



B2X Access

RFID access control for Hopeland HZ-100 readers

Version **1.0.0** · Windows 10 / 11 · English · Français · العربية

WHAT IT IS

Long-range access control, without the guesswork

B2X Access runs on an ordinary Windows PC and supervises Hopeland HZ-100 UHF readers over your network. It decides who may pass, drives the door, and keeps a record of every presentation — including the ones it turned down.

Hands-free

UHF tags read at several metres. A driver keeps both hands on the wheel; a delivery crew keeps hold of the boxes.

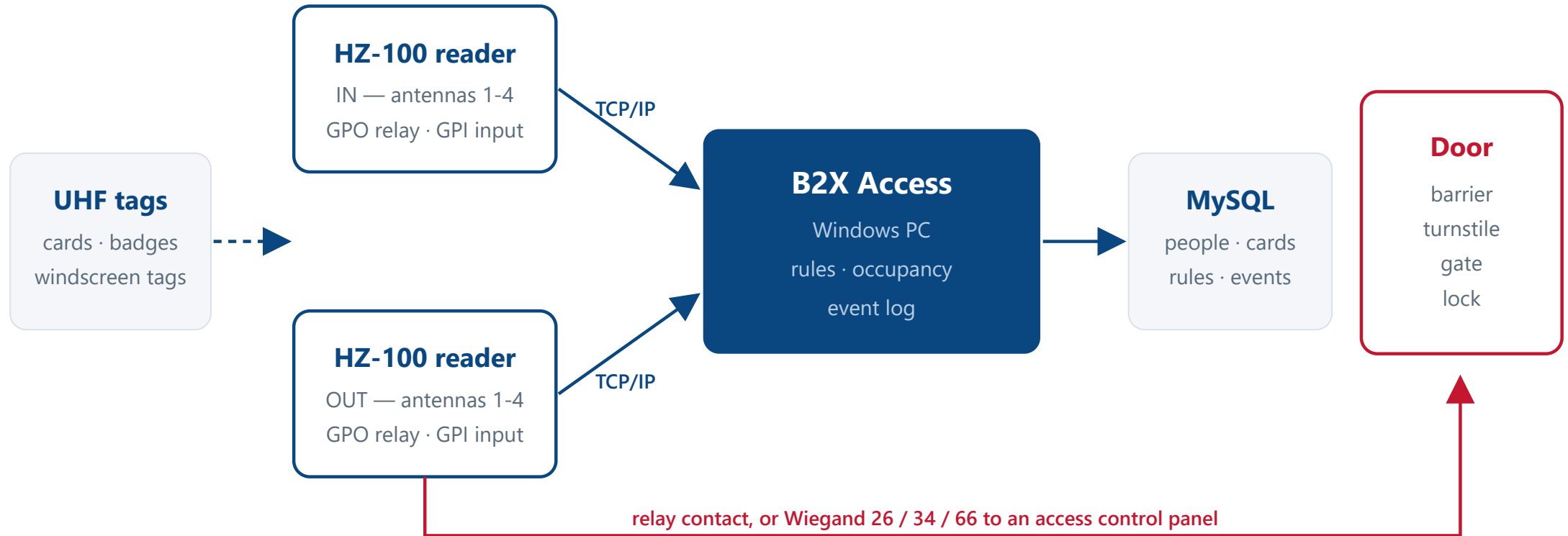
Accountable

Every decision is logged with the reason behind it, searchable and exportable. A refusal explains itself.

Resilient

The readers keep opening doors for authorised tags even with the PC switched off, from a list held on the device.

