, 0x00, 0x00, 0x30, 0x70, 0xD0, 0x90, 0x10, 0x10, 0x00,

/*-- 文字: 3 --*/
/*-- Fixedsys12: 此字体下对应的点阵为: 宽 x 高=8x16 --*/
0x00, 0x0C, 0x1C, 0x11, 0x11, 0x1F, 0x0E, 0x00, 0x00, 0x60, 0x70, 0x10, 0x10, 0xF0, 0xE0, 0x00,

/*-- 文字: 4 --*/
/*-- Fixedsys12: 此字体下对应的点阵为: 宽 x 高=8x16 --*/
0x00, 0x00, 0x1F, 0x1F, 0x00, 0x07, 0x07, 0x00, 0x00, 0xC0, 0xC0, 0x40, 0x40, 0xF0, 0xF0, 0x40,

/*-- 文字: 5 --*/
/*-- Fixedsys12: 此字体下对应的点阵为: 宽 x 高=8x16 --*/
0x00, 0x1F, 0x1F, 0x11, 0x11, 0x10, 0x00, 0x00, 0x00, 0x10, 0x10, 0x10, 0x30, 0xE0, 0xC0, 0x00,

/*-- 文字: 6 --*/
/*-- Fixedsys12: 此字体下对应的点阵为: 宽 x 高=8x16 --*/
0x00, 0x03, 0x07, 0x1E, 0x1A, 0x13, 0x01, 0x00, 0x00, 0xE0, 0xF0, 0x10, 0x10, 0xF0, 0xE0, 0x00,

/*-- 文字: 7 --*/
/*-- Fixedsys12: 此字体下对应的点阵为: 宽 x 高=8x16 --*/
0x00, 0x10, 0x10, 0x11, 0x17, 0x1E, 0x18, 0x00, 0x00, 0x00, 0x70, 0xF0, 0x80, 0x00, 0x00, 0x00,

/*-- 文字: 8 --*/
/*-- Fixedsys12: 此字体下对应的点阵为: 宽 x 高=8x16 --*/
0x00, 0x0E, 0x1F, 0x13, 0x11, 0x1F, 0x0E, 0x00, 0x00, 0xE0, 0xF0, 0x10, 0x90, 0xF0, 0xE0, 0x00,

/*-- 文字: 9 --*/
/*-- Fixedsys12: 此字体下对应的点阵为: 宽 x 高=8x16 --*/
0x00, 0x0F, 0x1F, 0x10, 0x10, 0x1F, 0x0F, 0x00, 0x00, 0x00, 0x90, 0xB0, 0xF0, 0xC0, 0x80, 0x00,

/*-- 文字: : --*/
/*-- Fixedsys12: 此字体下对应的点阵为: 宽 x 高=8x16 --*/
0x00, 0x00, 0x00, 0x06, 0x06, 0x06, 0x00, 0x00, 0x00, 0x00, 0x00, 0x30, 0x30, 0x30, 0x00, 0x00,

/*-- 文字: ; --*/
/*-- Fixedsys12: 此字体下对应的点阵为: 宽 x 高=8x16 --*/
0x00, 0x00, 0x00, 0x06, 0x06, 0x06, 0x00, 0x00, 0x00, 0x00, 0x00, 0x34, 0x3C, 0x38, 0x00, 0x00,

/*-- 文字: < --*/

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/*-- 此字体下对应的点阵为：宽 x 高=8x16  --*/
0x00, 0x01, 0x03, 0x06, 0x0C, 0x18, 0x10, 0x00, 0x00, 0x00, 0x80, 0xC0, 0x60, 0x30, 0x10, 0x00,

/*-- 文字： =  --*/
/*-- Fixedsys12: 此字体下对应的点阵为：宽 x 高=8x16  --*/
0x00, 0x02, 0x02, 0x02, 0x02, 0x02, 0x00, 0x00, 0x80, 0x80, 0x80, 0x80, 0x80, 0x00,

/*-- 文字： >  --*/
/*-- Fixedsys12: 此字体下对应的点阵为：宽 x 高=8x16  --*/
0x00, 0x10, 0x18, 0x0C, 0x06, 0x03, 0x01, 0x00, 0x00, 0x10, 0x30, 0x60, 0xC0, 0x80, 0x00, 0x00,

/*-- 文字： ?  --*/
/*-- Fixedsys12: 此字体下对应的点阵为：宽 x 高=8x16  --*/
0x00, 0x0C, 0x1C, 0x11, 0x13, 0x1E, 0x0C, 0x00, 0x00, 0x00, 0xB0, 0xB0, 0x00, 0x00, 0x00,

