The **RF** Experts

PRECISION RF POWER SENSOR

CW & Pulse Measurements

1% Accuracy
7027 & 7029 SERIES

Calibration-Grade Accuracy

The 7027 and 7029 Series sensors deliver ±1% accuracy with NIST-traceable calibration, ideal for process control in semiconductor fabs and for repeatable results in precision RF testing. Compatible with both pulsed and CW signals, they provide reliable measurements for tool qualification and process optimization.

Versatile Signal Support

Measures both legacy CW and modern pulsed RF signals to cover a broad range of applications.

High Accuracy and Linearity

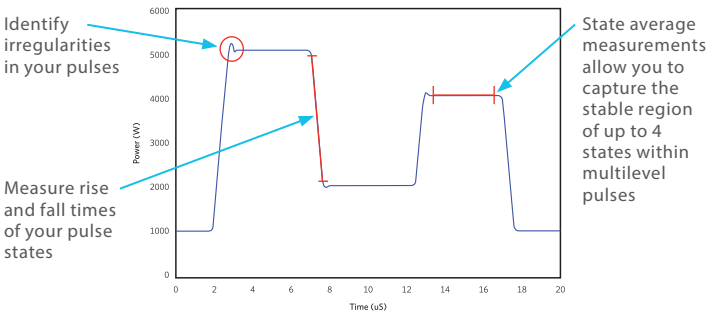
Delivers ±1% uncertainty across a wide dynamic range, ensuring precise power measurements and confidence in linearity testing.

Trusted, Traceable Data

Provides consistent, NIST-traceable results to support tool qualification, process control, and power delivery analysis across production sites.

ANALYZE COMPLEX RF PULSE WAVEFORMS

Utilize up to four sets of gates to analyze complex pulses



PRODUCT FEATURES

- ±1% Accuracy Over Full Dynamic Range
- Harmonic Filtering
- Continuous Wave Measurements
- Multi-Level Pulse Measurements
- API with SCPI Command Set
- Compatible with Bird 4421A-12-11-1 Meter

BENEFITS

- High Level of Accuracy for Better Process Control
- Specified Accuracy over the Power Range for Linearity Testing
- Multiple Methods of Displaying Readings
  - Power Meter for Fab Applications
  - Bird Power Viewer App for Lab Use
  - API Commands for Automated Testing
- Time Domain Analysis for Calibrated Pulse Shape Analysis

Bird

PRECISION RF POWER SENSORS

7027 & 7029 SERIES

Specifications

MEASUREMENT

Measurement Type	CW and Multi-State Pulsed RF Power
Impedance, Nominal	50 Ohms
Power Measurement Accuracy (2σ)	1% at calibrated frequencies,over entire power range 2% at all other frequencies within sensor bandwidth
VSWR Range	1.0:1 to 2.0:1
Insertion Loss	<0.05 dB max
Insertion VSWR	1.05 max
Directivity	28 dB min
Calibration	NIST Traceable

CONNECTION OPTIONS*

Input Connector (xx)	**Output Connector (yy)**
12 = HN(f)	12 = HN(f)
13 = HN(m)	13 = HN(m)
14 = 7/16(f)	14 = 7/16(f)
15 = 7/16(m)	15 = 7/16(m)
16 = SQS(m)	16 = SQS(m)
17 = SQS(f)	17 = SQS(f)
19 = QRM(f)	19 = QRM(f)
23 = QRM(m)	23 = QRM(m)

* Contact factory for additional connector options.

PHYSICAL

Size	6.0 in x 1.9 in x 3.7 in (155 mm x 50 mm x 95 mm) Not including QC connectors
Weight	Less than 3 lb, 1.4 kg

SYSTEM

Recommended Calibration Interval	6 months
Interface	USB 2.0
Power Supply	Via supplied USB Cable
External Sync Input	TTL High, 2-5V; TTL Low, 0-0.85V
Compatible With	Virtual Power Meter (VPM3) Software, RF Power Meter Display (4421A-12-11-1)

ENVIRONMENTAL

Operating Temperature	15 °C to 35 °C (59 °F to 95 °F)
Storage Temperature	-20 °C to 70 °C (-4 °F to 158 °F)
Humidity	95% maximum (non-condensing)
Altitude	15,000 ft max (4,500 m max)

CERTIFICATIONS

Mechanical Shock & Vibration	Designed to meet MIL-PRF-28800F class 3
EMC	**EMC Directive (2004/108/EC)** European Standard: EN 61326—Electrical Equipment for measurement, control & laboratory use; **EMC Requirements** Test Spec (for radiated immunity): EN 61000-4-3—Testing and measurement techniques - 10V/meter
CE Mark	Compliant
RoHS	Compliant

Model Selection Guide

Model Number	Frequency (MHz)	Power Range	Connectors	Pulse Rep Rate
7027-1-524001-xxyy	400 kHz ±10%	25 W to 25 kW	QC	10 Hz to 11.25 kHz
7027-1-544601-xxyy	2 MHz ±10%	10 W to 5 kW	QC	10 Hz to 50 kHz
7027-1-594301-xxyy	13.56 MHz ±5%	10 W to 10 kW	QC	100 Hz to 100 kHz
7027-1-615501-xxyy	40.68 MHz ±5%	75 W to 7.5 kW	QC	100 Hz to 100 kHz
7027-1-624901-xxyy	60 MHz ±5%	30 W to 6 kW	QC	100 Hz to 100 kHz
7027-1-604801-xxyy	27.12 MHz ±5%	10W to 3 kW	QC	100 Hz to 100 kHz
7029-1-525101-3030	0.4 MHz ±10%	200 W to 40 kW	1-5/8 in EIA Flanged	100 Hz to 100 kHz
7029-1-615901-3030	40.68 MHz ±5%	100 W to 20 kW	1-5/8 in EIA Flanged	100 Hz to 100 kHz
7029-1-625901-3030	60 MHz ±5%	100 W to 60 kW	1-5/8 in EIA Flanged	100 Hz to 100 kHz

Connector Options (xxyy): see above

Note:
The Pulse Power Sensor can measure 4 states within a single pulse.
Depending on the rep rate, the minimum state width is approximately 1% of the pulse rep rate period, the maximum state width is approximately 99% of the pulse rep rate period.
For applications with rep rates near the low or high extremes of the spec, consult the user manual for the exact limits.

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