



250B Upgrade Kit for 2000 Series Temperature Test Systems

What does it take to upgrade?

Typical System Upgrade kit consists of:

- S&A 250B Network Analyzer
- PCI GPIB card
- Minimum 500 MHz Pentium III with:
 - * One full PCI slot
 - * +3.3V and +5V power
 - * *Windows 98*®



Why upgrade?

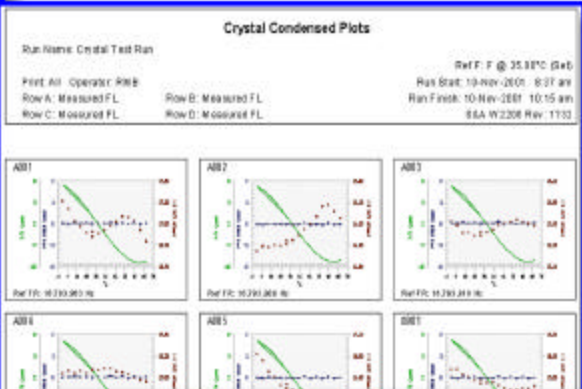
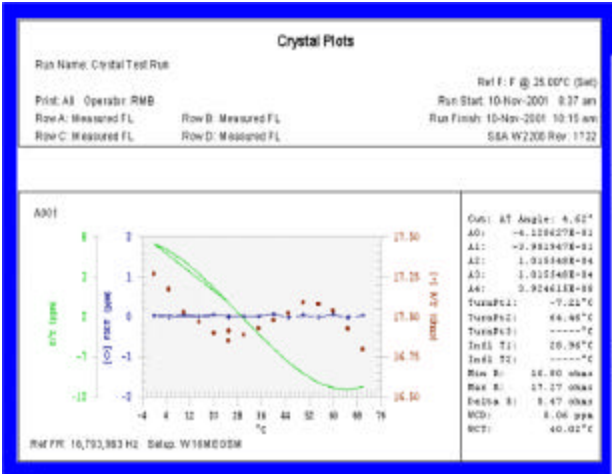
- 1** Higher system throughput improvement due to faster measurement with the 250B Network Analyzer
- 2** Drive Level Dependency (DLD) measurement is approximately 3 times faster with the 250B Network Analyzer
- 3** DLD can be measured and graphed as a function of temperature
- 4** User-friendly *Windows*® system software
- 5** Crystals in each vertical test wheel column are measured before incrementing the wheel, reducing the number of wheel rotations by 50%
- 6** Extensive graphing, QC, and printout capabilities
- 7** Custom printouts can be created using *Crystal Reports*™ (optional)
- 8** All data is published in *Microsoft Access*™ compatible data base in real time
- 9** Data can be exported to *Microsoft Excel*™ for custom data analysis

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SAUNDERS & ASSOCIATES, LLC

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SAMPLE REPORTS

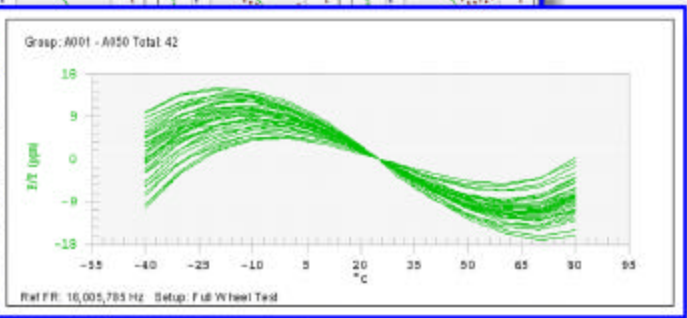


Crystal Tabular

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 4:51 pm
 Run Finish: 26-Oct-2001 6:34 pm
 S&A W2200 Rev: 1125

