



Channel Power Monitor

CPM Series



Be assured that your communication system is up and running at all times with Bird's Channel Power Monitor. It provides you with continuous information on the health of each component of your system that is accessible on any computer or tablet on the network or even the phone in your pocket.

The Channel Power Monitor (CPM) is comprised of a 1 RU central processor and a variety of sensors, which work together to monitor all components of a radio system, including each individual radio, the combiner, the feed lines and antenna. These inexpensive sensors are placed throughout the system, with a 5% accuracy that is traceable to NIST and as reliable as you have come to expect from Bird.

The CPM hosts its own webpage for setup and display of all measurement parameters. This enables you to access the system from any computer, tablet or phone on your network, only limited by your network security. The webpage displays all measurements and easily allows you to set up alarms for failure conditions such as high or low power or poor antenna VSWR. The unit includes both software and hard contact alarms and can even be configured to send you an SNMP Trap message to alert you to an emergency condition. Also standard is Data Logging, which takes reliability one step further by enabling you to see degraded performance before it becomes an emergency.

Features:

- 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.
- Configurable with multiple options for sensors and meters, purchase only what you need.
- Easy remote connection using a built-in web server for setup and monitoring.
- Push-to-talk input for 16 radios.
- Configurable alarming for high and low level power and high antenna VSWR, utilizing hard contact and SNMP formats.



Channel Power Monitor

CPM Series

The RF Experts

Monitor all aspects of your land mobile radio system with the Bird Channel Power Monitor. Continuously monitor radio performance, combiner loss and antenna/feedline characteristics to identify and alarm on critical changes. With the data logging function, long term performance monitoring can be used to identify performance changes before they negatively impact system performance – enabling your preventative maintenance team to address problems before they occur. Solutions are available for the entire range of Land Mobile Radio frequencies from 144 MHz to 940 MHz.

Features include:

- Data logging
- Slim 1RU package
- Built-in web Server provides SNMP messaging
- Push-to-talk (PTT) compatibility is standard
- Full control of alarm and data logging settings
- Capable of monitoring up to 16 non-directional and 16 directional sensors to cover your large radio system
- Software and hard contact alarms



Setup and monitoring is simple with the **BUILT-IN WEB SERVER**. Available anywhere there is an internet connection and a web browser, so it is as close as the computer on your desk or the phone in your pocket. Receive SNMP alerts or just check up on your system at your convenience. Also comes with an **ANDROID APP**.



Model 3141
Channel Power Monitor display is a 1RU central processor that consolidates and communicates information from a variety of sensors. This display hosts its own webpage for setup and display of all measurement parameters and alarm functions.



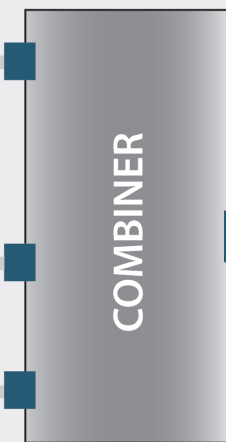
Utilizing the forward and reflected power measurements of the 4042 or 4043 sensors, determine the VSWR of your **ANTENNA** and cable feedline. Know immediately when your antenna is damaged and your transmission is compromised.

Directly measure the power output of each **RADIO** simultaneously. Alarm on failure and record measurements for later analysis.

RADIO 1

RADIO 2

RADIO 16



Model 4044 Non-Directional Power Sensor is an economical sensor capable of measuring the output power of either analog or digitally modulated radios, at power levels up to 125 watts. The Model 4044 is accurate to within +/-5% of reading with traceability to NIST. This sensor is a non-directional sensor that is ideal for use at the input to each channel of the transmit combiner where the VSWR is well controlled.

Sensors on both the input and output side of the **COMBINER** enable combiner performance to be measured continuously.

4042 Power Sensor
Provides power readings by individual channel.

4043 Power Sensor
Provides composite power readings.

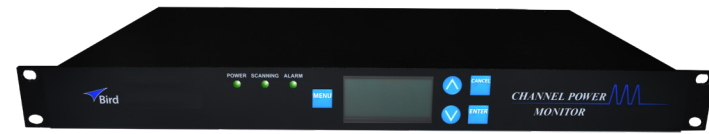
5009 Directional Power Sensor
Provides power readings in HF frequency bands.

Model 4042, 4043 & 5009 Directional Power Sensors provide both forward and reflected power measurements that are NIST traceable. These sensors are intended for use at the transmit combiner output, in order to provide both combiner power, as well as antenna VSWR information.

