



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

SPECIFICATION

MODEL: B12007-Line Code

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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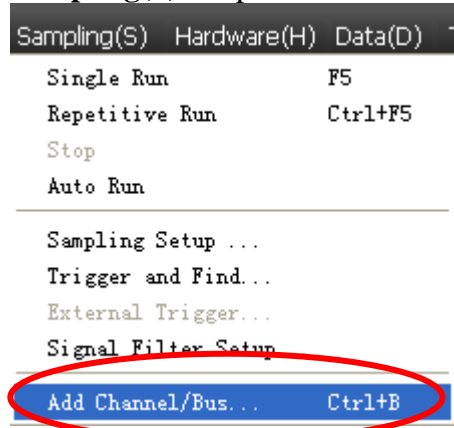
1 Software Register

Please register the software as the following steps:

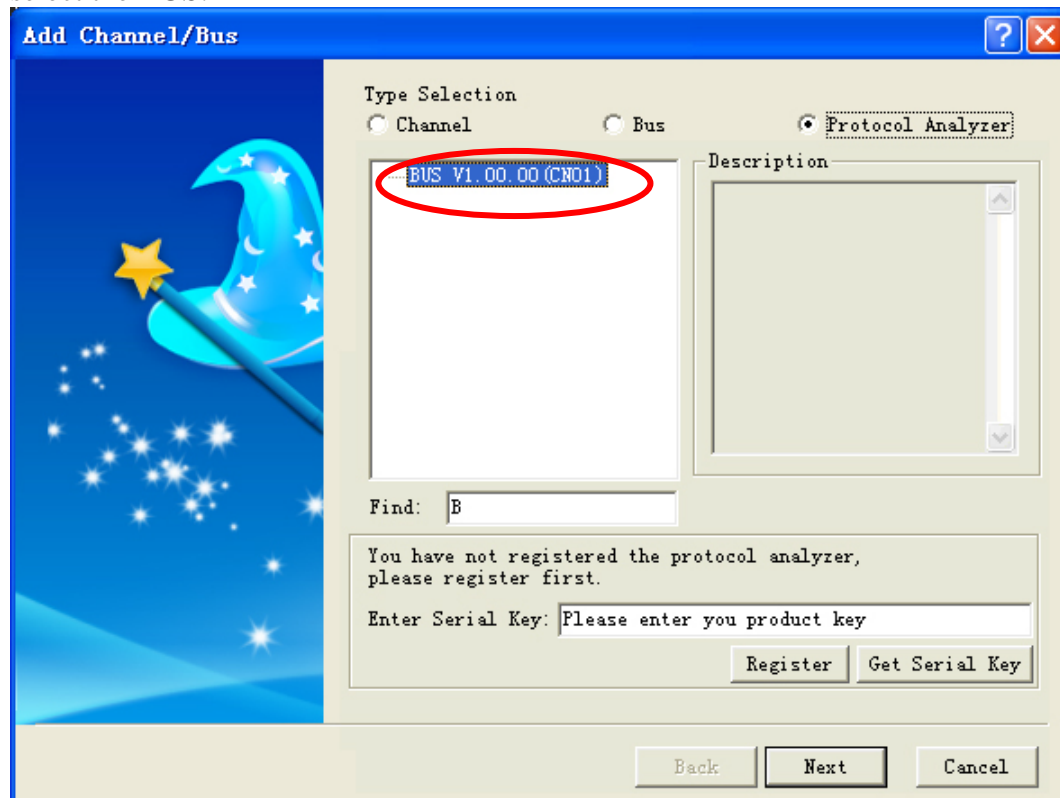
※ Remark1: The registration steps for all protocol analyzers are the same; you can complete the registration by following procedures. Following is an example on how to register the Protocol Analyzer BUS.

※ 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 select the **Add Channel/Bus** item on the pull-down menu of the **Sampling(S)** to open the **Add Channel/Bus** dialog box.



