

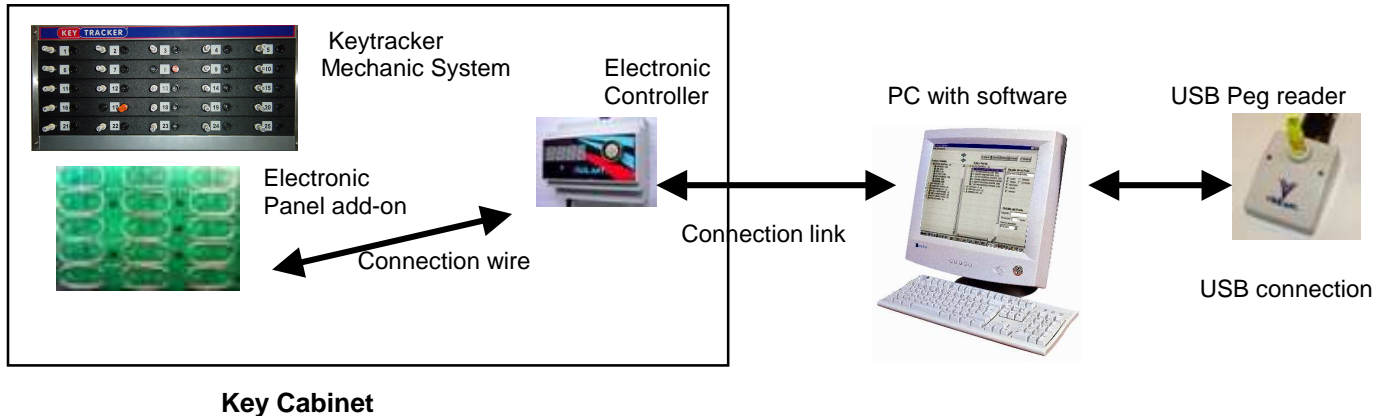
Keytracker Key Monitor

User manual (for software version 1.0.1.3)

System components definition:

Keytracker Key Monitor is a software to be installed under Windows. The software manages a Keytracker Electronic system and is designed to provide key monitoring, with activity reports of keys and users.

The Keytracker Electronic system is made up of different parts as seen in the picture:



Installed in the cabinet you have the Keytracker Mechanic System with the pegs used to retain keys and identify users. All the original pegs must be replaced by new pegs with RFID chip to use the electronic system.

IMPORTANT NOTICE: Any old plastic peg used in an electronic system will cause errors in software due to the lack of RFID tag for identification. Is very important to replace all existing pegs when old mechanic systems are updated to electronic.

The electronic panels are installed in the back side of the mechanic system. These panels are not visible to users. You will only notice them by the connection wire visible at the bottom of the system. Also contained in the cabinet you will find the electronic controller and the power supply.

The electronic controller is an important part of the system. It continuously scans the electronic panels identifying the RFID tags installed in pegs. Every change in pegs is logged in and date/time stamped. This change corresponds to key activity (users picking or hanging a key). The electronic controller works continuously, so you don't need to keep your computer continuously working. It is highly recommended to use an Uninterrupted Power Supply for the system, so key activity will be logged even if there is a mains power failure.

The PC with software is linked to the electronic controller for data downloading of the logged events or for real time (live) key panel monitoring. One single software can manage an unlimited number of electronic controllers. It is possible to manage key panels located in different sites but the electronic controllers must be linked properly to the PC. This link can be done in two different ways:

- 1) Serial RS232 wire to COM port. Will be used if the distance from PC to electronic controller is short. A standard USB to RS232 converter will make possible to use USB ports instead of COM ports which are usually not available in modern PCs and laptops.
- 2) Ethernet TCP/IP link. You can link PC and controllers using your local network or even via Internet gateway to reach universal connectivity. This is the most powerful way to link your controllers with PC but needs proper configuration and network administrator skills.

Also connected to PC is the Peg reader using USB port. This device is mandatory for the use of the system. It is used in the process of Key setup and user enrollment. Just plugging a peg it reads its RFID tag code and the software just needs to know which key or user is assigned to that peg.

1.- Software Configuration

The Setup process will guide you through installation. Don't forget to activate the options to:

- Install Interface RFID driver
- Install Ethernet config. tool

After software installation you will get it running and see the main window.

