SPECIFICATION

MODEL: B08003-LAP-LCD12864-M

PART NO: _____

VERSION: V1.10

Approver		Check	Design
GM	PM		

Customer Confirm

Content

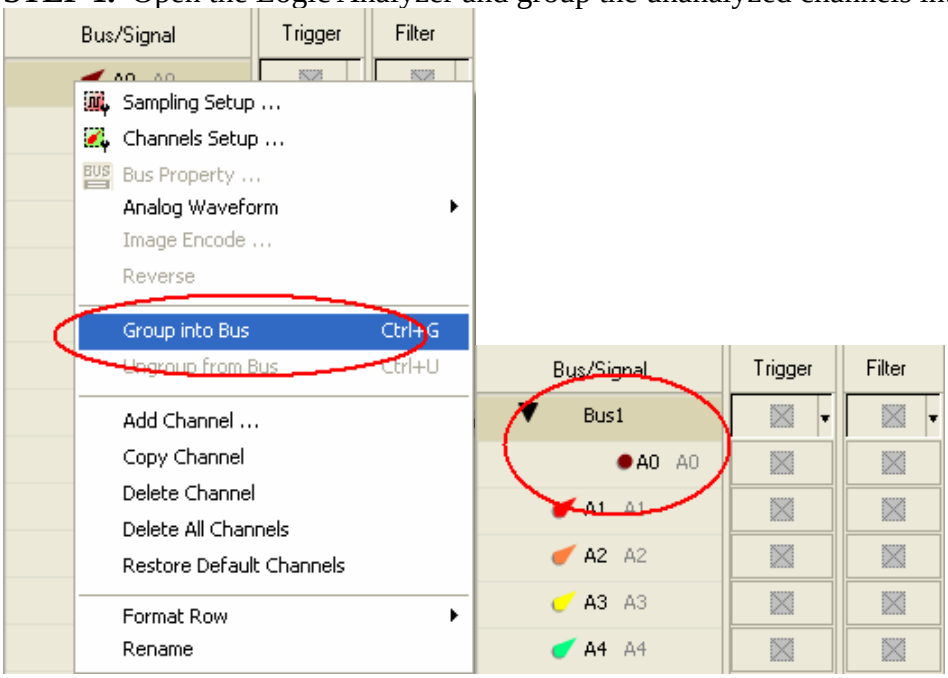
1 Software Register

Please register the software as the following steps:

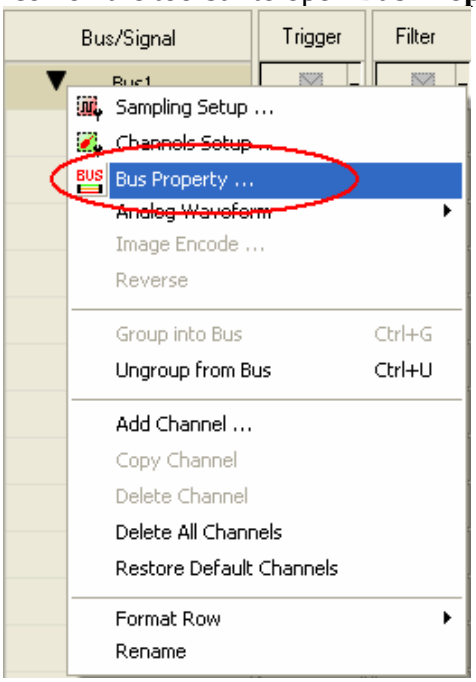
※ Remark1: The registration steps for all protocol analyzers are the same; you can complete the registration by following procedures. Following is an example on how to register the Protocol Analyzer BUS.

※ 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.

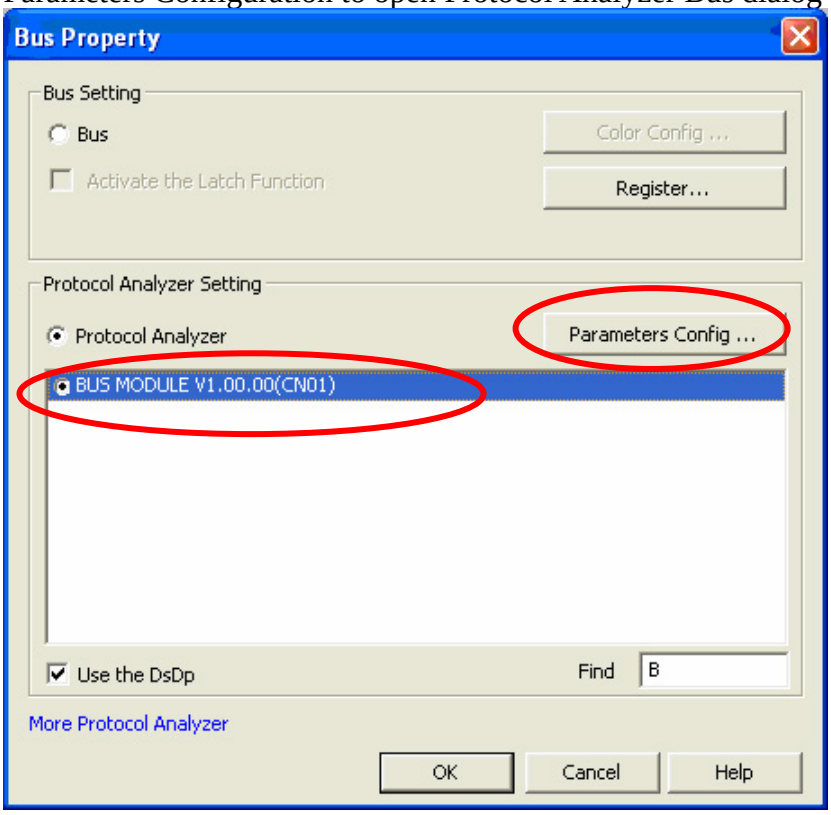
STEP 1. Open the Logic Analyzer and group the unanalyzed channels into **Bus1** by pressing the **Right Key**.



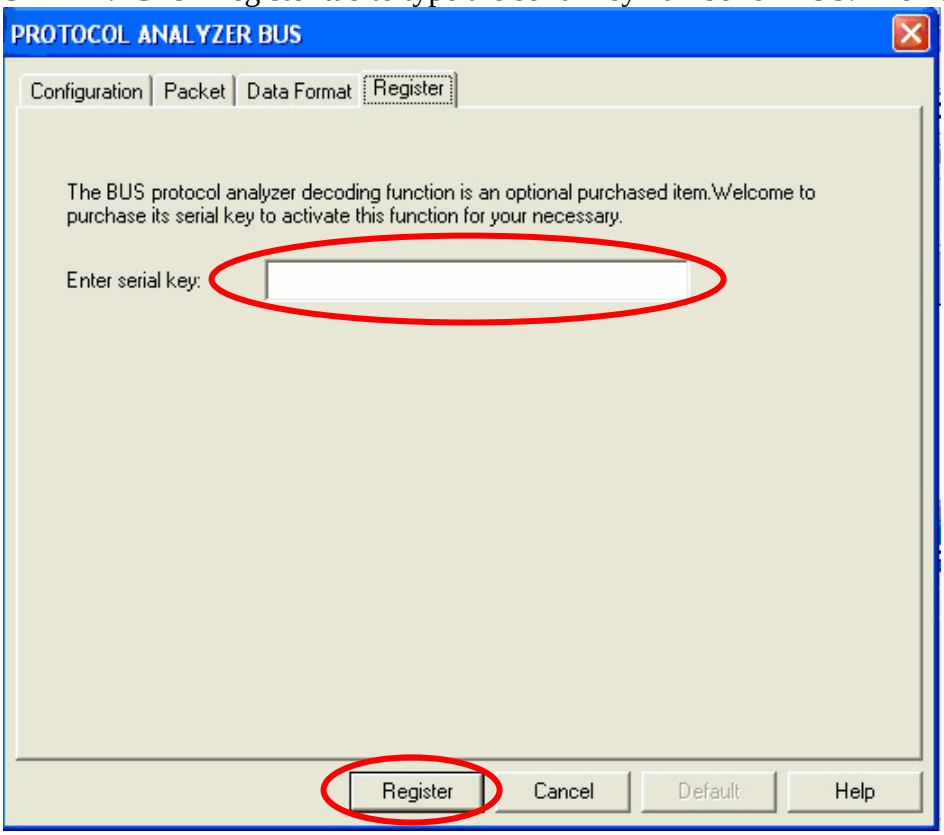
STEP 2. Select **Bus 1**, then press **Right Key** on the mouse to list the menu, then click **Bus Property** or **Bus** icon on the toolbar to open **Bus Property** dialog box.



