SPECIFICATION

MODEL: 018-LAP-LCD1602-M

PART NO: _____

VERSION: V1.24 ____

Approver		Check	Design		Customer Confirm
GM	PM				

Content

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.
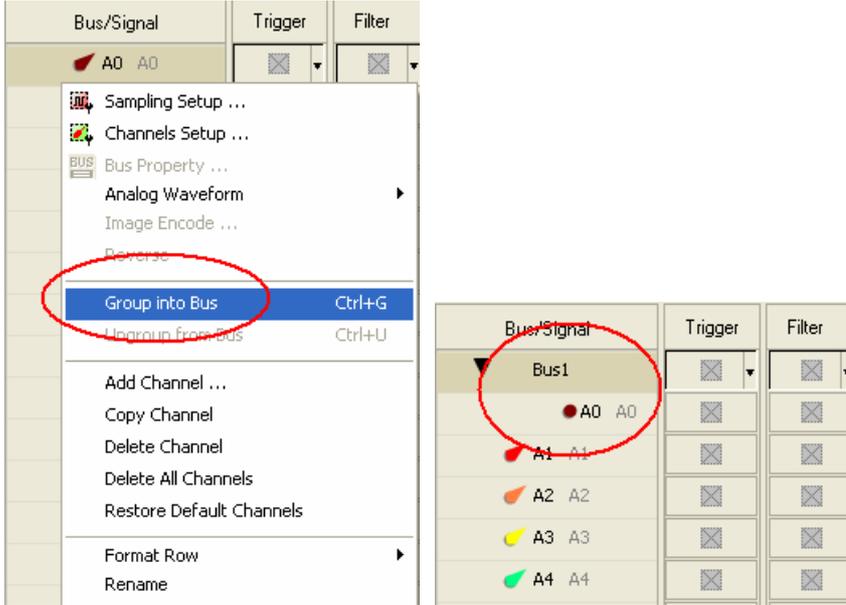

STEP 2. Select **Bus1**, and press **Right Key** on the mouse to list the menu, then click **Bus Property** or **Bus** icon on the toolbar to open **Bus Property** dialog box.

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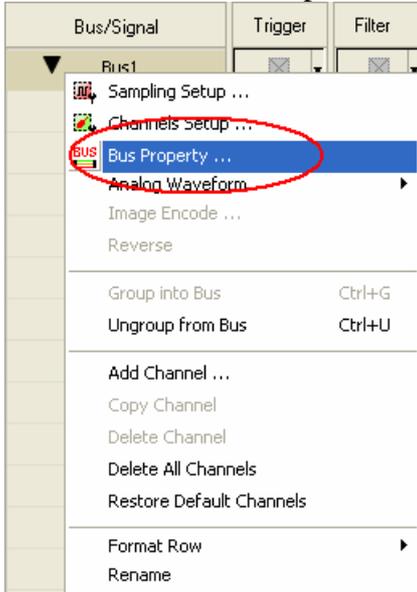
STEP 3. Select the Protocol Analyzer, and then choose **BUS MODULE V1.00.00 (CN01)**. Next click **Parameters Configuration** to open the Protocol Analyzer Bus dialog box.
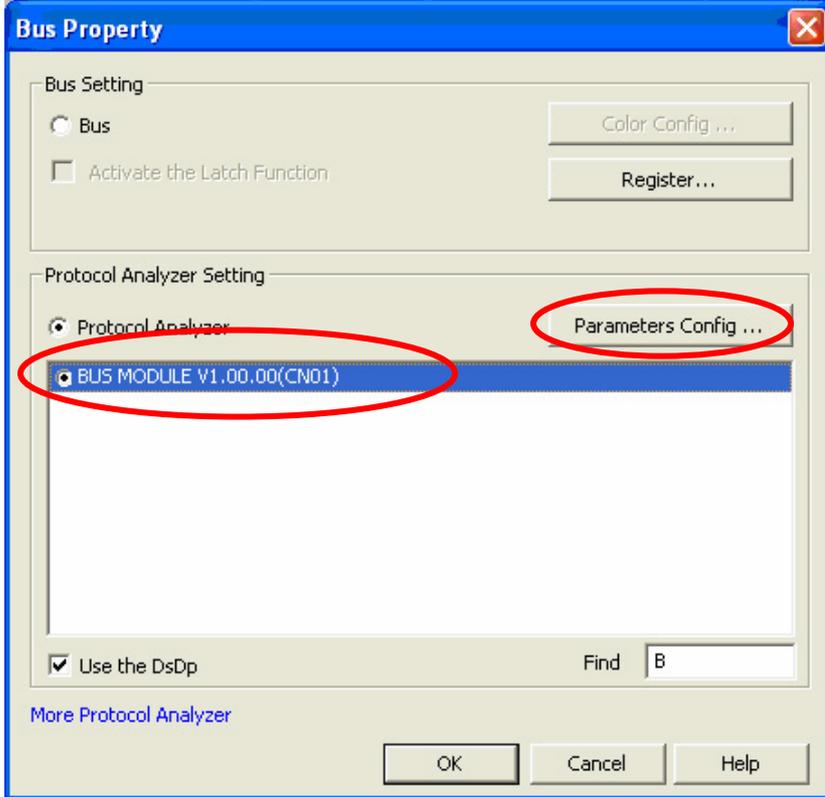
STEP 4. Click the Register tab to enter the serial key of the **BUS**. Then click **Register**.

