

# SPECIFICATION

**MODEL: B10004-LAP-LG4572-M**

**PART NO:** \_\_\_\_\_

**VERSION:** V1.02

Approver		Check	Design
GM	PM		

Customer Confirm

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## Revision History

Revision No.	History	Page No.	Date	Reviser
V1.00	First Version	2~26	2010-12-30	Sunshine
V1.01	Add the Image Encode function	1~8, 10~18	2013-05-29	Nancy
V1.02	Image Encode supports picture capturing and saving in BMP, JPG or PNG format.	2-16	2013-8-13	Anderson

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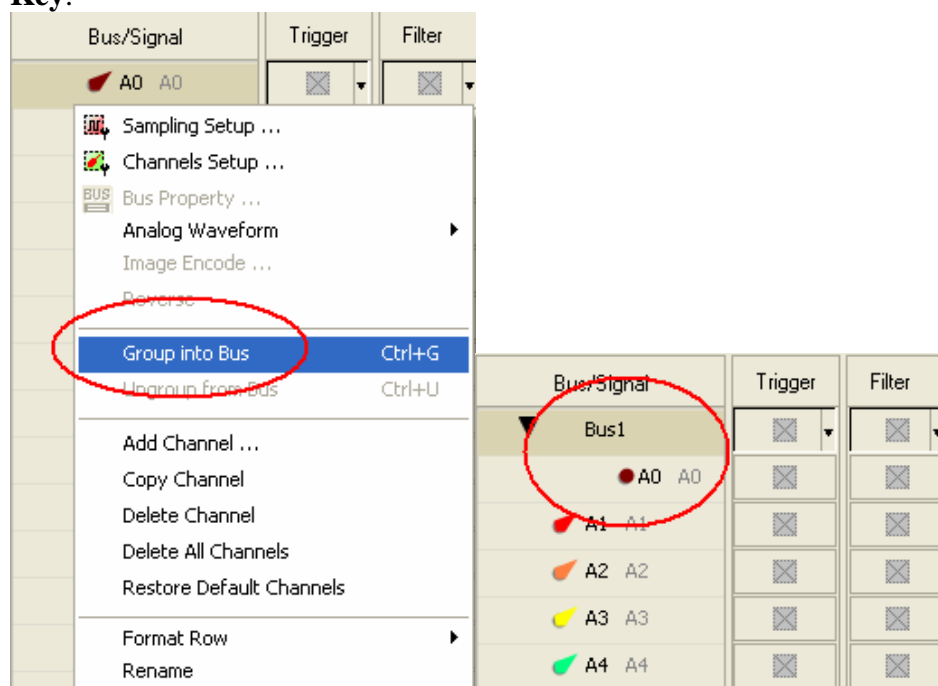
# 1 Software Register

Please register the software as the following steps:

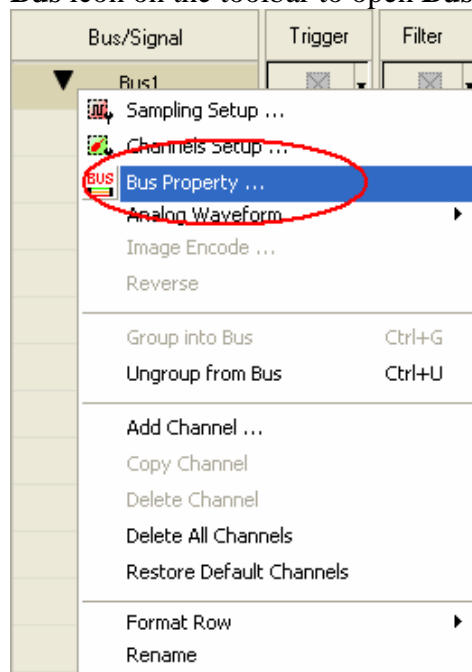
※ Remark1: The registration steps for all protocol analyzers are the same; you can complete the registration by following procedures. Following is an example on how to register the Protocol Analyzer BUS.

※ 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.

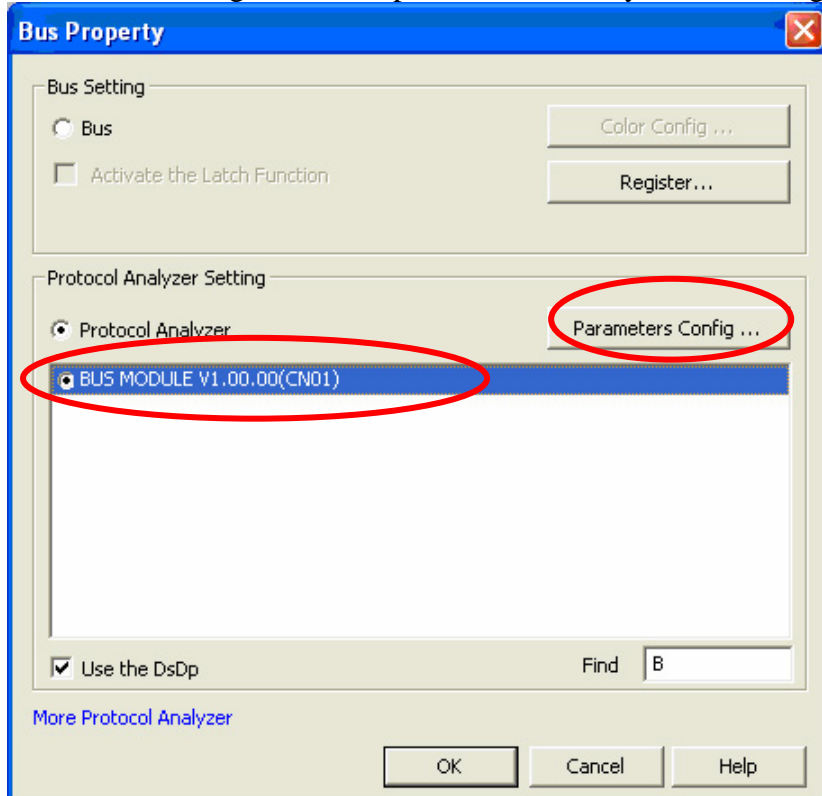
**STEP 1.** Open the Logic Analyzer and group the unanalyzed channels into **Bus1** by pressing the **Right Key**.



