



EFM-70™ Data Sheet

EF-70-based modular iris recognition system with dual iris image capture and central positioning LCD

Aug 2024



APPLICATION

For customized integration into kiosks, ATM's, and similar automated, self-service applications.

Product Description

The EFM-70 is the modular version of CMITech's next generation EF-70 dual iris imaging system. It is intended for specialized solution integrators to incorporate high accuracy iris recognition biometrics into a kiosk or similar self-service terminal. This system's operation is identical to CMITech's EF-70 iris recognition terminal product, which combines dual iris imaging with face imaging and provides unprecedented subject ease of use through a highly innovative and intuitive user positioning approach.

New to the EFM-70 is a central 1.45" touch LCD , which assists the user in intuitive positioning, making capture of the iris and face images faster and easier.

This independent user interface allows the integrator to position the units without regard to the kiosk's own display panel. It provides the same positioning feedback cues and instructions as in the EF-70 system including sound.

Subjects will view their own face in the LCD to position themselves correctly. Each subject will intuitively and naturally move to the correct position by simply centering and sizing their face image to the positioning box within the display. In addition, this box turn green to indicate that the subject is within the proper distance range of 40 to 70cm, after which the iris biometrics images are automatically captured. For face recognition, the working distance is 0.4 to 1.0 meters so that the subject needs only look at the display to initiate face image capture.

The EFM-70 can be used with a desktop cradle to allow it to be utilized as an enrollment device for an EF-70 installation.

The EFM-70 is an embedded system that includes its own ARM main board to manage all iris and face imaging processes. The communication options to the host system are TCP/IP via an Ethernet connection or a USB connection.

User Interface

While the EFM-70 has a working distance of 40 to 70 cm, the system detects subjects from over 1.0 meter. The subject's face is immediately displayed on the 1.45 inch high-resolution color display, guiding the subject to naturally center his / her face by simply positioning it within the "guide box". Optional vocalized instructions and text commands can also direct the user to move forward or back to get into range. When in the proper range, the guide box and top border turn green, indicating to the subject to stop and wait until the image capture process is completed. Like a smart phone "selfie" image, this interface is highly intuitive, with typical capture and authentication times of 0.5 seconds from proper positioning.

Subject positions face within guide box in display



MOVE FORWARD
Blue for too far away



GOOD
Green for OK!

