

# Instrument BusinessDepartment MICRO-WIRE Specification

Edition: V1.01



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## **1** Software Installation

Please Install software by the following steps.

Note: The installed steps to setup all buses are in the same, you can complete installation by following procedures.

## **STEP 1.** Install MICRO-WIRE Bus Module.



**STEP 2.** Press "Install"





#### **STEP 3.** Press "Next"



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





## **STEP 5.** Fill in user information, and then press "Next"

🙀 Special Bus Nicro wire Nodule - InstallShield Wizard	×
Customer Information Please enter your information.	
User Name:	
Maikle	
Organization:	
logic	
Install this application for: <u>A</u> nyone who uses this computer (all users)	
C Only for me (Maikle)	
InstallShield	Cancel

## **STEP 6.** Select "Complete" option and then, press "Next"

🛃 Special Bus	Nicro wire Nodule - InstallShield Nizard 🗙
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.)
C 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.** Press Install to start install program.



#### **STEP 8.** Press "Finish" to complete installation.





## 2 User Interface

Please refer to image below to select options of setting MICRO-WIRE .

#### MICRO-WIRE Setup Dialog Box fro Bus 1

SPECIAL BUS MICRO-WIRE SETUP:Bus1	
Configure Packet Item Register	
Bus Setting	
-Micro-wire	Data Follow
Data Channel д 💌	Follow MSB -> LSB
SLK Channel AO 💌	
Color	Custom Setting
SS Setting Active	
SS Channel A1	
ОК	Cancel Default Help

#### MICROWIRE Channel Options

SLK Channel: The default is A1.

Data Channel: The default is A2.

SS Channel: Select SS, the default is AO.

#### Data Follow Setup

The default is MSB->LSB; it can be selected as LSB->MSB.

#### **Bus Color**

The default color is Green

#### **Custom Setting**

Difference between the definition and SPI is that it is unnecessary to identify a bit due to the uncertain MICRO WIRE bits. All bits can be decoded. User can define the value as his own requirement.

Moreover, the virtual SS bus can proceed decode issues caused from the reason without SS bus.



cro-vire	Custom Setting		
-Select Devi	ce Level		
C High	SS enable level = Low		
• Low			
-Victure SS (	Condition		 
Idling Time	5	ns	ОК
Min : 5ns	J.	Max : 327.675us	Cancel
			Default

## MICRO-WIRE Package Dialog Box

SPECIAL	BUS <b>HICR</b>	O-VIRE S	ETUP:Bus1			
Configure	Packet It	tem Registe	er			
Iter	n	Color				
	ata		• • •			
			OK	Cancel	Default	Help
T. O	•		. 1	. 1		

Item: Select "DATA" to change the package color.

Color: This option changes the color of the package. The default color shown on the button is green. Click the color to select another color.



## MICRO-WIRE Register (For Free Version)

SPECIAL BUS MICRO-VIRE SETUP:Bus1	$\times$		
Configure Packet Item Register			
free use of the Analy Micro-wire!			
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 EMailservice_2@zeroplus.com.tw			
>>Website: http://www.zeroplus.com.tw			
Copyright(C) 1997-2007 ZEROPLUS TECHNOLOGY CO;LTD			
OK Cancel Default Help			



## **3 Op**erating Instructions

#### **STEP 1.** At First, group the unanalyzed channels into bus1



**STEP 2.** Selected Bus 1, then, press "Right Key" on mouse to list menu. Next, click" Bus Property" to open Bus Property Dialog Box.





**STEP 3.** For Special Bus Setting, select Special Bus . Then , choose "ZEROPLUS LA MICRO-WIRE MODULE V1.01(Internal Build). Next, click "Parameters Configuration".

Bus Property 🛛 🗙				
General Bus Setting	Color Config			
Special Bus Setting	Parameters Config			
<ul> <li>ZEROPLUS LA SSI MODULE V1.01(Internal Build)</li> <li>ZEROPLUS LA Manchester MODULE V1.0(Inernal Build)</li> <li>ZEROPLUS LA PS2 MODULE V1.01</li> <li>ZEROPLUS LA IIC MODULE V1.01</li> <li>ZEROPLUS LA IIS MODULE V1.01</li> <li>ZEROPLUS LA IS MODULE V1.01</li> <li>ZEROPLUS LA IS MODULE V1.01</li> </ul>				
C ZEROPLUS LA S/PDIE MODULE V1.1(Internal Baild) C ZEROPLUS LA SPI MODULE V1.03				
Other More Module: http://www.zerople	us.com.tw Cancel Help			

