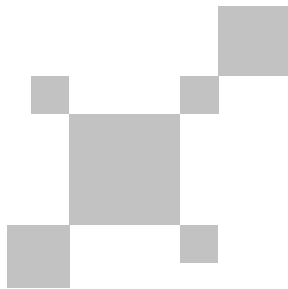


UNI-T®



UTi256M/UTi260M
手机热像仪说明书
Thermal Imager for Smart Phone

P/N:110401111276X

UTi256M/UTi260M
手机热像仪说明书
(4p-16p)

UTi256M/UTi260M
Thermal Imager for Smart Phone
User Manual
(18p-30p)

序言

尊敬的用户：

您好！感谢您选购全新的UTi256M/UTi260M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，与热像仪配件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

UTi256M/UTi260M

传感器	非制冷氧化钒
发射率	0.95（默认） 0.01~1.00
热成像像素	256*192（49152）
热成像像素大小	12μm
红外光谱带宽	8~14μm
伪彩（色板）	铁红、彩虹、黑热、白热、红热、熔岩、高对比度彩虹
视场角（热成像）	56.0°（H）×42.2°（V）
IFOV	3.8mrad
镜头焦距	3.2mm
调焦模式	定焦（免调焦）
灵敏度	<50mK@25℃
帧频率	25Hz
温度分析	点、线、矩形（每类最多添加3个）
测温显示	中心点温度、高/低温追踪
测温单位	摄氏度（默认）、华氏度
高低温报警	有
图像模式	热成像、融合（与手机端数码相机图像融合）、画中画
图像抓取模式	拍照、录像
图像保存格式	JPG
图像浏览	可旋转、涂鸦标记、温度分析、删除、保存
图像存储	手机端存储
设备通讯	Type-C USB（公头）
语言	中文/English

手机APP	有(支持Google Play)
手机系统	Android 6.0以上
认证	FCC CE (EN61326-1)
工作温度	-10°C~50°C (14°F~122°F)
存储温度	-20°C~60°C (-4°F~140°F)
工作湿度	10%~95%RH (非冷凝)
工作功耗	<350mW (常温 典型值)
跌落	1米

UTi260M

测温档位	低温档 (-20°C~150°C) 高温档 (0°C~550°C) (自动切换)
测温模式	工业测温 人体测温
测温精度	工业测温: 0°C~550°C, ±2°C/±2% (取大值, 环境温度25°C)
	人体测温: 30°C~40°C, ±0.5°C (常温无风环境)
测温范围	-20°C~550°C (-4°F~1022°F)

UTi256M

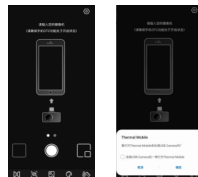
测温模式	工业测温
测温精度	0°C~200°C, ±2°C/±2% (取大值, 环境温度25°C)
测温范围	-20°C~200°C (-4°F~392°F)

2. 连接说明

打开APP, 若未检测到设备时, 则弹出“选择型号”的界面。

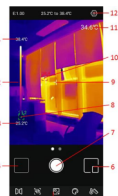


根据设备, 选择设备型号"UTi260M/UTi256M"后, 进入如下图页面, 此时可进入"相册"、"设置"页面, 其余功能不可用。插入设备, 弹出连接提示, 点击确定连接设备。




3. 显示说明

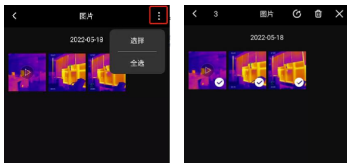
设备启动后初始状态如下图所示, 色标默认为铁红, 主页面分为以下部分。



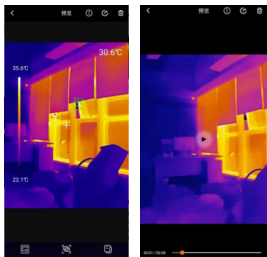
序号	描述	序号	描述
1	温度上限	7	拍照/录像开始/录像结束
2	温度分布色条	8	当前温度最小点
3	温度下限	9	中心点
4	相册	10	当前温度最大点
5	菜单栏	11	当前中心点温度值
6	画中画	12	设置



