

2013

Job Costing Manual 1.11

ZKT[®]ECO EUROPE
THE ADVANCED MULTIBIOMETRIC & RFID SOLUTIONS

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1.-Getting started

1.1 Fingerprint Placement

Recommended fingers: The index finger, middle finger or the ring finger; the thumb and little finger are not recommended (because they are usually clumsy on the fingerprint Collection screen).

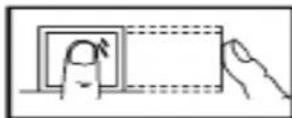
1. Proper finger placement:



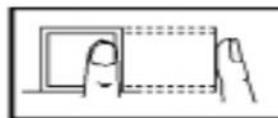
The finger is flat to the surface and centered in fingered guide.

2. Improper finger placement:

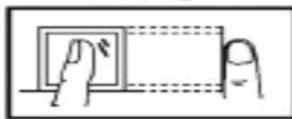
Not flat to the surface



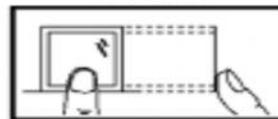
Off-center



Slanting



Off-center



Picture 1: Finger placement

Please enroll and verify your fingerprint by using the proper finger placement mode. We shall not be held accountable for any consequences arising out of the degradation in verification performance due to improper user operations. We shall reserve the right of final interpretation and revision of this document.

1.2 Instruction for Card Swipe

This device is supplied with an integrated non-contact RFID (125 MHz) card reader module. By offering multiple verification modes such as fingerprint, RF card and fingerprint + RF card verification, this device can accommodate diversified user needs. Swipe your card across the sensor area after the voice prompt and remove your card after the device has sensed it. For the swipe area, please see 2.2.3 Product appearance.

1.3 Precautions

Protect the device from exposure to direct sunlight or bright light, this greatly affects the fingerprint collection and leads to fingerprint verification failure. It is recommended to use the device under a temperature of 0–50°C so as to achieve the optimal performance. In the event of exposure of the device to the outdoors for long periods of time, it is recommended to adopt sunshade and heat dissipation facilities because excessively high or low temperature may slow down the device operation and result in high false rejection rate (FRR). When installing the device, please connect the power cable after connecting other cables. If the device does not operate properly, be sure to shut down the power supply before performing necessary inspections. Note that any live-line working may cause damage to the device and the device damage arising out of live-line working falls beyond the scope of our normal warranty. For matters that are not covered in this document, please refer to related materials including the installation guide, access control software user manual.

2.- Introduction of Device

2.1 Overview of Device Functions

As an integrated fingerprint & access control device, our product can be connected with either an electronic lock or an access controller. This device features simple and flexible operations and supports the use of administrators. The screen displays will guide you through all the operations. It supports access control function for a security management and supports multiple communication modes.

2.2 Important Safeguards

2.2.1 Installation Location

Do not install terminal in areas which are exposed to bright sunlight or rain, as the fingerprint readers are not designed to work in those areas. Bright light will interfere with reading of the sensor and fingerprint readers are not waterproof or vandal proof. It is recommended to protect your fingerprint terminal with enclosure.

2.2.2 Use of Sensor

Do not abuse the fingerprint sensor by scratching the surface, contacting the sensor's surface with heat, pressing hard during placement of fingerprint for verification. Clean the sensor occasionally with cellophane tape to maintain the performance of the sensor.

2.2.3 Product Appearance

Front view:



Picture 2: S900 Front View

2.3 Using the Fingerprint Terminal

This chapter will guide on how to use the fingerprint terminal effectively. To get a good reading every time, initial fingerprint enrollment must be done properly. The fingerprint terminal provides 4 types of enrolment methods:

• Fingerprint enrolment

User enrolls his fingerprint template into a terminal and the template will be used for future verifications.

• Password enrolment

For user who has difficulty to enroll fingerprint due to poor fingerprint quality, enrolment of password is recommended. Password enrolment is also suitable for visitors and temporary workers.

• Fingerprint and password enrolment

Under this option, a user can enroll both fingerprint and password at the same time. The user can either use fingerprint or password to report attendance or to gain access.

• RFID card enrolment

User can enroll RFID Card.

2.4 Date / Time Adjustment

When first installing a fingerprint terminal, it is important to set the correct date and time. Follow the steps shown to access the Date/Time adjustment menu:

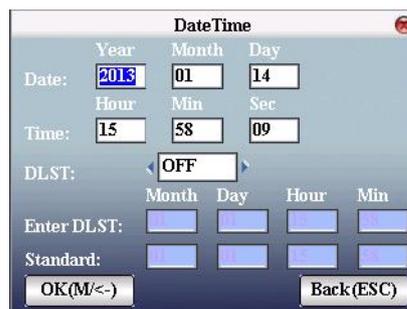
- You can insert inputs into the terminals through the keypad. It contains numbers from 0-9, an OK button, an ESC/Cancel button, a Scroll up/down button, a doorbell button and a Menu button.



Picture 3: Configuration Menu icon



Picture 4: /System/Date/Time



Picture 5: Date/Time window

2.5 Enroll Administrator / User

Once the fingerprint terminal is switched on, a display on the screen will appear. Enroll a supervisor or an administrator, who is the in-charge person to administer the fingerprint templates and the transaction data in the terminal. Choose trustworthy people for this particular role.

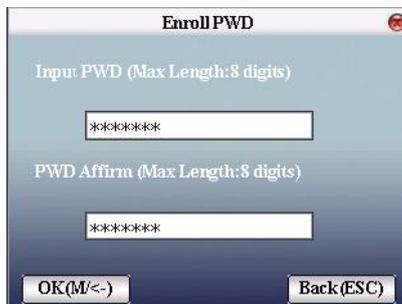
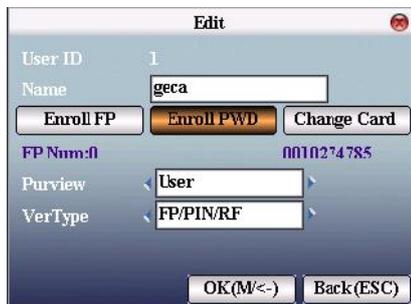


Picture 6: Enrollment Menu



2.6 Password Enrollment

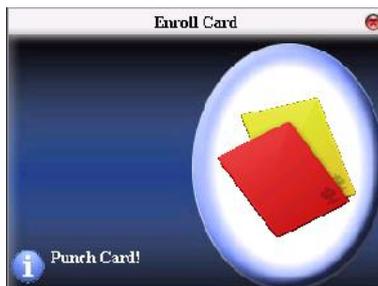
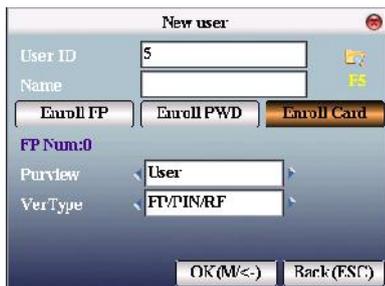
If a user cannot enroll his fingerprint or wants also another kind of verification, he can choose to use passwords. Password may contain numbers ranging from 1 – 8 digits.



Picture 7: Password Enrollment menu

2.7 RFID Card Enrollment

If a user cannot enroll his fingerprint, he can choose to use a RFID Card. RFID card is for added security on the unit, or if the user can't use a fingerprint.



Picture 8: RFID Enrollment

2.8 Manage Users

To open the manage screen, you may click on F5 key. When you are in the manage user screen you can make some actions related with the users pressing menu key as search, record, edit, delete and create.



User ID	Name	FP	PWD	Card
1	geca	0		
Search User		1		
Record		0		
Edit		0		
Del User				
New user				

At the bottom of the table, it says 'Edit: OK' and 'Func: n/←'.

Picture 9: Manage Users

3.- System options

3.1 Communications

When the device and PC are used to transmit data, it is necessary to use communication wire to set communication parameters in the device. When the device is in communication, “communicating...” appears. Don’t operate the device then.

Notice: When the device is communicating with computer, please check the setting here. The parameters here must be in accordance with that of software communication interface.



Picture 10: Communication Menu

3.1.1 Network

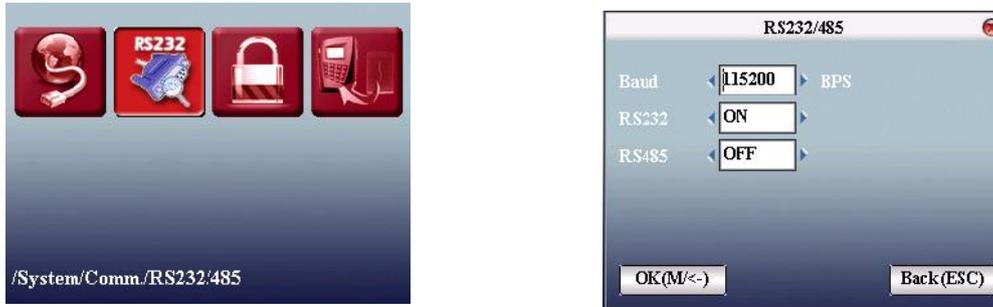
When Ethernet is used for communication of device and PC, the following settings need to be checked:
 Device IP address: IP is 192.168.1.201 by default. You can modify it if it is necessary. But it cannot be the same with that of PC. Subnet mask: It is 255.255.255.0 by default. You can modify it if it is necessary.
 Gateway address: It is 0.0.0.0 by default. If the device and PC are in different net segment, it is necessary to set address. Net speed: Set the speed according to the LAN where the device is.



Picture 11: Network configuration Menu

3.1.2 Serial Port options

When RS232/RS485 is used for communication of device and PC, it is necessary to set device ID. Device ID: 1—254. If RS232/RS485 is used, this ID needs to be input on the software communication interface.



Picture 12: Serial Port Option Menu

3.1.3 Security options

When RS232/RS485 is used for communication of device and PC, it is necessary to set device ID. Device ID: 1—254. If RS232/RS485 is used, this ID needs to be input on the software communication interface. To improve the security of attendance data, connection password needs to be set here. Connection password must be input when PC software is to connect device to read data. Connection password: System password is 0 by default. Namely, there is no password.) it can be set as other value. After setting, the password must be input if software is to communicate with device. Or the connection will fail. The password length is 1~6 digits.



