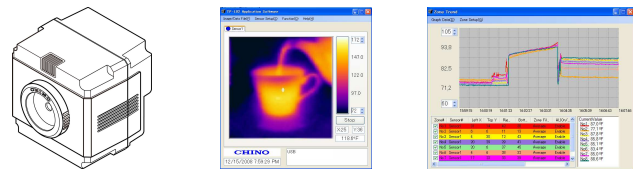


Introduction

Thank you for purchasing a compact thermal image sensor. This quick manual explains basic steps of easy operation and its settings. Please see the manual provided in the installation CD for detail explanation of each function on this product.



Before using

Please confirm the contents of packing. If something is missing, please contact your nearest distributor.

Names	Quantity
Thermal Image Sensor	1
Custom power/alarm output cable	1
Custom USB cable	1
Universal head	1
Lens cap	1
Connector cap	1
Mounting screw	1
Application software(CD)	1
Instruction manuals (Sensor and Application software) (CD)	
Quick manual (This manual)	1

Adobe Reader is required to read the manual included in the installation CD.

Safety precautions

- The safety precautions shown in this manual indicate the important contents about safety. Please be sure to understand and follow these precautions.
- In this manual, in order to use this product safely, precautions are described with the following indications and marks.

	Warning	This indicates a potentially hazardous situation that, if not avoided, will result in death or serious injury.
	Caution	This indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury or cause property damage.

[Safety precautions]

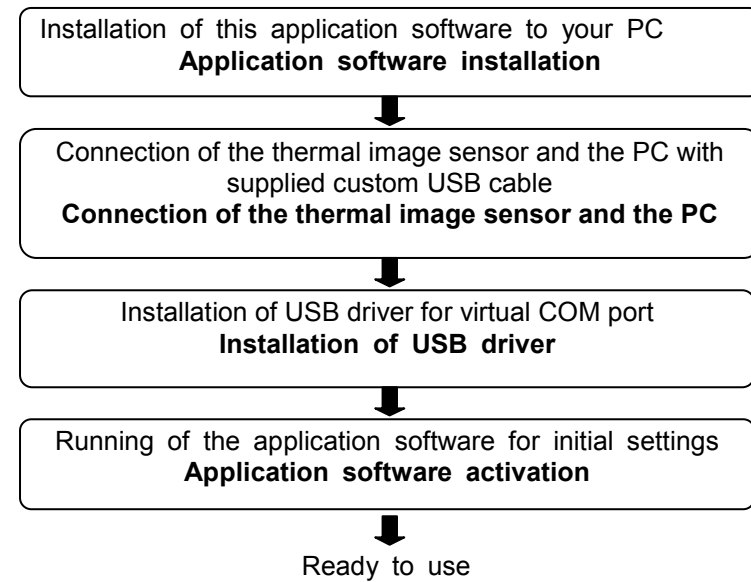
Warning

- Do not operate this product in a place where flammable gas or explosive gas exists. It is extremely dangerous to use this product under such environment.
- In order to prevent an electric shock, make sure that the power source is turned off before connecting any wiring.
- Stop using this product immediately, turn off the power source and contact to your nearest distributor if it is broken or there is smoke/abnormal odor from this product. Otherwise, it may cause fire.
- Do not repair or modify this product. If it is modified, operation of this product will not be guaranteed. It may also cause fire/electric shock.

Caution

- Avoid the use of this product in the following places.
 - A place where ambient temperature varies widely
 - A place where humidity is high
 - A place where rain/water is splashed
 - A place where there are dusts like sand or dirt
 - A place where it is subjected to exposed in scorching heat or direct sunlight
 - A place where it is subjected to radiation
 - A place where strong electric circuit exists beside this product
 - A place where there is any inductive interference
 - A place where there is mechanical vibration/shock

Preparation before using



Installation of application software

The following is the installation procedure of the application software. (The procedure is for Windows XP.)

- Start your PC and launch Windows. Before this application software is installed, close all other applications that are running. If not, the installation may be affected from them.
- Insert the CD with the CHINO application software. Setup Wizard should start automatically, if not, double-click the setup program in the CD to start.

