

SPECIFICATION

MODEL: B09018-LAP-LPT-M

PART NO:

VERSION: V1.00

Approver		Check	Design	
GM	PM	Check	Design	



Zeroplus Technology after signing.

2F, NO.123, Jian Ba Rd, Chung Ho City, Taipei Hsian, R.O.C. Tel: +886-2-66202225 Fax: +886-2-22234362



2F., No.123,Jian Ba Rd, Chung Ho City, Taipei Hsien, R.O.C. Tel: 886-2-66202225 Fax: 886-2-22234362

Content

1	Software Installation	3
2	User Interface	7
3	Operating Instructions	2



2F., No.123,Jian Ba Rd, Chung Ho City, Taipei Hsien, R.O.C. Tel: 886-2-66202225 Fax: 886-2-22234362

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. Following 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.



3/16



2F., No.123, Jian Ba Rd, Chung Ho City, Taipei Hsien, R.O.C. Tel: 886-2-66202225 Fax: 886-2-22234362

STEP 3. Click Next.

🔂 Protocol Analyzer	SSI - InstallShield Wizard
	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, and then press Next.

🙀 Protocol Analyzer SSI - InstallShield Vizard	×
License Agreement Please read the following license agreement carefully.	
LICENSE AGREEMENT	J
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 I do not accept the terms in the license agreement)
InstallShield < <u>B</u> ack Cancel)



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

🙀 Protocol Analyzer SSI - InstallShield Vizard	
Customer Information Please enter your information.	
User Name:	
sunshine	
Organization:	
zeroplus	
Install this application for:	Cancel

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

🙀 Protocol A	nalyzer SSI - InstallShield Wizard 🛛 🔀
Setup Type Choose the set	cup 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.)
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 Next > Cancel



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

W HOLOCOL Malyzer SSI - InstallShield Wizald
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

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.	
	< Back Finish Cancel	



2 User Interface

In the configuration, please refer to the below images to select options of setting LPT module.

LPT Configuration Dialog Box

SPP/PS2 Mode Configuration Dialog Box

PROTOCOL ANALYZ	ER LPT SETUP:Bus1			
Configuration Pack	et Data Format Register	1		
Pin Assignment				
DBO->DB7: AC	▼ ->	A7 🔽 S	SELECT : B3	_
/STROBE: BO	▼	B3 🔽 🗖 /	AUTOFEED: B3	
/ACK: B1	▼ /SELIN:	B3 🔽 🗖 /	ERROR: B3	
BUSY: B2	▼ /INIT:	B3 💌		
-Protocol Analyze	r Property			
LPT Mode: SF	P/PS2 🔻			
-Protocol Analyze	r Color			
WRITE	READ ACK	PAPER END	UNSELECT AUTOFEED	
INITIAL	INTERRUPT ECP ACT	TIVE FOWARD	REVERSE	
		•••		
			<u> </u>	
		ОК С	Cancel Default	Help

Pin Assignment: There are three different modes for LPT, which correspond with three different configuration interfaces respectively.

SPP/PS2 Mode: There are 17 Signal Lines for the SPP Mode in total, which include 8 Data Lines, 5 Status Lines and 4 Control Lines. DB0->DB7 are the Data ports. When the BUSY line is in the Low Level, it indicates "BUSY". When transmitting data, first the /ACK line is in the Low Level then in the High Level. When there is not a piece of paper for the printer, PE line is in the High Level. When the printer is effective, the SELECT line is the High Level. When there is an error for the printer, the /ERROR line is in the Low Level. The /SELIN line is usually in the High Level in the SPP Mode; when it is in the Low Level, it indicates the selection of input. When the /INIT line is in the Low Level, the printer starts initializing. When the /AUTOFEED line is in the Low Level, it indicates that the printer formfeeds automatically. The /STROBE line represents the Strobe Signal. Thereinto, the Read/ Write of the decoding data is mainly to use the DB0->DB7, /STROBE, BUSY, /ACK channels. The other channels are selectable decoding lines.

Protocol Analyzer Property: There are three modes for LPT, which are the SPP/PS2 Mode, EPP Mode and ECP Mode.

