

RF CALIBRATION KIT

Wideband, High Power

SMK-3000 SERIES

Precise. Accurate. Dependable.

The SMK calibration kits are precision, high power calibration standards that are used to calibrate RF radios, wattmeters, directional couplers and other high-power RF test equipment in the field or metrology lab. Unlike other calibration solutions, the SMK-3000 calibration kits reduce the cost of ownership and provide a much faster time-to-calibration with lab precision and accuracy you've come to expect from Bird.

Covering a frequency range of 1 to 1000 MHz, the in-line calibration kits enable users to calibrate with either 1% or 3% accuracy in just minutes.

Included in the SMK-3000 kit is the Model 4421A Multifunction Power Meter. This intuitive display unit clearly identifies the Forward and Reflected power measurements within the RF path. In addition, return loss readings can also be shown to provide additional insight into the RF system being monitored.

PRODUCT FEATURES

- Forward Power in W or dBm
- Reflected Power in W or dBm
- Return Loss in VSWR, RL, or Reflection Coefficient
- Graph of Power Over Time

INCLUDES

- Low band Directional Power Sensor
- Medium band Directional Power Sensor
- High band Directional Power Sensor
- 4421A Multifunction Power Meter
- Rugged carrying case
- Latch & Lock cable



4421A SERIES

PRODUCT SELECTION GUIDE

Kit Model #	Sensors Included	Frequency Range	Accuracy	Power Range
SMK-3001A (1% Kit)	SMK-3001-LB	1 to 10 MHz	+/- 1% of reading (2σ)	80 to 107 W
	SMK-3001-MB	10 to 100 MHz		
	SMK-3001-HB	100 to 1000 MHz		
SMK-3003A (3% Kit)	SMK-3003-LB	1 to 10 MHz	+/- 3% of reading (2σ)	1 to 1000 W
	SMK-3003-MB	10 to 100 MHz		
	SMK-3003-HB	100 to 1000 MHz		

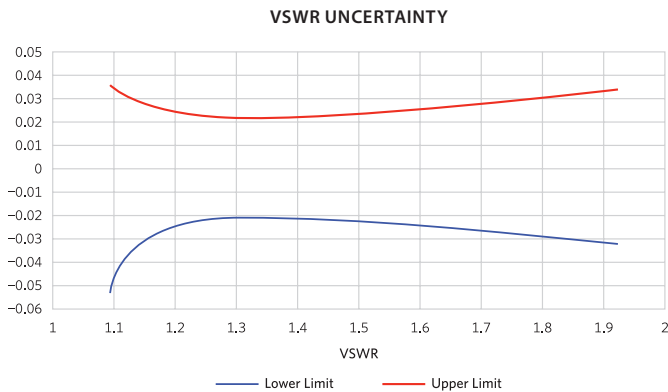
MEASUREMENT

Directivity	28 dB minimum
Impedance	50 ohms
Insertion loss	< 0.05 dB
Insertion VSWR	< 1.05:1

UNCERTAINTY

Forward Power Uncertainty*	
SMK-3001A series	± 1% of reading*, 2σ
SMK-3003A series	± 3% of reading*, 2σ
	Calibration plane location: Connector output
Reflected Power Uncertainty*	± 3% of reading*, 2σ
	Calibration plane location: Connector output
VSWR Uncertainty	-27 dB to -10 dB, see chart

*Measurement conditions: Harmonics < 35 dBc, Load VSWR < 1.1:1, AM modulation < 1%



CONNECTORS

RF Input	N(m), Quick Change (QC)
RF Output	N(f), Quick Change (QC)
Display	1-meter Latch & Lock coiled cable

ENVIRONMENTAL

Operating Humidity	20% to 50%
Operating Temperature	19.4 °C to 26.1 °C (73 °F ± 6 °F)
Storage Temperature	-20 °C to 70 °C (-4 °F ± 158 °F)

PHYSICAL

Weight (excluding 4421A)	5 lb (2.27 kg)
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MODEL 4421A

Specifications

PRODUCT FEATURES

- Compatible with SMK-3000 sensors and all 402x RF sensor series.
- Automatic sensor detection for seamless integration.
- Large 9.7 in full color LCD touchscreen display for easy readability.
- Dual sensor option expands measurement capabilities.
- Compact, lightweight and portable design enhances functionality.

MEASUREMENT

Compatible Bird Sensors	SMK-3000 Series , 4021, 4022, 4023, 4024, 4025, 4027 Series, 4028 Series
Power Range	Sensor dependent
Frequency Range	Sensor dependent
Sensor Channels	Model dependent, 1 or 2
VSWR Display	1.0 to 199.9
Return Loss Display	0 to 40 dB

SYSTEM

Display	9.7 in TFT full color LCD with touch screen
AC Power	100-240 VAC, 50 to 60 Hz, 0.5 A
Fuse rating	IEC (5 x 20 mm), time-delay
Battery Type	Internal, rechargeable
Battery Life	Up to 7 hours
Battery Charger	Built-in. Approximately 4 hours to fully recharge.

