APS mini

APS HiT

Access control system administration program

User's guide

hit

techfass®

(Released on: 2024/03/05, valid for build 1.0.8829.20970)

1 Content

1 Content 2
2 Product description 3
3 Program installation 3
3.1 System requirements 3
3.2 Installation 3
4 Program configuration 4
4.1 Main window description 4
4.2 Controlling the program, shortcuts 5
4.3 Files working area 6
4.4 Hardware working area 7
4.5 Users working area 21
4.6 Schedules working area 24
4.7 Events working area 26
4.8 Options working area 28
4.9 Help working area 29
4.10 Buttons for connection control and data upload 29
4.11 Communication with system 29
4.12 Communication with individual readers 30
5 Hardware management 31
5.1 LAN converter configuration 31
5.2 USB converter configuration 31
5.3 HW address configuration 32
5.4 Creating a new HW tree structure 33
5.5 Device upgrade 33
6 User management 34
6.1 Inserting new users 34
6.2 Access right assignment 35
6.3 Data transfer 36
7 Supplements 37
7.1 APSLAN converter setting 37
7.2 Driver installation for USB convertor and USB reader 39
7.3 Meaning of the operating events 40
7.4 Setting the number of addresses of modules for relay outputs control 43

2 Product description

The *APS HiT* is a software tool for configuration and administration of *APS mini Plus* access control system int the default ID format setting. The program enables to connect *APS mini Plus* system readers using *USB* or *TCP/IP* interface.

Note: If you want to manage the system by multiple users or want to run the system 24/7, manage large or complicated systems (e.g. with third party readers, non default ID format setting etc.) or when migrating from the APS Home SW it is recommended to use the software product *APS Administrator*.

3 Program installation

The program is provided free of charge. To install the program, download and run its installer from TECH FASS website (http://techfass.com).

3.1 System requirements

The program requires a PC with OS *MS Windows 10* and *MS .NET Framework 4.6.1* installed to run.

3.2 Installation

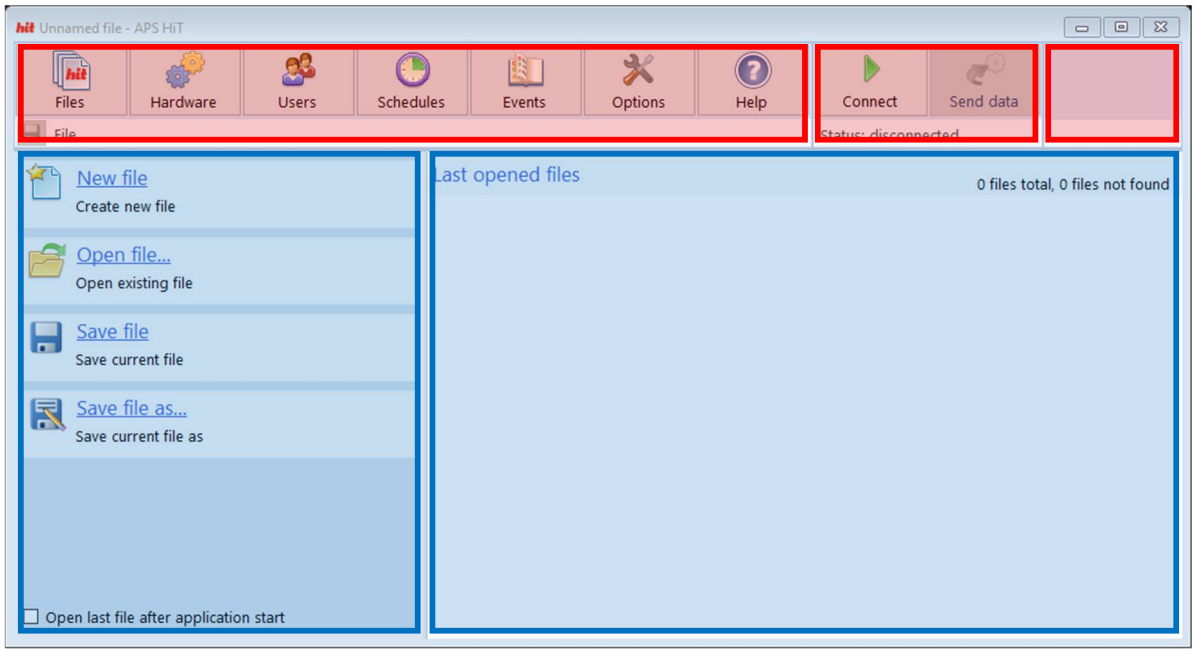
The program is installed in the *Program Files* folder on your PC. After its first run, the program creates a subfolder named *APS HiT* in your *Documents* folder, where it stores all your data files.

4 Program configuration

4.1 Main window description

The program main window *(pic. 4.1.1)* consists of two parts. Working area, which occupies the lower part of the window and the main menu located in its upper part. The main menu is divided in three panels:

- The first panel contains *Files*, *Hardware*, *Users*, *Events*, *Options* and *Help* buttons for selecting required working area. Below these buttons, there is a quick help information panel (displayed when hovering mouse over a button) and a quick save button for saving current data file.
- The second panel contains two buttons for connected readers' communication control. Below theses buttons there is an information panel, which shows current communication status and displays quick help information.
- The third panel displays detailed statuses of communication lines (if there are no communication lines set, the panel is empty).



Pic. 4.1.1: Program APS HiT (with individual parts designation)

The working area is divided into two panels:

- The left part contains commands menu for selected working area
- The right part displays selected working area data.

4.2 Controlling the program, shortcuts

The *APS HiT* program can be controlled via keyboard and mouse. The right-click on mouse brings a context menu, which simplifies the tasks with an item.

In the *APS HiT* program may be used following keyboard shortcuts:

- *DELETE* … erases selected rows from the table.
- *INSERT* … inserts new rows in the table.
- *F2* … edits cells in the table, displays editor of permissions for selected cell.
- *CTRL+C* … copy items to clipboard.
- *CTRL+V* … insert items from clipboard.
- *F5* … refreshes the table on the Events Archive panel.

On the *Users* panel may be used specific shortcuts:

- *CTRL+,* … access granted.
- *CTRL+0* … access denied.
- *CTRL+1 to 9* … access granted according to the schedule.

The warning message dialog contains *Copy message to clipboard* function, which allows fast insertion of the message in the mail for easier communication with the technical support.

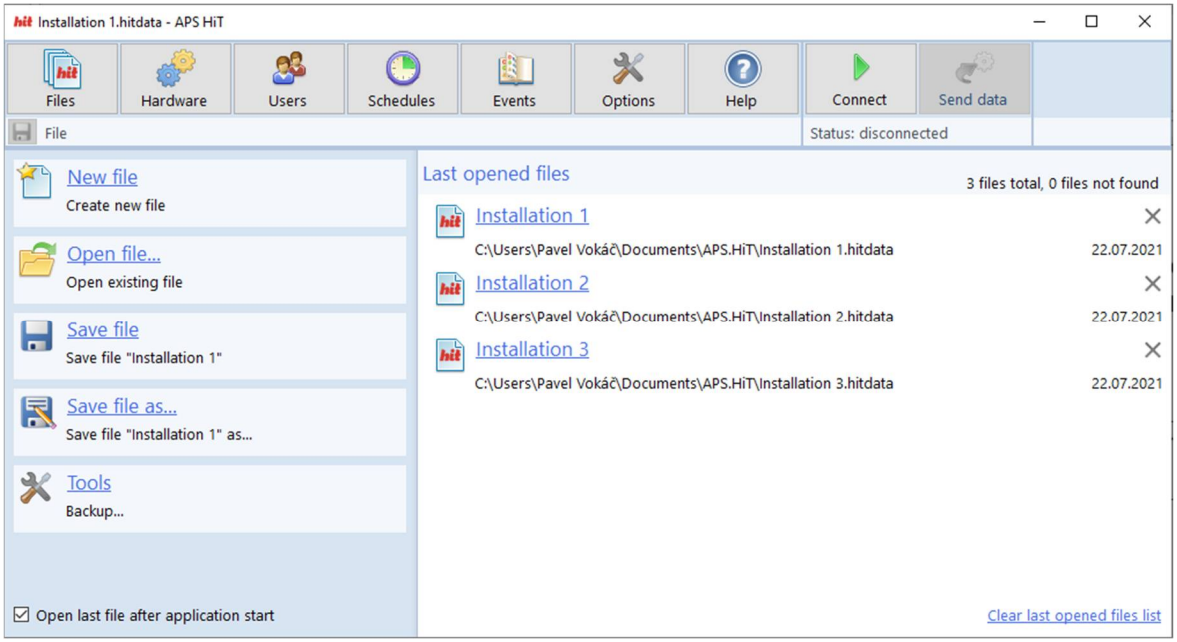
Pic. 4.2.1: Warning message

4.3 Files working area

The *Files* working area is used for program data files management (*pic. 4.3.1*) and enables to perform usual operations with *APS HiT* program data files.

- Create a new file.
- Open an existing file.
- Save current file.
- Save current file as.
- Tools for other file operations.

If you wish to open last used data file after program start, check the *Open last file after application start* option.



Pic. 4.3.1: Files working area

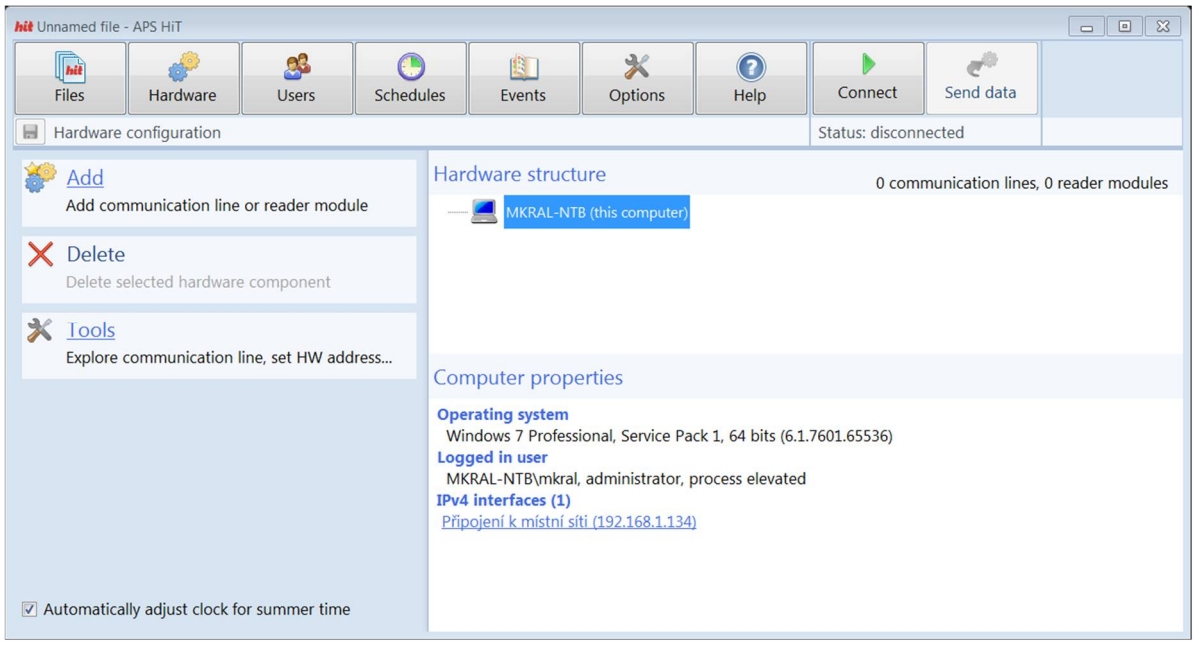
In the right panel there is a list of recently used data files. You can reset the list by using the *Clear last opened files list* link located below the list, or remove individual files from the list by pressing the cross icon located on the right. After right-clicking on a line of a specific file, a context menu will appear containing a command *to open the file location*.

