



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

SPECIFICATION

MODEL: B09019-LAP-HPI-M

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 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.

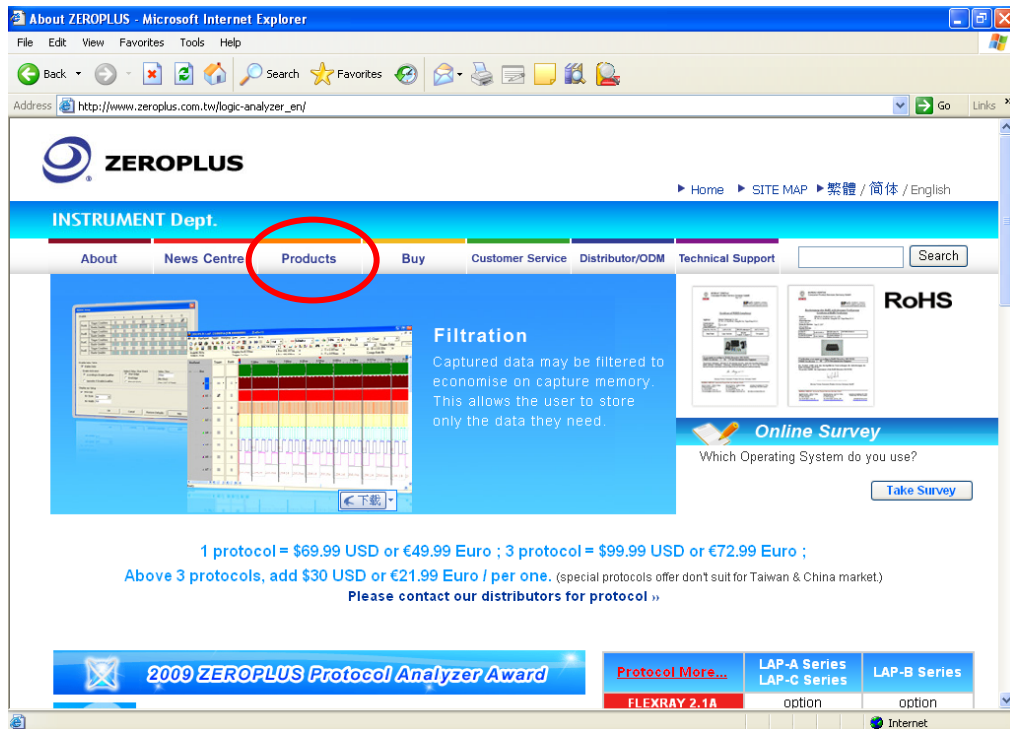
STEP 1. Visit the website of ZeroPlus: <http://www.zeroplus.com.tw>.

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

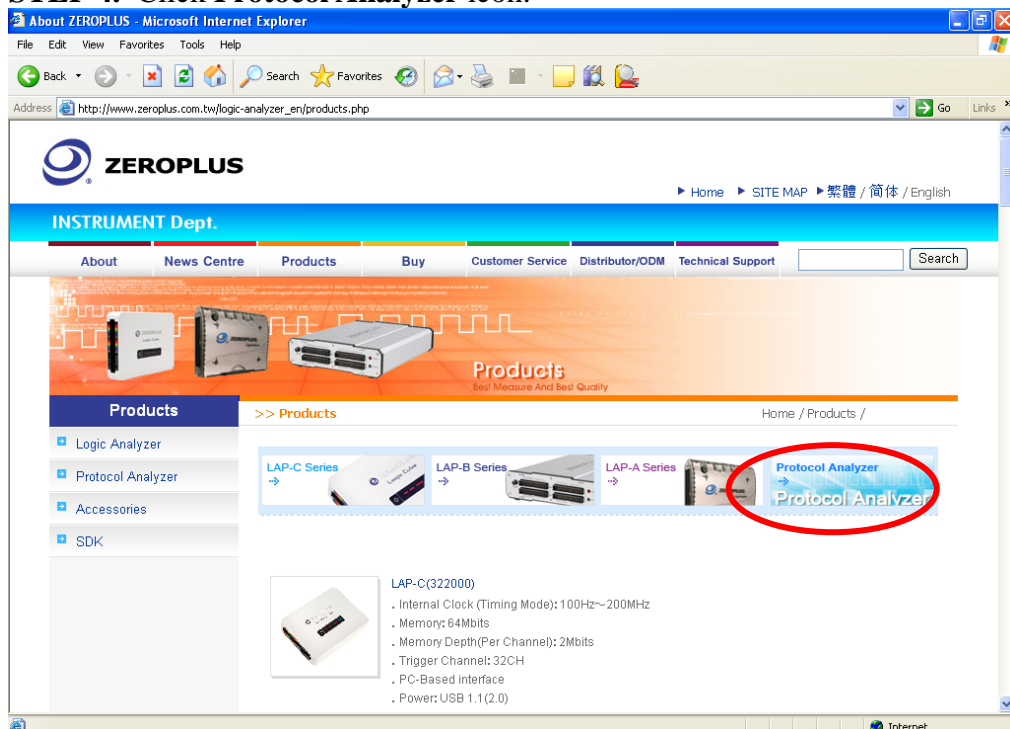




STEP 3. Click Products menu.

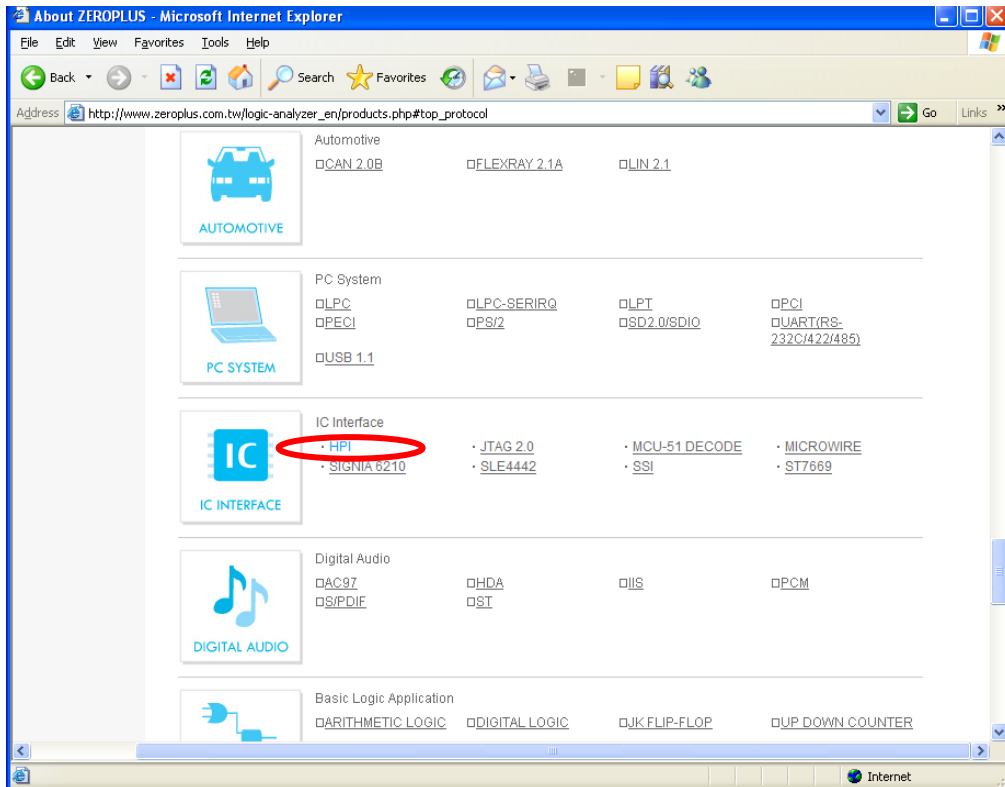


STEP 4. Click Protocol Analyzer icon.

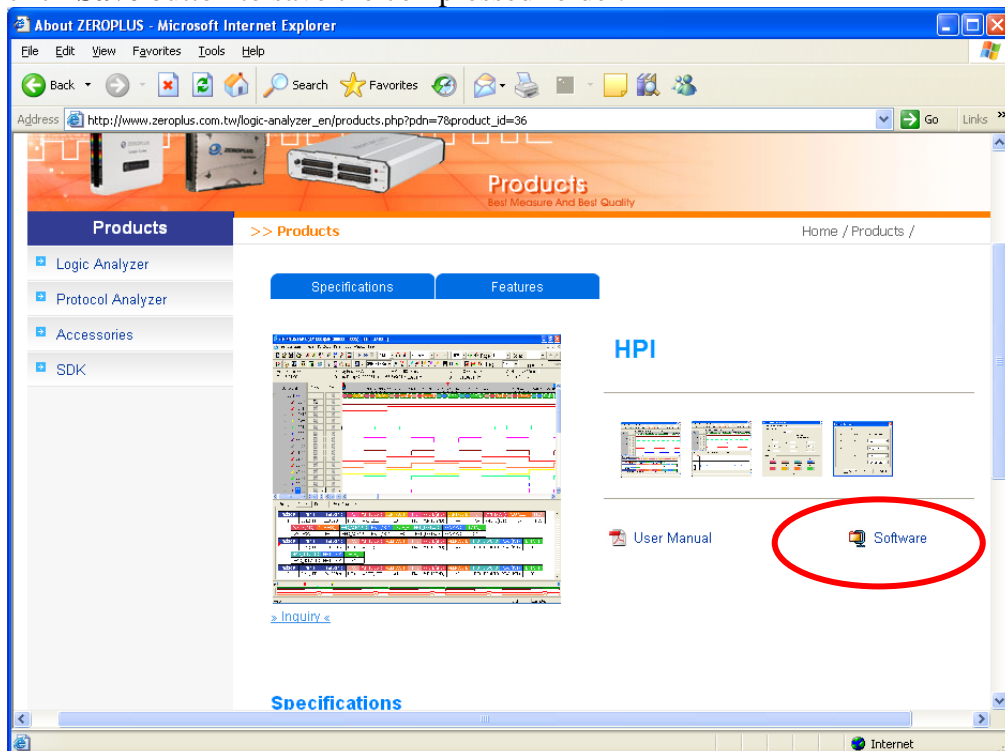




STEP 5. Click **HPI** in the IC INTERFACE column.



