

V2.5

Software Tutorial





Serial Port & Network Communication Software

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1. Introduction

Relay Timer R2X is one of our Relay Timer series software, which is to control relay boards of **National Control Devices**, **Robot Electronics**, and **Velleman**.

Relay Timer R2X is special to control 2-channel relay boards. Programmable time setting and high resolution make it quite fit for lights control, science experiment control, home automation control, industry control, energy conservation control, and so on.

We also have <u>Relay Timer R1X</u>, <u>Relay Timer R4X</u>, <u>Relay Timer R8X</u>, and <u>Relay Timer R16X</u>. They all have same features, except for different number of relay channel. <u>Relay Timer</u> is more powerful. It allows you to connect and control multiple relay booards.

Interface

The user interface of Relay Timer R2X includes *Title Bar, Control Panels, Time Panel, Rapid Buttons, and Status Bar.*



Features

- > Control 2- channel relay boards through Serial Port/USB or Network interface
- > Control relays manually with separate control panel
- > Control relays automatically according to schedule setting
- > Detect and show relay connection status automatically and continuously
- > Remind for disconnection and re-connection automatically
- > Update and display the current relay status simultaneously
- > Support multiple schedule setting with recurrence options
- > Switch to auto control mode after specified time or at fixed time
- Launch automatically after log-in Windows
- > Control relays remotely from other computers
- > Launch by command line with specified parameters
- > Save schedule setting for later loading.

2. Installation

System Requirement

Relay Timer R2X works well on Windows 7, Windows 8, and Windows 10. Please be sure you have your Windows system updated.

Download

Click *Download* link on <u>Relay Timer R2X web page</u>, or click the link below <u>http://www.serialporttool.com/download/RelayTimer/RelayTimerR2X.zip</u> to save *RelayTimerR2X.zip* file on your computer.

Install

Unzip *RelayTimerR2X.zip* file to get *RelayTimerR2X.msi* file. Double-click *RelayTimerR2X.msi* file to run Setup Wizard.



Follow the instruction of Setup Wizard, click Next button to step into next panel.

謁 Relay Timer R2X v2.5 Setup	-		\times
Destination Folder Click Next to install to the default folder or click Change to choose anot	ther.	C	
Install Relay Timer R2X v2.5 to:			
C:\Program Files (x86)\Serial Port Tool\Relay Timer R2X v2.5\ Change			
Back Next		Cano	el

Select *Destination Folder* or keep default folder, and click *Next* button to step into next panel.

📸 Relay Timer R2X v2.5 Setup			_		×
Ready to install Relay Timer R	2X v2.5			6	
Click Install to begin the installation. installation settings. Click Cancel to e	Click Back to r exit the wizard	eview or chang I.	e any of yo	ur	
	Back	Inst	all	Cano	el

Click Install button, Relay Timer R2X will be installed automatically.

After that, the final panel will be shown up like below.



Keep *Launch Relay Timer R2X Now* option checked. Click *Finish* button to exit the Setup wizard and run Relay Timer R2X at the same time.

3. Registration

After you install and run Relay Timer R2X, you will see the registration reminder panel first.

Register 30 Days Left	×
Relay Timer R2X	rt Tool
Registration Reminder: Thank you for using Relay Timer R2X! Relay Timer R2X on your machine is not registered yet. Relay Timer R2X is NOT free! You can try it for 30 days. After 30 days, the unregistered Relay Timer R2X will expire If you think it is useful, please pay for it.	
Register Later button will be enabled after 0 Second	
Registration Code	
Register Buy Now Register Later	

You have 30 days to try all features of Relay Timer R2X after install. This panel will let you know how many days left for your free trial. It will be shown every time when you run Relay Timer R2X until you have it registered.

After you pay for and get your registration code, input the code on this panel, click *Register* Button. The code will be verified and registered online automatically. You will see a message box after registration successful. This registration reminder panel will not be shown any more.

4. Set Connection with Relay Board

To control relay board with Relay Timer R2X, you need connect the relay board to your computer through serial port/USB or by network interface. Then, run Relay Timer R2X to set up the connection between relay board and Relay Timer R2X.

Click **Configure** button to show the *Configuration* panel.

