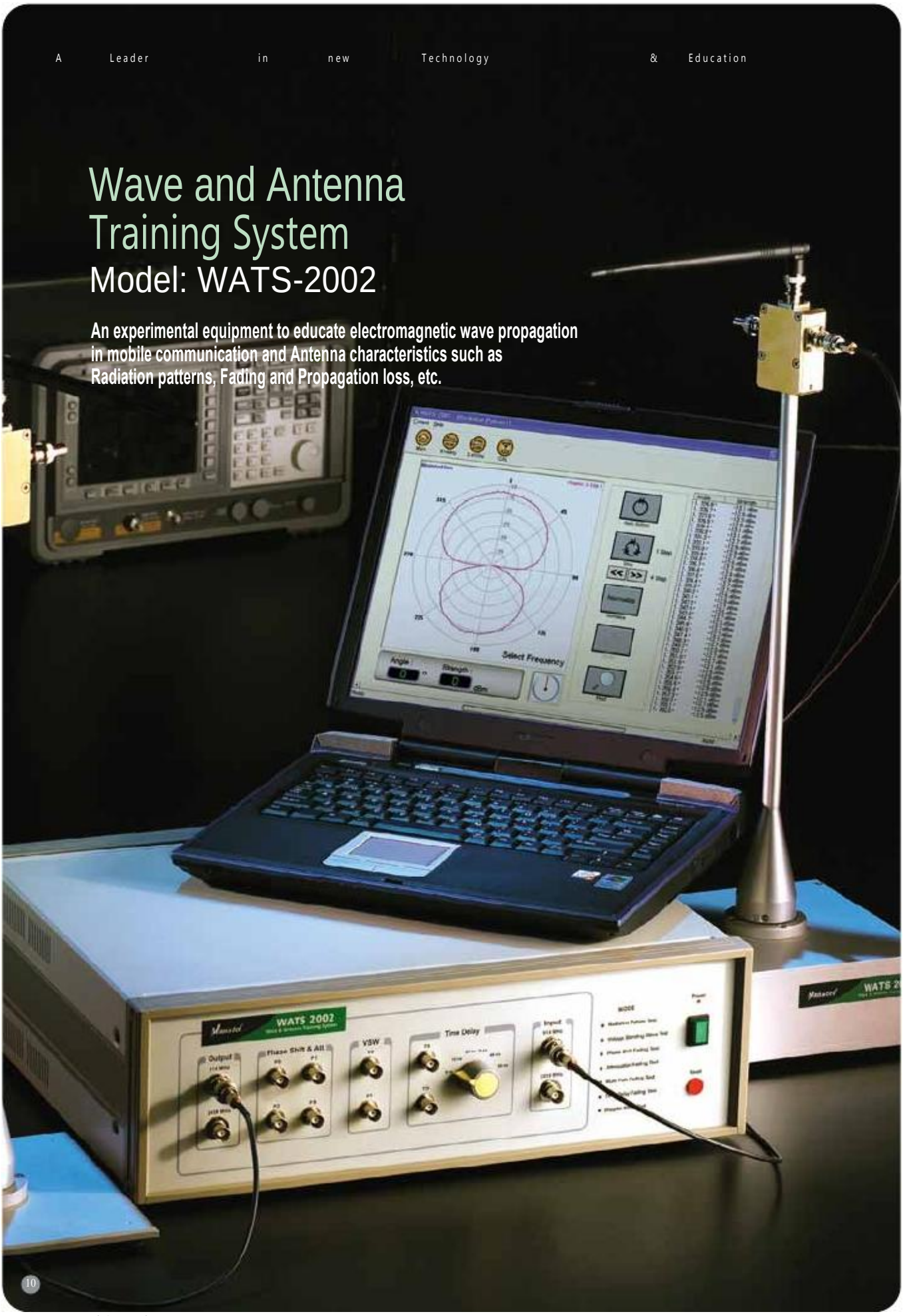
Wave and Antenna Training System

Model: WATS-2002

An experimental equipment to educate electromagnetic wave propagation in mobile communication and Antenna characteristics such as Radiation patterns, Fading and Propagation loss, etc.



