maks**e**NSE

INDEXOR**SYSTEMS**

SAMPLE TUBE ORGANIZER

maks**e**NSE

Manual

V5.5 (English)

www.maksense.com

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Introduction

The INDEXOR System allows quickly and efficiently organization and tracking of the localization of blood tubes.

Carefully read the information provided in this manual before installing the system.

Manual

This manual tells you how to use the INDEXOR System. It also provides detailed information on the major functions of software **QuickLab**, as well as instructions on how to connect the INDEXOR System to the Laboratory information System (LIS).

It also provides instructions on how to configure, calibrate and troubleshoot technical problems of the software **QuickLab**.

Patent Information

The **iSens - Electronica Lda.** has the propriety rights on the INDEXOR technology described at this document.

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General description

1.1. INDEXOR System

The INDEXOR system can be used to assist the organization of pre and post analytical areas, allowing registration of tubes, their distribution to the various laboratory areas and archive them for long term storage.

1.2. System components

The system consists of the following components:

iMaster

Racks

Computer with touchscreen

USB

Cable

Module (or unit) NDEXOR

RJ45 Cable (30 cm) for INDEXOR modules interconnection

Barcode reader

RJ45 cable (50 cm) for connecting iMaster with INDEXOR module
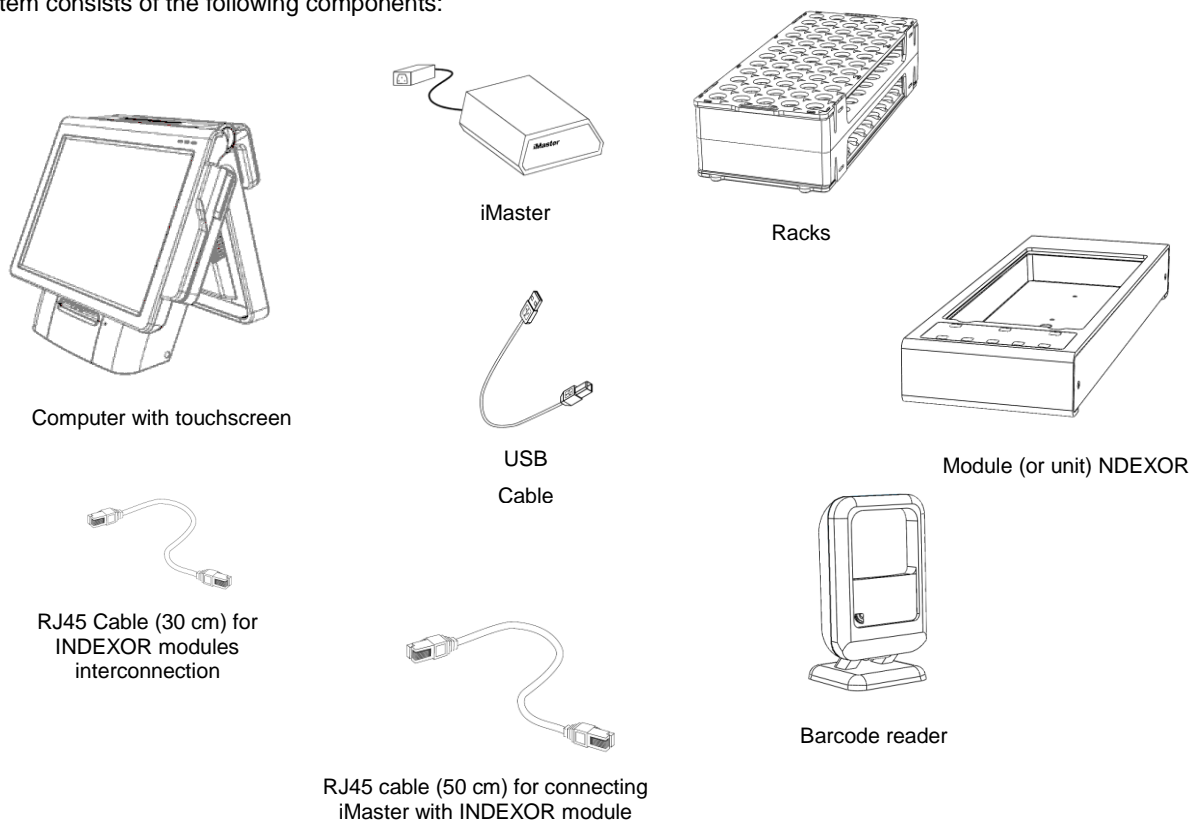
NOTE:

The number of RJ45 cables (30cm) available, should match the number of INDEXOR modules

iMaster Power supply specifications:

Input: 100-240 V, 0.6 A, 50-60 Hz

Output: 5V, 3.2 A

2. Installation and Connection Requirements

2.1. Hardware

1- **Important:** Connect the iMaster to a **USB PORT** on the **back of the computer** not on the front!

2- Connect the first INDEXOR Unit to the iMaster, on port 1 or 2 with the cable RJ45 (50cm). Check

INDEXOR ID on the back. There must not be two units with the same ID.

Connect the INDEXOR units in an ascending order to appear in the same order on the computer screen.

Note: A maximum of 8 modules **can be connected to each INDEXOR IMaster device port.**

3- Connect the next INDEXOR unit with RJ45 (30 cm) cable to the first INDEXOR unit.

**4-** Connect the iMaster Power cable to a wall socket. There is no Power button. The system is turned on by

software.

5- Connect the Barcode reader to any USB Port available.

6- Turn On the computer.

7- Choose INDEXOR User (if asked).

8- Click on the software icon QuickLab.

9- The Barcode Reader may be configured with the manual supplied.

The Barcode Printer Default commands are EPL type for Zebra printers. (By default is printing with Code

128 Barcodes). Can be changed in the options Screen.
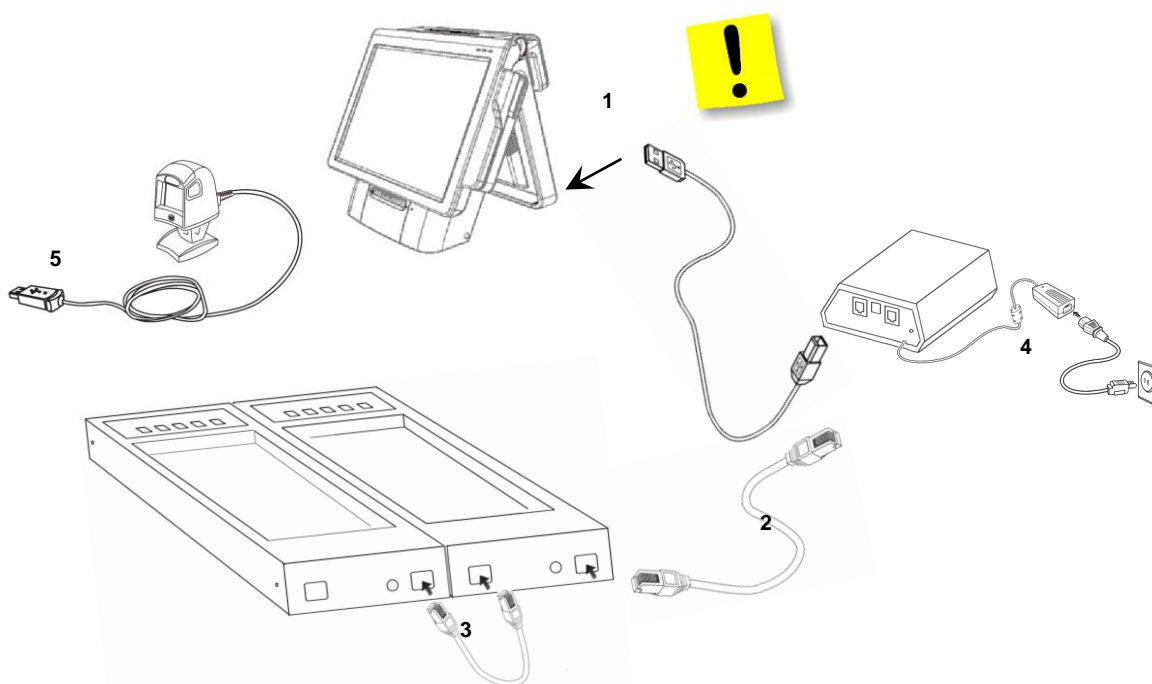
Important: The **barcode Reader** has infrared beams, **avoid facing it to INDEXOR** units in order to avoid noise in tube detection!

To access the computer back, remove the back panel as shown in the Picture:

Checking INDEXOR **Identification**:
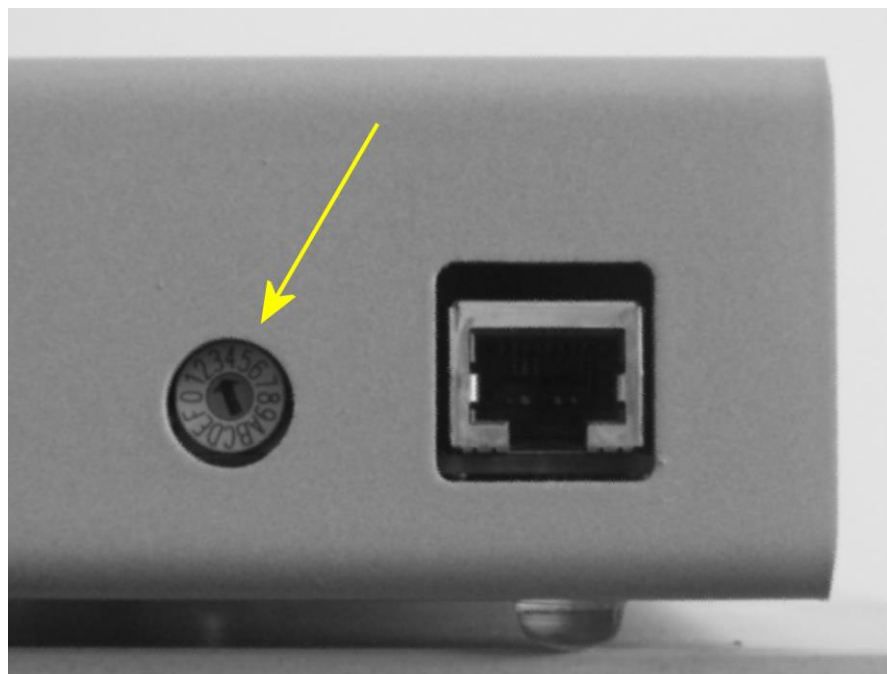
3. Working principles

1 - Insert a Tube Rack
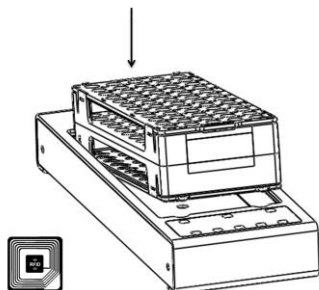
Insert a Rack, first with the back and then the front!

Check the [RFID] RFID light is on. If not on, means that the RFID tag is damaged.
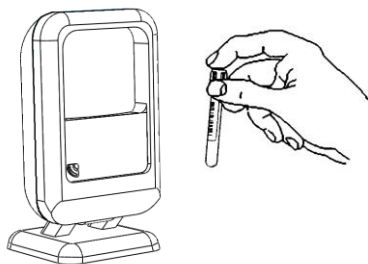
2 – Read a tube

Read a tube in the barcode Reader until a "**beep" sounds**.

If it's not possible to read the barcode, it can be entered manually followed by the <**ENTER**> key.

3 - Place the tube on a rack
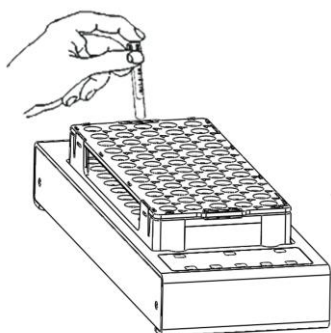
After reading the tube, it can be **placed anywhere** in a rack.

There are some **seconds of time out**. This time can be adjusted in the **Options** Screen.

In the computer screen should appear the **position where the tube was placed.**

4. INDEXOR module Front panel

The INDEXOR unit has a front panel with some lights to help identify the correct operation of the unit.
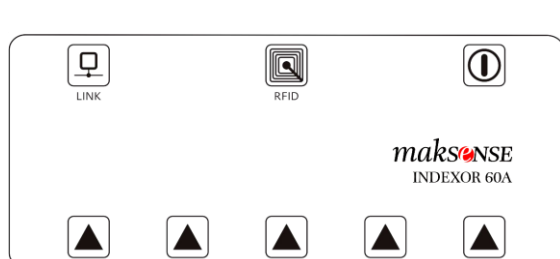
Blinking means the unit is communicating with iMaster**.**

When is on means a Rack with **a valid RFID tag**.

When is on, the unit has **power**.

Blinking means that there's a **signalized tube** to be picked up in the corresponding column.

5. QuickLab Software

The software main screen should look like this:

NOTE:

*For more information about installing the software **QuickLab** see Section 7.1.*
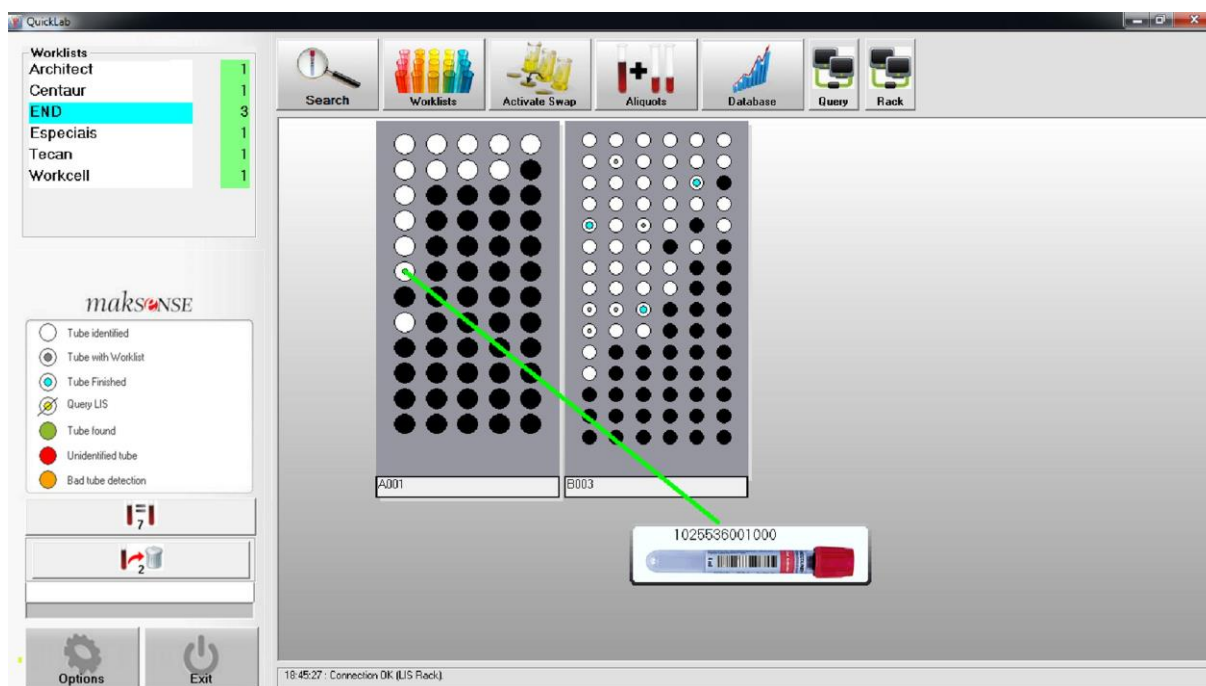
Tube status legend:

⬡   **Tube identified –**Tube with valid identification

◉   **Tube with Worklist –**The tube has one or more worklists

◉   **Tube finalizado –** means the tube has no more worklists or tests pending and it's ready for storage

🟢   **Tube found –** indicate where's the tube searched

🔴   **Unidentified tube –** the tube has no Identification – Read it again or check the list of problems in page 63

🟡   **Bad tube detection –** the tube is not well fitted in the rack or is a unit with a detection problem – check list of problems on page 63

Search – Allows searching tubes on INDEXOR units or Storage.

Worklists – For viewing and selecting Worklists available for tubes in the INDEXOR units.

Activate Swap – This option is useful for swapping tubes from one position to another without reading them again in the barcode reader.

Aliquots – Here it's possible to duplicate labels from the barcode reader or from a worklist.

Database – Information of all Racks and samples stored in the local database.

5.1. Searching tubes

Click in this button to search for tubes.

After clicking the SEARCH button is opened a window where you can enter up to 100 codes to search separated by <Enter>.
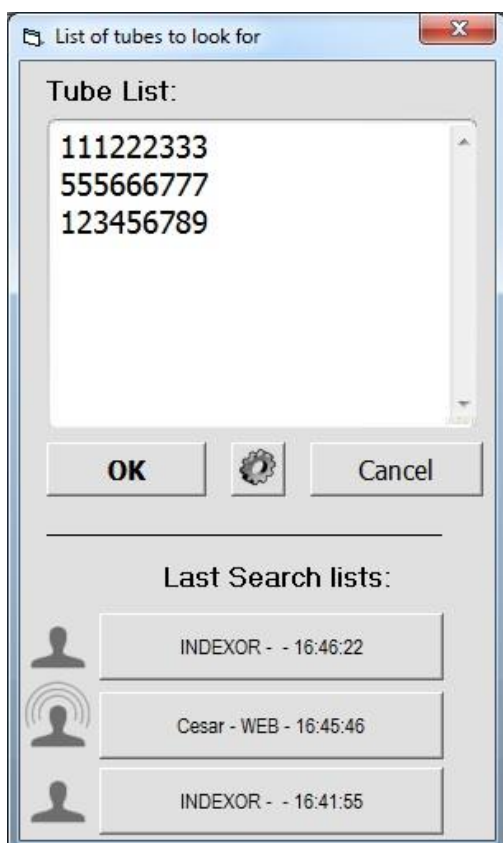
In this window are available the search lists from the last 15 minutes. In the icon of recent researches are available the following data:

NAME OF RESEARCH UNIT (ex. Cesar) - NAME OF THE PROGRAM (ex. WEB) – TIME OF SEARCH (ex. 16:45:46).

