



EFM-45™ Data Sheet

EF-45NC-based modular iris recognition system with dual iris image capture and central positioning LCD

May 2024



APPLICATION

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

Product Description

The EFM-45 is the modular version of CMITech's next generation EF-45NC 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-45NC iris recognition terminal product, which provides unprecedented subject ease of use through a highly innovative and intuitive user positioning approach.

New to the EFM-45 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-45 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 33 to 47cm, after which the iris biometrics images are automatically captured.

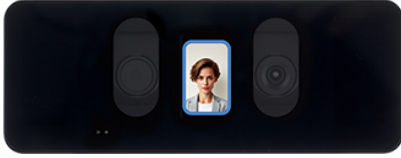
The EFM-45 can be used with a desktop cradle to allow it to be utilized as an enrollment device for an EF-45NC installation.

The EFM-45 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.

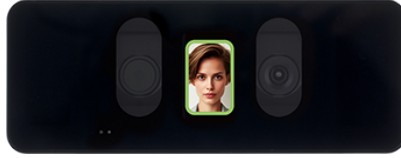
User Interface

The user interface will be shown on the LCD screen display.

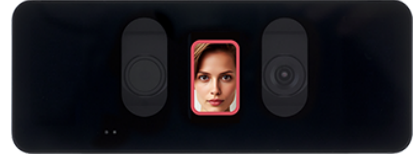
Subject positions face within guide box in display



MOVE FORWARD
Blue for too far away



GOOD
Green for OK!



MOVE BACKWARD
Red for too close

Results or messages displayed on LCD



Success
Authentication success or capture of iris and face is completed.



Failed or Denied
Authentication failed or denied. Or capture of iris and face is failed.



Warning!
System warning message displayed.

Display setup parameters and making changes



To enter the setup menu

Touch the center of LCD screen (Setup menu: UI, volume, detection, language, IP address, MAC address, camera and FW version.)

To change settings

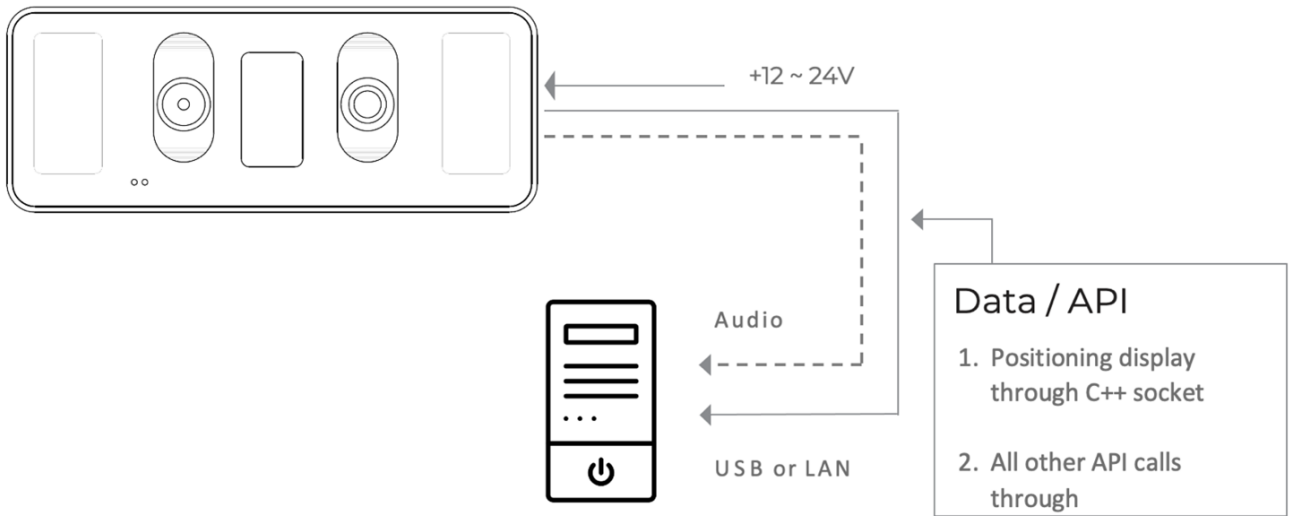
Touch the arrow icon on top and bottom. (To apply the display language change, touch the center of screen to reboot the system.)

To return to Home

Leave without touching for 10 seconds. The screen will return to normal capture mode.

