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

SPECIFICATION

MODEL: B11006-HART

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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Content

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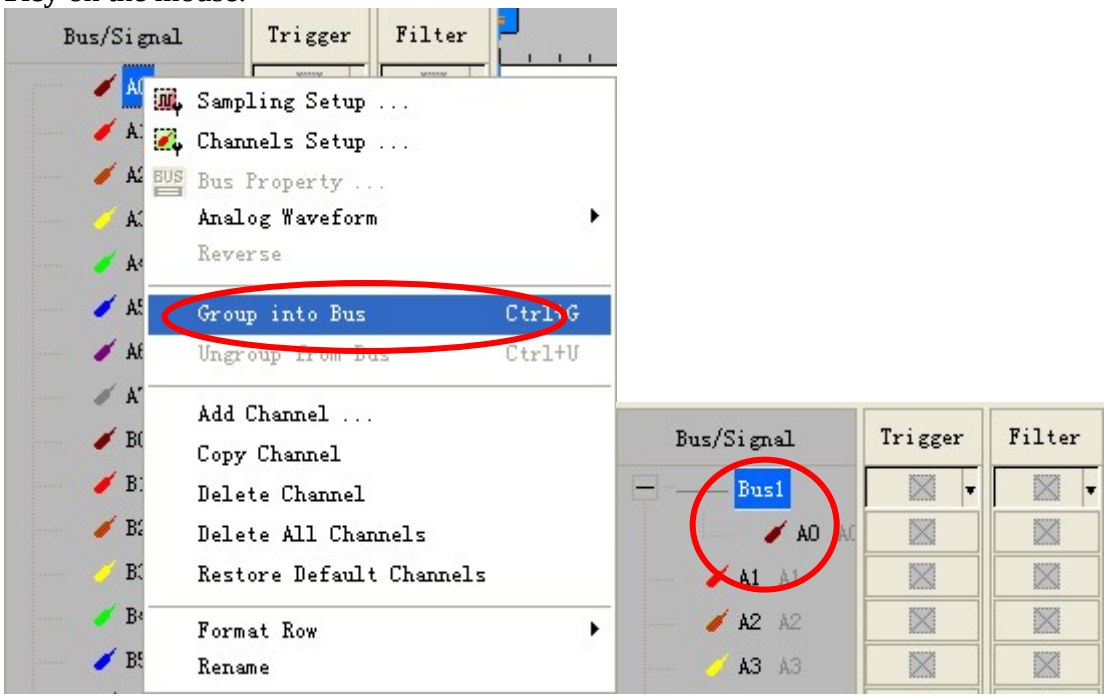
1. Software Register

Please register the software as the following steps:

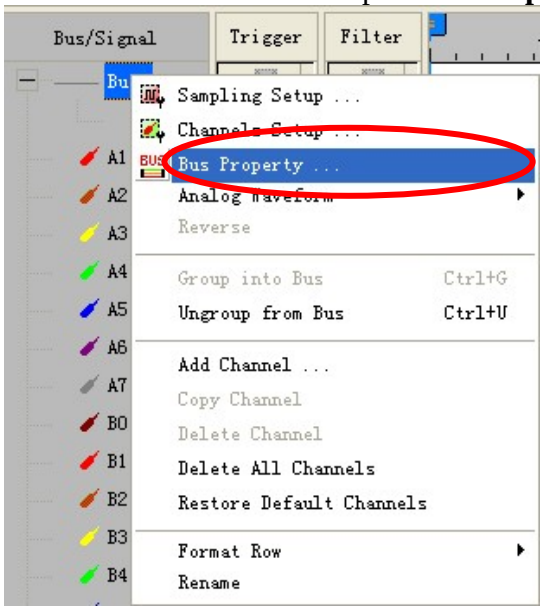
※ Remark1: The registration steps for all protocol analyzers are the same; you can complete the registration by following procedures. Following is an example on how to register the Protocol Analyzer BUS.

※ 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 group the unanalyzed channels into **Bus1** by pressing the **Right Key** on the mouse.



