

T-Link-EV5274/5278 User Manual Rev 0.92

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AMENDMENT HISTORY

Version	Date	Description
V0.90	Oct, 2014	New release.
V0.91	May, 2015	 1.修改 P4 文字及圖檔 2.修改 P6 文字 3.修改 P7 文字及圖檔 4.修改 P12 文字及圖檔 5.修改 P14 文字 6.修改 P17 文字 7.新增 P20 文字及圖檔 8.新增 P21 文字及圖檔 9.新增 P22 文字及圖檔 10.新增 P27 文字 11.修改 P29 圖檔 12.修改 P30 圖檔
V0.92	Sep, 2015	1.新增 P26~27 文字及圖檔



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1. Outline

Tenx (tenx technology) F51 & L51 Series single-chip is compatible with 8051, the user can use Keil uVision series of software as a development environment, this article will introduce the software and hardware configuration in Keil C.

2. Introduction

Figure 2-1 is T-Link-EV5274/5278 development board, the left portion is called EV5274/5278 Board and the right portion is called T-Link ICE Board to connect PC to use, the user can simulate TM52F5274/74B/78/78B through this development board, please refer to TM52F5274/74B/78/78B datasheet in detail.



Figure 2-1. T-Link-EV5274/5278 Board





3. T-Link-EV5274/5278 Hardware Description

3.1 Power Setting

- P6: Connect to external power (EV5274/5278 Board)
- P4: Internal or external power source selection (EV5274/5278 Board)
- P11: Internal power selection (T-Link Board)

MCU Power	P11	P6	P4
External Power	USB or 3.3V	EXT_Power	EXT
Internal Power	USB or 3.3V	Х	T-Link Board

3.2 USB Connecter

• P3: Mini USB connector to PC (T-Link Board)

3.3 Reset Button

• Reset: Reset Button (EV5274/5278 Board)

3.4 External Power Connecter

- P6: External VCC connecter (EV5274/5278 Board)
- P5: External GND connecter (EV5274/5278 Board)

3.5 MCU External Frequency-FXT/SXT

- X1: crystal FXT(1~8M) / SXT(32.768K) (EV5274/5278 Board)
- C9: matching capacitor (EV5274/5278 Board)
- C10: matching capacitor (EV5274/5278 Board)



3.6 PIN Assignment & Description

EV5274/5278 Board contains TM52F5274/74B/78/78B main chip, packaged is SOP 32-pin as shown below table for the pin assignment instructions.

Pin Number	Pin Name	Pin Number	Pin Name
1	VSS	17	P2.4
2	XI/P2.0	18	P2.5
3	XO/P2.1	19	TK11/SEG6/SCK/P3.6
4	VPP/RSTn/INT2/P3.7	20	TK10/SEG7/MISO/P1.7
5	COM3/P0.0	21	TK9/SEG8/P1.6
6	COM2/P0.1	22	CLD/SEG9/AD9/P1.5
7	COM1/P0.2	23	TK8/SEG10/AD8/CKO/P1.4
8	COM0/P0.3	24	TK3/SEG11/AD7/PWM1A/P1.3
9	SEG0/P0.4	25	TK2/SEG12/AD6/PWM0A/P1.2
10	SEG1/P0.5	26	TK1/SEG13/AD5/T2EX/P1.1
11	SEG2/P0.6	27	TK0/SEG14/AD4/T2/P1.0
12	SEG3/P0.7	28	TK7/SEG15/AD3/RXD/P3.0
13	TK13/ SS /SEG4/T0/ P3.4	29	TK6/SEG16/AD2/TXD/P3.1
14	TK12/MOSI/SEG5/T1/ P3.5	30	TK5/SEG17/AD1/INT0/P3.2
15	PWM0B/P2.2	31	TK4/AD0/INT1/P3.3
16	PWM1B/P2.3	32	VCC



4. How to start using T-Link-EV5274/5278 simulation

First, Install the tenx TM52Dll IDE file to follow steps to complete the installation, the IDE & Keil C version must be installed in the same path, the default path is $C:\setminus Keil:$

