# Software User Guide

# Jetronix-Eco

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This User Guide provides detailed guide on how to use the Jetronix-Eco Software

# Table of Contents




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# About this Guide

## This document is divided into the following chapters:

- Chapter 1, “Introducing Jetronix-Eco Software”.
- Chapter 2, “Software Key Features & Description”
- Chapter 3, “Getting Started”
- Chapter 4, “Sample Process Profile Guide”.
- The glossary provides definitions of technical terms that appear in the guide.

“Jetronix-Eco” User Guide organized in chapters and ends with a glossary of the terms and abbreviations used.

Chapters contain all what's related to the software operating, ends with sample process parameter settings as a guide and not as default operating parameters.

Table of content in the soft copy version is dynamic (cross reference); Right click over any content then Ctrl + Right click will direct the reader to the content location.

*For more detailed information regarding features, capabilities, and software introduced with this release, contact our Live Technical Support through SKYPE account jovysystemscs. Alternatively, send email to support@jovy-sys.com or fill in a support form, from this link http://www.jovy-sys.com/jovysystems/en/contacts/contact-us.html.*

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# 1 Introduction

## 1.1 Purpose

"Jetronix-Eco" software is designed by Jovy Systems® Limited to control the machine from the personal computer. The software allows more control and monitoring functions than the machine user interface.

The software includes machine "firmware upload" mode for future updates, as well the software will be updated, each new update enclosed with release's note include what is new in each version.

The User Guide is the only reference for using Jetronix-Eco Software, it is recommended to read it carefully before Download, Run or Use the Software.

## 1.2 Operating System Requirements

**Platforms:** Windows Server 2003, Windows Server 2008, Windows Vista, Windows XP, Windows 7.

**Processor:** 400 MHz Pentium processor or equivalent (Minimum); 1GHz Pentium processor or equivalent (Recommended).

**RAM:** 128MB RAM (Recommended 256).

**Display:** 800 x 600, 256 colors.

## 1.3 Operating Systems Additional Components

There are essential components should be installed to Windows operating systems for Jetronix-Eco Software.

- Microsoft .NET Framework 3.5 Redistributable Package. File Source downloadable from the Microsoft official website through this link

- Microsoft Visual C++ Runtime 2008 Redistributable. File Source downloadable from the Microsoft official website through this link


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# 2 Software Key Features & Description

## 2.1 Key Features

- User friendly and simple process control interface connecting to machine through USB 2.0 (A to B cable).
- Multi-stages control of the Process Profile through a personal computer.
- Firmware uploading mode (boot-loading mode) for machine firmware upgrading.
- Real time temperature readings (dual temperature scale °C/°F).
- Dynamic courser with X and Y indicator for - Time to Temperature - readings during plotting the running process graph.
- Process Time scales in minutes or seconds.
- Save and Run unlimited profiles to and from personal computer.
- Switch on the machine cooling fan at any time for emergency or application safety.
- Import and Export the saved profiles on machine memory (limited to 50 profiles).
- Saving process graph for analyzing and enhance the profile parameter settings.
- Temperature Safety set point to prevent applications over heating
- Temperature Alarm set point as an audible warning.

## 2.2 Software Parameters Description

**Machine and connectivity status in Software**


The machine (switched on/off) is offline, USB hasn't connected and not detected from the Software


The machine (switched on) is connected to PC through USB connection is detected from the Software


The machine status is detected and connected to the software and communication established.


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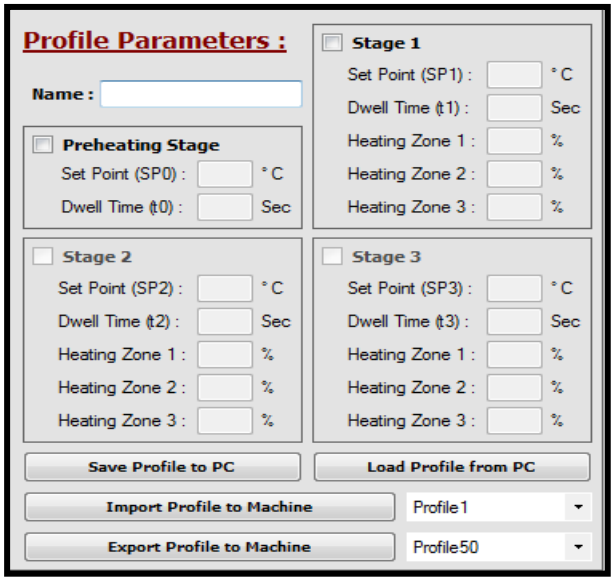
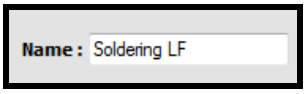
# Process Profile Parameters in Software




Name of Process Profile. Entry limited to 16 digits of upper case English Letters (A-Z), Numbers (0-9) and Space bar.

