

A photograph of a KL-900A Basic Communication System kit. The kit consists of a printed circuit board (PCB) populated with various electronic components such as resistors, capacitors, integrated circuits, and potentiometers. The board is overlaid with a blue grid and glowing blue arcs, suggesting a network or communication system. The text 'KL-900A Basic Communication System' is prominently displayed in white on the left side of the image. A CE mark is visible in the bottom right corner of the PCB.

# KL-900A Basic Communication System

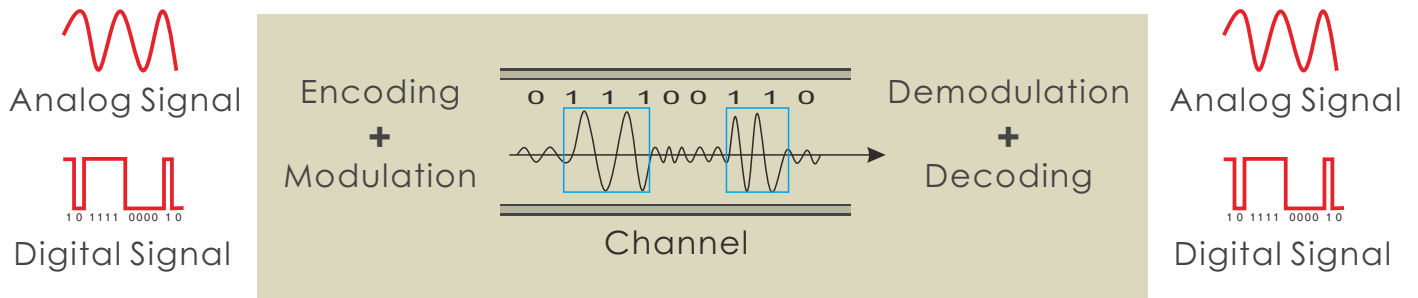
KL-900A offers experiments for beginners to learn telecommunication. Through the hands-on experiments in KL-900A, students can acquire a clear experimental view of the fundamental technical concepts and further be familiar with the operational aspects of the work in the telecommunication laboratory.

## ● How to transmit signals in a limited bandwidth?

Modulation is a technology that mixes wave(s) from one or more carriers into the signal to be transmitted, where the receiver is able to separate the signal from carriers without interference.

## ● A/D and D/A Converter

All signals generated from nature, such as sounds and images, are analog signals. If you want to save, modify or transfer those signals, you have to digitize them.



The schematic block diagram of Communication

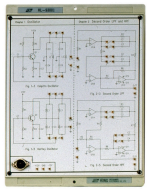


## ● Features

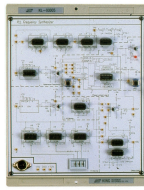
1. The trainer includes modules with experimental circuits. It offers the comprehensive course of basic analog and digital communication for beginners.
2. KL-900A is equipped with a power supply and a signal unit, with which students only have to obtain an oscilloscope externally to complete experiments.
3. System modularity of KL-900A maximizes flexibility and variety for experimentation and allows possibility for expansion and customization.

# Communication Modules

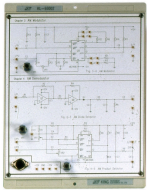
## • Analog



KL-93001  
Oscillator /  
Second Order  
LPF & HPF



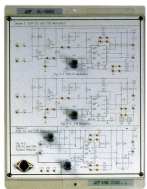
KL-93005  
PLL Frequency  
Synthesizer



KL-93002  
AM Modulator /  
Demodulator



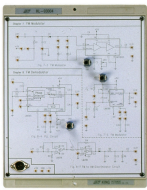
KL-93006  
TDM&PAM-TDM  
Multiplexer/  
Demultiplexer



KL-93003  
DSB-SC & SSB  
Modulator /  
Demodulator



KL-93007  
FDM Multiplexer /  
Demultiplexer

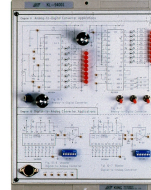


KL-93004  
FM Modulator /  
Demodulator

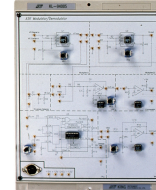


KL-93008  
Signal Converter  
/ Recovery/  
Regeneration

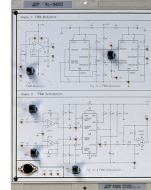
## • Digital



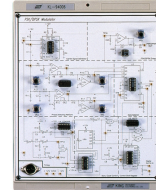
KL-94001  
A/D, D/A  
Converter  
Applications



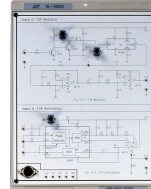
KL-94005  
ASK Modulator /  
Demodulator



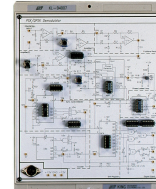
KL-94002  
PWM Modulator  
/ Demodulator



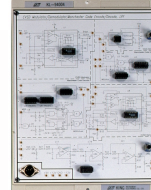
KL-94006  
PSK / QPSK  
Modulator



KL-94003  
FSK Modulator /  
Demodulator



KL-94007  
PSK / QPSK  
Demodulator



KL-94004  
CVSD Modulator /  
Demodulator,  
Manchester Code  
Encode / Decode

## List of Experiments

1. FR Oscillators
2. Second-order Filters
3. AM Modulators
4. AM Demodulators
5. DSB-SC and SSB Modulators
6. DSB-SC and SSB Demodulators
7. FM Modulators
8. FM Demodulators
9. A/D Converter
10. D/A Converter
11. PWM Modulators
12. PWM Demodulators
13. FSK Modulators
14. FSK Demodulators
15. Frequency Synthesizer
16. CVSD System
17. Manchester CVSD
18. ASK System
19. PSK/QPSK System
20. Time-division multiplexing (TDM)/pulse-amplitude modulation (PAM)
21. Frequency Division Multiplexing
22. Frequency Converter, Carrier Frequency Recovery and Manchester Clock Regeneration