STEP 2. Select **Bus 1**, 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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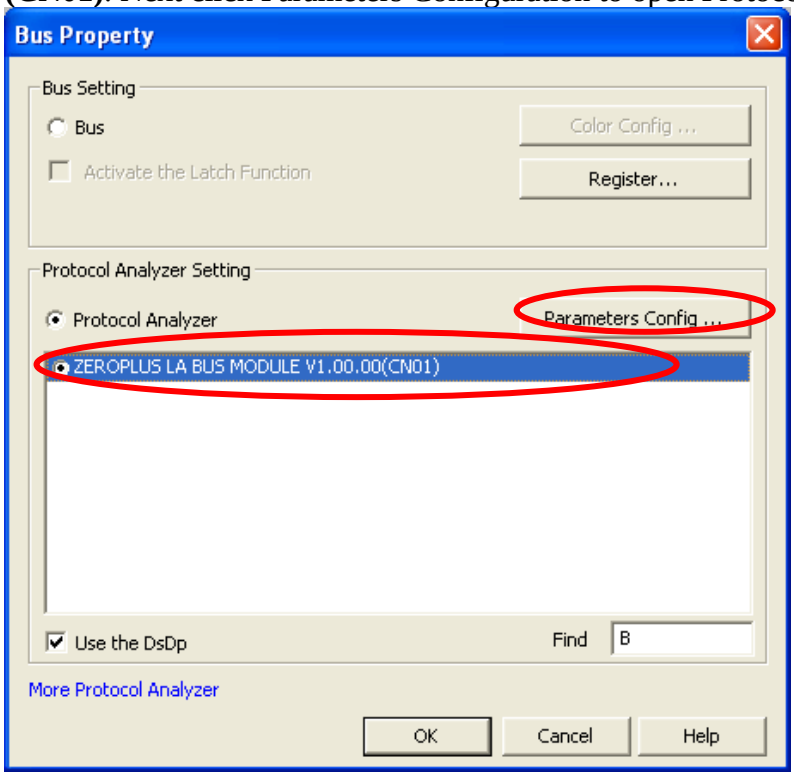
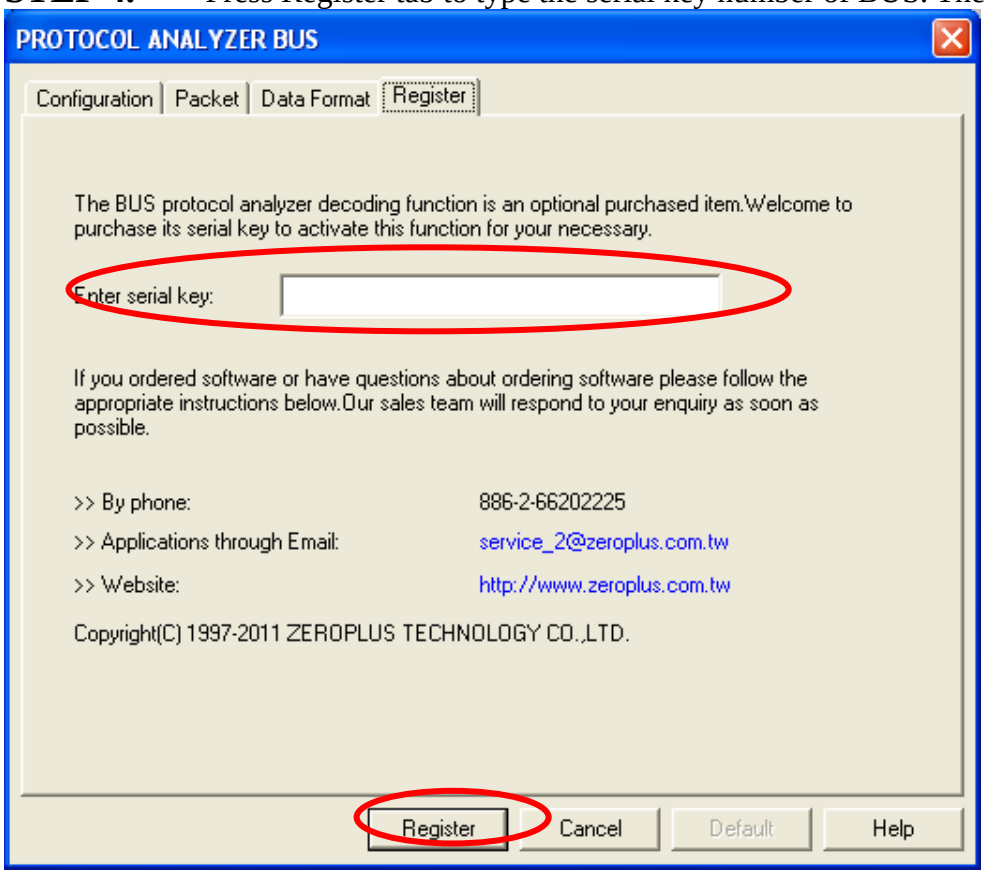
STEP 3. Select the Protocol Analyzer, and then choose **ZEROPLUS LA BUS MODULE V1.00.00 (CN01)**. Next click Parameters Configuration to open Protocol Analyzer Bus dialog box.



STEP 4. Press Register tab to type the serial key number of BUS. Then press Register.



