



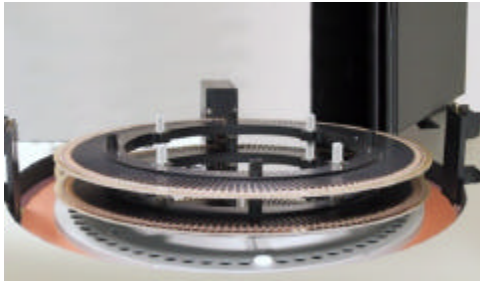
# W-2200 SMD DISC PALLET TEMPERATURE TEST SYSTEM

With 250B-1 or 250C Network Analyzer

- Automated, software based quartz crystal temperature test system
- Up to 2 disc pallets can be stacked
- Standard SMD sizes available include:

SMD TYPE	DISC CAPACITY	TOTAL CAPACITY/ PER CHAMBER
5 x 7mm	140	280
4.5 x 8mm	140	280
3.5 x 6mm	160	320
3.2 x 5mm	160	320
2.5 x 4mm	160	320
2.5 x 3.2mm	160	320
2.0 x 2.5mm	160	320
HC-49USMD	100	200
Leaded	100	200

- Custom SMD Sizes available
- Disc pallet platform can be easily integrated into dedicated machine for automatic loading / unloading SMD devices
- Measures over 75 different tests



- 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 is published in a *Microsoft Access*™ data base and can be exported to *Microsoft Excel*™ for custom data analysis
- Printouts are generated using *Crystal Reports*®
- Dual chamber configuration available

## 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.

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# SYSTEM CONFIGURATION

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

# SAMPLE REPORTS

**Crystal Plots**  
Run Name: Crystal Test Run  
Ref F: F @ 25.00°C (Std)  
Print All Operator: RMB  
Row A: Measured FL  
Row B: Measured FL  
Row C: Measured FL  
Row D: Measured FL  
Run Start: 10-Nov-2001 9:37 am  
Run Finish: 10-Nov-2001 10:15 am  
S&A W2200 Rev: 1722

**Crystal Condensed Plots**  
Run Name: Crystal Test Run  
Ref F: F @ 25.00°C (Std)  
Print All Operator: RMB  
Row A: Measured FL  
Row B: Measured FL  
Row C: Measured FL  
Row D: Measured FL  
Run Start: 10-Nov-2001 9:37 am  
Run Finish: 10-Nov-2001 10:15 am  
S&A W2200 Rev: 1722

**Crystal Tabular**  
Run Name: Example Run  
Ref F: F @ 25.00°C (Std)  
Print All Operator: RMB  
Row A: Measured FL  
Row B: Measured FL  
Row C: Measured FL  
Row D: Measured FL  
Run Start: 26-Oct-2001 4:51 pm  
Run Finish: 26-Oct-2001 6:34 pm  
S&A W2200 Rev: 1722

AS1	A01	A02	A03	A04	A05
12.795,174 Hz	12.795,855 Hz	12.795,817 Hz	12.795,842 Hz	12.795,817 Hz	12.795,817 Hz
0.00	0.00	0.00	0.00	0.00	0.00
0.01	5.13	9.01	21.44	8.00	3.28
5.02	0.33	4.90	5.00	0.79	20.77
8.88	0.44	5.03	10.20	5.24	30.39
15.02	0.50	5.03	15.01	10.94	46.56
20.50	0.36	5.02	20.00	15.00	63.54
25.00	0.09	5.05	25.01	19.99	80.52
30.02	-0.12	5.04	30.01	24.98	97.50
34.88	-0.39	5.03	35.00	29.97	114.48
40.02	-0.55	5.04	40.02	34.96	131.46
45.03	-0.52	5.06	45.02	39.95	148.44
49.99	-0.20	5.00	49.99	34.94	165.42
54.98	0.33	4.98	55.00	29.93	182.40
59.99	1.33	5.05	59.99	24.92	199.38

**Crystal Curvefit Summary**  
Run Name: Example Run  
Ref F: F @ 25.00°C (Std)  
Print All Operator: RMB  
Row A: Measured FL  
Row B: Measured FL  
Row C: Measured FL  
Row D: Measured FL  
Run Start: 26-Oct-2001 4:51 pm  
Run Finish: 26-Oct-2001 6:34 pm  
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**Crystal Curvefit Tabular**  
Run Name: Example Run  
Ref F: F @ 25.00°C (Std)  
Print All Operator: RMB  
Row A: Measured FL  
Row B: Measured FL  
Row C: Measured FL  
Row D: Measured FL  
Run Start: 26-Oct-2001 4:51 pm  
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**Crystal Setup File Parameters**  
Run Name: Example Run  
Ref F: F @ 25.00°C (Std)  
Print All Operator: RMB  
Row A: Measured FL  
Row B: Measured FL  
Row C: Measured FL  
Row D: Measured FL  
Run Start: 26-Oct-2001 4:51 pm  
Run Finish: 26-Oct-2001 6:34 pm  
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**Crystal Failures Only**  
Run Name: Example Run  
Ref F: F @ 25.00°C (Std)  
Print All Operator: RMB  
Row A: Measured FL  
Row B: Measured FL  
Row C: Measured FL  
Row D: Measured FL  
Run Start: 26-Oct-2001 4:51 pm  
Run Finish: 26-Oct-2001 6:34 pm  
S&A W2200 Rev: 1722

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