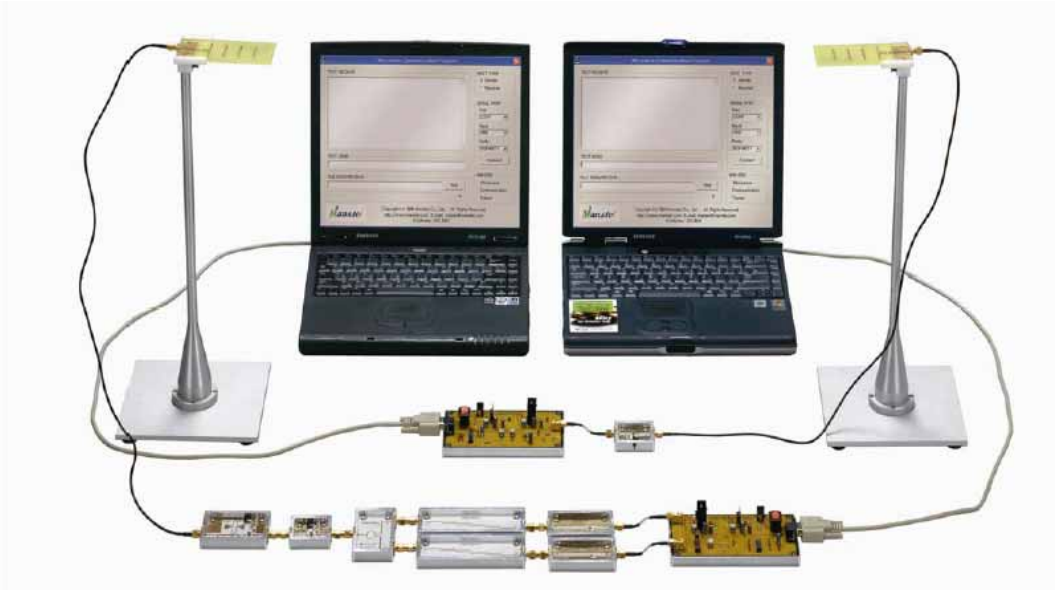
Microwave Communication Trainer

[MW-2000]

1. System Configuration



2. Characteristics

Allowing students to train themselves about experiment in microwave component design and manufacturing & Measurement, applying microstrip line theory and microwave device design theory. For these experiments Standard devices and specification & documents are supplied with software program as reference for manufacturing by students. Students learn about microwave technology through actual design, manufacturing, & measurement.

Additionally in MW-2000 training, Microwave communication is possible in system level.

We use FSK modulation & Demodulation in 2.4 GHz ISM band. The File transfer and Character transmission is possible by connecting computer and some Microwave devices with bit rate up to 14,400 bps. These devices can be designed and manufactured by student in experiment.

3. Functions

1) Communication using the Microwave system

2) Measurement in Microwave system

3) FSK Modulation & Demodulation in Microwave band

3) File transfer and data transmission

4) Understanding of the microstrip line design theory

5) Understanding of the basic theory of microwave devices

6) Design and simulation of Microwave devices

7) Experiments on manufacture and measurement of Microwave devices

4. Specifications

Items	Specifications
Frequency Band	2.4 [GHz] ~ 2.5 [GHz]
Modulation	FSK
Bit Rate	4800~14400 [bps]
Output Power	+4.5 [dBm] Max
Impedance	50 [Ω]
Substrate material	Rogers RO4003C
PCB thickness	0.508 [mm]
Dielectric constant	3.38

5. Training Contents

Chapter 9. FSK Demodulator

Chapter 10. Microwave communication in system level

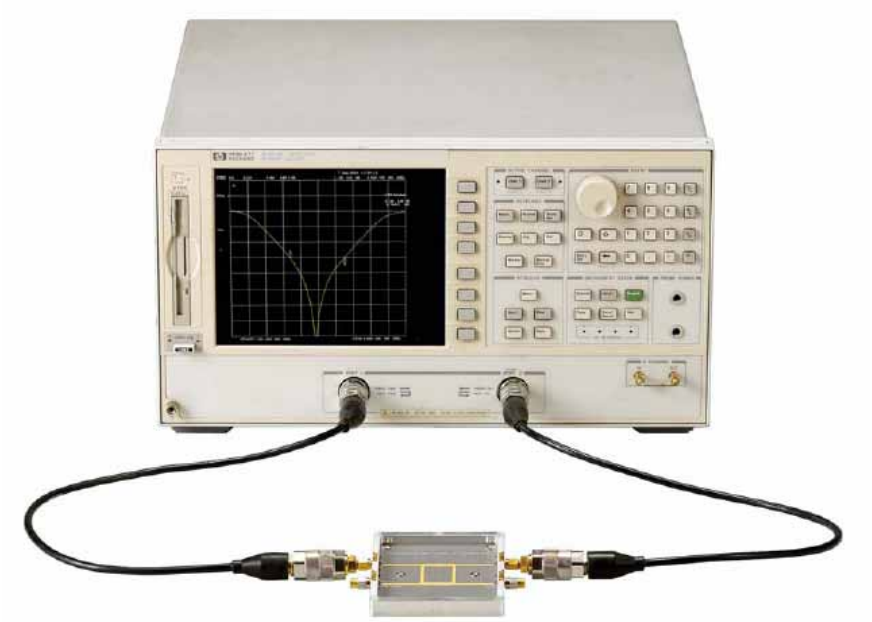
6. Components

- Device 12 EA
- DC Power Adaptor 2 EA
- DC Power Cable 2 EA
- RS232C Cable 2 EA
- RF Cable 3 EA
- Antenna Cable 2 EA
- Antenna Supporter 2 SET
- SMA Adaptor 6 EA
- 50 ohm Terminator 1 EA
- Software Program 1 EA
- Textbook 1 EA
- Answer Sheet 1 EA

Microwave Experiment Kit

[MW-1000]

1. Components



*. Measuring equipments are not included in this experiment Kit.

2. Characteristics

Allowing students to train themselves about Experiment in microwave component design and manufacturing & Measurement applying microstrip line theory and microwave component design theory. For these experiments Standard kit and specification & documents are supplied with microwave experiment kit for manufacturing by students. Students learn about microwave components technology through actual design, manufacturing, & measurement.

3. Functions

1) Study the microstrip line design theory
2) Study the basic theory of microwave component
3) Microwave component design & simulation
4) Microwave component manufacturing
5) Microwave component measurement
6) Microwave component analysis of characteristics

4. Specification

Items	Specifications
Frequency	2.0 GHz, 2.4 [GHz]
Input Impedance	50 [ohm]
Connecting Loss	0.3 [dB]
Substrate material	Teflon
PCB thickness	0.787 [mm]
Dielectric Constant	2.5

5. Training Contents

Part 1. Introduction

Chapter1. Introduction of the MW-1000 kit

Part 2. Experiment of the Microwave Passive Component

Chapter 2. Tapered Line Impedance Transformer

Chapter 3. Wilkinson Power Divider

Chapter 4. Quadrature Hybrid Coupler

Chapter 5. Coupled Line Directional Coupler

Chapter 6. Folded Lange Coupler

Chapter 7. Unfolded Lange Coupler

Chapter 8. 180° Hybrid

Chapter 9. Stepped Impedance Low Pass Filter

Chapter 10. Coupled Line Band Pass Filter

6. Components

- Main Components 9 EA
- Packing Box 1 EA
- Textbook 1 EA
- Connector 2 EA
- 50 ohm terminator 2 EA
- Answer sheet 1 EA