ENVIRONMENTAL

Humidity	95% max, noncondensing
Altitude	10,000 ft max
Operating Temperature	0 °C to 50 °C
Storage Temperature	-20 °C to 70 °C

PHYSICAL

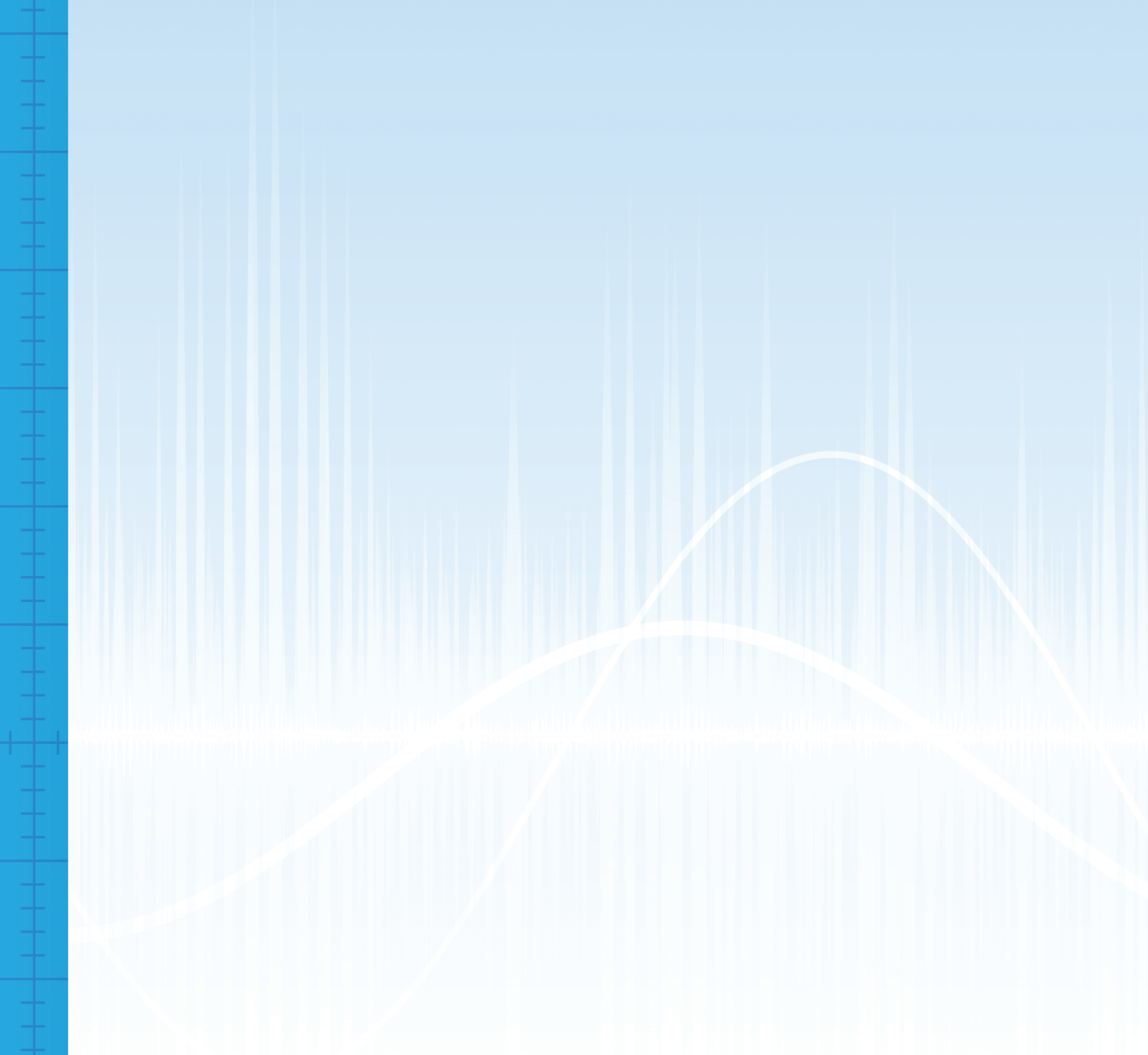
Size	10.6 in x 9.7 in x 3.6 in (269 mm x 246 mm x 91 mm)
Weight	Less than 5 lb

CERTIFICATIONS

CE	CE Compliant
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MODEL 4421A
Side Views



birdrf.com/products

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