Choose the Software Configuration option. You will see the following options to configure:

Time Zone & Language: Important here to set local time GMT+0 for the UK. You can set language in English if it was not chosen automatically

Folders & Files: Not need to change default settings here. You have options to change the database files location to a remote server and settings for an automatic data backup process

Capture: Very important here to choose the COM port for the USB Peg Reader. The USB driver previously installed will open a virtual COM port for the Peg Reader. Normally this COM ports use high numbers over 1 and 2. When selected you have a button to make a connection test. (Know bug: In version V1.0.1.2 this button do not work properly)

For connecting electronic controllers via ethernet you need to define a local UDP port number. Choose **6603** as default

The other options are used to keep electronic controller clock on time and schedule automatic connections and downloads from the electronic controllers

Customization: This option helps to get proper reports depending on the application. You can determine specific words to rename users and keys. For example if the key system is managing cars you can use "vehicle" as the name for "object" and you will get vehicle in all menus and reports. Same if the system is used for a real estate agency the proper name for "object" can be "house". If system is used at police station a proper name for "user" can be "officer". The alternative code of users and objects (keys) can be used to define more specific characteristics
You can also change the logo and colours in printed reports

System: Shows a report of the PC machine configuration. May be requested to solve software problems by hotline phone operators.

Maintenance: Also for software problems hotline. You will get a password and instructions by a hotline assistance service if you need to use this option.

Security: You can set 3 different user profiles protected by their own password. Administrator has full options available operator has limited options and capturer is the operator who just connects with electronic controller and downloads data

Email: By configuring the email options the software will be able to send reports automatically as e-mails.

When you finish Software Configuration please follow with the next step

2.- Controllers Setup

You must provide to the software the details to connect with the electronic controllers you already have installed. Depending on your application you can have just one controller or many. For example if you have key systems in two different areas physically apart then you will use one controller for each. Each controller can manage up to 40 electronic boards (40x25= 1000keys) but the disadvantage of using many electronic boards with a single controller is that scanning all the keys takes longer. So, system will need more time to detect a key change, typically 7 seconds for 25 keys, 14s for 50, 28s for 100 keys and so on.

Please note that controllers can only manage key panels with different key slot numbers (not repeated)

First time you run the software there are no controllers defined. If you have already configured controllers will see the list in the left side of this window. Using the (+) button please select a new controller.

Select the Read data from controller button. Your electronic controller must be powered and connected.

A new configuration window opens and basically you must select the way you are linking your controller with PC: Than is using Ethernet or COM port

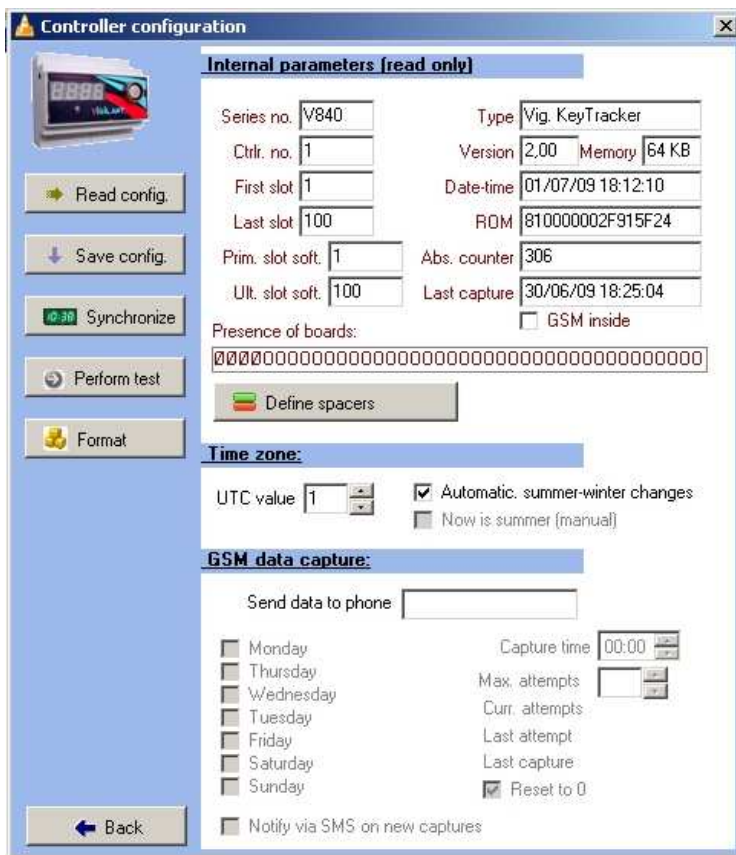
If your controller is connected using Ethernet you have to configure IPAddress and Port number.

