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

SPECIFICATION

MODEL: B08018-LAP-PMBus 1.1-M

PART NO： _____

VERSION： V1.13

Approver		Check	Design
GM	**PM**		

Customer Confirm

＊Please fax the file to Zeroplus Technology after signing.

Content

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 Channel/Bus** item on the pull-down menu of the **Sampling(S)** to open the **Add Channel/Bus** dialog box.

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

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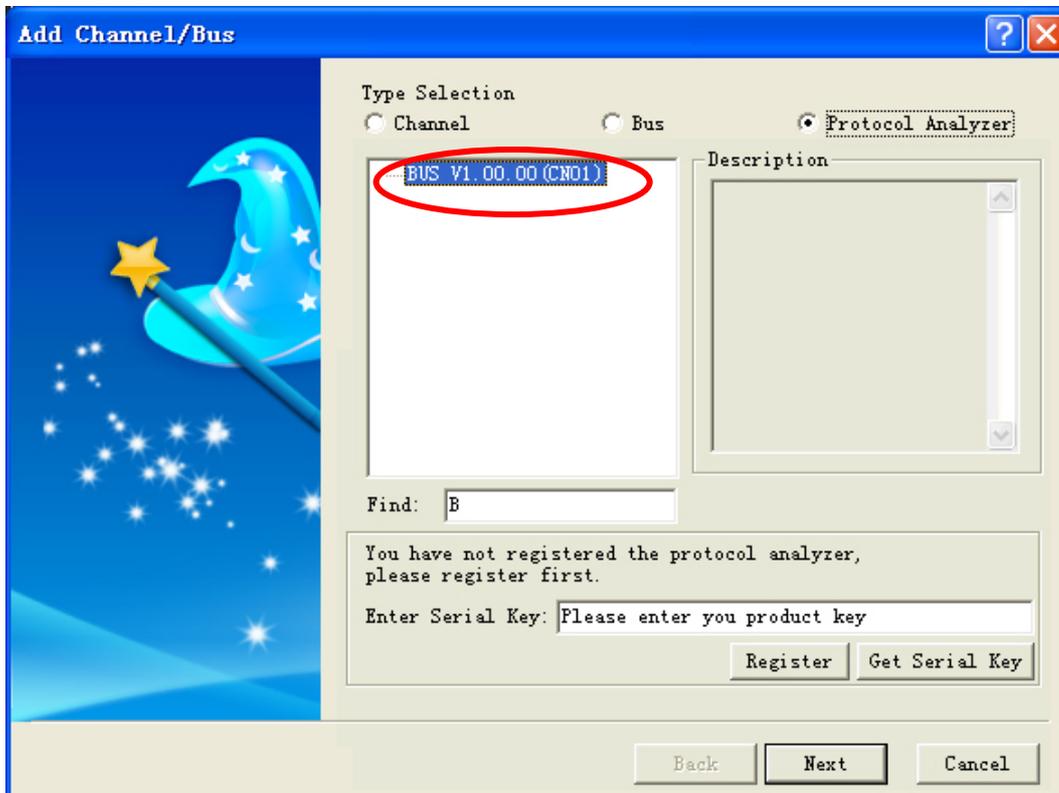
STEP 3.　　Enter the Serial Key of the BUS under this Model, and then press the **Register**.
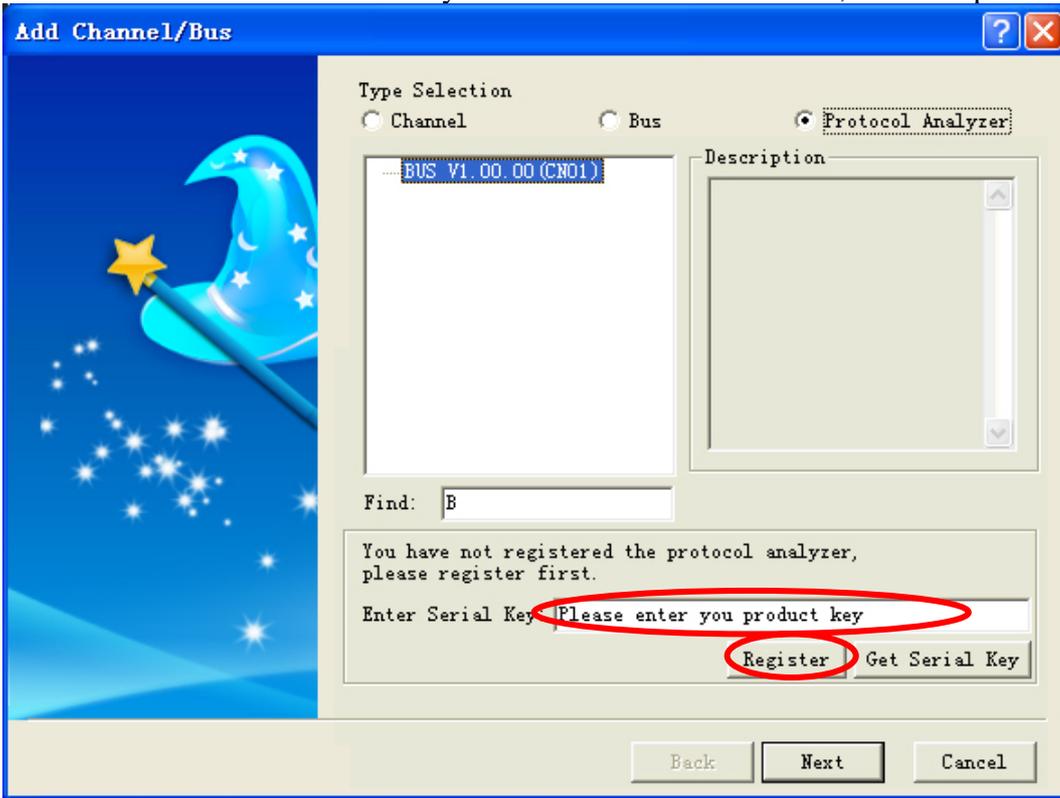
STEP 4.　　After the Register is successful, press the Next.

