

Instrument Business Department

<u>UART</u> Specification

Version : V2.0



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1 Software Installation

Please install the software as the following steps :

* Remark: The installation steps for all buses are the same; you can complete installation by following procedures. Below is an example on how to install SSI bus.

STEP 1. Install Bus Module



STEP 2. Click Install.



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STEP 3. Click Next.



STEP 4. Select **I accept the terms in the license agreement**, and then press **Next**.

1	🖥 Special Bus SSI Module - InstallShield Wizard	\mathbf{X}
	License Agreement Please read the following license agreement carefully.	
	LICENSE AGREEMENT	
	IMPORTANT-READ CAREFULLY : This LICENSE AGREEMENT is	
	entered into effect between ZEROPLUS Technology Co., Ltd. (hereinafter	
	"ZEROPLUS") and Customer (Individual or Registered Company).	
	Whereas ZEROPLUS owns a software product including computer	
	software as a package product for certain computer products, relevant	
	intermediary, product information, electronic file and internet on-line	
	downloadable software, electronic file and service, known as "ZEROPLUS	-
	I accept the terms in the license agreement Print	
	\bigcirc I $\underline{\mathrm{do}}$ not accept the terms in the license agreement	
I	nstallShield	
	< <u>B</u> ack <u>N</u> ext > Cancel	



STEP 5. Fill in user information in the below dialog box and click **Next**.

🙀 Special Bus SSI Module - InstallShield Wiz	ard 🔀
Customer Information Please enter your information.	
User Name: sunshine	
Organization: zeroplus	
Install this application for:	
Anyone who uses this computer (all users)	
Only for <u>m</u> e (sunshine)	
InstallShield	Const

STEP 6. First, select **Complete** and then click **Next**.

🛃 Special Bu	s SSI Nodule - InstallShield Wizard 🛛 🛛 🔀
Setup Type Choose the set	up type that best suits your needs.
Please select a	setup type.
© Complete	All program features will be installed. (Requires the most disk space.)
Cu <u>s</u> tom	Choose which program features you want installed and where they will be installed. Recommended for advanced users.
InstallShield	< <u>B</u> ack <u>N</u> ext > Cancel



STEP 7. Click **Install** to begin the installation.



STEP 8. Click **Finish** to complete the installation.





2 User Interface

Please refer to the below images to select options of setting UART Module

UART Configuration Dialog Box

SPECIAL BUS UART SETUP:Bus1
Configuration Package Register
Bus Setting Bus Name: Bus1 Start Data Bit Parity Bit Stop Bit
Channel: AO 💌
Bus Property Parity: none parity - Data Bit: 8 - Data Direction: MSB->LSB -
Baud Rate: 9600 V Stop Bit: 1 V Sample Rate: 70% V
(Min:1bps,Max:10Mbps;User can vary the baud rate and setup the value as your requiremerits.)
Use the reverse data level for decoding Based on the min pluse width to automatically find the baud rate
OK Cancel Default Help

Bus Name: Select the bus name for setting UART bus presently.

Channel: Select the channel that needs to analyze from the dropdown menu.

Bus Color: Set colors for every section.

Bus Property:

Baud Rate: The dropdown menu has options as below.

110,300,600,1200,2400,4800,9600,19200,38400,57600,115200,230400,460800 and 921600.User can select from the menu, if the baud rate does not meet your requirement, user can customize a value within the range1~10M BPS according to user's requirements.

Parity settings: There are three options on the dropdown menu: none parity, odd parity and even parity.

Data Bit: Select the data bit within the range 4~8 bit from the dropdown menu.

Stop Bit: Select the stop bit from the three options:1,1.5 and 2 bit.

Direction : MSB->LSB and LSB->MSB.

Sampling Rate: The default values are 50%, 60%, 70%, 80% and 90%, if the value doesn't meet user's requirements, user can customize a value within the range 50%~90%, and the precision is 1%.



UART Package Dialog Box

SPECIAL BUS UAL	RT SETUP:Bus1	
Configuration Pag	ckage Register	
Item	Color	
🔽 Data		
🔽 Parity		
🔽 Describe		
	OK Cancel Default	. Help

Item: Select the items displayed in the package list, including Data, Parity and Describe. **Color**: Set the color of the item displayed in the package list.