One PC, any number of readers



ON SITE

What it looks like once it is installed



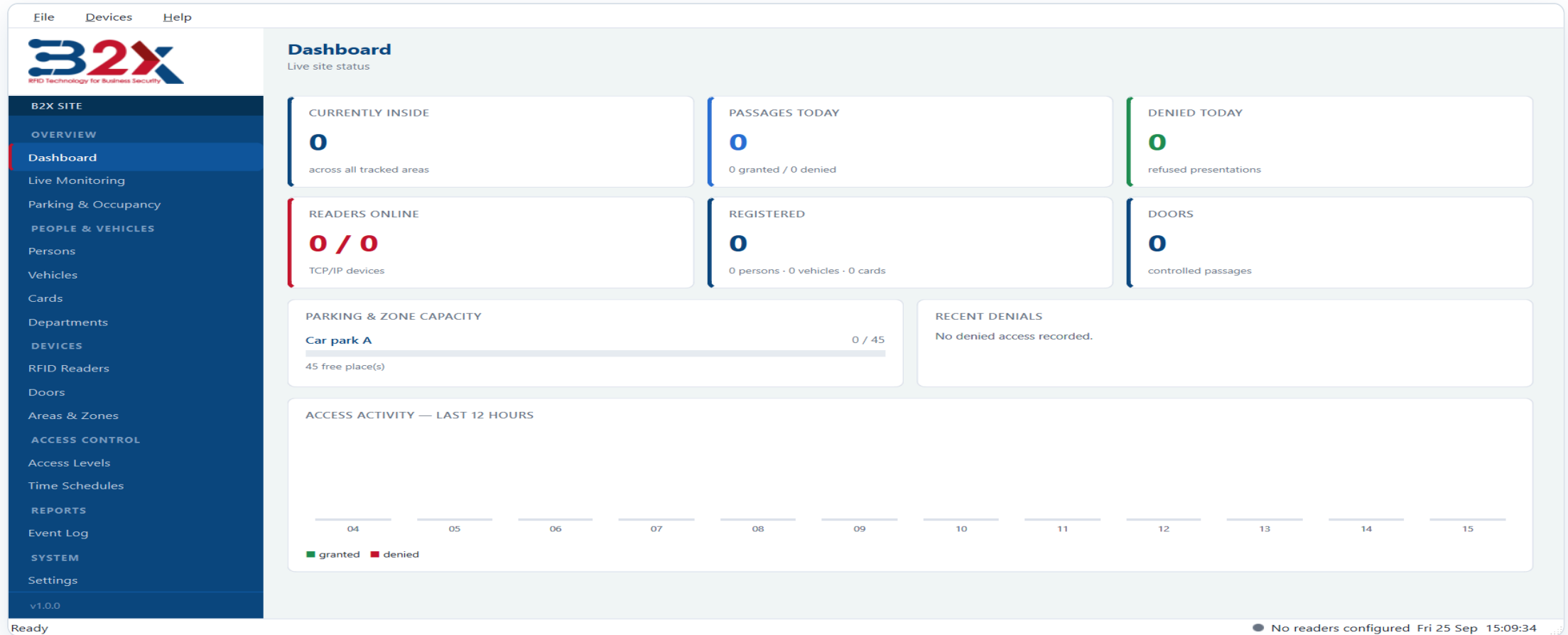
A reader beside the door, a tag in the work jacket. It is read from several metres away — nothing to present, nothing to aim.



A tag at the top of the windscreen and an antenna on the post: the barrier lifts without the driver opening a window.

OVERVIEW

The site at a glance



Occupancy, today's passages and refusals, reader health, and the last twelve hours of activity — on one screen.

Any door, whatever shape it is

- ✓ A door may have **no reader, one, or several** for IN — and independently the same for OUT.
- ✓ A vehicle gate with one antenna per lane, a turnstile read from both sides, an exit-only barrier: all the same model.
- ✓ Each reader point is scoped to **specific antenna ports**, so one four-port reader can serve four separate directions.
- ✓ Per point: minimum signal strength, relay pulse length, Wiegand format, and whether the output is active low.

General Rules **IN readers** OUT readers Exit buttons

Readers that grant entry into the inside area.

Label	Reader	Antenna	Relay	Min. RSSI	Action
Reader 001	Reader 001	All antennas	GPO 1 / 3000 ms	—	yes

1 reader point(s) Remove Edit Add IN reader

Save door Close

A reader point ties a reader, and the antennas it uses, to one direction.