You can find the controller connected to your network using the **Config Eth** button. This calls to a second application which opens in a separate window like **SMUDPSearch**. Use the **Search Devices** button to locate controllers in the network. You will see the IPAddress and Port number of the device. Please copy the REMOTE IP and REMOTE PORT values to the IP address and Port blanks in software windows. Your controller is already configured.

If your controller is connected to COM port via serial cable you have to select which COM port number is using.

You will be back to the previous window. Select again the **Read data from controller** button and wait until the controller number and details fill the blanks of the window.

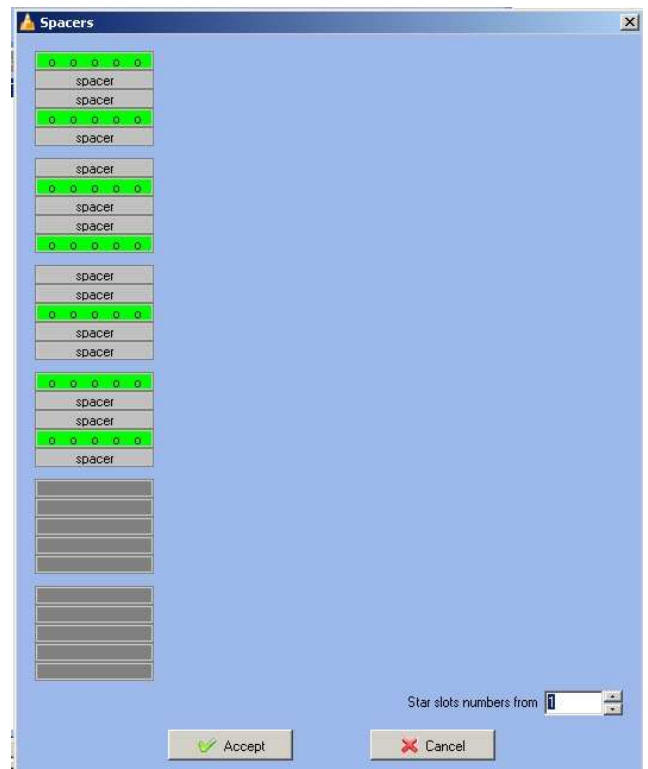
Then select the **Controller Configuration** button and will access to the following screen



In the example shown the controller manages 4 electronic boards. This boards are numbered 1 to 4 so correspond to key slots #1 to 100

The most important feature in this screen is to define spacers if this are used.

Click the Define spacers button and get access to the following window



This shows a diagram of the electronic panels connected to the controller. By default all the rows are used (no spacers) but you can setup spacers just by click the rows.

Picture shows a double spacer configuration for a 100 key panel, which finally gives 35 usable keys

Please repeat this process for any other controller installed

You have already configured connection to the devices and just need to setup keys and users for start. But before you do it is important to test that all the boards, pegs and controllers runs normally. To do so you need to check the controller map status

3.- Panel and pegs test: Controller map status

In order to be sure that all pegs are correctly identified by the electronic panels it is very important to run this test. Due to the performance variations of antennas in the electronic board and RFID tags there is an small percentage of situations were certain tags will not be read at certain slots. This can be fixed but needs to be identified first.

The best way to check it is using the Controller map status. You can find this in the "Reports and queries" menu. Then select the last report "Controller map status". Select the controller were the panel to test is connected and confirm selecting **Accept**.

A new window will show a grid simulating the key panel. It is recommended to **maximize size of this window** and **unselect the option of Automatic refresh** at the right top corner.