STEP 2. Select Protocol Analyzer item in the Add Channel/Bus dialog box, expand the Other Type, and select the BUS.





STEP 3. Enter the Serial Key of the BUS under this Model, and then click the **Register**.

Add Channel/Bus

Type Selection
☐ Channel ☐ Bus ☒ Protocol Analyzer

-----BUS V1.00.00 (CN01)

Description

Find: B

You have not registered the protocol analyzer,
please register first.

Enter Serial Key: Please enter you product key

Register Get Serial Key

Back Next Cancel

STEP 4. After the Register is successful, click the Next.

Add Channel/Bus

Type Selection
☐ Channel ☐ Bus ☒ Protocol Analyzer

-----BUS V1.00.00 (CN01)

Description

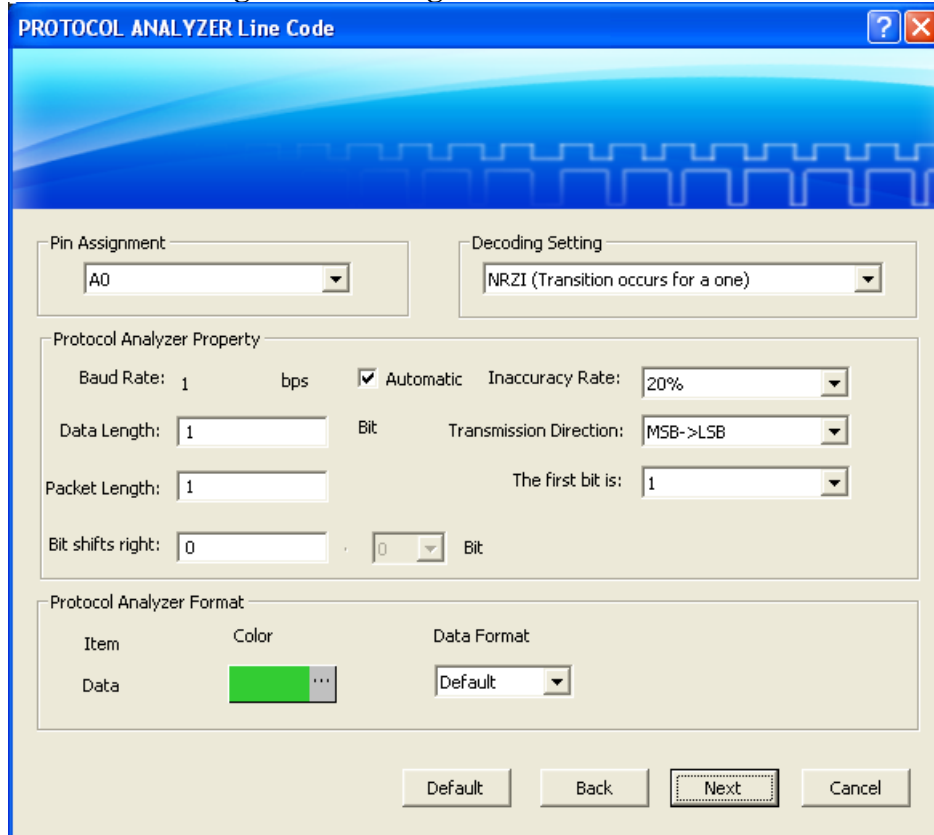
Find: B

Back **Next** Cancel

2 User Interface

Please refer to the below images to select options of Line Code module.

Line Code Configuration dialog box



Pin Assignment

Line Code only needs one line to decode; it is A0 by default.

Decoding Setting

There are NRZI (Transition occurs for a one), NRZI (Transition occurs for a zero), Manchester (Thomas), Manchester (IEEE802.3), Differential Manchester and CMI to choose.

Baud Rate

It only can be integer with a range of 1 to current sampling frequency plus 10. If “Automatic” is selected, then its value can’t be edit, which will be automatically calculated and displayed. The “Automatic” is selected by default.