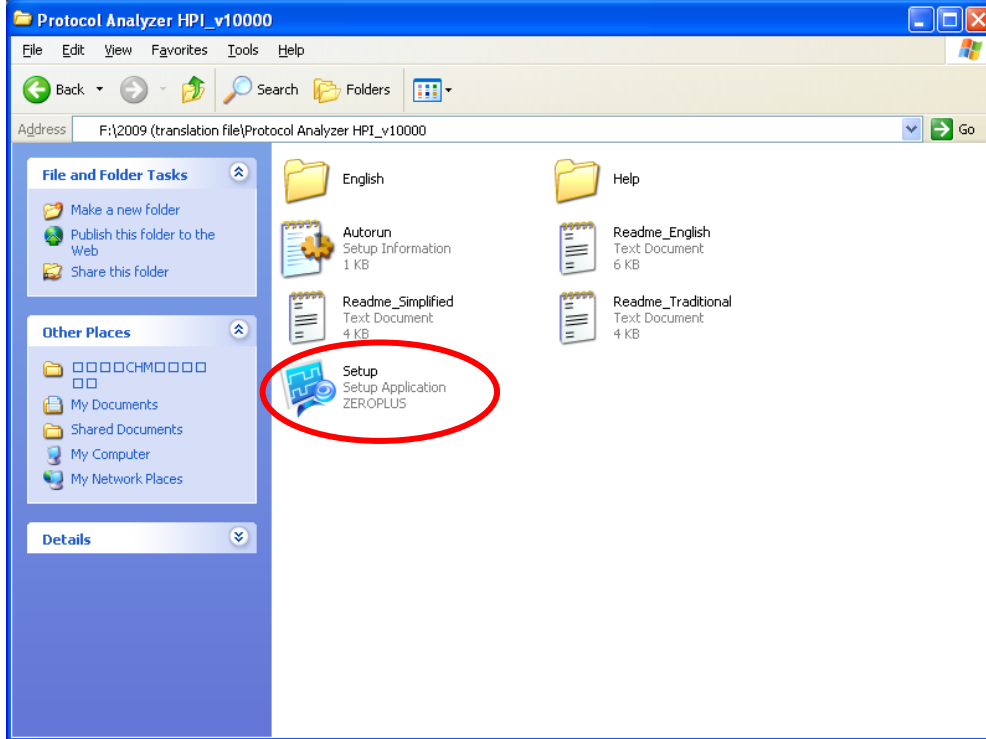
STEP 6. Click **Software** in the Products page. When the File Download dialog box appears, you can click **Save** button to save the compressed folder.



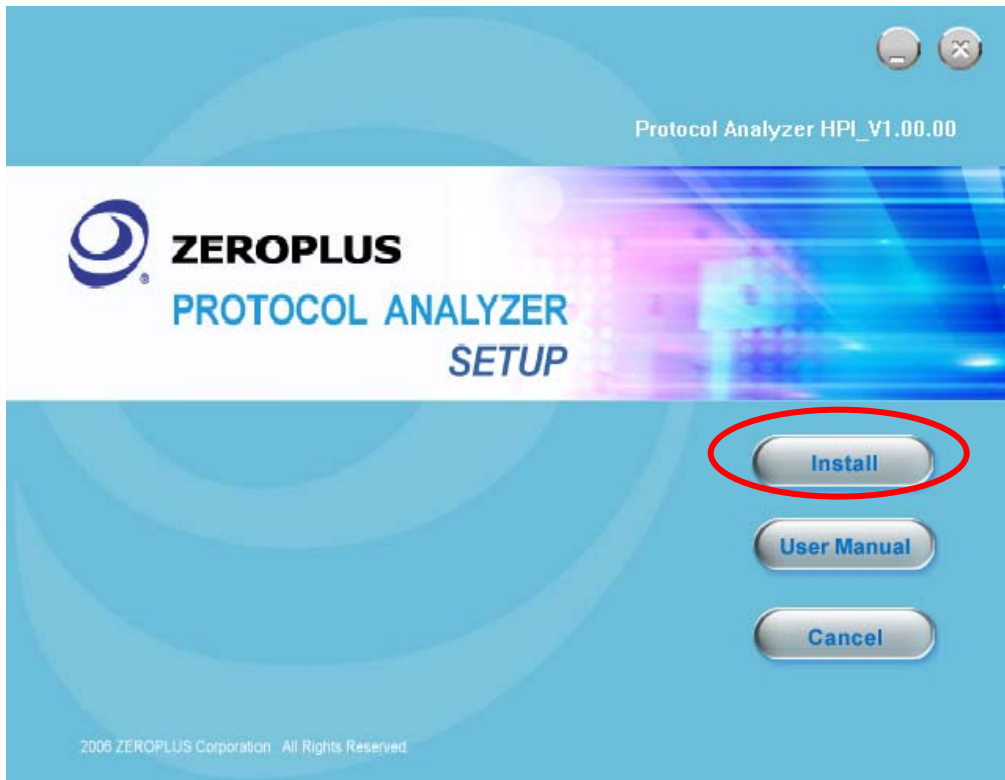


2 Software Installation

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

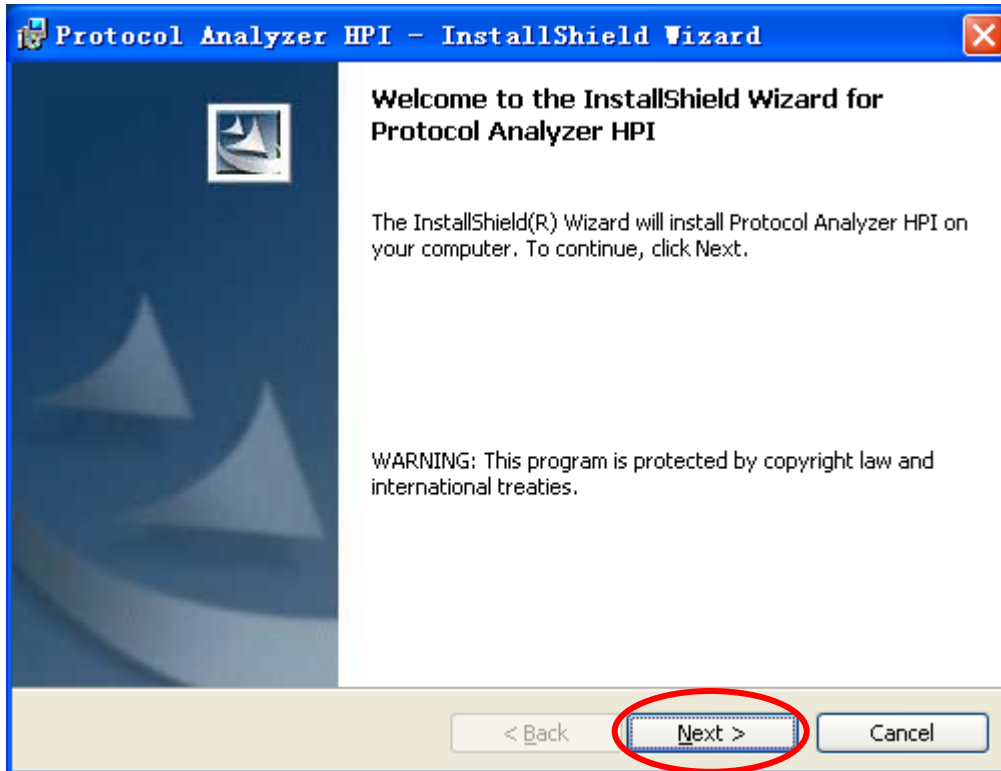


STEP 2. Click **Install**.