Picture 13: Security Option Menu

3.1.4 Wiegand

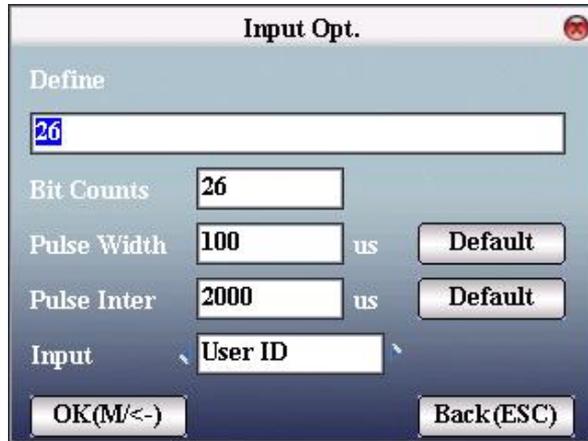
Define Wiegand input & output format.



Picture 14: Wiegand Format Menu

3.1.4.1 Input Opt.

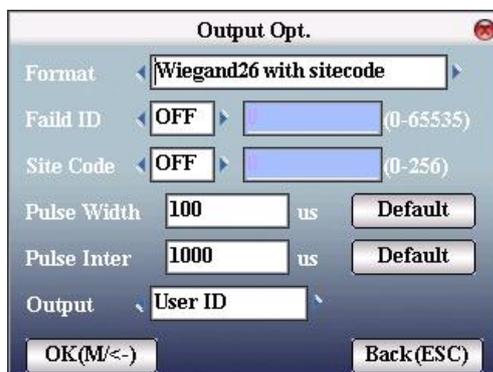
User defined format: User defined Wiegand input format bit digit: Wiegand data digit length pulse width: Pulse width is 100 microseconds by default, which can be adjusted from 20 to 800. Pulse interval: It is 900 microseconds by default, which can adjusted between 200 and 20000. Input content: Content contained in Wiegand input signal, including User ID or card number.



Picture 15: Wiegand Input Options

3.1.4.2 Output Opt.

- **Format:** It is the defined format in the system. User need not specify total digit and the information position. There are 4 definition formats by default in the system: Wiegand 26 with site code, Wiegand 34 with site code, Wiegand 26 without site cod and Wiegand 34 without site code. Wiegand26 with site code means W26 format output with device ID. Wiegand26 without site code means W26 format output without site code. If there is no site code, then the signal not to be output does not contain the information. If there is site code, the output is the set site code (similar to device ID. But this code is specified by the user and different devices can be repeated, with range of 0-255).
- **Failed ID:** It is the failed ID after unsuccessful verification. “Close” means not to output it.(with range of 0-65534)
- **Site code:** Similar to device ID. But the code is specified by user. Different device can be repeated. (With range of 0-255)
- **Pulse width:** Pulse width is 100 microseconds by default, which can be adjusted from 20 to 800.
- **Pulse interval:** It is 900 microseconds by default, which can adjusted between 200 and 20000.
- **Output content:** Content contained in Wiegand output signal, including User ID or card number.



Picture 16: Wiegand Output Options

3.2 Language

The Professional firmware version includes text and voices in all European languages, the voices have been recorded in a professional studio, getting really high sound quality. When the terminal start up for the first time it'll ask you to select the language you want, if later you would like modify it coming to this menu you can change to the new configuration. Professional firmware version provides the capability to select if you prefer female or male voices.



Picture 17: Language Options

3.3 Fingerprint

- 1:1 matching threshold value: The similarity of ID + fingerprint verification and the enrolled template
- 1:N matching threshold value: The similarity of verification and the enrolled template

Recommended matching threshold value:

Maching Threshold value			
FRR	FAR	1:N	1:1
High	Low	45	25
Middle	Middle	35	35
Low	High	23	45

- Finger sensitivity control the reaction of the sensor with an external light, the light can affect always to optical sensor, with this parameter we can make lower this effect if over our terminal there is a source light.
- Alg. Version: can be set 9.0 or 10.0 being this last one faster and improve the error rate. Take care because the size of trace information recorded with 10.0 algorithm is 1.2kb double size more than 9.0 algorithm, you can't transfer templates enrolled with 9.0 to 10.0, neither vice versa.



Picture 18: Fingerprint Options

3.4 Update

Use software to upgrade firmware program.

Notice: If you need such upgrade file, please contact technician. Usually, firmware upgrade is not recommended.

Operation

Insert U disk with upgrade file into the slot. The device will identify the file automatically. The device will give prompt whether it is successful or not.

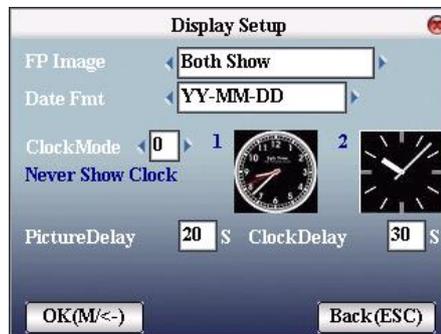
3.5 Display

Parameters related with the display.

- FP Image → it's to manage if we want to show the FP image when we are enrolling a finger or matching on the device.
- Date Format → YY-MM-DD, YY/MM/DD, YY.MM.DD, MM-DD-YY, MM/DD/YY, MM.DD.YY, DD-MM-YY, DD/MM/YY, DD.MM.YY and YYYYMMDD. Select your desired date format.
- Clock Mode → Can be never show or choosing between two kinds of clock to show on the screen.
- Picture Delay → How soon the picture will be changed effective value is 3~999 seconds.)
- Clock Delay → The clock picture display time length after verification. After the display delay, the propaganda picture will be displayed on the initializing interface again (with effective value of 0~999 seconds, and 0 means displaying clock all along) .



Picture 19: Display Option



3.6 Advanced Options

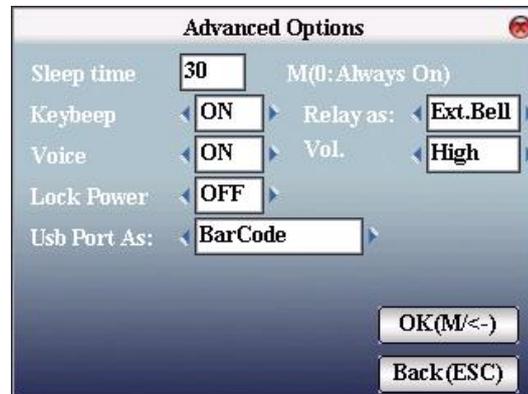
- Sleep time: When it is the scheduled sleep time, the device not in operation will enter sleep status. Press any key or finger to awake it. (Set 0 always on).
- Key beep: It controls the key sound to be enable or not.
- Voice: to select whether to give voice prompt or not. The device will give corresponding voice prompt during operation.
- Lock Power: To prevent hostile power-off, select whether to lock power-off or not.
“Disable”: the power is off 3 seconds after pressing **power-off**.
“Enable”, it is ineffective after pressing **power-off**.
- Relay as: To select how we want to use the relay, can be for door lock or external ring bell.

- USB Port as: to Select how we want to use the USB Port, can be as barcode (to connect a barcode scan) or as pen drive (to manage data using a pen drive)

Note: With Job Costing Firmware by default the Relay use is always set to External ring bell, and the USB port as barcode.



Picture 20: Advanced Options Menu



3.7 System info

Use **system information** to check the current device’s saving status, its version information and so on.



Picture 21: System Info Menu

3.7.1 Record capacity

Display the count of enrolled user, administrator and password enrollment and the capacity of fingerprint, the enrolled fingerprint, attendance record and the current saved attendance record in the form of diagram, as shown below:

3.7.2 Device information

Display device name, serial number, version information, manufacturer and manufacture date in device information for check:



Picture 22: Sys Info

4.- Terminal settings



Picture 23: Terminal Setting Icon

4.1.- Keypad

Please find Job costing appendix.

4.2.- Barcode settings

Please find Job costing appendix.

4.3.- Pendrive Management



Picture 24: Pendrive Management

4.3.1. Download

- *Download user data*

Save all users' information and fingerprint in the device to U disk.

- *Download SMS*

Save SMS added to the device to U disk.

- *Download user photo*

Save employee's photo into U disk.

4.3.2. Upload

- *Upload user data*

Upload user information and fingerprint saved in U disk to device.

- *Upload SMS*

Upload SMS in U disk to the device.

- *Upload user defined picture*

Upload JPG picture started with "ad_" in U disk to the device. Then these pictures will be displayed on the initializing interface

- *Upload user photo*

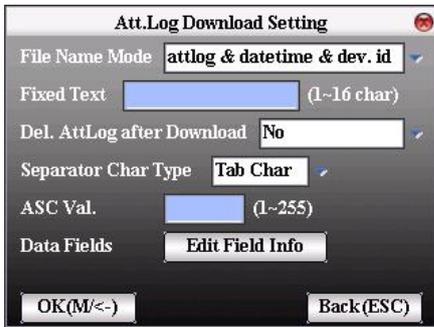
Upload JPG picture named with User ID in U disk to device. Then the employee's photo will be displayed upon fingerprint verification.

4.3.2. Pen drive Settings

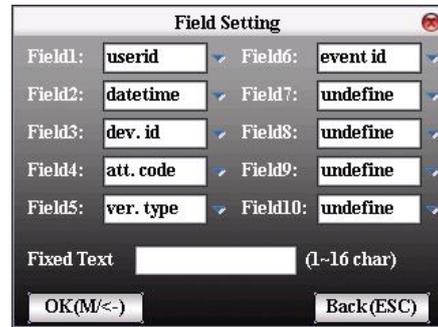
From the menu pen drive can perform all data downloads from the device, these download can be done: (Logs, user information, SMS, user photo, and terminals that have camera allow download capture photos too.) In the same way you can upload data to the terminal if we want to move data quickly and safely from one terminal to another. Within downloading records we can define a lot of parameters that will help us achieve further attendance reports in the way you want.

Definable parameters for downloading records

- File name.
- Fix text.
- Delete or not after download.
- Separator character
- ASCII value
- Data fields: we have 10 data fields configurable by user where we can define the information that we want to download and the position that information occupies, these data are: (Undefined, fixed User code, Date and Time, Terminal Cod, Terminal Name, ATT code, ATT name, system verification, code, description).