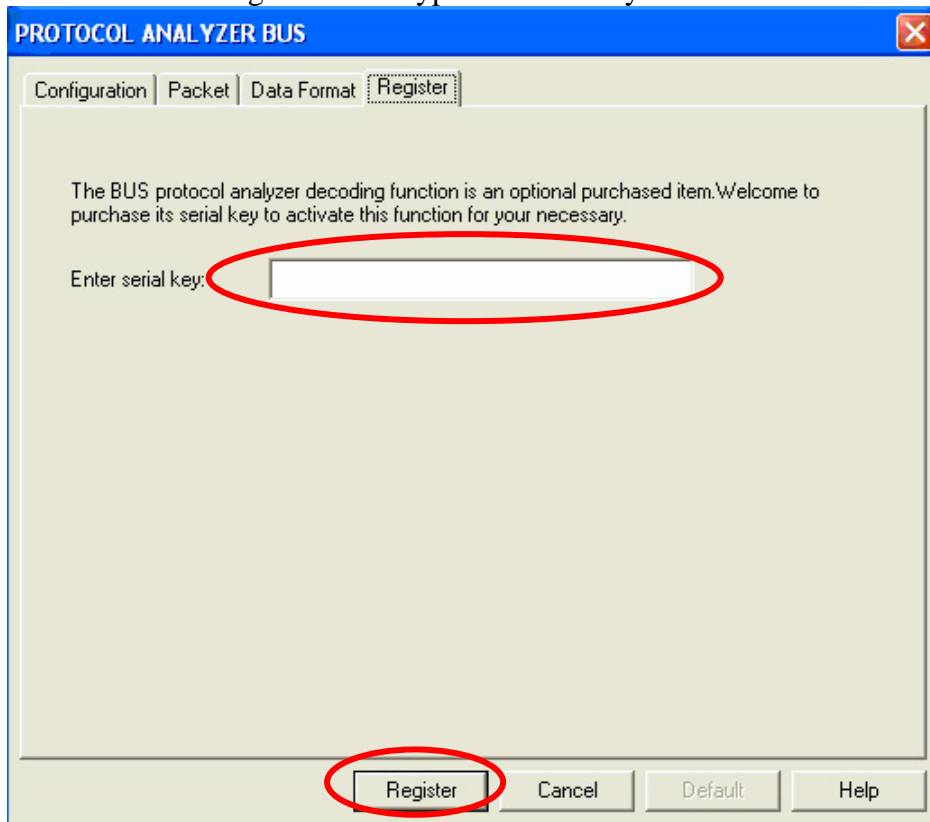
**STEP 2.** Select **Bus 1**, then press **Right Key** on the mouse to list the menu, then click **Bus Property** or **Bus** icon on the toolbar to open **Bus Property** dialog box.



**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.



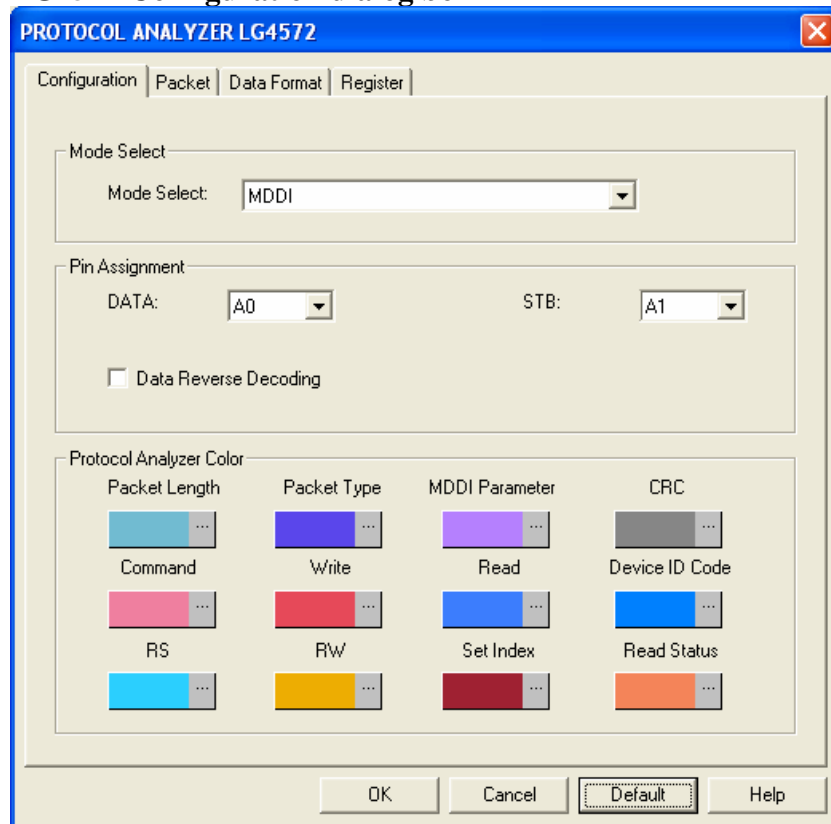
**STEP 5.** After clicking the Register button, following dialog box will appear, it denotes that the BUS has been registered successfully.



## 2 User Interface

Please refer to the below images to do settings of **LG4572** module.

