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

# SPECIFICATION

**MODEL: B09019-LAP-HPI-M**

**PART NO: _____**

**VERSION: V1.01**

| Approver | | Check | Design |
|---|---|---|---|
| GM | PM | | |
| | | | |

| Customer Confirm |
|---|
| |

*Please fax the file to Zeroplus Technology after signing.

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# Content

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# 1 Software Download

Please download the software as the following steps:

Remark: 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.** Visit the website of Zeroplus: http://www.zeroplus.com.tw.

**STEP 2.** Click **English** in the Instrument Division part on the Homepage.

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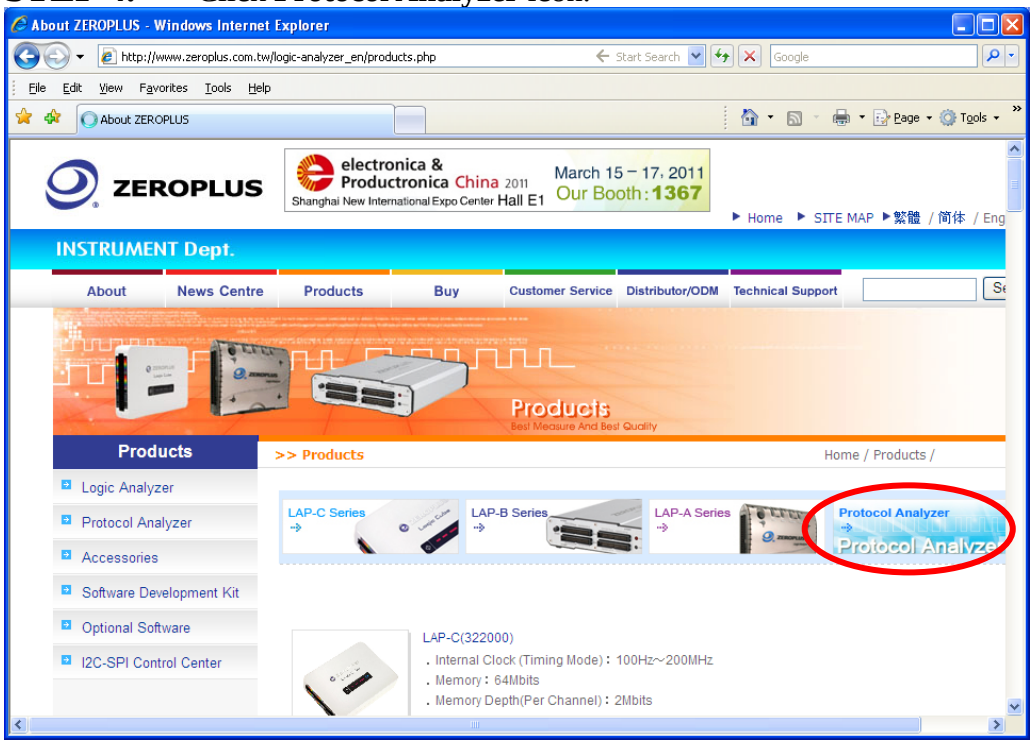
**STEP 3.** Click **Products** menu or select Protocol Analyzer item from its pull-down menu to go straight to STEP 5.


**STEP 4.** Click **Protocol Analyzer** icon.



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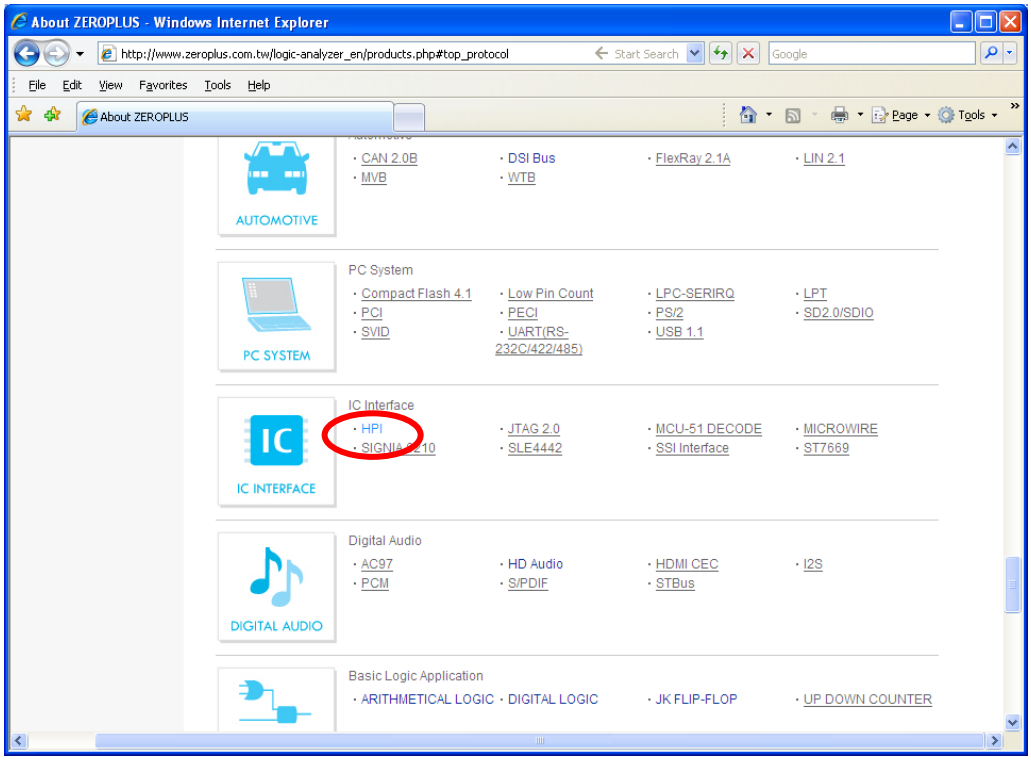
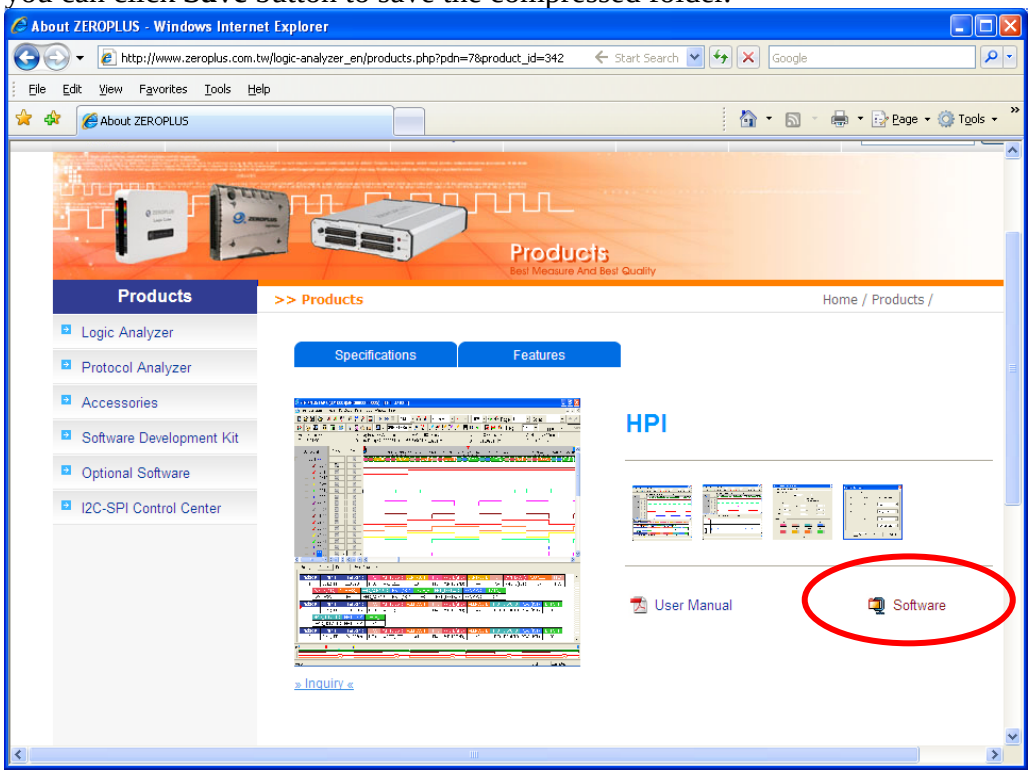
**STEP 5.** Click **HPI** in the IC Interface column.




**STEP 6.** Click **Software** in the Products page. When the File Download dialog box appears, you can click **Save** button to save the compressed folder.



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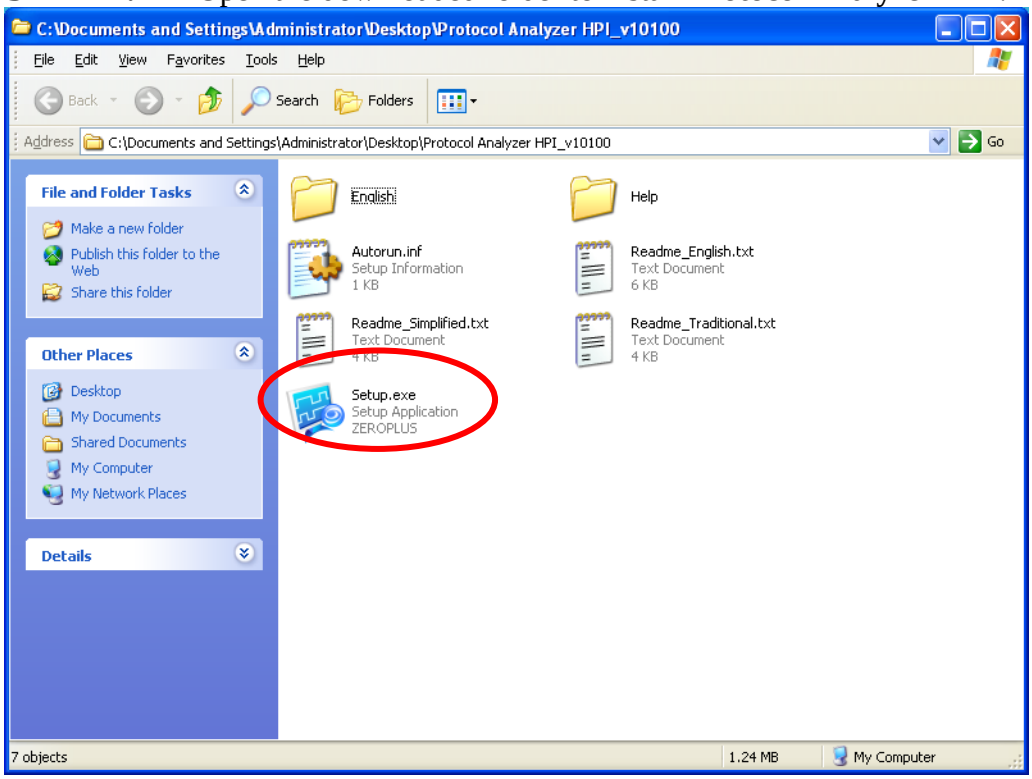
# 2 Software Installation

