

Instrument Business Department

CAN 2.0B Specification

Version: V1.05



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1 Software Installation

Please as the following steps to install software.

※ Remark: The installed steps for all Buses are the same ,to follow the steps are ok ,the below procedures are to install SSI Bus for example ,other Buses can take it for reference .

STEP 1. Install Bus Module





STEP 3. Click Next

| 🔂 Special Bus SSI 🛛 odule - InstallShield ¥izard 🛛 🔀 | | | | |
|--|---|--|--|--|
| | Welcome to the InstallShield Wizard for Special Bus SSI Module | | | |
| | The InstallShield(R) Wizard will install Special Bus SSI Module on your computer. To continue, click Next. | | | |
| | WARNING: This program is protected by copyright law and international treaties. | | | |
| | < Back Next > Cancel | | | |

STEP 4. Click I accept the terms in the license agreement option, and press Next.





STEP 5. Fill in user information in the below dialog box ,and than click Next.

| 🙀 Special Bus SSI ∎odule - InstallShield ∎izard | × |
|--|--------|
| Customer Information Please enter your information. | |
| User Name: | |
| Maikle | |
| Organization: | |
| logic | |
| Install this application for: | |
| InstallShield <u></u> | Cancel |

STEP 6. At first, Select **Complete** option, and then click **Next**.

| 🙀 Special Bu | s SSI Nodule - InstallShield Nizard 🛛 🗙 |
|-----------------------------|--|
| Setup Type Choose the se | etup type that best suits your needs. |
| Please select | a setup type. |
| • Complet | All program features will be installed. (Requires the most disk space.) |
| C Cu <u>s</u> tom | Choose which program features you want installed and where they will be installed. Recommended for advanced users. |
| InstallShield | < <u>B</u> ack <u>N</u> ext > Cancel |



STEP 7. Click Install to begin the installation.



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

| 🔂 Special Bus SSI 🛛 odule - InstallShield Tizard 🛛 🔀 | | | |
|---|-------------------------------|--|--|
| | nstallShield Wizard Completed | | |
| The InstallShield Wizard has successfully installed Special Bus SSI Module. Click Finish to exit the wizard. | | | |
| | < Back Einish Cancel | | |



2 User Interface

Please refer to the below images to select options of setting CAN 2.0B.

CAN 2.0B Configuration dialog box

| SPECIAL BUS CAN 2.0B SETUP:Bus | 1 | × | | |
|-----------------------------------|---|----------------------------------|--|--|
| Configuration Package Register | | | | |
| CAN BUS | | Data start | | |
| Bus Name: Bus1 | | | | |
| Channel Can-L | • | 111bit start | | |
| Use the reverse data level fo | r decoding | C 0 bit start | | |
| Bus Property | | | | |
| Baud Rate: 125000 | Perc same | centage 60% | | |
| (Min:1bps,Max: and setup the v | 10Mbps;User can vary the alue as your requiremerits. | e baud rate .) | | |
| 📃 🔲 After "End of Frame" happen | is,just begin to analyse | | | |
| 🔲 When CAN Data for expansi | on, combined Basic ID an | dID | | |
| Auto-Judge Baud Rate (sugged) | Auto-Judge Baud Rate (suggest adopting high sampling rate to carry on data samping) | | | |
| Bus Color | | | | |
| Start/Stop ID | Control Data | CRC Error/Overload | | |
| | | | | |
| | | | | |
| | OK Car | ncel Default Help | | |

CAN 2.0B Bus : CAN 2.0B signal can separate CAN-L&CAN-H, the default is CAN-L. **Use the Bus reverse level for decoding:** It can use the data to make reverse operation. **Data start :** The data start can separate two styles ,the 111 bit is a high start ,the 0 bit is the low start .

Bus Property:

Baud Rate: User can enter a Baud Rate or select one from the dropdown menu as his/her requirement, the baud rate value is integer and the default is 125K,the option value includes 5,10,20,40,50,80,100,125,200,250,400,500,660,800,1000,2000,125K......the Max is 10M. **Percentage sample:** It needs to enter a value in the sample position ,the default is 60%.The range is 25%~75%,the adjusted distinguishing rate is 1%,the dropdown menu has a option per 5% space.