7/16

Protocol Analyzer Color: The Protocol Analyzer Color can be varied by users.



EPP Mode Configuration Dialog Box

PROTOCOL ANALYZER LPT SETUP:Bus1					
Configuration Packet	t Data Format R	egister			
-Pin Assignment					
DBO->DB7: AO	▼ ->	A7	v		
/WRITE: BO	 /ADDS' 	TB: B3	•		
/DATASTB: B2	• [IN	TERRUPT : B3	V		
/WAIT: B1	• [/I]	NIT: B3	7		
-Protocol Analyzer	Property				
LPT Mode:					
-Protocol Analyzer	Color				
WRITE	READ	ACK	PAPER END	UNSELECT	AUTOFEED
	••••				<u> </u>
INITIAL	INTERRUPT	ECP ACTIVE	FOWARD	REVERSE	
			OK	Cancel De	fault Help

Pin Assignment: There are three different modes for LPT, which correspond with three different configuration interfaces respectively.

EPP Mode: It needs 12 channels for EPP decoding, which are the DB0->DB7, /WRITE, /WAIT, /DATASTB and /ADDSTB. The INTERRUPT and the /INIT are selectable decoding lines.

Protocol Analyzer Property: There are three modes for LPT, which are the SPP/PS2 Mode, EPP Mode and ECP Mode.

Protocol Analyzer Color: The Protocol Analyzer Color can be varied by users.



ECP Mode Configuration Dialog Box

PROTOCOL ANALYZER LPT SETUP:Bus1						×
Configuration Pack	et Data Format H	Register				
-Pin Assignment-	· · · · ·					
DBO->DB7: AO	• -	> A7	<u> </u>	X-FLAG:	B5 💌	
PERIPHCLK: B1		LK: BO	•	1284 ACTIVE:	B5 💌	
HOSTACK: B4	- ACKRE	VERSE: B3	•	PERIPHREQUEST:	B5 💌	
/PERIPHACK: B2	•			REVERSEREQUEST :	B5 💌	
-Protocol Analyzer	Property					
LPT Mode:	•					
Protocol Analyzer	Color					
WRITE	READ	ACK	PAPER END	UNSELECT	AUTOFEED	
					• • •	
INITIAL	INTERRUPT	ECP ACTIVE	FOWARD	REVERSE		
••••						
			OK	Cancel De:	fault Help	

Pin Assignment: There are three different modes for LPT, which correspond with three different configuration interfaces respectively.

ECP Mode: There are 8 Data Lines and 9 Control Lines, thereinto it needs 13 channels for decoding, which are the DB0->DB7, HOSTCLK, PERIPHCLK, /PERIPHACK, ACKREVERSE and HOSTACK. The X-FLAG, 1284 ACTIVE, PERIPHREQUEST, REVERSEREQUEST are selectable decoding lines.

Protocol Analyzer Property: There are three modes for LPT, which are the SPP/PS2 Mode, EPP Mode and ECP Mode.

Protocol Analyzer Color: The Protocol Analyzer Color can be varied by users.



LPT Packet Dialog Box

PROTOCOL ANALYZER	LPT SETUP:Bus1		
Configuration Packet	Data Format Regis	ter	
Item	Color	Item	Color
VRITE		V INITIAL	
🔽 READ	••••	✓ INTERRUPT	
I▼ ACK		🔽 ECP ACTIVE	
🔽 PAPER END		🔽 FOWARD	
🔽 UNSELECT		🔽 REVERSE	
🔽 AUTOFEED			
		01	K Cancel Default Help

In the packet part, users can set the items and colors as users' requirements.