4.1 Select Keil C version, click "Next>"





4.2 And then click "Next>"

Setup - tenx F51&L51 series	
Information Please read the following important information before continuing.	¥
When you are ready to continue with Setup, click Next.	
 ===== Tenx DLL Modify List ====== 72. Version 1.1.9.2 on 2014/09/18 ~2014/09/18 Add and modify list: (1) Modify CFGW check in TM52P5216/TM52P5214. (2) Modify TM52P5214/5216 Download to flash error. 71. Version 1.1.9.1 on 2014/09/17 ~2014/09/17 Add and modify list: (4) And modify list: (5) C + 0 - 00 	
 (1) Update t51.cdb.(0x36->0x3B) (2) Modify parameters in Touch key AP. 	-

4.3 The default path is C:\ Keil, click "Next>"

📲 Setup - tenx F51&L51 series	_ _ x
Select Destination Location Where should tenx F51&L51 series be installed?	£
Setup will install tenx F51&L51 series into the following folder.	a brox
To continue, click Next. If you would like to select a different folder, cli	ck Browse.
At least 2.7 MB of free disk space is required.	
< Back Next >	Cancel



4.4 Click "Install"

Setup - tenx F51&L51 series			×
Ready to Install Setup is now ready to begin in	stalling tenx F51&L51 series o	n your computer.	£
Click Install to continue with the change any settings.	e installation, or click Back if y	ou want to review or	
Destination location: C: Weil			
¢			3
	< <u>B</u> ack	Install	ncel

4.5 Click "Finish" to complete the installation





4.6 Connect T-Link-EV5274/5278 Board of USB (mini type) connector to PC



4.7 Confirm Device Manger



4.8 Open the KEIL C → Click the Project menu and select New Project window → Fill in the project name and click Save Project → Copy tenx 8051 Startup Code or not ?







4.9 CPU Data Base selection dialog box will be show up → Select the tenx F8051 Devices and click on OK button → Select a CPU model (for EV Board model), refer to Note (1) and the right window shows some of the parameters of this single chip model.

Select a CPU Da	ta Base File
tenx F8051 De Generic CPU D tenx F8051 Der	vices
Select a CPU Da	vices OK Cancel
Options for Target 'Target 1' Device Target Output Listing User C5' Database: terx F8051 Devices	A51 BL51 Locate BL51 Misc Debug Utilities
Vendor: tenx Device: TM52F5274 Toolset: C51 TM52F2230 TM52F2230 TM52F2260 TM52F2261 TM52F2264 TM52F2280 TM52F2280 TM52F2280 TM52F5274B TM52F5274B TM52F5278B TM52F5278B TM52F5288 TM52F5288	Use Extended Linker (LX51) instead of BL51 Use Extended Assembler (AX51) instead of A51 et name : EV5274 I based MCU contains 8K bytes Flash ROM, 512 bytes on-chip SRAM, I standard Timer()/1/2,UART. Real time Timer3, 2 PWM, 12-bit ADC, therupts/4 priority levels, Watch Dog Timer and LCD. ug code range : 0x00-0x32,0x3b-0x0ff,0x1000-0x1ffd) debug code range : 0x00-0x32,0x3b-0x1ffd) AM range : 0x0f00-0xffff)
ОК	Cancel Defaults Help

Note (1): TM52F5274/74B/78/78B (For EV Board model)

Chip Model	EV Board Model
TM52F5274/74B	EV2224/2228
TM52F5278/78B	EV3274/3278



4.10 Option for Target dialog box settings: Click the "Option for Target" button in the main menu, the project file is created must also be relevant to the project file settings as shown below.

🔀 TEST - µVision4		_ 0 _X
<u>File Edit View Project Flash</u>	Debug Peripherals Tools SVCS Window Help	
: 🗋 🌌 🖬 🕼 🤞 🤐 🗠 🗠 🥵 🤊		
Project V X		- X
Target 1	Options for Target 1'	
TEST.asm	Device Target Output Listing User C51 A51 BL51 Locate BL51 Misc Debug Utilities	
	tenx TM52F5268	
	Val (MHz): 8.0 Use On-chip ROM (0x0-0x32,0x38-0x1FFD)	
	Memory Model: Small: variables in DATA	
	Code Rom Size: Large: 64K program 💌	
	Operating system: None	
	Off-chip Code memory Start: Size: Off-chip Xdata memory Start: Size:	
	Forom Ban Ban	
	Forom Ban	
	Forom Ban I	
		*
III Pr (Bo () Fu U. Te	Code Banking Start: End:	<u> </u>
Build Output	Banks: 2 👻 Bank Area: 0x0000 0xFFFF 🔽 Save address extension SFR in interrupts	
		^
	OK Cancel Defaults Help	
*		-
	tenx FR051 Driver 1:4 C/21 CAP	NUM SCRI OVR RAW

