AI Human Temperature Filter

SenseNebula-M

AI at the Edge.

G3 Global

www.g3global.com.my

1 ABOUT US

G3 Global Berhad (formerly known as Yen Global Berhad) was founded in 1992 when it introduced the jeans-wear to the market under the brand name of GA Blue. The Group was listed on the Second Board of Bursa Malaysia in 2004 as GA Blue International Bhd and subsequently promoted to the Main Board in 2005.

The Group is primarily an original brand owner and manufacturer, focused on creating and marketing high quality branded apparel products that meet the exacting standards and requirements of the brand conscious consumers. The Group's products are channeled through a wide distribution network comprising more than 300 retail outlets throughout the country that are strategically located in major cities and popular shopping malls. Over the years, the Group expanded its range of products by having brands like Mustang, Edwin, Wrangler, Underground Products, Once Upon A Time and etc. In 2003, the flagship brand of GA Blue was awarded the Malaysian Superbrands status by the Malaysian Superbrands Council for its distinct brand awareness, quality and recognition.

In 2016, Green Packet Berhad acquired a stake in G3 Global, establishing the Group's venture into the ICT business via the acquisition of Atilze Digital Sdn Bhd and Atilze AI Sdn Bhd. Specializing in Internet of Things ("IoT") solutions and Artificial Intelligence("AI"), the Company provides end-to-end delivery of connected devices, cloud based data-driven applications and services for Connected Vehicles, Public Safety Surveillance, Face Recognition Access Control, Smart Homes, Smart Building, Intelligent City, Smart Agriculture and solutions built on Low-Power Wide-Area Network (LPWAN) especially on LoRa technologies.

In March 2017, the Group was renamed as G3 Global Berhad in line with its business diversification and aspiration to be a global player. G3 Global Bhd has inked a collaboration agreement with China's SenseTime Group Ltd to develop new artificial intelligence (AI) products and solutions in Malaysia in 2019. With our roots in Malaysia, together with our unrivaled understanding plus insights of multiple local businesses, industries, governments and community needs, and coupled as the strategic partner of SenseTime in Malaysia, we are poised to unlock another era of human development though the use of artificial intelligence to improve and enhance all aspects of human life in work, play, healthcare, security, safety and beyond. SenseTime is the world's leading artificial intelligence (AI) company, focused on computer vision and deep learning. SenseTime leads the market in almost all vertical industries, including smart city, smartphone, mobile Internet, online entertainment, automobile, finance, retail, education, real estate and so forth. The company boasts more than 700 customers and partners in China and overseas, including world-renowned institutions and companies such as Massachusetts Institute of Technology (MIT), Qualcomm, NVIDIA, Honda, Alibaba, Suning, China Mobile, UnionPay, Wanda, Xiaomi, OPPO, vivo, Weibo.

2 PRODUCT INFORMATION

AI Human Temperature Filter   is a software and hardware integrated intelligent temperature measurement and screening terminal. Based on deep learning technology, it supports multi-algorithm fusion such as detection and alarm of face without mask, face recognition alarm with mask, and suspected fever alarm linkage. It provides industry solution providers, integrators, and agents with intelligent products and solutions applicable to diverse temperature measurement scenarios.

3 PRODUCT HIGHLIGHTS

Lightweight, reliable and easy to use

- Rich intelligent temperature measurement applications, supporting suspected fever alarm, alarm of face without mask detection, face recognition alarm with mask, sound signals alarm linkage, etc.
- Lightweight design, low power consumption, and easy installation, no need for a specialized equipment room
- Industrial-grade, long-term stable operation at high and low temperatures
- POE or power supply, flexible, and easy to use

Flexible Access Modes

- Support unified access management for multiple binocular thermal cameras, live preview of visible light and thermal imaging video streams
- Secondary development of access by other temperature measurement equipment

Superior Processing Performance

- Deep learning algorithms based on edge computing GPU
- Single system supports up to 4 binocular thermal cameras access
- Support for blacklist or whitelist databases up to of 300,000 entries

Simple APIs

RESTful APIs facilitate secondary development by third parties

Diverse interface functions support multi-scenario applications

Support multiple data push methods such as HTTP, HTTPS, WebSocket

Excellent AI Algorithms

Supports multi-algorithm fusion such as suspected fever alarm linkage, detection and alarm of face without mask, face recognition alarm with mask