Picture 25: Pendrive Settings

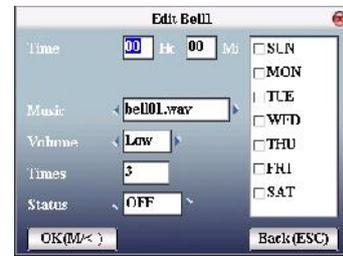


4.3.- Bell

Many companies need bell for on-duty and off-duty. Some use manual bell. Some use electronic bell. To save cost and provide convenience for management, we integrate bell functions to the device. You can set time for bell. When it is the scheduled time, the device will play the selected ring automatically. And the ring will stop automatically when it is the end time. If it's an external siren using the relay's device we have the connections to wire an external ring bell and the device will send the signal through the relay to the external siren to activate it.



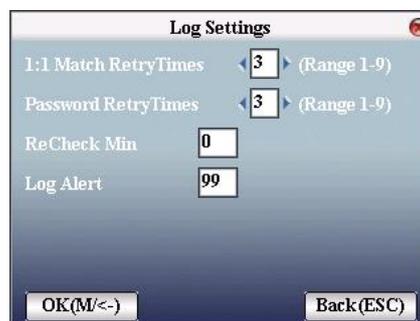
Bell	Bell Times	Ring	State
Bell 1	08: 00	Bell101.wav	
Bell 2	00: 00	Bell101.wav	
Bell 3	00: 00	Bell101.wav	
Bell 4	00: 00	Bell101.wav	
Bell 5	00: 00	Bell101.wav	
Bell 6	00: 00	Bell101.wav	
Bell 7	00: 00	Bell101.wav	
Bell 8	00: 00	Bell101.wav	



Picture 26: Bell Setting

4.4.- Log Settings

In this menu define the number of failed attempts to allow the user to make logs. We will select the time between logs as well (is the minimum time that must elapse between logs from the same user). In logs parameters you'll find the option to configure when you want to skip the warning message memory full of logs.



Picture 27: Log Settings

4.5 Job number verify

Please see read point 6 of the manual.

4.6.- Reset

Make device's communication option, system option and so on reset to the state of factory.

Factory reset: Make all the parameters in the device reset to the state of factory.

Reset keyboard definition: Reset the corresponding setting of keyboard definition to that of factory.

Reset bell option: Only reset bell option to factory state.

Reset other parameters: only reset communication option, system parameter, interface option and so on to factory state



Picture 28: Factory Reset

4.7.- Auto test

The device can test various modules automatically to help operator to judge the module with fault quickly, including test of TFT display, voice prompt, clock, keyboard, and fingerprint sensor.

- TFT display test**
 The device can automatically test TFT color display effect (through color display, white display and black display) to see whether the screen works normally
- Voice test**
 The device can automatically test voice prompt effect through playing voice files in the device to see if the files are complete and the voice effect are good or not.
- Keyboard test**
 The device can automatically test various keyboards to see if the keys work normally or not.
 Press any keyboard on the test interface (except for **OK** and **"ESC"**).
- Sensor Test**
 The device will automatically test the sensor to see if it works normally. Press fingerprint to see if the image is clear and usable.
 Press fingerprint on the sensor window and the fingerprint image will appear on the screen.
- RTC Test**
 The device can automatically test the clock to see if it works normally.
 Press **OK** to start time and then press **OK** to stop time.
 Press **"ESC"** to exit.



Picture 29: Autotest Menu

4.8.- Job Costing Setup

Please see read point 6 of the manual.

5.- Data Management



Picture 30: Data Management Icon

5.1.- Data Management

Employee’s attendance record will be saved in the device. For query convenience, **query record** function is provided.

5.1.1.- Data query

- *Query attendance:* According to user’s input query condition, the records will be displayed on the screen for user selected. Only shows log related with attendance and job costing only with date and time.
- *Query user:* To query the current user in the device.
- *Query SMS:* To query SMS in the device.



Picture 31: Data Query Menu

5.1.2.- Delete Data

To delete all data recorded in the device such as: Logs, users, pictures.



Picture 32: Delete Data

6.-Job Costing Introduction

The intention of this manual is to give a brief introduction of the management of Job Costing Firmware developed by ZKTeco.

This firmware is initially only supported in two devices: iClock S900 and iClock S680. This two devices were chosen for their robust design. S680 only uses Proximity Card identification, while the S900 supports by default Fingerprint identification but can also combine identification by Proximity Card. Both devices are compatible with standard USB Barcode reader



Picture 33: Devices that support Job Costing Firmware

The Job Costing Firmware is a special Firmware developed by ZKTeco, and adds new functions, apart from standard Time&Attendance functions, to manage projects, job numbers and tasks that employees perform within the company, keeping track of time and costs associated with each job.

Thanks to this firmware the employees can start, pause, restart or end a job and use the device with Time&Attendance functions as well, using Fingerprint, card or PIN for identification or simplifying this using the barcode scanner.

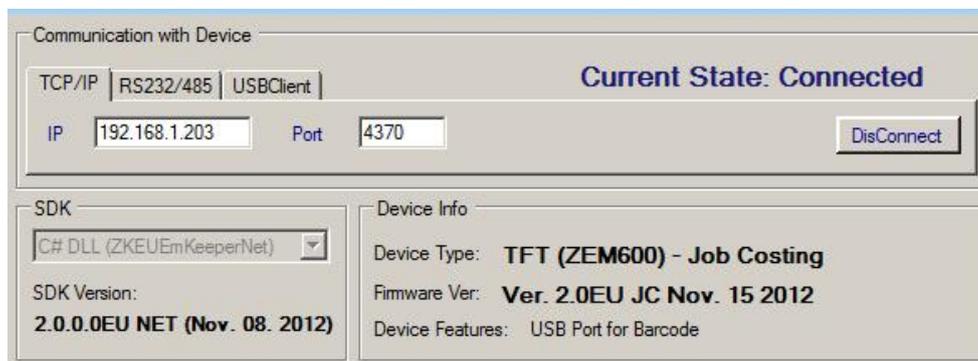
It is available in multi-language and it comes together with the SDK, DEMO, Tool and Documentation for data capture and integration with other applications.

7.- SDK Tool

Together with the Firmware flashed in the devices a SDK Tool, for remote connect with the PC, is provided.

With this tool, it's possible to configure the terminal, add projects/jobs/tasks and enroll users and later read out the information stored in the device.

This Tool includes it's source code in C# and C++, SDK library files needed, and documentation to integrate the job costing functions in any application.



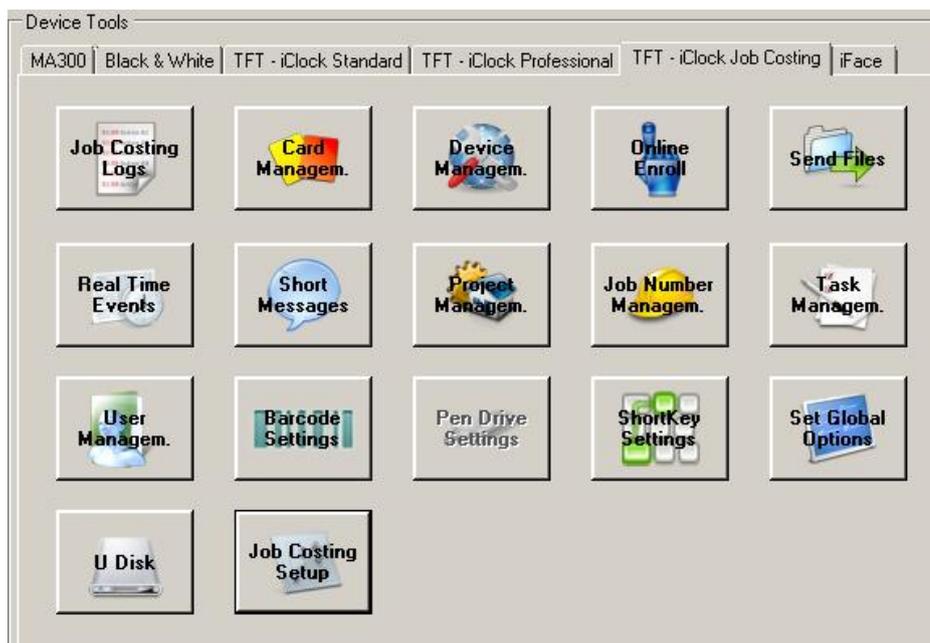
Picture 34: Connection Screen of the SDK Tool

More information about how to register the SDK and connect this Tool can be find in the SDK Manual. Setting the right IP Address, the Tool fill directly detect that the devices has the Job Costing Firmware installed, and will enable all the available functions. Most of the configuration and enrollment tasks can be performed directly on the device, but it is recommended to use the SDK Tool.

8.-First step: Setting the Job Costing configuration

The idea of controlling costs can be applied to many industries, that is why the firmware allows different configurations to fit in different needs.

The first step should be to set the configuration that the application requires. This can be done in the job costing setup menu

