



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

SPECIFICATION

MODEL: 014-LAP-LIN2.1-M

PART NO: _____

VERSION: V2.06

Approver		Check	Design
GM	PM		

Customer Confirm

*Please fax the file to Zeroplus Technology after signing.

2F, NO.123, Jian Ba Rd,
Chung Ho City, Taipei Hsian, R.O.C.

Tel:+886-2-66202225
Fax:+886-2-22234362



Content

1 Software Download.....	3
2 Software Installation	6
3 Software Register	10
4 User Interface	13
5 Operating Instructions.....	16



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.

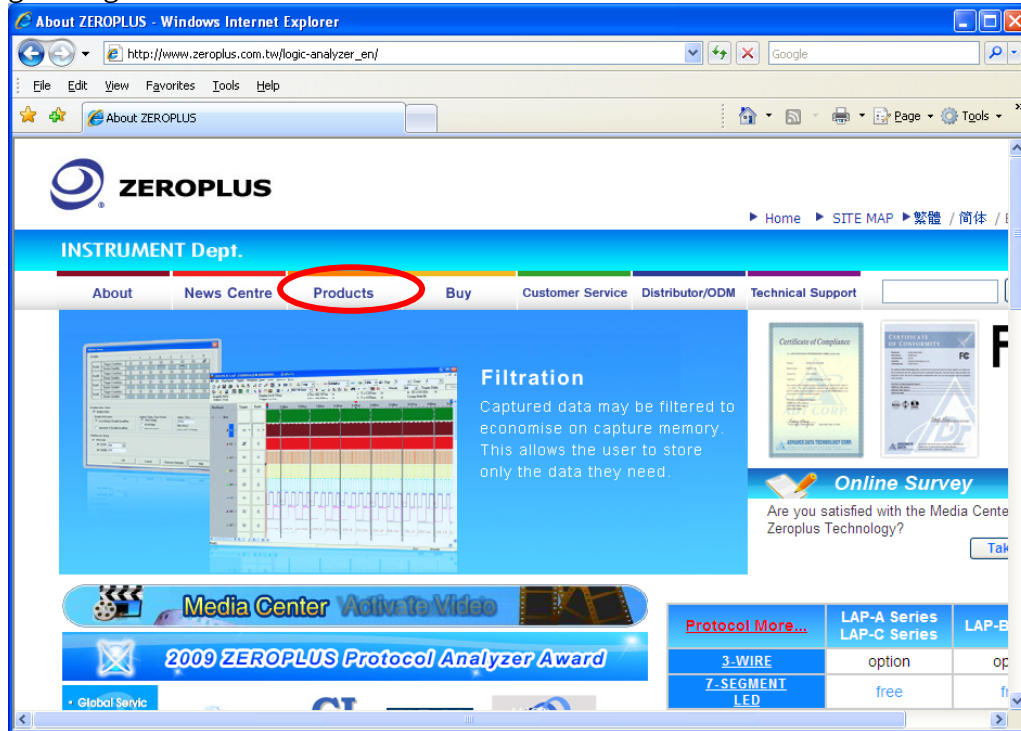
STEP 1. Visit the website of ZeroPlus: <http://www.zeroplus.com.tw>.

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

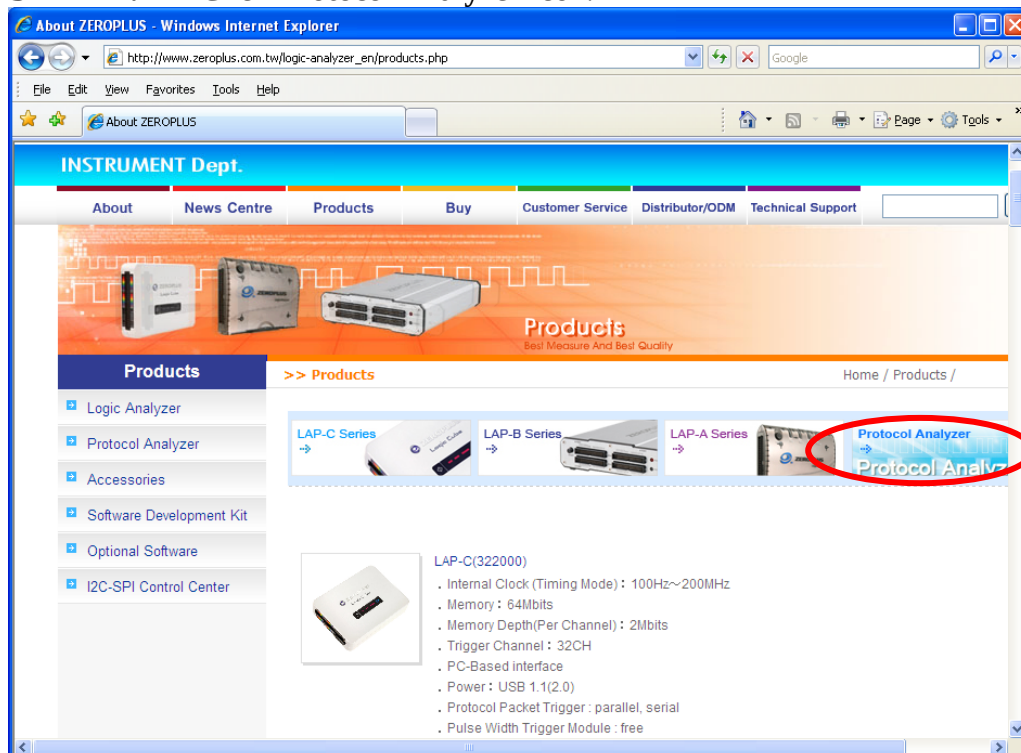




STEP 3. Click **Products** menu or select **Protocol Analyzer** item from its pull-down menu to go straight to STEP 5.

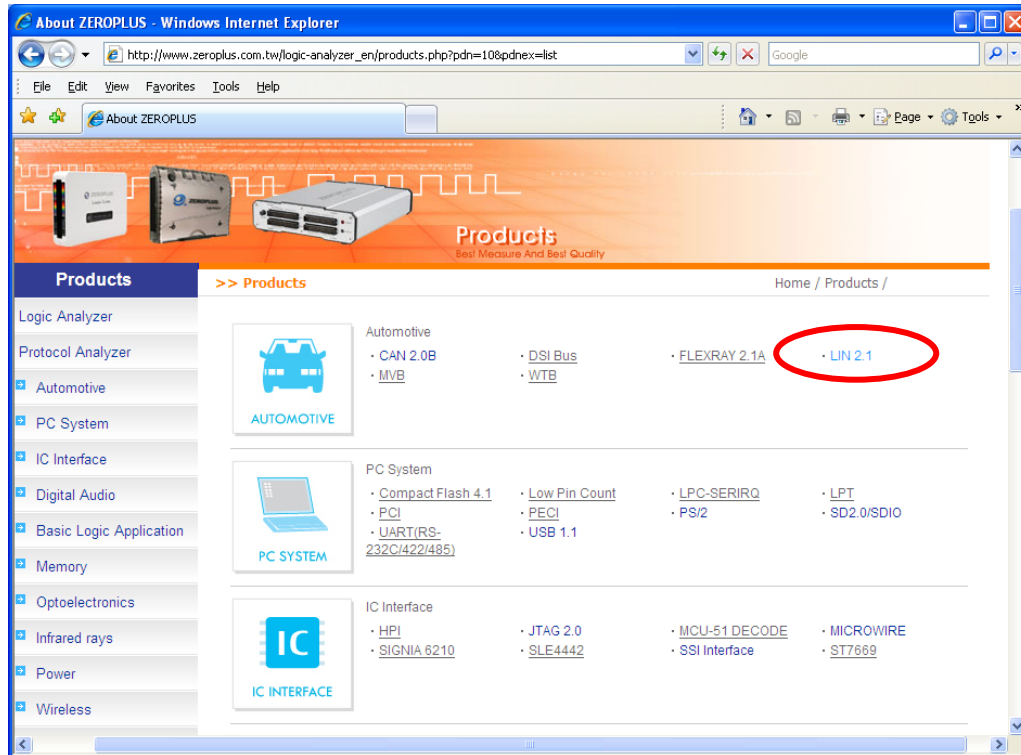


STEP 4. Click **Protocol Analyzer** icon.

