High Accuracy Thermal Body Temperature Measurement Solution

Dahua UK & Ireland

Requirements Analysis

Human Temperature Measurement

Key Function ▶

Preliminary Screening   **Temperature Record**

Current Status ▶

- Low efficiency of thermometer and infrared detection gun
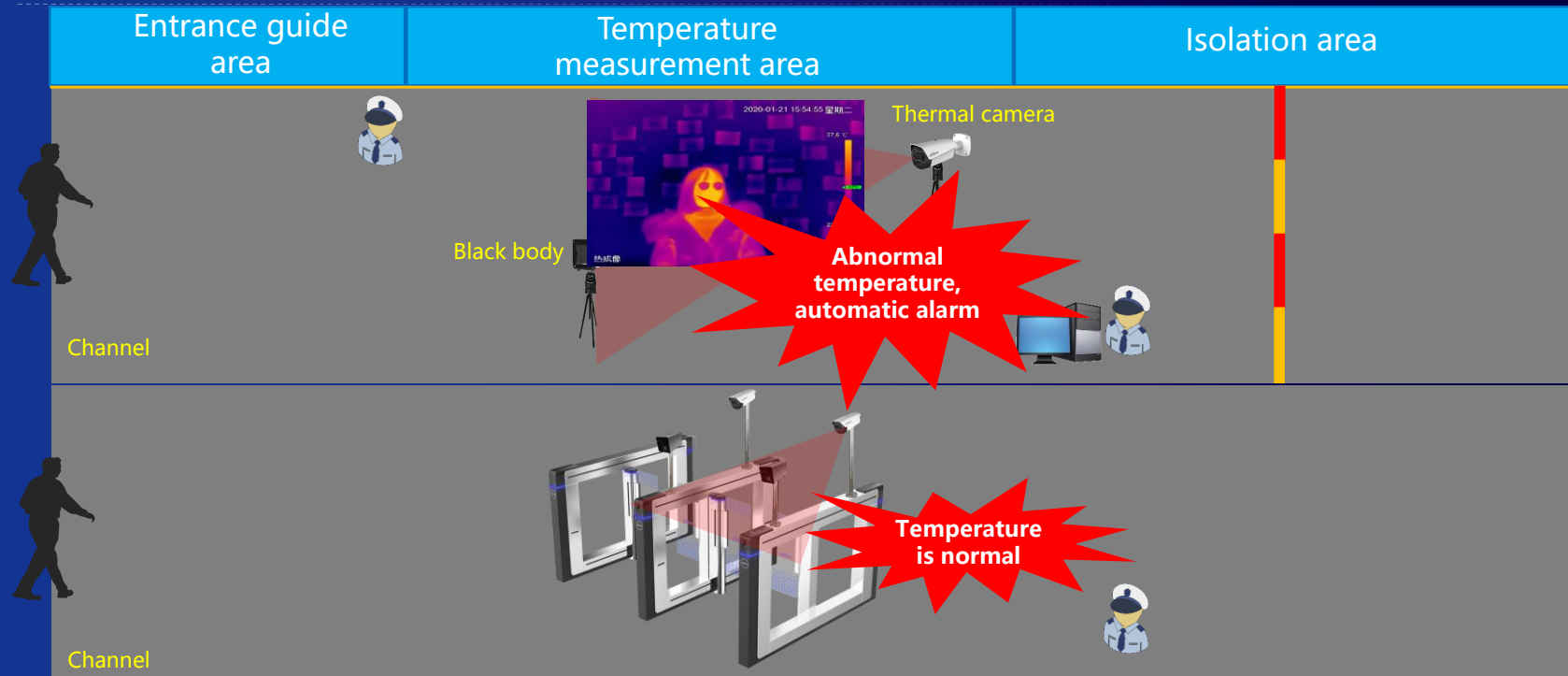- Manual temperature measurement workload, high risk