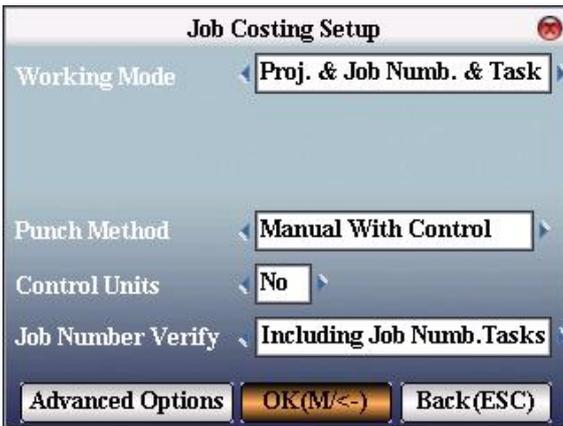


Picture 35: Main screen of the provided SDK Tool

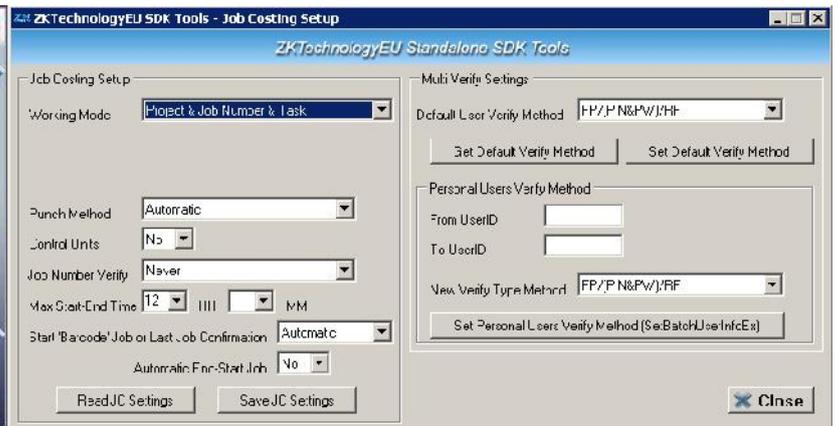


Picture 36: Terminal Setting Menu in the device

8.1.- Job Costing Setup



Picture 37: Job costing setup menu



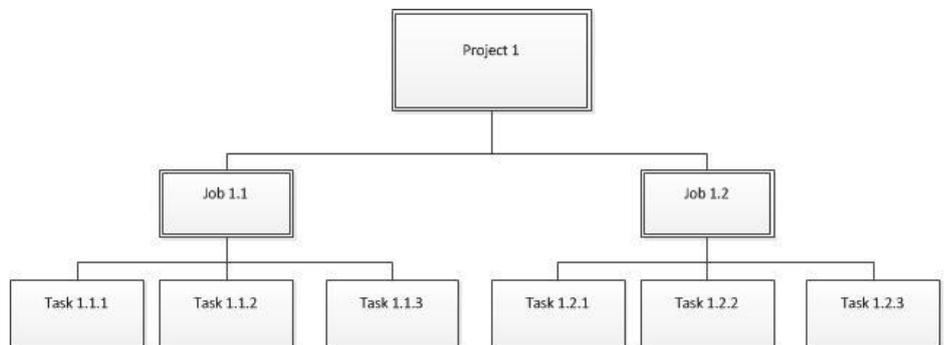
Picture 38: Job costing setup screen in SDK Tool

8.1.1. - Working Mode

Here it is possible to set the fields required when starting a new job

The hierarchy is as follows:

- 1.- Project
- 2.- Job number
- 3.- Task



Picture 39: Example of Hierarchy for a Jobcosting project

The possible relations are:

1. Project + Job Number + Task
2. Project + Job Number
3. Job Number + Task
4. Job Number

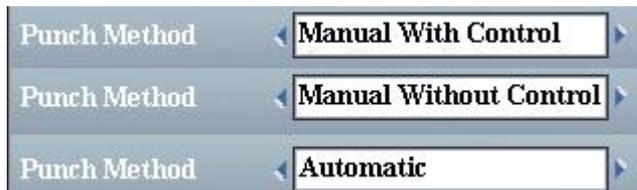


Picture 40: Working Mode Relations

8.1.2. - Punch Method

Three different punch methods can be defined:

1. Manual with control
2. Manual without Control
3. Automatic



Picture 41: Punch Methods

Manual with control

With this method it is necessary to select manually in the initial screen the action that is going to be performed.

The devices auto controls if the job is already open and advices that it cannot be started again

Manual without control

With this method it is necessary to select manually in the initial screen the action that is going to be performed.

The devices does not auto control if the job is already started.

Manual without control

With this method it is not necessary to select manually in the initial screen the action that is going to be performed.

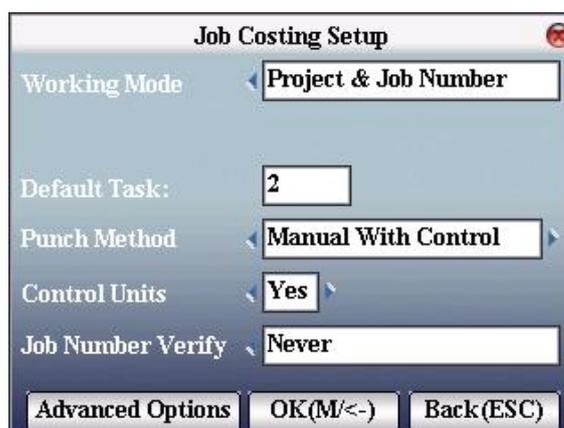
It is possible to start/end a job only using the barcode scanner. The device auto detects if the job is already started.



Picture 42: Initial Screen

8.1.3. - Units

If this option is selected, device will require the produced units when ending a job



Picture 43: Control Units

8.1.4. - Job Number Verify

When a job is started the device can auto check if this job is really created in the device. This can be defined

Three verification modes can be selected:

1. Never
2. Always
3. Including Job Number and Task

Never

Device does not check if the entered job is created in the device.

Always

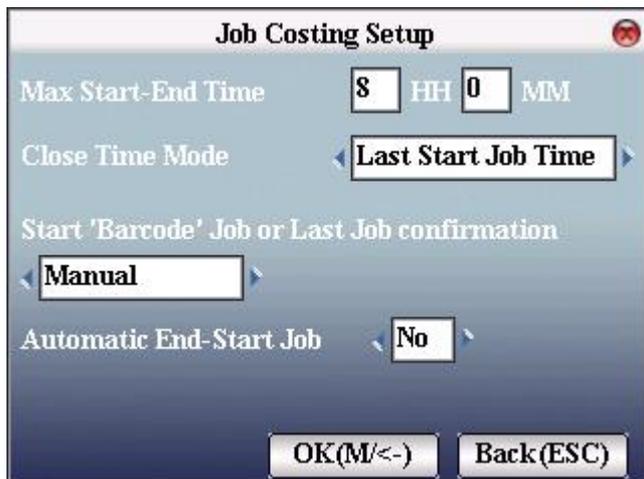
Device checks if the entered job is created in the device.

Including Job Number and Task

Device checks if the entered job and task are created in the device.

8.2.- Advanced Options

Some advanced features can be set in this menu



Picture 44: Advanced Options in Job Costing Setup

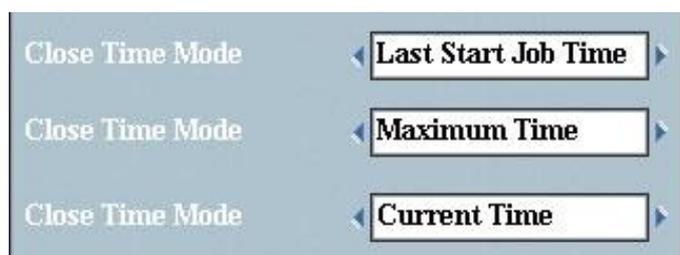
Max Start-End Time

Maximum duration for each of the tasks. This time will be considered only if there is a change of day.

Close Time Mode

Here it is possible to establish how to handle if the maximum duration is exceeded.

Three different modes can be chosen:



Picture 45: Closing Times Modes

Last Start Job Time

If maximum duration for task is exceeded, a closing log with at the same time as the start hour will be stored.

Maximum Time

If maximum duration is exceeded, a closing log with the “starting time + maximum duration” will be stored

Current Time

Saves the closing time whether it has exceeded the maximum duration.

The first two options will only be considered if there is a change of day between the start and end time. If there is no day change, current time will be stored.

Start “Barcode” Job or Last Job confirmation

In “Automatic” mode the job will be started after using the barcode, if “Manual” is selected the device will ask for a confirmation by pressing the “OK” key after using the Barcode scanner.

Automatic End-Start Job

If “YES” is selected, the Start new Job window will be launched automatically after ending a job.

If “NO” is selected the Start Job window must be launched manually by pressing the corresponding Function Key.

9.- Jobcosting Management

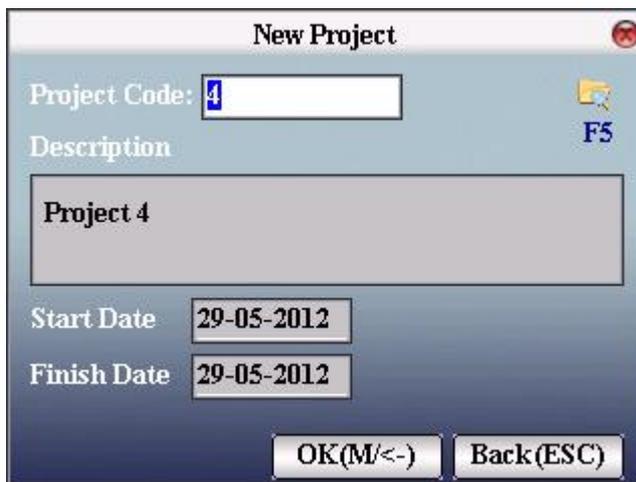
Projects, Jobs and Tasks can be created directly on the device or with the help of SDK Tool. It's recommended to use the PC with the SDK Tool to perform this management. Most of the fields cannot be set directly on the device and it's needed to use the SDK Tool to modify them.

9.1.- Project Management

9.1.1. - Create new Project on device



Picture 46: Project icon chosen in /Tables menu



Picture 47: New Project window

The “New Project” window can be opened in the /Tables menu

In this window the following fields can be set:

Project Code

This is the number assigned to the new project. Pressing the Function Key F5 displays a list of the projects already created.

Description

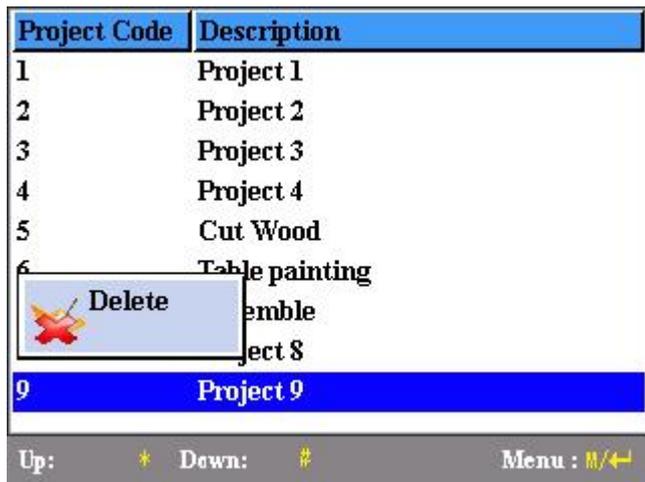
This is the name of the Project. It is only possible to set a description different from the default one using the SDK Tool. Creating a new project on the device will always set the default description “Project” + “Project Code”

Start Date / Finish Date

This information cannot be changed on the device. It will take as default the current date.