4. 相册

打开APP之后，点击“相册”进入图片/视频界面，可以对图片/视频进行查看，点击选择图标，可以选择所需要的图片/视频进行分享和删除操作。

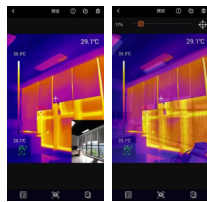


点击图片/视频，可以进入图片/视频查看界面，可以对图片/视频进行预览/查看信息（包括图片的文件名、日期、时间、分辨率、最高温、最低温、中心点、模式、发射率）/分享/删除/画中画/融合以及编辑等操作（注意：视频不可进行编辑）。

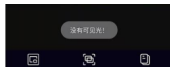



若要操作的图片在拍摄时打开了画中画或融合，在图片查看界面查看该图片时，点击画中画图标, 会在右下角出现画中画的小窗口；点击融合图标, 可查看融合情况，拖动上方滑块，可以调节可见光与红外光的融合比例（界面上与可见光融合功能相似，功能上保持一致）。






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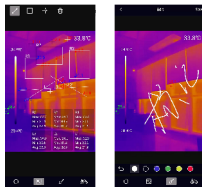


若要操作的图片在拍摄时没有打开画中画和融合，点击画中画或融合图标，会弹出提示“没有可见光！”。



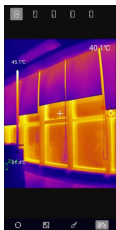
在图片查看界面，点击编辑图标, 进入编辑界面，可以对当前图片进行编辑操作。具体编辑项目为：

- 1) 旋转图片，点击图标, 即可改变图片方向。
- 2) 添加分析对象，点击图标, 出现如左下图界面，界面上与添加分析对象相似，功能上保持一致，可以对图片进行分析对象的移动/添加/删除等的操作。
- 3) 画笔，点击图标, 出现如右下图界面，可以对图片进行不同颜色的标记，点击图标可以撤回上一条标记（保存后的图片，点击图标依然可以撤回上一条标记）。



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4) 色条工具, 点击图标, 出现如下图界面, 功能上与主页面色条工具的功能保持一致, 可以对图片的色条工具进行切换。





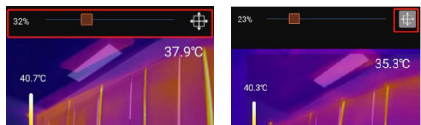
5. 主页面功能

5.1 镜头转换



点击图标, 可见光部分会转换手机的前/后置摄像头, 红外光部分会进行镜像切换。

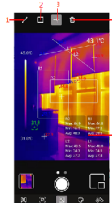
5.2 融合

当点击图标, 上方会出现调节融合的滑块, 拖动上方滑块, 可调节可见光与红外光的融合比例(如左图)。点击图标, 使此图标处于被选中状态时(如右图), 可拖动可见光画面, 调节融合距离, 再次点击图标, 可取消其被选中状态。



5.3 分析对象


点击图标, 进入添加分析对象的界面, 可以进行线/矩形/点的测温分析对象的添加/移动/删除的操作。若需要删除已添加的所有测温分析对象, 点击删除图标; 若只需要删除单个测温分析对象, 则拖动测温分析对象到边缘直至消失即可。(在主页面添加的测温分析对象, 在编辑页面依然可以进行删除处理。)

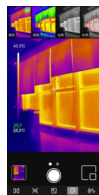


序号	描述
1	添加线测温
2	添加矩形区域测温
3	添加点测温
4	删除
5	测温分析栏


点击需要添加的分析对象的图标后, 可在主页面添加相应的测温分析对象, 并在主页面右下角展开一个半透明的信息栏, 用于显示所添加的分析对象的温度信息。若拖动变换测温分析对象的位置, 温度信息栏中该测温分析对象的温度信息将同步更新, 每类测温分析对象最多可添加三个。