Configuration	1				×
Manufacturer:	National Control Device	s 🗸	Auto run	after login Windows	
NCD Device Sett	ing				
Device Type:	ProXR	\sim			
Serial Port/	USB				
Port Name:	COM12 V Bau	ud Rate: 11520	0 V Stop Bits:	1 V Timeout	30 🜩 ms
O Network					
IP Address:	192.168.0.104	Port: 210	1		
IP	Mac Addres	s	Device Infomation		FirmwareVersic
Remote Access	rol Remotely Po	rt Number: 80		Password:	
Comment					
	C	к	Cance	el	

Select *Manufacturer*, *Device Type, and* connection interface *Serial Port/USB* or *Network* for the connected relay board.

Manufacturer

👩 Configuration	n	
Manufacturer:	National Control Devices 🗸	Auto run after login
NCD Device Set	National Control Devices Robot Electronics Velleman ProXR	
Serial Port.	/USB	
Port Name:	COM12 V Baud Rate	e: 115200 V Stop Bits: 1 V

Relay Timer R2X supports relay boards of <u>National Control Devices</u>, <u>Robot Electronics</u>, and <u>Velleman</u> only for now.

• Device Type

There are different device types for each manufacturer. Select the right one for your relay board.

🔀 Configuration	
Manufacturer: National Control Devices V	Auto n
NCD Device Setting	
Device Type: ProXR ~	
Serial Port/ R4X/R8XPro R1X/R2X	
Port Name: COM12 V Baud Rate: 115200	✓ Stop Bit
 Network 	
Configuration	
Manufacturer: Robot Electronics V	Auto ru
Robot Electronics Device Setting	
Device Type: ETH008	
USB-RLY88/RLY16L	
Port Name: COM3 V Baud Rate: 115200	Stop Bit
7 Configuration	
Manufacturer: Velleman	Auto rui
Velleman Device Setting	
Device Type: VM8090/K8090 V	
Port Name: COM3 ~	

Serial Port/USB Connection

Select the option Serial Port/USB, if the relay board is connected to your computer with Serial

Port/USB interface.

👩 Configuratio	on	×
Manufacturer:	National Control Devices $\ \lor$	Auto run after login Windows
NCD Device S	etting	
Device Type	ProXR ~	
Serial Po	nt/USB	
Port Nam	e: COM3 V Baud Rat	.e: 115200 ✓ Stop Bits: 1 ✓ Timeout: 30 🖨 ms
 Network 		

Select Port Name and Baud Rate. Keep default value for Stop Bits and Timeout.

Port Name: It is the name of Serial Port or USB interface that Relay Timer R2X will communicate with the relay board. All existed and available COM Port will be detected and list here. Select the corresponding COM Port for your relay board.

Baud Rate: It is the data transmission speed. Select the right Baud Rate to make the relay board work correctly. 9600 and 115200 are most used for relay board.

Network Connection

Select the option *Network*, if your relay board is connected to network same as your computer.

Port Na	me: COM3	∨ Baud	Rate: 115200	 ✓ Stop 	Bits 1
Network	c				
IP Add	ress: 192.168.	1.2	Port: 1749)4	
IP		Device Info	mation		
192.16	8.1.2	ETH008	00-1E-C0-94-27-7	'A	

IP Address and *Port* number need to be input here.

IP Address: It is the internet address of the relay board.

Be sure the relay board is set up in the same network with your computer. Normally, the connected network device information and IP Address will be list automatically. If not, you need log in your router to get the IP Address of the relay board.

Port: It is the communicate port number.

The default *Port* value is 2101 for National Control Devices' relay board, and 17494 for Robot Electronics' relay board.

After you select all above settings for the relay board, click OK button to finish configuration.

You will see the information of manufacturer, connection type and baud rate on Status Bar.

If the relay board is connected, you will see an arrow flashing on the Status Bar.

The flashing arrow indicates Relay Timer R2X is detecting the connection status between the computer and the relay board.

If the connection is invalid or broken, "Connection Error" will be displayed on Status Bar.

5. Control Relay Manually

Once you set up the connection, you can control the relay board with Relay Timer R2X now. When Manual button on the *Control Panel* is pressed down Manual, it means the relay channel is in manual control mode. The relays can be controlled manually with your mouse click.

Single Relay



Click the switch button on the Control Panel for each relay channel to turn on/off single relay.

