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UNI-T®



UTi261M

手机热像仪说明书

Thermal Imager for Smart Phone

P/N:110401111841X

序言

尊敬的用户：

您好！感谢您选购全新的UTi261M红外热成像手机模组，为了正确使用本产品，请您在使用之前仔细阅读本说明书全文，特别是有关“安全注意事项”的部分。

如果您已经阅读完本说明书全文，建议您将此说明书妥善保管，与模组一同放置或者放在您随时可以查阅的地方，以便在将来的使用过程中查阅。

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1. 性能指标

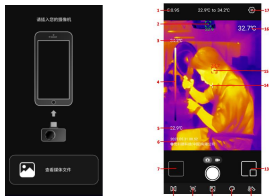
红外参数	
探测器类型	非制冷红外探测器
红外分辨率	256 x 192
红外响应波段	7.5~14μm
像元尺寸	12μm
帧频	25Hz
热灵敏度/NETD	<50mK
调焦方式	手动调焦
镜头尺寸	21.5mm
热成像镜头焦距	4.0mm
光圈	F1.0
视场角	44.92°H x 33.42°V
空间分辨率/IFOV	3.0mrad
测温功能	
测温范围	-20℃~450℃
测温精度	±2℃/±2%（取最大值，0℃~450℃，常温25℃）
测温分辨率	0.1℃
建议测温距离	0.4m

测温单位	°C/°F
测温显示	3个测温点（中心点、最高温、最低温）
温度分析	3点、3矩形、3线
等温线	手动/自动
高低温追踪	√
高低温报警	屏幕图标报警
测温参数	发射率、环境温度、距离
图像显示	
色板	红热、高对比度彩虹、彩虹、熔岩、铁红、黑热、白热
图像模式	热成像、融合、画中画
图像格式	JPG
视频格式	MP4
系统功能	
数据接口	Type-C USB
拍照	√
视频录像	√
语言	简体中文、英语
手机APP	Android

一般规范	
工作温度	-10°C~50°C
存储温度	-20°C~60°C
工作湿度	10%~95%RH 非冷凝
跌落防护	1m
认证	CE,FCC,UKCA,ROHS
产品标配	Type-C延长线、挂绳、说明书、布包


2. 显示说明

打开APP 未插入设备时，显示如左下图页面，此时可以查看媒体文件。
插入设备后初始状态如右下图所示（以工业测温模式为例）：







序号	描述	序号	描述
1	当前发射率	10	测温分析工具
2	当前温度最小点	11	色板
3	温度上限	12	等温工具
4	温度分布色条	13	画中画
5	温度下限	14	中心点
6	日期时间/定位显示	15	当前温度最大值
7	相册	16	中心点温度值
8	镜像切换	17	设置
9	融合		

3. 相册

进入相册页面，可以对图片/视频进行查看，点击 ，可以对所需要的图片/视频进行选取、分享和删除操作。











点击图片，进入图片查看界面，可以对图片进行预览、信息查看、分享、删除、画中画、融合、编辑、保存等操作；点击视频，可以对视频进行暂停/播放（播放时可拖动播放进度条来进行视频的快进和后退）、信息查看、分享、删除等操作。

若要操作的图片在拍摄时打开了画中画或融合，在查看该图片时，点击画中画  或融合  图标，可显示/隐藏图片的画中画或融合状态，修改后点击保存图标 ，即可保存图片状态。若要操作的图片在拍摄时没有打开画中画或融合，点击画中画或融合的图标，会提示“没有可见光！”。

点击编辑图标 ，进入图片编辑状态，可以对当前图片进行旋转、修改测温工具、画笔标记、修改等温工具的操作。

4. 主页面功能

- 运行状态，设备会根据使用环境变化或测量目标温度不同，自动进行快门校正；
- 长按左上角显示发射率的位置，可以进行手动打快门；
- 当目标物体因改变了测量距离而导致图像不清晰时，可以手动扭动调节模组的焦距来使画面清晰。

图标	功能描述
	红外光部分会进行镜像切换。
	进入融合模式，可以调节可见光与红外光的融合比例。
	进入融合模式后选中此图标后，可以手动调节可见光与热成像的融合情况。
	<ol style="list-style-type: none"> 1. 可以添加点、线、矩形等测温分析对象，并对其进行移动/拉伸/删除的操作，每类测温分析工具最多只能添加3个； 2. 添加后，在主界面下方会展开一个半透明的信息栏，用于显示添加的分析对象的温度信息； 3. 点击删除可以删除所有已添加的测温分析工具，若要删除单个测温分析工具，拖动测温分析工具到屏幕外即可。
	有铁红、彩虹、白热、红热、黑热、熔岩、高对比彩虹7种色板可更改。
	可更改等温工具的不同模式，包括比例等温、向下等温、向上等温、区间等温、手动等温。
	打开与关闭画中画的开关。
	<ol style="list-style-type: none"> 1. 点击拍照 /录像  图标，可实现拍照/录像功能的切换； 2. 录制视频时长不能少于3秒。