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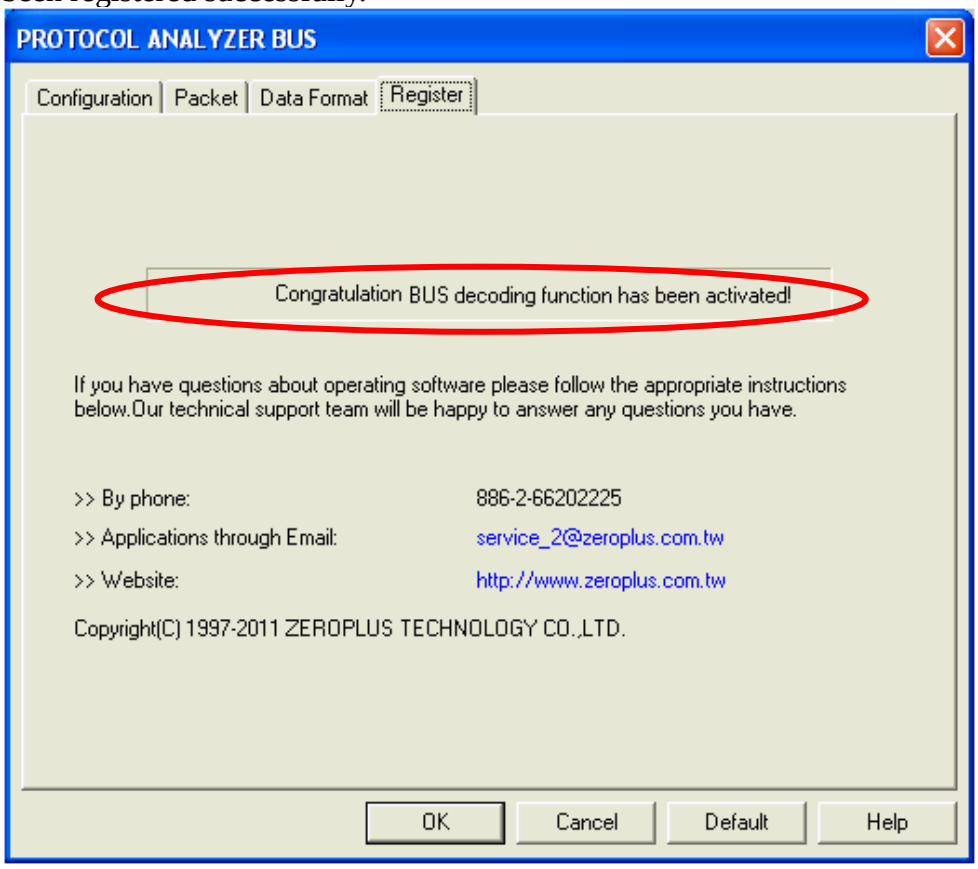
STEP 5. After pressing the Register button, following dialog box will appear, it denotes that the BUS has been registered successfully.



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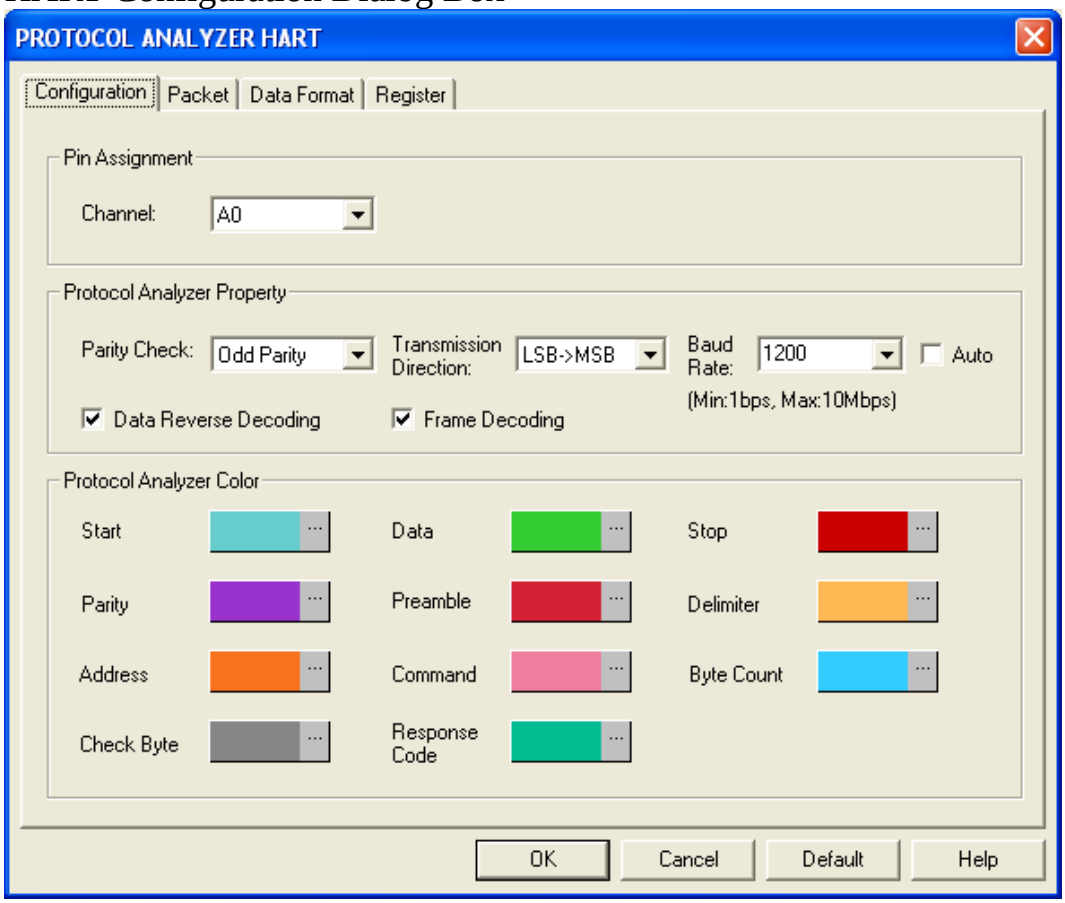
2. User Interface

In the Configuration, please refer to the below images to select options of setting HART module.

HART Configuration Dialog Box



Pin Assignment:

Channel: It uses one channel RS232 decoding.

Protocol Analyzer Property:

Parity Check: Users can select Odd Parity, Even Parity or None Parity. And the default is None Parity.

Transmission Direction: The default direction is LSB→MSB.

Baud Rate: The input value can be 1bps→10Mbps. Users also can select 110, 300, 600, 1200, 2400, 4800, 9600, 19200, 38400, 57600, 15200, 230400, 460800, 921600 bps from the pull-down menu.