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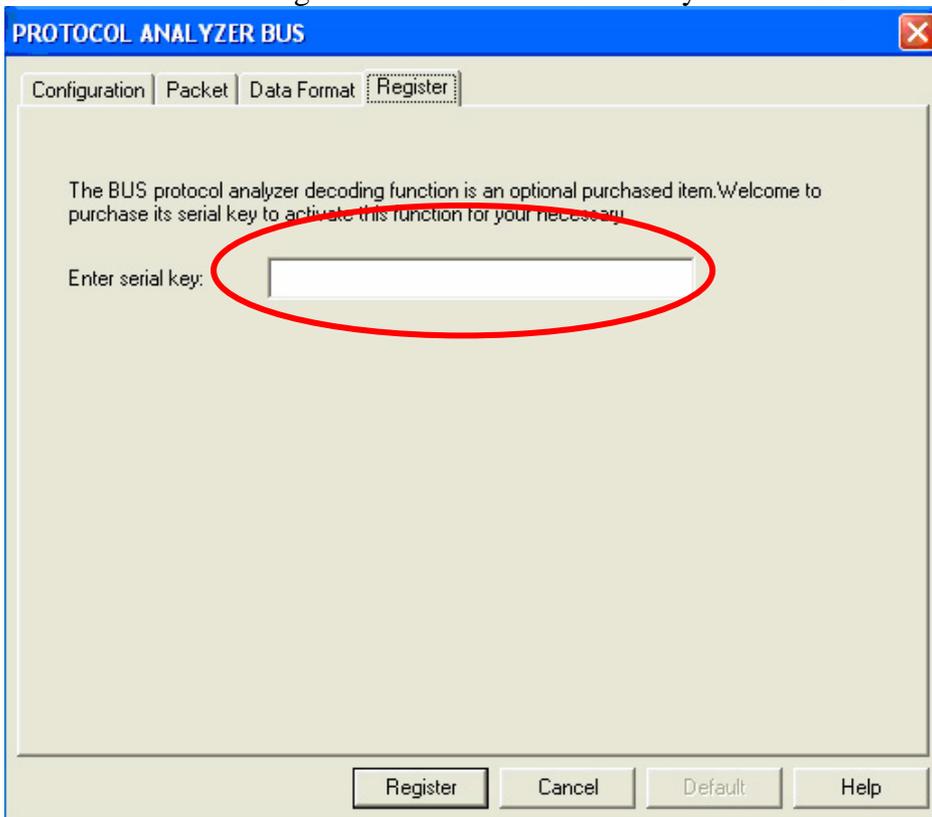
STEP 5. After clicking the Register button, the following dialog box will appear, it denotes that the BUS has been registered successfully.

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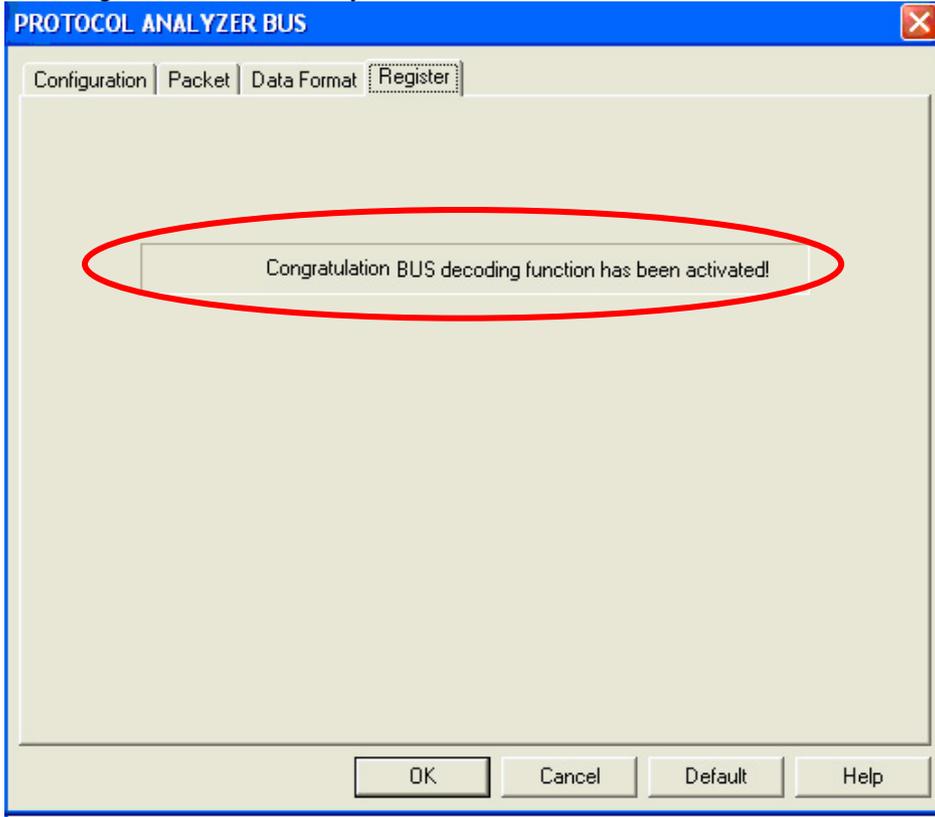
2. User Interface

Please refer to the below images to select options of setting LCD1602 Module.

LCD1602 Configuration dialog box
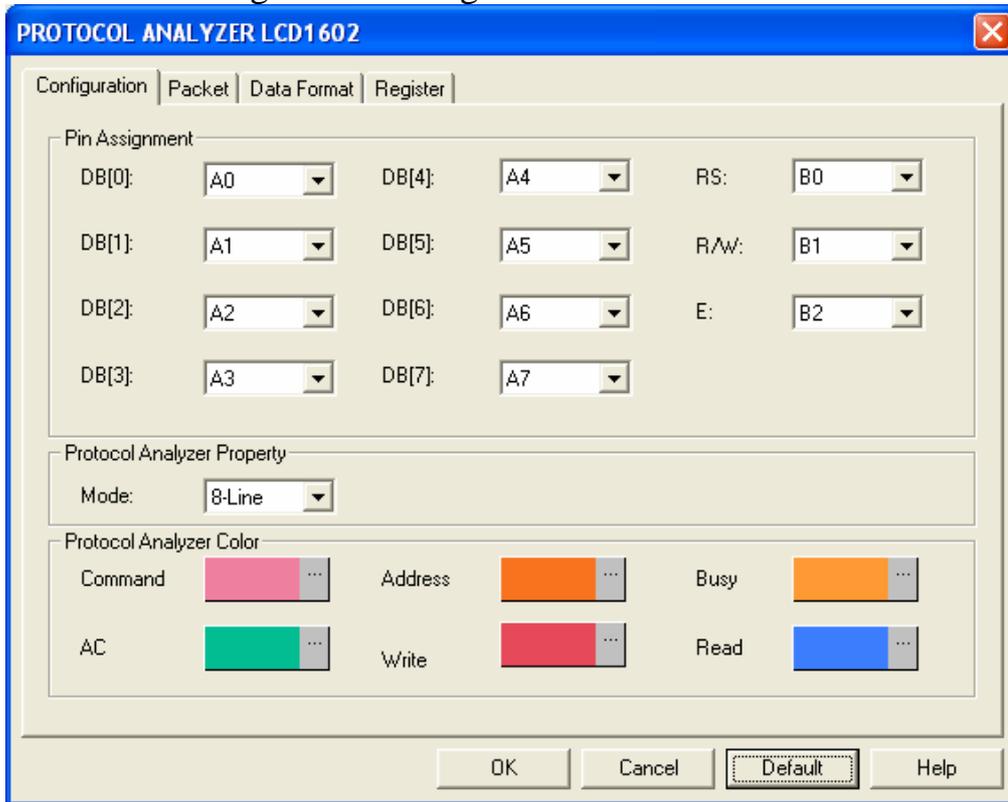
Pin Assignment:
RS: It is the Command or Data line, the default is B0.
R/W: It is the Read or Write line, the default is B1.
E: It is the Enable line, the default is B2.
DB[0] ~ DB[7]: They are the Data lines, their defaults are A0~A7.

