



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

SPECIFICATION

MODEL: B12012-IDE

PART NO : _____

VERSION : V1.00

Approver		Check	Design
GM	PM		

Customer Confirm

* Please fax the file to
Zeroplus Technology after
signing.

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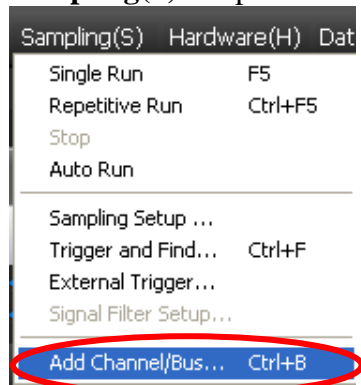
1 Software Register

Please register the software as the following steps:

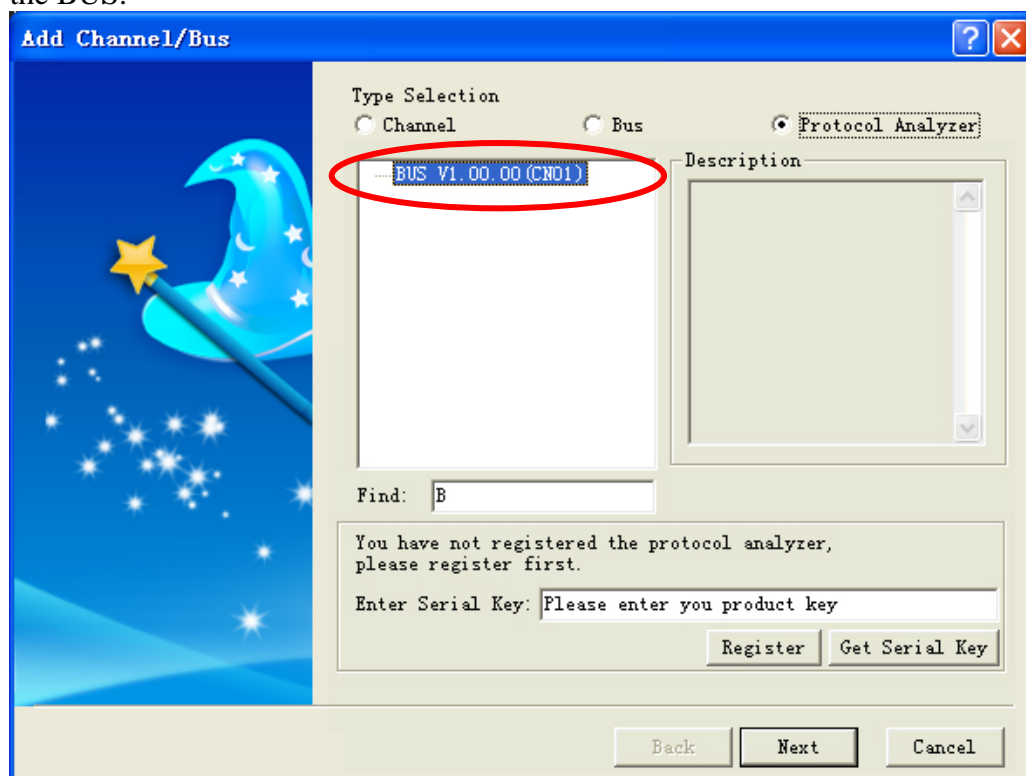
※ Remark1: The registration steps for all protocol analyzers are the same; you can complete the registration by following procedures. Following is an example on how to register the Protocol Analyzer BUS.

※ 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.

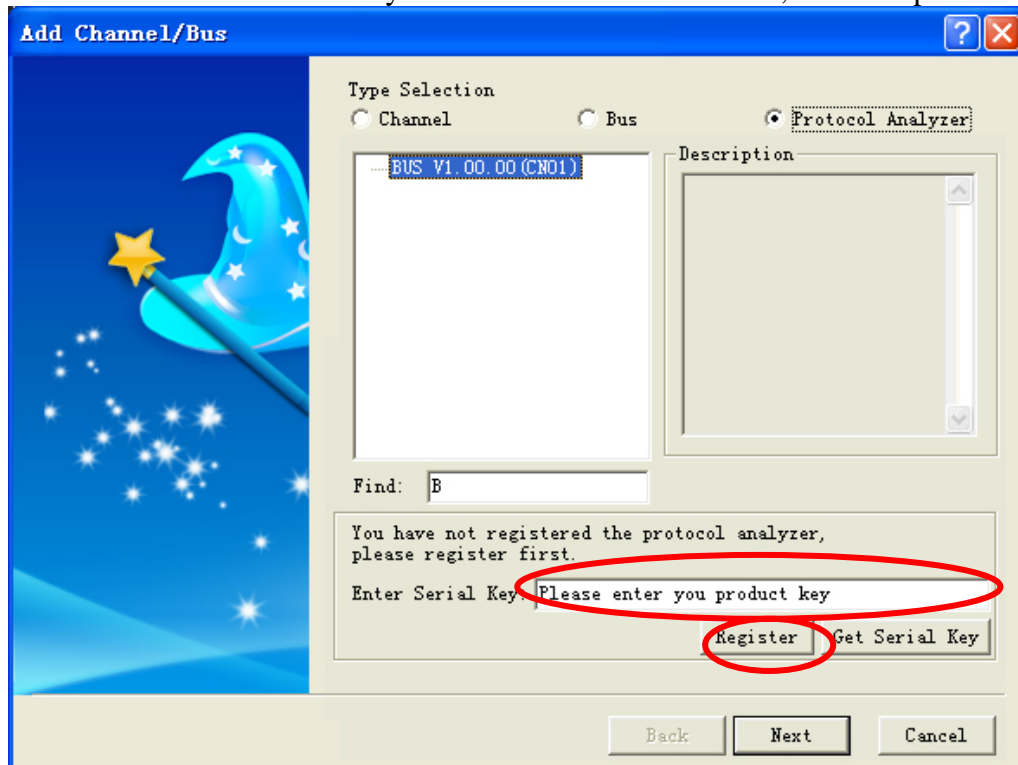
STEP 1. Open the Logic Analyzer and select the **Add Channel/Bus** item on the pull-down menu of the **Sampling(S)** to open the **Add Channel/Bus** dialog box.



