深圳力先电子有限公司

液晶显示模块使用手册

型号：**LX12864D** 系列

版本：1.0

客户确认			
客户确认：		盖章	
客户建议：			

编制		
拟制	确认	批准

RECORD OF REVISION

Version	Revision Date	Contents	Editor
1.0	2013-01-12	New Release	YOU

1. PHYSICAL DATA

Item	Contents	Unit
LCD type	STN/黄绿/正显	---
LCD duty	1/64	---
LCD bias	1/9	---
Viewing direction	6	o'clock
Module size (W×H×T)	77.0×48.0×2.7	mm
Number of dots(W×H)	128 × 64	dots
Dot Size(W×H))	0.48×0.48	mm
Dot Pitch(W×H))	0.52×0.52	mm

2. EXTERNAL DIMENSIONS

DOT:128*64

DOT 10:1

FRONT　BACK

接触面　补强板

0.30±0.05
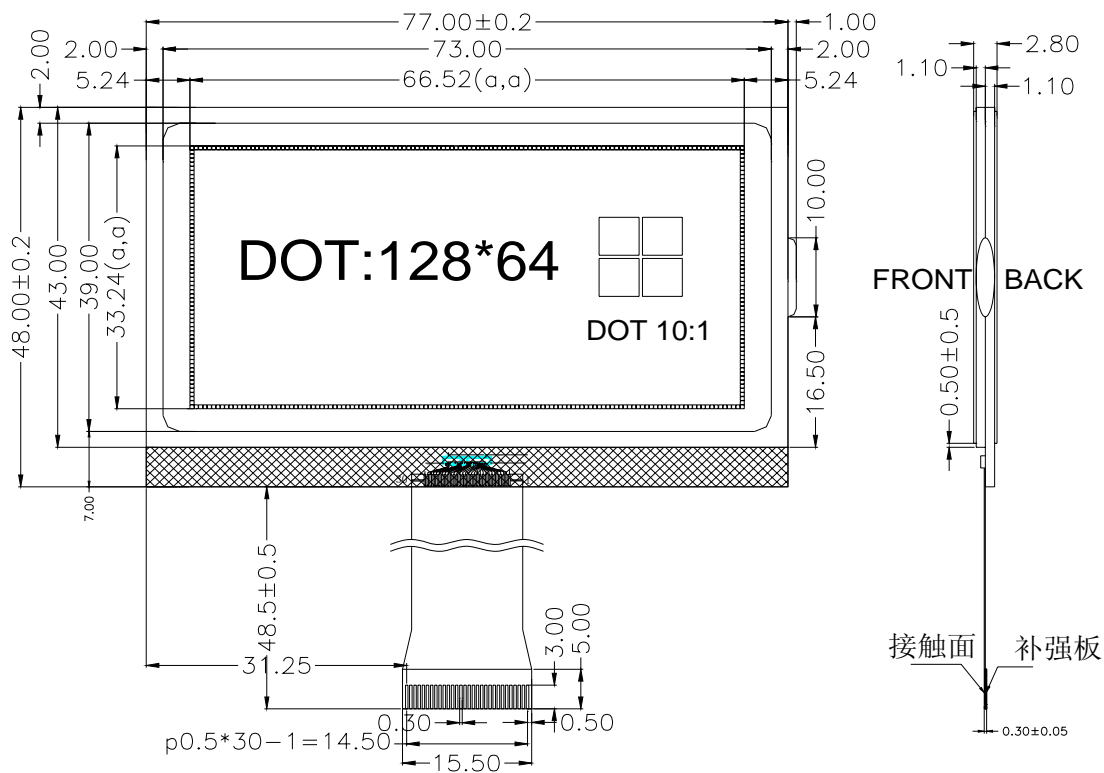
3. BLOCK DIAGRAM
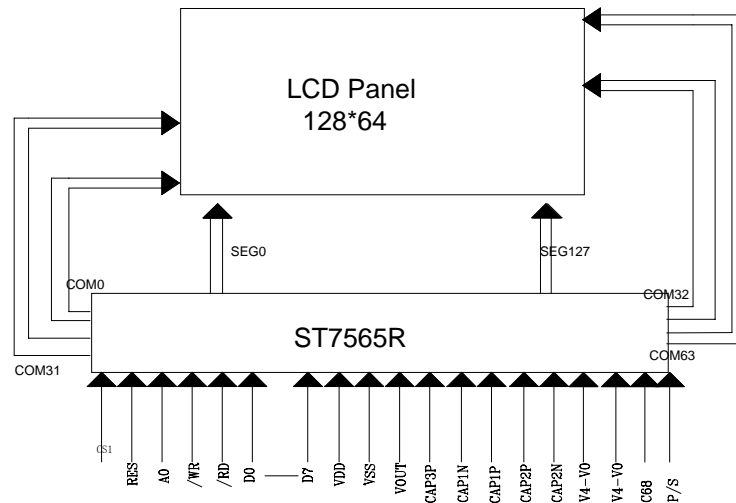
PIN NO.	Symbol	Level	Description
1	NC		NC
2	CS	H/L	Chip select.
3	RES	H/L	Reset pin.
4	A0	H/L	A0="H": data. A0="L": Instruction command.
5	/WR	---	When Bus Mode is 6800, R/W=R/W When Bus Mode is 8080, R/W=/RW
6	/RD	H/L	When Bus Mode is 6800, E=E When Bus Mode is 8080, E =/RD
7	DB0	H/L	This is an 8-bit bi-directional data bus that connects to an 8-bit or 16-bit standard MPU data bus. When the serial interface (SPI-4) is selected (P/S = "L") : D7 : serial data input (SI) ; D6 : the serial clock input (SCL). D0 to D5 should be connected to VDD or floating.
8	DB1		
9	DB2		
10	DB3		
11	DB4		
12	DB5		
13	DB6（SCL）		
14	DB7（SI）		
15	VDD	---	Power supply.
16	VSS	---	Ground.
17	VOUT	---	Negative power for LCD.
18	C3+	---	DC/DC voltage converter. Connect a capacitor between this terminal and the CAP2N terminal.
19	C1+	---	DC/DC voltage converter. Connect a capacitor between this terminal and the CAP1N terminal.
20	C1-		DC/DC voltage converter. Connect a capacitor between this terminal and the CAP1P terminal.