**STEP 1.** Open the downloaded folder to install **Protocol Analyzer HPI**.




**STEP 2.** Click **Install**.

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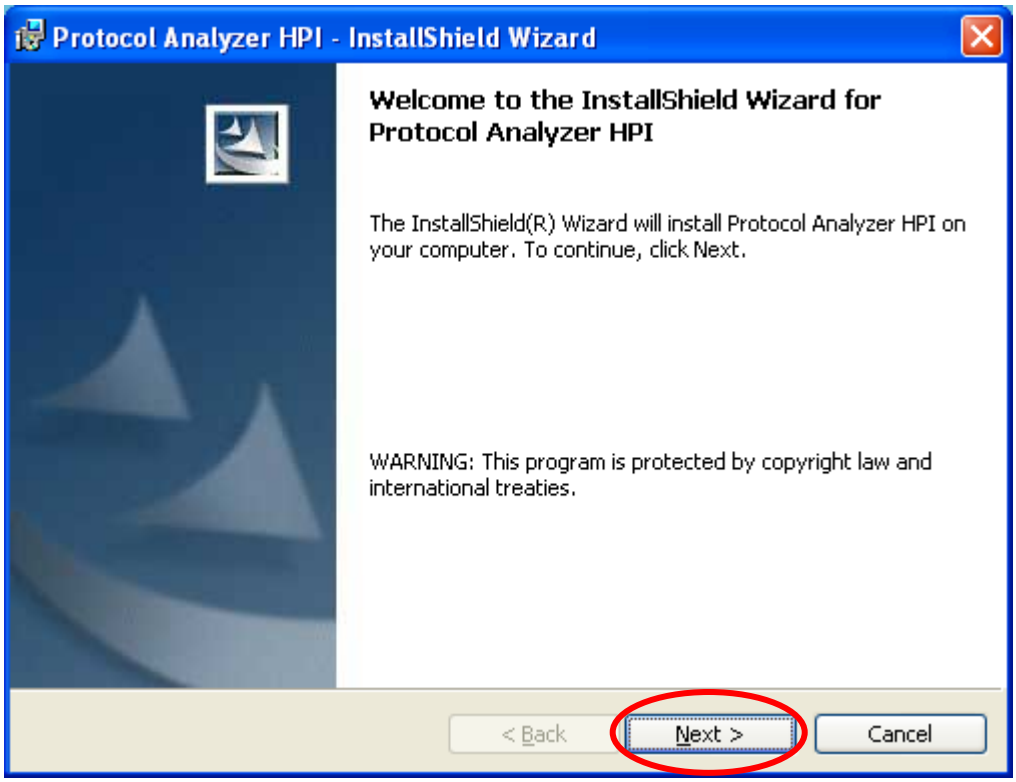
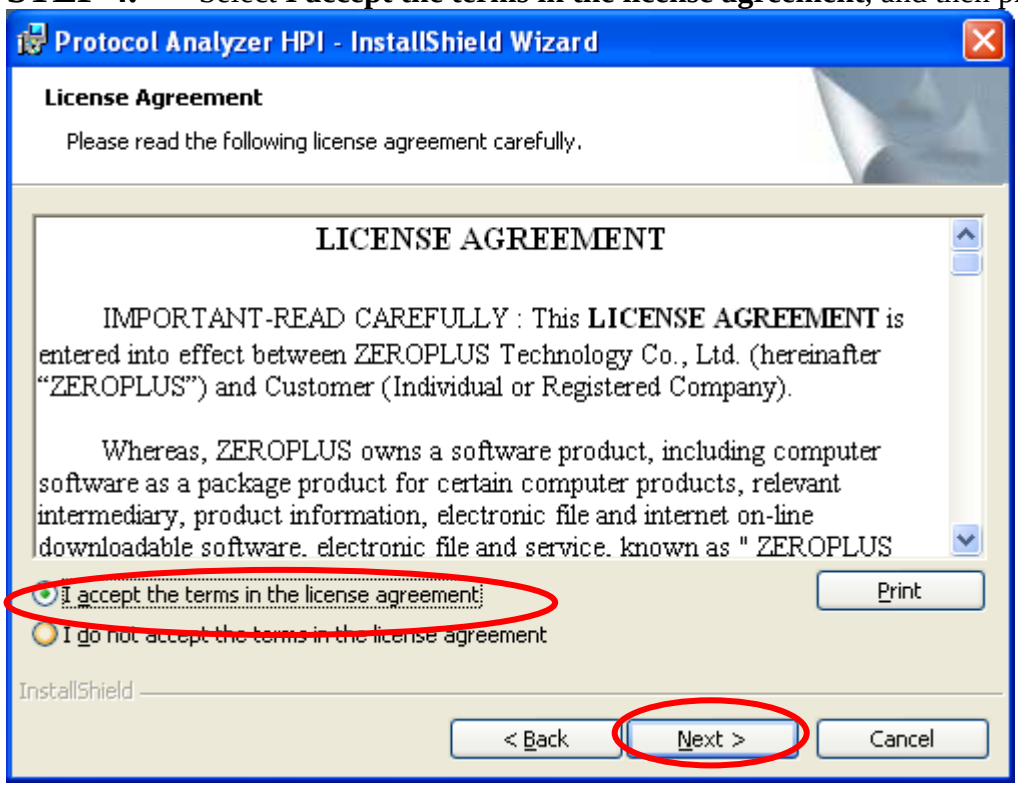
**STEP 3.** Click **Next**.




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



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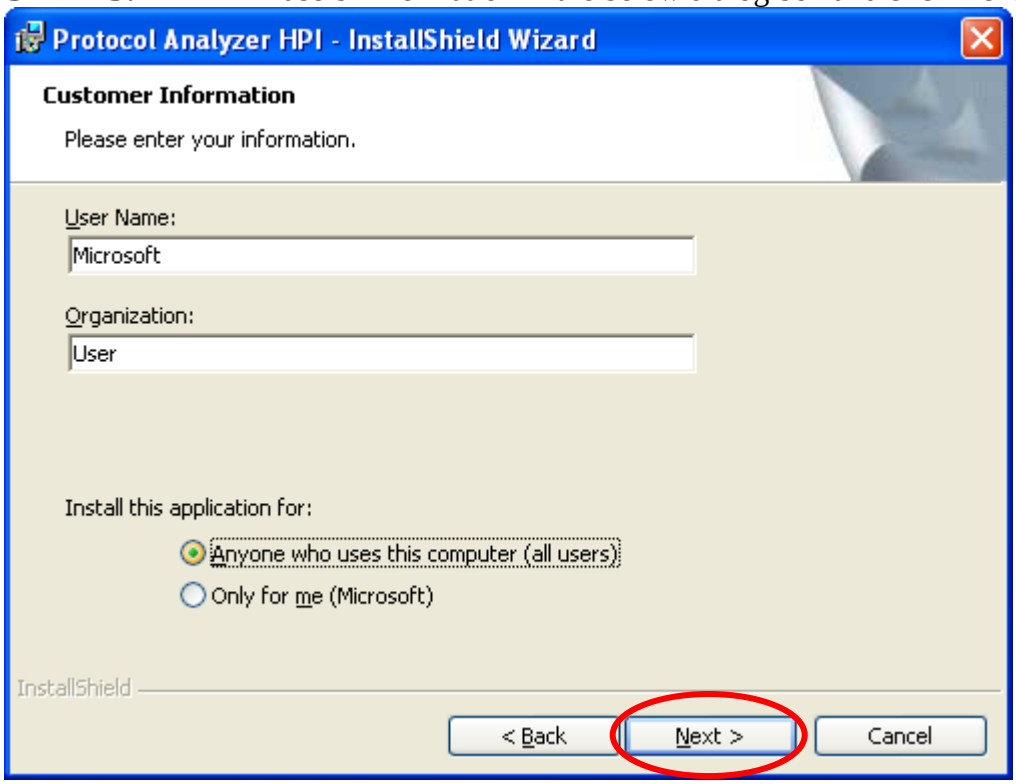
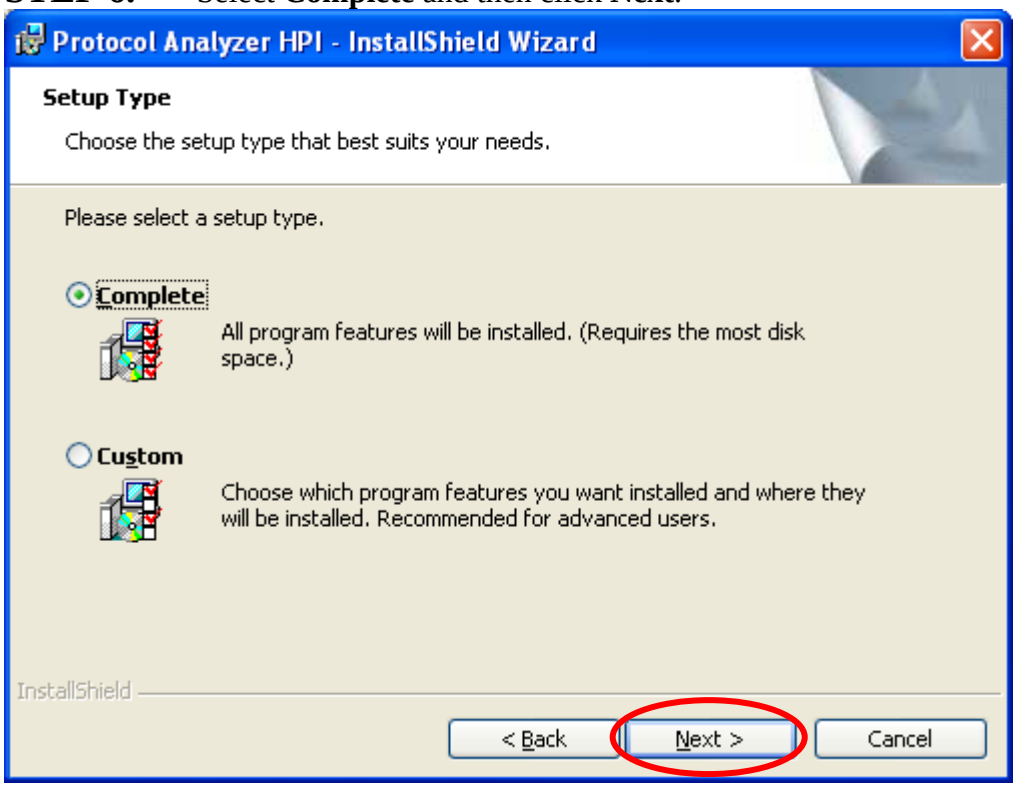
**STEP 5.** Fill in users' information in the below dialog box and click **Next**.




