

SPECIFICATION

MODEL: SD 2.0/SDIO Specification

PART NO : B08020

VERSION : V1.01

Approver		Check	Design		Customer Confirm
GM	PM	CIRCK	Design		Customer Commin
		*A	fter signature yo	u fax	to zeroplus company , please .
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1. Software Installation

Please follow below steps to install the software:

Remark: 1. The installation steps for all protocol analyzers are the same; you can complete the installation as following procedures. The following is an example 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 refer to the module software as the standard.





STEP 2. Click **Install**.



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STEP 3. Click Next.

🔂 Protocol Analyzer	SSI - InstallShield Vizard 🛛 🔀
	Welcome to the InstallShield Wizard for Protocol Analyzer SSI
	The InstallShield(R) Wizard will install Protocol Analyzer SSI on your computer. To continue, click Next.
	WARNING: This program is protected by copyright law and international treaties.
	< Back Next > Cancel

STEP 4. Select **I accept the terms in the license agreement** option and then click **Next**.

1	Protocol Analyzer SSI - InstallShield Wizard	×	
	License Agreement Please read the following license agreement carefully.	1	
	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 ergine a language.		
<	I accept the terms in the license agreement Print I do not accept the terms in the license agreement		
I	nstallShield <u>Back N</u> ext > Cancel		



STEP 5. Fill in users' information, and then click Next.

🙀 Protocol Analyzer SSI - InstallShield Wiza	ard 🛛 🔀
Customer Information Please enter your information.	44
User Name: sunshine	
Organization: zeroplus	
Install this application for: Anyone who uses this computer (all users) Only for me (sunshine) 	
InstallShield	t > Cancel

STEP 6. Select **Complete** option, 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.
© 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	< Back Next > Cancel



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

🔂 Protocol Analyzer SSI - InstallShield Wizard	×
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.	
InstallShield <u></u>]

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

🛃 Protocol Analyzer	SSI - InstallShield Vizard	×
	InstallShield Wizard Completed	
	The InstallShield Wizard has successfully installed Protocol Analyzer SSI. Click Finish to exit the wizard.	
	< <u>B</u> ack Einish Cancel	



2. User Interface

Please refer to the below images to select options of setting SD2.0/SDIO MODULE.

SD2.0/SDIO Configuration dialog box PROTOCOL ANALYZER SD2. 0/SD10 SETUP:Bus1 Configuration Package Register Pin Assignment DAT[3]: A2 • CLK: DAT[1]: A4 AO • • -DAT[2]: A3 DAT[0]: A5 A1 • CMD: • Decode Format ⊙ SD 1.1/SDIO ○ SD 2.0 Protocol Analyzer Property ○ CMD Decode 🔘 DAT Decode Data0~3 $\overline{\mathbf{v}}$ BLOCK Sampling Mode: Rising Edge 🔻 -Byte Protocol Analyzer Color DATA CMD X CRC START BUSY RN HOST CONTENT CARD CRC STATUS ADDRESS STOR 0K Cancel Default Help

SD2.0/SDIO Pin Assignment:

CLK is the frequency channel; CMD is the command channel; DAT 0~3 are the data channels.

Decode Format:

There are two decoding formats for selection, SD 1.1/SDIO and SD 2.0.

Protocol Analyzer Property:

CMD Decode (It only decodes command and response) DAT Decode(It only decodes transmission data). There are two modes for selection, Data0 and Data0~3.

BLOCK Setting:

Set the number of the BLOCK. Users can select the 512 byte, 1024 byte and 2048 byte from the dropdown menu, or users can enter a number as their requirements within the range 1 to 32767 Byte.

Sampling Mode:

Users can set CLK sampling mode as Rising Edge or Falling Edge.

Protocol Analyzer Color:

The protocol analyzer color can be varied by users.



SD2.0/SDIO Package dialog box



In the package dialog box, users can vary the color of items.

SD2.0/SDIO Register dialog box

PROTOCOL	ANALYZER SD2.0/SDIO S	ETUP:Bus1	
Configuratio	n Package Register		
			1
	Congratulation SD2.0/SDI	O decoding function has been activated!	
lfuou ba	we questions about operating so	oftware please follow the appropriate instructions	
below.0	ur technical support team will be	happy to answer any questions you have.	
>> By pł	none:	Tel:886-2-66202225	
>> Applications through EMail:		service_2@zeroplus.com.tw	
>> Web:	>> Website: http://www.zeroplus.com.tw		
Copyrigh	t(C) 1997-2008 ZEROPLUS TE	CHNOLOGY 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 the Right Key on the mouse, then click Bus Property to open the Bus Property dialog box.