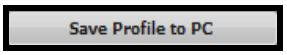

The stage's end temperature value.


Dwell time on the stage's end temperature value.


Upper zone heater power percentage (0% to 100%)


Middle zone heater power percentage (0% to 100%)


Sides zone heaters power percentage (0% to 100%)




Save Process Profile Settings to profiles folder


Load Process Profile Settings from profiles folder


Import Profile Process Settings from Machine memory to Software.



Export Profile Settings to machine to be saved within the 50 profile locations in Machine memory.



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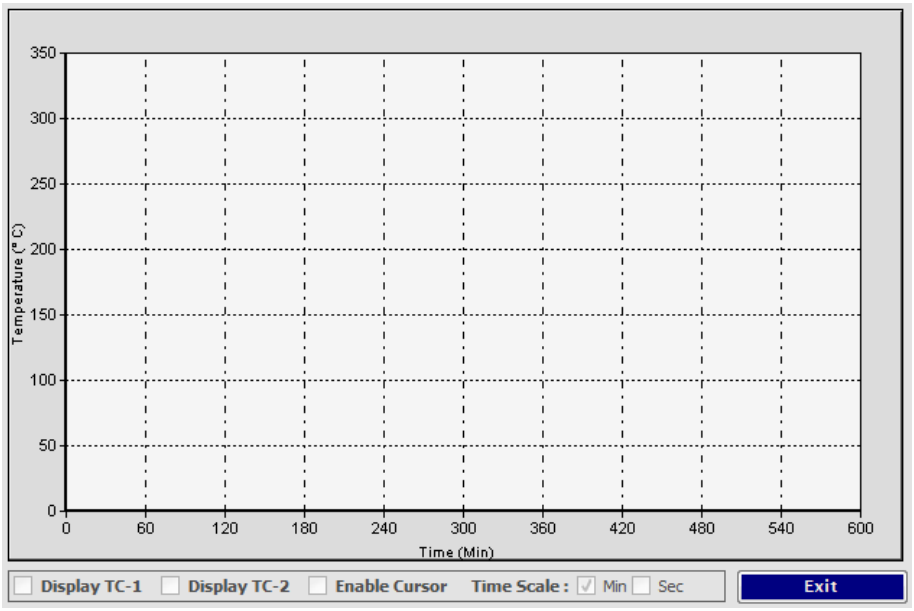
Start the Process Profile


Stop the Process Profile

## Process Graph Parameter Settings





Enable or disable plotting Main Thermocouple readings


Enable or disable plotting Optional Thermocouple readings


Enable courser for process Time to Temperture readings.


Set the Graph time scale in minutes or seconds.


Save the Process Graph for Part or Finished Process

## Machine peripherals control of the software


Run or Stop the Cooling Fan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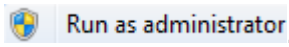
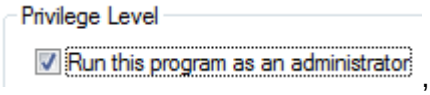
# 3 Getting Started

## 3.1 Software Installation

Installation includes three steps in sequences, Windows OS components, and Jetronix Suite and confirms the USB driver installation

- Run the CD with the machine package. Open folder additional OS components and Run two files. Restart your computer after successful installation.
    - Microsoft .NET Framework 3.5 Redistributable Package
    - Microsoft Visual C++ Runtime 2008 Redistributable
- Install the Software package, the file in Software Suite (un-compressed) folder. Right click choose **Run as Administrator** 

. Windows vista or later versions.
- Open Jetronix file location, C:\Program Files (x86)\Jetronix Rework Systems\Jetronix Suite, Right click on Jetronix application file, right click properties then compatibility and chose run this program as administrator 

, then Apply.
- Run the USB driver executable file and connect switched on Jetronix USB cable to a PC, the drivers should be detected automatically. Jetronix LCD shows USB connected. If the USB not detected automatically, choose to install the driver files manually 

. The driver source files in the CD folder named – USB driver source file.

## 3.2 Connecting the Machine to Software

- Run Jetronix Suite, the machine status on software will be 

- Connect switched on Jetronix to PC and when connection established the status on Software shows, USB connected. 