Removing any entry from the last opened files list does not delete the files from PC's hard drive.

After clicking the *Tools* button, a command for creating the backup file will appear. The backup file (zip format) will contain the data file and relevant archive event files.

4.4 Hardware working area

The *Hardware* working area (*pic. 4.4.1*) contains tools for administration of system devices (communication lines and readers). A tree structure is used for hardware management.



Pic. 4.4.1: Hardware working area

The commands menu contains following commands:

- Add a new communication line or a reader
- Delete selected device
- Open tools menu for selected device

4.4.1 Add command

Add command allows to add a new communication line or to add a reader to selected communication line. After the *Add* button is pressed, following options are displayed:

- LAN (network communication line)
- USB (serial communication line)
- Reader

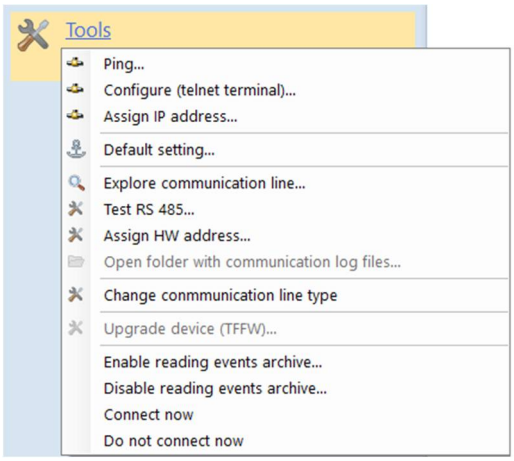
4.4.2 Delete command

Delete command is used for deleting selected device from connected hardware structure.

Deleting a communication line deletes all readers connected to the line at the same time. If you wish to change communication line type, use *Change communication line type* command from the *Tools* menu options.

4.4.3 Tools command

The *Tools* command displays advanced options for selected device. (*pic. 4.4.2*) Only meaningful commands are allowed for each device type.



Pic. 4.4.2: Tools option

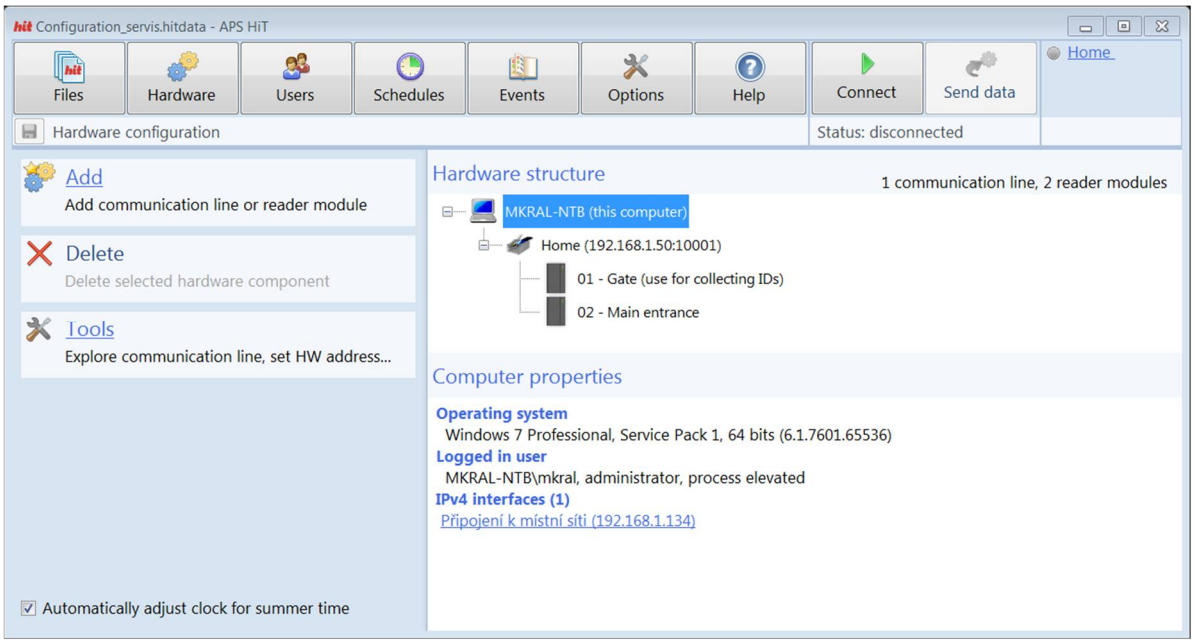
- *Ping* … verifies the CON-LAN converter availability using TCP/IP protocol.
- *Configure (telnet terminal)* … opens CON-LAN converter configuration menu using telnet protocol.
- *Assign IP address* …allows to assign an IP address to a CON-LAN converter using its MAC address (ARP method). This method cannot be used if there is a router between the PC and the converter.
- *Explore communication line* … searches the communication line and displays a list of discovered readers.
- *Test RS 485* … verifies the correct connection of readers RS 485 BUS contacts (*A* and *B* contacts). Readers correctly connected to the RS 485 BUS start to flash rapidly with red and green LED after the command is used.
- *Assign HW address* … opens a dialog for reader HW address setting. The process uses a known ID of a key fob / card, or it uses the SN (serial number) of the reader.
- *Open folder with communication log files* … opens folder with system communication log files.
- *Change communication line type* … changes communication line type from CON-LAN on CON-USB and conversely. This change does not delete connected readers.
- *Upgrade device (TFFW)* … Firmware or/and license upgrade for selected reader.
- Following commands allows to perform *bulk settings* of parameters of selected readers, resp. readers connected to selected communication lines:
  - *Enable reading events archive* ... sets the flag “Read event archive”.
  - *Disable reading events archive* ... clears the “Read event archive” flag.
  - *Connect now* ... clears the “Do not connect now” flag.
  - *Do not connect now* ... sets the "Do not connect now" flag.

4.4.4 Hardware structure

In the right panel there is an *APS HiT* system structure displayed (tree structure, *pic.4.4.3*). The highest level of the tree structure contains a PC (currently running the program); the second level contains communication lines; third level contains connected readers. The number of communication lines and connected readers is shown in the header of the tree.

In the structure the PC is represented by a PC icon and its name. Communication line is represented by a USB or RJ-45 connector icon, its name and primary parameters. Reader is represented by a reader icon, its HW address and name.

After right-clicking a selected reader, there is a context menu displayed. The menu contains the same commands as the ones available in the left commands' menu; furthermore, it contains an *Open door* and *Activate 2nd output function* commands for remote control of selected reader.

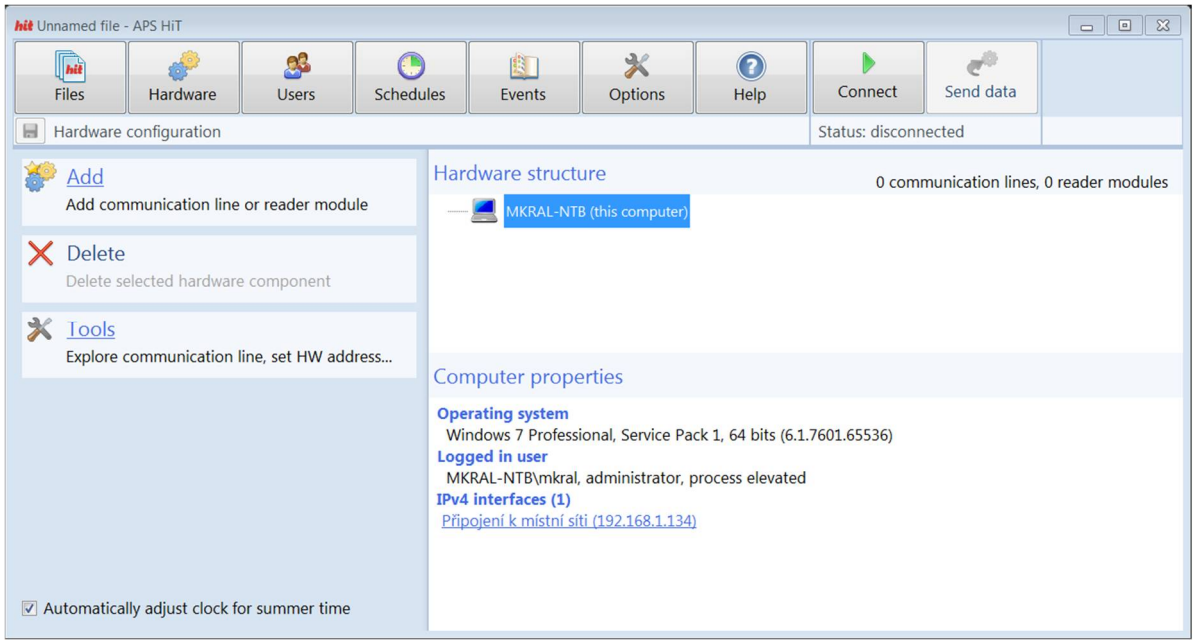


Pic. 4.4.3: Created HW tree structure

Below the HW tree there is a panel with configuration options for selected device (the options are different for each device type).

4.4.5 Computer properties

The configuration panel for *Computer properties* (*pic. 4.4.4*) contains basic information about the OS installed on your PC and about IPv4 interfaces.