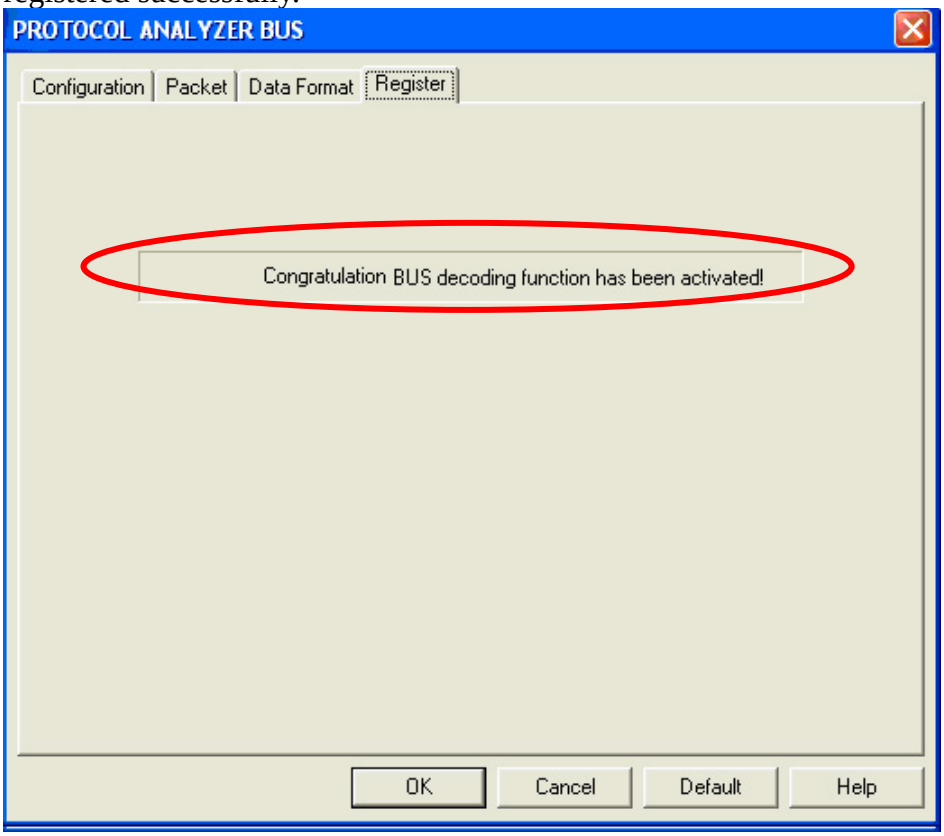
STEP 3. Select the Protocol Analyzer, and then choose **BUS MODULE V1.00.00 (CN01)**. Next click Parameters Configuration to open Protocol Analyzer Bus dialog box.



STEP 4. Click Register tab to type the serial key number of BUS. Then click Register.



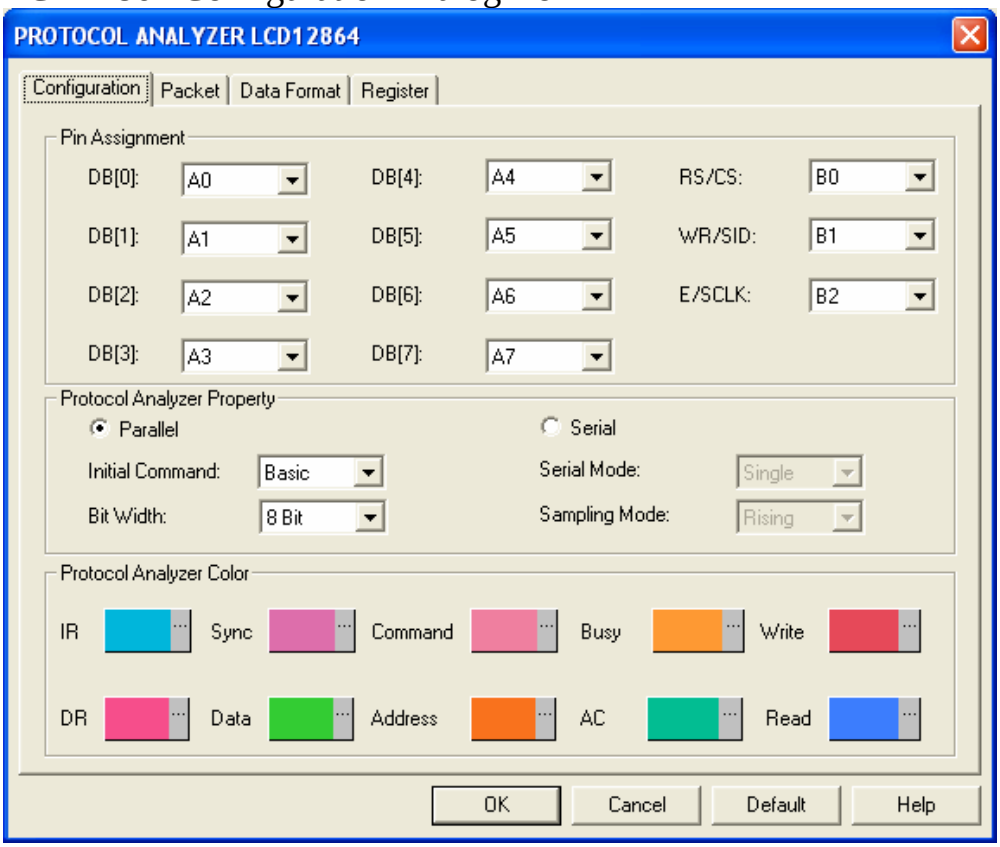
STEP 5. After clicking the Register button, following dialog box will appear; it denotes that the BUS has been registered successfully.



2 User Interface

Please refer to the below images to select options of setting **LCD12864** module.