Notice: When the Baud Rate changes, the sending interval between two characters will change too.

Auto: Below are the detailed operating steps.

1. First, it will auto-judge the bitwise is reversed or not. If not, the signal is normal; if the first part is low, it will be ignored; and if the last part is also low, it will also be ignored and the main program does the following calculation.
2. It will find the longest Low Level part (Lmax), if there is any Low Level part that is lower than Lmax/10, it will ignore the value and do the following calculation.
3. It will find the shortest Low Level part (Lmin). It will find the Low Level of (1~1.15)*Lmin and mark the number with N1, then find the Low Level of (2~2.3)*Lmin and mark the number with N2; it totals 20 parts (N1+N2=20). The average value is (total value of Low Level parts)/ (N1+2N2). If there is not such 20 parts in the whole signal, then it will recode the total parts that the signal has, and the average value still is (total value of Low Level parts)/(N1+2N2).
4. The average value is a time length value, it is no need to convert it to baud rate and can be decoded as bit

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length.

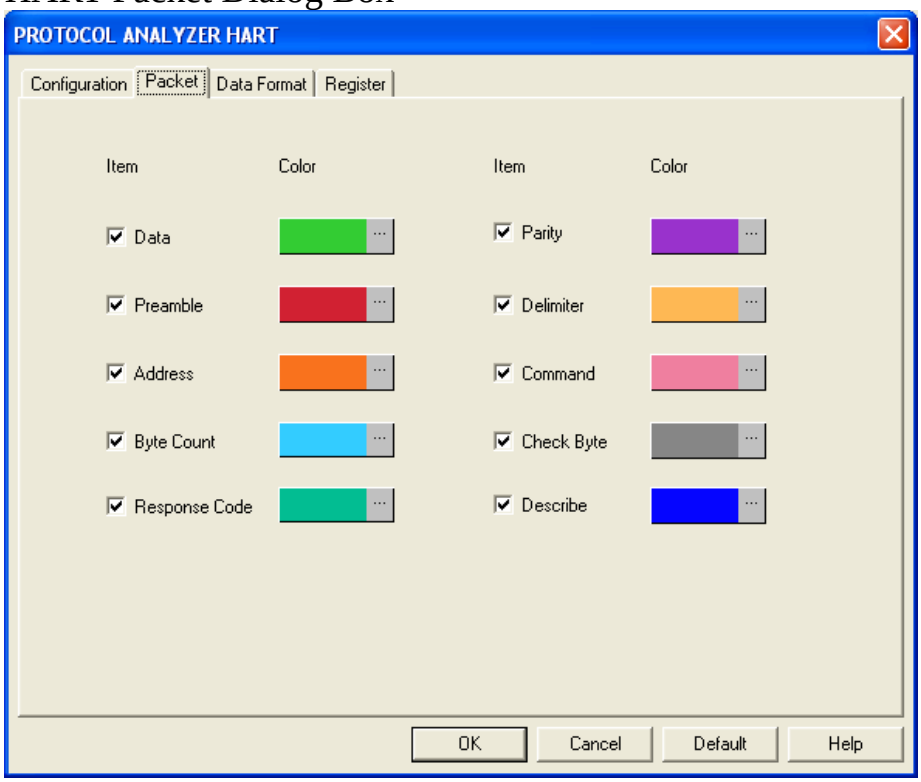
5. If the bitwise is reversed, the Low Level mentioned above should be High Level, because all should be reversed.

Data Reverse Decoding: All lines should be reversed, which means it will decode the Low as High and the High as Low in the decoding.

Frame Decoding: When selecting this option, it will decode the Frame Format; and it is selected in default.

Protocol Analyzer Color: The **Protocol Analyzer Color** can be varied by users.

HART Packet Dialog Box



In the Packet part, users can set the items and colors as users' requirements.

