

Microwave Power Meter

100 kHz to 50 GHz

Wide band
Power sensors

ORITEL
MH 600

ST 600
SD 600
Series



NATO certified 6625-14-475-8375

The ORITEL MH 600 microwave digital power meter:

- measures power in dBm or mW, on a dynamic of 50 dB (100 pW to 25 W) and power differences in dB or %, in the LF, HF, UHF and SHF bands,
- uses ORITEL ST 600 thermocouple probes and Schottky ORITEL SD 600 diode probes,
- is compatible with probes from the HP 8480 family.

- Laboratory and site instrument, particularly easy to use
- Alphanumeric display with analogue trend indicator
- French or English-language user interface
- Automatic calibration
- Automatic probe recognition
- Automatic loading of correction factors and frequency range
- IEC 625/IEEE 488 programming interface in standard supplying



Microwave Power Meter

ORITEL MH 600

100 kHz to 50 GHz

Laboratory and field instrument

- **Carefully styled and easy to use:**
Main functions displayed on an original front panel.
Ease of use on field service activities.
Automatic calibration.
- **Alphanumeric display:** Backlit, liquid crystal display together with an analog trend indicator.
- **User interface:** French or English (according to model).
- **Automatic power sensor recognition:**
Automatic loading of power sensor type, dynamic frequency range and typical calibration factors.
- **Sensors:** HP8480 power sensor family can be used.
- **Supplemental measurements:**
V.S.W.R. (% and dB) in relative mode.
- **Radar measurements:** Automatic peak power display with coupling and form factor included.
- **Power reference:**
In relative mode, preserved after an exchange of power sensor.
- **Configuration:** 10 store/recall registers.
- **Ease of maintenance:** Selftest - Special functions for an efficient helpful diagnosis system. Backup battery alarm - Battery charge alarm - Annual calibration with 11683A equipment.
- **Programming:**
According to IEC 625 (IEEE 488 compatible) in standard supplying. Interchangeable with HP437 (available on battery power supply).
- **EMI specifications:**
EN 55022-ed. 99 - EN 50082-2 ed.95.
Operating environment: + 10°C to + 55°C
- **Power supply:**
- Mains: 115 / 230 V, 48 Hz to 420 Hz, 15 VA and 24 V external DC power supply.
- Additional internal battery (5 h autonomy).
- **Size / Weight:** 210 x 88 x 300 mm / 3.5 kg

Characteristics

- **Range (sensor dependent):**
100 kHz to 50 GHz, - 70 dBm to + 44 dBm, 100 pW to 25 W
- **Display accuracy:**
Variable from 0.1 to 0.001 dB and from 1 to 0.01 %
- **Display units:**
Watt, dBm or dB and % **following power reference**
- **Dynamic range:** 50 dB in 5 ranges of 10 dB
- **Accuracy (1):**
Instrumentation: $\pm 0.5\%$ of full scale in mW, or ± 0.02 dB in Logarithmic mode.
Zero set: $\pm 0.5\%$ of full scale in mW on most sensitive range.
- **Linearity:** $\pm 5\%$ in power sensor dependent worst case
- **Zero carry over (2):**
 $\leq 0,5\%$ for thermocouple power sensors
 $\leq 5\%$ for diode power sensors
Digital zero offset compensation
- **Power reference (1):** 1 mW / 50 Ω / 50 MHz
Accuracy: $\pm 1\%$ (after 1/2 hour of preheating)
Stability: $\pm 1.2\%$ for 1 year
- **Recording output:** 0 to 1 V/1 k Ω for full scale deflection.
BNC connector.

(1) In stable operating environment ($25^{\circ}\text{C} \pm 2^{\circ}\text{C}$)

(2) As a percentage of full scale on most sensitive range for 1 hour period, at a constant temperature, 24 hours after start-up.

ORITEL ST 600 Serie

1 μW to 25 W
100 kHz to 50 GHz



ORITEL SD 600 Serie

100 pW to 10 μW
10 MHz to 50 GHz



Wide band power sensors

ORITEL ST 600 Serie ORITEL SD 600 Serie

The ORITEL ST 600 and SD 600 Series measuring probes are high-precision, high-stability microwave measuring elements forming the ORITEL MH 600 numerical power meter.

■ The sensitive element of the ORITEL ST 600 probe is constituted by a microwave thin-film technique thermocouple.

This type of sensor allows power measurements to be carried out within a dynamics range from 1 μ W to 25 W, between 100 kHz and 50 GHz, using coaxial structures.

■ ORITEL SD 600 probes use Schottky diodes as detectors. They allow power measurements to be carried out within a dynamics range from 100 pW to 10 μ W, 10 MHz to 50 GHz.

■ These probes' S.W.R. is generally less than 1.35 within their frequency range. If damaged, their active part can be replaced.