**STEP 6.** Select **Complete** and then click **Next**.



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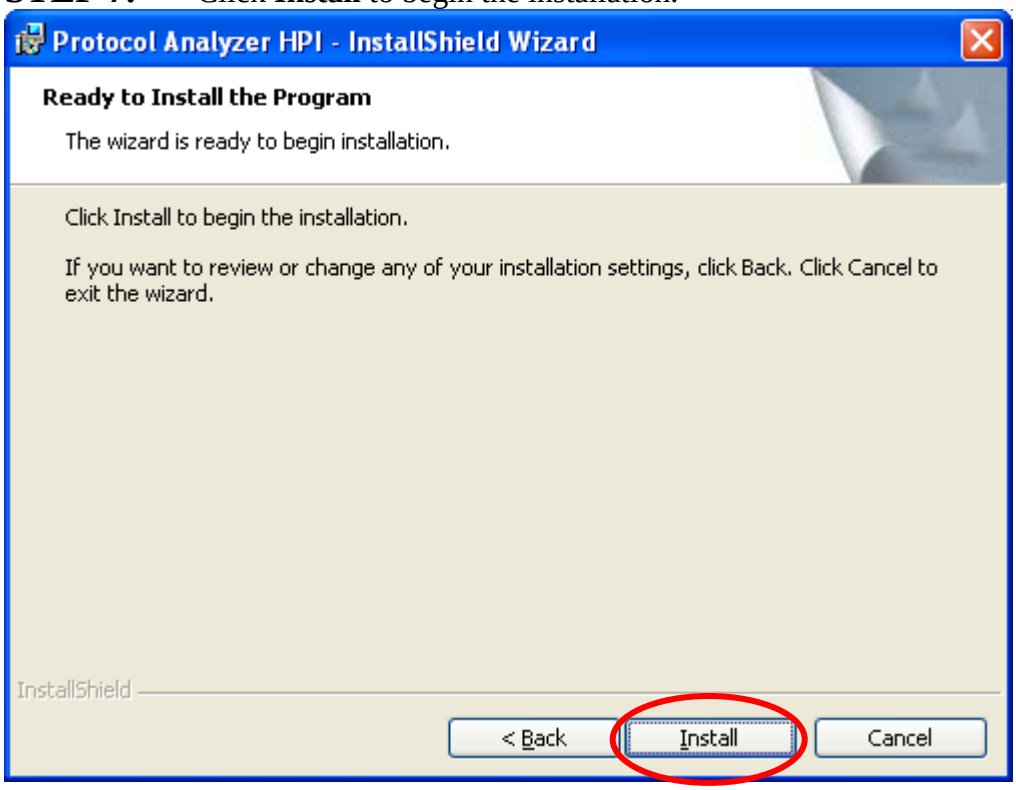
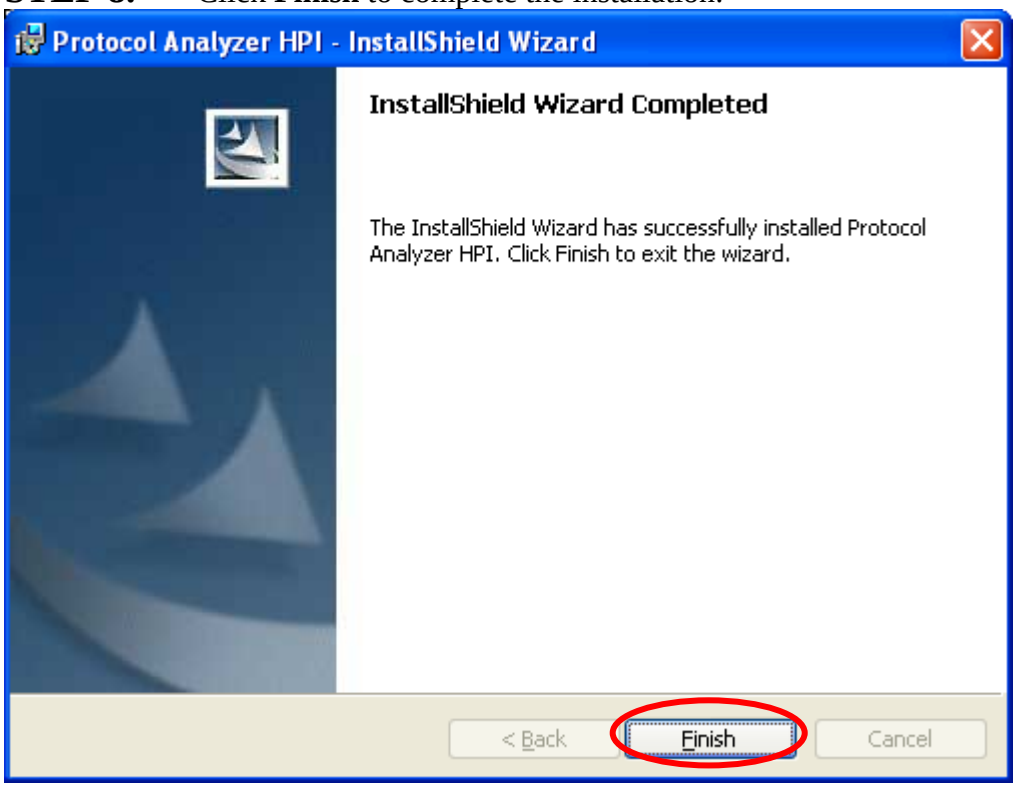
**STEP 7.** Click **Install** to begin the installation.




**STEP 8.** Click **Finish** to complete the installation.



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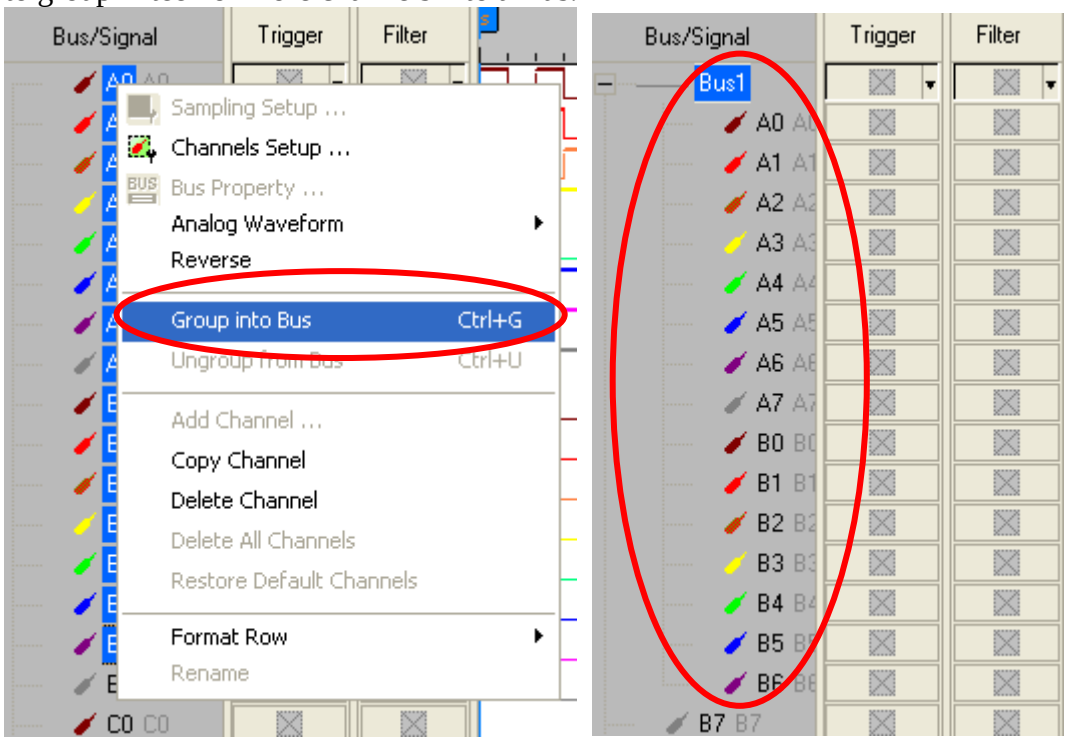
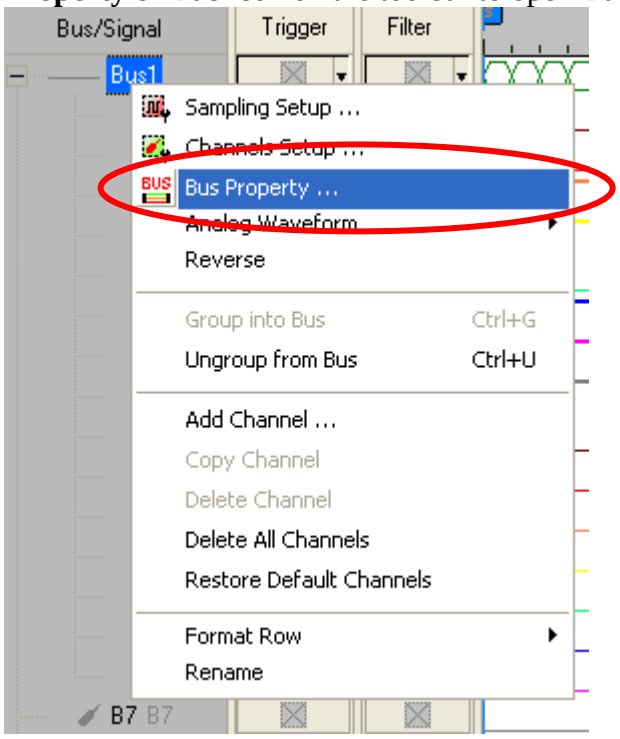
# 3 Software Register

**STEP 1.** Open the Logic Analyzer and group the unanalyzed channels into **Bus1** by pressing the **Right Key** on the mouse. HPI needs more than fourteen channels to decode signals, so it is necessary to group fifteen or more channels into a Bus.




