iService/ FaceMatch

Facial Recognition Device Manager & Edge Solution

Features

- Support CPU-based analytics based on deep learning AI algorithms
- Centrally hosted face database
- Synchronize face data with underlying connected face recognition devices (Edge & Tablet)
- Acts as a server to receive face recognition events from all devices
- Attendance taking / Access Control / VIP & Blacklist All-in-one Software
- Triggers user-defined actions based on face recognition events
- Provides integration with external systems
- Sync and manage multiple devices, including
  - FaceMatch Edge
  - FaceMatch Tablet (AI based tablet)
- Facial Recognition Edge Management System, including
  - Investigation reports
  - Attendance reports
  - Edge device management

Introduction

FaceMatch Manager is an intelligent server for facial recognition applications. Face Recognition System (FRS) included with complex AI and Deep Learning Algorithms, resulting in fast recognition performance with veracious results. Capable of managing faces recognizing edges on highly complex environments include iVA.FaceMatch Edge (IP cameras), FaceMatch Tablet and FaceMatch Camera. FRS supports a wide range of video sources including: RTSP streams, IP Cameras, and Multi-brand 3rd party Network Video Recorders (NVR).

Key Functions

Person of Interest (POI) Management
- Enroll persons of interest using a web portal.
- Assign each person into one or more groups for easier identification (i.e. VIP, Blacklist, Staff, Visitor).
- Trigger automated actions upon POI / Group detection, or on schedule.
- Privacy protection function, eigenvalue and pure data report.

Live Notification and Alerts
- Real-time notification via email, alert whenever a POI has been identified.
- Support HTTP(API) action trigger

Multiple Video Sources
- Support & Manage iVA.FaceMatch Edge and Tablet.
- Supports a wide range of industry standard video sources, including RTSP Camera Stream, NVR, or CMS

Secure user management
- Supports multiple system groups and user roles
- Supports single device login connection

Comprehensive Reports
- Detailed reports for recognized and unknown faces
- Daily attendance reports with POI Entry/Exit records
- Option to enable search filters for a seamless
- Option to enable search filters for a seamless investigation
- Export results to Excel & PDF format for further analysis

investigation
- Export results to Excel & PDF format for further analysis
- Face searching function for specific profile
- Quick profile registration from daily unmatched person report

Flexible Design & Configuration
- Configurable recognition threshold and face capture frequency
- Configurable minimum face capture size
- Configurable region of interest (ROI)

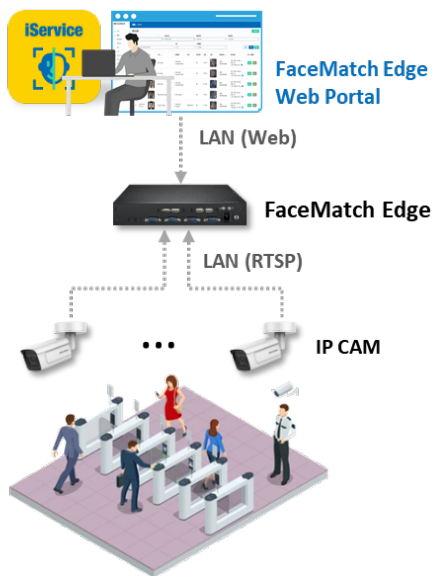### Reliable on Different Environments
- Recognize faces within 3.5 meters camera height mounting location
- Accurate down to 35 LUX ambient light condition

In-Depth Integration Capabilities
- Integrate with a wide a variety of application scenarios ranging from: welcome signages to turnstile face authentication to validate person's face.
- Integrate with Face Tracking System to identify and track POIs (VIPs, Blacklisted, Staff, etc.) and their associates
- Validate visitors' identifications using Visitor Management System kiosks
- Support Advantech ADAM for Access Control
- RESTful API available

