

inception

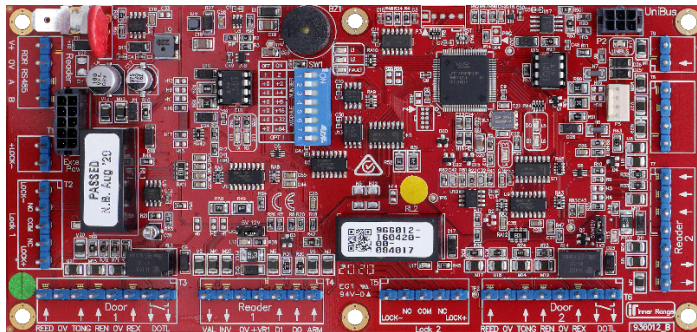
WEB POWERED SECURITY

Simple & Easy Installation
Integrated Security - Access Control



Intelligent LAN Access Module (ILAM) Offline Operation

The Inner Range Intelligent LAN Access Module (ILAM) is a 2-door access control module, which is expandable up to 8 doors with 2-door UniBus expanders. Up to 8 Wiegand readers or 16 SIFER or OSDP readers can be connected to the module. Lock outputs, door reed and tongue inputs, door REX and REN inputs, valid and invalid outputs, and Door Open Too Long (DOTL) outputs are all on-board for wired doors. Additionally, the ILAM can be used with Aperio wireless door locks.



In normal operation, the ILAM connects to an Inner Range Controller via the RS-485 LAN or IP LAN if using an Ethernet Bridge or CLOE module. When a credential is presented to an ILAM's reader, the ILAM sends a message to the Controller to notify it of the access attempt. The Controller determines if access should be granted and responds to the ILAM. The ILAM then provides feedback via its outputs, the reader LEDs & beeper, and activates lock relays if access is granted.

In the rare event of the ILAM losing connection to the controller, the ILAM will detect that it is offline and will switch to its offline operation mode. In offline operation, the ILAM processes all access requests locally using its onboard database. The ILAM will also store up to 100,000 access granted and door event review events in its onboard database and will send these to the controller once a connection is re-established.

ILAM Onboard Database

The Inception Controller maintains a database with all programming for the controller and its connected modules. A subset of this database is synchronised with the ILAM's onboard database over the RS-485 LAN, so the same programming applies to online and offline operations. The ILAM's database is stored permanently in non-volatile memory. In the event of a power cycle, the ILAM's database and its operation will be intact, without the need to connect to a controller, allowing user access through the ILAM's doors.

Whenever an ILAM module connection is detected by a controller or programming changes are made that are relevant to an ILAM's offline operation, the controller initiates a database synchronisation and logs 'ILAM Started Synchronising Offline DB' in the controller review.

When	Message	Who	What	Where
2023-09-04 16:14:11	ILAM Started Synchronising Offline DB			OnboardLAN

The time taken to complete a database synchronisation depends on a range of factors, including the number of users in the database, how many credentials, PINs, time periods, and holidays. The number of other modules on the LAN, the amount of LAN traffic, and the use of Ethernet Bridge and CLOE modules also affect the synchronisation time. Large and complex User databases can take several hours to download to the ILAMs, with smaller databases of 100 Users downloading in less than 15 minutes.

Once the database synchronisation is completed, the controller will log 'ILAM Finished Synchronising Offline DB' in the controller review.

When	Message	Who	What	Where
2023-09-04 16:19:34	ILAM Finished Synchronising Offline DB			OnboardLAN

Changes to the ILAM's module programming are communicated outside of the database synchronisation process and are typically completed within seconds.

Supported Firmware

ILAM modules are only compatible with Inception firmware V6.0 and onwards. Inception controllers with earlier firmware do not support ILAMS.

ILAM firmware V4.1.0 is the minimum supported firmware when connected to Inception controllers.

Offline Operation

Features supported when offline by ILAM firmware V4.1.0 or later include:

Credential Types

Card, PIN, Biometric – Fingerprint, Biometric – Face Recognition, Biometric – Iris, and License Plate Recognition Credential Types are supported.

A maximum of 100,000 credentials in total are supported, allowing each user up to 10 credentials.

Credential Templates

The ILAM can store a maximum of four Credential Formats in offline mode. Multiple Credential Templates referencing the same Credential Format are treated as a single Credential Format when synchronised to the ILAM.

Door Access Mode

The following Door Access Modes are supported offline:

- Single Credential
- Dual Credential
- Triple Credential

A door's inside and outside Access Mode can be configured in *Configuration > Access Control > Door > Door Side Configuration*.