Wave and Antenna Training System
Model: WATS-2002

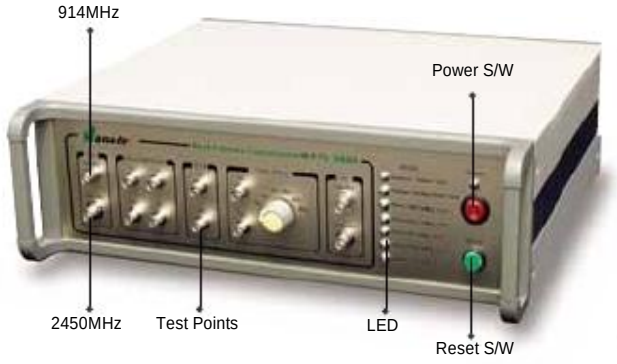
Antenna & Wave Propagation

Spectrum Analyzer and Laptop are purchased optionally.

WATS-2002 Features

Wave and Antenna Training System
Model. WATS-2002

An experimental equipment to educate electromagnetic wave propagation in mobile communication and Antenna characteristics such as Radiation patterns, Standing wave, Fading(Phase delay and attenuation), Doppler frequency and Propagation loss.



WATS-2002 Experiment Steps

1) Antenna characteristic Experiment
   - Radiation pattern measurement
   - Antenna manufacturing and characteristic measurement
2) Mobile communication propagation characteristics experiment
   - Fading experiment (phase delay, power attenuation, multi path)
   - Standing wave experiment
   - Time delay experiment
   - Doppler frequency experiment
3) Mobile communication propagation environments simulation
   - Propagation model simulation

Wave and Antenna
Training System
Model. WATS-2002

WATS-2002 Training Contents

Part 1. Introduction and Installation of Program
- Chapter 1 Introduction of WATS-2002
- Chapter 2 Program Installation and Instruction

Part 2. Antenna characteristics Experiment
- Chapter 3 Dipole Antenna Characteristics Experiment
- Chapter 4 Yagi Antenna Characteristics Experiment
- Chapter 5 Monopole Antenna Characteristics Experiment
- Chapter 6 Loop Antenna Characteristics Experiment
- Chapter 7 Ceramic Chip Antenna Characteristics Experiment
- Chapter 8 Inverted F Antenna Characteristics Experiment
- Chapter 9 Patch and Array Patch Antenna Characteristics Experiment

Part 3. Antenna Design and Manufacturing Experiment
- Chapter 10 Dipole and Yagi Antenna Production and Analysis Experiment
- Chapter 11 Loop Antenna Production and Analysis Experiment

Part 4. Mobile Communication Propagation Experiment
- Chapter 12 Phase Delay Experiment
- Chapter 13 Power Attenuation Characteristic Experiment
- Chapter 14 Multi-Path Fading Experiment
- Chapter 15 Time Delay and Doppler Effect Experiment
- Chapter 16 Standing Wave Experiment

Part 5. Mobile Communication Propagation Environments Simulation
- Chapter 17 Propagation Modeling and Propagation Loss Experiment

WATS-2002 Specifications

Items		Specifications
RF	Frequency	914 [MHz] , 2.45 [GHz]
	Output Power	+4.5 [dBm] Max
	Local Oscillation	PLL
	Impedance	50 [ohm]
	AGC Dynamic Range	40 [dB]
	IF	21.7 [MHz]
	Antenna	Yagi, Chip, Dipole, Monopole, Loop, Patch, Inverted F, Array Patch
Control	Control Method	Micro-controller
	Antenna Angle Control	360 , 400 steps
		0.9 / steps
	Angle Control Range	0~360
	Position Calibration	Auto Calibration
	Motor Rotation	Front, Back, Step

WATS-2002 Components

Main body	1 EA	50ohm Terminator	2 EA
Carriage Bag	1 EA	RS-232C Cable	2 EA
Textbook	1 EA	Adaptor	1 EA
Antenna	14 EA	Wrench	1 SET
Training Antenna	3 EA	Program CD(Multi-media CD)	1 EA
Antenna Base	2 EA	Antenna Fixing Bracket	2 EA
RF Coaxial Cable	3EA		

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