CMITECH
IMAGING EXPERTS

EMA-30

Iris Recognition System for Physical Access Control (PACS)

Product Description

The CMITech EMA-30 is a wall-mountable, dual iris biometrics imaging system for physical access control. Developed with an advanced image capture and processing architecture, the EMA-30 simultaneously and quickly captures the highest quality iris biometric images in the industry.

A simple and intuitive user interface makes positioning fast and repeatable, even for subjects with little or no acclimation. The EMA-30 automatically tilts vertically to adjust for each subject's height, making it ideal for wall-mounted access control applications.

The system is powered by a high performance ARM A9 embedded controller on a dedicated mainboard that handles all iris imaging, communications, and iris encoding and matching functions. The EMA-30 incorporates all essential PACS functions, including dual Wiegand connectors, optional on-board matching, a proximity sensor, a tamper switch, front side user buttons, and an optimized wall mounting system.

Developed with the latest in system design technologies by one of the leaders in iris recognition imagers, the EMA-30 is physically robust, highly reliable and easy to integrate.

Key Features

Feature	User Advantages
Embedded processor on dedicated main board	High performance, low power processor utilizes latest generation ARM A9 quad core SOC (system on chip) architecture. Provides highest level of on-board computing power for fast and seamless operation as well as very fast encoding and matching speeds.
Essential Physical Access Control functionality	• Proximity sensor for always-on operations • Tamper switch to alarm if system is detached from wall • Dual Wiegand ports • Front side buttons for programmable user controls • Optional on-board encoding and matching, and associated data base • Speaker with voice feedback • Easy to install wall mounting system
Compatible with most PACS systems	Readily interfaces to most PACS systems and peripherals through LAN (TCP/IP) and industry standard Wiegand connections.
Oversized optional data base	Stores up to 10,000 pairs of templates for on-board matching.
State-of-the-art optical design	With highest quality optics and very fast shutter speeds, the system exceeds industry standards for image quality. The measured modulation transfer function also exceeds the specification in the ISO 19794-6 standard of 4.0 lp/mm at 60% contrast ratio.
Advanced, proprietary stereoscopic eye localization	Accurately locates the position of both eyes in 3D in near-real time to optimize subject ease of positioning and iris image quality. Enables system subject distance positioning indicators.
Simple and repeatable subject user interface	Subject positioning is simple and intuitive. The subject merely aligns his / her eyes with the positioning mirrors, and then moves toward or away from the system based on simple, color LED indications: • Blue is too far away • Red is too close and • Green is OK.
Simplest of user instructions	The combination of the easy to use positioning features also means that the instructions to subjects are simple and straightforward. (See User Interface and Subject Instructions section.)
Proprietary optics for positioning indicators eliminate parallax viewing problems	The proprietary and patented design of the color LEDs for distance positioning can only be viewed by one eye at a time, eliminating any parallax viewing problems that might cause the subject to reposition his / her head. The result is a smooth and intuitive experience, even if the subject's head is positioned slightly to one side.
Automatic vertical height adjustment	The system automatically accommodates subjects of different heights by tilting the iris imaging subsystem after locating the subject's face and eyes.
Standoff distance of 32 to 35 cm	Comfortable operating range is fully applicable to access control environments, especially in compact installations.
Large depth of capture of 30 mm	The very large depth of capture enhances robustness and ease of positioning.

Feature	User Advantages
High speed, simultaneous dual sensors	Dual iris sensors acquire iris images at very high speed, 30 frames per second. The system controller monitors in near real time various quality metrics to determine which iris image pairs should be selected as the biometric sample.
Real time off-axis gaze detection	The system detects the subject gaze angle (i.e. whether the subject is looking directly ahead at the imager), an essential feature for optimal iris biometrics. If the subject is looking away, the system will automatically wait until the subject looks straight ahead in order to capture a valid iris biometric image.
Very wide interpupillary distance range of 45 to 85 mm	The wide interpupillary distance range accommodates all adults and young children, making it ideal for large scale, public authentication programs.
Optional Extended Depth of Capture to 6.0 cm (new)	Option within SDK to extend the depth of capture to 6.0 cm in recognition mode only for improved ease of use. Stand-off distance is 30 cm to 36 cm in Extended mode. Feature is backward compatible.

User Interface and Subject Instructions

Simplest and most repeatable subject interface available:

- Partially transparent mirror guides subject placement in X-Y dimensions
- Easy to use color LED's at center of mirror indicate correct placement of 32 to 35 cm in Z dimension.

move forward

move backward

stop / capture

The subject should be instructed to:

- Place the reflection of his / her eyes in the center of the mirror;
- Keep eyes open;
- Look at the colored LEDs and move his / her head toward or away from system according to the color;
- Stop when LED is green, and hold the position for about 1 second.

Please contact CMITech or your representative for more information on the CMIRIS Software Development Kit (SDK) that includes a demo and evaluation application.

CMITech Company, Ltd.
#904, 25, 248 Beon-gil, Simin-daero, Dongan-gu
Anyang-si, Gyeonggi-do
430-815 Republic of Korea
Tel: +82.70.8633.8277
Fax: +82.31.479.7055
Contact: sales@cmi-tech.com

CMITech America, Inc.
2033 Gateway Place, Suite 500
San Jose, CA 95110 USA
Tel: (1) 408 573-6930

Technical Specifications

Dimensions	202 x 122 x 66 mm (7.9 x 4.8 x 2.6 inches)
Weight	790 grams (27.8 ounces) without base
Image output	Meets ISO 19794-6; exceeds 4.0 lp/mm @ > 60% contrast
Iris diameter	240 pixels for average 11.5 mm diameter iris (200 to 285 pixels for full range of 9.5 to 13.5 mm diameter irises)
Iris image pixel resolution	640 x 480 pixels, 8 bit depth - Supports multiple formats
Operational iris imaging distance (stand-off range)	315 to 345 mm (12.4 to 13.6 inches) in Normal mode
Depth of field	30 mm (1.2 inches); option for 60mm (2.4 inches) in recognition mode only
Inter-pupillary distance covered	45 to 85mm (1.8 to 3.4 inches)
Time of capture	Typically about 1.0 second from time subject's eyes are placed within capture volume
IR illumination for iris imaging	Dual LED: wavelengths of 850 nm nominal (about 50%); and 750 nm nominal (about 50%)
Subject positioning LED indicators	Blue: Subject too far away Red: Subject is too close Green: Subject within capture volume
Maximum user positioning speed	125 mm per second (4.9 inches per sec.) in "Z" direction
Operating temperature range	0 to 40˚C
Humidity	10 to 90% RH, non-condensing
Eye safety standard	IEC 62471
Network interface	10/100 Base-T Ethernet (RJ45 connector) WiFi 802.11bgn : optional
Other communications ports	Terminal and wired connectors for: Wiegand in/out, RS-422, RS-485, 4 GPI/O, USB host (for service), USB slave, 1 dry contact relay
Power	Independent power supply required: 2.0 A at 12.0 V (supplied with system)
Other certifications	CE, FCC, RoHS, IEC eye safety