



Smart Thermal Imaging and Entrance Control

DFI

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Selection Guide

Model	iMage-E	iMage-M	iMage-F
Hardware	 	 	 
Key Features	1. Entry version for 1 to 1 detection 2. Up to 3 detection areas (any over-heat objects can be detected) 3. Detection distance: 1 to 1.5m 4. Object temperature range -10°C ~160°C	1. Advance version for 1 to 20 detects 2. Up to 20 detection areas(any over-heat objects can be detected) 3. Detection distance: 2.5 to 5m 4. Object temperature range -40°C ~550°C 5. Have security surveillance extensionality, ex. fire detection, electrical fence and non-smoking area monitoring...etc.	1. Face specific version for 1 to 10 detection 2. Detect human face only, up to 10 people at once (not face recognition) 3. No security surveillance extensionality
EZPRO included	Yes	Yes	Yes
PC requirement	At least Dual-Core Core-i3 CPU, 8GB memory	At least Dual-Core Core-i5 CPU, 8GB memory	At least Dual-Core Core-i5 CPU, 8GB memory
Face recognition	Need to add IP Camera and upgrade PC to at least 6-core Core i5 CPU		Need to upgrade PC to at least 6-core Core i5 CPU

iMage-E

Single person Thermal Imaging System

Thermal Camera_AX8	
Resolution	RGB : 640 x 480 ; IR : 80 x 60 pixels
Image Streaming Format	Motion JPEG / MPEG / H.264
Min. Illumination	Minimum 10 Lux without illuminator
Image Modes	Thermal, Visual, MSX (IR-image with enhanced detail presentation)
Thermal Sensitivity/NETD	<0.10°C@+30°C (+86°F)/100mK
Accuracy	±0.3°C (<1m fixed distance) ±0.8°C (1 to 1.5m fixed distance)
Object temperature range	-10°C to +150°C (14°F to 302°F)
Detection Area	Up to 3 boxes
Encapsulation	IP67
Communication and Power	Ethernet 100Mbps, powered over Ethernet, PoE IEEE 802.3af class 0
Operating Temperature	0°C to +50°C (32°F to +122°F)
EZ Pro Image Management System	
Alarm Functions	Automatic and real time CCTV image pop-up, warning sound, Email notification, PTZ, external device connection...etc. A maximum of 5 alarm can be set.
Quick Search	Provide event searching index, searching over-temperature events by text and image in few seconds
Heterogeneous Integration	Open platform with complete API for integrating 3 rd party system/device, like physical alarm, face recognition, entrance control system, etc.



iMage-M

Multiple persons Thermal Imaging System

Thermal Camera_M16B

Imaging Elements	RGB: 1/1.8" 6M CMOS / line-by-line scan Thermal: Uncooled microbolometer (Infrared Range: 7.5 to 13.5μ m))
Resolution	RGB: 6 million (3072x2048) IR: 336 x 252 pixels
Image Streaming Format	MxPEG / MJPEG / H.264
Sensitivity	彩色 : 0.1 lux, 1/60 秒
Min. Illusion	RGB: 0.1 lux, 1/60 second
Thermal Image	Temperature scale or black/white
NETD	Standard: 50mK · <79mK (50mK means that temperature change is 0.05°C)
Accuracy	±0.5°C (2.5 ~5m fixed distance)
Object temperature range	High sensitivity: -40 to 160°C Low sensitivity: -40 to 550°C
Detection Area	Up to 20 boxes
Encapsulation	Body: IP66 / IK06 Lens: IP66 / IK04 (B016 equal to IK06)

EZ Pro Image Management System

Alarm Functions	Automatic and real time CCTV image pop-up, warning sound, Email notification, PTZ, external device connection...etc. A maximum of 5 alarm can be set.
Quick Search	Provide event searching index, searching over-temperature events by text and image in few seconds

