

DHI-ISC-M5030

AI Security Screening System



The intelligent security screening system is a new security screening device that uses X-ray to quickly inspect baggage and goods without opening the packages.

Introduction

Adopting advanced X-ray image detection system, efficient semiconductor detector, digital image processing technology, and computer image display technology, the device provide users with an efficient, reliable and high-quality image processing system with service functions. The device has a large HDD capacity that can store many high-definition images, with reliable intelligent recognition and alarm against prohibited goods, image enhancement, network expansion and interconnection, fingerprint login, automatic detection and maintenance, and other functions. In addition, its simple and user-friendly operation design makes the user operation more convenient and efficient.

Features

Auxiliary Identification of Hazardous Liquids

Intelligent identification of hazardous liquids such as gasoline, kerosene, diesel, and alcohol is supported, with associated alarms including text and voice prompts.

Dual-source Output

Supports dual-source display of security screening mode and monitoring mode. When configured in security screening mode, different image enhancement effects can be set for display, facilitating comparative observation for operators.

Intelligent Identification of Prohibited Items

Adopts the deep learning algorithm to perform AI analyze for dangerous items (such as knives, bottled liquid, spray can, guns and lighters). Smart boxes of different colors can be superimposed according to the set danger level to facilitate the operator's identification. Alarm linkage are supported such as voice prompt, sound and light alarm and conveyor belt stopping.

Fingerprint Login

Supports the integration of a fingerprint module for fingerprint login, which effectively eliminates the complicate password entry.

Person-package Linkage

Supports the association and storage of person images of individuals placing packages at the entrance with the corresponding X-ray images of the packages.

- Uses X-ray to generator images of packaged items passing on the conveyor belt, and checks the shape and size of packaged items.
- Displays images of the packages with enhanced effects, such as high energy enhancement, super enhancement, light and gradient.
- Supports dual-source display. Security screening mode and monitoring mode are selectable.
- Supports the associated display of packages from vertical view.
- All detection results can be stored and generated as reports, which can be searched and exported after adding enhancement effects according to danger level and time.
- Enables the upload of scanned package images to designated servers through protocols such as FTP and Samba.
- Supports TIP injection function and relevant reports viewing such as security screener evaluation.
- Supports selectable conveyor speeds of 0.2 m/s, 0.3 m/s, and 0.4 m/s to optimize workflow.
- Supports adding IP camera and PoE camera for video monitoring, including preview, storage, and playback to monitor the entire security screening process.
- Supports the system anomaly alarm (including grounding alarms, cover open alarms, control board communication failure alarms, X-ray generator fault alarms, detector communication failure alarms and more).
- Supports HDD storage space management, including RAID 0/1/5, etc, which ensures data security.
- Supports the management of user groups and users, the use of two-level methods (user/user group), and the functions for user login freezing and shift change reminder.
- Supports system operation and maintenance (O&M) management, such as log query and online user query, device upgrade, maintenance records, and more.

Intelligent Energy-saving Function

Dynamic detection of packages is facilitated through the optoelectronic sensor at the entrance. If no packages are detected within a specified duration, the conveyor belt will automatically stop. The conveyor belt will resume operation automatically when a package is placed.

Safety Protection

X-ray protection is higher than the international standard. The leakage dose is less than 0.9 $\mu\text{Gy/h}$.

Application

Suitable for the security screening of handbags, briefcases, mailing bags, express mails and small parcels. It is mainly used in the security screening of key locations such as government office buildings, court, procuratorates and public security bureau.

Technical Specification

System

CPU	Intel quad-core processor
Memory	16 G
Operating System	Embedded Linux operating system
Operating Interface	Local GUI (full functions); Web interface

General

Tunnel Dimensions	505 mm × 305 mm (19.88" × 12.01")
X-ray Tube Anode Voltage	160 KV
X-ray Tube Cooling	Sealed oil bath with forced air
Wire Resolution	Typical: 40AWG(0.08 mm); standard: 40AWG(0.08 mm)
Penetration (steel)	Typical: 39 mm; standard: 36 mm
Leaked Dose	≤0.9 μSv/h (μGy/h)
Noise Level	≤59 dB
Conveyor Belt Speed	Adjustable 0.2 m/s, 0.3m/s and 0.4 m/s
Conveyor High	666 mm
Max Belt Load	160 kg (352.74 lb)
Insulation Resistance	≥200 Ω
Leakage Current	≤0.25 mA
Film Safety	ASA/ISO 1600