The screenshot displays the 'Door Side Configuration' interface. It features several configuration fields:

- Outside Area:** A dropdown menu set to 'Inner Range Office'.
- Inside Area:** A dropdown menu set to 'Server Room'.
- Outside Access Mode:** A dropdown menu set to 'Dual Credential Authentication'.
- Outside Access Mode - Specific Credentials:** A section with a blue header bar and two buttons: 'Add Items' and 'Remove Selected Items'.
- Inside Access Mode:** A dropdown menu set to 'Single Credential Authentication'.
- Inside Access Mode - Specific Credentials:** A section with a blue header bar and two buttons: 'Add Items' and 'Remove Selected Items'.
- Disarm Area on Access:** A checkbox that is checked.
- Area to Follow:** A dropdown menu set to 'None'.

Each configuration field has an information icon (i) to its right.

REX and REN Functionality

REX and REN inputs operate as normal when an ILAM is offline. REX and REN functionality is programmed in the hardware configuration wizard, *Configuration > Hardware > {Select Module} > Inputs and Outputs*.

Time Periods and Calendars

Users' door access permissions can be qualified by Time Periods. Inception can have up to 1,000 Time Periods and up to 250 Calendar Exceptions across all Time Periods.

Every 24 hours, Inception re-calculates any Calendar or Time Period exceptions in the Time Periods for the next two weeks and updates the ILAM offline database. Calendar exceptions will stop working if an ILAM is offline for more than two weeks.

NOTE: The ILAM does not retain time across a reset, so it must remain powered and not reset while offline to accurately determine the validity of Time Periods and Calendars. In the event of a power loss to the ILAM, the time periods and holidays will become out of sync with real-time.

For example, if an ILAM loses power for one hour and then regains power, but does not connect to a controller, the onboard time will be one hour behind real time. Time zones and Holidays will begin one hour behind real time. Events logged by the ILAM will be recorded one hour behind real time and reported as such when a connection to the controller is restored.

Wireless Locks

Aperio wireless locks operate as normal when an ILAM is offline.

Offline Door Permissions and Warnings

When access permissions are qualified by entities from other modules, such as area or input state, an offline ILAM will default to denying access.

Access permissions qualified by time periods will normally work as expected when an ILAM is offline. However, if a user's entry time period and exit time period for a door do not match, the access will be denied when an ILAM is offline.

Inception will raise a system warning, highlighting the complex access permissions that will be denied when an ILAM is offline.

The following permissions table shows all permission combinations and resulting offline behaviour.

Inception Door Entry Permission	Inception Door Exit Permission	ILAM offline Entry Permission	ILAM offline Exit Permission	System Warning
Always allow	Always allow	Always allow	Always allow	None
Always allow	Always deny	Always allow	Denied	None
Always allow	Time period	Always allow	Denied	Warning: User complex permissions denied
Always allow	Qualified permission	Always allow	Denied	Warning: User complex permissions denied
Always deny	Always allow	Denied	Always allow	None
Always deny	Always deny	Denied	Denied	None
Always deny	Time Period	Denied	Time period	None
Always deny	Qualified permission	Denied	Denied	Warning: User complex permissions denied
Time period	Always allow	Denied	Always allow	Warning: User complex permissions denied
Time period	Always deny	Time period	Denied	None
Time period	Time Period (Same as entry period)	Time period	Time period	None
Time period	Time Period (Different from entry period)	Denied	Denied	Warning: User complex permissions denied
Time period	Qualified permission	Always allow	Denied	Warning: User complex permissions denied
Qualified permission	Always allow	Denied	Always allow	Warning: User complex permissions denied
Qualified permission	Always deny	Denied	Denied	Warning: User complex permissions denied
Qualified permission	Time period	Denied	Time period	Warning: User complex permissions denied
Qualified permission	Qualified permission	Denied	Denied	Warning: User complex permissions denied

Offline Limitations

When an ILAM is offline from a controller, it cannot communicate with other parts of the system, and entities existing in those other parts cannot be controlled from the ILAM.

Due to this, the following functions are not supported in ILAM Offline operation:

- Reader LED control based on area states.
- User cancel on first card or PIN access.
- Duress code.
- Unlock time extension.
- Area-related operations including:
 - Area control.
 - User counting.
 - Defer arming.
 - Input isolation.
- Lift Control.
- Door-related features, including:
 - Interlocking (including when the interlocked doors are on the same ILAM).
 - Anti-passback.
- Door access qualifiers from other entities such as areas, inputs, or auxiliaries.
- Alternate door modes.