4.11 Output dialog box settings: To confirm "Create HEX File" option is checked, as shown below.

Device Target Output Select Folder for Obje	Listing User C51 A51 BL51 Locate BL51 Misc Debug Utilities ects <u>N</u> ame of Executable: TEST
 Create Executable: ☑ Debug Information ☑ Create HEX File 	ATEST n
C	
Create Library: ./TE	ST.LIB I Create Batch File
Create Library: .\TE	ST.LIB I Create Batch File



4.12 BL51 Locate dialog box settings: Unchecked "Use Memory Layout from Target Dialog" in BL51 Locate option and fill in Code & Xdata Range (Note: The chip code available range has divided into download mode and debug mode, please refer to Note (2))

vice larget Output Listing U	Jser C51 A51 BL51 Locate BL51 Misc Debug Utilities
Space Base Segments:	Code Range: 0x00-0x32,0x3b-0x0cff,0x1000-0x1ffd Xdata Range: 0xff00-0xffff
<u>⊇</u> ode:	
Precede:	
Data:	
Inker TO "TEST" control RAMSIZE(256)	*

Note (2): TM52F5274/74B/78/78B (EV5274/5278) Code Range area (Program ROM)

	Code Range		XRAM Range
Chip Model	Download Mode	Debug Mode	0 0000 0 0000
TM52F5274/74B/78/78B (EV5274/5278)	0x00-0x32, 0x3b-0x1ffd	0x00-0x32, 0x3b-0x0cff, 0x1000-0x1ffd	0xff00-0xffff





4.13 Debug dialog box settings: Click on "Use: "option, and then select "tenx F8051 Driver" as shown below.

otions for Targ	jet Target 1		1	
Device Target	: Output Listing User C51	A51 BL51 Lo	cate BL51 Misc Debug Ut	ilities
C Use <u>S</u> imula □ Limit Speed	tor Settings	s OUse: Keil I	Monitor-51 Driver	Settings
Load Application at Startup Kun to main() Initialization File: Edit.		Iritializatic ST-u	1390: Dallas Contiguous Mode 000 EPM Emulator/Programmer PSD ULINK Driver son XC800 ULINK Driver	main 3
Restore Debu Breakpu Watchp Memory	ug Session Settings points IV Toolbox points & PA r Display	Restore Infine NXP I Brtenx I Watchp I Memory	eon DAS Client for XC800 LPC95x ULINK Driver F8051 Driver oints Display	
CPU DLL:	Parameter:	Driver DLL:	Parameter:	
S8051.DLL		\$8051.DLL		
Dialog DLL:	Parameter:	Dialog DLL:	Parameter:	
DP51.DLL	p552	TP51.DLL	-p552	
		1		
	OK	Cancel	Defaults	Help

4.14 Utilities dialog box settings: Click on "Use Target Driver for Flash Programming" option and select "tenx F8051 Driver" as shown below.

tions for Target 'Target 1'	x
levice Target Output Listing User C51 A51 BL51 Locate BL51 Miss Debug Utilities	_
Use Target Driver for Flash Programming	
Init File: ST-uPSD ULINK Driver	
C Use Extern ADI Monitor Driver NXP LPC95x ULINK Driver Command, Errx F8051 Driver	
Arguments:	
OK Cancel Defaults Help	



4.15 Click on "settings" button and the "Flash Download Setup" window will be show up, check the "Download Function" desired option as shown below.

Option Reset Option Make		
Option Number(hex) : 5F1000 I Don't Show ICE Message □ Don't Item Description	Show AP Message Selected Function	
01. WDTE (0:7~6) :	WDT Disable	
02. FRCF(When CLKPSC=3 and select .	31	
03. PROT (1:7) :	Not Protected	
04. XRSTE (1:6) :	Disable	
05. LVR (1:5~4) :	LV Reset 2.3V	
06. VCCFLT (1:3) :	Disable	
07 DIMDSAV (1.2) ·	Not	
01. FVIRGAV (1.2).	MOVC Unlock	
08. MVCLOCK (1:1) :	Nouse	
08. MVCLOCK (1:1) : 09. Address range of IAP (2:3~0) :	No use	

4.16 Click on "Option" button, and the "Smart Option" will be show up, about the option configuration, please refer to TM52F5274/74B/78/78B datasheet.