9.1.2.-Delete Project on device

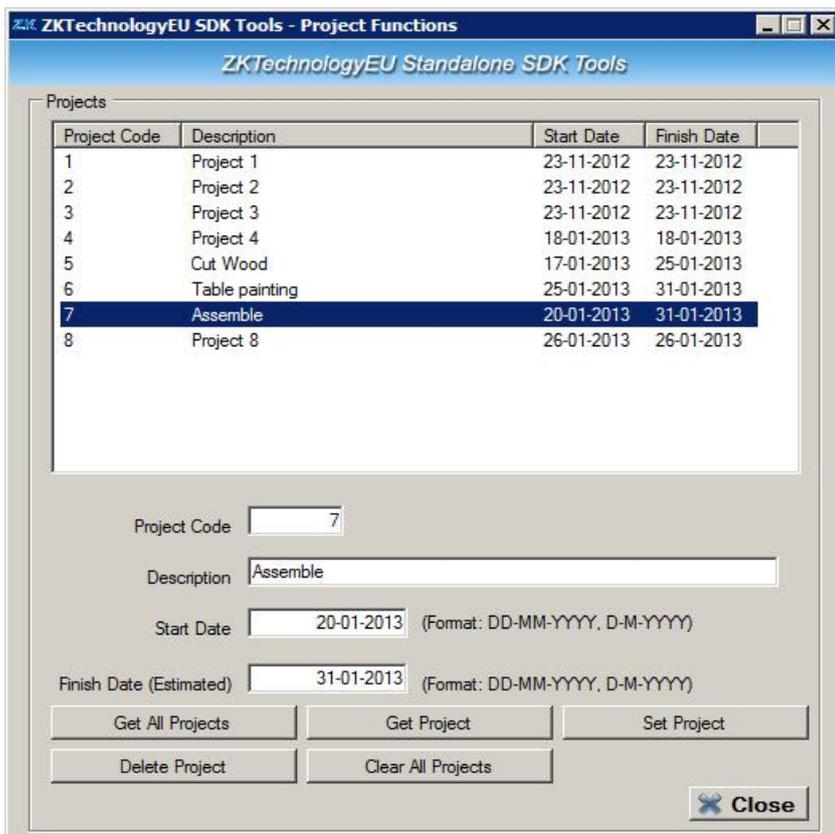
A Project can be deleted pressing the F5 Key in the “New Project” window. The selected Project can be deleted by pressing the M (Menu) and confirming this action.



Picture 48: Delete Project

9.1.3. - Project Management using the SDK Tool

All the Project management tasks can be easily performed with the SDK Tool.



Picture 49: Project management window on the SDK Tool

Project Code

This is the reference number for the project.

Description

Name or description of the project that helps to identify the Project.

Start Date

Date when the project is supposed to start. This field is for information only.

Estimated Finish Date

Date when the project is supposed to finished. This field is for information only.

Get All Projects Button

Import all projects stored in the device.

Get Project

Import only the project defined in the field "Project Code".

Set Project

Upload to the device the current project.

Delete Project

Deletes the project defined in the field "Project Code".

Clear All Project

Deletes all Projects in the device.

9.2.- Job Number Management

The device can support up to 1000 different Job Numbers.

9.2.1. - Create new Job on device



Picture 50: Job Numbers icon in /Tables Menu



Picture 51: New Job Number Window

The "New Job Number" window can be opened in the /Tables menu

In this window the following fields can be set:

Job Number Code

This is the number assigned to the new Job. Pressing the Function Key F5 displays a list of the Jobs already created.

Description

This is the name of the Job. It is only possible to set a description different from the default one using the SDK Tool. Creating a new Job on the device will always set the default description “Job Number” + “Project Code”

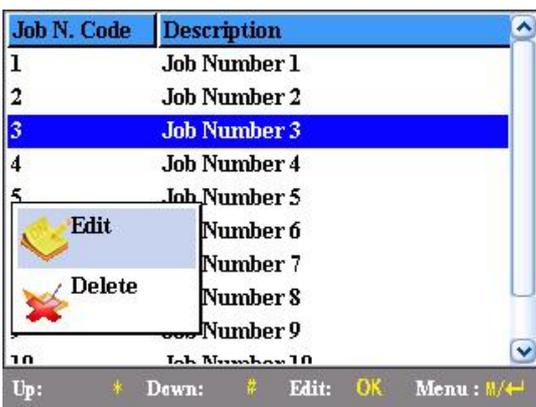
Units

If a Job consists of several manufactured parts this can be specified here. This field is for information only. If “Control Units” is active in the Job Costing Setup menu, the system will always ask for the units after finishing a job.

Start Date / Finish Date

This information cannot be changed on the device. It will take as default the current date.

9.2.2. – Delete Job on device



Picture 52: Edit/Delete Job Number

Pressing the F5 key in the Job costing menu, will display the list of created Job Numbers, by pressing the M (Menu) Key the Edit/Delete window will be displayed. After accepting the message, the selected Job Number will be deleted.

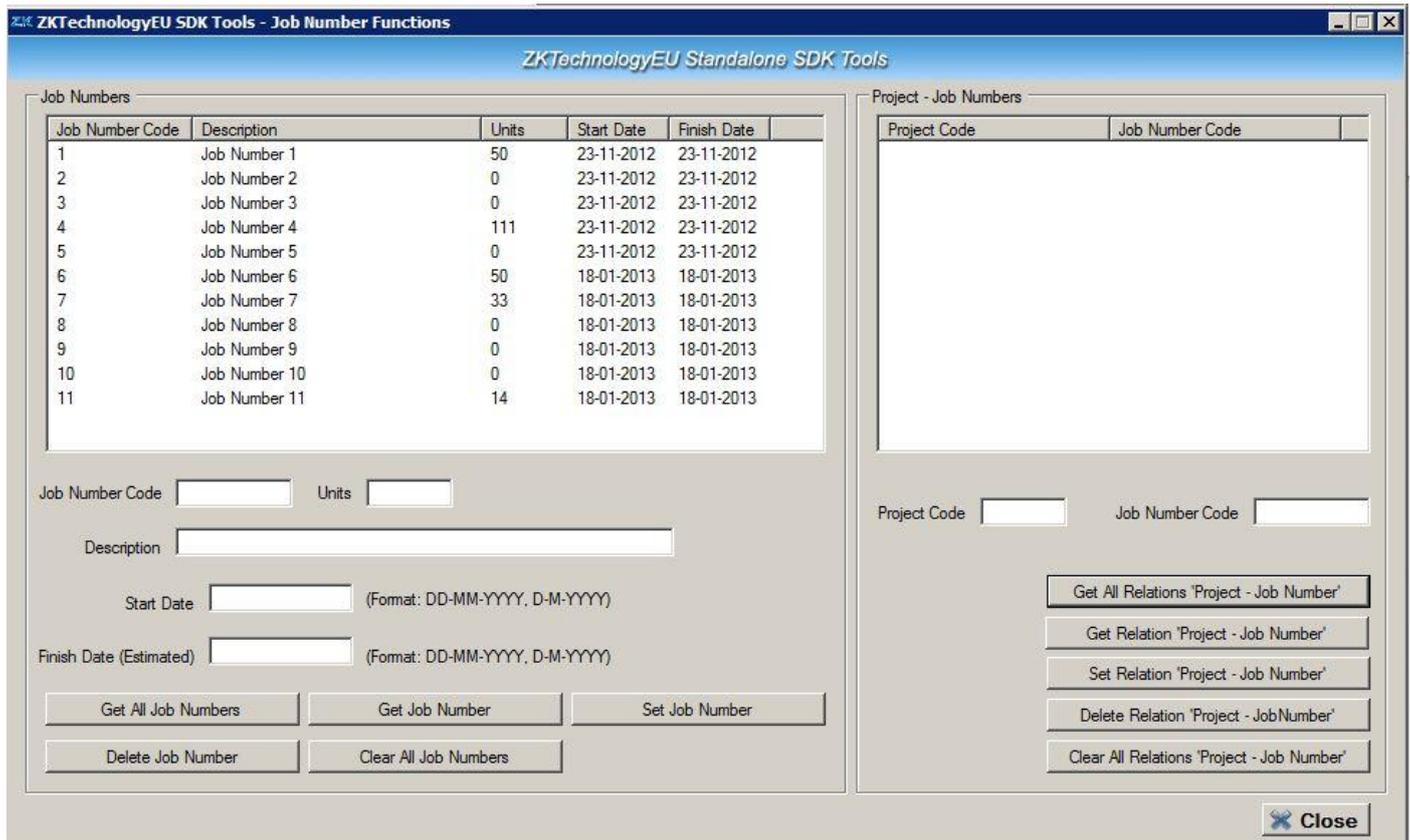
9.2.3. – Edit Job on device

This can be performed in a similar way to the deleting task. By selecting “Edit” in the previous window.

9.2.4. – View Job Number and Task relationships on device

On the device it is only possible to view the relationship between Job Number and Task. It is not possible to assign a Task to a Job, this is only possible by using the SDK Tool.

9.2.5. – Job Number Management using the SDK Tool



Picture 53: Job Number Management window in SDK Tool

The Job Number Management window has two parts, on the left it is possible to read out, create, delete and modify Jobs. On the right part it is possible to set the relationships between Projects and Job Numbers.

Job Number sub window

- **Fields:**

Job Number Code

Number assigned to the Job

Units

If a Job consists of several manufactured parts this can be specified here. This field is for information only. If “Control Units” is active in the Job Costing Setup menu, the system will always ask for the units after finishing a job.

Description

This is the name of the Job

Start/Finish Date

Here it is possible to set an estimated start and finish time for the Job. This field is only for information.

- **Buttons:**

Get All Job Numbers

Downloads form devices all already created Job Numbers.

Get Job Numbers

Download only the information about the selected Job Number, specified in the Job Code field.

Set Job Number

Create/modify the selected Job Number.

Delete Job Number

Delete the selected Job Number, specified in the Job Code field.

Clear All Job Numbers

Delete all Jobs in the device

Project - Job Number Relationship sub window

On the right side of the window it is possible to establish the relationships between projects and the jobs.