Both Relays



6. Control Relay Automatically

When **Auto** button is pressed down like this **Auto**, it means the relay channel is in auto control mode. The relay will be turned on/off automatically according to the *Schedule Setting*.

Schedule Setting

Click **Setting** button on the *Control Panel* to open *Relay Setting* panel. This panel is used to add, edit and delete Schedule Setting.

chedule	Status	Time	Duration	Recurrence	Comments	Add
						Edit
						Delete
						Delete A
						Up
						Down
						Тор
						Bottom

Relay Name: The relay can be given a name. It will be shown on the relay control panel. *Schedule:* The relay will be turned on/ off according to this schedule list.

Click Add button to show Schedule Setting panel to set the schedule of relay status.

Schedule Name: Input the name for the schedule or keep it default.

Relay Status: Select the status of relay during Schedule Time.

- On --- Relay will always be turned on.
- Off --- Relay will always be turned off.
- Customize Action --- Relay will be turned on/off according to this action setting.

Schedule Time: Set the start and end time for relay to keep the status.

Recurrence Pattern: Select options for the frequency, with which you want the event to recur.

Recurrence Range: Select time range of recurrence.

lf	🚫 Schedule Setting		×
	Schedule Name		
	Schedule 1		
	Relay Status	Schedule Time	
	Tum On	Start: 08:00:00 ~	
	◯ Tum Off	End: 09:00:00 V Same Day V	
	Customize Action	Duration: 01:00:00	
	Recurrence Pattern		
	Daily Every	day(s)	
		dav	
	O Monthly		
	◯ Yearly		
	Recurrence Range		
	Start: 8/30/2016	 No End Date 	
		○ End by: 8/31/2016	
		OK Cancel	

Click Add button to open Action panel.

No.	Tum On	Tum (Tum On:	00:01:00	Add
			Tum Off:	00:01:00	Edit
			Loop Count:	1	Delete All
			Duration:		Up
			ОК	Cancel	Down
	,	Loop Count:	1 📥	Duration: 00:00:00 /	_

Input time for Turn On and Turn Off, and select Loop Count for Turn On/Off. Click OK

button back to *Customize Action* panel.

00:01:00 00:01:00 2 Duration: 00:02:00 / 00:04:00		Turr on	Tum On	Loop	Duration	Add
Dele	l	00:01:00	00:01:00	2	Duration: 00:02:00 / 00:04:00	Edit
Dele						Delete
						Delete A
						Up
Do						Down

You can click *Add* button to add more *Action* rules on the list.

Loop: Select this check-box, the action in the list will always be executed in order.

Loop Count: Set the number for action loop.

Duration: Show the time for one loop and total loop.

Click *OK* button on both *Customize Action* and *Schedule Setting* panels to return to *Relay Setting* panel.

🔯 Relay Setting	I					×
Relay Name: Re	elay 1					
Schedule	Status	Time	Duration	Recurrence	Comments	Add
Schedule 1	Customize	10:00:00 ~ 11:00:00	01:00:00	Weekly	Recur every 1 week on:T	Edit
						Delete
						Delete All
						Up
						Down
						Тор
						Bottom
					ОК	Cancel

You will see the customize schedule setting is added. You can add more schedule settings here to make all kinds of complicated setting to control the relay automatically.

Click OK button to finish relay schedule setting.

After above settings, you can control single relay or both relays automatically.

Single Relay

To control single relay automatically, you have to make sure the Auto button is pressed down Auto for this relay channel to let it to step into auto control mode. Then the status of this relay channel will be changed according to above settings automatically.

Both Relays

Click All Auto button to set both relay channels into auto mode at the same time. Auto button of both relay channels will be pressed down together.

7. Save and Load Schedule Setting

Click **Save Setting** button to save schedule settings for both relay channels to a *.sch file.

Click **Load Setting** button to load a *.sch file to get the schedule settings for both relay channels directly.

8. Auto Run after Login Windows

Relay Timer R2X can be run automatically after you start your computer and login Windows.

Click **Configure** button to open the *Configuration* panel.

👩 Configuration	ı	X				
Manufacturer:	National Control Devices 🗸 🗹 Auto run after login Windows					
NCD Device Se	tting					
Device Type:	ProXR ~					
Serial Port/USB						
Port Name:	COM3 V Baud Rate: 115200 V Stop Bits: 1 V Timeout: 30 rms					

Select check box Auto run after login Windows.

