

Vismal M3

Dual-AI Visual and Thermal Module

Vismal M3 is a deep learning accelerated module, featured with high accuracy facial recognition algorithm, face temperature sensing, mask detection, liveness detection and embedded with rich I/Os. Vismal M3 significantly saves user's Total Cost of Ownership on innovative product development.



Specifications

Model	Vismal-M3
Dual AI, Processor	Broadcom: QuadCore ARM CPU Kneron: NPU+Dual Core CPU
Operation System	Linux
Storage	SD card 32GB
Algorithm	FaceTemp, auto calibration
Edge Facial Recognition	Deep Learning CNN algorithm
	99.7% accuracy
	2-million people max
	Liveness detection
	Detection distance: 1.5 meters
Video	Comply EU-GDPR
	H.265 compression standard
	1080p Full HD video streaming
	Flexible setup by API command
I/O	Rtsp streaming format
	RED/GREEN LED, Push Button
	3W mono speaker
	NFC card reader

Thermal Sensor	768 FIR pixels
	Field of View: 110°
	Accuracy: $\pm 0.5^{\circ}\text{C}$
	Programmable refresh rate 0.5Hz to 64Hz
	Detect distance: 30-100cm
Data Interface	Ethernet via a USB ethernet adapter
Power Consumption	5V/ 1.5A
Power source	5VDC through Micro USB
Dimension	108mm x 66mm x 26.8mm
Operating Temperature	0°C – 40°C
Non-operating Temperature	-25°C – 80°C
Weight	102g

API Commands

Communication Interface	MQTT
MQTT Broker Server	192.168.1.100
Port	1883
Video Streaming	http://192.168.1.100:8080/stream/video.mjpeg

人臉模型建立		
URL	http://localhost/api/TrainingModel/	
Method	POST	
Header	Content-Type	application/x-www-form-urlencoded
Parameter	Format	Example
user_name	string	"王大明"
member_id	string	"A123456"
phone_number	string	"0987654321"
email	string	"abc@ds-i.com.tw"
image	Base64	
created_by	string	"admin"
Response	"Failed ! Initialize failed" 初始化未完成。 "Failed ! Member id required" 未輸入 Member ID。 "Failed ! Image required" 未上傳照片。 "Failed ! Training failed" 照片未識到別人臉。 "Finish ! " 訓練成功！	

人臉模型刪除		
URL	http://localhost/api/DeleteUser/	
Method	POST	
Header	Content-Type	application/x-www-form-urlencoded
Parameter	Format	Example
member_id	string	"A123456"
modify_by	string	"admin"
Response	"200" 初始化未完成。 "201" 使用者不存在。 "100" 刪除成功！	

編輯使用者資訊		
URL	http://localhost/api/EditUser/	
Method	POST	
Header	Content-Type	application/x-www-form-urlencoded
Parameter	Format	Example
user_name	string	"王大明"
member_id	string	"A123456"
phone_number	string	"0987654321"
email	string	"abc@ds-i.com.tw"
modify_by	string	"admin"
Response	"Failed ! Initialize failed" 初始化未完成。 "Failed ! User doesn't exist" 使用者不存在。 "Finish ! " 修改成功！	

取得所有使用者資訊		
URL	http://localhost/api/UserSearch/	
Method	POST	
Header	Content-Type	application/x-www-form-urlencoded
Parameter	Format	Example
user_name	string	null
member_id	string	null
phone_number	string	null
Response	<pre>{ "User_ID": "1", "Serial_Number": "123456", "User_Name": "王大明", "Member_ID": "A123456", "Phone_Number": "0987654321", "Email": "abc@ds-i.com.tw", "Create_By": "admin" }, { "User_ID": "2", "Serial_Number": "123457", "User_Name": "李小華", "Member_ID": "A123457", "Phone_Number": "0987654322", "Email": "aaa@ds-i.com.tw", }</pre>	

	"Create_By": " admin " }"
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取得特定使用者資訊(user_name, member_id, phone_number)		
URL	http://localhost/api/UserSearch/	
Method	POST	
Header	Content-Type	application/x-www-form-urlencoded
Parameter	Format	Example
user_name	string	王大明
member_id	string	A123456
phone_number	string	0987654321
Response	<pre>{ "User_ID": "1", "Serial_Number": "123456", "User_Name": "王大明", "Member_ID": " A123456", "Phone_Number": "0987654321", "Email": "abc@ds-i.com.tw", "Create_By": "admin" }</pre>	

取得照片名稱		
URL	http://localhost/api/PictureName/	
Method	POST	
Header	Content-Type	application/x-www-form-urlencoded
Parameter	Format	Example
serial_number	string	123456
Response	"123456_01.jpg"	

取得照片 Base64 檔案		
URL	http://localhost/api/ImageToBase64/	
Method	POST	
Header	Content-Type	application/x-www-form-urlencoded
Parameter	Format	Example
picture_name	string	"123456_01.jpg "
Response	Base64	