Inaccuracy Rate

There are 5%, 10% and 20% to choose; it is 20% by default.

Data Length

Its value is between 1 and 32; it is 1Bit by default.

Transmission Direction

MSB→LSB or LSB→MSB can be selected; it is MSB→LSB by default.



Packet Length

Its value is between 1 and 65532; it is 1 by default.

The first bit is

It is only available under NRZI (Transition occurs for a one) or NRZI (Transition occurs for a zero) mode, and only can be set as 0 or 1.

Bit shifts right

Its value is between 0 and $[(\text{data length}) - 1]$ $[(\text{data length}) = \text{signal time length} / (1 / \text{baud rate})]$; the right box can be set only as '0' or '5'. Under the decoding modes of NRZI (Transition occurs for a one) and NRZI (Transition occurs for a zero), the right box is unavailable.

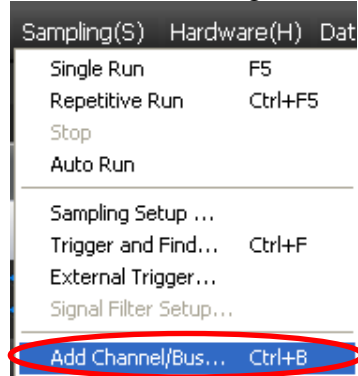
Protocol Analyzer Format

Users can set the color of the packet as their requirements. The item (Data) can be set as Binary, Decimal, Hexadecimal, ASCII or Default. And the data format of the item in the Waveform Display Area and Packet List is controlled by the Protocol Analyzer. The default data format is controlled by the main program and the data format of the item is Default.

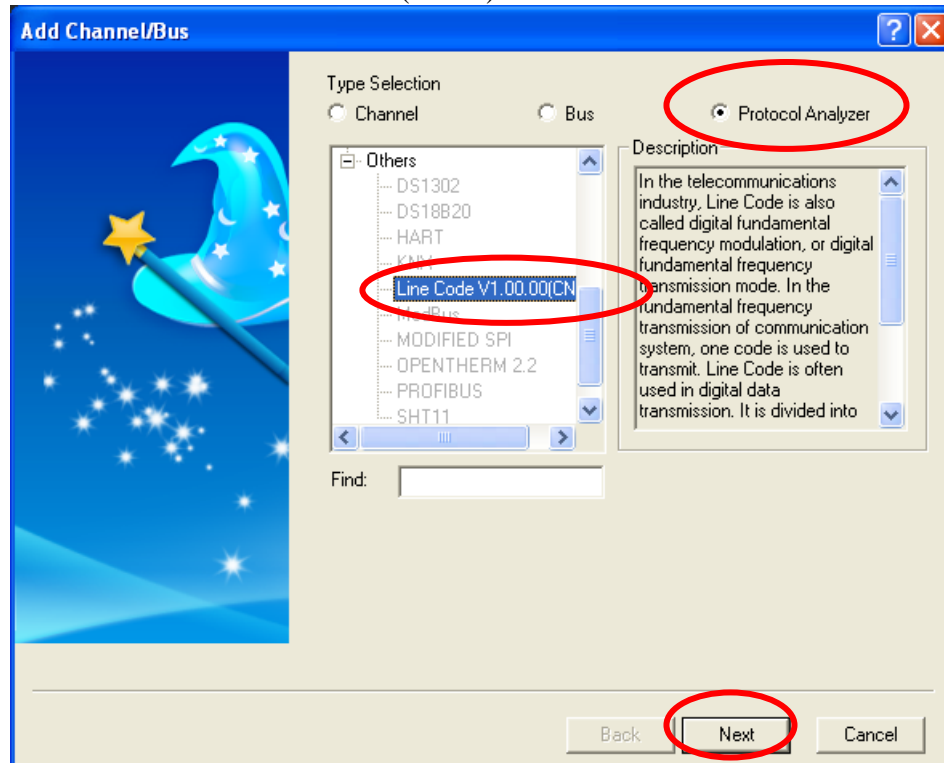


3 Operating Instructions

STEP 1. Select the Add Channel/Bus item on the pull-down menu of the Sampling(S) to open the Add Channel/Bus dialog box.