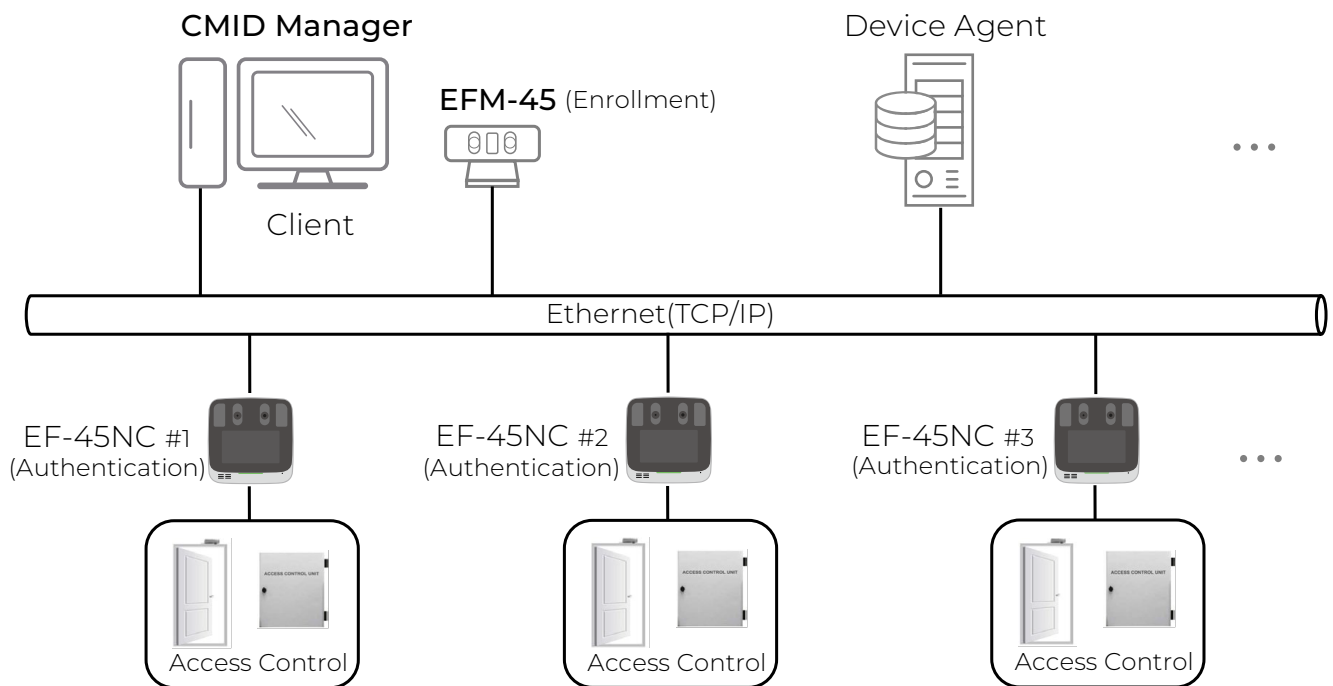
System Interface

Cable and data connections



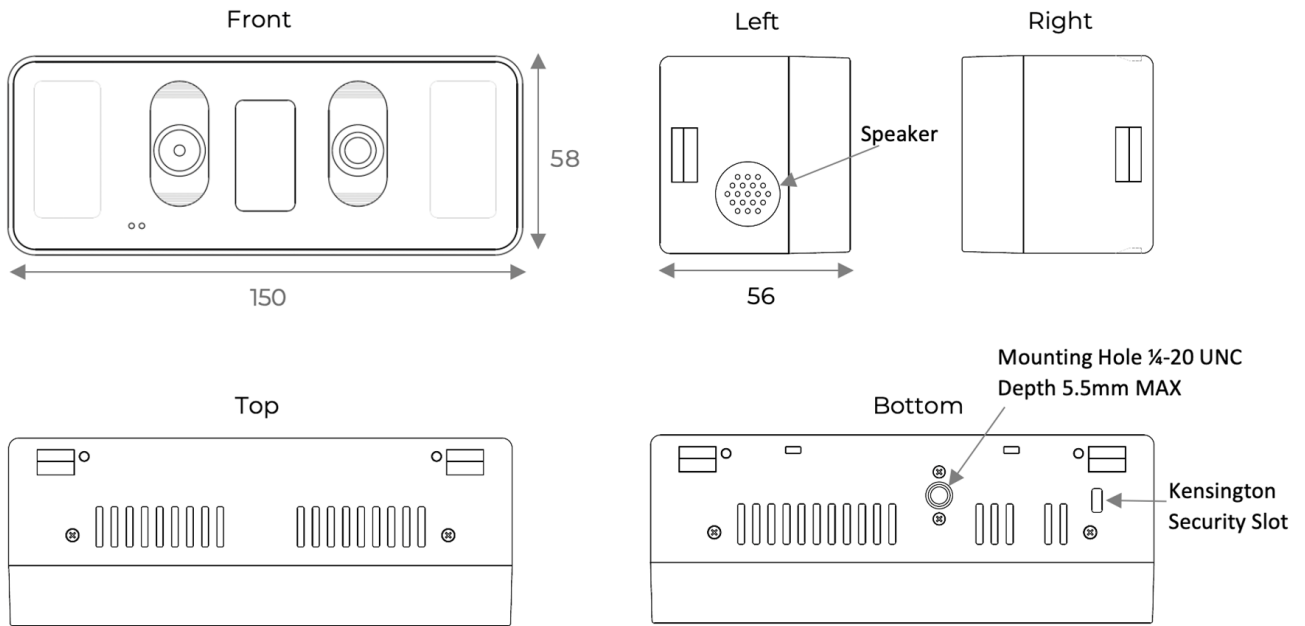
System Diagram

Example configuration with EF-45NC and CMID Manager

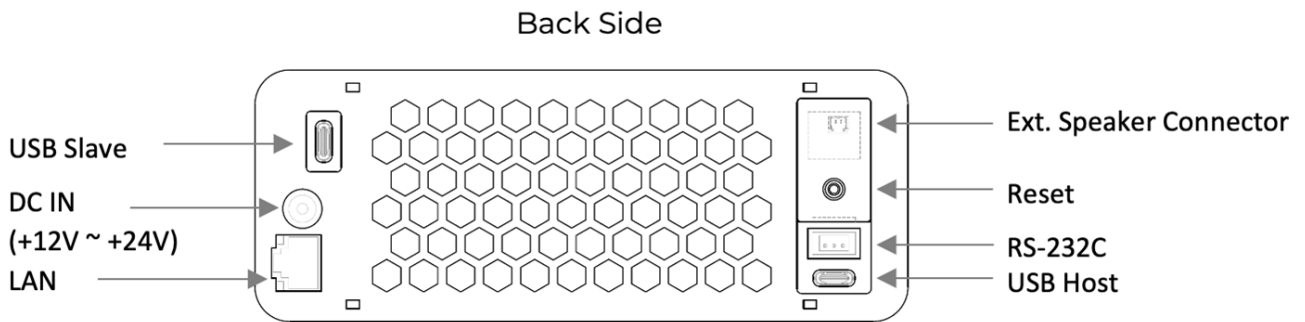


Dimensions

Dimensions of 150 x 58 x 56mm without a desktop cradle



Connectors



Installation Overview

Desktop

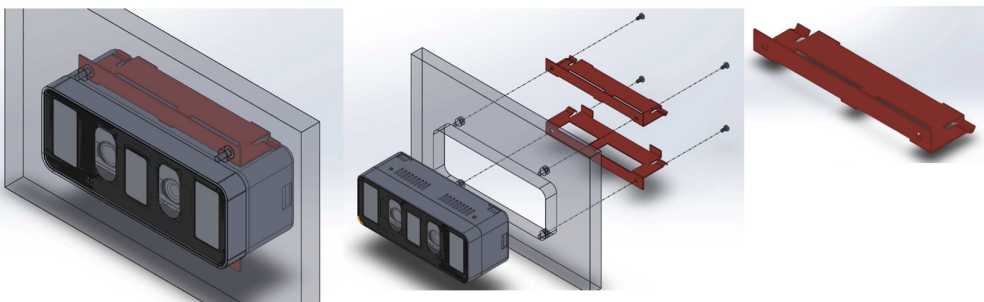
For desktop use, optional cradle is available.