5. 设置

在设置界面，可以进行语言选择、测温模式、温度单位、全图显示、高低温报警、发射率、测温距离(M)、环境温度、音频设置、前置摄像头、帮助、关于等功能的操作。

一级菜单	二级菜单
语言选择	默认/中文/English
测温模式	工业测温模式/体温筛查模式
温度单位	°C/°F
全图显示	打开/关闭最高温标记、最低温标记、中心点标记（体温筛查模式不显示中心点，在右上角显示当温度最大值）；显示/隐藏色条、日期、定位（定位打开后，同时需要在有网络的情况下才会显示）
高低温报警	可打开或关闭高低温报警（开关）打开报警开关后可调节报警值：温度预警最大值、温度预警最小值
发射率	0.01~1.00可调（体温筛查模式发射率固定为0.98）
测温距离(M)	0.05~5.00可调
环境温度	0~50°C（32~122°F）可调
音频设置	可选择打开/关闭录制视频的声音
前置摄像头	打开前置摄像头的开关后，可见光会转换到前置状态
帮助	可查看产品说明书
关于	可查看当前APP版本、(设备)型号、《用户协议和隐私条款》

6. 注意事项

- 请勿将有溶解性或类似的液体用于设备，这可能会导致设备的损坏。
- 在使用设备时请尽量保持稳定，避免剧烈晃动。
- 请勿暴力拆卸产品，以免造成不可逆的损坏。
- 请避免硬物接触设备的镜头，以免对镜头造成损伤。
- 请勿将产品镜头指向高强度能量源（包括太阳、激光发射设备以及这些设备的反射源），否则可能对产品的测温精度产生不利影响，并可能损害或永久损坏产品的红外探测器。
- 请在不使用时，将产品装入便携盒中。
- 该产品介绍所使用的商品图文信息，实际产品因批次不同，材质和细节上偶有微小差异，敬请谅解，请以收到具体实物为准。
- 页面中提供的实验数据为理论值，均来自优利德公司内部实验室，仅供参考；客户不可将其作为下单购物的参考依据。特此说明！如有任何疑问可联系客服，进行详细咨询，谢谢！

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Preface

Thank you for purchasing this brand new UTi261M smartphone thermal camera module. In order to use this product safely and correctly, please read this manual thoroughly, especially the CAUTIONS part.

After reading this manual, it is recommended to keep the manual at an easily accessible place, preferably close to the device, for future reference.

Limited Warranty and Liability

Uni-Trend guarantees that the product is free from any defect in material and workmanship within one year from the purchase date. This warranty does not apply to damages caused by accident, negligence, misuse, modification, contamination and improper handling. The dealer shall not be entitled to give any other warranty on behalf of Uni-Trend. If you need warranty service within the warranty period, please contact your seller directly.

This warranty is the only compensation you can obtain. Uni-Trend will not be responsible for any special, indirect, incidental or subsequent damage or loss caused by any reason or speculation. As some areas or countries do not allow limitations on implied warranties and incidental or subsequent damage, the above limitation of liability and stipulation may not apply to you.

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1. Specifications

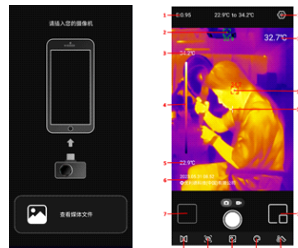
Infrared parameters	
Detector type	Uncooled infrared focal plane array (UFPA)
IR resolution	256 x 192
Spectral range	7.5~14μm
Pixel size	12μm
Frame rate	25Hz
Thermal sensitivity (NETD)	<50mK
Focus	Manual focus
Lens size	21.5mm
Lens focal length	4.0mm
Aperture	F1.0
Field of view (FOV)	44.92°H x 33.42°V
Spatial resolution (IFOV)	3.0mrad
Temperature measurement functions	
Temperature measurement range	-20°C~450°C
Accuracy	±2°C/±2% whichever is greater, 0°C~450°C, room temperature 25°C
Resolution	0.1°C

Optimal measurement distance	0.4m
Temperature unit	°C/°F
Temperature mark	3 spots (center spot, Hi/Lo spot)
On screen analyzer	3 Points/3 Lines/3 Rectangles
Isotherm	Manual/Auto
Auto tracking for Hi/Lo spots	√
Hi/Lo temperature alert	LCD animation
Temperature measurement parameters	Emissivity, Ambient temperature, Distance
Image display	
Color palettes	Red Hot, Rainbow HC, Rainbow, Lava, Ironbow, Black Hot, White Hot
Image modes	Thermal, Fusion, PIP
Image format	JPG
Video format	MP4
System functions	
Data interface	Type-C USB
Photo capturing	√
Video recording	√

Languages	English/Chinese
Smartphone APP	Android
General characteristics	
Operating temperature	-10°C~50°C
Storage temperature	-20°C~60°C
Operating humidity	10%~95%RH, non-condensing
Drop proof	1m
Certificates	CE,FCC,UKCA,ROHS
Standard accessories	Type-C extension cable, hand strap, user manual, pouch


2. Screen Indicators/Icons

Enter the mobile APP. If the thermal camera module (the Device) is not detected, an interface will appear, as shown on the bottom left. Users can view the media files at this point. The initial interface after inserting the device is shown in the lower right figure (taking the industrial mode as an example).







