SRA Smart Reflow Analyzer Hardware Guide

Publication Number SRA-330200-000

KIC® Making Ovens Smarter®

SRA Smart Reflow Analyzer Hardware Guide

Copyright © 2018 KIC. All rights reserved. Patents pending.
16120 West Bernardo Drive
San Diego, CA 92127
Phone: +1 858 673 6050 Fax: +1 858 673 0085
A Division of Embedded Designs Inc.

This document contains information that is proprietary to KIC. Said information, is copyrighted as is all associated software and hardware. All rights are reserved. Patents are pending.

This document and the information contained in it may not be sold, duplicated, used, or disclosed, in whole or in part, except as specifically authorized in writing by KIC. The information contained in this document and associated software is subject to change without notice.

There are no warranties with respect to the information contained in this document, express or implied, except as provided by written contract between KIC and the customer.

All KIC product names and logos are trademarks of Embedded Designs, Inc. All other trademarks used herein are the property of their respective owners.

Table of Contents

INTRODUCING THE SRA - SMART REFLOW ANALYZER **1**

REVIEW YOUR SRA KIT 2

YOUR SRA SOFTWARE 2

SRA HARDWARE INITIALIZATION **3**

WARRANTY PROTECTION IMPAIRMENT 3

THE SRA LEDS **4**

THE SMART DOCK LEDS **5**

THE SRA SPEED DETECTION SENSORS **6**

POWER THE SRA **7**

TYPICAL CHARGING TIME 7

BATTERY LED BEHAVIOR 7

THE POWER BUTTON 7

SET UP THE SRA **8**

CHOOSING THE MODE OF PROFILING **9**

DATALOG MODE 9

WIRELESS MODE 12

HARDWARE STATUS: LED STATUS WINDOW 15

THERMAL PROTECTION **16**

SAFE HANDLING AFTER EXITING THE OVEN **17**

SAFELY REMOVE THE SRA FROM THE OVEN 17

SAFELY OPENING THE SHIELD 18

SPECIFICATIONS AND NORMAL ENVIRONMENTAL CONDITIONS **19**

CLEANING PROCEDURE 19

REGULATORY COMPLIANCE **20**

CALIBRATING THE SRA **21**

REMOVE SRA MODULE 22

ESTABLISH COMMUNICATION 22

SPECIFY THE CJREF OFFSET 24

SPECIFY THE GAIN ADJUSTMENT 25

REINSTALL SRA MODULE 26

CONTACT KIC **27**

Introducing the SRA - Smart Reflow Analyzer

Built with the latest data processing and wireless technologies available – a smart device
The **SRA (Smart Reflow Analyzer**) and **Smart Dock** are packed with the latest in data processing and wireless technologies.

- Sampling capabilities up to 50 readings per second
- Real-time data collection through a secure, private Wi-Fi network with the Smart Dock pairing using ANT technology
- The latest in durable high temperature rated materials.
- **NiMH rechargeable batteries** make for a **reliable and safe** power source
- Advanced sensors for automated conveyor speed measurements
- Profile Stacking: Store multiple profile runs in a row before downloading

The SRA Smart Reflow Analyzer stands out as the best and "smartest" temperature data collection system available. The hardware is the best in temperature tolerance design using an **LCP** (Liquid Crystal Polymer) enclosure for better protection and faster cooldown between profiles. The design of the SRA thermal shield allows for easy and secure opening and closing, durability that meets the most stringent of drop tests, and temperature tolerance capabilities that exceed all previous KIC profiler and shield models.
Thermal profile data are conveniently transferred to your computer via a USB connection or real-time via Wi-Fi depending on the model. With complex power management algorithms and state-of-the-art circuitry, the SRA allows for long use between charges and longer battery life. Recharging and powering can be done via the USB cable when connected to a computer or to a wall socket.

The SRA Smart Reflow Analyzer raises the bar for Smart Factory systems and is another of the many smart devices and systems KIC offers to improve your production quality, productivity, and documentation.

Refer to this hardware guide for additional information when you see this warning symbol.

*This symbol indicates **HOT SURFACE** on the SRA shield and pallet. It is used in this guide anywhere where warnings are indicating safety procedures or warnings concerning hot surfaces.*

Review Your SRA Kit

Upon receiving your SRA kit, check it to make sure that all the required components are there. The specific contents of your kit will match the configuration— datalog or wireless—that you ordered. The full catalog of parts appears below.

NEED NEW IMAGE OF COMPLETE KIT ABOVE

Part Description
SRA Smart Reflow Analyzer - datalog or Wi-Fi model
Smart Dock (Wi-Fi models only)
AC charger/power supply
USB communication cable (A-Male/Micro-B)
Gloves for handling the SRA, hot from the thermal process
SRA Smart Reflow Analyzer Getting Started Guide
SRA Smart Reflow Analyzer CD containing:
Profiling Software 2G
SRA Smart Reflow Analyzer Hardware Guide
Profiling Software 2G User Manual
USB Software Dongle Key (Needed to run the Profiling Software 2G)
Calibration Certificate
Carrying Case

Your SRA Software

Profiling Software 2G provides all the tools you need for thermal profiling with your SRA Smart Reflow Analyzer. It lets you set operating parameters, monitor your hardware, graphically display analytical data, and manage multiple profile data sets. This Hardware Guide uses images from the Profiling Software 2G to illustrate procedures.

SRA Hardware Initialization

To begin profiling in either datalog or Wi-Fi mode, you must first set up your SRA for use on your PC. Both modes communicate to the computer through a standard USB port – datalog mode uses a cable, Transmitter (Wi-Fi) mode uses the Smart Dock. If the computer has no available USB ports, use a standard 2-8 port *hub* to add an open port.

Note: ***Install Profiling Software 2G BEFORE connecting the SRA Smart hardware to the computer. Connecting the hardware before the software is installed may result in Windows OS selecting the incorrect driver for the device and it will not connect to the software.***

The normal setup routine **must** follow the sequence shown below:

1. Install the software.
2. Install the USB security dongle.
3. Connect the SRA Smart Reflow Analyzer hardware to the computer.