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STEP 3. For Protocol Analyzer SD2.0/SDIO Parameters Configuration, select Protocol Analyzer, then choose **ZEROPLUS LA SD2.0/SDIO MODULE V1.01**. Next click **Parameters Configuration** to open the 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
C ZEROPLUS LA MII MODULE V1.02	2
C ZEROPLUS LA MILLER MODULE V	1.03
C ZEROPLUS LA MODIMODULE VI.	12
O ZEROPLUS LA PSB MODULE VI. 0	2
ZEROPLUS LA SD2.0/SDIO MODU	JLE V1.01
C ZEROPILIS LA SIGNIA6210 MODI	JLE V2.04
C ZEROPLUS LA SIE4442 MODULE	VI.00
	_
🔽 Use the DsDp	Find
More protocol analyzer: http://www	w.zeroplus.com.tw
ОК	Cancel Help

STEP 4. Press **Register** tab to type the serial key number of SD2.0/SDIO Module. Then press **Register**.

PROTOCOL ANALYZER SD2.0/SDIO) SETUP:Bus1	
Configuration Package Register		
The SD2.0/SD10_protocol analyzer of item.Welcome to purchase its serial k	decoding function is an optional purchased ey to activate this function for your necessary.	
Enter serial keur		
Enter senarkey.		
If you ordered software or have quest	ions about ordering software please follow the	
appropriate instructions below.Our sa possible.	les team will respond to your enquiry as soon as	
>> 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.	
	Register Cancel Default	Help
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STEP 5. After completing Register, it turns to **Bus Property** dialogue box. Click **Parameters Configuration** to set up the parameters of the protocol analyzer.

Bus Property					
General Bus Setting General Bus Activate the Latch function	Color Config				
Protocol Analyzer Setting	Parameters Config				
 C ZEROPLUS LA MII MODULE V1.02 C ZEROPLUS LA MILLER MODULE V1.03 C ZEROPLUS LA MOD MODULE V1.03 C ZEROPLUS LA PCM MODULE V1.02 C ZEROPLUS LA PSB MODULE V1.02 	03				
C ZEROPLUS LA SD2.0/SDIO MODULE V1.02 ZEROPLUS LA SIGNIA6210 MODULE V1.01 ZEROPLUS LA SIGNIA6210 MODULE V1.00 ZEROPLUS LA S/PDIF MODULE V1.03 ZEROPLUS LA SDI MODULE V1.03					
Use the DsDp					
ОК	Cancel Help				

STEP 6. Set SD2.0/SDIO Pin Assignment, CLK(Frequency Channel), CMD(Command Channel), DAT 0-3 (Data Channels) in the Configuration dialog box.

	PRO	TOCOL	ANALY	ZER SD2.0	/SDIO SI	ETUP : B	us l			
	Co	onfigura	tion Pag	wage Regis	cer					
		-Pin As	signment							
(CLK:	AO	•	DAT[3]:	A2	•	DAT[1]:	A4	
		CMD:	A1	•	DAT [2] :	A3	•	DAT [0] :	A5	
		Decode	Format							
		۲	SD 1.1/9	SDIO			O SD 2.	D		
		-Protoc	ol Analy:	zer Property						
		œ	CMD Dec	ode			🔿 DAT D	ecode Data	10~3	
			Samplin;	g Mode: Ri	sing Edge	•	BLOCK	: 512		🔻 Byte
		Protoc	ol Analy:	zer Color —						
		START		··· DATA		·· CMD X	:	··· CRO	;	
		BUSY		· · RN		·· ноsт		·· - COB	TENT	
		ADDRESS	5	CARD		·· CRC S	TATUS	·· STO	P	
	_					OK	Cance	l Def	ault	Help

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STEP 7. Decode Format (SD1.1/SDIO and SD2.0).

PROTOCOL ANALYZER SD2.0/SDIO SETUP:Bus1	×					
Configuration Package Register						
Pin Assignment CLK: A0 V DAT[3]: A2 V DAT[1]: A4 V						
CMD: A1 • DAT[2]: A3 • DAT[0]: A5 •						
Decode Format	1					
• SD 1.1/SDIO • SD 2.0	7					
Protocol Analyzer Property						
CMD Decode C DAT Decode Data0~3 ✓						
Sampling Mode: Rising Edge 💌 BLOCK: 512 💌 Byte						
Protocol Analyzer Color						
START DATA CMD X CRC						
BUSY						
ADDRESS CARD CRC STATUS STOP						
OK Cancel Default Help						

STEP 8. Set **CMD Decode** or **DAT Decode**, **BLOCK** number and CLK **Sampling Mode** in **Protocol Analyzer Property**.

PROTOCOL ANALYZER SD2.0/SDIO SETUP:Bus1	×						
Configuration Package Register							
-Pin Assignment	-						
CLK: A0 V DAT[3]: A2 V DAT[1]: A4 V							
CMD: A1 • DAT[2]: A3 • DAT[0]: A5 •							
Decode Format	51						
© SD 1.1/SDIO © SD 2.0							
Protecol Analyzer Property	-						
ⓒ CMD Decode							
Sampling Mode: Rising Edge 💌 BLOCK: 512 💌 Byte	1						
-Frotocol Analyzer Color	-						
START DATA CMD X CRC CRC							
BUSY							
ADDRESS CARD CRC STATUS STOP							
OK Cancel Default Hell							

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STEP 9. Protocol Analyzer Color setting.

