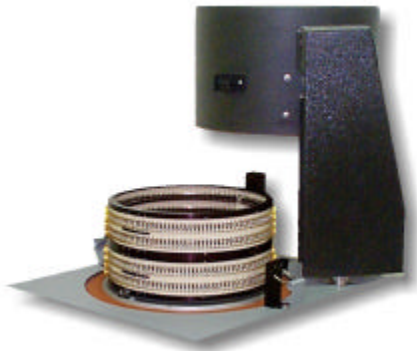




# W-2200B TEMPERATURE TEST SYSTEM

With 250B-1 or 250C Network Analyzer

- Automated software based quartz crystal temperature test system
- Measures over 75 different parameters
- Parameter and curve fit characteristics are checked against easy to define QC limits
- Crystals of different frequencies can be tested in a single temperature run
- All data published in a *Microsoft Access*<sup>™</sup> data base and can be exported to *Microsoft Excel*<sup>™</sup> for custom data analysis
- Crystal part number can be used to set complete measurement parameters, QC limits, temperature test points, and data printouts
- Printouts are generated using *Crystal Reports*<sup>®</sup>



- Accommodates two dual row test wheels with extended life test head contacts
- Easily loaded S&A proprietary sockets accept HC-45, HC-49, HC-43, HC-49US, HC-18, SMD and tubular type packages
- Typically holds 508 devices per run

## SPECIFICATIONS

<b>250B-1 Frequency Range:</b>	15 KHz to 220 MHz
<b>250C Frequency Range:</b>	15 KHz to 500 MHz
<b>Frequency Correlation:</b>	+/- 1 ppm* at series (typical)
<b>Crystal power:</b>	1 nW to 1000 uW (1 MHz to 50 MHz) 1 nW to 500 uW (>50 MHz to 200 MHz)
<b>Temperature Stability:</b>	±0.1° C

\* Proprietary measurement and calibration algorithms provide correlation to industry standard crystal measurement equipment.

## SAUNDERS & ASSOCIATES, INC.

2520 E. Rose Garden Lane - Phoenix, Arizona 85050 USA (602) 971-9977 FAX (602) 971-5522  
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# SYSTEM CONFIGURATION

- S&A 250B-1 or 250C Network Analyzer
- Windows® based System Software
- S&A 2451 Switch Controller
- Printer (Optional)
- S&A 4220 Temperature Test Chamber (LCO<sub>2</sub>, LN<sub>2</sub>, or Mechanical Refrigeration Cooling)
- Computer Requirements:  
Minimum 500 MHz Pentium III  
One full PCI slot with +3.3V & 5V power,  
Windows 98®
- IEC-444 Pi-Network Test Head

# SAMPLE REPORTS

**Crystal Plots**  
Run Name: Crystal Test Run  
Print All Operator: RMB  
Row A: Measured FL  
Row B: Measured FL  
Row C: Measured FL  
Row D: Measured FL  
Ref F: F @ 25.00°C (Set)  
Run Start: 10-Nov-2001 9:37 am  
Run Finish: 10-Nov-2001 10:15 am  
S&A W200 Rev: 1722

**Crystal Condensed Plots**  
Run Name: Crystal Test Run  
Print All Operator: RMB  
Row A: Measured FL  
Row B: Measured FL  
Row C: Measured FL  
Row D: Measured FL  
Ref F: F @ 25.00°C (Set)  
Run Start: 10-Nov-2001 9:37 am  
Run Finish: 10-Nov-2001 10:15 am  
S&A W200 Rev: 1722

**Crystal Tabular**  
Run Name: Example Run  
Print All Operator:  
Row A: Measured FL  
Row B: Measured FL  
Row C: Measured FL  
Row D: Measured FL  
Ref F: F @ 25.00°C (Set)  
Run Start: 26-Oct-2001  
Run Finish: 26-Oct-2001  
S&A W200 Rev: 1722

Setup	FR (MHz)	R (%)	Phase (°)	Imp (Ω)
A001	25.01	0.00	4.92	25.02
A002	25.02	0.00	0.00	12.39
A003	25.02	0.00	12.39	25.01
A004	25.01	0.00	11.97	25.01
A005	25.01	0.01	5.13	9.01

**Crystal Curvfit Summary**  
Run Name: Example Run  
Print All Operator:  
Row A: Measured FL  
Row B: Measured FL  
Row C: Measured FL  
Row D: Measured FL  
Ref F: F @ 25.00°C (Set)  
Run Start: 26-Oct-2001 4:51 pm  
Run Finish: 26-Oct-2001 6:34 pm  
S&A W200 Rev: 1722

**Crystal Setup File Parameters**  
Run Name: Example Run  
Print All Operator:  
Row A: Measured FL  
Row B: Measured FL  
Row C: Measured FL  
Row D: Measured FL  
Ref F: F @ 25.00°C (Set)  
Run Start: 26-Oct-2001 4:51 pm  
Run Finish: 26-Oct-2001 6:34 pm  
S&A W200 Rev: 1722

STAT	FR	CO	RS	Q	CL	L	RES	TEMP	R/T
15.8	2.0	29.0			12.0	12.00			
15.8	2.0				12.0	11.00			

**Crystal Curvfit Tabular**  
Run Name: Example Run  
Print All Operator:  
Row A: Measured FL  
Row B: Measured FL  
Row C: Measured FL  
Row D: Measured FL  
Ref F: F @ 25.00°C (Set)  
Run Start: 26-Oct-2001 4:51 pm  
Run Finish: 26-Oct-2001 6:34 pm  
S&A W200 Rev: 1722

**Crystal Failures Only**  
Run Name: Example Run  
Print All Operator:  
Row A: Measured FL  
Row B: Measured FL  
Row C: Measured FL  
Row D: Measured FL  
Ref F: F @ 25.00°C (Set)  
Run Start: 26-Oct-2001 4:51 pm  
Run Finish: 26-Oct-2001 6:34 pm  
S&A W200 Rev: 1722

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