

From theory to practice



Made up of a set of components which are sturdy and very easy to implement, the ORITEL BDH 100 bench enables a great many basic microwave experiments to be conducted.

- Clever assembly system using EASYFIX™ quick fastening lugs
- Rectangular waveguide technology in accordance with the R100/WR90 standard

8.5-9.6 GHz

Presentation

Confronted with permanently changing microwave technology, CHAUVIN ARNOUX has developed microwave measuring assemblies for teaching purposes in order to meet the requirements of, on the one hand, school and university education as well as company employee training, and, on the other hand, civilian and military training.

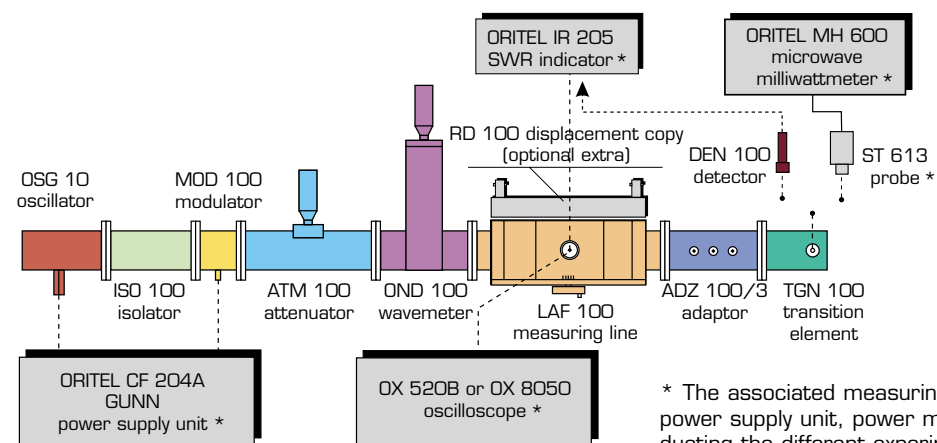
The **ORITEL BDH R100 bench** is manufactured using a rectangular waveguide in accordance with the R100/WR90 standard, and covers the frequency range between 8.5 and 9.6 GHz.

This frequency range, corresponding to a wavelength of 3 cm, was chosen, on the one hand, due to the considerable developments observed in this range and, on the other hand, for the small sizes of the components.

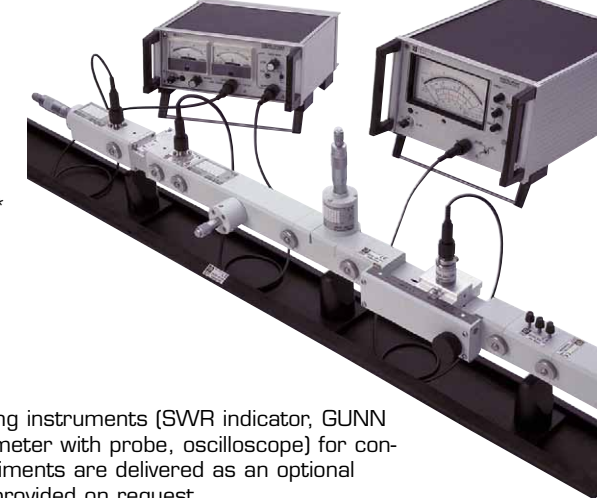
A few examples of experiments which can be performed with this basic bench are:

- Study of the GUNN oscillator
- Wavelength measuring
- Standing-wave ratio measuring
- Impedance measuring
- Frequency measuring
- Experimental determination of a detector's quadratic law

Detailed course, teaching and lab work material and aids come with this educational microwave bench.



* The associated measuring instruments (SWR indicator, GUNN power supply unit, power meter with probe, oscilloscope) for conducting the different experiments are delivered as an optional extras. Documentation is provided on request.



