

Thermopile Array Module



Midas Touch
magic embedded

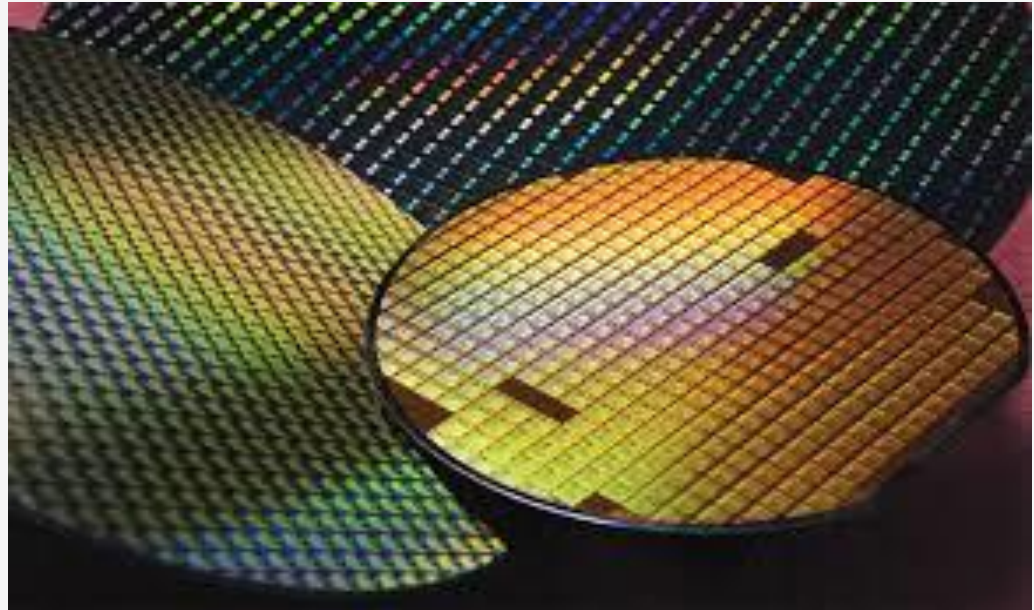
MTP-16PV Thermopile Array Module



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Operating Principle

Hundreds of thermocouples are serial connected.
The sensor detects and reads relative voltage when there has difference between object and operating environment.



MTP-16PV Thermopile Array Module



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Features :

- 1 16x16 array, the best solution for mid-range body temperature measurement.
- 2 By using I2C-USB convertible board, USB output interface makes development convenient and easy.
- 3 Midas Touch's algorithm compensates the ambient temperature, range from 10°C~40°C.
- 4 The entire Thermopile Array module is developed and made in Taiwan.
- 5 Midas Touch's algorithm minimizes the tolerance caused by ambient effects.



MTP-16PV Thermopile Array Module



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MA-I2CUSB-C01
I2C-USB Convertible Board

MTP-16PV
Thermopile Array Module



Algorithm



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(TB= Temp. obtained from IR ; TBH=Human Body Temp.)

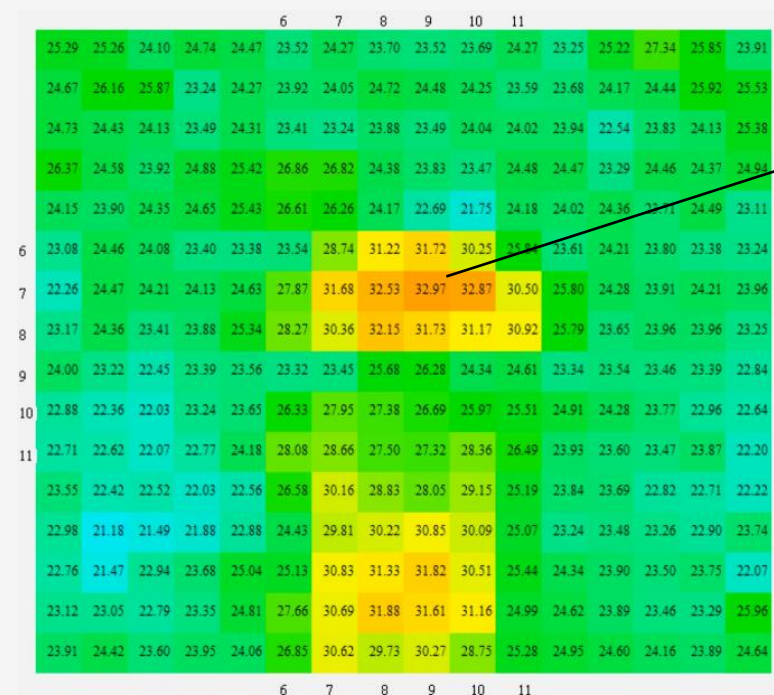
For Example:

$$Tb < 32.5 \quad TBH = (273/256) Tb + 1.68$$

$$32.5 \leq Tb < 35 \quad TBH = (57/256) Tb + 29.13$$

$$Tb > 35 \quad TBH = (223/256) Tb + 6.58$$

Due to the characteristics of Infrared, the temperature readings would be lower than normal body temperature under low temperature conditions. The reading would be between 30°C ~ 34°C, but temperature compensation algorithm shall correct and give the right human body temperature with the deviation of +/-0.3°C.



32.97 TB



36.84 TBH

Demo APP

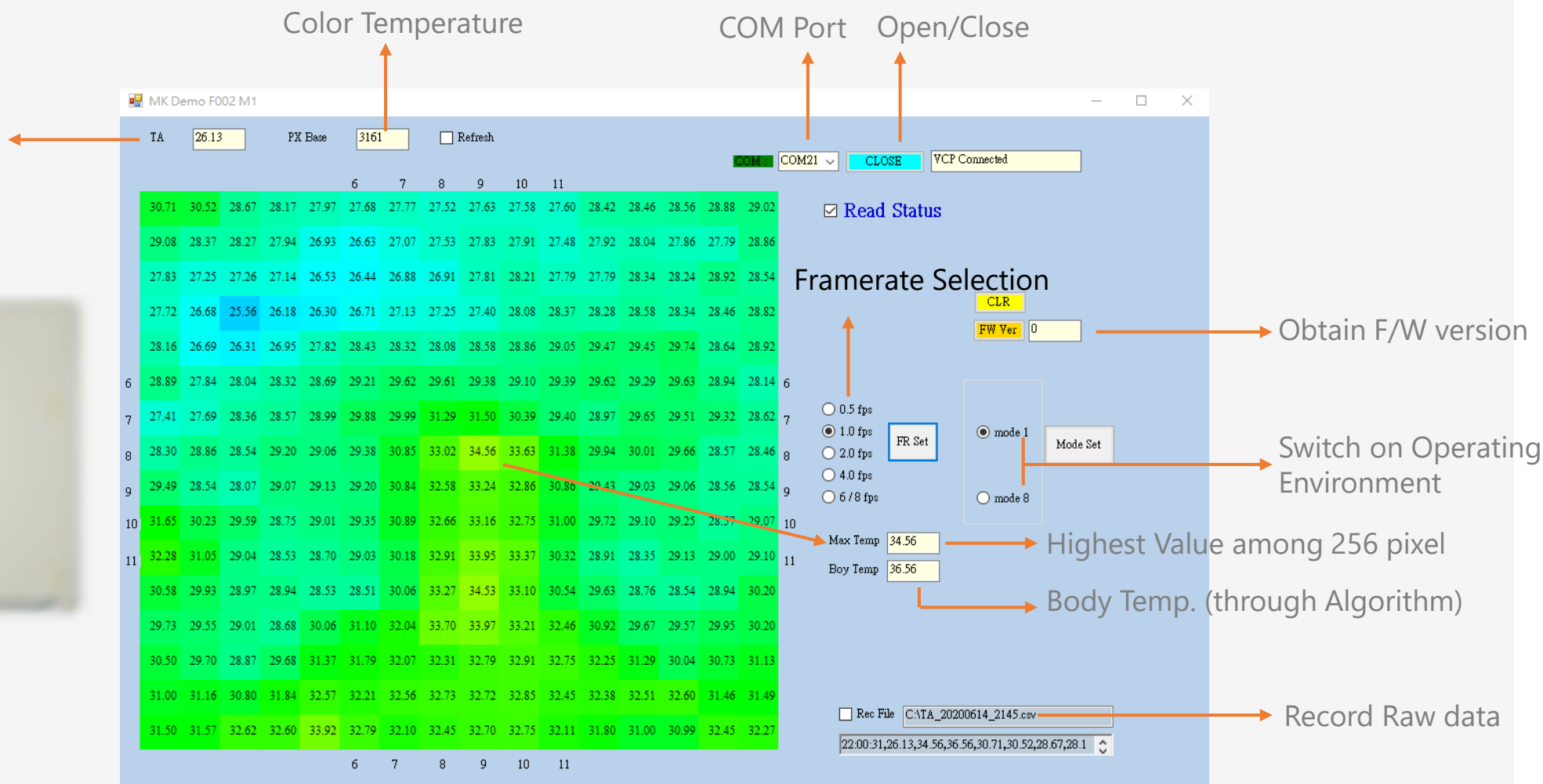


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Temp. around
Module



Blackbody Furnace



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ISOTECH temperature calibration instrument
(Blackbody Source Hyperion R) is used and the
accuracy is 0.05°C.

工機 NO.	20-04-BCC-204-01	財團法人台灣電子檢驗中心
收件日期:	Apr.15,2020	校正報告
Report Date		CALIBRATION REPORT
發行日期:	Apr.24,2020	ELECTRONICS TESTING CENTER, TAIWAN
Report Issue Date		Page 1 of 3
顧客名稱	聯新科技股份有限公司	
Customer		
顧客地址	台北市松江路67號4F之1	
Address		
儀器名稱	黑體爐	供校儀器 ITEM CALIBRATED
Nomenclature		
製造商:	ISOTECH	
Manufacturer		
型別:	982935-14-61/DB	
Model No.		
識別號碼:	311709-1	
ID. No.		
上述儀器經本實驗室校正,結果如內文。未經本實驗室書面許可,不得部份複製本報告,完整複製則不在此限。 The above instruments were calibrated by the laboratory and please refer to the content for the calibration results. This report may not be reproduced in part without the written permission of the laboratory, except for full reproduction.		