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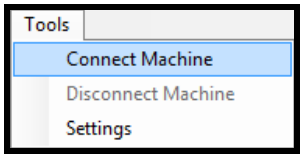
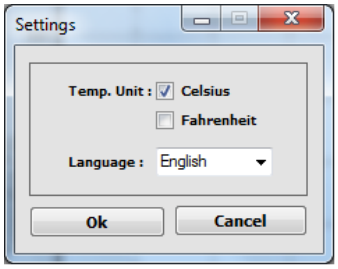
- Click Tools to connect the machine. 


- If the connection successful, the machine LCD shows 

and Machine status over the Software shows 

.

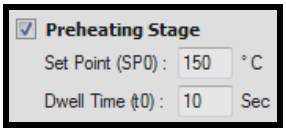
- Choose the Software settings,from Tools then settings 

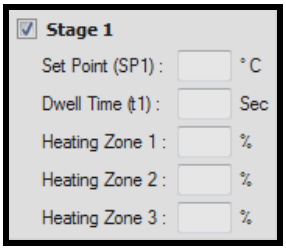
. Define the temperature scale unit °C/°F and Software language (only English available in the first release).

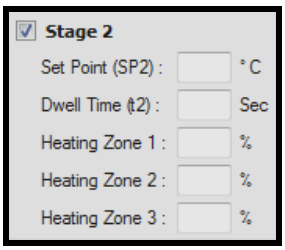
## 3.3 Process Profile Settings

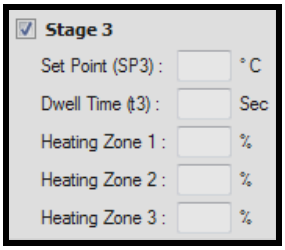
- Choose a Name to the process profile 


- Choose, how many stages (Controlled Preheating, 1,2 or 3) are required according to the application. You must fill in stages in sequence otherwise, stage window will not be active.




- Set the stage's end temperature value 

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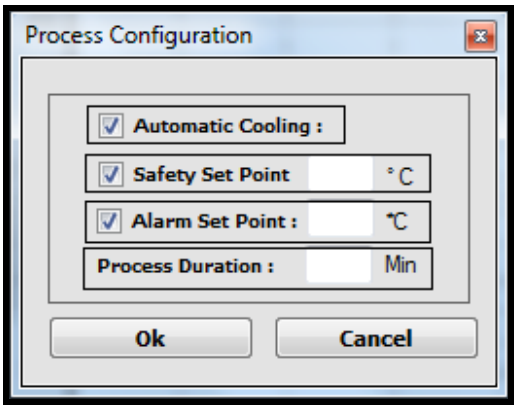
- If Dwell time is required according to application type in each stage, set a number of seconds from 0 to 99 Dwell Time.
- Set the Heaters power level (from 0% to 100%) for each heating zone in each stage Heating Zone 1, Heating Zone 2 or Heating Zone 3.
- After complete all the process profile parameters you have three options:
  - Run the profile by pressing Start process Start Process
  - Save the profile to the PC Save Profile to PC
  - Save the profile to the Machine memory Export Profile to Machine

## 3.4 Run a Profile Process

If the process profile ready, Whether the user finishes new process profile parameters, import a profile from machine memory Import Profile to Machine or load a saved profile from a PC Load Profile from PC then Run the process profile as follows:

- Press Start process Start Process and set up the process configuration then press OK.




| |
|---|
| - Run the cooling fan after last stage. |
| - Set safety set point to stop the heaters and run the cooling fan. |
| - Set alarm set point to switch the warning buzzer. |
| - Set an estimated processing time. |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- Set the Process Graph Parameters. Enable Time to Temperature indicator 

, Time Scale in minutes or seconds 

and number of thermocouples to be displayed 

.
- The Process Profile ends when the last stage complete (Thermocouple reading value is equal to the last stage set temperature and its dwell time passed), Or by pressing Stop 

.
- The Process Profile Graph could be saved during the process running or after the process ends by pressing 

.


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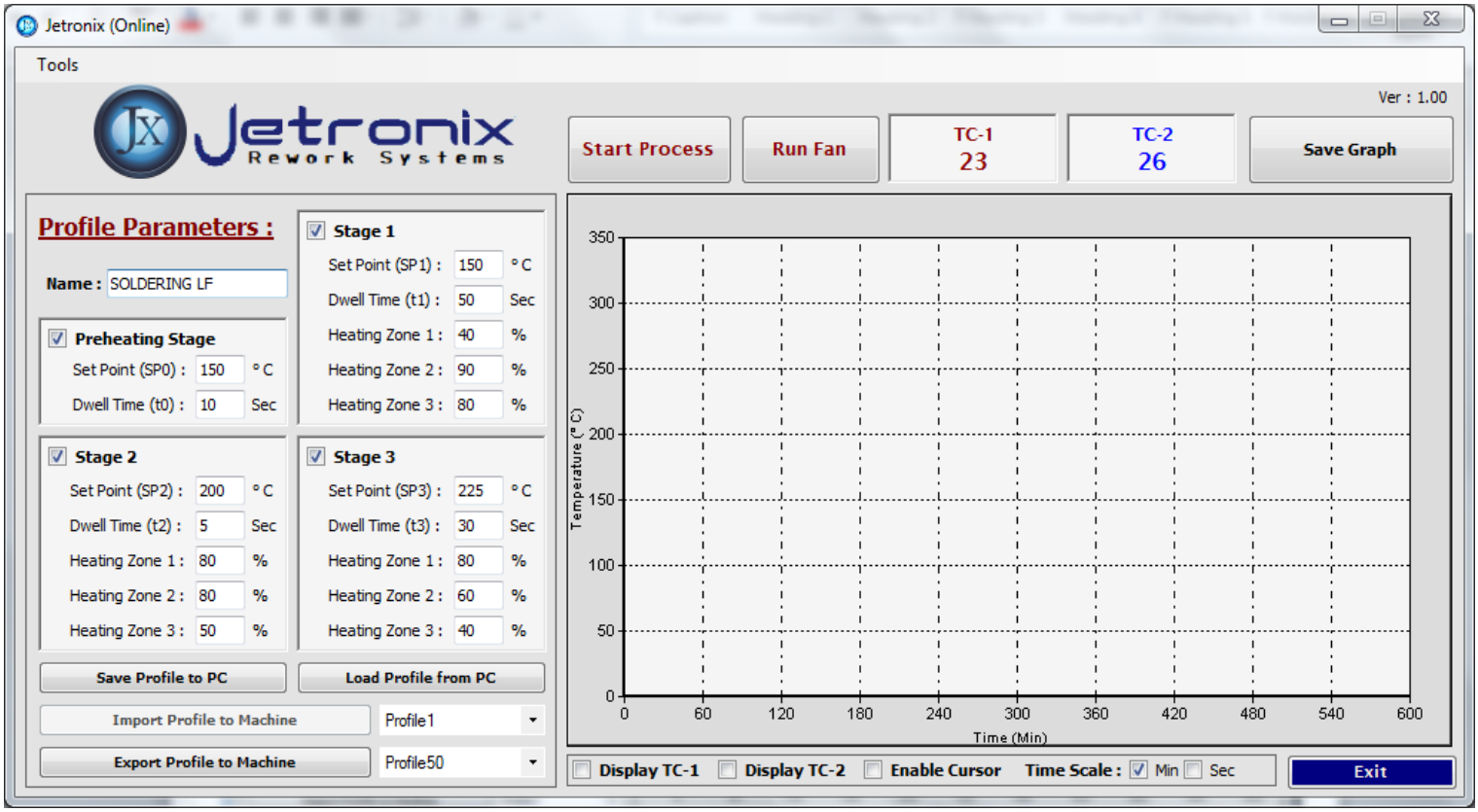
# 4 Sample Process Profile Guide

The Process Profile Guide for a Process of Soldering a Lead Free component as an example and not as Standard Soldering Process. Parameters vary according to the PCB construction and component characteristics.




**Process Profile Name: Soldering Lead Free**

Preheating Stage: Heaters Fully controlled by the machine, stage's end temperature is 150°C to prepare the PCB for heating the component area up to 225°C, with Dwell time t0 of 10 seconds for uniform the heat distribution.

Stage 1: Stage's end temperature is 170° - represents the flux activation stage – with Dwell time t1 of 5 seconds. The heating Zones power level as follows, Upper heating Zone 40% Middle Zone 90% and Side heating Zone 70%.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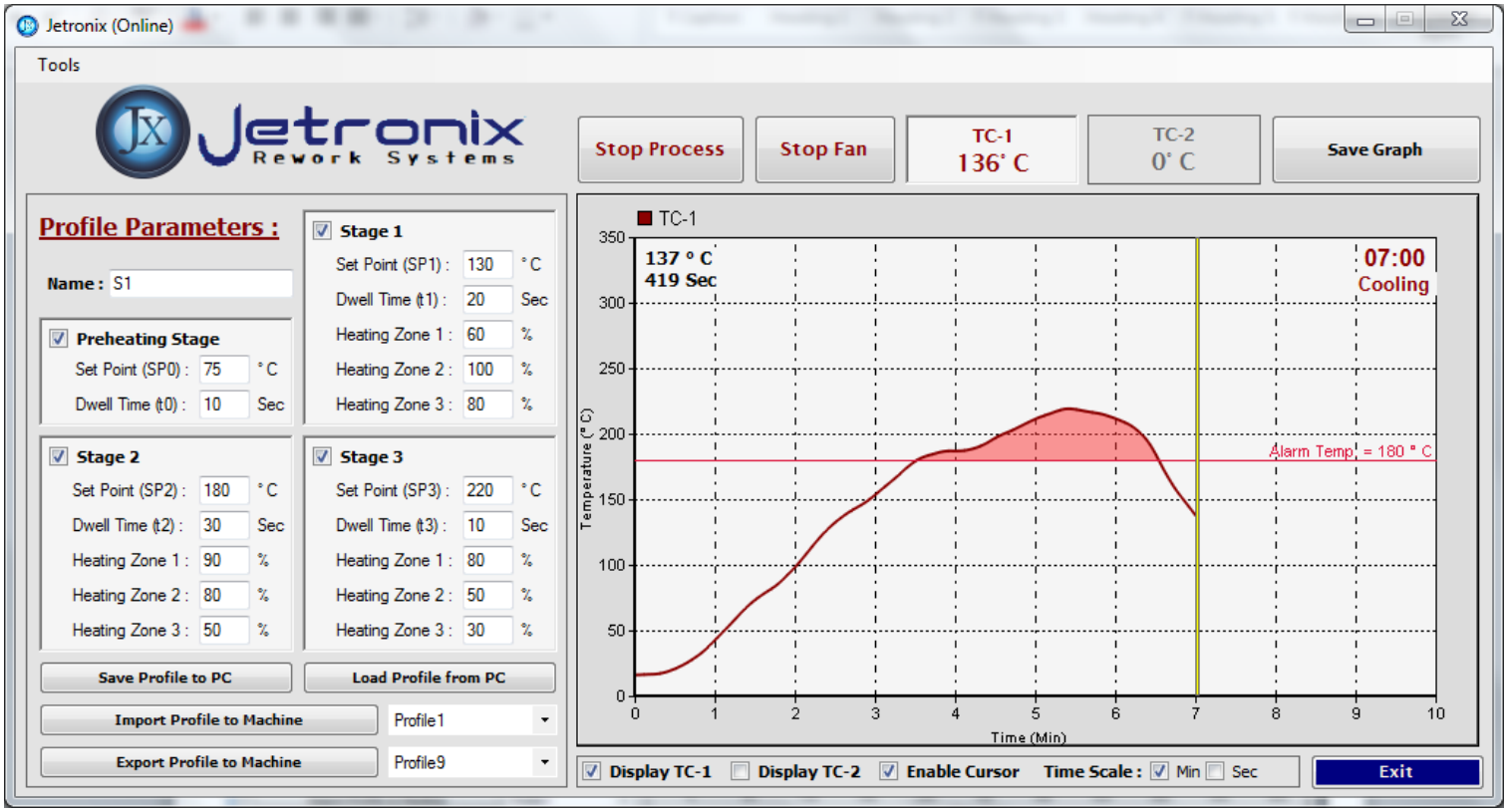
Stage 2: Stage's end temperature is 200°C – represents the Soaking to Reflow stage – with Dwell time t2 of 5 seconds. The heating Zones power level as follows, Upper heating Zone 80% Middle Zone 80% and Side heating Zone 50%.

Stage 3: Stage's end temperature is 200°C – represents the Peak temperature and above reflow – with Dwell time t3 of 30 seconds as Time Above Reflow. The heating Zones power level as follows, Upper heating Zone 80% Middle Zone 60% and Side heating Zone 40%.

Sample for (Completed) Process Graph – Soldering CPU Socket





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# 5 The Glossary

| | |
|---|---|
| TC-1 | Main Thermocouple |
| TC-2 | Optional Thermocouple |
| SP 0 | Temperature value for Preheating Stage's end |
| SP 1 | Temperature value for the Stage 1 end |
| SP2 | Temperature value for the Stage 2 end |
| SP3 | Temperature value for Stage 3 end |
| °C | Celsius |
| °F | Fahrenheit |
| TAL | Time Above Liquidus |
| Min | Minute |
| Sec | Seconds |
| PC | Personal Computer |
| | |


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