

Introducing

SolderStar WaveShuttle PRO

Wave Solder Setup & Process Control System

Part of the SolderStar PRO
3 in 1 Profiling Range



REFLOW • WAVE • VAPOUR



The Measurement System - All key parameters in a single pass

TRUE WAVE CONTACT SENSORS
(Not Thermocouple based)

DATALOGGER WITH QUICK
RELEASE 'SmartLink' CONNECTOR

Wave Height Sensor Array

Line speed sensor

Solder
Temperature
Sensor

Topside Pre-heat
Temperature Sensors
(Left & Right)

10mm HIGH QUALITY
PALLET WITH TITANIUM SIDE RAILS
FOR ULTRA REPEATABLE MEASUREMENT
AND MAXIMUM LIFE



TRUE WAVE CONTACT SENSING

FOR SENSING CONTACT TIME, WAVE HEIGHT AND LINE SPEED THE SOLDERSTAR WAVESHUTTLE USES SPECIALISED MEASUREMENT HARDWARE AND AN ARRAY OF TITANIUM SENSORS FITTED TO THE BOTTOM SIDE OF THE PALLET.

THIS TECHNOLOGY PROVIDES MORE ACCURACY AND REPEATABLE MEASUREMENT OF WAVE DATA WITH A RESPONSE TIME OF 10 MILLI-SECONDS. THIS IS 20 – 30 TIMES MORE ACCURATE THAN THERMOCOUPLE BASED SYSTEMS.