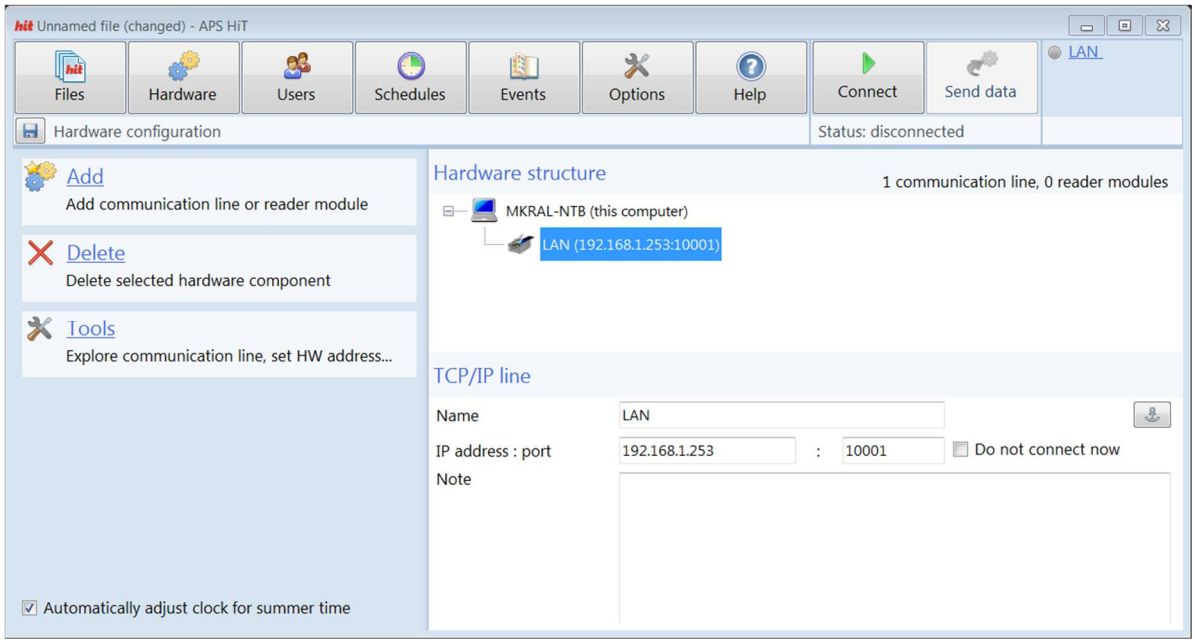


Pic. 4.4.4: Computer properties

4.4.6 LAN converter configuration

Configuration panel for the *LAN* converter (*pic. 4.4.5*) allows configuring basic communication parameters and identification of the device in the program:

- *Name* … identification of the converter (for easier orientation in the HW tree structure).
- *IP address : port* … IP address and port of the converter. Default values can be restored by pressing the anchor button.
- If you wish not to use a communication line temporarily, check the *Do not use now* option (communication line icon will be crossed out in HW tree structure).
- *Note* … any note describing the converter.

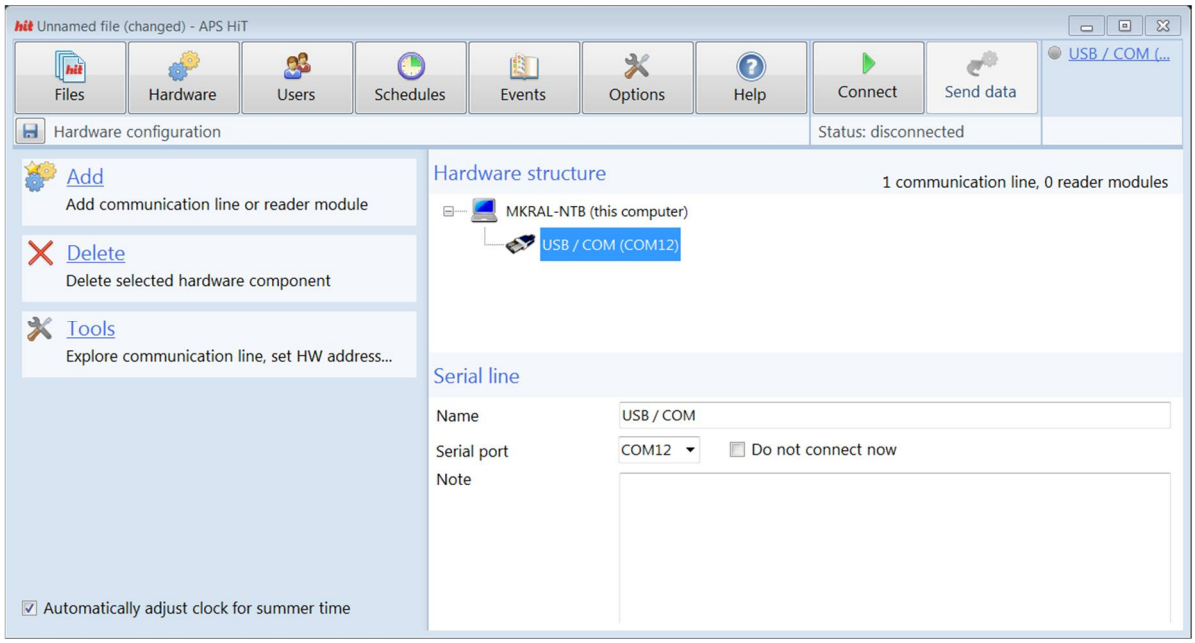


Pic. 4.4.5: LAN configuration panel

4.4.7 USB configuration

Configuration panel for the *USB* converter (*pic. 4.4.6*) allows configuring basic communication parameters and identification of the device in the program.

- *Name* … identification of the converter (for easier orientation in the HW tree structure).
- *Port* … serial port assigned to the converter (see more in chapter 7.2.2)
- If you wish not to use a communication line temporarily, check the *Do not use now* option (communication line icon will be crossed out in HW tree structure).
- *Note* … any note describing the converter.



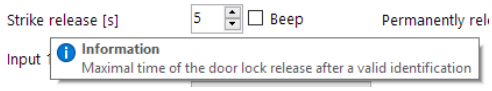
Pic. 4.4.6: USB configuration panel

4.4.8 Reader configuration

Configuration panel of the reader (*pic. 9*) allows configuring operation parameters and identification of the device in the program. Basic information about the reader (type, SN, firmware version and license) is shown in the header of the panel (after the first communication with the reader is established and the information is obtained).

For easier control is the program divided into two user interfaces – *Basic* and *Advanced* – where advanced user interface allows to set advanced setting of the reader.

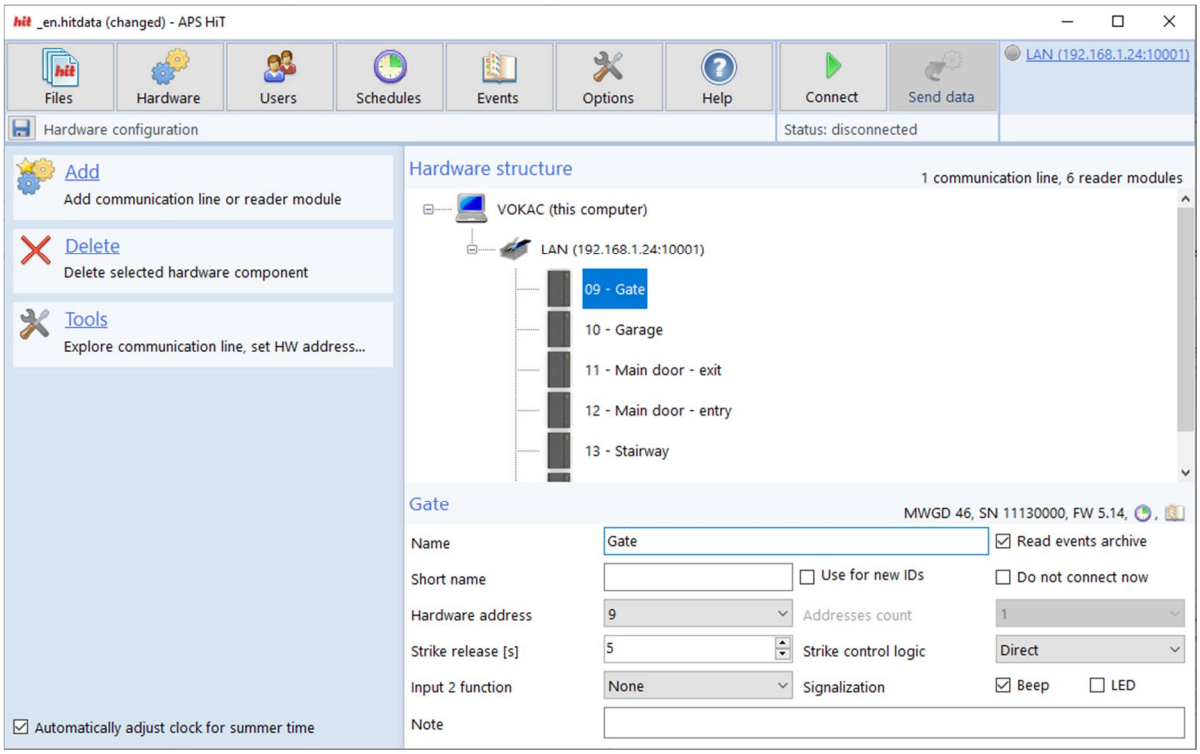
The individual parameters of the reader's configuration contain hidden help (hint). It is possible to show the help by holding the cursor above the desired parameter (*pic. 4.4.7*).



Pic. 4.4.7: Hint

4.4.8.1 Basic user interface

The *Hardware* panel in the basic user interface (*pic. 4.4.8*) is sufficient for setting of the reader in the typical application.



Pic. 4.4.8: Basic user interface

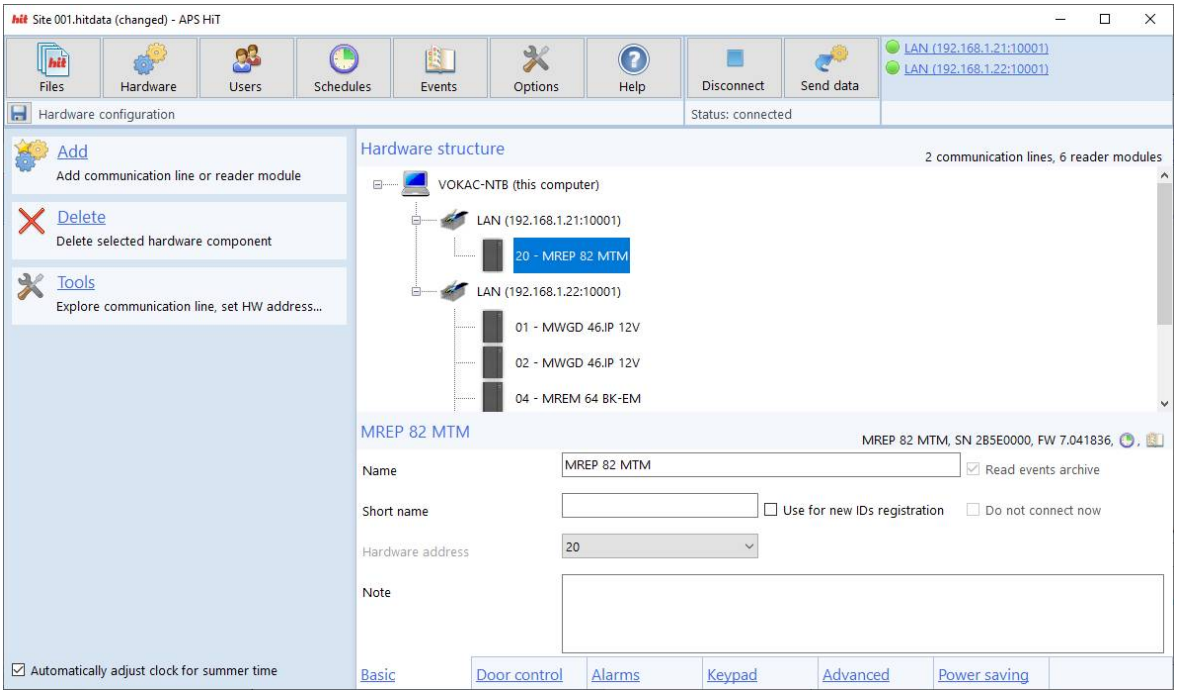
The configurable parameters in the basic user interface are:

- *Name* … identification of the reader; for simple administration it is recommended to identify the reader by its placement in the object.
- *Read events archive* … reader will read the events.
- *Short name* … a shortcut of the reader identification. If set, it is shown in the column header in the *Users* working panel.
- *Use reader for new IDs registration* … if the USB reader (USB-EM) is not available, it is possible to use one of the system readers for new IDs registration. Standard function of the reader is not affected.
- If you wish not to use the reader temporarily, check the *Do not use now* option (reader icon will be crossed out in HW tree structure).
- *Hardware address* … address of the reader on the communication line.
- *Addresses count* … on special modules for controlling a large number of outputs with one reader (for example, MREM 82 MTMBOX-MF modules) it is also possible to set the number of addresses that the module occupies on the communication line and controls corresponding number of outputs. If the first address is set to 1, the maximum number of addresses is 32, if it is set to 2, the maximum number of addresses is 31, and so on. Recommended procedure of setting this parameter is described in annex 7.4 of this document.
- *Strike release time* … defines the maximal time of door lock release after a valid identification of a user at a reader. The range is *1 ÷ 255 seconds*.
- *Strike control* … defines the logic of the output for door lock control. When a reader with a transistor output is used, choose *Direct* strike control when controlling a common door opener, and choose *Reverse* strike control when controlling a reverse door opener.
- *Input 2 function* … defines the function of second input of the reader. When the *Request to exit button* option is used, the reader will release the door lock, if the reader receive the relevant signal at its second input. When the *None* option is used, reader ignores its second input status.
- *Beep* … defines acoustical signalization when the door lock is released.
- *LED* … defines, if the door lock release is indicated by LED of the module (signalization differs according to individual module type)
- *Note* … any note describing the reader.

4.4.8.2 Advanced user interface

The Hardware panel in the advanced user interface (*pic. 4.4.9*) allows to set almost all available parameters of the reader. This mode is required especially for keypad readers or double-sided door control.

The advanced user interface must be set on the *Options* panel, in the *User interface* tab.



Pic. 4.4.9: Advanced user interface

In the advanced user interface are individual tabs on the bottom part of the panel, which contain different parameters of following categories:

- *Basic* … parameters for communication with the reader.
- *Door control* … parameters for setting of the inputs and outputs of the reader.
- *Alarms* … parameters for indication of the alarms.
- *Keypad* … parameters for setting of the keypad (if the reader disposes keypad).
- *Advanced* … parameters for setting of the Wiegand interface and advanced controls of the readers.
- *Power saving* … parameters for setting the power saving options.

Basic tab

- *Name* … identification of the reader; for simple administration it is recommended to identify the reader by its placement in the object.
- *Read events archive* … reader will read the events.
- *Short name* … a shortcut of the reader identification. If set, it is shown in the column header in the *Users* working panel.
- *Use reader for new IDs registration* … if the USB reader (USB-EM) is not available, it is possible to use one of the system readers for new IDs registration. Standard function of the reader is not affected.
- If you wish not to connect the reader temporarily, check the *Do not connect now* option (reader icon will be crossed out in HW tree structure).
- *Hardware address* … address of the reader on the communication line.
- *Addresses count* … on special modules for controlling a large number of outputs with one reader (for example, MREM 82 MTMBOX-MF modules) it is also possible to set the number of addresses that the module occupies on the communication line and controls corresponding number of outputs (pic. 1). If the first address is set to 1, the maximum number of addresses is 32, if it is set to 2, the maximum number of addresses is 31, and so on.
- *Note* … any note describing the reader.

Door control tab

- *Strike control type* … setting of the door lock mode.
  - *Standard* – release the door lock for preset time and then locked again.
  - *Toggle* – changing the door lock status (released / locked).
  - *Pulse* – door open function makes an impulse with the door lock output for a defined time given by a configurable *pulse width* parameter (with a 10 ms step).
  - *Holding magnet* – the lock output is switched to on for a defined time, if the door is opened, it is switched to off after the door it is closed.
- *Strike control logic* … setting of the strike logic according to installed type of the door lock or door opener.
- *Strike release* … maximal time of the door lock release after a valid identification.
- *Permanently release* … permanent door lock release according to a specific schedule.
- *Output 2 function* … setting of the 2nd output behavior (*Alarm*, *Pulse*, or *Toggle*).
- *Output 2 pulse time* … setting of the 2nd output 2 pulse time in [s].
- *Output 2 function key code* … defines which key is to be used to activate the output 2 function.
- Signaling the activation of the output 2 function can be set by the checkboxes *Optical* and *Acoustic confirmation of the output 2 function*.
- *Input 1 function* … defines the function of the first input of the reader.
- Request to exit button –open door function is performed when the button is pressed.
- Door contact – switch of the contact terminates the door lock release.
- *Beep* … acoustic signalization when the door lock is released.
- *LED* … defines, if the door lock release is indicated by LED of the module (signalization differs according to individual module type).

- *Input 2 function* … defines the function of the of the second input of the reader (if the reader disposes with second input).
  - *Request to exit button* – open door function is performed when the button is pressed.
  - *Handle* – the door can be opened without triggering a *Forced door alarm* when the handle is pressed.
  - *Tamper* – reader expects connecting an external tamper contact.
  - *Disabling* – configuration enables to block access of the users with access defined by time schedule or block remote door open function by setting relevant status at the input.
- *Input / output 3 function* … defines the function of the of the third input / output of the reader (if the reader disposes with third input / output).
  - *Tamper* – reader expects connecting an external tamper contact.
  - *Disabling* – configuration enables to block access of the users with access defined by time schedule or block remote door open function by setting relevant status at the input.
  - *Synchronizing* – sets the reader in the MASTER or SLAVE mode during the synchronization reading mode, the *Role* function sets the value.
  - *REX button*.

Alarms tab

- *Tamper alarm* … activates alarm output and acoustic signalization for preset time.
- *Forced door alarm* … activates alarm output and acoustic signalization for preset time
- *Door ajar alarm* … activates alarm output and acoustic signalization for preset time.
- *Door ajar time* … time period for leaving door open without activation of the alarm, after this period, door ajar alarm is activated.
- *Output overload* ... sets the time the Output overload alarm is signalized.
- *Enable request to exit button while tamper is active* … enabling / disabling using of the REX button during active tamper.

Keypad tab

The keypad tab contains two identical panels. The first one for setting parametrs of *the internal or external reader's keypad*, the second one for setting parameters of *the entry reader keypad* (keypad on reader with Wiegand output connected to the reader with integrated door controller).

- *Key code (Time & Attendance, …) or without keypad* … default setting. If the reader has a keypad, reader evaluate codes of individual keys.
- *PIN code* … reader allows access only after reading a valid ID and entering an assigned PIN code. The *Suppress when* function allows to set a time schedule, when the PIN will not be required.
- *ID (code) keypad* … reader in this setting allows to enter a valid ID using the numeric keypad. The *Lock time* function locks the keypad for a given period, when an invalid ID is entered five times in a row.

Advanced tab

- *Wiegand interface* … function sets the Wiegand interface:
  - *Output (WIO 22)* – Wiegand interface is set as an output for control of the WIO 22 module.
  - *Input (entry reader*) – Wiegand interface is set as an input – the reader is controlled by the internal reader and reader connected via Wiegand inetrface.
  - *Input (external reader)* – Wiegand interface is set as an input – the reader is controlled by the reader connected via Wiegand interface, internal reader is off.
- *Blanking filter* … The outputs of selected module types are equipped with current short-circuit protection with a current value of 1 A. This current protection is enabled by default. In case of capacitive load, the current limit can be reached and the output will be disabled. If it is a short peak current pulse, it is possible to turn on the "blanking time" filter. This function disables the current protection for a short time so that this peak can be bypassed. Then the current protection is activated again. The setting can be made in the range Off - Short - Medium – Long – Extra-long (the setting corresponds approximately to the values 0 µs – 60 µs - 80 µs – 100 µs – 800 µs). To protect the el. circuits of the module, it is recommended to choose the shortest possible value of disabling the current protection.
- *Advanced function* … checkbox for advanced settings of selected readers:
  - *MDEM.31* – function *Do not release the door lock after reading a valid ID* allows to use the reader only for records of the Time & Attendance. Reader does not activate the door lock relay.
  - *MRRF12* – function *Module controls 2 doors* sets the reader MRRF12 for control of the two devices.
  - *MWGD46* – function *Double-sided door control* sets the MWGD46 module in mode for control of the one door using two readers (entry and exit reader).

Power saving tab

- *Components to sleep* … contains check boxes for selecting components which will be turned off after the device goes to the sleep mode:
  - Keypad backlight.
  - Keypad function.
  - Reader 125 kHz.
  - Reader 13,56 MHz.
  - Logo backlight.
  - Lock key backlight.
  - LED bar.
- *Wakeup triggers* … contains check boxes for selecting resources that the device wakes from sleep mode:
  - Media detected … reading ID.
  - Key pressed … key pressed on the internal keypad.
  - Wiegand media …reading ID by the reader connected via Wiegand interface.
  - Wiegand key pressed …key pressed on the reader connected vie Wiegand interface.
- *Power save idle time*.
- *Ambient light sensor sensitivity*.

Power saving effect

Access system components generally have relatively low energy consumption (negligible compared to heating or air conditioning). Nevertheless, it is appropriate to reduce their energy consumption where possible. The following table shows the approximate reduction of the energy consumption of the single components of the dual frequency TECH FASS reader with integrated keypad.