Flash Download Setup V1.1.9.	3
General Edit-LCD Onlin Device : TM52F9278 Option Reset C Option Number(hex) : [C	Download Function
Don't Show ICE Me	Smart Option
tem Description 1. WDTE (0:7~6) : 2. FRCF(When CLKP 03. PROT (1:7) : 04. XRSTE (1:6) : 05. VLR (1:5~4) : 06. VCCFLT (1:3) : 07. PWRSAV (1:2) : 08. MVCLOCK (1:1) : 09. Address range of U	01. WDTE (0:7*6) : WDT Disable 02. FRCF(When CLKPSC=3 and select 7*F range, ICE Operating frequency maybe out of range) (0:4*0) : 0 03. PROT (1:7) : Not Protected 04. XRSTE (1:6) : Disable 05. LVR (1:5*4) : [LV Reset 2.9V 06. VCCFLT (1:3) : Disable 07. PWRSAV (1:2) : Not 08. MVCLOCK (1:1) : MOVC Unlock 09. Address range of IAP (2:3*0) : No use OK Cancel
	* *



4.17 FRCF (Fast Internal RC) settings: Click on "Option" button after the "Overwrite FRCF" is checked, the user can adjustment 32 frequency levels (The default is 7.3 Mhz).

Flash Download Setup V1.1.9.3	8	
General Edit LCD Online chec	k 1	
Device : TM52F5278 Option Reset Option Option Number(Nex) : 000000 IF Dont Show ICE Message	Download Function F Erase Flash F Program Flash F Verify Flash Pont Show AP Message F Overwrite FRCF	
Item Description 01. WDTE (0:7~6): 02. FRCF(When CLKPSC=3 a 03. PRU (1:7): 04. XRSTE (1:6): 05. LVR (1:5~3) 06. VCCFLT (1:3): 07. PWRSAV (1:2): 08. MVCLOCK (1:1): 09. Address range of IAP (2:3~10)	Smart Option 01. WDTE (0:7'6): WDT Disable 02. FRCF(When CLKPSC=3 and select 7'F range, ICE 03. PROT [1:7]: Not Protected 04. XRSTE [1:6]: Disable 05. LVR [1:5'4]: LV Reset 2.9V 06. VCCFLT [1:3]: Disable 07. PWRSAV [1:2]: Not 08. MVCLOCK [1:1]: MOVC Unlock 09. Address range of IAP [2:3''0]: No use OK	Image: Cancel



4.18 Click on "OK" to return to "Flash Download Setup" window, and then click on "OK" to return to "Utilities" window, this all new project configuration is complete and click on "OK" to exit the "Option for Target" window, the user can start programming now. (Note: To change chip model, user needs to confirm "Code Range" and "Option" settings, the "Open Project" will save the settings and the "New Project" will be default settings in the "Option" dialog box)

Device : TM52F5278 Option Reset Option Make *.tenx Option Number(hex) : 5F1000		
✓ Don't Show ICE Message	Show AP Message Verwrite FRC Selected Function	
01. WDTE (0:7~6) :	WDT Disable	
)2. FRCF(When CLKPSC=3 and select	. 31	
J3. PRUT (1:7) :	Not Protected	
14. ARSTE (1.0).	Disable	
15. LVN (1.5 ⁻⁴).	Dicable	
17 PWRSAV (1-2) -	Not	
8 MVCLOCK (1-1)	MOVC Unlock	
09. Address range of IAP (2:3~0) :	No use	
•		
77. PWRSAV (1:2) : 08. MVCLOCK (1:1) : 09. Address range of IAP (2:3~0) :	Not MOVC Unlock No use	

evice Target	Output Listing User C51 A51 BL51 Locate BL51 Misc Debug Utilities
-Configure Flas	n Menu Command
Use Targe	t Driver for Flash Programming
	terx F8051 Driver 💽 Settings 🔽 Update Target before Debugging
Init File:	
Command Arguments	
	Run Independent





5. How to use four wires to program or simulate by T-Link Board

The T-Link ICE Board can use four wires(VCC, VSS, P3.0/P2.4, P3.1/P2.5) or five wires (VCC, VSS, P3.0/P2.4, P3.1/P2.5, P3.3) to program, user must to select 4-wire in "Utilities dialog box settings".