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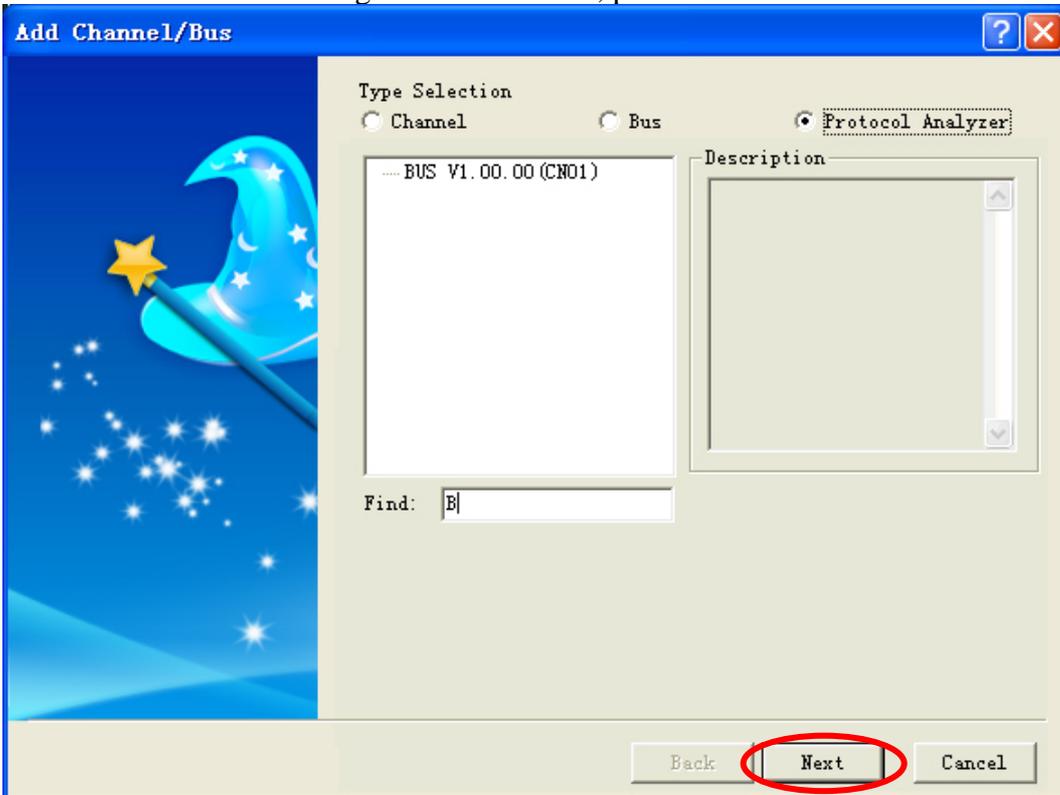
2 User Interface