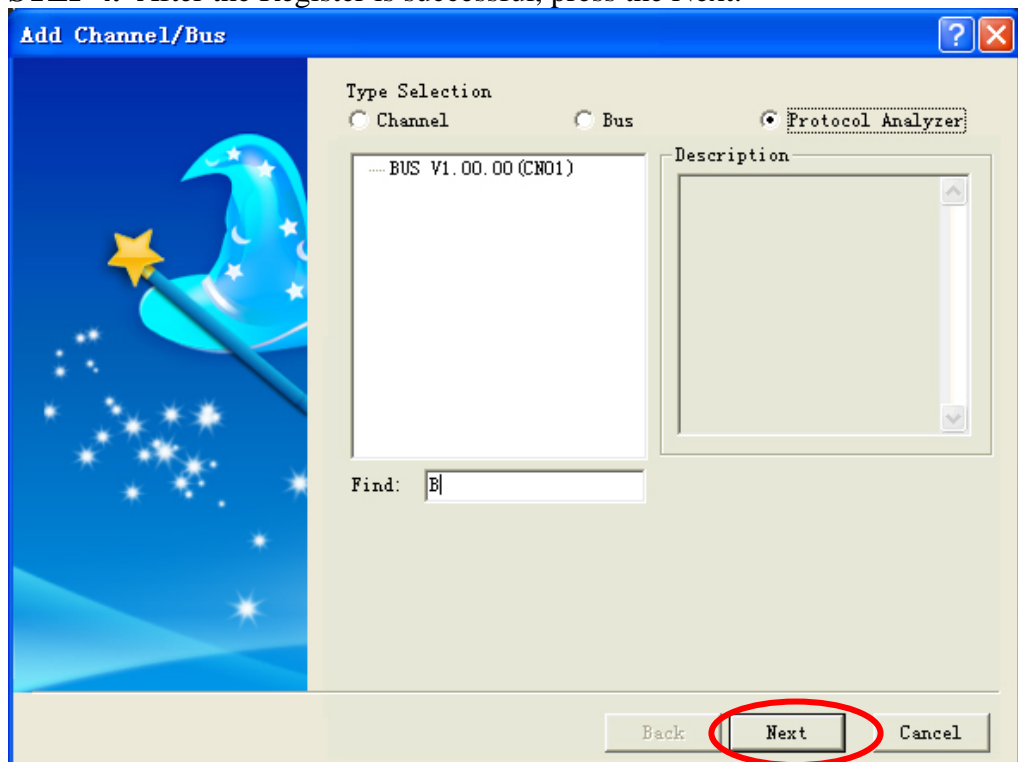
STEP 2. Select Protocol Analyzer item in the Add Channel/Bus dialog box, expand the Other Type, and select the BUS.



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



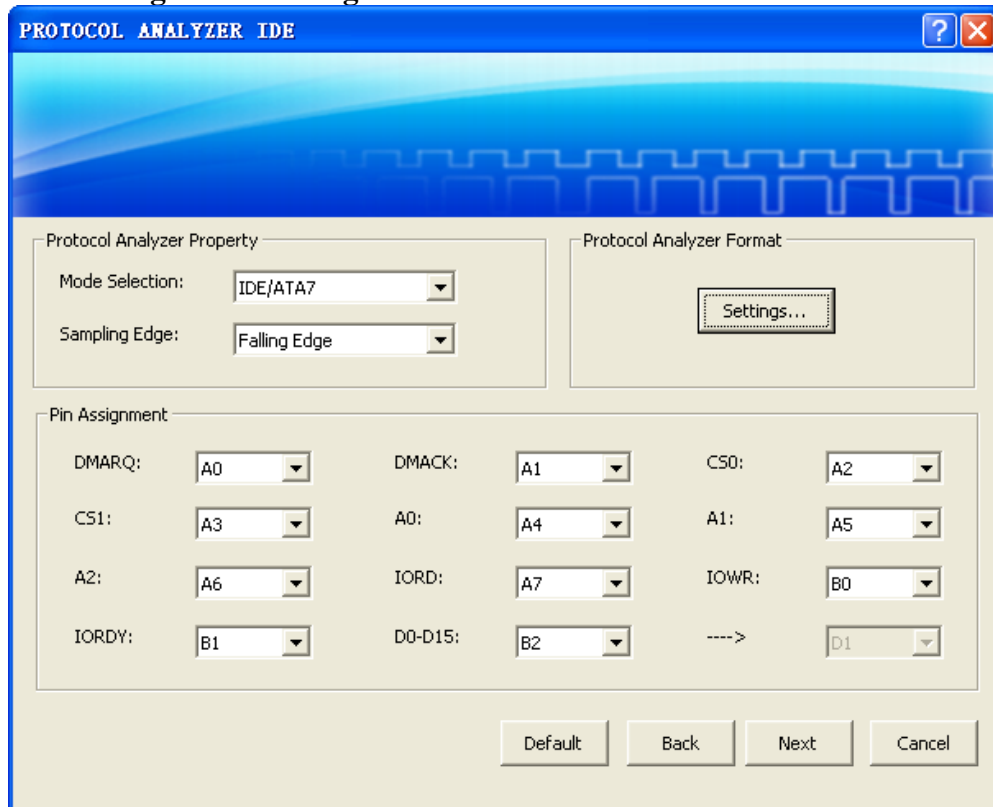
STEP 4. After the Register is successful, press the **Next**.