FaceMatch Solution Deployment Architecture

iService/ FaceMatch Software Specifications

System	Operating System	Ubuntu Linux 20.04
	Protocol	HTTP, HTTPS
	System Security	HTTPS with hardened security configurations Single login connection with renewable session token
	Supported Virtual Machine	VMWare, Hyper-V
Management Interface	Interface	Web Client
	Supported Browsers	Google Chrome on Windows, Linux, and Mac OS X
	Languages	English, Traditional Chinese , Japanese
Video Source	Supported Video Sources (Edge)	RTSP Streams, IP cameras
	Supported Camera Types (Edge)	Any standard RTSP H.264 camera
	Face Capture Parameters	Capture face size, default 100x100 pixel Side face capture options
	Face Verify Parameters	Capture face interval Face verify threshold Merge recognized faces interval Merge unknown faces interval
	Supported Edge Types	FaceMatch Edge , FaceMatch Tablet
System Users Management	System Users	Register user accounts using name, email address, and phone number
	User Groups	Default administrator and user group, and user-defined groups
	Group Permissions	Administrator group can setup the system User and user-defined groups can only run attendance / investigation reports
Person of Interest Management	POI Management	Enroll person using web client Manage person database through web portal
	Person Group	VIP, Blacklist, or user defined person group
	Batch Enrollment	Supports batch uploading using CSV and JPG files
	Photo Enrollment Requirements	Min. face size: 200x200 pixel Max. photo size: 1 MB (JPG or PNG)
	POI Profile Information	Name, person ID, card ID, PIN number, fingerprint file, email, group(s)
Investigation Reports	Search Filters	Filter face results by video source, time period, person's name, person group or stranger
	Search by Photo	Upload the POI's photo and infer the most similar faces (1:N)
	Similar Faces	List the top 3 of the most similar persons
	Stranger Acknowledgement	Acknowledge a stranger as an enrolled person
	Stranger Enrollment	Enroll a stranger to person database
	Data Export Format	Export face results in HTML or Excel format
Attendance Reports	Attendance Report	Supports daily, weekly, monthly, and yearly reports
	Exception Filters	Filter by 'absence', 'late arrival', or 'early leave'
	Data Export Format	Export results in HTML or Excel format

Rules and Actions	Rule Engine	Rule based engine to trigger single or multiple system actions based on Capturing video source(s) Detection time period POI/ person group(s) name
	Supported System Actions	HTTP command Email Mobile app notification Trigger IO Box Trigger Wiegand Box
Live Notifications	Supported Platforms	iOS and Android
	Notification Type	Realtime notification to mobile app for VIP or blacklisted person
Performance	Face Capturing Speed (Edge Devices)	Up to 30 faces per second
	Face Recognition Speed (Edge Devices)	Up to 20 faces per second Up to 20 faces per second in the same frame

iService/ FaceMatch Manager Hardware Specifications

Software	Software	FaceMatch Manager
	Software Feature	Manager for facial recognition edges
	Maximum Analyzing Channels	256 Channels FaceMatch Tablets/Edge Video sources
Hardware	CPU	Intel® Core™ i7-8700 (65W)
	RAM	32 GB DDR4 SO-DIMM (Non-ECC)
	Graphics	Intel® HD Graphics, Supports OpenGL 5.x, DirectX12, OpenCL 2.X
	Storage	1 x SATA 2.5" HDD (512GB)
	Internet	2 x RJ45 (10/100/1000 Mbps)
	I/O	2 x USB2.0 , 4 x USB3.0 , 1 x DP1.2 , 1 x HDMI1.4
	Power Consumption	114W
	Size	250 x 44.2 x 225 mm (9.84" x 1.74" x 8.85")
	Weight	4.0 kg
Environment	Operating Temperature	-0 ~ 50 °C, with 65W CPU
	Humidity	85% @ 40 °C, non-condensing
	Vibration	With SSD: 3 Grms, IEC 60068-2-64, random, 5~500Hz, 3 axes, 1hr/axis
	Shock	With SSD: 10 G, IEC 60068-2-27, half sine, 11 ms duration