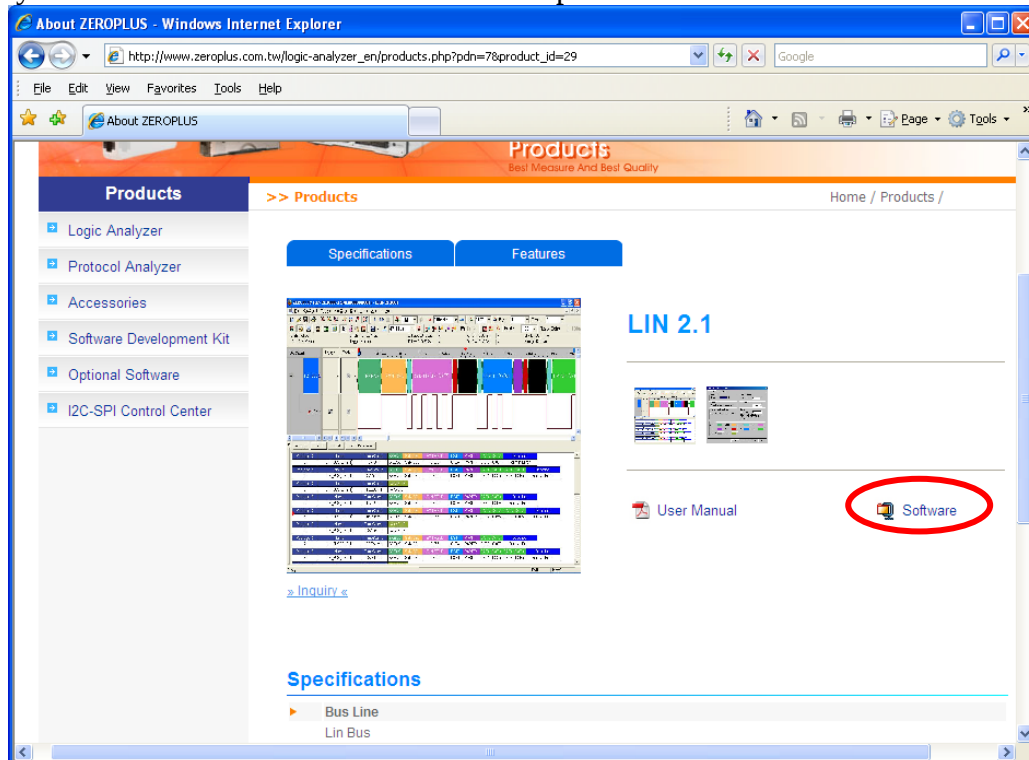




STEP 5. Click **LIN2.1** in the **Automotive** column.



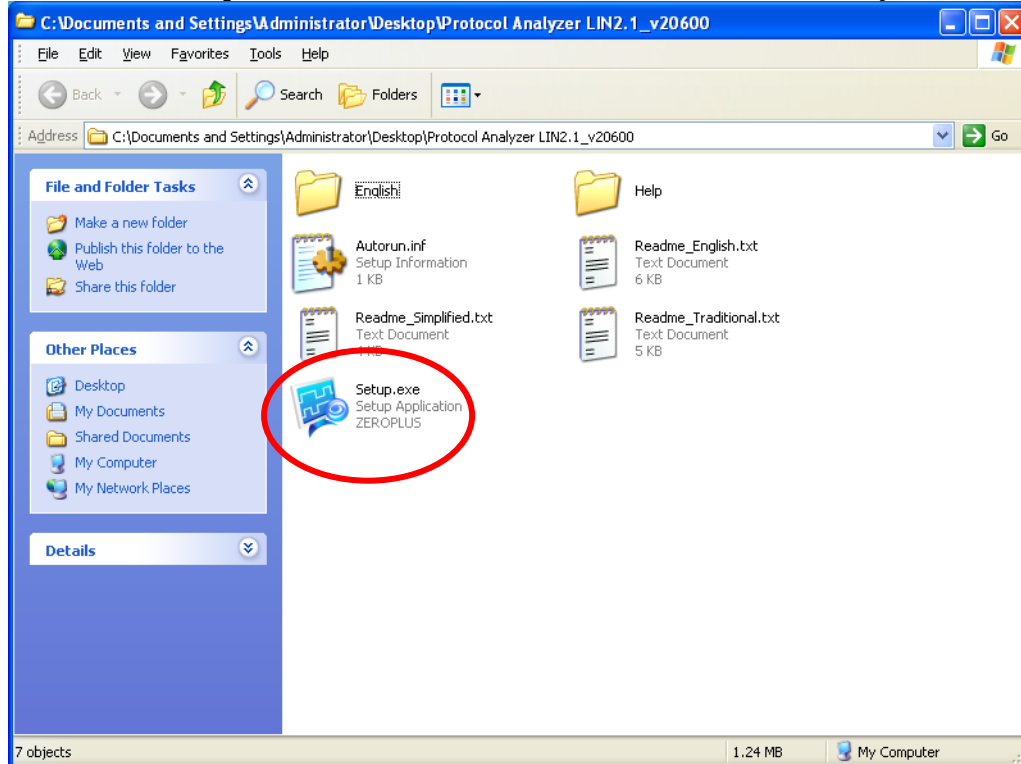
STEP 6. Click **Software** in the Products page. When the File Download dialog box appears, you can click **Save** button to save the compressed folder.



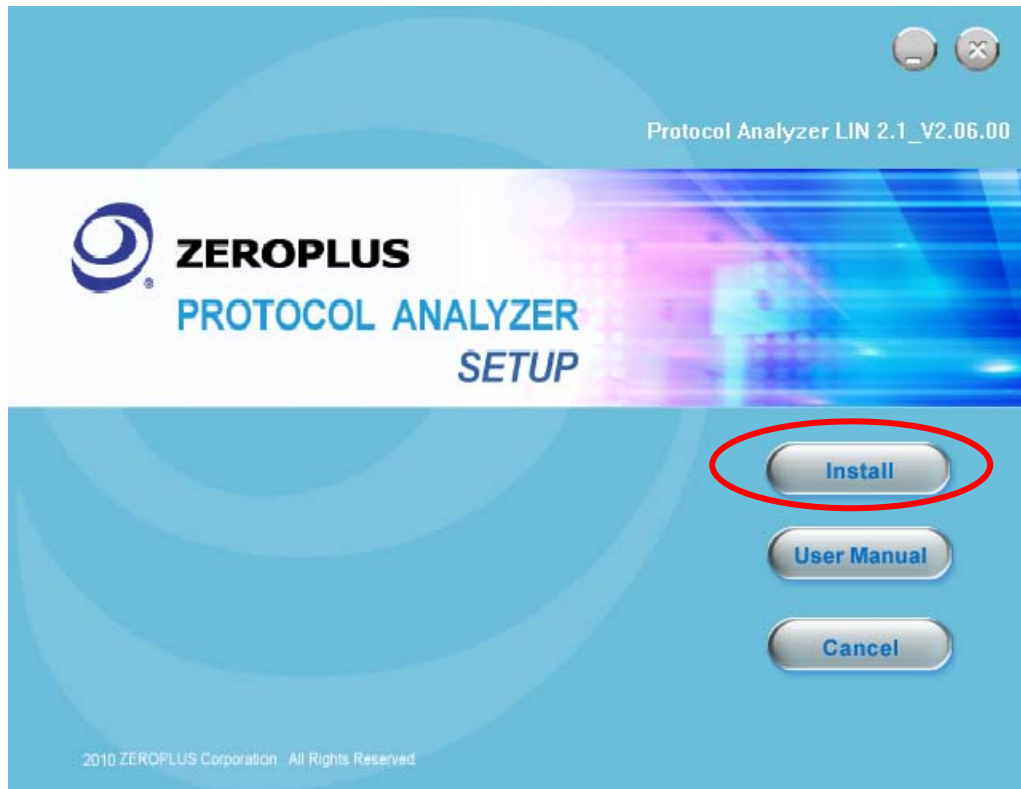


2 Software Installation

STEP 1. Open the downloaded folder to install **Protocol Analyzer LIN2.1**.

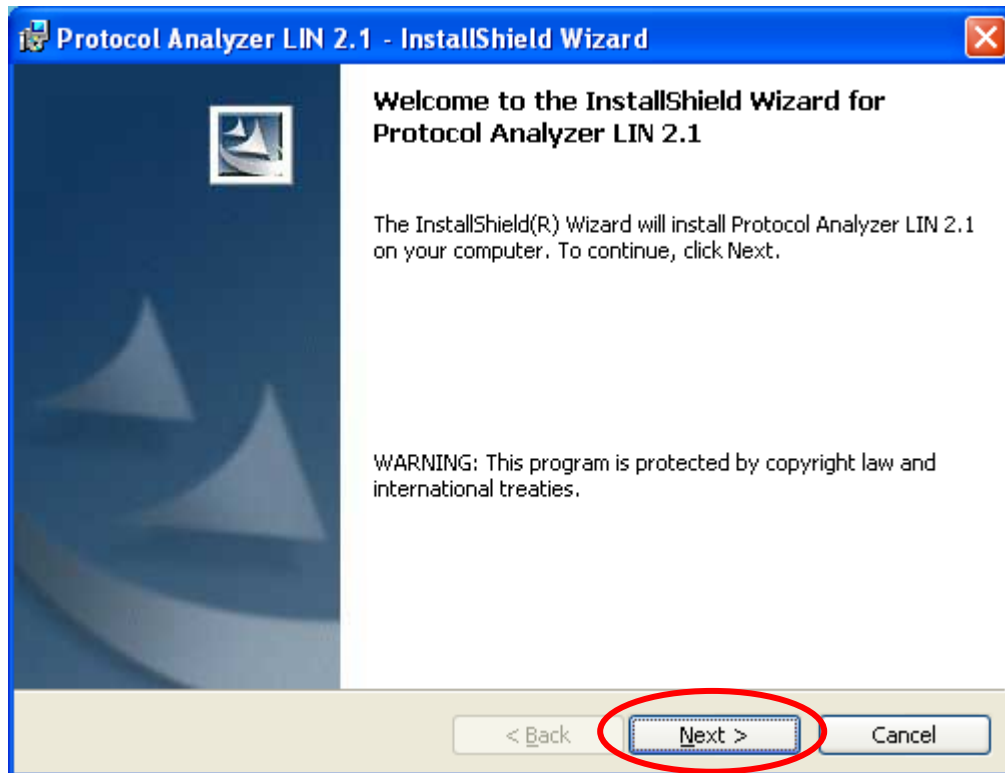


STEP 2. Click **Install**.