2 User Interface

Please refer to the below images to select options of **IDE** module.

IDE Configuration dialog box



Mode Selection:

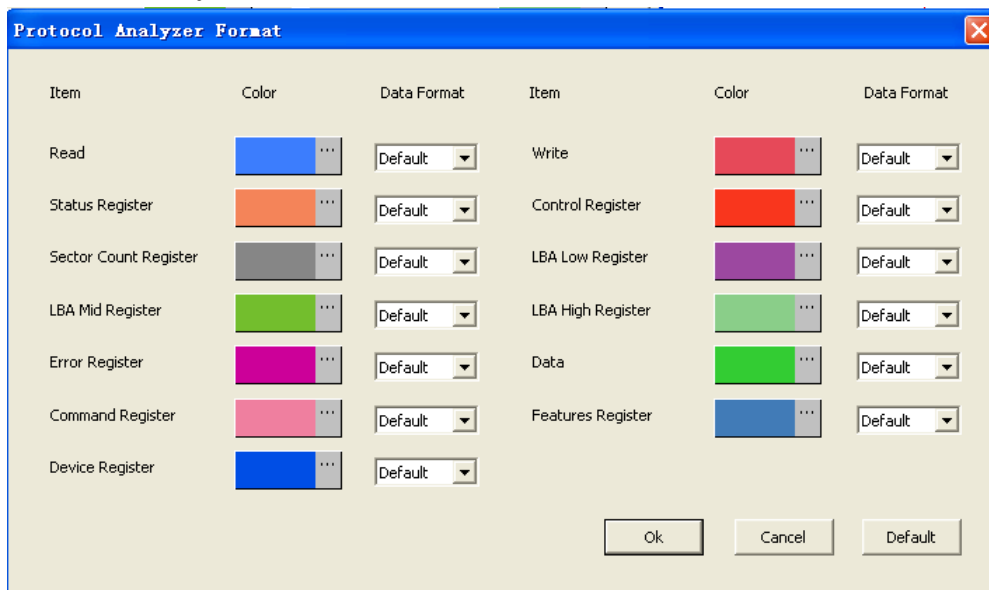
There are now only two work modes: IDE and ATA7 to be selected, some other modes are possible to be added in the future.

Sampling Edge: Rising Edge and Falling Edge can be selected. It is Falling Edge by default.

Pin Assignment:

IDE needs twenty-six channels to decode signal at least. DMARQ is used to activate the DMA Mode; DMACK is used to response DMA; CS0 and CS1 are the selecting data; A0, A1 and A2 are the address of register; IORD is used to read data; IOWR is used to write data; IORDY is used to suspend data, and D0~D15 are the data lines.

Protocol Analyzer Format:



The dialog box titled "Protocol Analyzer Format" contains two columns of settings. Each row represents a different item, with a color selection box and a data format dropdown menu. The items and their default settings are as follows:

Item	Color	Data Format	Item	Color	Data Format
Read	Blue	Default	Write	Red	Default
Status Register	Orange	Default	Control Register	Red	Default
Sector Count Register	Grey	Default	LBA Low Register	Purple	Default
LBA Mid Register	Green	Default	LBA High Register	Light Green	Default
Error Register	Magenta	Default	Data	Green	Default
Command Register	Pink	Default	Features Register	Blue	Default
Device Register	Blue	Default			

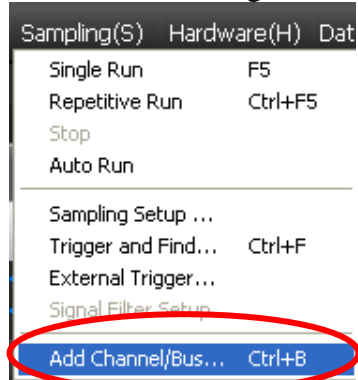
At the bottom right of the dialog box are three buttons: "Ok", "Cancel", and "Default".

Users can set the color of the packet as their requirements. The items (Read, Write, Status Register, Control Register, Sector Count Register, LBA Low Register, LBA Mid Register, LBA High Register, Error Register, Data, Command Register, Features Register and Device Register) can be set as Binary, Decimal, Hexadecimal, ASCII or Default. And the data format of these items in the Waveform Display Area and Packet List is controlled by Protocol Analyzer. The default data format is controlled by main program and the data format of these items is Default.