5.1 Utilities dialog box settings: Click on "Option" button, and select 4-Wire, as shown below.

Smart Option	
01. WDTE (0:7~6) : WDT Disable 🔹	
02. FRCF(When CLKPSC=3 and select 7°F range, ICE Operating frequency maybe out of range) (0:4°0) : 0 💌	
03. PROT (1:7) : Not Protected 💌	_
04. XRSTE (1:6) : Disable 💌	
05. LVR (1:5"4) : LV Reset 2.9V 💌	
06. VCCFLT (1:3) : Disable	
07. PWRSAV (1:2) : Not 💌	
08. MVCLOCK (1:1) : MOVC Unlock 💌	
09. Address range of IAP (2:3°0) : No use 🔹	
10. ICE Mode(2:4) : 5-Wire 💌	
4-Wire 5-Wire Cancel	
	-
★ IIII	



6. How to update tenx IDE & T-Link F/W

6.1 Update tenx IDE: Click on "Online check" button, and Update the TM52Dll IDE in Utilities dialog box, as shown below.

Online update	23
General Edit LCD Online check Version Infomation : V1.3.0.0 F/W Version: Update T-link ICE Board	
There are new version X New Version Is : v1.3.0.2build000 If you want to update, please press "Execute" or "Save as" else press "Cancel".	
Execute Save as Cancel	
ОК	

6.2 Update T-Link F/W: Connect TUT52 Writer to USB and T-Link Board, as shown below.





6.3 Click on "Update T-Link ICE Board" button to update T-Link Board F/W, as shown below.





7. How to use Touch Key Application

The Touch Key Application work in Debug Mode, user can use application to view the results of TK Data. The TK Data must be stored in XRAM and IRAM range, as shown below.

7.1 Click on "Debug" into Debug mode.

TEST - µVision4		- 0 <mark>- X-</mark>
<u>File Edit View Project Fla</u> sh <u>I</u>	Debug Peripherals Tools SVCS Window Help	
1 D 🐸 🖬 🗿 🕺 🖄 🖻 🖄 🗐 (🖭 🖕 🗣 🐘 改 🕼 韋 連 進 服 🙆 💿 💿 🖉 🗶 🖕 🔍 🖉 🗶 🔳	• 4
i 🤣 🔛 🔛 🧼 🙀 Tauget 1	· 🔊 📥 🗟	
Project 👻 🕈 🗙	TEST.asm	▼ ×
Target 1	01 ORG 00H 02 JMP START 03 04 ORG 1D00H 05 06 START: 07 NOP 08 NOP 09 NOP 10 11 END	1
■ Pr		×
Build Output		→ # ×
		*
(*		F
	tenx F8051 Driver L:4 C:21	CAP NUM SCRL OVR R/W



7.2 Click the Debug menu and select "Display Touch Key AP and Run".







7.3 Fill in TK Data, ex: TK name (address) and TK Bits and Total TK Channels.

Key-in symbol name for watch	
TK Name or Address (Ex: "i:0x20" ; "x:0xFF00"): i:0x22
TK data bits(8 or 11) : 11	Total TK channels : 0x10
Example1:	Example2:
TK data address = i:0x22	TK data address = i:0×22
TK data bits = 8	TK data bits = 11
Total TK channels = 0×3	Total TK channels : 0×2
User must:	User must:
Copy {TKDL[7:0]} of 1st TK into i:0x22	Copy (5'b00000, TKOVF, TKDH) of 1st TK into i:0x22
Copy {TKDL[7:0]} of 2nd TK into i:0x23	Copy {TKDL[7:0]} of 1st TK into i:0x23
Copy {TKDL[7:0]} of 3rd TK into i:0x24	Copy (5'b00000, TKOVF, TKDH) of 2nd TK into i:0x24
	Copy {TKDL[7:0]} of 2nd TK into i:0×25
Neter	
NUIC.	ICE pipe(maybe D1 2)D1 2) connet be enabled
1. Any touch key chainer on the pinstmaybe P1.2/P1.3] cannot be enabled.	
2. FIESS ON, USET COUE WILL A	iuu neerun anu ignore any oreak puint.
Cancel	[]

7.4 Click on "OK" button, and the "TK AP" will be show up.







7.5 TK AP Function, as shown below.





8. How to use LCD Application

The LCD Application can edit and work in Debug Mode, user can use application to simulator LCD Module, please refer to UM-EV22_52XX_LCDAP_SV090 User Manual for more information.