Power saving	Component	Savings (full backlight) [%]	Savings (default backlight) [%]
	Keypad backlight*	22	12
	Keypad function	0	0
	Reader 125 kHz	3	6
	Reader 13,56 MHz	7	12
	Logo backlight*	9	6
	Lock key backlight*	8	4
	LED bar*	28	14
	Total (* with recommended setting)	77 (*67)	54 (*36)

Table 1: Approximate energy savings of single reader components

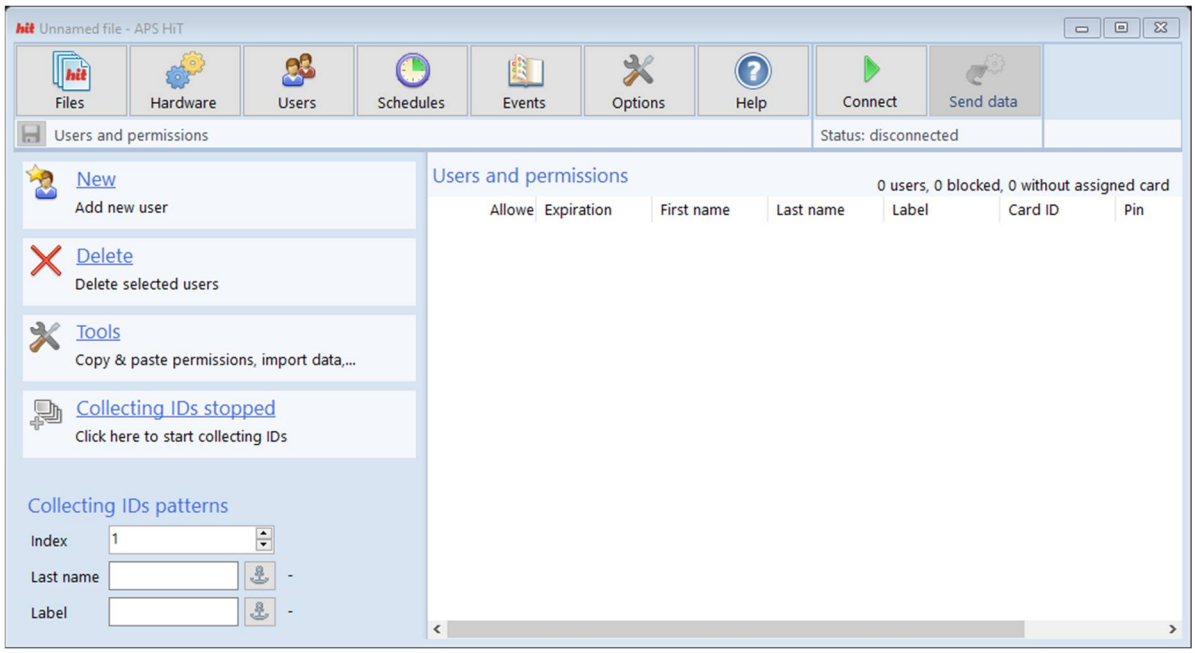
Only the components with * are turned off when recommended setting is applied.
The energy saving data is based on measurements performed on the MREP 82 MTM product, at 12 V power supply and full and default (approx. ½ full) backlight intensity of the keypad, LED bar, etc. Full backlight intensity is only available when the "Ambient light sensitivity" function is enabled.

4.5 Users working area

The *Users* working area (*pic. 4.5.1*) contains tools for administration of the users and their access rights.

The buttons located in the left part can be used to:

- Add a new user.
- Delete selected users.
- Display *Tools* context menu.
- Start and stop mass collection of key fob/card IDs.



Pic. 4.5.1: Users working area

At the bottom of the commands menu there is information about the availability of using *Collecting IDs* mode displayed.

4.5.1 New

Clicking on *New* button creates a new row in the table of users.

4.5.2 Delete

Command allows you to delete selected users from the table of users.

4.5.3 Tools

The command displays a context menu containing the following commands:

- *Copy and paste access permissions* using the clipboard function.
- *Search* in the user list.
- Entering the ID according to the *car plate* provides conversion of the car plate text to the 24-bit ID, to which it is converted by some types of registration cameras and sent in 26bit wiegand format (for example Dahua ITC237-PW6M-IRLZF1050 camera with the IPM-AE7-0020A converter).
- Entering the ID according to the *phone number* provides conversion of the phone number (with an international area code) to the 32-bit ID.
- *Import* user data from a CSV file.
- *Export user footprint* (GDPR).
- Display list of *deleted users* with *recovery* and *anonymization* (GDPR) functions.
- Command for *reading the list of users*, including access permissions, time schedules and holidays from connected readers (data read from readers do not include text information such as name, surname, label or note - only IDs are stored in the readers).

4.5.4 Collecting IDs

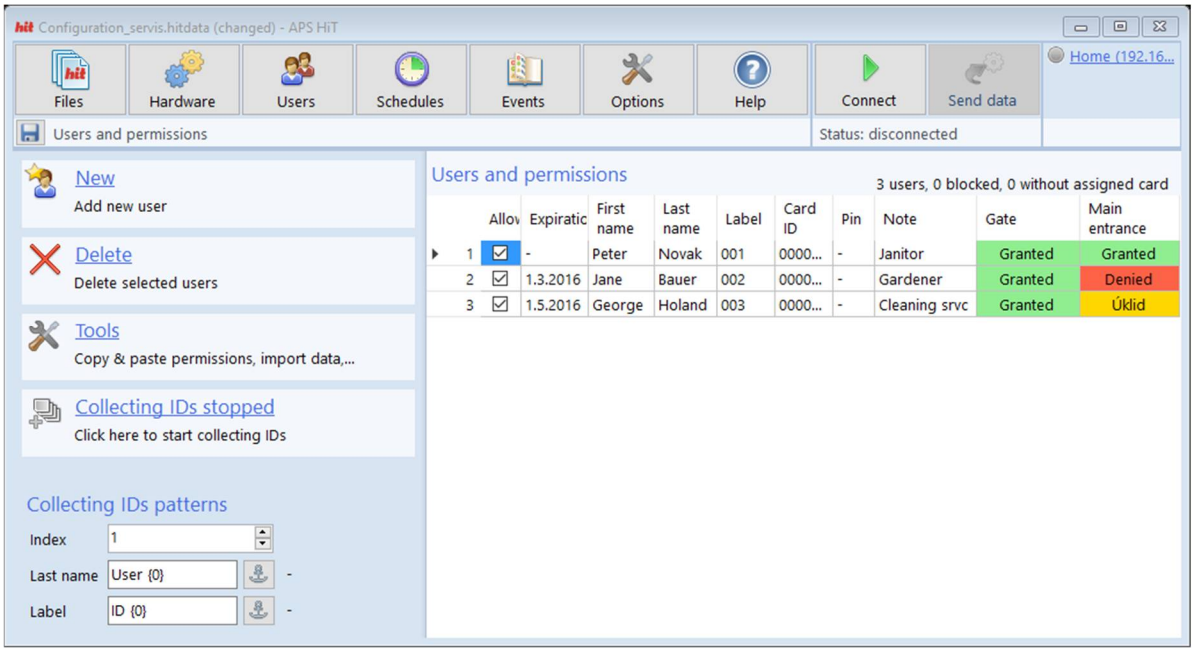
Command allows you to start mass collection of key fob/card IDs with a system or table-top USB reader. The function is described in detail in chapter 6.1.

4.5.5 Users table

In the right panel there is a table of users and their access rights (*pic. 4.5.2*). The table contains *nine columns* describing user data and their ID, other columns are representing connected readers, where the access level for each user and reader is set (columns count equals the connected readers count):

- The first column is reserved for the row number.
- *Allowed* … the checkbox disables access to all readers in system (when unchecked).
- *Expiration* … allows to set date when the user's access permission expires.
- *Name* … user's name.
- *Last name* … user's last name.
- *Card ID* … ID of an access card or key fob (hexadecimal format).
- *Label* … description of an access card or key fob.
- *PIN* … PIN of the user.
- *Note* … any note.

Other columns represent access rights for individual readers. In the column header displays the *Name* or *Short name* (if set) of the reader. The access level is given by the status of the scroll box. The access permission can be *granted*, *denied* or set according to *schedule plan* (only if the schedule plan is set).



Pic. 4.5.2: Table of users

It is possible to change the width of columns and their order. Columns can be hidden using *Columns* command from the context menu. Data in columns can be sorted in *ascending* or *descending* order by left-clicking the header of the column.

4.5.6 Searching the user table

After selecting the *Find* command in the users table context menu (or after pressing the CTRL + F hotkey), an input field for entering the find text is displayed at the top of the Users working area. After entering the text and pressing the Enter key, the program will search the users table and display the number of found records in the left part (if no record is found, a dash is displayed). If the ID is read on the desktop reader in search mode, it is inserted into the find field and the search starts.

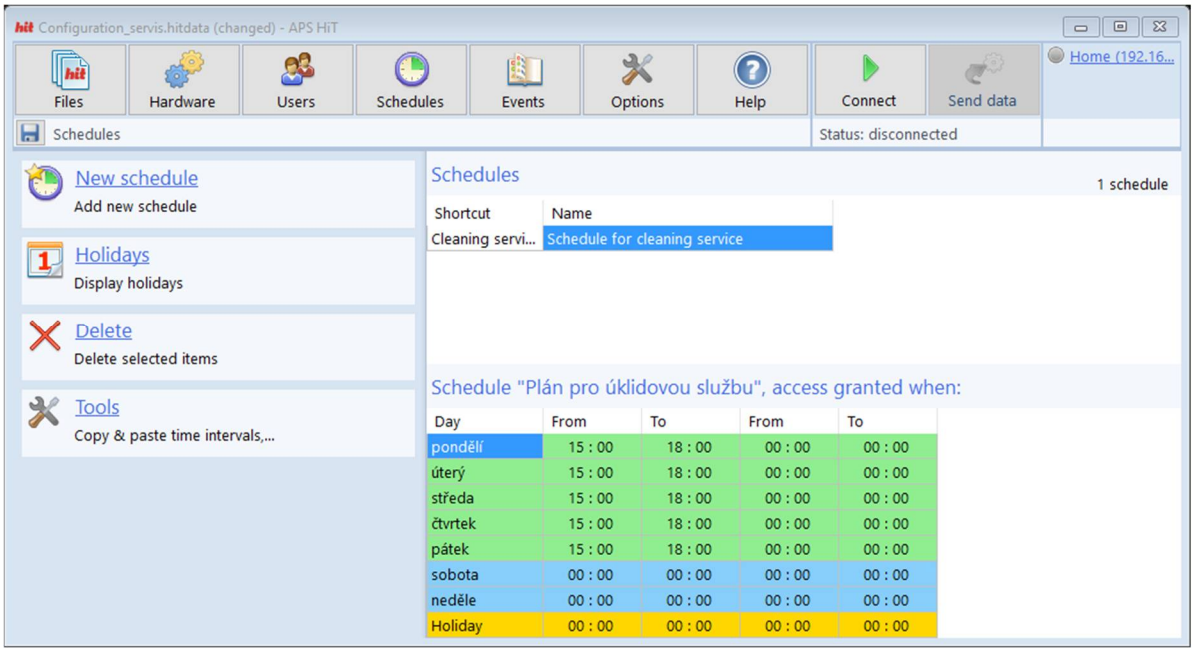
You can move between the found items with the Up and Down buttons.

4.6 Schedules working area

The *Schedules* working area (pic. 4.6.1) contains tools for setting the access of the users at a specified time according to schedule plan.