- **%** If the After "End of Frame" happen,just begin to analyze is selected ,the bus begins to decode after getting through the end of frame.
- **CAN data for expansion**: When Can data for expansion is selected, the bus combines Basic ID+ID data.
- Auto-Judge Baud Rate (suggest adopting hight sampling rate to carry on data sampling):Please carry on sampling with the sampling more than 50 times that of the device under test.To improve the veracity of automatic judgement,we suggest adopting 200MHz

Bus Color:

Start/Stop ID Control Data

CRC ERROR/Overload CAN 2.0B Package dialog box

| SPECIAL BUS CAN 2.0 | B SETUP:Busl | × |
|---------------------|-------------------|------|
| Configuration Packa | ge Register | |
| Item | Color | |
| 🔽 ID | ••• | |
| 🔽 Control | | |
| 🔽 Data | | |
| CRC | | |
| 🔽 Ack | | |
| 🔽 Describe | ···· | |
| | | |
| | | |
| | OK Cancel Default | Help |

In the package part ,user can vary the color of the item .

CAN 2.0B Register dialog box

| SPECIAL BUS CAN 2.0B SETUP:Bus1 | | | | |
|---|-----------------------------|--|--|--|
| Configuration Package Register | | | | |
| | | | | |
| The CAN 2.0B bus decoding function is optional purchased item.Welcome to purchase its serial key to activate this function for your necessary. | | | | |
| Enter serial key: | | | | |
| | | | | |
| | | | | |
| If you ordered software or have questions about ordering software please follow the appropriate instructions below.Our sales team will respond to your enquiry as soon as possible. | | | | |
| >> By phone: | Tel:886-2-66202225 | | | |
| >> Applications through EMail: | service_2@zeroplus.com.tw | | | |
| >> Website: | http://www.zeroplus.com.tw | | | |
| Copyright(C) 1997-2008 ZEROPLUS TECHNOLOGY CO;LTD | | | | |
| | | | | |
| | un Canad I Bafanla I - Vila | | | |
| Kegist | er Cancel Default Help | | | |

In the register part ,Our company provides the detail information, if you have any questions please contact us by phone or by email.



3 Operating Instructions

STEP 1. At first, group the unanalyzed channels into bus1 by pressing the **Right Key** on mouse.



STEP 2. Select **Bus1**, then press **Right key** on mouse to list menu, then press **Bus Property** or **Bus** bar on the toolbar to open bus property dialog box.





STEP 3. Special Bus setting, click Special Bus and choose **ZEROPLUS LA CAN 2.0B MOLDULE V1.05** and then click the **Parameters Configuration**.

| Bus Property 🗙 | | | |
|---|--------------------|--|--|
| - General Bus Setting | | | |
| | Color Coolin | | |
| GENERAL BOD | Color Conrig , | | |
| - Special Bus Setting | | | |
| SPECIAL BUS | Parameters Config | | |
| C ZEROPLUS LA 1-WIRE MODULE V1.0 | 04 | | |
| C ZEROPLUS LA 7-SEGMENT LED MOD | ULE V1.01 | | |
| C ZEROPLUS LA CCIR656 MODULE V1 | .00(Internal V0.0) | | |
| C ZEROPLUS LA LIN2.1 MODULE V2.0 | 0 | | |
| C ZEROPLUS LA DMX512 MODULE V1. | 00(Internal V0.4) | | |
| O ZEROPIUS LA FLEXRAY 2.1A MODU | | | |
| CO ZEROPLUS LA CAN 2.08 MODULE VI | .05 | | |
| C ZEROPLUS LA ST7460 MODULE VI C | voo(incernal VU.1) | | |
| C ZEROPLUS LA ST7669 MODULE VI. | ли оо 🔳 📃 | | |
| ☑ Use the DsDp | | | |
| Other More Module: http://www.zeroplus.com.tw | | | |
| ОК | Cancel Help | | |

STEP 4. Enter into the module **Configuration** dialog box.

| SPECIAL BUS CAN 2.0B SETUP | :Bus1 | | × |
|---|---|---|---|
| Configuration Package Reg | jister | | |
| CAN BUS | | Data start | |
| Channel Can-L | • | 111bit start | |
| Use the reverse data le | vel for decoding | ◯ 0 bit start | |
| Bus Property Baud Rate: 125000 (Min:1bps and setup | Max:10Mbps;User can v. the value as your require appens,just begin to analy | Percentage 60% sample: any the baud rate amerits.) yse | |
| When CAN Data for ex | pansion, combined Basic | ID and ID | |
| 🔲 Auto-Judge Baud Rate | (suggest adopting high sa | ampling rate to carry on data samping) | |
| Bus Color Start/Stop ID | Control E | Data CRC Error/Overload | |
| | ОК | Cancel Default Help | |