Protocol Analyzer Property:
Set the Mode to 8-Line or 4-Line, the default is 8-Line.

Protocol Analyzer Color:
Users can vary the protocol analyzer color.

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LCD1602 Packet dialog box
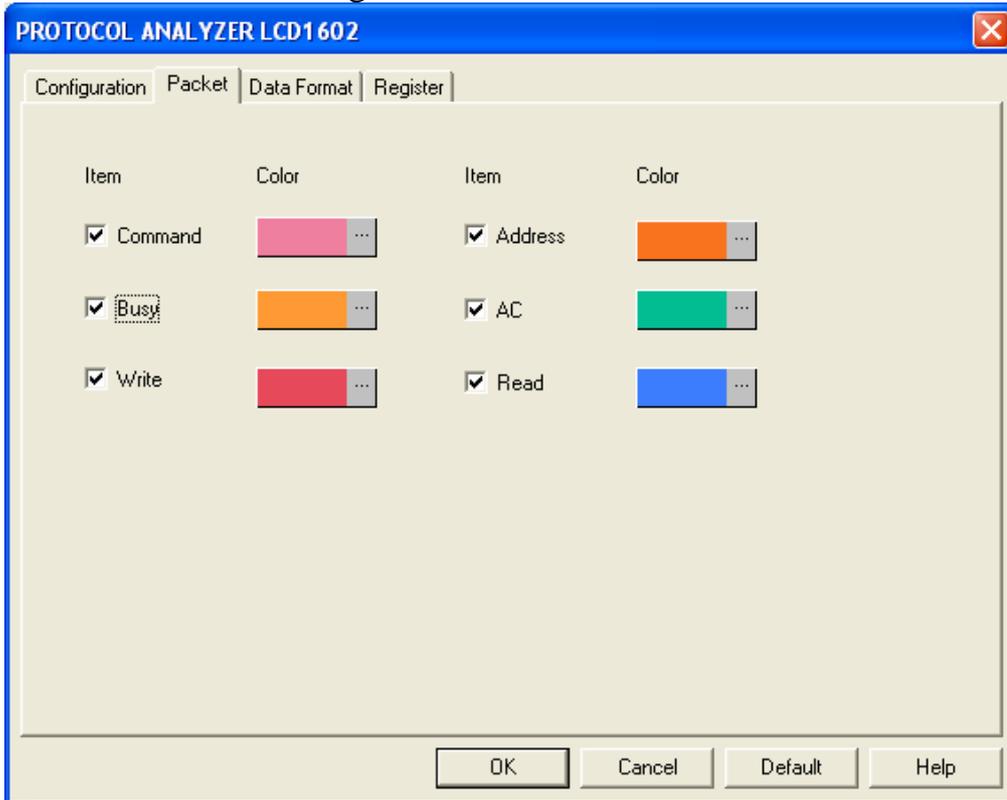
In the packet dialog box, users can vary the color of items.

## LCD1602 Data Format dialog box
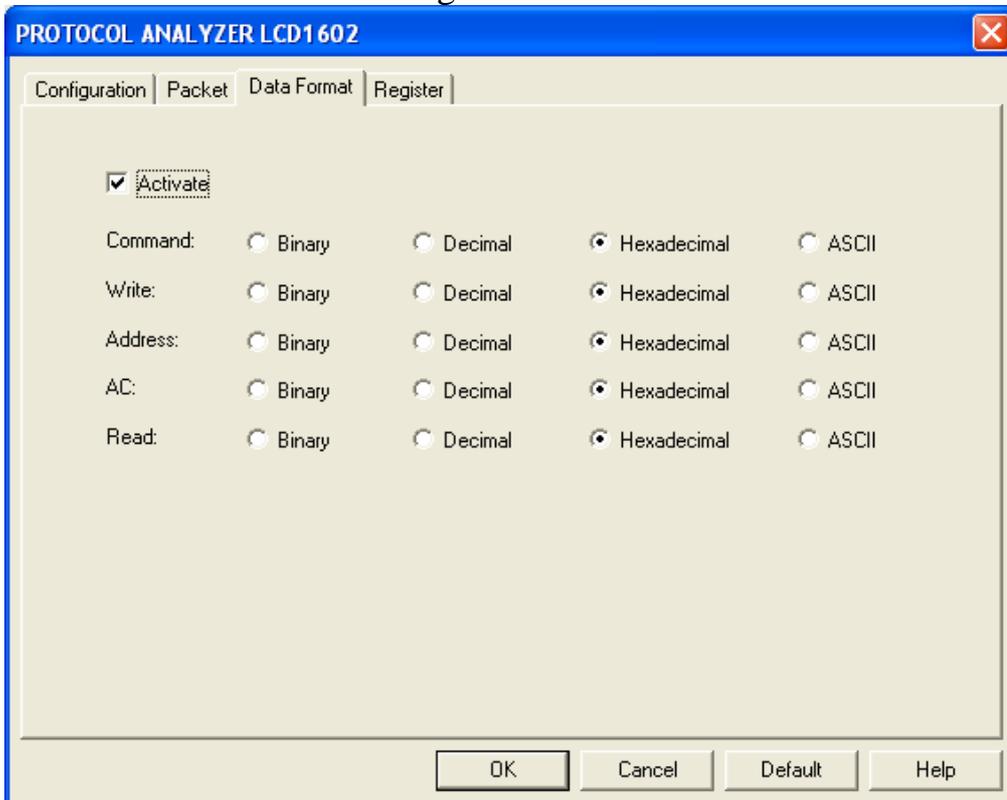
Users can set the Data Format of the Command, Write, Address, AC and Read as their requirements. When selecting the option, Activate, the data format is decided by the settings in the Protocol Analyzer; when not selecting the option, Activate, the data format is decided by the settings in the main program.