Please refer to the below image to select options of setting PMBus 1.1 Module.
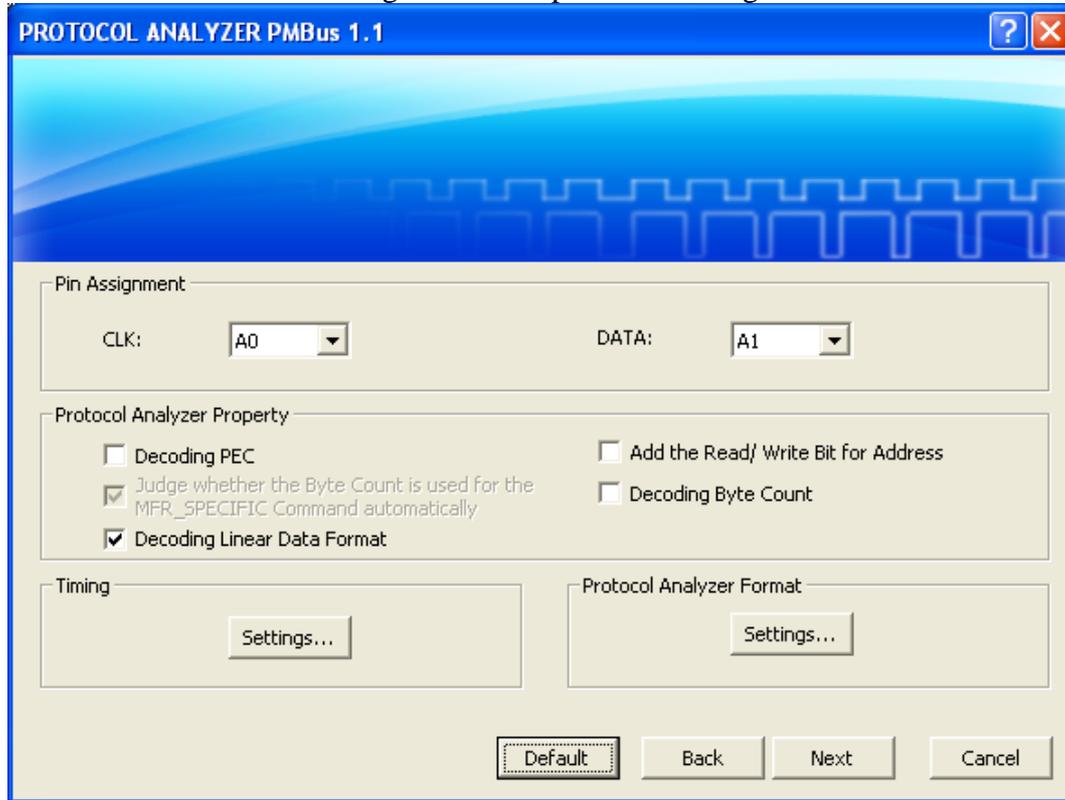
Pin Assignment: Set the channels accordingly. The CLK is Clock signal line, the default is A0; the DATA is the Data Transmission signal line, the default is A1.

Protocol Analyzer Property:

Decoding PEC: Users can choose to select this item or not as their requirements. If the Decoding PEC is selected, if there are some MFR-SPECIFIC commands to be decoded, since the Byte Count is used to indicate the byte length of BLOCK and not used to calculate PEC, so it is unnecessary to make some special treatment.

Judge whether the Byte Count is used for the MFR_SPECIFIC Command automatically: Generally, we don't decode the PEC in MFR-SPECIFIC command, because we have no way to judge whether Byte Count exists or not. But if there is the PEC Parity, we can identify whether MFR_SPECIFIC is in BLOCK type or not according to the comparison between the Byte Count and the Data byte length and the correct or incorrect PEC, which means that only the Byte Count matches with byte length of Data and PEC is correct when decoding the MFR SPECIFIC is considered as BLOCK, or MFR_SPECIFIC will not be considered as BLOCK; and PEC Parity will be done again, no matter it is correct or not. The error rate of this decoding way is the same with the error rate of PEC Parity. This item is activated only when the PEC and the Decoding Byte Count are both selected, and it is selected by default.

Decoding Byte Count: Byte Count can be decoded only when this item is selected, or only Data can be decoded.

Add the Read/Write Bit for Address: When displaying the Address, the original Address will move to left for one bit and add the R/W bit. See below image: the original Address is 0001011, and it becomes 00010110 after moving to left for one bit and adding the Write bit, or becomes 00010111 after adding the Read bit.

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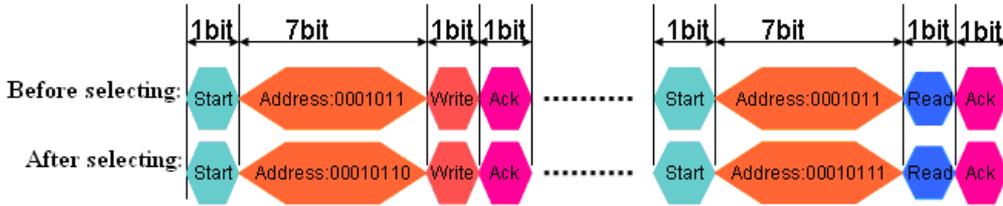
Decoding Linear Data Format: If this option is selected, the behind two bytes will de decoded to one Linear Data Format packet. The X value that calculated according to the two bytes will be displayed on the packet. The ACK is not dealt.