STEP 5. Firstly, Channel and Data start setup .

| SPECIAL BUS CAN 2.0B SETUP:Bus1 | × | | | |
|---|------------------------------------|--|--|--|
| Configuration Package Register | | | | |
| CAN BUS | - Data start | | | |
| BusiName: Busi | | | | |
| Channel Can-L 🔍 | 111bit start | | | |
| Use the newsee data level for decoding | C 0 bit start | | | |
| | | | | |
| Bus Property Baud Rate: 125000 Pe | rcentage 60% | | | |
| (Min:1bps,Max:10Mbps;User can vary t and setup the value as your requirement After "End of Frame" happens,just begin to analyse | he baud rate (s.) | | | |
| When CAN Data for expansion, combined Basic ID a | ind ID | | | |
| Auto-Judge Baud Rate (suggest adopting high sample | ing rate to carry on data samping) | | | |
| Bus Color | | | | |
| Start/Stop ID Control Data | CRC Error/Overload | | | |
| | | | | |
| | | | | |
| ОК С | ancel Default Help | | | |

STEP 6. Secondly, Baud Rate setup ,it can be customized and the default is 125K.

| SPECIAL BUS CAN 2.0B SETUP:Bus1 | × | | | |
|---|-------------------------------------|--|--|--|
| Configuration Package Register | | | | |
| CAN BUS | Data start | | | |
| Bus Name: Bus1 | 111bit start | | | |
| Channel Can-L 💌 | | | | |
| Use the reverse data level for decoding | C 0 bit start | | | |
| Bas Property Baud Rate: 125000 Pessa | ercentage 60% | | | |
| (Min:1bps,Max:10Mbps;User can vary t and setup the value as your requirement | the baud rate its.) | | | |
| After "End of Frame" happens, just begin to analyse | | | | |
| When CAN Data for expansion, combined Basic ID a | and ID | | | |
| Auto-Judge Baud Rate (suggest adopting high sample) | ling rate to carry on data samping) | | | |
| Bus Color Start/Stop ID Control Data | CRC Error/Overload | | | |
| | | | | |
| OKC | Cancel Default Help | | | |



STEP 7. Percentage sample setup .

| SPECIAL BUS CAN 2.0B SETUP:Bus1 | × |
|--|---|
| Configuration Package Register | |
| CAN BUS Bus Name: Bus1 Channel Can-L | Data start |
| Use the reverse data level for decoding | O bit start |
| Bus Property Baud Rate: 125000 (Min:1bps,Max:10Mbps;User can var and setup the value as your requirem After "End of Frame" happens,just begin to analys When CAN Data for expansion, combined Basic II Auto-Judge Baud Rate (suggest adopting high sar | Percentage 60% cample: y the baud rate erits.) e D and ID npling rate to carry on data samping) |
| Bus Color Start/Stop ID Control Da | ata CRC Error/Overload |
| ОК | Cancel Default Help |

STEP 8. Whether select Use the reverse data level for decoding option

| SPECIAL BUS CAN 2.0 |)B SETUP:Bus1 | | | | × |
|----------------------------|--|---|--|---|---|
| Configuration Packa | age Register | | | | |
| CAN BUS Bus Name: B | lus1 | | | Data start | |
| Channel | Can-L rse data level for | ✓ | > | O Dit start | |
| Bus Property Baud Rate: | 125000 (Min:1bps,Max:1 and setup the va Frame'' happens Pata for expansio aud Rate (sugge | OMbps;User car alue as your requ s,just begin to an n, combined Bas est adopting high | Percentag sample: n vary the baud iremerits.) nalyse sic ID and ID n sampling rate | ge <u>60% </u> d rate to carry on data samping) | |
| Bus Color Start/Stop | ID C | iontrol | Data | CRC Error/Overload | |
| | | OK | Cancel | Default Help | |



STEP 9. After End of Frame happens, just begin to analyse and When CAN Data for expansion, combined Basic ID and ID setup.