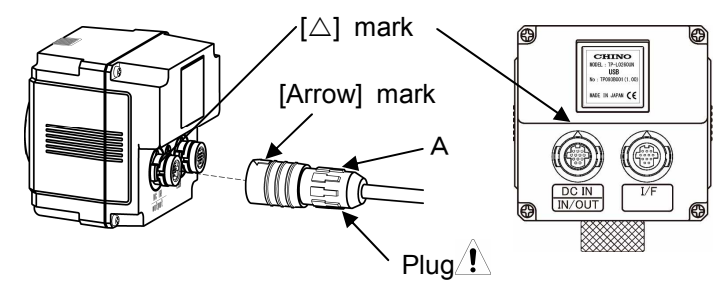


When the OS of your PC is Windows2000, Update Rollup 1 for SP4 and Internet Explorer (IE) 5.01 or later are required.

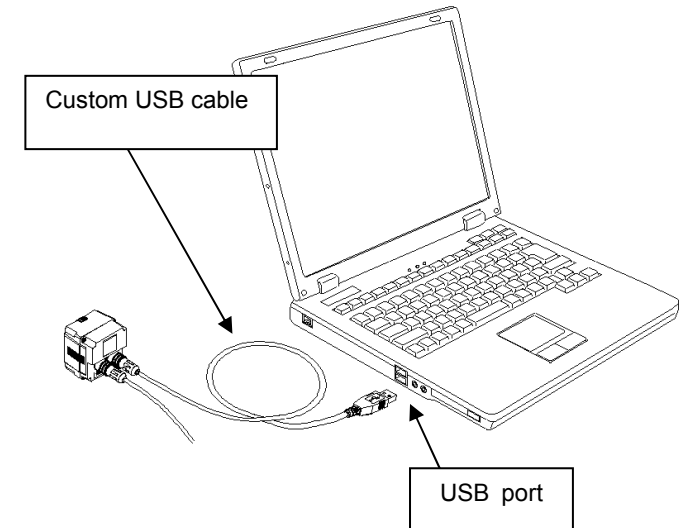
Connection of thermal image sensor and PC

Connect the custom power/alarm output cable and the custom USB cable to the sensor. Connect them to align the marks of [△] back of the sensor and [Arrow] on the cable connectors. To avoid misconnections, the custom USB cable is designed not to connect to the power/alarm output connector of the sensor. Similarly, the custom power/alarm output cable cannot be connected to the I/F connector of the sensor.

The connections are quick-disconnect locking type. Insert the plug until it clicks. To unplug, hold the sliding part (that has the [Arrow] marking on) and pull it outward. If the "A" part is pulled, the plugs may be damaged.



Plug the connector of the custom Network cable to the Ethernet port of a master unit (PC, etc.). And connect the O-tip terminals of the custom power/alarm output cable to the terminal block of 12VDC Power Supply.



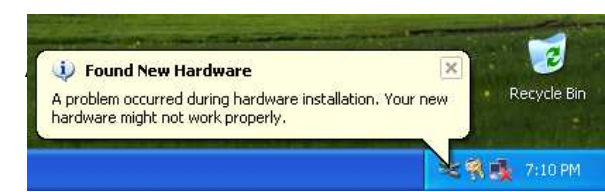
Installation of USB driver

The following procedure will install USB driver for virtual COM port on your PC.

Make sure the sensor is not connected to your PC before proceeding to the following.

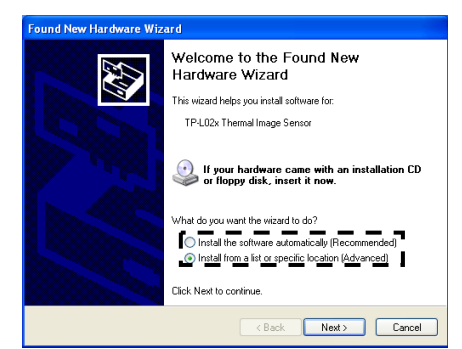
Connect the custom power/alarm output cable to the sensor. Connect them to align the marks of on [△] back of the sensor and [Arrow] of the cable connectors. Turn the power supply on, and connect the USB connector of custom USB cable to your PC.