21	C2+		DC/DC voltage converter. Connect a capacitor between this terminal and the CAP1N terminal. Reset signal.
22	C2-		DC/DC voltage converter. Connect a capacitor between this terminal and the CAP2N terminal.
23~26	V1~V4	---	This is a multi-level power supply for the liquid crystal drive.
27	V0	---	Contrast adjustment input.
28	C86	H/L	C86 = "H": 6800 Series MPU interface. C86 = "L": 8080 Series MPU interface.
39	P/S	H/L	P/S = "H": Parallel data input/output. P/S = "L": Serial data input.
30	NC	---	NC

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℃	+50℃	-10℃	+60℃	-20℃	+70℃	-30℃	+80℃
Humidity(without condensation)	Note 2,4		Note 3,5		Note 4,5		Note 4,6	

Note 2   Ta≦50℃: 80% RH max

     Ta>50℃: Absolute humidity must be lower than the humidity of 85%RH at 50℃

Note 3   Ta at -20℃ will be<48hrs at 70℃ 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   Ta≦70℃: 75RH max

     Ta>70℃: absolute humidity must be lower than the humidity of 75%RH at 70℃

Note 6   Ta at -20℃ will be <48hrs, at 80 ℃ will be <120hrs when humidity is higher than 75%.

5. ELECTRICAL CHARACTERISTICS

DC Characteristics   (VDD=3.3V;VSS=0V；Ta=-20～70℃)

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Power Supply for Logic	V_{DD}-V_{SS}	---	3.14	3.3	3.47	Volt
Input Voltage	V_{IL}	---	VSS	---	0.2V_{DD}	Volt
	V_{IH}	---	0.8V_{DD}	---	V_{DD}	Volt
Output Voltage	V_{OH}	I_{OL} =-0.5mA	0.8V_{DD}	---	V_{DD}	Volt
	V_{OL}	I_{OL} = +0.5mA	VSS	---	0.2V_{DD}	Volt
LCM Recommend LCD Module Driving Voltage	V_{LCD}	$T_a=0℃$	---	---	---	Volt
		$T_a=25℃$	9.15	9.35	9.6	
		$T_a=50℃$	---	---	---	
Power Supply Current for LCM	$I_{DD(B/L\ OFF)}$	---	---	---	TBD	mA

AC Characteristics
System Bus Timing for 6800 Series MPU

(VDD=3.3V, Ta=25℃)