Components for the ORITEL BDH R100 educational bench

ORITEL OSG 100 GUNN diode oscillator

- Voltage: 10 VDC
- Power: +17 dBm
- Dimensions: 53 x 59 x 225 mm
- Weight: 535 g
- Ref.: PO1.2753.07



ORITEL MOD 100 PIN diode modulator

- Insertion losses: < 1 dB
- Modulation depth: > 50 %
- Dimensions: 51 x 57.5 x 68 mm
- Weight: 200 g
- Ref.: PO1.2753.09



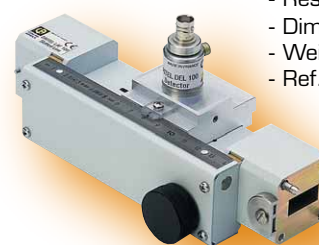
ORITEL OND 100 cavity wavemeter with curve

- Reading accuracy: 5 MHz
- Dimensions: 101 x 166 x 57.5 mm
- Weight: 585 g
- Ref.: PO1.2753.11



ORITEL LAF 100 measuring line

- Residual SWR: < 1.05
- Dimensions: 57 x 87 x 218 mm
- Weight: 1,080 g
- Ref.: PO1.2753.12



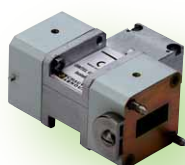
ORITEL DEN 100 coaxial detector

- SWR: < 1.25
- Max. power: +19 dBm
- Dimensions: 21 x 62 mm
- Weight: 65 g
- Ref.: PO1.2753.15



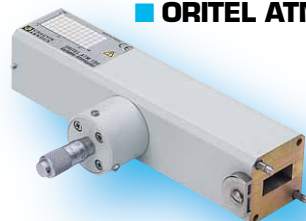
ORITEL ISO 100 ferrite isolator

- Insertion losses: < 1 dB
- Isolation: > 20 dB
- Dimensions: 99 x 46 x 87 mm
- Weight: 650 g (including 2 adaptors)
- Ref.: PO1.2753.08



ORITEL ATM 100 micrometer - adjustable attenuator

- Attenuation: > 20 dB
- Max. power: 1 W avg
- Dimensions: 191 x 100 x 41.5 mm
- Weight: 800 g
- Ref.: PO1.2753.10



ORITEL ADZ 100/3 impedance adaptor

- Number of screws: 3
- Dimensions: 53 x 57 x 60 mm
- Weight: 254 g
- Ref.: PO1.2573.13

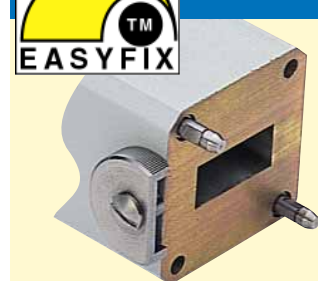


ORITEL TGN 100 waveguide-to-coax transition element

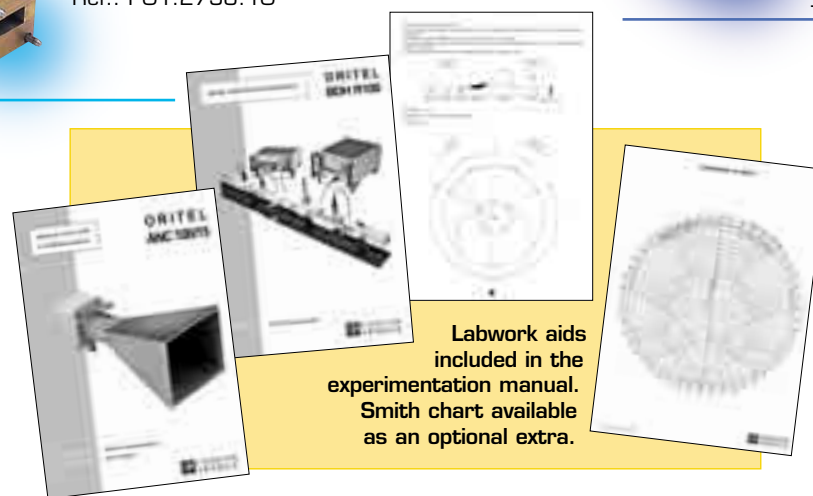
- SWR: < 1.25
- Dimensions: 56.5 x 53 x 41.5 mm
- Weight: 180 g
- Ref.: PO1.2753.14



EASYFIX™ quick fastening system



Each component is equipped with the EASYFIX™ quick fastening system: quarter-turn roller wheel and foolproofing devices. Compatibility with UBR 100/UG 39 standard flanges via the ORITEL AFR 100 adaptor. In a few minutes, the waveguide configuration necessary for carrying out experiments is assembled.