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



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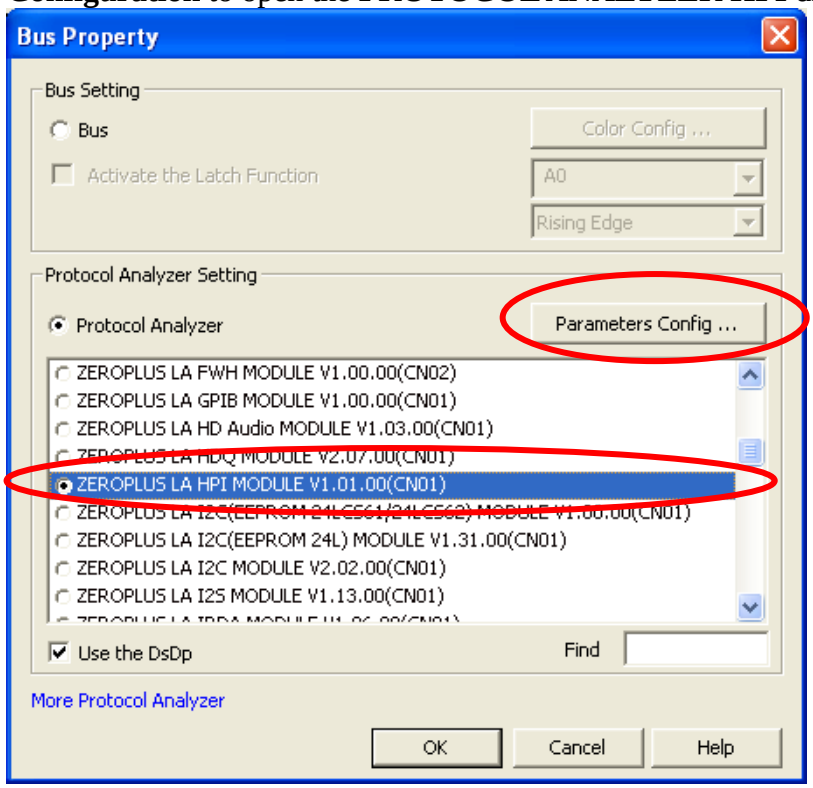
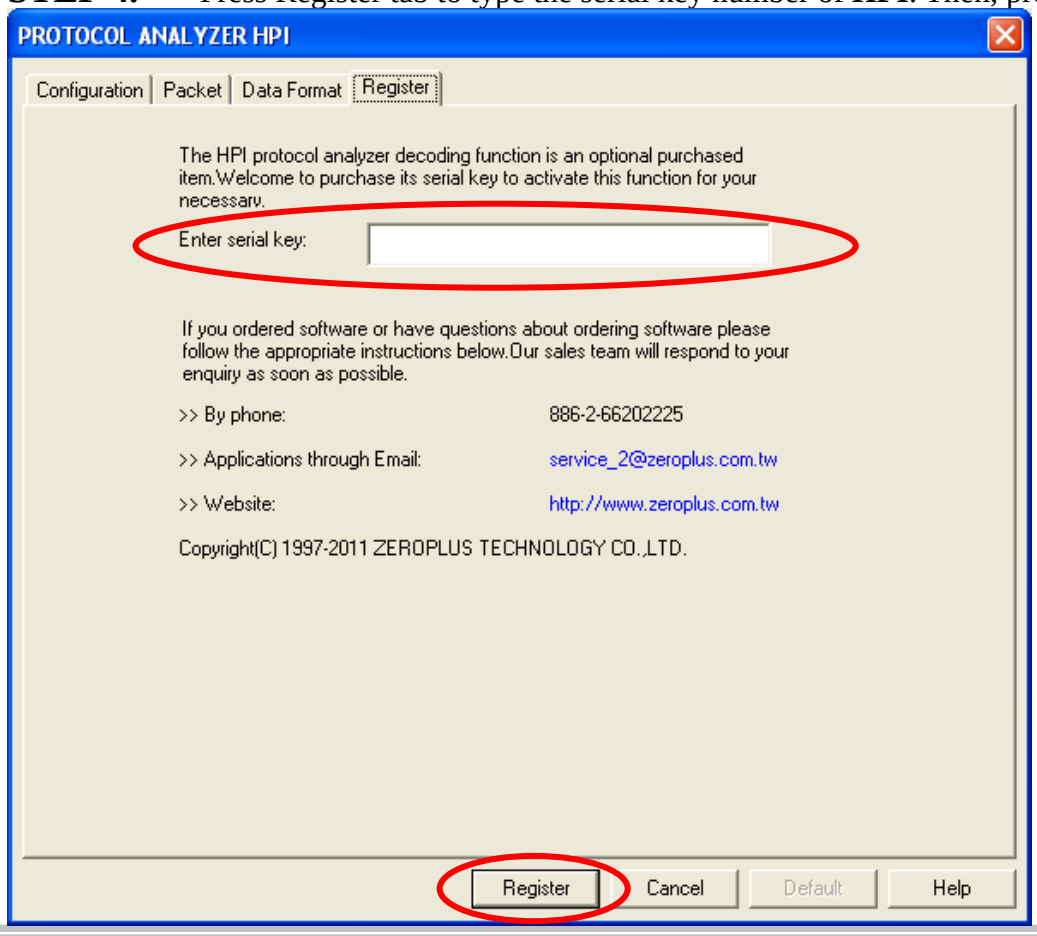
**STEP 3.** For Protocol Analyzer HPI Parameters Configuration, select Protocol Analyzer, and then choose **ZEROPLUS LA HPI MODULE V1.01.00(CN01)**. Next click **Parameters Configuration** to open the **PROTOCOL ANALYZER HPI** dialog box.




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



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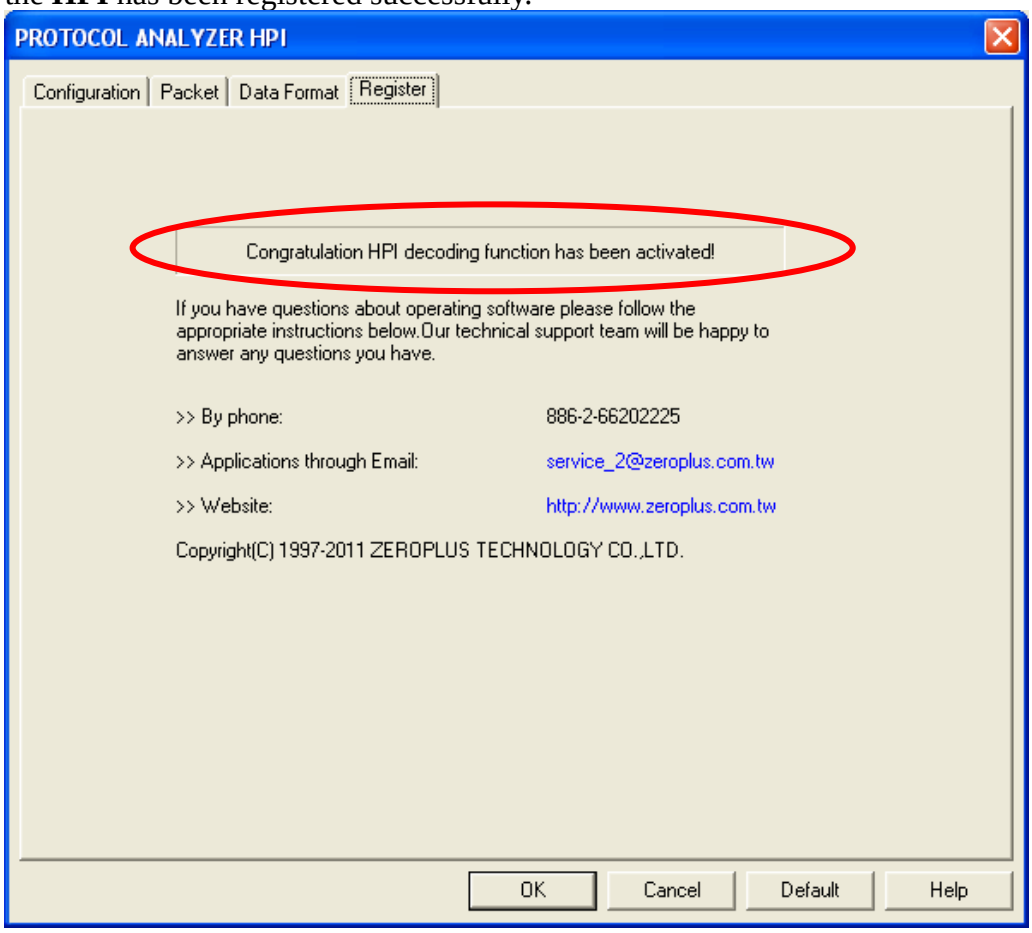
**STEP 5.** After pressing the Register button, the following dialog box will appear; it denotes that the **HPI** has been registered successfully.