If the research is done outside of the INDEXOR unit, the icon is displayed:

Clicking on config icon, [gear icon] ,it is possible to define:
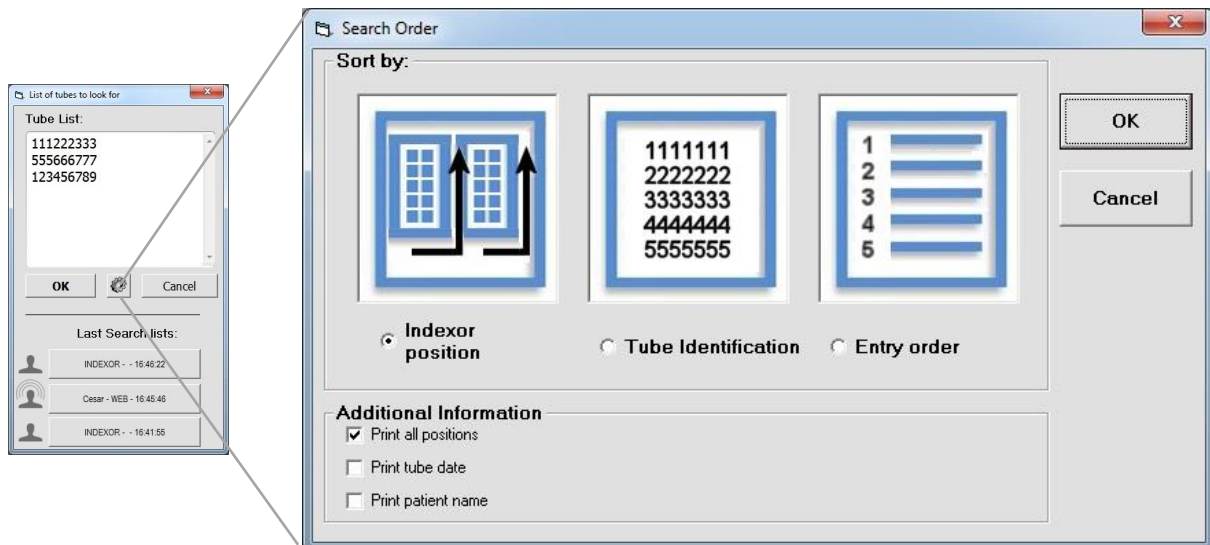
-how search results are displayed.

-Information to print

Possible Results:
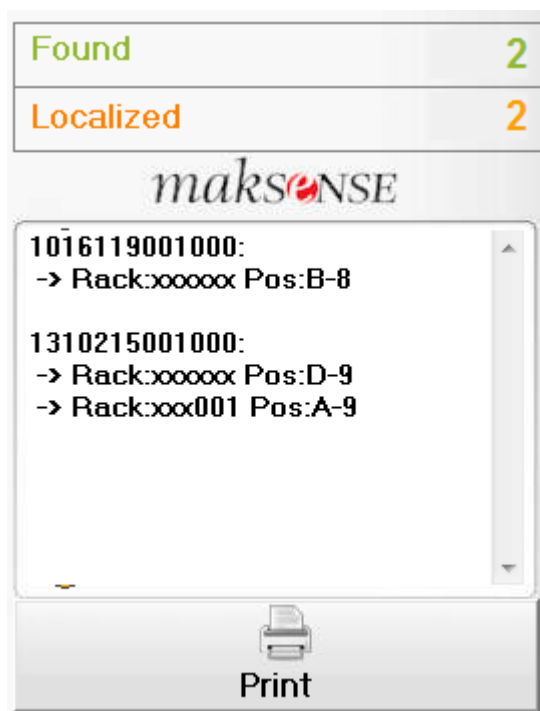
After the search are available the following outcomes:

Found - Corresponds to the number of tubes found in the INDEXOR units.

Found tubes in the bases INDEXOR will blink. When you take the first tube, the second flashes, and so on.

Tubes having the same identification flash simultaneously so that the user might select one. You should lift slightly and then turn back the tube you don't want.

Localized - Corresponds to the number of tubes not found in the INDEXOR bases, but are on the archive. .

The localized tubes are listed in the side window with an indication of its position in the corresponding support.

NOTE:

This list can be printed for easy browsing of the tubes, if these meet in the archive.

Not found - This corresponds to the number of tubes not found.

5.1.1. Web tube search

If the INDEXOR system is connected to the lab network, the tube search can be done through a web browser on any computer within the laboratory.
If a wireless network is available at the lab, the search can be done through a Tablet or Smartphone.
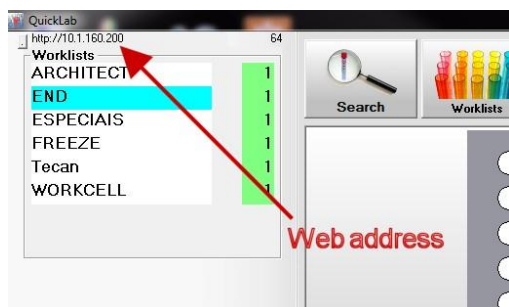
To perform a search via WEB you need to check the WEB address at the program **QuickLab** This address is indicated in the upper left corner of the **QuickLab** window.

By entering this address in the web browser of the unit you want to use (ex. Laptop, smartphone, etc.) you will access the following page:
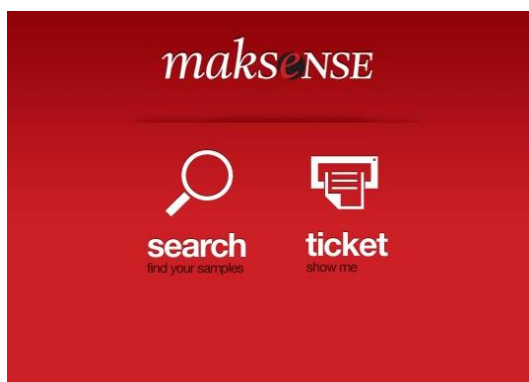
Here are two available options: **search and ticket.**

Search

When accessing the search option is asked to identify the user and the tubes to be searched.

When carrying out the search option, you are directed to a page with the indication of the found, localized and not found tubes.

Here you can press the **Start blink** icon that puts the found tubes flashing at the base INDEXOR. Press again to stop blinking if you don't want these tubes.

To exit this page, click on the icon **maksense**.

Ticket

The **ticket** option provides to be displayed on the screen of the used device, the information about the localized and not found tubes. This way avoids the unnecessary printing on paper for localization in the archive.
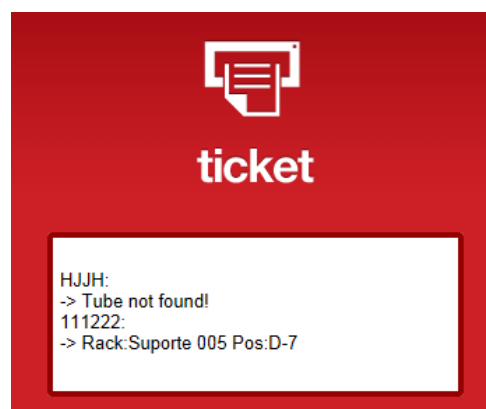
5.1.2. Tube detection
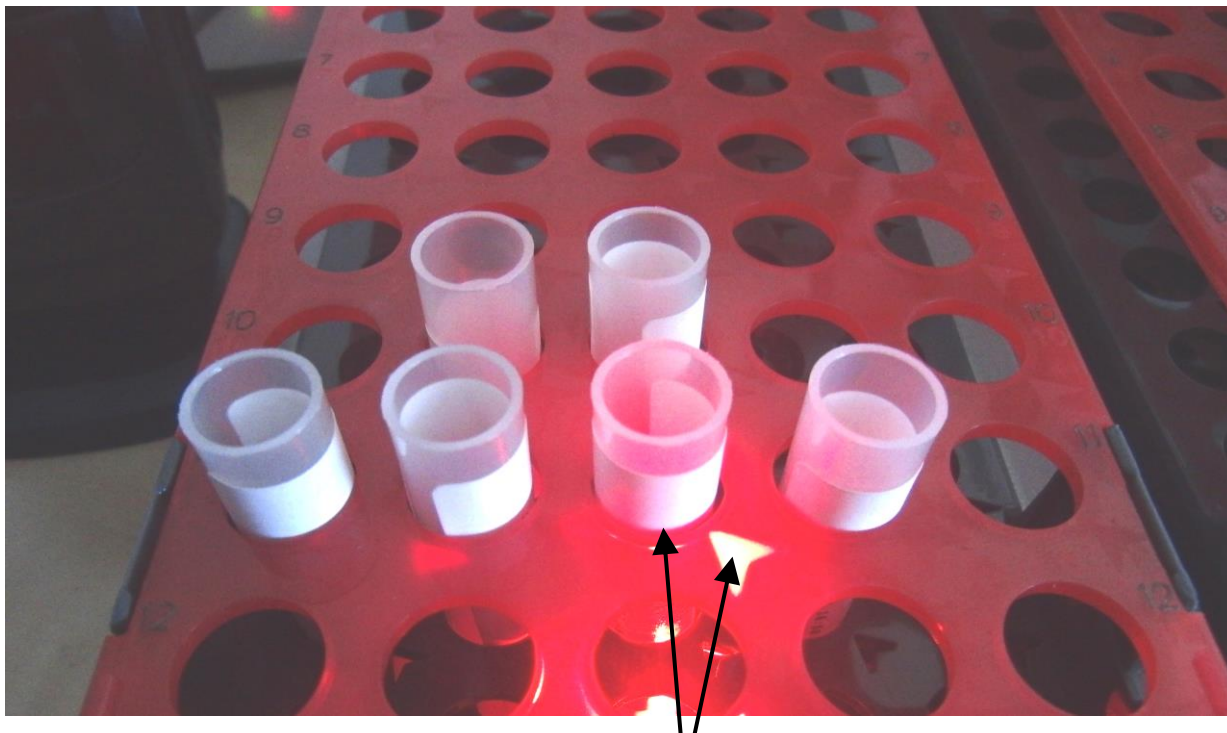
The **arrow** on the Rack shows the found tube.

> **Slow blinking** – Means tube **found**.

> **Fast blinking** – **Unidentified** Tube. Remove the tube and read it again on the barcode reader.

> **Simultaneously blinking** – In case more than one tube blinks means that they have the same identification. If just one tube is needed, then the other one can be lifted up and down in order to pass to the next one on the list.
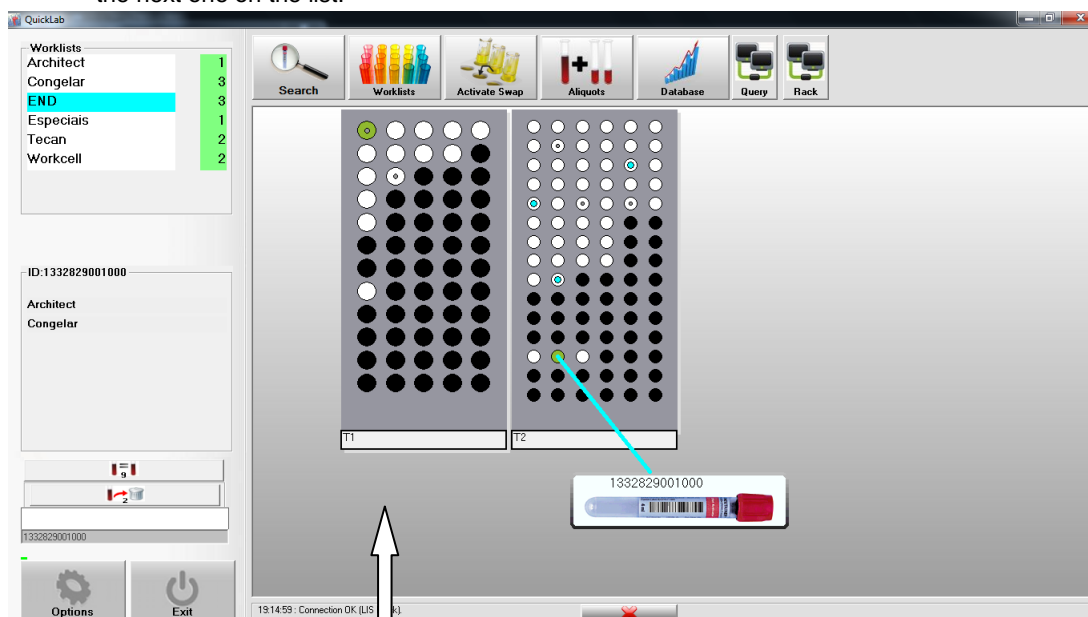
Click on gray area to cancel the current search

5.2. Worklists

This button will show the worklists window.

This window shows **how many tubes** exist for each **worklist**.

To show tubes for the wanted Worklist, the button with number of tubes should be pressed.

The tubes for that list will blink as they are being withdrawn.

Clicking on Worklist config button, settings can be defined:

-Name associated with the list of tubes without Worklist pending [1]

-Separate tubes processed and unprocessed [2].

-Sequence of visualization of tubes [3] Tubes with same identification will blink simultaneously. If just one tube is needed, then, the other one can be lifted up and down in order to pass to the next one on the list.

Color legend:

n (green)	- New tubes
n (orange)	- Urgent tubes

n
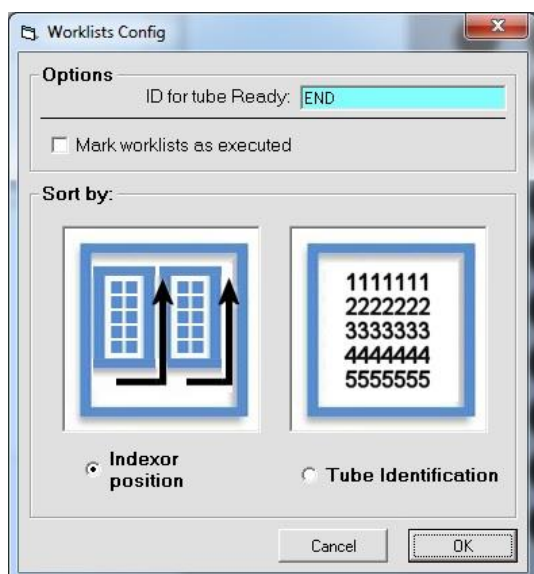
    - Already processed tubes

Example:

2	1

- There are 2 **new tubes** and 1 of them is **urgent**.

If number **2 is pressed**, then the 2 tubes will blink on INDEXOR units.

If number **1 is pressed**, then just the urgent tube will blink, making the total number of tubes now being 1.

Processed:

If checkbox "Mark worklists as executed" is checked, then the processed tube is separated from total tubes in Indexor.

1	1

- 2 tubes in indexor one processed and 1 not.

The Worklists on the main screen, shows only the not processed worklists.

To select a worklist, this area can be pressed as well as the button "Worklists".
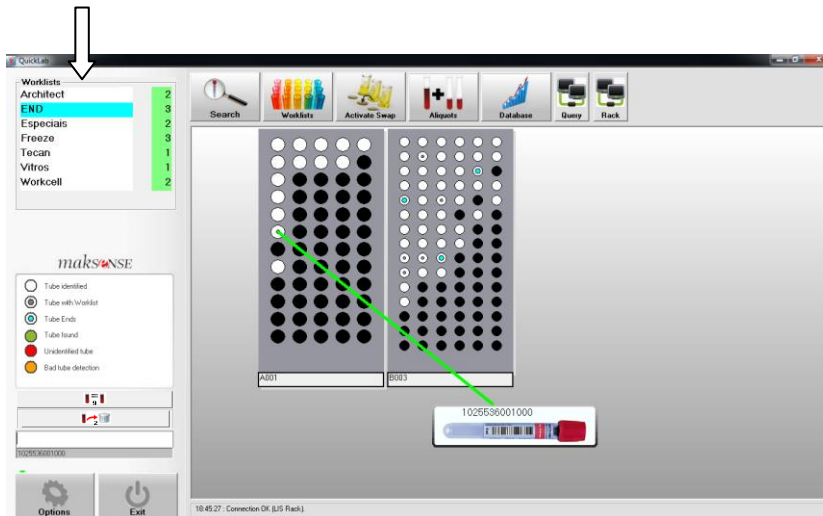
There are two methods of communication with the LIS (Laboratory information system):

5.2.1-Query mode: In this method, when a tube enters on Indexor system a query is sent to LIS.

5.2.2-List download mode: In this method, all the worklists are sent to Indexor system.

5.2.1. Query mode

Instant Worklists
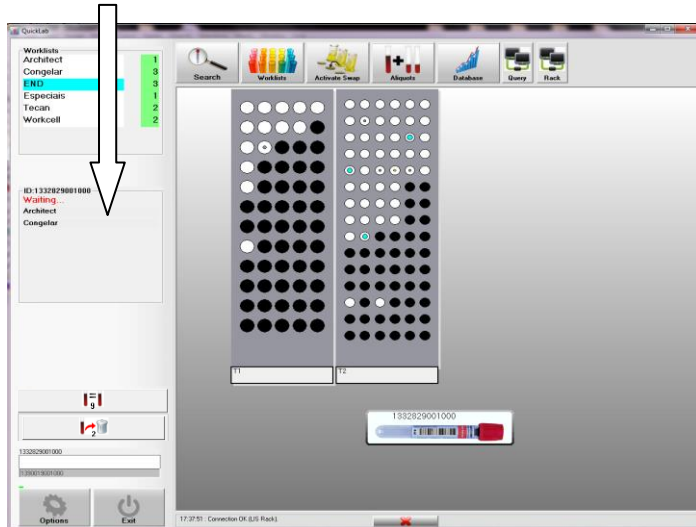
When a **connection to LIS** (Laboratory information system) exists and one tube is being read on the barcode reader, an **instant "QUERY"** to LIS is made in order to get the **last tube worklists** or status.

This makes possible, if user wants to, **place the tube in different racks** depending on the received worklists.
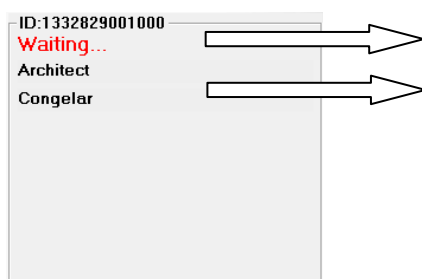
Waiting **LIS** response

While waiting for the response, the **last known worklists** are shown (**Gray background**).
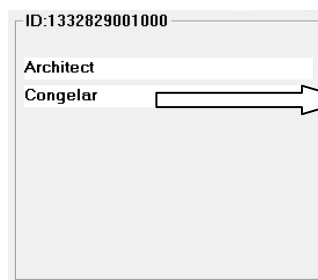
When the worklists have a **white background**, means they are **updated**.

Communication with LIS sequence:

1. read tube 12345
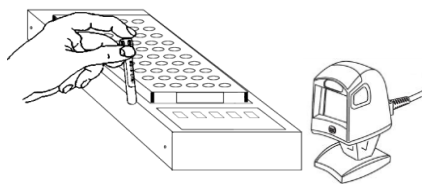
2. INDEXOR makes a "Query" to LIS for tube 12345.

3. Receive Worklists for tube 12345

Notes:

1 – The worklists **don't need to be defined** or created in the INDEXOR System.

2 – The **answers to the "Query"** are always understood as worklists.

3 – The only worklist that needs to be defined is the worklist for assuming the **tube is Ready**, that by default is "**END**". This list should mean that **there is no more tests to do** on that tube, so the tube can be stored.

4 – When a tube from a worklists passes to the state **"Processed"**, just means that already has been **removed by that list**, but may not yet enter that **instrument or done the corresponding test**.

5 – The **LIS** should **remove a tube from a Worklist** or test as soon as it **gets the result** from the corresponding instrument, and should send to **INDEXOR** just the **worklists without results**.

Updating worklists:

After a period of time, an update **"Query"** is done **again** to **update worklists** of each tube.
The **LIS** should answer with **pending Worklists or tests**.

