

## MEASUREMENTS

<b>Frequency Range</b>	10 - 130 MHz
<b>RF Power</b>	
<b>Average, Max</b>	2.2 kW
<b>Peak, Max</b>	37 kW
<b>Pulse Width, Max</b>	10 ms
<b>Duty Cycle</b>	Duty cycle such that avg. power rating is never exceeded
<b>VSWR, Max.</b>	1.1:1
<b>VSWR Stability over 10 min. interval</b>	± 0.1 dB

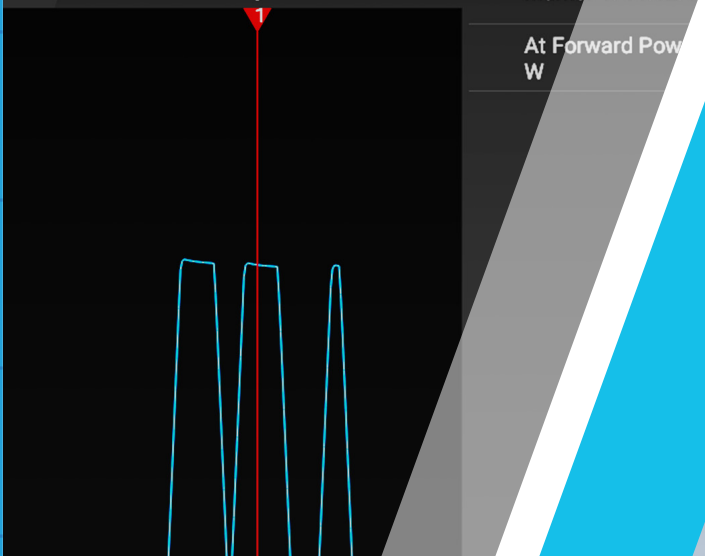
## System

<b>Cooling Method</b>	Forced air convection
<b>Impedance, Nominal</b>	50 ohm
<b>AC Input</b>	90-264 VAC @ 50/60 ± 3 Hz, single phase, current ≤ 10A. Output +15 VDC, 0 to 2.7A, US & CE AC cords included
<b>Connector</b>	7/16 (F)
<b>Operating Position</b>	Vertical only

## PHYSICAL

<b>Size</b>	13 in x 5.75 in x 20.5 in (330 mm x 145mm x 521 mm)
<b>Weight</b>	32 lb (14.6 kg)
<b>Body</b>	Black powder coat

second Time Graph



[birdrf.com/products](http://birdrf.com/products)

The RF Experts | USA Sales : 30303 Aurora Rd, Solon, OH 44139 | [www.birdrf.com](http://www.birdrf.com)  
Phone: +1 440.248.1200 / 866.695.4569 [Toll Free]

Bird is not responsible for omissions or errors. Specifications subject to change without notice.  
©2024 Bird • MRI3T-KIT-09042024



# RF CALIBRATION KIT

## Medical MRI Test Kit

# MRI3T KIT



MRI3T KIT

## Accuracy Delivered

RF Power has been used in medical applications for many years and require high precision RF power measurements. Manufacturers of Magnetic Resonance Imaging (MRI) rely on Bird's RF expertise and test equipment for their research and development and field calibration of MRI equipment.

Accuracy of RF power measurements delivered during clinical MRI testing ensures safety and regulatory compliance. Under strict safety guidelines, this ensures that patients are scanned safely in both 1.5T and 3T systems and that no RF burns occur.

Bird's new MRI test kit provides a complete set of equipment to carry out precise and independent measurements of RF power encountered. It also determines if the equipment is not in the appropriate exposure limits during device or pulse sequencing test.

Technicians can have confidence when performing MRI safety measurements and test the accuracy of the specific absorption rate over the range of operating conditions encountered in MRI.

### PRODUCT FEATURES

By utilizing Bird's 5014M USB RF Power Sensor paired with our Plug-In Elements, pulse power can be measured during MRI testing and calibration.

