Product Brief

integrated the world-class advanced thermal imaging module and advanced face recognition algorithm.

The system applies thermal imaging principle in face temperature measurement and calculate the body temperature based on the whole face temperature distribution. It speeds up the non-contact body temperature measurement, meanwhile combines near infrared technology and visible light face recognition technology, highly increased the efficiency of vivo detection and the accuracy of face recognition.

The system supports 1:1 and 1:N mode shift, works under Android 7.1.X and the above, is fast, accurate, safe and reliable in face recognition.

This equipment is specially using on high speed "face recognition & temperature measurement" could take the place of traditional body thermometer.

Application Features

- Face recognition and temperature measurement operating in the meantime, fast and accurate checking on work attendance by face recognition
- Support offline\Standalone operation
- Support 1:N verification, 1:N binocular vivo detection, prevent picture and video invasion
- High efficiency in 1:N recognition ,when face data records are over 5000, the maximum recognition is 1/10000, accuracy is 99.87%
- High speed recognition, face tracking and detection time is ~20ms, Vivo detection ~200ms, face characteristics extraction 150ms, the whole face comparison procession complete time is ~400ms when using Vivo.
- Algorithm of dynamic face recognition and tracking based on video stream
- Gate opening: IO signal, Wiegand signal, RS485& RS232 signal control (Integration)
- Support serial port, Wiegand output, output content can be set up
- Support offline local network equipment deployment, online HTTP transmission deployment
- Support fill-light recognition after IR face defection in total darkness ambience
- Night time fill-light coordinate with photo sensitive sensor
- Support screen display contents setting, such as company name & logo
- Support recognition distance setting
- Support customized ports mounting
- Recognition height: 1.2-2.2m
- Face angle: Horizontal 30 degrees, Vertical 30 degrees
- Recognition technologies: near infrared vivo detection, embedded visible light face recognition, adapt most of indoor & outdoor ambience, high speed on the move.
- Accurate temperature measurement:2-3seconds per person
- Statistics display, name display, customized information display
- Other functions: safety helmet detection, glasses detection

Optional Applications

Optional Card Readers

5.1.1. Support external ID and IC card reader (RFID\NFC)

5.1.2. Support 1:1 verification, accuracy is 99.99% in ID card comparison

5.1.3. RF working frequency: 13.56MHZ

5.1.4. Reading speed: 15times/s

5.1.5. Effective operational distance ＜3cm

5.1.6. Working temperature:-10℃-+55℃

5.1.7. Working humidity: 10-90% relative humidity, no condensation

5.1.8. Power consumption: ≤16%

Optional Cellular Module

5.2.1. Cellular module 3G\4G

5.2.2. WCDMA, EVDO, CDMA, GSM/4G (LTE-FDD/TD-SCDMA/EDGE/GPRS/GSM)

Optional QR Code Reader

5.3.1. Support external QR code scanner

Environmental

Device Dimensions

6.1.1. Size: 257mm x 138mm x 26.5mm

Operation Temperature:

6.2.1. Normal: 16 ℃ - 35 ℃

Storage Temperature:

6.3.1. Normal: -20 ℃ - 70 ℃

Device weight:

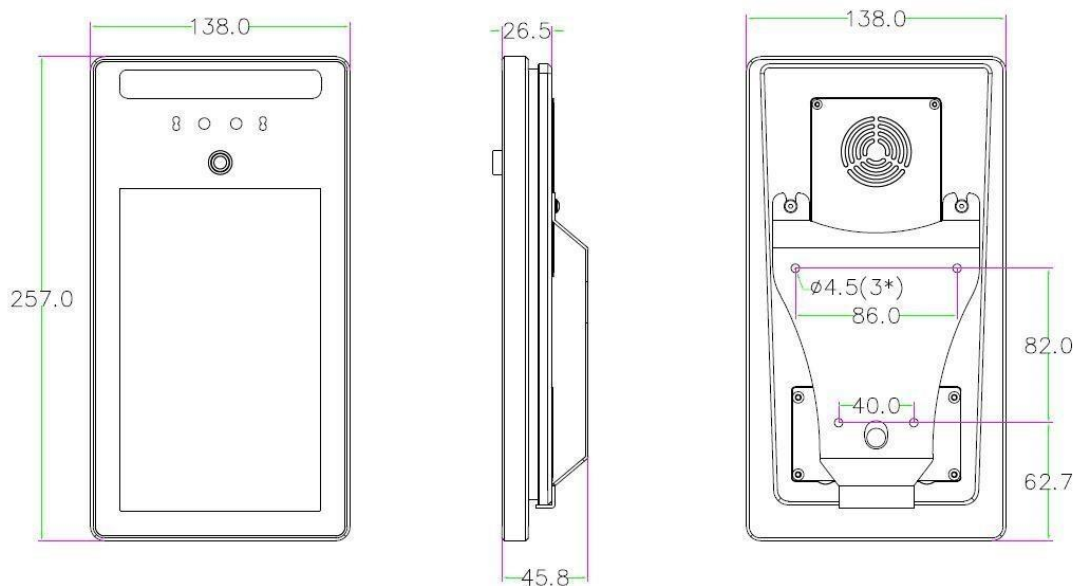6.4.1. 0.9Kg-1.35Kg (Depends on the configuration)