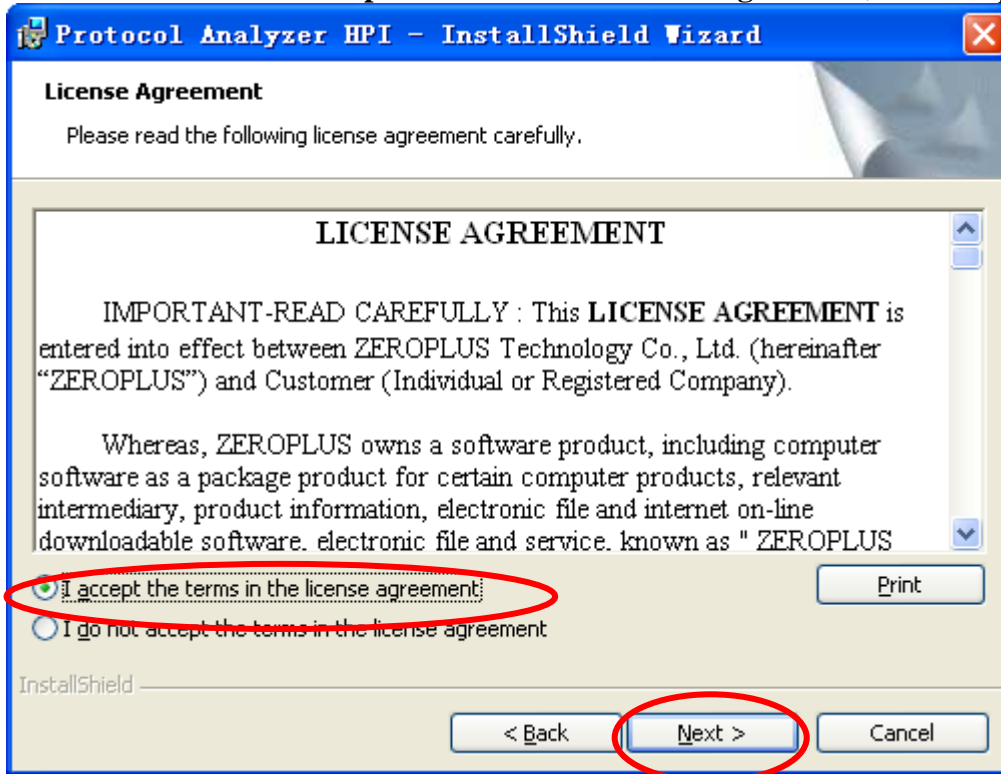




STEP 3. Click Next.

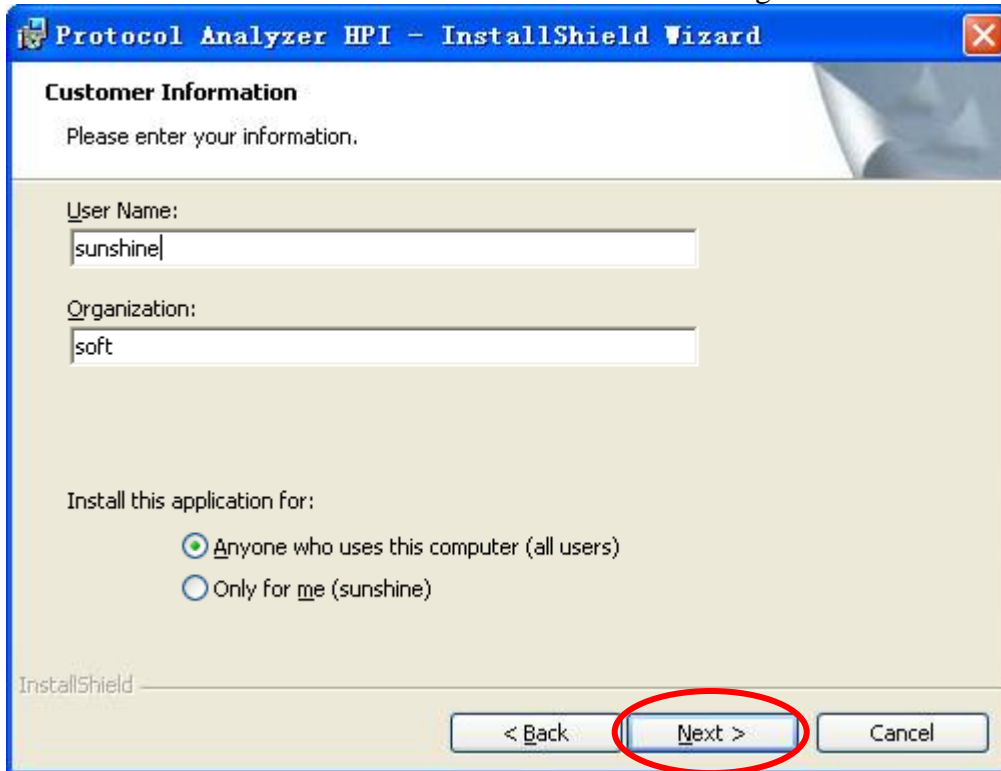


STEP 4. Select **I accept the terms in the license agreement**, and then press Next.

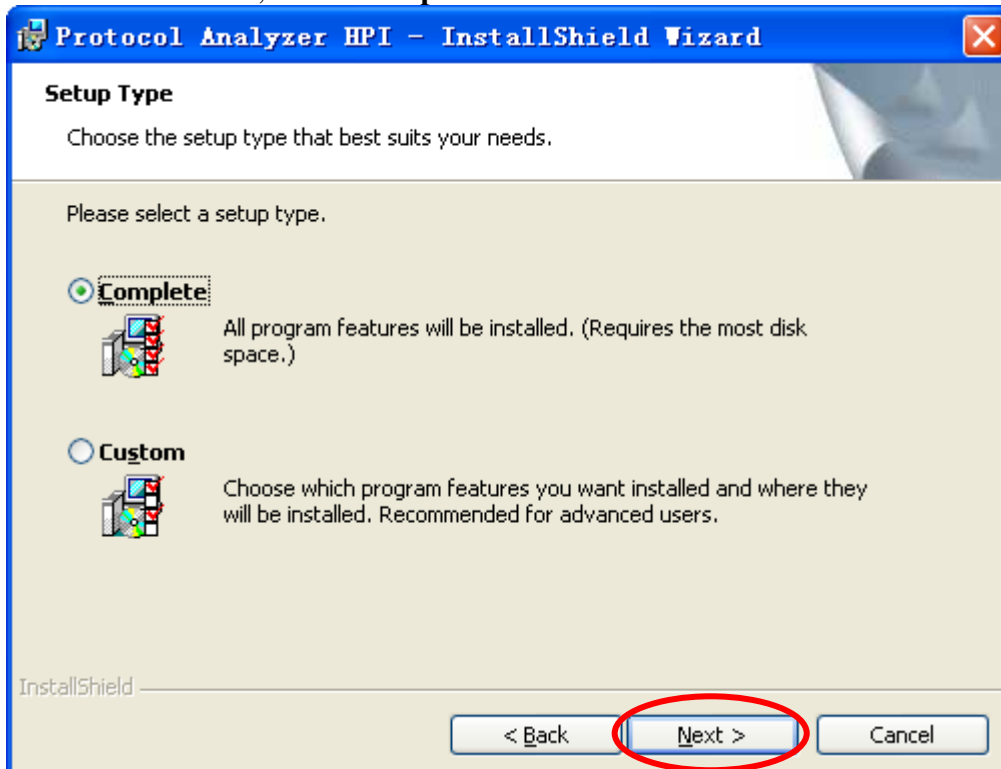




STEP 5. Fill in users' information in the below dialog box and click **Next**.

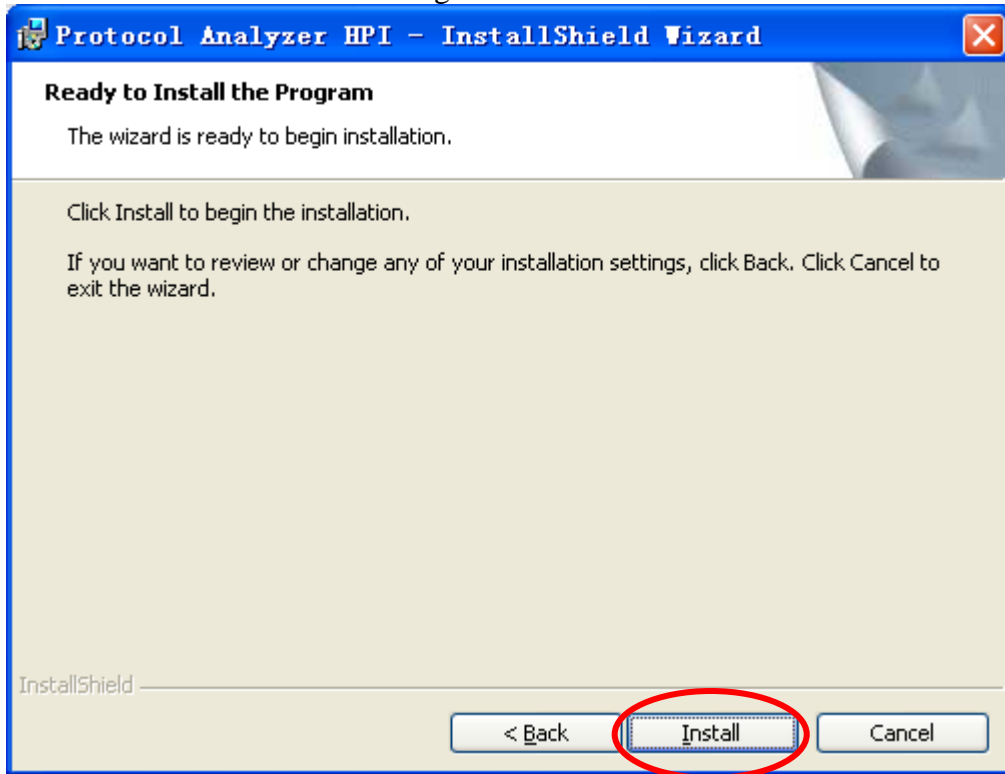


STEP 6. First, select **Complete** and then click **Next**.