UART Register Dialog Box

SPECIAL BUS UART SETUP:Bus1	×
Configuration Package Register	
Use UART for free!	
If you have questions about operating software please follow the appropriate instructions below.Our technical support team will be happy to answer any questions you have.	
>> By phone: Tel:886-2-66202225	
$>>$ Applications through EMail: service_2@zeroplus.com.tw	
>> Website: http://www.zeroplus.com.tw	
Copyright(C) 1997-2008 ZEROPLUS TECHNOLOGY CO;LTD	
OK Cancel Default Help	

There is Zeroplus company detailed information. If you have any questions about software Operations, you can contact Zeroplus by Telephone or Email.



3 Operating Instructions

STEP 1. First, group the unanalyzed channels into **bus1** by pressing the **Right Key** on mouse. Enable Bus/Signal Trigger 🌉 Sampling Setup ... 🔣 Channels Setup ... Bus Property Trigger Enable Group into Bus Ctrl+G Bus/Signal .trl+U Bus1 \mathbb{X} Add Signal ... Copy Signal 🥖 🗛 🔪 \mathbb{X} \mathbb{X} Delete Signal Delete All Signals \geq \geq 🖌 🚺 🕺 Restore Default Signals \mathbb{X} \mathbb{X} 🥖 🗚 🕺 🖊 Format Row ۲ Rename \mathbb{X} A3 A3 \mathbb{X} 🖌 AT AT

STEP 2. Select **Bus1**, then press **Right key** on mouse to list menu, then press **Bus Property** or **Bus** bar on the toolbar to open **Bus Property** dialog box.





STEP 3. For Special Bus UART Parameters Configuration, select Special Bus, and then choose **ZEROPLUS LA UART MODULE V2.00.** Next click **Parameters Configuration** to open **Parameters Configuration** dialog box.

Bus Property	
General Bus Setting	Color Config
Special Bus Setting	Parameters Config
C ZEROPLUS LA SPI MODULE V1.06 C ZEROPLUS LA SPI-SIGNIA MODULE C ZEROPLUS LA SSI MODULE V1.03 C ZEROPLUS LA ST7669 MODULE V1.00 C ZEROPLUS LA ST MODULE V1.00 C ZEROPLUS LA DSA MODULE V1.00 C ZEROPLUS LA PCM MODULE V1.00 C ZEROPLUS LA MICROWIRE MODULE ZEROPLUS LA MICROWIRE MODULE ZEROPLUS LA UART MODULE V2.00	(V1.01 00 (Internal V0.1) (Internal V0.1) E V1.02
Use the DsDp Other More Module: http://www.zeropl OK	Lus.com.tw Cancel Help

STEP 4. Click Configuration to open the configuration, and then set channel for UART.

SPECIAL BUS UART SETUP:Bus1
Configuration Package Register
Bus Setting Bus Name: Bus1 Channel: AD
Bus Property Parity: none parity V Data Bit: 8 V Data Direction: MSB->LSB V Data Direction: MSB->LSB V
(Min:1bps, Max:10Mbps;User can vary the baud rate and setup the value as your requirements.)
Use the reverse data level for decoding Based on the min pluse width to automatically find the baud rate
OK Cancel Default Help



STEP 5. Set Parity, Data Bit, Direction, Baud Rate Stop Bit and Sampling Rate for Bus Property.

SPECIAL BUS UART SETUP:Bus1		
Configuration Package Register		
Bus Setting Bus Name: Bus1 Channel: A0 Bus Property Parity: none parity Data Bit: 8 Data Direction: MSB-LSB Baud Rate: 9800 Stop Bit: 1 Sample Rate: 70% Min: 1bps, Max. 108 bps, Vicer can vary the baud rate and setup the value as your requiremerits.) Use the reverse data level for decoding		
Based on the min pluse width to automatically find the baud rate		
OK Cancel Default Help		

STEP 6. Select Use the reverse data level for decoding and Based on the min pluse width to automatically find the baud rate according to user's requirements

SPECIAL BUS UART SETUP:Bus1	×
Configuration Package Register	
-Bus Setting	
Bus Name: Bus1 Start Data Bit Parity Bit Stop Bit	
Channel: AO 💌	
Bus Property	
Parity: none parity 🕶 Data Bit: 8 💌 Data Direction: MSB->LSB 💌	
Baud Rate: 9600 💌 Stop Bit: 1 💌 Sample Rate: 70% 💌	
(Min:1bps,Max:10Mbps;User can vary the baud rate and setup the value as your requiremerits.)	
Based on the min pluse width to automatically find the baud rate	
OK Cancel Default Help	



STEP 7. Set the color for every item in Bus1 according to requirements.