Note: ***When connecting the SRA Smart Reflow Analyzer to laptop computers that utilize a floating ground connection (2-prong power plug) manually ground the laptop before connecting the SRA. This procedure will prevent unwanted electrical interference that may distort the temperature data collected by the SRA.***

If you have any questions or need assistance connecting your hardware, contact KIC Technical Support tech@kicmail.com.

Warranty Protection Impairment

Caution: RISK OF VIOLATION OF WARRANTY
Improper handling may limit our liability for damage to equipment and may also violate your instrument warranty. As well improper handling or use could impair the protection provided by the equipment.

The SRA LEDs

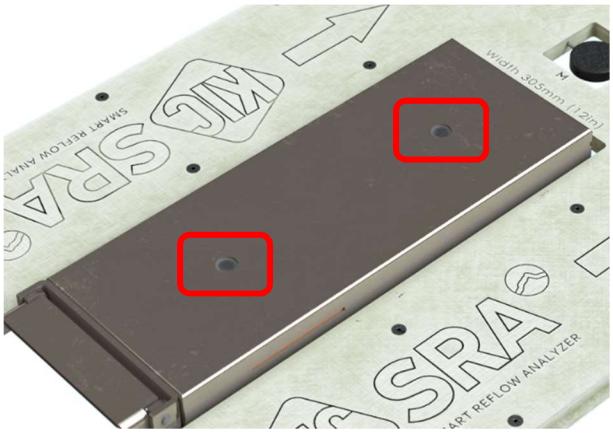
LED Name/ Icon/Color	Mode	LED Behavior	Mode Description
Battery	Charging	Combined solid and flashing. See description	Plugged into USB for charging. Each LED represents 1/3rd of battery capacity. Starting from the left the lights go from flashing to solid as the battery charge fills. Full charge when all 3 are solid.
	Using battery power	Flashing every 3 seconds	LEDs will flash depending on amount of charge left. Minimum to 1/3rd charge left – LED 1 1/3rd to 2/3rd charge left – LED 1-2 2/3rd to full charge left – LED 1-2-3
Alert	Not Ready	Solid On	Cannot profile: TCs too hot, SRA Module too hot, Battery too low, startup failure, voltage too low to charge or memory full. Plug into PC and software to identify alert.
	Ready	Off	Ready to begin profiling.
Data Collection	Profiling	Fast Flashing	Profiling in progress.
	Profile Complete	Flashing every 3 seconds	One or more profiles are complete and stored in memory.
	Data Empty	Off	No profiles stored in memory.
Wi-Fi	No Communications	Off	Wi-Fi not in use or not available.
	Wi-Fi In Use	Fast flashing	When profiling or downloading.
	Wi-Fi Ready	Slow flashing	Flashing every 3 seconds when paired with Smart Dock
ANT	Beacon	Flashing	Beacon mode starts when one sensor window is covered for >5 seconds. LED flashes until SRA finds a Smart Dock beacon and pairs with it to make private Wi-Fi connection.

The Smart Dock LEDs

LED Name/ Icon/Color	Mode	LED Behavior	Mode Description
Power	Power	Solid	Power to Smart Dock from USB established
Alert	Not Ready	Solid On	Cannot profile: due to TC 1 missing, TCs too hot, SRA module too hot, Battery too low, startup failure, voltage too low to charge or memory full. Plug into PC and software to identify alert.
	Ready	Off	Ready to begin profiling.
Data Collection	Profiling	Fast Flashing	Profiling in progress.
	Profile Complete	Flashing every 3 seconds	One or more profiles are complete and stored in SRA memory.
	Data Empty	Off	No profiles stored in SRA memory.
Wi-Fi	No Communications	Off	Wi-Fi not in use or not available.
	Wi-Fi In Use	Fast flashing	When profiling or downloading.
	Wi-Fi Ready	Slow flashing	Flashing every 3 seconds when paired with Smart Dock
ANT	Beacon	Flashing	Beacon mode starts when device is tapped. LED flashes for 30 seconds waiting for compatible device to pair. During this time Smart Dock will automatically pair with a compatible device within range.

The SRA Speed Detection Sensors

The SRA uses two (2) built-in sensors for automatic calculation of the conveyor speed during a profile. The top of the thermal shield has two access windows for these two sensors to project through when the shield lid is closed.



These sensors serve two (2) functions:

- Primary use - Automatically calculate conveyor speed during profiling
- Secondary use – With Wi-Fi versions of the SRA, when the unit is powered on, covering a single sensor window initiates the pairing function with the Smart Dock.

  Note: You can reference the LED tables above and Wireless Mode instructions below for more information on pairing of the SRA and the Smart Dock.

Power the SRA

The SRA is powered by an internal NiMH battery pack. You charge the battery using the USB cable into your computer or the USB cable into the plugged-in AC charger.

Typical Charging Time

Normal Charge – 4 hours

NOTE: If the Alert LED is lit and the software indicates the battery is low, but you need to get a profile done, you can charge it for a minimum of 10 minutes to clear the alert and run one profile.

Battery LED Behavior

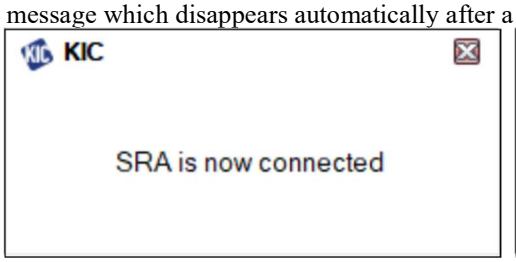
LED Name/ Icon/Color	Mode	LED Behavior	Mode Description
Battery	**Charging**	Combined solid and flashing. See description	Plugged into USB (or AC charger) for charging. Each LED represents 1/3rd of battery capacity. Starting from the left the lights go from flashing to solid as the battery charge fills. Full charge when all 3 are solid.
	Using battery power	Flashing every 3 seconds	LEDs will flash depending on amount of charge left. Minimum to 1/3rd charge left – LED 1 1/3rd to 2/3rd charge left – LED 1-2 2/3rd to full charge left – LED 1-2-3