A001 +2a001+	A002 +2a002+	A003 +2a003+	A004 +2a004+	A005 +2a005+										
Setup: 12megw2	Setup: 12megw2	Setup: 12megw2	Setup: 12megw2	Setup: 12megw2										
Ref F: 12,795,374 Hz	Ref F: 12,795,555 Hz	Ref F: 12,795,917 Hz	Ref F: 12,795,942 Hz	Ref F: 12,795,967 Hz										
°C	FR ppm	R	°C	FR ppm	R	°C	FR ppm	R	°C	FR ppm	R	°C	FR ppm	R
25.01	0.00	4.82	25.03	0.00	18.71	35.02	0.00	12.39	25.01	0.00	11.97	25.03	0.00	11.97
30.01	0.01	5.13	30.01	0.01	8.00	31.44	0.00	3.28	12.96	-0.01	3.74	12.49	0.01	3.74
35.02	0.33	4.98	35.00	6.79	20.77	4.98	3.16	12.82	4.99	3.52	12.39	5.01	3.52	12.39
39.98	0.44	5.03	10.00	5.24	30.39	16.00	2.69	12.93	10.00	2.94	12.39	9.99	2.94	12.39
15.02	0.50	5.03	15.01	3.89	18.81	16.00	3.27	12.88	14.99	3.27	12.39	14.99	3.27	12.39
20.00	0.36	5.03	20.00	3.89	18.81	16.00	3.27	12.88	14.99	3.27	12.39	14.99	3.27	12.39
25.00	0.09	5.05	25.01	3.89	18.81	16.00	3.27	12.88	14.99	3.27	12.39	14.99	3.27	12.39
30.02	-0.12	5.04	30.01	-0.12	5.04	30.01	-0.12	5.04	30.01	-0.12	5.04	30.01	-0.12	5.04
34.99	-0.39	5.03	35.00	-0.39	5.03	35.00	-0.39	5.03	35.00	-0.39	5.03	35.00	-0.39	5.03
40.02	-0.55	5.04	40.02	-0.55	5.04	40.02	-0.55	5.04	40.02	-0.55	5.04	40.02	-0.55	5.04
45.03	-0.52	5.06	45.02	-0.52	5.06	45.02	-0.52	5.06	45.02	-0.52	5.06	45.02	-0.52	5.06
49.99	-0.20	5.00	49.99	-0.20	5.00	49.99	-0.20	5.00	49.99	-0.20	5.00	49.99	-0.20	5.00
54.99	0.33	4.98	55.00	0.33	4.98	55.00	0.33	4.98	55.00	0.33	4.98	55.00	0.33	4.98
59.99	1.33	5.05	59.99	1.33	5.05	59.99	1.33	5.05	59.99	1.33	5.05	59.99	1.33	5.05



Crystal Curvefit 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 W2200 Rev: 1125

Setup: 12megw2	Ref F: 12,795,900 Hz	CL: 8.00 pF	Power: 100.00 uW	Int to 12.00 Ohms	Reason: FR/T				
STATDC	FS	CO	ES	Q	CL	L	FR	TEMP	R/T
ppm	pF	ppm	ppm	ppm	ppm	ppm	ppm	°C	ppm
10.8	8.0	29.6	13.0	33.09	17.0	11.00			
-10.8	8.0								

Crystal Curvefit Tabular

Run Name: Example Run
 Print All Operator:
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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 W2200 Rev: 1125

Setup: 12megw2	Ref F: 12,795,917 Hz	Angle AT(41°)	Ref F: 12,795,817 Hz						
A002 +2a002+	A003 +2a003+	Angle AT(25.5°)	Angle AT(25.5°)						
Ref F: 12,795,955 Hz	Ref F: 12,795,917 Hz	Ref F: 12,795,917 Hz	Ref F: 12,795,917 Hz						
°C	FR ppm	Curve	Delta	°C	FR ppm	Curve	Delta	R	
25.01	0.00	0.00	0.00	18.71	35.02	0.00	0.00	0.00	12.39
30.01	0.00	0.23	-0.95	21.44	4.99	3.29	3.14	0.14	12.96
35.02	0.75	5.30	-0.19	20.77	4.98	3.16	3.08	0.18	12.82
39.98	5.24	5.45	-0.22	20.39	16.00	2.69	2.64	0.14	12.93
15.02	3.69	3.14	-0.14	18.81	16.00	2.69	2.64	0.21	12.96
20.00	1.60	1.91	-0.23	18.29	30.00	1.16	0.89	0.17	12.57
25.00	-0.25	0.01	-0.24	18.12	35.01	0.17	0.88	0.17	12.95
30.01	-0.34	-1.30	-0.16	18.07	39.99	-0.82	-1.09	0.23	12.40
35.00	-0.30	-0.89	-0.21	18.79	44.99	-1.62	-2.11	0.18	12.26
40.02	-0.41	-0.30	-0.23	18.62	49.99	-2.94	-3.08	0.15	12.18
45.03	-0.34	-0.80	-0.16	18.66	49.99	-3.70	-3.00	0.15	12.09
49.99	-0.22	-0.30	-0.13	18.50	54.99	-4.29	-4.58	0.17	11.95
54.99	0.33	0.27	0.00	4.98	59.99	-0.15	-0.11	0.14	11.92
59.99	1.33	1.24	0.09	5.05	59.99	-0.70	-0.20	0.20	11.91

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 W2200 Rev: 1125

Setup: 12megw2
 Reference F: 12,795,900 Hz
 CL: 8.00 pF
 Power: 100.00 uW
 Int to 12.00 Ohms
 Reason: FR/T

STATDC	FS	CO	ES	Q	CL	L	FR	TEMP	R/T
ppm	pF	ppm	ppm	ppm	ppm	ppm	ppm	°C	ppm
10.8	8.0	29.6	13.0	33.09	17.0	11.00			
-10.8	8.0								

Crystal Failures Only

Run Name: Example Run
 Print All Operator:
 Row A: Measured FL
 Row B: Measured FL
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Ref F: F @ 25.00°C (Set)
 Run Start: 26-Oct-2001 4:51 pm
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 S&A W2200 Rev: 1125

Crystal	Stat	Setup File Parameters	Crystal Data	Curvefit Parameters
A001	+2a001+	Full FR Low		

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