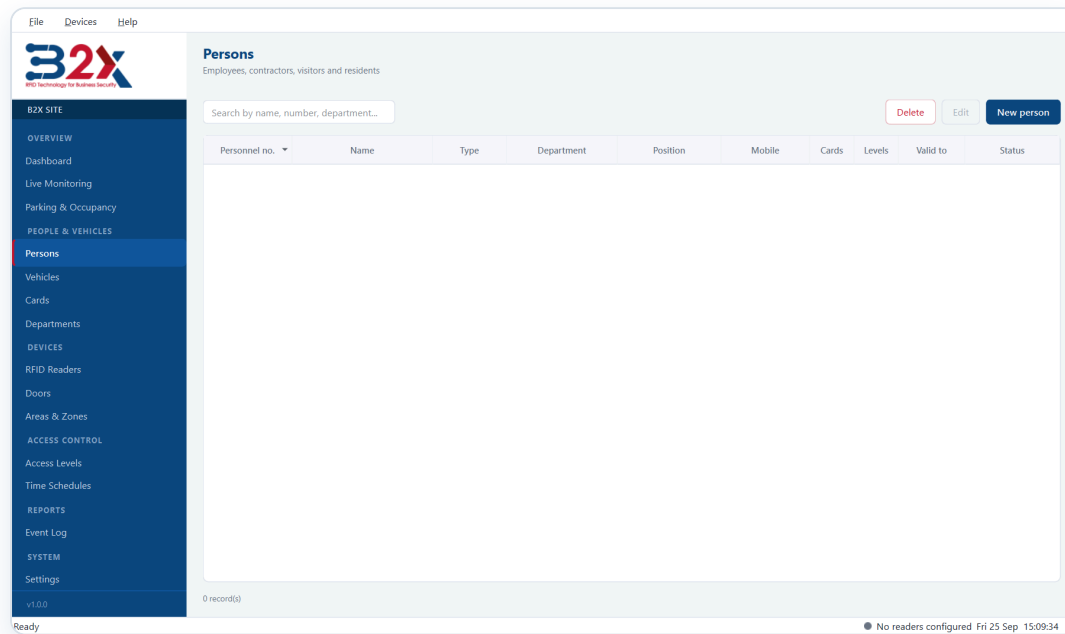
Twelve questions, in order

Every tag sighting runs the same chain. The first rule that refuses ends it, and its reason is what lands in the event log.

- 1 **Antenna mapped?** An unassigned antenna logs the read and stops.
- 2 **Signal strong enough?** Weak reads from the next lane are dropped.
- 3 **Seen just now?** A debounce window collapses repeat reads.
- 4 **Door enabled?** A disabled door refuses everything.
- 5 **Door locked down?** Lockdown overrides access levels.
- 6 **Card registered?** Unless the door is set to allow unknown tags.
- 7 **Card active and in date?** Lost, blocked or expired ends here.
- 8 **Card assigned?** An unassigned card opens nothing.
- 9 **Holder active and in date?** A departed employee is refused.
- 10 **Access level covers this door, this direction?**
- 11 **Inside the schedule?** Weekly patterns plus holidays.
- 12 **Anti-passback and capacity** — no re-entry without exit, and no entry into a full zone.

WHO AND WHAT

People and vehicles, side by side



Employees, contractors, visitors and residents — with photo, department, and a validity period.

The screenshot shows the 'Details' tab of the vehicle management interface. It has three tabs: 'Details', 'Tags', and 'Access levels'. The 'Details' tab is active. On the left is a placeholder for a photo, labeled 'No photo', with buttons for 'Choose photo...' and 'Remove'. On the right are form fields: 'Plate number *' (text input with example 'e.g. 123 TU 4567'), 'Type' (dropdown menu with 'Car' selected), 'Make' (text input), 'Model' (text input), 'Colour' (text input), 'Year' (dropdown menu with '—' selected), 'Owner' (dropdown menu with '— none —' selected), 'Department' (dropdown menu with '— none —' selected), and 'Assianed parkina' (dropdown menu with '— none —' selected). At the bottom right are 'Save vehicle' and 'Close' buttons.