校正資料:	<input checked="" type="checkbox"/> 僅量測 <input type="checkbox"/> 調整	
Calibration Information	Calibration Only Adjusted	
實際環境:	溫度: 22 °C 相對濕度: 51 %	
Actual Environments	Temperature Relative Humidity	
環境管制條件:	溫度: (23 ± 2) °C, 相對濕度: (50 ± 10) %	
Environmental Conditions		
校正日期:	Apr.17,2020	
Calibration Date		
建議再校日期:	Apr.16,2021	註: 建議再校日期為應顧客要求列入。
Recommended Recalibration Date		Note: The recommended recalibration date is agreed by the customer.
校正地點:	財團法人台灣電子檢驗中心校正實驗室	
Laboratory Location		
實驗室名稱地址:	<input checked="" type="checkbox"/> 1. 校正實驗室 33383 桃園市龜山區文山路29巷8號 TEL:+886-3-3280026	
Laboratory Name and Address	2. 新竹校正實驗室 30075 新竹市科學園區二街47號205室 TEL:+886-3-5798806	
	3. 台中校正實驗室 40766 台中市西屯區福中二街8號2樓之2 TEL:+886-4-23584899	
	4. 台南校正實驗室 70248 台南市南區新和二路5號 TEL:+886-6-2925787650,51	
財團法人台灣電子檢驗中心特此聲明報告內記載之受校儀器已與下方標準做過比較校正,用以校正之標準器可追溯至中華民國國家度量衡標準實驗室,美國標準及技術研究院,或與它國家之度量衡標準。本中心之校正服務均符合ISO/IEC 17025 之規定。 ETC hereby certifies that the equipment noted herein has been compared with the below listed standards. The Standards used to perform this calibration are traceable to NML/DOCNIST/USA or other countries. The calibration services from ETC are capable of performing services in compliance with the requirements of ISO/IEC 17025.		
財團法人台灣電子檢驗中心	實驗室主管	報告簽署人
ELECTRONICS TESTING CENTER, TAIWAN	Laboratory Head	Signature



