# **RELAY TIMER R1X**

## V2.5

## **Software Tutorial**





Serial Port & Network Communication Software

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## 1. Introduction

Relay Timer R1X is one of our Relay Timer series software, which is to control relay boards of **National Control Devices**, **Robot Electronics**, and **Velleman**.

Relay Timer R1X is special to control 1-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 R2X</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 R1X includes *Title Bar, Control Panels, Time Panel, and Status Bar.* 



#### • Features

- > Control 1- 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

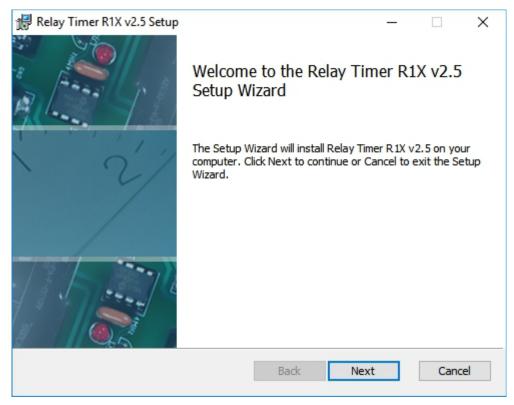
Relay Timer R1X works well on Windows 7, Windows 8, and Windows 10. Please be sure you have your Windows system updated.

#### • Download

Click *Download* link on <u>Relay Timer R1X web page</u>, or click the link below <u>http://www.serialporttool.com/download/RelayTimer/RelayTimerR1X.zip</u> to save *RelayTimerR1X.zip* file on your computer.

#### Install

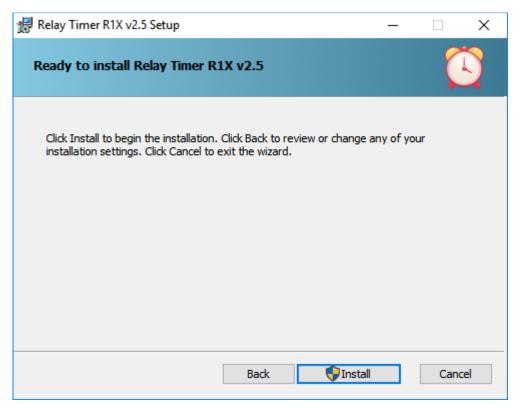
Unzip *RelayTimerR1X.zip* file to get *RelayTimerR1X.msi* file. Double-click *RelayTimerR1X.msi* file to run Setup Wizard.



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

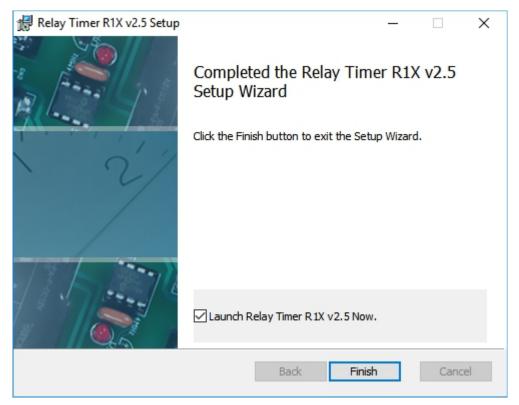
记 Relay Timer R1X v2.5 Setup 📃		$\times$
Destination Folder Click Next to install to the default folder or click Change to choose another		
Install Relay Timer R 1X v2.5 to:		
C:\Program Files (x86)\Serial Port Tool\Relay Timer R1X v2.5\ Change		
Back Next	Cano	el

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



Click Install button, Relay Timer R1X will be installed automatically.

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



Keep Launch Relay Timer R1X Now option checked. Click Finish button to exit the Setup wizard

and run Relay Timer R1X at the same time.

## 3. Registration

After you install and run Relay Timer R1X, you will see the registration reminder panel first.

Register 30 I	Days Left	×
(1 °C)	Relay Timer R1X	SerialPort Tool
Regist	tration Reminder: Version 2.5.	1
	x you for using Relay Timer R1X! Timer R1X on your machine is not registered ye	+
Relay	Timer R1X is NOT a freeware. You can try it for	30 days.
	30 days, the unregistered Relay Timer R1X will e think it is useful, please pay for it.	expire.
	Register Later button will be enabled after 2 Second	
	Registration Code	
		-
	Register Buy Now Register Later	

You have 30 days to try all features of Relay Timer R1X 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 R1X 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 R1X, you need connect the relay board to your computer through serial port/USB or by network interface. Then, run Relay Timer R1X to set up the connection between relay board and Relay Timer R1X.