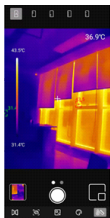
5.4 色板

在主界面, 点击图标, 会在上方显示可选择的色板, 包括铁红、彩虹、白热、红热、黑热、熔岩、高对比度彩虹等7种不同的色板。




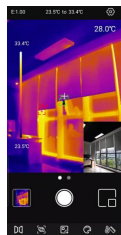
5.5 色条工具

在主页面，点击图标，会在上方显示可选择的色条工具，包括自动等温、向下等温、向上等温、区间等温、手动等温等五种不同色条工具。



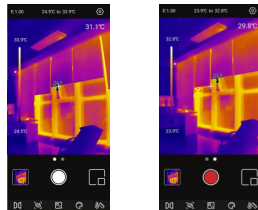
5.6 画中画

点击主界面图标，APP将打开手机摄像头，并且显示在画中画的小窗口，再次点击图标，可取消画中画。

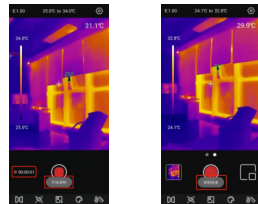


5.7 拍照/录像使能切换

左/右滑动拍照键，可实现拍照/录像功能的切换，照片与录像都会自动保存到相册中。




左右滑动进入录像模式后，点击录像按钮，开始录像，下方提示“开始录制”，左下方显示录像时长。再次点击，结束录像，提示“录制结束”。



5.8 自动打快门

运行状态，设备会根据使用环境变化或测量目标温度不同，自动进行打快门校正。

6. 设置

点击图标可以进入设置界面，可以进行语言选择、测温模式、温度单位、温度标记、高低温报警、发射率、测温距离（M）、环境温度、音频设置、帮助、关于等功能的操作。
注意：只有UTi260M存在测温模式选项。

一级菜单	二级菜单
语言选择	可切换语言：中文、English
测温模式	可选两种测温模式： 工业测温模式、人体测温模式
温度单位	可切换单位：C、F
温度标记	可打开或关闭温度标记； 最高温度标记（开关） 最低温度标记（开关） 中心点标记（开关）
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： 温度报警最大值、温度报警最小值
发射率	0.01-1.00可调
测温距离	0.05-5.00可调
环境温度	0-50°C可调
音频设置	可选择录制视频时是否录制声音
帮助	可查看说明书
关于	展示当前APP版本及产品型号

本说明书内容若有变更，恕不另行通知

7. 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，将产品装入携行盒中。
- 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！

优利德。

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<http://www.uni-trend.com.cn>

Preface

Thank you for purchasing this brand new UTi260M/UTi256M smartphone thermal camera module. In order to use this product safely and correctly, please read this manual thoroughly, especially the safety notes.

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 or 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.

Uni-Trend will not be responsible for any special, indirect, incidental or subsequent damage or loss caused by using this device.

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1. Specifications

UTi256M/UTi260M

Sensor	Uncooled vanadium oxide
Emissivity	0.95 (default) 0.01~1.00
IR resolution	256*192 (49152)
Pixel size	12μm
Spectral range	8~14μm
Palettes	Ironbow, Rainbow, Black Hot, White Hot, Red Hot, Lava, Rainbow HC
Field of view	56.0° (H) × 42.2° (V)
IFOV	3.8mrad
Lens focal length	3.2mm
Focus	Focus free
NETD	<50mK@25°C
Frame rate	25Hz
On screen analyzer	Point, Line, Rectangle (up to 3 graphics can be added for each type)
Temperature display	Center spot, Hi/Lo spot tracking
Temperature units	°C (default), °F
Hi/Lo temperature alarm	√
Image modes	Thermal, fusion [fuse visual image (on phone) and infrared image], PIP
Camera modes	Photo capturing & Video recording
Image format	JPG
Photo browsing	Images can be rotated, brushed, analyzed, deleted and saved.
Image storage	Stored in the smartphone
Data communication	Type-C USB (male)

Language	Chinese/English
Mobile APP	√ (support Google Play)
Operating system	Android 6.0 and higher versions
Certificates	FCC CE (EN61326-1)
Operating temperature	-10°C~ 50°C (14°F~ 122°F)
Storage temperature	-20°C~ 60°C (-4°F~ 140°F)
Operating humidity	10% ~ 95%RH (non-condensing)
Operating power consumption	<350mW (typical value at room temperature)
Drop Proof	1m

UTi260M

Temperature scale	Low scale: -20°C~150°C High scale: 0°C~550°C (auto switch)
Temperature measurement modes	Industry, human body
Accuracy	Industry: 0°C~550°C, $\pm 2^\circ\text{C}/\pm 2\%$ (Whichever is greater, ambient temperature:25°C) Human body: 30°C~40°C, $\pm 0.5^\circ\text{C}$ (room temperature without wind)
Temperature measurement range	-20°C~550°C (-4°F~1022°F)