/*-- 文字： @  --*/
/*-- Fixedsys12: 此字体下对应的点阵为：宽 x 高=8x16  --*/
0x0F, 0x1F, 0x10, 0x11, 0x13, 0x12, 0x1F, 0x0F, 0xE0, 0xF0, 0x10, 0x90, 0xD0, 0x50, 0xD0, 0xD0,

/*-- 文字： A  --*/
/*-- Fixedsys12: 此字体下对应的点阵为：宽 x 高=8x16  --*/
0x00, 0x07, 0x0F, 0x18, 0x18, 0x0F, 0x07, 0x00, 0x00, 0xF0, 0xF0, 0x80, 0x80, 0xF0, 0xF0, 0x00,

/*-- 文字： B  --*/
/*-- Fixedsys12: 此字体下对应的点阵为：宽 x 高=8x16  --*/
0x00, 0x1F, 0x1F, 0x11, 0x11, 0x1F, 0x0E, 0x00, 0x00, 0xF0, 0xF0, 0x10, 0x10, 0xF0, 0xE0, 0x00,

/*-- 文字： C  --*/
/*-- Fixedsys12: 此字体下对应的点阵为：宽 x 高=8x16  --*/
0x00, 0x0F, 0x1F, 0x10, 0x10, 0x1C, 0x0C, 0x00, 0x00, 0xE0, 0xF0, 0x10, 0x10, 0x70, 0x60, 0x00,

/*-- 文字： D  --*/
/*-- Fixedsys12: 此字体下对应的点阵为：宽 x 高=8x16  --*/
0x00, 0x1F, 0x1F, 0x10, 0x18, 0x0F, 0x07, 0x00, 0x00, 0xF0, 0xF0, 0x10, 0x30, 0xE0, 0xC0, 0x00,

/*-- 文字： E  --*/
/*-- Fixedsys12: 此字体下对应的点阵为：宽 x 高=8x16  --*/
0x00, 0x1F, 0x1F, 0x11, 0x11, 0x11, 0x10, 0x00, 0x00, 0xF0, 0xF0, 0x10, 0x10, 0x10, 0x10, 0x00,

/*-- 文字： F  --*/
/*-- Fixedsys12: 此字体下对应的点阵为：宽 x 高=8x16  --*/
0x00, 0x1F, 0x1F, 0x11, 0x11, 0x11, 0x10, 0x00, 0x00, 0xF0, 0xF0, 0x00, 0x00, 0x00, 0x00,

/*-- 文字： G  --*/
/*-- Fixedsys12: 此字体下对应的点阵为：宽 x 高=8x16  --*/
0x00, 0x0F, 0x1F, 0x10, 0x10, 0x1C, 0x0C, 0x00, 0x00, 0xE0, 0xF0, 0x10, 0x90, 0xF0, 0xF0, 0x00,

/*-- 文字： H  --*/
/*-- Fixedsys12: 此字体下对应的点阵为：宽 x 高=8x16  --*/
0x00, 0x1F, 0x1F, 0x01, 0x01, 0x1F, 0x1F, 0x00, 0x00, 0xF0, 0xF0, 0x00, 0x00, 0xF0, 0xF0, 0x00,

/*-- 文字： I  --*/
/*-- Fixedsys12: 此字体下对应的点阵为：宽 x 高=8x16  --*/
0x00, 0x00, 0x10, 0x1F, 0x1F, 0x10, 0x00, 0x00, 0x00, 0x00, 0x10, 0xF0, 0x10, 0x00, 0x00,

/*-- 文字： J  --*/
/*-- Fixedsys12: 此字体下对应的点阵为：宽 x 高=8x16  --*/
0x00, 0x00, 0x00, 0x00, 0x00, 0x1F, 0x1F, 0x00, 0x00, 0x60, 0x70, 0x10, 0x10, 0xF0, 0xE0, 0x00,

/*-- 文字： K  --*/
/*-- Fixedsys12: 此字体下对应的点阵为：宽 x 高=8x16  --*/
0x00, 0x1F, 0x1F, 0x01, 0x07, 0x1E, 0x18, 0x00, 0x00, 0xF0, 0xF0, 0x00, 0xC0, 0xF0, 0x30, 0x00,

/*-- 文字： L  --*/
/*-- Fixedsys12: 此字体下对应的点阵为：宽 x 高=8x16  --*/
0x00, 0x1F, 0x1F, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0xF0, 0xF0, 0x10, 0x10, 0x10, 0x10, 0x00,