LCD12864 Configuration Dialog Box

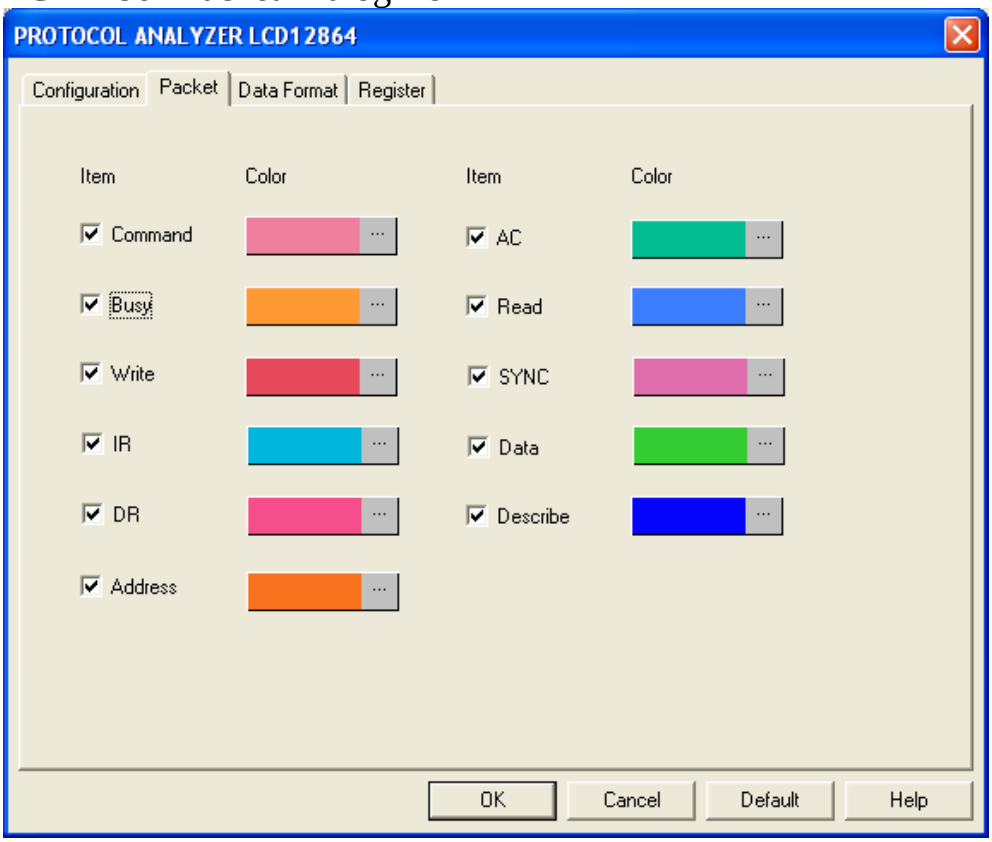


Pin Assignment:
Set the corresponding signal lines. Because there are different Signal Transmission Modes for the RS/CS, WR/SID, E/SCLK and DB[0]~DB[7], there are different Signal Setting Modes and the required channels for RS/CS, WR/SID, E/SCLK and DB[0]~DB[7].

Protocol Analyzer Property:
Parallel Settings:
Initial Command: Set the Initial Command to Basic or Extension.
Bit Width: Set the Width to 8 Bit or 4 Bit.
Serial Settings:
Serial Mode: Set the Mode to Single or Network.
Sampling Mode: Set the Mode to Rising or Falling.

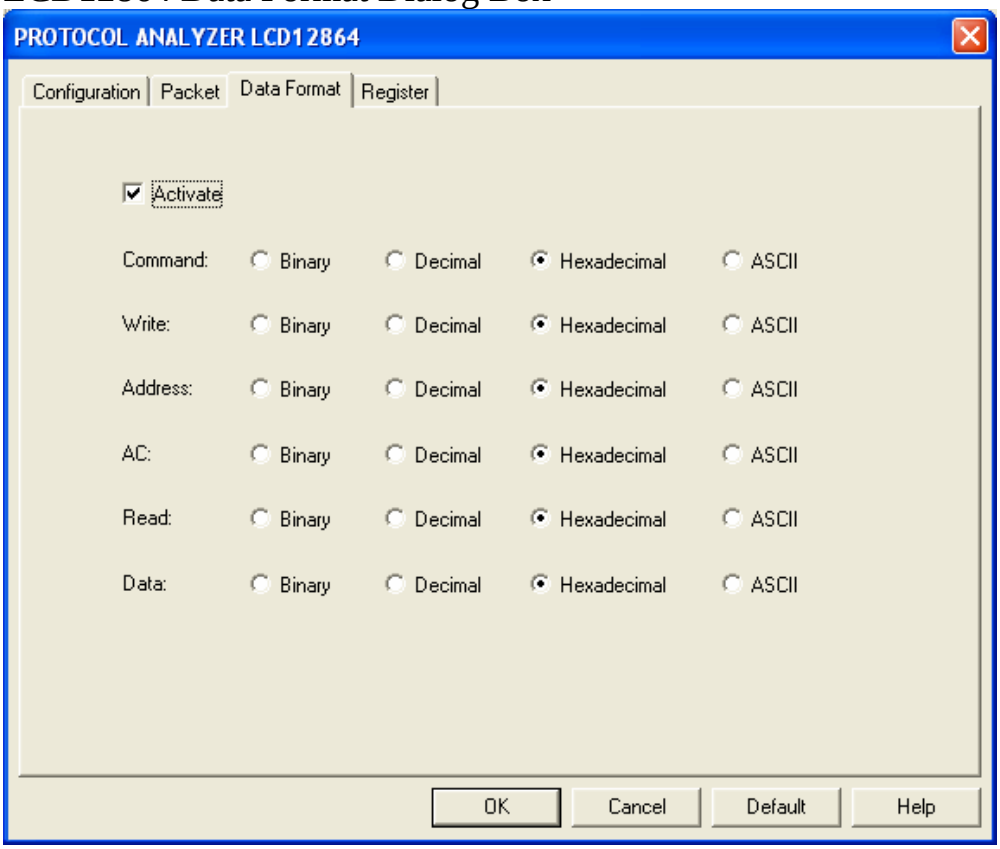
Protocol Analyzer Color:
Users can vary the protocol analyzer color.

LCD12864 Packet Dialog Box



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

LCD12864 Data Format Dialog Box



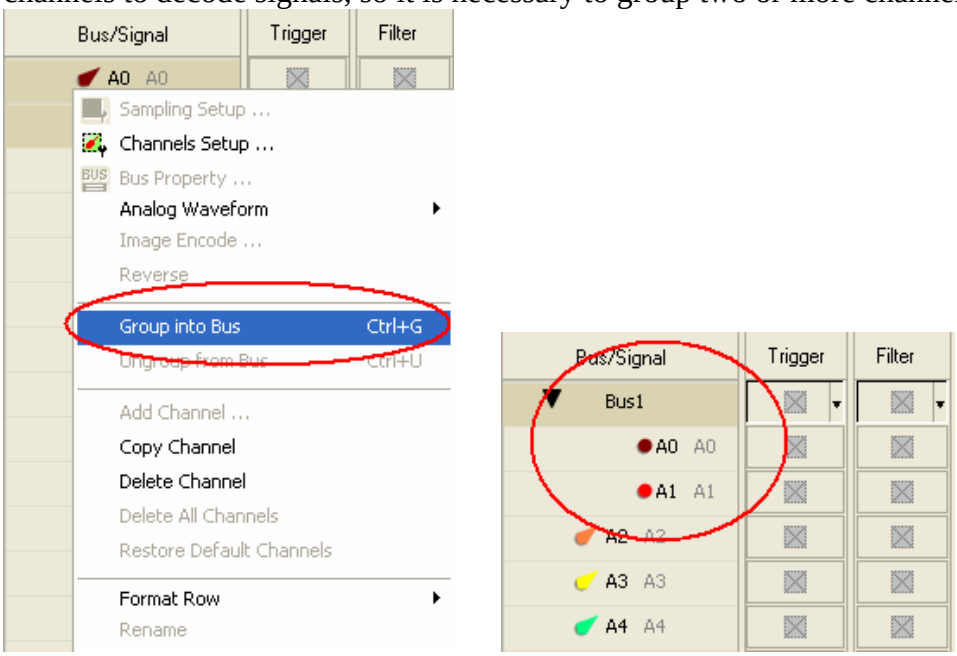
Users can set the data format of the Command, Write, Address, AC, Read and Data as their requirements. When selecting the option, Activate, the data format is decided by the settings in the Protocol Analyzer; when

not selecting the option, Activate, the data format is decided by the settings in the main program.