Channel Power Monitor

CPM Series Specifications

The RF Experts



CHANNEL POWER MONITOR DISPLAY

Model	3141A15, 3141A48
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
Dimensions	5.25" X 19" X 1.75" (133.35 x 483 x 44.5 mm)
Weight	Approximately 2 lbs. (0.85 kg)
Operating Temp.	0°C to +50°C (32°F to 122°F)
Storage Temp.	-20°C to + 80°C (-4°F to 176°F)
Humidity	95% ±5% max. (noncondensing)
Altitude	up to 10,000 feet (3,048 m)



CHANNEL & DIRECTIONAL POWER SENSOR

Model	4042 Channel Power Sensor 4043 Directional Power Sensor
Frequency by Part Number	4042-1-43wwxx-yyzz 100 MHz to 1000 MHz 4043-1-44wwxx-yyzz 144 MHz to 174 MHz 4043-1-45wwxx-yyzz 380 MHz to 450 MHz 4043-1-46wwxx-yyzz 450 MHz to 512 MHz 4043-1-47wwxx-yyzz 762 MHz to 806 MHz 4043-1-48wwxx-yyzz 806 MHz to 869 MHz 4043-1-49wwxx-yyzz 896 MHz to 940 MHz
ww:	Max Forward Power Measurement 05= 500 W 06= 50 W (avail. for 4042 only)
xx:	Comm 05= RS-485 via RJ-25
yy:	Input Connector 01=N(f) 02=N(m) 03=4.3/10(f) 04=4.3/10(m)
zz:	Output Connector 01=N(f) 02=N(m) 03=4.3/10(f) 04=4.3/10(m)
Max Reflected Power Measurement	10 dB below Forward Power Range
Dynamic Range	4042: 17 dB 4043: 13 dB
Accuracy	+/- 5% of reading
Impedance	50 OHM
Insertion Loss	< 0.2 dB
Insertion VSWR	<1.15:1
Intermodulation Distortion (PIM)	<-145 dBc
Power Supply	4042 7/18 VDC, <500 mA (from 3141) 4043 7/18 VDC, <50 mA (from 3141)
Operating Temperature	0 to 50°C
Dimensions (LxWxH)	5.2" x 3.8" x 1.4" (132 x 96.5 x 35.5 mm)
Weight	0.5 lbs (0.23 kg)
Compliance	CE, RoHS



DIRECTIONAL POWER SENSOR

Model	5009
Frequency Range	Element dependent, 2 MHz to 1000 MHz
Power Range	Element dependent, 125 mW to 1 kW full
Impedance	50 Ohms
Peak/Average Ratio	10 dB maximum with DPM elements
Accuracy	
True Average Power	± 5% of reading (15 °C to 35°C), ± 7% of reading (-10 °C to 50°C), ±8% of full scale
Peak Power	±8% of full scale
Insertion VSWR	1.05:1 from 0.45 to 1000 MHz (with N connectors)
Settling Time	<2.5 seconds
Connector(s)	QC Type. Female N normally supplied
Power Supply	From host instrument via cable connection
Interface	RJ25
Weight	1.12 lbs (0.51 kg)
Dimensions HxWxD	2.3" H x 2.1" W x 3.5" D (58 mm x 53mm x 89 mm) excluding connectors
Directivity	30 dB typical (exact value depends on element selected)
Humidity, Max.	95% maximum (non-condensing)
Pulse width Parameters	>100 MHz 800 ns minimum; 26-99 MHz 1.5 µs minimum; 2-25 MHz 15 µs minimum;
Pulse Rep. Rate Peak	15 pps minimum
Pulse Duty Factor	1 x 10-4 minimum
Operating Temp	-10 °C to +50 °C (14°F to 122°F)
Storage Temp	-40 °C to +75 °C (-40°F to 167°F)



NON-DIRECTIONAL POWER SENSOR

Model	4044
Frequency by Part Number	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
yy:	Input Connector 01=N(f) 02=N(m) 03=4.3/10(f) 04=4.3/10(m)
zz:	Output Connector 01=N(f) 02=N(m) 03=4.3/10(f) 04=4.3/10(m)
Power Range	2.5 - 100 W
Accuracy	+/- 5% of reading
Impedance	50 OHM
Insertion Loss	< 0.1 dB
Insertion VSWR	<1.10:1 max
Intermodulation Distortion (PIM)	<-140 dBc
Instrument Interface	0-4 VDC via RJ-25 Connector
Power Supply	15 VDC, 5 mA max (from 3141)
Operating Temperature	0 to 50°C
Dimensions	2.3" x 2.2" x 1.7" (50 x 56 x 43 mm)
Weight	0.2 lbs (0.1 kg)
Compliance	CE, RoHS

STANDARD ACCESSORIES

5A2968T	Termination (ships with CPM)
5A2286S-KIT1	Label kit (ships with CPM)
5A2968-CS10	Cable RJ25 (ships with sensors)
7005A836-6	AC/DC power supply (ships w/ 3141A15 only)

OPTIONAL ACCESSORIES

5A2968A-11	Cable Adapter
-------------------	---------------