1. After a predefined time

2. Update "Querys"

))) ID 12345
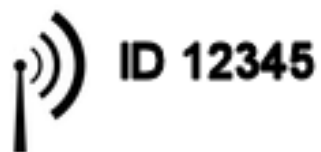
3. Receive pending Worklists or tests

Worklist1
Worklist2 (((

ℹ️ **Please check Protocol definitions on section 7.4 page 44**

5.2.2. List download mode

All worklists are sent from LIS to Indexor system. In the Worklists window more columns are displayed as showed in the picture below.
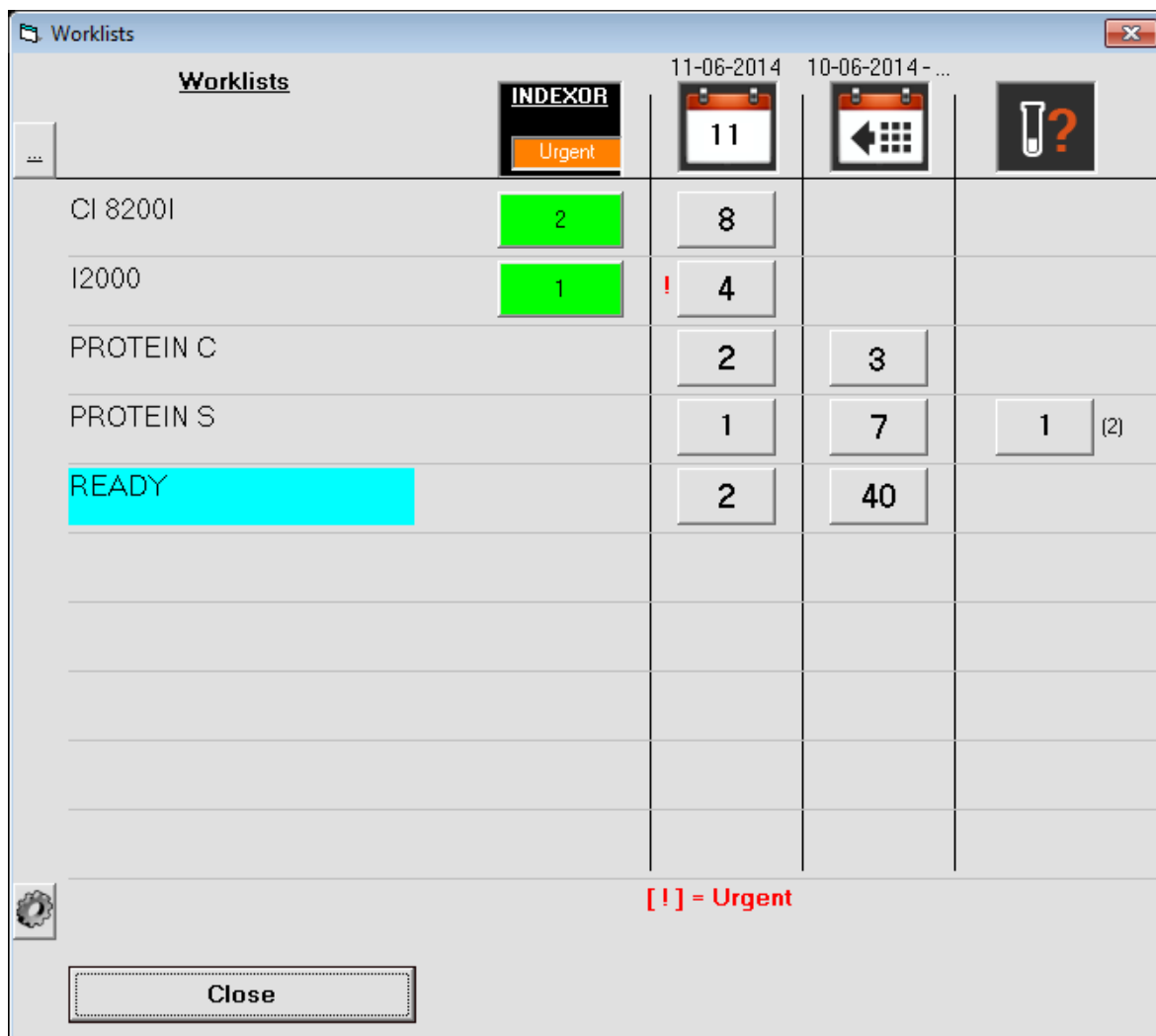
Clicking in any icon on the top of the columns a Help window will appears to explain what each column represents.
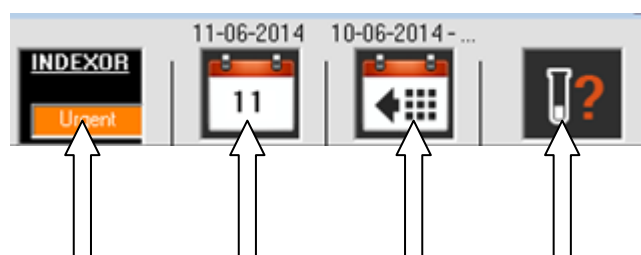
List Mode Help window.
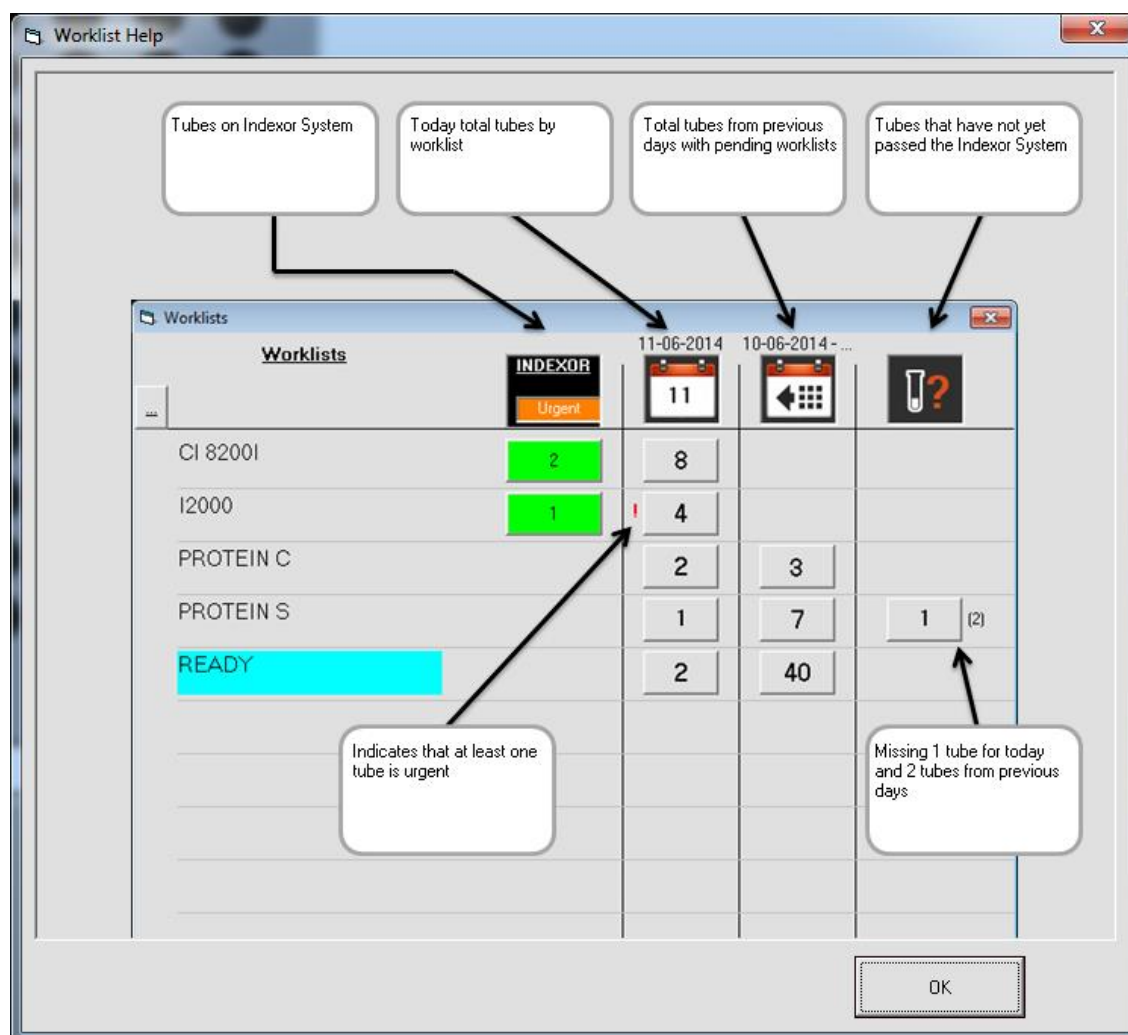
First column: - Tubes on Indexor system by worklist.

Second column: Today total tubes by worklist.

Third column: Total tubes from previous days with pending worklists.

Fourth column: Tubes that not yet passed the Indexor system. The number in the button represents missing tubes for today. The number between brackets represents tubes never seen from previous days.

5.3. Aliquots
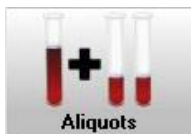
This button will open the Aliquots window.

PRINT BARCODES:

From Scanner

Here, passing a tube in front of Barcode reader will print a label with the same identification. It's possible also to enter **manually a code** followed by the **<Enter>** key.
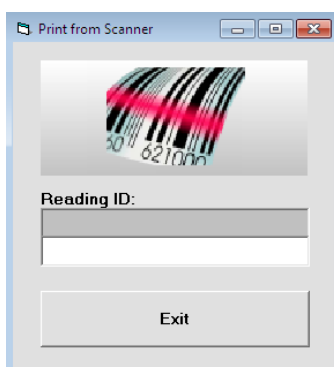
Finding a Primary tube

After printing labels, **stick them on new tubes.**

The **QuickLab** should be in the **main screen** without any opened window.

Finally, **read the new tube** in the barcode reader. The **INDEXOR will show where the primary tube is**.

Repeat this process for the rest of aliquot tubes.
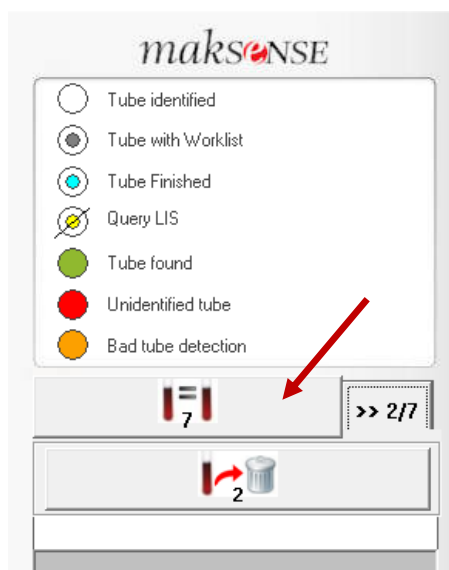
Tubes with the same identification

The indication of presence of a tube with the same identification is always available when you make the tube entry.

I.e., when you give entrance of the tubes and a tube is signalized, means that this is a tube with the same ID. **This could be ignored if you only pretend to arrange the tubes in the racks**, but could be useful for quick searchs of primary tubes!

At the main menu are provided more information regarding the number of aliquots at the INDEXOR units. With the press of this button, the pairs of aliquots are sequentially identified, by indicating their position and their name. This information is helpful to make the arrangement of aliquots by different racks, which can then be forwarded to different tests.

From current selection

In this option, labels can be printed from a specific worklist*.*

To do that, before entering this option, a **worklist should be selected**. But this time without taking the tubes out.

Close the worklists window and open now the Aliquots window.

After pressing the button **"From current selection"**, labels will be printed for the last selected worklist.

Also a **"Search"** for tubes can be done, followed by an aliquot print **From current selection**

Print All Worklists

In this option labels for all tubes with worklists are printed.

If the check box "Mark lists as executed" is checked, when a label is printed the tube appears as executed in the worklist window.

5.4. Activate Swap

Click this button to enable tube swapping positions.

This option allows **exchanging a tube** from one location to another **without reading it again** on the barcode reader.

If there is no activity during a specified period of time (20 seconds default) this option will **disable itself automatically** for security reasons. And will be **disabled** if a **Rack is removed** from an INDEXOR unit.

After clicking the button makes the swap of the tube you want. The system automatically assumes the exchange.

5.5. Database / Storage

Here it's possible to **see Rack and sample data. Some operations** over the database can also be done.
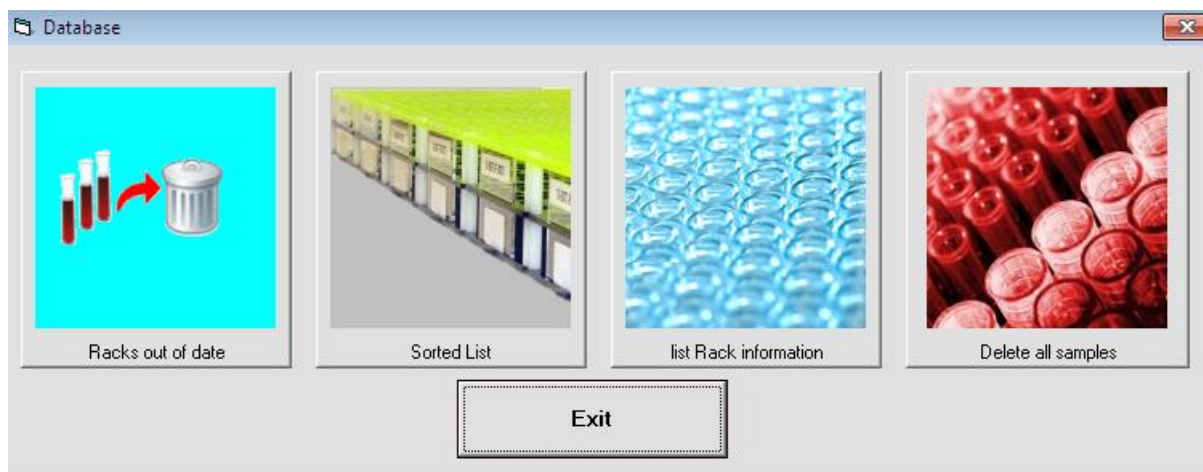
5.5.1. Racks out of date

This option is useful to check which are the tubes out of date (see storage types in the section 6.2 on page 32) and to sorting them to the trash.
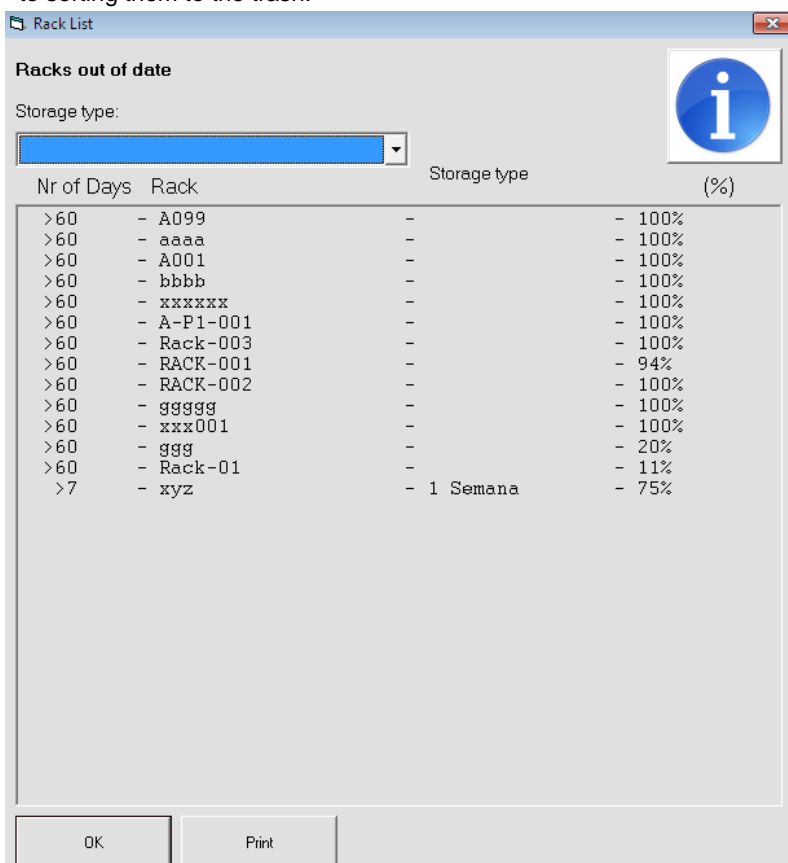
By selecting this option, are indicated, for the different storage types previously defined, which are the tubes out of date and what the fulfill level of the support. So, if the support appears at 100% means that you can put all the tubes from the support to the trash, saving time in checking all the tubes individually.

This information/help is explained in the **i** icon.

At the main menu, you also have a shortcut adjustable through the settings menu (see in section 7.1 on page 7.1)

By pressing this button, are indicated for the different storage types, which are the tubes out of date, which stay thus flashing on the racks, and may be eliminated.
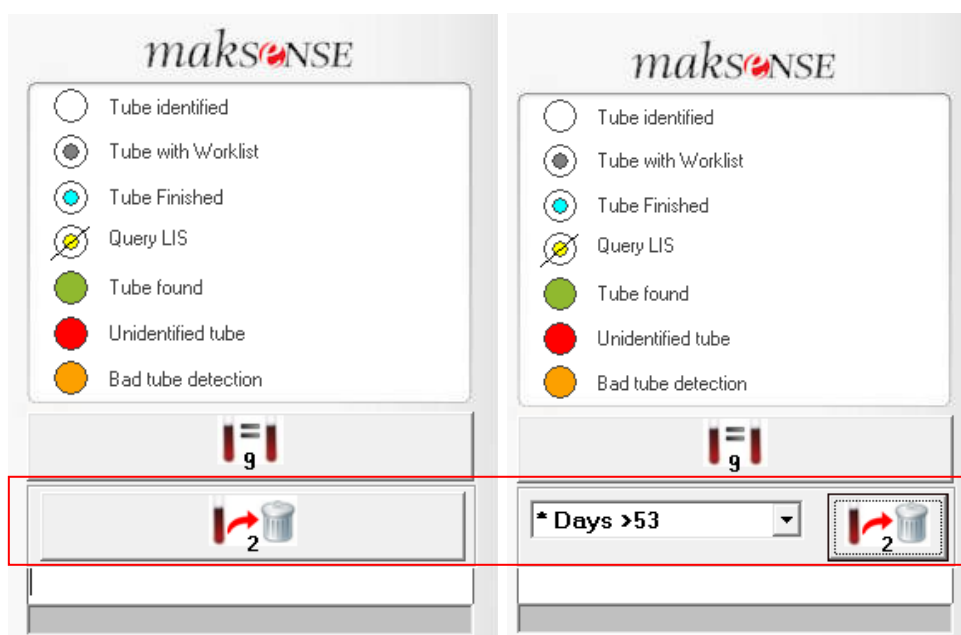
5.5.2. Sorted List

Sorted List

The option "**Sorted List**" gives a list of **oldest Racks** in the storage that should be used to put new tubes.