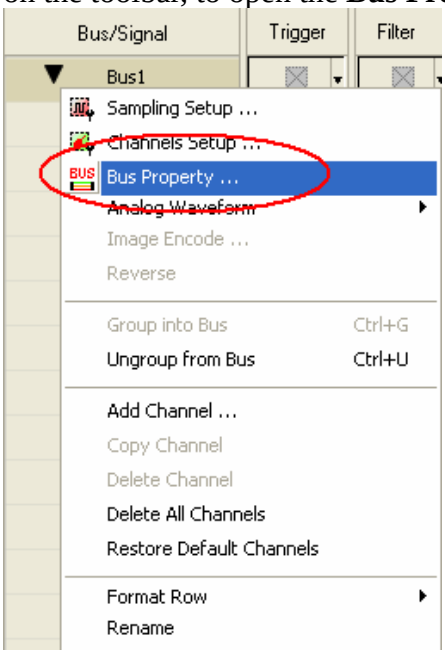
LCD12864 Register Dialog Box

3 Operating Instructions

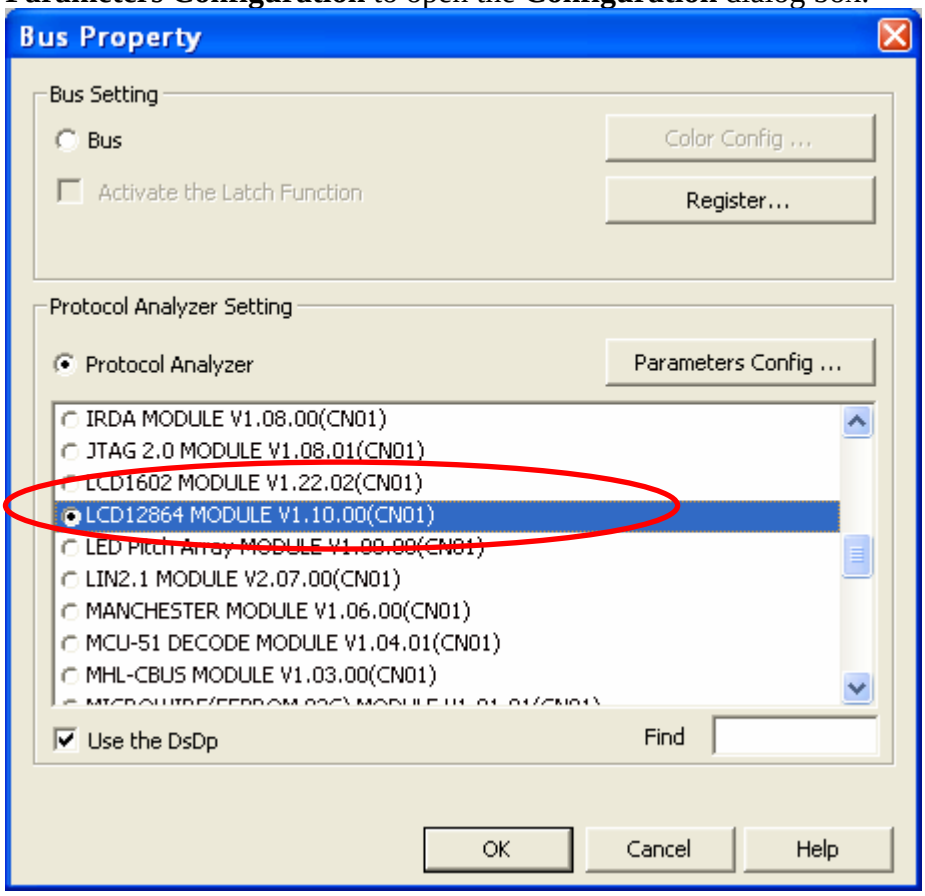
STEP 1. Group A0~A1 into **Bus1** by pressing the **Right Key** on the mouse. **LCD12864** needs two or more channels to decode signals, so it is necessary to group two or more channels into a Bus.



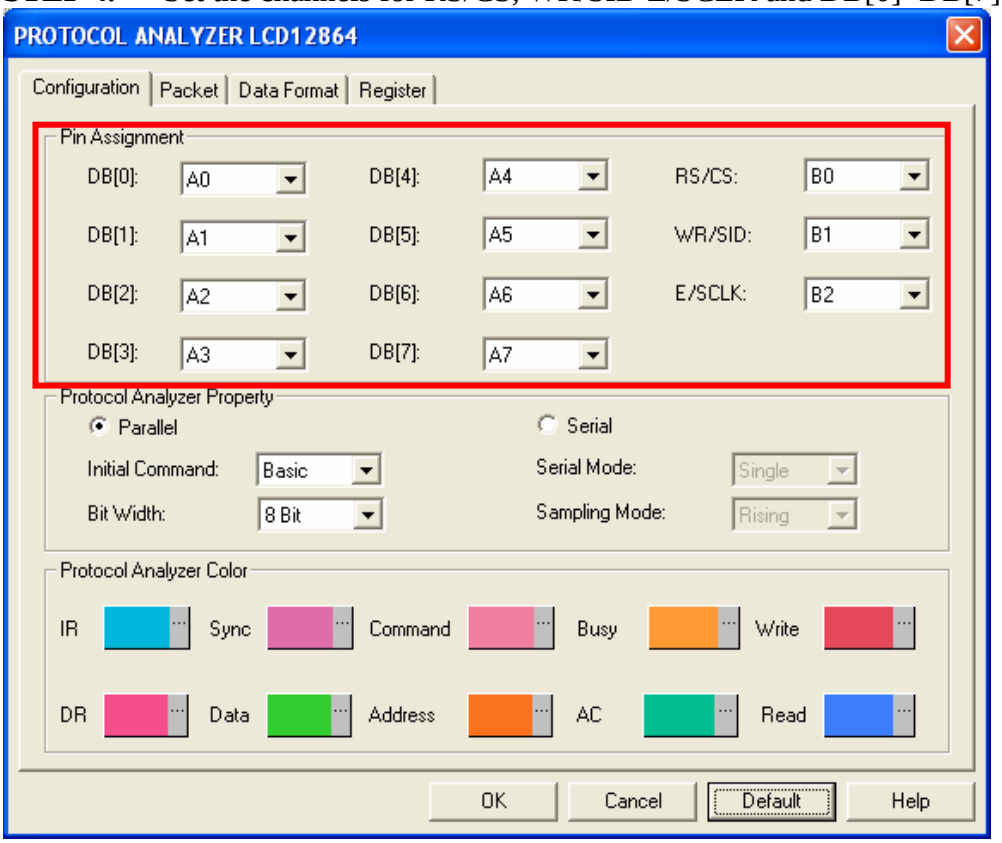
STEP 2. Select **Bus1**, press right key and select **Bus Property** from the popup menu**,** or click the **Bus** icon on the toolbar, to open the **Bus Property** dialog box.