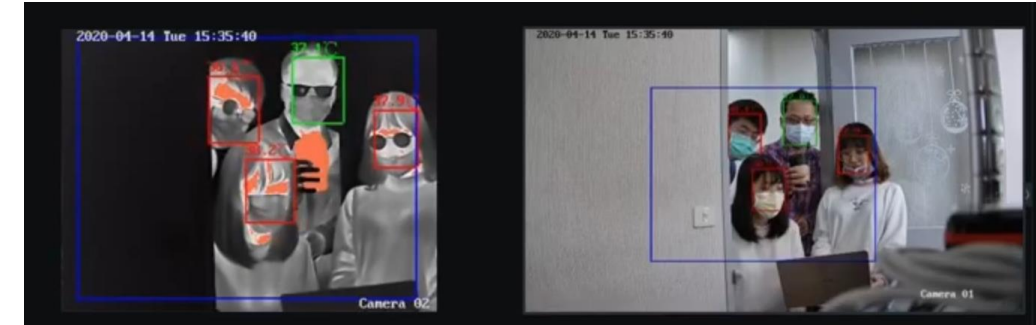
Heterogeneous Integration



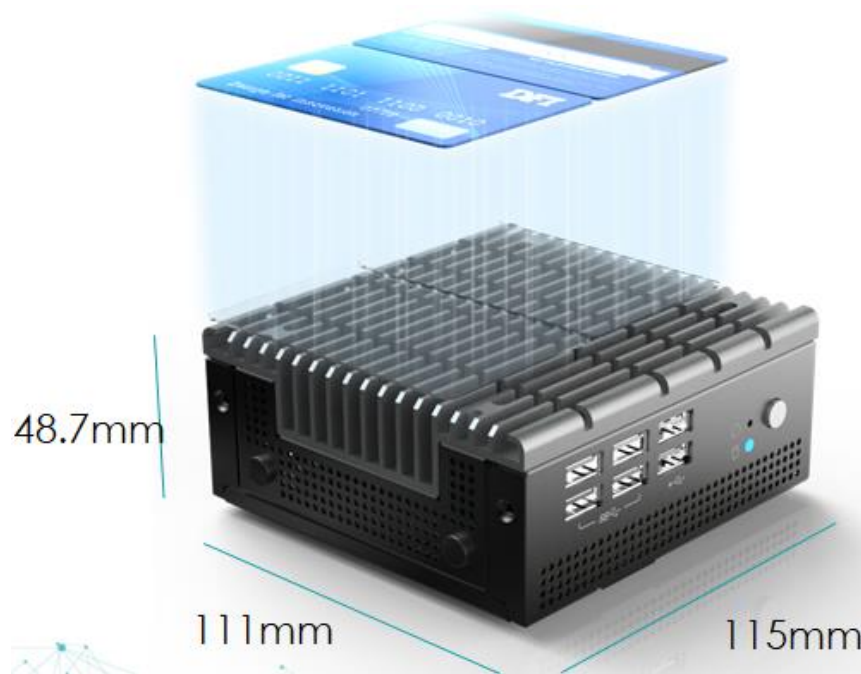
iMage-F

Multiple persons (Face only) Thermal Imaging System

Thermal Camera_HVCT-B4010I-6	
Resolution	RGB : 2688 x 1520 IR : 160 x 120 pixels
Image Streaming Format	H.264/H.265/MJPEG
Image Modes	Thermal, Visual, MSX (IR-image with enhanced detail presentation)
Thermal Sensitivity/NETD	<40mK
Accuracy	±0.5°C (0.8 to 1.5m fixed distance)
Object temperature range	30°C to 45°C
Detect object	Human face temperature, up to 10 persons
Encapsulation	IP66
EZ Pro Image Management System	
Alarm Functions	Automatic and real time CCTV image pop-up, warning sound, Email notification, PTZ, external device connection...etc. A maximum of 5 alarm can be set.
Quick Search	Provide event searching index, searching over-temperature events by text and image in few seconds
Heterogeneous Integration	Open platform with complete API for integrating 3 rd party system/device, like physical alarm, face recognition, entrance control system...etc..



EB100-KU



- Intel NUC mini PC & fanless design
- Intel **Core i3-6100U** Processor 2.3GHz or Intel Core i5-6300U Processor 2.4GHz
- DDR4 2666MHz SODIMM **8GB**
- 1x 2.5" SATA drive bay, 1x MSATA, 1x M.2 2280
- Operating Temperature: -20 ~ 40°C
- **Windows 10** IoT Enterprise 2019 LTSC
- Long lifecycle support, 2 yrs warranty



