MODEL NOMENCLATURE (7/8" Line Sections)

TPM 7 ___ ___ – ___ ___

- **Line Section**: 7 = 7/8"
- **Input Connector**
- **Output Connector**
- **Frequency Band**: L = 54-88 MHz; F = 88-108 MHz; H =174-216 MHz; U = 470-806 MHz
- **Power***: L = Low; M = Medium; H = High; S = Very High

Connector Options
A = N (F)
B = N (M)
C = LC (F)
D = 7/8" EIA
H = DIN (F)
J = DIN (M)
K = UHF (F)
L = UHF (M)

MODEL NOMENCLATURE (1 5/8", 3 1/8" Line Sections)**

TPM ___ ___ – ___ ___

- **Line Section**: 1 = 1 5/8"; 3 = 3 1/8"
- **Line Interface*****: U = Unflanged, Recessed Center Conductor; UF = Unflanged, Flush Center Conductor; ***For Flanged, leave blank
- **Frequency Band**: L = 54-88 MHz; F = 88-108 MHz; H = 174-216 MHz; U = 470-806 MHz
- **Power***: L = Low; M = Medium; H = High; S = Very High

*see Chart A for power ranges below.
** Other sizes and power ranges available upon request.

TPM OPERATING CHARACTERISTICS

Frequency Ranges	L = 54-88 MHz F = 88-108 MHz H = 174-216 MHz U = 470-806 MHz
Forward Power Range	See tables below
Reflected Power Range	10% of Forward Power Range
Measurement Type	In-Line, True Average Power
Peak/Average Ratio	10 dB maximum
Directivity, Rfl	30 typical, 26 dB minimum
Accuracy	±5% of reading
Dynamic Power Range	16 dB
Outputs	DB 9 Voltage I/O
Displays Offered	3140-A4, 4 channel 3140-A8, 8 channel

LINE SECTION

Operating Temperature	-10° to +50° C (14° to 122° F)
Storage Temperature	-40° to +80° C (-40° to 176° F)
Humidity	95% ±5% max. (noncondensing)
Altitude	up to 10,000 feet (3048 m)
Weights	TPM7 = 3.5 lbs TPM1 = 5.5 lbs TPM3 = 8.0 lbs 3140 = 2.5 lbs
Calibration cycle	Annual***

*** Standard calibration cycle of 1 year for reverification, but can be recalibrated by the customer with an accurate power reference. See the Application note on TPM calibration at www.bird-electronic.com

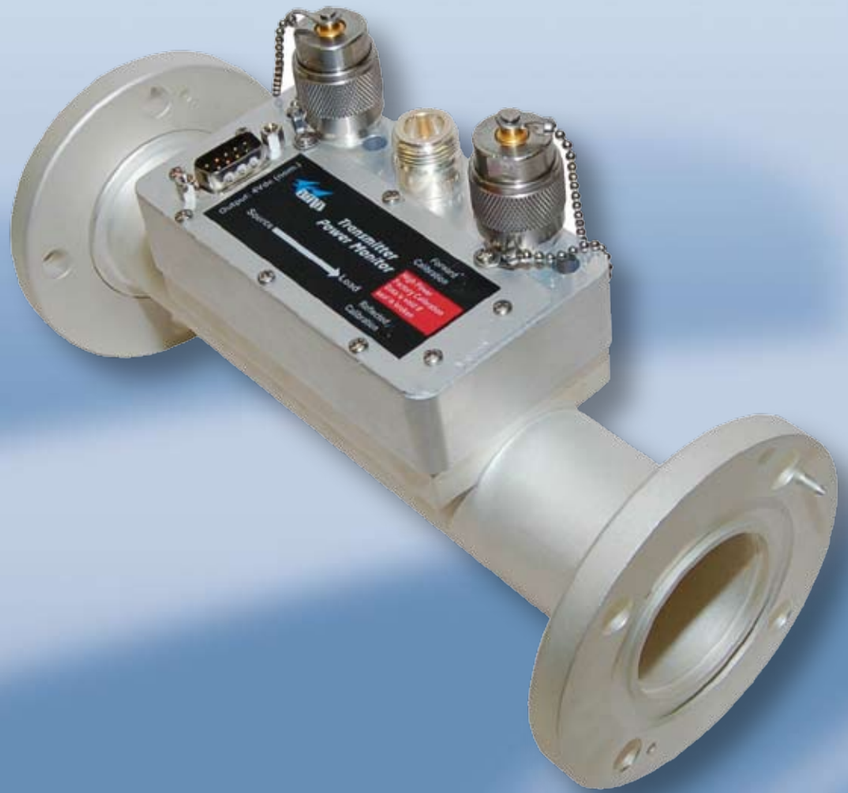
Chart A	VHF (54-216 MHz)		UHF (470-806 MHz)	
Line Size	**Power Designator**	**Forward Power Range**	**Power Designator**	**Forward Power Range**
7/8"	Low Medium High Very High	15 W - 500 W 35 W - 1.0 kW 80 W - 2.5 kW 150 W - 5.0 kW	Low Medium High	15 W - 500 W 35 W - 1.0 kW 80 W - 2.5 kW
1 5/8"	Low Medium High Very High	30 W - 1.0 kW 80 W - 2.5 kW 150 W - 5.0 kW 300 W - 10 kW	Low Medium High	30 W - 1.0 kW 80 W - 2.5 kW 150 W - 5.0 kW
3 1/8"	Low Medium High Very High	150 W - 5.0 kW 300 W - 10 kW 800 W - 25 kW 1.5 kW - 50 kW	Low Medium High	150 W - 5.0 kW 300 W - 10 kW 800 W - 25 kW

Note: For best accuracy, pick the lowest power range that includes your maximum average operating power.