No.	Description	No.	Description
1	Emissivity	10	On screen analyzer
2	Lo spot	11	Color palettes
3	Upper limit	12	Isotherm
4	Temp. bar	13	PIP
5	Lower limit	14	Center spot
6	Date and time/Location	15	Hi spot
7	Album	16	Center spot value
8	Mirroring	17	Settings
9	Fusion		

3. Album

On the initial page, tap "Album" (NO.7 in Screen Indicators/Icons) to view the photos/videos. Tap the icon  to select/share/delete photos/videos.

Tap a photo to enter an interface where users can preview/share/delete/edit/save this photo, and view its PIP/fusion mode or detailed information. Tap a video to pause/play (When playing a video, users can drag the progress bar to fast forward and backward it)/share/delete this video or view its detailed information.











If the PIP or fusion mode is enabled when capturing a photo, tap the icon  or  when viewing this photo to display/hide its PIP or fusion status. Tap the icon  to save the status after modifying. If the PIP or fusion mode is not enabled when capturing a photo, when users tap the PIP or fusion icon while viewing this photo, a prompt "No visible light!" will pop up.

In the photo viewing interface, tap the icon  to edit the current photo. The specific editing operations are: rotate, add on screen analyzers, brush, and isotherm.

4. Main Interface

- When the device is on, the shutter will automatically activate for calibration according to ambient changes or the different temperature of measured target.
- Long press the position in the upper left corner where the emissivity is displayed to manually activate the shutter.

- When the image is not clear because the measurement distance is changed, users can adjust the focal length manually to solve the problem.

Icon	Description
	The infrared image will be mirrored.
	Enter the fusion mode. The fusion ratio of visible light and infrared light can be adjusted.
	Tap this icon in the fusion mode to manually adjust the fusion ratio.
	<ol style="list-style-type: none"> 1. Users can add/move/stretch/delete on screen analyzers (line/rectangle/point). Up to 3 analyzers can be added for each type. 2. After adding an on screen analyzer, a semi-transparent information bar will show at the bottom of the main interface to display the temperature information of the added analyzer. 3. Tap the delete icon to delete all added analyzers. To delete a single analyzer, drag the analyzer to the edge until it disappears.
	7 optional palettes: Ironbow, Rainbow, White Hot, Red Hot, Black Hot, Lava, Rainbow HC.
	Optional isotherm tools: Ratio, Below, Above, Section and Manual.
	Enable/disable the PIP window.
	<ol style="list-style-type: none"> 1. Tap  /  to switch between Photo Capturing and Video Recording modes. 2. The duration of the recorded video should not be less than 3 seconds.

5. Settings

In the setting interface, users can perform the following functions.

Main menu	Submenu
Languages	Default/English/Chinese
Temperature measurement modes	Industry/human body
Temperature units	°C/°F
Full image display	Turn on/off the Hi spot/Lo spot/Center spot (the center spot will not be displayed in the human body mode and the Hi spot value will show in the upper right corner). Display/hide isotherm, date and location (The location is displayed when the function is enabled and the network is connected).
Hi/Lo temperature alarm	The Hi/Lo alert can be turned on or off. After turning on the alert, the Hi/Lo value can be adjusted.
Emissivity	0.01~1.00 adjustable (the emissivity in the human body mode is 0.98)
Measurement distance (m)	0.05~5.00 adjustable
Ambient temperature	0~50°C (32~122°F) adjustable
Sound	Users can select whether to record sound during video recording.
Front-facing camera	Enable the front-facing visual camera
Help	View the user manual
About	Display the current APP version, device model and User Agreement and Privacy Policy

6. Cautions

- Do not use soluble liquids on the device, as it may cause damage.
- When using the device, please try to keep it stable and avoid violent shaking.
- Please do not violently disassemble the product to avoid irreversible damage.
- Please avoid hard objects contacting the device lens.
- Please do not point the product lens at high-intensity energy sources (including the sun, laser emission equipment and the reflection sources of these equipment), otherwise, it may affect the measurement accuracy, and damage the infrared detector of the product.
- Please put the product into the carrying box when it is not used.
- Due to different batches, the materials and details of actual products may be slightly different from the graphic information. Please refer to the goods received.
- The experimental data in the manual are theoretical values and all from Uni-Trend's internal laboratories, for reference only. Customers cannot use them as bases for placing orders. If users have any questions, please contact customer service.

7. FCC Compliance statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation

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Made in China