Model	Frequency range	Power range	Maximum power	Maximum energy (2)	Maximum S.W.R.	Connector	Size (mm)	Weight (g)
ST 613 NATO code 6625-14-475-8374	10 MHz - 18 GHz	1 μ W - 100 mW	200 mW	3 W. μ s	1.25: 10 MHz - 12 GHz	N male	\varnothing = 40 L = 132	280
ST 636 (1)	100 kHz - 4.2 GHz	1 mW - 25 W	30 W avg. 0 to 35°C 125 W peak	500 W. μ s	1.30: 100 kHz - 4.2 GHz	N male	l = 82 L = 112 h = 250	800
ST 646 (1)	10 MHz - 18 GHz				1.20: 10 MHz - 12.4 GHz 1.30: 12.4 GHz - 18 GHz			
ST 635 (1)	100 kHz - 4.2 GHz	100 μ W - 3 W	3.5 W avg. 100 W peak	100 W. μ s	1.20: 100 kHz - 4.2 GHz 1.30: 10 MHz - 18 GHz	N male	l = 30 L = 38 h = 150	200
ST 645 (1)	10 MHz - 18 GHz							
ST 623/75 (1)	10 MHz - 2 GHz	1 μ W - 100 mW	300 mW moy 15 W peak	30 W. μ s	1.80: 100 kHz - 600 kHz 1.30: 600 kHz - 2 GHz	N male	l = 30 L = 38 h = 105	200
ST 633 (1)	100 kHz - 4.2 GHz				1.60: 100 kHz - 300 kHz 1.20: 300 kHz - 2 GHz 1.30: 2 GHz - 4.2 GHz			
ST 643 (1)	10 MHz - 18 GHz				1.40: 10 MHz - 30 MHz 1.20: 30 MHz - 12.4 GHz 1.30: 12.4 GHz - 18 GHz			
ST 653 (1)	50 MHz - 26.5 GHz				1.25: 50 MHz - 26.5 GHz	3.5 mm APCmale		
ST 663 (1)	50 MHz - 50 GHz				1.25: 50 MHz - 26.5 GHz 1.30: 26.5 GHz - 40 GHz 1.50: 40 GHz - 50 GHz	2.4 mm male		
SD 642 (1)	10 MHz - 18 GHz	100 pW-10 μ W	100 mW avg. 100 mW peak	100 mW avg. 100 mW peak	1.40: 10 MHz - 30 MHz 1.20: 30 MHz - 10 GHz 1.35: 10 GHz - 18 GHz	N male	L = 38 l = 30 h = 120	180
SD 652 (1)	60 MHz - 26.5 GHz				1.20: 50 MHz - 12 GHz 1.30: 12 GHz - 26.5 GHz	3.5 mm APC male		200
SD 662 (1)	50 MHz - 50 GHz				1.30: 50 MHz - 18 GHz 1.40: 18 GHz - 34 GHz 1.60: 34 GHz - 40 GHz 1.90: 40 GHz - 50 GHz	2.4 mm male		

(1) These Agilent Technologies, adapted by ORITEL, enable the ORITEL MH 600 milliwattmeter to recognise them (type, dynamic and frequency range) and automatically load their table of correction factors.
(2) Maximum tolerated pulse energy, in watt per μ s, for a form factor of ≥ 1000 and a maximum pulse width of μ s.



Comes complete with connection accessories and programming interface.
Shoulder bag and probe on option.

Order References:

Microwave Power Meter

■ **ORITEL MH 600 MAINS FR** **P01.2501.01**

Model with mains power supply and interface in French

■ **ORITEL MH 600 MAINS GB** **P01.2501.02**

Model with mains power supply and interface in English

■ **ORITEL MH 600 BATT. FR** **P01.2501.03**

Model with internal battery power supply and interface in French

■ **ORITEL MH 600 BATT. GB** **P01.2501.04**

Model with internal battery power supply and interface in English

Models come with mains lead, probe connection lead (1.60 m) and user's manual.

■ **Accessories**

- Rack mounting kit-single RAC 600/1 P01.2503.01
- Rack mounting kit-double RAC 600/2 P01.2503.02
- Shoulder bag P01.2980.44

Power sensors

ST 613 NATO code
6625-14-475-8374
Ref.: P01.2851.01

ST 636
Ref.: P01.2851.02

ST 646
Ref.: P01.2851.03

ST 635
Ref.: P01.2851.04

ST 645
Ref.: P01.2851.05

ST 623/75
Ref.: P01.2851.06

ST 633
Ref.: P01.2851.12

ST 643
Ref.: P01.2851.07

ST 653
Ref.: P01.2851.08

ST 663
Ref.: P01.2851.09

SD 642
Ref.: P01.2851.10

SD 652
Ref.: P01.2851.13

SD 662
Ref.: P01.2851.11