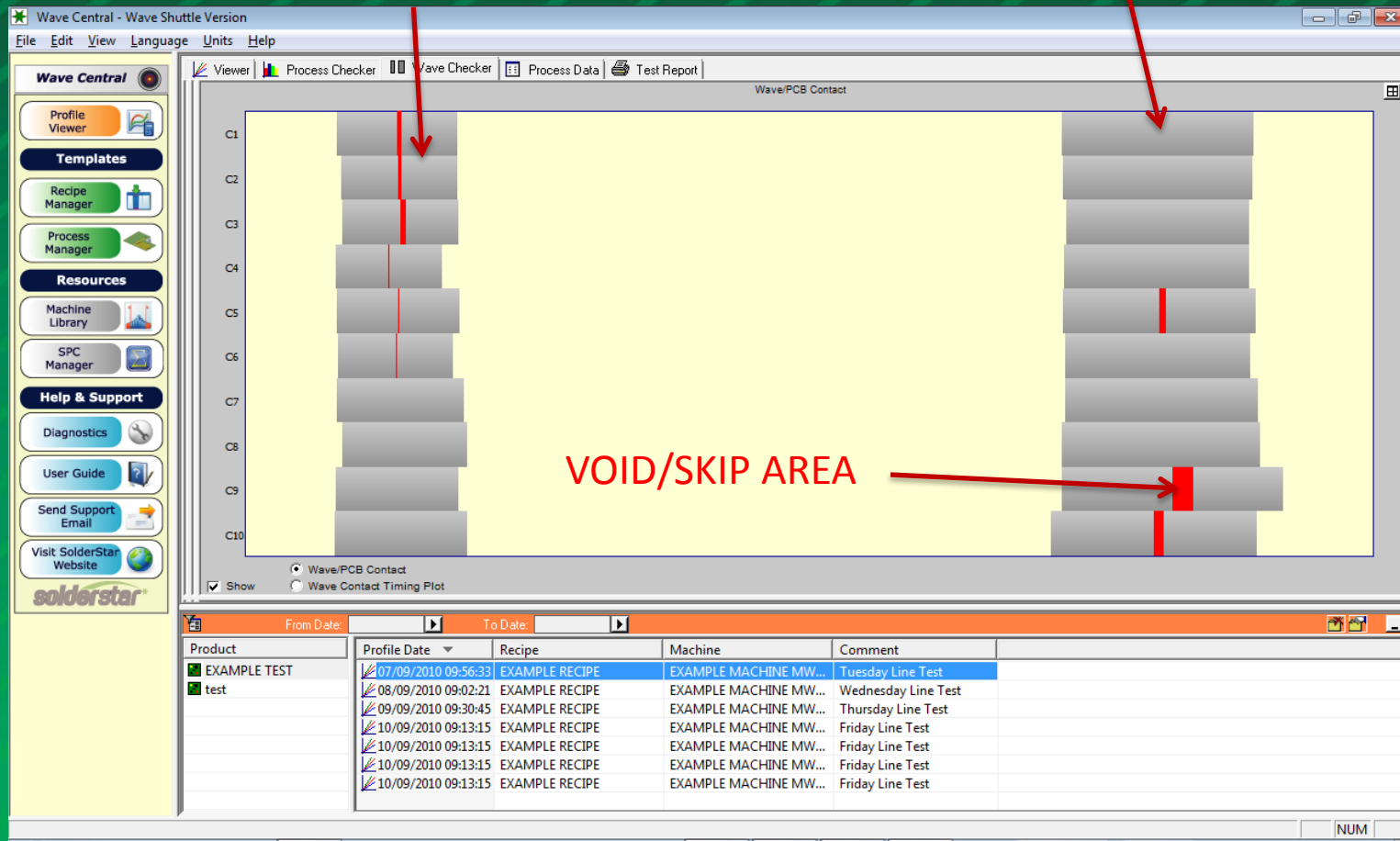


'Digital Plexi-Glass' – Technology

Measure and record the PCB/Wave Contact

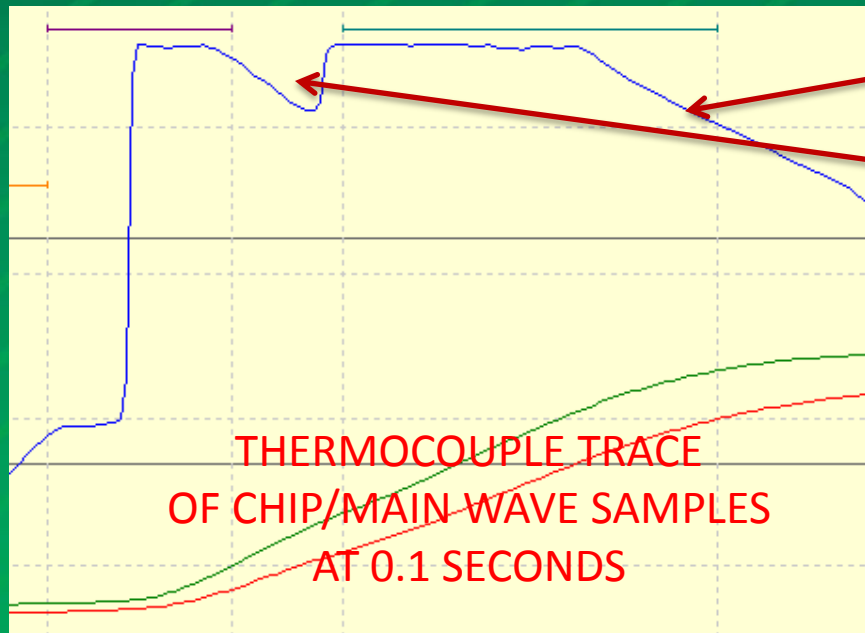
CHIP WAVE
CONTACT AREA

MAIN WAVE
CONTACT AREA



Why not simply use Thermocouples ?

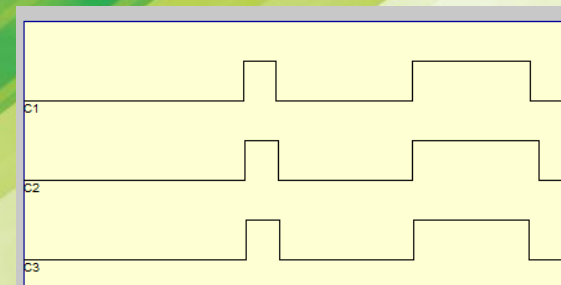
THERMOCOUPLES ARE EXCELLENT TEMPERATURE SENSOR AND ARE USED ON THE WAVE SHUTTLE PRO FOR TEMPERATURE BASED PARAMETER MEASUREMENT.
FOR MEASURING TIME BASED PARAMETERS SUCH AS DWELL TIME AND SPEED THE RESPONSE TIME IS TOO SLOW FOR ACCURATE AND REPEATABLE MEASUREMENT.