LPT Data Format Dialog Box

PROTOCOL ANAL	YZER LPT	SETUP: Bus	L	Σ
Configuration	Packet Data	Format Regis	ster	
🔽 Activate				
WRITE:	C Binary	C Decimal	• Hexadecimal	C ASCII
READ:	🔘 Binary	🔿 Decimal	🖲 Hexadecimal	C ASCII
ECP ACTIVE:	🔘 Binary	C Decimal	🖲 Hexadecimal	C ASCII
FOWARD:	C Binary	C Decimal	🖲 Hexadecimal	C ASCII
REVERSE :	C Binary	C Decimal	• Hexadecimal	C ASCII
			OK	Cancel Default Help

Users can set the Data Format of the WRITE, READ, ECP ACTIVE, FORWARD and REVERSE as their requirements. When selecting the option, Activate, the data formats are decided by the settings in the Module; when not selecting the option, Activate, the data formats are decided by the settings in the main program.



LPT Register Dialog Box

PROTOCOL ANALYZER LPT SETUP:	Busl 🛛 🔀
Configuration Packet Data Format	Register
Congratulation LPT decodir	ng function has been activated!
If you have questions about opera appropriate instructions below Ou	ting software please follow the
answer any questions you have.	contract support countract of suppy to
>> By phone:	Tel:886-2-66202225
>> Applications through EMail:	service_2@zeroplus.com.tw
>> Website:	http://www.zeroplus.com.tw
Copyright(C) 1997-2009 ZEROPLUS T	ECHNOLOGY CO., LTD.
	OK Cancel Default Help

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



3 Operating Instructions

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



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





2F., No.123,Jian Ba Rd, Chung Ho City, Taipei Hsien, R.O.C. Tel: 886-2-66202225 Fax: 886-2-22234362

STEP 3. For Protocol Analyzer LPT Parameters Configuration, select Protocol Analyzer, and then choose **ZEROPLUS LA LPT MODULE V1.00.00**. Next click **Parameters Configuration** to open **Configuration** dialog box.

Bus Property
General Bus Setting General Bus Color Config Activate the Latch Function Rising Analysis
Protocol Analyzer Setting
Protocol Analyzer Parameters Config
C ZEROPLUS LA IIC MODULE V2.00.01
© ZEROPLUS LA SPI MODOLE VI.10
C ZEROPLUS LA SCCB MODULE V1.00.00
C ZEROPLUS LA LPT MODULE V1.00.00
C ZEROPLUS LA LPC MODULE V1.07.00
C ZEROPLUS LA USB 1.1 MODULE V1.61.00 C ZEROPLUS LA SPI PLUS MODULE V1.00.01
✓ Use the DsDp Find
More Protocol Analyzer: http://www.zeroplus.com.tw
OK Cancel Help

STEP 4. Press Register tab to type the serial key number of LPT. Then, press Register.

PROTOCOL ANALYZER LPT SETUP:	Bus1	$\left \times \right $
Configuration Packet Data Format	Register	
The LPT protocol analyzer decodin item.Welcome to purchase its seri your necessary. Enter serial key: If you ordered software or have q please follow the appropriate ins	g function is an optional purchased al key to activate this function for uestions about ordering software tructions below.Our sales team will	
>>> By phone:	- Tel:886-2-66202225	
>> Applications through EMail:	service_20zeroplus.com.tw	
>> Website:	http://www.zeroplus.com.tw	
Copyright(C) 1997-2009 ZEROPLUS T	ECHNOLOGY CO., LTD.	
	Register Cancel Default Help	



STEP 5. Click **Parameters Configuration** again, and open the Configuration dialog box to set the parameters for the **Protocol Analyzer LPT**.



STEP 6. Set the Pin Assignment in the Configuration dialog box.

PROTOCOL ANA	LYZER LPT SE	TUP : Bus 1			
Configuration	Packet Data Fo	mat Register	1		
-Pin Assignme	nt				
DBO->DB7:	A0 💌	->	A7 💌	SELECT :	B2 💌
/STROBE:	B0 •	PE:	B2 💌	AUTOFEED:	B2 💌
/ACK:	B1 💌	SELIN:	B2 💌	/ERROR:	B2 💌
BUSY:	B2 💌	/INIT:	B2 💌		
-Protocol Ana	lyzer Property-				
LPT Mode:	SPP/PS2 💌				
-Protocol Ana	lyzer Color —				
WRIT	E READ	ACK	PAPER END	UNSELECT	AUTOFEED
INITI	AL INTERRU	PT ECP ACT	TIVE FOWARD	REVERSE	
		•••		•••	
			OK	Cancel	Default Help



STEP 7. Set the **Protocol Analyzer Property**; the default is **SPP/PS2** Mode.

