# IR203 Thermal Camera

## For Apple iOS Devices

## Instruction Manual


Perfect Prime

www.perfectprime.com

# Contents

# 1. Overview

PerfectPrime provides you a way to sense the invisible, measure the unfathomable, and analyze the improbable by providing thermal image and temperature measurements in a new way. This Guide provides you all the information you will need to operate the IR203.


The IR203 is powered by the host device, no charging or battery is needed

# 2. App Download

Scan the QR code below or enter the URL (https://apps.apple.com/tn/app/senxorproviewer/id1541291250) to download the "SenXorPro-Viewer" application and install it (only supports iOS Phone system).

QR Code

App

# 3. Product Specifications

## 3.1. General

| | |
|---|---|
| Resolution | 80 × 62 |
| FOV (angles in degrees) | 44.2° (H), 34.5° (V) |
| Maximum frame rate | 15 FPS |
| Max scene temperature range | -40°C to 1000°C |
| NETD | 150mK |
| Accuracy | up to +/-1°C |

## 3.2. Environmental

| | |
|---|---|
| Operating temperature | -20 - 85°C |
| Storage temperature | -40 - 85°C |

## 3.3. Interface

| | |
|---|---|
| Power Consumption | 300mW |
| iOS Dongle connector | Lightning |
| iOS Dongle size | 56mm x 28mm x 14mm |

## 3.4. Mechanical

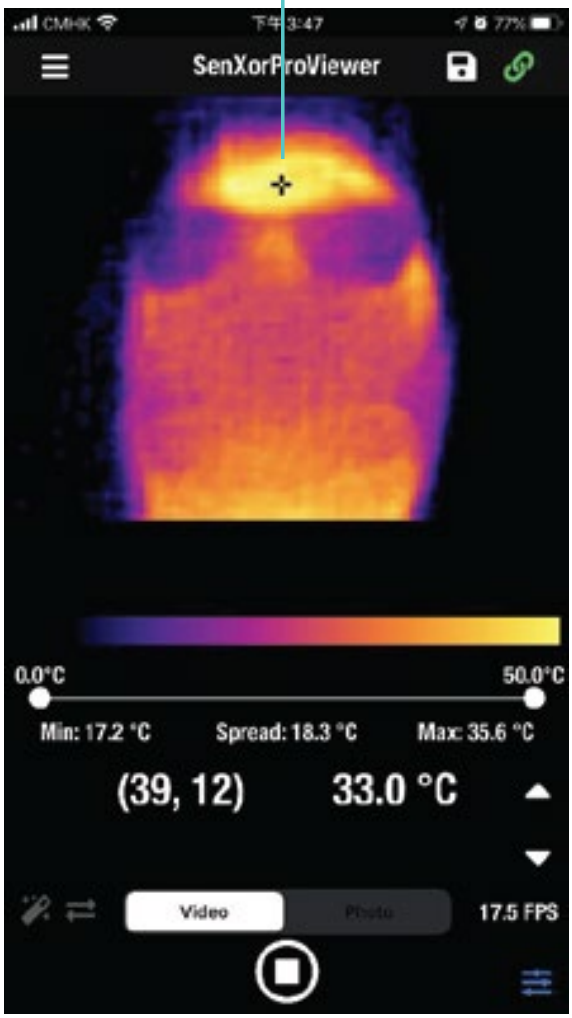
| | |
|---|---|
| iOS Dongle weight | 9.3 g |

# 4. Symbol Definition

You can download and install the Meridian SenXorProViewer App on Apple App Store. You need to install the App before you use the IR203.