PMBus 1.1 Timing Dialog Box
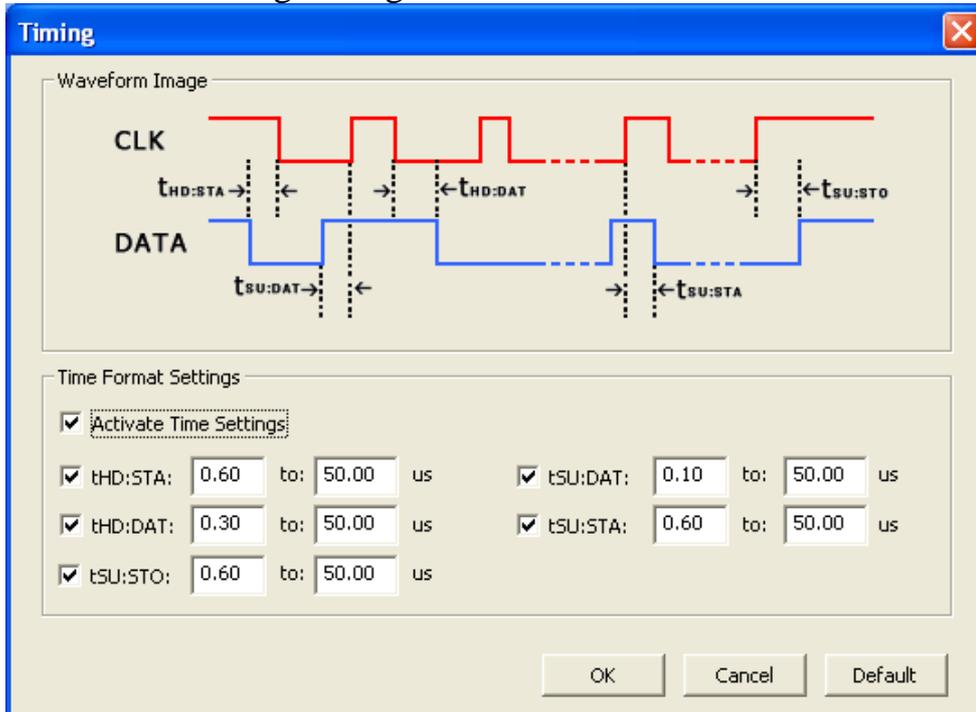
Waveform Image: It is used to show the position for the set time.

Time Format Setting: When the Activate Time Settings is selected, the set time will become the condition for decoding judgment. For example in START decoding, it will judge first whether the condition of START is met or not, and then judge whether the set time of tHD: STA matches with the actual waveform, if both are met, START can be decoded. Other packets are the same.

Protocol Analyzer Format: Users can set the color of the packet as their requirements. The Items (Data, Address, Command, PEC, Byte Count) can be set as Binary, Decimal, Hexadecimal, ASCII or Default. And the Data Format of the Items (Data, Address, Command, PEC, Byte Count) 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.

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Protocol Analyzer Format

| Item	Color	Data Format	Item	Color	Data Format
Start		Default	PEC		Default
Read		Default	Write		Default
Data		Default	Byte Count		Default
Address		Default	Stop		Default
Command		Default	NACK		Default
ACK		Default	Linear Data Format		Decimal

OK   Cancel   Default

3.   Operating Instructions

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

STEP 2.   Select the Protocol Analyzer item in the Add Channel/Bus dialog box, expand the Power, select the PMBus 1.1, and then press the **Next**.