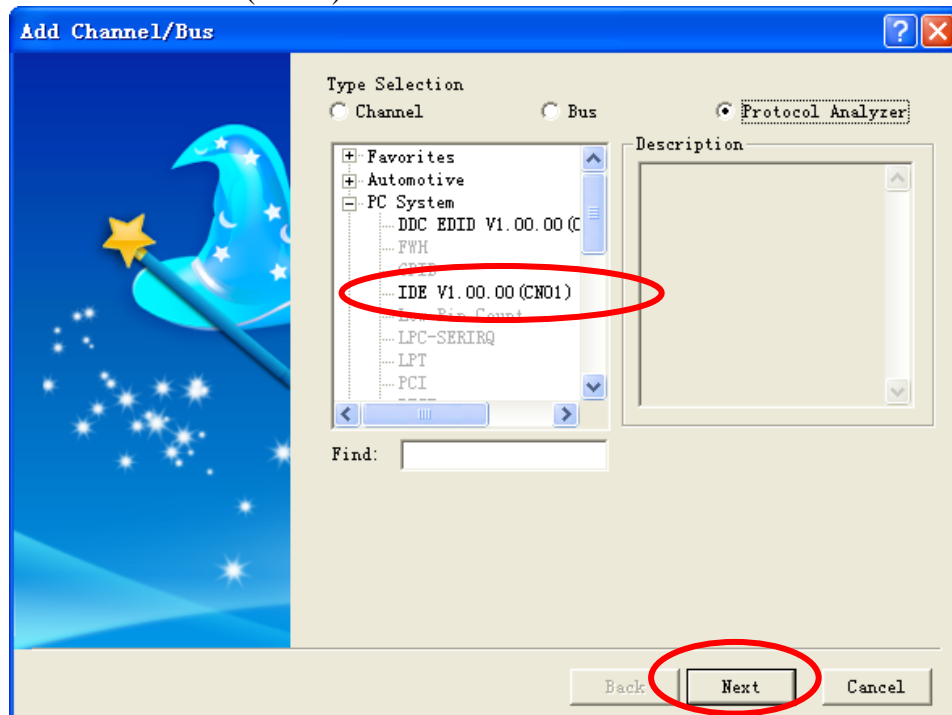


3 Operating Instructions

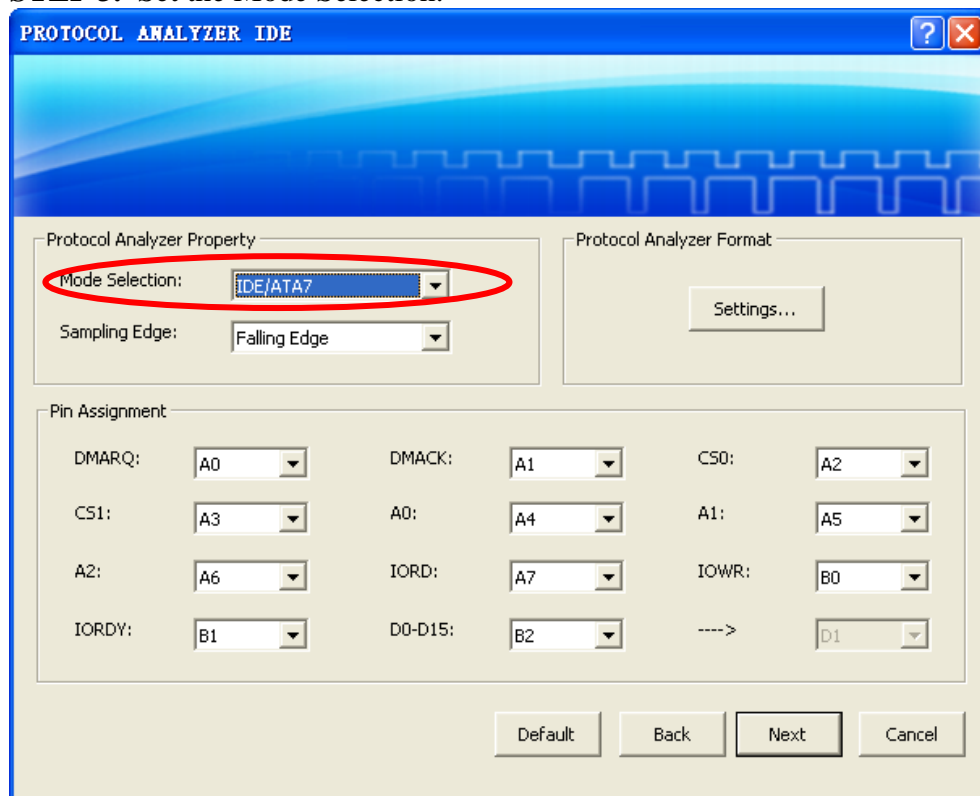
STEP 1. Select the Add Channel/Bus item on the pull-down menu of the Sampling(S) to open the Add Channel/Bus dialog box.



STEP 2. Select the Protocol Analyzer item in the Add Channel/Bus dialog box, expand the PC System, select the IDE V1.00.00 (CN01) and then click the Next.