STEP 2. Select the Protocol Analyzer item in the Add Channel/Bus dialog box, expand the Others System, select the Line Code V1.00.00(CN01) and then click Next.





STEP 3. Set Pin Assignment.

PROTOCOL ANALYZER Line Code

Pin Assignment: **A0**

Decoding Setting: **NRZI (Transition occurs for a one)**

Protocol Analyzer Property

Baud Rate: 1 bps ☒ Automatic Inaccuracy Rate: 20%

Data Length: 1 Bit Transmission Direction: MSB->LSB

Packet Length: 1 The first bit is: 1

Bit shifts right: 0 Bit

Protocol Analyzer Format

Item Color Data Format

Data Default

Default Back Next Cancel

STEP 4. Set the Decoding Setting.

PROTOCOL ANALYZER Line Code

Pin Assignment: A0

Decoding Setting: NRZI (Transition occurs for a one)

Protocol Analyzer Property

Baud Rate: 1 bps ☒ Automatic Inaccuracy Rate: 20%

Data Length: 1 Bit Transmission Direction: MSB->LSB

Packet Length: 1 The first bit is: 1

Bit shifts right: 0 Bit

Protocol Analyzer Format

Item Color Data Format

Data Default

Default Back Next Cancel



STEP 5. Set the Baud Rate.

PROTOCOL ANALYZER Line Code

Pin Assignment: A0

Decoding Setting: NRZI (Transition occurs for a one)

Protocol Analyzer Property

Baud Rate: 1 bps ☒ Automatic Inaccuracy Rate: 20%

Data Length: 1 Bit Transmission Direction: MSB->LSB

Packet Length: 1 The first bit is: 1

Bit shifts right: 0 Bit

Protocol Analyzer Format

| Item | Color | Data Format |
|------|-------|-------------|
| Data | | Default |

Default Back Next Cancel

STEP 6. Set the Inaccuracy Rate.

PROTOCOL ANALYZER Line Code

Pin Assignment: A0

Decoding Setting: NRZI (Transition occurs for a one)

Protocol Analyzer Property

Baud Rate: 1 bps ☒ Automatic Inaccuracy Rate: 20%

Data Length: 1 Bit Transmission Direction: MSB->LSB

Packet Length: 1 The first bit is: 1

Bit shifts right: 0 Bit

Protocol Analyzer Format

| Item | Color | Data Format |
|------|-------|-------------|
| Data | | Default |

Default Back Next Cancel



STEP 7. Set the Data Length.

The screenshot shows the 'PROTOCOL ANALYZER Line Code' dialog box. The 'Pin Assignment' is set to 'A0'. The 'Decoding Setting' is set to 'NRZI (Transition occurs for a one)'. The 'Protocol Analyzer Property' section has 'Baud Rate' set to '1 bps', 'Automatic' checked, 'Inaccuracy Rate' set to '20%', 'Data Length' set to '1 Bit' (highlighted with a red box), 'Transmission Direction' set to 'MSB->LSB', 'Packet Length' set to '1', 'The first bit is' set to '1', and 'Bit shifts right' set to '0'. The 'Protocol Analyzer Format' section has 'Data' format set to 'Default'. At the bottom are buttons for 'Default', 'Back', 'Next', and 'Cancel'.

STEP 8. Set the Transmission Direction.