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 R1X 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
<ul> <li>Network</li> </ul>	
Configuration	
Manufacturer: Robot Electronics V	Auto ru
Robot Electronics Device Setting	
Device Type: ETH008 V	
USB USB-RLY88/RLY16L	
Port Name: COM3 V Baud Rate: 115200	Stop Bit
👩 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	te: 115200 🗸 Stop Bits: 1 🗸 Timeout: 30 🖨 ms
<ul> <li>Network</li> </ul>		

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 R1X 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	Name: COM3	∼ Baud	Rate: 115200	<ul> <li>✓ Stop I</li> </ul>	Bits 1 🗸
Network	ork				
IP A	ddress: 192.168.	1.2	Port: 17494		
IP		Device Info	mation		
192.	168.1.2	ETH008	00-1E-C0-94-27-7A		

*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.

NCD ProXR COM12 115200 ••• Serial Port Tool

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

The flashing arrow indicates Relay Timer R1X 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 R1X now. When Manual button on the Control Panel is pressed down Manual , it means the relay channel is in manual control mode. The relay can be controlled manually with your mouse click.

	Relay Na	ame 🤤	
	Auto	Manual	
		on	
	Setting	Override	
Click the switch button on	on the Con	<i>trol Panel</i> to turn	on/off relay manually.

## 6. Control Relay Automatically

When <u>Auto</u> button is pressed down like this <u>Auto</u>, 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.

lay Name: Rela	y 1					
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.

🔯 Schedule Setting	×
Schedule Name Schedule 1	
Relay Status     Schedule Time       Image: Tum On     Start:     08:00:00       Tum Off     End:     09:00:00       Customize Action     Duration:     01:00:00	~
Recurrence Pattern <ul> <li>Daily</li> <li>Every</li> <li>day(s)</li> <li>Weekly</li> <li>Every working day</li> <li>Yearly</li> <li>Yearly</li> </ul>	
Recurrence Range           Start:         8/30/2016           Image         Image           Image	
ОК С	Cancel

If Customize Action is selected, Customize Action panel will be shown.

No.	Tum On	Tum Off	Loop	Duration	Add
					Edit
					Delete
					Delete Al
					Up
					Down
Loop		Loop Count:	1 🜲	Duration: 00:00:00 /:	

Click Add button to open Action panel.

🔯 Action	×
Relay Status	
Tum On:	00:01:00
Tum Off:	00:01:00
Loop Count:	1
Duration:	
ОК	Cancel

Input time for *Turn On* and *Turn Off,* and select *Loop Count* for *Turn On/Off.* Click *OK* button back to *Customize Action* panel.

No. 1	Tum On 00:01:00	Tum Off 00:01:00	Loop 2	Duration Duration: 00:02:00 / 00:04:00	Add
					Edit
					Delete Al
					Up
					Down
Loop		Loop Count:	5 🜲	Duration: 00:04:00 / 00:20	.00

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.

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

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, the relay can be controlled automatically.

```
You have to make sure the Auto button is pressed down Auto to let it to step into auto control mode. Then the status of the relay channel will be changed according to above settings automatically.
```

## 7. Save and Load

Click Save button to save schedule settings to a \*.sch file.

Click Load button to load a \*.sch file to get the schedule settings directly.

### 8. Auto Run after Login Windows

Relay Timer R1X can be run automatically after you start your computer and login Windows.

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

👩 Configuration	1		×
Manufacturer:	National Control Devices $\ \lor$	Auto run after login Windows	
NCD Device Se	tting		
Device Type:	ProXR ~		
Serial Port	/USB		
Port Name	COM3 ~ Baud Rate: 115200	✓ Stop Bits: 1 ✓ Timeout: 30 ♣ ms	

Select check box Auto run after login Windows.

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

Relay Timer R1X will be run automatically next time when you log in Windows system.

### 9. Control Remotely via Internet Browser

Relay Timer R1X can be controlled remotely from other computer via internet browser.