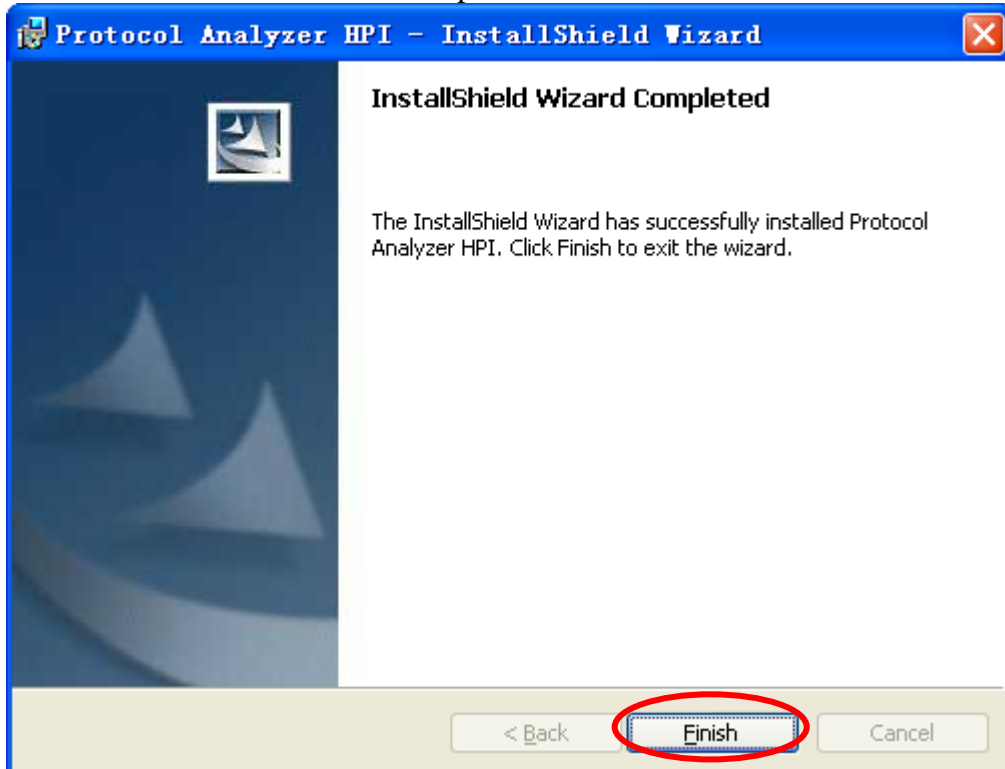




STEP 7. Click **Install** to begin the installation.



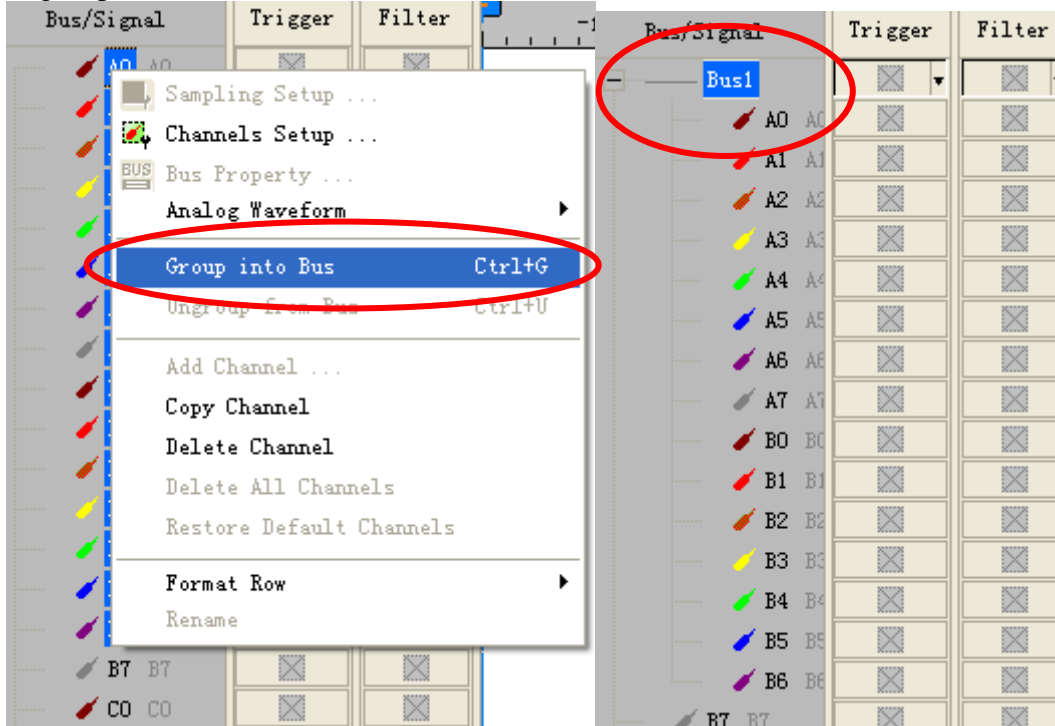
STEP 8. Click **Finish** to complete the installation.



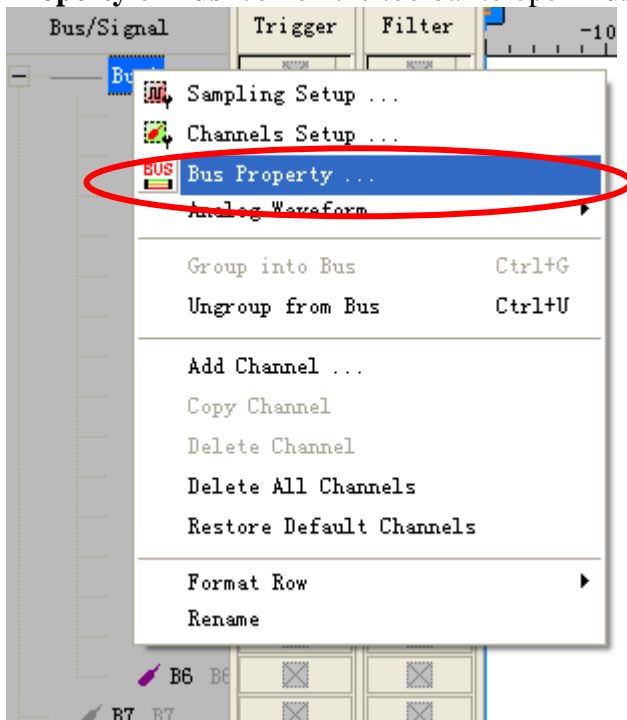


3 Software Register

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.

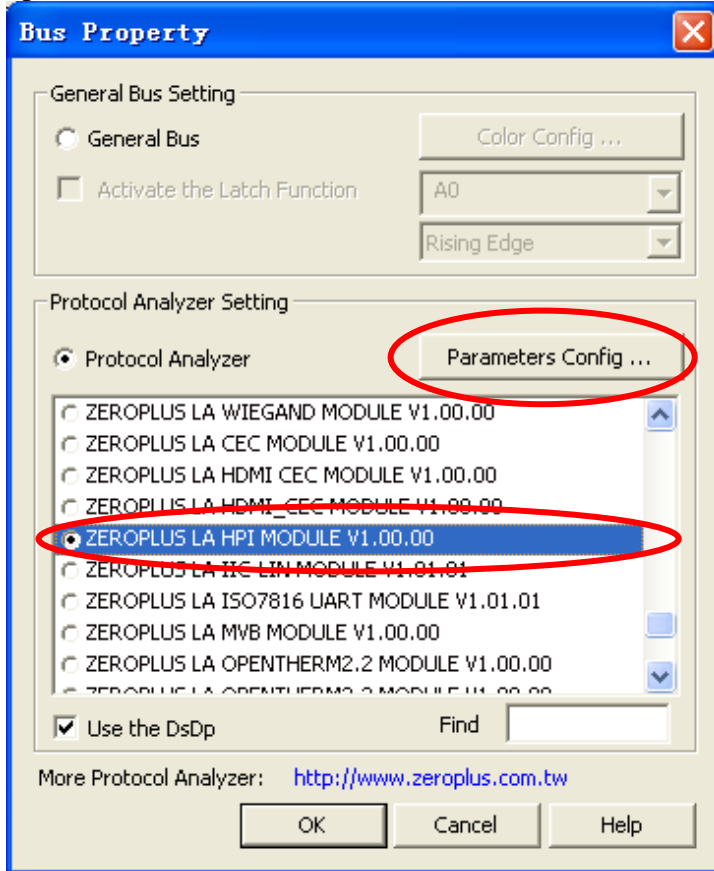


STEP 2. Select **Bus1**, then press **Right Key** on the mouse to list the menu, then press **Bus Property** or **Bus** icon on the toolbar to open **Bus Property** dialog box.