Compact and Reliable

Q&A

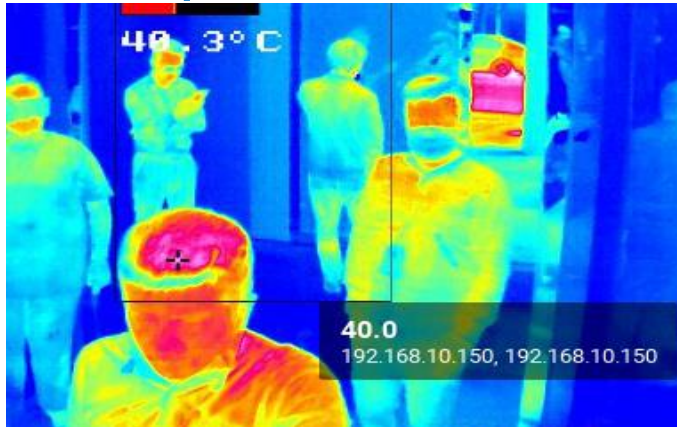
No	Questions	Answers
1	What's the life cycle of Camera?	5 years
2.	What's warranty period of Camera?	1 year
3.	How to do if the camera is broken?	Send back to DFI, ioNetworks is the owner for camera maintenance.
4.	Software support	DFI is the main contact, ioNetworks is the owner for software support.
5.	How large storage size needed for one day recording?	Single person detection: 10GB per day Multiple persons detection: 70GB per day Multiple Face detection: 50GB per day Administrator can set how many days data to be kept in PC, the more days the more storage capacity needed.

SOLUTION INTRODUCTION



Application Scenario

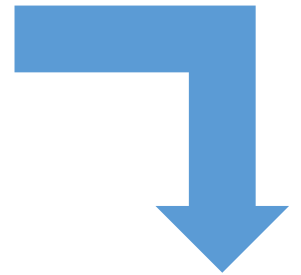
When the body temperature is detected higher than critical point defined



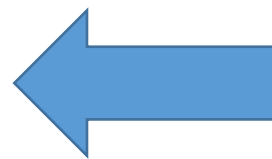
Event is recorded in database along with image

Bookmark Log - EZ Pro Client

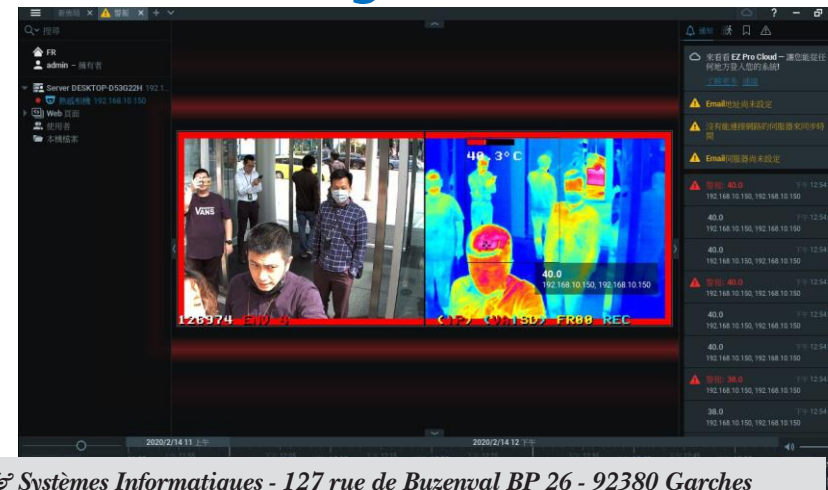
Name	Camera	Start time	Length	Created	Creator	Tags
Motion on Door (192.168.1.194)	Door	2/18/20 5:12 PM	6 seconds	2/18/20 5:12 PM	System Event	
Motion on Door (192.168.1.194)	Door	2/18/20 5:12 PM	6 seconds	2/18/20 5:12 PM	System Event	
Motion on Door (192.168.1.194)	Door	2/18/20 5:11 PM	6 seconds	2/18/20 5:11 PM	System Event	
Motion on Door (192.168.1.194)	Door	2/18/20 5:10 PM	6 seconds	2/18/20 5:10 PM	System Event	
Motion on Door (192.168.1.194)	Door	2/18/20 5:09 PM	6 seconds	2/18/20 5:09 PM	System Event	
Motion on Door (192.168.1.194)	Door	2/18/20 5:08 PM	6 seconds	2/18/20 5:08 PM	System Event	
Motion on Door (192.168.1.194)	Door	2/18/20 5:04 PM	6 seconds	2/18/20 5:04 PM	System Event	
Motion on Door (192.168.1.194)	Door	2/18/20 4:54 PM	6 seconds	2/18/20 4:54 PM	System Event	
Motion on Door (192.168.1.194)	Door	2/18/20 4:53 PM	6 seconds	2/18/20 4:53 PM	System Event	
Motion on Door (192.168.1.194)	Door	2/18/20 4:48 PM	6 seconds	2/18/20 4:48 PM	System Event	
Motion on Door (192.168.1.194)	Door	2/18/20 4:43 PM	6 seconds	2/18/20 4:43 PM	System Event	
Motion on Door (192.168.1.194)	Door	2/18/20 4:43 PM	6 seconds	2/18/20 4:43 PM	System Event	
Motion on Door (192.168.1.194)	Door	2/18/20 4:42 PM	6 seconds	2/18/20 4:42 PM	System Event	
Motion on Door (192.168.1.194)	Door	2/18/20 4:38 PM	6 seconds	2/18/20 4:38 PM	System Event	
Motion on Door (192.168.1.194)	Door	2/18/20 4:36 PM	6 seconds	2/18/20 4:36 PM	System Event	
Motion on Door (192.168.1.194)	Door	2/18/20 4:33 PM	6 seconds	2/18/20 4:33 PM	System Event	
Motion on Door (192.168.1.194)	Door	2/18/20 4:33 PM	6 seconds	2/18/20 4:33 PM	System Event	
Motion on Door (192.168.1.194)	Door	2/18/20 4:32 PM	6 seconds	2/18/20 4:32 PM	System Event	