**SLOW RESPONSE/SLOPES
INTRODUCE DWELL TIME ERRORS**

**GAP BETWEEN WAVES
IF DIFFICULT TO DETECT REPEATABLY**

**TRUE CONTACT SENSORS
SOLVE THIS PROBLEM**



How is the system used?

The system is unbelievable easy to use :-

- (1) Connector the datalogger to the pallet
- (2) Press the BLUE button to begin the run
- (3) Pass the pallet through the machine
- (4) Press the BLUE button the stop the run
- (5) Disconnect the datalogger from the pallet and download the data to the PC via high speed USB



What Parameters are measured ?

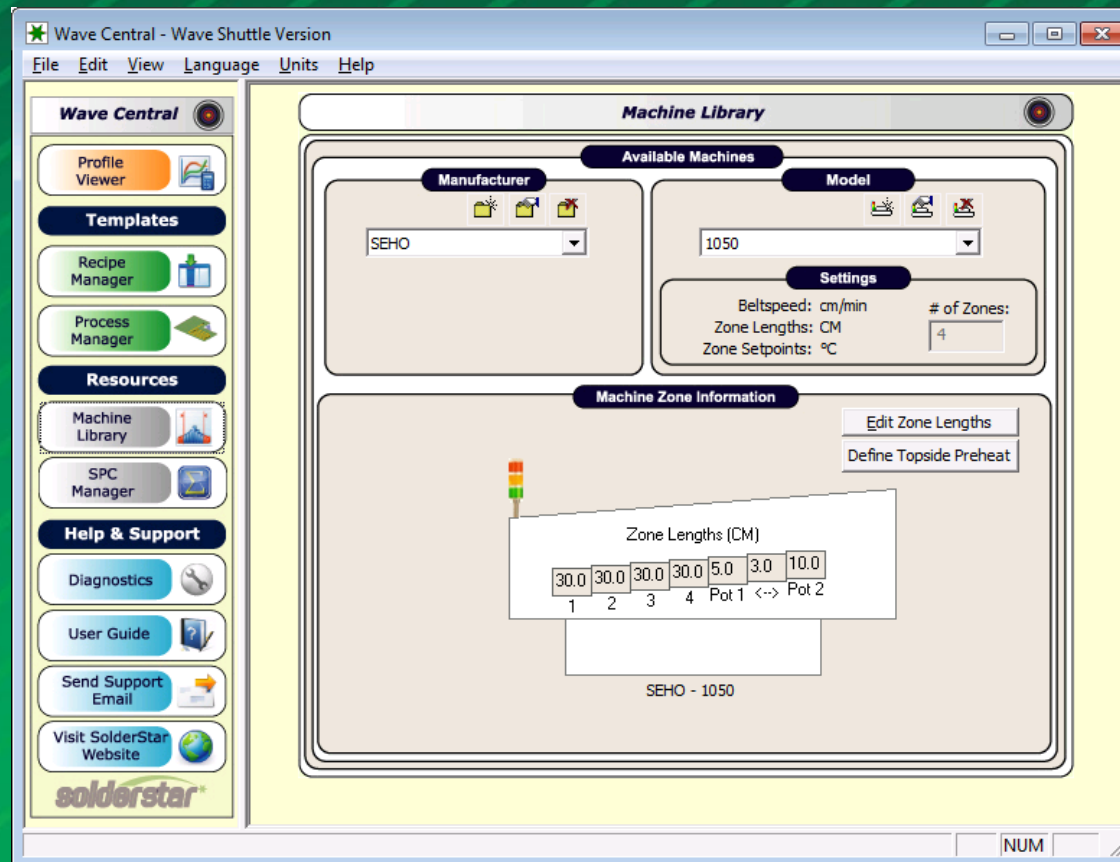
- Dwell/Contact time on Chip / Main Wave
- Immersion Depth / Wave Height
- Conveyor Speed
- Wave to Conveyor Parallelism
- Solder Temperature
- Pre-heat temperatures / Slopes
- Topside peak / wave temperatures