Power consumption:
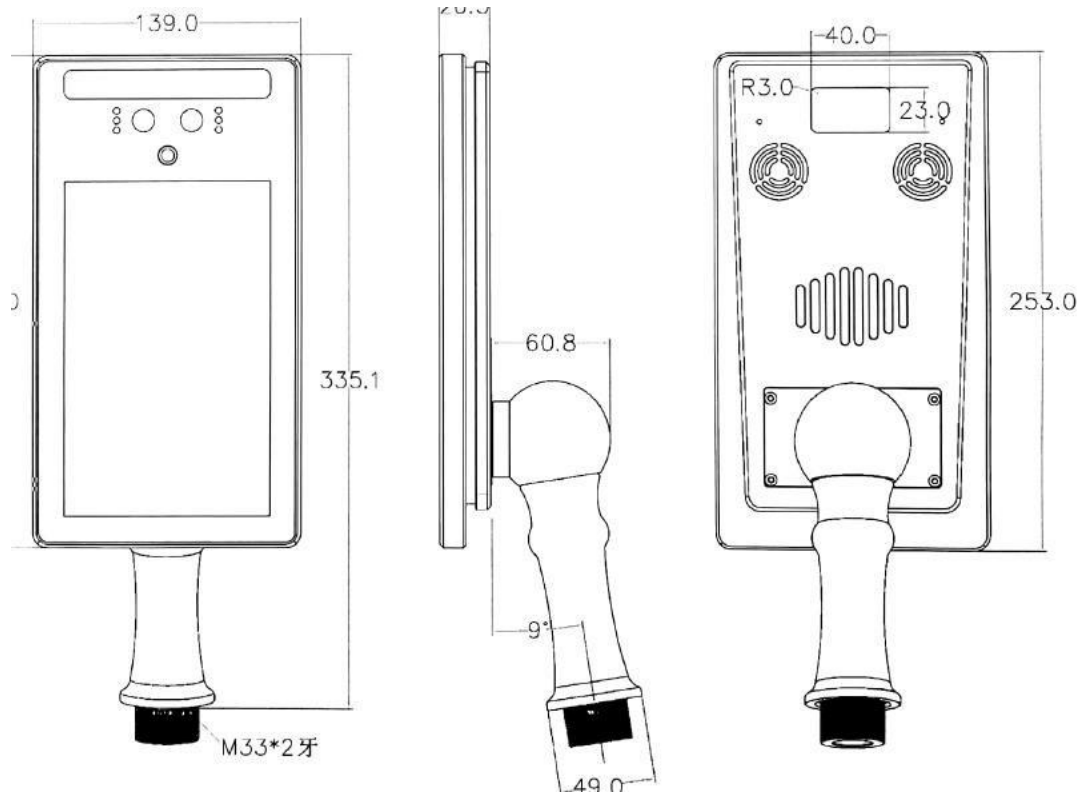
6.5.1. Power supply: DC12V/2A

6.5.2. Normal consumption: 12mA @ 5V (Normal mode)

6.5.3. Max consumption: 45mA @ 5V (Under indicator LED ON and RF transmission)

Device Diagram

Wall mounting on vertical column mounting

Performance Index

Body Temperature Measurement Features

8.1.1. Features:

8.1.1.1. 8x8 Thermopile for human body temperature capture

8.1.1.2. 32Bit Cortex M0+ 48Mhz for main processor

8.1.2. Thermopile Specification:

8.1.2.1. FOV: 35 degrees

8.1.2.2. Distance of 30~60cm (The error will be relative to distance) 8.1.2.3.

Temperature range: 32 ~ 41 degrees in 0.3~0.5 degrees accuracy.