Slot	ID	Hex	Status
1	A80009295F	H: 1	St: 0
2	A8000901E3	H: 2	St: 0
3	A80009304E	H: 3	St: 0
4	A8000925B3	H: 4	St: 0
5	A800093188	H: 5	St: 0
6	A80009280E	H: 6	St: 0
7	A80008FC17	H: 7	St: 0
8	A8000930B9	H: 8	St: 0
9	A800090326	H: 9	St: 0
10	A80009282F	H: 10	St: 0
11	A8000930F9	H: 11	St: 0
12	A80008F9A3	H: 12	St: 0
13	A800056B08	H: 13	St: 0
14	A8000936FF	H: 14	St: 0
15	A800092610	H: 15	St: 0
16	A80008FB7C	H: 16	St: 0
17	A800091EEC	H: 17	St: 0
18	A800091910	H: 18	St: 0
19	A800090B61	H: 19	St: 0
20	A800091C19	H: 20	St: 0
21	A8000929A5	H: 21	St: 0
22	A800091ECD	H: 22	St: 0
23	A8000933BC	H: 23	St: 0
24	A80009475C	H: 24	St: 0
25	A80008FFF1	H: 25	St: 0
26	A80008FAD9	H: 26	St: 0
27	A80009269C	H: 27	St: 0
28	A80008F803	H: 28	St: 0
29	A800097165	H: 29	St: 0
30	A8000905BC	H: 30	St: 0
31	A80008FFB9	H: 31	St: 0
32	A8000976AC	H: 32	St: 0
33	A80009359E	H: 33	St: 0
34	A8000900D7	H: 34	St: 0
35	A800092249	H: 35	St: 0
36	A8000914C1	H: 36	St: 0
37	A800093718	H: 37	St: 0
38	A80008FE46	H: 38	St: 0
39	A800091F61	H: 39	St: 0
40	A800091D98	H: 40	St: 0
41	A8000918B1	H: 41	St: 0
42	A800090A40	H: 42	St: 0
43	A8000916B3	H: 43	St: 0
44	A800093309	H: 44	St: 0
45	A8000911FD	H: 45	St: 0
46	A800092FF9	H: 46	St: 0
47	A80008F853	H: 47	St: 0
48	A80008FAD5	H: 48	St: 0
49	A800091EE5	H: 49	St: 0
50	A80008FBCB	H: 50	St: 0
51	A800091F1D	H: 51	St: 0
52	A8002A9B3B	H: 52	St: 0
53	A800090B88	H: 53	St: 0
54	A800091D54	H: 54	St: 0
55	A800090B54	H: 55	St: 0
56	A8000926E7	H: 56	St: 0
57	A800091F11	H: 57	St: 0
58	A800093885	H: 58	St: 0
59	A800091F1F	H: 59	St: 0
60	A80008FB86	H: 60	St: 0
61	A800091D61	H: 61	St: 0
62	A800094A84	H: 62	St: 0
63	A8002A432E	H: 63	St: 0
64	A800090010	H: 64	St: 0
65	A8000933A6	H: 65	St: 0
66	A800090023	H: 66	St: 0
67	A80009202D	H: 67	St: 0
68	A80008FC58	H: 68	St: 0
69	A800093687	H: 69	St: 0
70	A80009405C	H: 70	St: 0
71	A800097785	H: 71	St: 0
72	A800091353	H: 72	St: 0
73	A8000913AA	H: 73	St: 0
74	A800090E52	H: 74	St: 0
75	A800093691	H: 75	St: 0
76	A800094240	H: 76	St: 0
77	A800090F35	H: 77	St: 0
78	A80008F819	H: 78	St: 0
79	A80008F956	H: 79	St: 0
80	A800092C66	H: 80	St: 0
81	A8000919EF	H: 81	St: 0
82	A80008F7E1	H: 82	St: 0
83	A8000933E3	H: 83	St: 0
84	A8000906C9	H: 84	St: 0
85	A80009372D	H: 85	St: 0

You can try reading the map again by selecting the Refresh button, but please wait for the system to scan all the panels. If you refresh too fast you will only get the previous map but not an updated one.

Scroll the window and check for slots not reading Pegs. You will identify them as there is an Error message in red and no ID number of tag detected.

Slot	ID	Hex	Status
1	A80009295F	H: 1	St: 0
2	A8000901E3	H: 2	St: 0
3	A80009304E	H: 3	St: 0
4	A8000925B3	H: 4	St: 0
5	A800093188	H: 5	St: 0
6	A8000968F9	H: 6	St: 0
7	A80008FC17	H: 7	St: 0
8	A8000919AC	H: 8	St: 0
9	A800090326	H: 9	St: 0
10	A80009282F	H: 10	St: 0
11	A8000930F9	H: 11	St: 0
12	-----	H: 12	St: 1 Err: 2 (40%)
13	A800056B08	H: 13	St: 0 Err: 2 (40%)
14	A8000936FF	H: 14	St: 0
15	A800092610	H: 15	St: 0

This screen shows a reading problem at slot 12. There is no ID number as there is no tag detected. The error shows 2 consecutive fails in a total of 6 reads and calculates the percentage. Please ignore the error message in the following slot 13. This slot really works but the message appears due to a software problem. You will also get this messages in the following consecutive slot in this software version.