The Window should look like:
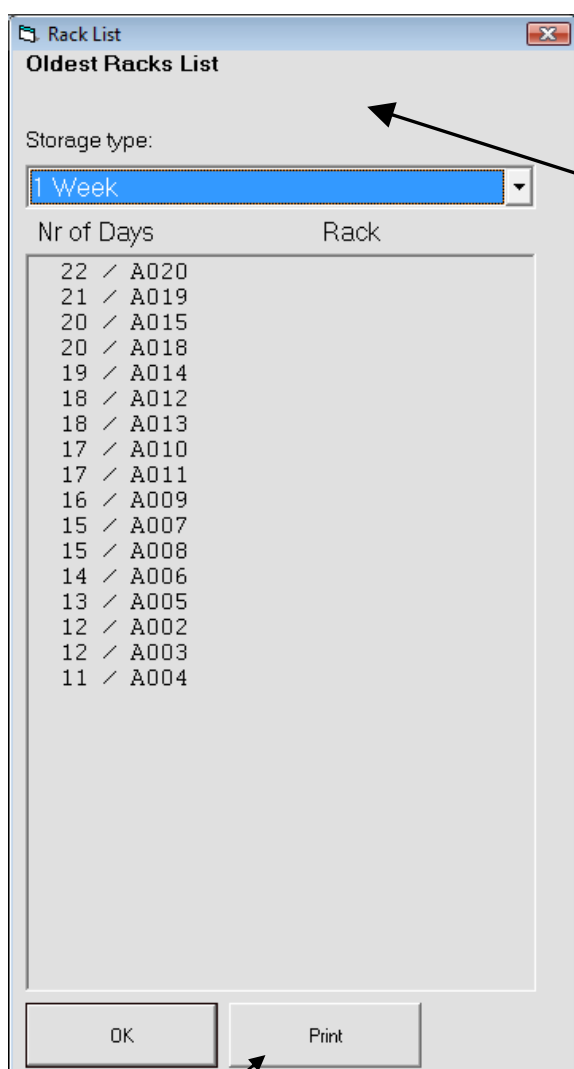
If **Storage type** is defined, must be selected here.

This list can also be printed to help searching the racks in the storage.

5.5.3. Rack information list

list Rack information
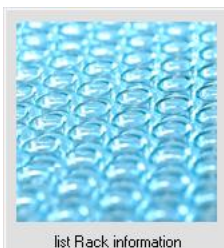
This option lists information on the database about each Rack.

Includes: Tube identification, RFID, Rack name, absolute position, X and Y position.

The column *SENT_LIS* is used to save the **position status**. If the position was already sent to **LIS** then is set to

YES.

| TUBE_ID	TUBE_PRESENT	RFID	RACK_NAME	POS.X	POS.Y	POS.ABS	SENT_LIS
1903949001000	YES	ED68932700000000	B003	1	A	1	YES
1037421001000	YES	ED68932700000000	B003	2	A	2	YES
1903946001000	YES	ED68932700000000	B003	3	A	3	YES
3421678	YES	ED68932700000000	B003	4	A	4	YES
XA6791-K0	YES	ED68932700000000	B003	5	A	5	YES
2901894001000	YES	ED68932700000000	B003	6	A	6	YES
1016119001000	YES	ED68932700000000	B003	7	A	7	YES
3110400001000	YES	ED68932700000000	B003	8	A	8	YES
1400039001000	YES	ED68932700000000	B003	9	A	9	YES
	YES	ED68932700000000	B003	10	A	10	NO
1390019001000	YES	ED68932700000000	B003	11	A	11	YES
1030312001000	YES	ED68932700000000	B003	12	A	12	YES
1332829001000	YES	ED68932700000000	B003	13	A	13	YES
1307895001000	YES	ED68932700000000	B003	14	A	14	YES
	YES	ED68932700000000	B003	15	A	15	NO
1037443001000	YES	ED68932700000000	B003	16	B	1	YES
	YES	ED68932700000000	B003	17	B	2	NO
1903952001000	YES	ED68932700000000	B003	18	B	3	YES
1075942	YES	ED68932700000000	B003	19	B	4	YES
PR9629-K0	YES	ED68932700000000	B003	20	B	5	YES
2607106001000	YES	ED68932700000000	B003	21	B	6	YES
1705266001000	YES	ED68932700000000	B003	22	B	7	YES
1021300001000	YES	ED68932700000000	B003	23	B	8	YES
	YES	ED68932700000000	B003	24	B	9	NO
1234567	YES	ED68932700000000	B003	25	B	10	YES
	YES	ED68932700000000	B003	26	B	11	NO
	YES	ED68932700000000	B003	27	B	12	NO
	YES	ED68932700000000	B003	28	B	13	NO
	YES	ED68932700000000	B003	29	B	14	NO
	YES	ED68932700000000	B003	30	B	15	NO
1714111001000	YES	ED68932700000000	B003	31	C	1	NO
2205803001000	YES	ED68932700000000	B003	32	C	2	NO
1903942001000	YES	ED68932700000000	B003	33	C	3	NO
1608636	YES	ED68932700000000	B003	34	C	4	NO
1030219001000	YES	ED68932700000000	B003	35	C	5	NO
1310215001000	YES	ED68932700000000	B003	36	C	6	NO

Rack [ED68932700000000 / B003 / /]

List Racks

Delete current Rack information   Send Rack to LIS   Exit

Delete current Rack information

It's possible to delete rack sample data as also rack identification data.

Can be useful in case a **RFID tag is damaged**, avoiding this way **unnecessary space being** used in the database.

Send Rack to LIS

This button makes the status of **SENT_LIS to "NO"** of all rack position, **forcing the system to send it again** to

LIS.

5.5.4. Delete all samples

Delete all samples

Here, all database information about samples can be deleted.
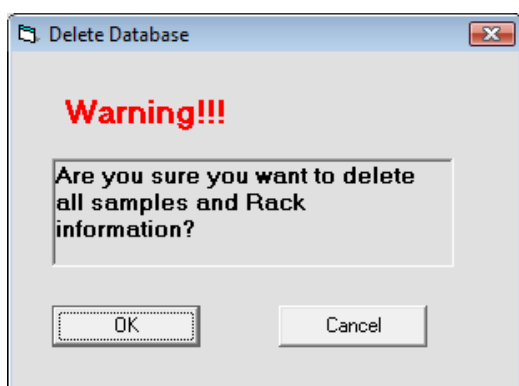
Deleted information:

- Sample information. **Every rack will be empty**.

- Worklists Information. All **temporary Query responses** will be deleted.

Information not deleted:

- Rack information like rack name and rack type are kept.

- Storage types

- Configurations e calibrations.

6. Rack identification

The rack identification can be changed clicking in its name.

Click here to change rack name
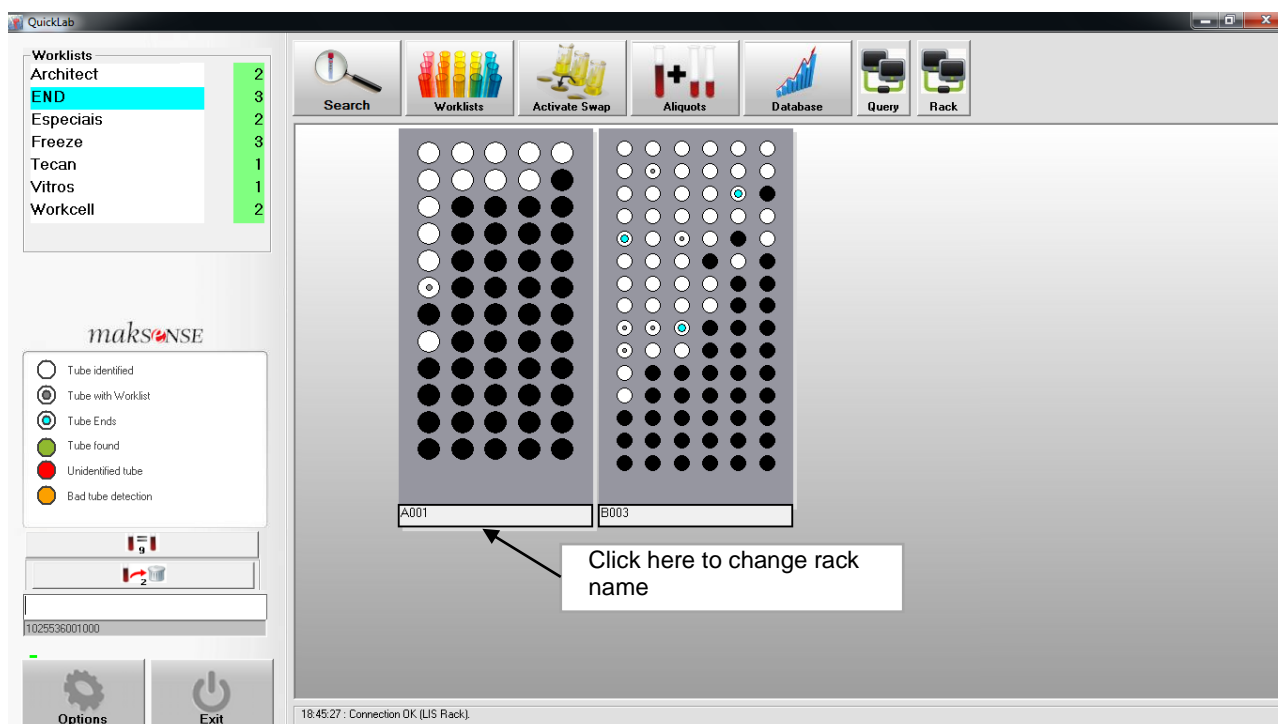
Since software **version 6.1**, it is possible to store and send more information with the rack.

Besides information about the location of tubes, is possible to send the name of the rack, Storage type, type of rack and name of the driver who transported her.

Changing Rack identification data:

Rack name

Storage Type
(1 week, 3 Months, etc...)

To define storage types (page 32)

Rack type (see next page)

Driver name
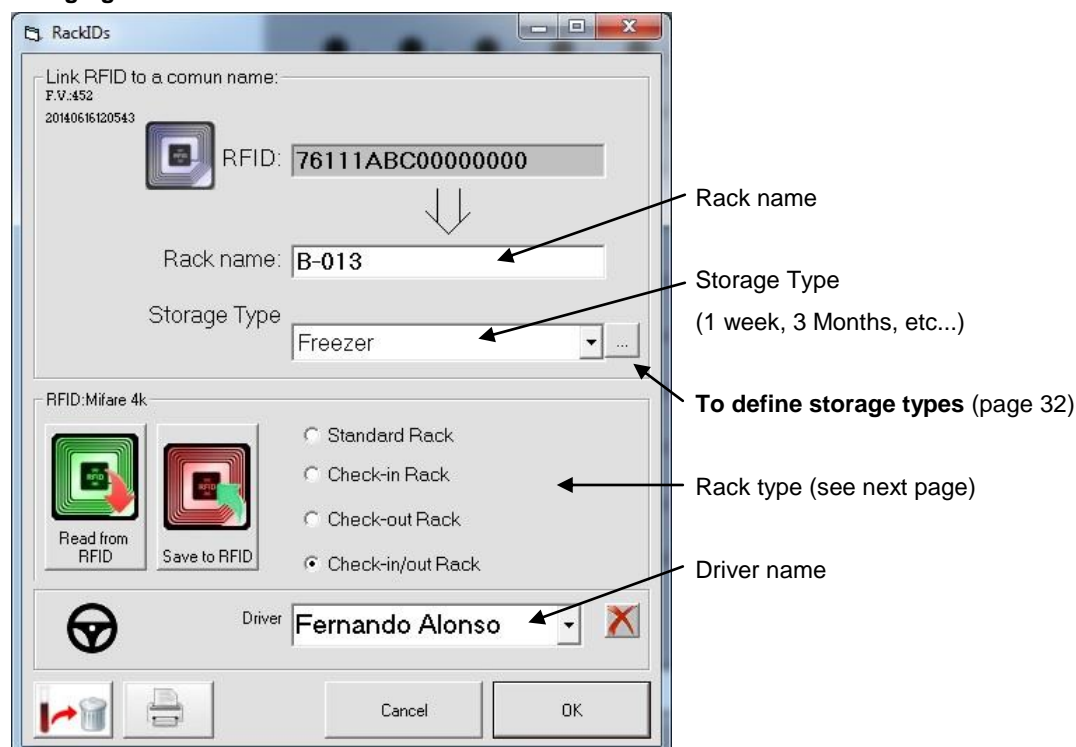
6.1. Rack type

The rack type can be used to **save rack information on the RFID tag**. When saving this information on RFID tag, **allows that rack to be read in another INDEXOR System** completely independent from the first one.

For this to work it's necessary to set the behavior of the Rack in each system.

This feature can be used to make the registration of tubes coming from other blood collection stations.

If each blood collection station has its own INDEXOR system the racks should be set as **Check-out racks**, but should be set as **check-in rack** in the **main Laboratory**.

So, **before taking the rack out** in a collection station to be carried out, the windows for Rack identification should be opened and clicked on **"SAVE to RFID" button**.

After that in the central Laboratory, inserting the rack in an INDEXOR unit, automatically will open a window to confirm reading the data on RFID tag.

If during the read, **a missing tube is detected**, a report will be generated in order to be **checked and printed** if needed.

Selecting the rack type:
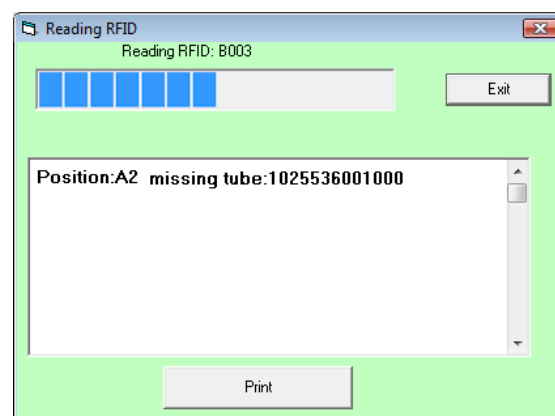
 - Standard rack

In this case Read/Write on RFID tag it's not allowed.

 - Check-in Rack

In this type of rack, every time the rack is inserted on INDEXOR unit, the RFID tag is read to check if the **data is newer** than the last read. If it's true, a new window will pop up to confirm the **read from the tag**.

This rack can be used for **entering tubes from another INDEXOR System** for example from a blood collection station or from another point in the Laboratory.

 - Check-out Rack

In Check-out type, the RFID is never read, **just writing to RFID** tag is allowed.

This functionality is useful in a **collection station** to save sample data to RFID tag **before being carried** to Central Laboratory. Save sample data opening Rack information screen and Click **"Save to RFID".**

 - Check-in/out Rack

In this case both functions are allowed and work as explained above.

6.2. Storage types

In case there is more than one storage location or type, for example "**Freezer**", it's possible to link a rack with this kind of information.

From this point, every tube in these racks will be linked to this storage type.

To define storage types click here.

In this window create a storage type.

Allows the creation of 10 storage types.

7. QuickLab software options

Opening **QuickLab** software:
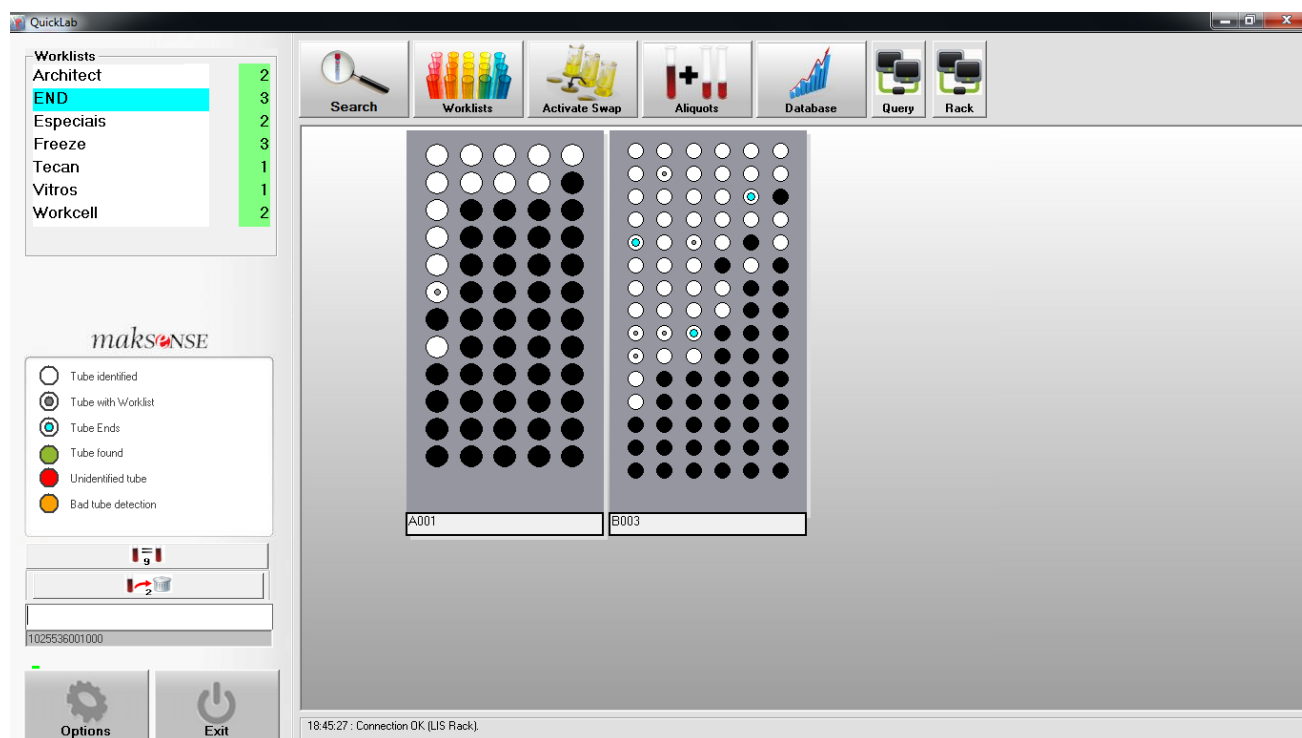
Accessing options screen

7.1. Settings
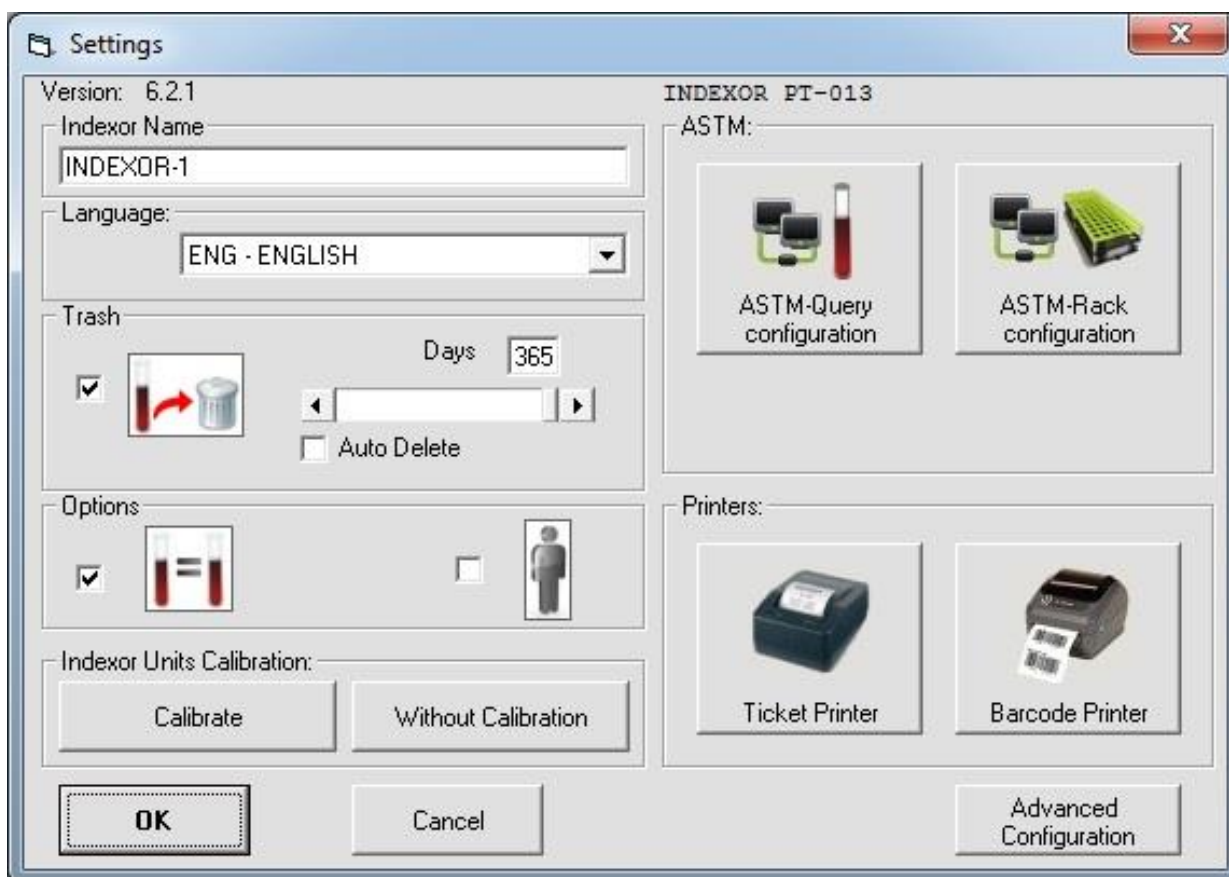
In this menu you can setup the following options:

1. **Indexor Name:**

    Give a name to the INDEXOR system.