Synchronize to Access Control and alarm system



Send warning notifications



Why Thermal Imaging Device?



- **Non-contact** body temperature imaging by Infrared
- **Automatic** detection, recording and sending alarm
- **Reduce** staff allocated for entrance control
- Detect multi-persons at once, **reducing queue-up**

Mechanism

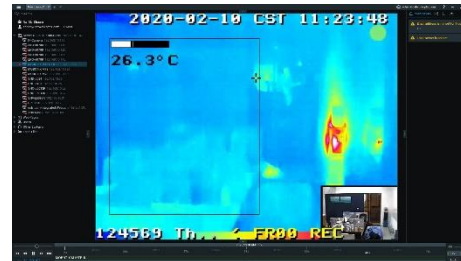
Detection

Define max. 20 detection areas and set independent trigger points.



Management

1. Real time warning
2. Event record
3. Search and tracking



Pop-up CCTV screen
Play warning sound
Snapshot screen, show the abnormal temperature

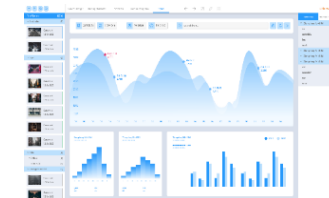
Tracking moving route of abnormal person by multiple split screens

Advance Management

Heterogeneous system integration



Entrance Control



Central monitoring

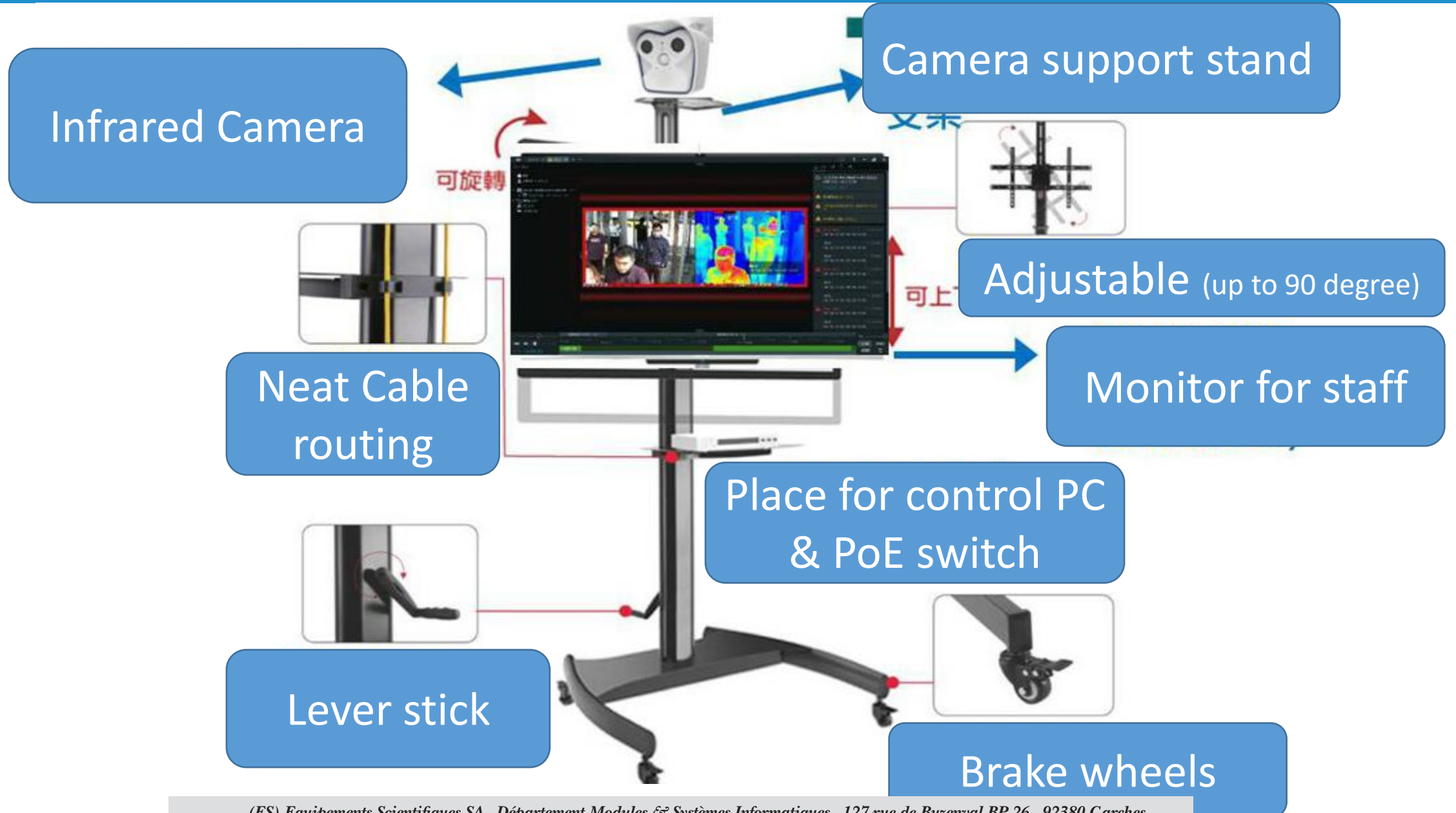
Application Scenario with Face Recognition (Optional)