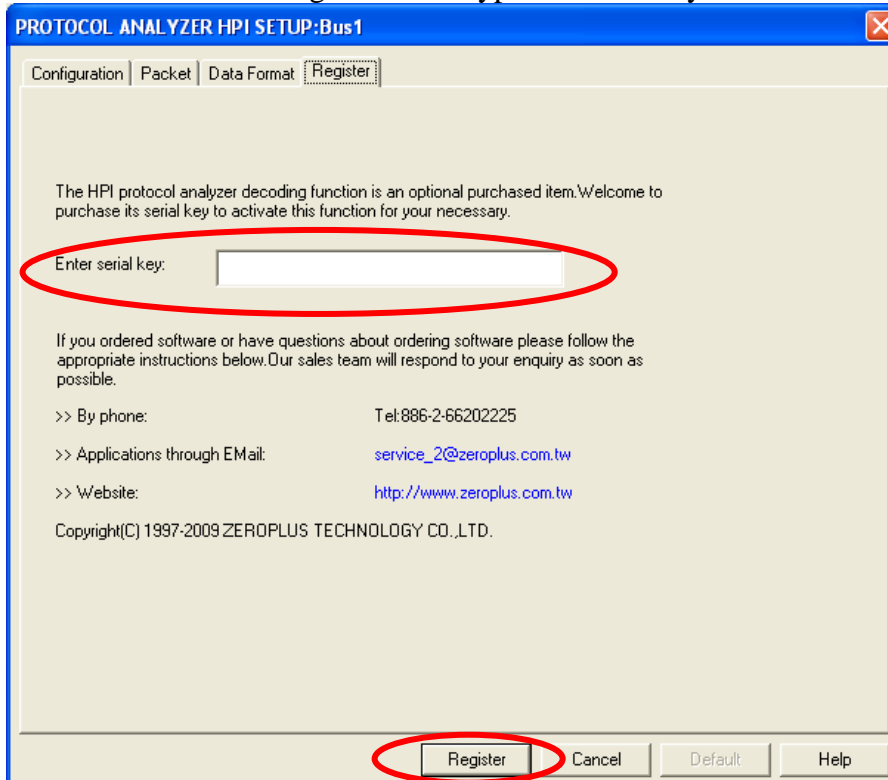




STEP 3. For Protocol Analyzer HPI Parameters Configuration, select Protocol Analyzer, and then choose **ZEROPLUS LA HPI MODULE V1.00.00**. Next click **Parameters Configuration** to open the **PROTOCOL ANALYZER HPI SETUP** dialog box.

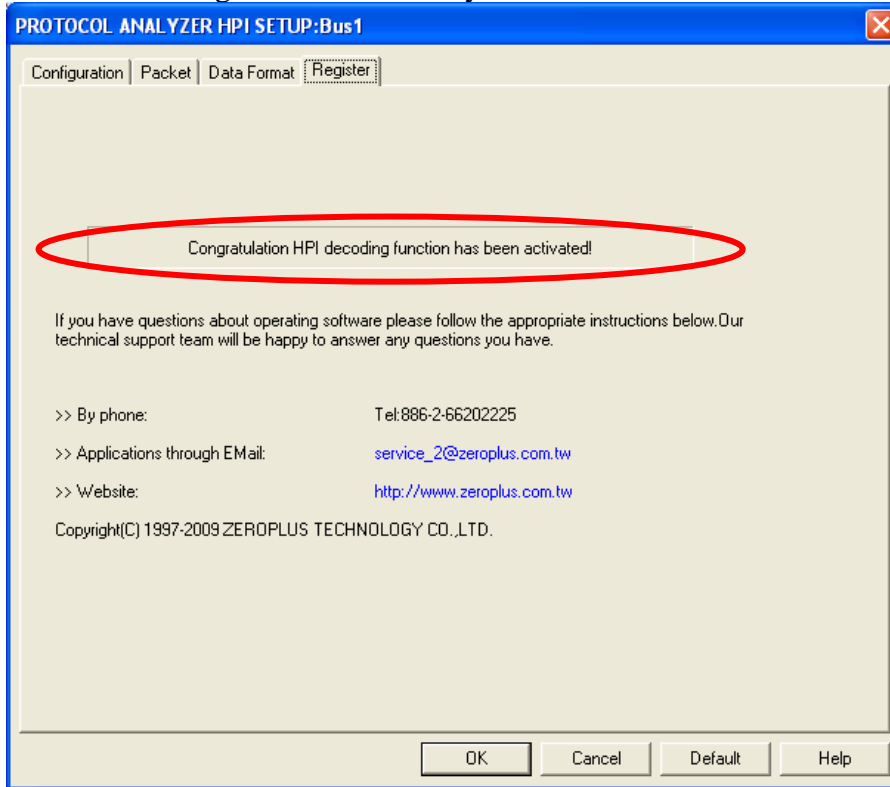


STEP 4. Press Register tab to type the serial key number of **HPI**. Then, press **Register**.





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

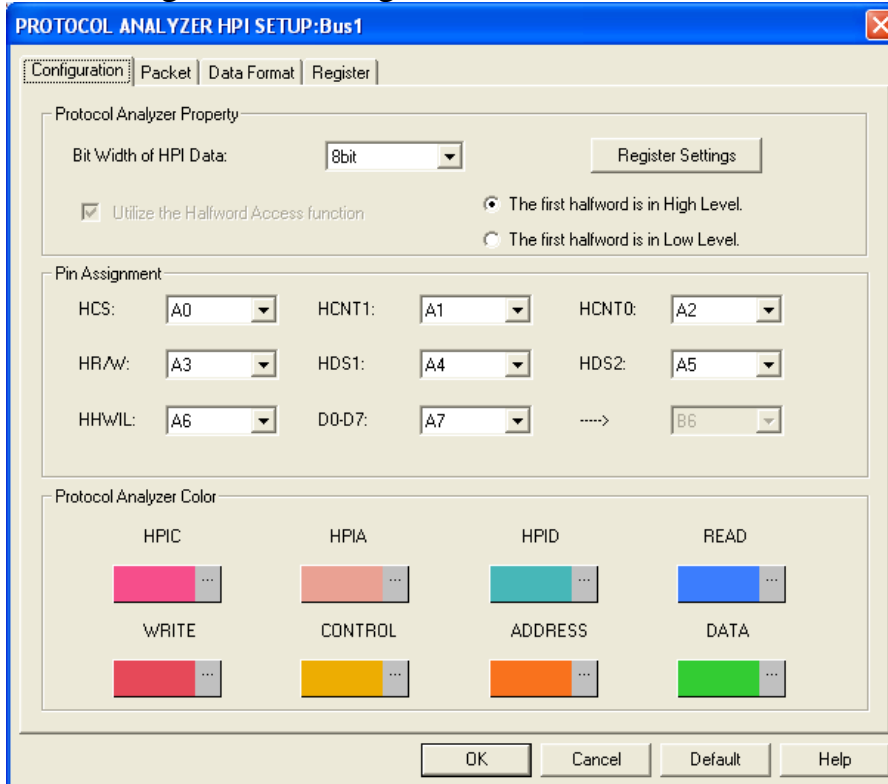




4 User Interface

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

HPI Configuration Dialog Box



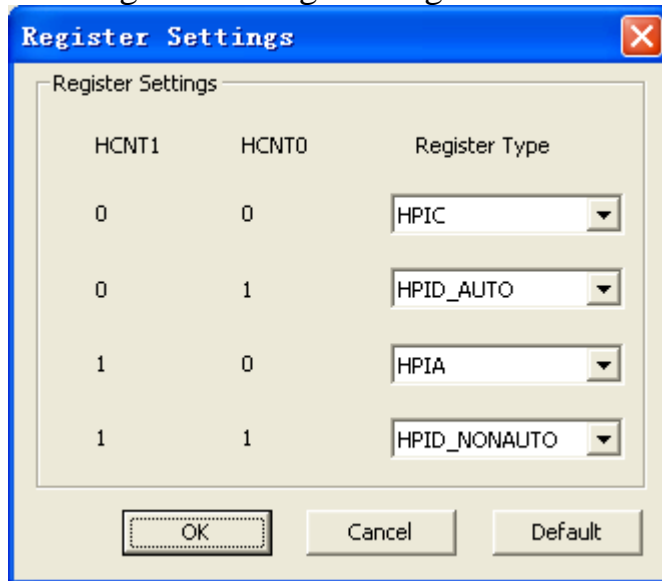
Protocol Analyzer Property:

Bit Width of HPI Data: The number of the HPI channel can be decided according to the options in the pull-down menu, namely, 8bit, 16bit and 32bit. When the **8bit** is selected, the **Utilize the Halfword Access function** is selected automatically, and users cannot change the selection; when the **32bit** is selected, the **Utilize the Halfword Access function** is not selected and cannot be changed either, and it can only be used in the LAP-B Series.

Utilize the Halfword Access function: It is used to decide whether the Protocol Analyzer HPI uses the halfword transmission. When selecting the **Utilize the Halfword Access function**, the options, **The first halfword is in High Level** and **The first halfword is in Low Level**, can be selected.



HPI Register Settings Dialog Box



Register Settings: It is used to set the Register Type corresponding to the values of the HCNT 1 and HCNT0, and it should be noticed that the same Registers cannot be set at the same time. There are four Registers to be selected, namely, HPIC, HPID_AUTO, HPIA and HPID_NONAUTO.

Pin Assignment

HCS: It is the Chip Select Control channel.

HCNT1 & HCNT0: They are the Register Select channels.

HR/W: It is the Read/Write Control channel.

HDS1 & HDS2: They are the Data Latch channels.