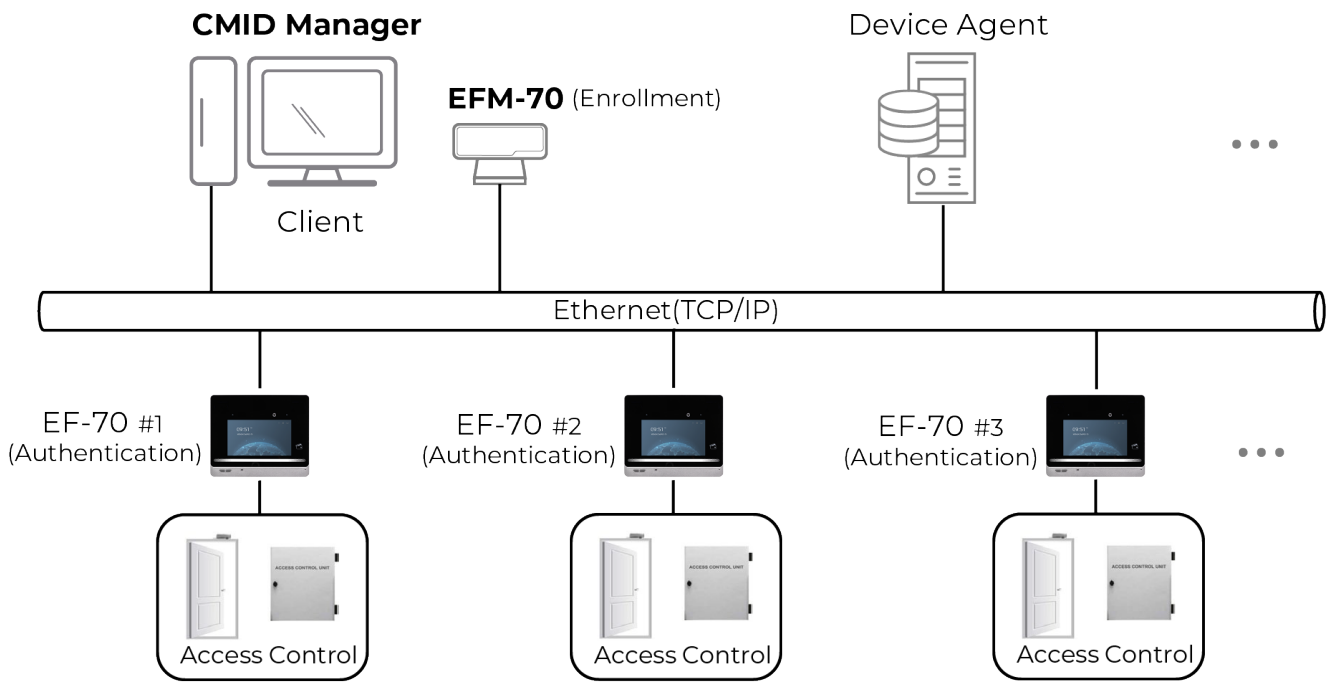


MOVE BACKWARD
Red for too close

System Components

The EFM-45 integrates multiple components to provide secure authentication and manage access across various entry points. This networked solution combines centralized management through the CMID Manager software, enrollment stations using the EFM-70 device, and authentication terminals known as EF-70 to create a comprehensive security infrastructure for organizations. The system's architecture allows for efficient user enrollment, robust data management, and reliable access control at multiple locations.

Example configuration with EF-70 and CMID Manager



Technical Specifications

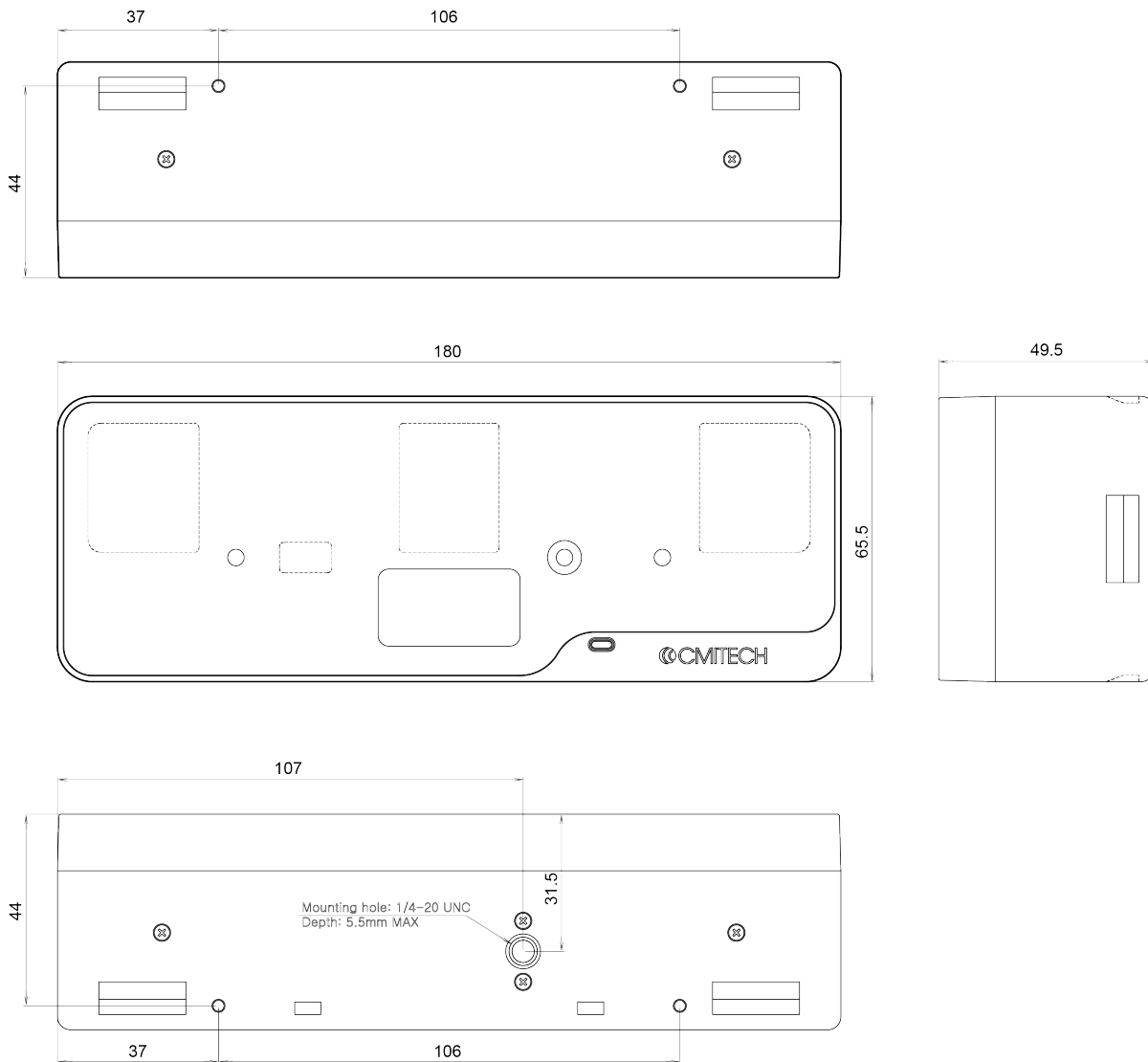
| Specification | Description |
|--|--|
| Embedded CPU | ARM quad-core |
| On-board iris and face algorithms for embedded encoding and matching | Standard in all configurations |
| Flexible Software Development Kit (SDK) configurations | High level SDK is RESTful type that includes host side application for LAN or USB connection to EFM-70 resident services layer. Requires Windows API development to EFM-70 host side application. Reference code included. |
| Configuration Utility software application | This host side software application provides centralized (network) control and setup of system configuration including IP address settings and centralized FW upgrades. |
| Host side compatibility | Windows C# (.NET), Windows C, Linux C on x86 platform. Please contact CMITech for Java or Android support. |
| Dimensions | 180 x 65.5 x 49.5 mm (7.1 x 2.6 x 1.9 inches) without mounting wall plate |
| Weight | 450 g without wall plate |
| On-board data storage | Up to 200,000 iris template pairs with match speed about 1.0 second either in 1:N mode (identification) or 1:1 mode (verification). |
| Iris image pixel resolution | Up to 50,000 face templates Exceeds ISO 19794-6 2011 and ISO 29794-6 iris imaging standards with MTF of 3.0 lp / mm at 50% contrast |
| Iris image output | 640 x 480 pixels, 8bit depth, supports multiple formats |
| Enrollment mode operational iris imaging distance (stand-off range) and depth of field | 50 to 70 cm range (20 cm depth of capture range) in enrollment mode. Meets or exceeds ISO 19794-6 2011 and 29794-6 specifications. |

