



**孕龍科技股份有限公司**  
**Zeroplus Technology Co., Ltd.**

# SPECIFICATION

**MODEL: 030-LAP-PCM-M**

**PART NO :** \_\_\_\_\_

**VERSION :** V1.21

Approver		Check	Design
GM	PM		

Customer Confirm

\* Please fax the file to  
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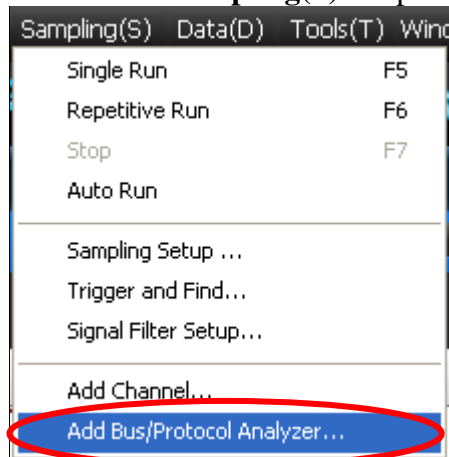
## 1 Software Register

Please register the software as the following steps:

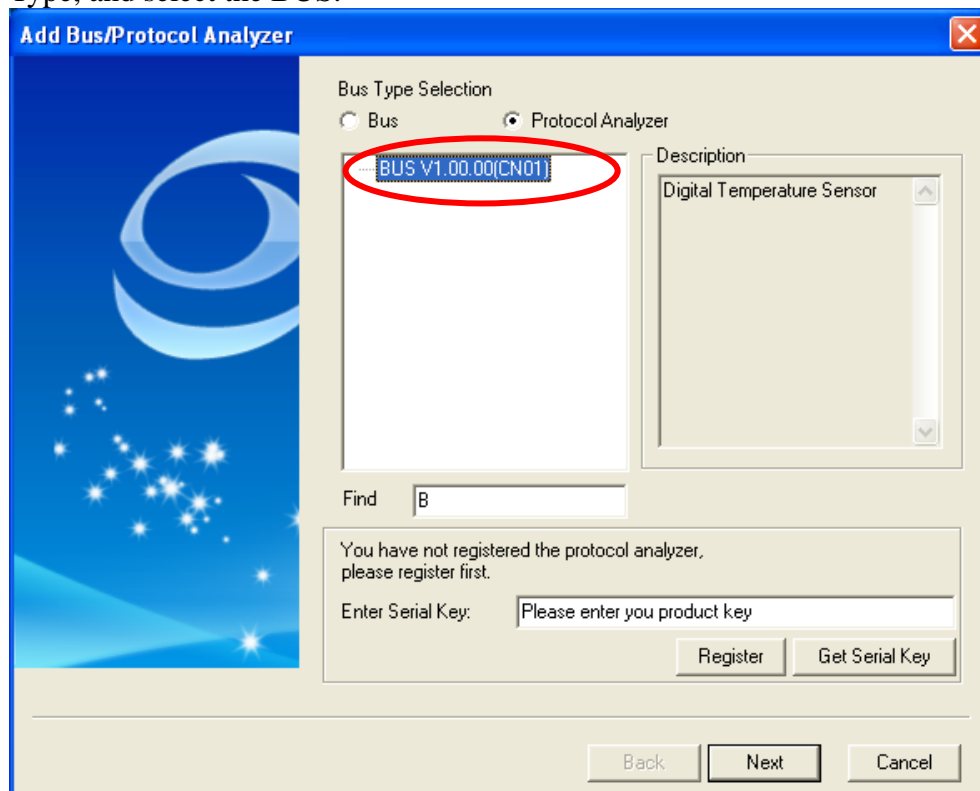
※ Remark1: The registration steps for all protocol analyzers are the same; you can complete the registration by following procedures. Following is an example on how to register the Protocol Analyzer BUS.

※ Remark2: 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 1.** Open the Logic Analyzer and select the **Add Bus/Protocol Analyzer** item on the pull-down menu of the **Sampling(S)** to open the **Add Bus/Protocol Analyzer** dialog box.