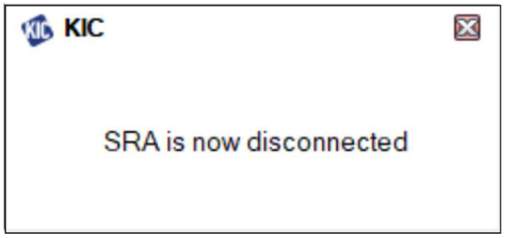
The Power Button

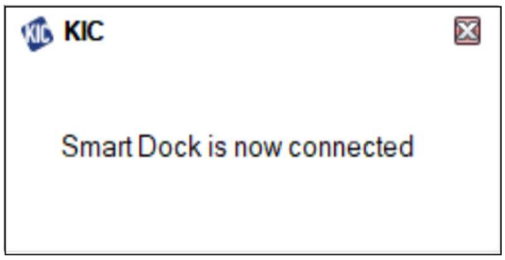
- Push power button momentarily to turn on or off
- Hold power button for 10 seconds for a hard reset of the hardware

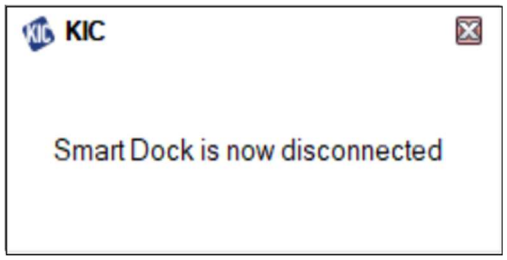
Set Up the SRA

Once the Profiling Software 2G is installed and running, whenever you connect an SRA Smart Reflow Analyzer to a USB port, a message appears in the lower right of the screen reporting that it is detected. When you unplug the device, another message appears showing it has been disconnected from the PC. This is true for the Smart Dock as well. It is a momentary message which disappears automatically after a few seconds:







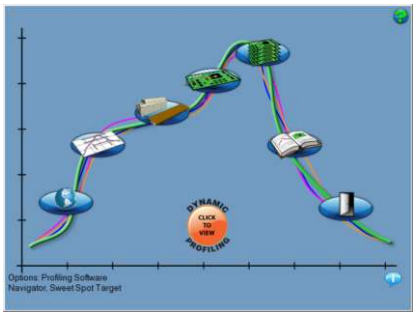


Choosing the Mode of Profiling

There are two modes – Datalog or Transmitter. In Datalog mode, the device records data as it moves through the thermal process that it later will transfer to the computer through a USB cable. In Transmitter mode, the device sends the data live, via Wi-Fi connection with the Smart Dock, and is displayed in the software wirelessly.

Datalog Mode

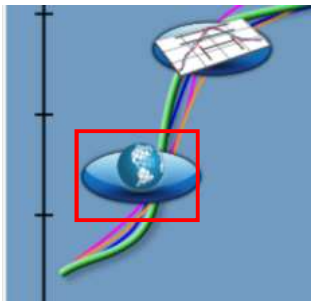
1. Launch Profiling Software 2G. Your Profiling Software USB Security Dongle is required to use all features in the software.



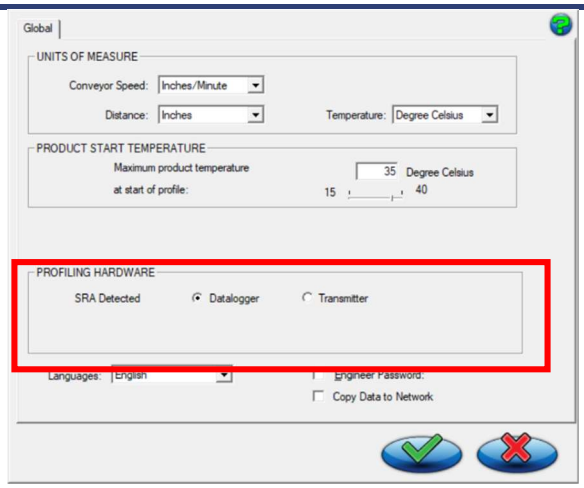
2. Use the communication cable to connect the SRA to a USB port on the computer.

3. A message appears confirming the SRA is detected.

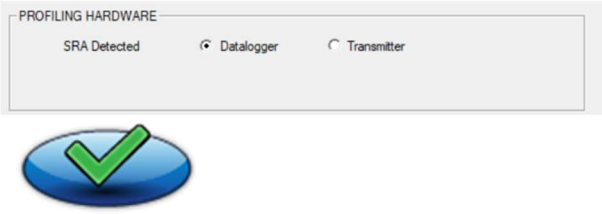
4. From the **Main** screen, click on the **Globe** button to display the **Global Preferences** screen.



5. The software shows the SRA as detected in the Profiling Hardware panel and displays radio button choices for specifying the communication mode.



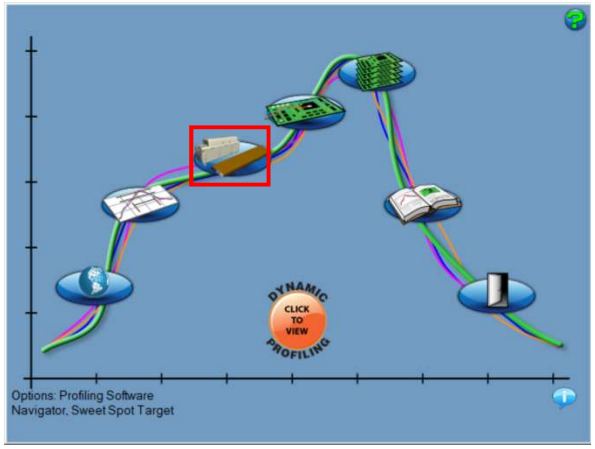
6. Click the radio button for **Datalogger,** followed by the **Save** (green check) button:



7. Click **OK** on the message boxes (no messages appear if the Datalogger radio button was already selected).

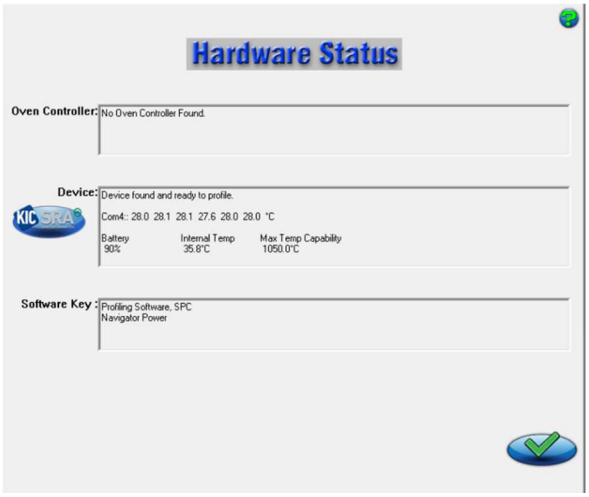
You are returned to the Main screen.