1. New hardware is detected.



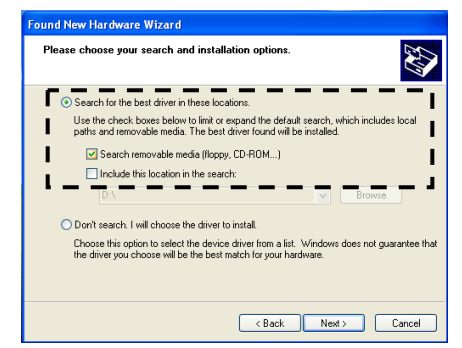
2. Install from specific location

Select "Install from a list or specific location (Advanced)", and click [Next].

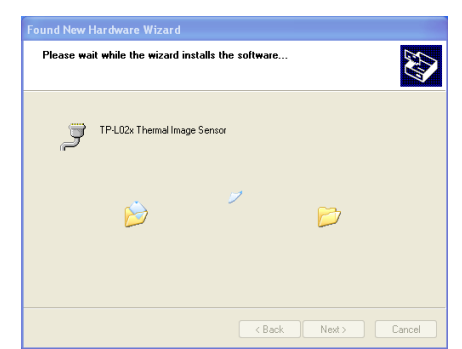


4. Insert the CD in CD-ROM.

Insert the supplied CD in your CD-ROM drive. Select "Search for the best driver in these locations", and check "Search removable media (floppy, CD-ROM)", and click [Next].

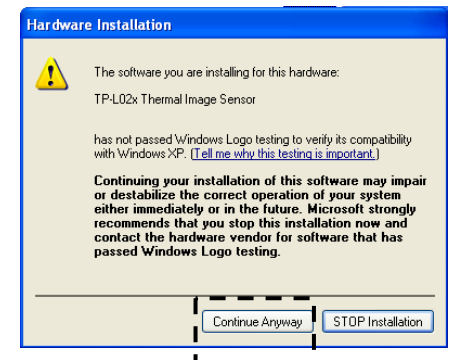


5. Installation of software starts



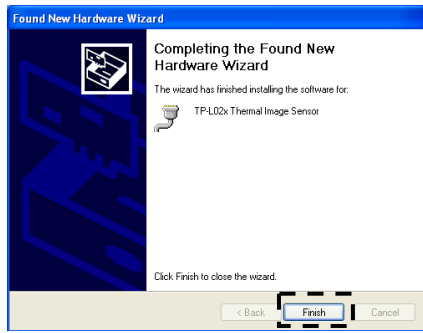
6. Attention to the installation might be displayed.

Attention to the installation might be displayed. Please click [Continue Anyway]



7. The USB driver installation completion.

The USB driver installation is completed.
Click [Finish]



Starting application software

Start the application software installed for the thermal image sensor.

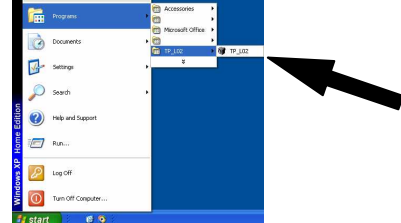
To start the application software, follow the procedure below.

[1]

[Method 1] Double-click the icon on the desktop.



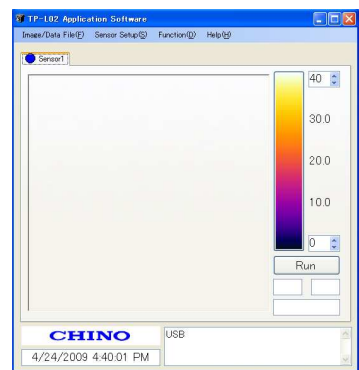
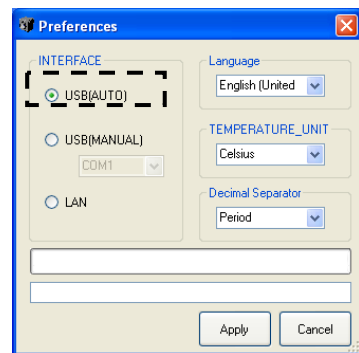
[Method 2] Select from [Start] → [Programs] → [TP_L02].