/*-- 文字： M  --*/
/*-- Fixedsys12: 此字体下对应的点阵为：宽 x 高=8x16  --*/
0x00, 0x1F, 0x1F, 0x04, 0x03, 0x04, 0x1F, 0x1F, 0x00, 0xF0, 0xF0, 0x00, 0x80, 0x00, 0xF0, 0xF0,

/*-- 文字： N  --*/
/*-- Fixedsys12: 此字体下对应的点阵为：宽 x 高=8x16  --*/
0x00, 0x1F, 0x1F, 0x06, 0x03, 0x01, 0x1F, 0x1F, 0x00, 0xF0, 0xF0, 0x00, 0x00, 0x80, 0xF0, 0xF0,

/*-- 文字： O  --*/
/*-- Fixedsys12: 此字体下对应的点阵为：宽 x 高=8x16  --*/
0x00, 0x0F, 0x1F, 0x10, 0x10, 0x1F, 0x0F, 0x00, 0x00, 0xE0, 0xF0, 0x10, 0x10, 0xF0, 0xE0, 0x00,

/*-- 文字： P  --*/
/*-- Fixedsys12: 此字体下对应的点阵为：宽 x 高=8x16  --*/
0x00, 0x1F, 0x1F, 0x11, 0x11, 0x1F, 0x0E, 0x00, 0x00, 0xF0, 0xF0, 0x00, 0x00, 0x00, 0x00, 0x00,

/*-- 文字： Q  --*/
/*-- Fixedsys12: 此字体下对应的点阵为：宽 x 高=8x16  --*/
0x00, 0x0F, 0x1F, 0x10, 0x10, 0x1F, 0x0F, 0x00, 0x00, 0xE0, 0xF0, 0x10, 0x18, 0xFC, 0xE4, 0x00,

/*-- 文字： R  --*/
/*-- Fixedsys12: 此字体下对应的点阵为：宽 x 高=8x16  --*/
0x00, 0x1F, 0x1F, 0x11, 0x11, 0x1F, 0x0E, 0x00, 0x00, 0xF0, 0xF0, 0x00, 0x80, 0xF0, 0x70, 0x00,

/*-- 文字： S  --*/
/*-- Fixedsys12: 此字体下对应的点阵为：宽 x 高=8x16  --*/
0x00, 0x0C, 0x1E, 0x13, 0x11, 0x18, 0x08, 0x00, 0x00, 0x20, 0x30, 0x10, 0x90, 0xF0, 0x60, 0x00,

/*-- 文字： T  --*/
/*-- Fixedsys12: 此字体下对应的点阵为：宽 x 高=8x16  --*/
0x00, 0x10, 0x10, 0x1F, 0x1F, 0x10, 0x10, 0x00, 0x00, 0x00, 0xF0, 0xF0, 0x00, 0x00, 0x00,

/*-- 文字： U  --*/
/*-- Fixedsys12: 此字体下对应的点阵为：宽 x 高=8x16  --*/

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0x00, 0x1F, 0x1F, 0x00, 0x00, 0x1F, 0x1F, 0x00, 0x00, 0xE0, 0xF0, 0x10, 0x10, 0xF0, 0xE0, 0x00,

/*-- 文字: V --*/
/*-- Fixedsys12: 此字体下对应的点阵为: 宽 x 高=8x16 --*/
0x00, 0x1F, 0x1F, 0x00, 0x00, 0x1F, 0x1F, 0x00, 0x00, 0xC0, 0xE0, 0x30, 0x30, 0xE0, 0xC0, 0x00,

/*-- 文字: W --*/
/*-- Fixedsys12: 此字体下对应的点阵为: 宽 x 高=8x16 --*/
0x00, 0x1F, 0x1F, 0x00, 0x03, 0x00, 0x1F, 0x1F, 0x00, 0x80, 0xF0, 0x70, 0x80, 0x70, 0xF0, 0x80,

/*-- 文字: X --*/
/*-- Fixedsys12: 此字体下对应的点阵为: 宽 x 高=8x16 --*/
0x00, 0x18, 0x1C, 0x07, 0x03, 0x18, 0x00, 0x00, 0x70, 0xF0, 0x00, 0x80, 0xF0, 0x70, 0x00,

/*-- 文字: Y --*/
/*-- Fixedsys12: 此字体下对应的点阵为: 宽 x 高=8x16 --*/
0x00, 0x1E, 0x1F, 0x01, 0x01, 0x1F, 0x1E, 0x00, 0x00, 0x00, 0xF0, 0xF0, 0x00, 0x00, 0x00, 0x00,