1. Settings
2. Contour Detector Mean temperature
3. Contour Detector Selected contour
4. Color Palette temperature adjustments
5. Min/Max temperature And spread
6. Flip Image
7. Auto Range (temperature)
8. Start/Stop Capture
9. Image adjustments
10. FPS Up/Down Display
11. Selected point (x,y) temperature
12. Current color palette
13. Save Video Button
14. Connection Status (red not connected Green connected)

# 5. Getting Temperature of a Point




The SenXorProViewer App allows the user to get the temperature of a particular point by touching the location on the thermal picture. The crosshair on the thermal picture indicates the selected X Y coordinates and the corresponding temperature is shown on the screen

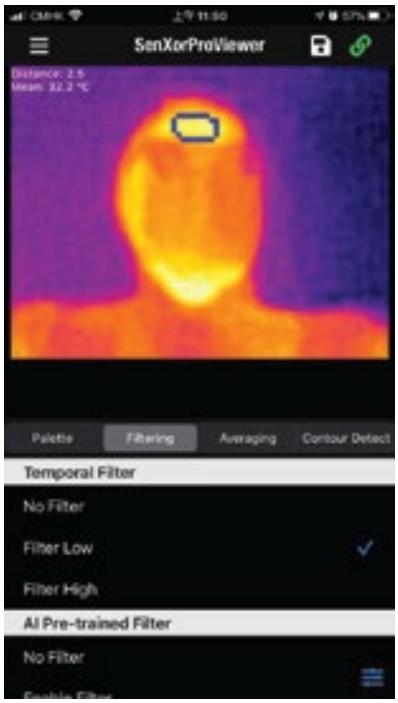
# 6. Choose Color Palette

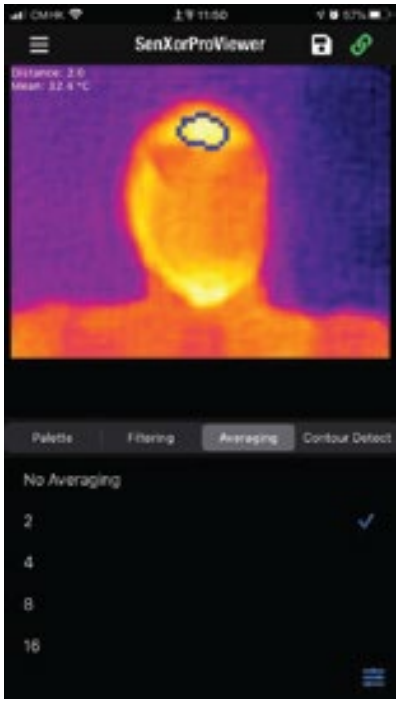

Choose palette

The SenXorProViewer App allows the user to choose preset color palettes to map temperature values to different colors, include grayscale, colors and combinations.

16 preset color palettes are provided for image visualization, temperature data is not affected. Tap the palette list, select one of the palettes on the drop-down list and result will be applied to the new thermal image.