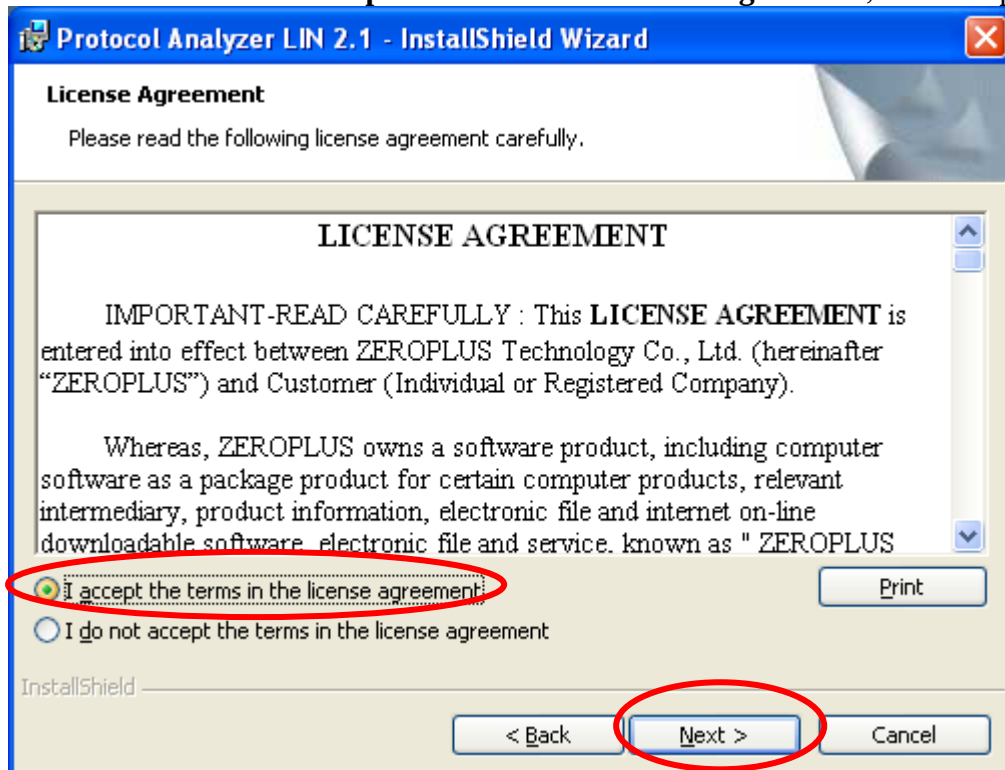




STEP 3. Click Next.



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**.

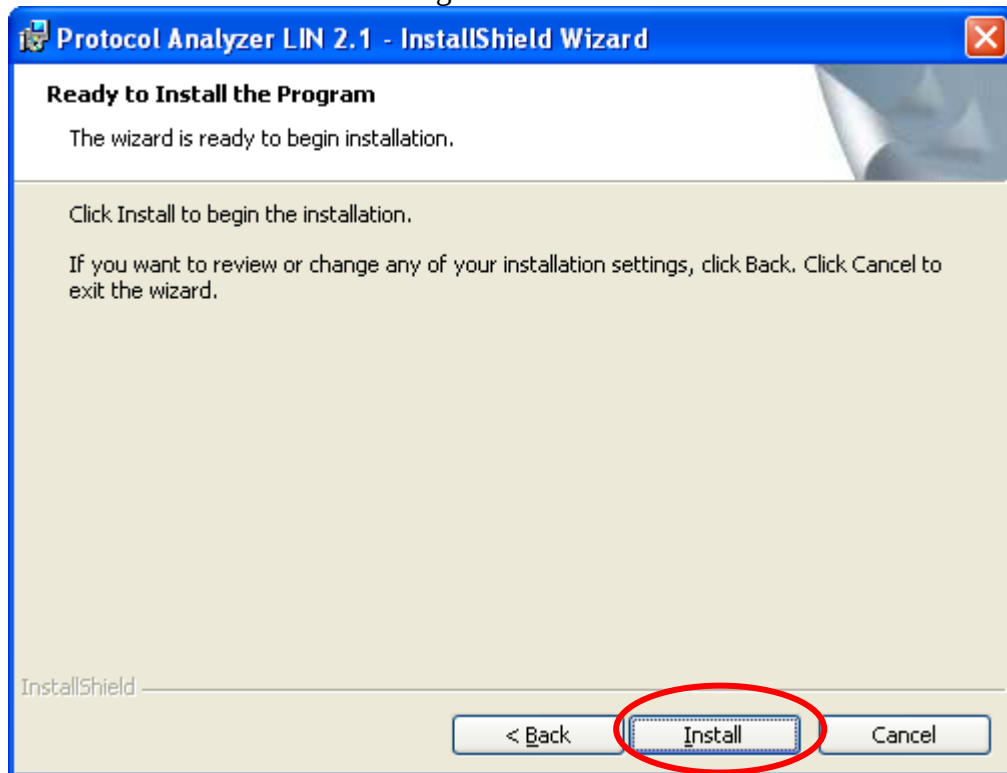
The dialog box is titled "Protocol Analyzer LIN 2.1 - InstallShield Wizard". It has a "Customer Information" section with the instruction "Please enter your information." Below this, there are two text input fields: "User Name:" with "Microsoft" entered, and "Organization:" with "User" entered. There are two radio button options: "Anyone who uses this computer (all users)" which is selected, and "Only for me (Microsoft)". At the bottom, there are three buttons: "< Back", "Next >" (which is circled in red), and "Cancel".

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

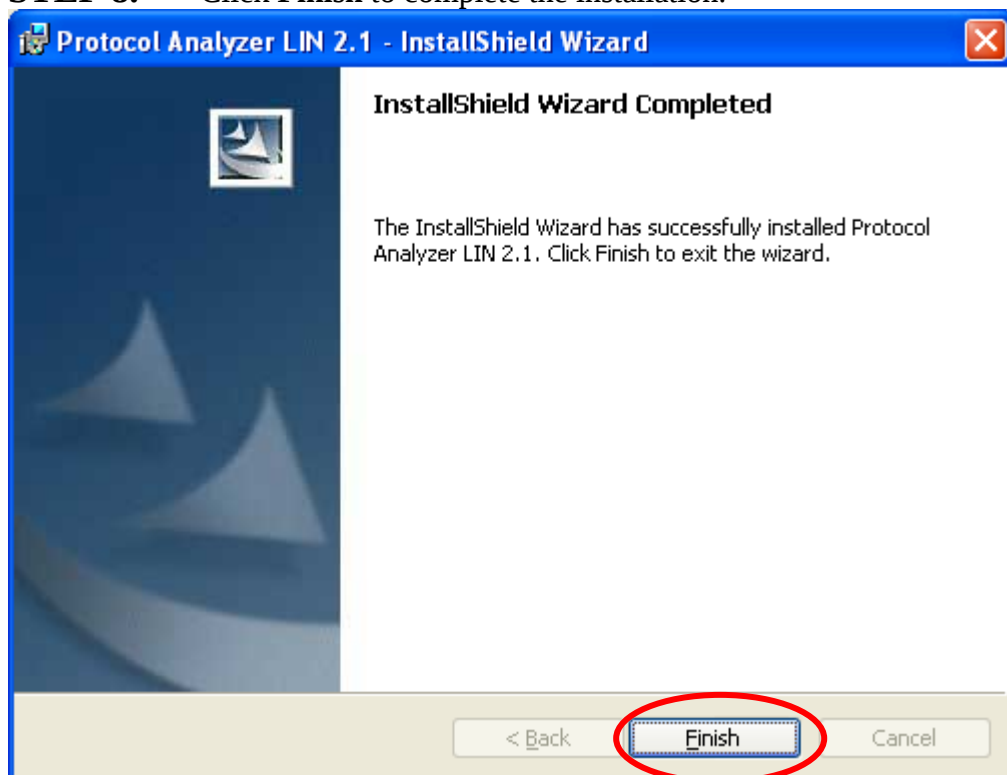
The dialog box is titled "Protocol Analyzer LIN 2.1 - InstallShield Wizard". It has a "Setup Type" section with the instruction "Choose the setup type that best suits your needs." Below this, there are two radio button options: "Complete" which is selected, and "Custom". The "Complete" option has a description: "All program features will be installed. (Requires the most disk space.)". The "Custom" option has a description: "Choose which program features you want installed and where they will be installed. Recommended for advanced users." At the bottom, there are three buttons: "< Back", "Next >" (which is circled in red), and "Cancel".