Vehicles carry a plate, make and model, and can be tied to the person responsible for them.

The tag takes whatever form suits the holder

- ✓ **Card** — the familiar badge, for a visitor or a contractor you hand something to and expect back.
- ✓ **Windscreen tag** — stuck on once, it follows the vehicle rather than the driver.
- ✓ **Textile tag** — laundry grade, sewn into the work jacket. Nothing extra to carry, nothing to leave in a locker, and nothing to fish out with both hands full.

To B2X Access all three are simply cards: a tag number assigned to a person or a vehicle. The rules do not change with the shape of the thing carrying it.



Hold the tag up.

That is the whole procedure.

- ✓ The card dialog listens to the readers live and lists every tag in range, strongest first.
- ✓ The **best signal wins** automatically — the tag in your hand, not the pallet behind you.
- ✓ Tags already issued are flagged on the spot, so a number is never allocated twice.
- ✓ The factory **TID** is captured alongside the EPC, which is how a cloned tag is spotted later.
- ✓ Typed a number by hand? A live read will never overwrite it.

Capture from reader

All readers Stop scanning Clear

EPC	Signal	Reads	Reader	Status
E28011606000020000D4E5F6	-37 dBm	9	Enrolment desk	New tag
E280AAAAAAAAAAAAA...	-55 dBm	3	Enrolment desk	Amel Ben Youssef (EMP...
E28011606000020000A1B2C3	-62 dBm	4	Enrolment desk	New tag

3 tag(s) in range. Using the strongest; click another row to choose it instead.

Card number * E28011606000020000D4E5F6

Type UHF

TID E280117000D4E5F6

Label e.g. Windscreen tag

Status Active

Issued 25/09/2026

☐ Expires on 25/09/2026

Facility code Optional — Wiegand facility code

The card number must match exactly what the reader reports. Type it by hand only if the tag cannot be presented to a reader.

Save Cancel

A car park that knows when it is full

The screenshot displays the B2X Parking & Occupancy dashboard. The left sidebar contains a navigation menu with sections: B2X SITE, OVERVIEW, PEOPLE & VEHICLES, DEVICES, ACCESS CONTROL, REPORTS, and SYSTEM. The 'Parking & Occupancy' section is highlighted. The main content area shows two summary cards: 'Car park A' with 45 occupied spaces (free of 45, 0 occupied) and 'Site' with 0 occupants (inside — no capacity limit). A table below shows a list of occupants with columns for Zone, Holder, Kind, and Card. The table is currently empty. At the bottom, a status bar indicates '0 holder(s) inside' and 'No readers configured Fri 25 Sep 15:09:34'.

File Devices Help

B2X
RFID Technology for Business Security

B2X SITE

- OVERVIEW
- Dashboard
- Live Monitoring
- Parking & Occupancy**
- PEOPLE & VEHICLES
 - Persons
 - Vehicles
 - Cards
 - Departments
- DEVICES
 - RFID Readers
 - Doors
 - Areas & Zones
- ACCESS CONTROL
 - Access Levels
 - Time Schedules
- REPORTS
 - Event Log
- SYSTEM
 - Settings

v1.0.0

Parking & Occupancy
Who and what is inside each zone right now

Car park A
Parking zone · PARK-A
45
free of 45 · 0 occupied

Site
Counted zone · SITE
0
inside — no capacity limit

All zones Search occupants... Check out selected Refresh

Zone	Holder	Kind	Card
------	--------	------	------

0 holder(s) inside

● No readers configured Fri 25 Sep 15:09:34

Occupancy is counted per zone. Set a capacity and B2X can refuse entry once the last place is taken — with reserved places held back, and a warning level before it gets there.