# 7. Enable Filters for Better Picture Quality



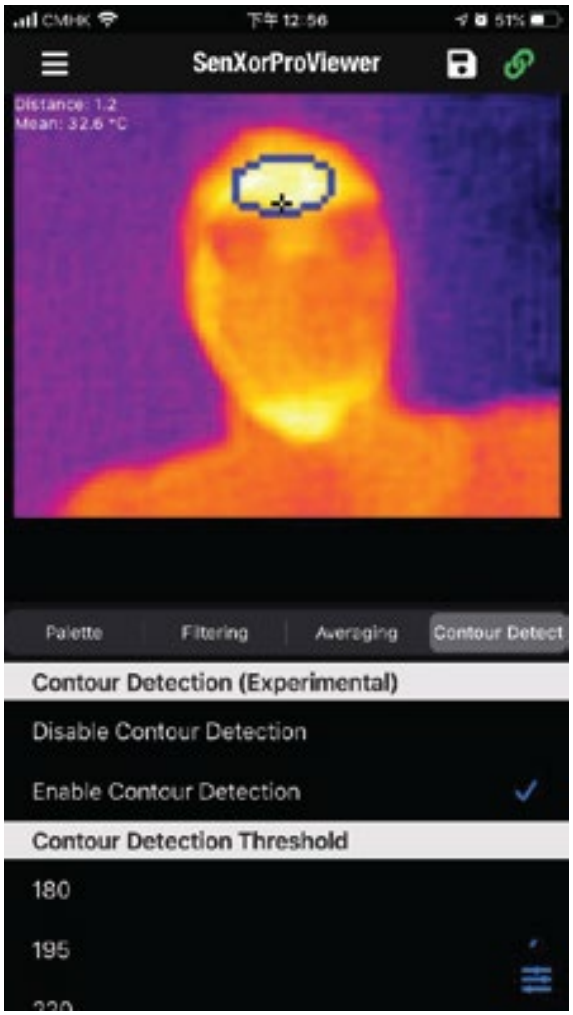

The SenXorProViewer App supports the following types of image filtering that serve to improve the intrinsic noise of the detector:

Temporal filters -- these work in reducing the temporal fluctuation of individual detector pixels from one thermal frame to the next:

- Simple rolling average -- accessed via the Averaging button, with recommended values of 2 or 4 (number of frames over which the averaging is performed.
- Predictive temporal filter – access via the Temporal Filter. The strength of which can be selected between low and high, depending on the dynamics of the scene. For static scenes, high strength is recommended, while for scenes with motion, low strength is recommended to avoid ghosting artefacts in the video.

Spatial filter – access via the AI Pre-trained Filter. This filter works by reducing the noise within an individual frame by considering the relation between the values of individual pixels within the frame. It is enabled by default and works best in conjunction with the temporal filters.

# 8. Contour Detection (Beta, Experimental)




The Contour Detection feature is for DEMO purpose only, not for medical advice or usage.

The SenXorProViewer App supports an indicative contour detection as an experimental feature. The function is based on the detection of the hottest region within the captured image-- then display the mean of the hottest region.

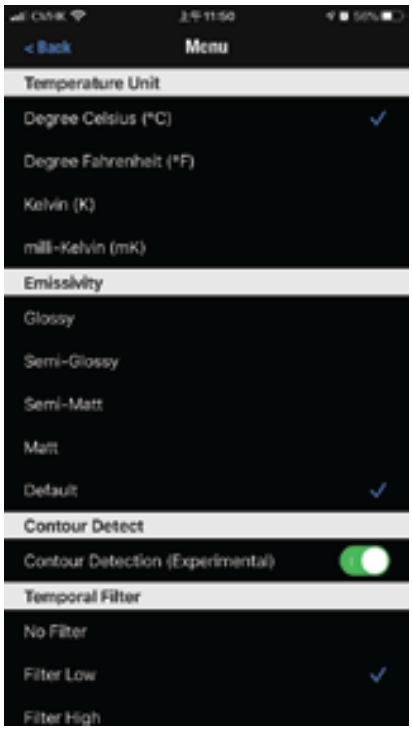
The SenXorProViewer App shows the contour of the hottest spot that is automatically detected. Since the model involves some parameters, the user has control over them to fine tune the threshold and obtain a more stable readout.

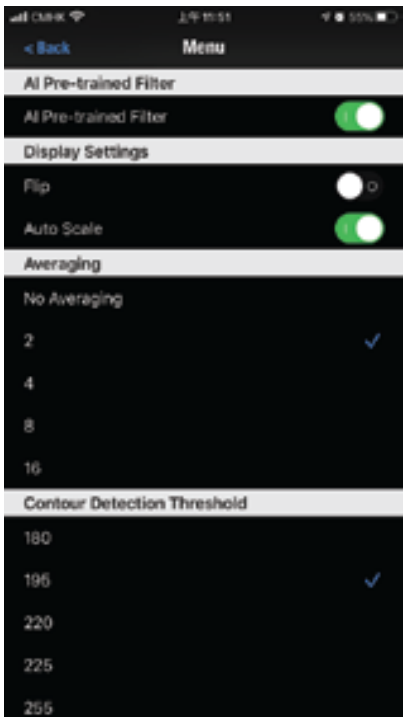
The model is intended for distance between the camera and the subject in the range of 0.7 to 2 m.