The buttons located in the left part can be used to:

- Switch to schedules window / Add a new schedule plan
- Switch to Holidays window / Add a new holiday
- Delete the selected item
- Display the Tools context menu



Pic. 4.6.1: Schedules

4.6.1 Schedules setting

The schedule can be set for each day in a week, when one day can be divided into two periods (e.g. for night access). The examples of the time spans are explained in *table 2*.

Schedules	Interval	Meaning
	00:00 – 00:00	Access denied all day
	00:00 – 24:00	Access allowed all day
	08:00 – 17:00	Access allowed from 08:00 to 17:00

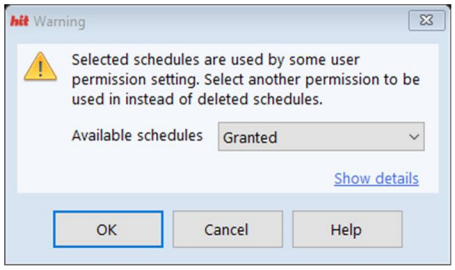
Table 2: Time spans examples

The schedule is identified by its *shortcut* and *name*. The shortcut is displayed in scroll list during configuration of the user access permissions.

The Tools context menu contains commands for copy and paste of the schedules. You can copy the entire schedule or only individual days.

The *Usage information* command displays a new popup windows with detailed information about usage of the selected schedule.

When deleting some schedule, which is used by some user, a pop-up window will be displayed. It allows to select another permission to be used instead of deleted schedules. The *Show details* link shows the list of the users, which has set access permission according to the schedule.

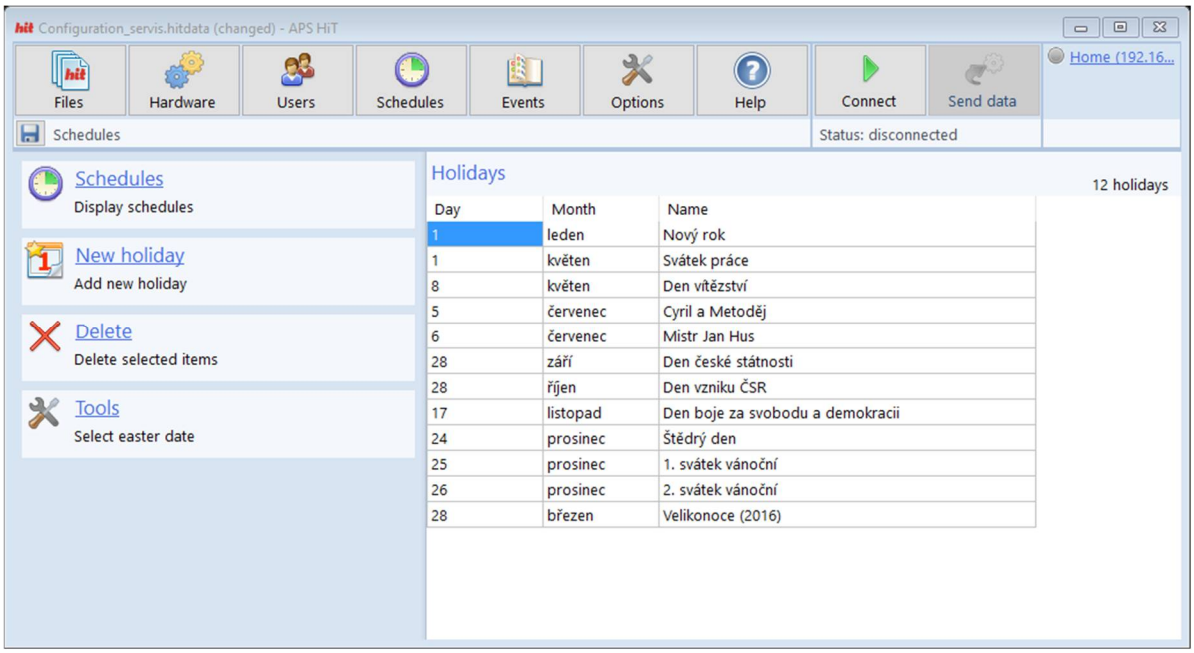


Pic. 4.6.2: Deleting the schedule

4.6.2 Holidays

Holidays may be inserted by *New Holiday* button on Holidays module. Days inserted in this table will be evaluated in the schedules. The table is in the initial state empty and the readers do not evaluate holidays.

The *Tools* button allows to insert the date of the Easter.



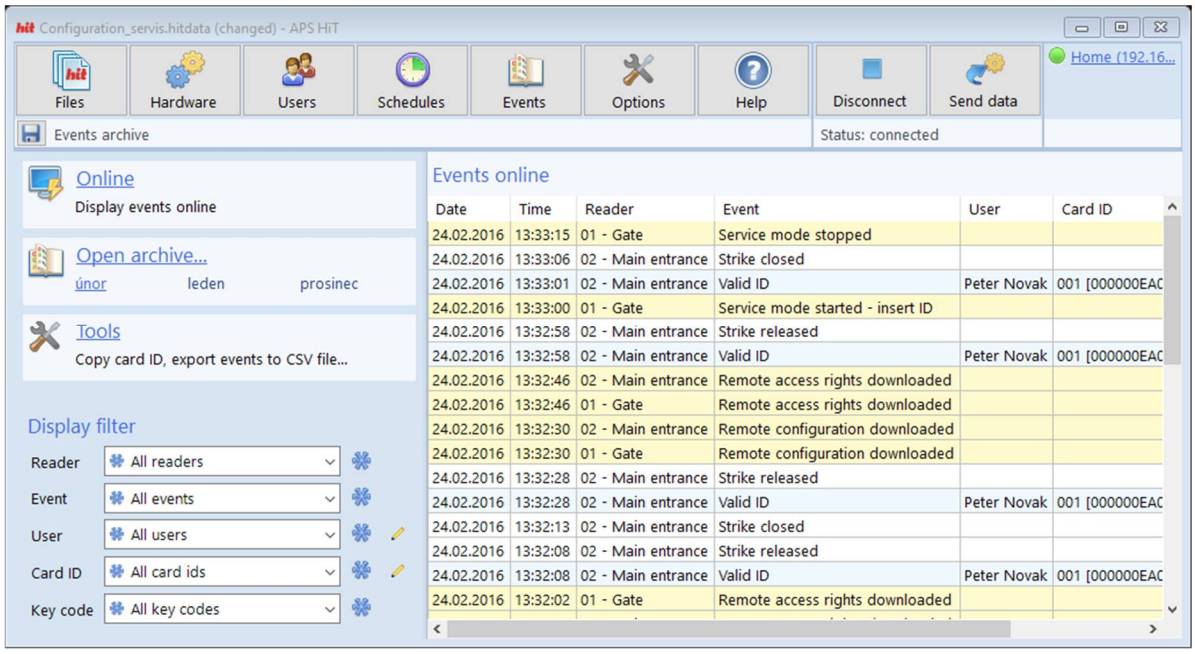
Pic. 4.6.3.: Holidays

4.7 Events working area

The *Events* working area *(pic. 4.7.1.)* contains tools for browsing the events archive of the readers.

The buttons located in the left part can be used to:

- Online events monitoring
- Open the events archive which is stored in the PC (the button contains three links which can open the events archive of the last three months)
- Display the *Tools* context menu



Pic. 4.7.1.: Events archive

4.7.1 Reading and saving the events

The reading of the events is performed continuously during the communication with the readers. The events are stored in the files located in the same folder where the application data file is saved (one file for each month). The filename consists of the name of the data file, the year and the month in which the event occurred, and the *"hitevents"* suffix.

The archive displays events stored in the *hitevents* file. The newest events may be shown by pressing the *Refresh* button ( ).

The meaning of the operating events is described in chapter 7.3 (Supplement 3: Meaning of the operating events).

4.7.2 Tools

The *Tools* context menu contains command for copying the ID of the card (key fob) selected from the list of events archives (the function is not allowed when browsing the online events) and command for export of the events into CSV file.

4.7.3 Display filter

The content of the events table may be filtered using the fast filters. The forms of the filter offer actual available values (readers, users, IDs, …).

- *Reader* … displays event, which occurred on selected reader.
- *Event* … displays specific event, which occurred in the whole system.
- *User* … displays all events of the selected user.
- This filter allows to search for users which are not available anymore. The pencil (✎) runs a new window for entering the specific name of the user.
- *Card ID* … displays events of the selected ID.
- This filter allows to search for IDs which are not available anymore. The pencil icon (✎) runs a new window for entering the specific ID.
- *Key code* … displays events with selected key code.

Filters may be combined.

The star icon (✱) located next to the filter displays all available events from the selected form.

4.8 Options working area

The *Options* working area displays the general setting of *APS HiT* program.

4.8.1 User interface

The setting of the *APS HiT* user interface. It is possible to set:

- Language localization.
- User interface for hardware setting (*Basic* / *Advanced*).
- Default access permission for new user.
- Number of the rows displayed in the table of events.
- Link for opening the log files folder.

4.8.2 Passwords

The data files of the *APS HiT* program may be password protected:

- The *Open file* password protects the whole data file against changing. It is not possible to open the file without entering the password.
- The *Hardware configuration* password protects only the Hardware working area. The configuration of the user's data, schedules and events is allowed without entering the password.

To cancel the preset password, enter the password only in the *Old password* field, the remaining fields leave blank.

4.8.3 Microreader

The function allows to set the serial port for USB tabletop reader. The roll-down list displays available serial port. More information in chapter 7.2.

4.8.4 Update

The function checks the new updates for *APS HiT* program. This function requires internet connection.

4.9 Help working area

The *Help* working area contains links for opening documentation to all SW and HW components of access control system. To open the documentation, use proper SW (*e.g. Adobe Reader*). Documents are saved locally; there is no need for internet connection.

- *About APS HiT* … displays information about *APS HiT* software.
- *Help* … displays user's guide and step by step guide.
- *Wiring diagrams* … displays typical wiring diagrams for HW components.
- *Data sheets* … displays hardware data sheets and manuals.
- *Drivers* … drivers for USB converter and USB tabletop reader.

4.10 Buttons for connection control and data upload

The buttons are used to connect/disconnect access control system components to *APS HiT* SW and to upload all set configuration and data in the system components. More details about the communication status can be found in chapter 0.

Any time the configuration or user access rights are changed, it is necessary to upload them the system using *Send data* button. The green progress bar shows the data transfer progress (*pic. 4.11.1*).

Pic. 4.11.1: Successfully connected communication line during data transfer

4.11 Communication with system

In the third part of the main panel of *APS HiT* program there is communication status area. Individual communication lines status is indicated by icons. Their meaning is explained in *table 3*.

Status	Icon	Significance
		Communication line is disconnected.
		Communication is being established / errors on communication line.
		Communication line is OK.

Table 3: Meaning of line status icons

The information line, which is located under communication buttons, displays summary report (*Status: disconnected/connecting/connected*) for all connected communication lines.