### LG4572 Configuration dialog box



#### Mode Select:

The Protocol Analyzer LG4572 has 13 modes, DATA has its unique bit width under different mode. These following modes can be selected:

MDDI;

MIPI DBI type-A(M68 interface)\_8line;  
MIPI DBI type-A(M68 interface)\_9line;  
MIPI DBI type-A(M68 interface)\_16line;  
MIPI DBI type-A(M68 interface)\_18line;  
MIPI DBI type-A(M68 interface)\_24line;  
MIPI DBI type-B(I80 interface)\_8line;  
MIPI DBI type-B(I80 interface)\_9line;  
MIPI DBI type-B(I80 interface)\_16line;  
MIPI DBI type-B(I80 interface)\_18line;  
MIPI DBI type-B(I80 interface)\_24line;  
MIPI DBI type-C(9bit interface)\_4line;  
SPI.

#### Pin Assignment:

The number of the channel is changed according to the selected LG4572 Mode. If the MDDI Mode is selected, LG4572 only needs two channels (DATA and STB) to decode the signals.

If the MIPI DBI type-A(M68 interface)\_8line Mode or MIPI DBI type-B(I80 interface)\_8line Mode is selected, LG4572 will need twenty channels (DB0->DB7,DnC,nWR\_E\_SCK,nCS and nRD\_RnW) to decode the signals.

If the DBI type-A(M68 interface)\_9line Mode or MIPI DBI type-B(I80 interface)\_9line Mode is selected, LG4572 will need thirteen channels (DB0->DB8,DnC,nWR\_E\_SCK,nCS and nRD\_RnW) to decode the

signals.

If the DBI type-A(M68 interface) 16line Mode or MIPI DBI type-B(I80 interface)\_16line Mode is selected, LG4572 will need twenty channels (DB0->DB15,DnC,nWR\_E\_SCK,nCS and nRD\_RnW) to decode the signals.

If the MIPI DBI type-A(M68 interface)\_18line Mode or MIPI DBI type-B(I80 interface)\_18line Mode is selected, LG4572 will need twenty-two channels (DB0->DB17,DnC,nWR\_E\_SCK,nCS and nRD\_RnW) to decode the signals.

If the MIPI DBI type-A(M68 interface)\_24line Mode or MIPI DBI type-B(I80 interface)\_24line Mode is selected, LG4572 will need twenty-eight channels (DB0->DB23,DnC,nWR\_E\_SCK,nCS and nRD\_RnW) to decode the signals.

If the MIPI DBI type-C(9bit interface)\_4line Mode is selected, LG4572 will need three channels (nCS, SCK, SDI or SDO) to decode the signals.

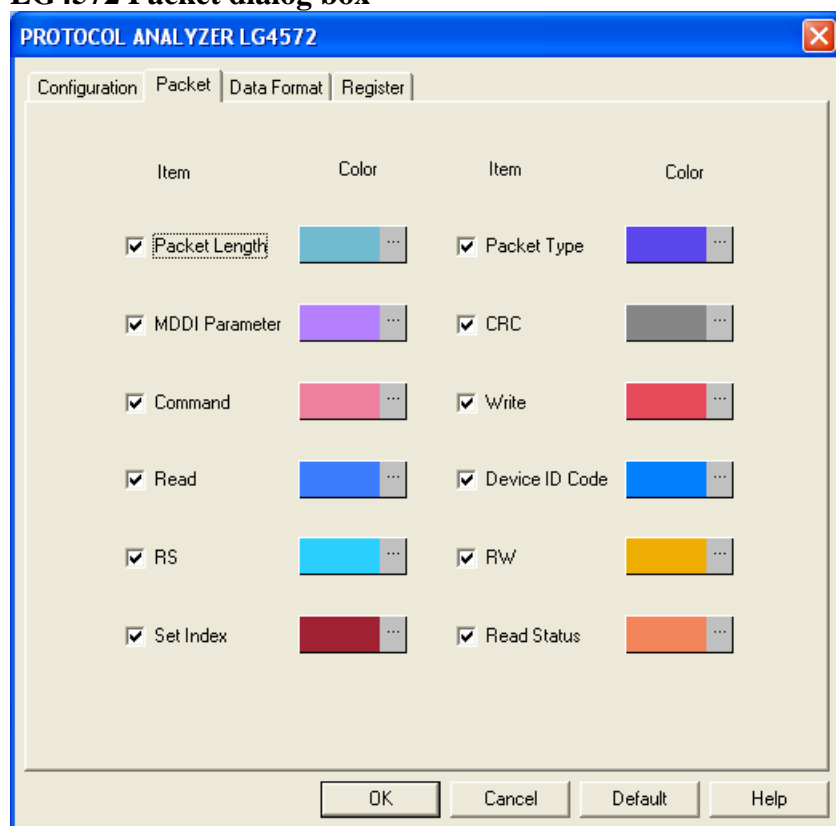
### Data Reverse Decoding:

The Data will be decoded in reverse after the option is selected, and it is not selected by default.

### Protocol Analyzer Color:

The color can be varied by users.

### LG4572 Packet dialog box



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



**LG4572 Data Format dialog box**

PROTOCOL ANALYZER LG4572

Configuration

Packet

Data Format

Register

☒ Activate

Packet Length:

☐ Binary

☒ Decimal

☐ Hexadecimal

☐ ASCII

Packet Type:

☐ Binary

☐ Decimal

☒ Hexadecimal

☐ ASCII

MDDI Parameter:

☐ Binary

☐ Decimal

☒ Hexadecimal

☐ ASCII

CRC:

☐ Binary

☐ Decimal

☒ Hexadecimal

☐ ASCII

Command:

☐ Binary

☐ Decimal

☒ Hexadecimal

☐ ASCII

Read:

☐ Binary

☐ Decimal

☒ Hexadecimal

☐ ASCII

Write:

☐ Binary

☐ Decimal

☒ Hexadecimal

☐ ASCII

Device ID Code:

☐ Binary

☐ Decimal

☒ Hexadecimal

☐ ASCII

Set Index:

☐ Binary

☐ Decimal

☒ Hexadecimal

☐ ASCII

Read Status:

☐ Binary

☐ Decimal

☒ Hexadecimal

☐ ASCII

OK

Cancel

Default

Help

Users can set the data format of the Packet Length, Packet Type, MDDI Parameter, CRC, Command, Read, Write, Device ID Code, Set Index and Read Status 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.