UTi256M

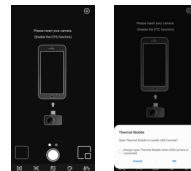
Temperature measurement modes	Industry
Accuracy	0~200°C, $\pm 2^\circ\text{C}/\pm 2\%$ (Whichever is greater, ambient temperature:25°C)
Temperature measurement range	-20°C~200°C (-4°F~392°F)

2. Connection

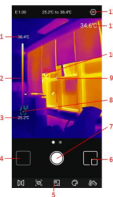
Enter mobile APP. If the thermal camera module (the Device) is not detected, an interface for users to select model will appear, as shown below.



Select "UTi260M" or "UTi256M" to enter the following interface. At this time, users can open the "Gallery" and "Settings" pages, but other functions are unavailable. After inserting the device, a prompt will pop up. Select "YES" to connect the device.


**3. Screen Indicators/Icons**

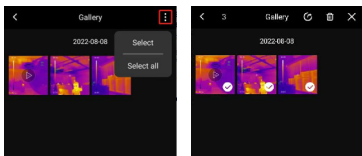
After the device is loaded, the initial smartphone page is shown in the figure below. The palette is Ironbow by default, and the main page is divided into the following sections.



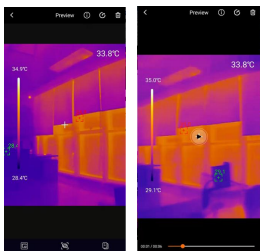
No.	Description	No.	Description
1	Upper limit	7	Photo capturing /Recording/Saved
2	Temp. bar	8	Lo spot
3	Lower limit	9	Center spot
4	Gallery	10	Hi spot
5	Menu bar	11	Center spot value
6	PIP	12	Settings



4. Gallery

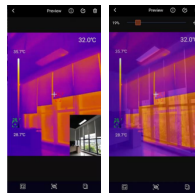
On the initial page, tap "Gallery" (NO.4 in Screen Indicators/Icons) to view the photos/videos. Tap the icon  to select/select all/share/delete photos/videos.



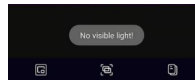
Tap an image/video to enter an interface where users can preview/share/delete/edit (image only) this image/video, view its PIP/fusion mode or detailed information (filename, date, time, resolution, Hi spot, Lo spot, center spot, mode, emissivity).








If the PIP or fusion mode is turned on when capturing a photo, tap the icon  when viewing this photo, a small PIP window will appear in the lower right corner. Users can tap  to check the fusion status, and drag the upper slider to adjust the fusion ratio of visible light and infrared light.

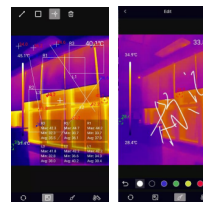


If the PIP or fusion mode is not turned on when capturing a photo, when users tap the PIP or fusion icon while viewing this photo, a prompt "No visible light!" will pop up.

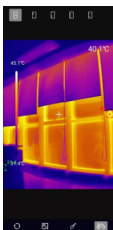


In the photo viewing interface, tap the icon  to edit the current photo. The specific editing operations are as follows:

- 1) Rotate: Tap  icon to change the photo direction.
- 2) Add on screen analyzers: Tap  to display the interface as shown in the lower left. The analyzers can be added/moved/deleted.
- 3) Brush: Tap  to display the interface as shown in the lower right. Users can mark a photo in different colors. Tap  to withdraw the previous mark. (After saving a photo, tap  can still withdraw.)




4) Isotherm: Tap  to enter the isotherm selection interface, as shown below.





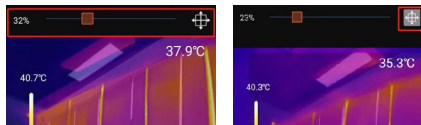
5. Main Interface

5.1 Camera Switching



Tap  to switch between the front and rear cameras of the smartphone. The infrared image will be mirrored.