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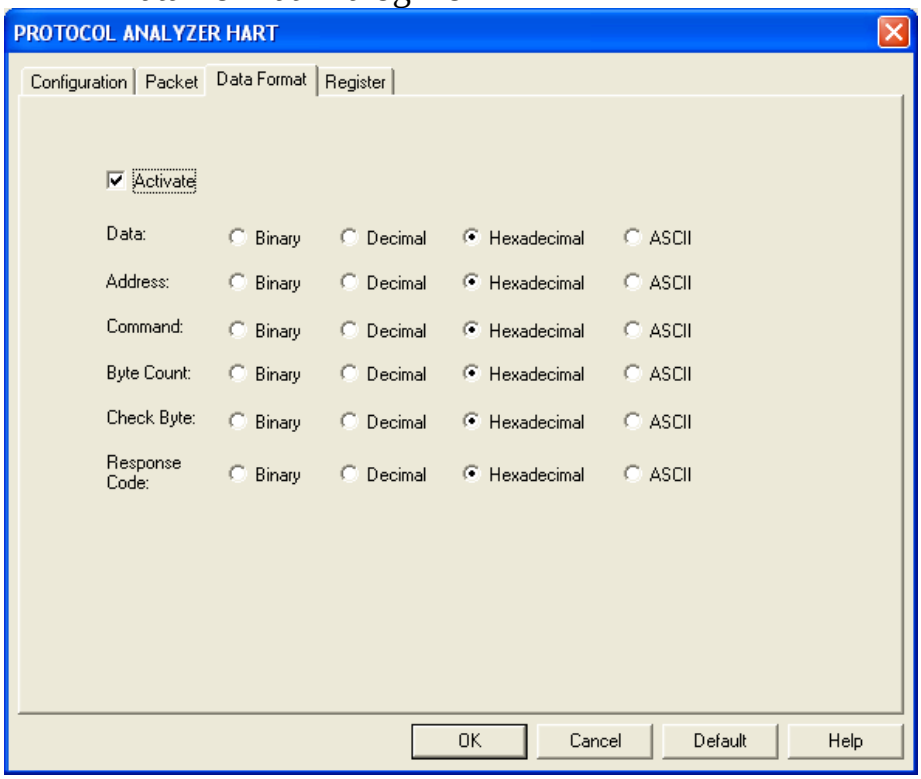
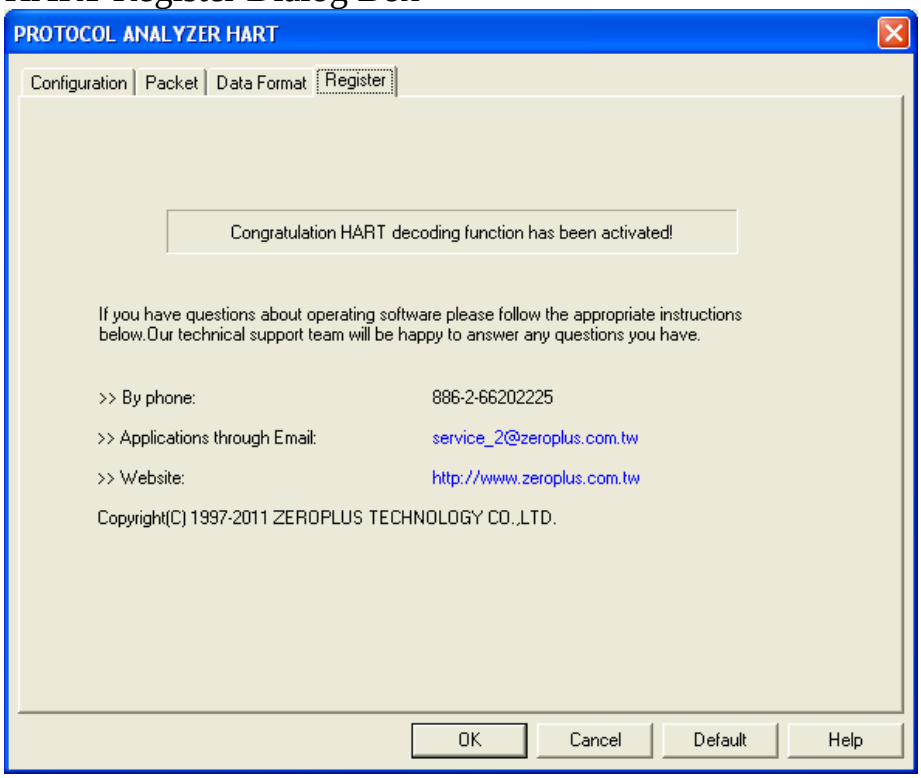
HART Data Format Dialog Box



Users can set the Data Format of Data, Address, Command, Byte Count, Check Byte and Response Code 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.

HART Register Dialog Box



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

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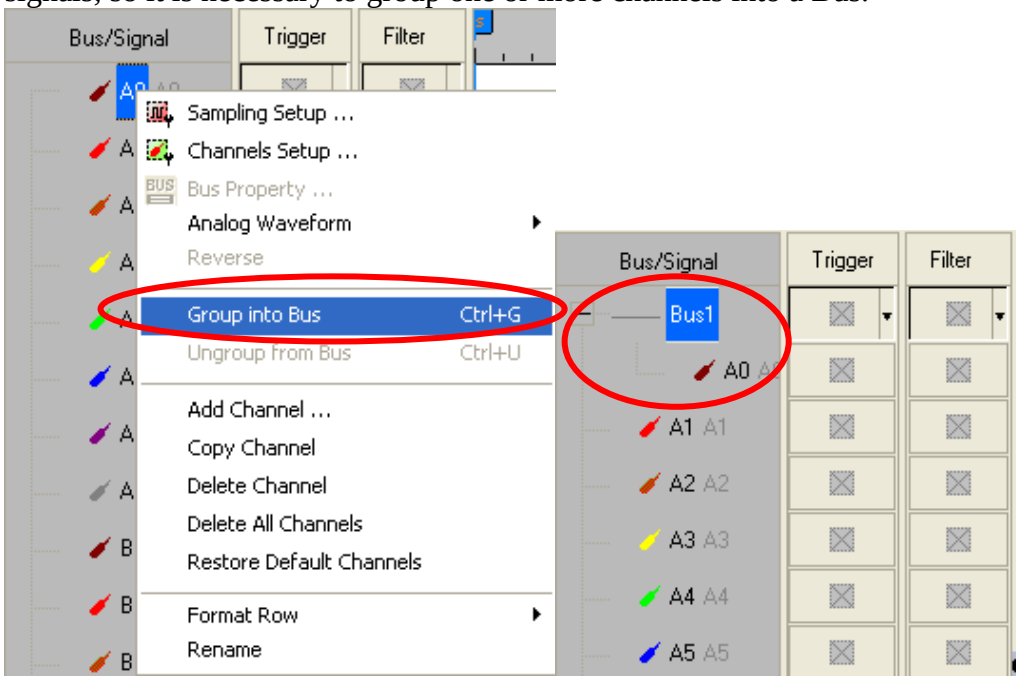
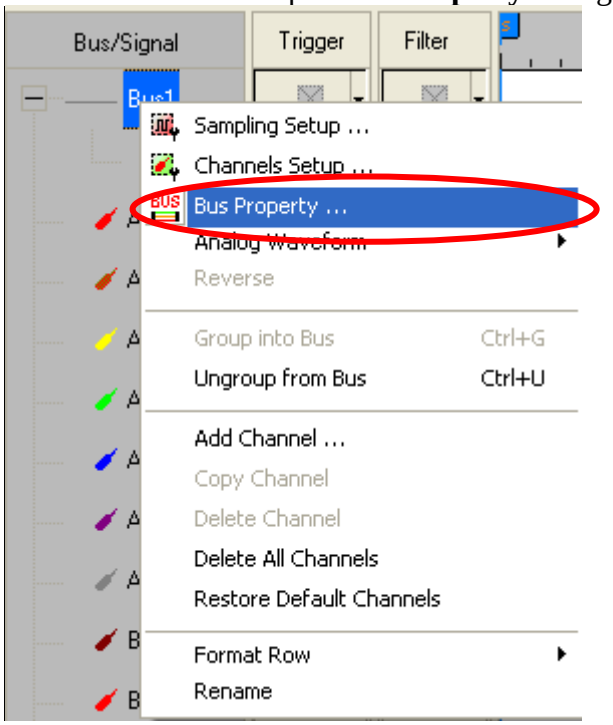
3. Operating Instructions

