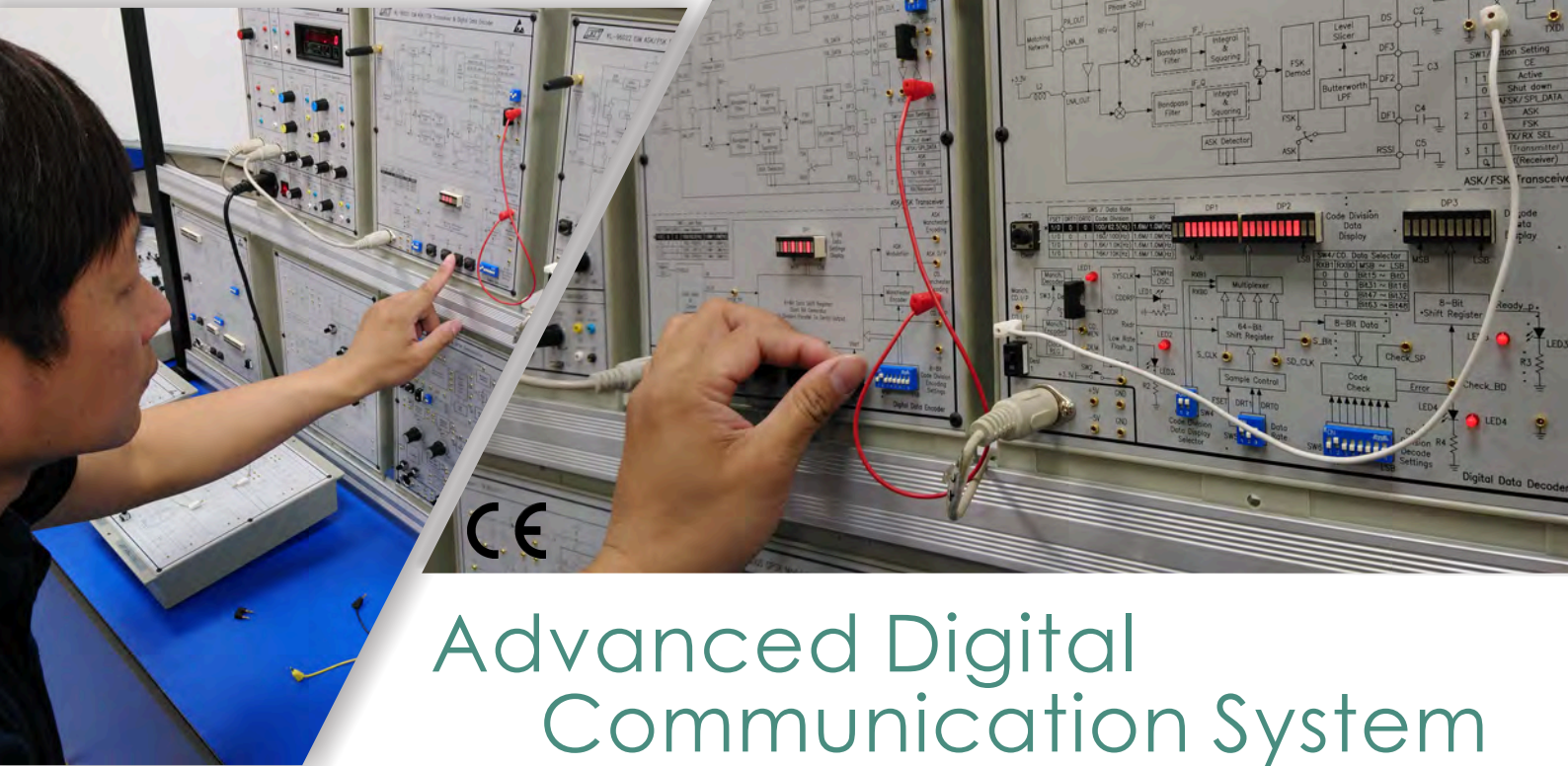


# KL-920

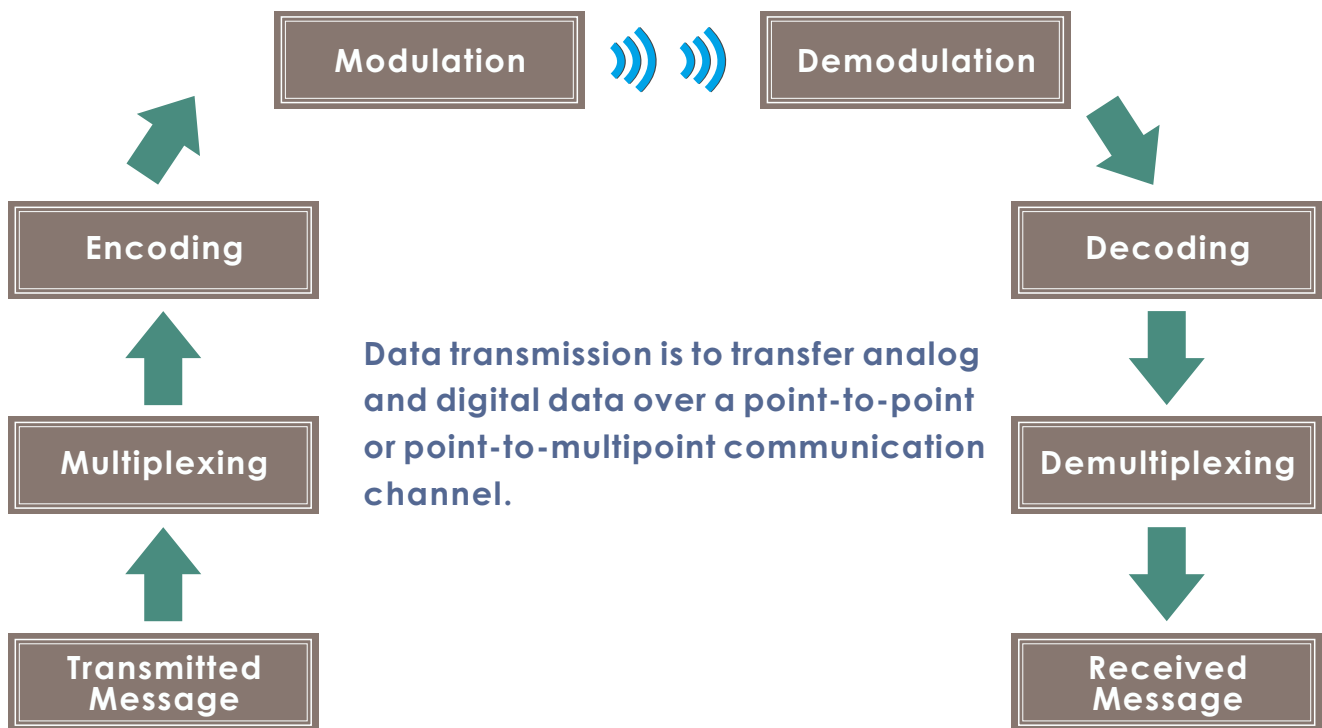


## Advanced Digital Communication System

KL-920 is implemented with high speed MCU, DSP and highly flexible FPGA devices, giving students more opportunities to setup and observe digital data signals at each transmission stage.

### Features

1. The digital data transmission format is integral, including start bit, preamble, identifier, data with FEC coding, CRC coding, and stop bit.
2. All digital transmission data is encoded with Manchester code and transmitted via ASK or FSK modulator.
3. Programmable data, data rate, preamble, identifier, and noise from DIP switches.
4. FEC encoding, CRC mechanism, and Manchester coding can be included or ignored before wireless ISM transmission.
5. 3 sets of audio signals are sent and received over the TDMA channel via the STS1 and STM1 frames.
6. Dual channel TDM transmission of audio signals can be modulated by PCM or A-Law /  $\mu$ -Law compander.



