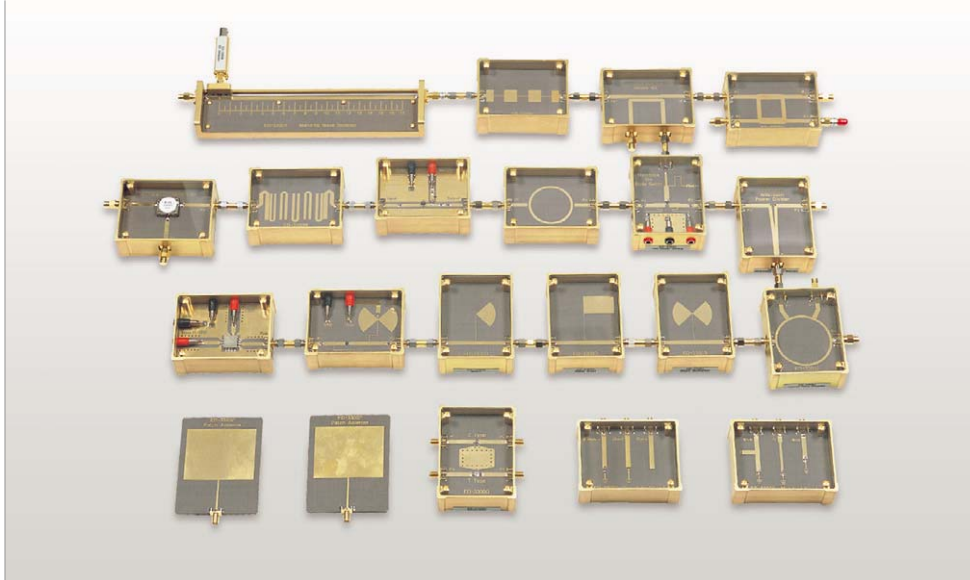


MICROSTRIP LINE TRAINER

ED-3300

- Helps understand theories on the Microstrip Line Theory and Microwave Elements Design
- Composed of 22 types of modules such as VCO using Coupler, Divider, Circulator, Attenuator and Filter
- SWR Detector, Modulation, Transmission/Reception, Detector, Self-Oscillation functions



> EXPERIMENTS

- VCO and DC Detector
- Principle of Circulator
- Characteristics of Directional Coupler
- Other types of Coupler
- Reflection and Impedance Matching
- Attenuator
- SWR measurement
- PIN Diode Switch
- MMIC Amplifier

> SPECIFICATIONS

TECHNICAL

- **VCO**
 - » Frequency Range : 1.4~2.4GHz
 - » Output Power : 10dB \pm 2dB
- **DC Detector**
 - » Measurement Range : -25~10dBm
 - » Output Power : Below 2V
- **Circulator**
 - » Bandwidth : 300MHz
 - » Insertion Loss : 0.5dB
 - » Separation : 20dB
- **Directional Coupler**
 - » Insertion Loss : 0.4dB
 - » Return Loss : 28dB
 - » Coupling : 15 \pm 0.5dB
- **Unmatched Load** : Load 100 Ω , short circuit, open circuit
- **Matched Load** : Load 50 Ω , stub, $\lambda/4$ Converter
- **Attenuator(T / Π Type)** : Attenuation : 3dB
- **Wilkinson Power Divider** : Coupling : 3dB
- **Branch Line Coupler** : Coupling : 3dB
- **Hybrid Ring Coupler** : Coupling : 3dB
- **PIN Diode Switch(SPDT)**
 - » Insertion Loss : 1.5 \pm 0.5dB
 - » Voltage : 5V, 4mA
- **Low Pass Filter**
 - » Pass Band : DC~1.9GHz
 - » Insertion Loss : 0.4dB
- **Band Pass Filter**
 - » Pass Band : 100MHz

» Insertion Loss : 2dB

- **MMIC Amplifier**
 - » Frequency Range : 1~2.5GHz
 - » Gain : 17 \pm 0.5dB
 - » Voltage : 12V, 110mA
- **Patch Antenna**
 - » Return Loss : 20dB

GENERAL CHARACTERISTICS

- **Transmission Line** : Microstrip Line
- **Peculiarity Impedance** : 50 Ω
- **Frequency Range** : 1.4~2.4GHz
- **Center Frequency** : 1.8GHz
- **Connector** : SMA type
- **Dimension** : 460(W) x 350(D) x 120(H)mm
- **Weight** : 6.3kg

ACCESSORIES

- Open Connector : 2ea
- 10dB Attenuator : 2ea
- Short Connector : 2ea
- 20dB Attenuator : 2ea
- SMA 50 Ω 10ad : 5ea
- DC Source Connector Cable : 4ea
- SMA Plug-Plug Connector : 8ea
- Spanner : 1ea
- SMA Jack-Jack Connector : 2ea
- User Manual : 1ea

※ Required Instrument : Power Supply(ED-4770 model or ED-330 model recommended)