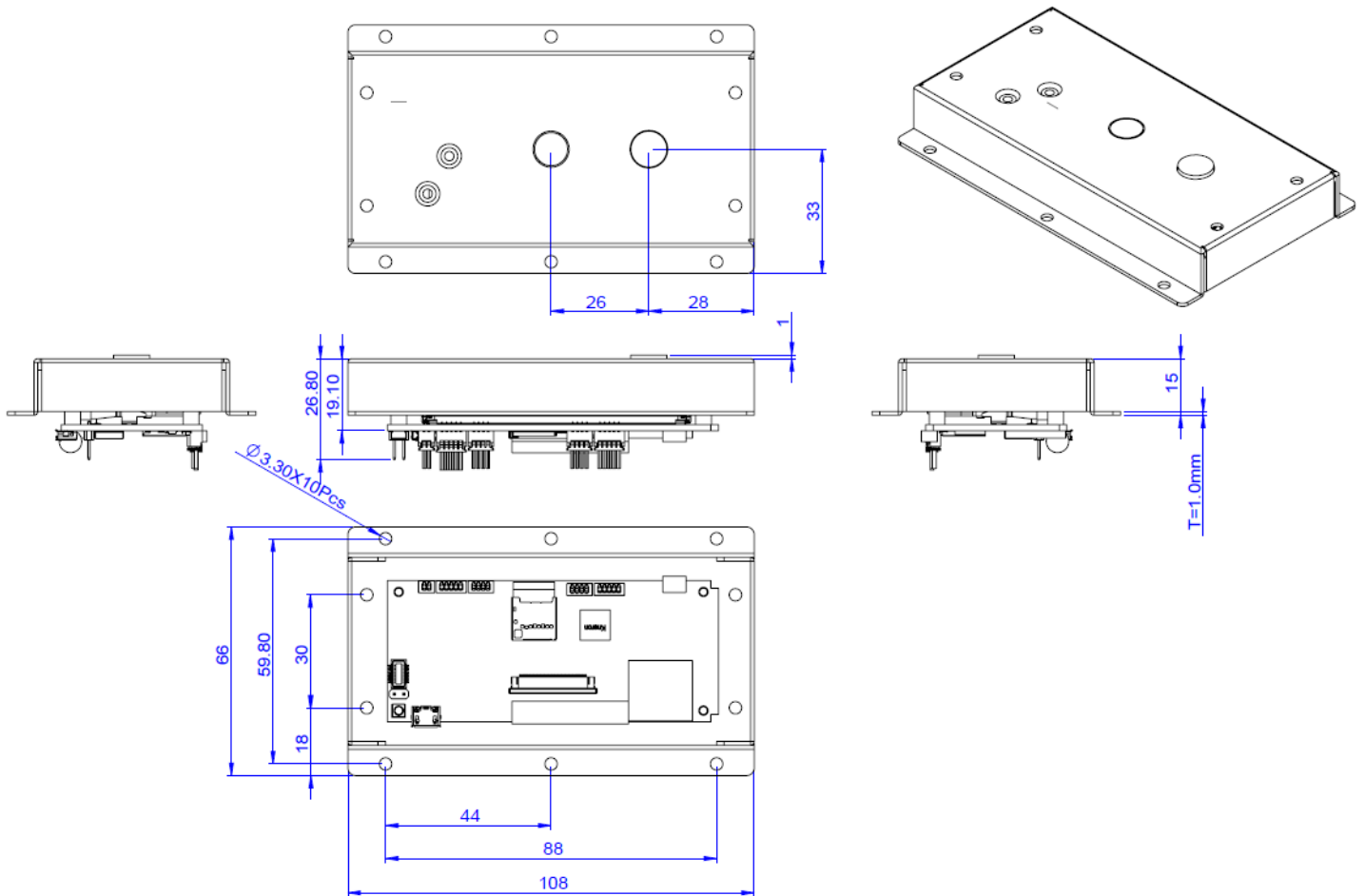
設定可接受最小臉辨之像素大小		
URL	http://localhost/api/SetMinFaceSize/	
Method	POST	
Header	Content-Type	application/x-www-form-urlencoded
Parameter	Format	Example
size	string	100
Response	"success " 修改成功！	

辨識結果輸出(已建檔)	
Communication interface	MQTT
MQTT Broker Server Ip	localhost
Port	1883
Subscribe Topic	DSI/FacialRecognition/Result
Payload	<pre>{ "name": "王大明", "member_id": "A123456789", "temperature": "36.5", "location": "A_place", "faceSize": "480", "faceQuality": "C04", "similarity": "0.74", "image": "base64" }</pre> 註： faceQuality: "C01" 人臉圖模糊

	“C02” 人臉圖過暗 “C03” 人臉圖過亮 “C04” 人臉圖非正臉 “Pass” 人臉圖品質通過
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繼電器控制	
Communication interface	MQTT
MQTT Broker Server Ip	localhost
Port	1883
Publish Topic	DSI/Relay1/Control
Payload	“open”

Mechanical Drawing



Digital System
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昱辰資訊

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