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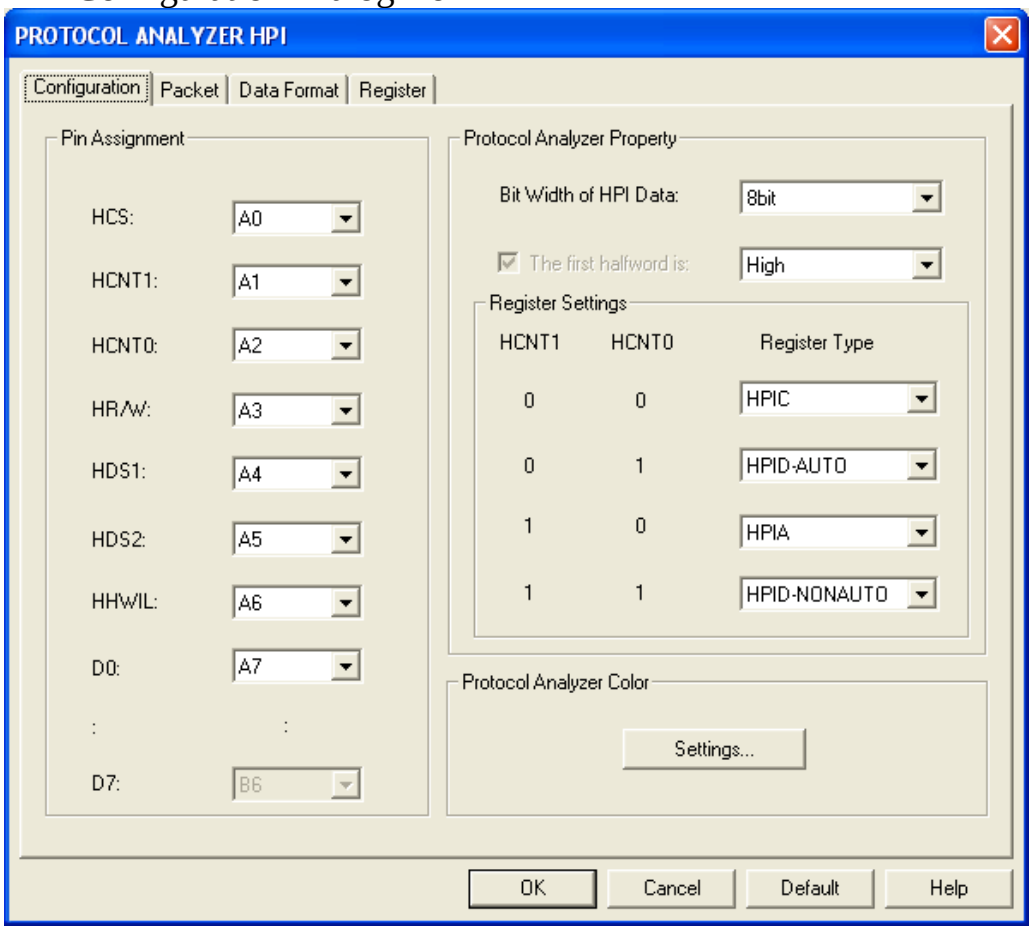
# 4 User Interface

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

HPI Configuration Dialog Box




**Pin Assignment**:
**HCS**: It is the Chip Select channel.
**HCNT1-0**: It is the Register Select channel.
**HR/W**: It is the Read/Write Control channel.
**HDS1-2**: It is the Data Latch channel.
**HHWIL**: It is the Halfword Indication channel. When the Option, **The first halfword is**, is disabled, the channel is disabled.
**D0-D15**: They are the Data Transmission channels, but only the channel, D0, can be set, and the other channels are increased gradually. At the same time, when the different Bit Widths of HPI Data are selected, the Channel Length will be changed accordingly.

**Protocol Analyzer Property**:
**Bit Width of HPI Data**: Set the Bit Width (or the number of the Data channel) to 8bit or 16bit.
**The first halfword is**: When the Option is selected, it is necessary to set the Level of the first halfword to High or Low in the behind column; when the Option is disabled, the column is disabled.

**Register Settings**: Set the Types of the Register according to the values of the HCNT[1:0]. Notice that the Type of the set Register should not be the same.

**Protocol Analyzer Color**: Press the **Settings** to open the Protocol Analyzer Color dialog box. The protocol analyzer colors can be varied by users.

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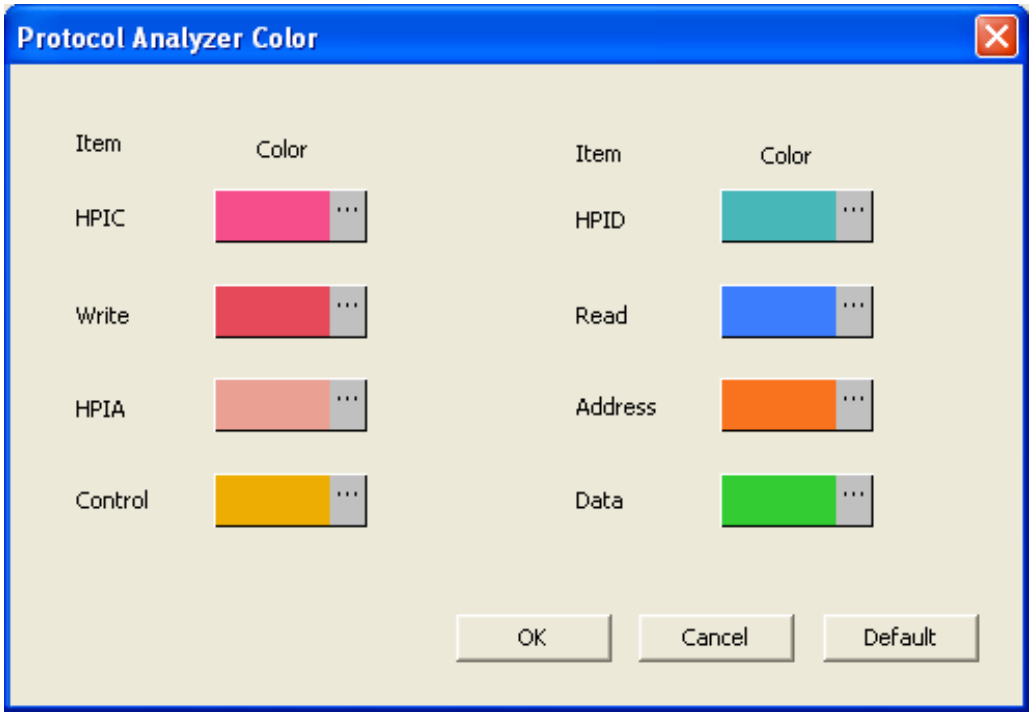
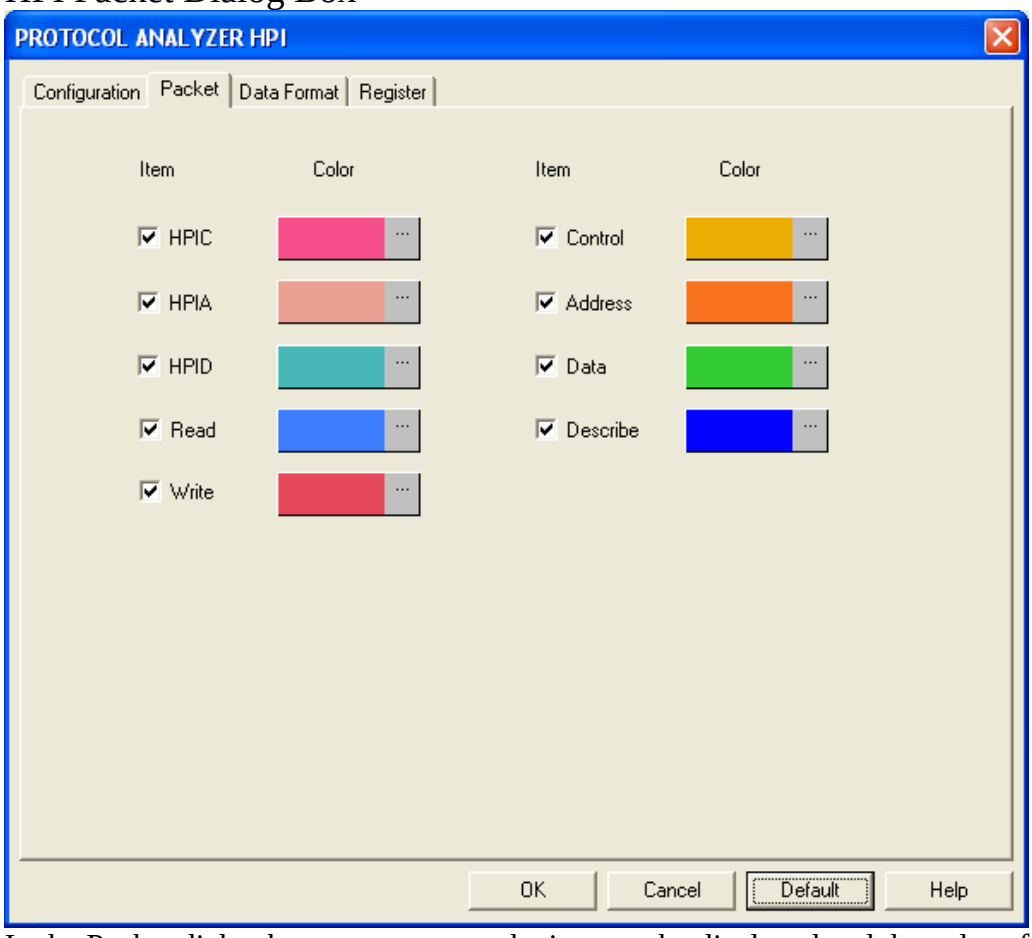



HPI Packet Dialog Box




In the Packet dialog box, users can set the items to be displayed and the color of items.

