# Product manual

## (TE-HQ1 User manual)





i3system, Inc.
**Intelligent Image & Information System**

# Contents

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**Intelligent Image & Information System**
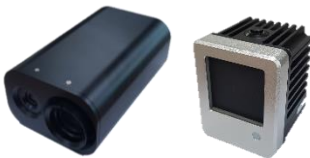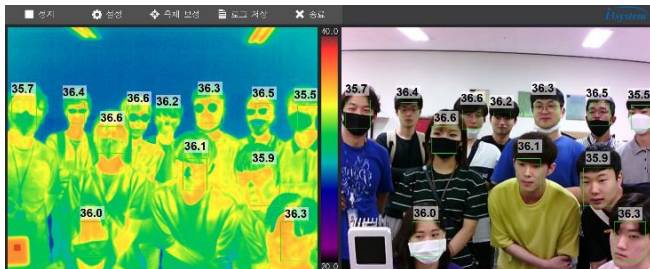
# 1. Product Introduction

## 1.1 Product Configuration
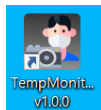
| TE-HQ1 | iPB40 (Portable Blackbody) | Windows S/W |
|--------|----------------------------|-------------|

## 1.2 Camera Components (TE-HQ1)

| 1 | Thermal Camera |
|---|----------------|
| 2 | Visible Camera |
| 3 | USB Port |
| 4 | Mount Hole |

## 1.3 Blackbody Components (iPB40)

| 1 | On/Off |
|---|--------|
| 2 | LED Indicator |
| 3 | USB-C port |
| 4 | DC Adapter |
| 5 | Mount Hole |

**1.4 Set Up**





Warm up          Ready



TempMonit...
v1.0.0        execute

| ▶ Start | ⚙ Setting | ✦ Blackbody | ✐ Reset Log | 🗎 Save Log | ✖ Exit |
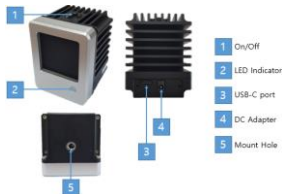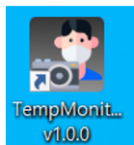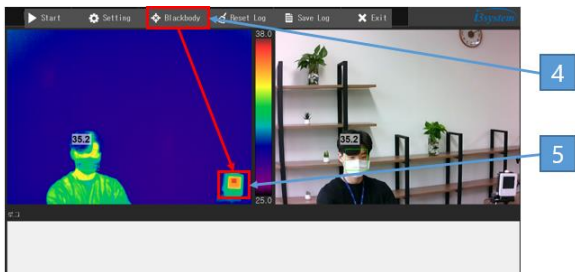
① **Connect TE-HQ1 with USB cable to the PC or Laptop. Please connect the camera after turn on Desktop PC or Laptop. Do not turn on PC or Laptop while camera is still connected.**

② **Set iPB40 on Tripod or Armbar then plug DC 5V adapter. Press On/Off button on iPB40 and wait until LED indicator turn into blue.**