**STEP 4.** Register user information: type the serial key number of logic analyzer. Then, press "Register"

SPECIAL BUS MICRO-WIRE SETUP:Busi	X		
Configure Packet Item Register			
The MICRO WIRE bus decoding function is optional purchased item. Welcome to purchase it's serial key to activate this function for your necessary.			
Enter serial key:			
If you ordered software or have questions about ordering software please follow the appropriate instructions below.Our sales team will respond to your enquiry as soon as possible.			
>> By phone Tel:886-2-66202225			
>> Applications through EMail service_2@zeroplus.com.tw			
>> Website: http://www.zeroplus.com.tw			
Copyright(C) 1997-2007 ZEROPLUS TECHNOLOGY CO;LTD			
Register Cancel Default Help	,		



**STEP 5.** After completing it turns to Bus Property dialogue box. Pressing "Paraneter Configuration" is to set up the parameter of special bus.

Bus Property 🔀					
General Bus Setting					
C GENERAL BUS	Color Conrig				
- Special Bus Setting					
	Parameters Config				
- Si Echie Dos					
C ZEROPLUS LA HDQ MODULE V1.0	~				
C ZEROPLUS LA 1-Wire MODULE V1.0	2				
C ZEROPLUS LA CANBus MODULE V1.	02				
C ZEROPLUS LA HDQ MODULE V1.01					
C ZEROPLUS LA IIC MODULE V1.01					
C ZEROPLUS LA IIS MODULE V1.01					
ZEROPLUS LA LPC MODULE V1.00(I ZEROPLUS LA MICRO WIDE MODULI	E VI. 01/Jeternal Ruild)				
ZEROPLUS LA MICRO-WIRE MODULE VI-UI (Internal Build)					
☑ Use the DsDp					
Other More Module: http://www.zeroplus.com.tw					
OK Cancel Help					

**STEP 6.** At First, select the channels for Data, SKL and SS )

SPECIAL BUS HICRO-VIRE SETUP:Bus1	×
Configure Packet Item Register Bus Setting Micro-wire Data Channel A2 SLK Channel A0 Color Color Custom Setting SS Setting Active SS Channel A1 T	
OK Cancel Default Help	



#### **STEP 7.** Starting decoding after ensuring the follow direction.

SPECIAL BUS MICRO-WIRE SETUP:Bus1	
Configure Packet Item Register Bus Setting Micro-wire Data Channel A2 SLK Channel A0 Color	Data Follow Follow Custom Setting
SS Setting Active SS Channel A1	



## **STEP 8.** When SS setting is unnecessary, please remove Active option. Then, press "Custom Setting".

SPECIAL BUS MICRO-WIRE SETUP:Busi	2	×
Configure Packet Item Register Bus Setting Data Channel A2 SLK Channel A0 Color	Data Follow Follow MSB -> LSB Custom Setting	
SS Setting Active SS Channel A1	Cancel Default Help	

## **STEP 9.**Custom Setting

Setting standby time. We suggest the duration is longer than CLK. Press "OK" to complete setting.

Micro-wire Custom Setting	
Select Device Level         Image: High S5 enable level = Low         Image: Low         Victure S5 Condition         Idling Time         Image: Min : 5ns         Max : 327.675us	OK Cancel Default



## **STEP 10.** Press "OK" to start decoding.

SPECIAL BUS MICRO-WIRE SETUP:Bus1	
Configure   Packet Item   Register   Bus Setting	
Micro-wire Data Channel A2	Follow MSB -> LSB
SLK Channel A0	Custom Setting
Active	
SS Channel	
OK	Cancel Default Help

**STEP 11.** Following picture shows that the completion of bus decoding. The conditions are set as that Low lever Trigger on SS(A0), Memory depth is 1M( If you use logic Analyzer type: LAP-16128 or LAP-32128, please set memory depth as 128K) and Sampling Frequency is 200MHz.

