

## MICROWAVE POWER METER

### MPM6342 / MPM3342 / MPM2342

This product is composed of microwave power meter main unit and serial power sensor, adopting embedded computer and embedded operating system integrally with application of microwave diode detection technology, digital signal processing technology and multi-dimensional compensation technology, which offer the instrument such characteristics as broad frequency band, large dynamic power range, sensor serialization, high precision, quick measurement and analysis and convenient operation. It is mainly used for the measurement and metering of average power, peak power and pulse envelope power of microwave signal, and also can be used for the measurement of high-power pulse modulation signal and narrow pulse modulation signal. It is an important measuring instrument for development, production, acceptance and maintenance in the fields of radar, electronic countermeasure and communication.

### Main Characteristics

- With accurate power measurement function of continuous wave signal, single sensor in dynamic range of 85 dB
- Available in measurement and analysis functions of various envelope parameters of microwave and millimeter wave pulse modulation signal, such as: peak power, pulse power, average power, overshoot, rise time, fall time, top amplitude, bottom amplitude, pulse width, pulse period, duty ratio, closing time and pulse repetition frequency.
- Offering extended measurement function of high-power pulse, if provided with high-power attenuator or high-power directional coupler to offer.
- Available in automatic offset calibration function.
- Available in automatic capture measurement function.
- Available in rise/fall edge trigger and internal/external trigger function.
- Available in CCDF statistical measurement and analysis function.
- With color LCD display and Chinese/English graphical operation interface, for user's convenience.
- **Available in storage/recall function.**  
With GPIB and LAN program control function to meet modern communication needs. Multiple measurement modes to meet different user's measurement requirements.
- **Available in continuous wave measurement, peak value measurement and CCDF statistical measurement, three measurement modes.**  
This instrument becomes a traditional continuous wave power meter if provide with continuous wave power sensor, which can measure the power of microwave and millimeter wave and continuous wave signals accurately, with single sensor in dynamic power measurement range up to 85dBm (-65dBm~+20dBm).

- This instrument becomes a high-performance peak power meter if provided with peak power sensor, which can measure and analyze the amplitude and time domain parameters of pulse modulation signal.
- In statistical measurement mode, the instrument performs continuous sampling measurement on signal rather than trigger event. CCDF refers to the percentage of sampling point, the power level of which is above or equivalent to certain value, among whole samples, it can also be represented as 1-CDF (1 minus CDF).
- **Narrow pulse testing**  
MPM6342 is capable of measuring and analyzing microwave and millimeter wave pulse modulation signal with pulse width of  $\leq 50\text{ns}$ , and measuring and analyzing pulse modulation signal with duty ratio of less than one ten-thousandth.
- **Set frequency response offset**  
Frequency response offset which varies with frequency provides a quick and effective compensation method for relevant frequency changes in testing system response, acting on the power sensor. Power meter can store 10 frequency response offset tables, with maximum 80 frequency points each, which is very helpful for storing frequency response offset when measuring high-power signal of high-power directional coupler or high-power attenuator.  
After starting frequency response offset functioning, in the process of automatic calibration and power measurement, the power meter automatically sets calibration factor according to sensor calibration table and frequency response offset table, to correct the measurement results and ensure measurement accuracy.
- **Storage and recall of configuration data**  
In order to reduce repeated setting, user can store configuration data up to 10 types of power meter main unit. Those configuration parameters are saved in system for convenient recall by user during similar measurement.
- **Network program control**  
In addition to traditional GPIB program control function, MPM6342 also has the function of network program control to meet the modern instrument testing requirements.

## Typical Applications

MPM6342 microwave power meter is a universal high-performance measurement instrument for peak microwave power, mainly used for measuring and metering average power, peak power and pulse envelope power of microwave signal, and also can be used for the measurement of high-power pulse modulation signal and narrow pulse modulation signal.

- In continuous wave mode, it is a universal traditional microwave power meter;
- In peak value measurement mode, through different time-based settings, the instrument can automatically measure and analyze the peak value power, pulse

power, average power, overshoot, rise time, fall time, top amplitude, bottom amplitude, pulse width, pulse period, duty ratio, closing time and pulse repetition frequency, etc. multiple envelope parameters of microwave and millimeter wave pulse modulation signal.