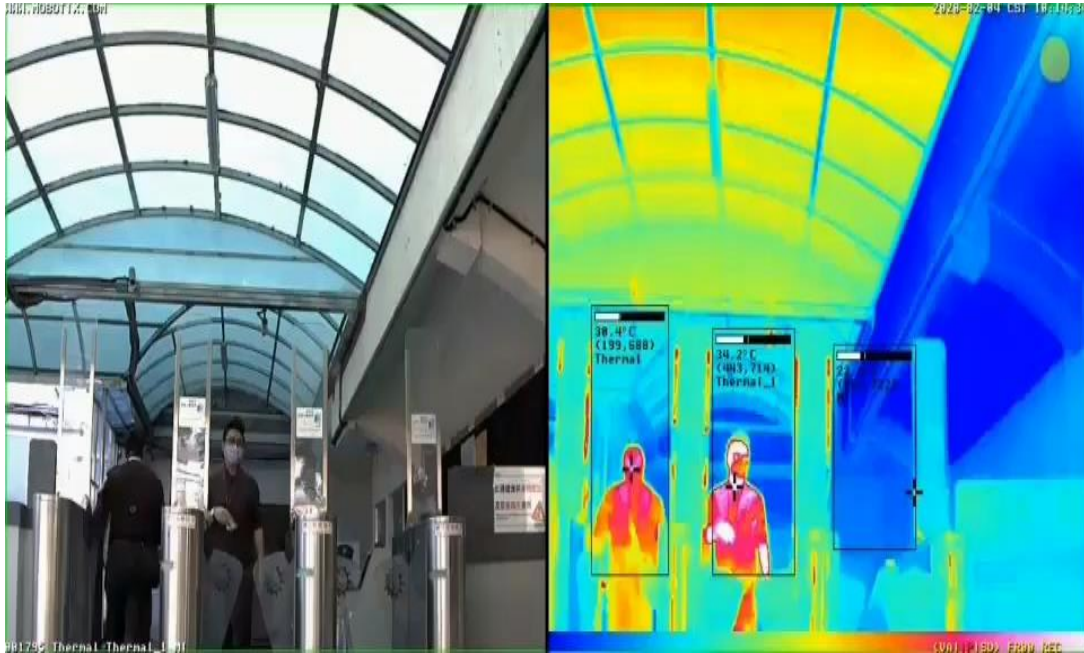
Two-factor gateway clearance process:



Equipment Setting Example



Multiple Persons Detection: iMage-M

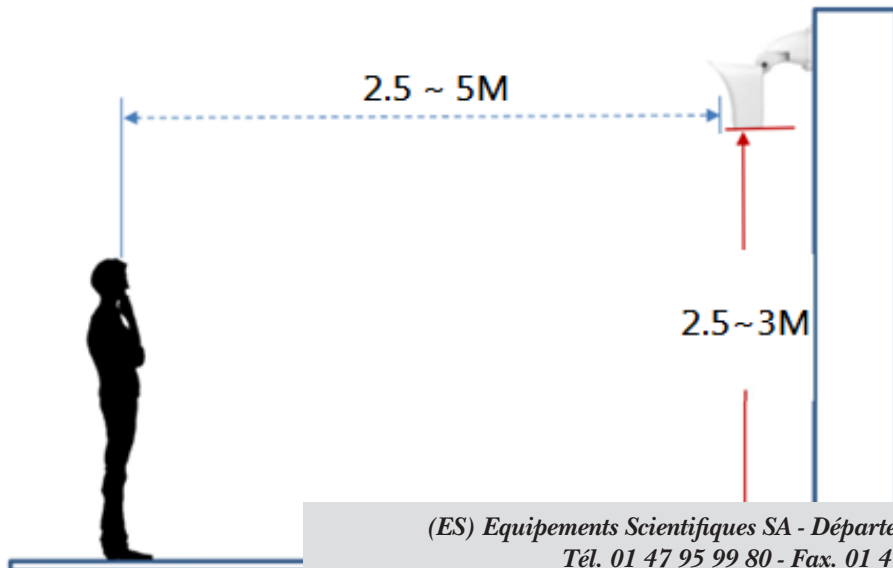


Up to 20
detection
areas

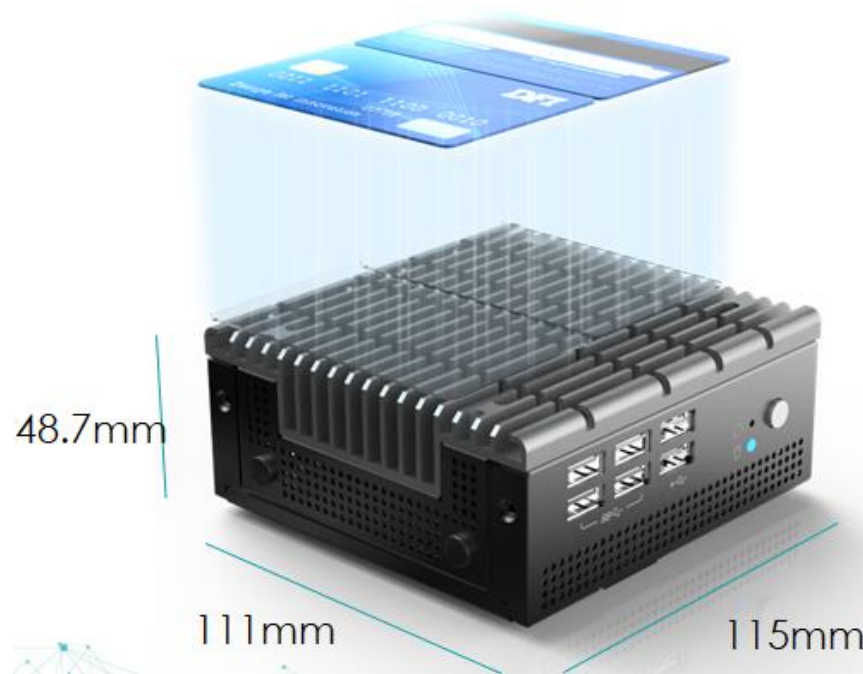
EZ Pro+Win10



EB100-KU with
Core i5 6300U



EB100-KU



- Intel NUC mini PC & fanless design
- Intel **Core i5-6300U** Processor 2.4GHz
- DDR4 2666MHz SODIMM **8GB**
- 1x 2.5" SATA drive bay, 1x MSATA, 1x M.2 2280
- Operating Temperature: -20 ~ 40°C
- **Windows 10** IoT Enterprise 2019 LTSC
- Long lifecycle support, 2 yrs warranty