🝓 ZEROPLUS LAP-	3210000	▲ (S/N: 0	(2000-0000) -	[microwire1.02-8]			
🀔 <u>f</u> i e B <u>u</u> s/Nignal	l' <u>n</u> igger	Kum∕Stop	<u>Lata Torls M</u> indo	v <u>H</u> sin	$\frown$		
🗋 🗭 🔚 🚔 🖉	i, 🔍 🂱	🌾 👯 •	🏽 🔟 🕨 🕨 🗉	📔 🙀 16K 💌 👪 斗 21	UUMHz 💌 🗝 🏘	• <b>±U% - +</b> ⊁ Page	- Count 1 -
1 🚯 🔝	III 🥵	R 😽 🖑	") 🖬 📲 📲	359.244ma 🖌 🙀 🔐	Bar Bar Bar 100 14	🌖  📆 🔮 👳 🛛 Height	- 28 - Trigger Delay 5r
Scale: 359, 244ns		Displ	lay Pos 9 295us	& Pos: -C35, 915us	💌 à -	7 = 35 915as 🔻	A - B = 15Cns 💌
Total:01.92cs Trig			ger Pvs Ois	B PosC35.785us	▼ 1-	7 - 35 735as <del>v</del>	Compr Bate:Ho
bus/Signal	Trigge	Enable	2. 11 jus	. 3.907cs . 5.703as	7.499us 9.295ts	; 11.)92us 12.888u	s 14.684us 16.48us 18 2
Bus/Signal —— Busl MICEO-WIF	Triggen •	Enable	2. 11 Jus EATA : 0X	3.907cs 5.703us .	7. 499as 9. 295ts DATA : CXC7	, 11.)92us 12.8881 DATA : 0×3	s 14.684us 16.48us 182 F CATA : 0X3F 0
Dus/Signal 	Trigger	Enable V	2. 11 Jus EATA : 0X	3.907cs 5.733as	7. 499us 9. 295ts DATA : CKC7	:, 11.)92us, 12.8881 7 DATA : 0×3	s 14.584us 15.48us 18.7 F CATA : 0X3F
Bus/Signal Bus! MICEO-WIF ss MO slk Al	Trigger	Enable V	CATA : 0×	, 3.907, s, 5.733, s, , 01		11.,392us 12.,888 CXO : ATAO CXO : CXO	s 14.584us 15.48us ; 8.7 F CATA : 0x3F



## Following picture shows the package list and waveforms displaying.

8	December 2287091US LAP-16128U (S/M:00000000323) - [M W_16128]											
🚛 File BysSignal Trigger RunStop Data Iools Window Help 📃 🗗 🗙												
	) 差 🖪 🎒	M, 🔍 🌳	¢₽ ΥT γ <sup>™</sup>		■ 🖊 🖬 🔳	6K 💌 👫 📶	200MHz 🔽 🗖	<sup>™</sup> ∮ 50%	🔽 📣 Page	1 🔹	Count 1	-
1		x III / /	R Display	🗰 🛛 🗃 🖌 🦾 Pos:158.753us	9.922us	▼ <sup>𝔐</sup> <sub>𝑘</sub> = A A Pos:-001.291ms	¥ B¥ T¥ +¥ j r Bar Bar Bar j	A - T = 1.29	😿 😬 🔶 H 1ms 🖃	leight 28	<ul> <li>▼ Trigger I</li> <li>B = 600ns</li> </ul>	Delay 20ns
	Total:2.621ms		Trigger	Pos:Ons		B Pos:-001.29ms	<b> </b>	B - T = 1.29	ms 🚽	Con	npr-Rate:No	
E	Bus/Signal	Trigger	Enable	-039.688us	9.922u	s 59.532us	109.143us 1	58.753us 2	08.363us 25	7.974us 307.5	84us 357.1	94us 406. <mark>80</mark> 🏠
E	Busi (M	ICR		UNI		A 0×65	0×72	0×6F	0X70	0×60	0×75	0×73
	🖌 🖌	A( 🛛 🕂	× •		1000							
	🥖 A1	. A: 🔨										
	🥖 A2	2 A.										
<			<									>
×	Setting	lash										
	Packet #	Nam	e	TimeStamp	DATA							<b></b>
	1	Bus1(MICRO	D-WIRE)	Ons	0X7A							
	Packet #	Nam	е	TimeStamp	DATA							
	2	Bus1(MICR(	D-WIRE)	53.24us	0X65							
	Packet #	Nam	е	TimeStamp	DATA							
	3	Bus1(MICR(	D-WIRE)	106.44us	0X72							
	Packet #	Nam	e	TimeStamp	DATA							
	4	Bus1(MICR(	D-WIRE)	159.62us	0X6F							
	Packet #	Nam	e	TimeStamp	DATA							
	5	Bus1(MICRO	D-WIRE)	212.88us	0X70							
	Packet #	Nam	e	TimeStamp	DATA							
	6	Bus1(MICR(	D-WIRE)	266.06us	0X6C							
												•
Re	ady										End!	Normal