Item	Signal	Symbol	Condition	Min.	Max.	Unit
Address setup time	A0	tAW6		0	—	
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	—	ns
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	
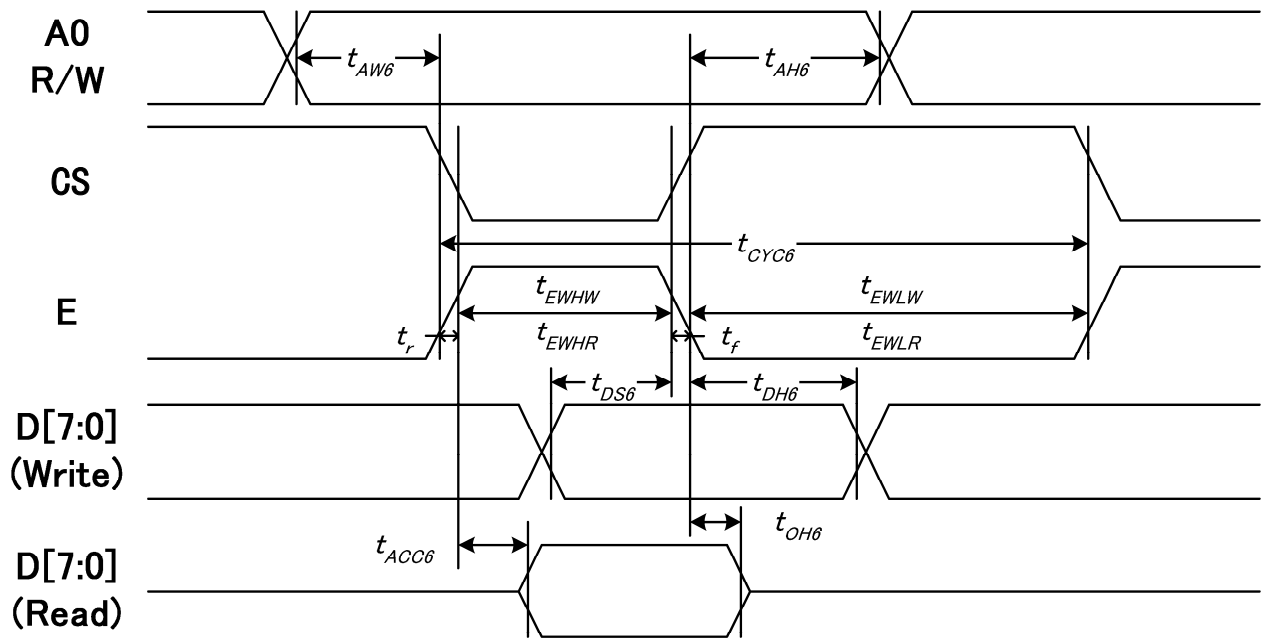
System Bus Timing for 8080 Series MPU

(VDD=3.3V, Ta=25℃)

Item	Signal	Symbol	Condition	Min.	Max.	Unit
Address setup time	A0	tAW8		0	—	
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	—	ns
/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	
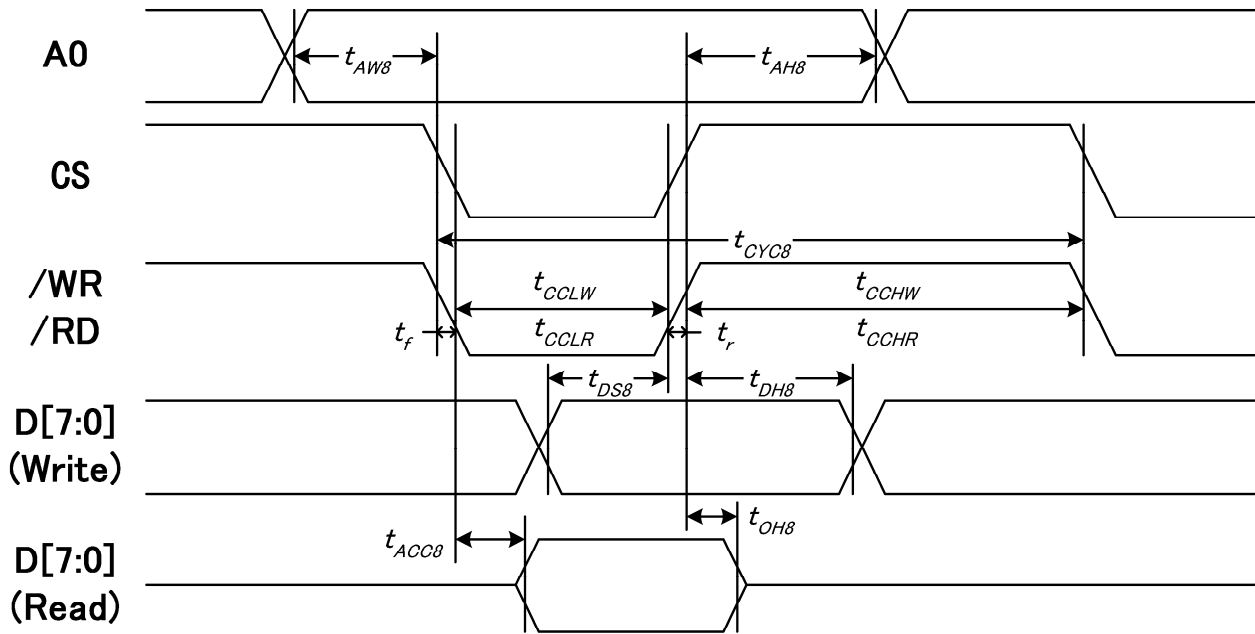
System Bus Timing for 4-Line Serial Interface