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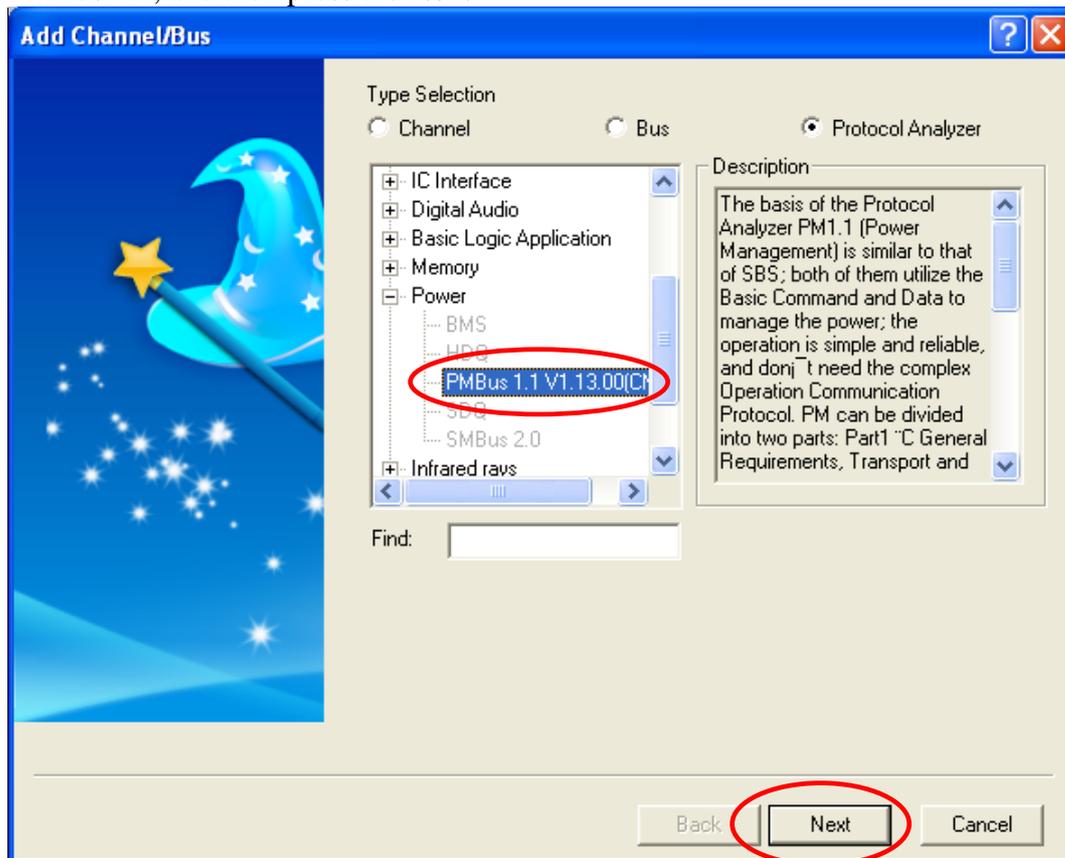
STEP 3.　Set the Pin Assignment.
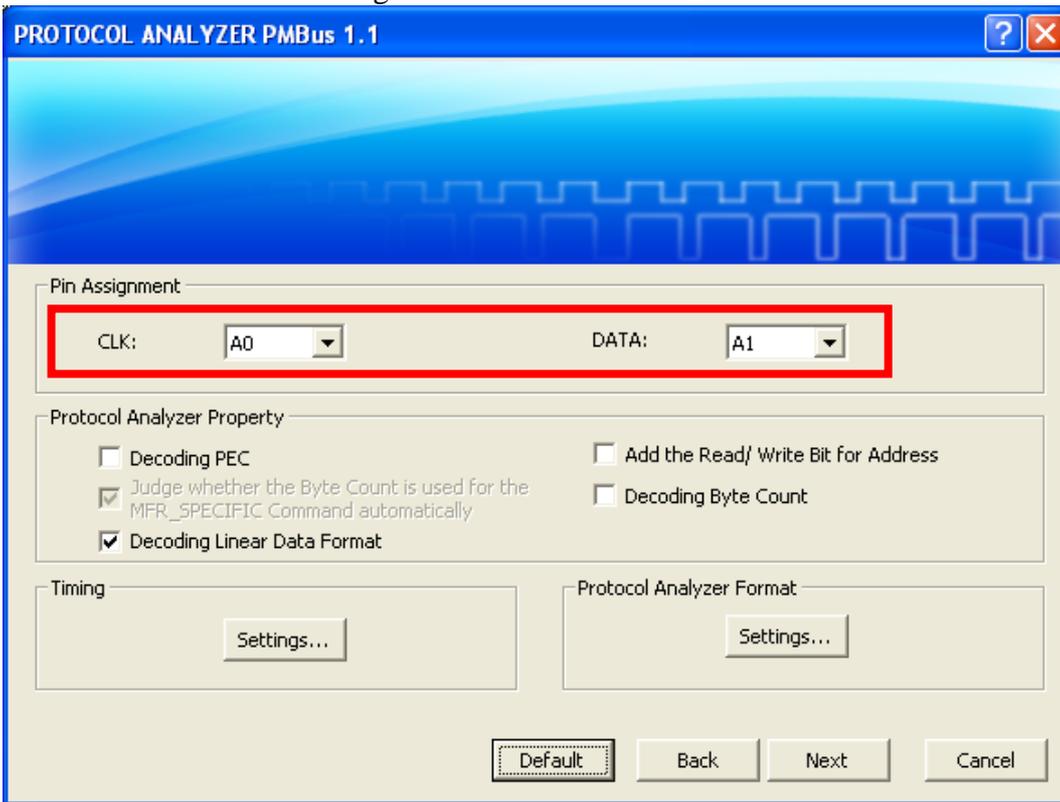
STEP 4.　Set the Protocol Analyzer Property.