③ **Execute [ TempMornitoring ] software on PC or Laptop.**

④ **Locate iPB40 at the bottom corner on the imaging screen.**

⑤ **Press [ Blackbody ] then click iPB40 on thermal imaging screen.**

   ※ **iPB40 is a standard heat source to calibrate temperature for its accuracy.**

**1.5 Integral System**

① **Image of integral system of TE-HQ1 with iPB40 and Armbar.**



HQ1

iPB40

Tripod

Ball head

Armbody

Armbar
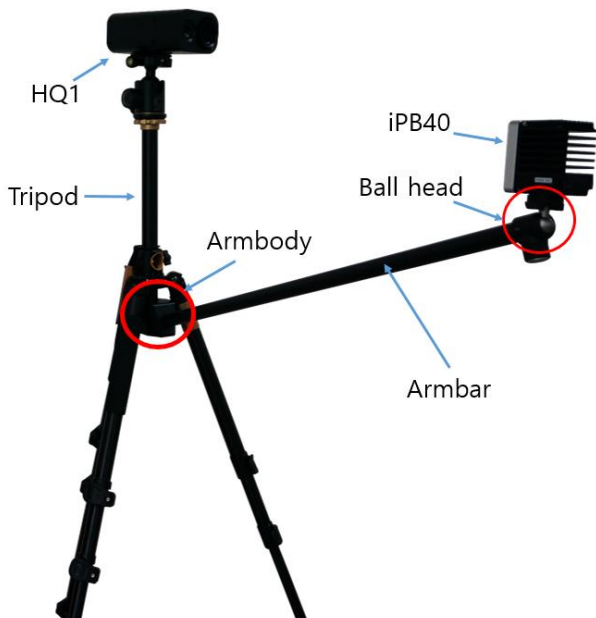
## 1.6 Windows Software
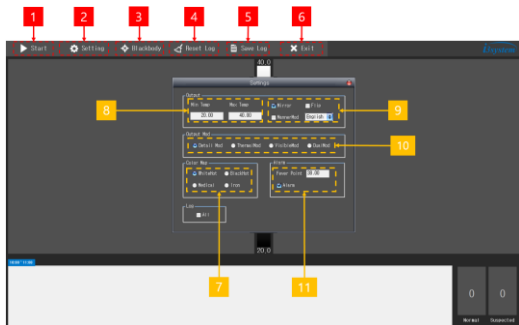


① **Start / Pause**

② **Setting**

③ **Blackbody**

- **Press [Blackbody] then click iPB40 on thermal imaging screen.**

④ **Reset Log : Reset saved events**

⑤ **Save Log : Save captured events in excel**

   **(My computer/Documents/i3system)**

⑥ **Close**

⑦ **Color Map Setting**

| Whitehot | Blackhot |
|----------|----------|
|  |  |
| **Medical** | **Iron** |
|  |  |
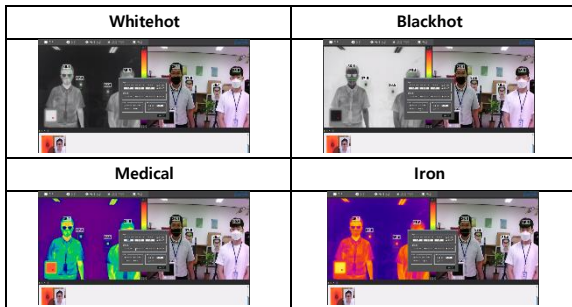
⑧ **Temperature Range Setting**

⑨ **Display & Language Setting**

⑩ **Output Mode**

| Detail mode | Thermal mode |
|-------------|--------------|
|  |  |
| **Visible mode** | **Dual mode** |
|  |  |
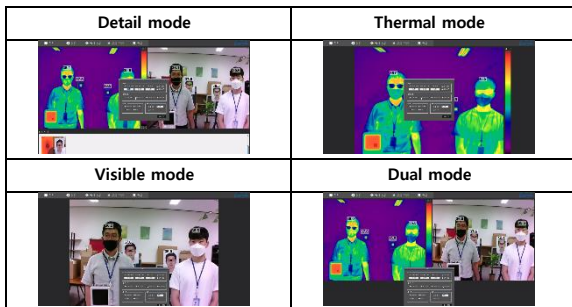
⑪ **Alarm Setting : Set alarm temperature**

⑫ **W/T mode (Walk Through mode)**

　※**W/T Mode off : It checks fever with Skin surface temperature measured.**

　※**W/T Mode on : It checks fever with compensated temperature.**

⑬ **Admin mode (Alt + O)**

　1)**Min Temp : It doesn't show the temperature below Min Temp set**

　2)**Temp Compensation : It compensates temperatures set on measured temperatures.**

**⑭ Dual Screen Setup for HQ1 camera**

## Display

### Rearrange your displays

Select a display below to change the settings for it. Press and hold (or select) a display, then drag to rearrange it.


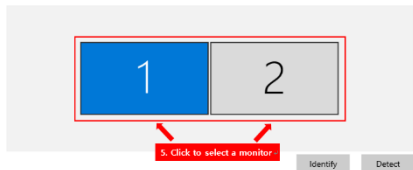
5. Click to select a monitor

Identify    Detect

### Color

Night light
Off
Night light settings

### Windows HD Color

Get a brighter and more vibrant picture for videos, games and apps that support HDR.
Windows HD Color settings

### Scale and layout

Change the size of text, apps, and other items
100% (Recommended)
Advanced scaling settings

Display resolution
5  1280 × 720

Display orientation
Landscape

### Multiple displays

Multiple displays
3  Extend these displays

Make this my main display
4  anced display settings

Graphics settings

1) **Connect your monitor with HDMI cable to PC**

2) **Right-click on your desktop and select "Display".**

3) **Click the Multiple displays – Select Extend these displays**

4) **From the display, select the PC to be your main display, check the box that says "Make this my main display." The other monitor will automatically become the secondary display.**