Intelligent algorithms with a high capture rate, high accuracy, and a low false positive rate

Enhanced multi-scenario adaptability with improved recognition range, recognition angle, and recognition quantity

Data Secure and Reliable

- Hardware encryption design, data encryption storage
- Web-based HTTPS security access
- API call through HTTPS
- Support for secure data push through HTTPS
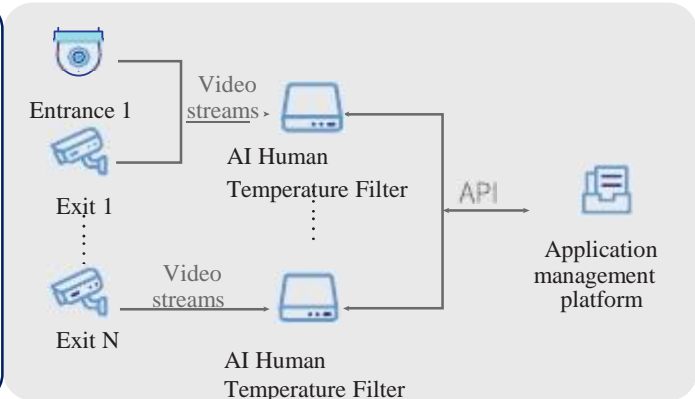
4 APPLICATION SCENARIOS

Smart Transportation

Application Scenarios

Temperature measurement and related identification alarm for airport, railway station, subway station, etc.

Functions

- Passengers quickly measure temperature and pass through, access personnel counting
- Isolated personnel management deployment
- Suspected fever personnel trajectory analysis, peer analysis of close contacts, frequency analysis, comprehensive alarm

Entrance 1

Video streams

Exit 1

AI Human Temperature Filter

Exit N

Video streams

AI Human Temperature Filter

API

Application management platform
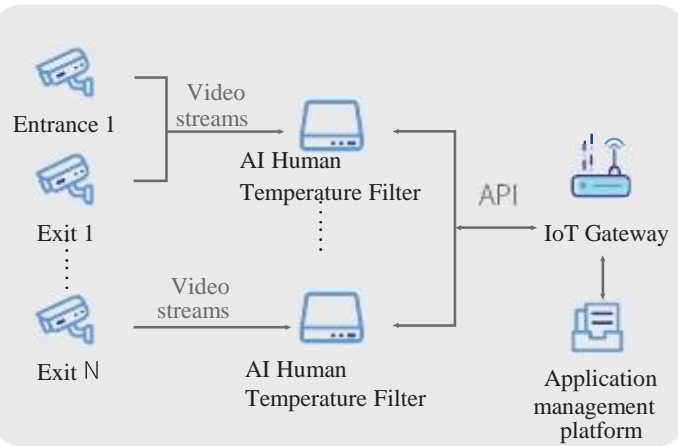
Smart Community

Application Scenarios

Community epidemic prevention management, entrance and exit visitor management

Functions

- Automatic access of residents and tenants who wear masks
- Isolated personnel management deployment, trajectory analysis
- Suspected fever personnel trajectory analysis, peer analysis of close contacts, frequency analysis, comprehensive alarm

Entrance 1

Exit 1

Exit N

Video streams

Video streams

AI Human Temperature Filter

AI Human Temperature Filter

API

IoT Gateway

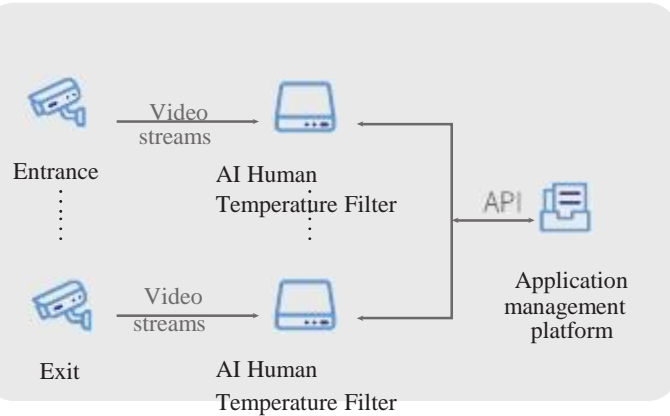Application management platform

Smart Campus

Application Scenarios

Epidemic prevention application for campus

Functions

- Daily temperature screening of school staff, identification and alarm of suspected fever
- Suspected fever teacher and student trajectory analysis, peer analysis of close contacts, frequency analysis, comprehensive alarm