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



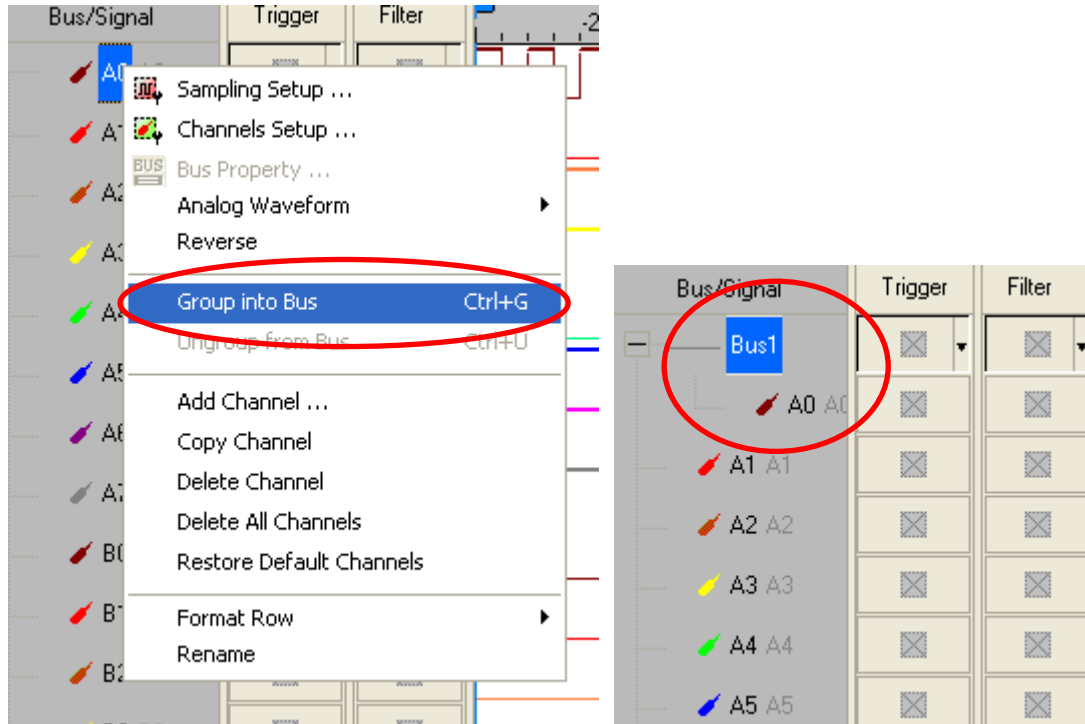
STEP 8. Click **Finish** to complete the installation.



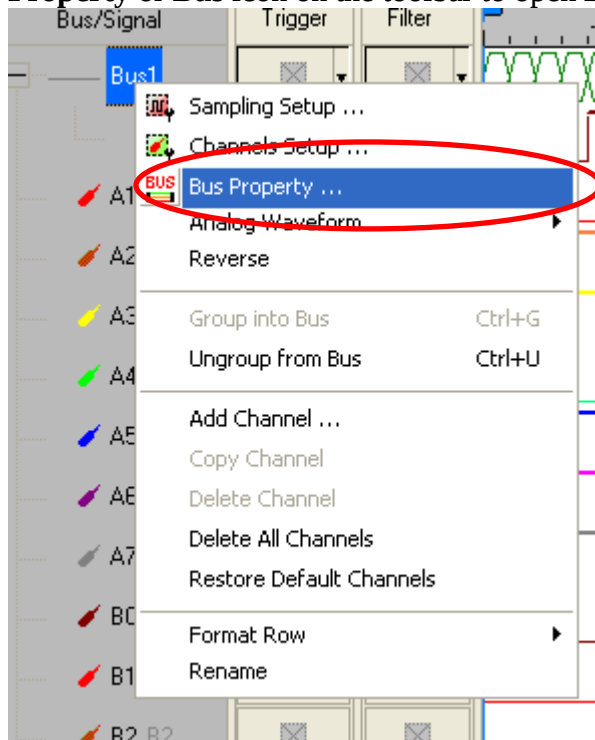


3 Software Register

STEP 1. Group the unanalyzed channels into **Bus1** by pressing the **Right Key** on the mouse. **LIN2.1** only needs one channel to decode signals, so it is necessary to group one or more channels into a Bus.

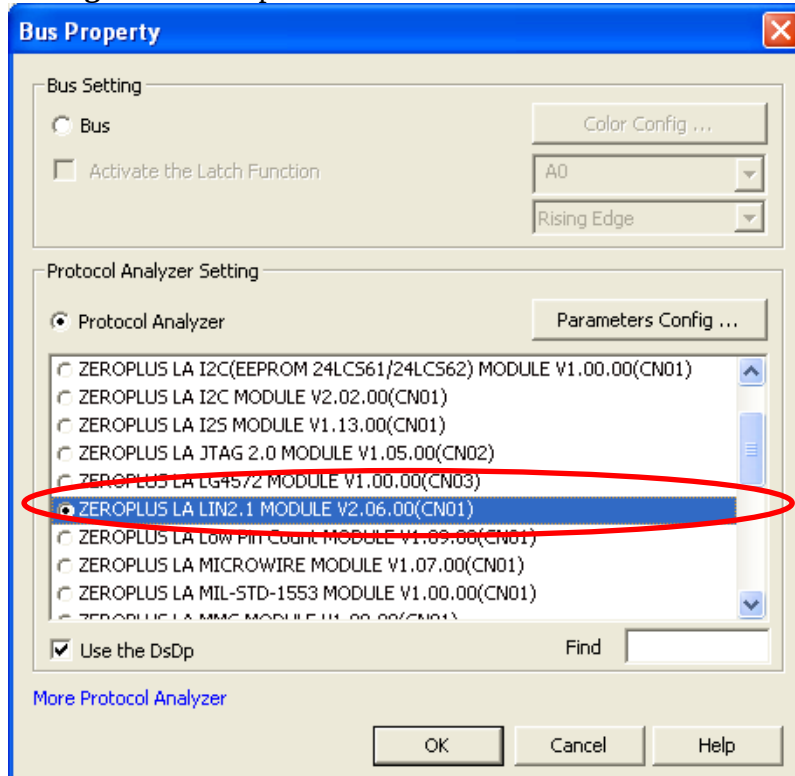


STEP 2. Select **Bus1**, and press **Right Key** on the mouse to list the menu, then press **Bus Property** or **Bus** icon on the toolbar to open **Bus Property** dialog box.

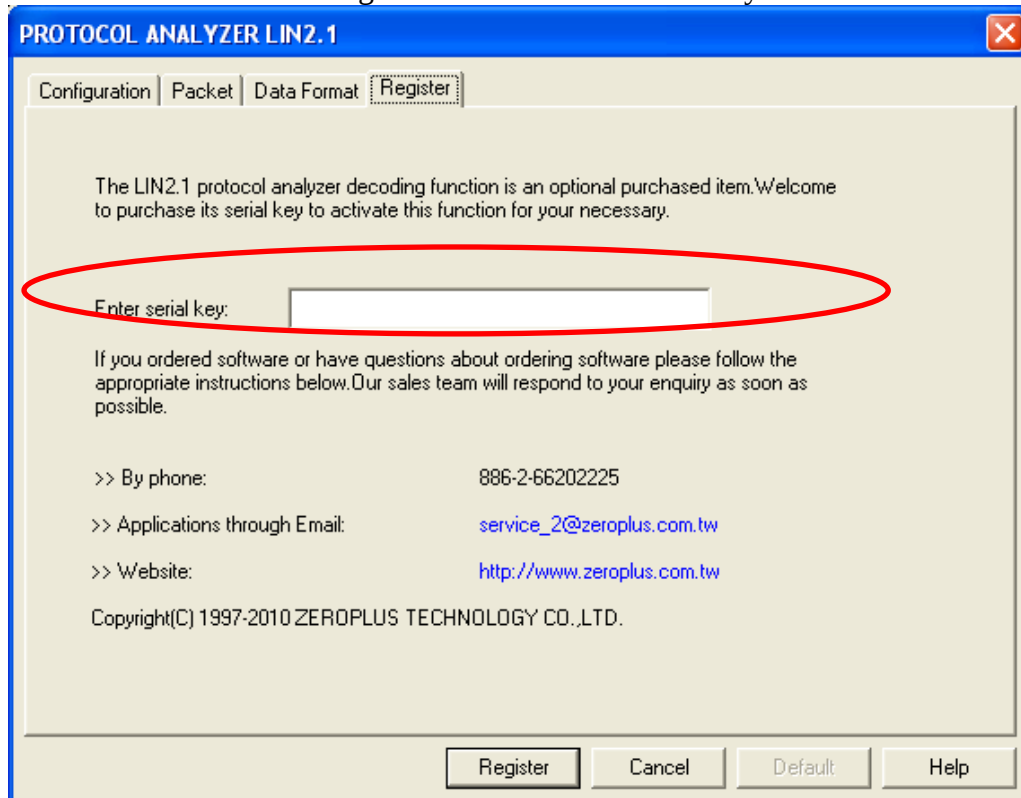




STEP 3. For Protocol Analyzer LIN2.1 Parameters Configuration, select Protocol Analyzer, and then choose **ZEROPLUS LA LIN2.1 MODULE V2.06.00(CN01)**. Next click **Parameters Configuration** to open the **PROTOCOL ANALYZER LIN2.1** dialog box.