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LCD1602 Register dialog box

PROTOCOL ANALYZER LCD1602

Configuration | Packet | Data Format | Register

Congratulation LCD1602 decoding function has been activated!

OK | Cancel | Default | Help

LCD1602 Register dialog box
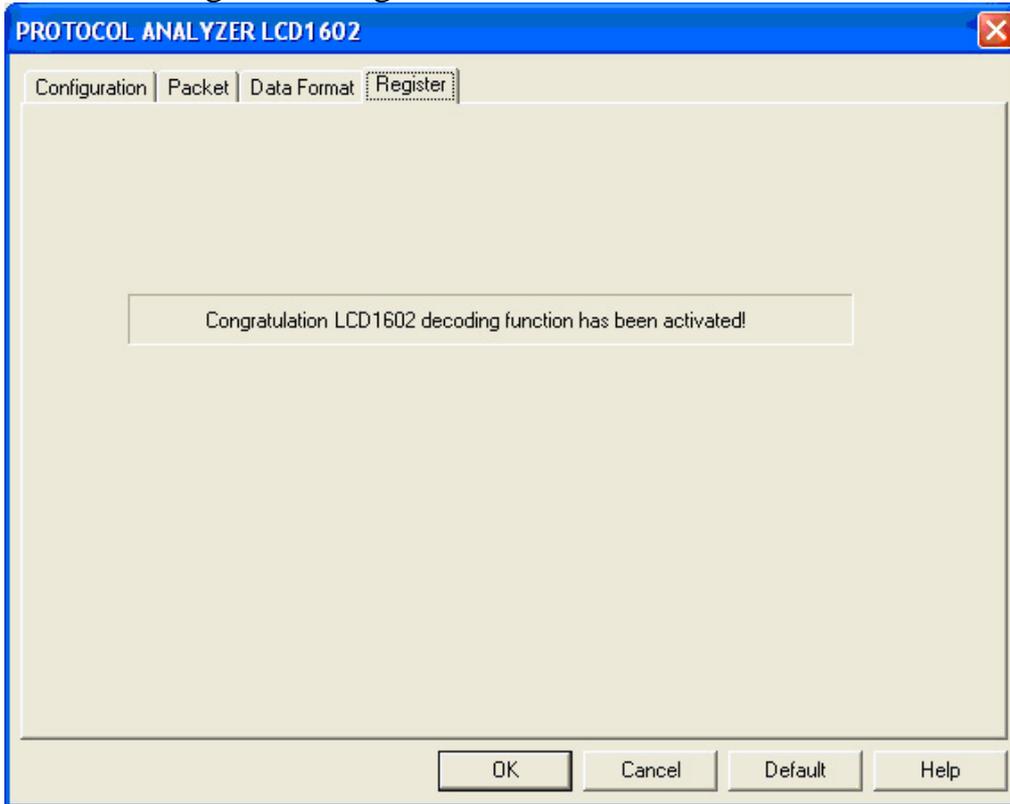
3. Operating Instructions

STEP 1. Group A0-A6 into **Bus1** by pressing the **Right Key** on the mouse. LCD1602 needs seven channels to decode signals at least, so it is necessary to group seven or more channels into a Bus.
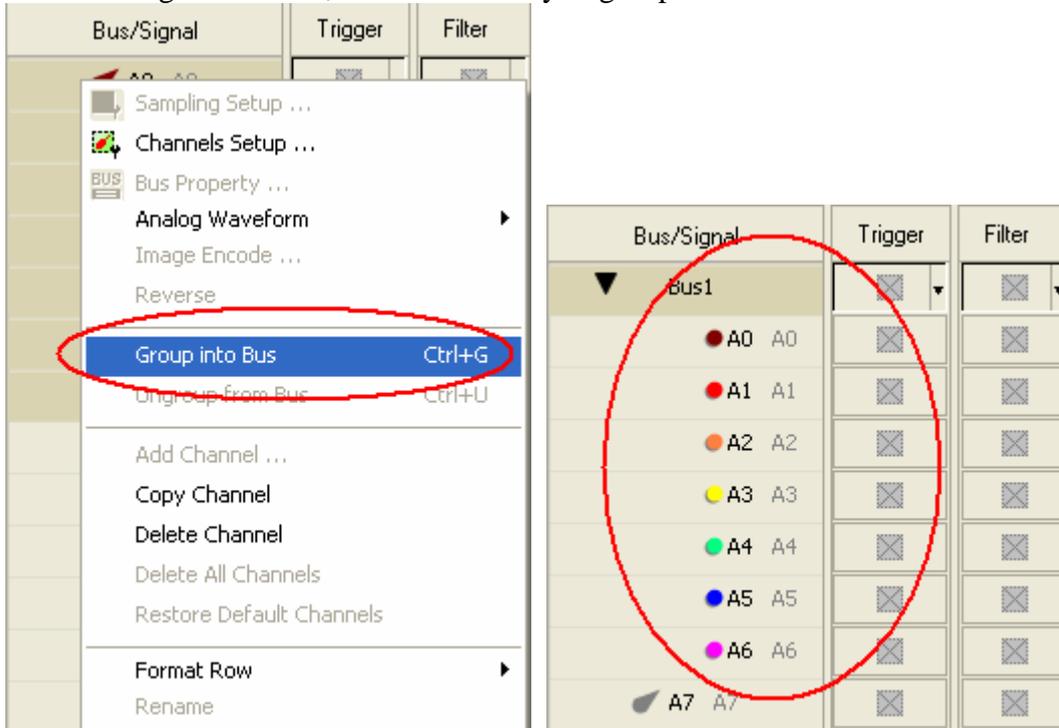

STEP 2. Select **Bus1**, and press **Right Key** on the mouse to list the menu, then press **Bus Property** or **Bus** icon on the toolbar to open **Bus Property** dialog box.