/*-- 文字: Z --*/
/*-- Fixedsys12: 此字体下对应的点阵为: 宽 x 高=8x16 --*/
0x00, 0x10, 0x10, 0x11, 0x13, 0x1E, 0x1C, 0x00, 0x00, 0x70, 0xF0, 0x90, 0x10, 0x10, 0x10, 0x00,

/*-- 文字: [ --*/
/*-- Fixedsys12: 此字体下对应的点阵为: 宽 x 高=8x16 --*/
0x00, 0x00, 0x1F, 0x1F, 0x10, 0x10, 0x00, 0x00, 0x00, 0x00, 0xFE, 0xFE, 0x02, 0x02, 0x00, 0x00,

/*-- 文字: \ --*/
/*-- Fixedsys12: 此字体下对应的点阵为: 宽 x 高=8x16 --*/
0x00, 0x18, 0x1E, 0x07, 0x01, 0x00, 0x00, 0x00, 0x00, 0x00, 0x80, 0xE0, 0x78, 0x18, 0x00,

/*-- 文字: ] --*/
/*-- Fixedsys12: 此字体下对应的点阵为: 宽 x 高=8x16 --*/
0x00, 0x00, 0x10, 0x10, 0x1F, 0x1F, 0x00, 0x00, 0x00, 0x00, 0x02, 0x02, 0xFE, 0xFE, 0x00, 0x00,

/*-- 文字: ^ --*/
/*-- Fixedsys12: 此字体下对应的点阵为: 宽 x 高=8x16 --*/
0x00, 0x10, 0x30, 0x60, 0x60, 0x30, 0x10, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00,

/*-- 文字: _ --*/
/*-- Fixedsys12: 此字体下对应的点阵为: 宽 x 高=8x16 --*/
0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x02, 0x02, 0x02, 0x02, 0x02, 0x02, 0x02, 0x02, 0x02,

/*-- 文字: ` --*/
/*-- Fixedsys12: 此字体下对应的点阵为: 宽 x 高=8x16 --*/
0x00, 0x00, 0x40, 0x60, 0x70, 0x10, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00,

/*-- 文字: a --*/
/*-- Fixedsys12: 此字体下对应的点阵为: 宽 x 高=8x16 --*/
0x00, 0x00, 0x04, 0x04, 0x04, 0x07, 0x03, 0x00, 0x60, 0xF0, 0x90, 0xF0, 0xF0, 0x00,

/*-- 文字: b --*/
/*-- Fixedsys12: 此字体下对应的点阵为: 宽 x 高=8x16 --*/
0x00, 0x1F, 0x1F, 0x04, 0x04, 0x07, 0x03, 0x00, 0x00, 0xF0, 0xF0, 0x10, 0x10, 0xF0, 0xE0, 0x00,

/*-- 文字: c --*/
/*-- Fixedsys12: 此字体下对应的点阵为: 宽 x 高=8x16 --*/
0x00, 0x03, 0x07, 0x04, 0x04, 0x06, 0x02, 0x00, 0x00, 0xE0, 0xF0, 0x10, 0x10, 0x30, 0x20, 0x00,

/*-- 文字: d --*/
/*-- Fixedsys12: 此字体下对应的点阵为: 宽 x 高=8x16 --*/
0x00, 0x03, 0x07, 0x04, 0x04, 0x1F, 0x1F, 0x00, 0x00, 0xE0, 0xF0, 0x10, 0x10, 0xF0, 0xF0, 0x00,

/*-- 文字: e --*/
/*-- Fixedsys12: 此字体下对应的点阵为: 宽 x 高=8x16 --*/
0x00, 0x03, 0x07, 0x04, 0x04, 0x07, 0x03, 0x00, 0x00, 0xE0, 0xF0, 0x90, 0x90, 0x90, 0x80, 0x00,

/*-- 文字: f --*/
/*-- Fixedsys12: 此字体下对应的点阵为: 宽 x 高=8x16 --*/
0x00, 0x01, 0x0F, 0x1F, 0x11, 0x11, 0x11, 0x00, 0x00, 0x00, 0xF0, 0xF0, 0x00, 0x00, 0x00, 0x00,

/*-- 文字: g --*/
/*-- Fixedsys12: 此字体下对应的点阵为: 宽 x 高=8x16 --*/
0x00, 0x03, 0x07, 0x04, 0x04, 0x07, 0x07, 0x00, 0x00, 0xE2, 0xF2, 0x12, 0x12, 0xFE, 0xFC, 0x00,