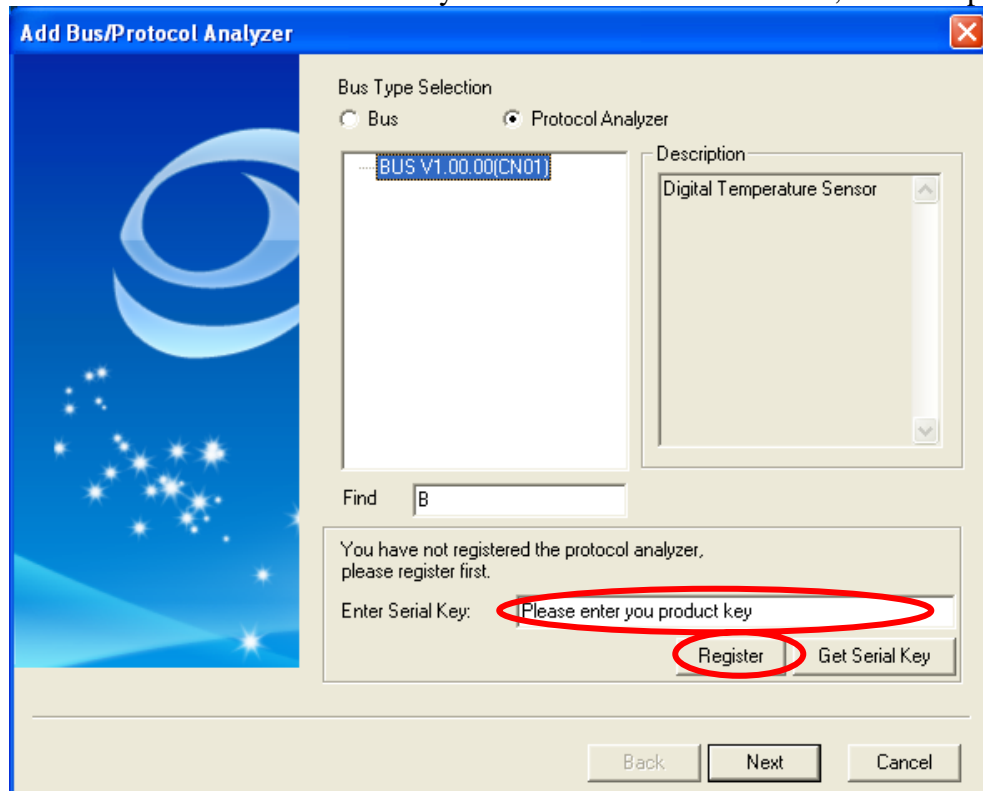


**STEP 2.** Select Protocol Analyzer item in the Add Bus/Protocol Analyzer dialog box, expand the Other Type, and select the BUS.