| SPECIAL BUS CAN 2.0B S | ETUP:Bus1 | | | × |
|--|---|---|-----------------------------|-----------------|
| Configuration Package | Register | | | |
| CAN BUS Bus Name: Bus1 Channel Car | нL 🔽 | D | ata start • 111bit start | |
| Use the reverse of | lata level for decoding | | ○ 0 bit start | |
| Bus Property Baud Rate: 125 (Min and After "End of Fran When CAN Data | i000 :1bps,Max:10Mbps;User of setup the value as your re ne'' happens,just begin to for expansion, combined for Rate (suggest adopting the | Percentage sample: can vary the baud ra equiremerits.) analyse Basic ID and ID igh campling rate to | 60% ate | ▼ ng) |
| Bus Color Start/Stop ID | Control | Data | CRC Error/Over | rload |
| | ОК | Cancel | Default | Help |

The below image is the state of uncombined Basic ID + ID frame of Can_H,and the combined Basic ID + ID frame of Can_L,user can select the mode as his/her requirements.

| 🚳 ZEROPLUS LAP-32 | 21000 U-A (S | s/#:000000 | -0000) - [| 18-CAN Peil | .als] | | | | | |
|-------------------|----------------------|-------------------------------------|----------------------------|-----------------------------|---------------|--------------|-----------------|-------------|-----------------------|------------------|
| 🏥 File Bus/Signal | . T <u>r</u> igger | Run/Stop | <u>D</u> ata <u>T</u> ools | <u>W</u> indow <u>H</u> elp | | | | | | _ <u>8</u> × |
| 🗋 🖻 🖉 🗐 | 🔍 🔀 🖗 | ψ <mark>₽</mark> Ψ⊤ Ψ ^[] | i 🗾 🕨 | ► 🔲 🖉 📢 | 16K 💌 I | 🙀 🗤 10N | /Hz 🔻 | uur 😽 | 50% 💌 📣 Pa | ige 1 💌 |
| 🚯 🕟 🗟 🗷 | I 📰 🛛 🥵 | 🔺 📓 🖑 |) 🗰 🛛 🚟 🚽 | <u> 6</u> .053u | s 🔻 🕷 | Bar Bar Bi | ₩ T ¥ +¥ | # 14 | কা 🔣 🐻 🐏 | Height 40 |
| Trigger Delay 1 | Oons | Font Size | 18 T | gle Kun | | | | | | |
| Scale:6.053us | Di | splay Pos:2 | 57.319us | A Pos:=718. | 3us 💌 | A - T | = 718.3us | - | A - B = 3us | - |
| Total:1.638ms | Tr | igger Pos:O | ns | B Pos:-715. | 3us 🔻 | B - T | = 715.3us | - | Compr-Rate:No | · |
| Bus/Signal | Trigger | Enable | 136.25 | 2us166.519us19 | 96. 786us 221 | 7.052us257.3 | 19us 287. 586 | 5us 317.85 | 2us 348. 119us 378. 3 | 386us408.652 |
| Busi (CAN 2 | | \square | | ID | : OX3 | SFFFF | | >00 | OX1 OX | .88 |
| 🖌 🖉 Can-L | Z | | | | | | | | | |
| Bus2 (CAN 2 | | × - | | usic ID- | +ID : | OXOFFI | FFFFF | | OX1 OX | .88 |
| 🥖 Can-H | | | | | | | | | | |



STEP 10. Following pictures show that the completion of the bus decoding ,the condition is set that the RAM size is 16K, the Sampling frequency is 10MHz.