SPECIAL BUS UART SETUP:Bus1
Configuration Package Register
Bus Setting Bus Name: Bus1 Channel: AO
Bus Property Parity: none parity V Data Bit: 8 V Data Direction: MSB->LSB V
Baud Rate: 9600 Stop Bit: 1 Sample Rate: 70% (Min:1bps, Max:10Mbps; User can vary the baud rate and setup the value as your requiremerits.)
Use the reverse data level for decoding Based on the min pluse width to automatically find the baud rate
OK Cancel Default Help

STEP 8. Following pictures show the completion of the Bus decoding and package list. The conditions are set as: Memory depth is 2K, Sampling frequency is 1MHz

ZEROPLUS LAP-32128U-A(S/N:000000-0000) - [UART_IVOSTOP_ODD_8BIT. als]								
🕌 File Bus/Signal Trigger	Run/Stop Data Tools Window Help - 🗗							
🗋 🖻 🖉 📲 🎒 🕮 🖏 🖏	🕂 👯 📲 📓 🕨 🛤 🕡 2K 🗸 🖓 🖬 📶 1MHz 🔽 🕬 👫 50% 🔽 🐝 Page 1 🔍 Count							
🚯 🚯 📾 💷	限 🕅 🕅 - 🎿 82.93us 🔽 🙀 🙀 🔐 🔐 🙀 🔐 🖓 🖬 🕪 🖓							
Font Size 28 💌								
Scale:82.93us	Display Pos:4.147ms A Pos:-335.51ms 💌 A - T = 335.51ms 💌 A - B = 600ms 💌							
Total:670.862ms	Trigger Pos:Ons B Pos:-335.509ms - B - T = 335.509ms - Compr-Rate:16378.455							
Bus/Signal Trigger	Enable 2.488ms 2.903ms 3.317ms 3.732ms 4.147ms 4.561ms 4.975ms 5.39ms 5.805ms 6.22ms							
Busi (UART)	∞ OX2F OXDE OXA7 OXA7							
UART N								
🖌 A1 A1								



Following picture shows the package list and waveforms display.								
Seroplus LAP-32128U-A (S/N:00000-0000) - [UART_TVOSTOP_ODD_8BIT.als]								
🎩 <u>F</u> ile B <u>u</u> s/Signal T <u>r</u> igger	Run/ <u>S</u> top <u>D</u> ata <u>T</u> oo	ls <u>W</u> indow <u>H</u> elp				_ 8 ×		
🗅 🚅 🗐 🎒 🕮 🥰 🖤	🖗 🕂 y 🗓 🔟	▶ ▶ ■ ₩ 2K	- ₩I 1MH	z 💌 🛲 🦂 5	D% ▼ 🐝 Page 1	▼ Count		
🚯 🚯 📾 📟 🏮	🔌 🕅 🖑 🎬 📓	🖥 🕶 👗 82.93us		Từ +☆ Bar Bar	🐻 📴 🔖 Height	t 40 👻 T r:		
Font Size 28 -								
Scale:82.93us Total:670.862ms	Display Pos:4.147ms Trigger Pos:Ons	s A Pos:-335 B Pos:-335	.51ms ▼ .509ms ▼	A - T = 335.51ms ▼ B - T = 335.509ms ▼	A - B = 600 Compr-Rate:	ns 🔻 16378. 455		
Bus/Signal Trigger	Enable 2	.488ms 2.903ms 3.3	317ms 3.732ms 4.	147ms 4.561ms 4.9	176ms 5.39ms 5.80	/5ms 6.22ms		
		0X2F	0	XDE	OXA7			
🖌 VART	⊗ .							
🖌 🖌 A1 A1								
A2 A2	8							
	8							
🖌 🖌 🗛 📈	×							
<	<					>		
× Setting Flash Expor	rt Synch Parameter							
Package # Name	TimeStamp	Data Parity						
1 Bus1(UAF	RT) Ons	0X37 ODD PARITY						
Package # Name 2 Bus1(UAF	TimeStamp 3TD 1.255ms	Data Parity 0X16 ODD PABITY						
Package # Name	TimeStamp	Data Parity						
3 Bus1(UAF	RT) 2.51ms	0X2F ODD PARITY						
Package # Name	TimeStamp	Data Parity						
	(IJ J./64MS					•		
Ready					End!	DEMO		