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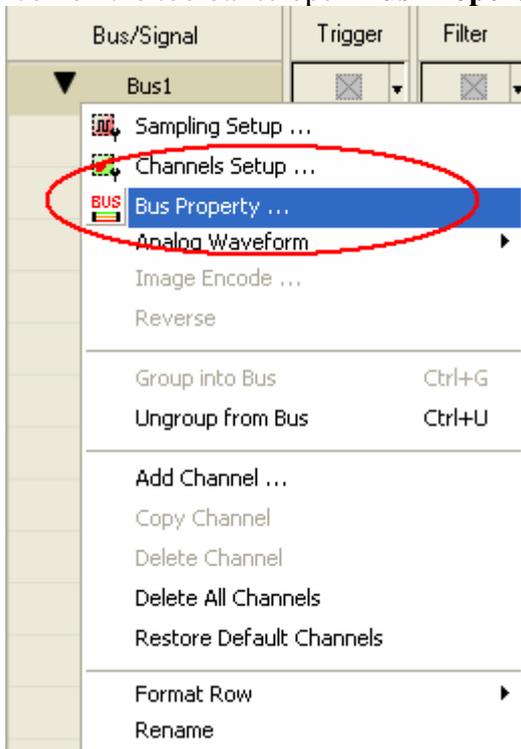
STEP 3.   Select Protocol Analyzer, and then choose **LCD1602 MODULE V1.24.00 (CN01)**. Next click **Parameters Configuration** to open the PROTOCOL ANALYZER LCD1602 dialog box.
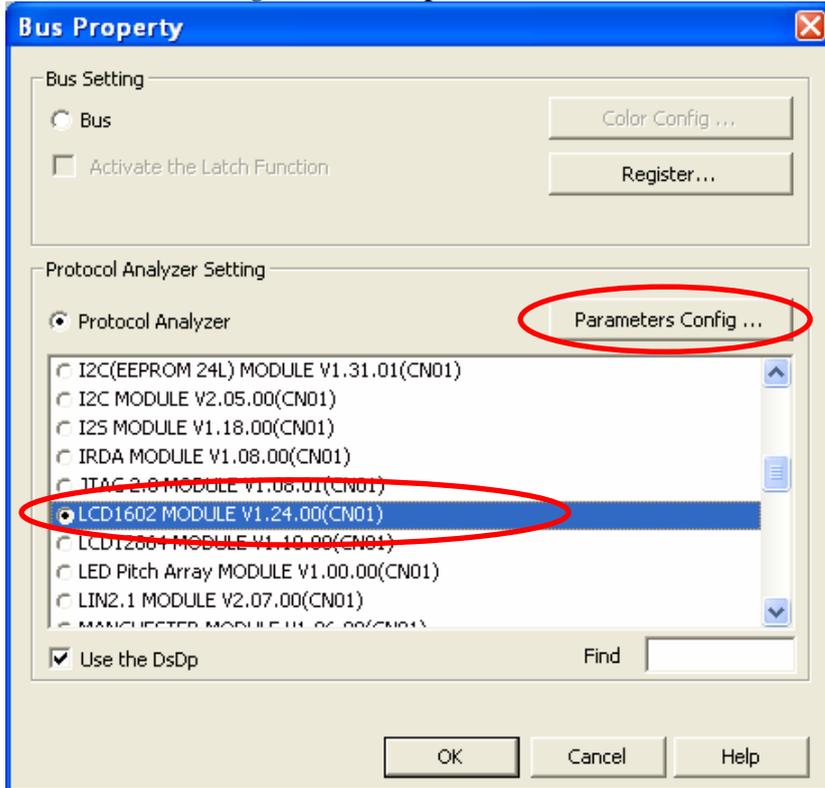
STEP 4.   Set the Pin Assignment.

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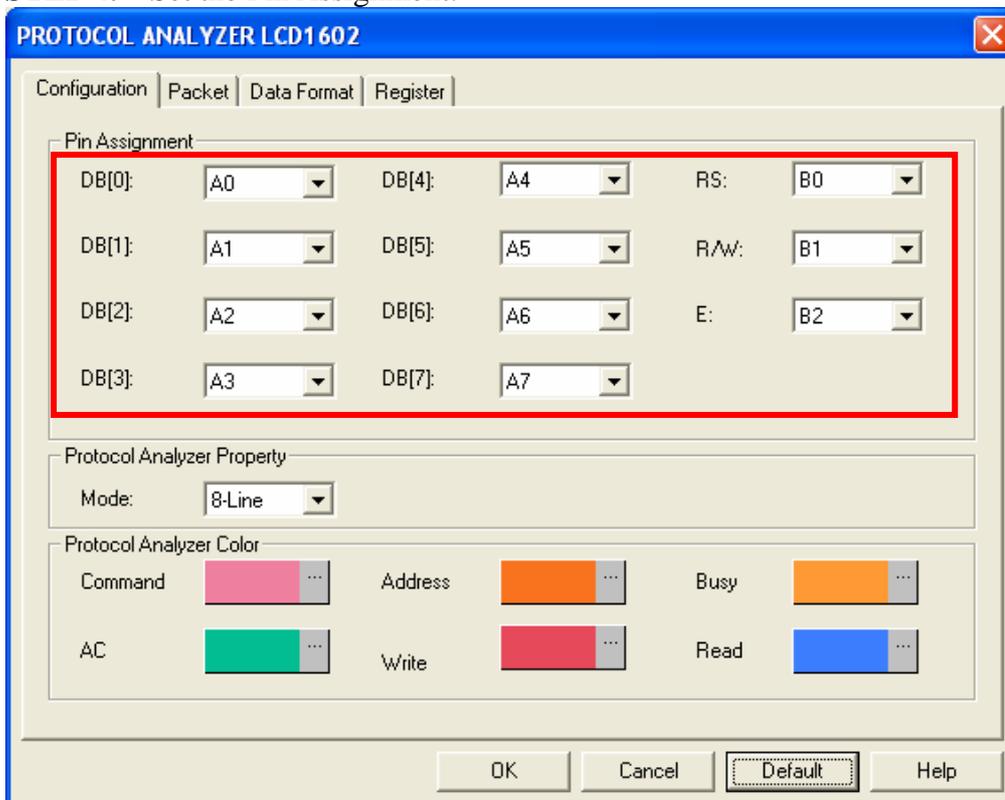
STEP 5. Set the Mode to 8-Line or 4-Line.
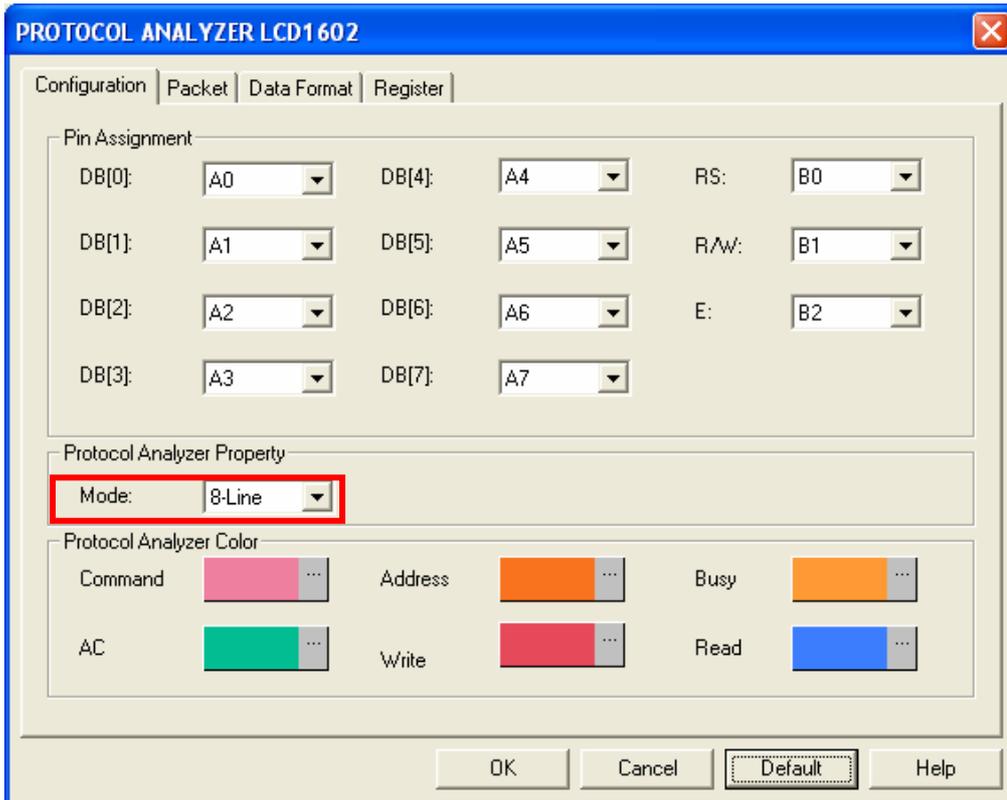