Click Configu	ure button to s	how the Configur	<i>ation</i> dialog.	
👩 Configuration	1			×
Manufacturer:	Robot Electronics	$\sim$	Auto run after login Wir	ndows
Robot Electronic	s Device Setting			
Device Type:	ETH008	$\sim$		
Remote Access				
Enable Cont	trol Remotely	Port Number: 80	Password	: 1234
Comment				

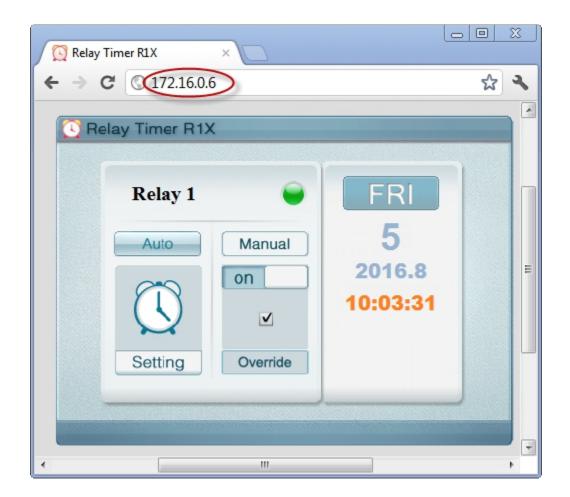
Select Enable Control Remotely check box.

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 R1X 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 R1X 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 R1X 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 R1X 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 R1X 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:

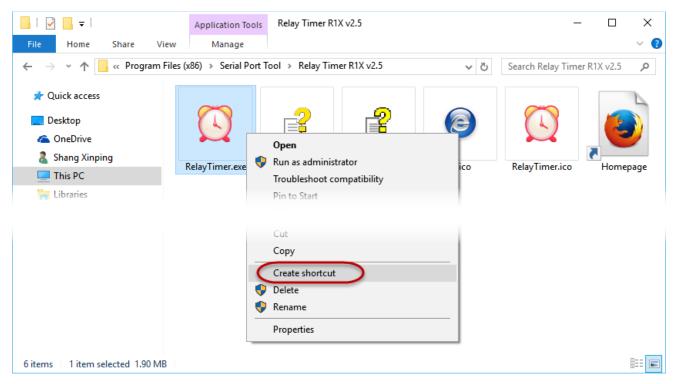
- Click Windows Start -> Run cmd.exe to open command line window.
- Type the command with parameters.



• Press 'Enter' key to launch Relay Timer R1X with the specified configuration file.

Example II:

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



• Open 'Properties' of the shortcut.

📙   🛃 📑 =	Shortcut Tools	Application Tools R	elay Timer		_	×
File Home Share Vi	ew Manage	Manage				~ 🕐
$\leftarrow \rightarrow \checkmark \uparrow $ Relay Tim	er			~ Ū	Search Relay Timer	Q
<ul> <li>✓ Quick access</li> <li>▲ Desktop</li> <li>▲ OneDrive</li> <li>▲ Shang Xinping</li> <li>➡ This PC</li> <li>➡ Desktop</li> </ul>	Shortcut	Open         Open file location	> > >			
Control Panel Recycle Bin DesktopTemp Install Relay Timer SPT		Copy Create shortcut Delete Rename Properties				
1 item 1 item selected 1.87 KB						

• Add the arguments shown as below.

🛐 RelayTimer.ex	e - Shortcut Properties	s X		
Security	Details	Previous Versions		
General	Shortcut Compatibility			
RelayTimer.exe - Shortcut				
Target type:	Application			
Target location:	Relay Timer R1X v2.5			
	-	1011 - 11 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -		
Target:	(v2.5\Relay limer.exe"	-s "C:\test\Device1.sch"		
Start in:	"C:\Program Files (x86)\	Serial Port Tool\Relay Tir		
Shortcut key:	key: None			
Run:	Normal window $\checkmark$			
Comment:				
Open File Loo	cation Change Icor	n Advanced		
	OK	Cancel Apply		

• Double click the shortcut to launch Relay Timer R1X with the specified schedule file.

## 11. Getting Help

We would like to support more kinds of relay board to work with Relay Timer R1X. Please contact us if you have any question or suggestion about Relay Timer R1X.

E-mail: <a href="mailto:support@serialporttool.com">support@serialporttool.com</a>

We also have <u>Quick Timer series</u> software to control relay boards by schedule setting.

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