(VDD=3.3V, Ta=25℃)

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	---	
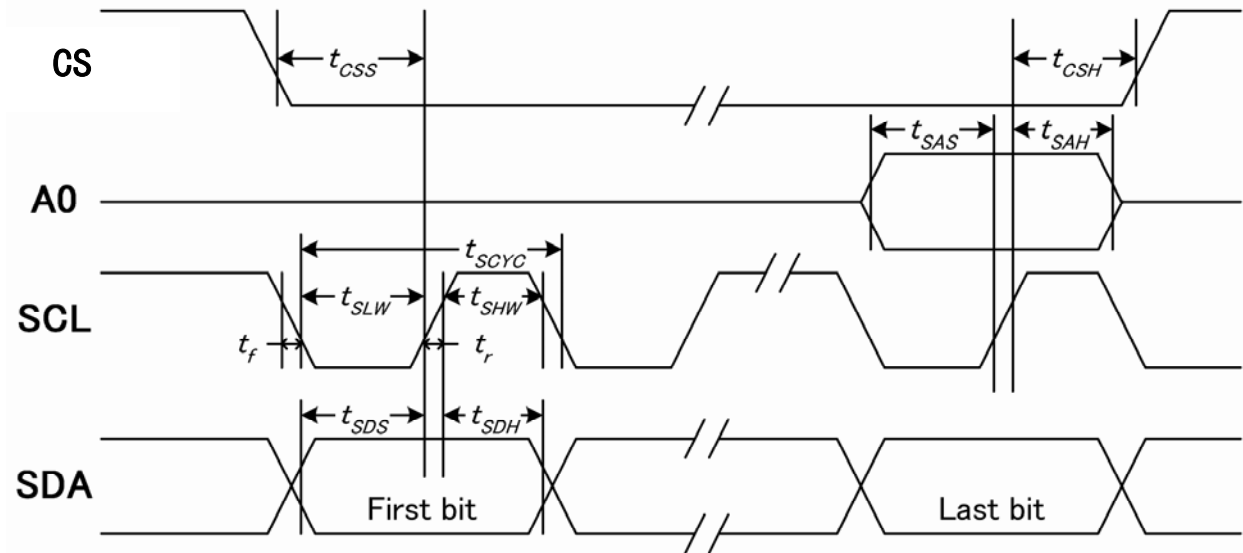
6. ELECTRO-OPTICAL CHARACTERISTICS

Item	Symbol	Condition	Min.	Typ.	Max.	Unit	note
Viewing angle range	θ_f (12 o'clock)	When Cr$\geqq$2	35	---	---	Degree	Note 2 Note 3 Note 4
	θ_b (6 o'clock)		30	---	---		
	θ_l (9 o'clock)		30	---	---		
	θ_r (3 o'clock)		30	35	---		
Rise Time	T_r	$V_{DD}-V_0$=8.7V Ta=25℃		112		mS	Note 1
Fall Time	T_f			250			
Contrast	Cr		---	5. 4	---		

[Note 1] Definition of Response Time (Tr, Tf)

[positive type]

