

SPECIFICATION

MODEL: IIC Specification

PART NO : B08015

VERSION : V1.07

Appro	over	Check	Design		Customer Confirm
GM	PM	CHECK	Design		
		*A	fter signature yo	u fax	to zeroplus company, plea
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1 Software Installation

Please install the software as the following steps:

Remark: 1. The installation steps for all protocol analyzers are the same; you can complete the installation by following procedures. Below is an example on how to install protocol analyzer SSI.
 Remark: 2. We won't have additional notice for you, when there is any modification of the module

specification. If there is some unconformity caused by the module version upgrade, users should take the module software as the standard.



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	Protocol Analyzer SSI - InstallShield Vizard	×
	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	
	"ZEROPLOS") 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	~
K	I accept the terms in the license agreement	
	\bigcirc I $\underline{\mathrm{do}}$ not accept the terms in the license agreement	
Ir	nstallShield	
	< <u>B</u> ack <u>N</u> ext > Cancel	

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

🙀 Protocol Analyzer SSI - InstallShield Wizard	
Customer Information Please enter your information.	
User Name: sunshine	
Organization: zeroplus	
Install this application for:	
 Anyone who uses this computer (all users): Only for me (sunshine) 	
InstallShield	Cancel

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

🛃 Protocol 🗚	nalyzer SSI - InstallShield Wizard 🛛 🛛 🔀
Setup Type Choose the set	up type that best suits your needs.
Please select a	setup type.
⊙ <u>Complete</u>	All program features will be installed. (Requires the most disk space.)
O 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.

🛃 Protocol Analyzer SSI - InstallShield Vizard 🛛 🚺
Ready to Install the Program The wizard is ready to begin installation.
Click Install to begin the installation.
If you want to review or change any of your installation settings, click Back. Click Cancel to exit the wizard.
Tectal/Shield
< <u>B</u> ack Install Cancel

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

🛃 Protocol Analyzer	SSI - InstallShield Vizard	\mathbf{X}
	InstallShield Wizard Completed	
	The InstallShield Wizard has successfully installed Protocol Analyzer SSI. Click Finish to exit the wizard.	
	< <u>B</u> ack <u>Finish</u> Cancel	



2 User Interface

Please refer to the below images to select options of setting **IIC MODULE**.

IIC Configuration Dialog Box

PROTOCOL ANALYZE	R IIC SETUP:	Bus 1		
Configuration Timin	g Package Regi	ister		
-Pin Assignment Protocol Analyzer	Nam, Busl	SDA : AO	SCL :	A1 💌
-Protocol Analyzer	Setting			
Custom Sett	ing			
-Protocol Analyzer	Color			
START	DATA	ADDRESS	READ	WRITE
		••••		
A-ACK	A-NACK	D-ACK	D-NACK	STOP
		ОК С	ancel Defa	ult Help

Pin Assignment: Select the displayed name for Protocol Analyzer IIC presently.

SDA Channel: Select SDA channel in IIC protocol.

SCL Channel: Select SCL channel in IIC protocol.

Custom Setting: Open the protocol analyzer IIC Custom Setting dialog box.

Protocol Analyzer Color: Set the displayed colors of all sections, including DATA/ADDRESS, START, READ, WRITE, A-ACK, A-NACK, D-ACK, D-NACK and STOP.



IIC Protocol Analyzer Customize Dialog Box.

Protocol Analyzer Customize		×
Read / Write bit Active Read Bit Conditions High C Low Ack Bit Don't Stop Analysis When NACK happen	Data Area Contents Address Data Name: ADDRESS DATA Number of Bit: 7 8 Address left shift one bit then	OK Cancel Default
Ack Bit Conditions Ack Bit = Low C High C Low	AND Read/write bit	

Regarding judging the data in protocol analyzer IIC, judge SDA data when SCL performs as **Rising Edge**. For example, when SCL is **Rising Edge**, SDA is 0(Low Level), and the data captured in protocol analyzer IIC is 0(Low Level).

Read/Write bit: Set the judgement condition of **Read/Write** bit. The default **Read** condition is high level, and the default **Write** condition is low level. That is to say, the default judgement of **Read/Write** bit is that when SDA is equal to 0, it denotes WRITE; when SDA is equal to 1, it denotes READ.

Ack Bit: Set the judgement conditions for Ack Bit. The default of Ack Bit is Low; the default of NoACK Bit is High. That is to say, when SDA is equal to 0, it denotes ACK; when SDA is equal to 1, it denotes NACK.

Data Area:

Name: The name can be edited; the defaults on the image are ADDRESS and DATA.

Number of Bit: Bit number can be edited. The defaults on the image are that ADDRESS is 7bit and DATA is 8bit.



IIC Timing Dialog Box



Waveform Image: Describe the position of the set time.