Function

Live View	AI recognizes the scanned objects. And the AI box tracks the real-time movement of the objects. It support custom modification of the color of text and boxes.
Type Recognition	Supports intelligent recognition of over a hundred categories of prohibited and restricted items, including knives, guns, law enforcement equipment, aerosol cans, liquids, batteries, fireworks, tools, walkie-talkies, drones, etc.
Danger Level	Algorithm sensitivity settings for three levels (high, medium, low) are supported, allowing for the configuration of different security screening strategies based on types such as land transport, air transport, and special regulations.
Event Linkage	The sound and light alarm (Alarm IO output), audio prompt, platform alarm, screen prompt and more will be triggered according to danger level.
Image Storage	Supports storage for more than 1 million pictures. The picture includes danger level and item type, the original picture and the AI picture can be selected to view.

Baggage Search	Supports search according to time, object type and more, playback and export scanned baggage images and associated videos.
TIP Management	Supports the random insertion of dangerous good images into scanned package images generated during normal operations. Parameters include the insertion frequency and proportion of various types of dangerous goods, along with start and end times for the insertion can be configured. Additionally, relevant item insertion reports and assessment reports can be queried.
Package Linkage	Configurable front entrance camera support the capture of packages, which are then linked with X-ray imaging and stored for easy retrieval by security screener and travelers for review.
Image Processing	Supports the following image enhancement effects: color/black & white, partial enhancement, super enhancement, edge enhancement, scanning, organic material stripping, inorganic material stripping, mixture stripping, inverse color, high energy enhancement, low energy enhancement, light, dark, density threat alert Z7/Z8/Z9, high density alert, AI overlay, vertical flip, pseudo color, etc.
Image Playback	Supports playback of 30 images.
Image Zooming	64x
Intelligent Temperature Control	Detects the temperature of main board and HDD and automatically adjusts fan speed to make it work stably and quietly.

Port

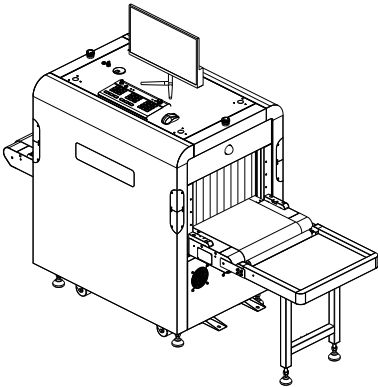
RS232 Port	1-Channel RS232 port
Power Port	1-Channel port
USB Port	2-Channel USB3.0
Video Output (Network)	2-Channel input, 1-channel MIC Output (3.5 mm)
Network Port	1 RJ45 (supports 1,000 M)
Display Port	2-Channel HDMI output
Alarm Output Port	3-Channel alarm output
Emergency Stop Button	3 buttons

Regular

Power Supply	220–240 VAC, 50-60 Hz
Power Consumption	800 W
Max Power Consumption	1.2 kW
Operating Temperature	0 °C to +45 °C (32 °F to +113 °F)
Operating Humidity	0% to 95%
Storage Temperature	–20 °C to +70 °C (–4 °F to +158 °F)
Storage Humidity	0% to 95%, non-condensing
Product Dimensions	1,665 mm × 766 mm × 1,237 mm (65.55" × 30.16" × 48.70")
Packaging Dimensions	1,805 mm × 1,026 mm × 1,409 mm (71.06" × 40.39" × 55.47")
Net Weight	360 kg (793.66 lb) (Bare machine)
Gross Weight	490 kg (1080.26 lb) (Including package)
Installation	Ground mount

Ordering Information		
Type	Model	Description
Intelligent Security Screening Machine	DHI-ISC-M5030	Intelligent Security Screening Machine
		21.5 inch LCD Monitor
		0.5m Out Sliding table
		Special Keyboard, Mouse
Optional Accessories	DHI-ISC-M50-EC05	0.5m Extend Roller table
	DHI-ISC-M50-EC10	1.0m Extend Roller table
	DHI-ASM101A	Fingerprint reader

Installation



Dimensions (mm[inch])