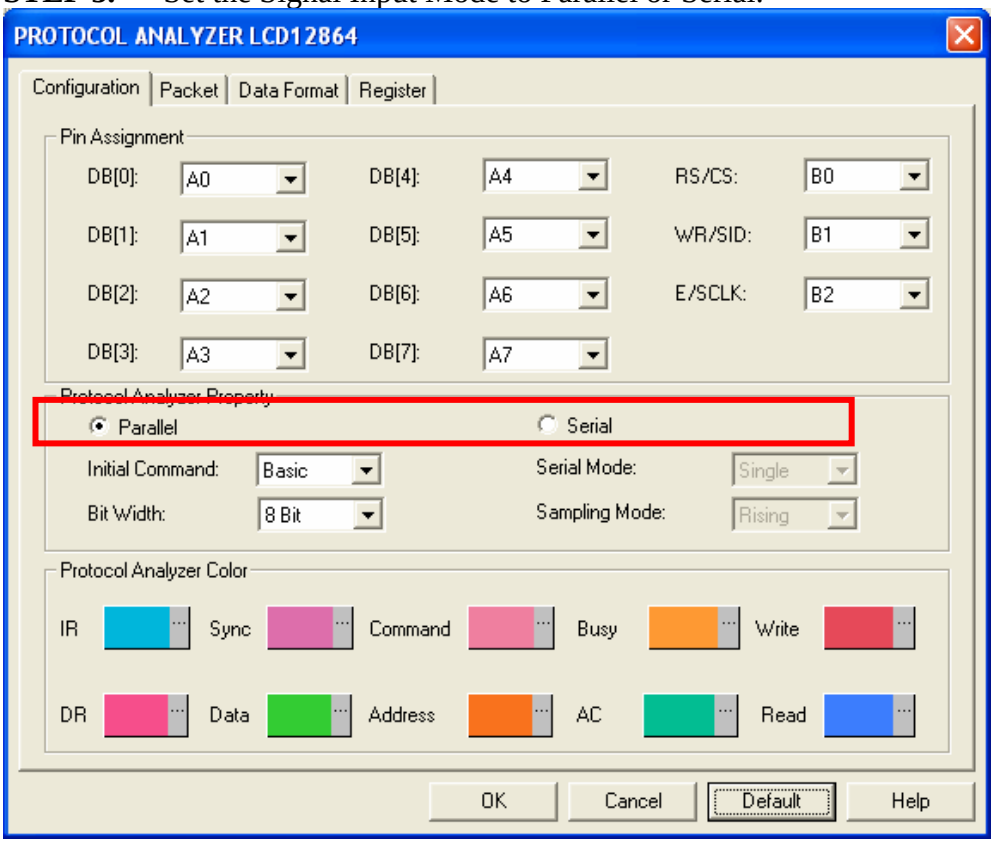
STEP 3. Select Protocol Analyzer, and then choose **LCD12864 MODULE V1.10.00(CN01)**. Next click **Parameters Configuration** to open the **Configuration** dialog box.



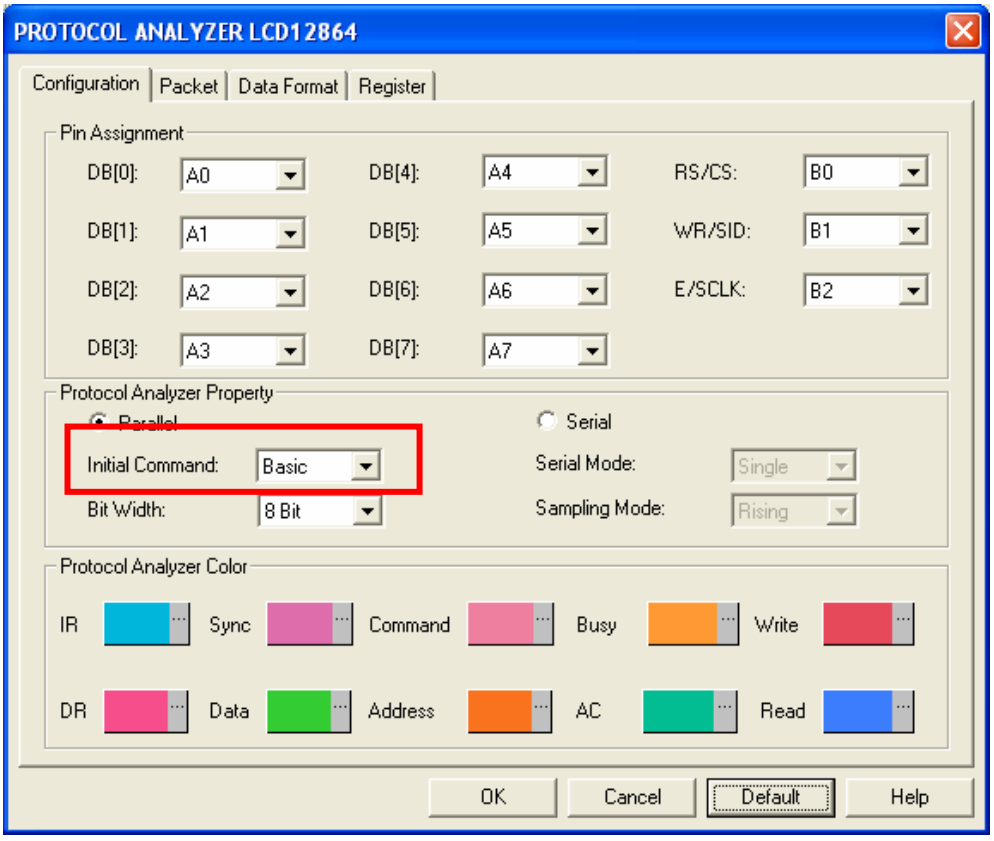
STEP 4. Set the channels for RS/CS, WR/SID E/SCLK and DB[0]~DB[7].



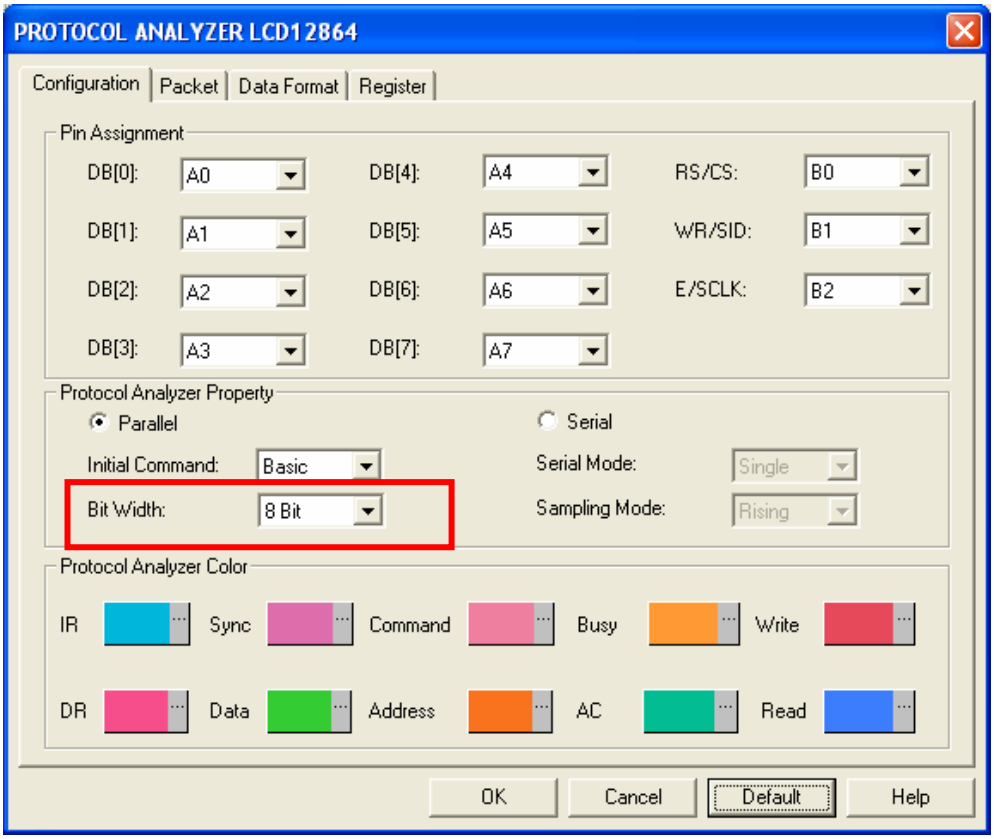
STEP 5. Set the Signal Input Mode to Parallel or Serial.