Slots showing yellow box just indicate that the ID number changed. This happens when you change a peg. Will turn to white in the following panel read.

You can test changing retention pegs by user pegs in any slot and then refresh. The slots changed will show the yellow box and the new ID number. St:0 means normal working.

If you find problems with pegs not read in a slot try the following:

- 1) Be sure that the peg you are using contains an RFID tag and is not a plastic standard peg
- 2) Change the peg to any other slot and plug a new peg in the slot not reading. Many times it is a problem of certain peg in certain slot and will work in other slots
- 3) If the peg show reading problems in other slot may be it was assembled backwards. You will have to open the peg and check if the RFID tag is correctly positioned
- 4) If the slots shows problems to read other tags it may need some tuning. Tuning slots requires technical skills and is done by trained Keytracked personnel

When you be sure that all pegs are read at the panel then you can go ahead and finish setup process

4.- Key Setup

From the main software window you can select two different option for keys:

Keys large button is a tool to manage already defined keys. You can search a key by name, date of enrollment and more options.

Quick Key Creation is the procedure to define new keys. Please select this option.

The first step to setup keys in your system is to enroll all the white retention pegs you already have in your Keytracker mechanic system. This process is mandatory to get system working correctly. This can be done in two different ways depending on the number of keys and if you get all them plugged in the system.

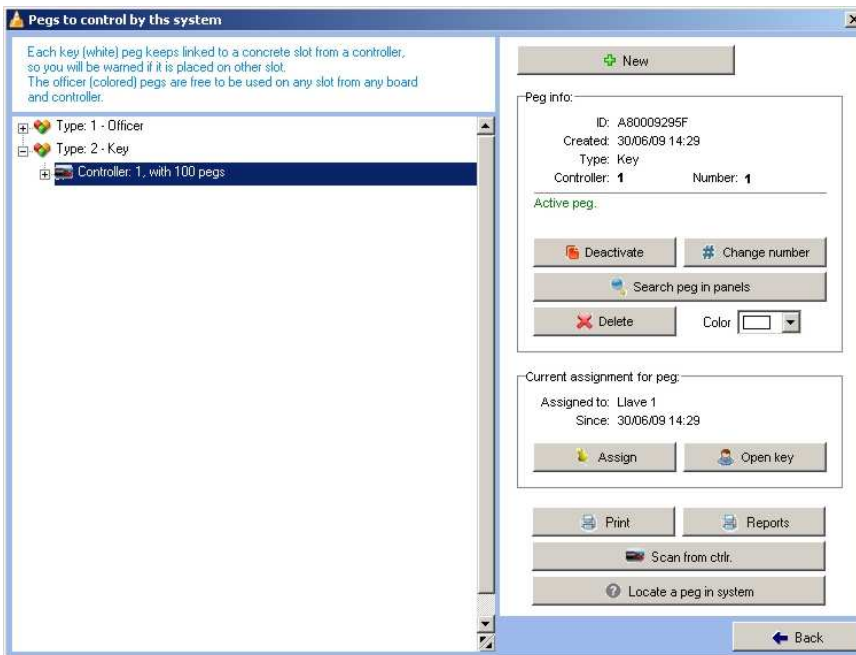
If you already don't have all the white pegs in the system and there are not many you can **setup them manually using the USB desktop reader**. So follow this steps:

- 1) Get white peg numbered #1 from the panel plugging there any user peg.
- 2) Plug the white Peg #1 in the USB desktop reader. The green led in the right side will blink.
- 3) Enter the name of the key attached to Peg#1. If you already don't have keys in your system just use a name like "Key 1". You can not live this box blank.
- 4) The Alternative code can be left blank. You can use it to define more details referring that key and is useful for later searches or reports
- 5) You must fill the peg number which is the engraved number in the white peg.
- 6) Push the Accept button and the key will be setup
- 7) Remove peg from desktop reader and plug it back in panel
- 8) As you only have one controller all the keys defined will be used with this controller and the attached keytracker panels. If you have many controllers it will be posible to get for example Peg#1 in all of them. This can be done as the internal RFID number of the pegs identify them so are different for the software.
- 9) Date of creation will be the actual date&time by default
- 10) Please repeat steps 1 to 7 untill you finish with all the white pegs in your keytracker panel

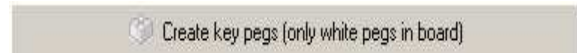
When you are installing a new system usually the key panels contain all the white key pegs and it is very simple to speed up the process enrolling them all from the controller. This process will pair the internal RFID number with the peg number, but will not identify the key assigned to that peg. That will be made later when you attach the key to the white peg with a seal.

