

FT62F21X

Application note

目录

1	LVD 相关寄存器的设置	3
2	应用范例	4

FT62F21x LVD 应用

1 LVD 相关寄存器的设置

本芯片内置有低电压侦测功能。当电源电压低于设置的电压档位(由 PCON 的 LVDL<3:0> 选择)超过 T_{BOR} (3 到 4 个慢时钟周期) 以上时, 标志位 LVDW 将会被置 1, 软件可以利用此位来监控电源电压。如果电源电压大于 LVDL 设置的电压档, 该标志位会自动清除, 换言之, LVDW 位不具有锁存功能。

相关寄存器的各个位定义如下:

1) PCON 寄存器

Bit	7	6	5	4	3	2	1	0
Name	LVDL[3:0]				LV DEN	LVDW	/POR	/BOR
Reset	0	0	0	0	0	x	q	q

Bit7~Bit4: LVDL 低电压侦测选择位

LVDL 值	检测电压
0000	1.8V
0001	2.0 V
0010	2.4V
0011	2.7V
0100	3.0V
0101	3.3V
0110	3.6V
0111	4.0V
1xxx	1.2V

Bit3: 低电压侦测使能

- 1: 开启 LVD 侦测功能
- 0: 关闭 LVD 侦测功能

Bit2: 低电压标志位, 只读

- 1: VDD 掉到了 LVDL[2:0]所设置的电压超过 T_{BOR}
- 0: VDD 正常, 高于 LVDL[2:0]所设置的电压

Bit1: 上电复位标志, 低有效

- 0: 发生了上电复位
 - 1: 没发生上电复位或者由软件置 1
- /POR 在上电复位后值为 0, 此后软件应该将其置 1

Bit0: 低电压复位标志, 低有效

- 0: 发生了低电压复位
- 1: 没发生低电压复位或者由软件置 1

/BOR 在上电复位后其值不确定, 必须由软件置 1。发生后续复位后, 通过查询此位来确定是否低电压复位

2 应用范例

```

/*****
/* 文件名: Test_62F21X_LVD.c
* 功能: FT62F21X_LVD 功能演示
* IC: FT62F21X SOP8
* 晶振: 16M/4T
* 说明: 设置 LVD 低电压 1.8V, 当检测到电压低于 1.8V 时,DemoPortOut 持续输出 频率
为 166.7Hz 的方波

```

高于 1.8V 时,DemoPortOut 持续输出 频率为 500Hz 的方波

* Memory: Flash 1KX14b, EEPROM 128X8b, SRAM 64X8b

* FT62F21X SOP8

```

*
* -----
* DemoPortOut ----- |1(PA4)          (PA3)8 |-----NC
* NC-----|2(TKCAP)      (PA0)7 |-----NC
* NC-----|3(VDD)        (PA1)6 |-----NC
* NC-----|4(VSS)        (PA2)5 |-----DemoPortIn
*
* -----
*/

```

*/

```

//=====

```

```

#include <FT62F21X.INC>;

```

```

;=====

```

```

;RAM DEFINE

```

```

TEMP          EQU    0X40
TEMP1         EQU    0X41
TEMP2         EQU    0X42
W_TMP         EQU    0X4C
S_TMP         EQU    0X4D

```

```

;=====

```

```

;CONSTANT DEFINE

```

```

;=====

```

```

INTCON_DEF    EQU    B'00000000'    ;GIE, TMR0IE,
OPTION_DEF     EQU    B'00000000'    ;PORTA pull-ups are enable;Timer0 1:2
OSCCON_DEF     EQU    B'01110000'    ;16MHz INTERNAL OSC
WPUA_DEF       EQU    B'00000000'    ;
TRISA_DEF      EQU    B'00000100'    ;PA4-OUT PA2-IN
PCON_DEF       EQU    B'01111000'    ;使能 LVD,1.8V