PC Analysis Software

MACHINE LIBRARY

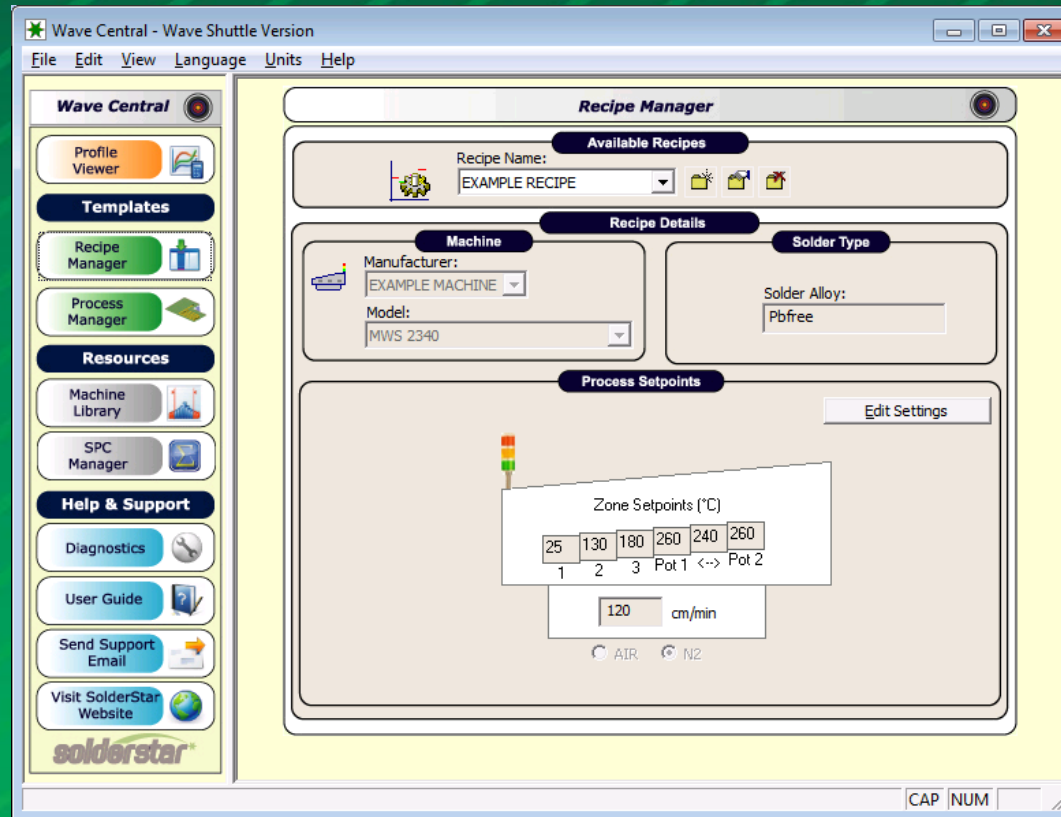
DEFINE INFORMATION ABOUT YOU WAVE SOLDERING MACHINES
ZONE LENGTHS, POT DIMENSIONS , TOPSIDE PRE-HEATING