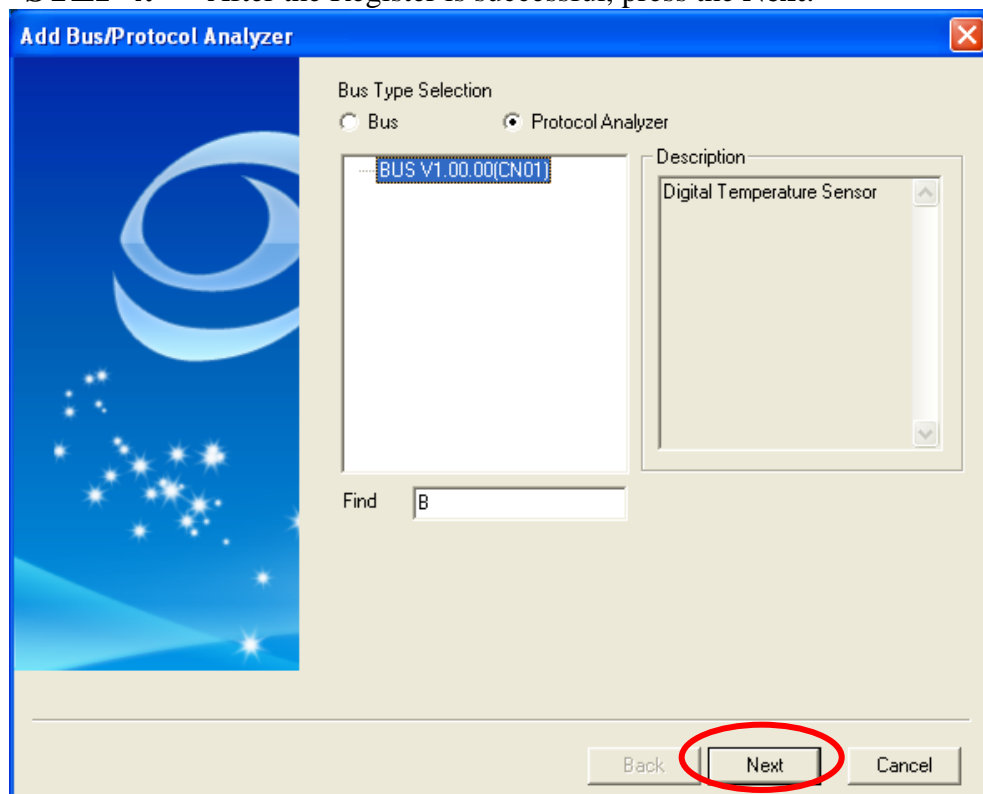




**STEP 3.** Enter the Serial Key of the BUS under this Model, and then press the **Register**.



**STEP 4.** After the Register is successful, press the **Next**.





## 2 User Interface

Please refer to the below image to select options of setting PCM Module.

**PROTOCOL ANALYZER PCM**

**Pin Assignment**

SCLK: A0 DT: A2  
FS: A1 DR: A2

**Protocol Analyzer Property**

Data Length: 8 Bit Short Frame Space: 0 Bit  
Byte Count: Default Byte Sampling Mode: Falling  
Long Frame Space: 0 Bit Transmission Direction: MSB->LSB

**Protocol Analyzer Format**

Item	Color	Data Format	Item	Color	Data Format
DT	[Green Box]	Default	Space	[Green Box]	Default
DR	[Pink Box]	Default			

Default Back Next Cancel

### Pin Assignment:

**SCLK:** It is the Frequency channel, the default is A0.

**FS:** It is the Synchron channel, the default is A1.

**DR/DT:** It is the Data channel, the default is A2.

### Protocol Analyzer Property:

**Data Length:** The max value of **Data Length** is 56 Bit.

**Byte Count:** The max value of **Byte Count** is 128 Byte.

**Long Frame Space:** The max value of **Long Frame Space** is 255 Bit.

**Short Frame Space:** The max value of **Short Frame Space** is 255 Bit.

**Sampling Mode:** Users can set Rising or Falling as the sampling mode for **SCLK**.

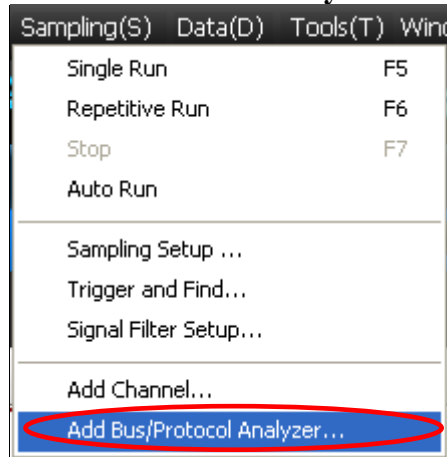
**Transmission Direction:** Users can set MSB->LSB or LSB->MSB as the transmission direction.

**Protocol Analyzer Format:** Users can set the color of the packet as their requirements. The Items (DT, DR) can be set as Binary, Decimal, Hexadecimal, ASCII or Default. And the Data Format of the Items (DT, DR) in the Waveform Display Area and Packet List is controlled by the Protocol Analyzer. The default Data Format is controlled by the main program and the Data Format of the Item is the Default.