```

```

LSB           EQU    0

```

```

MSB           EQU    7

```

```

;=====

```

```
;USER DEFINE
```

```
=====
```

```
#define DemoPortOut  PORTA,4
```

```
=====
```

```

    ORG      0x0000
    LJUMP    RESTART
    ORG      0x0004
    STR      W_TMP
    SWAPR    STATUS,W
    STR      S_TMP
    BCR      STATUS,RP0
```

```
INT_RET:
```

```

    SWAPR    S_TMP,0
    STR      STATUS
    SWAPR    W_TMP,1
    SWAPR    W_TMP,0
    RETI
```

```
=====
```

```
;SYSTEM START
```

```
=====
```

```
RESTART:
```

```

    BANKSEL  PORTA
    LCALL    INITIAL
    BCR STATUS, 5  ;->BANK0
```

```
MAIN_LOOP:
```

```

    NOP
    BANKSEL  PCON
    BTSS     PCON,2 ;若为 1 则跳过
    LJUMP    MAIN_LOOP
    BSR      DemoPortOut
    LCALL    DELAY_10MS
    BCR      DemoPortOut
    LCALL    DELAY_10MS

    LJUMP    MAIN_LOOP
```

```
=====
```

```
;SYSTEM INITIAL
```

```
=====
```

```
INITIAL:
```

```

    BANKSEL  PORTA  ;
    LDWI     0X00    ;立即数存到 W
    STR      PORTA   ;将 W 存到 PORTA
```

```

BANKSEL    TRISA
LDWI       TRISA_DEF    ;PA4-OUT
STR        TRISA        ;SET IO Direction
LDWI       WPUA_DEF
STR        WPUA
LDWI       OPTION_DEF
STR        OPTION_REG   ;SET OPTION
LDWI       OSCCON_DEF
STR        OSCCON       ;SET OSCCON
BANKSEL    PORTA
LDWI       INTCON_DEF
STR        INTCON
BANKSEL    PCON
LDWI       PCON_DEF
STR        PCON    ;

```

CLEAR_RAM:

```

LDWI       40H
STR        FSR

```

CLEAR_RAM_LOOP:

```

CLRR       INDF
INCR       FSR,F
LDWI       80H
XORWR      FSR,W
BTSS       STATUS,Z
LJUMP      CLEAR_RAM_LOOP
RET

```

```

=====
;DELAY_10MS 16MHZ/4T
=====

```

DELAY_10MS:

```

LDWI       H'28'
STR        TEMP1
LDWI       H'0F'
STR        TEMP2

```

DELAY_10MSLOOP3:

```

CLRWDI
DECRSZ     TEMP2,F    ;TEMP2-1 ->F结果为 0 则跳过下一条语句
LJUMP      DELAY_10MSLOOP3
DECRSZ     TEMP1,F
LJUMP      DELAY_10MSLOOP3
RET

```

END

Fremont Micro Devices (SZ) Limited

#5-8, 10/F, Changhong Building, Ke-Ji Nan 12 Road, Nanshan District, Shenzhen, Guangdong 518057

Tel: (86 755) 86117811

Fax: (86 755) 86117810

Fremont Micro Devices (Hong Kong) Limited

#16, 16/F, Blk B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fotan, Shatin, Hong Kong

Tel: (852) 27811186

Fax: (852) 27811144

Fremont Micro Devices (USA), Inc.

42982 Osgood Road Fremont, CA 94539

Tel: (1-510) 668-1321

Fax: (1-510) 226-9918

Web Site: <http://www.fremontmicro.com/>

* Information furnished is believed to be accurate and reliable. However, Fremont Micro Devices, Incorporated (BVI) assumes no responsibility for the consequences of use of such information or for any infringement of patents of other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent rights of Fremont Micro Devices, Incorporated (BVI). Specifications mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied. Fremont Micro Devices, Incorporated (BVI) products are not authorized for use as critical components in life support devices or systems without express written approval of Fremont Micro Devices, Incorporated (BVI). The FMD logo is a registered trademark of Fremont Micro Devices, Incorporated (BVI). All other names are the property of their respective own.