

- 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



- Chamber holds 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
- Sub PPB measurement
- Electronic switching
- High speed frequency measurement
- Complete frequency perturbation testing of 512 parts in about 1.5 hours

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) -65° C to 85° C (MR with LN ₂ Boost)

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SYSTEM CONFIGURATION

- S&A 4350MR Option 1 Temperature Test Chamber
- Eight position card cage and backplane PCB
- Frequency Counter
- DUT Power Supply

- Computer
- S&A MFC-100 Card
- National GPIB Card
- *Windows*® based System Software

SAMPLE REPORTS

Oscillator Group Summary

Run Name: example run 0 to 90 degree
 Run Start: 02-Mar-2003 9:40 pm
 Run From: 02-Mar-2003 7:30 pm
 S&A W200 Rev: 0/0/1 Report: 1/00

Front All Operator
 Ref: F @ 25.00°C (Std)

Setup: C:\Program Files\Saunders & Associates\QSD0 at4350MR.exe
 Reference Fr: 40,885,200 Hz Vcc: 5.000 V Vss: 5.000 V Trigger: CMOS Level: 1.300 V
 Group S Default

Setup: C:\Program Files\Saunders & Associates\QSD0 at4350MR.exe
 Reference Fr: 8,192,000.0 Hz Vcc: 5.000 V Vss: 5.000 V Trigger: CMOS Level: 1.300 V
 Group S Default

AS01 AS02 AS03 AS04 AS05 AS06

Outlet 42

Oscillator Temperature Test

Ref: F @ 25.00°C (Std)

Run Start: 22-Mar-2003 6:23 pm
 Run From: 22-Mar-2003 12:25 pm
 S&A W200 Rev: 2/21

Oscillator Run File

Run Name: 0 to 90 degree

Author:
 Modifier:
 Operator:

Setup: full

Description: CMOS 0.80 µf Load
 Reference Fr: 40,885,200 Hz
 Front All

Run Date: 17-Dec-2002 8:10 pm
 Vcc: 5.000 Volts Vss: 2.000 Volts
 Trigger TTL Level: 1.300 Volts
 S&A 200A Rev: 1.00 Report: 1.00

FFREQ	FS	FS
	ppm	Hz
0	Pass	-0.3 40,885,199
5	Pass	-0.3 40,885,178
10	Pass	-0.3 40,885,173
15	Pass	-0.3 40,885,169
20	Pass	-0.3 40,885,168

Configuration

Wheel Name: 00 Wheel Position: 10A Wheel

Group: AS01 - AS06 Setup File: 4350MR
 Reference Fr: 40,885,000 Hz Vcc: 5.000

Group: AS05 - AS10 Setup File: 5MR2
 Reference Fr: 8,192,000 Hz Vcc: 5.000

Temperature Table

Set Temp: 0.00°C Soak: 20.00 min Max
 Step Temp: 90.00°C Step: 5.00°C Soak: 5

TC10 Crystal calibration test

Setup: Test Device C

Description: CMOS 0.80 µf
 Reference Fr: 40,885,200 Hz
 Front All

Run Date: 17-Dec-2002 8:48 pm
 Vcc: 5.000 Volts Vss: 2.000 Volts
 Trigger: TTL Level: 1.300 Volts
 S&A 200A Rev: 1.00 Report: 1.00

FFREQ	FS	FS
	ppm	Hz
0	Pass	-1.3
5	Pass	-1.3
10	Pass	-1.3
15	Pass	-1.3
20	Pass	-1.3
25	Pass	-1.3
30	Pass	-1.3
35	Pass	-1.3
40	Pass	-1.3
45	Pass	-1.3
50	Pass	-1.3
55	Pass	-1.3
60	Pass	-1.3
65	Pass	-1.3
70	Pass	-1.3
75	Pass	-1.3
80	Pass	-1.3
85	Pass	-1.3
90	Pass	-1.3

Oscillator Tabular

Run Name: example run 0 to 90 degree
 Run Start: 02-Mar-2003 9:40 pm
 Run From: 02-Mar-2003 7:30 pm
 S&A W200 Rev: 0/0/1 Report: 1/00

Front All Operator
 Ref: F @ 25.00°C (Std)

AS01 - 4350Hz Setup: 4350MR Ref F: 40,885,200 Hz % Fr: ppm	AS02 - 4350Hz Setup: 4350MR Ref F: 40,887,750 Hz % Fr: ppm	AS03 - 4350Hz Setup: 4350MR Ref F: 40,887,750 Hz % Fr: ppm	AS04 - 4350Hz Setup: 4350MR Ref F: 40,885,100 Hz % Fr: ppm	AS05 - 4350Hz Setup: 4350MR Ref F: 40,888,100 Hz % Fr: ppm
0.00 14.30	0.01 -0.37	0.00 -0.70	0.00 -0.23	0.00 -0.24
5.01 5.00	0.01 0.70	0.01 -0.88	0.01 -1.93	0.00 0.12
10.00 077.8	10.00 0.71	0.00 -0.95	0.00 -1.25	0.00 0.21
15.02 25.00	15.02 1.54	15.01 -0.70	15.00 -0.74	14.99 0.26
19.99 -0.05	19.99 0.20	19.99 -0.51	19.99 -0.21	19.99 0.24
25.01 0.00	25.01 0.00	25.01 0.00	25.00 0.00	24.99 0.00
29.97 1.10	29.97 -1.49	29.97 0.06	29.97 0.01	29.98 0.48
40.01 1.00	40.01 -0.91	40.00 18.07	39.99 0.07	39.99 0.52
44.98 3.00	44.98 -4.94	44.98 383.5	44.98 3.04	44.98 01.95
50.00 4.04	49.99 -4.20	49.99 129.5	49.98 4.36	49.99 244.8
55.02 0.00	55.02 -5.39	55.02 45.01	55.01 0.00	55.01 17.87
60.01 0.23	60.01 -4.95	60.02 172.5	60.01 0.52	60.00 882.7
65.03 12.41	65.03 -3.16	65.02 84.10	65.01 11.27	64.99 18.71
70.01 18.62	70.00 -6.29	70.01 26.15	70.01 14.84	70.01 18.40
75.02 21.21	75.01 1.40	75.01 14.13	75.01 19.21	75.00 14.20
79.99 26.45	79.99 5.82	79.99 18.00	80.00 34.82	80.00 19.10

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