Time Format Settings: When the Time Settings are activated, the set time will become the condition of judging decoding. For example, when you want to decode START, you should judge whether the conditions of START is satisfied firstly, and then judge whether the set time of tHD: STA is coincident with the factual waveform. If the two conditions are satisfied, the START can be decoded. Other segments decoding of the package are the same as START decoding.



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IIC Package Dialog Box



In the package part, users can select the displayed items and set their colors.

IIC Register Dialog Box

PROTOCOL ANALYZER IIC SETUP:Bu	1 5 1	$\mathbf{\times}$
Configuration Timing Package Regist	er	
Vse IIC for free!		
If you have questions about operati instructions below.Our technical su questions you have.	ng software please follow the appropriate pport team will be happy to answer any	
>> By phone:	Tel:886-2-66202225	
>> Applications through EMail:	service_20zeroplus.com.tw	
>> Website:	http://www.zeroplus.com.tw	
Copyright(C) 1997-2008 ZEROPLUS TEC	HNOLOGY CO., LTD.	
	OK Cancel Default Help	

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

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3 Operating Instructions

STEP 1. Group the unanalyzed channels into **Bus1** by pressing the **Right Key** on the mouse.



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





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STEP 3. For Protocol Analyzer IIC Parameters Configuration, select Protocol Analyzer, and then choose **ZEROPLUS LA IIC MODULE V1.07.** Next click **Parameters Configuration** to open **Parameters Configuration** dialog box.

Bus Property	
General Bus Setting	
C General Bus	Color Config
Activate the Latch function	A0 🔽
	Rising analysis 💌
Protocol Analyzer Setting	
Protocol Analyzer	Parameters Config
 ZEROPLUS LA DMX512 MODULE V1 ZEROPLUS LA DSA MODULE V1.02 ZEROPLUS LA FLEXRAY 2.1A MODULE ZEROPLUS LA HDQ MODULE V2.04 ZEROPLUS LA IIC MODULE V1.07 ZEROPLUS LA IIC LIN MODULE V1.07 	.03
 ZEROPLUS LA IIS MODULE V1.05 ZEROPLUS LA IRDA MODULE V1.04 ZEROPLUS LA JTAG 2.0 MODULE V1.04 	1.02
🔽 Use the DsDp	Find
More protocol analyzer: http://www.z	eroplus.com.tw Cancel Help

STEP 4. Click Parameters Configuration to open the IIC Configuration dialog box as following.

PROTOCOL ANALYZE	R IIC SETUP:	Bus 1				
Configuration Timing Package Register						
-Pin Assignment Protocol Analyzer	Nam, Busl	SDA : AO	SCL :	A1 💌		
Protocol Analyzer	Setting					
Custom Sett:	ing					
-Protocol Analyzer	Color —					
START	DATA ····	ADDRESS	READ	WRITE		
A-ACK	A-NACK	D-ACK	D-NACK	STOP		
		OK C	ancel Defa	ilt Help		
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STEP 5. Set the channels of **SDA** and **SCL** in Pin Assignment section.



STEP 6. Set Custom Setting.

PROTOCOL ANALYZE	R IIC SETUP:	Bus1				
[Configuration] Timin	g Package Reg	ister				
Pin Assignment —						
Protocol Analyzer	Nam, Busl	SDA : AO	▼ SCL :	A1 💌		
Protocol Analyzer Setting						
Custom Sett	ing					
-Protocol Analyzer Color						
START	DATA	ADDRESS	READ	WRITE		
A-ACK	A-NACK	D-ACK	D-NACK	STOP		
			• • •			
UK Cancel Default Help						

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STEP 7. Set **Read/Write bit**.

Protocol Analyzer Customize		
Read / Write bit ✓ Active Read Bit Conditions ● High ● Low Ack Bit ✓ Don't Stop Analysis When NACK happen Ack Bit Conditions Ack Bit = Low NoAck Bit = High	Data Area Contents Address Data Name: ADDRESS DATA Number of Bit: 7 8 Address left shift one bit then AND Read/Write bit	OK Cancel Default

STEP 8. Set Ack Bit.



STEP 9. Set **Data Area**.

Protocol Analyzer Customize		
Read / Write bit ✓ Active Read Bit Conditions ← High ← Low Write Bit = Low	Data Area Contents Address Data Name: ADDRESS DATA Number of Bit: 7	OK Cancel Default
Ack Bit Don't Stop Analysis When NACK happe Ack Bit Conditions Ack Bit = Low NoAck Bit = High	Address left shift one bit then AND Read/Write bit	



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STEP 10. Set **Timing**.



STEP 11. Set the colors for Protocol Analyzer IIC.



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STEP 12. Following pictures show the completion of the protocol analyzer decoding and the package list. The trigger condition is Either Edge; the memory depth is 512K; the sampling frequency is 50MHz.

Protocol Analyzer Decoding



Package List



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