PROTOCOL ANA	LYZER L	PT SETUP:	Bus 1				×		
Configuration Packet Data Format Register									
Pin Assignme	ent								
DBO->DB7:	AO	•	->	A7 💌	SELECT:	B2 💌			
/STROBE:	BO	• F	PE:	B2 💌	AUTOFEED:	B2 💌			
/ACK:	B1	• •	SELIN:	B2 💌	/ERROR:	B2 💌			
BUSY :	B2	•	'INIT:	B2 🔻					
-Protocol An: LPT Mode:	-Protocol Analyzer Property LPT Mode: SPP/PS2 -								
WRIT	ſE	READ	ACK	PAPER END	UNSELECT	AUTOFEED			
INITI	[AL	INTERRUPT	ECP ACTIVE	FOWARD	REVERSE				
	••••								
				OK	Cancel I	Default Help			

STEP 8. Set the **Protocol Analyzer Color**.

PROTOCOL ANALYZER	LPT SETUP:Bus	s 1				
Configuration Packet	Data Format Reg	;ister				
Pin Assignment						
DBO->DB7: AO	▼ ->	A7	_	SELECT:	B2	
/STROBE: BO	• PE:	B2	<u> </u>	/AUTOFEED:	B2	-
/ACK: B1	V /SEL	IN: B2	<u> </u>	/ERROR:	B2	
BUSY: B2	INI	T : B2	~			
-Protocol Analyzer	Property					
LPT Mode: SPP/	PS2 💌					
-Protocol Analyzer	Color					
WRITE	READ	ACK	PAPER END	UNSELECT	NTOFEED	
INITIAL	INTERRUPT E	CP ACTIVE	FOWARD	REVERSE		
			••••			
			OK	Cancel De	efault H	elp



2F., No.123,Jian Ba Rd, Chung Ho City, Taipei Hsien, R.O.C. Tel: 886-2-66202225 Fax: 886-2-22234362

STEP 9. Following pictures show the completion of the protocol analyzer decoding and the packet list. The trigger condition is set as Either Edge; the memory depth is 2K; the sampling frequency is 10MHZ.

Protocol	Analyz	zer D	ecoding					
🎼 ZEROPLUS I	AP-C (32128) (S/N:00	0000-0000) - [demo_SP	P.alc]				- 7 🛛
媥 <u>F</u> ile B <u>u</u> s/Si	gnal T <u>r</u> igger	Run/ <u>S</u> top	<u>D</u> ata <u>T</u> ools <u>W</u> indow Maly					_ 8 ×
🗋 😂 🖪 🖨	副 🏼 🖤	YT YT Y	🏽 🔟 🕨 🕨 🖊 2K	🔹 👬 🎁 10MHz	▼ № № 50%	▼ 🖗 🎝 Page 🚺	 Count 	- A A
۵ 🕓	🕿 📰 🥵	\$ 1	🏷 🎞 📓 🗸 1.788896u: •		🔣 💱 👪 le 🍕	🐻 🎬 🍖 Height	24 🔻 Trigger	Delay 100n
Scale: 1.788896	us	Disp	lay Pos:-3.0105ms	A Pos:8.8589ms -	A - T = 8	8.8589ms ▼	A - B = 8.8589ms	•
10tal:51.3054m	s	Disp	1ay Aange.09.44411505	B Pos:Uns ▼	B - I = (Jns 🔻	Compr-Kate.250.000	•
Bus/Signal	Trigger	Filter	-3.046278ms -3.0373	333ms -3.028389ms -3.	019444ms -3.0105ms -	-3.001555ms -2.992611	ms -2.983666ms -2.974	722ms -2. 🚅 🔷
Busi (L	PT)	\otimes	ACK	UNKNOW	PAPER END	UNKNOW 🛛	NSELECT V UNKN	OW AUT
🥒 🖌 DI	80 🗙	\otimes						
🧹 DI	B1 /	\otimes						
🖌 DI	82 / 🔣	\otimes						
🥑 DI	B3 / 🔀	\otimes						
🥑 DI	B4 / 🔀	\otimes						
🧹 DI	85 /	\otimes						
🖌 DI	86 / 🖂	\otimes						
/ DI	B7 / 🖂	\otimes						
🖌 🛐	TROB 🛛 🔻							
🖌 AC	CK F 🔀	\otimes						
— 🥖 ВІ	JSY 🖂	\otimes						
🥑 PI	в ва 🔀	\otimes						
🧹 SI	ELEC 🛛	\otimes						
FA 🔪	лтоғ	\otimes						
🧹 EI	RROR	\otimes						
/ II	ятт 🖂	\otimes						
🧹 SI	ELIN 🖂							
— 🧹 C1 C1		\otimes						
🥖 C2 C2		\otimes						
🧹 C3 C3		\otimes						~
<	> < >	<	<					>