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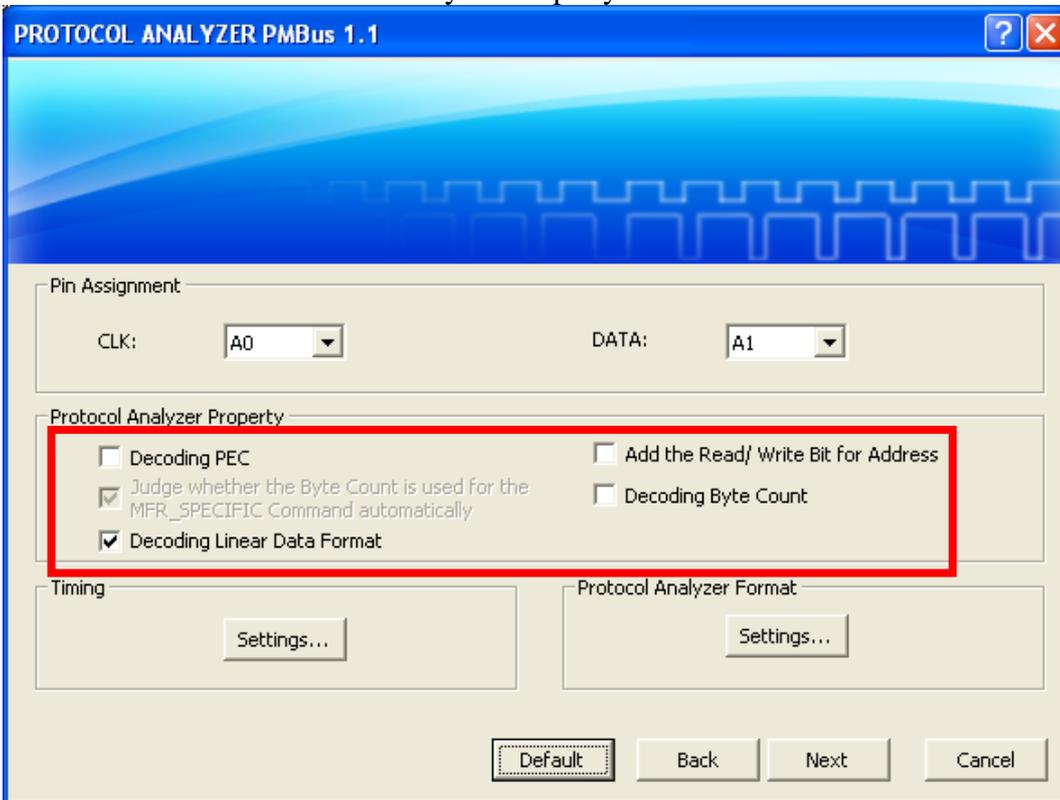
STEP 5. Click the left Settings to set the Timing.
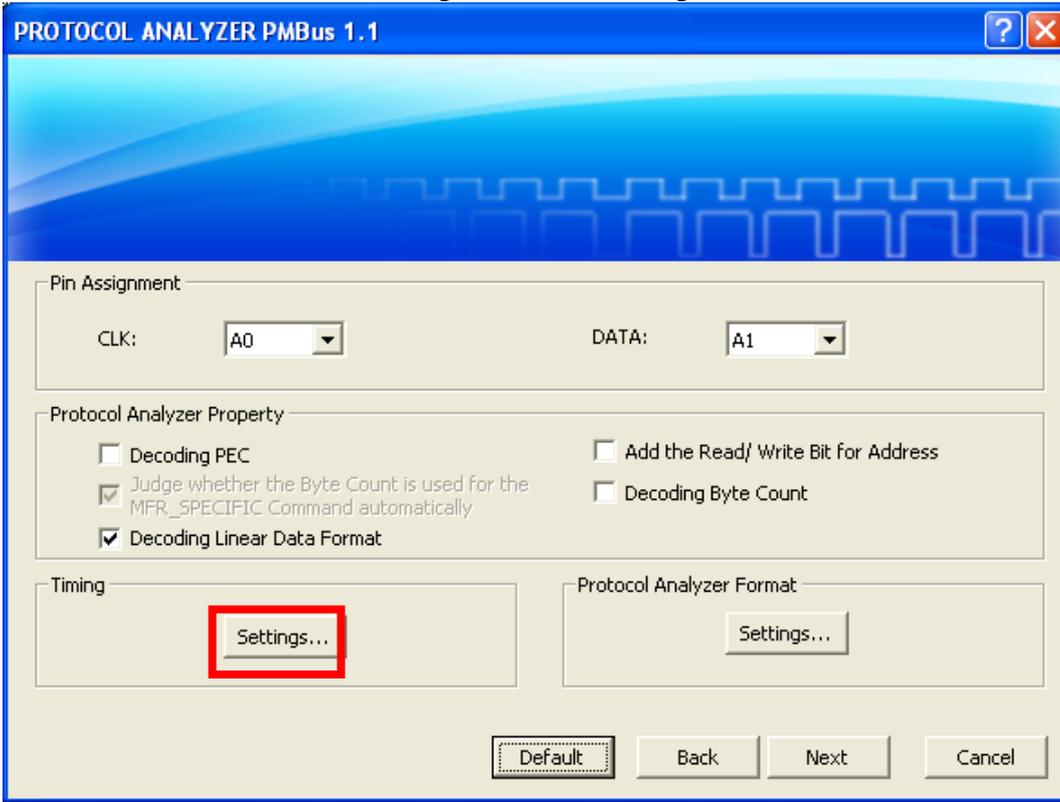
STEP 6. Click the right Settings to set the Protocol Analyzer Format.