| A ZEROPLUS LAP-32 | 21000 U-A (S | S/N:00000 | 0-0000) - | 1 -CAN Peil | . als] | , in the second s | | | |
|-------------------|----------------------|------------------|----------------------------|-----------------------------|---------------|---|-----------------|-----------------------|-------------|
| 🎩 File Bus/Signal | T <u>r</u> igger | Run/Stop | <u>D</u> ata <u>T</u> ools | <u>W</u> indow <u>H</u> elp | | | | | _ 8 × |
| 🗅 🖻 🖶 🎒 | M, 🔍 🖗 | ψ <mark>Έ</mark> | | bb 🔲 👬 | 16K 💌 🕅 | 10MH: | z 🗸 🔨 🗤 🗸 🕌 | 50% 💌 📣 Pa | ge 1 💌 |
| 🚯 🕓 🔝 | | k 📓 🔇 | ") 🗰 🔛 🤋 | 🦷 🦾 6.053u | s 🖌 🤻 | Bar Bar Bar B | Dar Bar 🛃 🎼 | কা 🐻 📴 🍖 | Height 40 |
| Trigger Delay 1 | OOns | Font Size | 18 🔻 | | | | | | |
| Scale:6.053us | Di | splay Pos: | 257.319us | A Pos:=718. | 3us 🔻 | A - T = ' | 718. 3us 💌 | A - B = 3us 🔻 | r I |
| Total:1.638ms | Tr | igger Pos: | Ons | B Pos:=715. | 3us 🔻 | B - T = ' | 715. 3us 💌 | Compr=Rate:No | |
| Bus/Signal | Trigger | Enable | 136.25 | 2us166.519us19 | 96. 786us227. | 052us 257. 319us | 287.586us317.85 | 2us 348. 119us 378. 3 | 86us408.652 |
| Bus1 (CAN 2 | | \boxtimes | | ID | : 0X3 | FFFF | | OX1 OX | 88 |
| 🧹 🖌 Can-L | Z | | | | | | | | |
| Bus2 (CAN 2 | | • | | ID | : OX3 | FFFF | | OX1 OX | 88 |
| 🧹 Can-H | \boxtimes | | | | | | | | |

The below pictures are package list and waveform display.

| 🍓 ZEBOPLUS LAP-321 | 1000V- A (S/H :00000 |)-0000) - [1∎- | CAN Peil .« | ls] | | | | _ | |
|------------------------------------|------------------------------------|--|------------------|----------------|-------------------------|-------------------------|--------------------------|----------------------|-----|
| 🎩 <u>F</u> ile B <u>u</u> s/Signal | T <u>r</u> igger Run/ <u>S</u> top | <u>D</u> ata <u>T</u> ools <u>W</u> ir | dow <u>H</u> elp | | | | | _ | 8× |
| 🗋 🗅 🚅 🔚 🎒 | ↓ ₩↓ ∰↓ ↓ ↓ | " 🔟 🕨 🕨 | ■ M 16 | 6K 💌 i∰i | ₩ 10MH | Z 💌 📶 | 🎋 50% 💌 | i → Page 🛛 | - |
| 🚯 🕟 📾 🔤 | 📰 [😰 📐 🕷 🕅 |) 🗰 🛛 🚟 🚽 🚽 | £ 6.053us | - ^m | -2 A¥ B≥ Bar Bar Bar | T¥ +2 Bar Bar ₽9 | te et 🛛 😿 🖁 | 🗳 🏘 🛛 Height | 40 |
| Trigger Delay 10 | Ons Font Size | 18 🔻 | | | | | | | |
| Scale:6.053us | Display Pos:2 | 257.319us / | A Pos:=718.3u | s 🔻 | A - T = | 718. 3us 💌 | A - B : | = 3us - | |
| Total:1.638ms | Trigger Pos:(|)ns] | 3 Pos:-715.3u | s 🔻 | B - T = | 715. 3us 🔻 | Compr-3 | Rate:No | |
| Bus/Signal | Trigger Enable | 136.252us1 | .66. 519us196. | 786us 227. 05 | 2us 257. 319u | s287. 586us317 | 7.852us348.119 | us 378, 386us 408, | 652 |
| Bus1 (CAN 2 | | | ID | OX3F | FFF | | OX1 | 0X88 | |
| 🥖 Can-L | | | | | | | | | |
| Bus2 (CAN 2 | • | | ID | OX3F | FFF | | OX1 | 0X88 | |
| 🥖 Can-H | | | | | | | | | |
| | | • | | | | | | | |
| × Setting Flash | Export Synch | Parameter | | | | | | | |
| Package # | Nате | TimeStamp | Basic ID | SRR IDE | ID | RTR RB1 RE | 30 Dic Data | CRC ACK | |
| | Bus1(CAN 2.0B) | Ons | 0X3FF | SRR IDE | 0X3FFFF | RTR <mark>RB1</mark> RE | 30 <mark>0×1</mark> 0×88 | 0X96D1 ACK | |
| Package # | | TimeStamp | Basic ID | SRR IDE | ID | RTR RB1 RE | BO Dic Data | CRC ACK | |
| | Bus2[CAN 2.0B] | Uns | UX3FF | SRRIDE | UX3FFFF | RIRKBIRE | 30 UX1 UX88 | UX96D1 ACK | J |
| | | | | | | | | | |
| ШТ | | | | | | | | | |