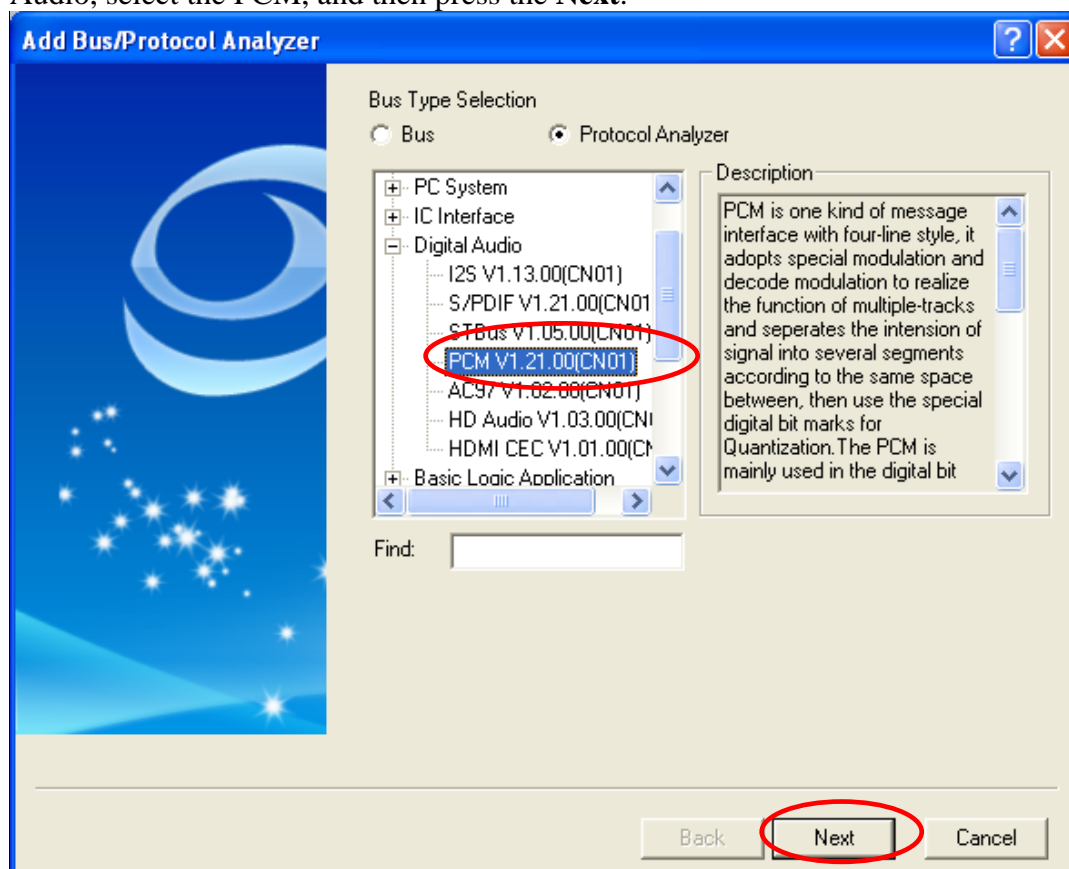


### 3. Operating Instructions

**STEP 1.** Select the **Add Bus/Protocol Analyzer** item on the pulldown menu of the **Sampling(S)** to open the **Add Bus/Protocol Analyzer** dialog box.



**STEP 2.** Select the Protocol Analyzer item in the Add Bus/Protocol Analyzer dialog box, expand the Digital Audio, select the PCM, and then press the **Next**.





### STEP 3. Set the Pin Assignment.

**PROTOCOL ANALYZER PCM**

**Pin Assignment**

SCLK: A0 DT: A2  
FS: A1 DR: A2

**Protocol Analyzer Property**

Data Length: 8 Bit Short Frame Space: 0 Bit  
Byte Count: Default Byte Sampling Mode: Falling  
Long Frame Space: 0 Bit Transmission Direction: MSB->LSB

**Protocol Analyzer Format**

Item	Color	Data Format	Item	Color	Data Format
DT	Green	Default	Space	Green	Default
DR	Pink	Default			