/*-- 文字: h --*/
/*-- Fixedsys12: 此字体下对应的点阵为: 宽 x 高=8x16 --*/
0x00, 0x1F, 0x1F, 0x04, 0x04, 0x07, 0x03, 0x00, 0x00, 0xF0, 0xF0, 0x00, 0x00, 0xF0, 0xF0, 0x00,

/*-- 文字: i --*/
/*-- Fixedsys12: 此字体下对应的点阵为: 宽 x 高=8x16 --*/
0x00, 0x04, 0x04, 0x37, 0x37, 0x00, 0x00, 0x00, 0x00, 0x10, 0x10, 0xF0, 0xF0, 0x10, 0x10, 0x00,

/*-- 文字: j --*/
/*-- Fixedsys12: 此字体下对应的点阵为: 宽 x 高=8x16 --*/
0x00, 0x00, 0x04, 0x04, 0x37, 0x37, 0x00, 0x00, 0x00, 0x02, 0x02, 0x02, 0x02, 0xFE, 0xFC, 0x00, 0x00,

/*-- 文字: k --*/
/*-- Fixedsys12: 此字体下对应的点阵为: 宽 x 高=8x16 --*/
0x00, 0x1F, 0x1F, 0x00, 0x01, 0x07, 0x06, 0x00, 0x00, 0xF0, 0xF0, 0x80, 0xC0, 0x70, 0x30, 0x00,

/*-- 文字: l --*/
/*-- Fixedsys12: 此字体下对应的点阵为: 宽 x 高=8x16 --*/
0x00, 0x10, 0x10, 0x1F, 0x1F, 0x00, 0x00, 0x00, 0x00, 0x10, 0x10, 0xF0, 0xF0, 0x10, 0x10, 0x00,

/*-- 文字: m --*/
/*-- Fixedsys12: 此字体下对应的点阵为: 宽 x 高=8x16 --*/
0x00, 0x07, 0x07, 0x04, 0x04, 0x07, 0x03, 0x00, 0x00, 0xF0, 0xF0, 0x00, 0xE0, 0x00, 0xF0, 0xF0,

/*-- 文字: n --*/
/*-- Fixedsys12: 此字体下对应的点阵为: 宽 x 高=8x16 --*/
0x00, 0x07, 0x07, 0x04, 0x04, 0x07, 0x03, 0x00, 0x00, 0xF0, 0xF0, 0x00, 0x00, 0xF0, 0xF0, 0x00,