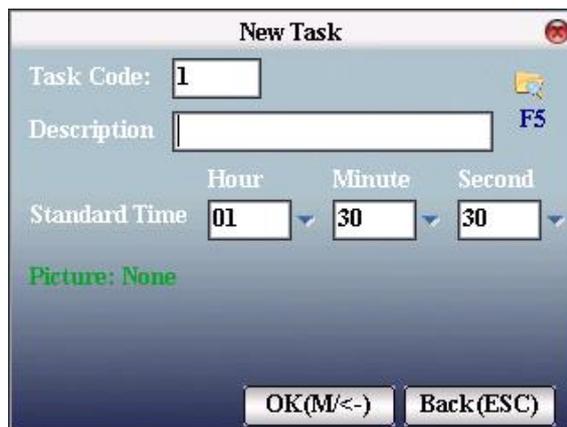
These associations are for information only, a job can always be started even if the association to the project is no created.

9.3.- Task Management

The device can support up to 300 different Tasks.



Picture 54: Task icon in /Tables Menu



Picture 55: New Task Window

9.3.1. - Create new Task on device

The “New Task” window can be accessed in the /Tables menu.

Task Code

Reference number for the Task

Description

Name of the Task

Standard Time

Here it is possible to set an estimated duration for the task. This field is only for information.

The list of all tasks can be accessed by pressing the F5 Key.

9.3.2. – Edit/Delete Task on device

Task Code	Description	Std Time
1	11111	00:30:30
2	22222	00:30:30
3	333333	00:30:30
4	55555	00:30:30
		04:30:30
		03:30:30

New

Edit

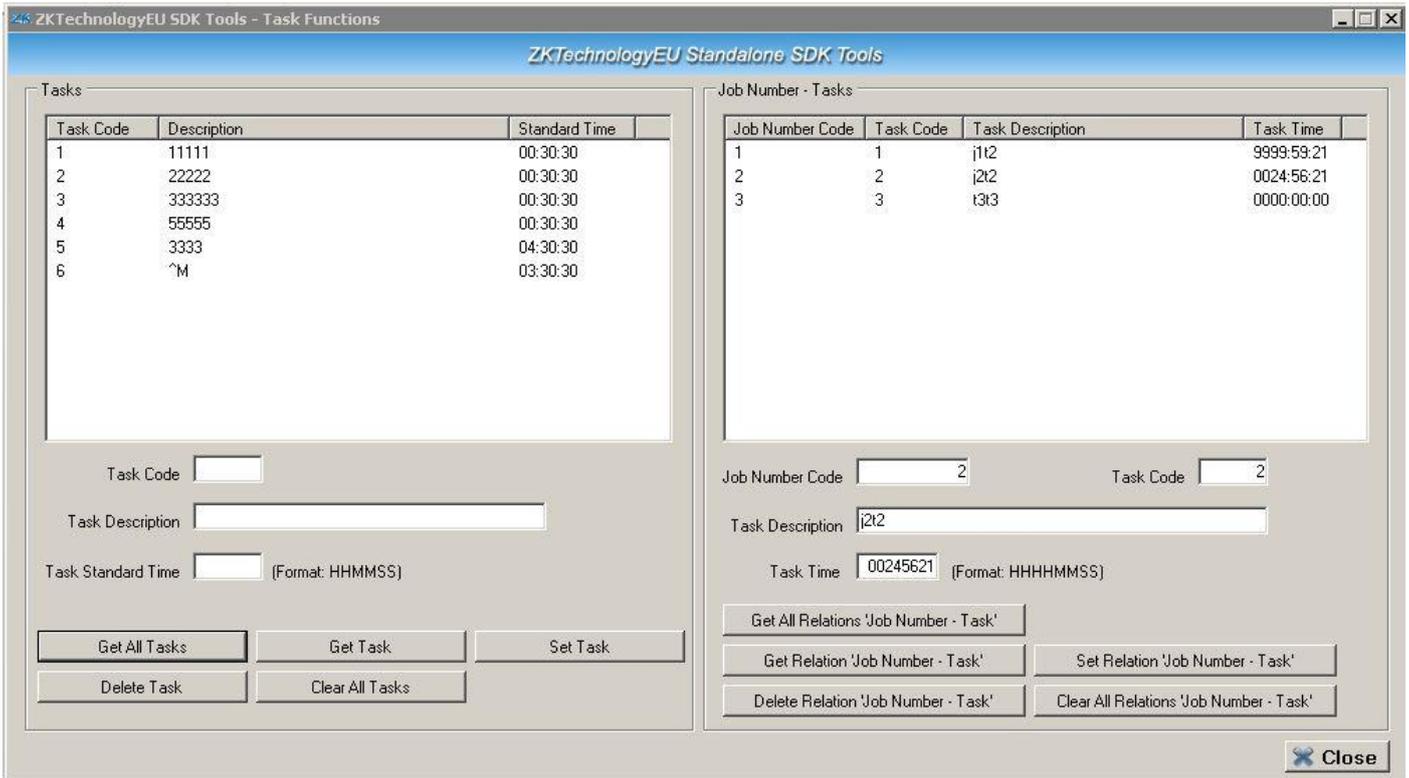
Delete

Up: * Down: # Edit: OK Menu: M/←

Picture 56: Edit/Delete Task window

The list of all created tasks can be accessed by pressing the F5 key in the “new task” window. On this screen by selecting one task and pressing the OK Key it is possible to Edit or Delete this task.

9.3.3. – Task Management using the SDK Tool



Picture 57: Task Management window in SDK Tool

The Task Management window has two parts, on the left it is possible to read out, create, delete and modify tasks. On the right part it is possible to set the relationships between Job Numbers and Tasks.

Task sub window

- **Fields**

Task Code

Number assigned to the Task

Task Description

This is the name of the Task.

Start/Finish Date

Here it is possible to set an estimated start and finish time for the Task. This field is only for information.

- **Buttons:**

Get All Task

Downloads form devices all already created Job Task.

Get Task

Download only the information about the selected Task, specified in the Task Code field.

Set Task

Create/modify the selected Task.

Delete Task

Delete the selected Task, specified in the Job Code field.

Clear All Task

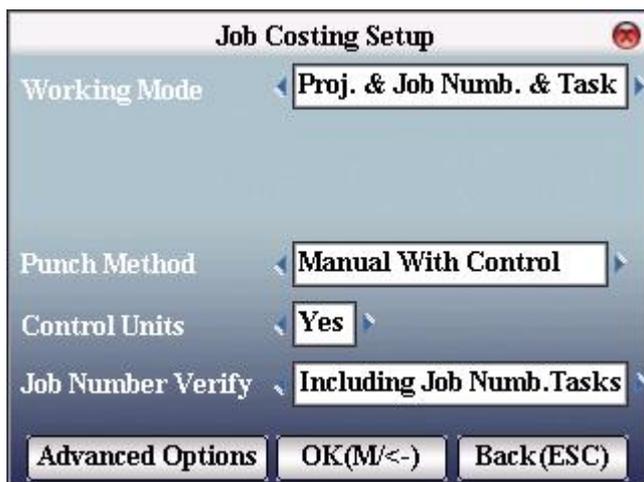
Delete all Tasks in the device.

Job Number - Task Relationship sub window

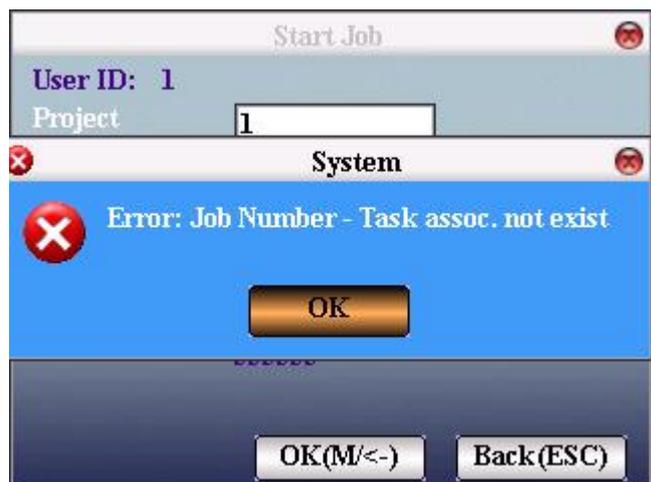
On the right side of the window it is possible to establish the relationships between Job Numbers and the Task.

This relationship will be checked, when starting a job, if the “Job Number Verify” in the Job Costing Setup is set to “Including Job Numb.Tasks”.

If the association Check is active and the association is not established an error message will be launched when trying to start the job.



Picture 58: Job-Task association check active



Picture 59: Error message Job-Task association not exist

10.- Shortkey Definition

The main screen device comes with the following default short key definition:

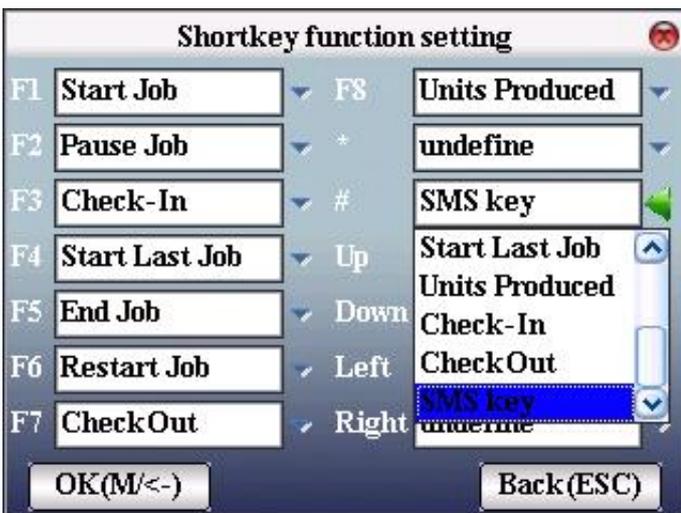


Picture 60: Default shortcuts with Manual Punch Method

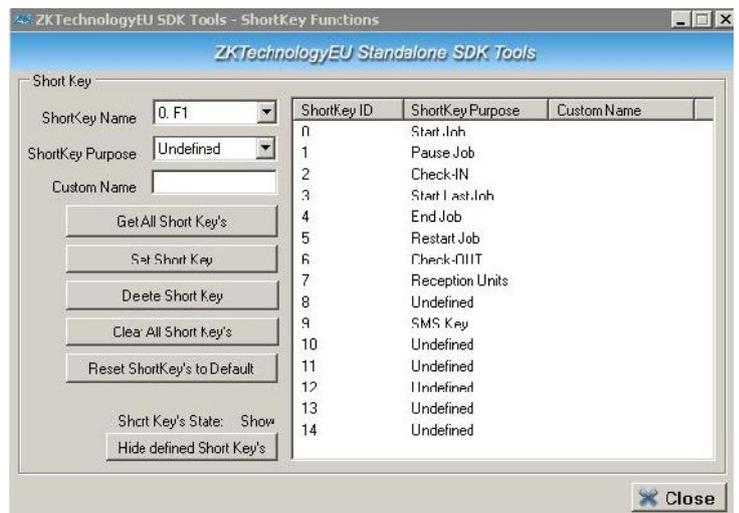


Picture 61: Default shortkey with Automatic Punch Method

This default definition can be changed directly on the terminal or through the SDK Tool.



