

CHANNEL POWER MONITOR

Radio System Monitoring

CPM SERIES

Radio System Health Monitoring Solutions

Be confident of the status of each individual component in a radio system with effortless monitoring from a computer, tablet or mobile device.

Comprised of a central processor and a variety of sensors, the Bird CPM can be setup to monitor radio performance, combiner loss, and antenna/feedline characteristics providing continuous information on the health of each component it monitors.

Easy system access is available from any computer, tablet or phone on your network with the CPM-hosted web page. This allows for set up of alarms for failure conditions such as high or low power, or poor antenna VSWR. The monitor includes both software and hard contact alarms and can be configured to send SNMP Trap messages for emergency condition alerts. Data logging is standard and takes reliability one step further by enabling you to see degraded performance before it becomes an emergency.

PRODUCT FEATURES

- Power monitor display and sensors allow you to build a system around your needs.
- Monitor up to 16 non-directional and 16 directional sensors simultaneously.
- Measures forward, reflected, composite and individual channel power as well as antenna system VSWR.
- Monitoring of the system is accomplished via interface with the front panel or accessed through the built in web server and web page.
- Configurable alarming for high and low level power and high antenna VSWR, utilizing hard contact and SNMP formats.
- Standard Push-to-Talk (PTT) compatibility.

SENSOR OPTIONS

- Model 4044 Non-Directional Power Sensor** measures output power of either analog or digitally modulated radios up to 125 watts.
- Model 4042 Directional Channel Power Sensor** provides power readings by individual channel.
- Model 4043 Directional Power Sensor** provides composite power readings.
- Model 5009 Directional Power Sensor** provides power readings in HF frequency bands.



Solutions are available for the entire range of Land Mobile Radio frequencies.

3141 MODELS

Specifications

SYSTEM

Input Voltage	
3141A15	+15 VDC (supplied by 115/230 VAC Adapter)
3141A48	±48 VDC (+48 or -48)
Input Current	
3141A15	<3 Amps
3141A48	<1 Amp
Fuse Rating	
3141A15	5 Amp
3141A48	1.25 Amp

ENVIRONMENTAL

Operating Temperature	0 °C to 50 °C (32 °F to 122 °F)
Storage Temperature	-20 °C to 80 °C (-4 °F to 176 °F)
Humidity	95% ±5% max (non-condensing)
Altitude	up to 10,000 ft (3,048 m)

PHYSICAL

Size	1 RU 5.25 in X 19 in X 1.75 in (133.35 mm x 483 mm x 44.5 mm)
Weight	Approximately 2 lb (0.85 kg)

NON-DIRECTIONAL POWER SENSOR

MODEL 4044

MEASUREMENT

Frequency Range	
4044-1-420404-yyzz	118 MHz to 136 MHz
4044-1-440404-yyzz	144 MHz to 174 MHz
4044-1-450404-yyzz	380 MHz to 450 MHz
4044-1-460404-yyzz	450 MHz to 512 MHz
4044-1-470404-yyzz	762 MHz to 806 MHz
4044-1-480404-yyzz	806 MHz to 869 MHz
4044-1-490404-yyzz	896 MHz to 940 MHz

See connection options below to build part number.
Custom band options available.

Power Range	2.5 to 125 W
Impedance	50 Ohms
Accuracy	±5% of reading
Insertion Loss	<0.1 dB
Insertion VSWR	<1.10:1 max
Intermodulation Distortion (PIM)	<-140 dBc

CONNECTORS

Input Connector (yy)	01 = N(f) 02 = N(m) 03 = 4.3/10(f) 04 = 4.3/10(m)
Output Connector (zz)	01 = N(f) 02 = N(m) 03 = 4.3/10(f) 04 = 4.3/10(m)

SYSTEM

Power Supply	15 VDC, 5 mA max (from 3141)
Interface	0-4 VDC via RJ-25 Connector

ENVIRONMENTAL

Operating Temperature	0 °C to 50 °C (32 °F to 122 °F)
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PHYSICAL

Size	2.3 in x 2.2 in x 1.7 in (50 mm x 56 mm x 43 mm)
Weight	.2 lb (0.1 kg)

CERTIFICATIONS

Compliance	CE, RoHS
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STANDARD ACCESSORIES

