

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

All trademarks are the property of their respective owners.

The Roditi International Corporation Ltd

180 King's Cross Road, London WC1X 9DE, United Kingdom

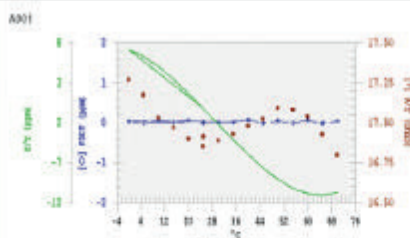
Tel: +44 20 7819 8080 Fax: +44 20 7730 4131 Email: saunders@roditi.com Web: <https://roditi.com>

SAMPLE REPORTS

Crystal Plots

Run Name: Crystal Test Run
 Print All Operator: RMB
 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: 10-Nov-2001 8:37 am
 Run Finish: 10-Nov-2001 10:15 am
 S&A W2208 Rev: 1722



Cut: AT Angle: 4.52°
 A0: -4.1284278-82
 A1: -2.9823478-82
 A2: 1.0134408-84
 A3: 1.0134408-84
 A4: 2.9244138-88
 TurnP1: -7.23°C
 TurnP2: 64.46°C
 TurnP3: -7.23°C
 InSL T1: 20.39°C
 InSL T2: -7.23°C
 Row R: 25.00 uHz
 Row S: 57.27 uHz
 Delta R: 8.47 uHz
 WCD: 8.06 gpm
 WCT: 40.02°C

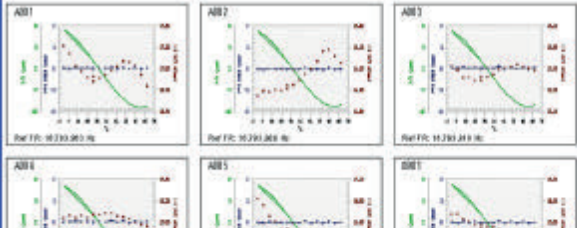
Ref F: 16,793,983 Hz Setup: W16M008

Crystal Condensed Plots

Run Name: Crystal Test Run

Print All Operator: RMB
 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: 10-Nov-2001 8:37 am
 Run Finish: 10-Nov-2001 10:15 am
 S&A W2208 Rev: 1722



Crystal Tabular

Run Name: Example Run

Print All Operator:
 Row A: Measured FL
 Row C: Measured FL

Row B: 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 W2208 Rev: 1722

A001 +2a001+				A002 +2a002+				A003 +2a003+				A004 +2a004+				A005 +2a005+			
Setup: 12magv2				Setup: 12magv2				Setup: 12magv2				Setup: 12magv2				Setup: 12magv2			
Ref F: 12,795,174 Hz				Ref F: 12,795,355 Hz				Ref F: 12,795,917 Hz				Ref F: 12,795,942 Hz				Ref F: 12,795,942 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	25.02	0.00	12.39	25.01	0.00	11.97	25.00	0.00	11.97	25.00	0.00	11.97	25.00	
30.01	0.01	5.13	0.01	8.08	21.44	0.00	3.28	12.86	-0.01	3.74	12.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
5.02	0.33	4.98	5.00	6.79	20.77	4.99	3.10	12.82	4.99	3.52	12.39	5.00	0.00	0.00	0.00	0.00	0.00	0.00	
9.99	0.44	5.03	10.00	5.24	20.39	10.00	2.60	12.83	10.00	2.84	12.39	9.99	0.00	0.00	0.00	0.00	0.00	0.00	
15.02	0.50	5.03	15.01	10.00	10.84	16.00	3.02	12.86	14.99	3.32	12.39	14.99	0.00	0.00	0.00	0.00	0.00	0.00	
20.00	0.36	5.02	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	
25.00	0.09	5.05	25.01	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	0.00	0.00	0.00	0.00	0.00	0.00	
30.02	-8.12	5.04	30.01	30.02	30.02	30.02	30.02	30.02	30.02	30.02	30.02	30.02	0.00	0.00	0.00	0.00	0.00	0.00	
34.99	-8.39	5.03	35.00	34.99	34.99	34.99	34.99	34.99	34.99	34.99	34.99	34.99	0.00	0.00	0.00	0.00	0.00	0.00	
40.02	-8.55	5.04	40.02	40.02	40.02	40.02	40.02	40.02	40.02	40.02	40.02	40.02	0.00	0.00	0.00	0.00	0.00	0.00	
45.03	-8.52	5.06	45.02	45.03	45.03	45.03	45.03	45.03	45.03	45.03	45.03	45.03	0.00	0.00	0.00	0.00	0.00	0.00	
49.99	-8.20	5.00	49.99	49.99	49.99	49.99	49.99	49.99	49.99	49.99	49.99	49.99	0.00	0.00	0.00	0.00	0.00	0.00	
54.99	0.33	4.98	55.00	54.99	54.99	54.99	54.99	54.99	54.99	54.99	54.99	54.99	0.00	0.00	0.00	0.00	0.00	0.00	
59.99	1.33	5.05	59.99	59.99	59.99	59.99	59.99	59.99	59.99	59.99	59.99	59.99	0.00	0.00	0.00	0.00	0.00	0.00	

Run Name: Example Run

Print All Operator

Row A: Measured FL

Row B: Measured FL

Row C: Measured FL

Row D: Measured FL

Crystal Curvefit Summary

Run Name: Example Run

Print All Operator:
 Row A: Measured FL
 Row C: Measured FL

Row B: 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 W2208 Rev: 1722

A003 +2a003+
 Setup: 12magv2
 Cut: AT Pseudo Angle: 2.51°
 Ref F: 12,795,917 Hz

A0: -4.787002E-02 TurnP1: 8.12
 A1: -2.088013E-01 TurnP2: 57.04
 A2: -1.032941E-03 TurnP3: ---
 A3: 8.513240E-05 IntT: 1: 29.95
 A4: 2.248727E-07 IntT: 2: ---
 Max R: 12.90
 WCD: -0.16 ppm Min R: 11.77
 WCT: 25.02 °C Delta R: 1.18

49.99 -0.30 -0.21 0.00 4.99 55.02 -0.15 -0.31 -0.14 18.25 55.01 -4.75 -4.30 0.16 11.92
 59.99 1.33 5.05 59.99 -0.70 -0.90 -0.20 18.29 59.99 -4.71 -4.25 0.14 11.96
 59.99 1.33 5.05 59.99 -0.70 -0.90 -0.20 18.29 59.99 -4.71 -4.25 0.14 11.96

Crystal Curvefit Tabular

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 W2208 Rev: 1722

A002 +2a002+				A003 +2a003+			
Setup: 12magv2				Setup: 12magv2			
Angle AT: 4.77°				Angle AT: 2.51°			
Ref F: 12,795,355 Hz				Ref F: 12,795,917 Hz			
°C	FR	ppm	Delta R	°C	FR	ppm	Delta R
25.03	0.00	0.00	0.00	25.02	0.00	0.00	0.00
30.01	0.08	8.23	-8.95	30.01	0.08	8.23	-8.95
5.02	0.78	5.90	-4.99	5.02	0.78	5.90	-4.99
10.00	5.24	5.15	-2.20	10.00	5.24	5.15	-2.20
15.01	5.00	5.14	-1.84	15.01	5.00	5.14	-1.84
20.00	1.68	1.91	-2.23	20.00	1.68	1.91	-2.23
25.01	-0.23	0.01	-0.24	25.01	-0.23	0.01	-0.24
30.01	-0.24	-1.80	-1.80	30.01	-0.24	-1.80	-1.80
35.00	-0.90	-0.90	-2.21	35.00	-0.90	-0.90	-2.21
40.02	-0.51	-0.50	-2.23	40.02	-0.51	-0.50	-2.23
45.02	-0.94	-0.86	-0.86	45.02	-0.94	-0.86	-0.86
50.00	-0.30	-0.30	-1.13	50.00	-0.30	-0.30	-1.13
55.01	-0.31	-0.31	-1.14	55.01	-0.31	-0.31	-1.14
59.99	1.33	5.05	59.99	59.99	1.33	5.05	59.99

Crystal Setup File Parameters

Run Name: Example Run

Print All Operator:
 Row A: Measured FL
 Row C: Measured FL

Row B: 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 W2208 Rev: 1722

Setup: 12magv2									
Reference F: 12,795,900 Hz CL: 8.00 pF Power: 100.00 uW Into: 10.00 Ohm Measure: FR/T									
STATUS	FR	CO	ES	S	CL	L	FRS	TRND	R/T
	ppm	pF	thick	n	IF	uW	uW	°C	ppm
	16.8	3.0	19.0			19.0	19.02		
	-16.8	2.5				12.0	11.03		
SDTS	WCD	R/T	CVT	ANG					
thick	ppm		thick	°					

A001 +2a001+ Fail FR Lo -194.7+ 4.6+ 4.8 119 11.3+ 7.26+ 77 25.01 4									
0.2 -19.1 8.1 AT 0.95									
A002 +2a002+ Pass 4.3 5.7 10.7 54 12.0 12.55 134 25.03 -3									
5.5 9.5 11.4 AT 4.47									
A003 +2a003+ Pass 3.3 2.6 12.4 62 12.2 12.65 122 25.02 -4									
1.2 -9.2 11.6 AT 2.81									
A004 +2a004+ Pass 3.3 2.7 12.8 68 12.1 12.73 121 25.01 -3									
1.5 -9.1 11.0 AT 2.66									

Crystal Failures Only

Run Name: Example Run

Print All Operator:
 Row A: Measured FL
 Row C: Measured FL

Row B: 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 W2208 Rev: 1722

Crystal	Serial#	Setup File Parameters	Crystal Data	Crystal Parameters
A001	+2a001+	Fail FR Low		

The Roditi International Corporation Ltd is the exclusive European representative of Saunders & Associates, LLC