Watch the site as it happens

The screenshot displays the B2X Live Monitoring web application. The interface includes a sidebar menu on the left with categories like B2X SITE, OVERVIEW, PEOPLE & VEHICLES, DEVICES, ACCESS CONTROL, REPORTS, and SYSTEM. The main content area is titled 'Live Monitoring' and shows '0 event(s) in view - streaming'. It features a filter dropdown set to 'All events' and a search bar. Below the filter is a 'LAST PRESENTATION' section with a 'No photo' placeholder and a 'Waiting...' button. To the right is a 'TEST CONSOLE' with input fields for 'Card number / EPC', 'ANT 1', and '-45 dBm', and a 'Present tag' button. A table with columns 'Time', 'Decision', 'Holder', 'Card', 'Door', 'Dir', and 'Reader' is visible, but it is empty. The bottom status bar shows 'Ready' and 'No readers configured Fri 25 Sep 15:09:34'.

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PEOPLE & VEHICLES

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DEVICES

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- Doors
- Areas & Zones

ACCESS CONTROL

- Access Levels
- Time Schedules

REPORTS

- Event Log

SYSTEM

- Settings

v1.0.0

Ready

Live Monitoring
0 event(s) in view - streaming

All events Filter by card, holder or door...

Pause Clear view

LAST PRESENTATION

No photo

Waiting...

TEST CONSOLE

Feeds a tag to the access engine exactly as the antenna would. Use it to verify door mappings, access levels and relay wiring.

Card number / EPC ANT 1 -45 dBm

Present tag

Add a reader first (Devices → RFID Readers).

Time	Decision	Holder	Card	Door	Dir	Reader
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No readers configured Fri 25 Sep 15:09:34

Every presentation as it lands, with the holder, the door, the direction and the verdict. Granted in green, refused in red, with the reason spelled out.

Two ways to open the door

Relay mode — B2X decides

The PC evaluates the rules and pulses the reader's GPO output, which drives a relay and the door. Nothing else is needed between the reader and the barrier.

Use it for a standalone gate, a barrier, a turnstile — anywhere there is no panel already on site.

GPO1 · adjustable pulse · active-high or active-low

Wiegand mode — the panel decides

B2X converts the tag to a Wiegand card number and presents it to your existing access control panel, exactly as a conventional card reader would. The panel keeps the final say.

Use it for a site that already runs a panel you are not replacing.

26 / 34 / 66-bit · facility code · D0 and D1

One or the other, per reader. On the HZ-100 the Wiegand data lines share the same physical pins as the GPO outputs, so a reader does one job or the other. B2X sets the device up accordingly when it connects.

A button on the wall, wired to the reader

- ✓ A push button on the reader's **GPI input** releases the door through its **GPO output** — no tag, no card.
- ✓ Configured per door: which input, which edge, how long the output holds, and whether it still works during lockdown.
- ✓ The press is written to the event log like any other passage, so the audit trail stays complete.
- ✓ Occupancy is deliberately left alone — a button press says the door opened, not who walked through it.

The screenshot shows a configuration window for a 'Request to Exit' button. The fields are as follows:

- Label:** e.g. Exit button, lobby side
- Reader *:** Reader 001 (192.168.1.116)
- Input:** GPI 1
- Fires on:** Rising edge - the button pulses it high
- Records as:** OUT - leaving
- ☒ This input is active
- Release the door with:**
 - Output:** GPO 1
 - Release for:** 3000 ms
 - ☐ Low-level trigger (pull down to fire)
 - Hold-off:** 1500 ms
 - ☐ Stop working during a lockdown

An exit button carries no card, so the event is recorded against the door with no holder. Zone occupancy is left alone - B2X cannot know who left, and guessing would corrupt the count and with it anti-passback. A zone that needs exact numbers needs a read on the way out, not a button.

Buttons: Save, Cancel

STANDALONE FALLBACK

Switch the PC off. The doors still open.

B2X pushes a whitelist of authorised tags into each reader. If the PC is shut down, rebooting, or simply unplugged, the reader keeps reading and keeps pulsing its relay for the tags on that list.