BIRD TECHNOLOGIES GROUP

2008 PICK HIT Radio

Transmitter Power Monitor (TPM)



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1042 TPM 04042008

RF Measurement and Management in Your World

The Transmitter Power Monitor (TPM*) is the latest broadcast solution from Bird.

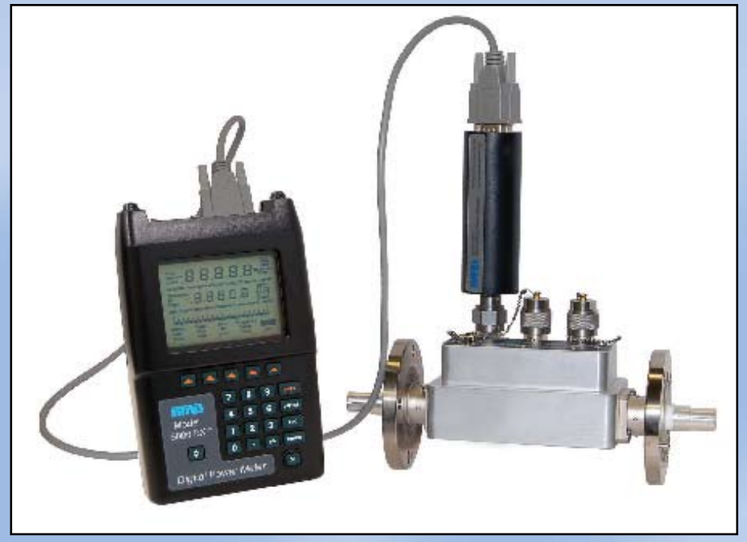
Calibrated coupling ports and accurate power measurement combined in the same unit passes savings of money and space on to you. Using state of the art techniques, the TPM is the first in-situ power solution that can be calibrated in-line and on site. This unprecedented characteristic helps minimize downtime and optimize on-air time. In addition, a simplified interface allows for a high level of customization and integration that any system could appreciate.

Features / Benefits:

The TPM's built-in, calibrated coupling ports help maximize convenience and minimize space usage in the transmission system. Three different ports (forward, reflected, and non-directional) are characterized over the major commercial broadcast bands (FM Radio and Television). Data is provided with each unit, giving an accuracy of +/-0.33 dB across the band. This means you can use your TPM for power measurement while you use the coupler ports to do mask compliance.

In-Situ Calibration:

With the TPM you will never have to remove it from service and send the unit back to the factory for calibration. Connecting an accurate terminating power meter to the precision coupling port will provide your reference for in-situ calibration. The unsurpassed feature with in-situ calibration is you can significantly reduce measurement error by calibrating your power meter at your specific power level and frequency during operation. By removing two of the principal causes of error you will discover your power meter tracking will be more precise than ever before.



The Bird TPM calibration kit provides a portable highly accurate terminating power meter to calibrate the TPM in-situ. This keeps you ON AIR with reliable power measurements traceable to NIST.

* Patent Pending

TPM... your independent power standard!

Integrated Diode Power Meter Error Budget			
1	Directional Coupler Frequency Response Error	+/-3.0%	Includes frequency response error for forward and reflected measurements. Does not include directivity effects on reflected channel.
2	Detector Linearity	+/-1.5%	Includes detector linearity over a 20dB dynamic range.
3	Instrumentation Uncertainty and Noise	+/-1.5%	
4	Temperature Drift	+/-1.5%	Assumes a 7 degree C ambient temperature range.
5	Calibration Standards Uncertainty	+/-0.75%	Uncertainty of working standards on production floor.
	RSS (Probable) Error	+/-4.04%	Error sources may be treated as independent variables.

All Specifications subject to change without notice

Meter Panel

The Transmitter Power Monitor, meter display panel (Model 3140-A4 or 3140-A8) is used to accurately display the forward and reflected power on one TPM or up to eight separate TPM's. One set of highly accurate meters displays the RF power readings and a user friendly front panel switch that selects among the mulitple TPM systems.

Model 3140	4 or 8 channel
Operating voltage	115/230 VAC 50/60Hz
Operating power	Less than 10 watts
Dimensions	3.5" X 19" X 3.5" (2 RU) (89mm X 483mm X 89mm)
Weight	Approximately 2.5 lbs (0.85kg)
Operating temperature	-10 to + 50 degrees C (-14 to 122 degrees F)
Storage temperature	-40 to + 80 degrees C (-40 to 176 degrees F)
Humidity	95% +/-5% (Noncondensing)
Altitude	up to 10,000 feet (3048 m)