Default Back Next Cancel

### STEP 4. Set the Protocol Analyzer Property.

**PROTOCOL ANALYZER PCM**

**Pin Assignment**

SCLK: A0 DT: A2  
FS: A1 DR: A2

**Protocol Analyzer Property**

Data Length: 8 Bit Short Frame Space: 0 Bit  
Byte Count: Default Byte Sampling Mode: Falling  
Long Frame Space: 0 Bit Transmission Direction: MSB->LSB

**Protocol Analyzer Format**

Item	Color	Data Format	Item	Color	Data Format
DT	Green	Default	Space	Green	Default
DR	Pink	Default			

Default Back Next Cancel



## STEP 5. Set the Protocol Analyzer Format.

**PROTOCOL ANALYZER PCM**

**Pin Assignment**

SCLK: A0 DT: A2  
FS: A1 DR: A2

**Protocol Analyzer Property**

Data Length: 8 Bit Short Frame Space: 0 Bit  
Byte Count: Default Byte Sampling Mode: Falling  
Long Frame Space: 0 Bit Transmission Direction: MSB->LSB

**Protocol Analyzer Format**

Item	Color	Data Format	Item	Color	Data Format
DT		Default	Space		Default
DR		Default			

Default Back Next Cancel

## STEP 6. Press the Next to finish all settings.

**PROTOCOL ANALYZER PCM**

**Pin Assignment**

SCLK: A0 DT: A2  
FS: A1 DR: A2

**Protocol Analyzer Property**

Data Length: 8 Bit Short Frame Space: 0 Bit  
Byte Count: Default Byte Sampling Mode: Falling  
Long Frame Space: 0 Bit Transmission Direction: MSB->LSB

**Protocol Analyzer Format**

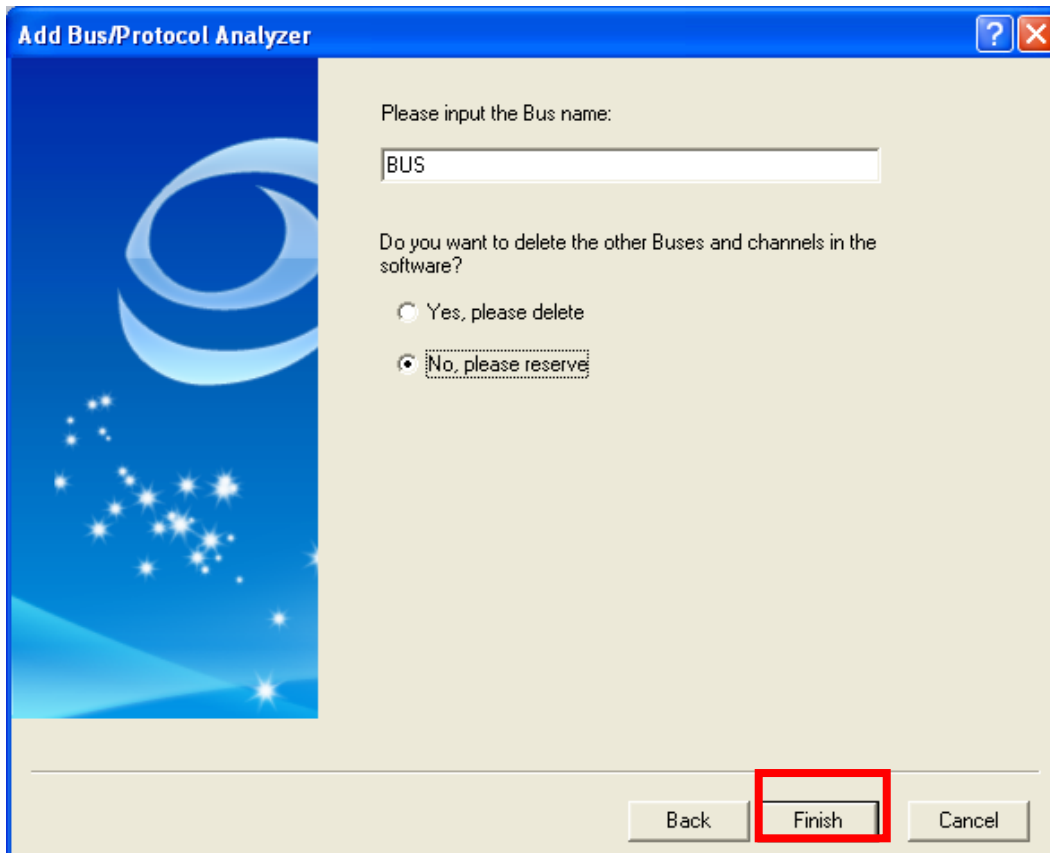
Item	Color	Data Format	Item	Color	Data Format
DT		Default	Space		Default
DR		Default			