Compact and Reliable

Front View

Multiple People Detection

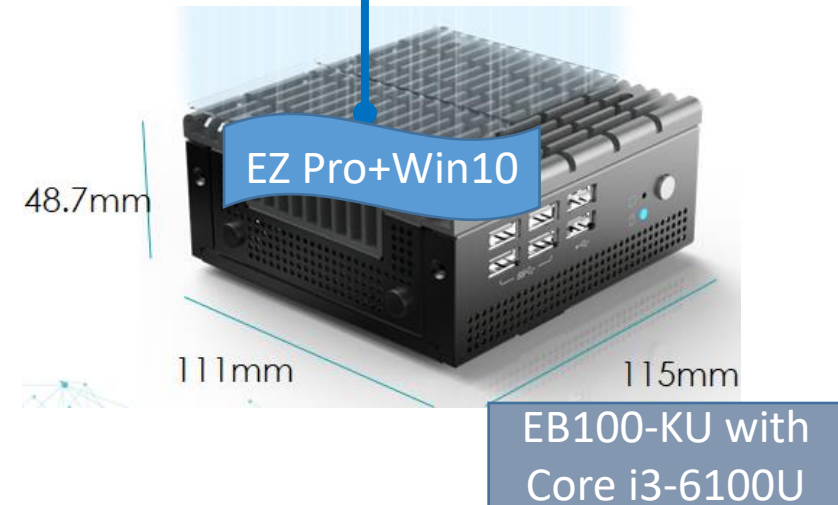
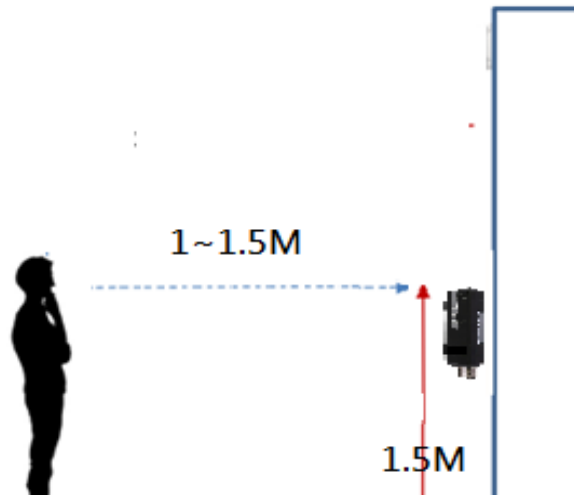
Lens Type	Dual Lens(RGB+Thermal)
Imaging Elements	RGB: 1/1.8" 6M CMOS / line-by-line scan Thermal: uncooled microbolometer (Infrared Range: 7.5 to 13.5μ m)
Resolution	RGB: 6 million (3072x2048) Thermal: 336 x 252 pixels
Compression Format	MxPEG / MJPEG / H.264
Min. Illumination	RGB: 0.1 lux, 1/60 second
Max. Fps	thermal imaging, thermal overlay image, dual image: 9 FPS
Thermal Image	Temperature scale or black/white
NETD	Standard: 50mK · <79mK (50mK means that temperature change is 0.05°C)
Temperature Measurement Range(Adjustable)	High sensitivity: -40 to 160°C Low sensitivity: -40 to 550°C
Temperature Measurement Method	Full image area(customizable temperature measurement window)
Protection Class	Body: IP66 / IK06 Lens: IP66 / IK04 (B016 equal to IK06)
Operation& Storage Temperature	-30°C ~ +60°C
Certification	EN55032:2012; EN55022:2010; EN55024:2010; EN50121-4:2015; EN61000-6-1:2007; EN61000-6-2:2005; EN61000-6-3:2007+A1:2011; EN61000-6-4:2007+A1:2011; AS/ NZS CISPR22:2009+A1:2010; CFR47 FCC part15B