What pauses until the PC returns is everything the PC decides: the event log, time schedules, anti-passback and zone capacity. You choose who goes on the list — everyone, or only the holders who must never be locked out.

Every decision is on the record

The screenshot displays the B2X Event Log interface. On the left is a dark blue sidebar menu with the B2X logo at the top. The menu categories include B2X SITE, OVERVIEW, PEOPLE & VEHICLES, DEVICES, ACCESS CONTROL, REPORTS (with 'Event Log' highlighted), and SYSTEM. The main content area is titled 'Event Log' with the subtitle 'Every access decision, searchable and exportable'. It features a filter bar with dropdowns for 'Last 24 hours', 'All decisions', 'All doors', and a text input for 'max 1000', followed by an 'Apply' button and a 'Filter results...' search box. Below the filters is a table with the following headers: Date & time, Decision, Holder, Card, Door, Dir, Reader, Ant, RSSI, Relay, and Reason. The table body is currently empty. At the bottom left of the main area, it says '0 event(s) — 0 granted, 0 denied'. At the bottom right, there is an 'Export CSV...' button. A status bar at the very bottom shows 'Ready' on the left and 'No readers configured Fri 25 Sep 15:09:35' on the right.

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Event Log
Every access decision, searchable and exportable

Last 24 hours All decisions All doors max 1000 Apply Filter results...

Date & time	Decision	Holder	Card	Door	Dir	Reader	Ant	RSSI	Relay	Reason
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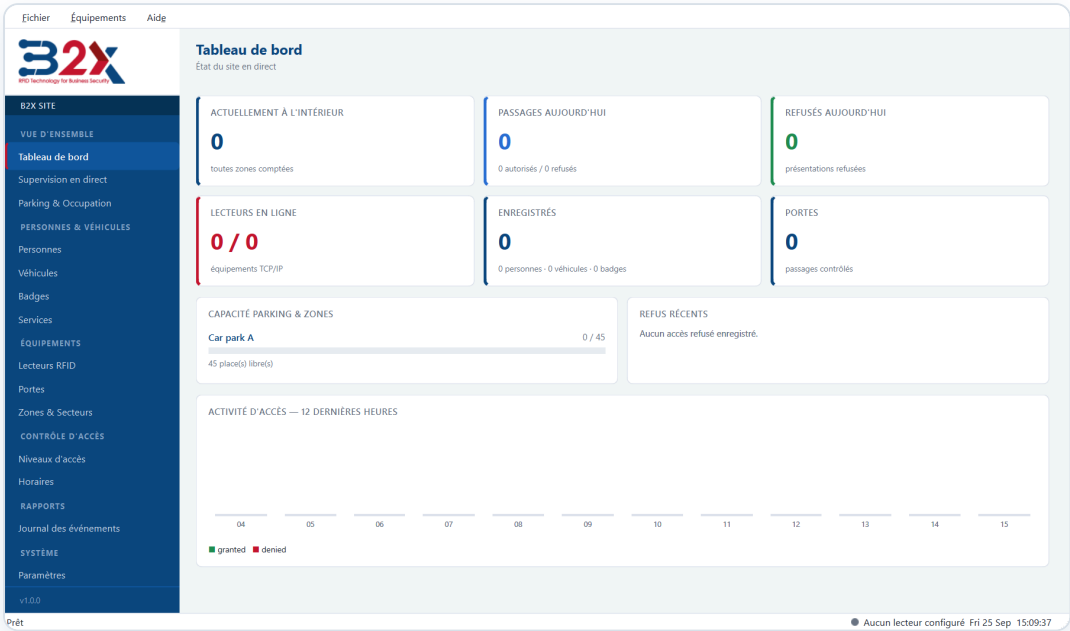
0 event(s) — 0 granted, 0 denied

Export CSV...

Ready ● No readers configured Fri 25 Sep 15:09:35

Filter by date, door, decision or holder, then export to CSV. Refusals carry their reason, so "the gate would not let me in" has an answer.

