



十速科技股份有限公司  
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# TM57PE15

# 與

# TM57PE12

## Application Note

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## AMENDMENT HISTORY

Version	Date	Description
V1.0	Dec, 2012	New release

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有关修改 .....	錯誤! 尚未定義書籤。
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## PRODUCT NAME

TM57 系列 IC

## APPLICATION NOTE

### TM57PE15 與 TM57PE12 差異表

		TM57PE12	TM57PE15
Feature	LVR	2-level (1.5V/2.3V/Disable)	3-level (1.5V/2.3V/3.2V)
	LVR Flag	No	Yes (can be read)
	FIRC	8M/4MHz	16M/8M/4M/2MHz
	PA7 pull-up	always enable	by F/W (default enable)
EFF/ESD	EFT Enhancement	No	Yes

- TM57PE15 LVR 有三個選項：1.5V / 2.3V / 3.2V；相對於 TM57PE12，多增加了 3.2V LVR 的選項。
- TM57PE15，多了 LVD 的功能。此功能，只有當 LVR 設定為 1.5V 時，LVD 的旗標位會在 2.1V 時提示。
- TM57PE15 在 FIRC 的選項，有 4 組：16 MHz / 8 MHz / 4 MHz / 2 MHz。相對於 TM57PE12 的 FIRC 多了 16 MHz & 2 MHz。
- PA7 上接電阻：TM57PE12 Always enable；TM57PE15 透過 F/W 可選。
- 增強 EFT。只需在主程序中，一上電就增加兩條指令，即可有效改善。請參閱 AP NOTE TM57PE15 高抗干擾應用程序處理。

### TM57PE12 轉 code TM57PE15 注意事項

- 當 TM57PE12 轉 CODE 到 TM57PE15 時，請注意下列事項：
  - LVR 的設置：TM57PE12 並無 LVR3.2V 的選項，當轉 CODE 到 TM57PE15 時，要特別留意。
  - PA7 上拉電阻的選項：TM57PE12 在 PA7 上拉電阻選項 Always enable。注意轉 code 到 TM57PE15 時，PA7 的值是否設定正確。

TM57PE15 SYSCFG 與 TM57PE12 差異

SYSCFG[11:10]: LV reset selection	
11	LVR threshold is 1.5V, always enable
10	LVR threshold is 1.5V, disable in sleep mode
01	LVR threshold is 2.3V, always enable
00	LVR threshold is 3.2V, always enable (PE15 only) LVR disable (PE12)
SYSCFG[5]	
1	IRCCLK = 16M / 8M / 4M / 2M (by SFR R-Plane 19h.7~6 ) /PE15 only
0	IRCCLK = 4M

Memory Map (SFR) 與 TM57PE12 差異

- F-Plane : LVD Flag

Name	Address	R/W	Rst	Discription
LVFLAG	03.7	R	0	LVR Flag (2.1V) (PE15 Only)
GBIT1	03.6	R/W	0	General purpose bit
-	03.5	-	-	Reserved
TO	03.4	R	0	WDT time out flag
PD	03.3	R	0	Sleep mode flag
ZFLAG	03.2	R/W	0	Zero Flag
DCFLAG	03.1	R/W	0	Decimal Carry Flag
CFLAG	03.0	R/W	0	Carry Flag

- R-Plane : PA7 設置 & FIRC 設置

Name	Address	R/W	Rst	Discription
PAPUN	08.7~0	W	7f	PA pull-up, 0=enable (PAPUN.7 PE15 Only)

FIRC SEL	19.7~6	W	10	FIRC Select, (PE15 Only) 11:16MHz, 10:8MHz, 01:4MHz, 00:2MHz
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