Entrance

Exit

Video streams

Video streams

AI Human Temperature Filter

AI Human Temperature Filter

API

Application management platform
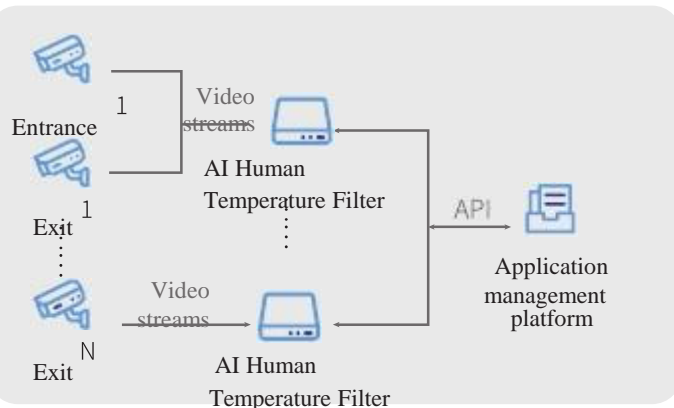
Smart Building

Application Scenarios

Epidemic prevention application for buildings and venues

Functions

- Automated access for employees who wear masks. Alarm triggers for those who don't
- Isolated personnel management. Deployment. Trajectory analysis
- Suspected fever personnel trajectory analysis. Frequency analysis.

Entrance

Exit 1

Exit N

1

Video streams

Video streams

AI Human Temperature Filter

AI Human Temperature Filter

API

Application management platform

5 SPECIFICATIONS

Basic Parameters

Product Name	Product Series	Model no.	Description
AI Human Temperature Filter	SenseNebula-M	ST-SNMA-SX04TV	Standard edition

Item	Description
Dimensions	169 mm x 103.5 mm x 33.8 mm
Weight	0.85 KG
Power consumption	15W
MTBF	>100,000 hrs

Performance Parameters

Item	Description
Mask detection rate	> 99%
Wear mask recognition accurate rate	> 90%
Face detection rate	≥99% (applicable to video streams)
Accurate recognition rate	≥99%
False recognition rate	<1%
Face detection angle	Yaw angle : (yaw)= -60°~ +60° Pitch angle (pitch)= -30°~ +30° Roll angle (roll)= -45°~ +45°
Face recognition angle	Yaw angle : (yaw)= -30°~ +30° Pitch angle (pitch)= -30°~ +30° Roll angle (roll)= -30°~ +30°
Face capture size	Face image > 60 x 60 pixels
Face recognition size	Face image > 60 x 60 pixels
Processing performance	12 persons/s
Access capability	4-channel thermal imaging camera access
Encryption mode	Software and hardware encryption
Total capacity of portrait databases	300,000 stored images
Number of portrait databases	50
Image size of the portrait database	300,000
Image size of the portrait database	<100KB (recommended)
Image format of the portrait database	JPG, JPEG, PNG, BMP, TIF
Capture storage capacity	4GB (around 400,000 of face captures and alarm images)

System Specifications

Item	Description
Power supply	AC100-240V-DC12V input power adapter/POE
CPU	ARM
GPU	Edge Computing GPU
Memory	8GB DDR4
Storage	64GB eMMC
Network port	Gbit Ethernet x 2 (including POE x 1)
Ports	COM x 1, USB x 2, HDMI x 1, SD x 1, RESET x 1
Internet protocols	TCP/IP, Http, DNS, DHCP, etc.
Operating system	Linux
Software	For the latest software, please refer to the official release.

Environmental Specifications

Item	Value	Description
Operating temperature	-10 ℃~50 ℃	SenseNebula-M may operate abnormally out of this range. Do not mount SenseNebula-M above a heat source.
Storage temperature	-20 ℃~60 ℃	—
Operating humidity	5%~95% RH	Do not expose SenseNebula-M to rain or dampness. Water ingress or moisture may damage its internal components and result in malfunction.
Ventilation	—	The device must be installed in a well-ventilated area. Special care should be taken to protect the device against dust.
Installation method	—	Place the device horizontally or mount it on a wall and secure it with mounting ears. We recommend that M3 × 8 mm recessed pan head screws be used to secure the device on a wall.

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