4.12 Communication with individual readers

After clicking on the name of the communication line a pop-up window with detailed description of individual reader's communication status is displayed. Their meaning is explained in *table 4.*

Status	Icon	Significance
		Communication is OK
		Communication is poor / reader is not responding
		Waiting for the response from the reader
		Reader is not used

Table 4: Meaning of reader status icons

When the communication with all connected readers is ok, the system is ready to be programmed.

5 Hardware management

5.1 LAN converter configuration

The *APS HiT* program contains tools for converter parameters setting (IP address, IP port, configuration password, etc.). These are following tools: the *IP address setting* (using MAC address) *wizard*, the *telnet terminal* and the *Ping* diagnostic tool.

5.1.1 IP address setting

Command *Assign IP address* allows you to set converter's IP address using MAC address.

Run *APS HiT* as administrator to be able to use this command.

- In the HW tree select the converter, which is meant to change its IP address.
- Click on the *Tools* button and choose *Assign IP address* option.
- In the *MAC address* field insert converter's MAC address (including dashes) and click on the *Next* button.

TPC line from the computer to the device cannot contain any routing device!

- In the next step it is necessary to select an IP address you wish to set. The IP address must be located in the same subnet as the IP address of the used network interface of your computer. After pressing the *Find* button the network is set for the first unoccupied IP address in the relevant subnet. Continue by pressing the *Next* button.
- In the next step verify all parameters. The *configuration password* option enables setting of the password used for accessing the converter setting, the default value is *1234*.
- After pressing the *Assign* button, the program tries to assign selected IP address to the device with selected MAC address. The outcome is displayed in a dialog.

5.1.2 Telnet terminal configuration

Configuration of the converter parameters is done using the telnet protocol. For easier use *APS HiT* contains its own *telnet terminal* client.

Insert a CON-LAN converter in the HW tree, enter its IP address, click on Tools button and select *Configure (telnet terminal)* command. Detailed description of all configurable parameters can be found in *chapter 8*.

5.1.3 Ping

The *Ping* diagnostic tool is used to verify converter's availability on the TCP/IP network.

5.2 USB converter configuration

After installation of the drivers choose the proper COM port in the *Hardware* working area. Detailed description of driver's installation and detection of COM ports can be found in *chapter 7.2.2*.

5.3 HW address configuration

Each reader on a communication line is identified by its *hardware address*. The address can be set in range *1 ÷ 32* and all the addresses on the BUS must be *unique*.

When connecting the readers, where the hardware address is set by *address jumpers' configuration*, set up the address during the installation (procedure is listed in installation guide to the reader).

For readers with *SW setting* of the hardware address, use *APS HiT* program to set up the hardware address. The address can be set using *Use confirm ID* method (random card with a known ID) or using *serial number* of the reader.

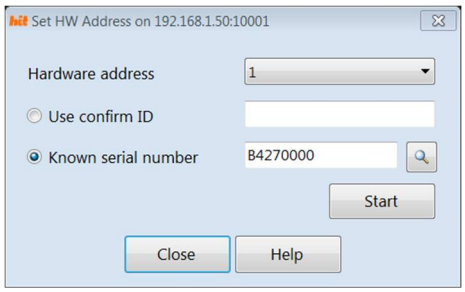
5.3.1 Confirm ID

- Open the *Set HW address setting* dialog by selecting the proper option from the context menu.
- Select an unoccupied HW address from the scrolling list.
- Select the *Use confirm ID* option (*pic. 6.3.1*), fill in card's ID and press *Start*.
- Fill in the *known ID card* on the reader that you want to assign the address.
- The reader should get the address immediately.

Pic. 6.3.1: Confirm ID method

5.3.2 Known serial number

- Open the *Set HW address setting* dialog by selecting the proper option from the context menu.
- Select an unoccupied HW address from the scrolling list.
- Select the *Known serial number* option (*pic. 6.3.2*) and fill in the *SN* of the reader, which you need to obtain the address and press *Start*.
- The reader should get the address immediately



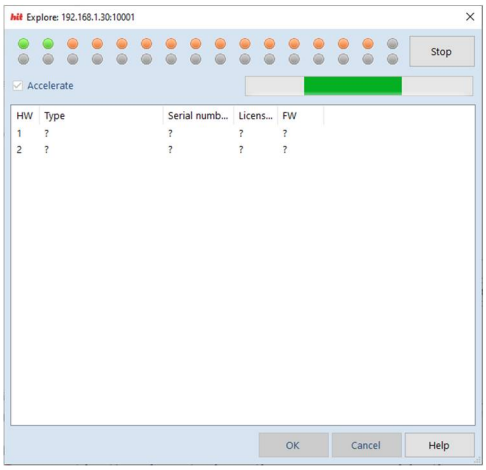
Pic. 6.3.2: Known SN method

Communication with the system must be disconnected when assigning HW address.

5.4 Creating a new HW tree structure

After all readers have their unique HW addresses set, it is necessary to insert them in the program HW tree structure. Readers can be inserted *manually* or en masse using the *Explore communication line* dialog:

- On the *Hardware* working panel select required communication line, press *Tools* and select *Explore communication line* option.
- Program starts scanning communication line and displays occupied HW addresses. Status icons in the upper part of the window represent individual addresses and announce their occupation.
- When the scan is finished, the dialog displays discovered readers and basic identification information (*pic. 6.4.1*).
- Add the readers in the HW tree by pressing the *OK* button.
- After inserting the readers in the structure, click on the *Connect* button located on the upper panel in the main window and verify test the communication with the readers. Correct connection is indicated in the upper information row with a green icon and a massage: Status: Connected.



Pic. 6.4.1: Exlore line

5.5 Device upgrade

The *APS HiT* program allows to upgrade firmware or a license the access control system reader, or perform an upgrade to a higher *TECH FASS s. r. o.* system (APS mini Plus, APS 400).

- In the *Hardware* working area click on the *Tools* button and select the *Upgrade device* command.
- Choose the upgrade file (xxxxxxxx.tffw, where xxxxxxxx is the SN of the reader).
- After the *OK* button is pressed, the program starts upgrading selected device. The green bar indicates transfer status.

6 User management

6.1 Inserting new users

For IDs collecting use the USB table-top reader (USB-EM) or one of the system readers (system must be connected when using system reader).

In case of inserting a greater amount of users at once, it is appropriate to insert all the key fobs in the IDs collecting mode, where you can successively insert IDs and create new users at once.

Collecting IDs mode

- In the *Users* working panel press *Collecting IDs* button. Collect the IDs using USB reader or one of the system readers and the program automatically creates table of users.
- After inserting IDs fill in personal data of the users.

Creating a single user

- In the *Users* working panel press the *New* button to create a new row in the table of users.
- Fill in personal data of the user.
- Click in the *Card ID* field and collect card ID using the USB reader or the selected system reader for IDs registration.
- Repeat this procedure for every new user.

Convert vehilcle license plate number to ID

When using a camera to read vehicle license plates, a 24-bit ID is often used. To convert the license plate number to a 24-bit ID by the ANPR algorithm, the *Enter plate number* command is available in the context menu of the user table. After entering the plate number to the displayed dialog and pressing the OK button, the computed ID is written to the currently selected table row. The plate number to the Label column and ID in the Card ID column.

6.2 Access right assignment

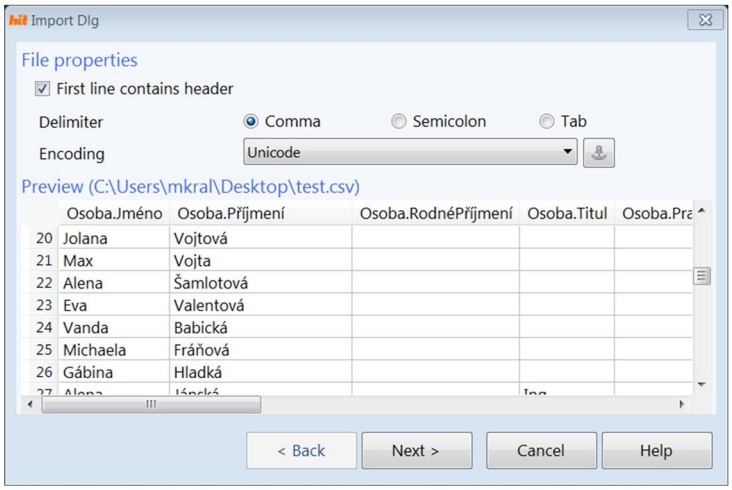
The table of users contains one column for each system reader, which defines individual access rights for each user. In the header of every column there is a name or a short name (if it is filled) of the reader. The access level is given by the checkbox status (checked = access granted).

6.2.1 Copy and paste permissions

The access rights setting can be copied and pasted between individual users. The function copies only the access rights; it does not copy any other data.

6.2.2 Import from CSV file

Another possibility for inserting new users is import from CSV file (*pic. 7.1.1*).



Pic. 7.1.1: Import from CSV file

First step is selecting the CSV file. Select the *Tools* button, choose *Import data from CSV file* option and locate the CSV data file in your computer.

Next step is defining the structure of the data:

- *First line contains header* … definition of the first line in the file.
- *Delimiter* … delimiter used in the CSV file.
- *Encoding* … definition of the encoding in the CSV file.

Another step is assigning of the columns from the importing file to data fields of the *APS HiT* program. In the header of a given column choose one header name of the *APS HiT* data structure.

6.2.3 Data export

The *APS HiT* program does not allow direct export of the table of the users, but the data may be copied using the *Crtl+C* key shortcut and inserted in random table processor.

The PIN column is not copied due to security restrictions.

6.3 Data transfer

For data transfer it is necessary to connect the access control system to a PC (if is not already connected) and upload the changes to the system readers by pressing the *Send data* button.

It is recommended to save the configuration in a file before closing the program. Commands for the files' management are located in the *Files* working panel.

7 Supplements

7.1 APSLAN converter setting

7.1.1 Factory defaults

Default factory parameters of the converter are:

- IP address: *192.168.1.253*
- IP port: *10001*
- Password: *1234*
- Subnet mask: *255.255.255.0*
- Gateway IP address: *192.168.1.1*
- Function mode: *RS485/Ethernet*

These parameters (with an exception of function mode) can be reset by pressing the *RESET* button for *5 seconds* or more. Exceeding of this time is signalized with fast flashing of the red LED. A shorter depression of the *RESET* button restarts the converter and keeps its settings.

7.1.2 Configuring the converter

The *LAN* communication converter parameters' setting is realized via a *TELNET terminal* with a following procedure:

- Connect the *converter* to a *LAN* and connect a *power supply*.
- Run the command line with *cmd* command.
- Run the command *telnet IP_Address 9999* to access the *Converter setting* in a telnet terminal. The current IP address of the must be in the same subnet as the IP address of the network card of the computer.
- Enter the *password* and press *Enter*.

After the password is correctly entered, a MAC address of the converter and a settings menu will be displayed.