2. **Language:**

    - **Language –** Choose the language. If changed, application must be restarted in order changes to take effect.

3. **Trash:**

    By selecting this option, will be displayed in the main menu, the following icon:

    This icon represents the number of tubes out of date, therefore allowing the identification of these tubes in the racks, and subsequently elimination.

4. **Options:**

    - **Aliquots -** Selecting this option, will display in the main menu a shortcut to this function (see section 5.3 on page 22)

    -

    - **Name search -** By selecting this option, in the window **List of tubes to look for**, will appears a shortcut that will allowed you to make a search by patient's name.

5. **INDEXOR units Calibration:**
    - **Calibrate –** Calibrates sensor values. No rack should be on INDEXOR units. Should be done on the first installation of the equipment and every time the ambient light characteristics changes radically or if some kind of scratch is detected on the acrylic glass.
    - **Without calibration –** In this case no calibration value is calculated and the sensors are read without reflection compensation.

6. **ASTM**

Configuration of ASTM LIS connection (Laboratory information system)
    - **ASTM-Query Configuration:** see next page.
    - **ASTM-Rack Configuration:** see page 47.

7. **Printers:**
    - **Ticket Printer –** Selects a ticket printer installed on the computer and the printer parameters.
    - **Barcode Printer –** Selects a barcode printer installed on the computer and its parameters.

7.1.1. ASTM-Query configuration

LIS Host IP

LIS Host Port

INDEXOR system name

LIS Host name

The ASTM communication is always done in "Slave" mode.

ASTM:

> **OFF/TCPIP/Serial Port –** Communication type used to communicate with LIS system

> **Local identification –** Put here a name, for example INDEXOR1.

> **Host identification – LIS** Host name.

Timeouts:

> **Communication Timeout –** Maximum allowed time to wait for line by line communication.

> **Host Response Timeout –** INDEXOR waits for the response for the last *"Query"* this specific period of time**!**

Type:

> **Host query –** Every time a tube is placed, the System queries the LIS.

> **List Download –** All worklists are sent from LIS to Indexor..

Data:

> **Update Query every –** Time for updating a query. Means that after "x" minutes another "query" is done to update the worklists of each tube. If "x" is set to zero, then it's constantly querying the LIS for every tube.

> **Remember last Queries for –** Number of days to remember last queries for each tube.

7.1.2. Ticket Printer
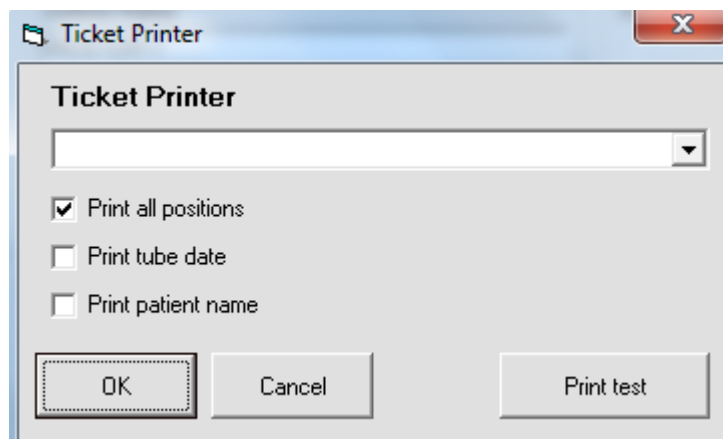
Selects the ticket printer and enables to print tickets with the following data:

-   Positions of all the tubes found in all the modules;
-   Tube date;
-   Patient name.

7.1.3. Barcode Printer
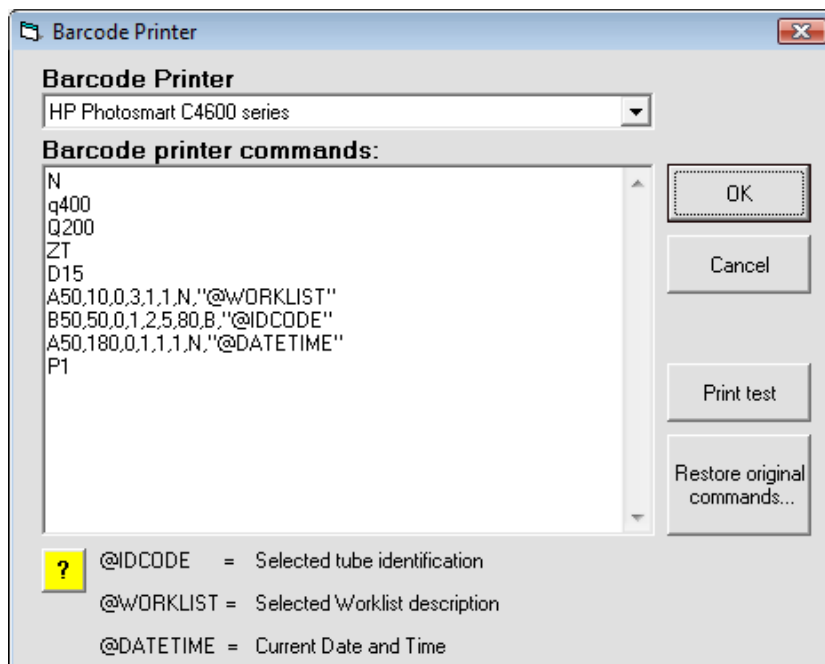
Commands

By default the command window includes several **EPL commands** defined for a **Zebra Printer.**

These commands can be changed for any kind of printer.

In case a restore is needed for the default commands, the button **"Restore original commands…"** can be used.

There are **three variables** that can be included in commands. These variables are replaced by **QuickLab** software before being printed.

@IDCODE – Tube identification

@WORKLIST – Worklist name if exist. This is the worklist name selected from the Worklists screen.

@DATETIME – Current date and time

Barcode type – The default barcode type is CODE 128. The barcode type can changed to other available in the next page list.

Please check the button   **?**   for a complete list.

Print test – Prints a sample label
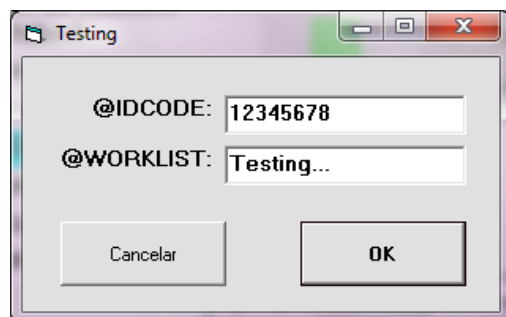
?   **Help button**

This window includes a page from **Zebra printer manual**.

The next list includes the **possible barcodes available** that can be used in the following **EPL command.**

Command: B50,50,0,1,2,5,80,B,"@IDCODE"

Barcode type   Legend

Bar Code   EPL Commands

Description Use this command to print standard bar codes.

Syntax Bp_1,p_2,p_3,p_4,p_5,p_6,p_7,p_8,"DATA"

Table 1 • Bar Codes

Description	P4 Value	P5 Value	P6 Value
Code 39 std. or extended	3	1-10	Y
Code 39 with check digit	3C	1-10	N
Code 93	9	1-10	N
Code 128 UCC Serial Shipping Container Code	0	1-10	N
Code 128 auto A, B, C modes	1	1-10	N
Code 128 mode A	1A	1-10	N
Code 128 mode B	1B	1-10	N
Code 128 mode C	1C	1-10	N
Code 128 with Deutsche Post check digit	1D	2-10	N
Codabar	K	1-10	Y
EAN8	E80	2-4	N
EAN8 2 digit add-on	E82	2-4	N
EAN8 5 digit add-on	E85	2-4	N
EAN13	E30	2-4	N
EAN13 2 digit add-on	E32	2-4	N
EAN13 5 digit add-on	E35	2-4	N
German Post Code	2G	3-4	N
Interleaved 2 of 5	2	1-10	Y
Interleaved 2 of 5 with mod 10 check digit	2C	1-10	Y
Interleaved 2 of 5 with human readable check digit	2D	1-10	Y
Postnet 5, 9, 11 & 13 digit	P	—	N
Planet 11 & 13 digit	PL	—	N
Japanese Postnet	J	—	—
UCC/EAN 128	1E	1-10	N
UPC A	UA0	2-4	N
UPC A 2 digit add-on	UA2	2-4	N
UPC A 5 digit add-on	UA5	2-4	N
UPC E	UE0	2-4	N
UPC E 2 digit add-on	UE2	2-4	N
UPC E 5 digit add-on	UE5	2-4	N
UPC Interleaved 2 of 5	2U	1-10	Y
Plessey (MSI-1) with mod. 10 check digit	L	—	—
MSI-3 with mod. 10 check digit	M	—	—

Parameters	Details
p_1 = Horizontal start position	Horizontal start position (X) in dots.
p_2 = Vertical start position	Vertical start position (Y) in dots.
p_3 = Rotation	*Accepted Values:* 0 = normal (no rotation) 1 = 90 degrees 2 = 180 degrees 3 = 270 degrees
p_4 = Bar Code selection.	See Table 1, *Bar Codes* on page 51 for more information.
p_5 = Narrow bar width	Narrow bar width in dots. See Table 1, *Bar Codes* on page 51 for more information.
p_6 = Wide bar width	Wide bar width in dots. *Accepted Values:* 2-30 See Table 1, *Bar Codes* on page 51 for more information.
p_7 = Bar code height	Bar code height in dots.
p_8 = Print human readable code	*Accepted Values:* B = yes N = no
DATA = Fixed data field	The data in this field must comply with the selected bar code's specified format. The backslash (\) character designates the following character is a literal and will encode into the data field. Refer to the following examples:

To Print	Enter into data field
"	\"
"Company"	\"Company\"
\	\\
\code\	\\code\\

7.2. Advanced configuration

In the window **Settings**, in **Advanced Configuration**, you can do the following settings:
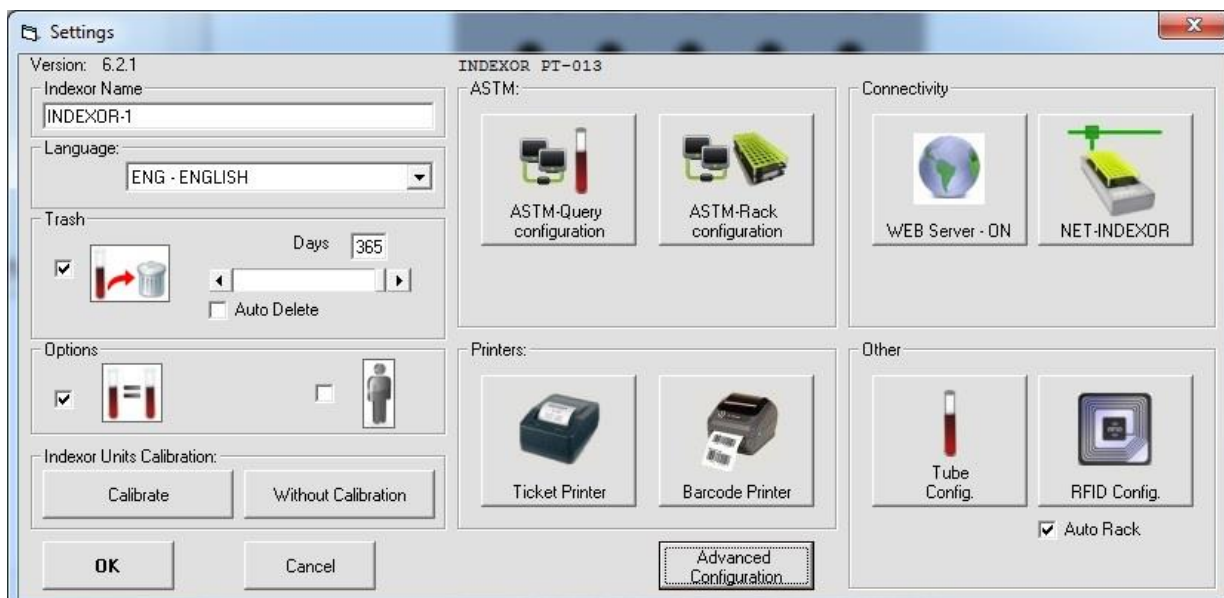
1. Connectivity:
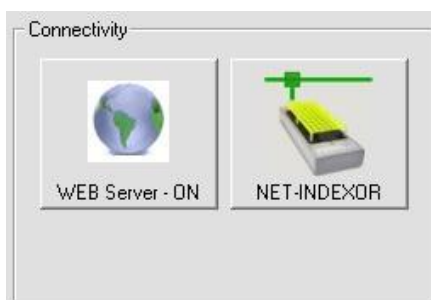
- **WEB Server-ON :** Allows to use web tube search. See page 12.

- **NET-INDEXOR:** Allows the use of multiple networked Indexor Systems. See page 50.

2.   Other:
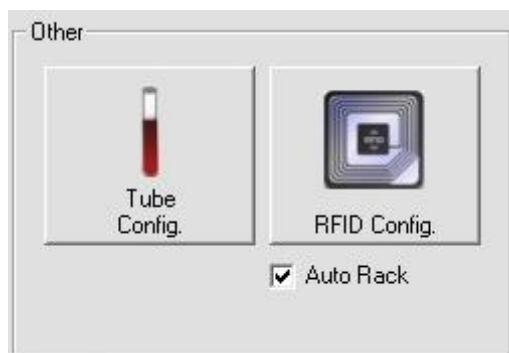
- TUBO CONFIG.

This option allows set the timeouts for the tubes and the sensibility in the detection of tubes in the bases.
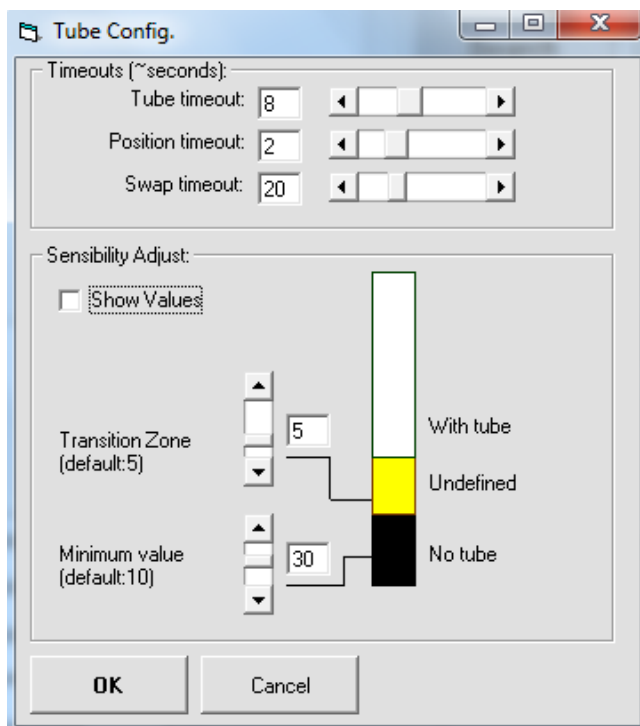
a)   **Timeouts (~seconds):**

-   **Tube timeout -** Maximum allowed time between reading a tube in the barcode reader and put it in a rack over an INDEXOR unit.

-   **Position timeout -** Maximum allowed time between lifting a tube up and down again without losing its identification. This can be useful if a tube is lifted without intention.

-   **Swap timeout –** Time to disable tube swap function if no activity is detected. These values are in seconds but may vary depending on computer performance.

b)   **Sensibility adjust:**

The tube detection values are from 0 to 255. A tube is detected summing the next two variables:

-   **Minimum value –** The minimum value that starts a tube detection.
    If a tube it's not detected, this value should be lowered. The option "**Show values**" should also be turned on for easier adjustments.

-   **Transition zone –** Safety margin to avoid noise detection.

- RFID CONFIG.

If the checkbox "Auto Rack" is on, means that the system will recognize racks that have already been named in another Indexor system.

Two types of RFID tags are possible: **MIFARE and iCode**. Just **one at a time** it's possible to work with.

After changing in this window the type of RFID tag, that information **will be saved in the RFID reader EEPROM** at INDEXOR modules.

There is no problem in changing this option, **it's always possible to go back**!

If the choice is not the right one, the only problem is **not reading the Rack identification**. But restoring the right option, everything will start working again without information loss.