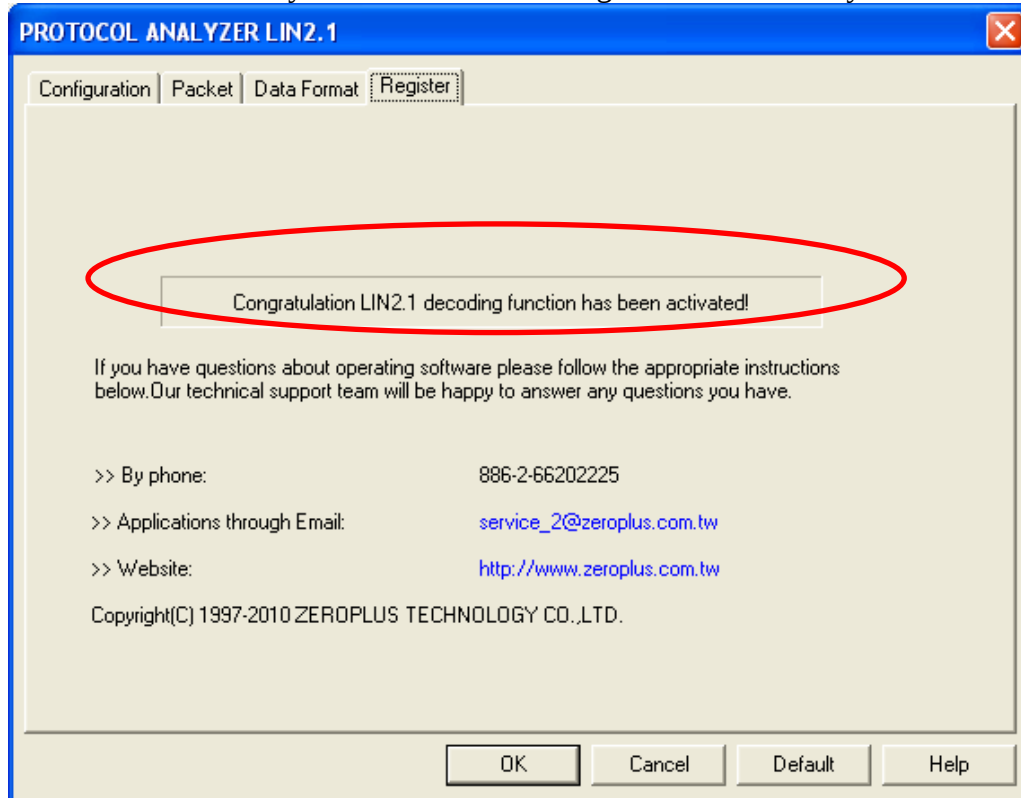


STEP 4. Press the Register tab to enter the serial key of the **LIN2.1**. Then, press **Register**.





STEP 5. After pressing the Register button, the following dialog box will appear; it denotes that the Protocol Analyzer LIN2.1 has been registered successfully.

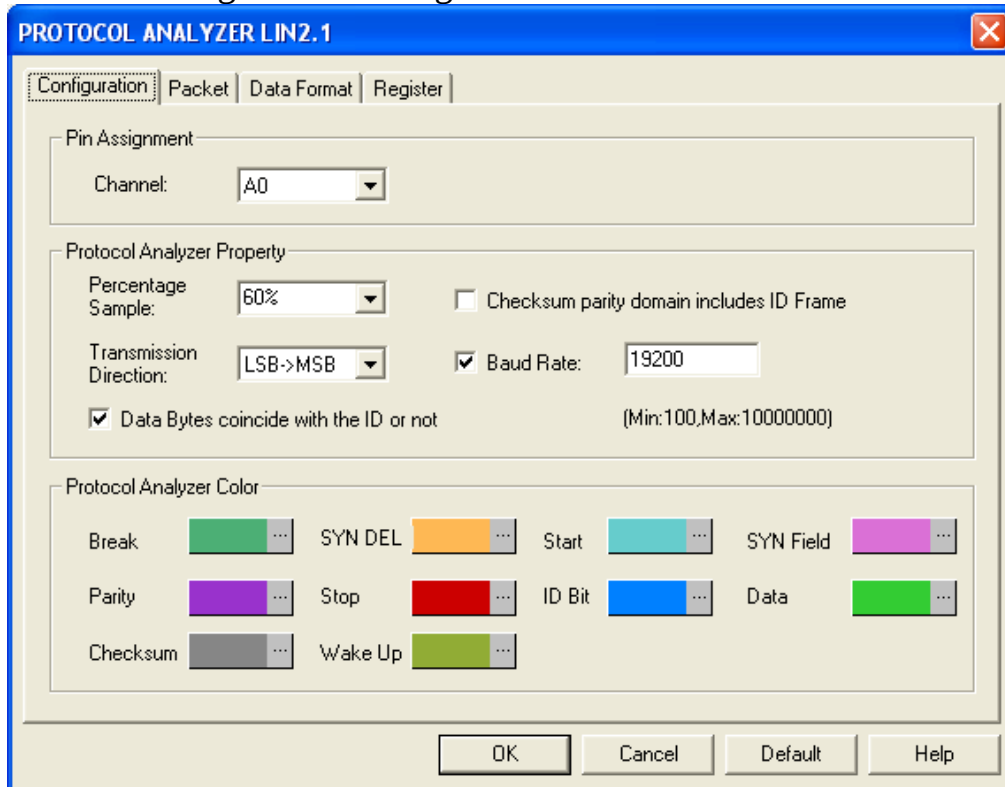




4 User Interface

Please refer to images below to select options of setting **LIN2.1 Module**.

LIN2.1 Configuration Dialog Box



Pin Assignment:

LIN2.1 only needs one channel to decode the signals, and the default is A0.

Protocol Analyzer Property:

Percentage Sample: Set the Percentage Sample in the range from 20% to 80%, the default is 60%.

Transmission Direction: Set the Direction to MSB->LSB or LSB->MSB, the default is LSB->MSB.

Data Bytes Coincide with the ID or not: When the option is selected, it means that the data bytes are related to the ID and the corresponding data bytes can be decoded; the option is enabled by default.

Checksum parity domain includes ID Frame: When it is activated, the Checksum is valid. The option is not activated by default.

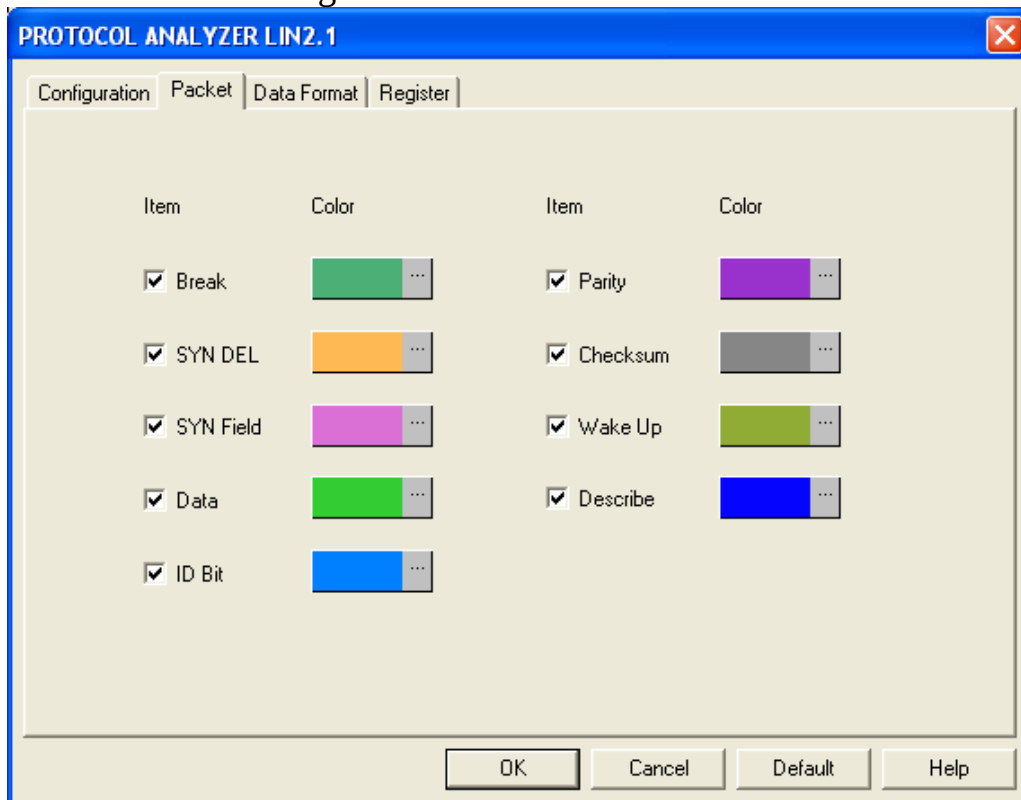
Baud Rate: When the Baud Rate is selected, the I/O signal will be calibrated. The calculation method is that $1/\text{Baud Rate} \text{ equals } 1\text{ T (synbit/8)}$. Users can enter a value within the range from 100 to 10000000bps as their requirements.