| Specification | Description |
|--|--|
| Recognition mode operational iris imaging distance | Recognition mode provides up to 40 to 70 cm range (30 cm depth of capture) for small scale applications. Does not necessarily meet ISO specifications. Range selectable in SDK. |
| Iris positioning indicators | <p>Face positioning within box in LCD serves to center users face in X-Y dimensions.</p> <p>Subject will fit size of face to box size within LCD display for distance(Z) positioning, with simultaneous color bar display for correct distance positioning:</p> <ul style="list-style-type: none"> • Blue: too far away • Green: OK • Red: too close <p>Supplemental voice distance feedback is also simultaneous. Vocalizations convertible to local language via .wav file substitution.</p> |
| Auto tilt | Internal: +25 to -25 degree up/down tilt |
| LCD | 1.45" (172 x 320 pixels) with touch screen |
| Time of iris image capture and authentication | Typically about 0.5 second from time the subject's eyes are properly placed within capture volume. |
| IR illumination for iris imaging | Dual wavelength LEDs (spectral range of 700 to 900 nm) that conforms to ISO best practices for iris imaging. |
| Face image capture | Standard 24bit color and NIR images, both accessible from SDK |
| Face recognition | Standard on-board encoding and matching |
| Audio | 1W embedded speaker |
| Operating temperature | -20 to 50 °C |
| Humidity | 10 to 90% RH, non-condensing |
| Illuminator eye safety standard | IEC 62471 |
| Ethernet | 10/100 Mbps (RJ45 connector) |
| I/O | USB 2.0 host (Type-C), USB-2.0 Slave (Type-C), RS-232C, Factory Reset |

| Specification | Description |
|---------------------|---------------------------------------|
| Voltage | 12 to 24V DC, Max 25W |
| Power Adaptor | Optional |
| Kensington Lock | Yes |
| Tripod mount thread | ¼ / 20 UNC (standard consumer tripod) |
| Desktop cradle | Optional |

Dimensions

Dimensions of 180 x 65.5 x 49.5 mm without a desktop cradle



Contact Information

Please Contact CMITech or your representative for more information about the EFM-70 product, CMIRIS Software Development Kits (SDK) and other supporting software.

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