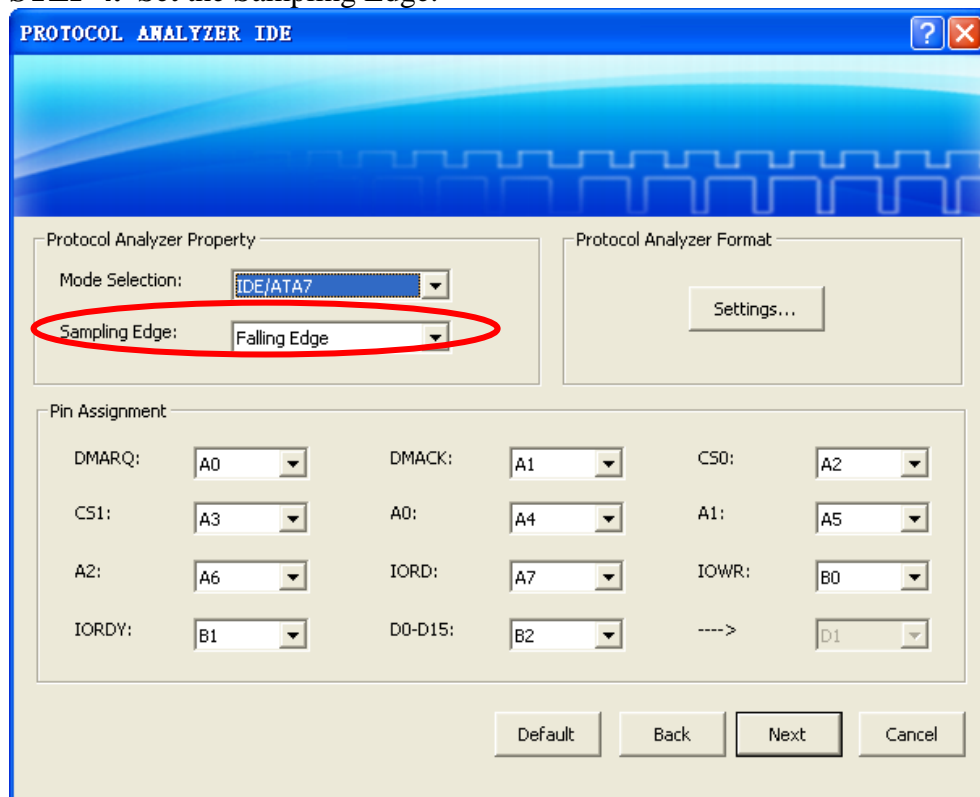


STEP 3. Set the Mode Selection.



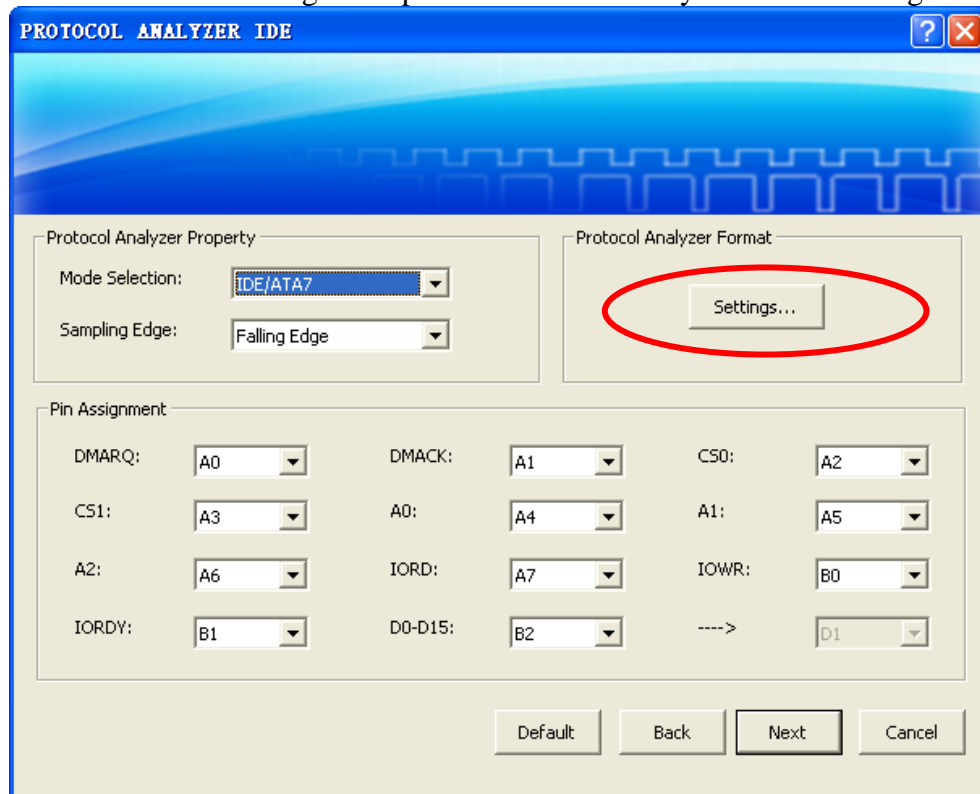
The screenshot shows the 'PROTOCOL ANALYZER IDE' window. The 'Protocol Analyzer Property' section has 'Mode Selection' set to 'IDE/ATA7' (highlighted with a red circle) and 'Sampling Edge' set to 'Falling Edge'. The 'Protocol Analyzer Format' section has a 'Settings...' button. The 'Pin Assignment' section shows various pin assignments: DMARQ: A0, DMACK: A1, CS0: A2, CS1: A3, A0: A4, A1: A5, A2: A6, IORD: A7, IOWR: B0, IORDY: B1, D0-D15: B2, and D1. At the bottom are 'Default', 'Back', 'Next', and 'Cancel' buttons.