[Negative type]
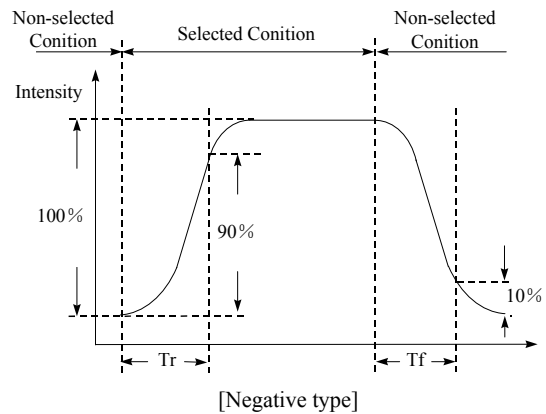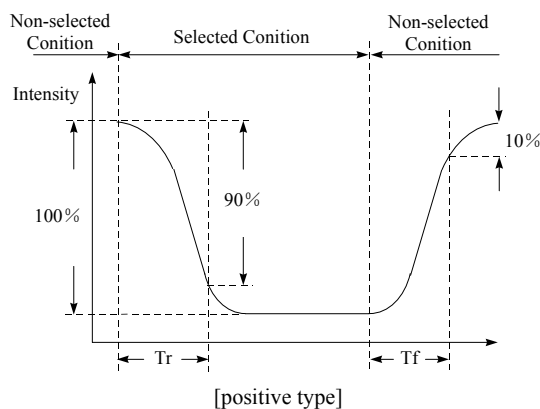
Conditions:

Operating Voltage : Vop   Viewing Angle(θ, φ): 0° , 0°
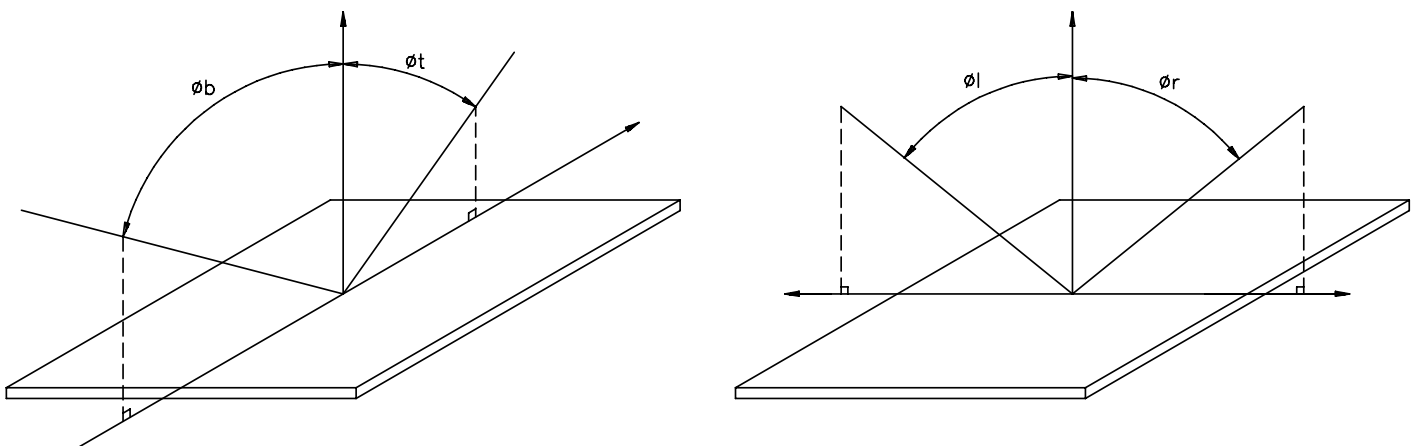Frame Frequency : 64 Hz   Driving Wave form : 1/N duty, 1/a bias
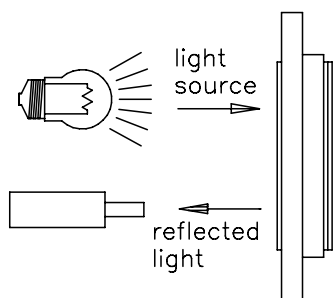
[Note 2] Definition of Viewing Direction
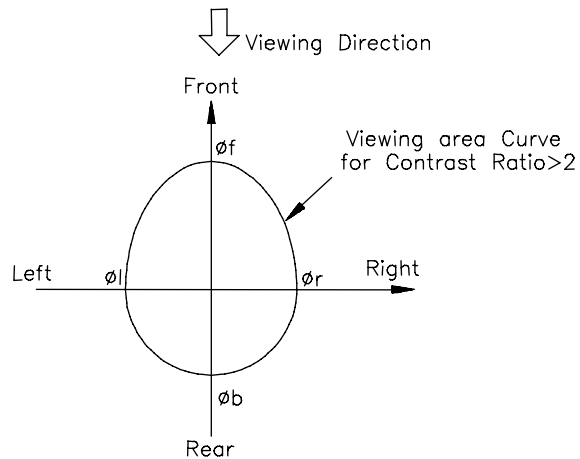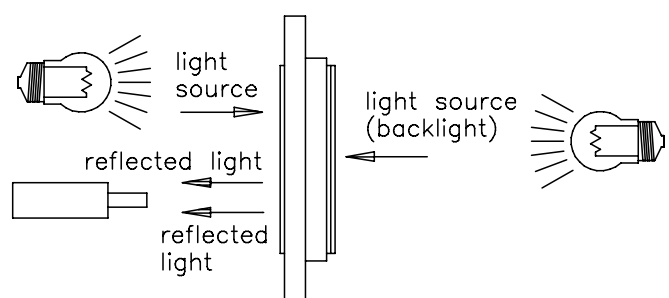