- Forward Power
- Reflected Power
- Match Measurements
- Sensor Temperature

### APPLICATIONS

- Hospitals, Urgent Cares, MRI Service Providers
- Imaging Service Providers
- OEM (Original Equipment Manufacturers)
- Emergency Care
- Resellers
- Capital Equipment Vendors



5000-NG  
RF Power Meter Display



8581A Load



5014M Sensor



4300B672-2  
Hard Carrying Case



Elements



Adapters

## MEASUREMENT

<b>Frequency Range</b>	10 MHz to 130 MHz
<b>RF Power</b>	
<b>Average, Max</b>	2.2 kW
<b>Peak, Max</b>	37 kW
<b>Pulse Width, Max</b>	10 ms
<b>Duty Cycle</b>	Duty cycle such that avg. power rating is never exceeded
<b>Acceleration, Max.</b>	± 1.5 G along any axis
<b>Magnetic Field, Max.</b>	500 G
<b>Acoustic Noise</b>	75 dBa max, 1m from external surfaces

## TEST CABLES

<b>Connectors</b>	7/16 (M) to 7/16 (M)
<b>Material</b>	RG393

## ELEMENTS

<b>Dynamic Range</b>	20 dB
<b>Labeling, Element</b>	Label lists max power (W)

## ENVIRONMENTAL

<b>Operating Temperature</b>	5 °C to 40 °C (41 °F to 104 °F)
<b>Storage Temperature</b>	-20 °C to 70 °C (-40 °F to 158 °F)
<b>Humidity, Relative</b>	
<b>Operating</b>	30% to 75%
<b>Storage</b>	95% noncondensing max.
<b>Altitude, Above Sea Level (ASL)</b>	
<b>Operating</b>	-984 to +11,800 ft ASL (-300 to +4000 m)
<b>Storage</b>	-984 to +18,000 ft ASL (-300 to +5490 m)

## ADAPTERS

<b>Connector</b>	7/16 (F) to HN (M) 7/16 (F) to N (M) 7/16 (M) to HN (F) 7/16 (M) to N (F)
------------------	--

## SYSTEM

<b>Display</b>	Full-Color 8 in 1280 x 800-pixel display with backlight.
<b>Languages</b>	English
<b>Battery Type</b>	Rechargeable, 3.7V/6200 mAh lithium
<b>Battery Operating Time</b>	8 hours typical
<b>Battery Charge Time</b>	6 hours typical 24-hour data logging (display in sleep mode)
<b>OS</b>	Android 5.1
<b>Maintenance Interval</b>	>= 1 year
<b>Calibration Interval</b>	<= 12 months
<b>AC Input</b>	100-240 VAC @ 50/60 ± 3 Hz, single phase, current <= 10A. US & CE plugs included

## PHYSICAL

<b>Size</b>	21 in x 15 in x 25 in (535 mm x 381 mm x 635 mm)
<b>Weight</b>	75 lb (34.1 kg)
<b>Material</b>	No toxic materials, Metals are corrosion resistant, no sharp edges or projections on accessible components, Ferrous materials present.

## STANDARD ACCESSORIES

<b>Power Meter Display</b>	5000-NG
<b>USB Sensor</b>	5014M
<b>Forced-Air Cooled Load</b>	8581A200-1
<b>Case, Cards &amp; Manual</b>	4300B672-2
<b>AC Adapter (5000-NG)</b>	5B5002-1
<b>AC Adapter (Load)</b>	5A2436
<b>Stylus</b>	SK-TP-112
<b>Cables, 6 ft (7/16DIN(M)-7/16DIN(M))</b>	4300A676-8 (2)
<b>USB Cable</b>	5A2653-6L
<b>Manual</b>	920-4300A750-1