8.1 Click on "Option for Target" button in the main menu, as shown below.

🖞 TEST - µVision4		
<u>File Edit View Project Flash [</u>	2ebug Peripherals Tools SVCS Window Help	
- C 😂 🖬 🖉 I X 🗈 🖻 I 9	- 「今今 🥐 & & & 卓 定 店 店 🖄 🖉 📃 🔹 🔍 🖉 🖉 🖉 🔍	
🚯 🗄 🌐 🥔 🧮 🙀 Tauget 1	· 🔊 👘	
Project 👻 a 🗙	TEST.asm	▼ ×
E Group 1	Options for Target 1'	*
TEST.asm	Device Target Output Listing User C51 A51 BL51 Locate BL51 Misc Debug Utilities	
	tenx TM52F5284	
	Xtal (MHz): 6.0 T Use On-chip ROM (0x0-0x32,0x38-0x3FFD)	
	Memory Model: Small: variables in DATA	
	Code Rom Size: Large: 64K program 💌 🔽 Use On-chip XRAM (0xFF00-0xFFFF)	
	Operating system: None	
	Off-chip Code memory	
	Start: Size: Start: Size:	
	Eprom Ram	
	Eprom Ram	
	Eprom Ram	
		×
	Code Banking Start: End: Tar' memory type support	
Build Output	Banks: 2 💌 Bank Area: 0x0000 0xFFFF 🔽 Save address extension SFR in interrupts	• 4 ×
		[^]
	OK Cancel Defaults Help	
		-
< :		Þ
the second s	tenx F8051 Driver L:4 C:21 CA	P NUM SCRL OVR R/W

8.2 Click on "setting" Button in "Utilities" Digital box, as shown below.

Options for Target 'Target 1'	×
Device Target Output Listing User C51 A51 BL51 Locate BL51 Miss Dabug Utilities	
Configure Flash Menu Command	
Init File:	
C Use External Tool for Flash Programming	
Arguments:	
E Run Independent	
OK Cancel Defaults Help	



8.3 Click on LCD "Edit Button" and check "show LCD in debug" option, as shown below.

LCD Setting	×
General Edit LCD Online check	1
Edit LCD F	
Free run timer set (ms):	
LCD File Name :	
C:\Users\rd\Documents\123.LCD	
PAT file path:	
C:\Keil4\lib\Pat\ICEBM.PAT	
OK	

8.4 Click on "Debug" into Debug mode and the LCD Application will be show up, as shown below.





9. LVR Setting Notes

System clock		LVR Options (Minimum)					
Source	Frequency	M5254 M5258 F5284 F5288	F5284B F5288B	F5264 F5268 F5274 F5278	F5264B F5268B F5274B F5278B	F2280 F2284 F2230 F2234	F2280B F2284B F2230B F2234B
FXT/2	8 MHz		2.01/	2.01/	2.01		2.9V
FRC/1	7.3 MHz		2.9 V	2.9 V	2.9 V		2.8V
FXT/2	6 MHz	2.9V	2.9V	2.9V	2.9V	2.6V	2.6V
FXT/2	4 MHz	2.21/	2.21/	2.21	2.21	2 414	2 414
FRC/2	3.7 MHz	2.3 V	2.5 V	2.5 V	2.3 V	2.4 V	2.4 V
FXT/2, /4	2 MHz	1.0V	1.0V	1.917	1 917	2 414	2 414
FRC/4	1.8 MHz	1.91	1.99 1.99	1.8 V	1.8 V	2.4 V	∠.4 V
FXT/2, /4	1 MHz	1.9V	1.9V	1.8V	1.8V	1.5V	1.5V
FRC/8	0.9 MHz					1.5 V	1.3 V

Note: Please refer to TM52XXXX_02SV11 AP Note for more information.



10. Q & A

Q1: How to program a user file on TWR98 Writer ?

A1: The User must make "*.tenx" file to program in "Utilities dialog box settings", or enter "Download Mode" and "Debug Mode", as shown below.

Flash Download Setup V1.3.1.2		
General No LCD Device Online check		
Device : Option Reset Option Make *.	Download Function I Erase Flash I Program Flash I Verify Flash	
Option Number(hex) : 00420000		
Don't Show ICE Message Don't S	Show AP Message C Overwrite FRCF	
Item Description	Selected Function	
01. FIRC(When CLKPSC=11 and select	. 0	
02. PROI (1:7) :	Not Protected	
03. XRSTE (1:6) :	Pin Reset Enable	
04. MOVCLOCK (1:5) :	MOVC Unlock	
05. WDTE (1:4) :	WDT Disable	
00. LVRE (1.1).	Low Voltage Reset Enable	
08 ICE Mode(2:4) :	5-Wire	
09 Operating Voltage(3:0)	3V mode	
< <u> </u>	•	
O		

Q2: How to use UV3 and UV4 version in the same time ?