STEP 1. Group A0 into **Bus1** by pressing the **Right Key** on the mouse. HART needs one channel to decode signals, so it is necessary to group one or more channels into a Bus.



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



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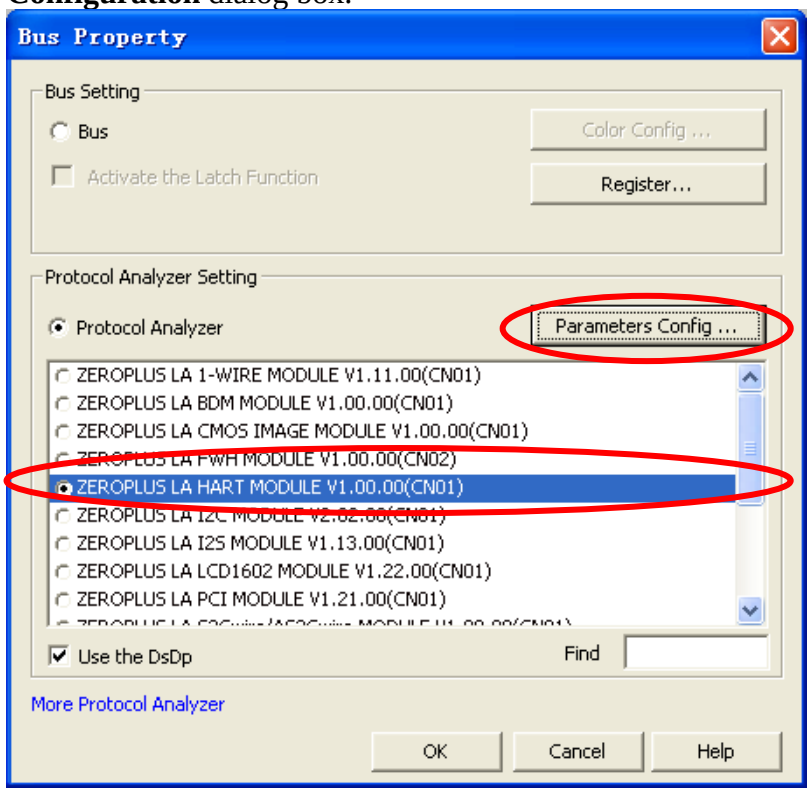
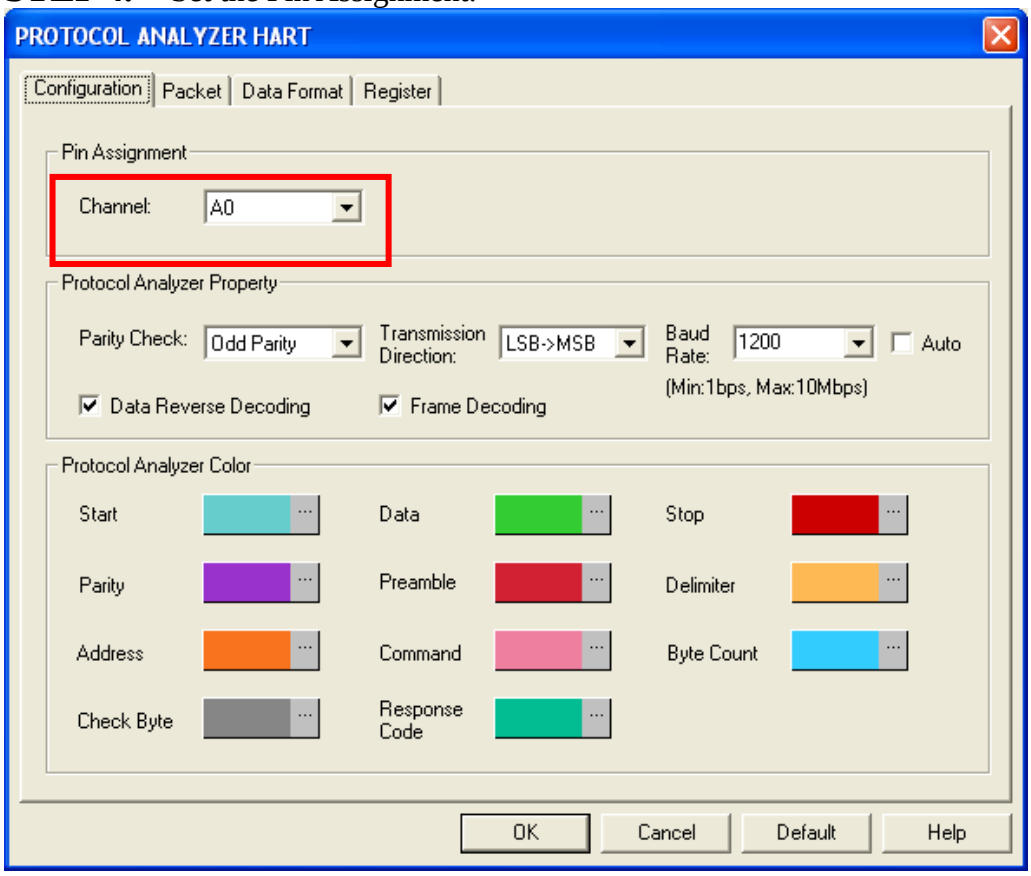
STEP 3. For Protocol Analyzer HART Parameters Configuration, select Protocol Analyzer, and then choose **ZEROPLUS LA HART MODULE V1.00.00(CN01)**. Next click **Parameters Configuration** to open **Configuration** dialog box.