5) **Select the Secondary display, Click the "Resolution" - Select 1280x720**

6) Check the box that says "Dual monitor"
7) Check the displays are like the picture above

⑮ **When HQ1 shows <35.0 on a person scanned instead of normal temperature.**



  1) Go to setting – Set min temp(red box on the right picture) to 31.00, then Re-scan fever for the person after 30 seconds

**Why <35.0? :** Since Thermal imaging camera scans fever based on skin surface temperature, it would be affected by external environment like cold weather. In this case, it shows this mark for users to check fever again so that HQ1 can catch all of potential cases even in bad environment

## 2. Product Specifications

### 2.1 Specifications

| TE-HQ1 | |
|---|---|
| Detector | Micro-Bolometer (Uncooled) |
| Thermal Resolution, Pixel pitch | 384 x 288, 17μm |
| NETD | 50mK / F#1.0, 300K |
| Temp. Accuracy | **±0.3℃**<br>(distance range 1m~4m) |
| Wavelength | 8 to 14μm (LWIR) |
| Visible Resolution | 1280x720 |
| Time to Image | ≤ 10 sec. |
| Power / Video Output | USB 3.0 (80cm) |
| Framerate | ≤ 30 Hz |
| Size (mm) | 90(W) x 60(H) x 144(D) |
| Weight (g) | < 800 (w/o cable) |
| Operating temp. | 10℃ ~ 45℃ |
| Storage temp. | -10℃ ~ 65℃ |
| Power Consumption | ≤ 5W |

| Focal Length | F# | FOV ( H x V ) |
|---|---|---|
| 9.7mm | f/1.0 | 37.5º±2º x 28.5º±2º |

| iPB40 | |
|---|---|
| Temp. Range | 36.5℃ |
| Temp. Accuracy | ±0.3℃ |
| Effective Area (mm) | 40 x 40 |
| Emissivity | 0.97 ± 0.02 |
| Power | DC adapter (1.5m) |
| Power Supply | +5 Vdc (Max 2A) |
| Power Consumption | < 7.5 W (1.5A) |
| Time to Use | ≤ 1 min. |
| Size (mm) | 52(W) x 66(H) x 54(D) |
| Weight (g) | < 300 (w/o cables) |
| Operating temp. | 10℃ ~ 45℃ |
| Features | LED Indicator<br>Mount hole |

## 2.2 Size
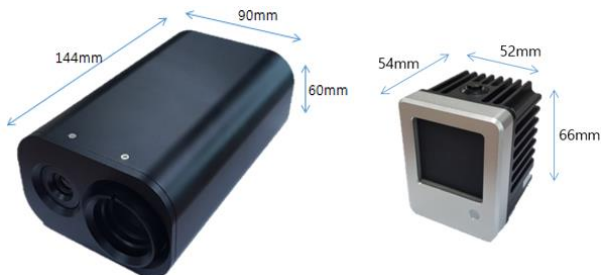


**HQ1 : 90mm x 60mm x 144mm (without lens)**

**iPB40 : 52mm x 66mm x 54mm**

   **\* W x H x D**

## 3. How to Use

### 3.1 At a Glance

① Install TE-HQ1 on Tripod.

② Turn on Windows PC or Laptop.

③ Connect TE-HQ1 to Windows PC or Laptop with USB cable.

④ Stabilize camera for few minutes.

⑤ Tighten the Armbody to the Tripod.

⑥ Assemble Armbar with Armbody and Ball head.

⑦ Install iPB40(Blackbody) on ball head.

⑧ Connect DC adaptor to iPB40 and press [ On/Off ] button and wait until LED indicator turn into blue color (≤1 min.).

⑨ Execute Windows SW then press [Start/Pause] button.

   (※ You can adjust focus with the dent on IR camera lens)

⑩ Locate iPB40 at the bottom corner on thermal imaging screen.

⑪ Press [Blackbody] button then click iPB40 on thermal imaging.

   (※ Extremely IMPORTANT for fever scanning)

⑫ Set temperature range between 20℃ ~ 40℃.

⑬ Adjust position and angle of the camera and tripod for monitoring.

⑭ Recommend to avoid counter-light to the camera.