Protocol Analyzer Color:

The protocol analyzer color can be varied by users.

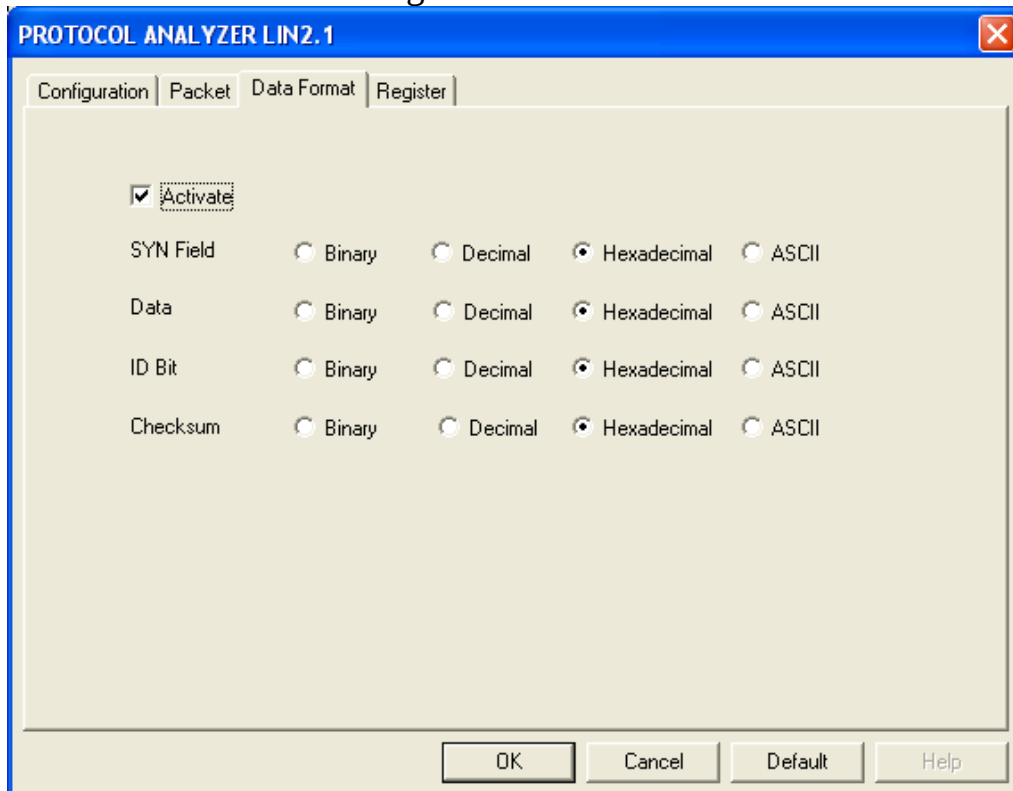


LIN2.1 Packet Dialog Box



In the Packet dialog box, users can select the items to be displayed and set the colors as users' requirements.

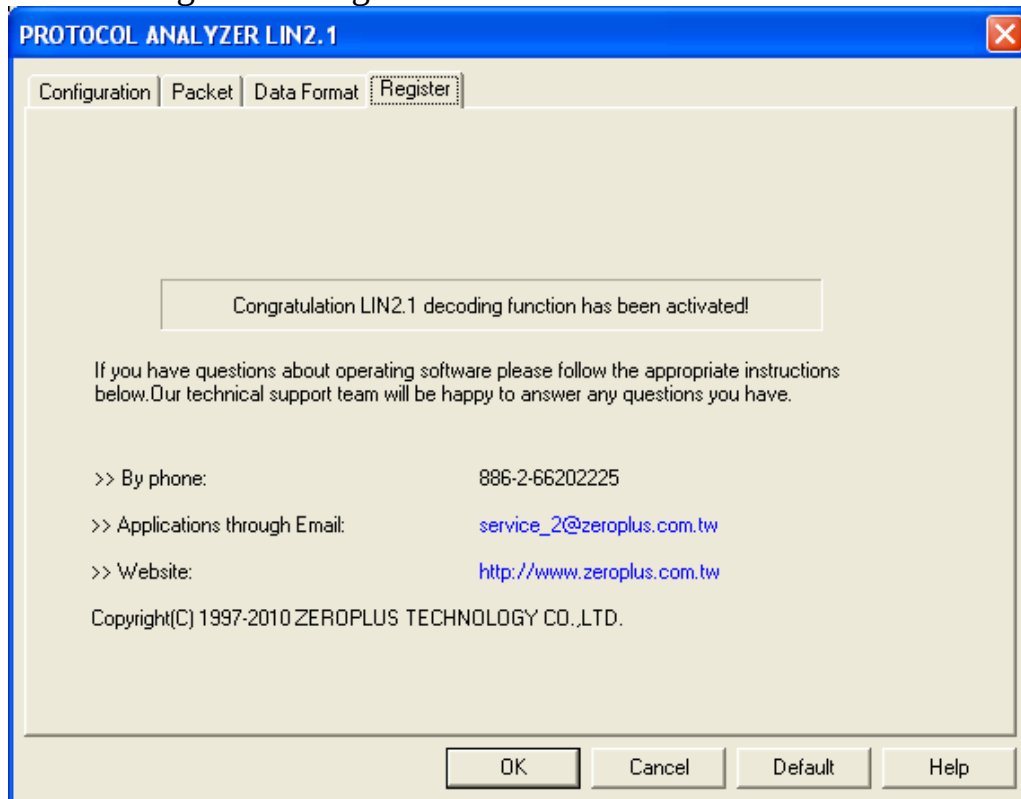
LIN2.1 Data Format Dialog Box





Users can set the Data Format of the SYN Field, Data, ID Bit and Checksum as their requirements. When selecting the option, Activate, the data format is decided by the settings in the Protocol Analyzer; when not selecting the option, Activate, the data format is decided by the settings in the main program.

LIN2.1 Register Dialog Box

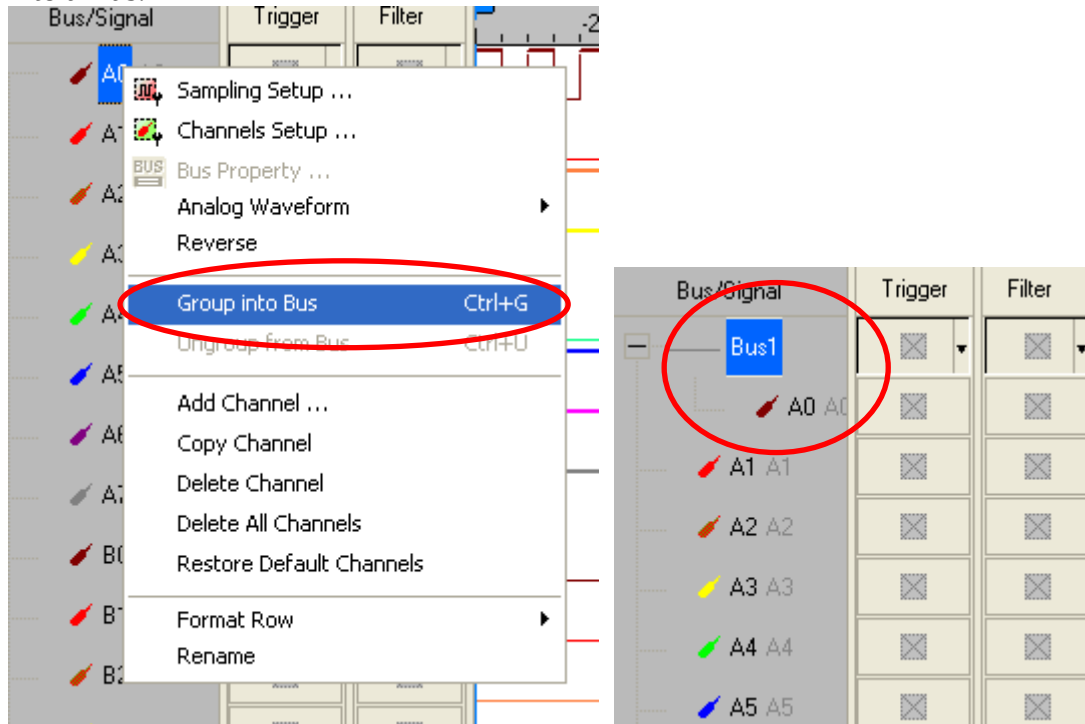


There is written ZeroPlus company information. If you have any questions about software operations, you can contact ZeroPlus by Telephone or Email.