For an automatic key setup from controller follow this steps:

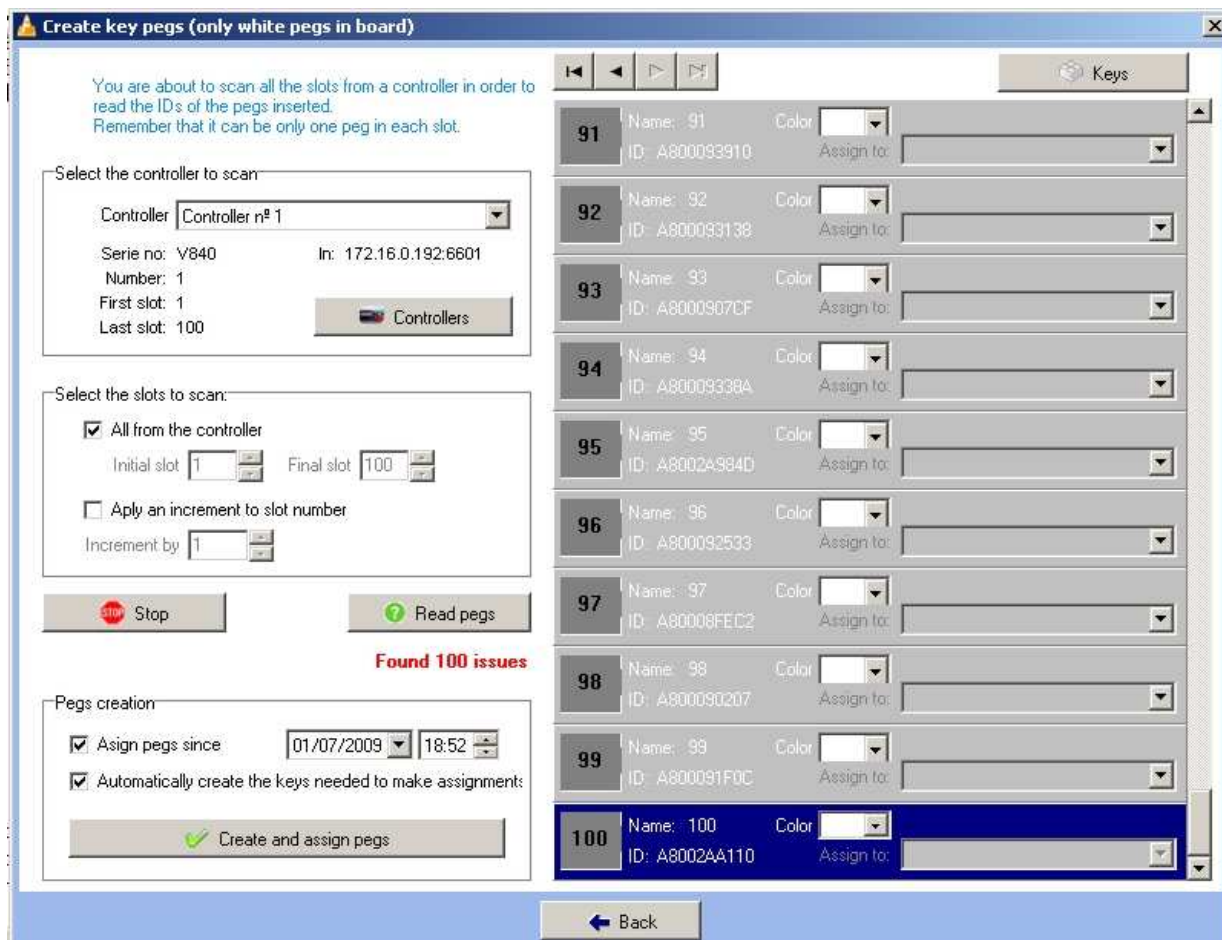
- 1) From the software main window press CTRL-ALT-P key sequence. A new option appears at the bottom of main menu like **Control Pegs** select it and access to the following screen



- 2) Select Type 2 – Key and the controller where you have all the white pegs already installed.
- 3) Then select **Scan from ctrl.** Option. From the new option menu select