## RF CALIBRATION KIT

# 5000-NG RF POWER METER DISPLAY

## Specifications

### MEASUREMENT

<b>Frequency Range</b>	2 MHz to 6 GHz with external power sensors (not included)
<b>Key Measurements</b>	True Average Power (Forward and Reflected) VSWR, Return Loss, rho, Match Efficiency Peak Power, Peak to Average Ratio, PEP, Crest Factor, Burst and Burst Average Power, CDF, CCDF, Confidence %, IEEE 194 Pulse Parameters, Sensor Temperature

### ENVIRONMENTAL

<b>Operating Temperature</b>	-20 °C to 60 °C (-4 °F to 140 °F)
<b>Storage Temperature</b>	-20 °C to 80 °C (-4 °F to 176 °F)

### PHYSICAL

<b>Size</b>	9.2 in x 6.3 in x 1.1 in (233 mm x 160 mm x 28 mm)
<b>Weight</b>	1.3 lb (0.59 kg)

### SYSTEM

<b>Display</b>	Full-Color 8" 1280 x 800-pixel display w/ backlight
<b>Operating System</b>	Android 5.1
<b>Languages</b>	English
<b>Storage</b>	16 GB
<b>Data Transfer</b>	WiFi802.11, USB drive
<b>Battery Type</b>	Rechargeable, 3.7 V/6200 mAh lithium battery
<b>Battery Life</b> (display in sleep mode)	24 hrs. continuous usage
<b>Battery Charge Time</b>	6 hours typical
<b>Recommended Calibration Interval</b>	No calibration required (sensor calibration recommended)
<b>Power Supply</b>	AC: 100 to 240 V / 50-60 Hz; DC: 5V/2.5 A
<b>Upgradeability</b>	Firmware field-upgradable via USB port, interchangeable US & CE plugs
<b>Additional Functions</b>	Data logging, numerical & graphing display
<b>Sensor Detection</b>	Automatic USB Sensors

# 5014M SENSOR

### MEASUREMENT

<b>Frequency Range</b>	Element dependent, 50 - 130 MHz
<b>Calibration Frequency &amp; Nominal Power Level</b>	<b>127.72 MHz:</b> 35 kW, 25 kW, 15 kW, 4.5 kW, 4.0 kW, 3.3 kW <b>63.86 MHz:</b> 16 kW, 10 kW, 2 kW <b>51.70 MHz:</b> 8 kW, 4 kW, 2.5 kW
<b>Accuracy</b>	<b>General:</b> Calibration frequency & power $\pm 7.5\%$
<b>Peak/Average Ratio</b>	10 dB maximum with DPM elements
<b>Insertion VSWR</b>	1.05:1 Max
<b>Insertion Loss, Max</b>	0.1 dB
<b>Dynamic Range</b>	20 dB

### SYSTEM

<b>Settling Time</b>	<3 seconds
<b>Recommended Calibration Interval</b>	1 year

### CONNECTORS

<b>RF Connectors</b>	Input 7/16 (M)
----------------------	----------------

### ENVIRONMENTAL

<b>Operating Temperature</b>	-10 °C to 50 °C (14°F to 122 °F)
<b>Storage Temperature</b>	-40 °C to 75 °C (-40 °F to 167 °F)
<b>Humidity</b>	95% max (non-condensing)

### PHYSICAL

<b>Size</b> (excluding connectors)	2.3 in x 2.1 in x 3.5 in (58 mm x 53 mm x 89 mm)
<b>Weight</b>	1.12 lb (0.51 kg)

### ELEMENTS INCLUDED

<b>4300A374-20</b>	50kW Peak, 30 to 60 MHz (FWD)
<b>4300A374-30</b>	50kW Peak, 60 to 130 MHz (FWD)
<b>4300A374-50</b>	5kW Peak, 30 to 60 MHz (RFL)
<b>4300A374-60</b>	5kW Peak, 60 to 130 MHz (RFL)

[birdrf.com/products](http://birdrf.com/products)

Bird is not responsible for omissions or errors. Specifications subject to change without notice.  
©2024 Bird • MRI3T-KIT-09042024

