

# KIC<sup>®</sup> NAVIGATOR<sup>™</sup>



Process  
Set Up  
Tool



## OPTIMIZED SET UP

- ◆ Optimize set up even for strict process requirements
- ◆ Maximize product throughput
- ◆ Guarantee solder joint quality
- ◆ More Efficient staff allocation
- ◆ Better equipment utilization
- ◆ 24 Hour customer support

## The One-Best Process Set Up — Automatically

KIC's powerful Navigator software is a system that *automatically determines the single best oven recipe for every product*. Once the initial profile is run, the Navigator evaluates billions of combinations of conveyor speeds and setpoint temperatures. In 60 seconds or less, the Navigator presents the process set up that will produce a profile centered in the process window, with the lowest Process Window Index<sup>™</sup> (PWI<sup>™</sup>) number. Reducing the profile to a single number provides the operator with the ONE BEST oven set up for each product.

### KIC Navigator Profiling is Easy

You give the Navigator your profile specs and the Navigator tells you how to set the oven to achieve that profile. No more profile prediction, no more auto-prediction, just the best oven set up in less than a minute. The Navigator is capable of automatically searching the entire range of possible recipes — *over a billion* — in less than a minute, so operators no longer need to set search parameters. With the Navigator, an operator with limited process knowledge can find the optimal profile every time.

### KIC Navigator Profiling is Fast

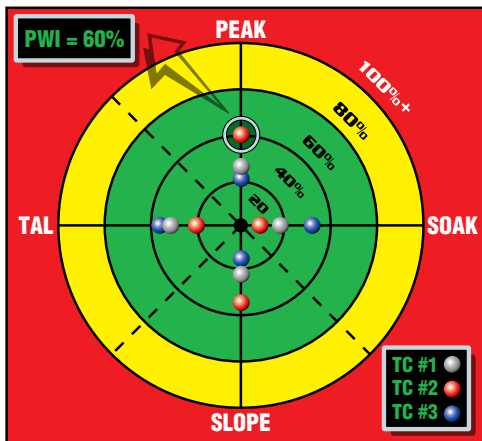
Whether it takes you two runs to set up a simple profile, or 5 runs for a difficult one, why spend the time? The Navigator finds the best possible profile in less than 60 seconds. This means more efficient use of the engineering resources, increased line uptime, and improved line uptime — which all mean an improved bottom line.

### KIC Navigator Profiling is Precise

Without the power of the Navigator, solder reflow oven setpoint changes are typically made in 5°C increments. Research made possible by the Process Window Index shows that setting up the oven in smaller increments offers significantly improved process performance. Extensive testing revealed substantial benefits in setting up profiles in 1°C increments. Slight setpoint changes in the soak and reflow zones produced more robust profiles that reduced temperatures at hot spots on the board and provided more even heating across the assembly. Precision profiling also makes developing tight-spec lead-free profiles as quick and easy as any other profile with the Navigator.



# THE PROCESS WINDOW INDEX™



## Profiling Reduced to a Single Number

For precise ranking of profile performance, the KIC Navigator uses the Process Window Index (PWI). The PWI calculates how much of the available process window is used by a given profile in relation to its process specifications. Therefore, the lower the PWI, the more efficient and stable the process! (See the PWI data sheet for a detailed explanation)

<b>Solder Paste: SYSTEM DEFAULT</b>			
<b>Maximum Slope Over the Profile</b>			
<input checked="" type="checkbox"/> Maximum Rising Slope (Ramp Rate)	Target:	2.0	High: 3.0 Celsius/Second(s)
<input checked="" type="checkbox"/> Maximum Falling Slope (Cooling Rate) (i.e. -5 → -1)	Range:	-4.0	→ -2.0 Celsius/Second(s)
Number of Seconds to Calculate Slope Over: 40			
<b>Maximum Slope Between Temperatures:</b>			
Temperature Range:	<input checked="" type="checkbox"/> Slope 1	<input type="checkbox"/> Slope 2	<input type="checkbox"/> Slope 3
Celsius:	30	→ 175	
Slope Range:	Celsius/Seconds(s)	0.5	→ 1
Number of Seconds to Calculate Slope Over: 90			
<b>Time between/above and Peak Temperatures</b>			
Temperature Range:	<input type="checkbox"/> Preheat	<input checked="" type="checkbox"/> Soak	<input checked="" type="checkbox"/> Reflow
Celsius:		175	→ 185
Time:		35	→ 45
Second:			30 → 90
Temperature Range:	<input type="checkbox"/> Total Time Above	<input checked="" type="checkbox"/> Peak	<input type="checkbox"/> Maximum Exit Temperature
Celsius:		208	→ 228
Time:			
Second:			
<input type="button" value="✓"/> <input type="button" value="✗"/>			

Edit the Process Window Screenshot

# COMPUTER CONFIGURATION

## Minimum System Requirements

- 400 MHz Processor, Celeron / 128 Mb RAM<sup>1</sup>
- 1 Gb available storage (for product history)
- Video 1024 x 768 resolution / 16-bit
- 1 available serial port or USB port
- 1 available parallel port or USB port for software key options
- Microsoft® Windows® 2000 or XP<sup>2</sup>

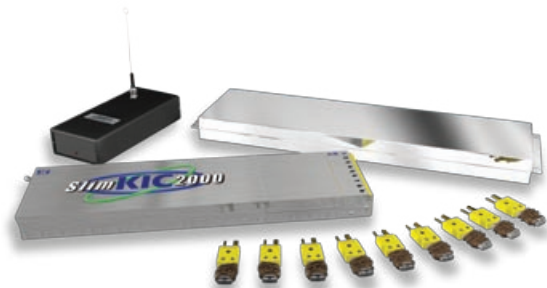
1 When KIC 2000 Software is running on the same computer as the Oven software, and/or when additional KIC 2000 Software options are installed, a faster CPU and more RAM may be required.  
2 Contact KIC for issues with operating systems other than those listed.

# KIC 2000 PLATFORM

The KIC Navigator expands the power and capabilities of your SlimKIC® 2000™ Thermal Profiler, optimizing your process set up automatically. Please refer to the SlimKIC 2000 data sheet for complete details and specifications.

The KIC Navigator is a component of and included with the KIC Auto-Focus™ option. Please refer to the KIC Auto-Focus data sheet for complete details and specifications.

**Note:** KIC 2000 products can interface directly with the oven controller, eliminating the need for manual setpoint data entry. Please consult your oven supplier for availability.



## 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.

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