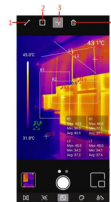
5.2 Fusion

When users tap the icon , a slider for adjusting fusion will appear at the top. Dragging the slider can adjust the fusion ratio of visible light and infrared light (left figure). Tap the icon  at the upper right corner, and it will be highlighted (right figure). At this point, users can drag the screen to manually adjust the fusion distance. Tap the icon again to exit.



5.3 On Screen Analyzer


Tap  to enter the interface for adding on screen analyzers. Users can add/move/delete the analyzers (line/rectangle/point). Tap the icon  to delete all added analyzers. To delete a single analyzer, drag the analyzer to the edge until it disappears. Analyzers added in the main interface can be deleted in the editing interface.

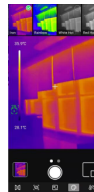


No.	Description
1	Line
2	Rectangle
3	Point
4	Delete
5	Temperature analysis area


Tapping the corresponding icon can add an on screen analyzer and expand a semi-transparent information bar on the bottom right of the interface to display the temperature information of the added analyzer. If users drag an analyzer to change its position, its temperature information will be updated synchronously. Up to 3 analyzers can be added for each type.

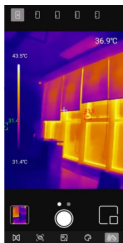
5.4 Palettes

In the main interface, tap , and the optional palettes will show on the top of the screen, including Ironbow, Rainbow, White Hot, Red Hot, Black Hot, Lava, Rainbow HC.




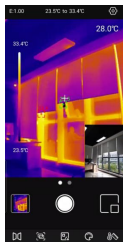
5.5 Isotherm

In the main interface, tap , and the optional isotherm tools will show on the top of the screen, including Auto, Below, Above, Section and, Manual.



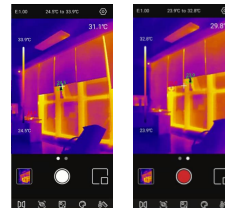
5.6 PIP

Tap , and the APP will turn on the smartphone camera and display a small PIP window. Tap the icon again to turn it off.

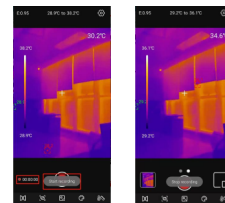


5.7 Photo Capturing/Video Recording

Slide the camera icon left/right to switch between Photo Capturing and Video Recording modes. Both photos and videos will be automatically saved in "Gallery" (NO.4 in Screen Indicators/Icons).



Slide the camera icon left/right to enter the video mode. Tap video icon to record videos, and the recording duration will be displayed in the lower right corner. Tap the video icon again to end the recording.

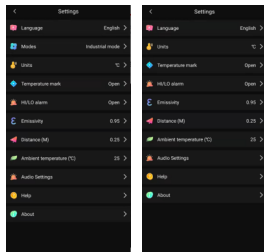


5.8 Shutter Calibration

When the device is on, Shutter will automatically activate for calibration according to ambient changes or the different temperature of measured target.

6. Settings

Tap  to enter the setting interface. Users can perform the following functions.



Main menu	Submenu
Language	English/Chinese
Modes (UT1260M only)	Industry, human body
Units	°C, °F
Temperature mark	The following markups can be turned on or off: Hi temperature Lo temperature Centre point
Hi/Lo alarm	The Hi/Lo alarm can be turned on or off. After turning on the alarm, the Hi/Lo value can be adjusted.
Emissivity	0.01~1.00 adjustable
Distance	0.05~5.00 adjustable
Ambient temperature	0~50°C adjustable
Audio Settings	Users can select whether to record sound during video recording.
Help	View the user manual
About	Display the current APP version and device model

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.

8. 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.

UNI-T

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Guangdong Province, China



彩盒 菲林做货要求

序号	项目	内容	备注
1	尺寸	110*85mm	
2	材质	128双铜+60g双铜	
3	颜色	四色	
4	外观要求	完整清晰、版面整洁，无斑墨、残损、毛边、刀线错位等缺陷。	
5	装订方式	骑马钉	
6	表面处理		
7	其它	无	
版本		REV. 2	
DWH 设计	宣浩	MODEL 机型: UTi256M	Part NO. 物料编号: 110401111276X
CHK 审核		 优利德科技(中国)股份有限公司 UNI-TREND TECHNOLOGY (CHINA) CO., LTD.	
APPRO. 批准			