STEP 4. Set the Sampling Edge.

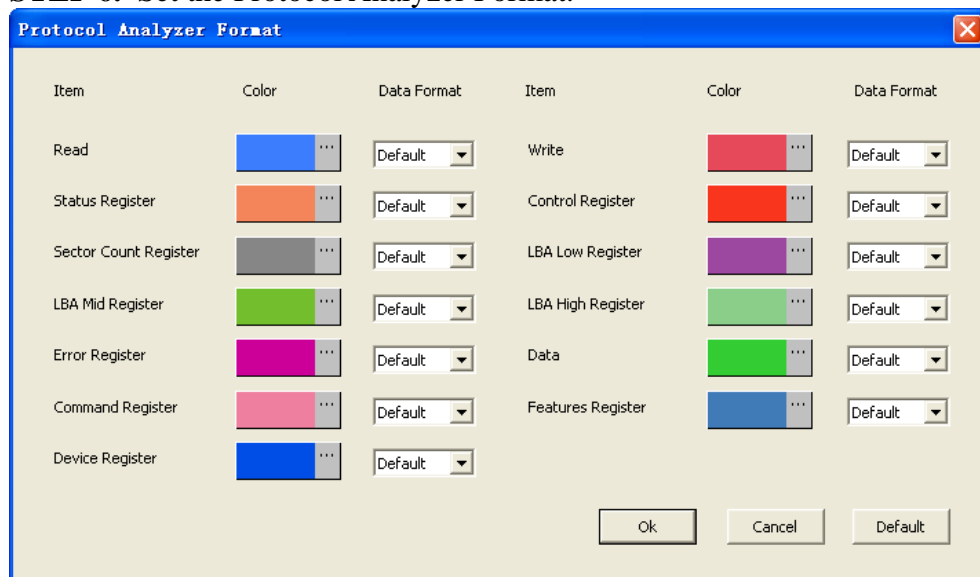


The screenshot shows the 'PROTOCOL ANALYZER IDE' window. The 'Protocol Analyzer Property' section has 'Mode Selection' set to 'IDE/ATA7' and 'Sampling Edge' set to 'Falling Edge' (highlighted with a red circle). The 'Protocol Analyzer Format' section has a 'Settings...' button. The 'Pin Assignment' section shows various pin assignments: DMARQ: A0, DMACK: A1, CS0: A2, CS1: A3, A0: A4, A1: A5, A2: A6, IORD: A7, IOWR: B0, IORDY: B1, D0-D15: B2, and D1. At the bottom are 'Default', 'Back', 'Next', and 'Cancel' buttons.

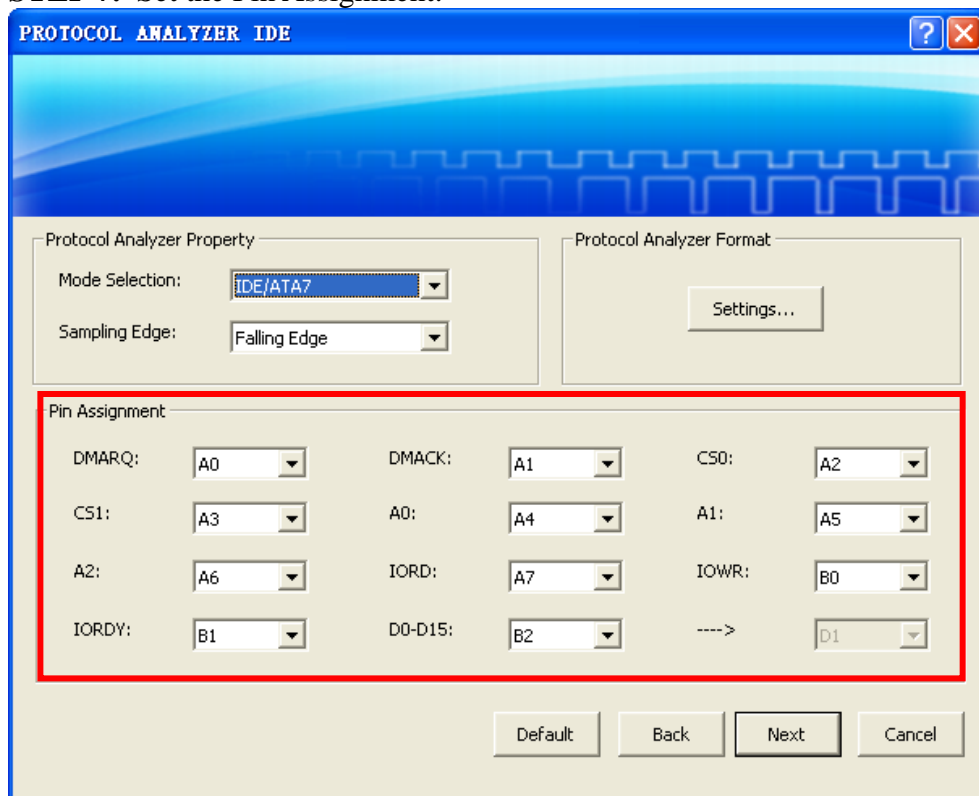
STEP 5. Press “Settings” to open the Protocol Analyzer Format dialog box.