RFID

Select RFID type

| Mifare | Permits saving Rack information on RFID memory for Check-in/ Check-out functions with 4k memory tags |

| iCode | iCode RFID tags have less memory available and cannot be used for Check-in/ Check-out functions |

Exit
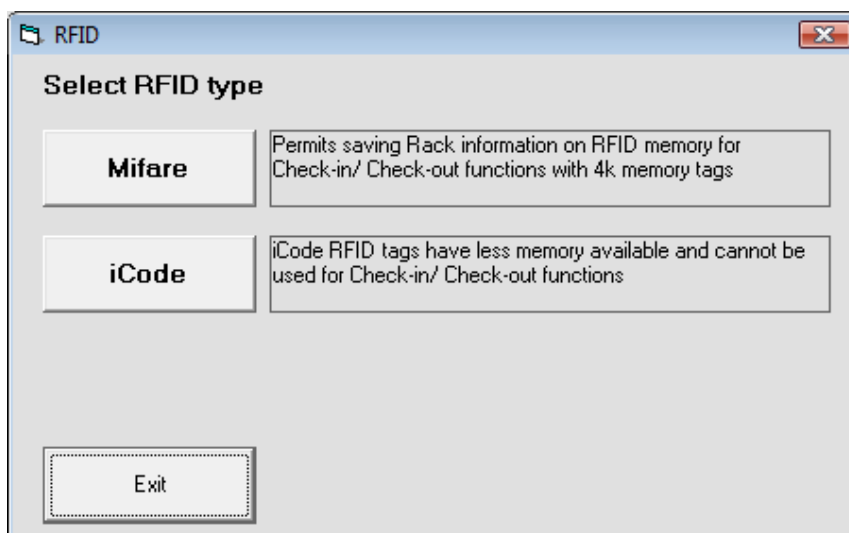
7.3. LIS connection

LIS connection status
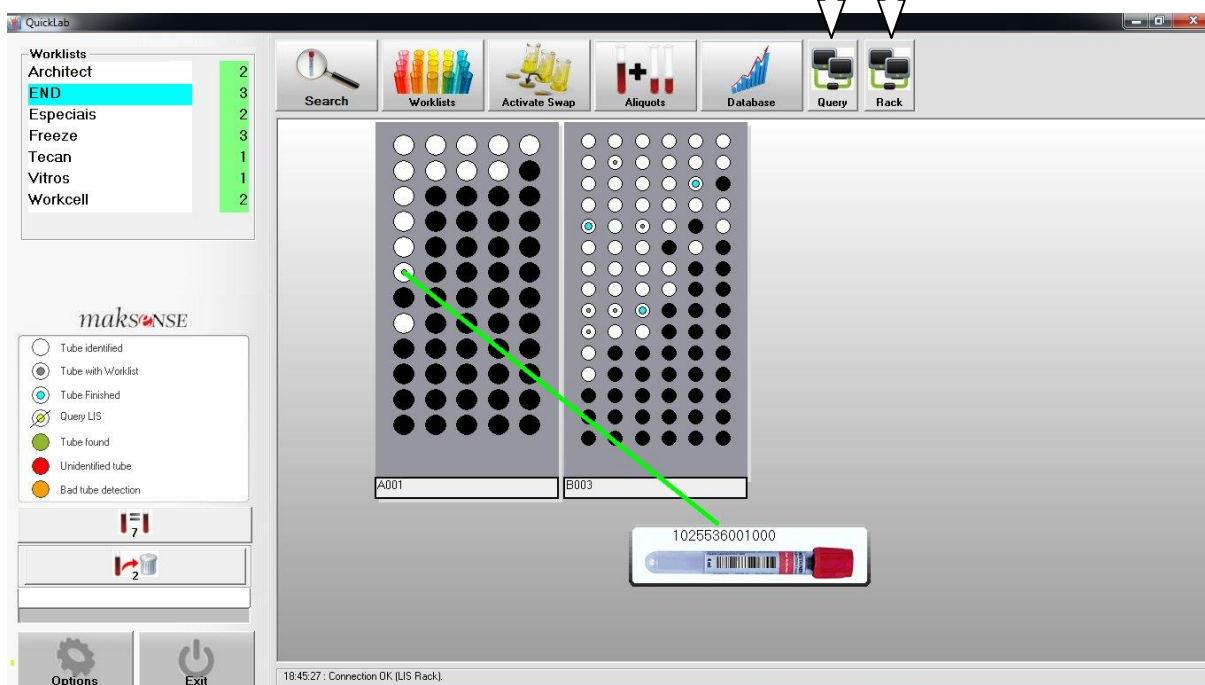
Possible status:

- Connection OK

TCP/IP or Serial connection is done.

Clicking on this button access to the communication window can be reached.

- **Connection failed**

No connection exists. The system will keep trying.

Clicking on this button access to the communication window can be reached.

- Connection disabled

The **"LIS"** configuration it's in **"OFF"** state.

7.4. LIS communication window

In this button, the **communication between LIS and INDEXOR** can be checked.

Communication Summary   ASTM communication

Error window

Communication Log:

In this window the communication between LIS and INDEXOR is shown. Just the last pages are shown.

Update Log:

Here is a list of communication summary to easily check the data. Just last pages are available.

In the error window, errors are logged.
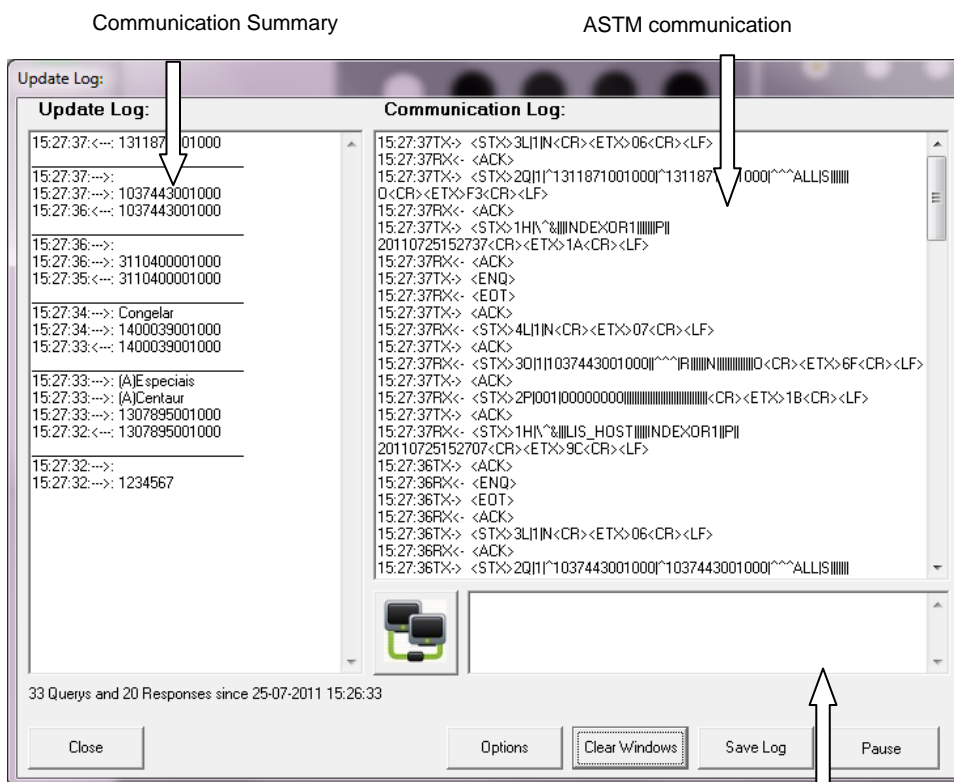
Options	**-** Immediate access to the Setup window **"LIS-QUERY"**
Clear Windows	**-** Clears the communication windows to easily check handshake.
Save Log	**-** Saves to file the three log windows. They are saved in the current directory of **QuickLab** with the following names: **ASTM-Date-time.TXT, LIST-Date-time.TXT , ERROR-Date-time.TXT**
Pause	**-** Stops the communication to easily check log windows.

ASTM Protocol

***"Query"* by INDEXOR System:**

```
1H|\^&||||INDEXOR1|||||HOST||P||20090901085909
2Q|1|^1056300001000|^1056300001000|^^^ALL|S|||||||O
3L|1|N
```

INDEXOR1	– INDEXOR system Identification
HOST	– LIS Identification
20090901085909	– Date and time
1056300001000	– Sample Identification

Response by LIS:

```
1H|\^&|||HOST|||||INDEXOR1||P|1|
2P|1|11054671||||John Maya||1945/12/20|||||||||||||||||||||||||||||||
3O|1|1056300001000||^^^Workcell\^^^Vitros ECI|R||||||N|||||||||||||||O
4O|2|1056300001000||^^^Freeze|R||||||N|||||||||||||||O
5L|1|N
```

11054671 – Patient identification (Optional)
John Maya – Patient Name (Optional)
1945/12/20 – Patient birthDate (Optional)

1056300001000 – Sample Identification
^^^Workcell – Worklist
^^^Vitros ECI – Worklist
^^^Freeze – Worklist
R = Routine – **Normal Teste,**
     As soon as possible – **Urgent Test**
     Callback – **Repeat a test**

A = Add   - Add worklist

  New   - New worklist

  Cancel   - Cancel worklist

Remarks:

- If a worklist begins with the character "!", is considered a priority list. Becomes marked in orange and appears before the other worklists.

- Between each line must have an "ACK".

Example

"*Query*" from QuickLab **(**ID=101273001000**):**

```
TX->   <ENQ>
RX<-   <ACK>
TX->   <STX>1H|\^&||||INDEXOR1||||||LIS_HOST||P||20110330180334<CR><ETX>91<CR><LF>
RX<-   <ACK>
TX->   <STX>2Q|1|^1012732001000|^1012732001000|^^^ALL|S|||||||O<CR><ETX>E7<CR><LF>
RX<-   <ACK>
TX->   <STX>3L|1|N<CR><ETX>06<CR><LF>
RX<-   <ACK>
TX->   <EOT>
```

Response to "*Query*" from LIS to QuickLab (Worklists: Architect, Freeze, Vitros ECI):

```
RX<-   <ENQ>
TX->   <ACK>
RX<-   <STX>1H|\^&|||LIS_HOST|||||INDEXOR1||P||20110330180530<CR><ETX>8F<CR><LF>
TX->   <ACK>
RX<-   <STX>2P|001|00000000|||||||||||||||||||||||||||||||||<CR><ETX>1B<CR><LF>
TX->   <ACK>
RX<-
<STX>3O|1|1012732001000||^^^Architect|R||||||N||||||||||||||||O<CR><ETX>00<CR><LF>
TX->   <ACK>
RX<-   <STX>4O|2|1012732001000||^^^Freeze|R||||||N|||||||||||||||O<CR><ETX>CC<CR><LF>
TX->   <ACK>
RX<-   <STX>5O|3|1012732001000||^^^Vitros
ECI|R||||||N|||||||||||||||O<CR><ETX>E5<CR><LF>
TX->   <ACK>
RX<-   <STX>6L|1|N<CR><ETX>09<CR><LF>
TX->   <ACK>
RX<-   <EOT>
```

7.5. ASTM-Rack configuration:

Important: A different channel must be used in **ASTM-QUERY** and **ASTM-RACK** communication. This means that a different IP or port must be set in the configuration screen.

Example:

QUERY configuration:	IP Host/**Port**=10.1.160.3: **50000**
RACK configuration:	IP Host/**Port**=10.1.160.3: **50001**

Or

QUERY configuration:	IP Host/**Port**=10.1.160.3: **50000**
RACK configuration:	IP Host/**Port**=10.1.160.4: **50000**

LIS host IP   LIS host Port

LIS Rack Configuration

LIS interface:
- OFF
- Tcpip — Host: 10.1.160.3   Port: 50001
- Serial Port: 1   19200

Local Identification: INDEXOR1 ← INDEXOR System name
Host Identification: HOST ← LIS host name

Timeouts:
Communication Timeout: 5 seconds

Data update:
Check updates every: 0 seconds

OK   Cancelar   Resend Rack information

The ASTM communication is always done in "Slave" mode.

ASTM:

OFF/TCPIP/Serial Port – Communication type used to communicate with LIS system

Local identification – Put here a name, for example INDEXOR1.

Host identification – LIS Host name.

Timeouts:

Communication Timeout – Maximum allowed time to wait for line by line communication.

Data update:

Check updates every - After "x" seconds the database it's **checked** to see if any change happens in any rack position. If "x" is set to zero then every change is **sent immediately to LIS**.

Resend Rack information:

Forces all rack information to be sent to **LIS again.**

LIS communication window

In this button, the **communication between LIS and INDEXOR** can be checked for Rack communication.

The first time, that is used the communication with the LIS, all the racks with their respective positions are sent even if they are empty.

After that, only are sent the alterations of positions of the tubes in the racks.
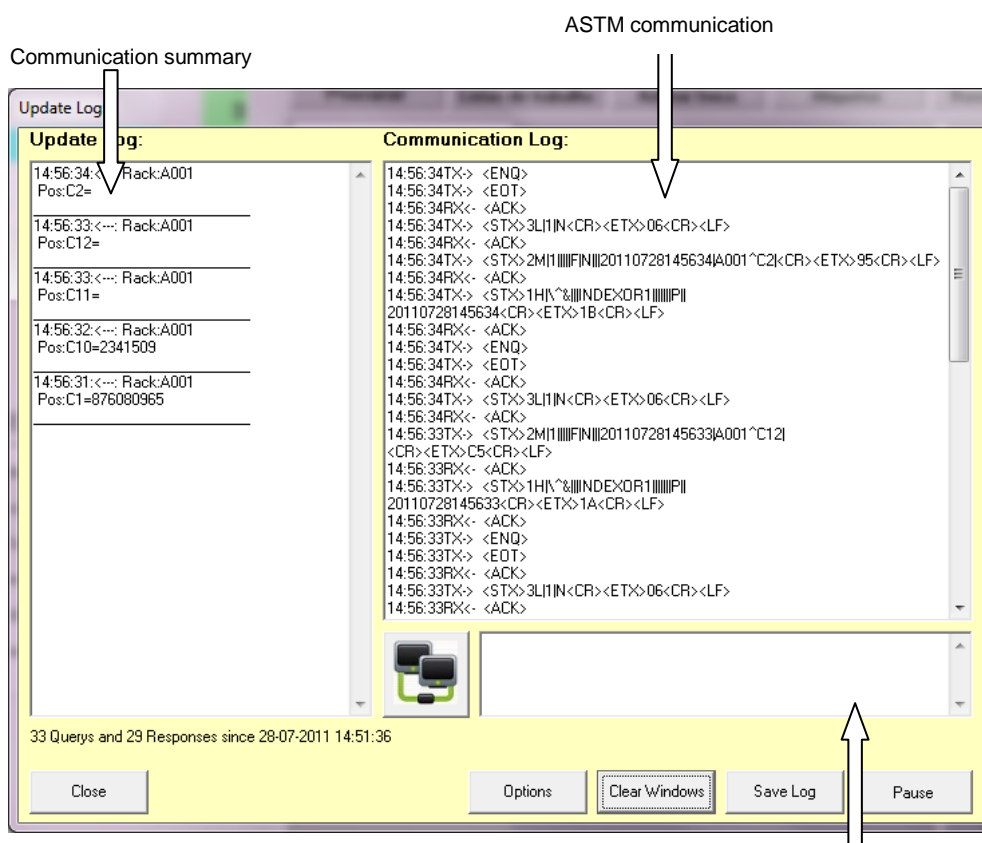
ASTM communication

Communication summary

Error window

Communication Log:

In this window the communication between LIS and INDEXOR is shown. Just the last pages are shown.

Update Log:

Here is a list of communication summary to easily check the data. Just last pages are available.

In the error window, errors are logged.

Options	- Immediate access to the Setup window **LIS-RACK**
Clear Windows	- Clears the communication windows to easily check handshake.
Save Log	- Saves to file the three log windows. They are saved in the current directory of **QuickLab** with the following names: **ASTM-Date-time.TXT, LIST-Date-time.TXT , ERROR-Date-time.TXT**
Pause	- Stops the communication to easily check log windows

Sending Rack information to LIS

(Manufacturer Record)

1H|\^&||||INDEXOR1|||||HOST||P||20101105091345

2M|1|I||1056300001000|1056300001000|F|N|FERNANDO ALONSO|BIOQ|20101105091345|X001^B12|

3L|1|N

```
INDEXOR1              - INDEXOR System Identification
HOST                  - Central Host(LIS) Identification
20090901085909        - Date and time
1056300001000         - Sample identification
1056300001000         - Identification of the tube/sample to permanently eliminate from
LIS. (Optional)
```
Note: Should only be sent one of the situations (green or red)

```
FERNANDO ALONSO          - Driver (Opcional)
X001^B12                 - Rack and tube position
BIOQ                     - Type of storage (Opcional) example:1 Week ou 3 Months
```

Example:

```
14:52:08TX->  <ENQ>
14:52:08RX<-  <ACK>
14:52:08TX->  <STX>1H|\^&|||INDEXOR1|||||||P||20110728145208<CR><ETX>18<CR><LF>
14:52:08RX<-  <ACK>
14:52:08TX->  <STX>2M|1||||12345||F|N|JOSE PINTO|BIOQ|20110728145208|A001^B12|
<CR><ETX>C1<CR><LF>

14:52:08RX<-  <ACK>
14:52:08TX->  <STX>3L|1|N<CR><ETX>06<CR><LF>
14:52:08RX<-  <ACK>
14:52:08TX->  <EOT>
```

7.6. NET-INDEXOR
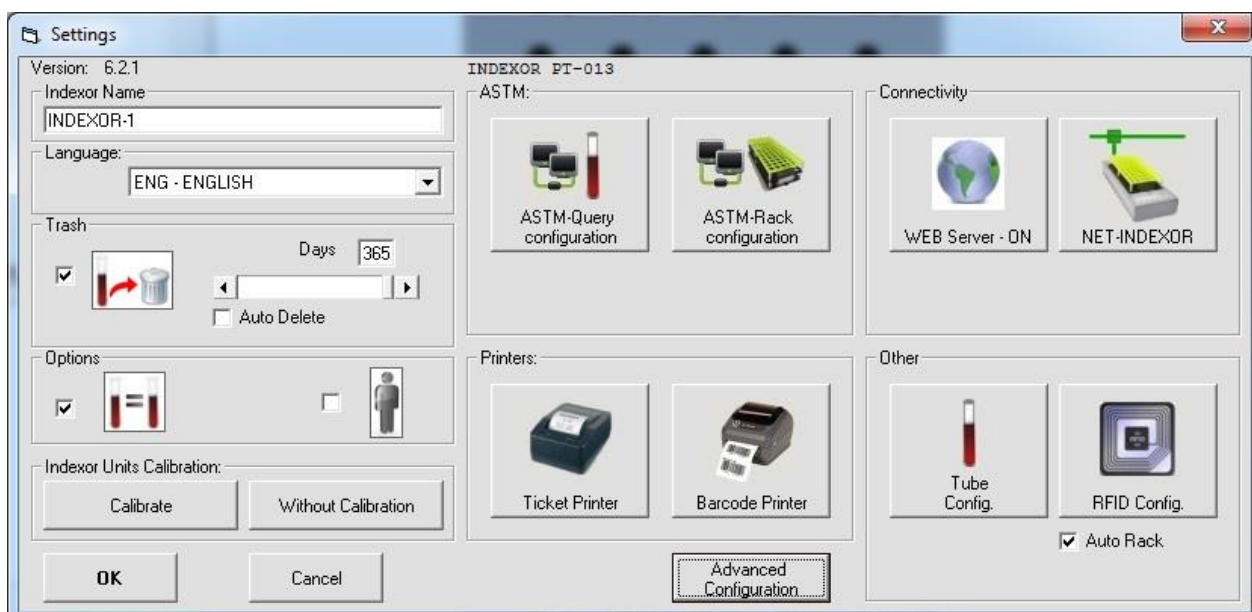
In the **Advanced Configuration** menu, you can set the use of Indexor Systems in network, which means that you can use multiple Indexors Systems, with different modules, all interconnected, thus updating all processed operations done in the different units. Therefore, you can work on all systems in an integrated manner.

For instance, you may have an Indexor System in one room where you perform certain tests, and another in the cooling zone where you make the collection of tubes and racks.

For that, you should select one **main Indexor System**, which will be the only one connected to the LIS, while the remaining Indexor Systems, which **may be up to 8**, will be the **secondary**.