**LG4572 Register dialog box**

PROTOCOL ANALYZER LG4572

Configuration

Packet

Data Format

Register

Congratulation LG4572 decoding function has been activated!

OK

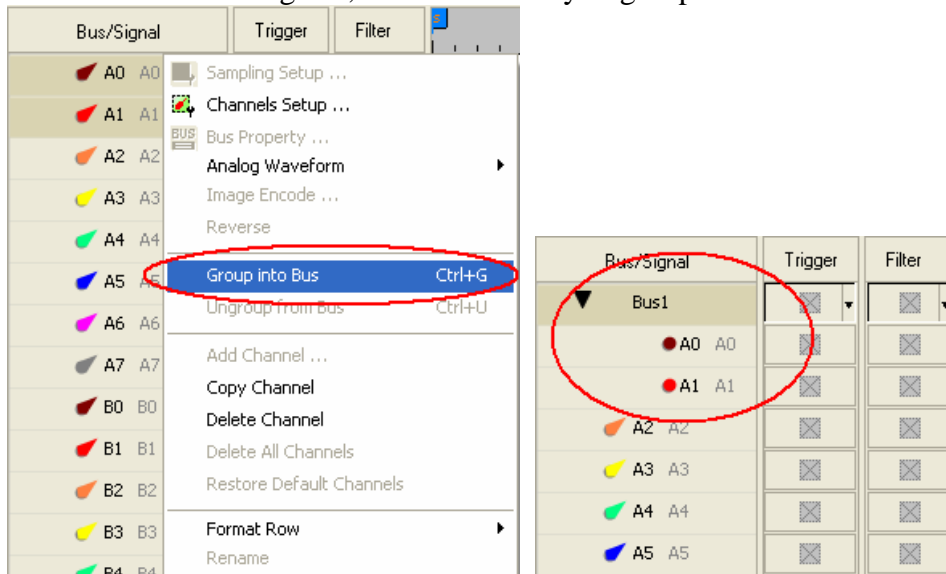
Cancel

Default

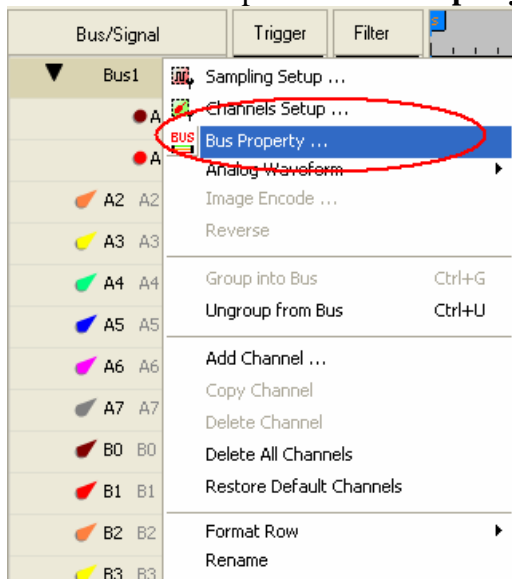
Help

### 3 Operating Instructions

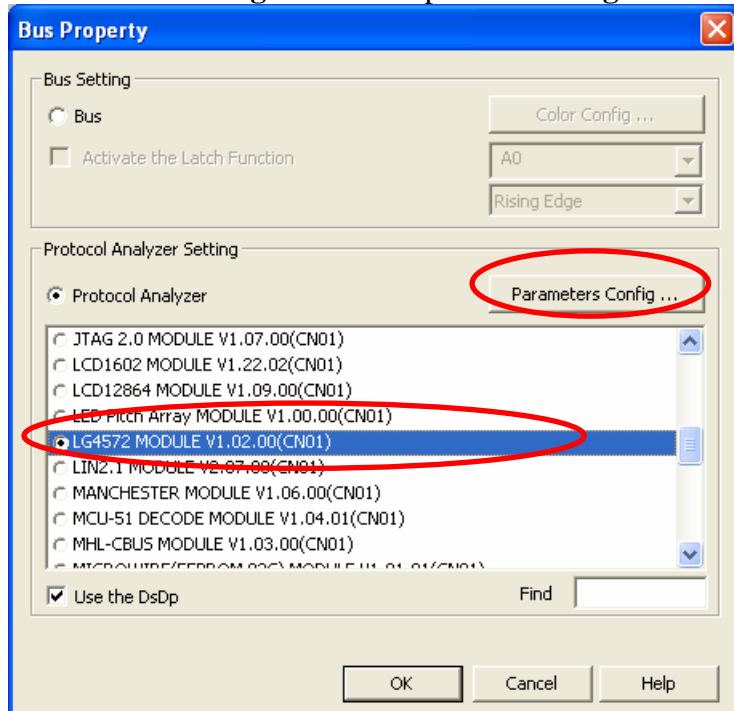
**STEP 1.** Group the A0-A1 into **Bus1** by pressing the **Right Key** on the mouse. LG4572 needs at least two channels to decode signals, so it is necessary to group two or more channels into the Bus.