PC Analysis Software

RECIPE MANAGER

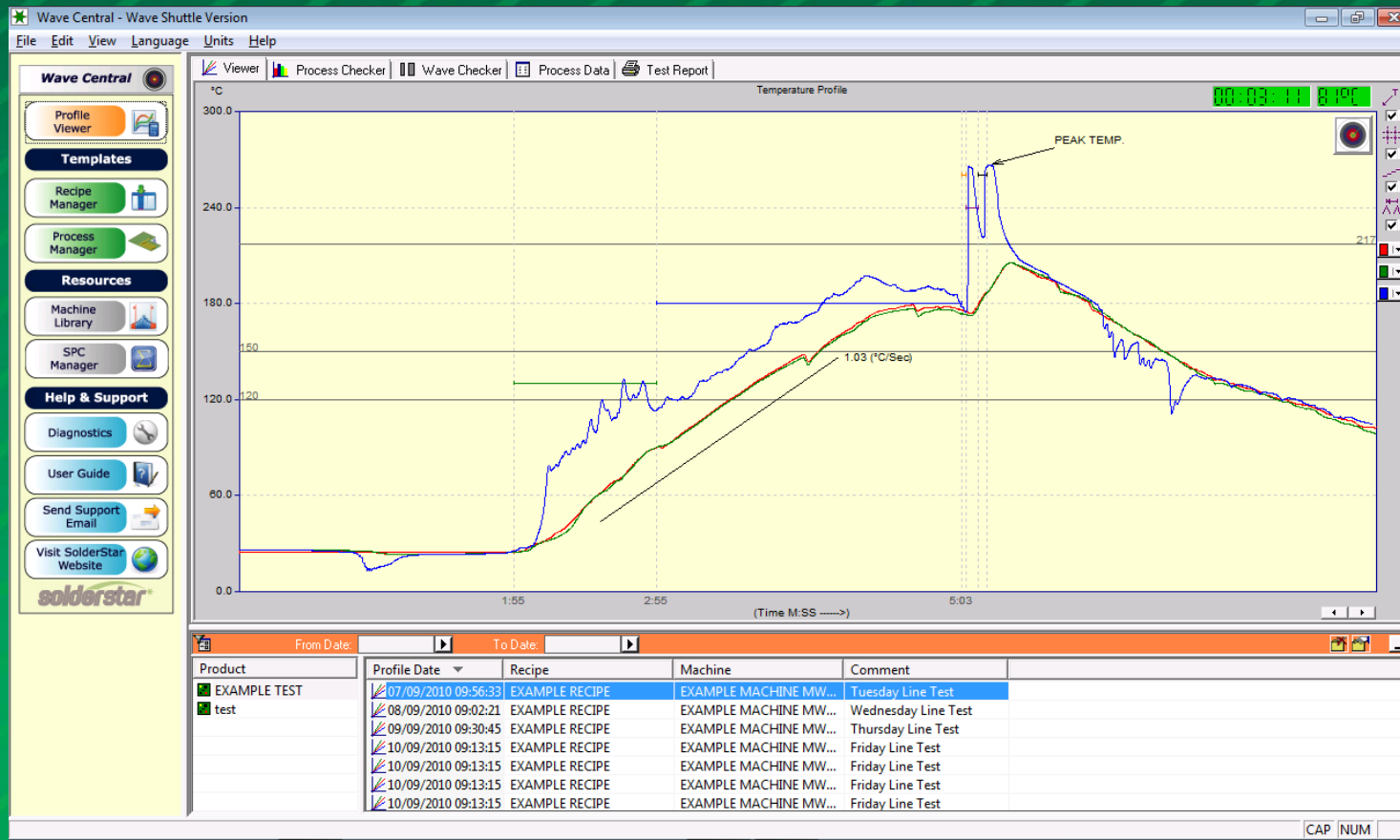
RECORD PROCESS SETPOINTS FOR TEMPERATURE & SPEED



PC Analysis Software

PROFILE VIEWER

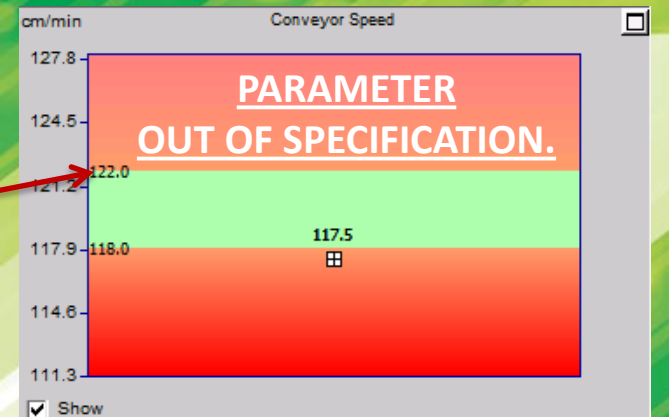