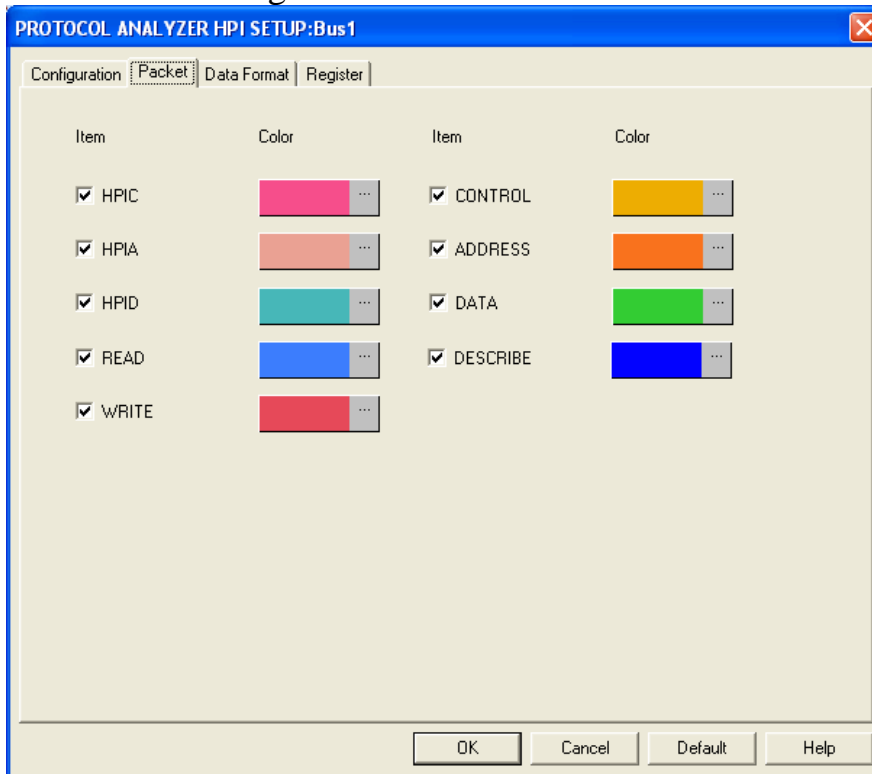
HHWIL: It is the Halfword Indication channel. When the **Utilize the Halfword Access function** check box is not selected, the HHWIL channel is disabled.

D0-D7: They are the Data Transmission channels. Only the D0 channel can be set, and the other channels can be increased in order. On the other hand, the number of the channels can be changed according to the selected Bit Width. Specifically, when the **8bit** is selected, the channels are from D0 to D7; when the **16bit** is selected, the channels are from D0 to D15; when the **32bit** is selected, the channels are from D0 to D31;

Protocol Analyzer Color: The protocol analyzer colors can be varied by users.

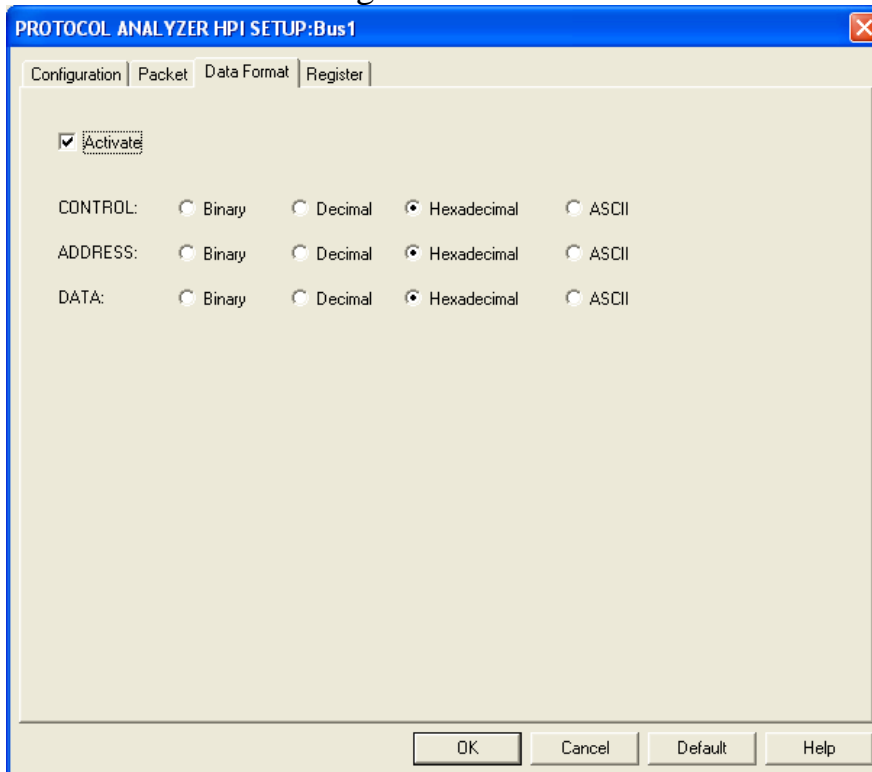


HPI Packet Dialog Box



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

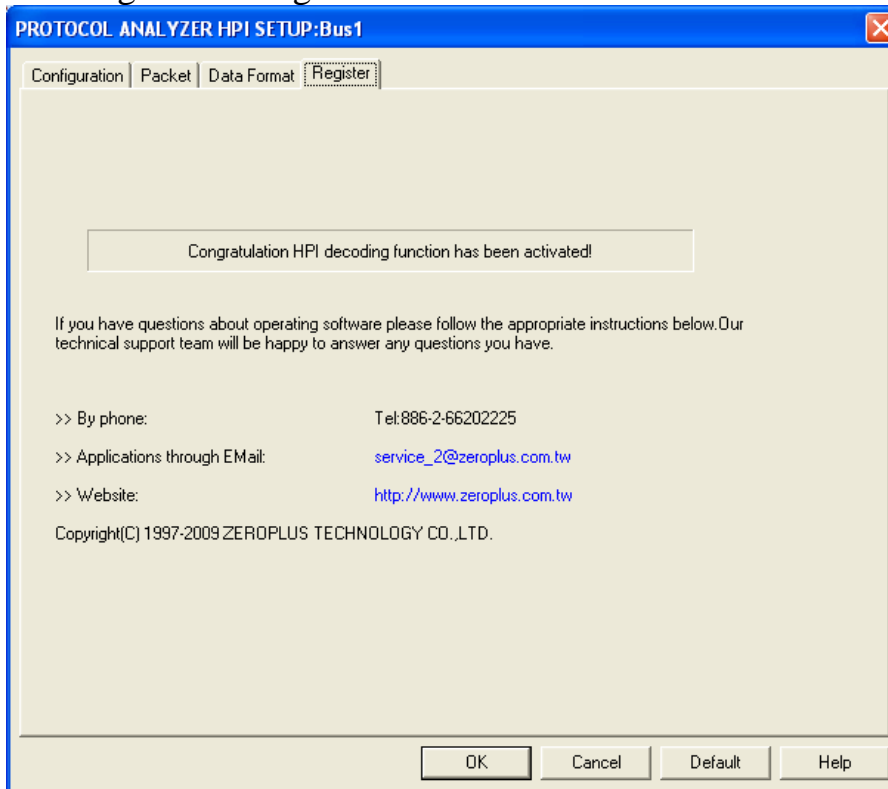
HPI Data Format Dialog Box



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.



HPI Register Dialog Box

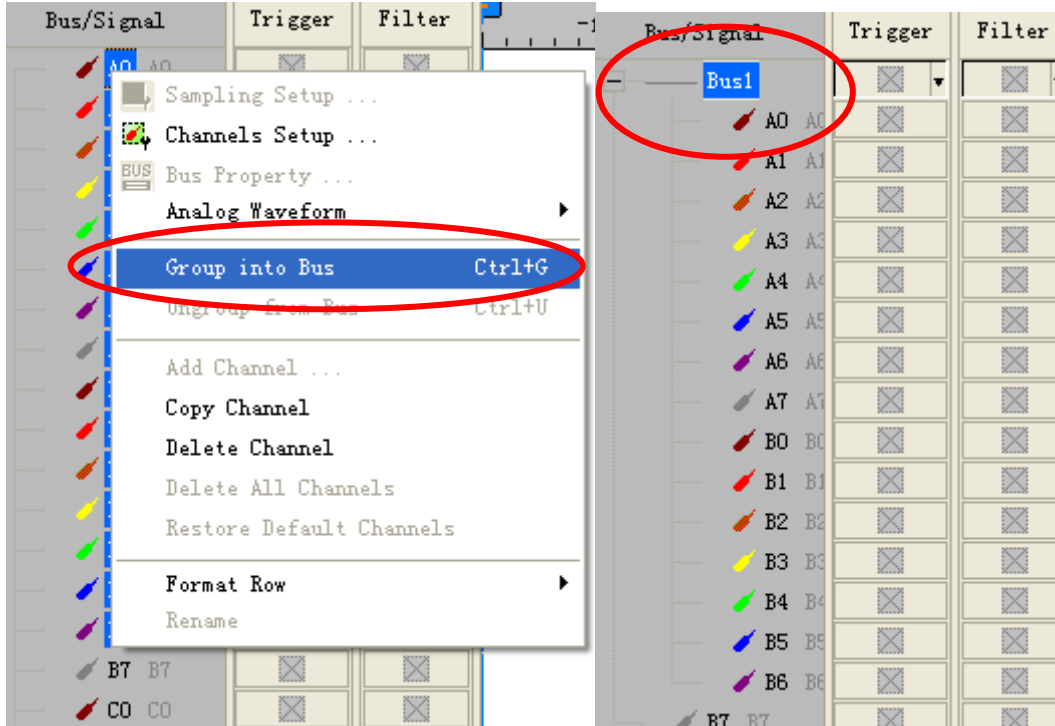


There is ZeroPlus company information. If you have any questions about software operations, you can contact ZeroPlus by Telephone or Email.