Accuracy of Thermopile Array Module



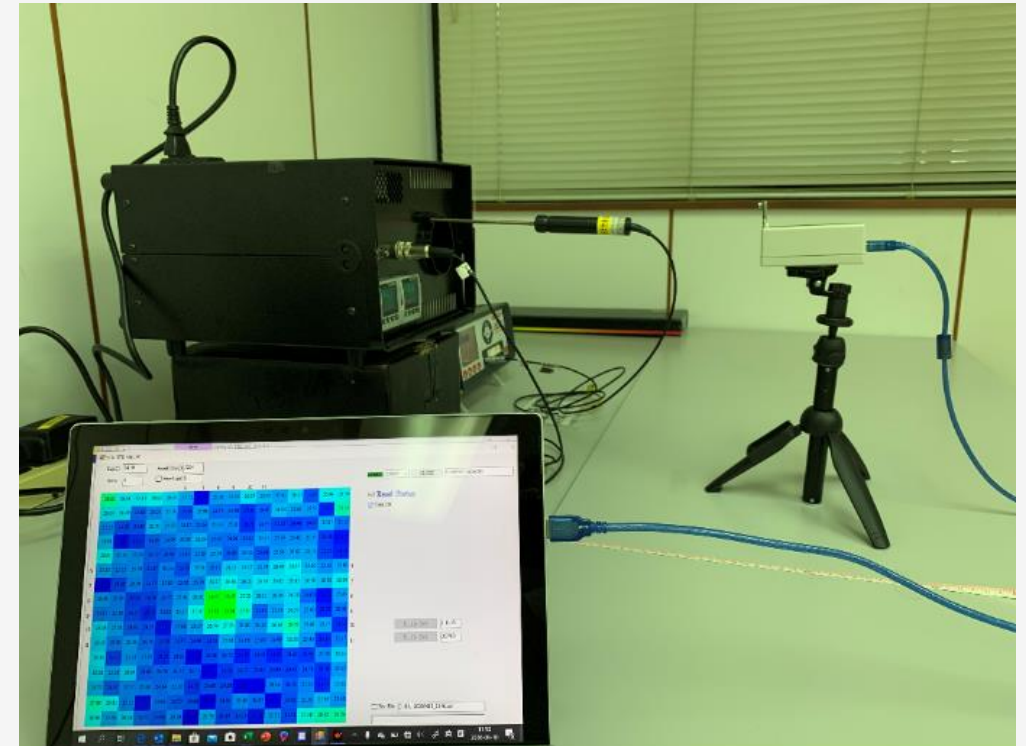
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Blackbody Source Temp. : 35°C / 36°C / 37°C / 38°C

