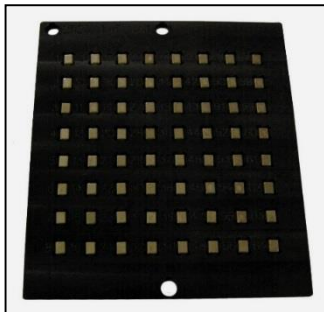
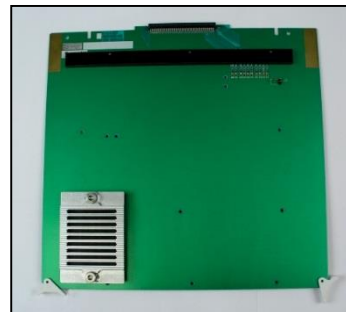


- Industry's first crystal temperature test system with 100% electronic switching
- Proprietary 50 ohm reflection network provides typical frequency measurement repeatability 10 ppb !
- Chamber holds eight 64-position pallet socket DUT PCBs for a total of 512 parts
- RTD sensor mounted on DUT PCB for precision temperature measurement
- Crystals of different frequencies can be tested in a single temperature run
- Parameter and curve fit characteristics are checked against easy to define QC limits
- Data can be exported to *Microsoft Excel*™ for custom data analysis
- Thermistor-crystal testing for GPS application :
  - Residual frequency stability slope RFSS (ppb/°C)
  - 5°C small orbit hysteresis 1 RFHS (ppb/°C)
  - 5°C small orbit hysteresis 2 HSO (ppb pk-pk)

**Extremely high speed, high precision frequency measurement using calculated FL over temperature, measures 512 parts in  $\leq 30$  seconds**



64 Position Pallet



64 Position Pallet Socket DUT PCB

### SPECIFICATIONS

250B-2 Frequency Range:  
250C-2 Frequency Range:  
Frequency Correlation:  
Frequency Repeatability:  
Temperature Stability:  
Temperature Range:

1 MHz to 220 MHz  
1 MHz to 420 MHz  
 $\pm 1$  ppm\* at series (typical)  
10 ppb (typical)  
 $\pm 0.1^\circ$  C  
 $-55^\circ$  C to  $125^\circ$  C (MR)  
 $-65^\circ$  C to  $125^\circ$  C (MR with LN<sub>2</sub> Boost)

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

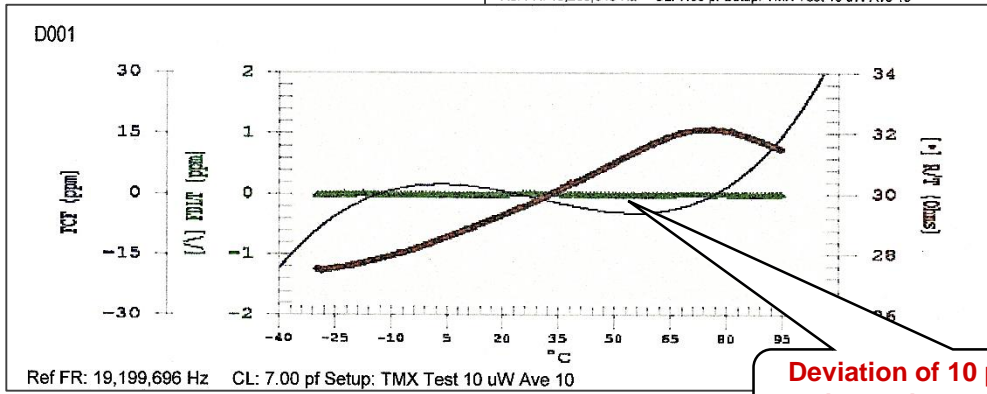
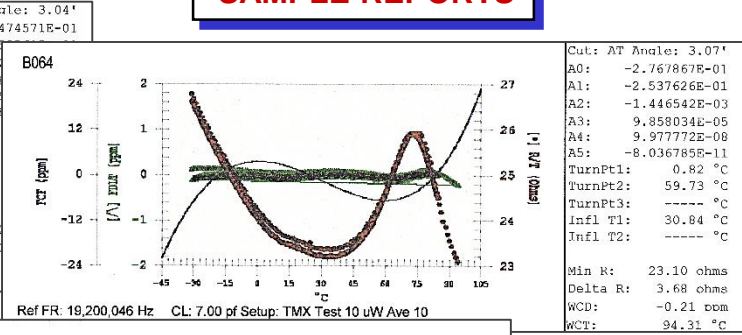
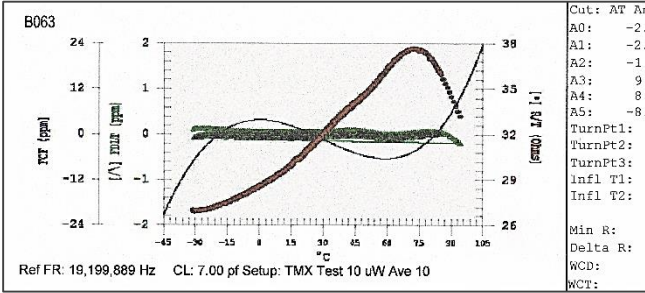
## SAUNDERS & ASSOCIATES, LLC

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# SYSTEM CONFIGURATION

- S&A 250B-2 or 250C-2 Network Analyzer with OCXO Option
- S&A 4350MR Option 1 Temperature Test Chamber
- Eight position card cage and backplane PCB
- 50 Ohm Reflection Networks
- Windows® based System Software
- System Controller
- Printer (Optional)

# SAMPLE REPORTS



Deviation of 10 ppb from curvefit shows the system's excellent measurement repeatability

Start: D001 Stop: D064  
 Setup: TMX Test 10 uW Ave 10  
 Reference F: 19,200,000 Hz CL: 7.00 pF Power: 10.00 uW into 40.00 Ohms

Measurement to locate resonance or micro-jumps

Measurement to locate small orbit hysteresis 1

Measurement to locate small orbit hysteresis 2

	L	TS	PWR	FR	FR	C0	OH	HSO	HSOT	
	mH	ppm/pF	uW	ppb/°C	Hz	pF	OH	ppb	°C	
D001	99.162	-154.493	19,197,034	-20.32	19,199,610	1.92	29.63	113	2.47	
	27.83	15.5	10	-11.75	-21.51	-26.6	76.11	42.4	32.09	
D002	99.162	-154.112	19,197,041	-23.45	19,199,550	2.00	24.05	141	2.44	
	28.17	15.1	10	11.65	6.32	-23.4	76.11	43.2	-23.09	
D003	99.162	-153.494	19,197,053	-21.55	19,199,586	1.97	25.52	133	2.45	
	28.10	15.2	10	-11.19	-21.51	-23.1	76.85	54.1	-23.09	

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