

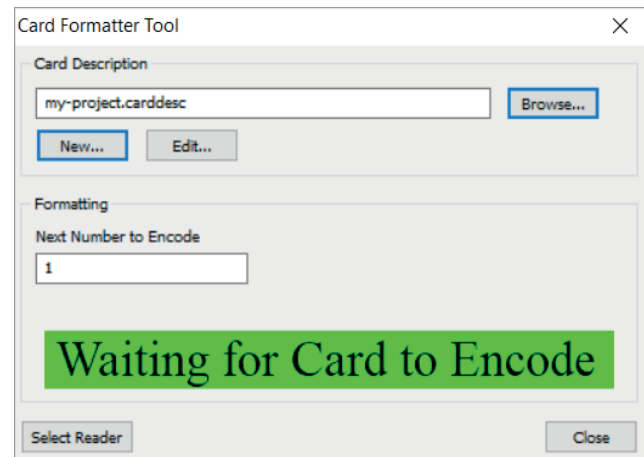
# Card Formatter

## Format project cards safely on site

For sensitive applications, e.g. access control or payment, SmartCards like MIFARE DESFire offer extensive security features. These include encryption of and restricted access to the data on the card.

To make use of these features, you need to format the cards for your project: In this process, the memory structure for the application data is created, keys and access conditions are defined, and a PCN (Programmed Card Number) is assigned as a unique identifier for all applications using this card.

With BALTECH Card Formatter Tool, you can format cards via an intuitive user interface – no technical know-how needed. Thanks to its security features tailored to non-secured environments, you can also use it safely on site.



## Requirements

Card Formatter Tool requires Windows 10. It's available free of charge, but only works with the following equipment:

### Job file

A job file contains the project-specific data to program onto the card.

You can order ready-to-use job files from us at a service fee of **€500** per project or change request.

Please note that we don't provide documentation or support for job file creation or modification.

### Compatible reader

Card Formatter Tool works with BALTECH ID-engine ZM or ZB readers. Both 10115-xxx-xx and 10117-xxx-xx series are compatible. To format Hitag cards, ensure your reader version supports 125 kHz cards.

## Security features

To prevent card duplication or cloning, Card Formatter Tool offers the following security features designed for use in non-secured environments:

### Default

- Log file in CSV format to keep track of each formatted card
- Entries include date & time (system clock), UID, PCN, and content of custom data fields.

### Optional

- Predefined PCN range per job file
- Enforce consecutive assignment of PCNs: Users can't skip PCNs.
- Prevent multiple assignment of PCNs: Users can assign each PCN only once.
- AES-encrypted job file with admin password: Users can't view keys or manipulate the job file.

## Supported card and transponder types

### MIFARE DESFire

- All EV1 features supported plus EV2 programming of Delegated Application Management (DAM) keys
- AES key diversification (optional)
- Format new blank cards with entire card structure including multiple applications, files, key sets, etc.
- Add new applications to pre-formatted cards (existing applications are preserved).
- Erase and re-format cards (existing applications are deleted).

### MIFARE Classic

- All features supported
- Format new blank cards with entire card structure.
- Add new application data to existing cards including keys.
- Exchange keys of existing applications.
- Program static MIFARE Application Directory (MAD).

### MIFARE Plus

- Level 1: all MIFARE Classic features
- Level 2 and Level 3: full feature support on request

### Hitag

- Program plain data structure without encryption.

## Data structure

- Fix data and incremental PCN in any encoding, e.g. BCD, ASCII, or hexa-decimal
- Custom entry fields for variable data, e.g. card holder name, to be entered manually via the GUI

## Download & further information

- Card Formatter Tool is available for [download at baltech.de](https://www.baltech.de).
- To order a job file and get detailed how-tos, visit [docs.baltech.de/card-formatter](https://docs.baltech.de/card-formatter).

