

RF POWER METERS EMPOWER™ MODEL 7002-002, 7002-004



MODEL 7002-002, 7002-004

- **Fast Performance:**
Up to 10 Million Samples per Second
- **Measured with Continuous Wave**
- **Accurate Measurements with Dynamic Range of:**
 - 65 dB for 6 GHz (Model 7002-002)
 - 55 dB for 18 GHz (Model 7002-004)
- **Low Measurement Uncertainty**

ETS-Lindgren's EMPower Power Meters make fast, accurate power measurements, even at low power levels.

The EMPower modular plug-in card occupies one slot in the EMCenter™, and includes four USB ports, accommodating any combination of up to four EMPower or EMPower Pulse™ sensors.

Both power meters have an accuracy of 0.25 dB, making them suitable for measurements in accordance to automotive, military, telecom, and basic EMC standards.

EMPower is fully supported by TILE!™, EMQuest™, and other test automation software packages. For additional information, please contact ETS-Lindgren.

Standard Configuration

- EMPower USB RF Power Sensor (Please Specify Model)
- 2m Shielded USN Cable

FEATURES

Fast Performance

The EMPower Meters perform power measurements at a maximum sampling speed of 10 million samples per second.

Accurate Measurements

EMPower allows high precision RF measurements with high dynamic range of 65 dB for the 6 GHz model, and 55 dB for the 18 GHz model.

Low Measurement Uncertainty

Impedance mismatch is a main contributor to measurement uncertainty in RF power measurements. EMPower sensors have low VSWR to overcome this problem.

Options

- EMPower Meter Plug-in Card
- EMCenter Modular RF Platform (Model 7000-001, required for operation)
- EMCenter RF System + IEEE-488 (GPIB) (Model 7000-010)
- Additional USB RF Power Sensors
- ISO 17025 Accredited Calibration for EMPower (Model 7002-002)
- ISO 17025 Accredited Calibration for EMPower (Model 7002-004)

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Technical Specifications

Performance Specifications (EMPower Sensors)		7002-002 (USB RF Power Sensor)	7002-004 (USB RF Power Sensor)	
Detector Type		Diode	Diode	
Measure Function		RMS CW Power	RMS CW Power	
Calibrated Frequency Range		9 kHz to 6 GHz	9 kHz to 6 GHz	
Power Measuring Range		-55 dBm to + 10 dBm	-45 dBm to +10 dBm	
Input Damage Level		> 20 dBm	> 20 dBm	
Resolution		0.01 dB	0.01 dB	
VSWR		< 1.10 @ 9 kHz to 100 MHz < 1.15 @ 100 MHz to 2 GHz < 1.35 @ 2 GHz to 6 GHz	< 1.20 @ 10 MHz to 6 GHz < 1.35 @ 6 GHz to 18 GHz	
Maximum Linearity Error (0 dBm ref)		0.05 dB / 10 dB	0.5 dB / 10 dB	
Measuring Speed (Per Second)		20K, 100K, or 1M	20K, 100K, or 1M	
Accuracy (23° ± 2° C)		.25 dB	0.25 dB (≤ 10 GHz) 0.50 dB (> 10 GHz)	
Temperature Effect		< 0.15 dB Over Full Temperature Range	< 0.15 dB Over Full Temperature Range	
Measurement Units		dBm or Watts	dBm or Watts	
Physical Specifications		7002-001 (Plug-in Card)	7002-002 (USB RF Power Sensor)	7002-004 (USB RF Power Sensor)
Temperature Range (Use)		0° C to 40° C	0° C to 40° C	0° C to 40° C
		32° F to 104° F	32° F to 104° F	32° F to 104° F
Temperature Range (Storage)		-20° C to 85° F	-20° C to 85° F	-20° C to 85° F
		4° F to 185° F	4° F to 185° F	4° F to 185° F
Relative Humidity		10% to 90% (Non-condensing)	10% to 90% (Non-condensing)	10% to 90% (Non-condensing)
Connector to Plug-in Card or PC (Data)	n/a	USB-B	USB-B	USB-B
Cross-Polarization Isolation	n/a	USB 1.1	USB 1.1	USB 1.1
Maximum Continuous Power	n/a	< 200 mA	< 200 mA	< 200 mA
RF Input connector	n/a	N-type Precision	N-type Precision	N-type Precision
Sensor Filter Specifications				
Filter 1	1			
Filter 2	3			
Filter 3	10			
Filter 4	30			
Filter 5	100			
Filter 6	300			
Filter 7	5000			
Sensor Filter Specifications (Auto Mode)				
Filter 3	+10 dBm to 0 dBm			
Filter 3	0 dBm to -10 dBm			
Filter 3	-10 dBm to -20 dBm			
Filter 4	-20 dBm to -30 dBm			
Filter 5	-30 dBm to -40 dBm			
Filter 6	-40 dBm to -50 dBm			
Filter 7	≤ - 50 dBm			