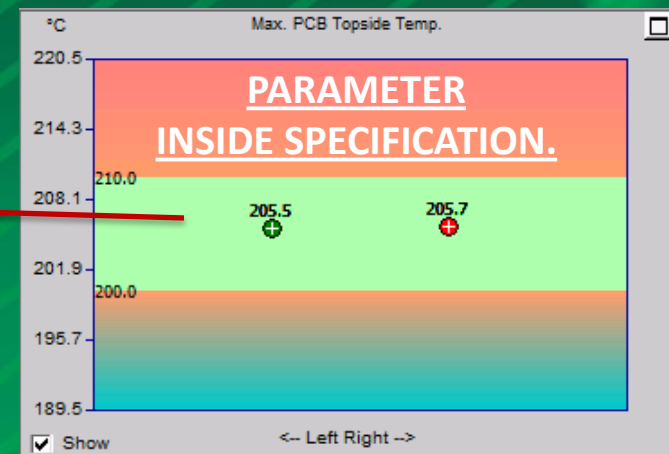
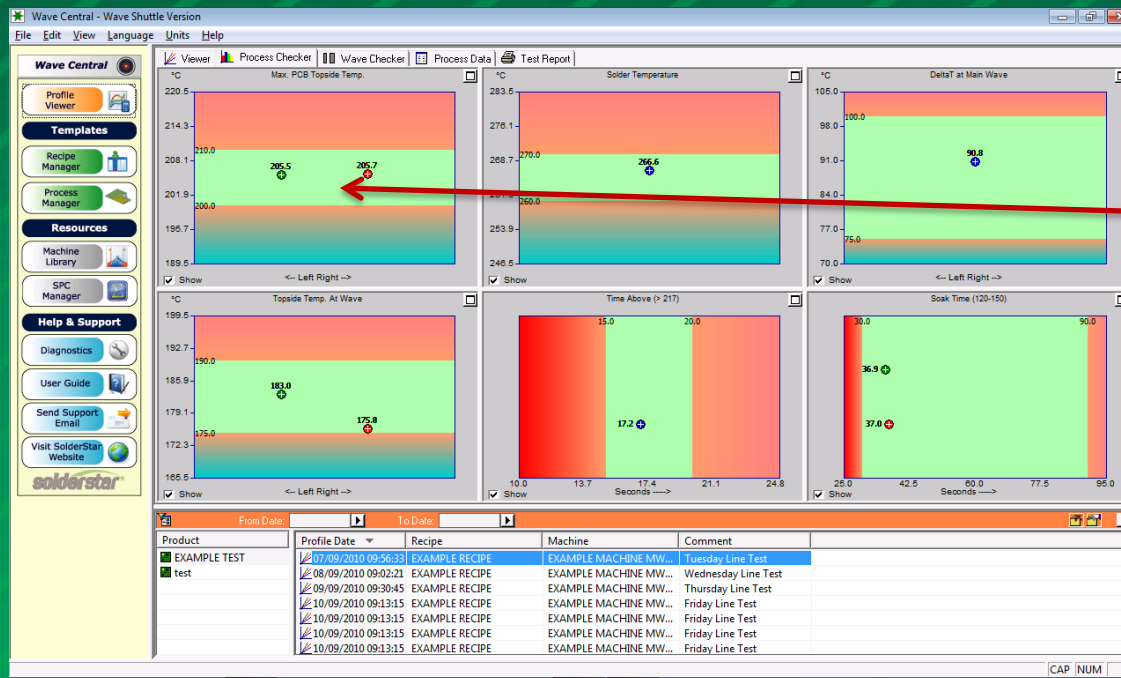
ANALYSE TEMPERATURE DATA, PROFESSIONAL DOCUMENTATION
TOOLS ALLOW COMPREHENSIVE REPORTING.
PROFILE DATA ORGANISATION BY PRODUCT, TIME AND DATE.



