Intelligent Temperature Detection + Face Recognition System

1 Overview

SCW9201R-8T 2 megapixel intelligent terminal for thermal imaging temperature detection and face recognition is an AI product in which Face++ lightweight convolutional neural networks (CNN) algorithm is built in and high-precision thermal imaging temperature-detecting chip and ISP image processing technology into an organic whole. It can provide various functions including image collecting, mask detection, face recognition and comparison, temperature measuring and liv detection and etc. With high temperature-detecting precision and recognition rate as well as rapid recognition speed. It is ahead of similar products in the industry and can work off-line, is easy to install and use. It can be applied widely in various scenes including area access control system, brake channel and buildings to help prevent and control Corona Virus Disease.

2 Technical Specifications

■ Integrate contactless body-temperature-detecting and live-detecting into an organic whole for rapid screening and early warning.

■ Support mask detection and face recognition with mask.

■ Stable and reliable due to FACE++ deep face recognition algorithm.

■ 1/2.8" 2 megapixel Exview HAD CCD sensor with 1920×1080@30fps output resolution in maximum

■ Exview HAD CCD CMOS, 0.001Lux@(F1.2，AGC ON)；

■ Integrate thermal-imaging temperature measuring module with ± .3℃precision, send voice alarming signal when detecting abnormal body temperature;

■ Library supportting 50 thousand face images with recognition speed lower than 100ms and rate higher than 99.7%;

■ Support video and body temperature overlap；

■ Record, save and trace recognition information and body temperature information；

■ Support wiegand protocol；

■ Lightning protection and surge protection；

■ 8-inch LCD screen with ultrathin metal case and IP66 waterproof level.

■ Ultrathin with the thinnest metal case in the field.

■ Multi configuration options for face recognition + body temperature detection + mask recognition.

■ Support off-line working mode.

■ Support HTTP protocol and provide data interface for other health management platform to share health bigdata.

3 Technique Parameters

Thermal Infrared Parameter	
Sensor	Far IR temperature sensor
Spectral Range	8~14um
Resolution Ratio	80x60
Temperature Measure	Scope：-10~150℃，Precision： ±0.5℃（30~50℃），±1℃（0-30℃ or 50~80℃），±2℃（other temperature scope）
Field of View	33°
Day-Night Parameter	Adaptive fixed color
Wide Dynamic	Self adaptive
Digital Noise Reduction	Self adjusting
Voice Broadcast	Support abnormal temperature alarming

Visible Parameter	
Lens	Focal Length 3.6mm， field of view：118°
Minimum Illumination	0.005Lux@F1.2（colorful mode）；0.001Lux@F1.2（white-black mode）
Dynamic Range	≥120dB
Signal to Noise Ratio	≥46dB（AGC OFF）
Exposure Mode	Program mode（user-defined shutter interval），shutter mode（1/5 - 1/20,000s），support slow shutter
White Balance	Auto, indoor, outdoor, sodium lamp mode, manual
Digital Noise Reduction	support DNR,3DNR

Image and Compression	
Video Compression	H.265 Main Profile / H.264 High profile / M-JPEG
Max. Resolution Ratio	1920x1080@30fps
Main Code Stream	920x1080, 1280x960, 1280x720, 720x576
Deputy Stream	640x480, 352x288, 320x240, 176x144
MJPE	1920x1080, 1280x720, close
Output Bit Rate	CBR or VBR, Configurable scope: 32Kbps~10Mbps
Audio Compression	G711 , PCM
Characters Overlap	Support channel name, date and time overlap and overla pe position can be adjusted.
Temperature Detection	Support abnormal temperature alarming, overal and local temperature measuring

AI	
Face Library	50 thousand pieces in maximum
Recognition Speed	≤300ms
Live Detection	Support
Power Interface	DC12V
Internet Interface	1 channel of 10/100BaseT Ethernet RJ45 Interface
Wiegand	1 channel of Wiegand interface output
On-off Interface	1 channel of relayoutput

Basic Prameters	
Sensor	1/2.8 " Progressive Scan CMOS
Minimum Illumination	0.01Lux@(F1.2,AGC ON)
Shutter	1/100s~1/10000s
Lens	Focal length 3.6mm， FOV：118°
Screen Size	7/8 inch HD screen
Day-Night Parameter	Self-adaptive
Wide Dynamic Range	Self-adaptive
Digital Noise Reduction	Adjust automatically
Voice Broadcast	Support abnormal temperature alarming

Video	
Video Standard	H.265 Main Profile / H.264 High profile / M-JPEG
Bit Rate	CBR or VBR, Configurable scope: 32Kbps~10Mbps
Video Size	1920x1080@30fps
Frame Rate	25fps
Video Set	Exposure(shutter), gain, contrast, vibrancy, face exposure compensation
Video Overlap	Time, point location
Backlight Compensation	Support

Recognition Performance	
Working Mode	On line, off line and automation
Recognized Objects	Face, gender, age and safety helmet optional
Recognition Type	1 : N、1 : 1
Detection Type	live detection
Recognition Speed	≤100ms
Recognition Tate	≥99%
Recognition Distance	0.3-0.5m
Image Library	2W-5W
Image Library Import	Support single import, batch import and real-time captured image import