Picture 62: Shortkey function menu setting on device



Picture 63: Shortkey Functions window in the SDK Tool

The Short key function setting menu can be accessed in the menu /Terminal Setting/Keypad.

It is recommended to use the SDK Tool to perform this task, it allows more functions like changing the label, resetting the Short key Defaults, or hide the labels on the main screen.

11.- Barcode Setting

11.1.- Introduction

Any standard USB Barcode Scanner can be connected to the USB port of the Device. The power supply of the device needs at least 3A output to feed the barcode.

The use of a barcode scanner can be very useful. Tasks can be started by the reading of barcodes generated by your own.

Barcodes formats up to 50 digits can be established, and each Barcode format can hold up to 5 different fields. This are the allowed field definitions:

- Undefined
- User ID
- Card Number
- Project
- Job Number
- Task

An example of how to establish a Barcode format can be found at point 4.4.

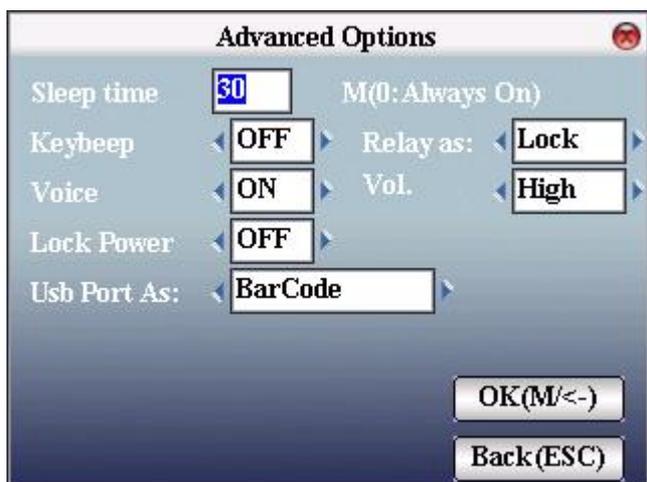


Picture 64: USB Barcode Scanner

11.2.- Definition of the USB Port

First step for using the Barcode should be to set the USB Port to be used as Barcode Scanner entrance.

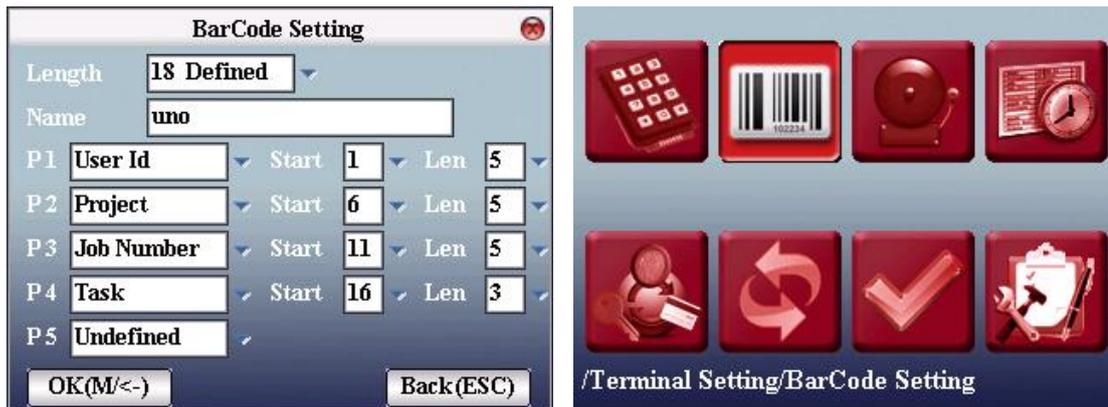
This can be set in the menu /System/Advanced Options.



Picture 65: USB Port defined as Barcode Scanner entrance

11.3- Barcode definition

The Barcode Setting menu can be accessed through the Terminal Setting menu.



Picture 66: Entering the Barcode Setting menu

The Barcode format can be set in this menu.

Length

The barcode length can be defined at this point. Lengths between 5 and 49 digits can be defined. The device will only read defined barcode formats. Any non-defined Barcode length will not be considered by the terminal.

Name

The name of the Barcode format can be set in this point.

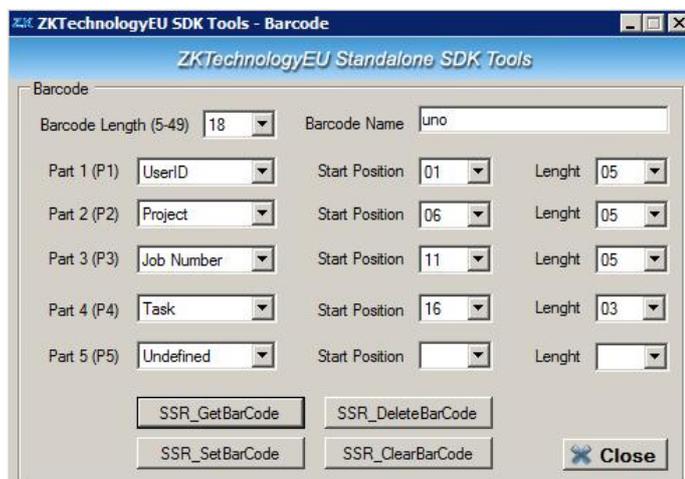
Fields

Starting digit, length and meaning for each of the fields can be defined here.

It is necessary to perform a restart to store the new barcode format.

11.4- Barcode definition using the SDK Tool

The same configuration can be easily performed from a PC using the SDK Tool.



Picture 67: Barcode Menu in the SDK Tool

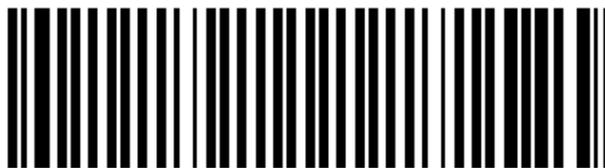
11.5- Example of Barcode definition

In this example, a length of 18 is defined with these fields.

- 1-5 User ID
- 6-10 Project
- 11-15 Job number
- 16-18 Task

The next picture is a barcode example, the barcode is generated from this code:

00001 00001 00001 001



Picture 68: Barcode example

Starting digit, length and meaning of each of the fields of the barcode format can be defined in the Barcode setting Menu.

Field	Name	Start	Len
P1	User Id	1	5
P2	Project	6	5
P3	Job Number	11	5
P4	Task	16	3
P5	Undefined		

Picture 69: Example for Barcode setting

With these settings the device will read out:

User 00001 will start Project 00001, Job number, 00001 Task 001.

12.- Job Costing operations. How to use?

After we install Job costing terminal the users can operate entering the operation code. Depending configuration we decide for operate in terminal (manual or automatic, with control or not, etc...), it will be used in one way or other, but the standard basic operations are the same. These operations are described below:

			
<p>Press F1 Start a Job</p>	<p>Place FP, card ,User ID or barcode.</p>	<p>Select Project ,Job number, task (depending configuration we set).</p>	<p>Confirmation. Done! The job already started.</p>
			
<p>Press F2 Pause a Job Need a Job already started</p>	<p>Place FP, card ,User ID or barcode.</p>	<p>Confirmation. Done! The current Job is paused</p>	<p>Comments : Only will use if we want pause a job for breakfast, lunch, etc...</p>
			
<p>Press F6 Restart a Job Need a Job already paused</p>	<p>Place FP, card ,User ID or barcode.</p>	<p>Confirmation. Done! The current Job is restarted. *No need enter any data</p>	
			
<p>Press F5 End a Job/Task Need a Job already started</p>		<p>Enter units produced if we set "Control units = Yes"</p>	<p>Confirmation. Done! The current Job/task finished (part or total)</p>

			
<p>Press F7 Start last Job</p>	<p>Place FP, card ,User ID or barcode.</p>	<p>Terminal shows our last Job and task data in terminal. *Depending setup need press "OK"</p>	<p>Confirmation. Done! Last job already started.</p>
			
<p>Press F8 Units produced</p>	<p>Place FP, card ,User ID or barcode.</p>	<p>Select Project/ Job number and units we finished for this Project/Job (Never task).</p>	<p>Confirmation. Done!</p>
			
<p>Press F3 Check-In Attendance log record</p>	<p>Place FP, card ,User ID or barcode.</p>	<p>Confirmation. Done!</p>	<p>Comments : Check-In isn't in connection with Job costing operations, so always can press it.</p>
			
<p>Press F7 Check-Out Attendance log record</p>	<p>Place FP, card ,User ID or barcode.</p>	<p>Confirmation. Done!</p>	<p>Comments : Check-Out isn't in connection with Job costing operations, so always can press it.</p>

These are the possible operations for users. In case we configure the terminal in "automatic mode", the labels assigned to F1 and F5 (Start and End a Task/Job) will disappear. That means no need press any function key for start/end a job. The terminal automatically will switch between both. For the rest operations, we still need press the function key.

Depends of business sector, the terminal will use in different way. Factories or car repair shops will use more frequently that projects companies or architectural, due the tasks normally are shorter and have more job numbers.

Here is a table with some standard cases for operations. Please note that all companies can use (or not) attendance check-in and check-out and this table is only one simple reference. Each company has different way to do.