Click OK button on *Configuration* panel to finish the setting.

Relay Timer R2X will be run automatically next time when you log in Windows system.

9. Control Remotely via Internet Browser

Configure

Click

Relay Timer R2X can be controlled remotely from other computer via internet browser.

button to show the Configuration dialog.

👩 Configuration × \sim Manufacturer: Robot Electronics Auto run after login Windows Robot Electronics Device Setting Device Type: ETH008 \sim Remote Access Port Number: 80 1234 Enable Control Remotely Password: Comment OK Cancel

Select Enable Control Remotely check box.

Set *Port Number* or keep default value. Be sure this port number is not used by other applications. Select *Password* to set password or keep it unchecked without password for remote access.

Click OK to finish the setting.

Relay Timer R2X can be controlled on any other computer, which is in the same network, by visiting the current computer's IP address via internet browser.



If Port Number is 80, you just need to type the IP address in the browser, shown as above.

If Port Number is modified, you need add the number after the IP address, shown as below.



10. Launch with Command Line

Relay Timer R2X can be launched with command line operation to run with a specified configuration or schedule setting.

Format:

```
"Path to RelayTimer.exe" -c "Path to *.cfg"
"Path to RelayTimer.exe" -s "Path to *.sch"
```

Note:

The parameter "-c" is to launch Relay Timer R2X with the specified configuration file (*.cfg). Both the contents in <u>Configuration</u> dialog and <u>Relay Setting</u> dialogs will be loaded. If the *.cfg file does not exist, it will be created in the specified path automatically. After editing the Configuration dialog and Setting dialogs, the information will be saved to the created *.cfg file. When the command is run next time, all information will be loaded.

The parameter "-s" is to launch Relay Timer R2X with the schedule setting file (*.sch). The content of <u>Relay Setting</u> dialog will be loaded. All information will be saved in the default configuration file. When Relay Timer R2X is launched by Icon on desktop or start menu, it loads the default configuration file. When you run this command, you need make sure the current default configuration file is same as when the *.sch file was saved.

Example I:

- Click Windows Start -> Run cmd.exe to open command line window.
- Type the command with parameters.



• Press 'Enter' key to launch Relay Timer R2X with the specified configuration file.

Example II:

• Create shortcut for RelayTimer.exe in the installation folder.

📊 🛃 🛄 🛨	Application Tools	Relay Timer R2X v2.5	
File Home Share View	/ Manage		
← → × ↑ 📙 « Program File	es (x86) > Serial Port T	ool > Relay Timer R2X v2.5	√ Ö
 Quick access Desktop OneDrive Shang Xinping This PC Desktop 	RelayTimer.exe	Open Run as administrator Troubleshoot compatibility Pin to Start 7-Zip	yTimerR2x.ch
 Control Panel Recycle Bin DesktopTemp Install Relay Timer SPT 		Copy Paste Create shortcut Delete Rename Properties	

• Open 'Properties' of the shortcut.



• Add the arguments shown as below.

🔝 RelayTimer.exe - Shortcut Properties 🛛 🗙 🗙							
Security General	Details Shortcut	Previous Versions Compatibility					
Rela	RelayTimer.exe - Shortcut						
Target type: Application							
Target location:	Target location: Relay Timer R2X v2.5						
Target:	Target: (v2.5\RelayTimer.exe" -s "C:\test\Device1.sch")						
Start in:	Start in: "C:\Program Files (x86)\Serial Port Tool\Relay Tir						
Shortcut key:	Shortcut key: None						
Run:	Run: Normal window ~						
Comment:	Comment:						
Open File Loc	Open File Location Change Icon Advanced						
	ОК	Cancel Apply					

• Double click the shortcut to launch Relay Timer R2X with the specified schedule file.

11. Getting Help

We would like to support more kinds of relay board to work with Relay Timer R2X. Please contact us if you have any question or suggestion about Relay Timer R2X.

E-mail: support@serialporttool.com

We also have <u>Quick Timer R2X</u> software to control 2-channel relay boards by schedule setting.

Please visit our <u>Website</u>, <u>Blog</u> or <u>YouTube channel</u> to get more information.