[Note 3] Definition of viewing angle

[Note 4] Description of Measuring Equipment

Reflective type   Transflective type

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	0	0	1	0	1	0	1	1	0	0/1	0: OFF, 1: ON
Static indicator Register set	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
	0	0	0	0	0	0	0	0	0	D0	Driving capability (D0): (1)>(0)
(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

No.	Test Item	Content of Test	Test Condition	Applicable Standard
		Environmental Test		
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. -10°C 30min ⇌ 25°C 5min. ⇌ 60°C 30min 1 cycle	-10°C / 60°C 10 cycles	------
		Mechanical Test		
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 1l msedc 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
		Others		
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:

1. Air bubble in the LCD.
2. Sealleak
3. Non-display.
4. Missing segments.
5. Glass crack.
6. Current Idd is twice higher than initial value.

9. QUALITY GUARANTEE

No	Item	Criteria

1	inclusions (black spot, white spot, dust)	(1)round type
		  diameter mm(a*) no of defect*
		  a$\leqq$0.20 neglect
		  0.20$<$a$\leqq$0.35 5max
		  0.35$<$a none
		(2)linear type
		
		  length mm(l) **width mm(W)** **no. of defect**
		  na W$\leqq$0.03 neglect
		  l$\leqq$3 0.03$<$W$\leqq$0.08 6
		  3$<$l 0.08$<$W none

2	scratch	1.scratch on protective film is permitted.
		2.scratch on polarizer shall be as follow:
		  (1)round type
		    diameter mm(a*) no of defect
		      a$\leqq$0.15 neglect
		    0.15$<$a$\leqq$0.20 2 max
		    0.20$<$a none
		  (2)linear type
		be judged bye 1.-(2) linear type

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 $\leqq$ 0.15mm maximum number: ignored 0.15$<$(a+b)/2$\leqq$0.20mm maximum number:10
6	dot width	design width ±15%
7	dot defect	(a+b)/2$\leqq$0.20mm maximum number: ignored 0.20$<$(a+b)/2$\leqq$0.30mm maximum number:5 x=width
8	contrast irregularity(spot)	diameter spec no of defect a$\leqq$0.50mm neglect 0.50$<$a$\leqq$0.75 5 0.75$<$a$\leqq$1.00 3 1.00$<$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:

```
        MPU8031                          LCM

        P2.7  ─────────────────→  /CS
        P2.0  ─────────────────→  A0
        /WR   ←─────────────────→  /WR
        RD    ─────────────────→  RD
        P0.0~0.7 ──────────────→  D0~D7
```
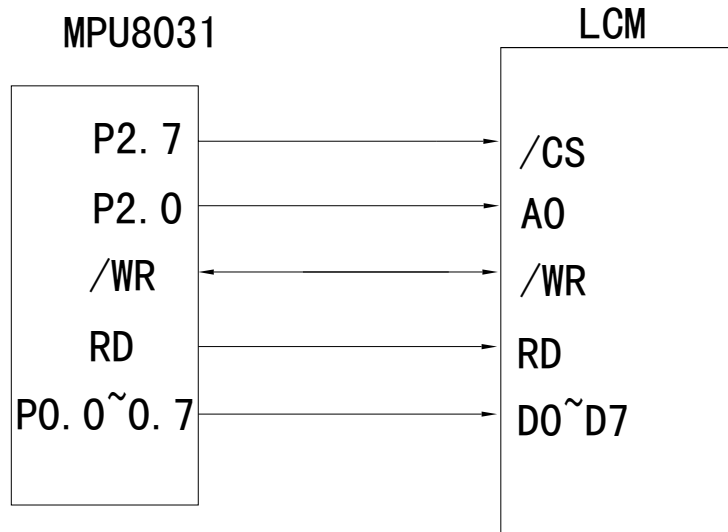
串口测试程序

```
//*****************************************************************
//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 dispplay)
                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 ASICC 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);    //Colum 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,0x00,0x00,0x00,0x00,0xB0,0xB0,0x00,0x00,0x00,0x00,

/*-- 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, 0x00, 0xC0, 0xC0, 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, 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, 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, 0x11, 0x10, 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:  <  --*/
```

