

- Automated, software-based oscillator, VCXO and TCXO temperature test system
- Measures frequency over temperature
- Parameter and curve fit characteristics are checked against easy to define QC limits
- Oscillators of different frequencies can be tested in a single temperature run
- All data is published in a *Microsoft Access™* data base
- Data can be exported to *Microsoft Excel™* for custom data analysis
- Oscillator part number can be used to set complete measurement parameters, QC limits, temperature test points and data printouts



- Electronic switching
- Four oscillators can be measured at one time
- Up to 200 oscillator measurements at 1 PPB resolution in about 1 second
- Chamber holds up to eight 64-position measurement boards for a total of 512 parts
- Socket PCBs available include 2.0x2.5, 2.5x3.2, 3.2x5, 3.5x6, 5x7, 5x7.5, 9x14, DIP (full & half)
- Measurement boards available for LVDS, PECL, ECL, CMOS, and TTL devices

SPECIFICATIONS

Oscillator Frequency Range:	10 KHz to 1 GHz
Temperature Stability:	± 0.1° C
Temperature Uniformity:	± 0.6° C
Temperature Range:	-55° C to 85° C (MR) (125° C max. temperature optional)

SAUNDERS & ASSOCIATES, LLC

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SYSTEM CONFIGURATION

- S&A 4350MR Option 1 Temperature Test Chamber
- System Controller
- Eight position card cage and backplane PCB
- S&A MFC-100 Card
- 4 Frequency Counters
- GPIB Interface
- DUT Power Supplies
- *Windows*® based System Software
- Router
- 5-Port Switch

SAMPLE REPORTS

Oscillator Group Summary

Run Name: example run 0 to 80 degrees

Print: All Operator: Run Start: 02-May-2003 5:40 pm

Ref: F @ 25.00°C (Set) Run Finish: 02-May-2003 7:30 pm

S&A W2800 Rev: 0701 Report: 1700

Setup: C:\Program Files\ Saunders & Associates\Q90ID\ata40MHz.qcc
Reference F: 40,999,000 Hz Vcc: 5.000 V Vco: 5.000 V Trigger: CMOS Level: 1.300 V

Group 0 Default

Setup: C:\Program Files\ Saunders & Associates\Q90ID\ata#0MHz.qcc
Reference F: 9,192,000.0 Hz Vcc: 5.000 V Vco: 6.000 V Trigger: CMOS Level: 1.300 V

Group 0 Default

A001 A002 A003 A004 A005 A006

Oscillator Run File

Run Name: 0 to 80 degrees

Author: Run Date: 17-Dec-2002 5:19 pm

Modifier: Vcc: 5.000 Volts Vco: 2.500 Volts

Operator: Reference F: 40,000,263 Hz

S&A 280A Rev: 1.00 Report: 1.00

Configuration

Wheel Name: 08 Wheel Position: 104 Wheel

Group: A001 - A005 Setup File: 40MHz
Reference F: 40,999,000 Hz Vcc: 5.00

Group: A006 - A010 Setup File: 8MHz
Reference F: 9,192,000 Hz Vcc: 5.000

Temperature Table

Set Temp: 0.00 °C Soak: 20.00 min Mea

Step Temp: 80.00 °C Step: 5.00 °C Soak:

Oscillator Tabular

Run Name: example run

Print: All Operator: Run Date: 17-Dec-2002 2:44 pm

Ref: F @ 25.00°C (Set) Vcc: 5.000 Volts Vco: 2.500 Volts

Trigger: TTL Level: 1.300 Volts

S&A 280A Rev: 1.00 Report: 1.00

A001 - 40MHz	A002 - 40MHz	A003 - 40MHz	A004 - 40MHz	A005 - 40MHz	
Ref F: 40,997,300 Hz	Ref F: 40,997,759 Hz	Ref F: 40,997,728 Hz	Ref F: 40,998,151 Hz	Ref F: 40,998,188 Hz	
°C	F (ppm)	°C	F (ppm)	°C	F (ppm)
0.00	14.39C	0.01	-1.07	0.00	-0.78
5.01	5.0K	5.01	1.70	5.01	-0.86
10.00	577.9	10.00	0.11	9.99	-0.95
15.02	25.99	15.02	1.54	15.01	-0.76
19.98	-0.85	19.99	1.28	19.98	-0.51
25.01	0.00	25.01	0.00	25.00	0.00
29.97	0.58	29.97	-1.49	29.97	0.91
35.00	1.10	35.00	-2.80	35.00	1.63
40.01	1.98	40.01	-3.91	40.00	19.87
44.98	2.89	44.98	-4.94	44.98	383.5
50.00	4.84	49.99	-5.20	49.99	129.5
55.02	8.89	55.02	-5.30	55.02	45.51
60.01	9.23	60.01	-4.85	60.02	172.5
65.03	12.41	65.03	-3.16	65.02	84.10
70.01	16.62	70.00	-1.25	70.01	20.16
75.02	21.21	75.01	1.46	75.01	14.13
79.98	26.45	79.99	5.62	79.99	19.98
				80.00	24.52

Oscillator Temperature Test

Ref: F @ 25.00°C (Actual)

Run Start: 22-May-2002 5:23 pm

Run Finish: 23-May-2002 12:25 am

S&A W2200 Rev: 2.21

TCXO Crystal Perturbation test

Run Date: 17-Dec-2002 2:44 pm

Vcc: 5.000 Volts Vco: 2.500 Volts

Trigger: TTL Level: 1.300 Volts

S&A 280A Rev: 1.00 Report: 1.00

A009

Ref FR: 24,999,809 Hz Setup: 25MHz microjump

Vco Sweep 1

Vco Sweep 1

Vco Sweep 1