8. When the Main screen appears, click the **Hardware Status** button.



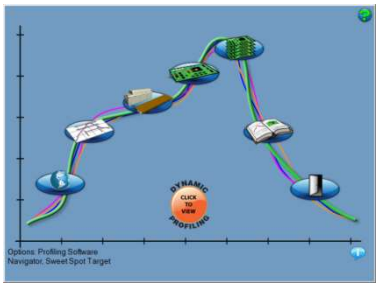
9. The Hardware Status screen appears, showing the status of the device, and confirming that the software is connected to the SRA and receiving live readings.

Note: The Device panel displays live temperature values and the current battery voltage. TC connections display the live temperature or appear as open (opn) if there is no reading from that TC.



Wireless Mode

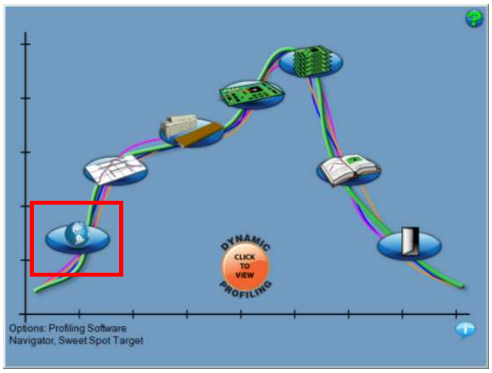
1. Launch Profiling Software 2G. Your Profiling Software USB Security Dongle is required to use all features in the software.



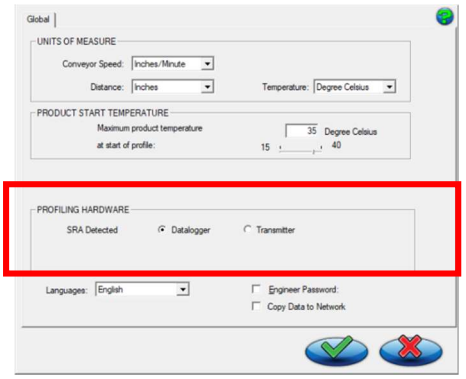
2. Use the communication cable to connect the SRA to a USB port on the computer.

3. A message appears confirming the SRA is detected.

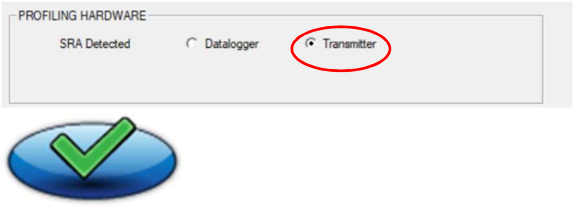
4. From the Main screen, click on the Globe button to display the Global Preferences screen.



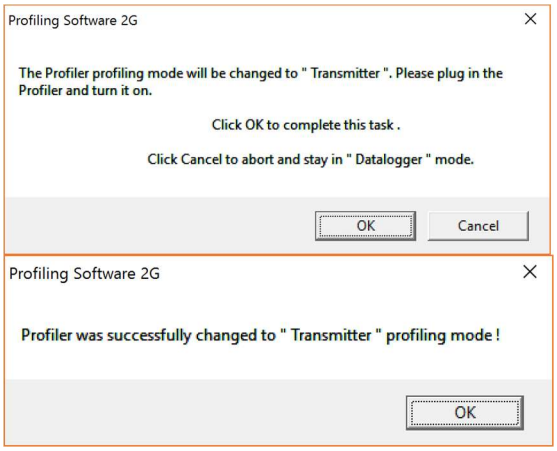
5. The software shows the SRA as detected in the Profiling Hardware panel and displays radio button choices for specifying the communication mode.



6. Click the radio button for **Transmitter,** followed by the **Save** (green check) button



7. Click **OK** on the message boxes. You will then be returned to the main screen.



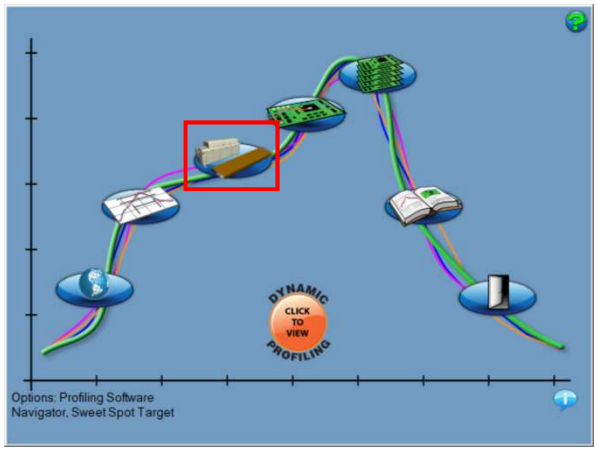
8. Remove the USB cable from the SRA and insert it into the Smart Dock.

9. Tap the Smart Dock and then cover either one of the two (2) SRA speed sensor windows on top of the SRA for at least 5 seconds to start the pairing.

10. The ANT blue LED on both devices flashes until the devices are paired.

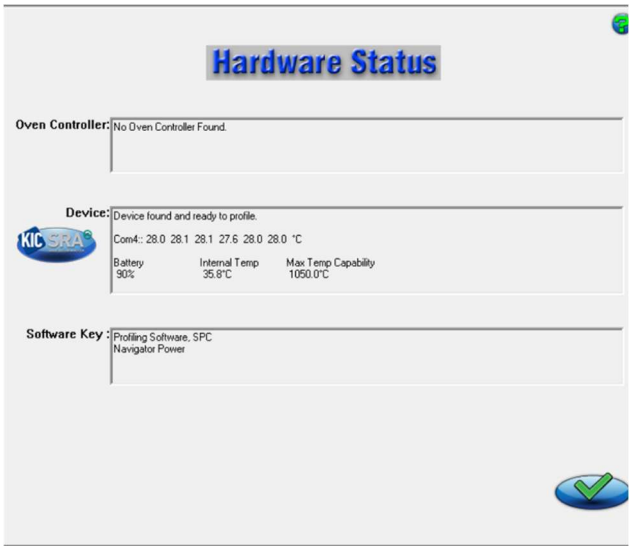
11. The Wi-Fi orange LED on both devices flashes every 3 seconds indicating a successful Wi-Fi connection.