English, French and Arabic



Français — the whole interface, including decision reasons.



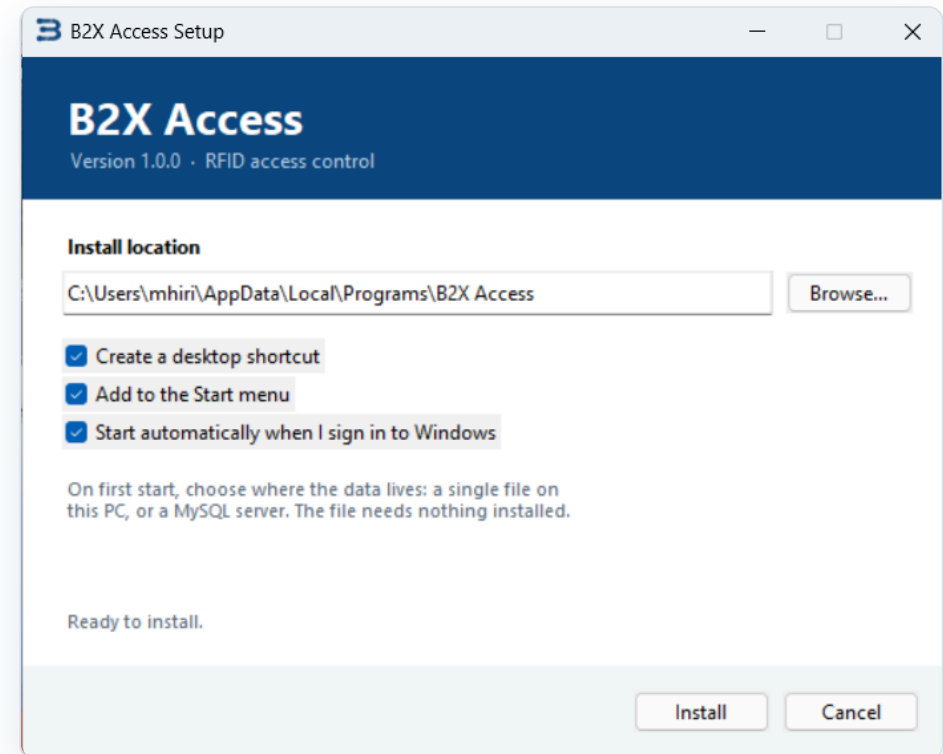
العربية — fully mirrored right-to-left: navigation, tables, status bar.

Chosen per installation in Settings. Decision reasons stay in English inside the database, so an audit export reads the same on every machine.

DEPLOYMENT

One file, one click

- ✓ A single `setup.exe` carries everything — no Python, no runtime, nothing to install first.
- ✓ Installs **per user**, so Windows never asks for an administrator password.
- ✓ Registers a scheduled task that starts B2X Access automatically when the operator signs in.
- ✓ Only one copy ever runs: launching it again raises the window that is already open.
- ✓ Upgrading in place keeps the settings, photos, logs and exports.
- ✓ Uninstalls cleanly from **Apps & features**.



WHAT YOU NEED

Requirements

ITEM	REQUIREMENT
PC	Windows 10 or 11, 64-bit. 4 GB RAM is ample; a 1440×900 screen or larger.
Database	A single file, which needs nothing installed — or MySQL 8 / MariaDB 10.6+ on this PC or on the network when several workstations share one site.
Readers	Hopeland HZ-100 series, reachable over TCP/IP. Any number; each with up to four antenna ports.
Door hardware	Either a relay driven from the reader's GPO output, or an existing access control panel on Wiegand.
Network	Wired Ethernet to the readers is strongly preferred. Fixed IP addresses.
No hardware yet?	Simulation mode runs the entire application with no readers attached — for training and demonstration.



Ready when you are

Install it on one PC, point it at your readers, and the site is under control the same afternoon.

3

languages,
including right-to-left Arabic

0

administrator prompts
during installation

24/7

doors keep working
even with the PC off