- Manual recording is inefficient
- Personnel information collection is difficult
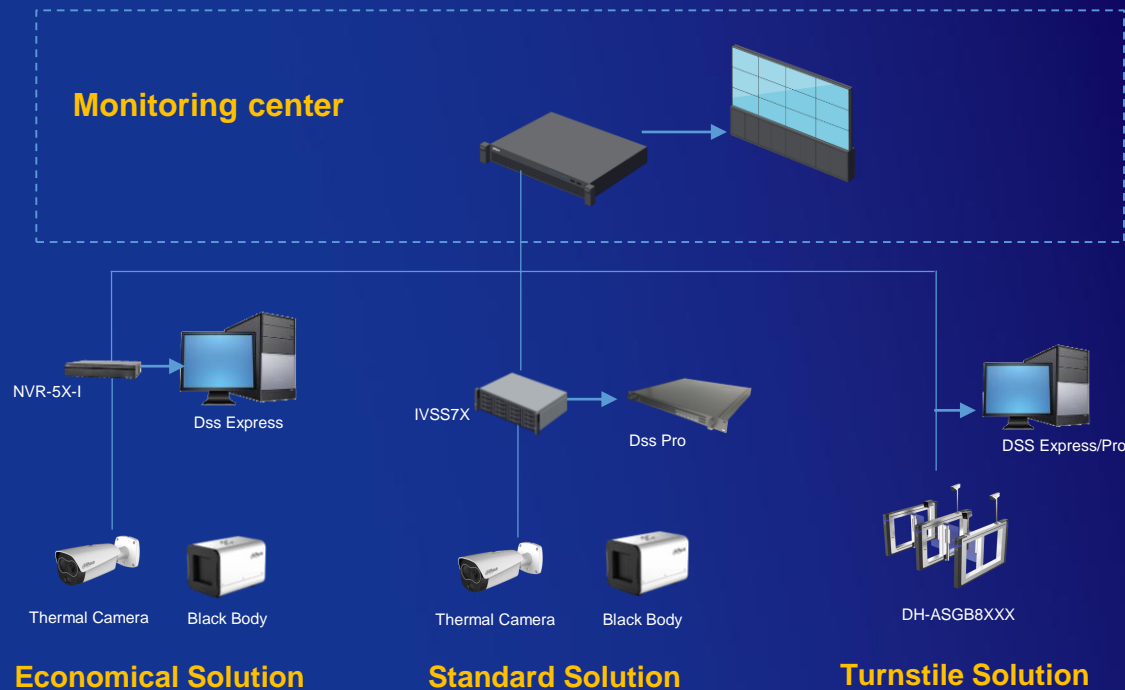
Requirement ▶

- Non-contact automatic temperature measurement
- Accurate, fast and multi-person detection

- Record abnormal temperature information automatically
- Collect abnormal personnel portrait automatically

Solution | Process

| Entrance guide area | Temperature measurement area | Isolation area |

Solution Overview

Monitoring center

NVR-5X-I

Dss Express

IVSS7X

Dss Pro

DSS Express/Pro

Thermal Camera

Black Body

Thermal Camera

Black Body

DH-ASGB8XXX

Economical Solution

Standard Solution

Turnstile Solution

Application Scenarios

Airport

Railway Station

Hospital

School

Solution Values

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High Accuracy
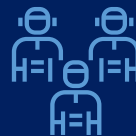
Temperature measurement accuracy: **±0.3℃**

High Efficiency

Efficiency improved by **800%**

Safe & Contactless Measurement

Max. measurement distance: **3m**

Multi-target Measurement

Up to **30 targets** detection at the same time

Intelligent Analysis

Face mask detection accuracy: **> 95%**

Flexible to Deploy

Easy installation and **flexible** deployment

International Standard

Designation: E1965 – 98 (Reapproved 2016)

**Standard Specification for
Infrared Thermometers for Intermittent Determination of
Patient Temperature[1]**

This standard is issued under the fixed designation E1965; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

5.4 *Maximum Permissible Laboratory Error (for a Skin IR Thermometer):*

5.4.1 Within the manufacturer's specified operating ambient conditions (see 5.6) over the display temperature range as specified in 5.2.2, laboratory error δ as measured according to 6.1.5 shall be no greater than 0.3 °C (0.5 °F).

- **American Society for Testing and Materials(ASTM) defines electronic instruments intended for intermittent monitoring of patient temperatures**
- **For the measurement error of infrared thermometers should not greater than 0.3℃**

Solution Values | High Accuracy

Comparison between thermometer and TPC measurement

High Accuracy

1 **±0.3℃ (with blackbody)** ；

2.The accuracy is 0.3 degrees and can reach 0.1 degrees in specific indoor environments;
3. Real-time warning for people with abnormal temperature.