STEP 4. Set the Pin Assignment.



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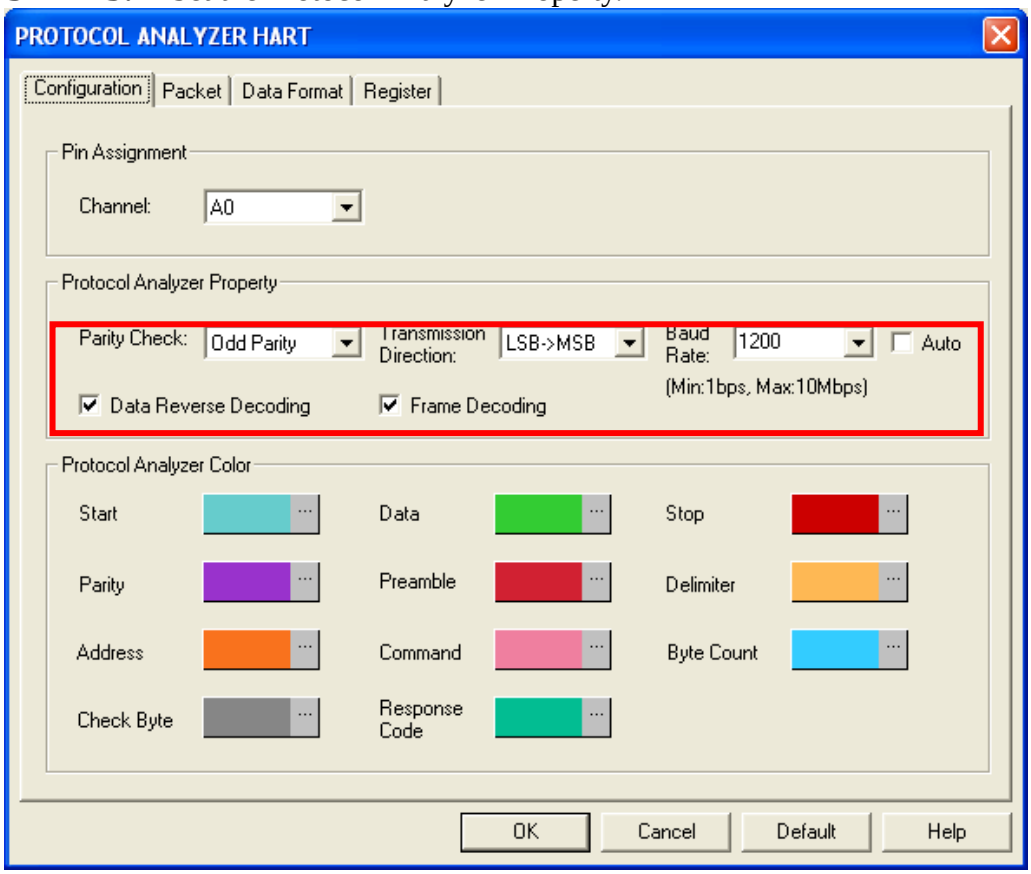
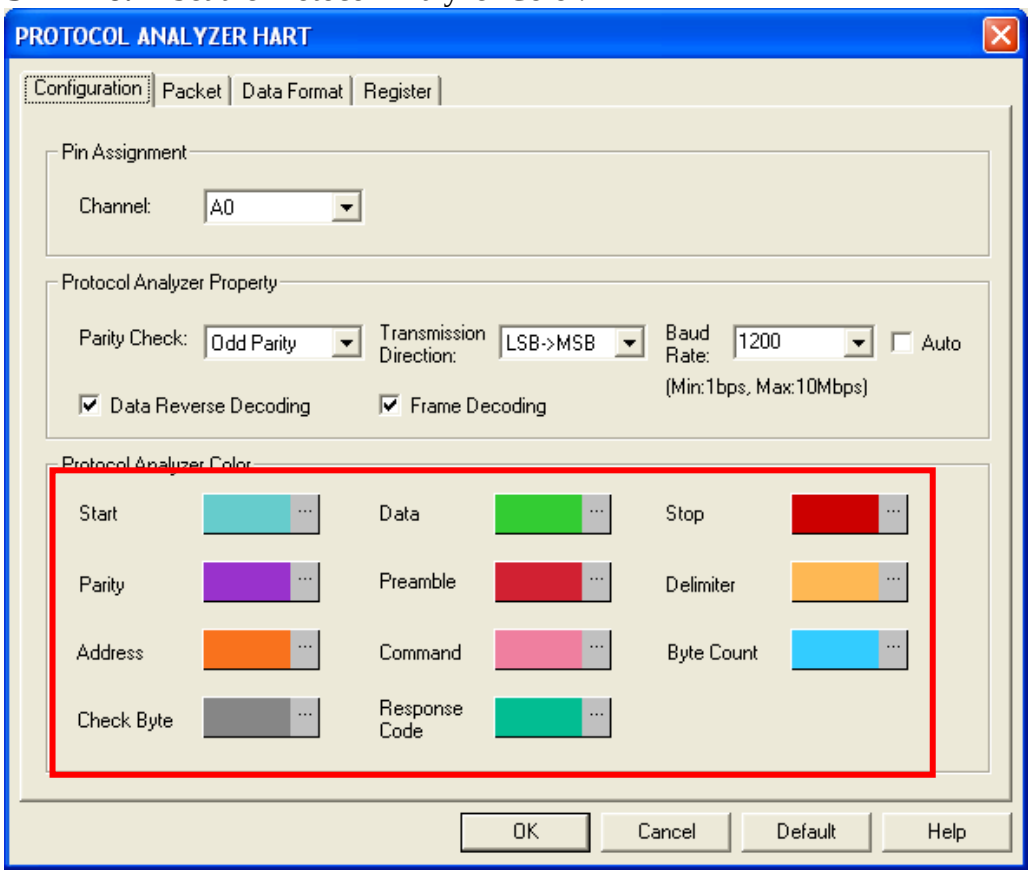
STEP 5. Set the Protocol Analyzer Property.