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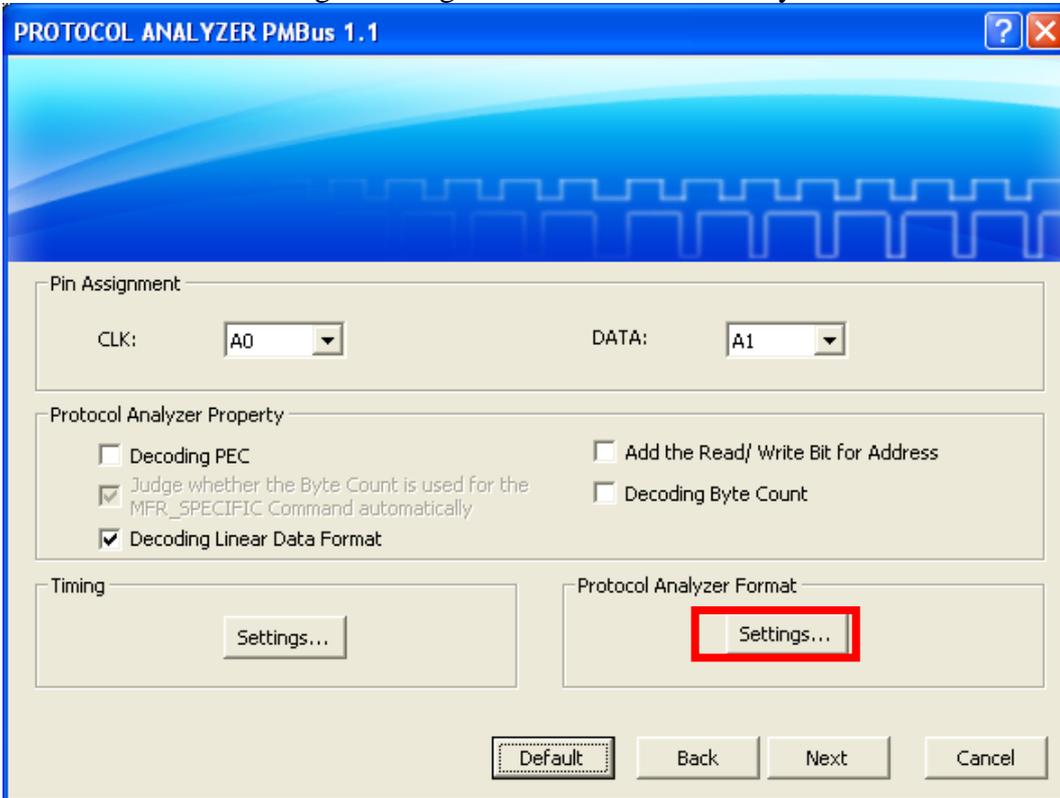
**STEP 7.**   Press the **Next** to finish all settings.
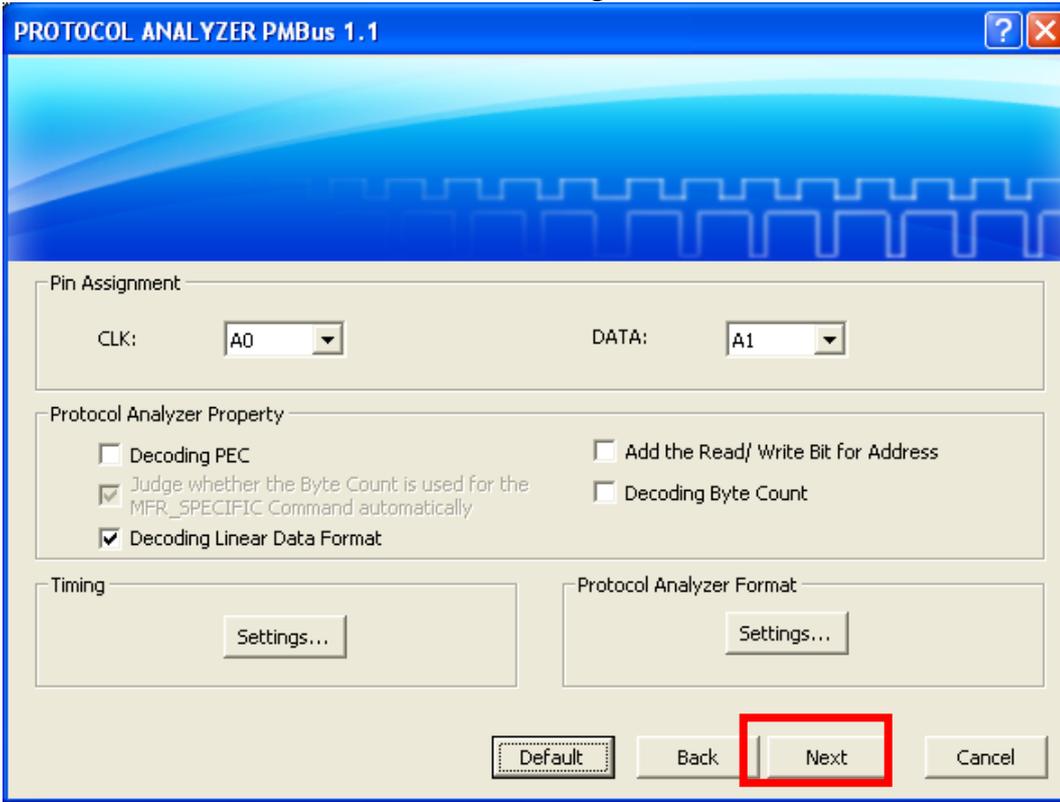
STEP 8.   Please enter the Bus Name, select **Yes, please delete** or **No, please reserve** and then press **Finish**.
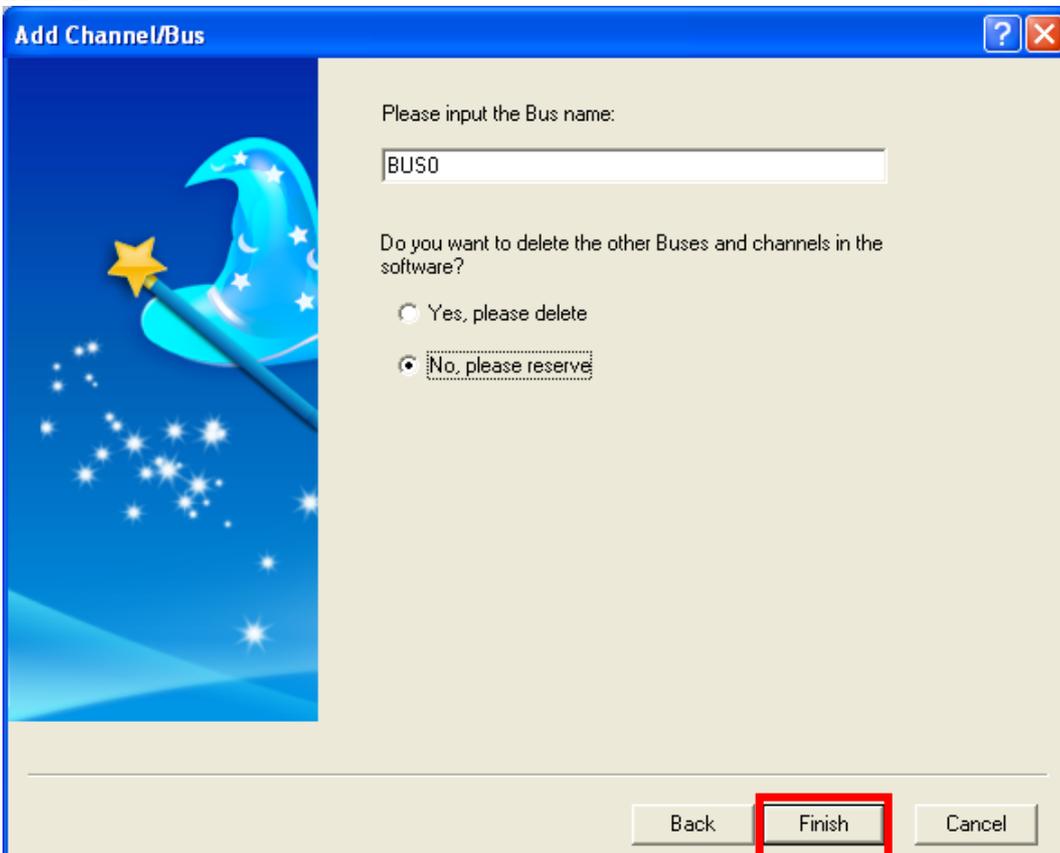
STEP 9. Following pictures show the completion of the protocol analyzer decoding and packet list. The trigger condition is set as Rising Edge; the memory depth is 256K; the sampling frequency is 10MHz. (the sampling frequency should be more than 8 times higher than the signal to be tested.)