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0x05, 0x85, 0x0A, 0x1E, 0x20, 0x1D, 0x95, 0x8B, 0x84, 0x00, 0x00, 0x00, 0x01, 0x82, 0x0C, 0x12,
0x0E, 0x02, 0x1D, 0x21, 0x1D, 0x84, 0x03, 0x00, 0x00, 0x00, 0x81, 0x00, 0x05, 0x0A, 0x05, 0x02,
0x01, 0x04, 0x0A, 0x04, 0x00, 0x00, 0x00, 0x55, 0xAA, 0x55, 0xAA, 0x55, 0xAA, 0x55, 0x00, 0xFF,
0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0xFF,
0xFF, 0x00, 0xFF, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0xFF, 0x00, 0xEF, 0xFF,
0xFF, 0xFF, 0xDF, 0xFE, 0x7E, 0x7F, 0x7F, 0x3E, 0x3E, 0x3F, 0x3F, 0x3B, 0x3F, 0x3F, 0x7F, 0x7F,
0xF7, 0xFF, 0xFF, 0xFE, 0xFD, 0xFD, 0x7E, 0xFD, 0xFD, 0xFE, 0xFF, 0xFF, 0xFF, 0xCF, 0xC7, 0xE3,
0xC7, 0xCF, 0xFF, 0x7F, 0xB7, 0x5F, 0xAB, 0x55, 0xAA, 0x55, 0x8A, 0x01, 0x00, 0x01, 0x10, 0xA9,
0x68, 0x55, 0x04, 0xB9, 0xE8, 0x19, 0xC8, 0x35, 0xCA, 0x13, 0x0C, 0x01, 0xF0, 0x09, 0xA8, 0xE9,
0x08, 0xF1, 0xB8, 0xD5, 0xFA, 0x05, 0xF8, 0x01, 0x40, 0xA1, 0x40, 0xC1, 0x20, 0xD1, 0xE8, 0xE9,
0xE8, 0xA9, 0x50, 0x21, 0x00, 0x01, 0x02, 0x55, 0xAA, 0x55, 0xAA, 0x55, 0xAB, 0x57, 0x00, 0xFF,
0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0xFF, 0x00, 0xFF,
0xFF, 0x00, 0xFF, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0xFF, 0x00, 0xF9, 0xF6,
0xFB, 0xF6, 0xF9, 0x7F, 0x3D, 0x1F, 0x3F, 0x7F, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF,
0xFD, 0xFF, 0xFF, 0x7F, 0xBF, 0xDF, 0xEF, 0xDF, 0xBF, 0x7F, 0xFF, 0xFF, 0xEF, 0xFF, 0xFF, 0xFF,
0xFF, 0xFF, 0xE7, 0xDB, 0xDD, 0xEE, 0xDD, 0xDB, 0xE7, 0x7F, 0xFF, 0x7F, 0xFF, 0x77, 0xFF, 0x7F,
0xFF, 0x7F, 0xFE, 0x7F, 0xFF, 0x6F, 0xFF, 0x7F, 0xFC, 0x78, 0xFC, 0x78, 0xFC, 0x7F, 0xFF, 0x5F,
0xFF, 0x7F, 0xFF, 0x73, 0xE1, 0x70, 0xE1, 0x73, 0xFF, 0x7F, 0xFF, 0x7F, 0xFF, 0x7F, 0xFE, 0x6D,
0xFD, 0x7E, 0xED, 0x7D, 0xFE, 0x7F, 0xFF, 0x7F, 0xFF, 0x7F, 0xFF, 0xFD, 0xF8, 0xFC, 0x00, 0xFF,
0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0xFF, 0x00, 0xFF,
0xFF, 0x00, 0xFF, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0xFC, 0x04, 0xF4, 0xF4,
0x74, 0xD4, 0xF4, 0xF4, 0xF4, 0xF4, 0xF4, 0xF4, 0xB4, 0xF4, 0xF4, 0xF4, 0xF4, 0xF4, 0xF4, 0xF4, 0xF4,
0xF4, 0xF4, 0xF4, 0xC4, 0xB4, 0xD4, 0xB4, 0xC4, 0xF4, 0xF4, 0xF4, 0xF4, 0xF4, 0xF4, 0xF4, 0xF4,
0xF4, 0xF4, 0xF4, 0xF4, 0xE4, 0xF4, 0xF4, 0xF4, 0xF4, 0xF4, 0xF4, 0xF4, 0xF4, 0xF4, 0xF4, 0xF4,
0xF4, 0xE4, 0xF4, 0xF4, 0xF4, 0xF4, 0xF4, 0xF4, 0xF4, 0xF4, 0xF4, 0xF4, 0xF4, 0xF4, 0xF4, 0xF4,
0xF4, 0xF4, 0xF4, 0xF4, 0xF4, 0xF4, 0xF4, 0xF4, 0xF4, 0xF4, 0xF4, 0xF4, 0xF4, 0xF4, 0xF4, 0xF4,
0xF4, 0xF4, 0xF4, 0xF4, 0xF4, 0xF4, 0xF4, 0xF4, 0xF4, 0xF4, 0xF4, 0xF4, 0xF4, 0xF4, 0xF4, 0xF4,
0xF4, 0xF4, 0xF4, 0xF4, 0xF4, 0xF4, 0xF4, 0xF4, 0xF4, 0xF4, 0xF4, 0xF4, 0xF4, 0xF4, 0xF4, 0xF4,
0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0xFF, 0x00, 0xFF,
0xFF, 0x01, 0xFD, 0x05, 0x05, 0x05, 0x05, 0x05, 0x05, 0x05, 0x05, 0x05, 0x05, 0x05, 0x05, 0x05,
0x05, 0x05, 0x05, 0x05, 0x05, 0x05, 0x05, 0x05, 0x05, 0x05, 0x05, 0x05, 0x05, 0x05, 0x05,
0x05, 0x05, 0x05, 0x05, 0x05, 0x05, 0x05, 0x05, 0x05, 0x05, 0x05, 0x05, 0x05, 0x05, 0x05, 0x05,
0x05, 0x05, 0x05, 0x05, 0x05, 0x05, 0x05, 0x05, 0x05, 0x05, 0x05, 0x05, 0x05, 0x05, 0x05, 0x05,
0x05, 0x05, 0x05, 0x05, 0x05, 0x05, 0x05, 0x05, 0x05, 0x05, 0x05, 0x05, 0x05, 0x05, 0x05, 0x05,
0x05, 0x05, 0x05, 0x05, 0x05, 0x05, 0x05, 0x05, 0x05, 0x05, 0x05, 0x05, 0x05, 0x05, 0x05, 0x05,
0x05, 0x05, 0x05, 0x05, 0x05, 0x05, 0x05, 0x05, 0x05, 0x05, 0x05, 0x05, 0x05, 0x05, 0x05, 0x05,
};
    