If you do not know the *IP address* of the converter and you cannot use the *reset button* to set the default parameters, the *IP address* can be temporarily set for a single connection with this procedure:

- Connect the device to the computer network.
- Run the command line terminal as the Administrator.
- Run the command *netsh interface ipv4 show addresses*, the available network interfaces will be displayed. Choose the network interface to connect the device (IP address must be in the same subnet) and copy its name to the clipboard (or remember it).
- Run the command *netsh interface ipv4 delete neighbors* to delete the ARP table content.
  Run the command *netsh interface ipv4 add neighbors "interface_name" "required_IP_address" "device_MAC_address"* to add static entry to the ARP table.

- Run the command *telnet IP_Address 1* to insert the desired IP address into the ARP table of the converter (Telnet shows an error after a while).

Note: The procedure described above requires the telnet client program, which is an optional Windows feature. It can be enabled in the section Enable or disable Windows features of the Windows configuration.

7.1.3 Changing IP address

You can change the *IP address* by selecting *1 Set IP*. A new address is entered by single bytes separated by the *Enter* key. If the entered value is out of allowed range, the byte is not changed. After inserting all of the address bytes the *final IP address* is displayed and you are returned back to the main menu.

7.1.4 Changing IP port

Changing an *IP port* is available after choosing the option *2 Set port*. If the entered value is out of allowed range, IP port is not changed. After the *IP port* value is entered successfully, it is displayed and you are returned back to the main menu.

7.1.5 Changing the password

A change of the *password* is available after choosing the option *3 Set password*. You can use any alphanumerical string as a password, it can contain up to 9 characters. A blank password is not allowed. The password is saved by pressing the *Enter* key.

If a password is lost, the only solution to enable accessing the settings menu is resetting the converter to its factory defaults.

7.1.6 Changing subnet mask

You can change the *subnet mask* by selecting *4 Set IP subnet mask*. A new subnet mask is entered by single bytes separated by the *Enter* key. If the entered value is not allowed, the subnet mask is not changed. After inserting all of the address bytes the *final subnet mask* is displayed and you are returned back to the main menu.

7.1.7 Changing gateway IP address

You can change the *gateway IP adress* by selecting *5 Set gateway IP*. A new address is entered by single bytes separated by the *Enter* key. If the entered value is out of allowed range, the byte is not changed. After inserting all of the address bytes the *final IP address* is displayed and you are returned back to the main menu.

7.1.8 Changing the function mode

To change the function mode, choose the option *4 Set function mode*. After that select desired function mode by pressing 0 for *RS485/ethernet* mode or 1 for *Wiegand/Ethernet* mode. Current function mode is indicated by the communication LED flashing.

7.1.9 Saving the settings

To *save the settings* choose the option *9 Save & Exit*. If you *do not want to save* the parameters, exit the settings menu by choosing *8 Exit without saving*.

7.2 Driver installation for USB convertor and USB reader

Proper function of the *USB* converter and the *USB* table-top reader requires proper driver installation.

The driver installation package can be found at the *Help* tab in the *Drivers* section.

7.2.1 Installing the driver

Select the driver belonging to the device and run the installer by clicking the link. After extraction the installer is run, where you can proceed through the installation steps by clicking the *Next* button. Finish the installation by clicking the *Finish* button.

7.2.2 USB converter configuration

In the *Hardware* working area click on the *New* command and select the *USB/COM* option. In the HW tree select the USB converter. Select required COM port from the scrolling list, which was assigned to the converter (the COM port will be added to the COM port list in the computer management dialog after the driver is installed). If the port is selected correctly, the program will be able to connect to the communication line.

7.2.3 USB reader configuration

For higher comfort is recommended to manage IDs using *USB reader*. Set the reader according to following procedure.

After you install the driver, you can connect USB reader to your PC. In *Options* working area choose the *Microreader* option and select the correct COM port from the scrolling list. If is the USB reader connected properly, a green icon and the serial number of the USB reader is displayed next to the scrolling list.

The program is able to work with *USBREM 02* and *REM 181.USB* readers.

Note: The USB reader is not part of the access system (similar to a keyboard or mouse, this is a computer accessory) and therefore do not include it in the access control system hardware structure.

7.3 Meaning of the operating events

Event types

##	Default description	Meaning
0	Connected	Communication with a PC has started
1	Valid ID	A valid card, access granted
2	Invalid ID	A known card without proper permission, access denied
3	Unknown ID	An unknown card (from the module's sight)
4	Input 1 on	Input 1 on
5	Input 1 off	Input 1 off
6	Input 2 on	Input 2 on
7	Input 2 off	Input 2 off
8	Tamper	Tamper alarm
9	Door Ajar	Maximal time for door staying opened was exceeded
10	Forced Door	Door forced
11	Remote Door Open Request	Opening door from a PC
12	Alarm – zone APB	Read ID which is already present
13	Power on (reset)	Device turned on / restarted
14	Unlicensed ID	Read ID is not an original TECHFASS ID
15	Invalid user setting	User setting is invalid, default setting used
16	Alarm – time APB	ID read while APB timer active
17	ID expired	ID expired (according to the expiration date)
18	Invalid ID (expired)	Read expired ID
19	Alarm – ID	Alarm – ID with Alarm flag read
20	Strike control – pulse	Door lock relay pulse performed
21	Identification with ID from a PC	Identification from a PC with user ID
62	Keypad unlocked	Keypad unlocked after lock time expiration
63	Keypad locked	Keypad locked after entering 5 unknown codes
64	Strike Released	Unlocked
65	Strike Closed	Locked
66	Output 2 on	Output 2 on
67	Output 2 off	Output 2 off
68	Armed	Signal from IDS – armed
69	Disarmed	Signal from IDS – disarmed
70	IDS control – pulse	Pulse for IDS status change
71	IDS control – disarm	IDS control output in disarmed status
72	IDS control – arm	IDS control output in armed status
73	IDS control – warning	IDS control warning status
74	Input 3 on	Input status changed in disabling mode
75	Input 3 off	Input status changed in disabling mode
76	Disabled	Module function disabled by input status
77	Enabled	Module function enabled by input status
78	Invalid (disabled)	Identification invalid, module disabled st.
79	Denied (tamper)	Function denied due to module tamper st.
80	Denied (disabled)	Function denied, module in disabled st.
81	Invalid (rolling code error)	Unexpected value of ID rolling code

82	Output 1 overload	Output 1 current limit was reached
83	Output 2 overload	Output 2 current limit was reached
84	Output 1 overload alarm	Output 1 overload alarm was activated
85	Output 2 overload alarm	Output 2 overload alarm was activated
86	Denied media read (125 kHz TF / EM)	ID media of the denied type was read
87	Denied media read (Jablotron)	
88	Denied media read (125 kHz)	
89	Denied media read (13.56MHz 32bit UID)	
90	Denied media read (13.56MHz 56bit UID)	
91	Denied media read (TECH FASS Mobile ID)	
202	Execute output 2 function requested	Execute output 2 function requested (by the selected key)
203	Execute output 2 function denied	Execute output 2 function denied
204	Remote execute output 2 function requested	Remote execute output 2 function requested (by the communication line)
205	Remote execute output 2 function denied	Remote execute output 2 function denied
206	Diagnostic information	Reserved for the manufacturer
207	Battery low	Reserved for APS Key
208	Automatic configuration correction	
209	Permanent door lock release started by time plan	
210	Permanent door lock release stopped by time plan	
211	Cancellation of permanent door lock release after repeated card read rejected	
212	Invalid ID - validity index low	
213	Permanent door lock release after repeated card read rejected	
214	Permanent door lock release after repeated card read	
215	Cancellation of permanent door lock release after repeated card read	
216	Programmer successfully authorized	
217	Invalid - before permission validity	
218	Cannot read from sector	The sector number is written in the “Key code” field
219	Invalid key for reading from sector	
220	Cannot write to sector	
221	Invalid key for writing to sector	
222	Foreign card (customer ID)	Reserved for APS Key
223	Foreign card (installation ID)	
224	Foreign programmer (customer ID)	

	225	Foreign programmer (installation ID)	
	226	Communication enabled after connecting foreign programmer	
	227	Online authorization - unsupported result	Response type for online authorization request is not supported
	228	Online authorization - unexpected result	Received a response for authorization request when no request sent
	229	Online authorization - timed out	Response type for online authorization request was not received in time
	230	Online authorization - waiting for previous result	New ID read while waiting for response for previous online authorization request
	231	Online authorization - missing license	Online authorization request was not sent, the device does not contain proper license
	232	Events archive overflow	Some events lost due to archive overflow
	233	PIN duress	Duress PIN code entered
	234	FW initialized	New firmware first run, configuration reset
	235	Aperio events	Event of Aperio wireless lock
	236	RTC power lost	Clock reset due to RTC power loss
	237	Single ID Added	ID inserted in a server process
	238	Single ID Deleted	ID deleted in a server process
	239	Hardware Address Changed	Module HW Address was changed
	240	Remote Configuration Downloaded	Configuration data downloaded from a PC
	241	Remote Access Rights Downloaded	Access rights data downloaded from a PC
	242	Remote Access Rights Deleted	Access rights data deleted from a PC
	243	Service Mode Started – Insert ID	Service mode entered for inserting IDs
	244	Service Mode Started – Delete ID	Service mode entered for deleting IDs
	245	Service Mode – Delete All IDs	All IDs deleted in service mode
	246	Service Mode Stopped	Service mode left
	247	Service Mode – ID Inserted	A card inserted in service mode
	248	Service Mode – ID Deleted	A card deleted in service mode
	249	Tamper OK	End of tamper alarm
	250	PIN Alarm	Alarm – invalid PIN entered 5 times in a row
	251	PIN Changed	PIN changed
	252	Invalid PIN	Invalid PIN entered
	253	Door OK	End of door ajar or forced door alarm
	255	Disconnected	Communication with a PC lost

Table 5: Meaning of the operating events

7.4 Setting the number of addresses of modules for relay outputs control

- Create a new communication line in the Hardware work area (if necessary).
- Set the initial HW address. To set the HW address, you can use both of the methods of setting the address (using a known ID or a known serial number – see chapter 5.3).
- Connect the initial address to the line.

> Note: You can also use the "Explore communication line " tool to find out the SN and other details (see chapter 5.4). If the module has a different number of addresses than required, add only the initial address.

- Connect the system and wait for the program to read information about the connected devices.
- Disconnect the system and set the required number of addresses (controlled outputs, locks, …) at the start address of the module.

> Note: A *maximum of 32 addresses* can be connected to the APS mini Plus communication line. The MREM 82 MTM-BOX MF, MRMC 82 DISGRT modules (and other similar modules with settable number of addresses) can therefore control *a maximum of 32 outputs*. If more than 32 addresses (outputs, locks, …) are required to be operated, the device must be added to the new communication line (s). *The addresses cannot conflict with the addresses of other modules connected to the communication line.*

- The program adds additional addresses (modules) to the line; these addresses will have the "do not connect now" flag set.
- Do not change the "Do not connect now" flag, start communication with the system and "Program" the system (click the "Program" button - see chapter 4.10).
- Stop communication with the system, enable communication at all assigned addresses (this can also be done in bulk - see chapter 4.4.3).