Default Back **Next** Cancel



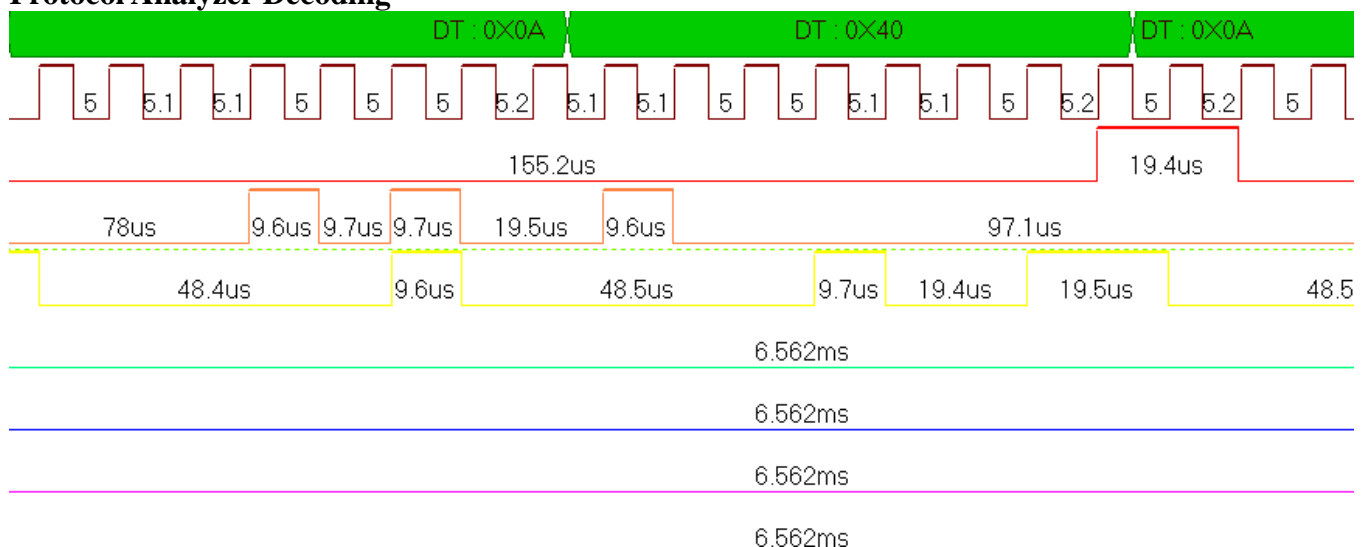


**STEP 7.** Please enter the Bus Name, select **Yes, please delete** or **No, please reserve** and then press **Finish**.



**STEP 8.** Following pictures show the completion of the protocol analyzer decoding and packet list. The trigger condition is set as Either Edge; the memory depth is 128K; the sampling frequency is 10MHz. (the sampling frequency should be more than 4 times higher than the signal to be tested.)

### Protocol Analyzer Decoding





## Packet List

Navigator			
Packet List			
Statistics			
Memory Analyzer			
Packet #	Name	TimeStamp	DT
1	Bus1(PCM)	0.0823ms	1BYTES
Packet #	Name	TimeStamp	DT
2	Bus1(PCM)	0.1796ms	2BYTES
Packet #	Name	TimeStamp	DT
3	Bus1(PCM)	0.3348ms	4BYTES
Packet #	Name	TimeStamp	DT
4	Bus1(PCM)	0.6453ms	3BYTES
Ready		End!	DEMO