12. When the Main screen appears, click the **Hardware Status** button.



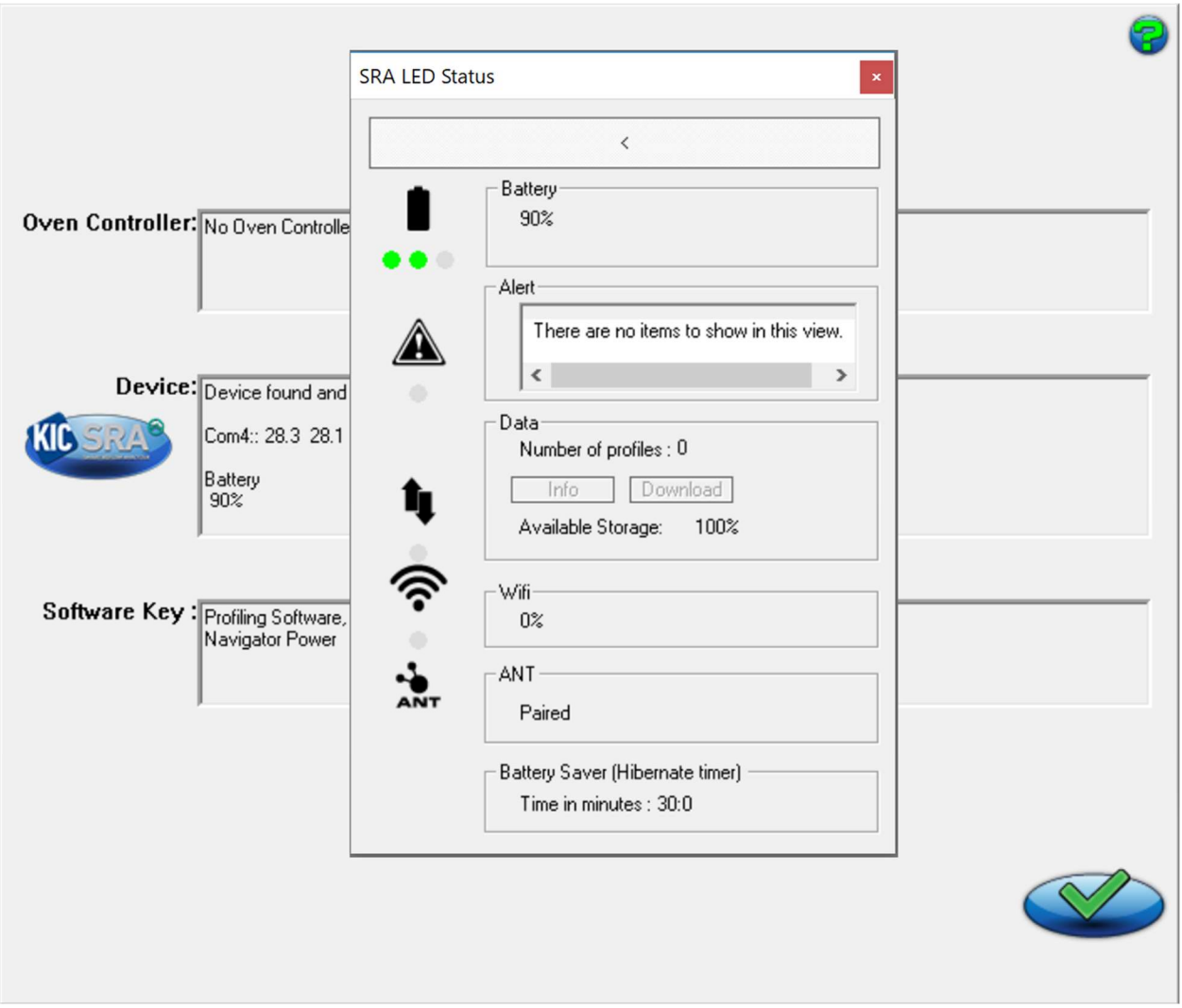
13. The Hardware Status screen appears, showing the status of the device, and confirming that the software is receiving the live Wi-Fi signal from the SRA.

    Note: The Device panel displays live temperature values and the current battery voltage. TC connections display the live temperature or appear as open (opn) if there is no reading from that TC.



Hardware Status: LED Status Window

With the SRA connect you can access an LED Status Window from the Hardware Status screen by clicking on the blue logo to the left of the Device panel. This pop up window will indicate the matching status of the SRA LEDs on the SRA hardware, along with brief status descriptions. This will allow you to identify the state or mode of the device based on the LED display.



Battery indicates percent of battery charge.

Alert (if LED is on) will list any and all alerts in the list box.

Data LED status will indicate the number of profiles currently stored in the SRA with access for information on the stored profiles and the ability to download them. It also displays the amount of available storage (as a percentage).

Wi-Fi indicates the signal strength of the Wi-Fi connection to the Smart Dock (displayed as a percentage).

ANT will list if the SRA is paired with a Smart Dock or not.

Battery Saver indicates the time in minutes the SRA will turn off automatically if left idle.

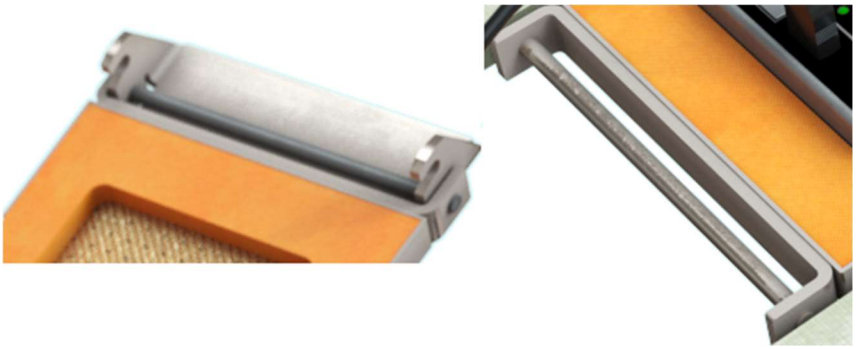
Thermal Protection

The SRA Smart Reflow Analyzer includes a built-in *thermal shield*—a stainless steel enclosure that protects the internal electronics (*SRA module*) against extreme heat during runs through a thermal process.

