Specifications

Frequency Characteristics

Frequency Range:	
Model SA-2000	806 MHz to 2000 MHz
Model SA-2000A	806 MHz to 2300 MHz
Model SA-2500A	780 MHz to 2500 MHz
Frequency Resolution:	50 kHz
Frequency Accuracy:	± 150 kHz (75 ppm)
Number of Points:	238

Measurement Range and Resolution

	Range	Resolution
Return Loss:	0.0 to –60.0 dB	0.1 dB
VSWR:	1.00 to 99.99	0.01

Measurement Uncertainty (after 1 display refresh)

Return Loss:	Determined graphically from composite of 42 dB directivity, 1.2 source VSWR, and instrumentation error. Refer to the figure on page 110.
VSWR:	Calculated from Return Loss

Test Port

Connectors:	N, Female normally supplied
Impedance:	50 Ohms
Directivity	42 dB, after calibration
Measurement Speed	Better than 1 sweep per 4 seconds, test port open, y-axis set to full scale
Immunity to Interfering Signals	≥ 13 dB interferer at desired measurement frequency.
Maximum Input Signal (Damage Level)	≥ 22 dBm
Output Power	< 0 dBm

Distance to Fault (DTF) Measurement

Mode Internal

Resolution [R]

X-Axis:

$$R \equiv \frac{3 \times 10^8}{2 \times \sqrt{\varepsilon_r} \times \Delta F}$$

Where R=Resolution (meters), ε_r=Dielectric Constant*, ΔF= frequency bandwidth

Y-Axis: 0.1 dB, 0.01 VSWR

Range

X-Axis: 238 x R
Y-Axis: 0 to –60 dB

Accuracy

X-Axis: ± 2% of full-scale range with $V_p = 1$
Y-Axis: Same as for Return Loss Measurements

V_p Range 0.20 to 1.00, or 1.00 to 99 percent

Power Measure Mode

Function: Displays power from Bird power sensors, VSWR alarm and BPM (specifications determined by sensor)

General

Data Storage 300 traces in fundamental data format stored in non-volatile memory. Traces may be recalled and displayed in any of the display formats.

PC/Remote Power Sensor Interface Port

Connector: Female DB-9, compatible with PC serial port.
Protocol: Serial RS-232, 9600 baud, 8 data bits, 1 stop bit, no parity, and no handshake.

Printer Interface Port

Connector:	Female DB-25, compatible with PC parallel port.
Compatibility:	HP Deskjet printers with PCL Level 3 protocol

Power Requirements

Internal:	Lithium-ion rechargeable battery 3 hours minimum operating time
External DC:	9 to 16 Vdc
External AC:	90 to 264 Vac @ 45 to 66 Hz

Physical Specifications

Dimensions:	10.44" x 8.38" x 3.28" (265 x 212 x 83 mm)
Weight:	< 5 lbs. (2.3 Kg)

Environmental Specifications

Operating Temp:	–10° to 50°C (14° to 122°F)
Storage Temp:	–40° to 80°C (–40° to 176°F)
Humidity:	95% maximum (non-condensing)
Altitude:	up to 15,000 feet (4,572 m)

International Standards

EMC:	Conforms to: EN 63126-1:1997
Safety:	Conforms to: EN 61010-1:1993, with Amendment A2:1995

Calibration

Calibration Cycle:	User Defined
Recommended Calibration Interval:	12 months

*Dielectric Constant - The dielectric constant of the antenna cable determines the propagation velocity of the cable, which together with the frequency range of the match data, determines the maximum distance for which the calculation can be done without aliasing errors.

Measurement Uncertainty (Return Loss after one refresh)