The configuration is performed as follows:

1 - In Advanced Settings, select **NET-INDEXOR**;

2 - In this window, if you want to activate this option in network, you should enable the port by marking

On in the **port** button.
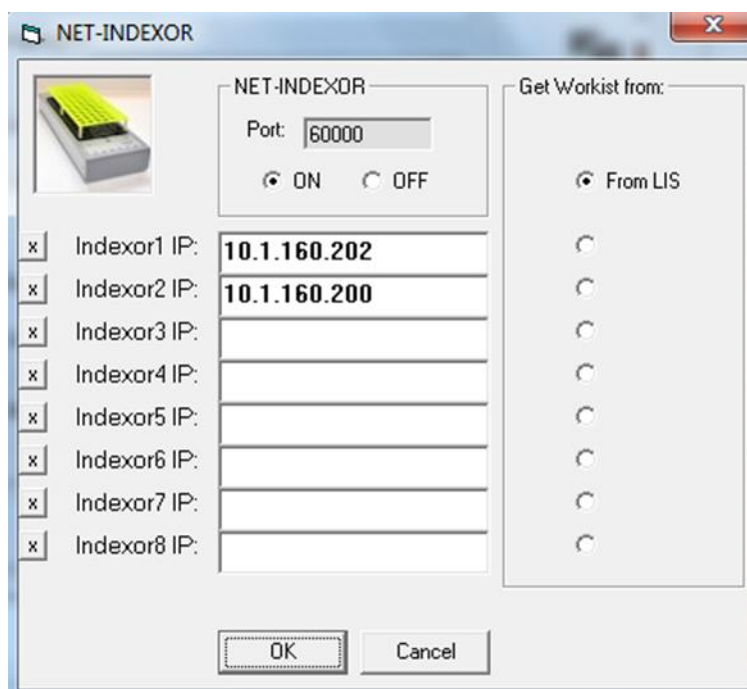
3- In this window and in every system you want to use in network, you should identify the IP of the others systems to be connects to the system in use. The system IP is indicated, as shown in the Figure.
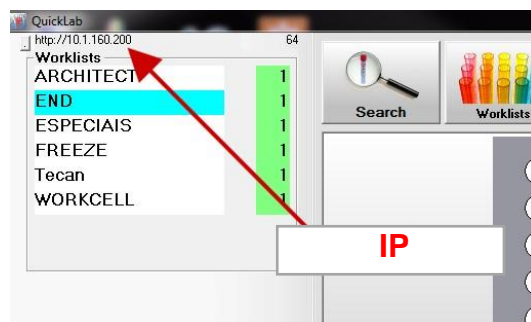
4- The main system,ie, the one connected to the LIS (see page 43), must have selected the option **Get Worklist from: From LIS.**

5 - In secondary systems, which should not be linked to the LIS (see page 43), you should indicate the IP of the remaining primary and secondary systems (**step 3**). In these systems, the IP of the Main System shall be select **Get Worklist from**. Thus, during the use, these systems will always be inquiring the main system about changes in the Worklists.
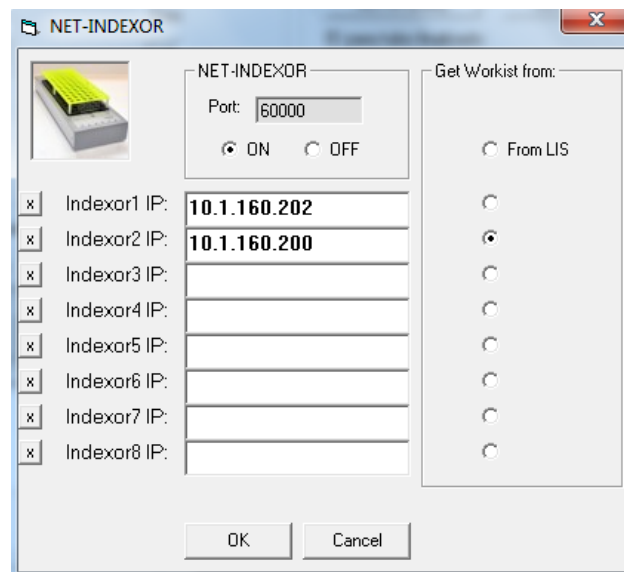
NOTES:

- Once you have made the connection of networked systems, will appear in the sidebar of the main menu, the name of INDEXOR Systems connected, as illustrated in the figure.

No communication   Communication ok
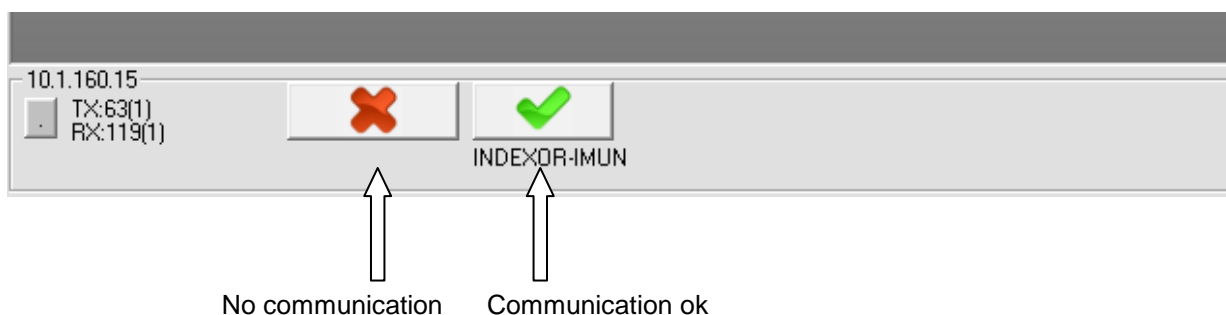
- If the button [ ] is red , it means that there was a communication error. That can be diagnosed by pressing this button and analyzing communication logs.

- If you need to relay all data to a system, you can press the button [x] on the IP of the system you want to update. This is useful, for example, when you install a new computer on an INDEXOR system that was already used.

8. File structure

The main folder of **QuickLab should be placed on**:
C:\QuickLab

- 📁 Backup
- 📁 dll
- 📁 Drivers
- 📁 Host_Simulator
- 📁 Manual
- 📁 Setup_Plus
- 📁 Web
- 🗒 Compact-Database.exe
- 📄 Config.ldb
- 📄 Config.mdb
- 🔧 ftd2xx.dll
- 📄 LastVersion.txt
- 🖼 MAKSENSE Sensing Solutions.jpg
- 🖼 MAKSENSE Small.jpg
- 📄 QuickData.ldb
- 📄 QuickData.mdb
- 📄 QuickLab.exe
- 📄 QuickLab.ldb
- 📄 QuickLab.mdb
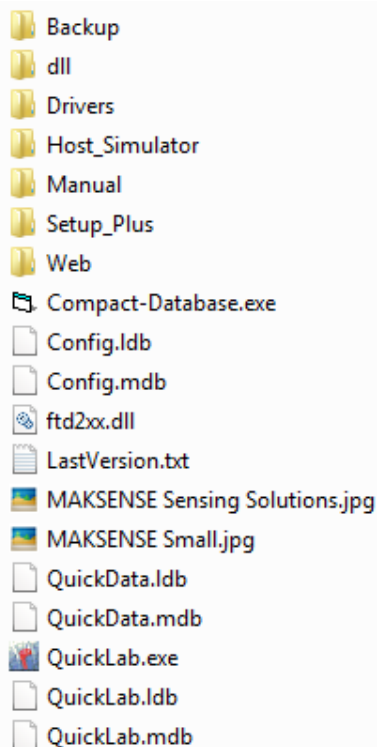
8.1. Auxiliary files

Compact-Database.exe – Can be used to **shrink database size**. This function deletes unused space inside the database and optimizes access to the data. Can be used anytime with the **QuickLab** application closed.
NOTE: Does not delete any kind of information!

Backup folder – Everytime that the **QuickLab** program is shut down are stored in the backup folder> "week day", the data from the occurred session. This sub-folder only contains the data regarding one day. The new data corresponding to equal week days are overlaid to the old data.

Drivers folder – If necessary, drivers for **iMaster USB device** and for **Zebra Printer** (optional) can be found.

Host_Simulador folder– Has the necessary files to **simulate a LIS host**.

- 📄 DataEdit.exe
- 📄 simulador.mdb
- 📄 simulador_Rack.mdb
- 📄 Simulator.exe
- 📄 Simulator_Rack.exe
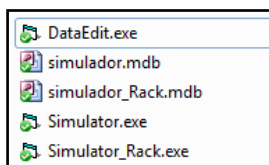
DataEdit.exe – Shows **worklists** for **LIS Simulator** and allows manually insert new worklists.
Simulator.exe- LIS Simulator for "**Querys**" (in menu File/Config check TCP/IP and port address)
Simulator_Rack.exe- LIS Simulator for Racks (in menu File/Config check TCP/IP and port address)

⚠ **The communication ports for Simulator.exe and Simulator_rack.exe must be different!**

8.2. Installing QuickLab Software in a new computer:

- Copy from included Pen Drive the folder **QuickLab** to the root of drive **C:**

- Inside the **SETUP** folder run file **Setup.exe** and follow the instructions. If any kind of warning or error occurs, choose ignore and continue.

- Depending on the **Operating system**, some **problems might happen** when installing the Software. In this case a manual installation procedure may be done. The instructions for this procedure are at folder **Setup\Register** in file **ReadME.txt.**

- To start the applications run the file **QuickLab.exe** in folder **C:\QuickLab**

NOTE:

You can do a new installation of the **Quicklab** software, and therefore install a new software update, without losing the data from the prior installation. When installing a new software version, the **Quicklab** folder is renamed with the designation **Quicklab+ "date (year:month:day:hr:min:sec)"** and the new instalation is assigned a folder with the name **Quicklab**. Thus, avoids the overlapping of folders and the consequent loss of data.

9. Barcode reader

9.1. Datalogic Magelan 1100i

To setup the Barcode reader the manufacturer manual is provided.

Datalogic Magelan 1100i

Configuration:

To setup the barcode reader, please read in sequence:

1 – The code in the **beginning of the page (START/END)**

2 - The **wanted value** in the corresponding page

3 – Finish with the reading of **START/END in the top of the page**

Click on the **top button** of the barcode reader   to allow read on the green spot.

Common options:

If the reader it's not transmitting to the computer, can be necessary to setting it up as USB keyboard.

Check pages:

- Page 33 : Keyboard interface - USB keyboard
- Page 55 : Keyboard Language
- Page 56 : Caps Lock State ON/OFF

Change Beep volume:

- Page 18 : Good Read Beep Volume

Reset to factory defaults:

- Page 3 – After this, disconnect Barcode reader and back on again. Making after this the additional setup needed!

9.2. Motorola DS9208

This barcode reader comes by default with Code128 and Code39 enabled.

Motorola DS9208

Setup:
To set or adjust the settings of the reader, please follow the following steps:

1- Open the application: $123\ Scan^2 - Scanner\ Configuration\ utility$

2- Select the option : "Clone/modify my connected scanner settings"
(If the scanner is not found, please wait some seconds and try again)
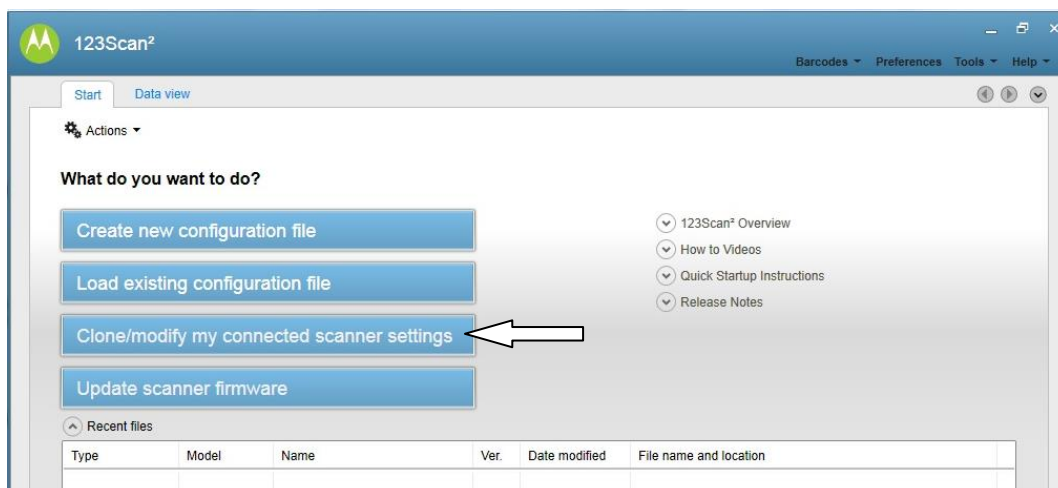
3- Choose "CLOSE" after the message :
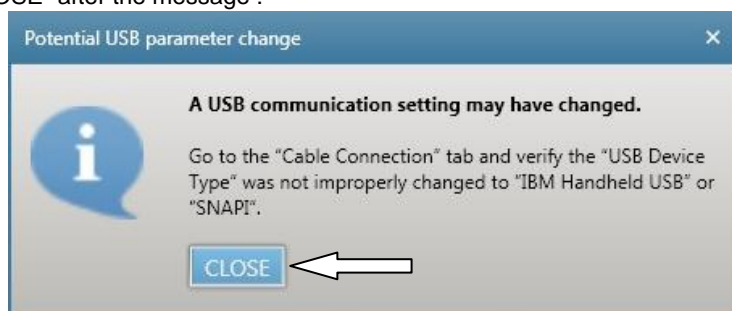
4-   In the configuration screen choose the options you want to change.
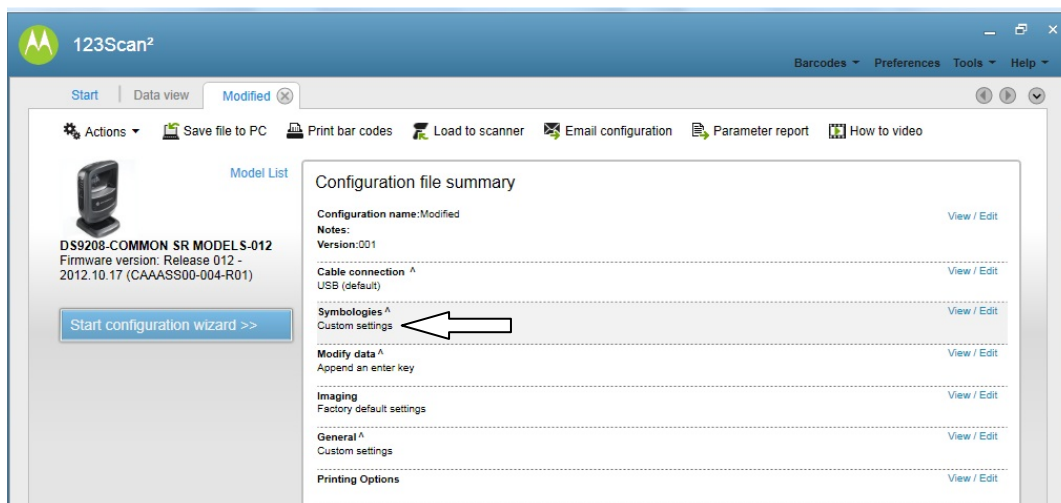
5-   The option "Symbologies" allows configuration of different barcode types
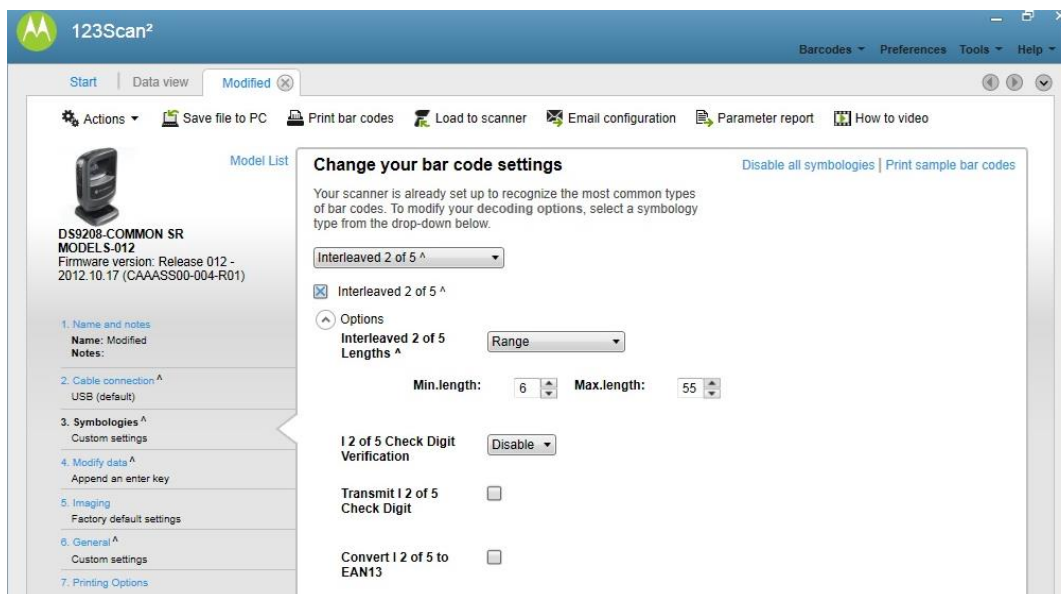
6-   In the "General" tab, it's possible to change other options like sound volume and tone.
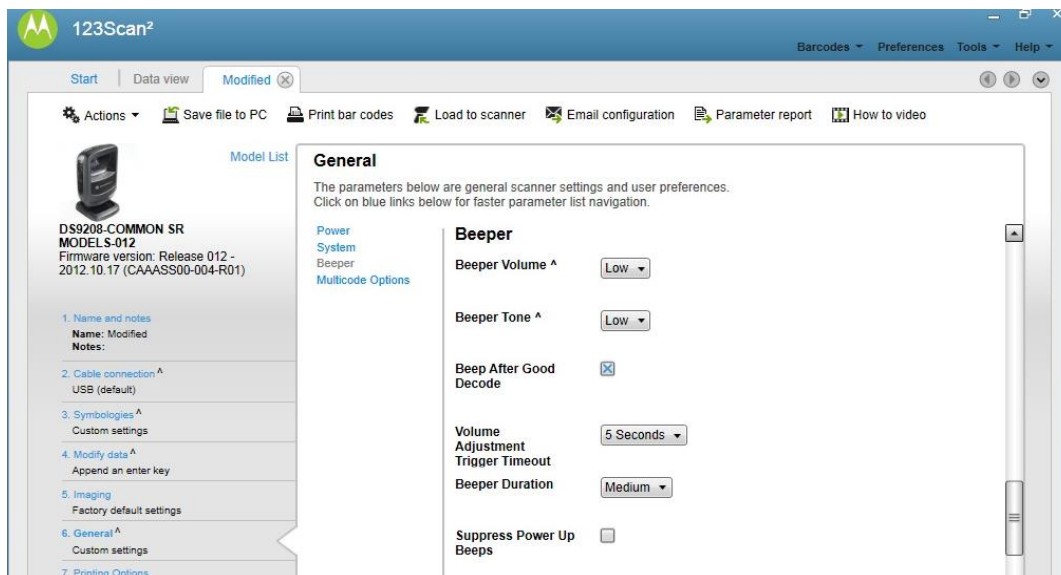
7- When all changes have been done, choose "DONE" (1) and then "LOAD TO SCANNER" (2)
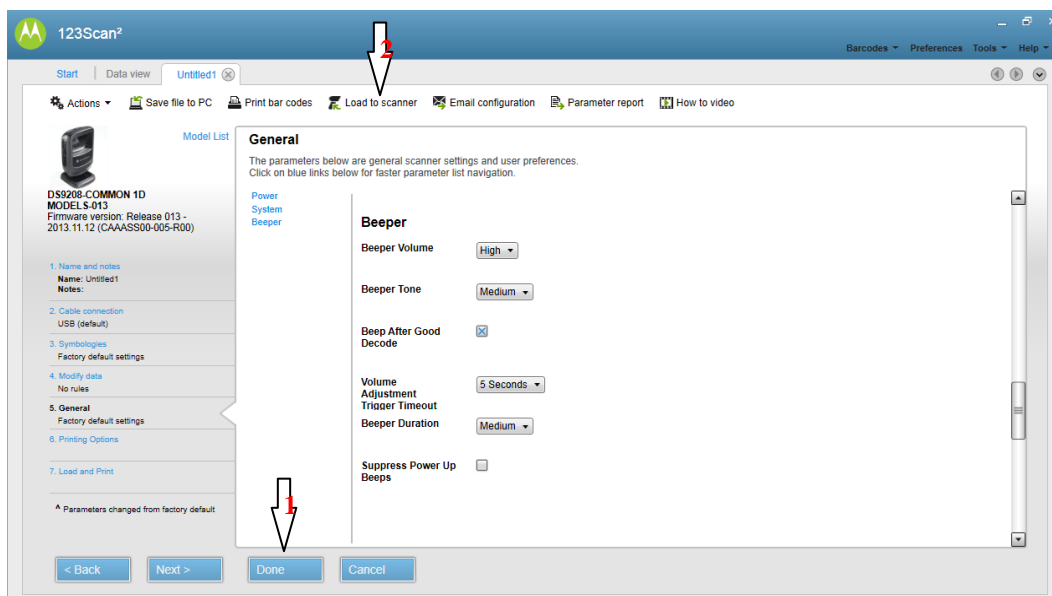
8- Click on the listed Scanner or "LOAD TO ALL SCANNERS"
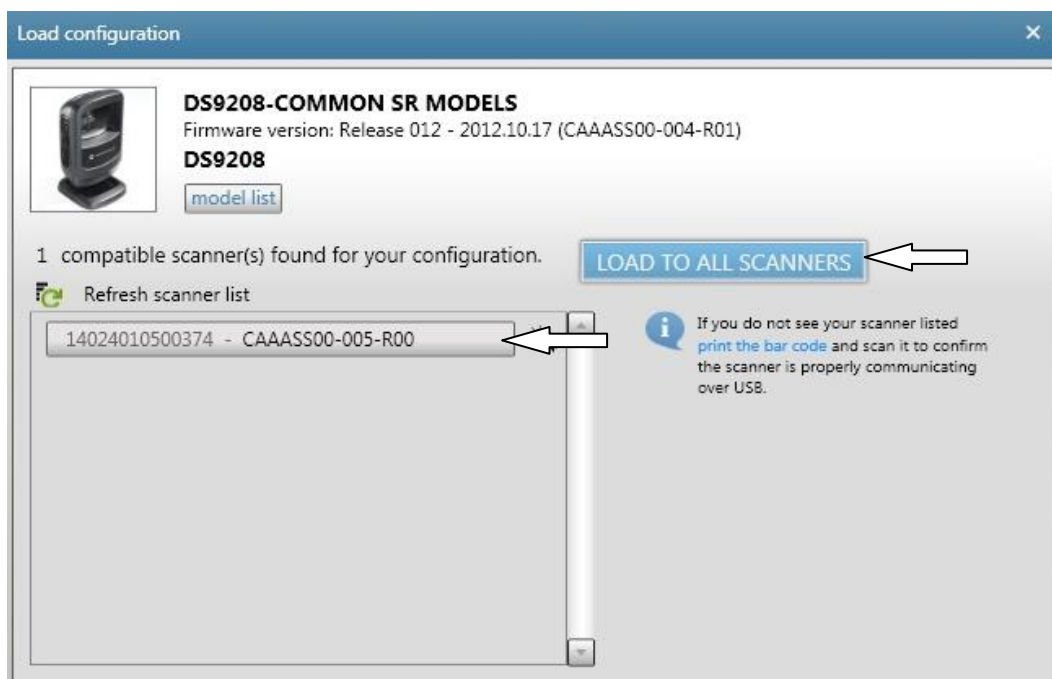
Obs: Wait a few seconds to allow scanner to get back to normal operation.