- 4) You will get a new screen like this



- 5) Confirm that the first and last slot match numbering and select the option Read Pegs
- 6) Controller reports all the ID of the RFID tags installed in the slots and you will see them in the right part of the screen.
- 7) Then in the left bottom corner (Pegs creation) fill the blanks in “Assign pegs since” and “Automatically create the keys needed to make assignments”. Then press the button Create and assign pegs

You already have all your white key pegs defined. Using the Keys large button in main software window you can check all them appear at the left side. You can perform searches and sorts by different ways here. When you assign a key to the white pegs just edit and change the name and details

Please **note that automatic key setup process is a critical process** and do only need to be done once at system installation. If it is run again with user keys inserted in slots or white pegs in wrong slots will cause severe errors that will affect system configuration. That is why this option will keep hidden during the normal operation of software

5.- User Setup

From the main software window you can select two different option for users:

Users large button is a tool to manage already defined users. You can search by name, date of enrollment and more options.

Quick User Creation is the procedure to define new users. Please select this option.

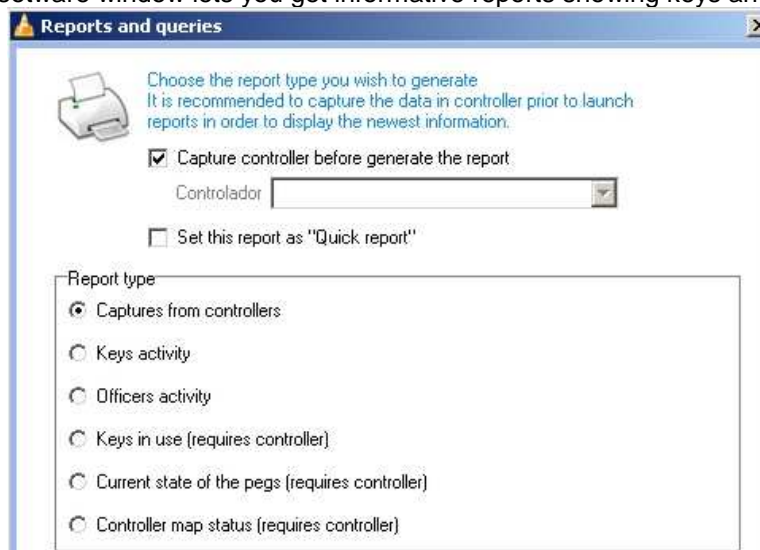
The first step to setup users in your system is to enroll all the coloured user pegs you already have. This process can be a little boring but is mandatory to get system working correctly. So follow this steps:

- 1) Plug a coloured user peg in the USB desktop reader. The green led in the right side will blink.
- 2) Enter the name for this user peg. If you already don't have users in your system just use a name like “User 1”. You can not live this box blank.
- 3) Alternate code is an optional data field you can use or not
- 4) Peg number is the engraved legend in peg, numbers, letters or just left it blank is peg is plain
- 5) Select the colour of peg. You actually have only 5 different colours for RFID pegs
- 6) Press the Accept button and the peg will be setup
- 7) Remove peg from desktop reader and plug it back in panel and choose another one to setup. Proceed with all the coloured user pegs like in steps 1 to 6

You already have all your user key pegs defined. Using the Keys large button in main software window you can check all them appear at the left side. You can perform searches and sorts by different ways here. When you assign the user key to a person just edit and change user name and details.

6.- Reports

This option from the main software window lets you get informative reports showing keys and users activity



Reports which require controller need on-line connection to the controller for data access. The other reports can access controller to search for recent data or look in the database for older data previously downloaded from controllers. Every time you download data from a controller it is stored in the database. This makes possible to get reports from old dated events. Selecting “Capture controller before” ensures that you always get the latest events

6.1.- Report type: Captures from controllers

This reports lets you see the key panel activity during a selected time. Select the option and press **Accept**. Then you'll see the following window to setup reports settings. First you select the controller which you want to analyze. Then select the range of days you want to get in report. You can even select a starting and ending time/date.

You can also choose to filter a kind of event. Then select **"Accept"**.

You will get the message of system accessing controller, downloading data and finally erasing data.

The report will follow. Please note that you can change the logo printed in the left top corner of the report. To do that select Application Configuration in the main software window and then Customization.

You can also replace the generic name of users to other more in accordance to your application (i.e. Officers for a police station key control). The name of Keys can also be changed to any other, for example cars for a motor dealer Key control.