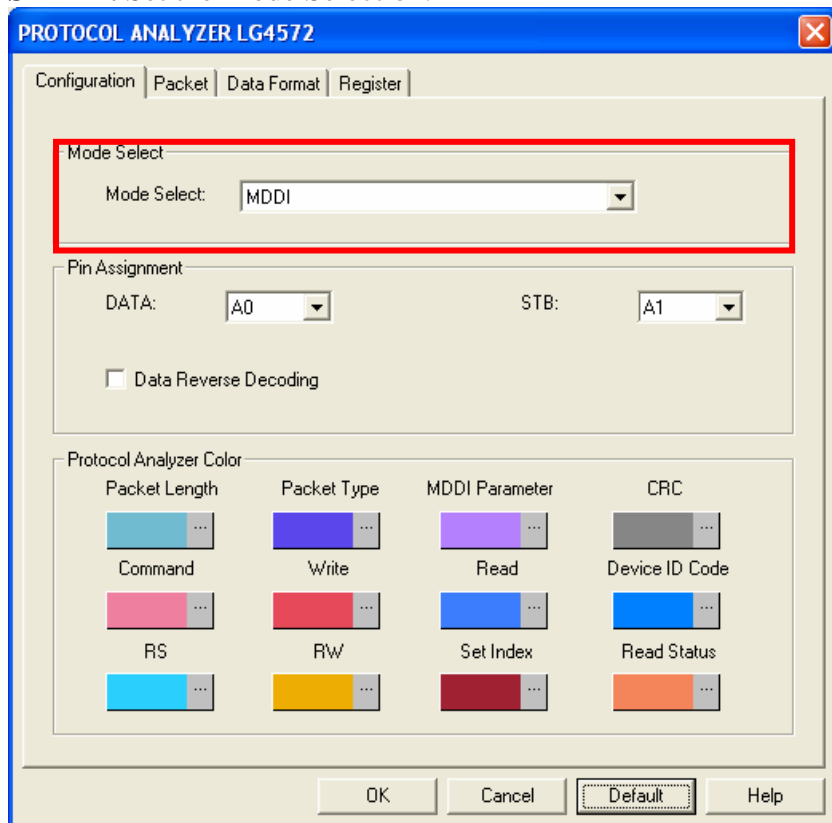
**STEP 2.** Select **Bus1**, press **Right Key** and select **Bus Property** from the popup menu, or click the **Bus** icon on the toolbar to open the **Bus Property** dialog box.



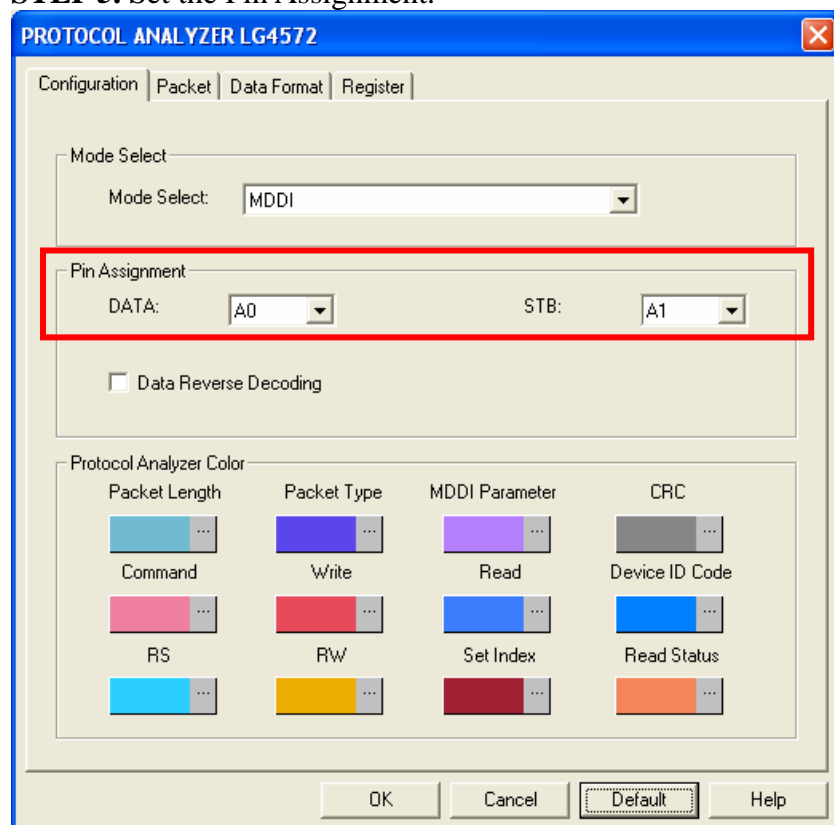
**STEP 3.** Select Protocol Analyzer, and then select **LG4572 MODULE V1.02.00(CN01)**. Next click **Parameters Configuration** to open the **Configuration** dialog box.



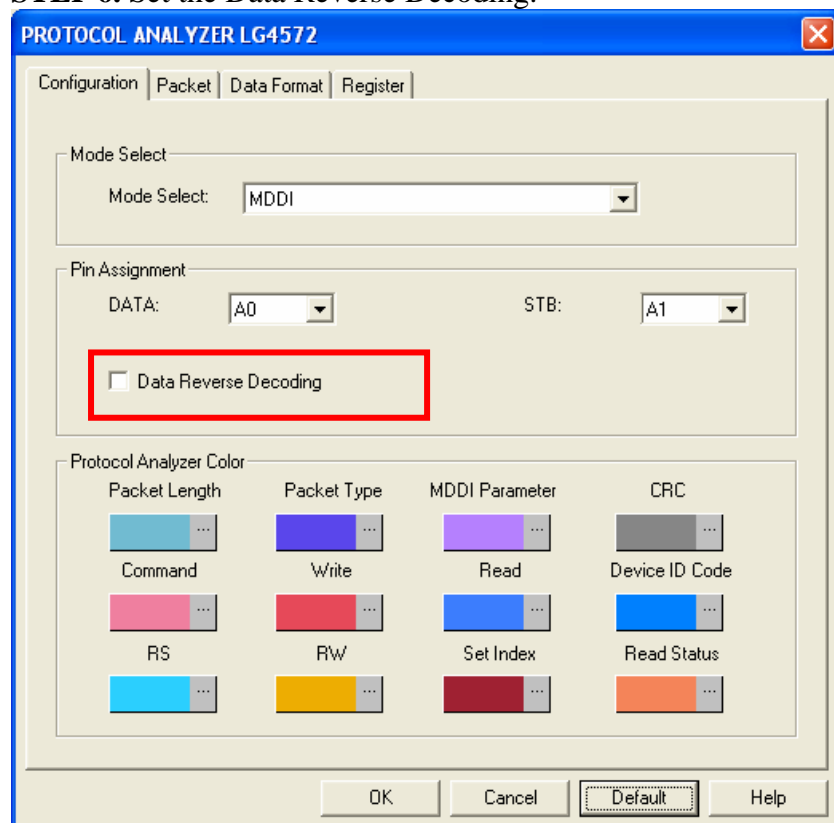
**STEP 4.** Set the Mode Selection.