## ● Various encoding / decoding experiments

➔ Manchester

➔ SONET STS1

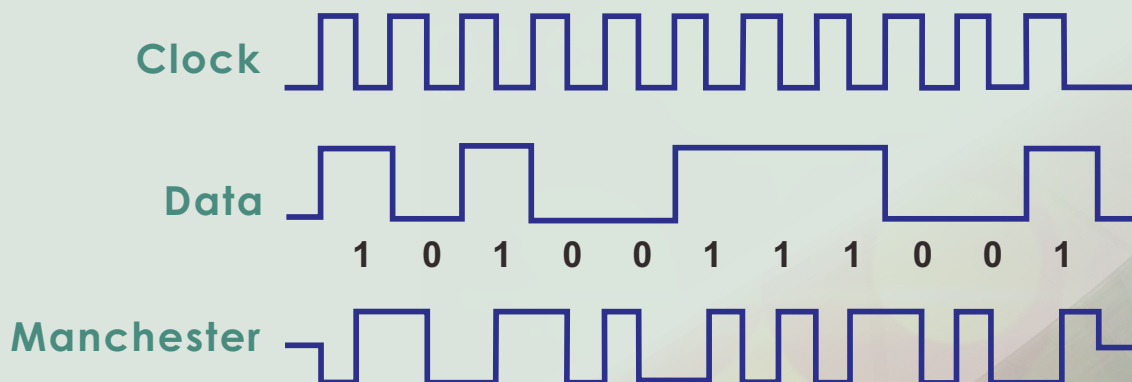
➔ SONET STM1

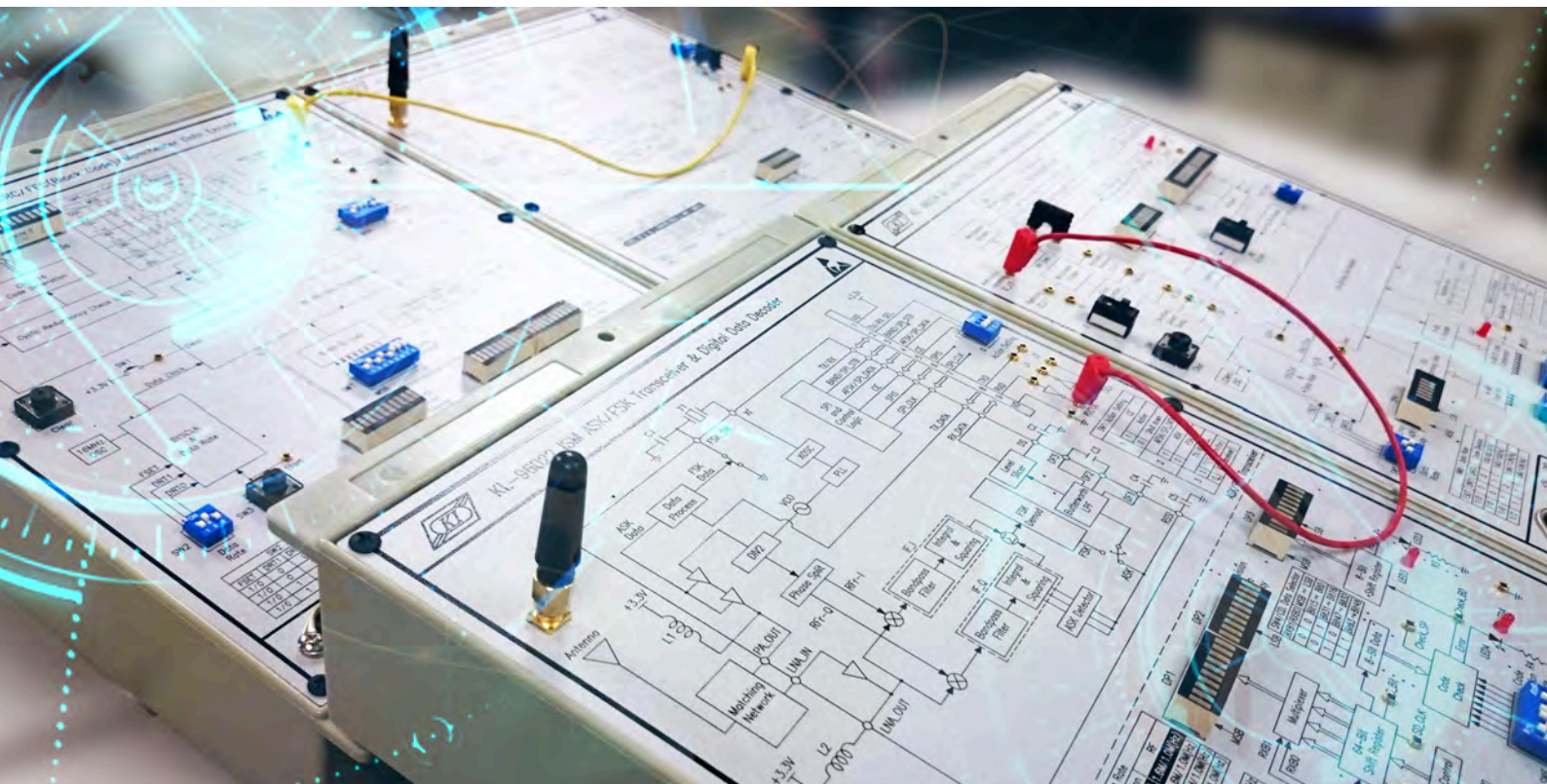
➔ CDMA

➔ DSSS

➔  $\mu$ -law

➔ A-law





## ● List of Experiments

1. Data Spread-Spectrum Modulation and Manchester Encoding
2. Serial Data Manchester Encoding / Decoding
3. Spread-Spectrum Data Sampling, Decoding and Checking
4. ASK Digital Data Transmission
5. FSK Digital Data Transmission
6. Data Hamming Encoding and Manchester Encoding
7. Digital Data Decoding and Error Correction
8. Digital Data ASK/FSK Transmission and Decoding
9. Convolutional Encoding and Data Interleaving
10. Viterbi Decoding and Error Correction
11. Viterbi Decoding and FSK Transmission
12. 64-byte Data Transmission
13. 1-byte Data Transmission
14. 1-byte ADC Data Transmission
15. 10-byte ADC Data Transmission
16. PC Digital Data Transmission
17. SONET STS1 Multiplexing
18. SONET STS1 Demultiplexing
19. SONET STM1 Multiplexing
20. SONET STM1 Demultiplexing
21. TDM Codec
22. DSP-Based FIR Filters
23. Multichannel ADC
24. SPI and Serial DAC
25. PWM Modulation
26. CDMA Encoding
27. CDMA Decoding
28. DSSS Encoding
29. DSSS Decoding
30.  $\mu$ -Law Encoding
31. A-Law Encoding
32. Time Division Multiplexing and Data Compressing
33. Time Division Demultiplexing and Data Expanding