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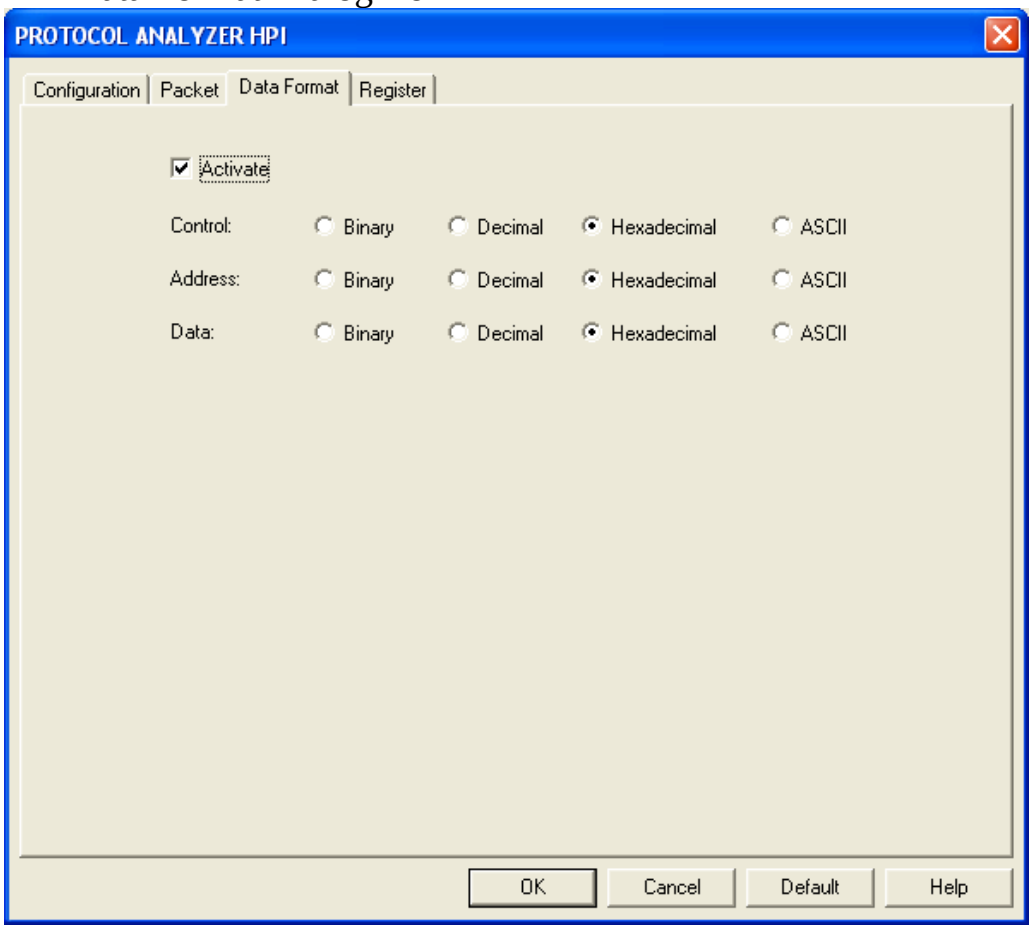
HPI Data Format Dialog Box




Users can set the Data Format of the Control, Address and Data as their requirements. When selecting the option, Activate, the data formats are decided by the settings in the Protocol Analyzer; when not selecting the option, Activate, the data formats are decided by the settings in the main program.

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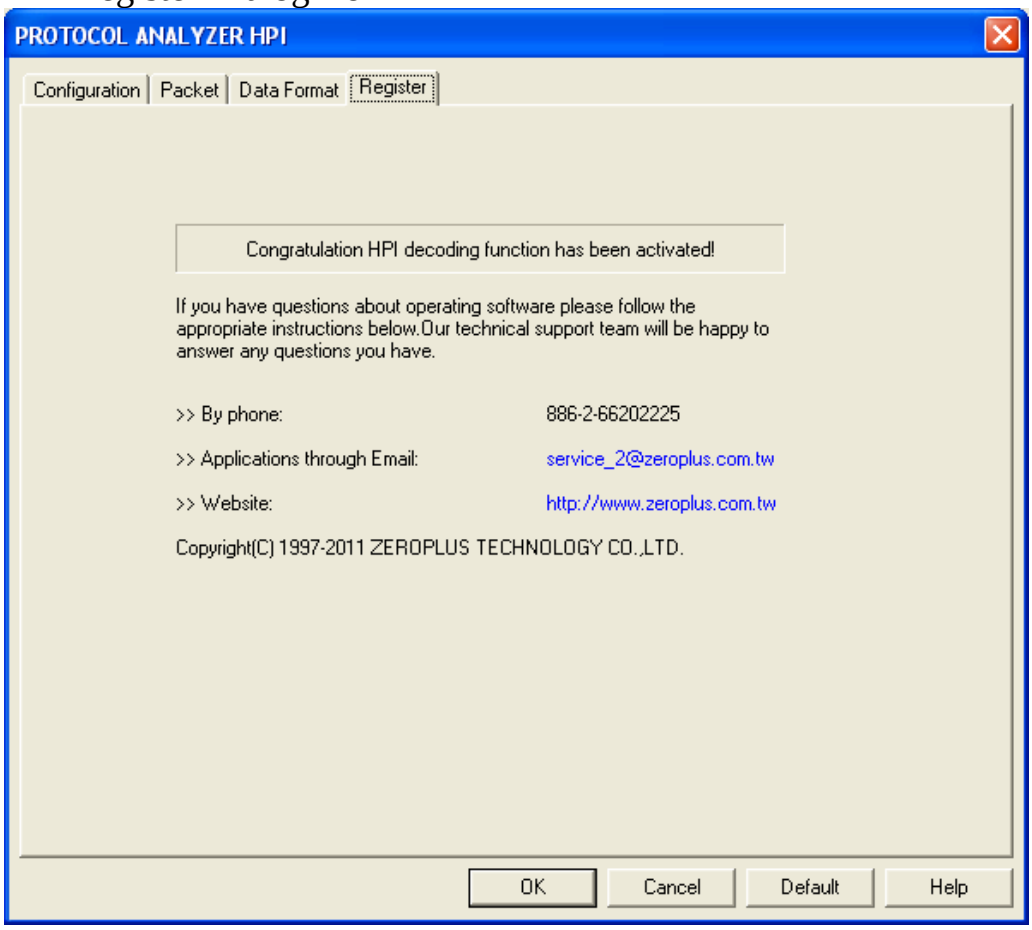
HPI Register Dialog Box




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

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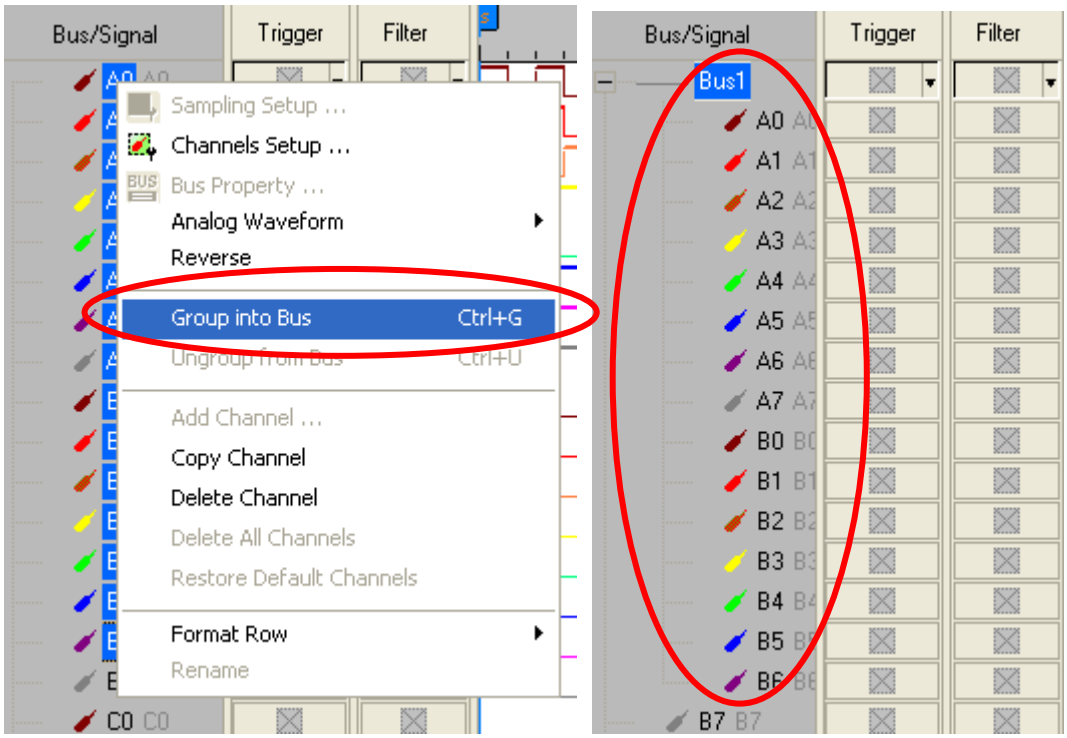
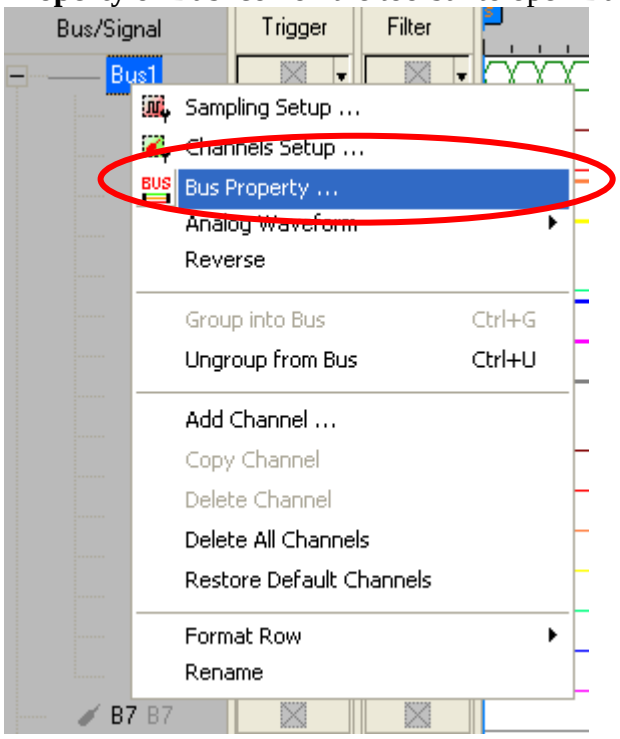
# 5 Operating Instructions

**STEP 1.** Group the unanalyzed channels into **Bus1** by pressing the **Right Key** on the mouse. HPI needs more than fourteen channels to decode signals, so it is necessary to group fifteen or more channels into a Bus.