Caution: *The **SRA module's** maximum internal temperature is 85 ℃.*

Note: G*loves are required* when the device has just emerged from the oven. Your SRA kit includes a pair of specially selected safety gloves.

1. The top side of the shield has a latching tab which hooks on to the bottom section of the shield.



2. Close the lid of the shield and rotate the latch downward to lock it in place.

Safe Handling after Exiting the Oven

As the SRA emerges from the oven, the pallet and shield will be hot to the touch. Your kit includes a pair of safety gloves, and it is absolutely required that you use these gloves for handling the unit after an oven run.

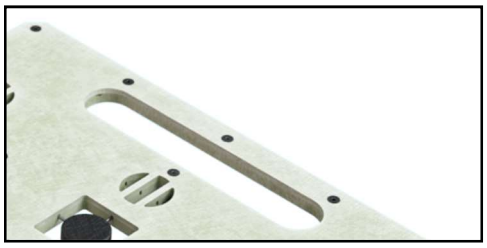
The safety gloves provided with your kit feature a fabric construction that is rated to permit holding an object heated to 120°C (250°F) for up to 30 seconds. Operators should never hold the device longer than 30 seconds and should only hold it as long as needed to move it safely to a workbench or other appropriate flat surface.

Caution: Never substitute gloves that are not rated for similar temperature and holding cycle specifications. Contact your device manufacturer for replacement or extra pairs.

Safely Remove the SRA from the Oven

Hot Surface: Wear the safety gloves supplied with your kit during this procedure.

1. As the SRA reaches the end of the conveyor, the handle at the front of the device can be used to lift it from the conveyor.



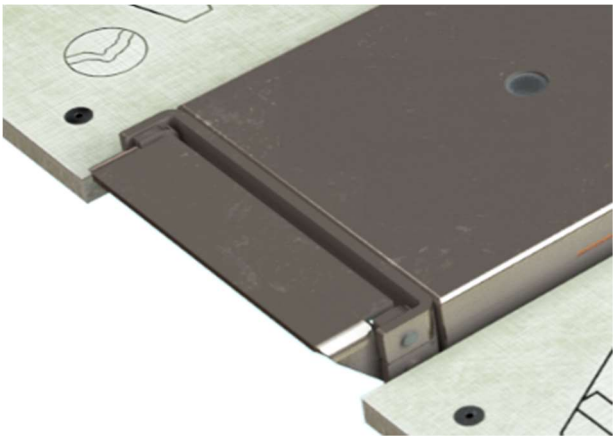
2. Carry the SRA away from the oven area, and place on a flat, level surface that is unaffected by the unit's heat.

3. Follow the procedure titled Safely Opening the Shield.

Safely Opening the Shield

Hot Surface: Wear the safety gloves supplied with your kit during this procedure.

1. Carefully pull up on the latch to open the shield.



2. With a datalogger model, connect the USB download cable to the SRA module to download the data.
   Note: On Wi-Fi enabled versions, it is not necessary to connect the USB cable to the SRA module as the data is wirelessly downloaded via the Smart Dock.

3. It is recommended to place the SRA in front of a fan or other cooling station arrangement to aid in the cooling process.

Specifications and normal environmental conditions

Accuracy:	±0.5°C
Resolution:	±0.1°C
Internal Operating Temp:	0°C to 85°C
Humidity Range:	20-85% non-condensing
Measurement Range:	-150°C to 1050°C
Sample Rate:	Up to 50 readings per second
Data Points:	72000 per channel
PC Connection:	USB 2.0 (Std-A/Micro-B)
Power:	NiMH battery: 2.4Vdc USB connection to PC: 5Vdc, 500mA
Wireless Communication:	Wi-Fi 2.4 GHz & ANT 2.4 GHz
Embedded Thermocouples:	Type K
Dimensions (L x W x H mm):	432.0 x 305.0 x 23.0
For Indoor Use Only	
Overvoltage Category 1	

- Max constant voltage handled: 3.15v
- Max transient voltage handled: 60v for less than 1ms

Cleaning Procedure

Clean the exterior surfaces of the chassis with a dry lint-free cloth. If any dirt remains, use a cloth or swab dipped in a 75% isopropyl alcohol solution. Use a swab to clean narrow spaces around the button and connector. Do not use abrasive compounds on any part of the chassis, as they may damage it.

Be sure to keep the speed sensor windows on both the *SRA module* and thermal shield cover clean of dust and debris to ensure proper operation.

Avoid the use of chemical cleaning agents, which might damage the plastics used in this instrument. Use a 75% isopropyl alcohol solution as a cleaner and wipe with a clean cloth dampened with deionized water. Before using any other type of cleaner, consult your KIC representative.

Regulatory Compliance

FCC

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
FCC Caution: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense

RF Exposure statement: To comply with FCC RF exposure requirements, a separation distance of at least 20cm must be maintained between the SRA Smart Flow Analyzer and all persons when WiFi data is being transmitted.

Calibrating the SRA

To keep your device operating at proper factory specifications, KIC recommends calibrating the unit *every 12 months*. The procedure detailed below lets you calibrate the device to within ±1.1°C (±1.9°F).

The calibration procedure follows a sequence of multiple steps:

1. Removal of *SRA module* from main assembly
2. Establishing *SRA module* hardware/software communication
3. Setting/Adjusting the Cold Junction Reference (CJREF) offset value
4. Setting/Adjusting the Gain value
5. Reinstallation of *SRA module* into main assembly

The CJREF offset is the amount of temperature to add or subtract from the base profiler readings. KIC recommends setting this value to the same temperature as the CJREF (Internal) temperature. You can view the CJREF (Internal) temperature by clicking the *Get Current TC* button on the *Calibration Log* screen displayed during the procedure.