STEP 6. Set the Protocol Analyzer Format.



STEP 7. Set the Pin Assignment.



PROTOCOL ANALYZER IDE

Protocol Analyzer Property

Mode Selection: **IDE/ATA7**

Sampling Edge: **Falling Edge**

Protocol Analyzer Format

Settings...

Pin Assignment

DMARQ: **A0** DMACK: **A1** CS0: **A2**

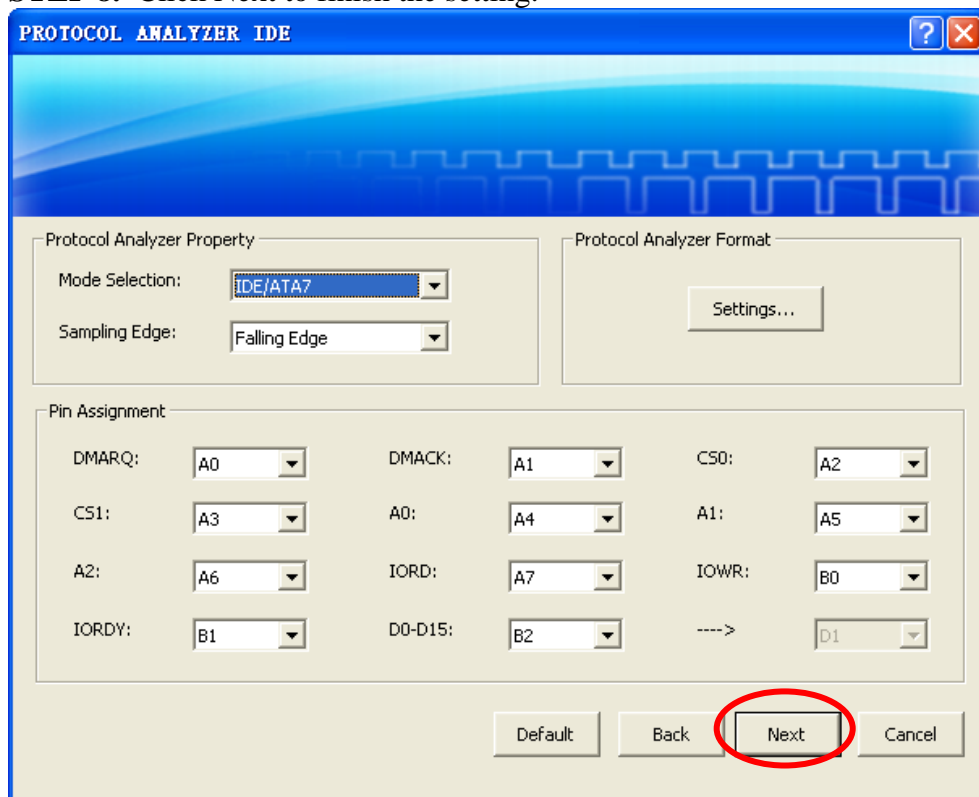
CS1: **A3** A0: **A4** A1: **A5**

A2: **A6** IORD: **A7** IOWR: **B0**

IORDY: **B1** D0-D15: **B2** ----> **D1**

Default Back **Next** Cancel

STEP 8. Click Next to finish the setting.



PROTOCOL ANALYZER IDE

Protocol Analyzer Property

Mode Selection: **IDE/ATA7**

Sampling Edge: **Falling Edge**

Protocol Analyzer Format

Settings...