STEP 6. Set the Protocol Analyzer Color.

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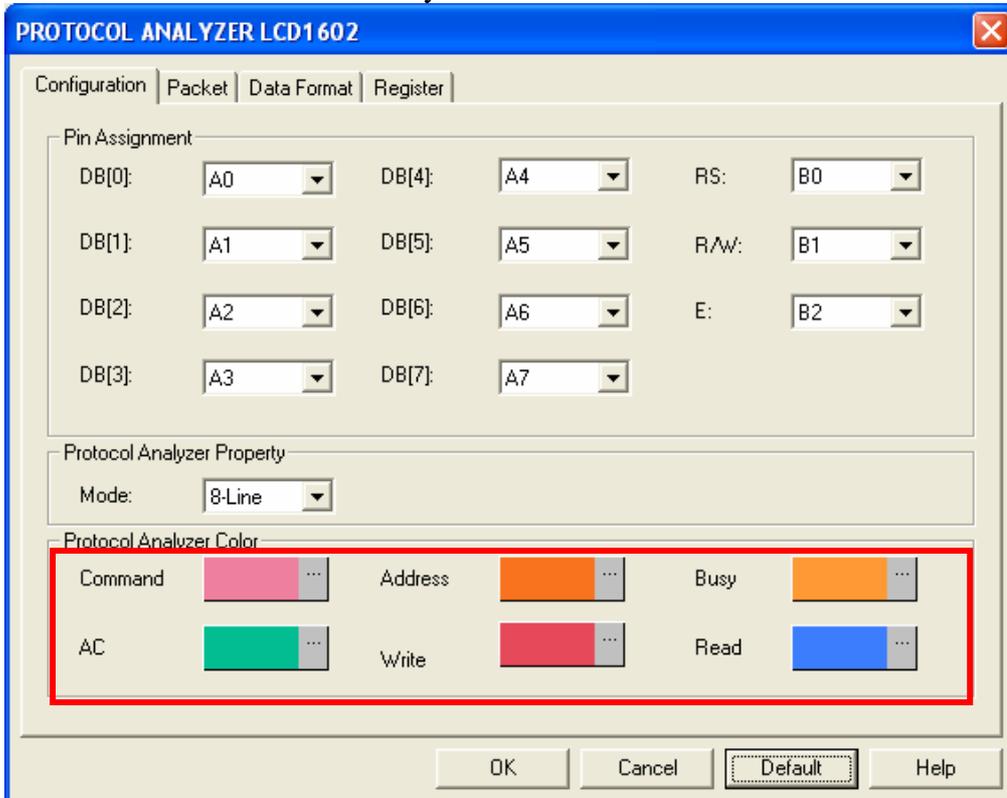
STEP 7.   Following pictures show the completion of the protocol analyzer decoding and the packet list. The trigger condition is set as Either Edge; the memory depth is 128K; the sampling frequency is 200MHz (the sampling frequency should be more than four times higher than the signal to be tested).