When the body temperature is higher than 37.3℃, it is considered abnormal body temperature, and there is a risk of coronavirus infection, which requires isolation for further treatment

Efficiency improved by 800%

Temperature measurement speed comparison

5000 person

- **Traditional forehead thermometer**
  3 s/person， total 4.2 hours

- **Thermal**
  3 person/s， total 30 minutes

Max. measurement distance: 3m

- Avoid cross infections, protect the health of the medical workers

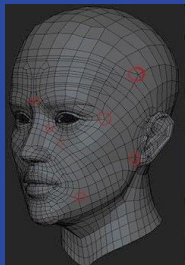Dahua Thermal Body Temperature Measurement Solution

Up to 30 targets detection at the same time

Solution Values | Intelligent Analysis
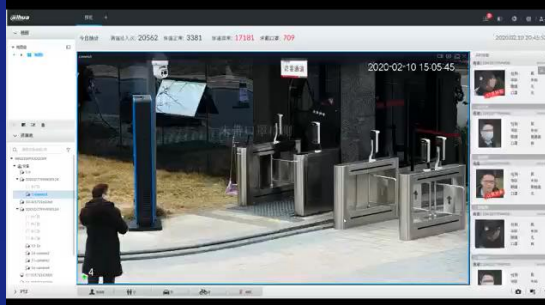
Dahua TECHNOLOGY

Face mask detection accuracy:
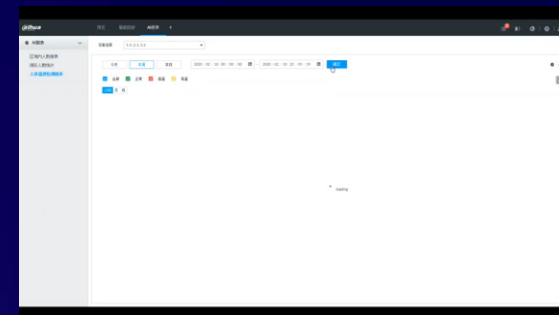**> 95%**

IVSS

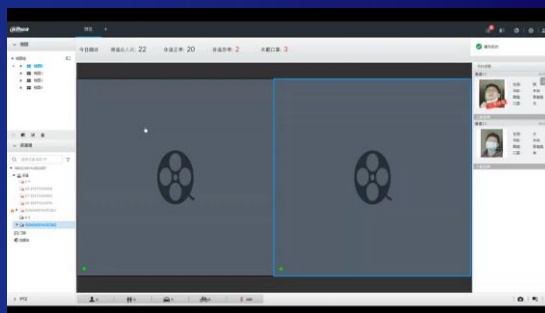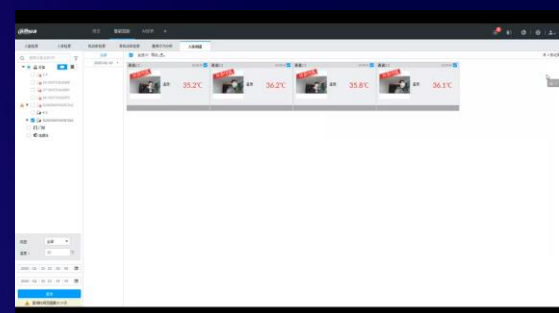Support mask detection, face temperature measurement, data statistics/report export and other functions
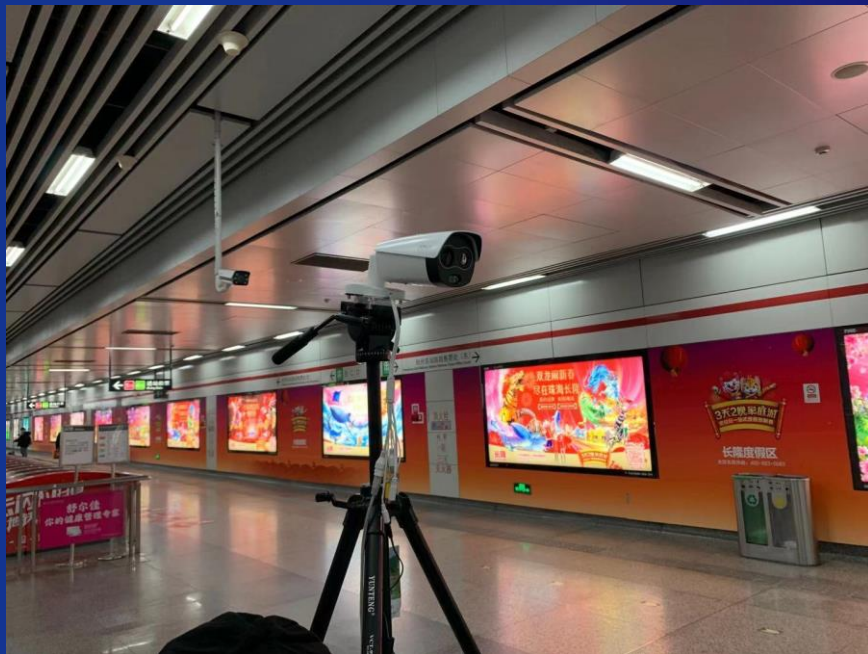
Mask detection