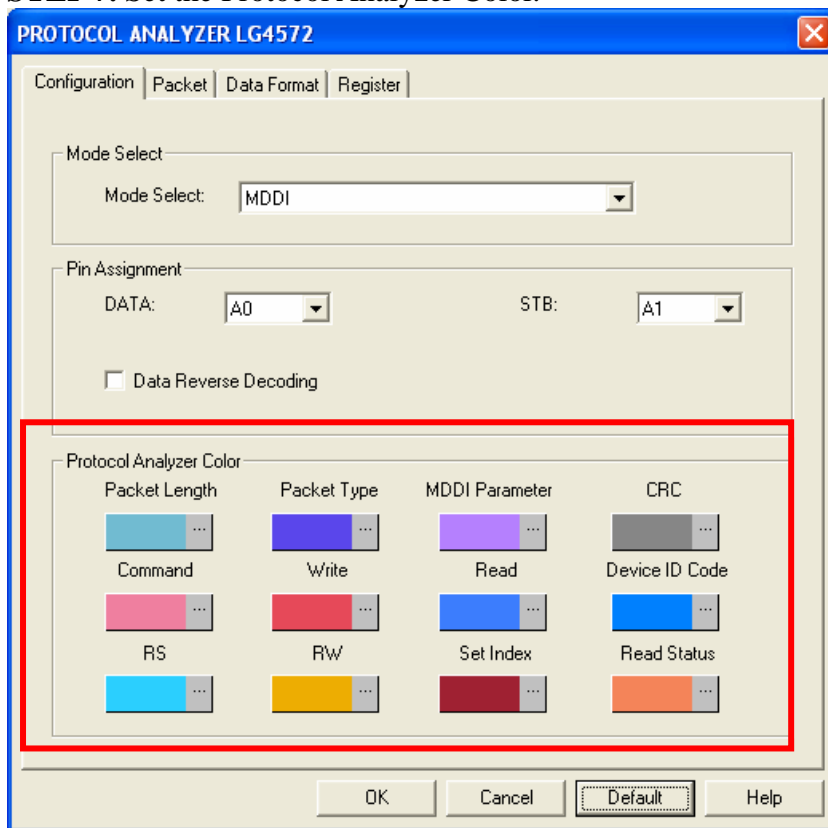
## STEP 5. Set the Pin Assignment.