Packet List

🎼 ZEROPLUS LAP-C	(32128)) (S/N:000	000-0000) - [d	mo_SPP.alc]						_ 7 🗙
🏂 <u>F</u> ile B <u>u</u> s/Signal	T <u>r</u> igger	Run/ <u>S</u> top <u>I</u>	ata <u>T</u> ools <u>W</u> indow	<u>H</u> elp						_ 8 ×
🗋 😂 🖪 🎒 🔍	🖉 🖗	v₽ v v		2K 🔻 👬 👬	10MHz	• nu nu 50%	💌 👫 📣 Pag	e 1	- Count 1	- 4 4
		k 🔛 🖑	1.793	149u: 🔻 👗 🎇		र 👥 👪 रह का		Height 2	4 - Trigge	er Delay 100n
Scale:1.793149us		Displa	ay Pos:-3.01082ms	A Pos:8.85	i89ms ▼	A - T =	8.8589ms -	- ,	A - B = 8.8589m	s 🔻
Total:51.3654ms		Displa	y Range:89.657437us	B Pos:Ons	-	B - T =	Ons 🖛		Compr-Rate: 250.8	308
Bus/Signal	Trigger	Filter	-3.046683ms	-3.037718ms -3.02	8752ms -3.019	786ms -3.01082ms	-3.001855ms -2	2.992889ms -	-2.983923ms -2.9	74957ms -2. 🚽 🔷
Busi (LPT)	•	🛛 🗸 🗖	ACK	i i i	VKNOW	PAPER EN	D UNKNOW	UNSE	ELECT UN	KNOW AUT
🖌 DBO /	х	\otimes								11 () () () () () () () () () (
🥒 🖉 DB1 /		\otimes								
🥖 DB2 🖇	\mathbf{X}	\otimes								
d DB3 /	\mathbf{X}	\otimes								
🥒 🥒 🖉 🖉	\square	\otimes								
🥒 DB5 🖇	\mathbf{X}	\otimes								
🖌 DB6 🖇	\mathbf{X}	\otimes								
🖋 DB7 🖇	\square	\otimes								
🖌 STROB		\otimes								~
<	< 🗐 🔊	< î > .	<	-		0				>
× Setting Refresh	Export.	Synch P	arameter							
Packet # Na	ime i	TimeStamp	WRITE							_
1 Bus1	(LPT) ·	-3.0833ms	46							
Packet # Na	ime '	FimeStamp	ACK							
Packet # Na	ame l'	TimeStamp	PAPER END							
3 Bus1	(LPT)	-3.0143ms	PAPER END							
Packet # Na	ime i	TimeStamp	UNSELECT							
4 Busi	(LPT) ·	-2.9913ms	UNSELECT							
5 Busti	ime (LPT) ·	-2.9683ms	AUTOFEED							
Packet # Na	ime i	TimeStamp	ERROR							
6 Bus1	(LPT)	-2.9453ms	ERROR							
Packet # Na	ime i	TimeStamp	INITIAL							•
Ready									End!	DEMO

16/16 Copyright © ZEROPLUS TECHNOLOGY CO., LTD. All rights reserved. Publication Release: