



#### Production Details

Product Name	:PCB Assembly 1
Production LotID	:KIC 002 XYZ
Board Count	:7
Oven Name	:Line B
Process Window	:System Default
Production Start Date	:21/07/2019 13:59
Production End Date	:In Progress

PWI = 89%  
CpK = 1.49



## Reflow Process Inspection *for a transparent reflow process*

### RPI Advantages

- **Process Traceability for each PCB**
- **Management Data for Reflow Quality and Throughput**
- **Reduced Production Costs**
- **Temperature Profile Data for Every PCB**
- **Automated Continuous Profiling**
- **Meets Medical Device ISO 13485**
- **Compatible with Select Vacuum Reflow Ovens**

#### Managing the Ultimate Reflow Oven Output

A reflow oven is a very busy machine striving to control multiple variables while heating and cooling PCBs. The purpose of the oven, however, is very simple.

- A. To create a specific PCB profile
- B. To maintain required throughput.

The KIC RPI optimizes both of these outputs while sharing the data on a continuous basis with the authorized personnel.

#### Features

The RPI utilizes embedded sensors for heat and conveyor speed to automatically measure and display the following information:

- PCB profile
- Profile's "fit" to the process window
- Continuously displayed production details
  - ◆ #PCBs produced
  - ◆ Product name and lot ID
  - ◆ Production date and time stamp
  - ◆ Oven name
- PCB process traceability
- SPC & Cpk charts
- Statistics of defects and process yields
- Pareto chart on out of spec occurrences

The RPI features include:

- Profile optimization software
- Barcode reading software
- Remote Process Monitoring software
- Alarm Relay
- Light Bar

#### Fail-Safe Operation

- There are numerous opportunities for mistakes and defects to occur in the reflow process. Human errors include loading the wrong oven program or loading the wrong PCBs. The RPI's bar code capability prevents such mismatch.
- Another common defect occurs when the process drifts out of spec or out of control. The RPI will immediately alert the responsible personnel of such occurrences and can shut down the infeed conveyor if desirable.
- SPC charts will alert the engineer of upcoming trouble, typically when the reflow oven is still operating within spec.

#### Bottom Line

KIC's Reflow Process Inspection System – RPI ensures a healthy profile for every board you build. Can you prove to your auditor the in-spec temperature profile for every board passing through the reflow process?

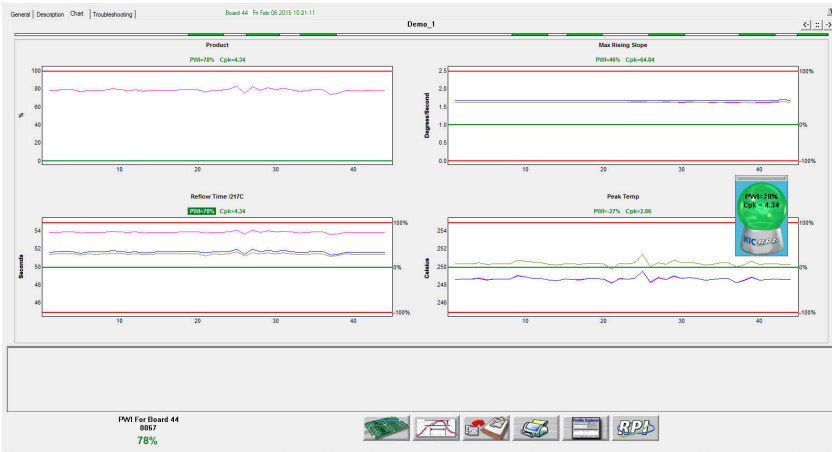
- Meet requirements for medical devices for ISO 13485
- Satisfy all of your auditor's requirements for reliability and traceability
- Board-level traceability – reflow temperature profile data
- SPC – UCL/LCL, Cpk data and control charts in real-time

### Reflow Inspection System

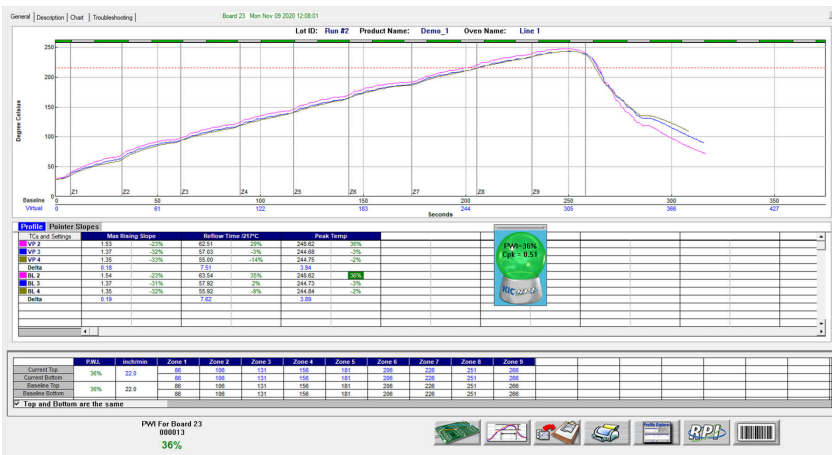
# RPI SYSTEM

## System Components

- Two (2) thermocouple probes (each probe has 15 thermocouples)
  - 1 ea. data acquisition unit
  - 1 ea. speed encoder
  - 1 ea. board sensor
  - 1 ea. alarm relay
  - 1 ea. light tower
  - 1 ea. KIC RPI software with software protection dongle
- Note: The RPI requires a KIC profiler.



## Automatic SPC Charting with Real-time CpK



## Temperature Graph and Data for Each PCB Processed

Technical Support • 24 Hours Every Day • Everywhere

### Risk Free Guarantee

All KIC products are designed to give maximum value and fast payback by streamlining your thermal process. Investment in a KIC product is a step toward total process control and quality management. All KIC products come with a no questions asked, 30 day money back guarantee.

For more information on any of our products or service please visit us on the Web at: [www.kicthermal.com](http://www.kicthermal.com) or [www.kic.cn](http://www.kic.cn).

### Services Available

- Technical Support
- Installation and Setup
- Application Support
- Hardware Support
- Guaranteed Warranty



# RPI VACUUM SYSTEM

In addition to "standard" RPI features:

- Process monitoring capabilities throughout the entire process, including vacuum zone
- Duration in vacuum zone automatically saved for each PCB
- Dynamic graphical display of vacuum zone for each PCB
- Compatible with select\* vacuum reflow ovens. Contact KIC to check for compatibility with your machine.

\* Requires communication with oven controller software. May require purchase of vacuum communication package from oven manufacturer.

## Data acquisition unit/Probes

Accuracy: ..... ± 1.2°C  
 Readings/second: ..... 13  
 Thermocouples: ..... Type K  
 Temperature Range: ..... -150°C to 450°C  
 Dimensions:

Data acquisition unit (LxWxH):  
 308.6mm x 173.5mm x 35.8mm

Probes: ..... length and thermocouple spacing is customized to each oven

Communications: ..... Ethernet, RJ-45 connector

Computer Capability: ..... PC

Power Requirements: ..... 12V DC @ 300mA

# COMPUTER CONFIGURATION

## Minimum System Requirements

Dual Core / 1 GHz Processor PC with 2GB RAM  
 2GB available storage

Video 1024 x 768 resolution / 16-bit

1 available USB port (for data download)

1 available USB port (for software key)

1 available Ethernet port or 1 available USB port with Ethernet to USB

Visit our website at <http://kicthermal.com/support-downloads/os-compatibility-chart> for product compatibility with Windows operating systems.



Corporate Headquarters  
 16120 West Bernardo Drive • San Diego, CA 92127 USA  
 +1(858)673-6050 Phone • +1(858)673-0085 FAX  
[sales@kicmail.com](mailto:sales@kicmail.com) • [tech@kicmail.com](mailto:tech@kicmail.com)

European Regional Office  
[europe.sales@kicmail.com](mailto:europe.sales@kicmail.com) • [europe.tech@kicmail.com](mailto:europe.tech@kicmail.com)

Asian Regional Office  
[asia.sales@kicmail.com](mailto:asia.sales@kicmail.com) • [asia.tech@kicmail.com](mailto:asia.tech@kicmail.com)

[kicthermal.com](http://kicthermal.com)

[kic.cn](http://kic.cn)