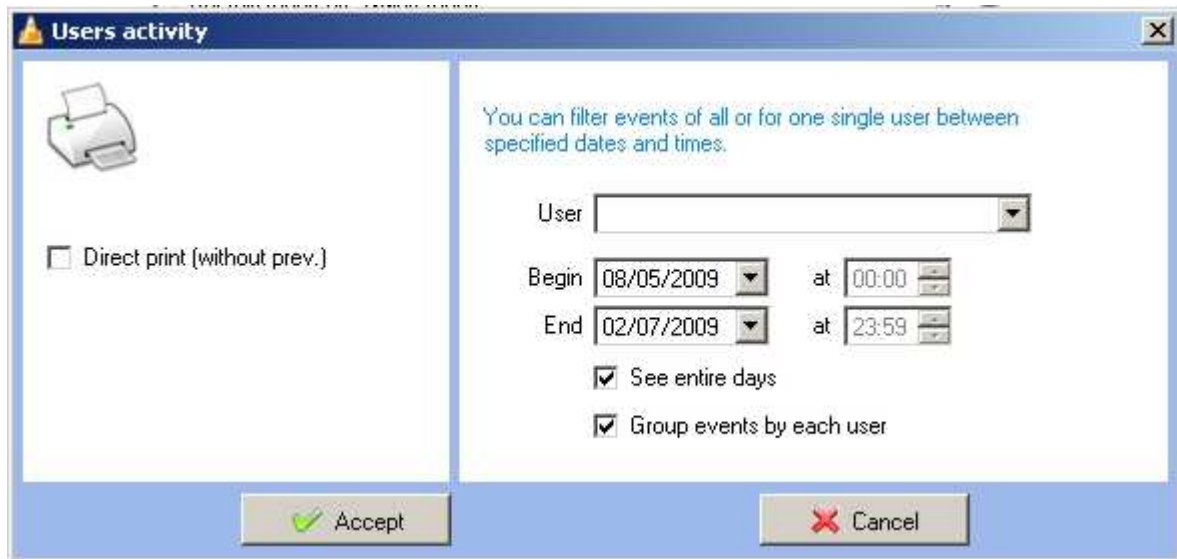
6.2.- Report type: Keys Activity

This report will give you a detailed information of activity for a single key or a group of keys during a selected time.

To select more than one key and get the report grouping events by key there is no way to do it in this software version but will be a fix in next. **If you live the key box empty the report groups all the keys**

6.3.- Report type: Users Activity

This report will give you a detailed information of activity for a user or a group of users during a selected time



To select more than one user and get the report grouping events by user there is no way to do it in this software version but will be a fix in next. **If you leave the user box empty the report groups all the users**

6.4.- Report type: Keys in use

This report requires connection capabilities with the controller. The software lets you choose which controller do you want to analyze and then makes the report.

Controller	Peg	Key	Status
1	6	Llave 6	The peg is in use by User 149 from 02/07/2009 9:52:25.
1	24	Llave 24	The peg is in use by User 124 from 02/07/2009 9:39:30.
1	29	Llave 29	The peg is in use by User 129 from 02/07/2009 9:39:37.
1	70	Llave 70	The peg is in use by User 130 from 02/07/2009 9:39:17.

4 pegs are currently in use

Report shows the **keys in use at exactly this moment**, white peg number, key description, user which holds the key and date/time when it was picked up from panel

6.5.- Report type: Current status of pegs

This report requires connection capabilities with the controller. The software lets you choose which controller do you want to analyze and then makes the report.

In fact it is very similar to the previous report of keys in use but refers to all the keys in the panel. The keys standing in the panel will be reported as "Peg placed in its corresponding slot"

6.6.- Report type: Controller map status

This is a technical report to show how system works. Please refer to Page 4 of this guide (3.- Panel and Pegs test)

7.- Live Control

This window connects in real time with the controller and shows events as they happens. Events are defined like key picked by a user from panel or user plugging back a key in panel. This is the basic information to produce detailed reports later on. If Keys and Users are defined with a picture it is also shown at the same time.



Please note that there is a delay between event and its detection by software. The electronic panel scans the 25 key slots in about 7 seconds. When an event happens it will be detected in two scans worse case, so will be displayed in software 14 seconds later. If you are using a 50 keys system there are two electronics panels connected, so the total scan time will be 14 seconds and in the worse case event detection will take two scans, so 28 seconds to be reported in software. The more panels connected to a single controller, the longer delay you will get to display events.