```

```

Uchar code bmp3[]={
/*-- 调入了一幅图像: E:\!Program\MobilePhone3.bmp --*/
/*-- 宽度 x 高度=128x64 --*/
0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF,
0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF,
0xE7, 0xC7, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xE0, 0x80, 0x00, 0x04, 0xFE,
0x07, 0x3F, 0xFC, 0xE0, 0xC0, 0x00, 0x40, 0xE0, 0xF0, 0xFC, 0x3E, 0x0F, 0x01, 0x01, 0x03, 0x07,
0x07, 0x0F, 0x0F, 0x0F, 0x0E, 0x1E, 0x1E, 0x9C, 0x9E, 0x9C, 0xDC, 0xD8, 0xD8, 0xCC, 0xC0, 0x80,
0x80, 0xC0, 0xF0, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xF8, 0xC0, 0x9C, 0x24, 0x43, 0x40, 0x20, 0x1C,
0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x28, 0x24, 0x22, 0x21,
0x26, 0x38, 0x04, 0x18, 0xF0, 0x17, 0x10, 0x10, 0x14, 0x18, 0x10, 0x00, 0x00, 0x00, 0x00, 0x00,
0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF,
0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFE, 0xFE, 0xFE, 0xFE, 0xFB, 0xF3, 0xD1, 0xFB, 0x79, 0x7B,
0x7F, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0x7F, 0x7F, 0x3F, 0x3F,
0x9F, 0xCF, 0x67, 0x13, 0x13, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x60, 0xE0, 0xE0, 0xE0, 0xC1,
0x81, 0x83, 0x03, 0x03, 0x03, 0x03, 0x07, 0x06, 0x07, 0x07, 0x0E, 0x0C, 0x08, 0x10, 0x00, 0x00,
0x00, 0x00, 0x00, 0x00, 0x00, 0xF0, 0xF0, 0xE0, 0x00, 0x00, 0x0B, 0x80, 0x70, 0x8C, 0x08, 0x10, 0xE0,
0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x04, 0x08, 0x32, 0xC2,
0xC2, 0x34, 0x04, 0x08, 0x30, 0xC0, 0x60, 0x18, 0x0C, 0x06, 0x04, 0x00, 0x00, 0x00, 0x00, 0x00,
0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFE, 0xFF, 0xFF, 0xFD,
0xFF, 0xFF, 0xEB, 0xCF, 0xEC, 0xCC, 0xCC, 0xFE, 0xFE, 0x7E, 0x7F, 0xFF, 0xF7, 0xFF, 0xFD, 0xFE,
0xFF, 0xFF, 0xF7, 0xF9, 0xF0, 0xF8, 0xF8, 0xFC, 0xFF, 0xFF, 0xF7, 0xF2, 0xF8, 0xFC, 0xFE, 0xFF,
0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0x7C, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00,
0x40, 0x80, 0x80, 0xC0, 0x40, 0x40, 0xC0, 0x80, 0x80, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00,
0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x80, 0x40, 0x40, 0x40, 0x40, 0x81,
0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x02, 0x82, 0x73, 0x20,
0x00, 0x3F, 0x20, 0x40, 0x40, 0x3F, 0x20, 0x20, 0x20, 0x3F, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00,
0x03, 0x7F, 0xFF, 0xBF, 0x1F, 0xFF, 0xFC, 0x9E, 0x9F, 0xFF, 0xDF, 0xEF, 0x73, 0xF1, 0xBF, 0xF8,
0xFC, 0xFC, 0xFE, 0xFE, 0x7E, 0x3E, 0x1E, 0x0E, 0x0E, 0x0C, 0x0C, 0x8C, 0x8C, 0x84, 0xE0,
0x20, 0x91, 0xC7, 0xE8, 0x30, 0x20, 0x20, 0x60, 0x41, 0xC2, 0xC4, 0x85, 0x89, 0x9B, 0x8B, 0x8B,
0xE3, 0xD7, 0x99, 0xE1, 0x81, 0x01, 0x01, 0x01, 0x01, 0x01, 0x01, 0x00, 0x01, 0x00, 0x00, 0x00, 0x00,
0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00,
0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x03, 0x1C, 0x08, 0x00, 0x00, 0x00, 0x00,
0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x02, 0x04, 0xF8, 0x04,
0x02, 0xE2, 0x42, 0x82, 0x02, 0xFA, 0x02, 0x42, 0x22, 0xC2, 0x02, 0x00, 0x00, 0x00, 0x00, 0x00,
0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0x0F, 0x01, 0x00, 0x00, 0x80, 0xC0, 0xC0, 0xE0, 0xF1, 0xF2,
0x72, 0x74, 0x74, 0x78, 0x78, 0x30, 0x30, 0x20, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00,
0x00, 0xC0, 0x1C, 0xC0, 0x00, 0x40, 0x64, 0x9E, 0x3C, 0xF8, 0xD0, 0xE0, 0x40, 0x00, 0xC0, 0xC0,
0x80, 0xC0, 0xC0, 0x00, 0xE0, 0x30, 0x1E, 0xFF, 0xF7, 0xFF, 0x9F, 0xDF, 0x5F, 0x1F, 0x1F, 0x1E,
0x7E, 0x3C, 0x3C, 0x3B, 0x30, 0x70, 0x60, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00,
0x00, 0x00, 0x03, 0x02, 0x04, 0x08, 0x10, 0x20, 0x7F, 0x80, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00,
0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x02, 0x42, 0x22,
0x3A, 0x13, 0x02, 0xFE, 0x02, 0x03, 0x0A, 0x72, 0x22, 0x06, 0x02, 0x00, 0x00, 0x00, 0x00, 0x00,
0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFC, 0xFD, 0xFD, 0x7F, 0x1F, 0x0F, 0x37, 0x43, 0x81, 0x80, 0x04,
0x19, 0x13, 0x27, 0x4D, 0xDE, 0x9C, 0xB4, 0xB8, 0xB8, 0x78, 0x30, 0x10, 0x00, 0x00, 0x00, 0x00,
0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x01, 0x03, 0x07, 0x02, 0x00, 0x00, 0x00, 0x00, 0x00,
0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0xC0, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xCF, 0xC3,
0xC1, 0x81, 0x80, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x01, 0x03, 0x03, 0x06, 0x09, 0x10, 0x30,
0x68, 0x86, 0x01, 0x00, 0x00, 0x00, 0x01, 0x3E, 0xC0, 0x41, 0x02, 0x04, 0x0C, 0x10, 0x20, 0x21,
0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x01, 0x02, 0x04,
0x18, 0xE0, 0x00, 0x00, 0x00, 0xFC, 0x02, 0x02, 0x02, 0x02, 0x1E, 0x00, 0x00, 0x00, 0x00, 0x00,
0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0x3F, 0x9F, 0x8F, 0xA7, 0xC3, 0xE1, 0xE9, 0xF0, 0xC8, 0xE5, 0x72,
0xE1, 0xC0, 0x80, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00,
0x00, 0x00, 0x20, 0x61, 0x61, 0xE1, 0xE3, 0xC6, 0x8C, 0x0C, 0x18, 0x19, 0x33, 0x7F, 0x00,
0x00, 0x00, 0x00, 0x00, 0x00, 0x07, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF,
    