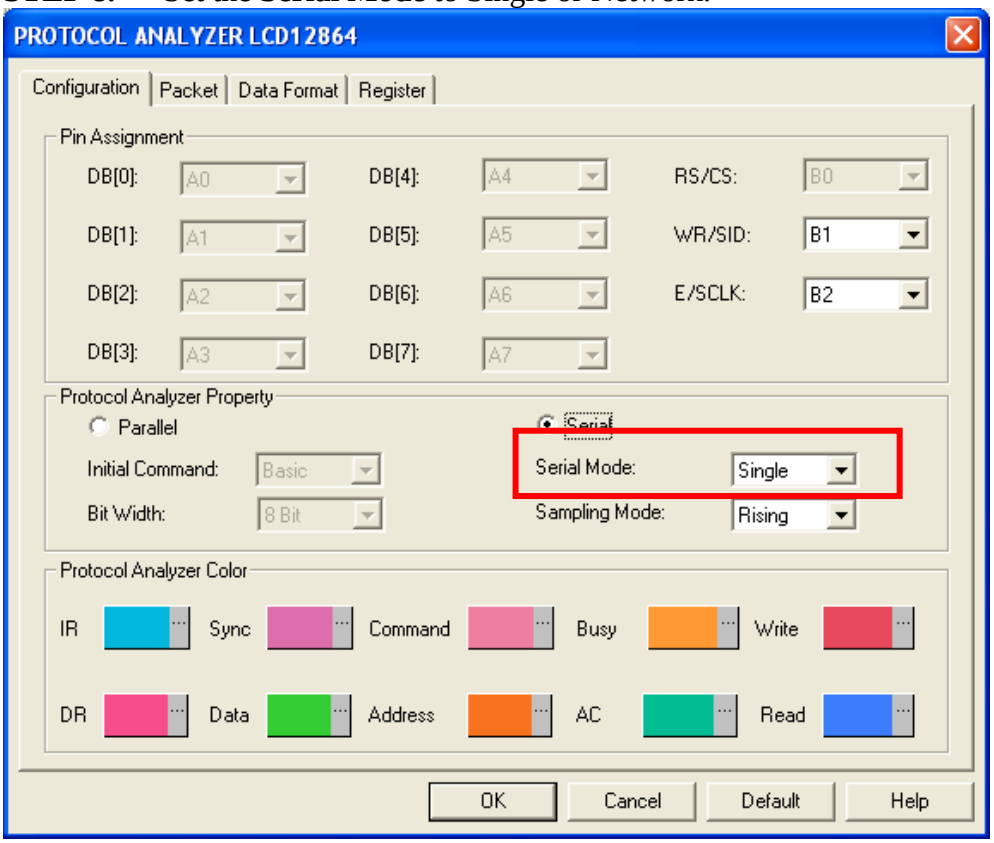
STEP 6. Set the **Initial Command** to Basic or Extension in the Parallel Mode.



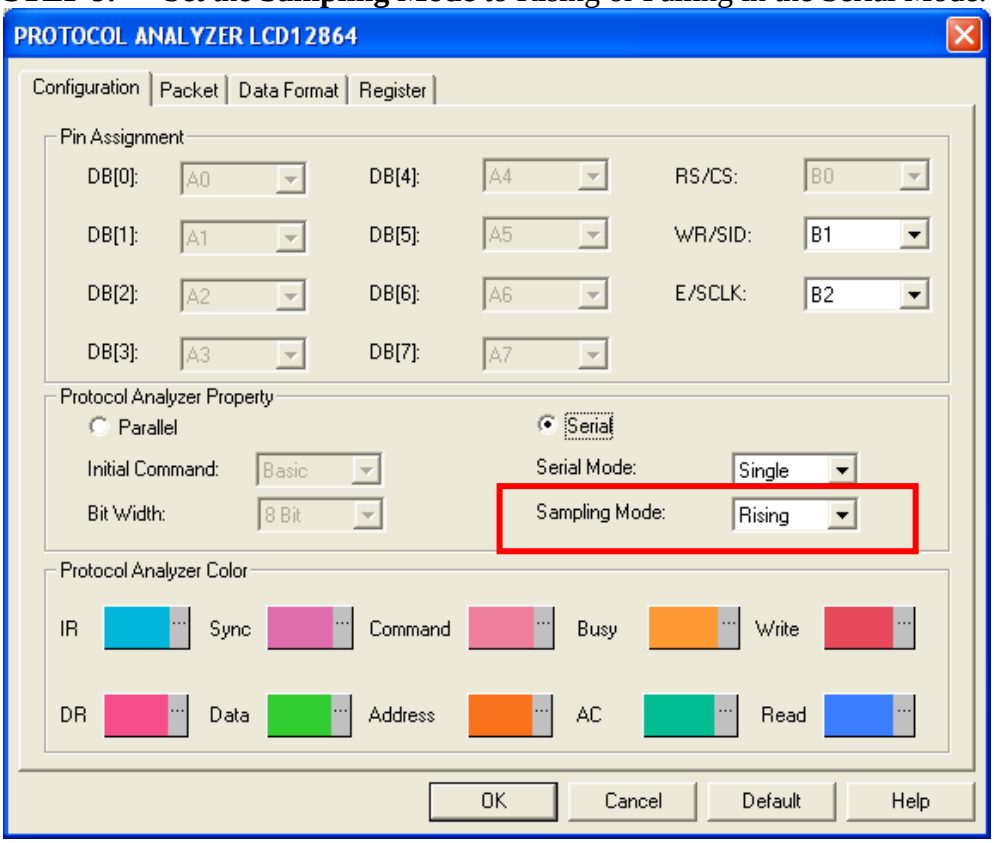
STEP 7. Set the **Bit Width** to 8 Bit or 4 Bit in the Parallel Mode.