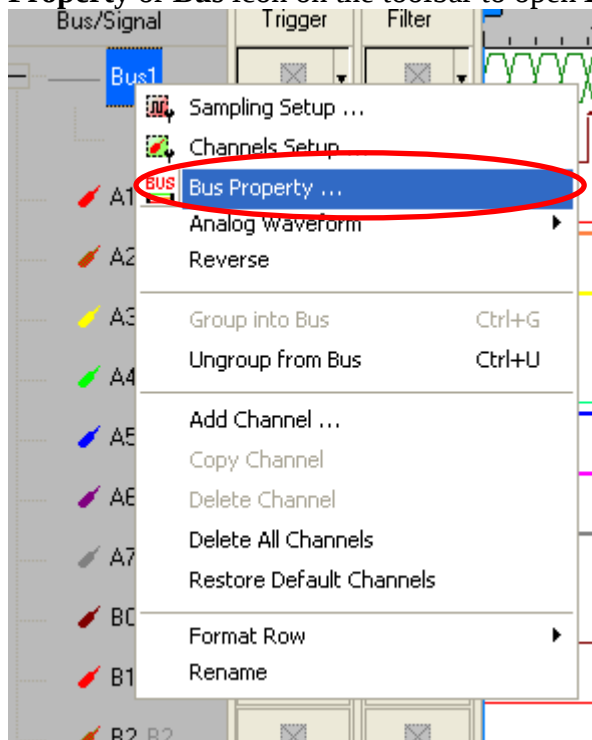


5 Operating Instructions

STEP 1. Group the unanalyzed channels into **Bus1** by pressing the **Right Key** on the mouse. **LIN2.1** only needs one channel to decode signals, so it is necessary to group one or more channels into a Bus.

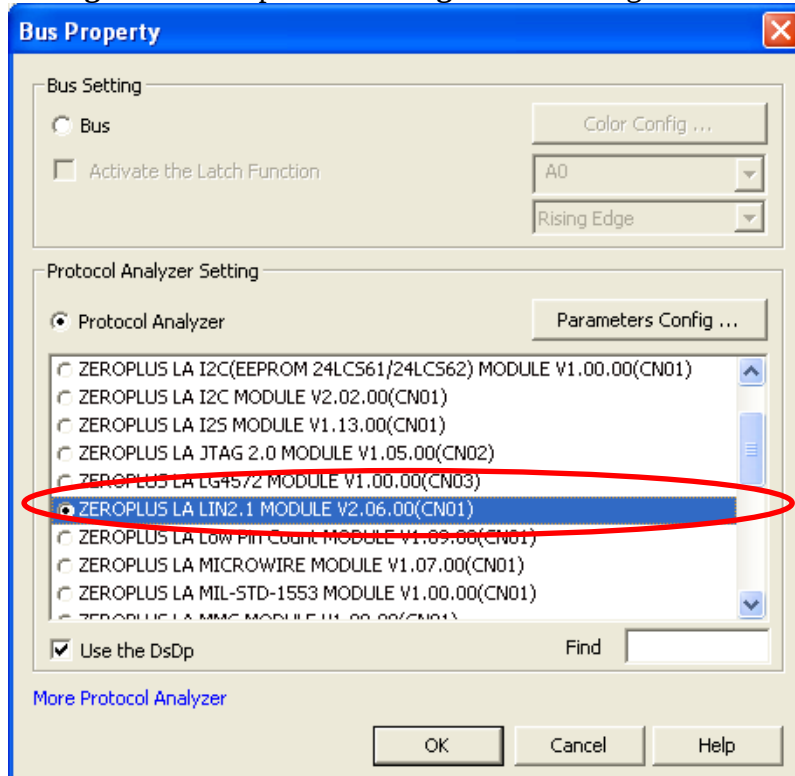


STEP 2. Select **Bus1**, and press **Right Key** on the mouse to list the menu, then press **Bus Property** or **Bus** icon on the toolbar to open **Bus Property** dialog box.

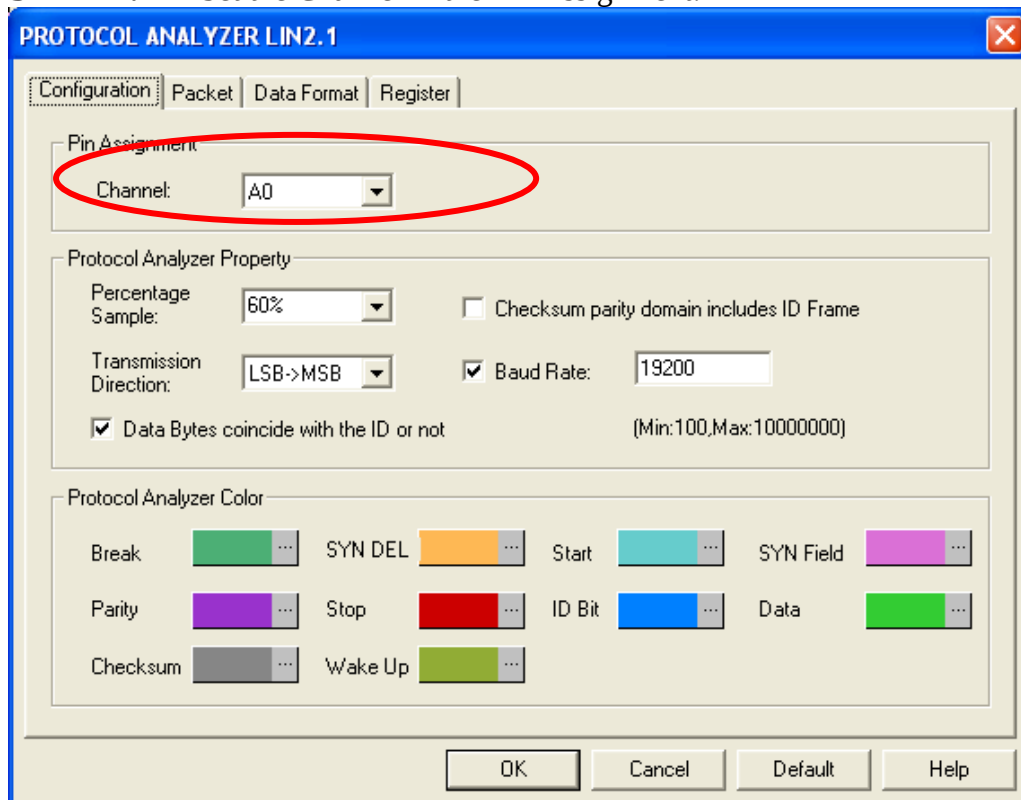




STEP 3. For Protocol Analyzer LIN2.1 Parameters Configuration, select Protocol Analyzer, and then choose **ZEROPLUS LA LIN2.1 MODULE V2.06.00(CN01)**. Next click **Parameters Configuration** to open the **Configuration** dialog box.



STEP 4. Set the Channel in the Pin Assignment.





STEP 5. Set the **Percentage Sample** in the range from 20% to 80%.

PROTOCOL ANALYZER LIN2.1

Configuration | Packet | Data Format | Register

Pin Assignment

Channel: A0

Protocol Analyzer Property

Percentage Sample: 60%

☐ Checksum parity domain includes ID Frame

Transmission Direction: LSB->MSB

☒ Baud Rate: 19200

☒ Data Bytes coincide with the ID or not (Min:100,Max:10000000)

Protocol Analyzer Color

Break SYN DEL Start SYN Field

Parity Stop ID Bit Data

Checksum Wake Up

OK Cancel Default Help

STEP 6. Set the **Transmission Direction** to MSB->LSB or LSB->MSB.

PROTOCOL ANALYZER LIN2.1

Configuration | Packet | Data Format | Register

Pin Assignment

Channel: A0

Protocol Analyzer Property

Percentage Sample: 60%

☐ Checksum parity domain includes ID Frame

Transmission Direction: LSB->MSB

☒ Baud Rate: 19200

☒ Data Bytes coincide with the ID or not (Min:100,Max:10000000)

Protocol Analyzer Color

Break SYN DEL Start SYN Field

Parity Stop ID Bit Data

Checksum Wake Up

OK Cancel Default Help



STEP 7. Set the Data Bytes Coincide with the ID or not.

