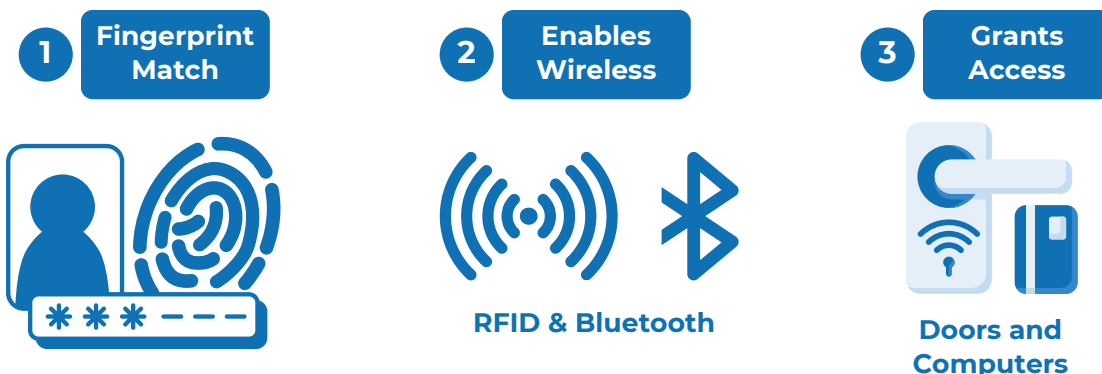# MBX-*ID* Access Badge

The **MBX**-*ID* **Access Badge** is the latest member of the MBX family of biometrically-authenticated wireless devices. The MBX-*ID* is an access control device, similar in size to a typical credit card, but with a fingerprint sensor and embedded Bluetooth, RFID and/or NFC wireless capabilities. The MBX-ID requires biometric authentication before enabling the embedded wireless capabilities - in a convenient picture ID badge format – and can be utilized in a variety of access control, location and identity verification applications.

Physical Access Control

The vast majority of physical access control systems incorporate an RFID access card issued to authorized personnel, such as employees. The problem, however, is that the access control system can not determine if the person in possession of the access card is the same person who was originally issued the card. Lost or stolen access cards can be used by unauthorized persons to gain entry to workplaces, hospitals, schools and other sensitive areas. This endangers the safety of employees, students, patients and staff as well as the physical and intellectual assets of the organization.

The MBX-ID Access badge solves this problem by biometrically authenticating the person in possession of the access badge before granting access. A lost or stolen access badge is useless in the hands of an unauthorized person because the user must first biometrically authenticate to the badge before the wireless (RFID, Bluetooth) functions are enabled. The MBX-ID Access badge can be used as an alternative to common touch surfaces, such as keypads and fingerprint sensors on door locks, gates and turnstiles.

1 Fingerprint Match

2 Enables Wireless
RFID & Bluetooth

3 Grants Access
Doors and Computers

Logical Access Control

The vast majority of computer and network access is dependent on a username and password for access, which can be easily guessed or stolen via a variety of techniques.

MBX-ID Access badge is more secure than usernames and passwords because biometric authentication is required first, which then enables the Bluetooth logon credentials. Software resident on the computer or network can automatically log on the user as soon as the badge is within a predefined Bluetooth perimeter and, similarly log off the user when the MBX is leaves the Bluetooth perimeter.

Specifications

MBX-ID Specifications	
Format / Size	ISO/IEC 7810 ID:1 85.60 mm x 53.98 mm x 1.25 mm
Operating Temperature	From -40c to +85c
Fingerprint sensor (FPC)	10mm X 10mm (.4" X .4") area sensor capturing 508 DPI
Status Indicators	LED: Red, Green, Blue
Battery	wireless rechargable and Single use, non-rechargeable
Authentication Time	Less than 400 milliseconds
Power On / Off	Power on activated by finger touch on the sensor. Power off by programmable timeout.
Physical security	A single secure system-on-chip contains the processor, memory, I/O, BLE.
Bluetooth	
Bluetooth LE Frequency	2.4 GHz frequency ISM band
Cryptography (Bluetooth)	Optional crypto library for: AES 256 bits, SHA-256, RSA PKCS, DH, Hardware RNG, crypto hardware accelerators
Data security (Bluetooth)	128 bit keyed HMAC protects all transmitted ID data end-to-end to server/receiver. Optional PKI (Public Key Infrastructure)
RFID / NFC	
Contactless protocols	ISO 14443A, NFC Type 2, Mifare DESfire, HID, customer-specified
RFID Frequency	13.56 MHz
NFC Frequency	ISO 14443
Fingerprint Sensor (FPC)	
Fingerprint Sensor (FPC)	Capacitive touch fingerprint sensor with superior 3D image quality
False Acceptance Rate (F.A.R.)	Less than 3%
False Rejection Rate (F.R.R.)	Less than 1%
Finger Orientation	360%
Image Resolution	508 dpi resolution; 160 x 160 pixels

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