Protocol Analyzer Decoding

Packet List

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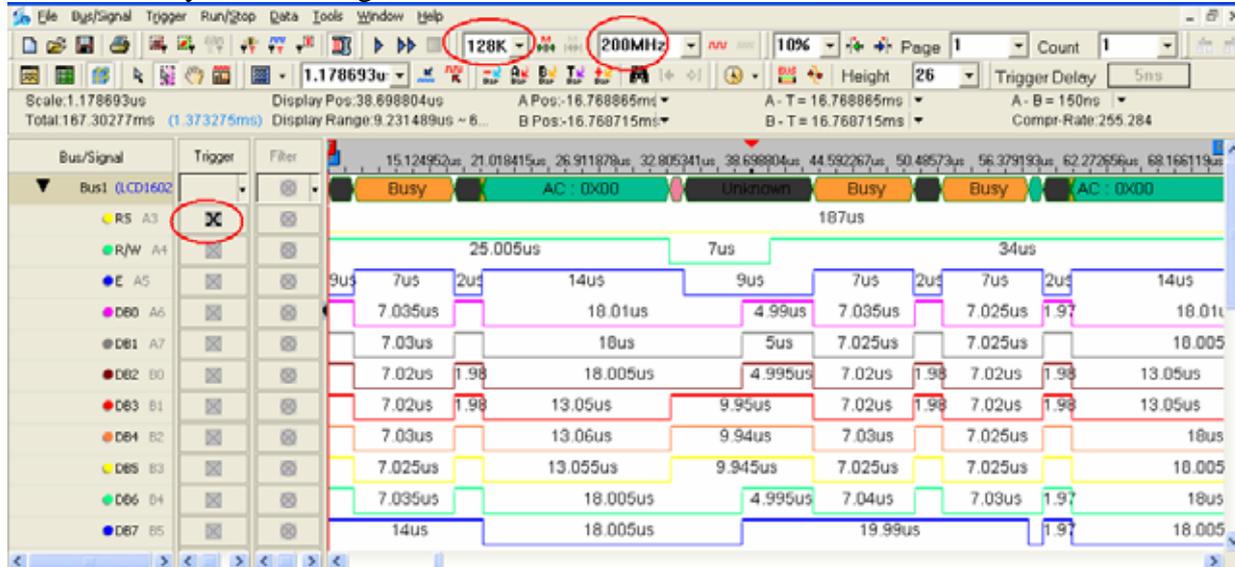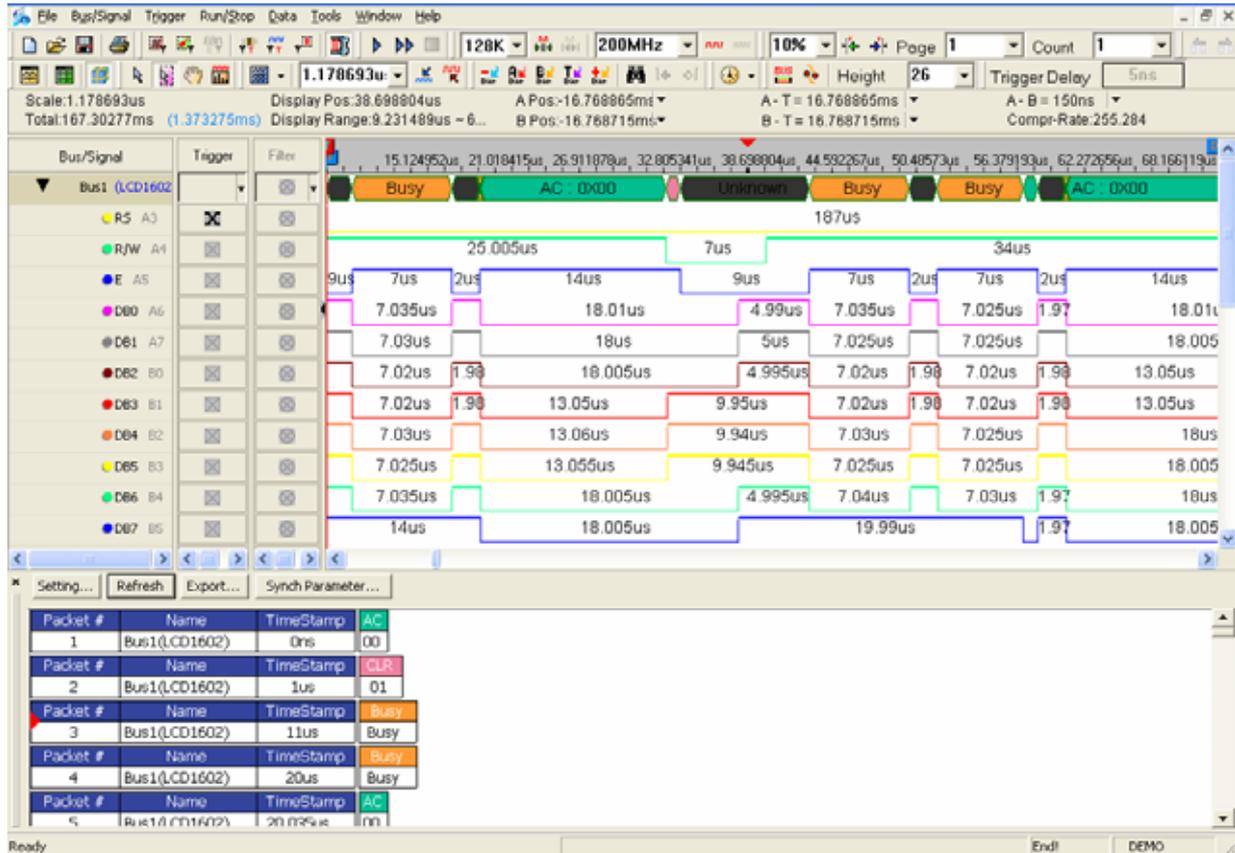
4. Function Description

4.1 Image Encode

This function can decode the data format of protocol analyzer and display the decoded data in images. (Only LAP-A, LAP-C and smart+ are supported.)

4.1.1 Interface
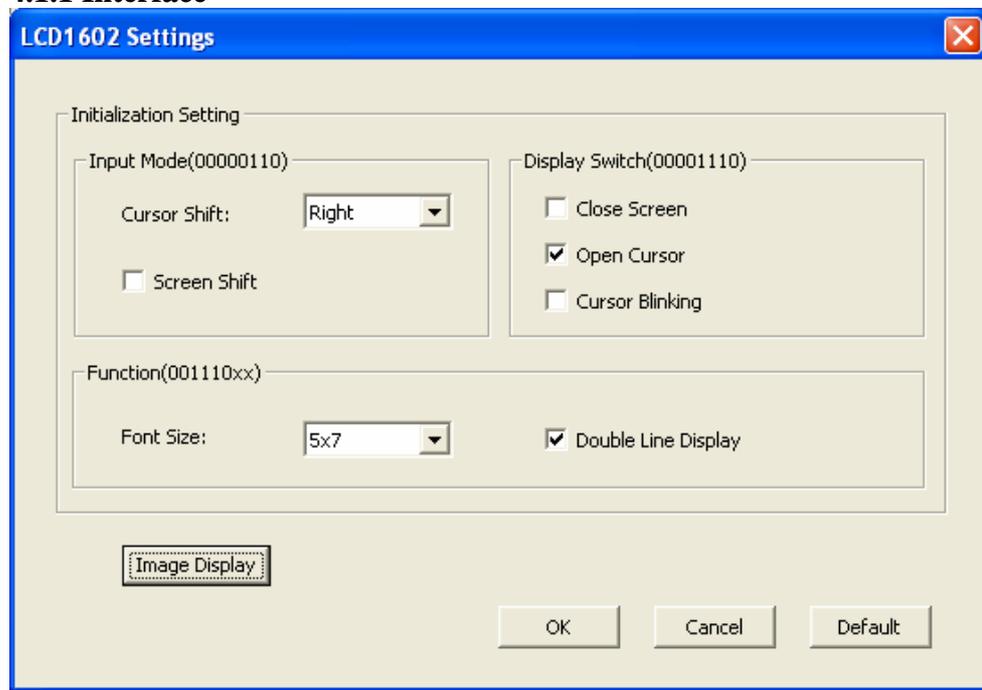
Initialization Settings: Set the original parameters of screen, such as Cursor Shift, Screen Shift, Close Screen, Open Cursor, Cursor Blinking, Font Size and Double Line Display.