PC Analysis Software

PROCESS CHECKER SCREENS

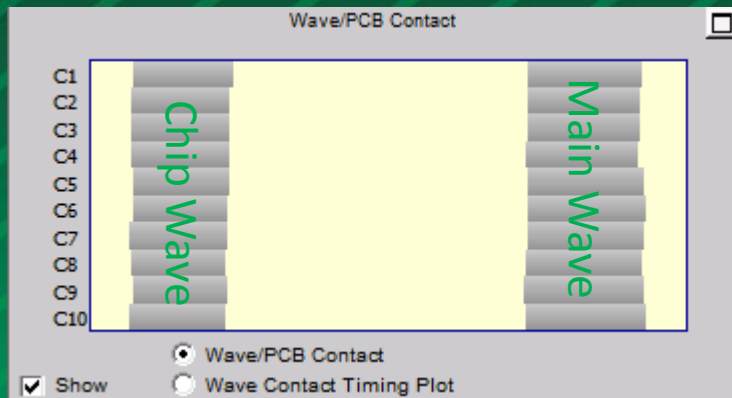
ALLOWS PROCESS LIMITS TO BE DEFINED FOR RAPID PASS/FAIL INDICATION MAKING PROCESS TESTING SIMPLE AND EFFICIENT.



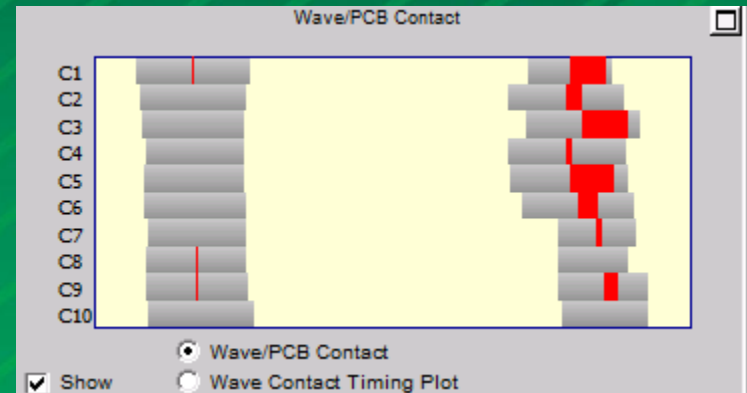
GOOD/BAD LIMITS CAN
BE QUICKLY DEFINED

Dwell time – a graphical representation of your PCB/Wave Contact Examples

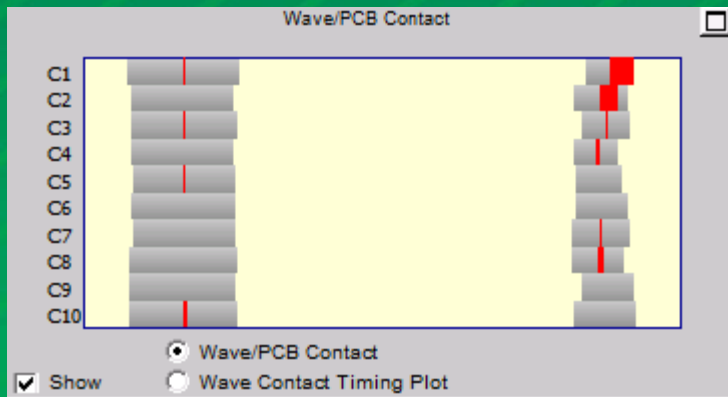
Good Contact