Data statistics

Face recognition

Report export

Easy installation

The thermal camera and the black body are mounted on the tripod, which means they don't need to be mounted on the wall or on the ceiling. In this way, the installation cost can be reduced significantly.

Flexible deployment

The system is mobilizable, it can be moved to anywhere according to the requirements. In this way, it can make maximum use of the products.

Products

Temp measurement part	Accessories part	Storage & analysis part	Display part

Temp measurement part

High-end

TPC-BF5421-T

Entry-level

TPC-BF2221-T

Black-body

TPC-HBB-AHW/BHW   TPC-HBB-CHW/DHW

Accessories part

PoE Switch

Tripod

Connector

Storage & analysis part

DHI-NVR5X-I

DHI-IVSS7X

Optional

Display part

22-inch 1080P Plastic
DHL22-F600-S

27/43/50/55-inch 4K Plastic
LM27/43/50/55-F410

49/55-inch 4K Metal
LM49/55-S400

Optional

Products Comparison

	TPC-BF5421-T + TPC-HBB-AHW/BHW	TPC-BF2221-T + TPC-HBB-CHW/DHW
Resolution	400*300	256*192
Thermal Sensitivity (NETD)	≤40mK@f/1.0	≤50mK@f/1.0
Structure	Higher-end structural design and structural parts	Economical structural design
Hardware	High-end components	Optimized circuit design and lower cost
Blackbody	Jointly developed blackbody	Dahua self-developed blackbody
Positioning	High-end and more valuable solution	To make BTM solution common and protect as many people as possible

Scenarios

Epidemic Period

Airport | Railway Station | Hospital | School

General Period

Entry and Exit | Kitchen | Kindergarten

Shanghai railway station

Dahua thermal human temperature measurement solution helps Shanghai railway station, one of the busiest railway station in the world, to realize rapid human body temperature measurement with dense crowds and find people with abnormal body temperature timely.

Success Cases | Shanghai Hongqiao International Airport

Shanghai Hongqiao International Airport(IATA：SHA)

It is a 4E civil international airport, and it is one of the three gateway complex hubs in China, with an annual passenger throughput of more than 42 million passengers.

A week after the system was launched:

1. Temperature measurement **1.22 million** person-times;

2. **101 people** were found to have abnormal temperature.

3. **60 people** sent to hospital for further confirmation.

Success Cases

Medelin Jose Maria Cordova International Airport, Colombia

Medelin Jose Maria Cordova International Airport, Colombia

Diego Aracena International Airport, Chile

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Success Cases

Uzbekistan Airport

Beirut Rafic Hariri International Airport, Lebanon

Lotus Supermarket, Thailand

Hong Kong

Success Cases

Ministry of Education, Singapore

Sentosa Casino, Singapore

Success Cases

IFEMA Hospital, Spain

Foxconn Factory, Vietnam

Success Cases

Mega Alma-ata Mall, Kazakhstan

CDMX Actinver Financial Center, Mexico

TV reports

Telemadrid, Spain

SKAI TV, Greece

TV reports

NTV, Turkey

Thai Deputy Prime Minister Speech