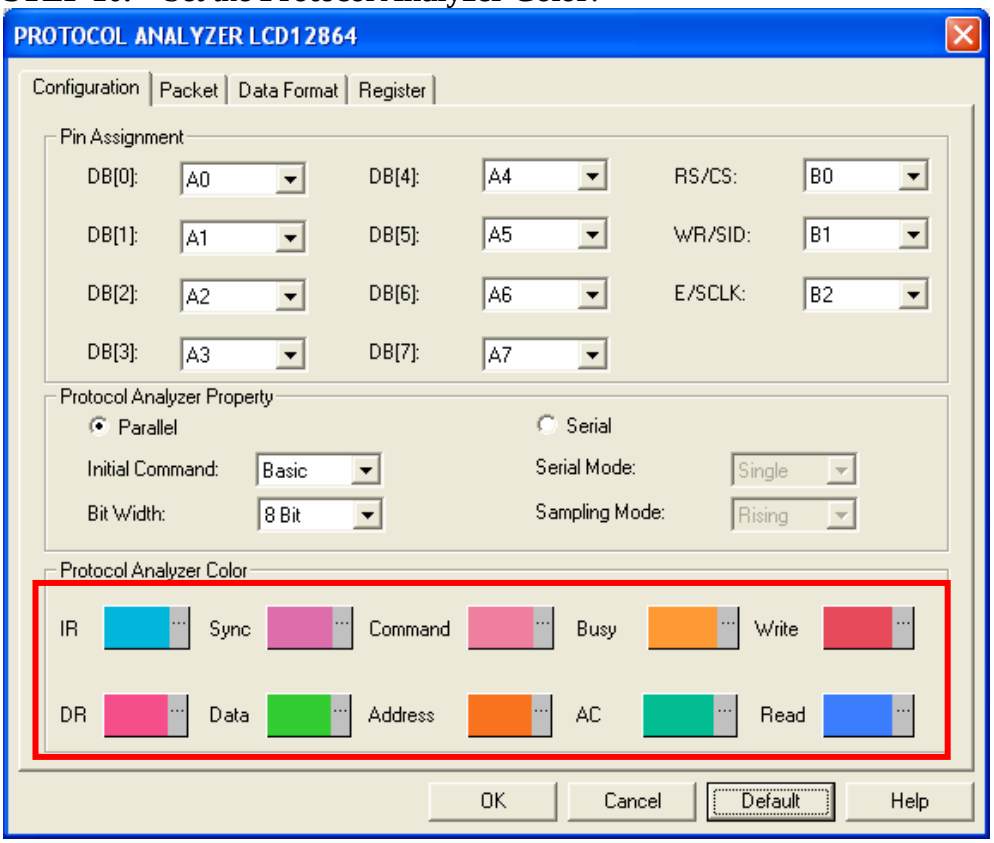
STEP 8. Set the **Serial Mode** to Single or Network.



STEP 9. Set the **Sampling Mode** to Rising or Falling in the Serial Mode.

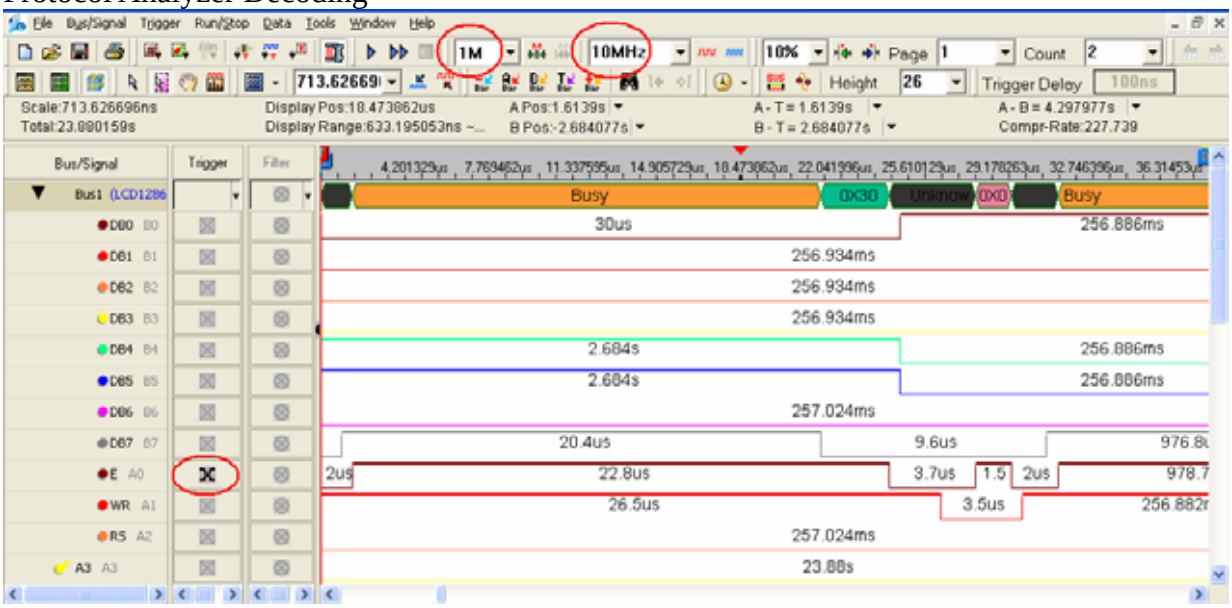


STEP 10. Set the **Protocol Analyzer Color**.

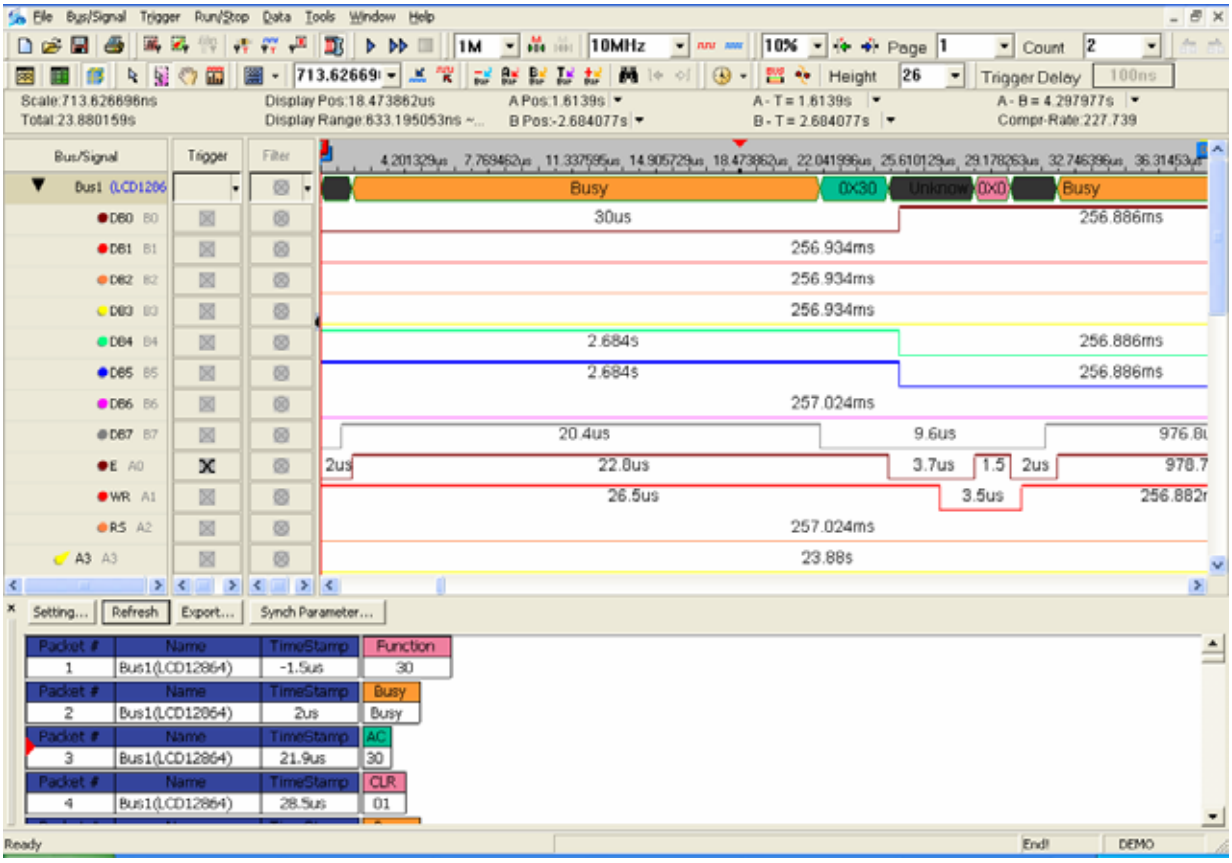


STEP 11. Following pictures show the completion of the protocol analyzer decoding and the packet list. The trigger condition is set as Either Edge; the memory depth is 1M; the sampling frequency is 10MHz (the sampling frequency should be more than four times higher than the signal to be tested).