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0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0x87, 0x80, 0x80, 0x80, 0x00, 0x7F, 0xE0, 0x00, 0x80, 0xC0, 0x30,  
0x08, 0x03, 0x82, 0x66, 0x08, 0x51, 0xA2, 0x54, 0x88, 0x10, 0x20, 0x00, 0x01, 0x06, 0x08, 0x80,  
0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x1F, 0x00, 0x00,  
0x7F, 0x02, 0x0C, 0xF1, 0x50, 0x10, 0x18, 0x16, 0x10, 0x11, 0x10, 0x00, 0x00, 0x00, 0x00, 0x00,  
0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF,  
0xFF, 0xFF, 0x7F, 0x3F, 0x1F, 0x0F, 0x07, 0x03, 0x03, 0x01, 0x01, 0x00, 0x00, 0x00, 0x00, 0x00,  
0x00, 0x00, 0x60, 0xE0, 0xE0, 0xA0, 0x30, 0x20, 0x68, 0x78, 0x68, 0xF8, 0xF0, 0xE0, 0xC0, 0x00,  
0x00, 0x00, 0x00, 0x01, 0x06, 0x18, 0xE0, 0x80, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF,  
0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0x3F, 0x0F, 0x07, 0x01, 0xC0, 0x38, 0x08, 0x06, 0x03,  
0x3C, 0xC0, 0x23, 0x10, 0x70, 0x00, 0x00, 0x00, 0x0C, 0x10, 0x20, 0xFF, 0x80, 0x00, 0x00, 0x00,  
0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00,  
0xFE, 0x00, 0x00, 0xFE, 0x84, 0x84, 0xFC, 0x84, 0x84, 0xFE, 0x80, 0x00, 0x00, 0x00, 0x00, 0x00,

};