A2: If user wants to install UV3 and UV4 version in the default path (UV3 & UV4 version in C:\ Keil) in the same time, the user musts to change C51 folder name (because there will be two C51 folders), and then install tenx F51 & L51 IDE file, if user needs to use UV3 version, the UV4 version must to change C51 folder name. However, the user wants to install UV3 and UV4 version in the different path (UV3 version in C:\ Keil, UV4 version in D:\ Keil), the tenx F51 & L51 IDE & Keil C version (UV3 or UV4) must be installed in the same path.



Q3: Why the user clicks on "Debug" button as shown below window ?

AP Note :	ICE Mode Note :
System Clock frequency Suggestion: A. TM52F5274/F5278 – less than 6MHz. B. TM52F5274B/F5278B – less than 8MHz.	In ICE mode, don't use (maybe P24/P25 or P30/P31) ICE pins or change its pin mode.
ОК	□ Do not show next time OK

A3: When the user writes program file must be avoid to control P3.0/P2.4 > P3.1/P2.5 pin (For example : P3 > P2 Mode configuration change) , if do not show this window in the next time , please check "Do not show next time" option, or to confirm "Don't Show ICE Message" is checked in the "Flash Download Setup" window.

Device : TM52F5278 Option Reset Option M	 ake *.tenx	Download Function		
Option Number(hex) : 5F1000				
✓ Don't Show ICE Message	Don't Show AF	P Message 🔽 Overwrite FRO		
Item Description	Select	Selected Function		
01. WDTE (0:7~6) :	WDT	WDT Disable		
02. FRCF(When CLKPSC=3 and select		31		
UZ. FROP (WHEN CLRPSC-3 and sel	ect J1			
03. PROT (1:7) :	Not P	rotected		
02. FRG(Wilen CLRPSC-3 and sel 03. PROT (1:7) : 04. XRSTE (1:6) : 5. LVR (4:5-4) :	Not Pi Disab	rotected		
03. PROT (1:7) : 04. XRSTE (1:6) : 05. LVR (1:5~4) : 06. VCCELT (1:2) :	Not Pi Disabl	rotected le set 2.3V		
02. FROM (WINE OLAPSO - 3 and sel 03. PROT (1:7): 04. XRSTE (1:6): 05. LVR (1:5~4): 06. VCCFLT (1:3): 07. PWRSAV (1:2):	Not Pi Disabl LV Re Disabl	rotected le set 2.3V le		
02. FRGF(WHENCLRF3C-3 and self 03. PROT (1:7) : 04. XRSTE (1:6) : 05. LVR (1:5~4) : 06. VCCFLT (1:3) : 07. PWRSAV (1:2) : 08. MVCLOCK (1:1) :	Not P Disab LV Re Disab Not	rotected le set 2.3V le 2. Unlock		
03. PROT (1:7) : 04. XRSTE (1:6) : 05. LVR (1:5~4) : 06. VCCFLT (1:3) : 07. PWRSAV (1:2) : 08. MVCLOCK (1:1) : 09. Address range of IAP (2:3~0) :	Not Pi Disab LV Re Disab Not MOV(No us	rotected le set 2.3V le C Unlock e		



Q4: Why the user clicks on "Debug" button as shown below window, and then exit the "Debug Mode"?



- A4: Because the user selects chip model and EV Board model does not match, please recheck chip model and EV Board model.
- Q5: Why the user clicks on "Debug" button or "Download" button as shown below window, and then exit the "Debug Mode" or "Download Mode" ?



A5: Because the user writes program file is out of "ROM code" range, please refer Note (2) in Page 14.



Q6: Why the user clicks on "Debug" button as shown below window, and then exit the "Debug Mode" ?



A6: Because the "Create HEX File" is not checked in "Output" option, please refer below figure.

Select Folder for Objects Name of Executal	BL51 Locate BL51 Misc Debug Utulities ble: TEST
(• Create Executable: .\TEST ✓ Debug Information ✓ Debug Information ✓ Create HEX File HEX Format: HEX-80 C Create Library: .\TEST.LIB	▼ □ Create Batch File

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