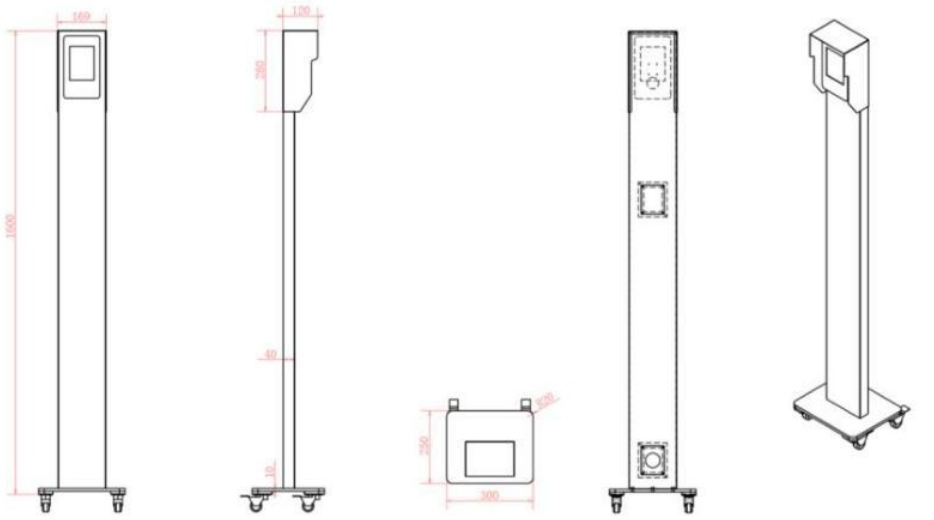
Capture Functions	
Image Formate	JPEG
Captured Results	Panorama, local close-up image
Image Size	1920*1080 for Panorama , and depending on actual picture for close-up image
Local Storage	Built-in 8GB eMMC support offline resume
Capture Storage	Close-up image: store 0.64 million pieces with 64G TF card
	Panorama : store 0.32 million pieces with 64G TF card

Mode Type	
List Type	Black list, whith list and casual user
Output Mode	Wiegand 26/34/66 and relay
Trigger Mode	Video trigger, swipping card, swipping ID, scanning QR C ode
Secondary Development	Multi platform (Linux, Arm, Windows) and multi language (Java, C++, C#)
Network Features	
Protocol	ONVIF, TCP/IP,HTTP, FTP, 485, GB28181, Wiegand, DNS, NTP
General Functions	Heartbeat, Password Protection, NTP timing
Working Environment	
Power	DC 12V 2A
Power Consumption	≤8W
Working Temperature	-30℃ ~ + 70℃
Working Humidity	20% - 90%
Water Protection Level	IP66
Protection Measures	Lightning protection and surge protection

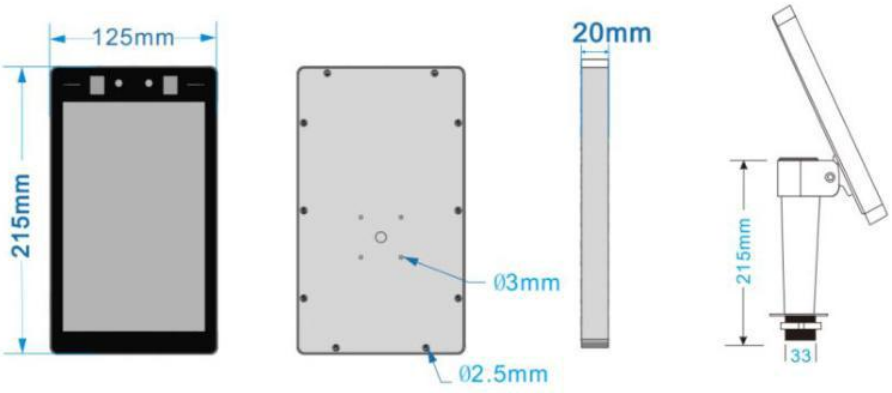
General Detection			
SD Card Interface	Max. 128G		
USB	2 USB interfaces and 1 channel expandable		
MIC	Built-in		
Voice Broadcast	Support alarming for abnormal temperature		
Detection Distance	0.3M—0.5M		
Audio Interface	2 channels of audio outputs		
RS485	1 channel Half-duplex RS485 interface		
Working Temperature	-20°C ~60°C		
Working Humidity	0%-90% RH (no condensing)		
Power comsuption	5W		
Size	215x125x25mm		
Weight	< 1kg		
Interface No.	**Pin**	**Name**	**Functions**
Power interface	/	Power	12VDC
Network Interface	/	Network interface	RJ45 Network interface
On-off interface	+	Alarm-NO	NO Normally open port
	-	Alarm-NO	COM Public Port
Wiegand interface	1	VCC	12VDC
	2	Wiegand_D1	Wiegand protocol data port D1
	3	Wiegand_D0	Wiegand protocol data port D0
	4	GND	Signal ground

4 Components and Installation

4.1 Components



Front Side Foundation Reverse Side Overall



4.2 Desktop Style

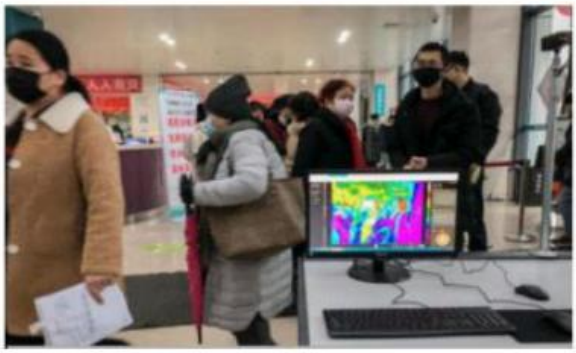
Desktop style

- Base thickness 3.8cm
- With 2 USB interfaces
- Base with adjusting screw
- Cool blue light band
- Environmental protection paint for cold rolled sheet

4.3 Vertical Style

4.3 Wall Mounted

5 Application Scenarios



Community

Shopping mall

Station

Checkpoint