The screenshot shows the 'PROTOCOL ANALYZER Line Code' dialog box. The 'Pin Assignment' is set to 'A0'. The 'Decoding Setting' is set to 'NRZI (Transition occurs for a one)'. The 'Protocol Analyzer Property' section has 'Baud Rate' set to '1 bps', 'Automatic' checked, 'Inaccuracy Rate' set to '20%', 'Data Length' set to '1 Bit', 'Transmission Direction' set to 'MSB->LSB' (highlighted with a red box), 'Packet Length' set to '1', 'The first bit is' set to '1', and 'Bit shifts right' set to '0'. The 'Protocol Analyzer Format' section has 'Data' format set to 'Default'. At the bottom are buttons for 'Default', 'Back', 'Next', and 'Cancel'.



STEP 9. Set the Packet Length.

The screenshot shows the 'PROTOCOL ANALYZER Line Code' dialog box. The 'Pin Assignment' is set to 'A0'. The 'Decoding Setting' is set to 'NRZI (Transition occurs for a one)'. Under 'Protocol Analyzer Property', 'Baud Rate' is 1 bps, 'Automatic' is checked, 'Inaccuracy Rate' is 20%, 'Data Length' is 1 Bit, 'Transmission Direction' is MSB->LSB, and 'The first bit is' is 1. The 'Packet Length' field is highlighted with a red rectangle and contains the value 1. 'Bit shifts right' is 0. Under 'Protocol Analyzer Format', 'Data' is highlighted with a green color and 'Default' format. At the bottom are 'Default', 'Back', 'Next', and 'Cancel' buttons.

STEP 10. Set the first bit under NRZI (Transition occurs for a one) or NRZI (Transition occurs for a zero) mode.

The screenshot shows the 'PROTOCOL ANALYZER Line Code' dialog box. The 'Pin Assignment' is set to 'A0'. The 'Decoding Setting' is set to 'NRZI (Transition occurs for a one)'. Under 'Protocol Analyzer Property', 'Baud Rate' is 1 bps, 'Automatic' is checked, 'Inaccuracy Rate' is 20%, 'Data Length' is 1 Bit, 'Transmission Direction' is MSB->LSB, and 'The first bit is' is 1. The 'Packet Length' field contains the value 1. 'Bit shifts right' is 0. Under 'Protocol Analyzer Format', 'Data' is highlighted with a green color and 'Default' format. At the bottom are 'Default', 'Back', 'Next', and 'Cancel' buttons. The 'The first bit is' dropdown menu is highlighted with a red rectangle.



STEP 11. Set the Bit shifts right.

The screenshot shows the 'PROTOCOL ANALYZER Line Code' dialog box. The 'Pin Assignment' is set to 'A0'. The 'Decoding Setting' is set to 'NRZI (Transition occurs for a one)'. The 'Protocol Analyzer Property' section includes 'Baud Rate: 1 bps', 'Automatic' checked, 'Inaccuracy Rate: 20%', 'Data Length: 1 Bit', 'Transmission Direction: MSB->LSB', 'Packet Length: 1', and 'The first bit is: 1'. The 'Bit shifts right' field is highlighted with a red box and set to 0. The 'Protocol Analyzer Format' section shows 'Data' with a green color and 'Default' data format. The 'Next' button is highlighted.

STEP 12. Set the Protocol Analyzer Format

The screenshot shows the 'PROTOCOL ANALYZER Line Code' dialog box. The 'Pin Assignment' is set to 'A0'. The 'Decoding Setting' is set to 'NRZI (Transition occurs for a one)'. The 'Protocol Analyzer Property' section includes 'Baud Rate: 1 bps', 'Automatic' checked, 'Inaccuracy Rate: 20%', 'Data Length: 1 Bit', 'Transmission Direction: MSB->LSB', 'Packet Length: 1', and 'The first bit is: 1'. The 'Protocol Analyzer Format' section is highlighted with a red box, showing 'Data' with a green color and 'Default' data format. The 'Next' button is highlighted.



STEP 13. Click Next to finish all settings.