Cases	Description											
Case 1 Car repair shop	<p>Normally, in these companies, each car generates one Job number. The tasks can be divided in mechanical and sheet iron/paint. Normally the tasks duration are short (change car oil, revisions, etc...). That means one user can make per day between 5 and 10 operations of start/end job. In this case we will assume they stop 10/15 minutes for a break. The total tasks can be between 50/60 and Job numbers opened, depend company size, can be around 40. That means 40 cars can be repairing at the same time. One possible solution to know when car is completely finished is entering this car or Job number as "Units produced" with F7, selecting 1 unit. With this, we know that car already finished. Note that the user that introduces F7 (car finished in this case) can be different the one really work on this car. For example the repair manager.</p>											
User flowchart	<table border="1"> <tr> <td>F1 Start Job</td> <td>F5 End Job</td> <td>F1 Start Job</td> <td>F5 End Job</td> <td>F2 Pause Job</td> <td>F6 Restart Job</td> <td>F5 End Job</td> <td>F1 Start Job</td> <td>F5 End Job</td> <td>F8 Units (1) produced</td> <td>← Car finished</td> </tr> </table>	F1 Start Job	F5 End Job	F1 Start Job	F5 End Job	F2 Pause Job	F6 Restart Job	F5 End Job	F1 Start Job	F5 End Job	F8 Units (1) produced	← Car finished
F1 Start Job	F5 End Job	F1 Start Job	F5 End Job	F2 Pause Job	F6 Restart Job	F5 End Job	F1 Start Job	F5 End Job	F8 Units (1) produced	← Car finished		
Case 2 Projects company (houses, software, consulting, etc..)	<p>Normally, in these companies, the different tasks execution takes more time. Maybe even months. This kind of companies can work using Project and Job number and tasks if the project is big. With this option we divide a project (project number) in smaller ones inside it (job numbers). In these companies, we can set control units to "Yes", so when one user finish a task, introduces 1 unit, that means task finished (this is only one example).</p>											
User flowchart	<table border="1"> <tr> <td>F1 Start Job</td> <td>F5 End Job</td> <td>F4 Start last Job</td> <td>F5 End Job</td> <td>F4 Start last Job</td> <td>F5 End Job</td> <td>.....</td> <td></td> <td></td> <td></td> <td></td> </tr> </table>	F1 Start Job	F5 End Job	F4 Start last Job	F5 End Job	F4 Start last Job	F5 End Job				
F1 Start Job	F5 End Job	F4 Start last Job	F5 End Job	F4 Start last Job	F5 End Job						
Case 3 wood factory	<p>These companies can produce the same reference for different costumers, so the tasks are the same. In these kind of factories, normally, exist some tasks called "machine preparation" that independent units will produce need fix time to prepare. The reception units are common to use (F8). Is common too, makes a job numbers to produce "spare parts" that will be used for other job numbers. Thus, in tasks can be useful control the tasks units. Like in all factories sector, there are special Job numbers that are opened during all year. For example, clean factory, machines problems, etc... and company can control all time spent in this jobs. The tasks for these special job numbers can be the same or set different. It depends of reason machine problem or clean area.</p>											
User flowchart	<table border="1"> <tr> <td>F1 Start Job</td> <td>F5 End Job/task.</td> <td>F1 Start Job</td> <td>F5 End Job/task.</td> <td>F1 Start Job (clean factory)</td> <td>F5 End Job/task</td> <td>.....</td> <td></td> <td></td> <td></td> <td></td> </tr> </table>	F1 Start Job	F5 End Job/task.	F1 Start Job	F5 End Job/task.	F1 Start Job (clean factory)	F5 End Job/task				
F1 Start Job	F5 End Job/task.	F1 Start Job	F5 End Job/task.	F1 Start Job (clean factory)	F5 End Job/task						

12.1.- Job Costing log records

The system allows store different kind of operations in Job Costing firmware. These operations can be transmitted to PC software to control time and cost of all different jobs/project and tasks.

Currently, the operations allowed by terminal are the next:

Basic Operation Name	Description	Code assigned in log records	Family Codes for future
Start Job	The user start one task in a Job or project.	10	10-19
End Job	The user finish (partially or totally) a task in a Job or project.	20	20-29
Pause Job	When the user pause for a while the current opened task.	40	40-49
Restart Job	When the user start again the previous task paused in a Job or project.	50	50-59
Check-In	The user enter in a work center (attendance Check)	60	60-69
Check-Out	The user leaves the work center(attendance Check)	70	70-79
Start last Job	When the user start the same task and Job/Project last day	10	10-19
Reception Units	When the user enters the units produced for one Job/project. This units (produced and others) aren't in connection with any task. Belong to Job/Project units.	30	30-39

These codes are defined from 10 to 70, reserving for future sub family codes that belong to one main operation. All operations that users enter in terminal in normal mode are stored with these codes in log records.

There is a special case that terminal version already included. It's when one user forget end a job from one day to another, exceeding the maximum time allowed for these cases. Depending of Terminal configurations, we will receive 3 codes belong to "End Job" basic operation. These are:

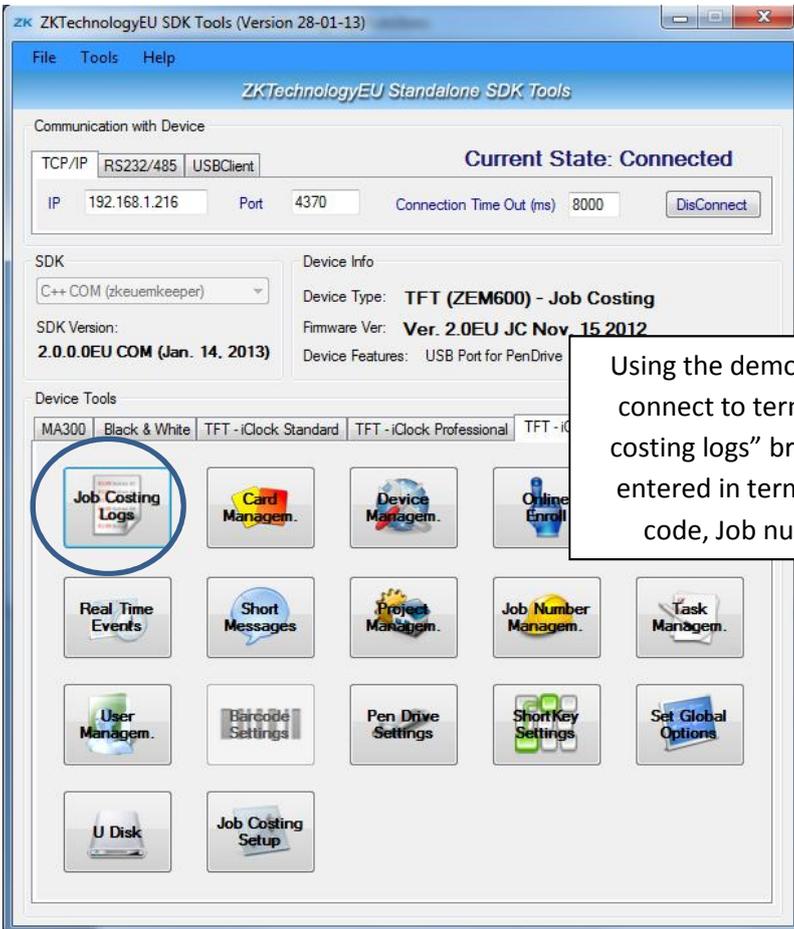
Basic Operation Name	Terminal Configuration to close task not closed.	Code assigned in log records
End Job	At the same time as Start Job	21
	At maximum time we set	22
	At current time	23

12.1.1.- Log records format

The information transmitted by terminal to PC Software (SDK) or USB include the next fields :

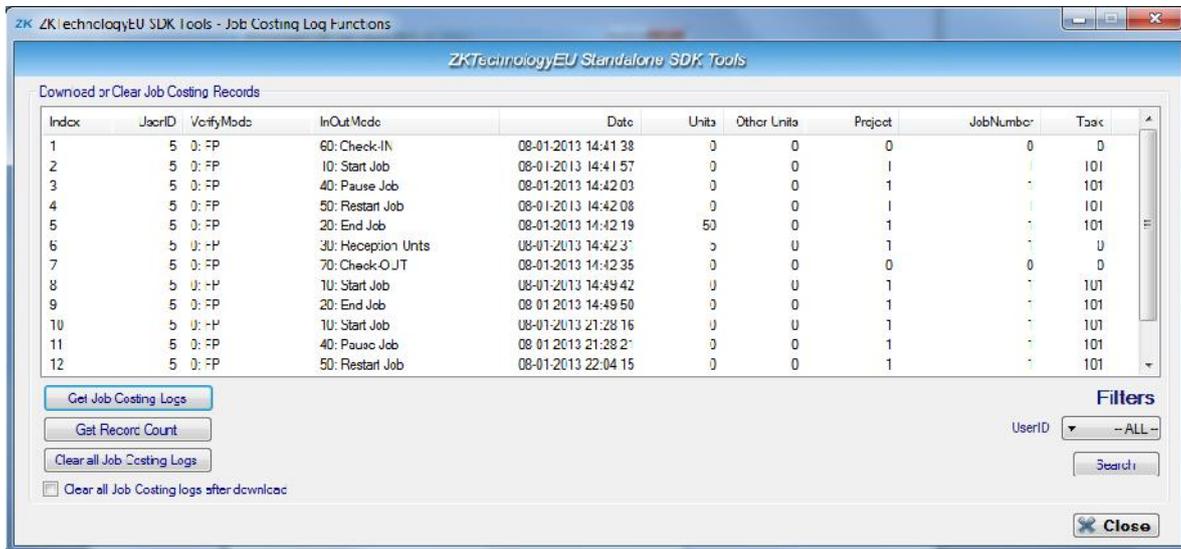
Data Field	Description
Index	Internal record number
User ID	User code affected for this operation
VerifyMode	Same as T&A. The way user identify to terminal.
InOut Mode	Operation code (Start Job, End Job, Check-In, etc...)
Date	Date and Time of this operation
Units	Units entered for this task or job (reception units)
Other Units	Units entered in "Reception Units". It can be damaged units, etc...
Project	Project number assigned to this operation.
Job Number	Job number or job code assigned to this operation, except Check-In/Out codes that are assigned to 0.
Task	Task code assigned to this operation, except Check-In/Out and reception units codes that are assigned to 0.

Finally, in order to see the real log records and make easy integration with other software, the system includes a PC demo called ZKTECO_EU_SDKTools.exe, that allows get all job costing log records.



Using the demo Software, we can easily connect to terminal and selecting "Job costing logs" browse all user operations entered in terminal with the operation code, Job number, task and units .

Picture 70: Job Costing icon in SDK Tool



Picture 71: Job Costing Log Functions on SDK Tool

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