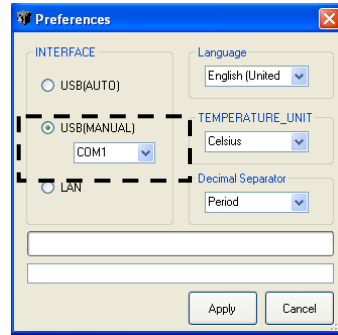
By using either method, the application will start.

[2]

The Preference window will appear. Select [USB (AUTO)] → Click [Apply] button.

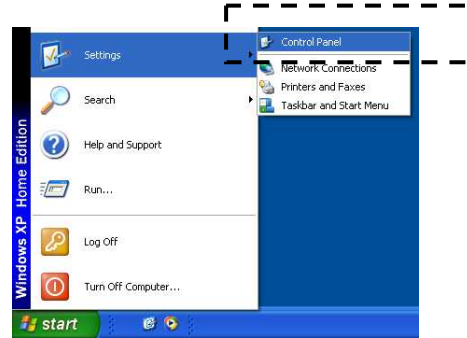


⚠ If the application of [TP_L02] doesn't start properly, quit the application and re-launch it again.
Select [USB (MANUAL)] in the [Preferences] window, choose the COM port number that the USB driver uses, and click [Apply] button.



The following explains how to confirm the number of the COM port used by the USB driver.

[1] Select and open Control panel window.



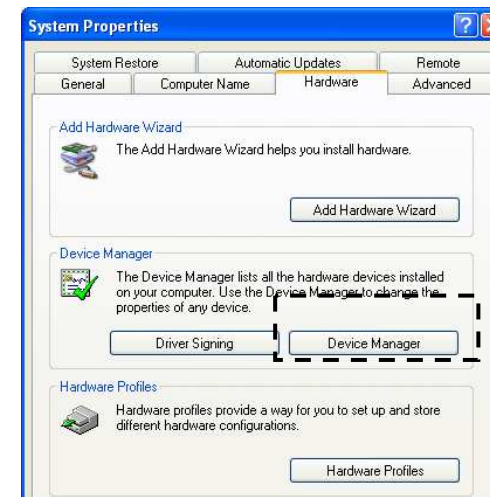
[2] Double click the System icon.



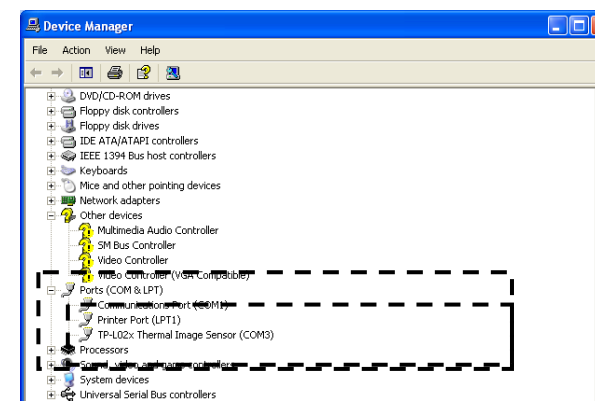
[3] Click Hardware tab in the System Property window.



[4] Click "Device Manager" button and the Device Manager window will appear.