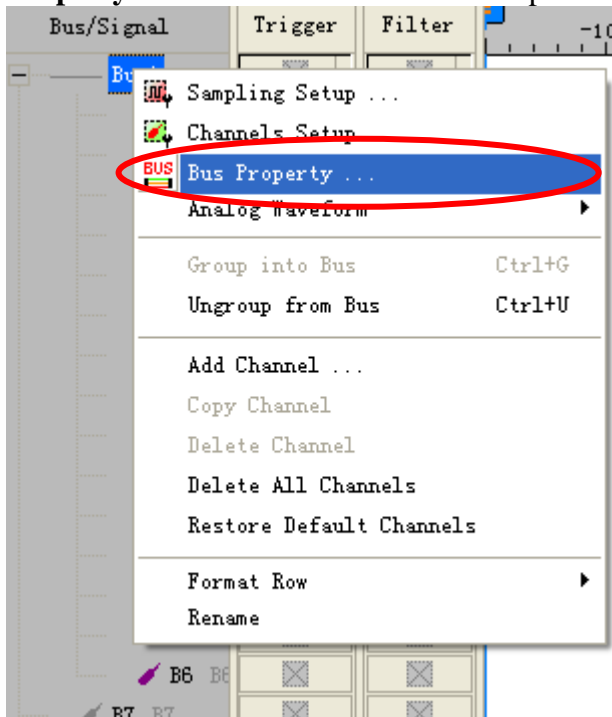


5 Operating Instructions

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.

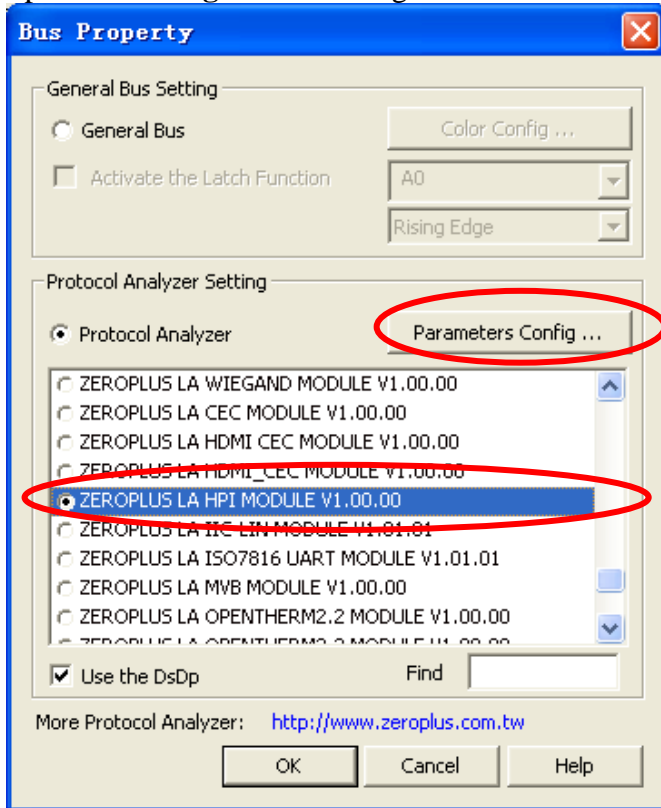


STEP 2. Select **Bus1**, then press **Right Key** on the mouse to list the menu, then press **Bus Property** or **Bus** icon on the toolbar to open **Bus Property** dialog box.

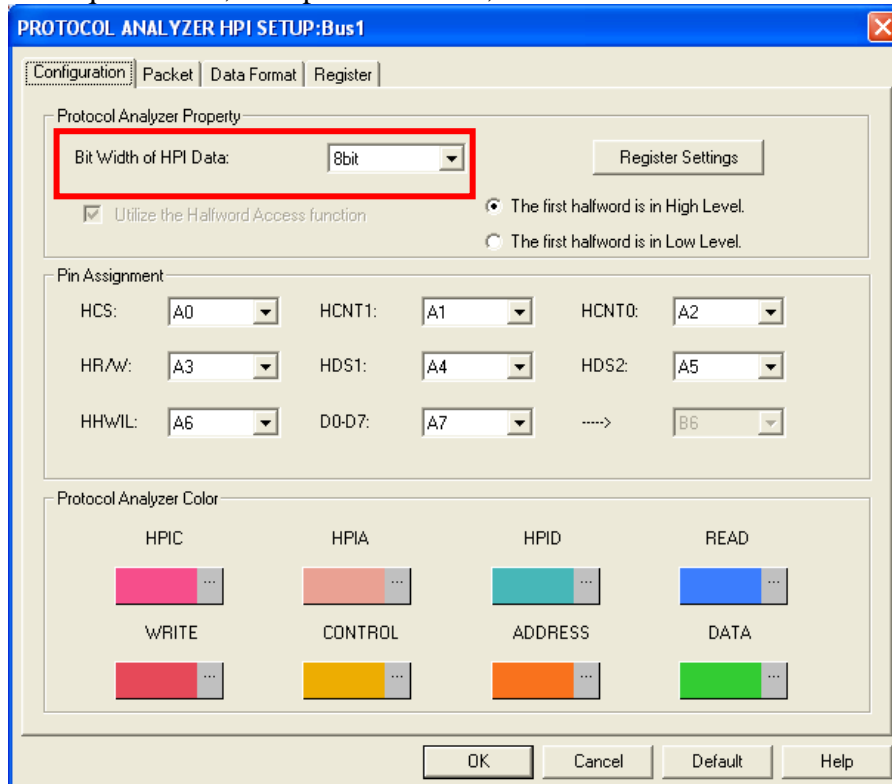




STEP 3. For Protocol Analyzer HPI Parameters Configuration, select Protocol Analyzer, and then choose **ZEROPLUS LA HPI MODULE V1.00.00**. Next click **Parameters Configuration** to open the **Configuration** dialog box.

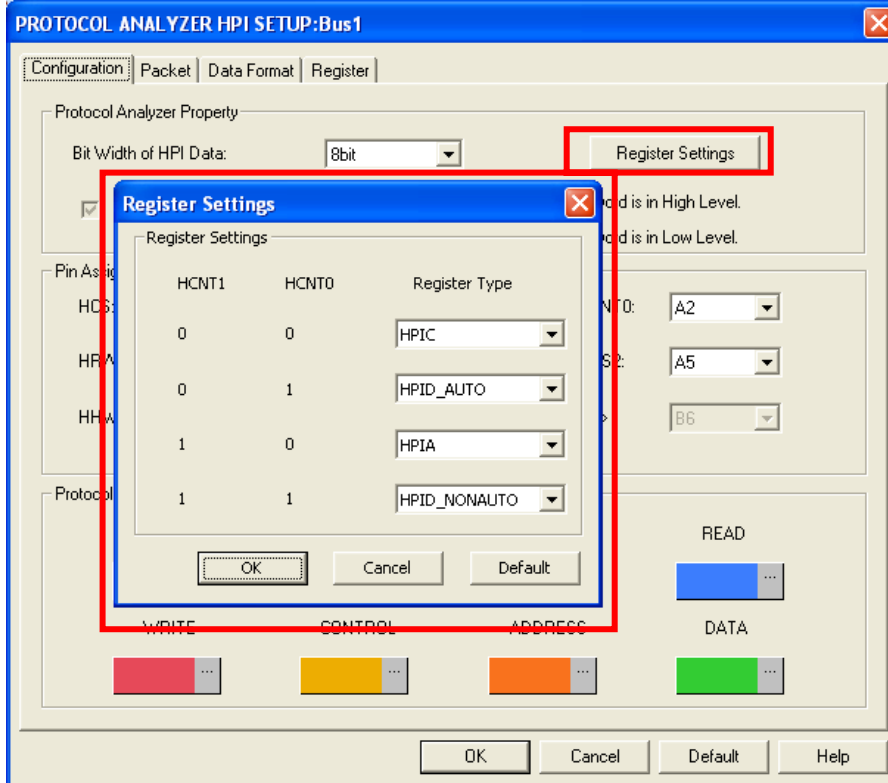


STEP 4. In the Configuration dialog box, the **Bit Width of HPI Data** can be set according to the requirements; the options are 8bit, 16bit and 32bit.