# 9. Menu Settings

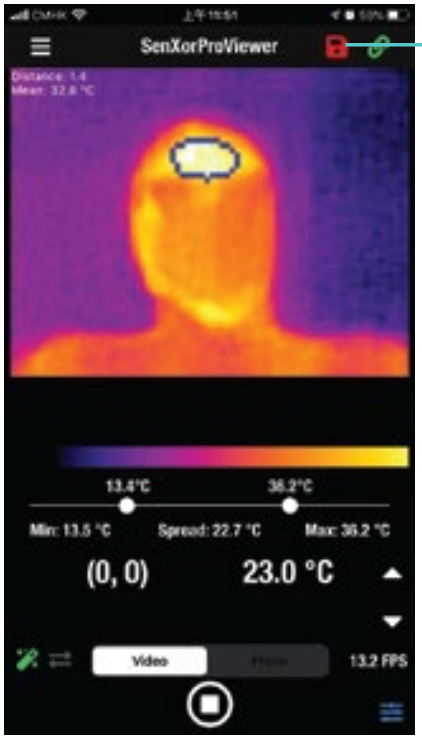
The setting of Filters, Contour Detection, Temperature Unit and Emissivity and Language Selection can be found in the menu. Each setting is saved after change and will be kept even the SenXorProViewer App is restarted.

Emissivity is a property of the material of each individual object in the field of view. It quantifies the ability of an objects surface to emit long-wave infrared radiation and strongly affects the temperature readout from the IR203. By default, the emissivity is set to 0.95 which is a representative value for many common objects with matt surface, as well as the human skin (in the range of 0.95 - 0.97). Note that metals tend to have a dramatically lower emissivity as low as 0.1, and it trongly depends on their surface processing. The user can adjust the emissivity according to the exact object of observation.




# 10. Recording Functions

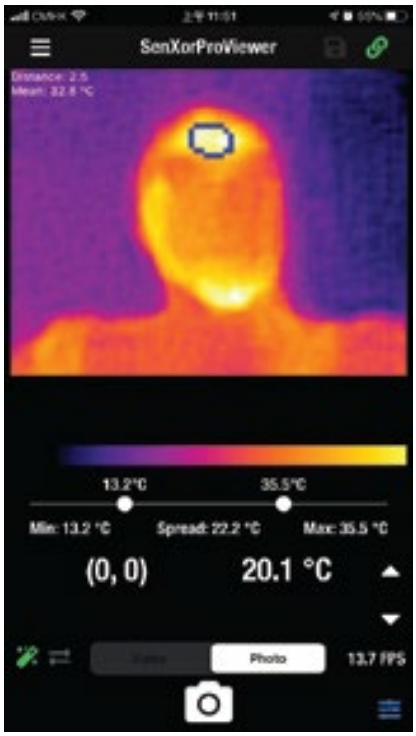



Save Video Button

Thermal video can be stored to the camera roll by pressing the save button on the video streaming screen.

To capture thermal photos, switch to photo mode

and press the camera button. The photos captured are stored in the camera roll.




**Note:** The SenXorProViewer App does not collect or save any thermal image or video unless the user selects to save a picture or video to the device.

# CUSTOMER SERVICE INQUIRIES

Your emails are important to us so we strive to reply all inquiries and emails within **24 hours**. In exceptional cases, we may require more time to respond.
Thank you for your understanding.

For more information about our products and services, please send us an email:
**cs@perfectprime.com**

For B2B or project-based application, please send an email:
**sales@perfectprime.com**

FOR MORE INFORMATION ABOUT PERFECTPRIME PLEASE VISIT OUR ABOUT US PAGE AND FEEL FREE TO BROWSE.

Scan QR Code for the Youtube channel for video manual

Scan QR Code for the Product Manual page (Multi-Language available for certain products)

Scan QR Code to register the product for 1 year warranty

Tyche Smart Limited | Retailer
cs@perfectprime.com | Email
2nd Floor, 107 Charterhouse Street,
EC1M 6HW, London,
England UNITED KINGDOM | Address
+44 203 7695377 | Telephone

CE RoHS