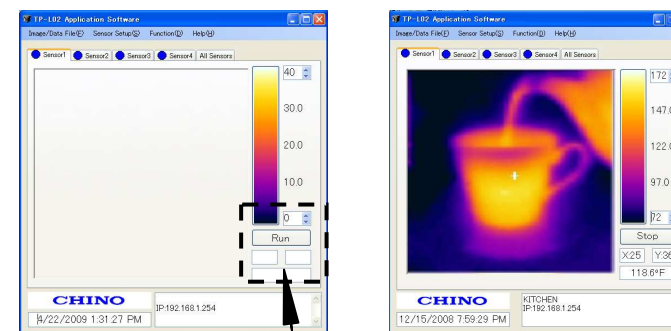
[5] Click the "+" mark next to Port (COM & LPT).



You can find the COM port No. next to "TP-L02x Thermal Image Sensor".
This example shows COM3.

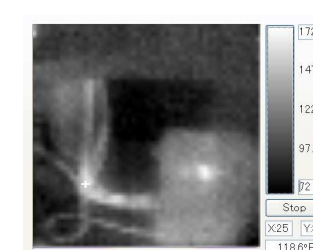
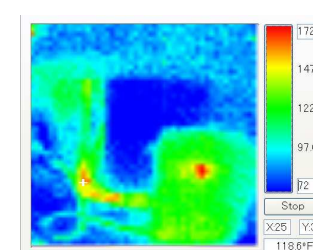
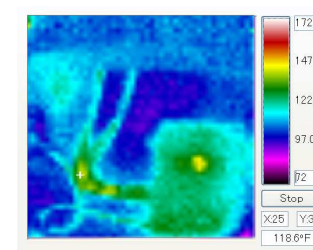
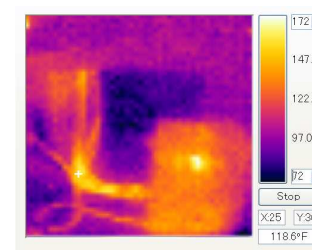
Displaying of thermal image

Start Application Software and the following screen will appear. Click [Run] button on the screen.

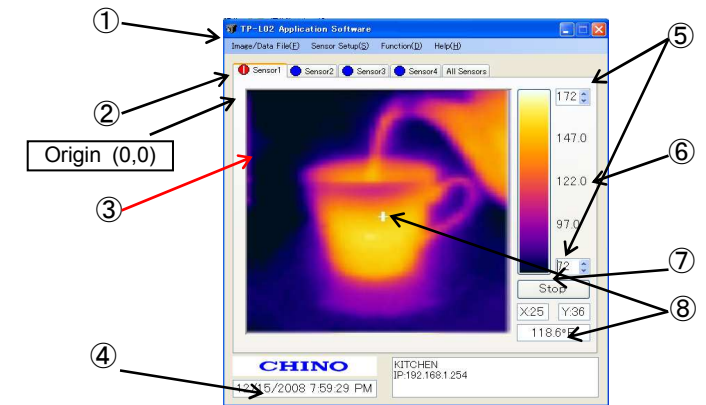


[RUN] button

◆ Color pallet Iron Rainbow Gradation Gray Scale



Screen configuration and explanation



No	名称	説明
①	Main Menu Bar	Various functions offered by this application software can be selected.
②	Indicator for Alarm from Sensor	The red/yellow colors are flashed when the alarm set on the sensor(s) is activated. (The alarms are displayed at the upper side of the tab of sensor.)
③	Thermal Image Screen	Display a 2-dimensional thermal image based on temperature from each pixel in a 48x47 array. The frame rate of the display is 0.5fps. The coordinates of pixels displaying temperature values are (X=0, Y=0) as the origin at the top-left and (X=47, Y=46) at the bottom-right.
④	Current Time	The current time of the PC is displayed.
⑤	Temperature Scale	Maximum and minimum values of the temperature scale being displayed currently. To change values, click the Up/Down arrows mark or enter values from the keyboard after clicking the box.
⑥	Color Palette	The temperature of temperature scale is displayed by 256 colors. By clicking the color palette, the displaying color pattern of thermal image can be changed. The default is the iron. The display pattern can be selected from 4 kinds of iron, rainbow, gradation and gray.
⑦	Run/Stop	Run/Stop for communication.
⑧	Temperature Value and Coordinate of the pixel	The coordinate and temperature value selected by the sensor are displayed.