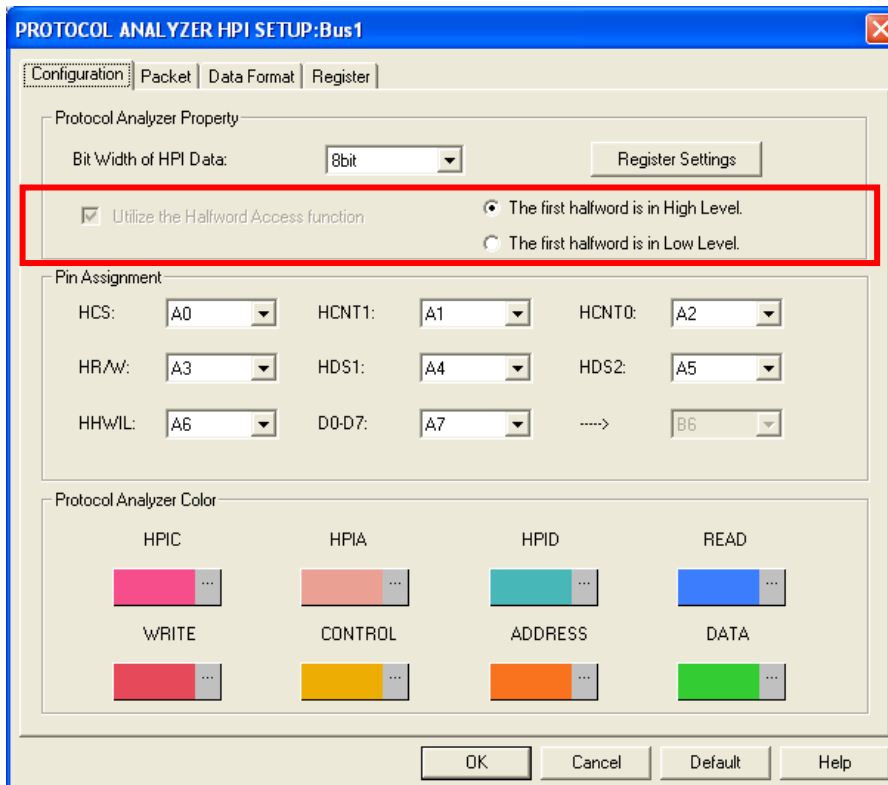




STEP 5. Press the Register Settings button to enter the Register Setting dialog box and set the Register Type corresponding to the values of the HCNT 1 and HCNT0.

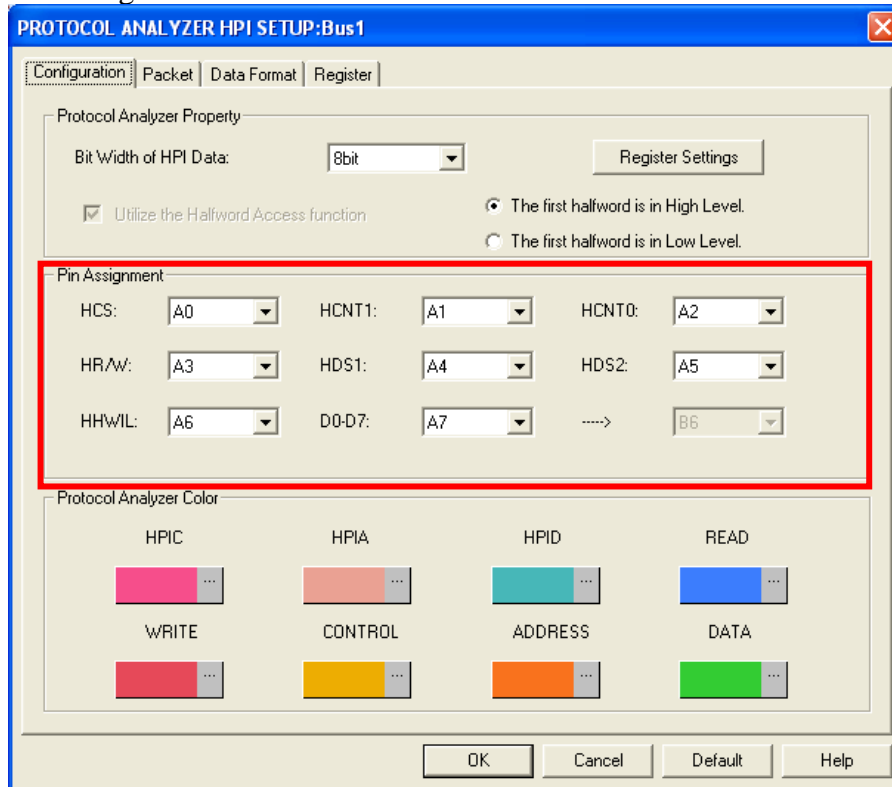


STEP 6. Select the option, **The first halfword is in High Level** or **The first halfword is in Low Level** when the Halfword Access function is selected.

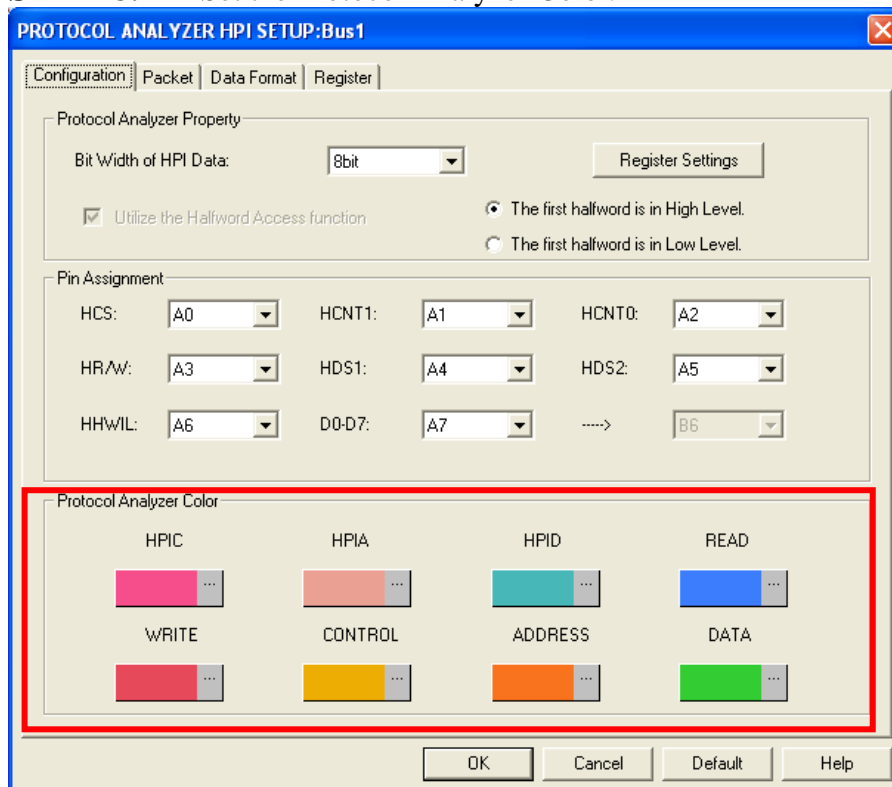




STEP 7. Set the channels in the **Pin Assignment**. The number of the channels is different according the selected Bit Width of HPI Data.



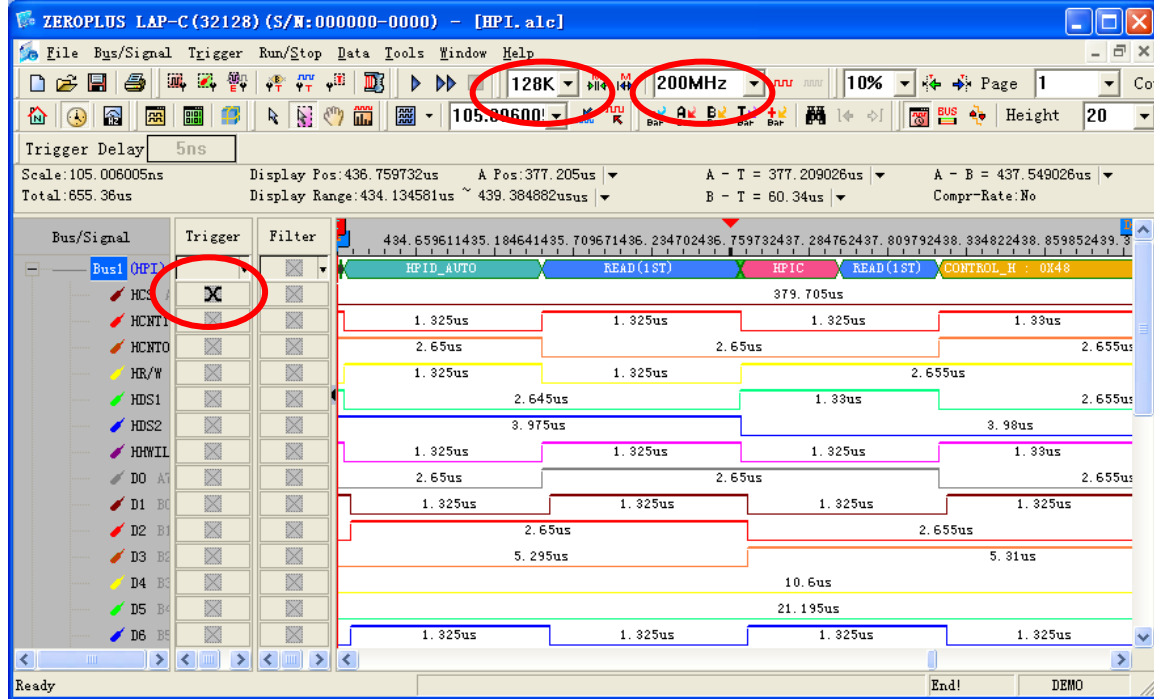
STEP 8. Set the Protocol Analyzer Color.





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



Packet List