The *Gain Adjust* portion of the calibration procedure affects the accuracy of the profiler across its temperature capability range. For maximum accuracy, set the *Gain Adjust* calibration value to the highest temperature you expect to read for your thermal process.

Note: The *maximum temperature* setting is the highest temperature that the SRA is set to read. The highest temperature that the device is *capable of reading* is 1050°C (1922°F). This device is factory preset at 1050°C (1922°F), but you can change the setting to suit your needs.

Note: Only qualified persons should perform the calibration procedure. If you need assistance, training, or need to arrange for KIC to calibrate your *SRA Smart Reflow Analyzer* contact KIC Technical Support tech@kicmail.com, asia.tech@kicmail.com, europe.tech@kicmail.com.

Before starting the procedure

Assemble the following hardware:

- SRA module
- Micro USB communication cable
- Type K thermocouple simulator
- Calibration Adapter* (SRA version)

*Contact KIC to acquire the correct calibration adapter cable. sales@kicmail.com

TC Simulator

SRA Calibration Adapter

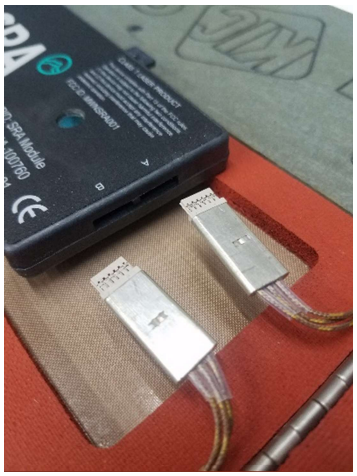
Be prepared to run the *Profiling Software 2G* application and/or the *SRA Hardware Utility*.

Do not attempt to calibrate the *SRA module* with an ungrounded computer as this may produce inaccurate resuls/

Remove SRA Module

1. Open the thermal shield cover, locate and remove the four (4) M3 mounting screws.

2. Lift the *SRA module* slightly out of the shield and then unplug the two (2) connectors at the front edge of the module. This allows the module to be taken completely out of the main assembly.



Establish communication

3. Connect the *SRA module* to the computer USB port. (The device should power on automatically when connected to the PC.)

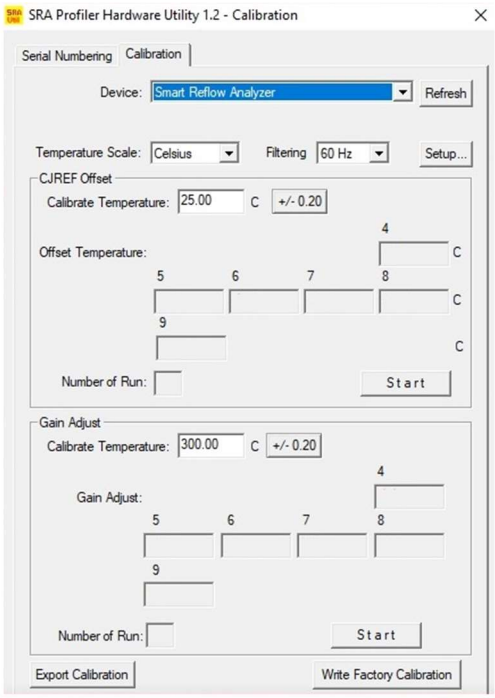
4. Connect the calibration adapter cables to the *SRA module*, making sure to note the orientation of the connector. The side of the connectors stamped with the word 'Top' should face up. Either connector can plug into either slot of the *SRA module*.

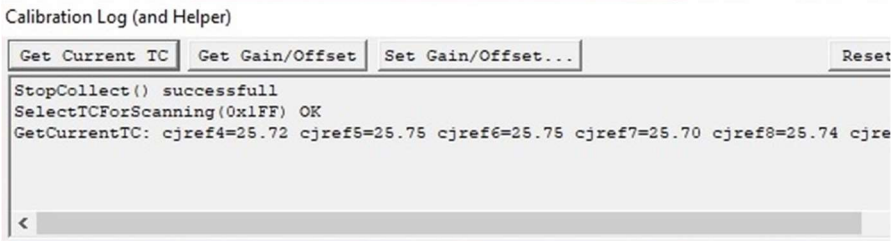
5. Connect the other end of the adapter to the **output port (**left side when instrument viewed upright) of the type K thermocouple simulator.

6. Turn on the power to the thermocouple simulator, and set the output value to 25°C (77°F).

7. Open the **SRA Utility** folder and double click the SRA Util icon SPSUtil (default folder location = *C:\Profiling Software 2G\SPS Utility)*.

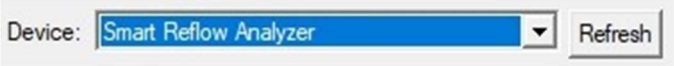
8. The **SRA Hardware Utility - Calibration** screen and the **Calibration Log** screens appear:





9. Ensure that **Smart Reflow Analyzer** is displayed in the Device field, the appropriate temperature scale is selected, and the proper filtering for your location is selected.

   Note: When the software utility is open and the hardware connected, if the *SRA* name does not appear in the Device field, clicking the **Refresh** button forces the utility to search for the presence of the hardware and display the name in the field if found:

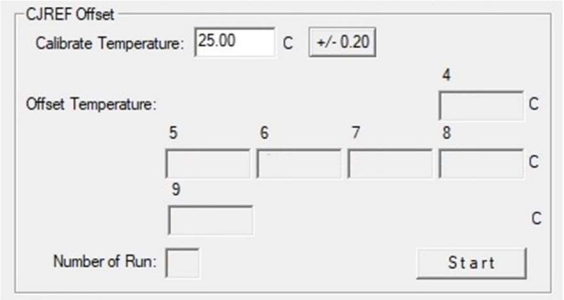


10. On the Calibration Log (and Helper) window, click the **Set Idle** button, and then click the **Get Current TC** button to verify communication between the software and the profiler. (If communicating properly the current live temperature readings from the device appear as shown in example above.)

Specify the CJREF offset

1. Open the **SRA Hardware Utility - Calibration** screen.

2. In the **CJREF Offset** panel's **Calibrate Temperature** field, accept the recommended default temperature of 25°C (77°F) or type in a new value between 10°C (50°F) and 500°C (932°F).