1	PROTOCOL ANALYZER SD2.0/SDIO SETUP:Bus1						
	Configuration Package Register						
	Pin Assignment						
	CLK: A0 DAT[3]: A2 DAT[1]: A4						
	CMD: A1 • DAT[2]: A3 • DAT[0]: A5 •						
	Decode Format						
	• SD 1.1/SDIO						
	Protocol Analyzer Property						
	CMD Decode C DAT Decode Data0 [∞] 3 ✓						
	Sampling Mode: Rising Edge BLOCK: 512 Byte						
	Frotocol Analyzer Color						
	START DATA CMD X CRC CRC						
Q	BUSY CONTENT						
	ADDRESS CARD CRC STATUS STOP						
	OK Cancel Default Help						

STEP 10. Following pictures show the completion of the protocol analyzer decoding and the package list. The trigger condition is set as Rising Edge; the memory depth is 128K; the sampling frequency is 200MHz.

Protocol Analyzer Decoding

Seroplus Lap-	-32128U-	A(S/N:000000-0000)	- [SD2.0-SDI0.als]		
🐔 File Bus/Signal	T <u>r</u> igger	Run/ <u>S</u> top <u>D</u> ata <u>T</u> ools <u>W</u> i	indow <u>H</u> elp		_ @ X
🗅 🗲 🖪 🎒 🖉	i , 🛛 🙀	🕂 🕂 📲 📲 🔟	🕨 🔲 🚺 128K 🔻 🖗 🖓	🛛 200MHz 🕑 🔤 👫 50%	i ▼ 🐳 Page 🚺 💽 Cour
🚯 🚯 📾		k 📓 🖑 🇰 📓 🗸 .	👗 3.24us 🔽 🦷 🖥	AR DA BA BA BA BA A A	😿 ध 🏘 Height 🛛 🛨
Font Size 9	-				
Scale:3.24us	1	Display Pos:3.225ms	A Pos:7.212ms 💌	A = T = 7.212ms ▼	A - B = 91.09ms ▼
Total:158.998ms		Trigger Pos:Ons	B Pos:-083.878ms ▼	B − T = 83.878ms ▼	Compr-Rate:242.612
Bus/Signal	Trigger	Enable 3.16ms	3.177ms 3.193ms 3.2	09ms 3.225ms 3.241ms 3.258	ns 3.274ms 3.29ms 3.30 5
Bus1 (SD2. (RT HOST CM	D : 0X34 CONTENT :	0X80022200
CLK	Z				
🖌 CMD /		\otimes			
🖌 DAT3		\otimes			
DAT2		\otimes			
- DAT1					v



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Package List

Seroplus Lap-	-32128U-A(S/N:0000	000-0000) - [SD2.0-SDI0.als]	
💭 File B <u>u</u> s/Signal	. T <u>r</u> igger Run/ <u>S</u> top <u>D</u> at	ata <u>T</u> ools <u>M</u> indow <u>H</u> elp	- 8 ×
🗋 🖻 🖉 🕯	🕰 🕮 💱 🐺 📲 I	Image: Image	💌 Cour
🚯 🕟 📾	🔳 🥵 🔌 🔛 👘	🎬 📓 🗸 🗯 3.24us 🔽 🦞 🔂 🙀 🗛 🗛 🗛 🗛 🗛 🛤 14 🕫 🐻 🔡 🌺 Height	40 🔽
Font Size 9	-		
Scale: 3.24us	Display Pos:3.	3.225ms A Pos:7.212ms ▼ A = T = 7.212ms ▼ A = B = 91.09ms ▼	
Total:158.998ms	Trigger Pos:On	Dns B Pos:-083.878ms ▼ B - T = 83.878ms ▼ Compr-Rate:242.612	
Bus/Signal	Trigger Enable	3.16ms 3.177ms 3.193ms 3.209ms 3.225ms 3.241ms 3.258ms 3.274ms 3.29ms	3. 300
Bus1 (SD2. (• 🛛 •	UNERDW START HOST CMD : 0X34 CONTENT : 0X80022200	
🖌 CLK /			ЛЦ
🧹 CMD 🖟			
🖌 DAT3			
- DAT2			
DAT1			>
× Setting Refre	sh Export Synch Par	arameter	
Package #	Name Bus1(SD2.0/SDIO)	TimeStamp START HOST CMD/ACMD CONTENT CRC7/CRC16 STOP 1.053ms START HOST 0X05 0X80022020 0X28 STOP	
Package #	Name	TimeStamp START CARD RN CONTENT CRC7/CRC16 STOP	
2	Bus1(SD2.0/SDIO)	1.613ms START CARD 0X05 0X00001020 0X6C STOP	
Package #	Name Bus1(SD2,0/SDIO)	3,163ms START HOST CMD/ACMD CONTENT CRC//CRC16 STOP	
Package #	Name	TimeStamp START CARD RN CONTENT CRC7/CRC16 STOP	
4	Bus1(SD2.0/SDIO)	3.722ms START CARD 0X34 0X00001000 0X1B STOP	-
Ready		End! DEM	