Protocol Analyzer Decoding
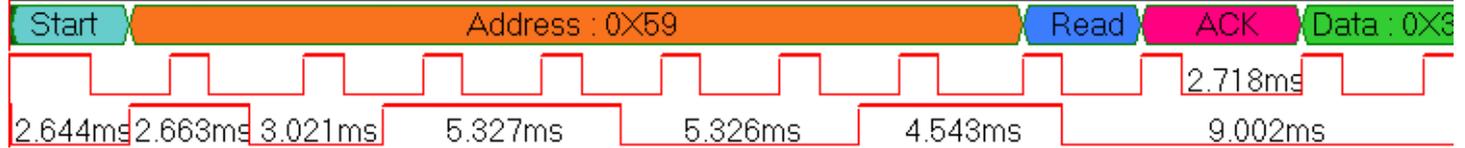
Packet List

Packet #	Name	TimeStamp	Start	Address	Read	ACK	Data	ACK	Data	NACK	Stop
1	New0(PMBus 1.1)	22.71ms	Start	0X59	Read	ACK	0X33	ACK	0X00	NACK	Stop

Packet #	Name	TimeStamp	Start	Address	Write	ACK	Read_Fan_Speed_1		ACK	Stop
2	New0(PMBus 1.1)	113.071ms	Start	0X59	Write	ACK	0X90		ACK	Stop

Packet #	Name	TimeStamp	Start	Address	Read	ACK	Data	ACK	Data	NACK	Stop
3	New0(PMBus 1.1)	168.772ms	Start	0X59	Read	ACK	0XE1	ACK	0X22	NACK	Stop

Packet #	Name	TimeStamp	Start	Address	Write	ACK	Read_Fan_Speed_2		ACK	Stop
4	New0(PMBus 1.1)	256.819ms	Start	0X59	Write	ACK	0X91		ACK	Stop

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