Pin Assignment

DMARQ: **A0** DMACK: **A1** CS0: **A2**

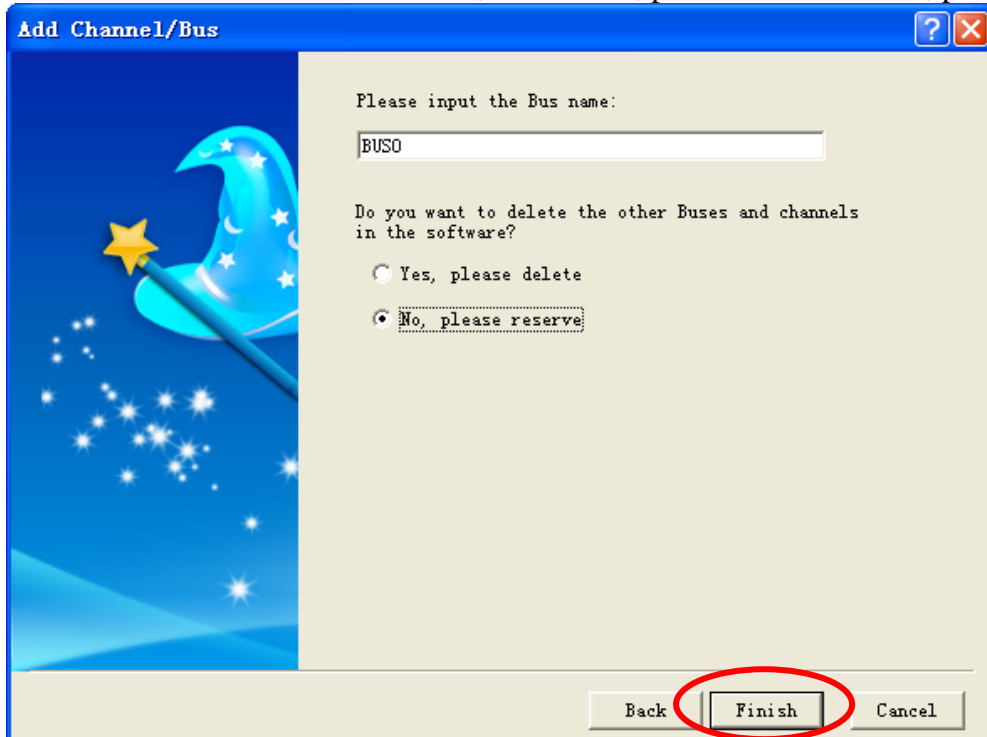
CS1: **A3** A0: **A4** A1: **A5**

A2: **A6** IORD: **A7** IOWR: **B0**

IORDY: **B1** D0-D15: **B2** ----> **D1**

Default Back **Next** Cancel

STEP 9. Please enter the Bus Name, select “Yes, please delete” or “No, please reserve” and then click Finish.



Add Channel/Bus

Please input the Bus name:

BUS0

Do you want to delete the other Buses and channels in the software?

☐ Yes, please delete

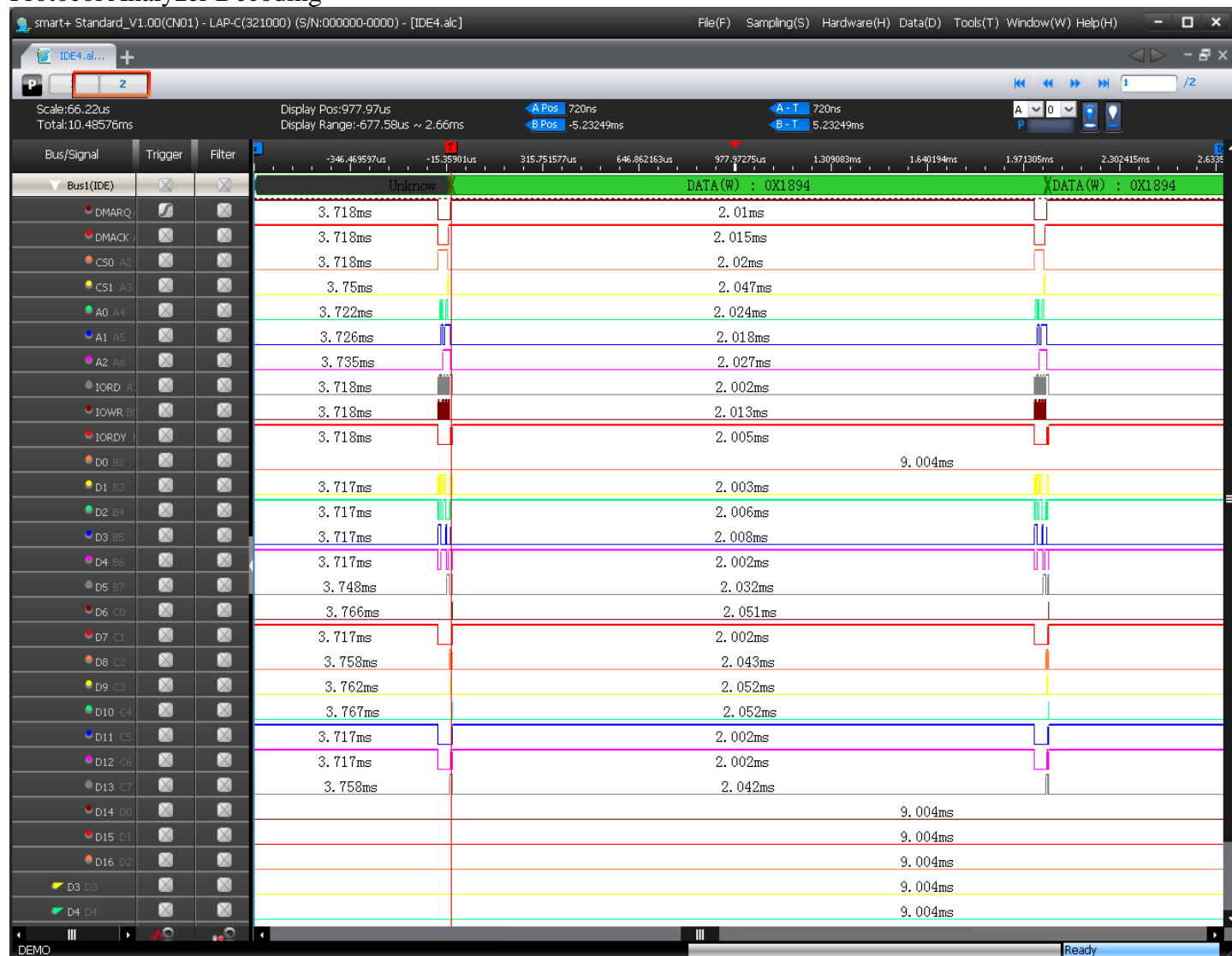
☒ No, please reserve

Back Finish Cancel



STEP 10. 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 1M and the sampling frequency is 100MHz (the sampling frequency should be more than four times higher than the signal to be tested).

Protocol Analyzer Decoding





Packet List