Note: The Calibrate Temperature value should be selected to represent an *anticipated ambient temperature*. Calibrating to this temperature will likely yield acceptably accurate performance. The selected default (25°C) approximates typical room temperature and is recommended for most lead-free soldering applications. However, the number of ovens present or other site-environment factors might influence your selection of this value. You can type in whatever value better matches your specific situation. If your thermal process is well established around specific temperatures, it may make sense to focus calibration on these target values.

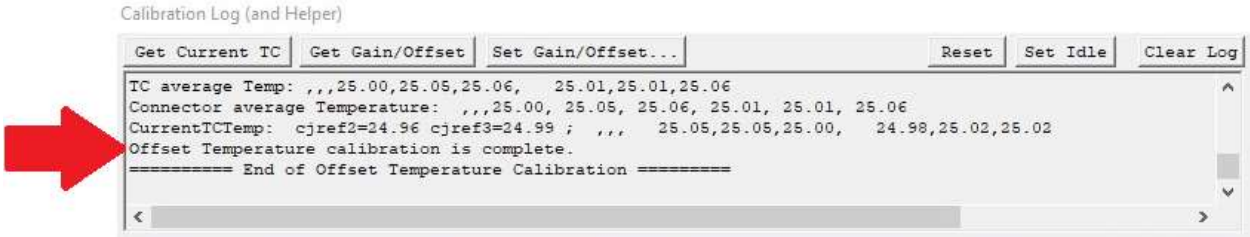
Note: Older versions of software may indicate other values as the default temperature.

3. Adjust the output on the thermocouple simulator to match your specified calibration temperature.

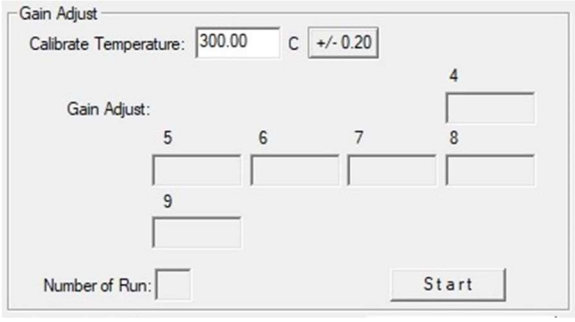
4. When the values match, click the-**Start** button to begin calibration.

   The software automatically adjusts the calibration temperature for each of the device ports, typically resulting in different values among the four ports. Electronic adjustments also tune the profiler for maximum accuracy at the specified temperature.

   When the software completes the offset calibration, a status messages appears in the Calibration Log area at the bottom of the utility screen:



Specify the gain adjustment



1. Open the **SRA Hardware Utility - Calibration** screen.

2. In the **Gain Adjust** panel's **Calibrate Temperature** field, accept the recommended default temperature of 300°C (572°F) or type in a new value between 10°C (50°F) and 500°C (932°F).

   Note: The recommended default temperature is selected for its suitability to typical lead-free soldering applications. The range of values presented offers you the choice of calibrating to a *maximum temperature* or to a specific *temperature of interest*. Calibrating to the maximum temperature will yield acceptably accurate performance throughout the range. Alternatively, if your thermal process is well established around specific temperatures, it may make sense to focus calibration on these target values.

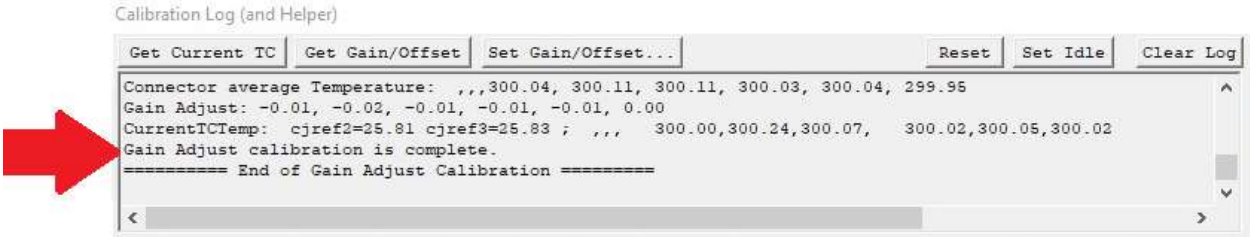
   Note: Older versions of KIC software may indicate other values as the default temperature.

3. Adjust the output on the thermocouple simulator to match your specified calibration temperature.

4. When the values match, click the-**Start** button to begin calibration.

   The software automatically adjusts the Gain setting while electronic adjustments tune the profiler for maximum accuracy at the specified temperature.

   When the software completes the gain adjustment, a status messages appears in the Calibration Log area at the bottom of the utility screen:



5. Close and exit the software to end the procedure.

   Note: In the Gain Adjust panel, the *Number of Run* field displays a running count of the number of times you needed to run the final gain adjustment part of the calibration procedure. The count can go to a maximum of eight. While it is typical to restart the gain adjustment two or three times before achieving final calibration, a run count number that exceeds five or six can indicate that the device has a problem that should be analyzed by KIC technical support. tech@kicmail.com

Reinstall SRA Module

1. Reinsert the two (2) connectors from the main assembly into the front of the *SRA module*. NOTE: Be sure to take note of orientation of connectors – A to A, B to B.

2. Position the *SRA module* in place inside the main assembly and reinstall the four (4) mounting screws.

Contact KIC

On the Web

You can find the latest KIC product news along with a library of useful information at our website:

www.kicthermal.com or www.kic.cn

KIC Technical Support

KIC Tech Support is available by email:

USA: tech@kicmail.com
Europe: europe.tech@kicmail.com
Asia: asia.tech@kicmail.com

KIC Service/Repair

All service and repair of the SPS Smart Profiler or Smart Dock, other than the calibration, requires contacting a KIC Service center and having the service/repair conducted by personnel authorized by KIC.

KIC Product Training

Contact KIC Customer Support by email, training@kicmail.com

KIC Sales

Contact KIC sales:

USA: sales@kicmail.com
Europe: europe.sales@kicmail.com
Asia: asia.sales@kicmail.com
China: asia.sales@kicmail.com

Find the KIC Representative in Your Area

Send an email, or visit our web page to find a local representative.