8.1.3. MCU Specification:

8.1.3.1. NXP KL03 Serial MCU

8.1.3.2. Cortex M0+ 32 Bit/48Mhz

8.1.3.3. Support IO Interface: I2C, UART, SPI, GPIO

8.1.3.4. Support 12 bit ADC

8.1.3.5. Build-in RTC / PWM

8.1.4. Temperature Detection Specification:

8.1.4.1. Distance: 30~50cm, Accuracy ±0.3℃ - ±0.5℃

8.1.4.2. Detect the temperature of forehead

8.1.4.3. Auto-search the t forehead temperature ~2 seconds 8.1.4.4.

Operation temperature (Room temperature): 16 - 30℃

Video and Optics Features:

8.2.1. Binocular Camera Specification:

8.2.1.1. Binocular B/W, HDR 200M, auto exposure, auto white balance

8.2.1.2. Auto backlight optimization Sensor: 1/2.7" industry level binocular HD WDR sensor

8.2.1.3. FPs: Black& white /color 30FPs no image trails

8.2.1.4. Infrared spectrum: 850nm

8.2.1.5. Effective pixel: 1920*1080/1920*1080

8.2.1.6. Lens: M12= (f=3.6M 8.2.1.7. M)/ (f=3.6MM)

8.2.1.8. Pixel dimensions: 3.0um *3.0um/3.0um *3.0um

8.2.1.9. Minimum 11 illumination; ≥0.01LUX at F1.2/≥0.1LUX at F1.2

8.2.1.10. Signal-noise ratio: ≥41dB, WDR: ≥96dB/≥105dB

8.2.2. Video and Picture Specification:

8.2.2.1. Video encode: H.265 Main Profile encoding/H.264 BP/MP/HP encoding/MJPEG encoding 640*480@ 30fps / 800*600@ 30fps/ 1280*720@ 30fps/1280*1024@ 30fps/1920*1080@ 30fps

8.2.2.2. Image resolution: 640*480@ 30fps / 800*600@ 30fps/ 1280*720@ 5fps/1280*1024@5fps/1920*1080@5fps

Face Recognition Features:

8.3.1. Recognizable face angles: Yaw ≤ ±45°, Pitch ≤ ±90°

8.3.2. Detection speed: ~20ms

8.3.3. Tracking speed: ~5ms

8.3.4. Near infrared vivo detection

8.3.5. Embedded visible light face recognition

8.3.6. Adapt most of inside and outside ambience

8.3.7. High speed recognizing when moving

Comparing Accuracy: Extracting Feature 150ms, Comparing < 1ms

FPR	TPR	Threshold
0.1	0.9987	43.9738
0.01	0.9835	60.6078
0.001	0.945	70.3895
0.0001	0.8345	76.562
1.00E-05	0.6592	80.8815

Specification Chart

PHYSICAL	
Dimensions	257mm*138mm*26.5mm
Package Dimensions	365mm*230mm*80mm
Weight	1.35kg
Package Weight	1.8kg
Appearance Material	6061 Aluminum Alloy, CNC+ Anodic Oxidation
CONFIGURATION	
Body Temp Measurement	8*8 Thermopile, Distance: 30~60cm, Accuracy ±0.2℃~±0.5℃
Screen	8 inch IPS screen, 1280*800
CPU	ARM 4 Cores, 1.8GHz
RAM/ROM	2GB + Internal 8GB (Expendable via TF\SD card)
Camera	RGB&AI Dual WDR Cameras, Micron AR0230 Sensors
Network	1x 10M/100M self-adaptive Ethernet port RJ45
Wireless	Wi-Fi 802.11b/g/n 2.4G/5G
Audio	1 x External Optional Earphone/MIC audio output (National standard: GND,MIC,R,L)
Sockets	RS485, RS232, Wiegand26/34, TTL, On-Off signal (DI, DO)

OS	Android 7.1.1
FUNCTIONS	
Facial Recognition	1:1, 1: N
Face Database Size	Up to 50,000, recommend 10,000
Record Log with photos	60,000+ (Auto override old logs)
Record Log without photos	100,000+ (Auto override old logs)
Languages support	Arabic, English, French, German, Hebrew, Italian, Japanese, Korean, Portuguese, Thai, Russian, Spanish, Simplified Chinese / Traditional Chinese, Vietnamese
OPERATIONAL	
Operating Temperatures	Face Recognition (Operating Ambient Temperature)：-15~60℃ Body Temperature Measurement (Operating Ambient Temperature): 16~35　℃
Operating Humidity	≤90%
Power Port	1 x external port and 1 internal 6P port(STB Function)
Rated Voltage & Current	DC12 ~16V, 2A
Certificates	CE, FCC, RoSH