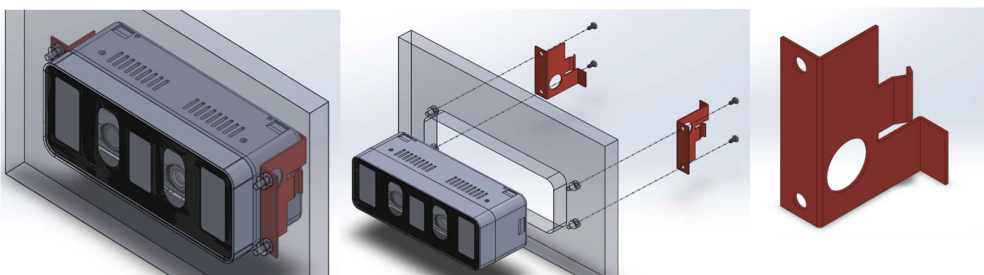
Kiosk Mounting

The EFM-45 is primarily intended for flush installation in kiosk front panel. Depending on the installation environment, user should utilize a customized bracket or clamp as shown below. Please contact CMITech for more information.

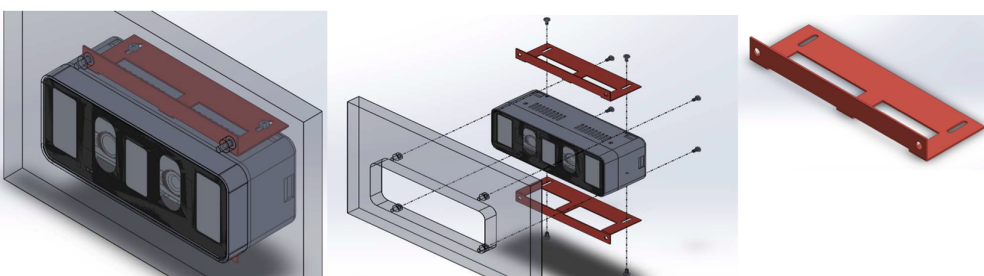
Type A : Top/Bottom side mount using a bracket



Type B : Side mount using a bracket



Type C : Auto clamp bracket top and bottom



Technical Specifications

Specification	Description
Embedded CPU	ARM quad-core processor
Memory	DRAM 2GB, FLASH 8GB
Iris on-board algorithm	Standard Delta ID
Face on-board algorithm	Please contact CMITech for details
SDK configurations	High level SDK is RESTful type that includes host side application for LAN or USB connection to EFM-45 resident services layer. Requires Windows API development to EFM-45 host side application. Reference code included.
Host side compatibility	Windows C# (.NET), Windows C, Linux C on x86 platform. Please contact CMITech for Java or Android support.
Dimensions	150 x 58 x 56 mm
Weight	320 g
On-board data storage	Up to 100,000 iris template pairs (useful for 1:N authentication mode) with match speed of under 0.5 seconds.
Iris image output	Meets ISO 19794-6 2011, ISO/IEC 29794-6 standards
Iris image pixel resolution	640 x 480 pixels, 8 bit depth. Output format .bmp standard
Standard operation iris imaging distance	36 to 44 cm range (15 cm depth of capture) in enrollment mode
Simplest of user instructions	<p>Very simple and repeatable subject instructions:</p> <ul style="list-style-type: none"> • Position face within guide box in display. • Move toward the system to size head to box. • Once within range, the box bar will turn green to indicate proper positioning. <p>Capture is automatic once subject is in proper position and real time image quality metrics parameters are met.</p>
Speed of iris image capture	Typically about 0.5 second from time subject's eyes are placed within proper capture volume.

Specification	Description
IR illumination for iris imaging	Dual wavelength near infrared (NIR) LEDs to conform to ISO best practices for iris imaging.
Face image capture	Standard 24-bit color (for reference image)
Auto tilt	Internal: +25 to -20 degree up/down tilt
LCD	1.45" (172 x 320 pixels) with touch screen
Sound	Internal speaker embedded with external speaker connector
Ethernet	10/100 Mbps (RJ45 connector)
I/O	USB 2.0 host (Type-C), USB-2.0 Slave (Type-C), RS-232C, Factory Reset
Voltage	12 to 24V DC, Max 30W
Power Adaptor	Optional
Kensington Lock	Yes
Tripod mount thread	1/4 / 20 UNC (standard consumer tripod)
Desktop cradle	Optional
Operating temperature range	-20 to 50 °C
Humidity	10 to 90% RH, non-condensing
Illuminator eye safety standard and certification	IEC 62471
Other certifications	CE, FCC, UKCA, KC, RoHS

Contact Information

Please Contact CMITech or your representative for more information about the EFM-45 product, CMIRIS Software Development Kits (SDK) and other supporting software.

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