/*-- Fixedsys12; 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, 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, 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, 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, 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, 0x00, 0xF0, 0xF0, 0x00, 0x00, 0x00,

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

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, 0x1C, 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, 0x00, 0xF0, 0xF0, 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, 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,

/*-- 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,

/*-- 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, 0x00, 0x60, 0xF0, 0x90, 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, 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, 0x07, 0x04, 0x07, 0x03, 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,

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

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

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

/*--  文字:  r  --*/
/*--  Fixedsys12;  此字体下对应的点阵为：宽 x 高=8x16    --*/
0x00,0x07,0x07,0x01,0x02,0x06,0x06,0x00,0x00,0xF0,0xF0,0x00,0x00,0x00,0x00,0x00,

/*--  文字:  s  --*/
/*--  Fixedsys12;  此字体下对应的点阵为：宽 x 高=8x16    --*/
0x00,0x03,0x07,0x04,0x04,0x04,0x04,0x00,0x00,0x10,0x90,0x90,0x90,0xF0,0x60,0x00,

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

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

/*--  文字:  v  --*/
/*--  Fixedsys12;  此字体下对应的点阵为：宽 x 高=8x16    --*/
0x00,0x07,0x07,0x00,0x00,0x07,0x07,0x00,0x00,0xC0,0xE0,0x30,0x30,0xE0,0xC0,0x00,

/*--  文字:  w  --*/
/*--  Fixedsys12;  此字体下对应的点阵为：宽 x 高=8x16    --*/
0x00,0x07,0x07,0x00,0x03,0x00,0x07,0x07,0x00,0xC0,0xF0,0x30,0xC0,0x30,0xF0,0xC0,

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

/*--  文字:  y  --*/
/*--  Fixedsys12;  此字体下对应的点阵为：宽 x 高=8x16    --*/
0x00,0x07,0x07,0x00,0x00,0x07,0x07,0x00,0x02,0xE2,0xF2,0x16,0x1C,0xF8,0xE0,0x00,

/*--  文字:  z  --*/
/*--  Fixedsys12;  此字体下对应的点阵为：宽 x 高=8x16    --*/
0x00,0x04,0x04,0x04,0x05,0x07,0x06,0x00,0x00,0x30,0x70,0xD0,0x90,0x10,0x10,0x00,

/*--  文字:  {  --*/
/*--  Fixedsys12;  此字体下对应的点阵为：宽 x 高=8x16    --*/
0x00,0x00,0x01,0x0F,0x1E,0x10,0x00,0x00,0x00,0x80,0xC0,0x78,0x3C,0x04,0x00,0x00,

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

/*--  文字:  }  --*/
/*--  Fixedsys12;  此字体下对应的点阵为：宽 x 高=8x16    --*/
0x00,0x00,0x10,0x1E,0x0F,0x01,0x00,0x00,0x00,0x00,0x04,0x3C,0x78,0xC0,0x80,0x00,

/*--  文字:  ~  --*/
/*--  Fixedsys12;  此字体下对应的点阵为：宽 x 高=8x16    --*/
0x0C,0x18,0x10,0x18,0x0C,0x04,0x0C,0x18,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,