Quick Setup:

The following codes can be read by the Scanner to set it up according to the following specifications:

1- Code128 + Code 39
   (Default configuration)
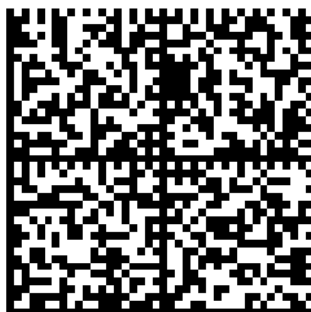
2- Interleaved 2 of 5

3- Code 128 + Code 39 + Interleaved 2 of 5

In case any communication problem occurs, then the following code will get the scanner back to USB communication.

123Scan² USB Communication

10. Computer

a) PTK IMPRESS D5

Intel Atom processor D525, Touch Screen 15"

Thermal printer included

CPU		Intel Atom processor D525 (1M Cache, 1.86 GHz)
Main board		Intel ICH8M
Storage		SATA HDD 2.5inch (max.2, Deafault 320 GB)
Memory		DDR3 SODIMM x 1 slot (Default 1GB up to 4 GB)
VGA		Intel Gen3.5+GFX Render Core (Pineview-M)
Printer		3'' thermal printer (220 mm/sec max, Auto cutter)
Display,		15'' TFT LCD with 5-wired resistive Touch Screen 1024x768 resolution
Internal I/O	Parallel	Internal 1 port (included in J2 connector)
	USB	3 Ports (reserved for Touch controller, SCR EMV card, MSR controller)
	RS-232	COM 4 reserved CDP
	Extension	Mini PCI PCIe
	VGA	Reserved for 2nd display (15 pin Header, Shared with external D-SUB port)
	LVDS	24 bit LVDS
External I/O	USB	Rear 2, side 0~2; depends on
	PS/2	Mouse 1/Keyboard 1
	RS-232	COM1~3 with +5/12V power on 9 pin
	LAN	GbE LAN
	Audio	Line-Out/Line-in/Mic
	C.D	Cash drawer port
	VGA	Reserved for 2nd display (Shared with internal 15 pin header)
Options	MSR	Comply with ISO 7811, Support 1&2&3 track
	SCR	EMV level one
	Speaker	Internal 50mm speaker (amplified, mono)
	Camera	Camera
	Dallas	Dallas I-button reader
	Customer display	VFD type (20x2)
	2nd LCD	12.1'' LCD or 15'' LCD(1024x768 resolution)
	2nd HDD	2nd HDD storage
	DVR	DVR Card: 4 channels support
	Wifi	Mini PCIe for wireless LAN
	VGA	Mini PCI for VGA Card
Qualification		CE, FCC, KC, CCC, CB
Power Supply		INPUT: 100-240 V 2.0-1.5A 50/60Hz OUTPUT: DC 24V 6A or DC 12V 5A
OS Support		Linux, Windows XP/XPE, WEPOS, POS Ready, Windows
Dimension (WxHxD)		405x351x345 (mm)

b) PTK VENTO 1.5 GHZ 1 Gb- HD160 -15" TOUCH

Intel Celeron MOBILE 1.5Ghz, 1Gb DDR2, Hd 160Gb, Touch Screen 15"

Thermal printer included

5 USB, 2 RS232C, 1 Ethernet GigaLan RJ45.

Main system:	
CPU:	Intel ® Pentium ® Celeron Mobile 1.5 GHz expandable to 2.0 GHz Mobile Pentium - FSB 800/533MHz
Memory:	1 x SO DIM DDR2 socket expandable to 2GB DDR2 533/667/800
Ports and connections:	
Serial Ports 2 x RS232C Ports (9-pin) port (COM1, 2,)	
3 x RS232C ports built reserved (TouchScreen-COM3)	
LAN:	1 x RJ-45 10/100/1000
1x 15-pin VGA supports Dual Display and Mirror Mode	
1x RJ11 for connection to the cash drawer	
PS / 2	2 x PS / 2 Keyboard and Mouse
USB:	5 x USB 2.0 (2 x back, 3 x front)
Audio:	1 x Mic in / 1 x Line-out / 1 x Line-in
Display and Graphics:	
Graphics:	On Board - Intel 82915GMCH
Display:	15 "TFT, 1024x768 Max Res
Touch Screen:	5-wire resistive - USB
Display adjustable (up to ~):	0 ° ~ 80 °
Mass:	
HDD:	1 HDD 2.5 "SATA
Power Supply:	
Internal ATX 120W, input range 100 ~ 240VAC @ 50 ~ 60Hz	
Other Functions:	
Audio:	ICH4 integrated audio / AC97 CODEC
Weight, Dimensions and Other:	
Weight:	9.7 Kg
Dimensions	360 (W) x 344 (D) x 351 (H) mm
Safety and EMC:	FCC, CE, ROHS
Temperature:	
Operating: 0 ° ~ 40 °	Storage: 0° ~ 60ºC
Humidity:	20% ~ 90%
Operating System:	
Windows 7	
Printing system	
> High performance CPU 32bit	
> Thermal-cut	
> Super-fast printing: 220mm / s	
> Seiko Mechanism - the best manufacturer of mechanisms for thermal printers.	
> Compatible TM88	

> Windows and OPOS Drivers	
Technology:	Direct Thermal
Print Sources:	
Sources:	14x28 (42 columns) / 12x24 (49 columns)
Dot Pitch / Density:	0.125 x0, 125 mm / 203.2 DPI
Source Type:	95 Alphanumeric / 128x35 Graphics
Bar Code:	EAN-8, EAN-13, CODE39, Code93, Code128, ITF, UPC-A, UPC-E, CODABAR
Maximum print width:	72mm, 576dot
Print Speed:	220mm / sec
Buffer:	4Kb
Paper:	
Paper Type:	Thermal Paper
Size:	79.5 mm x 83mm diameter roller
Thickness:	0.07 mm
Drivers:	Windows / OPOS
Emulations:	ESC / POS / TM88
Reliability: TPH:	100km
MCBF:	60,000,000 lines
Cutter:	1,000,000 cuts
Certifications:	CE, FCC, MIC, RoHS

11. Troubleshooting

This equipment has been designed to be reliable. However, if a problem should occur, follow the procedures suggested in this section. This section can help you determine the cause of the problem and how to resolve it.

Users should be familiar with these procedures.

During the operation of the system INDEXOR, many warning messages and / or error can be displayed. The list below contains the system messages and suggestions for their resolution.

Issue or message	Troubleshooting
"USB Device (iMAster) not responding" iMaster device has all lights turned off.	Check the connections. See if the energy cable is connected. Check the cable condition. In case the transformer is not providing the iMaster with energy power please contact the vendor
"Missing USB Device"	No USB connection between the iMaster device. You should check the USB connection between the computer and the iMaster. In case this issue persists you may need to install the software drivers.
The system is not detecting the tubes.	System has not been calibrated. Please calibrate the system.
Language does not change as indicated.	You did not restart the application after changing the language settings. Please restart the application (quit the software and open it again).
The tube rack does not fit in the INDEXOR model.	Each INDEXOR model (INDEXOR60A or INDEXOR90A) has its own model of tube rack. Please make sure that the tube rack you are trying to use matches the INDEXOR model you are using.
Tube signaled has unidentified. Red color in the tube identification legend.	Probably you have taken the tube from its place for a longer period than the one configured in timeouts – position timeout. Alternatively, you have changed the tube position without activating the option "Activate Swap". Please perform the tube scanning again.
Tube signaled as wrongly placed. Orange color in the tube identification legend.	In case of a persistent problem, the sensitivity should BE increased (by decreasing its value) in the advanced configuration panel. Important to calibrate units again.
The selected printed name does not exist.	The printer was not selected in the settings screen. Please select the correct printer.
"Timeout in ler_usb"	Communication with iMaster has been lost. Try with "retry" option, in case it's not possible, restart the application and disconnect the USB cable from iMaster. Reconnect it again and wait 5 seconds before restarting the application.
"Timeout in ler_usb_vector	Communication with iMaster has been lost. Try with "retry" option, in case it's not possible, restart the application and disconnect the USB cable from iMaster. Reconnect it again and wait 5 seconds before restarting the application.
Message Rack type: xxx non-existent	Problem in the database data, or a module with old firmware is being used.
The number of modules presented in the QuickLab panel is different from the actual number of modules.	A new module INDEXOR was added with the same address or one with an old firmware version. Please make sure that each INDEXOR module has a unique address.
"Uncalibrated Devices. Calibrate please!"	Please calibrate the system. Go to options screen and press calibrate.
The code scanner is not working.	Please consult the Scanner User Manual and configure it according to the specifications needed.

12. Safety Precautions

The INDEXOR System has been designed with the highest concern for safety. However, to ensure accident-free operation, be sure to follow these guidelines:

→ Avoid shaking INDEXOR System or placing it on an **unstable surface**.

→ Do not expose the INDEXOR System to **high temperatures**.

→ Do not expose the INDEXOR System direct **sunlight or too intense light**.

→ Do not expose the INDEXOR System to humidity, because it is an electrical appliance.

→ Avoid handling the system components with **wet hands**;

Warning: Avoid **looking directly to the LEDs l**amps inside the INDEXOR.

Maintenance

→ The INDEXOR System doesn't require special maintenance.

Warning: Don't try to perform maintenance to the System INDEXOR!
Do not disassemble, modify or repair the System INDEXOR.

Environmental Information

This symbol on the product indicates it is covered by Directive 2002/96/EC (Waste Electrical and Electronic Equipment). The crossed-out dustbin indicates that waste electrical and electronic equipment may not be disposed of with unsorted household waste and that it must be collected separately.

Disposal must be carried out in accordance with local environmental regulations for waste disposal.

For information about recovery and recycling treatment of this product, please contact the supplier of this equipment.

Important: A correct disposal of the equipment helps avoiding dangerous or detrimental action to human health and the environment.

13. Cleaning and disinfection

Cleaning INDEXOR units

Turn off the power supply before cleaning.

It can be cleaned with a **soft cloth slightly moistened with ethyl alcohol 70%.**

It can also be cleaned with **bleach diluted to 5%** but in this case **pass then a cloth slightly moistened with water**.

Avoid spilling liquids in order not to flood the electric circuits.

⚠️ **Caution:** Never spray or apply cleaners directly on the system. Never use acids or caustic chemicals to clean.

Cleaning Racks

Step 1:

- Using a detergent solution such as RBS with the 25th Type III water (40ml diluted in 2 liters of water). Alternatively detergent use with tap water

Or

- Use bleach diluted 5% concentrated. Dilute 100 ml of bleach in 2 liters of tap water.

Step 2:

- Emerge the Rack in the chosen solution for a maximum period of 5 minutes, followed by rinsing with tap water.

Step 3:

- The Rack can be dried in an oven at 50 ° C within 10 minutes.

14. Manufacturer's Declaration

Conformity with the European requirements

Applicable Directives

→ 2006/95/CE - Electrical equipment for use within certain voltage limits (LVD)

→ 2004/108/CE - Electromagnetic compatibility (EMC)

→ 1999/5/CE - Radio equipment and telecommunications terminal equipment (R&TEE)

→ 2002/95/CE - Restricting the use of certain dangerous substances in electrical and electronic equipment (RoHS)

→ 2002/96/CE - Waste of electrical and electronic equipment (WEEE)

Harmonized Standards

EMC

EN 61000-3-2 (2006) + A1 (2009) + A2 (2009);

EN 61000-3-3 (2008);

EN 55022 (2006) + A1 (2007);

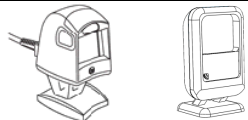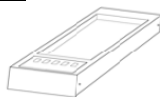EN 55024 (1998) + A1 (2001) + A2 (2003).

LVD

EN 60 950:2006 + A11:2009;

EN 50364:2001 (section 5.1.1).

R&TEE

EN 300 330-2;

EN 50364:2001 (section 5.1.1).

The INDEXOR System complies with the standards of Electromagnetic Compatibility (EMC) and Safety; however, iSens cannot assure that this product complies with these standards in case non iSens distributed cables or accessories are used.

15. Specifications

Components Description :	
1. Computer with touchscreen and ticket printer included (PTK Vento).	
2. - CCD Barcode Reader (Datalogic Magellan 1100i or Motorola DS9208)	
3. - QuickLab Software for hardware control and LIS communications.	
4. - iMaster for USB conversion and power supply to INDEXOR units.	
5. - INDEXOR 60/90 units for reading rack information.	

LIS connection :	
Ethernet 10/100/1000 Gb (RJ45) or serial communication (RS-232).	

Computer specification:	
Touch screen 15" (1024x768), Windows 7, Mobile 1.5GHz, 1Gb RAM, HD 160Gb	
5xUSB,2xPS/2, 2xRS232C, 1xEthernet GigLan RJ45	
Keyboard, mouse	
Thermic Ticket Printer with cut function. TM88 Compatible.	

Bar code specification:	
Barcode types:	UPC-A,UPC-E,EAN-13,EAN-8, Code 39, Code 32, Code 128, Interleaved 2 of 5, Codabar, Code 93, MSI/Plessey, Standard 2 of 5
2D Symbologies:	PDF417, Datamatrix, QrCode, MAxicode, Aztec
Maximum number of characters:	20 (Software restriction)

Sample Tubes allowed:	
75mm/100mm Tubes of 13/16 mm diameter.	

Rack types:	
60 Tubes/Rack for 16mm Tubes	
60 Tubes/Rack for 13mm Tubes	
90 Tubes/Rack for 13mm Tubes	
Rack Dimensions:	250(W) x105(D) x60(H) mm
Minimum Temperature :	-80ºC

INDEXOR Units:	
INDEXOR 60A :	for 60 tubes Racks (13 and 16 mm tubes)
INDEXOR 90A :	for 90 tubes Racks (13mm tubes)
Up to 16 INDEXOR units may be connected. Making possible to monitor up to 1440 (90x16) tubes at the same time.	

Consumables specification	
- Thermic paper Roll (79,5mm Wide x 83mm Diameter) Thikness:0,07mm	

Power :	
Computer:	100~240VAC @ 50~60Hz 120W
INDEXOR:	100~240V @ 50~60Hz 0.6A
- Barcode Reader:	100~240V @ 50~60Hz 0.35A
Safety/approval:	
Computer:	FCC, CE, ROHS
INDEXOR:	CE, ROHS
Barcode Reader:	FCC, CE, ROHS
Physical Measurements and weight	
Computer:	360(W)x344(D)x351(H) mm / 9,7 kg
Barcode Reader:	84(H) x 71(W) x 94 (D) mm / 198.5g
iMaster:	85(W)x135(D)x42(H) mm / 160 g
INDEXOR 60/90A:	130 (W)x375(D)x50 (H) mm / 1.3kg

Temperature and Humidity Specifications		
	Humidity	Temperatura
Computer:	20% ~ 90% /	0º ~40º (0º~60º Storage)
Barcode Reader:	5 ~ 95%	0º ~40º (-40º~70º Storage)
iMaster / INDEXOR 60/90A:	20 ~ 90%	0º ~40º (0~70º Storage)

Noise specifications
~25 dB(A)