## STEP 6. Set the Data Reverse Decoding.

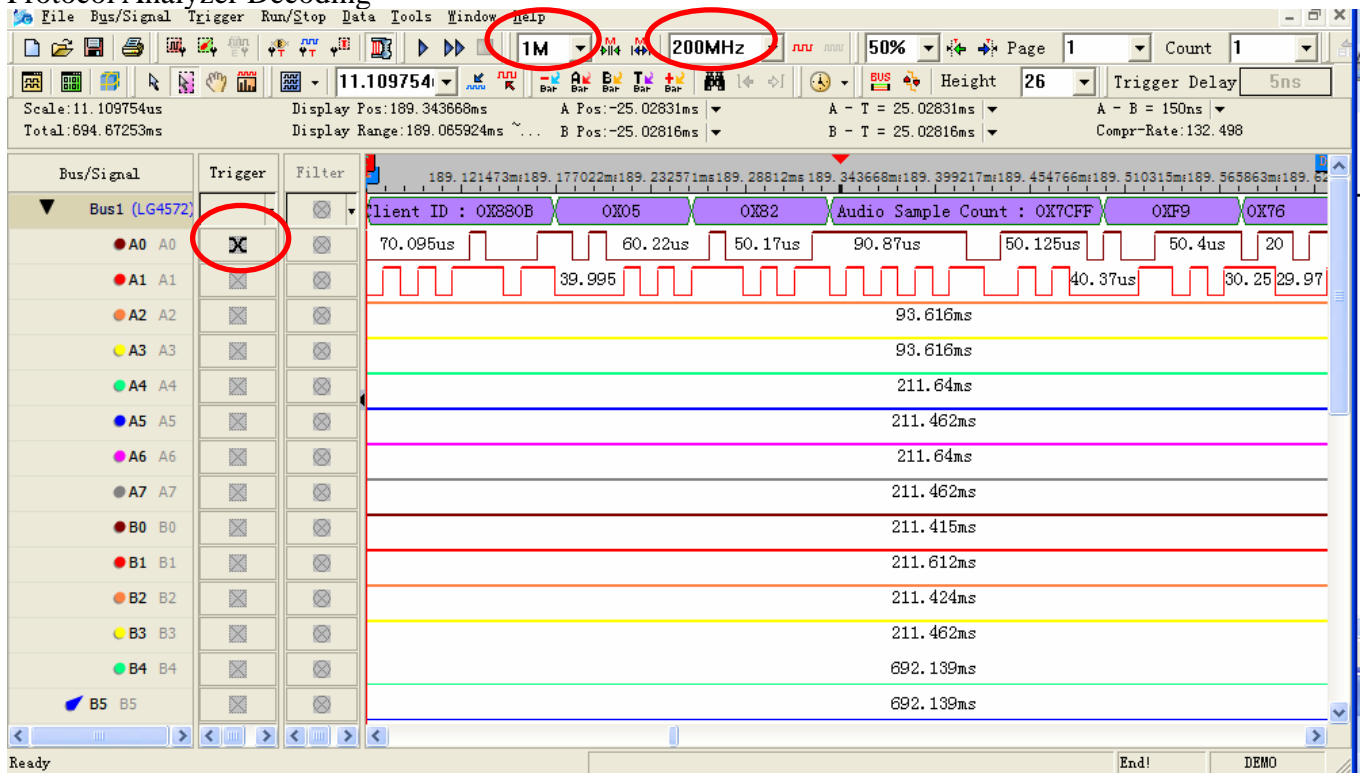


## STEP 7. Set the Protocol Analyzer Color.

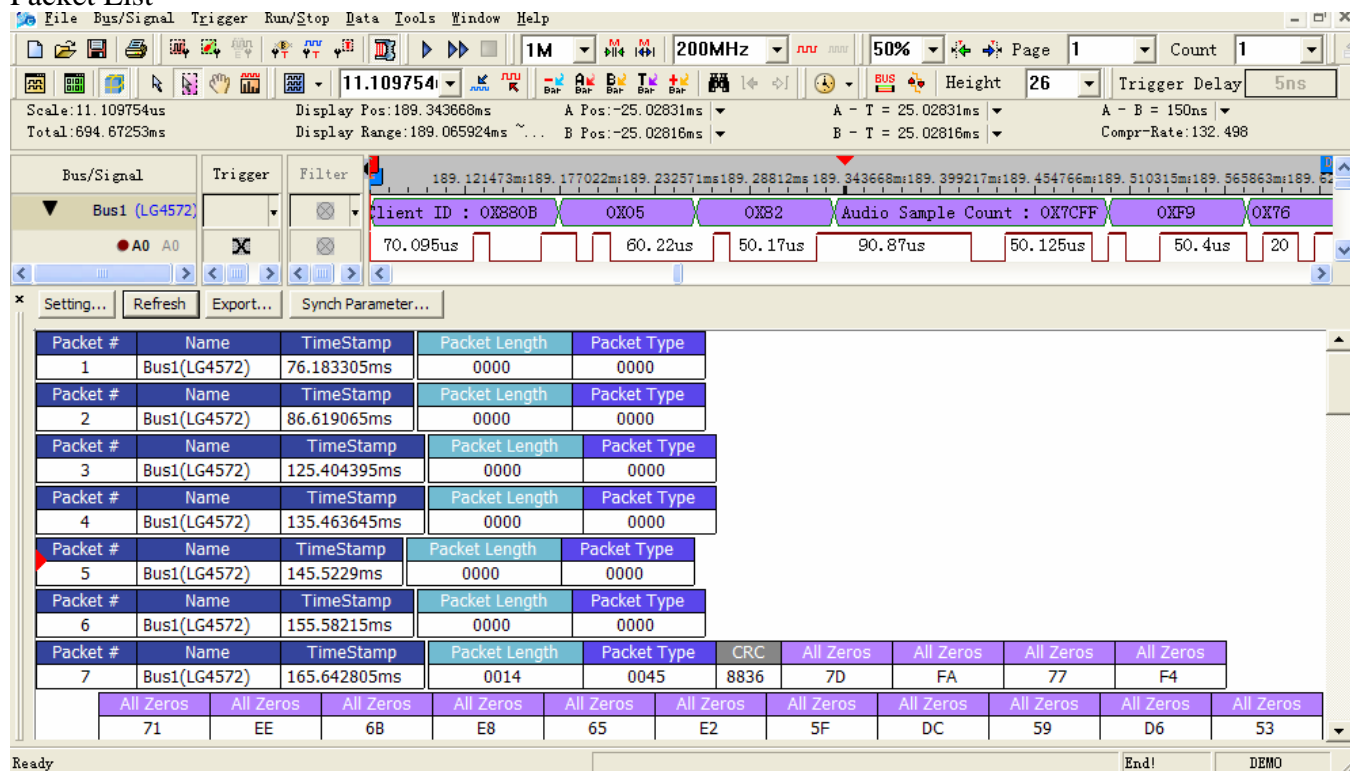


**STEP 8.** Following pictures show the completion of the protocol analyzer decoding and packet list. The trigger condition is set as Either Edge, the memory depth is 1M and the sampling frequency is 200MHz (the sampling frequency should be more than four times higher than the signal to be tested).