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

Uchar code bmp1[]={
/*--  调入了一幅图像: E:\!Program\MobilePhone22.bmp  --*/
/*--  宽度 x 高度=128x64   --*/
0xFF,0x80,0xBF,0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,
0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,
0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,
0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,
0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,
0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,
0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,
0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,0xA0,0xBF,0x80,0xFF,
0xFF,0x00,0xFF,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x7F,0x40,0x5F,0x4F,
0x5F,0x5F,0x5E,0x5C,0x58,0x58,0x50,0x50,0x50,0x50,0x50,0x50,0x50,0x58,0x58,
0x5C,0x5E,0x5F,0x5F,0x5F,0x5F,0x4F,0x5F,0x5F,0x57,0x4A,0x55,0x4A,0x55,0x4A,0x55,
0x4A,0x55,0x4A,0x54,0x48,0x53,0x44,0x4B,0x4B,0x4B,0x48,0x47,0x40,0x40,0x40,0x41,
0x42,0x42,0x42,0x45,0x49,0x45,0x45,0x45,0x42,0x40,0x40,0x40,0x40,0x47,0x48,0x47,
0x47,0x48,0x47,0x4B,0x45,0x42,0x40,0x40,0x43,0x45,0x45,0x48,0x4A,0x4A,0x45,0x40,
0x40,0x50,0x4A,0x55,0x4A,0x55,0x4A,0x55,0x4A,0x55,0x4B,0x57,0x4F,0x53,0x40,0x7F,
0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0xFF,0x00,0xFF,
0xFF,0x00,0xFF,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0xFF,0x00,0xFF,0xE0,
0x80,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,
0x00,0x00,0x00,0x80,0xE0,0xFF,0xFF,0xDF,0xFF,0xFF,0xBF,0x55,0xAA,0x55,0xAA,0x55,
0xAA,0x55,0x00,0x02,0x05,0xFA,0x04,0x58,0x52,0xFD,0x00,0xFF,0x00,0x00,0x38,
0xC5,0xEE,0x9D,0x52,0x56,0x11,0xDE,0x4E,0x58,0x27,0x20,0x50,0xBF,0x00,0xFF,0xA0,
0xA0,0x18,0xA4,0x52,0x4D,0x88,0x07,0x25,0xDA,0x57,0x40,0x3D,0xAA,0xB4,0xAA,0x55,
0x25,0x05,0xA2,0x50,0xB8,0x7C,0x9E,0x7D,0xBA,0x55,0xAA,0xD5,0xEA,0xF5,0x00,0xFF,
0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0xFF,0x00,0xFF,
0xFF,0x00,0xFF,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0xFF,0x00,0xFF,0x1F,
0x07,0x03,0x01,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,
0x00,0x01,0x03,0x07,0x1F,0xFF,0xFF,0xFF,0xFF,0xF7,0xFF,0x7F,0xBF,0x5F,0xAF,0x57,
0xAB,0x55,0xAA,0x55,0x2A,0x15,0x2A,0x15,0x2A,0x15,0xAA,0x14,0x08,0x00,0x00,0x02,
```

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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, 0x00, 0x81, 0x00, 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, 0xFF, 0x00, 0xFF,
0xFF, 0x00, 0xFF, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0xFF, 0x00, 0xEF, 0xFF,
0xFF, 0xFF, 0xDF, 0xFE, 0x7E, 0x7F, 0x3E, 0x3E, 0x3F, 0x3F, 0x3B, 0x3F, 0x3F, 0x3F, 0x7F, 0x7F,
0xF7, 0xFF, 0xFF, 0xFE, 0xFD, 0xFD, 0x7E, 0xFD, 0xFD, 0xFE, 0xFF, 0xFF, 0xFF, 0xCF, 0xC7, 0xE3,
0xC7, 0xCF, 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, 0xFF, 0x00, 0xF9, 0xF6,
0xFB, 0xF6, 0xF9, 0x7F, 0x3D, 0x1F, 0x3F, 0x7F, 0xFF, 0xFF, 0xFF, 0xDF, 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, 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, 0xFF, 0x00, 0xFF,
0xFF, 0x00, 0xFF, 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, 0xC4, 0xB4, 0xD4, 0xB4, 0xC4, 0xF4, 0xF4, 0xF4, 0xF4, 0xF4, 0xF4, 0xD4, 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, 0x74, 0x34, 0x74, 0xF4, 0xF4, 0xF4, 0xF4,
0xF4, 0xF4, 0xF4, 0xF4, 0xF4, 0xF4, 0xF4, 0xF4, 0xB4, 0xF4, 0xF4, 0xF4, 0x74, 0xB4,
0xD4, 0xE4, 0xD4, 0xB4, 0x74, 0xF4, 0xF4, 0xF4, 0xF4, 0xB4, 0xF4, 0xF4, 0xF4, 0x74, 0x04, 0xFC,
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, 0xFD, 0x01, 0xFF,
};

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, 0xDF,
0xE7, 0xC7, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xE0, 0x80, 0x00, 0x04, 0xFE,
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