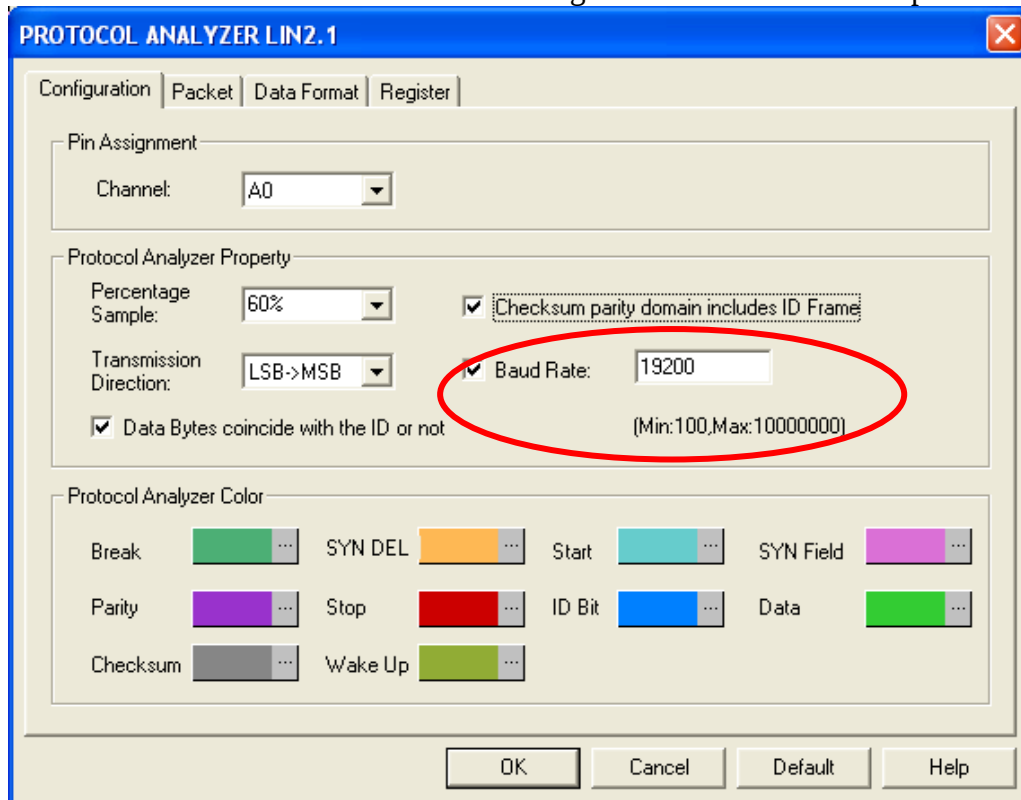
The screenshot shows the 'PROTOCOL ANALYZER LIN2.1' window with the 'Configuration' tab selected. The 'Pin Assignment' section shows 'Channel: A0'. The 'Protocol Analyzer Property' section has 'Percentage Sample: 60%', 'Transmission Direction: LSB->MSB', and 'Baud Rate: 19200'. The checkbox 'Data Bytes coincide with the ID or not' is checked and circled in red. The 'Checksum parity domain includes ID Frame' checkbox is unchecked. The 'Protocol Analyzer Color' section shows various color-coded fields: Break (green), SYN DEL (orange), Start (cyan), SYN Field (pink), Parity (purple), Stop (red), ID Bit (blue), Data (green), Checksum (grey), and Wake Up (olive). The 'OK', 'Cancel', 'Default', and 'Help' buttons are at the bottom.

STEP 8. Set the Checksum parity domain includes ID Frame.

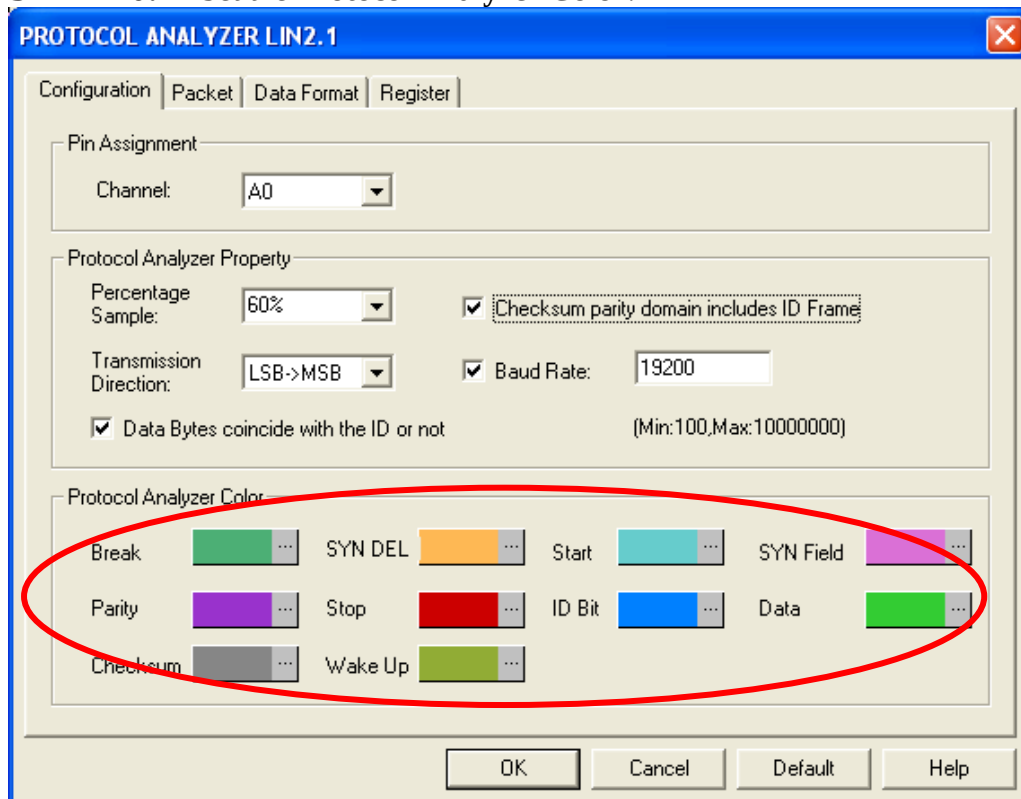
The screenshot shows the 'PROTOCOL ANALYZER LIN2.1' window with the 'Configuration' tab selected. The 'Pin Assignment' section shows 'Channel: A0'. The 'Protocol Analyzer Property' section has 'Percentage Sample: 60%', 'Transmission Direction: LSB->MSB', and 'Baud Rate: 19200'. The checkbox 'Checksum parity domain includes ID Frame' is checked and circled in red. The 'Data Bytes coincide with the ID or not' checkbox is also checked. The 'Protocol Analyzer Color' section shows various color-coded fields: Break (green), SYN DEL (orange), Start (cyan), SYN Field (pink), Parity (purple), Stop (red), ID Bit (blue), Data (green), Checksum (grey), and Wake Up (olive). The 'OK', 'Cancel', 'Default', and 'Help' buttons are at the bottom.



STEP 9. Set the **Baud Rate** in the range from 100 to 10000000bps.

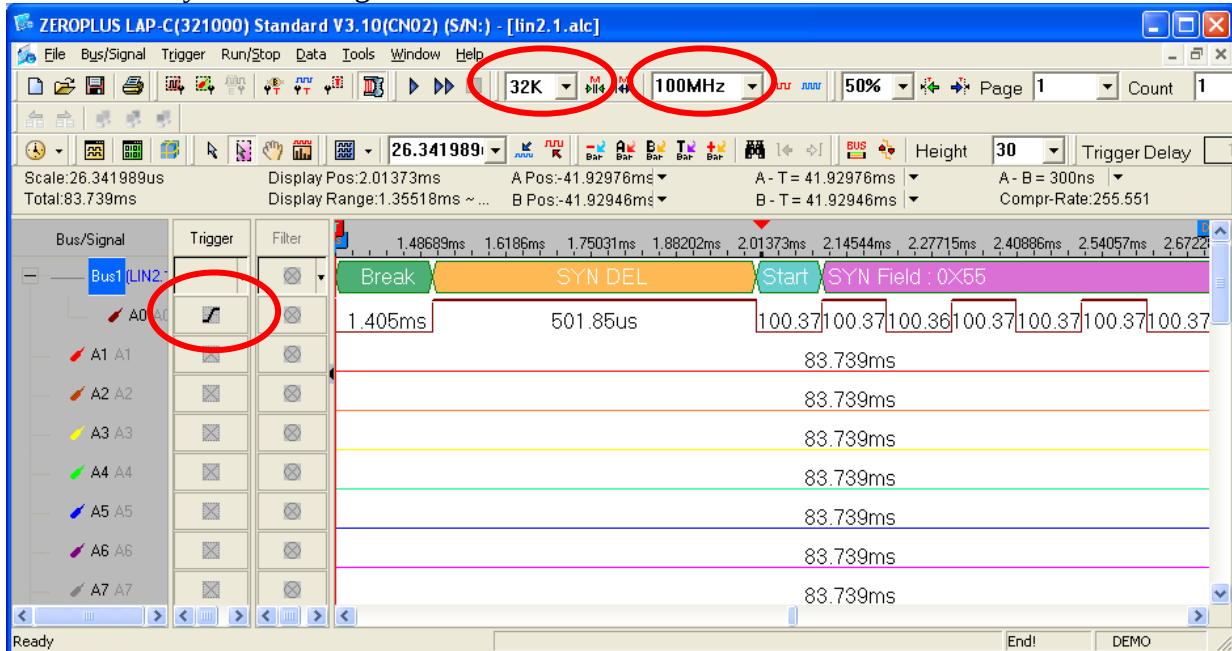


STEP 10. Set the **Protocol Analyzer Color**.



STEP 11. Following pictures show the completion of the protocol decoding and packet list. The trigger condition is set as Rising Edge; the memory depth is 32K; the sampling frequency is 100MHz (the sampling frequency should be more than ten times higher than the signal to be tested).

Protocol Analyzer Decoding



Packet List

