



KL-900B

Analog Communication System



144MHz VHF FM Transceiver Trainer

KL-900B Analog Communication System discloses the secret of the walky-talky based on the 144MHz VHF band. It breaks the circuit of walky-talky into 4 blocks : receiver block, transmitter block, audio amplifier block and microphone amplifier block.

Block diagrams are printed clearly on the panel of the module, giving students a comprehensive view of how walky-talky works.

► Features

- 144MHz VHF FM transceiver trainer
- 2 modules form basis for over 9 fully documented experiments
- Includes experiment and instructor's manual

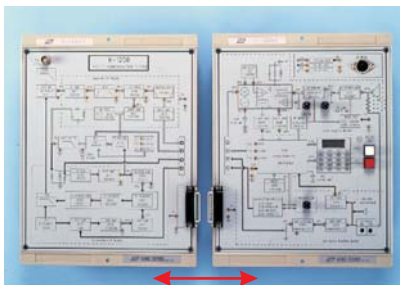
► Specifications

► Experiment Modules

1. 2mm connection leads are used throughout the system
2. The building block diagrams are printed on the surface of each module.
3. Modules are secured in plastic housings (297 x 226 x 60mm)

► List of Modules

Analog Communication System Module (KL-93051/KL-93052)



Analog Communication System Module(KL-93051/KL-93052)

(1) General characteristics

- a. Frequency range : 144~146 or 144~148 MHz
- b. PLL range : 130~170 MHz
- c. Modulation type : FM
- d. Channel setting step : 5, 10, 12.5, 20, 25, 50KHz
- e. Antenna impedance : 50 Ω
- f. Squelch sensitivity : 0.16 μ Vmax
- g. Audio output : 250mW
- h. Maximum offset : \pm 5KHz
- i. 1st IF signal : 21.8MHz
- j. 2nd IF signal : 455KHz

(2) Key-Pad function

- a. SQL : To eliminate the "ZA" noise on FM
- b. Volume : Power switch/volume control
- c. TX/RX LED : Signal transmitter/receiver indicator;
red (transmitting) green (receiving)
- d. Channel : Channel selector
- e. M.S. socket : External MIC or speaker
- f. Function key
- g. PTT : Exchange transmitting and receiving function



► List of Experiments

1. Introduction to Analog Communication System

- (1) Resetting the transceiver
- (2) Setting the channel frequency
- (3) Expanding frequency range
- (4) Operating two keys
- (5) Operating SET key

2. Microphone Amplifiers

- (1) Measuring PTT DET output
- (2) Measuring transmitted signal
- (3) Measuring MIC-AMP (LIM) output
- (4) Measuring MIC-LPF output

3. Phase-Locked Loops

- (1) Measuring crystal oscillator output
- (2) Measuring data, clock and LE in receiving
- (3) Measuring data, clock and LE in transmitting
- (4) Measuring phase comparator inputs
- (5) Measuring phase comparator output

4. Voltage-Controlled Oscillators

- (1) Measuring RX VCO characteristic
- (2) Measuring TX VCO characteristic

5. RF Power Amplifiers

- (1) Measuring TX POWER AMP input and output
- (2) Measuring APC AMP input and output

6. RF Amplifiers

- (1) Measuring RF AMP input
- (2) Measuring RF AMP output
- (3) Measuring BPF output

7. Mixers and IF Amplifiers

- (1) Measuring RX VCO output
- (2) Measuring 1st MIXER output
- (3) Measuring CRYSTAL BPF output
- (4) Measuring 1st IF AMP output
- (5) Measuring 1st IF AMP input and output

8. FM Demodulators

- (1) Measuring second mixer output
- (2) Measuring 2nd FILTER output
- (3) Measuring S-MET AMP output
- (4) Demonstrating squelch control

9. Audio Amplifiers

- (1) Measuring AF PREAMP input
- (2) Measuring AF PREAMP output
- (3) Measuring AF POWER AMP output

► Accessories (KL-98002)

1. Power Supply Module (SPS-001)
Fixed DC power supply
 - a. Output voltage : +5V, -5V, +12V, -12V
 - b. Output current : +5V/3A, -5V/0.3A, +12V/1.5A, -12V/0.3A
 - c. Output connector : 5 PIN DIN connector
 - d. With output overload protection
2. Teacher's guide : 1 pce
3. Experiment manual : 1 pce
4. VHF, FM transceiver : 1 set

► Equipment Required

1. Digital Storage Oscilloscope (DSO) :
100MHz bandwidth, 1GS/s sampling rate and FFT function or better
2. FM signal generator :
Capable of generating 130MHz~180MHz FM signal
3. AF signal generator :
Frequency range : 1Hz~10KHz
Waveforms : Sine wave
Amplitude : 10Vp-p or better
4. Digital multimeter