# 4. Warranty

## 4.1 Manufacturer information

i3system,inc.

435, Expo-ro, Yuseong-gu, Daejeon 34014 Republic of Korea.

Telephone : +82-70-4944-7733~34

Website : www.i3-thrmalexpert.com

E-mail : thermal_expert@i3system.com

## 4.2 Repair Service

Contact Sales Agency in the country where you purchase the product.

## 4.3 Warranty

① All products that were purchased from authorized sales agencies, distributors, or directly from the manufacturer have the same warranty period as descripted on this document.

② Warranty service will be applied to products that were purchased from authorized sales agencies, distributors, or manufacturer. Warranty will be valid only in the country where it was purchased.

③ Warranty service is valid for one year from the purchased date on issued receipt through authorized sales agencies, distributors, or manufacturer. Warranty service will NOT be applied or provided if defects or malfunction are caused by users.

④ The warranty period is one year from the purchasing date, NOT from the repairing date. This does not mean you have another extended period after warranty service.

⑤ Software updates are not applied to this warranty conditions.

⑥ Manufacturer will not provide warranty service for any kinds of damages or malfunction that were caused by users at any circumstances such as modification, remodeling, repairing by non-manufacturer, and inappropriate way of using.

⑦ This document represents the quality assurance agreement between the manufacturer and users, and cannot be modified/revised without any written permission from the manufacturer.

⑧ This warranty follows Consumer Protection Law on e-commerce.

⑨ Warranty service procedures

   A. Any kinds of defects or malfunctions should be noticed to the manufacturer within 14 days after observed in order to receive warranty service. Contact authorized sales agencies or distributors where you purchased before the temporary return for repair. Your purchasing document such as receipt must be submitted for warrant service.

   B. Manufacturer have a right to determine if the warranty service will be provided for the returned products or not. If the manufacturer judge that returned product cannot be covered by warranty service, repairing cost will be charged to the customer.

## 4.4 Copyright and Software Use

① Manufacturer do NOT allow any other course of action with Software such as copy, transfer, modification, reverse analysis, decompiling in electronic, magnetic, and optical formats without prior written authorization by the manufacturer.

② Users must purchase the product to use software legally.

③ It is mandatory to users to follow the software license terms of use. Users are considered as agreed to follow the license terms and conditions.

④ If you find any defects or bug while using software, please contact the manufacturer with detailed explanations.

## 4.5 Precautions

① Do not drop or give a shock/stress to the product that lead to damage.

② Please be cautious with cables from external source when connecting to the product. Manufacturer is not responsible for any kinds of malfunction or damages caused by cables that were not included in the package.

③ The lens on camera is fragile, please handle carefully.

④ Since the camera lens are coated on the front and back, please handle it carefully to avoid any damages to the lens.

⑤ Lens of TE-HQ1 is NOT exchangeable.

⑥ If the infrared sensor is contaminated, image quality will be deteriorated, or the product might not work properly.

⑦ Please be careful not to get injured while using accessories.

⑧ Do not expose the camera directly to any high-temperature energy source such as sun, fire, and laser. Image quality may be deteriorated, and infrared sensor will be damaged.

⑨ Please store and use the product within its operating temperature. If not, infrared sensor and electronic components will be damaged.

⑩ This product is not waterproof and dust-proof, please do not expose it to water, rain, and dust.

⑪ Do not use air compressor for cleaning of the product.

⑫ **Please connect only 5V DC power supply through USB Connector. Otherwise, the product will be damaged.**

## 4.6 Manual Updates

① **This document can be updated without any prior notice. You can find updated manual on the website (www.i3-thermalexpert.com).**

# Warranty

We assure that this product has passed the Quality Control and Assessment at i3system, Inc.

Please make sure to describe purchase date in below table.

| Product Name | TE-HQ1 |
|---|---|
| Serial number | |
| Warranty period | 1 year |
| Purchase Date | 20        (Year)/        (Month)/        (Day) |
| Name of Seller | |

Customer will be paying for the repairing cost after free warranty period.

Free warranty repairing service may not provide in cases of ;

 - Product is disassembled, repaired, modified, or remodeled at any places other than manufacture's facility.

 - Damage or malfunction caused by inappropriate use or negligence by users.

 - Intentional damage or malfunction by users.

 - Damage or malfunction caused by not following precaution list above.

 - Damage or malfunction caused by natural disaster.