







**POSSIBLE SETUP**

<p><b>Klystron Microwave Test Bench</b></p>  <p>Order Code - 10401</p>	<p><b>Gunn Microwave Test Bench</b></p>  <p>Order Code - 10402</p>
<p><b>Gunn Microwave Test Bench (Dielectric)</b></p>  <p>Order Code - 10403</p>	<p><b>Klystron Microwave Test Bench 4 (Antenna)</b></p>  <p>Order Code - 10404</p>
<p><b>Klystron Microwave Test Bench</b></p>  <p>Order Code - 10405</p>	<p><b>Gunn Microwave Test Bench</b></p>  <p>Order Code - 10406</p>

The Microwave Test Benches are precision made microwave systems, which use standard type rectangular wave-guide components to illustrate the essential elements of this field for study.

**The equipment consist of :**

- A selection of wave-guide components
- The power supply for the microwave source
- A detector
- A meter, which monitors the detector output
- Wall Chart
- Microwave Components Chart

These Training Benches are completely self-contained & provide the means to allow students to carry out practical work at extremely low cost. A comprehensive manual containing extensive microwave theory and a progressive series of assignments is supplied with the Trainer.

**Experiments**

- Study of Reflex Klystron
- Frequency, Guide Wavelength Measurement
- SWR, Reflection Co-efficient Measurement
- Impedance Measurement
- Study of Gunn Oscillator
- Frequency, Guide Wavelength Measurement
- Dielectric Constant Measurement of Solids
- Dielectric Constant Measurement of Liquid
- Phase Shift Measurement
- Measurement of Radiation Pattern of Antennas
- Measurement of Gain of Antennas
- Measurement of Polar Pattern of Antennas
- Study of E-Plane, H-Plane & Magic Tees

Note: Specifications are subject to change.

- Study of Directional Couplers
- Study of Fixed and Variable Attenuators
- Study of Isolator and Circulators
- Measure the gain of a waveguide Horn Antenna
- Study & Measurement with Multihole Directional Coupler
- Study of Magic Tee, Q & Bandwidth Measurement in cavity resonator

### Instruments

- 10501 Klystron Power Supply -----1
- 10502 VSWR Meter Digital -----1
- 10503 Gunn Power Supply -----1

### Components

- |        |  |       |  |
|--------|--|-------|--|
| 10504  | Coaxial Waveguide Adaptor              | 10545 | Wave Guide Stand   |
| 10505  | Cooling Fan                            | 10546 | Wave Guide Twist   |
| 10506  | Cross Directional Coupler 20 dB        | 10547 | Wave Guide Cavity  |
| 10507  | Detector Mount                         | 10548 | Y Circulator   |
| 10508  | Dielectric Antenna                     | 10549 | Samples of Solid Dielectric  |
| 10509  | E-Plane Bend                           | 10550 | Smith Chart (100 Pc Pad)   |
| 10510  | E-Plane Sectoral Horn Antenna          | 10551 | Crystal Diode IN 23  |
| 10511  | E-Plane Tee                            | 10552 | Cable BNC - BNC  |
| 10512  | Fixed Attenuator 3 dB                  | 10553 | Cable TNC - TNC  |
| 10513  | Fixed Attenuator 6 dB                  | 10554 | Tripod Stand   |
| 10514  | Fixed Attenuator 10 dB                 | 10555 | Low Pass Filter - Microwave Component  |
| 10515  | Fixed Short                            | 10556 | High Pass Filter - Microwave Component   |
| 10516  | Frequency Meter - Digital              | 10557 | Band Pass Filter - Microwave Component   |
| 10517  | Gunn Oscillator                        | 10558 | Cable N Type to TNC  |
| 10518  | H-Plane Bend                           | 10559 | Cable N Type to N Type   |
| 10519  | H-Plane Sectoral Horn Antenna          | 10560 | Microphone + Headphone   |
| 10520  | H-Plane Tee                            | 10561 | Fasteners (Brass Fly-Net Set)  |
| 10521  | Isolator                               | 10562 | Waveguide Bend to Connect Antenna  |
| 10522  | Klystron Mount Only - No Klystron Tube | 10563 | Cable N type to BNC  |
| 10522A | Klystron Tube                          | 10564 | Mains Cord   |
| 10523  | Liquid Dielectric Cell                 | 10565 | Product Demo CD/Video Demo + Smith Chart + Wall Charts + Theoretical / Experimentation Video |
| 10524  | Magic Tee / E-H Tee                    | 10566 | Wave Guide Section WR90 (1 Foot Length)  |
| 10525  | Matched Termination                    | 10567 | Microwave Simulation Software Single License   |
| 10526  | Movable Short                          |       |  |
| 10527  | Multi Hole Directional Coupler 10 dB   |       |  |
| 10527A | Multi Hole Directional Coupler 6 dB    |       |  |
| 10528  | Multi Hole Directional Coupler 3 dB    |       |  |
| 10529  | Parabolic Dish Antenna                 |       |  |
| 10529A | Helical Antenna                        |       |  |
| 10529B | Conical Antenna                        |       |  |
| 10530  | Phase Shifter                          |       |  |
| 10531  | Pick Up Horn Antenna                   |       |  |
| 10532  | Pin Modulator                          |       |  |
| 10533  | Precision Short                        |       |  |
| 10534  | Pyramidal Horn Antenna                 |       |  |
| 10535  | Radiation Pattern Turn Table           |       |  |
| 10536  | S. S. Tuner                            |       |  |
| 10537  | Slotted Antenna Broad Wall             |       |  |
| 10538  | Slotted Antenna Narrow Wall            |       |  |
| 10539  | Slotted Section                        |       |  |
| 10540  | Solid Dielectric Cell                  |       |  |
| 10541  | Standard gain Horn Antenna             |       |  |
| 10542  | T Circulator                           |       |  |
| 10543  | Tunable Probe                          |       |  |
| 10544  | Variable Attenuator 20 dB              |       |  |

### Optional Components

- 10502A VSWR Meter - Analog
- 10516A Frequency Meter - Direct Read Out Analog

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