5A2968T	Termination (ships with CPM)
5A22865-KIT1	Label kit (ships with CPM)
5A2968-CS10	Cable RJ25 (ships with sensors)
7005A836-6	AC/DC power supply (ships w/ 3141A15 only)

CHANNEL DIRECTIONAL RF POWER SENSOR

MODEL 4042

Specifications

MEASUREMENT

Frequency Range 4042-1-430505-yyzz	100 MHz to 1000 MHz
<i>See connection options below to build part number.</i>	
Forward Power	10 W to 500 W
Measurement Range	1 W to 50 W (06 option)
<i>Measure power and VSWR for up to 16 frequencies or channels with selectable bandwidths of 6.25, 12.5 or 25 kHz.</i>	
Max Reflected Power Measurement	10 dB below Forward Power Range
Dynamic Range	17 dB
Impedance	50 Ohms
Accuracy	±5% of reading
Insertion Loss	<0.2 dB
Insertion VSWR	<1.15:1 max
Intermodulation Distortion (PIM)	<-145 dBc

SYSTEM

Power Supply	7-18 VDC, <500 mA (from 3141)
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ENVIRONMENTAL

Operating Temperature	0 °C to 50 °C (32 °F to 122 °F)
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PHYSICAL

Size	5.2 in x 3.8 in x 1.4 in (132 mm x 96.5 mm x 35.5 mm)
Weight	.6 lb (.27 kg)

CERTIFICATIONS

Compliance	CE, RoHS
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DIRECTIONAL RF POWER SENSOR

MODEL 4043

MEASUREMENT

Frequency Range 4043-1-420505-yyzz	118 MHz to 136 MHz
4043-1-440505-yyzz	144 MHz to 174 MHz
4043-1-450505-yyzz	380 MHz to 450 MHz
4043-1-460505-yyzz	450 MHz to 512 MHz
4043-1-470505-yyzz	762 MHz to 806 MHz
4043-1-480505-yyzz	806 MHz to 869 MHz
4043-1-490505-yyzz	896 MHz to 940 MHz
<i>See connection options below to build part number.</i>	
Max Forward Power Measurement	25 to 500 W
Max Reflected Power Measurement	10 dB below Forward Power Range
Dynamic Range	13 dB
Impedance	50 Ohms
Accuracy	±5% of reading
Insertion Loss	<0.2 dB
Insertion VSWR	<1.15:1 max
Intermodulation Distortion (PIM)	<-145 dBc

SYSTEM

Power Supply	7-18 VDC, <50 mA (from 3141)
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ENVIRONMENTAL

Operating Temperature	0 °C to 50 °C (32 °F to 122 °F)
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PHYSICAL

Size	5.2 in x 3.8 in x 1.4 in (132 mm x 96.5 mm x 35.5 mm)
Weight	.5 lb (0.23 kg)

CERTIFICATIONS

Compliance	CE, RoHS
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CONNECTION OPTIONS FOR MODEL 4042 & MODEL 4043

Max Forward Power Measurement (ww)	Comm (xx)	Input Connector (yy)	Output Connector (zz)
05 = 500 W	05 = RS-485 via RJ-25	01 = N(f)	01 = N(f)
06 = 50 W (4042 only)		02 = N(m)	02 = N(m)
		03 = 4.3/10(f)	03 = 4.3/10(f)
		04 = 4.3/10(m)	04 = 4.3/10(m)

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DIRECTIONAL RF POWER SENSOR

MODEL 5009

Specifications

MEASUREMENT

Frequency Range	Element dependent, 2 MHz to 1000 MHz <i>DPM elements only. Refer to birdrf.com for complete list of power & frequency bands for plug-in elements.</i>
Power Range	Element dependent, 0.1 W to 1 kW full
Impedance	50 Ohms
True Average Power Accuracy	±5% of reading (15 °C to 35 °C)
Peak Power Accuracy	±8% of full scale , Pulse-Power Elements. 800 ns to 15 us min. pulse width
Insertion VSWR	1.05:1 max

CONNECTORS

RF Connectors	QC Type. Female N normally supplied
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SYSTEM

Power Supply	From host instrument via cable connection
Interface	RJ25

ENVIRONMENTAL

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

PHYSICAL

Size	2.3 in x 2.1 in x 3.5 in (58 mm x 53 mm x 89 mm) Not including QC connectors
Weight	1.12 lb (0.51 kg)

OPTIONAL ACCESSORIES

5A2968A-11	Cable Adapter
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