Labwork aids included in the experimentation manual. Smith chart available as an optional extra.

ORITEL CHG 100 adapted load

- SWR: < 1.05
- Dimensions: 101 x 166 x 57.5 mm
- Weight: 65 g
- Ref.: PO1.2753.16



ORITEL CC 100 short circuit platelet

- Ref.: PO1.2753.17



ORITEL SUP 100 guide support

- Ref.: PO1.2753.18



Instrumentation

ORITEL CF 204A GUNN power supply unit



- 0 V to 10 VDC
- 0 mA to +10 mA square signals, frequency: 1 kHz
- Dimensions: 240 x 100 x 215 mm
- Weight: approx. 2.4 kg
- Ref.: PO1.2753.24

ORITEL IR 205 SWR indicator



- Sensitivity: 2 μ V
- Attenuation: 60 dB per 10 dB
- Dimensions: 215 x 145 x 320 mm
- Weight: 4.2 kg
- Ref.: PO1.2705.01

ORITEL MH 600 microwave power meter + ORITEL ST 613 probe



- Frequency: 10 MHz to 18 GHz
- Measured power: 1 μ W to 100 mW
- Dimensions: 210 x 88 x 300 mm
- Weight: 3.5 kg
- Ref.: MH 600: PO1.2501.01
- Ref.: ST 613: PO1.2851.01

2-channel 20-MHz DC analog oscilloscope



- Sensitivity: 5 mV to 20 V per division
- Modes: CH1, CH2, -CH2, ADD, XY
- Dimensions: 435 x 330 x 163 mm
- Weight: 5.5 kg
- Ref.: OX 520B

2-channel 60-MHz DC digital/analog oscilloscope



- Sensitivity: 1 mV to 20 V per division
- Modes: CH1, CH2, -CH2, ADD, XY
- Integrated FFT and harmonics analysis
- RS232-to-Centronics interface, SCPI programming
- Dimensions: 435 x 330 x 163 mm
- Weight: 5.5 kg
- Ref.: OX 8050

Composition of the ORITEL BDH R100 educational bench

ORITEL BDH R100 bench - Ref. P01.2751.01

This is made up of the 11 components listed below along with 3 guide supports and a user's manual grouped together in a carrying case (the RS 100 support rail is delivered as an optional extra).

- 1 ORITEL OSG 100 GUNN diode oscillator
- 1 ORITEL ISO 100 ferrite isolator
- 1 ORITEL MOD 100 PIN diode modulator
- 1 ORITEL ATM variable attenuator
- 1 ORITEL OND 100 cavity wavemeter with curve
- 1 ORITEL LAF 100 measuring line
- 1 ORITEL ADZ 100/3 impedance adaptor
- 1 ORITEL TGN 100 waveguide-to-coax transition element
- 1 ORITEL DEN 100 coaxial detector
- 1 ORITEL CHG 100 adapted load
- 1 ORITEL CC 100 short circuit platelet
- 3 ORITEL SUP 100 guide supports

Additional components

ORITEL CGX 100/20 dB cross coupler

- Coupling: 20 dB
- Directivity: 15 dB typ.
- Dimensions: 102 x 102 x 53 mm
- Weight: 595 g
- Ref.: PO1.2753.05

IRIS 100 coupling iris (for CGX 100)



- Coupling: 20 and 30 dB
- Ref.: PO1.2753.06

ORITEL ANC 100/15 dB horn antenna



- Gain: 15 dB
- Flange: UBR 100/UG 39
- Dimensions: 132.5 x 80 x 68.5 mm
- Weight: 395 g
- Ref.: PO1.2753.04

ORITEL AFR 100 fastening adaptor



- Compatible with UBR 100/UG 39 standard flanges
- Ref.: PO1.2753.01

ORITEL RD 100 displacement copy (for ORITEL LAF 100 measuring line)

- Ref.: PO1.2753.02

ORITEL RS 100 bench support rail - 1 m

- Ref.: PO1.2753.03

MALE BNC/MALE BNC lead x 2

- Length: 1 m
- Ref.: PO1.2950.57



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