The screenshot shows the 'PROTOCOL ANALYZER Line Code' dialog box. It contains several sections: 'Pin Assignment' with a dropdown set to 'A0'; 'Decoding Setting' with a dropdown set to 'NRZI (Transition occurs for a one)'; 'Protocol Analyzer Property' with fields for Baud Rate (1 bps), Data Length (1), Packet Length (1), Bit shifts right (0), and Transmission Direction (MSB->LSB); and 'Protocol Analyzer Format' with a color selection (green) and Data Format (Default). At the bottom, there are buttons for 'Default', 'Back', 'Next' (highlighted with a red rectangle), and 'Cancel'.

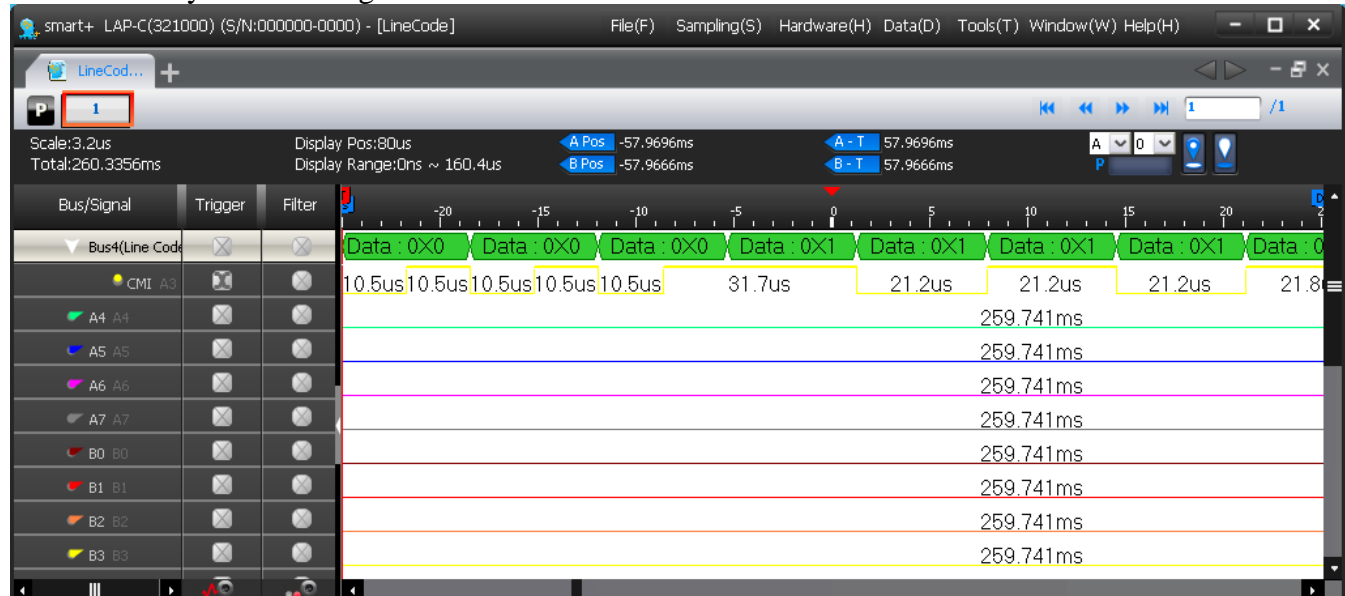
STEP 14. Please enter the Bus Name, select “Yes, please delete” or “No, please reserve” and then click Finish.

The screenshot shows the 'Add Channel/Bus' dialog box. It has a decorative left panel with a star and a crescent moon. The main area contains a text input field for 'Please input the Bus name:' with 'BUS0' entered. Below it is a question 'Do you want to delete the other Buses and channels in the software?' with two radio button options: 'Yes, please delete' and 'No, please reserve' (which is selected). At the bottom, there are buttons for 'Back', 'Finish' (highlighted with a red circle), and 'Cancel'.



STEP 15. 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 16K and the sampling frequency is 10MHz (the sampling frequency should be more than ten times higher than the signal to be tested).

Protocol Analyzer Decoding



Packet List