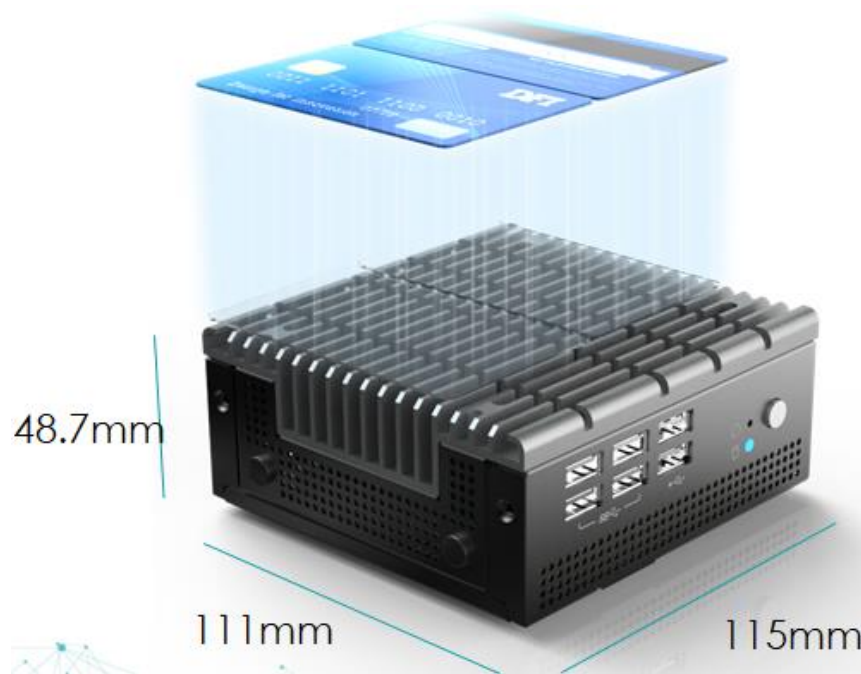
Single Person Detection



Up to 3
detection
areas



EB100-KU



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Compact and Reliable

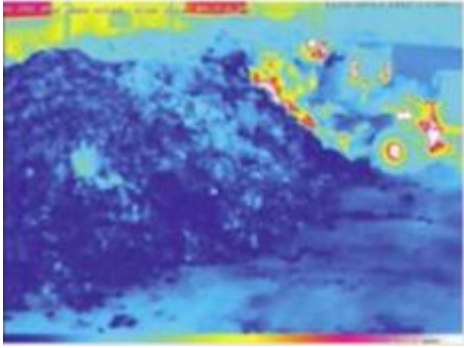
Front View

Single Person Detection

Item	Content	Details
Image& Optics	IR Pixel	80*60 pixels
	NETD	<0.10°C@ +30°C (+86°F)/100mK
	Focal Length	Focus
Sensor	Sensor Type	Focal Plane Array (FPA), uncooled microbolometer
	Spectral Range	7.5–13 μm
	Pixel	640 × 480
Visible Light Camera	Image Compression Format	Motion JPEG, MPEG, H.264
	Image type	Thermal, Visual, MSX (IR-image with enhanced detail presentation)
Measurement	Temperature Range of the Detected Object	–10°C to +150°C (14°F to 302°F)
	Accuracy	±2% of reading (+10 to+ 100C @ + 10 to +35 amb)
Ethernet	Ethernet Type	100 Mbps
	Ethernet Standard	IEEE 802.3
	PoE Protocol	Power over Ethernet, PoE IEEE 802.3af class 0.
Environment	Operation Temperature	0°C to +50°C (32°F to +122°F)
	Waterproof Level	IP67
	Camera Size	Without connector: 54 × 25 × 79 mm (2.1 x 1 x 3.1 in.) Includes connector: 54 × 25 × 95 mm (2.1 x 1 x 3.7 in.)



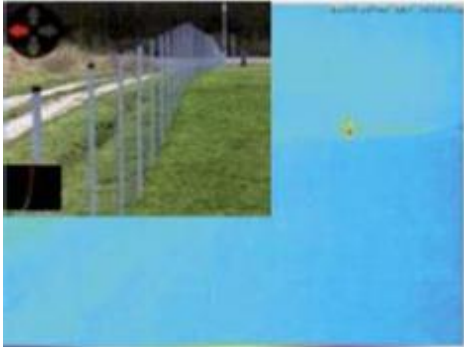
Extended Applications



Fire warning



Thermal overlay image



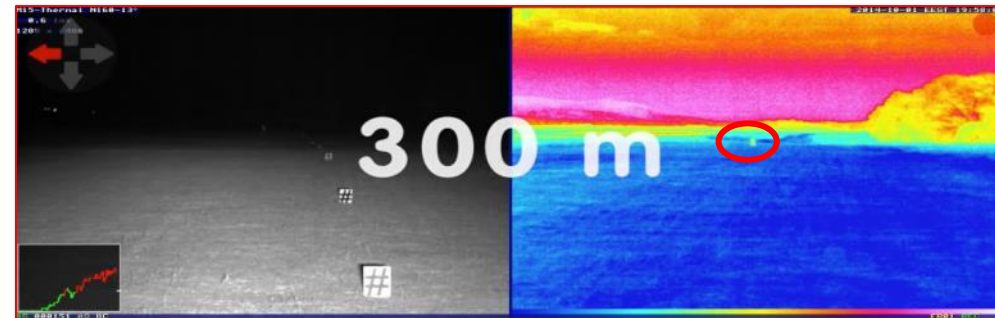
Electronic fence



No smoking area



Military Surveillance



Night vision