## Technical Specifications:

### Main technical specifications of main unit

Frequency range	10MHz~40GHz (depends on power sensor)	
Power range	-65dBm~+20dBm (depends on power sensor)	
Maximum display resolution	Logarithmic mode: 0.001dB Linear mode: bit 4	
Offset range	±100.00dB	
Rise time	≤13ns	
Time-based range	10ns/Div~1h/Div.	
Minimum detectable pulse width	50ns	
Pulse width accuracy	50ns~500ns: ≤13ns 501ns~1s: ≤2%	
Maximum detectable pulse repetition frequency	20MHz	
Pulse repetition frequency accuracy	1Hz~20MHz: ≤2%	
Internal trigger level range	-20dBm~+20dBm	
Calibration source	Frequency	1GHz±10MHz
	0dBm Power accuracy	±1.5% (25°C)
	Output power range	-40dBm~+20dBm
	Output connect	N type
Measure uncertainty of main unit	±0.17dB	
Display	3.8' color TFT-LCD	
External interface	USB, LAN, GPIB	
Power supply	220V (±10%), 50Hz (±5%)	
Interface language	Chinese/English	
Environment adaptability	Operating temperature: 0°C~40°C	
	Storage temperature: -40°C~70°C	
Dimensions	272×97×353 (mm)	
Max. weight	5kg	

**Main technical specifications of optional sensor**

Peak power sensor	PPS70718	Frequency range	500MHz~40GHz	
		Pulse power range	-24dBm~+20dBm	
		Continuous wave power range	-34dBm~+20dBm	
		Rise time	≤13ns	
		Standing wave ratio	0.5GHz~10GHz	1.20: 1
			10GHz~18GHz	1.25: 1
			18GHz~26.5GHz	1.35: 1
			26.5GHz~40GHz	1.60: 1
Correction factor value uncertainty (0dBm)	±0.35dB			
Maximum input power	+23dBm			
Compatible peak power sensor PPS20718 /30718/ 40718		See the "MPA1442 Broadband Peak Microwave Power Analyzer Product Sample" for detailed indexes		
Continuous power sensor	Compatible CPS01717 / 11717 / 21717		Power range: -65dBm~+20dBm See "MPM4342 Microwave Power Meter Product Sample" for other detailed indexes	

Ordering Information

- Main Unit  
MPM6342 Microwave Power Meter Main Unit
- Standard Configuration

No.	Name	Quantity
1	Power Cord	1
2	Product Certificate of Conformity	1
3	User's Guide	1

- Options

No.	Name	Model	Description
1	Continuous wave power sensor	CPS01717 / 11717 / 21717	
2	Peak power sensor	PPS20718 / 30718 / 40718 / 70718	
3	12-core connecting cable		Connecting sensor with main unit

The MPM2342 power meter is a new generation diode detector universal power meter, which based on DSP technology. With built-in 50MHz power sweep calibrator, it can trace standard of power and automatically calibrate the amplitude response of a

power Probe. The MPM2342 universal power meter can achieve accurate measurements of average power of continuous wave and the RF power level of a pulse modulated signal. Power Probes' calibrate and power lever's measurements of signal can be reached by operated the front panel manually or controlled through GPIB interface of the rear panel.

The MPM3342 is a dual-channel (channels: A, B) universal power meter designed specifically for Automatic Test Equipment (ATE) system. It can configure two CPS00232 series power Probes, which can accurate measure the power of continuous wave or pulse modulated inputted from the two channels, and the results display on the LCD. It has A, B, A/B, B/A, A-B, B-A testing mode, and has functions of measuring the microwave elements or components' Return Loss/SWR by configured specifically Directional Bridge, and also has all functions of the MPM2342 universal power meter. It is economical and high-performance.

Specifications for MPM2342 and MPM3342		
Frequency range:10MHz~110GHz (depend on the kind of the configured probe)		Power Range: -70dBm~+50dBm
Zero Configuration: ±100pW		Display Resolution: Logarithm mode 1~0.001dB, Linear Mode: 1-4 bits
Power Sweep Calibration Source		
Frequency Accuracy: ±1.5%	Power Accuracy: ±1.9% (when tracing back to power accuracy ±0.5% The power accuracy of standard calibration can be better than ±1.2%)	power Dynamic Range: -30dBm~+20dBm
Dimensions *W*H=370*220*90(mm)		
Weight:5kg		