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



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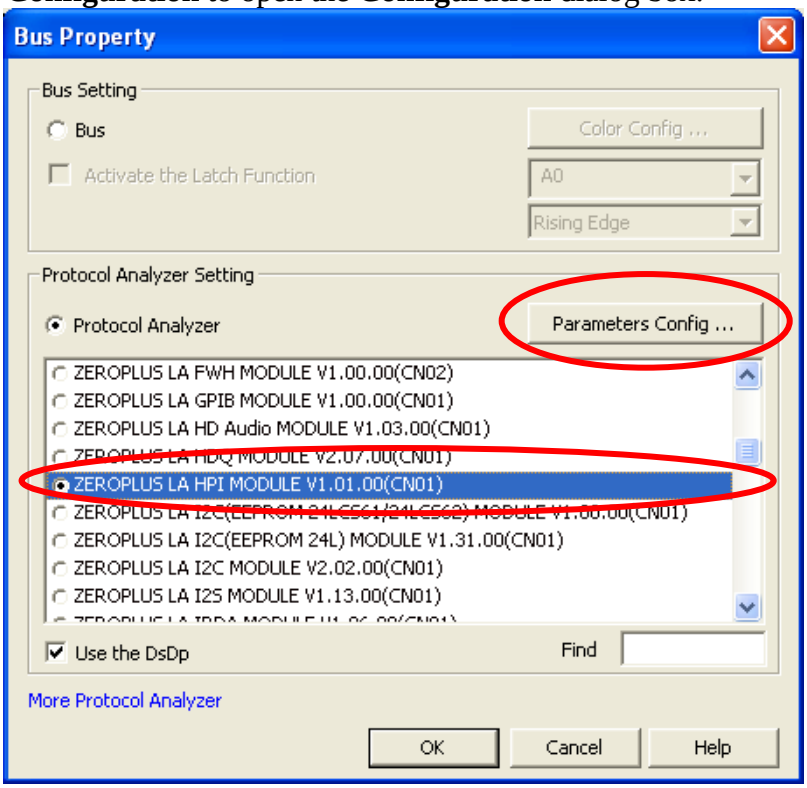
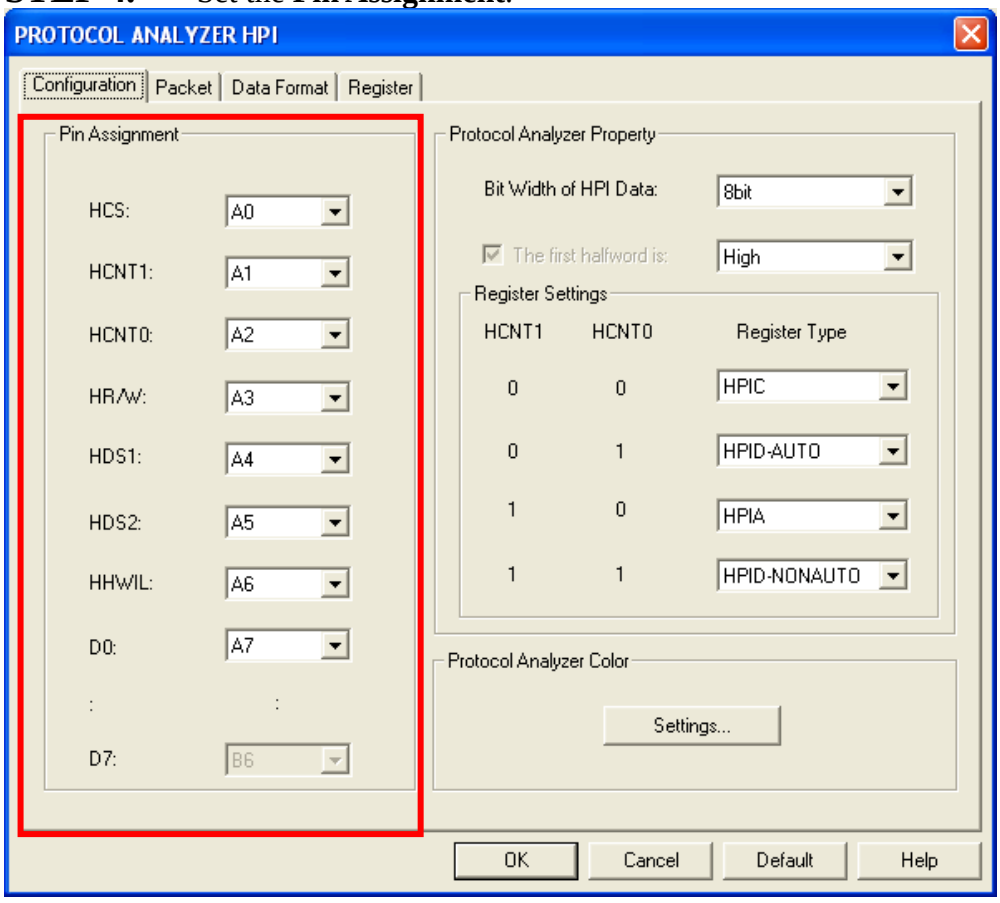
**STEP 3.** For Protocol Analyzer HPI Parameters Configuration, select Protocol Analyzer, and then choose **ZEROPLUS LA HPI MODULE V1.01.00(CN01)**. Next click **Parameters Configuration** to open the **Configuration** dialog box.




**STEP 4.** Set the **Pin Assignment**.



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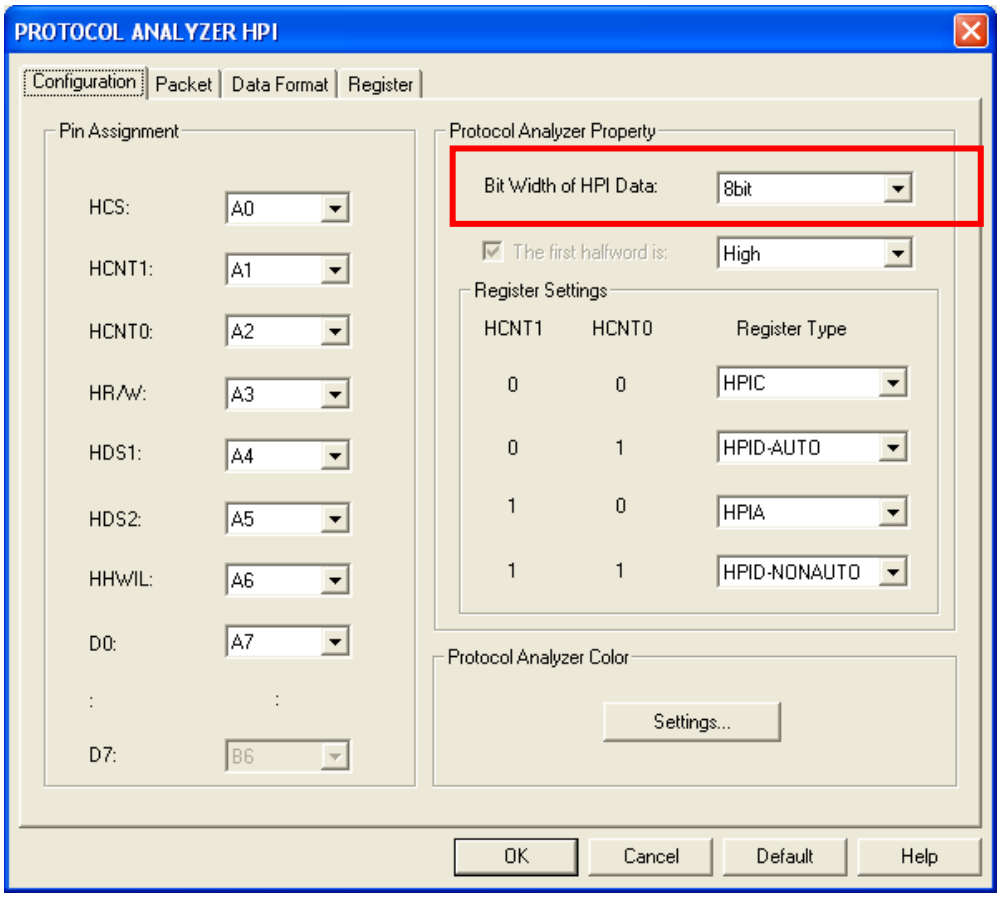
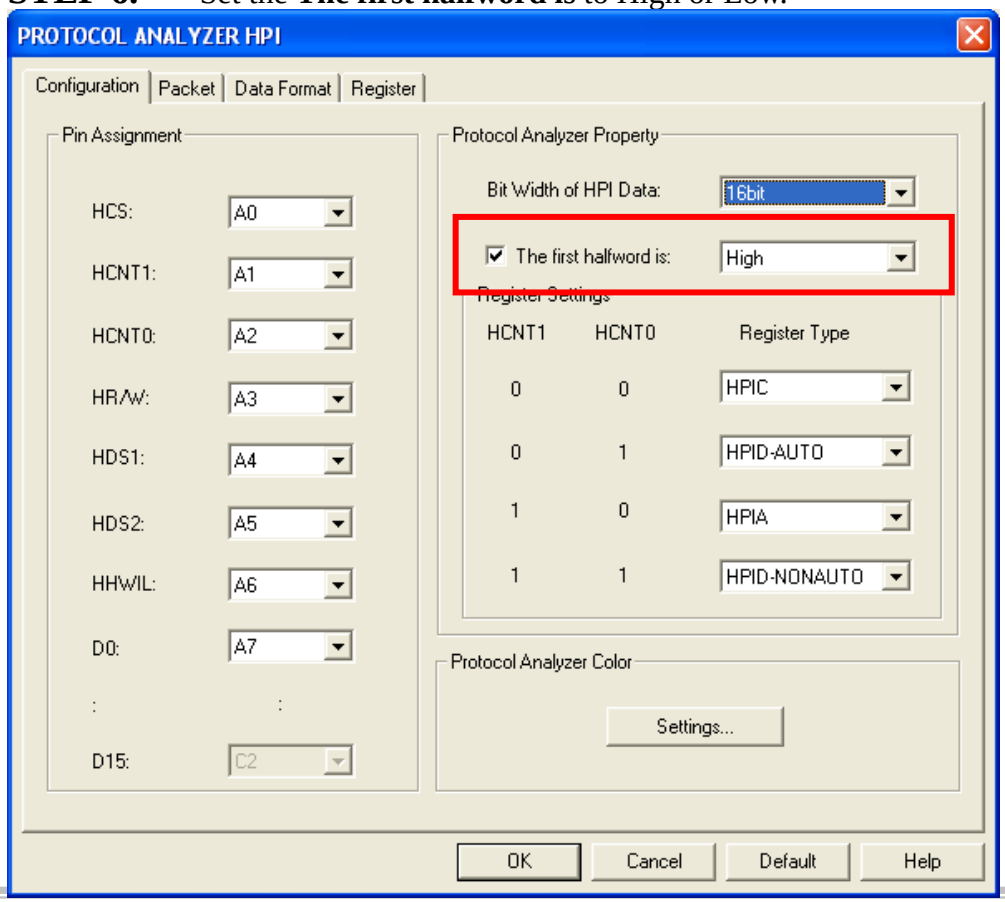
**STEP 5.** Set the **Bit Width of HPI Data** to 8bit or 16bit.