Distance : 50cm

Operating Environment : Tambient : 28.0°C

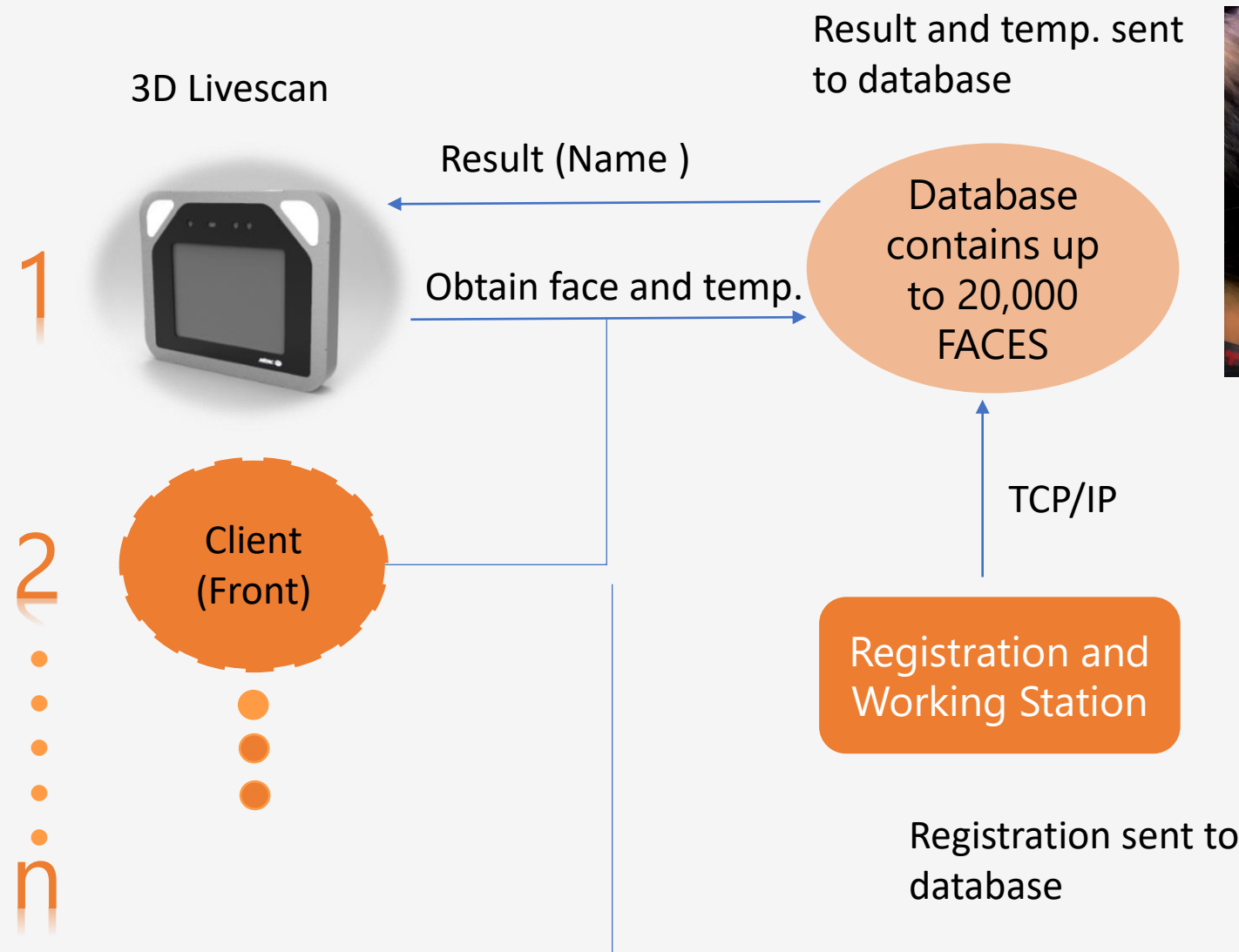
Blackbody Source Temp.	35°C	36°C	37°C	38°C
Raw Max (°C)	32.73	33.47	34.16	34.62
Raw Avg. (°C)	32.41	33.15	33.86	34.23
Raw Min. (°C)	32.10	32.80	33.50	33.93



Applications (Door Access Control #1)



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Applications (Door Access Control #2)



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Facial Identification and body temperature measurement are combined

1. **Body temperature measurement**

Measurement records
Abnormal situations notification

2. **Facial recognition**

Employees record
Strangers detection

3. **Door access control**

Regional security
In and out records

*Three functions are
completed
in one second!*



Identification

Body Temperature



Applications (Time Attendance)



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Ascentis®

Ascentis CarePoint - Touchfree time clocks with temperature reading.

<https://youtu.be/JjAS2FIpna8>



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