Chip OK – Parallelism Problem On Main Wave + Voiding

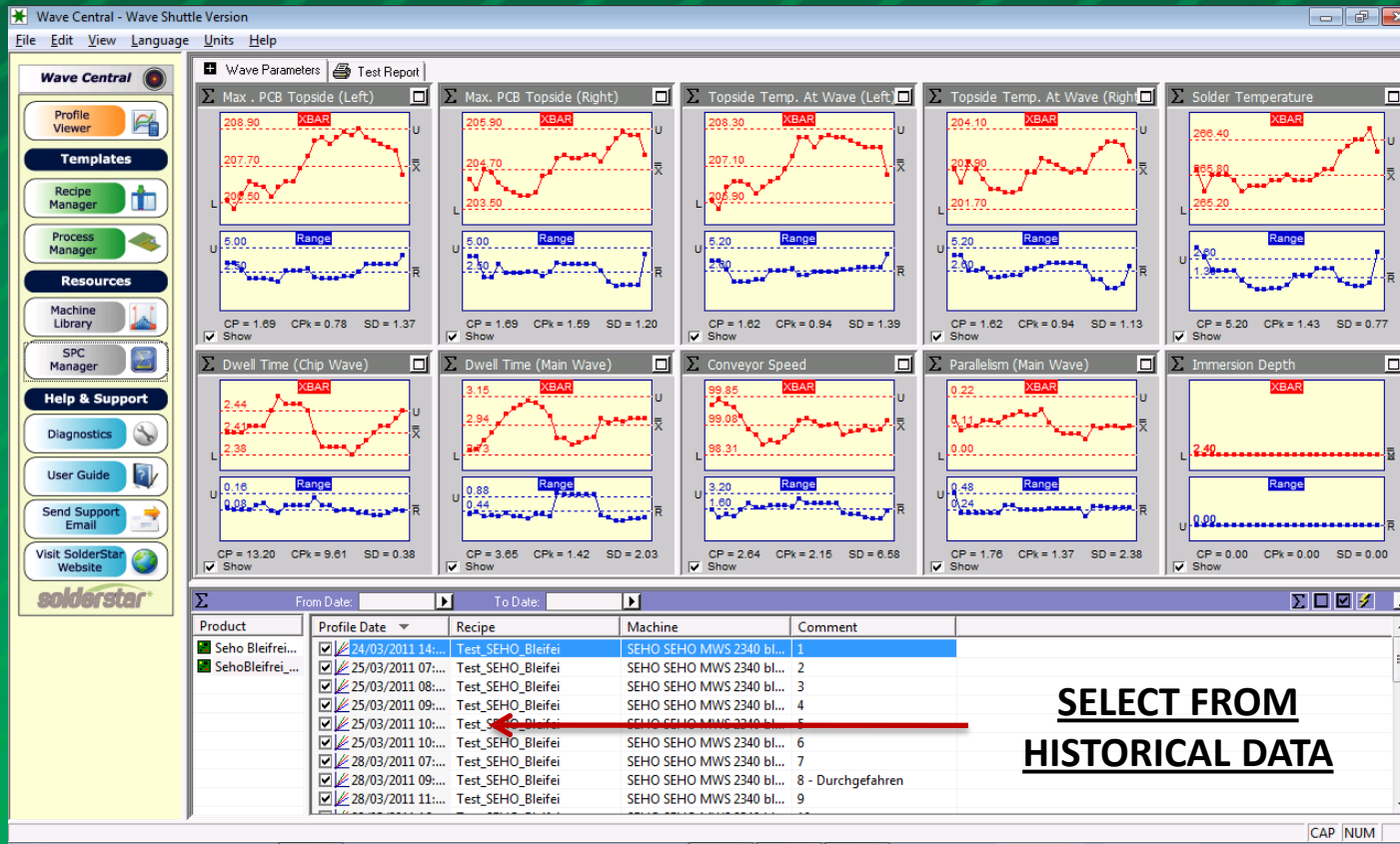


Chip OK – Main Wave Height to low



SPC Manager

ALL DATA CAPTURED BY THE WAVESHUTTLE IS HIGHLY REPEATABLE.
USING OUR DATA MANAGEMENT SYSTEM ALLOWS FOR EASY SPC
CHARTING TO BE PERFORMED USING THE INTEGRAL SPC MANAGER TOOLS



XBAR & RANGE
CHARTS

Cpk & CP
CALCULATION

CONFIGURE USL
AND LSL FOR
6 SIGMA
PRODUCTION