**STEP 6.** Set the **The first halfword is** to High or Low.



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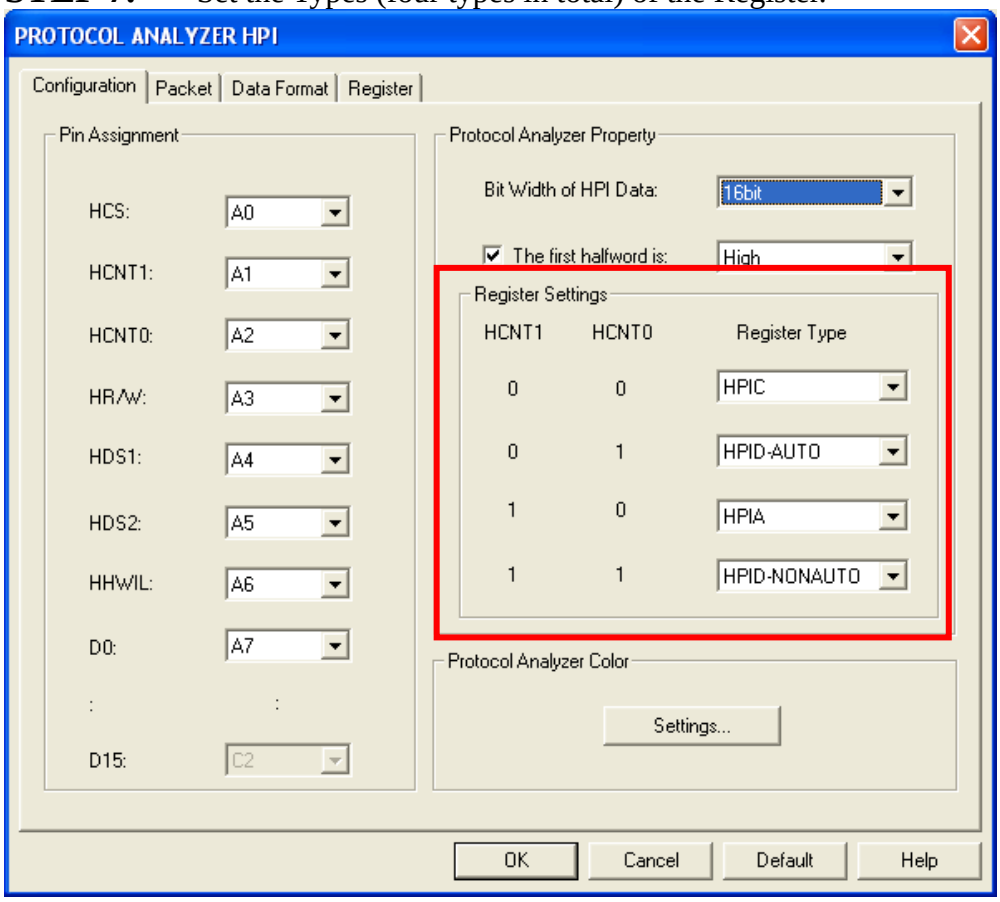
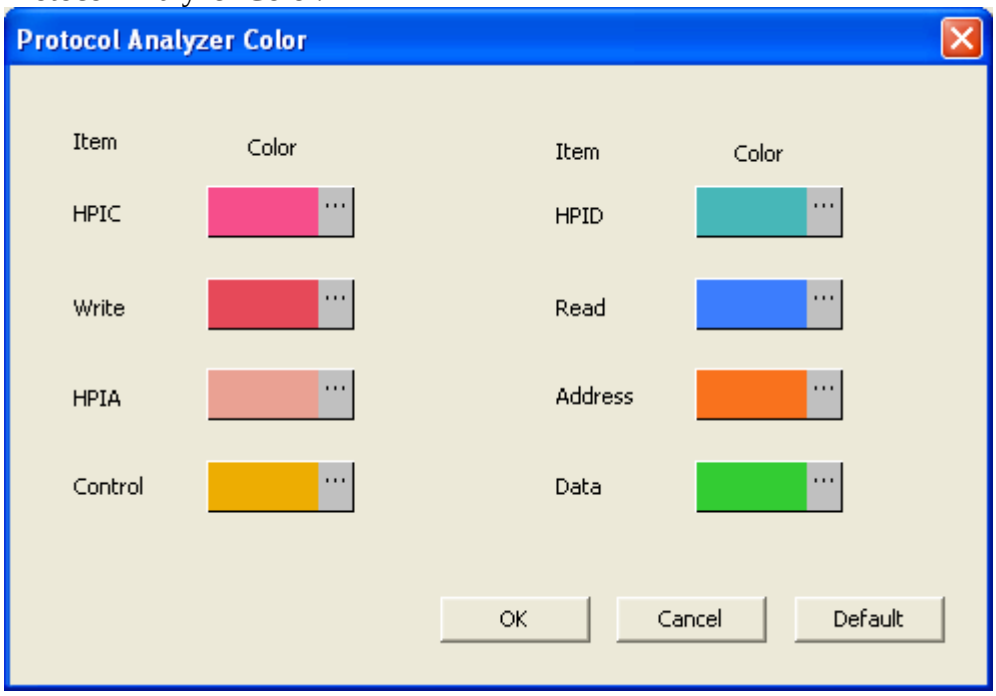
**STEP 7.** Set the Types (four types in total) of the Register.




**STEP 8.** Press the **Settings** button to open the Protocol Analyzer Color dialog box and set the Protocol Analyzer Color.



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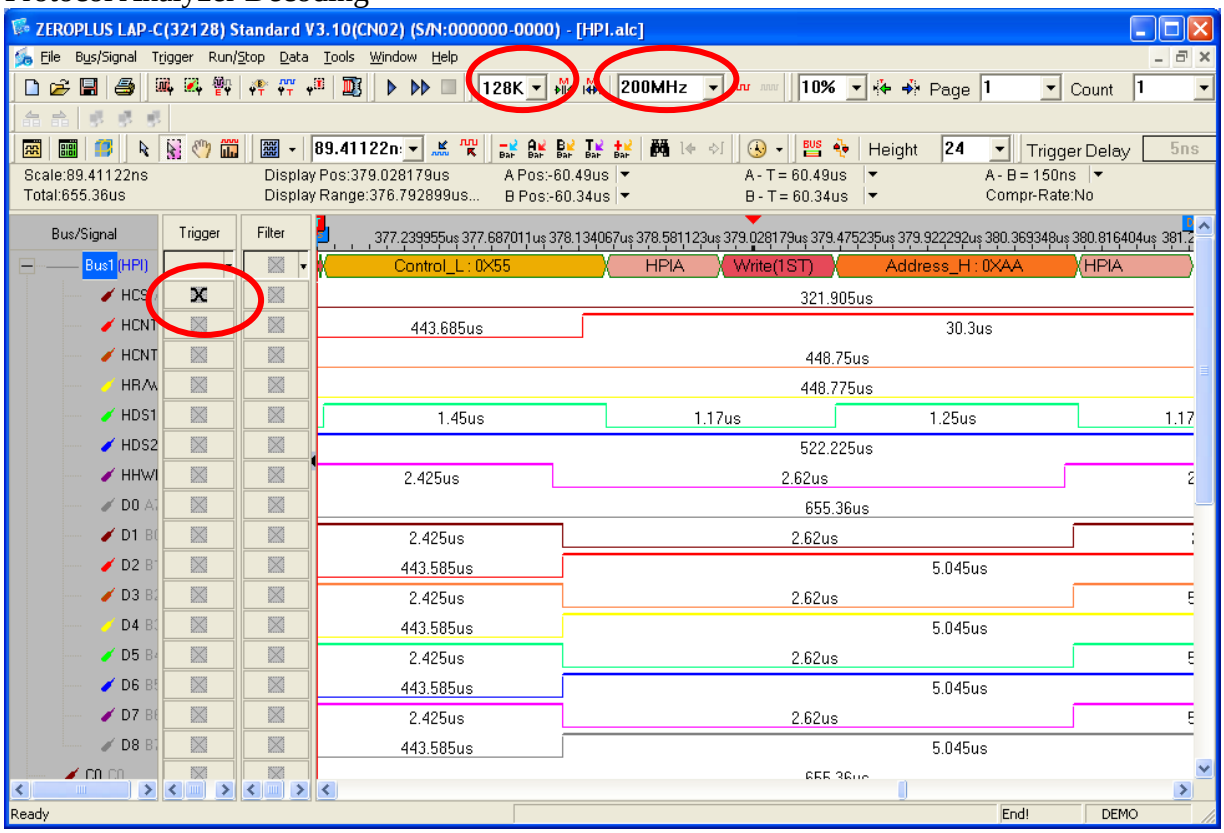
**STEP 9.** Following pictures show the completion of the protocol analyzer decoding and packet list. The trigger condition is set as Either Edge; the memory depth is 128K; the sampling frequency is 200MHz (the sampling frequency should be more than 4 times higher than the signal to be tested).

Protocol Analyzer Decoding



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Packet List