STEP 6. Set the Protocol Analyzer Color.



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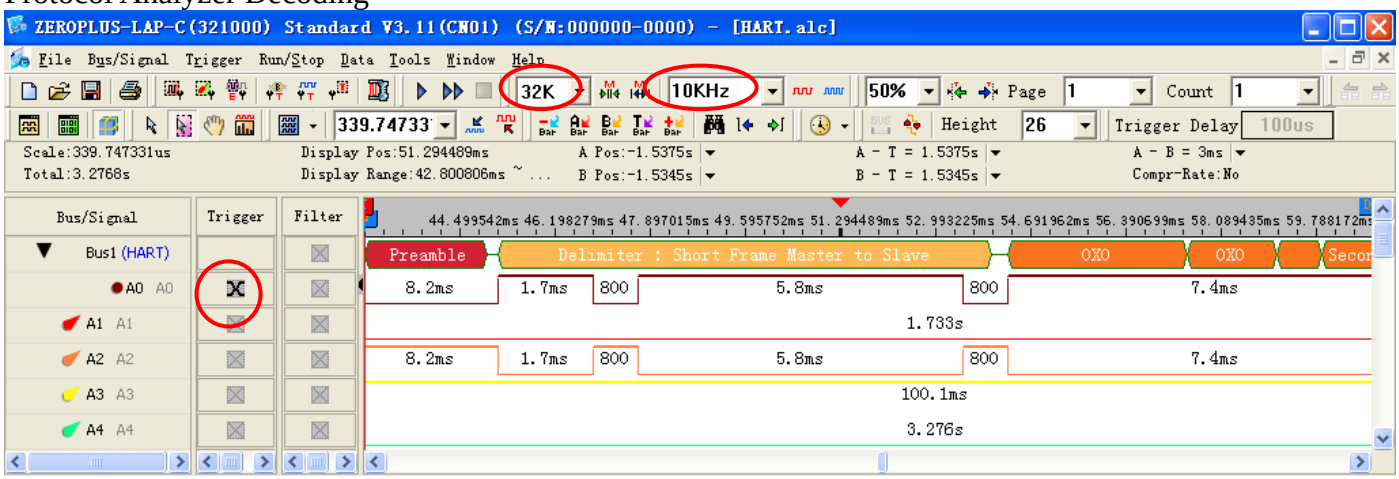
STEP 7. Following pictures show the completion of the protocol analyzer decoding and the packet list. The trigger condition is set as Either Edge; the memory depth is 32K; the sampling frequency is 10KHz. (the sampling frequency should be more than ten times higher than the signal to be tested)

Protocol Analyzer Decoding



Packet List