Click the button of 'Image Display' to open its dialog box.
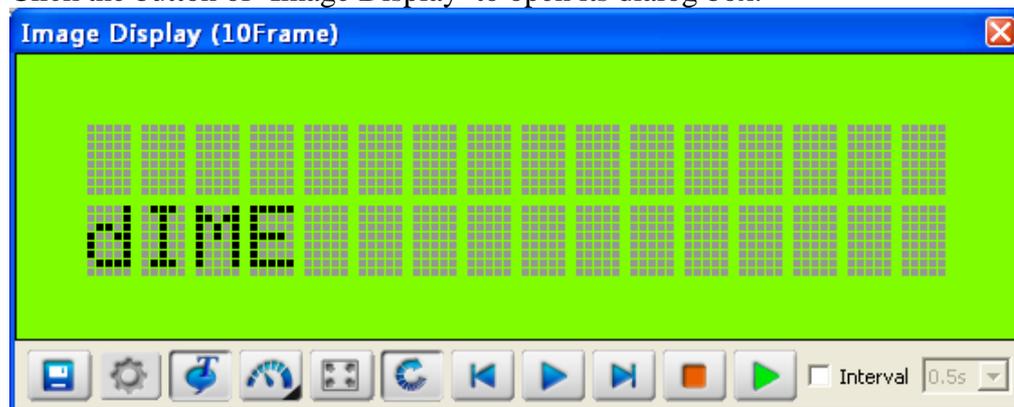
1. **Capture**: Click this button to capture in the display area. The picture could be saved in BMP, JPG or PNG(default) format with title and current frame data.

2. **Setup**: It is disabled.

3. **Display Amount**: Show the frame data on the right of title.

4. **Play Speed**: These speeds are in proportion with the time bit length of data. For example, x10 indicates the speed is 1/10 of the time bit length of data. Click it to select the play speed.

```
×10
×5
×2
√ ×1
/2
/5
/10
```

5. **Full Screen**: It is disable.

6. **Loop**: Show the data repeatedly.

7. **Play/Pause**: Click the play button to play while it changes to the pause button, click the pause button to pause and display the current data while it changes to the play button.

8. **Previous**: Show the previous data. It is disabled during playing or when the data is the first one.

9. **Next**: Show the next data. It is disabled during playing or when the data is the final one.

10. **Stop**: Stop playing.

11. **Run**: Click this button to capture data for one time.

12. ☐ Interval 0.5s ▼ : If selected, the data will be captured continuously with that interval no matter the Run button is clicked or not. It is not selected by default.

4.1.2 Operating Instructions

STEP 1. After decoding finished, press right key on the Bus name (Bus(LCD1602)) and select the Image Encode from the popup menu.
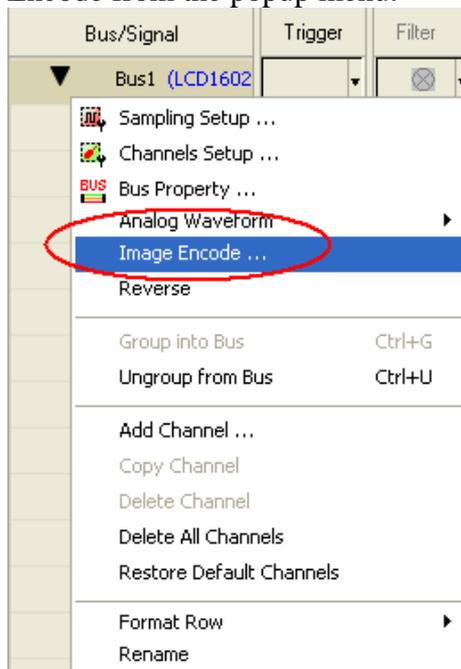
STEP 2. Set the initialization settings.
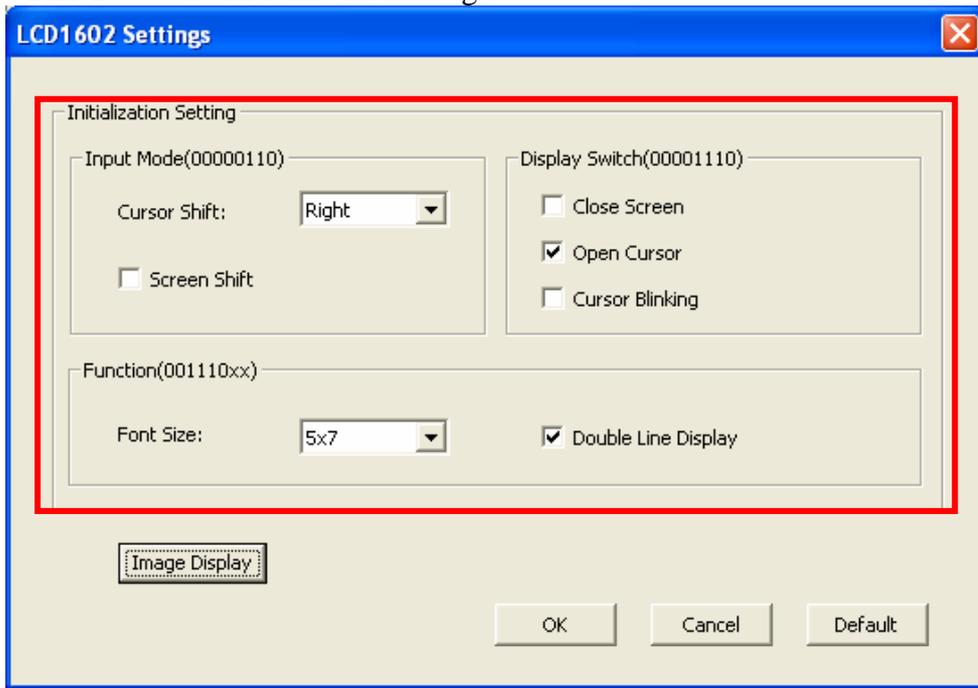
STEP 3. Click the button of 'Image Encode' to open.

FM07F1D