iService/ FaceMatch Edge Hardware Specifications

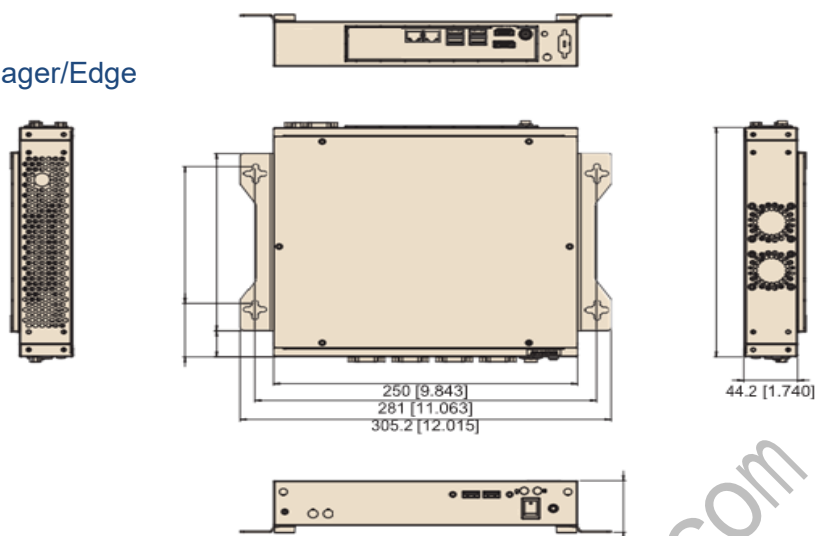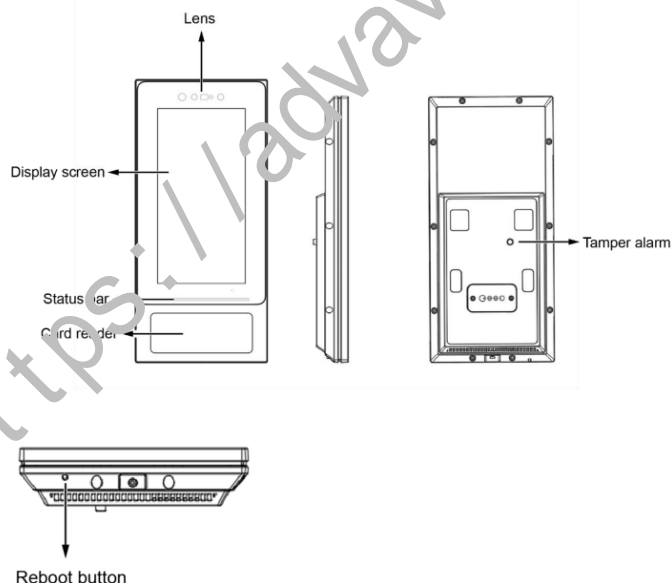| Software	Software	FaceMatch Edge , Mask Recognition support
	Software Feature	Facial recognition Standalone attendance taking system / access control / VIP&blacklist notification system
	Maximum Analyzing Channels	6 Camera Sources , 100, 000 Profiles(Max.)
Hardware	CPU	Intel® Core™ i7-8700 (65W)
	RAM	16 GB DDR4 SO-DIMM (Non-ECC)
	Graphics	Intel® HD Graphics, Supports OpenGL 5.x, DirectX12, OpenCL 2.X
	Storage	1 x SATA 2.5" HDD (512GB)
	Internet	2 x RJ45 (10/100/1000 Mbps)
	I/O	2 x USB2.0 , 4 x USB3.0 , 1 x DP1.2 , 1 x HDMI1.4
	Power Consumption	114W
	Size	250 x 44.2 x 225 mm (9.84" x 1.74" x 8.85")
	Weight	4.0 kg
Environment	Operating Temperature	-0 ~ 50 °C, with 65W CPU
	Humidity	85% @ 40 °C, non-condensing
	Vibration	With SSD: 3 Grms, IEC 60068-2-64, random, 5~500Hz, 3 axes, 1hr/axis
	Shock	With SSD: 10 G, IEC 60068-2-27, half sine, 11 ms duration

iService/ FaceMatch Tablet Hardware Specifications

Software	Software	FaceMatch Tablet , Mask Recognition support
	Recognition Distance / Speed	0. 3M-1. 5M / 0. 03~0. 5 sec
	Database Size	50, 000 Profiles(Max.)
Hardware	CPU	Multimedia SoC (System-on-Chip)
	ROM/RAM	8GB/1GB

	IR Camera	1. 3M @1280x1080
	RGB Camera	1920x1080(2M)
	Audio	Built-in speaker
	Network	RJ-45 cable connector f or 10/ 100Mpbs Network/ PoE connection
	Display	IPS 6" (1440x720)
	I/O	DI x 3 ; DO x 3 ; Relay x 1
	Size	221. 1mm X 103. 6mm X 26. 5mm
Environment	Operating Temperature/ Humidity	-20°C ~ 60°C / 90% RH (non-condensing)
	IP Ranting	IP65
	Power Input	PSE Class 4 (IEEE802. 3at)// DC 12V
	Certifications	EMC: CE , FCC , VCCI, UL

Dimension

Unit: mm

FaceMatch Manager/Edge

250 [9.843]
281 [11.063]
305.2 [12.015]

44.2 [1.740]

Front View

Rear View

FaceMatch Tablet

Lens

Display screen

Status bar

Card reader

Tamper alarm

Reboot button

Part Number	Description
EPC-T2286VA-A1E-C	i7-8700,16G/512G,FaceMatch Edge Advantech
32CSIVAFMFEN01	FaceMatch Edge License for IP Camera
EPC-T2286VA-A2E-C	i7-8700,32G/512G,FaceMatch Manager Advantech
96PD-FRT9361	FaceMatch Tablet , Advantech
32CSIVAFMFSR01	FaceMatch Manager License for tablet

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