### Protocol Analyzer Decoding



## Packet List

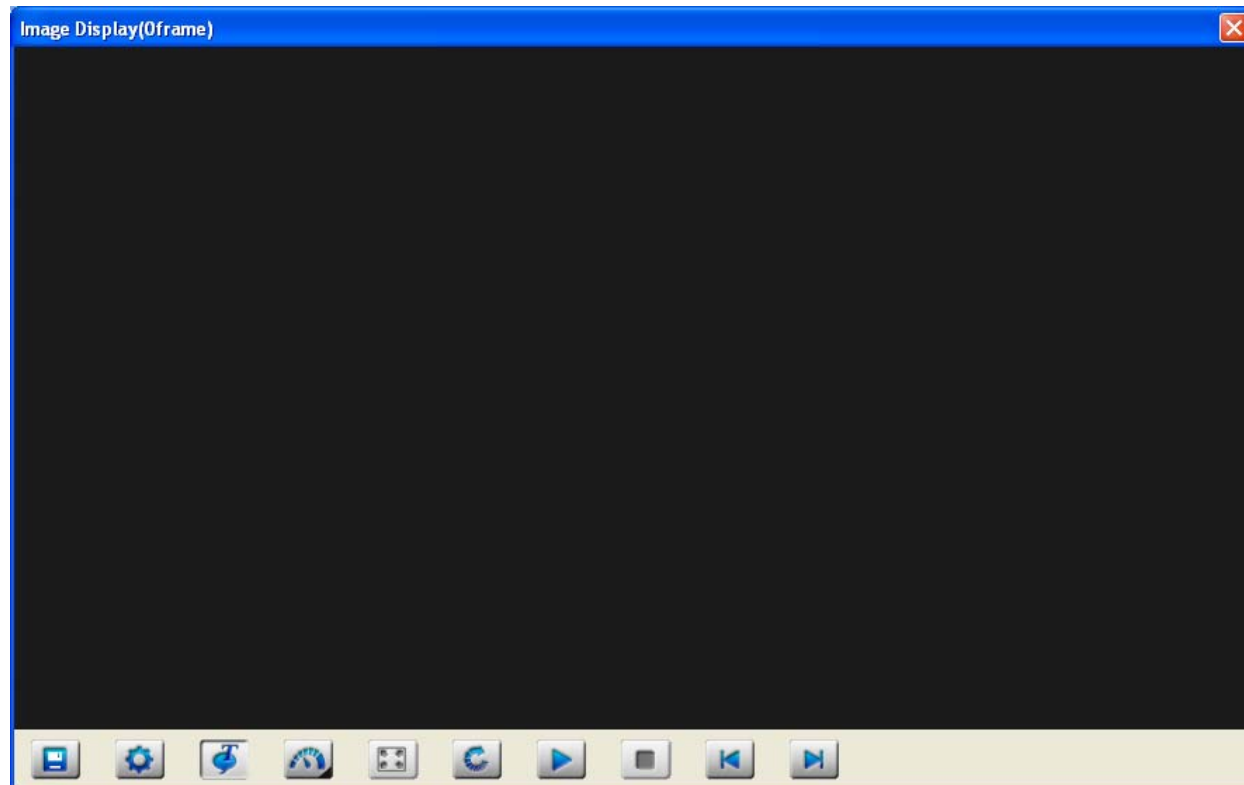


## 4 Function Description

### 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.)

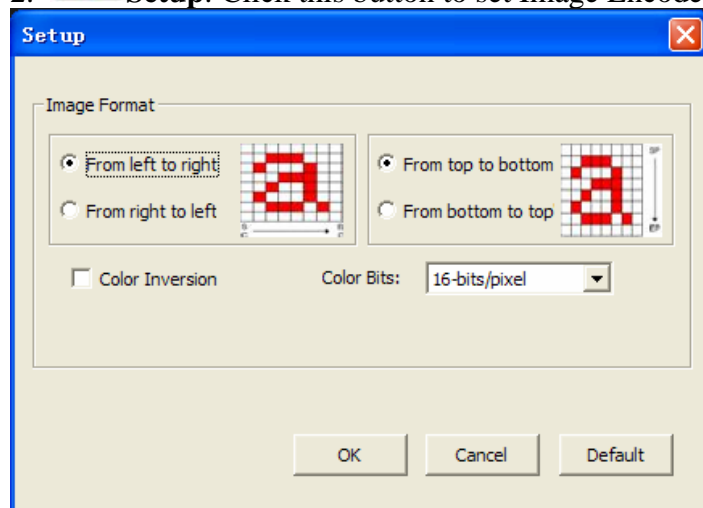
#### 4.1.1 Interface



1.  **Capture:** Click this button to capture the screen and save it in JPG, BMP or PNG format.



2. **Setup:** Click this button to set Image Encode, see below:



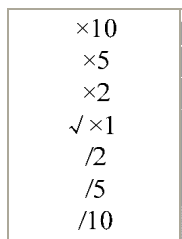
- (1) The default Image Format is set to “From left to right” and “from top to bottom”.  
(2) For Color Bits, there are three options to be selected, including 16-bits/pixel, 18-bits/pixel and 24-bits/pixel.  
(3) When the option “Color Inversion” is selected, the color can be switched between Display Color and Background Color. This option is not activated by default.



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 disable.



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 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. **Stop:** Stop the playing.



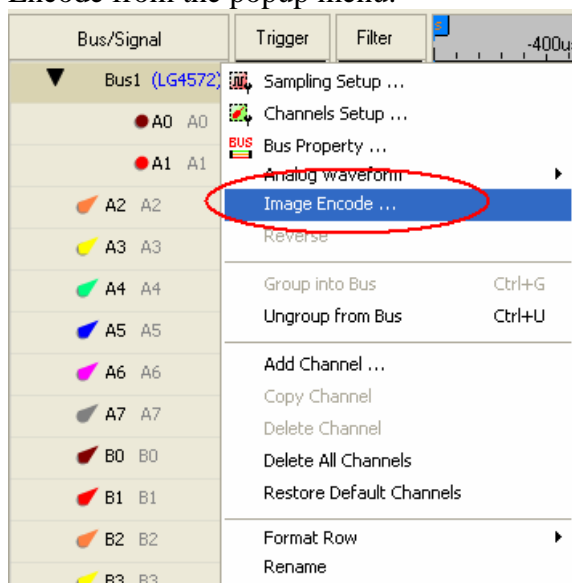
9. **Previous:** Show the previous data in default display mode, or move one grid rightward in moving display mode.



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

## 4.1.2 Operating Instructions

**STEP 1.** After decoding finished, press right key on the Bus name [Bus1(LG4572)] and select the Image Encode from the popup menu.



**STEP 2.** The interface of Image Encode.