Protocol Analyzer Decoding



Packet List

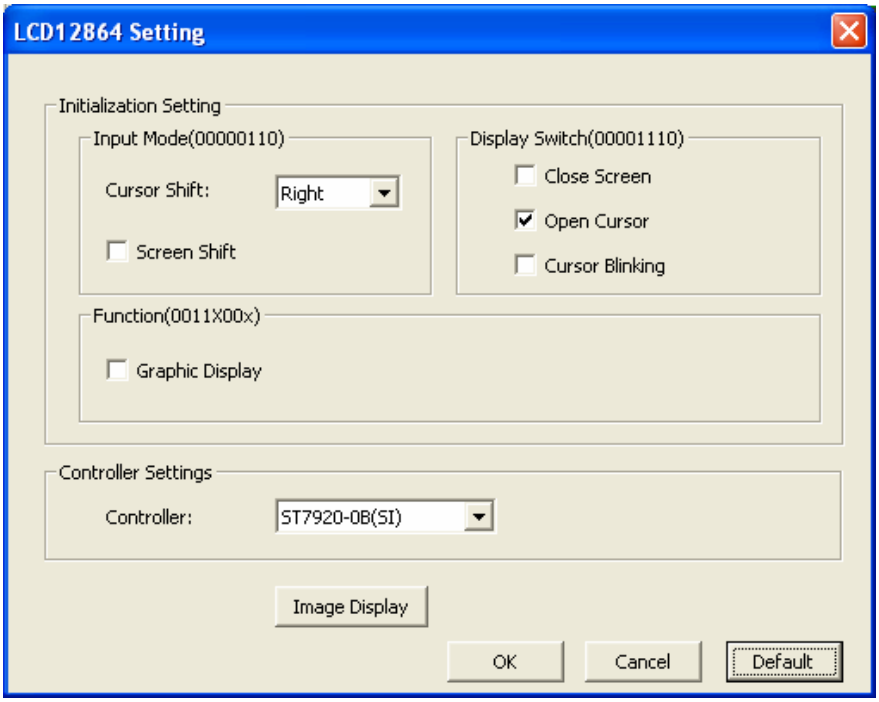


4 Function Description

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+ support this function.)

4.1.1 Interface



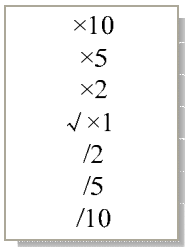
Initialization Setting: Set the initial values of screen, including Cursor Shift, Screen Shift, Close Screen, Open Cursor, Cursor Blinking and Graphic Display.
Controller Settings: Users could set the controller to ST7920-0B(SI), ST7920-0A(TR) or ST7920-0C(SI/TR/JP); it is ST7920-0B(SI) by default.
Click the 'Image Display' button to open the dialog box of Image Encode.

1. **Capture**: Click this button to capture the picture of the display area and save it in BMP, JPG or PNG, format (PNG by default).

2. **Setup**: This function is not supported; it is grey.

3. **Display Amount**: Show the page number of current 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.



5.  **Full Screen**: This function is not supported in this module; it is grey.

6.  **Loop**: Show the data repeatedly. In default display mode it only shows the data repeatedly in the most right grid; in moving display mode it shows the data form right to left repeatedly.

7.  **Play/Pause**: Click the play button to display the Bus data in order 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.

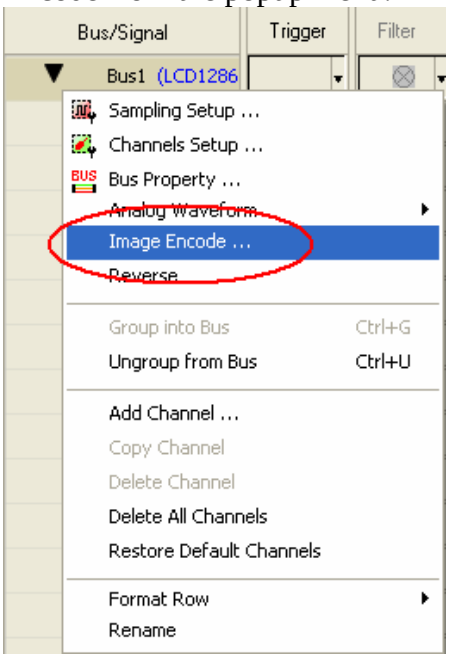
8.  **Previous**: Show the previous data in default display mode, or move one grid rightward in moving display mode.

9.  **Next**: Show the next data in default display mode, or move one grid leftward in moving display mode.

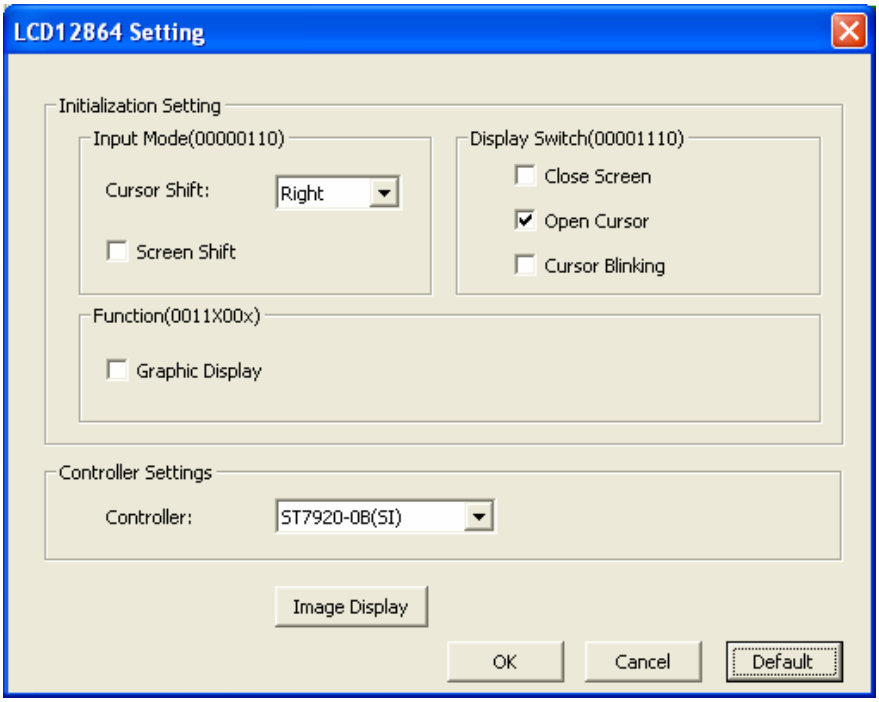
10.  **Stop**: Stop the playing.

4.1.2 Operating Instructions

STEP 1. After decoding finished, press right key on the Bus name (Bus1(LCD12864) and select the Image Encode from the popup menu.



STEP 2. Set the initial values.



STEP 3: Click the 'Image Display' to open the dialog box of 'Image Encode'.