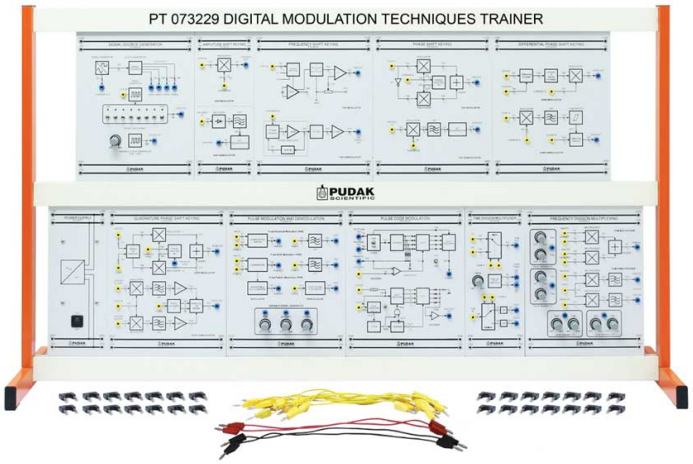
Features

- The trainer is designed for electronics vocational students of communication as a trainer to learn the principles of modulation technique of information signal that is digitally transmitted by transmitter to receiver.
- The trainer is designed in panel modules. Each panel module is equipped with test point and the circuit diagram blocks are printed clearly to help students when doing experiments.
- All input and output terminals of each panel module have 4 mm socket for easier connection.
- Supporting accessories and experiment manual book are included in this trainer.

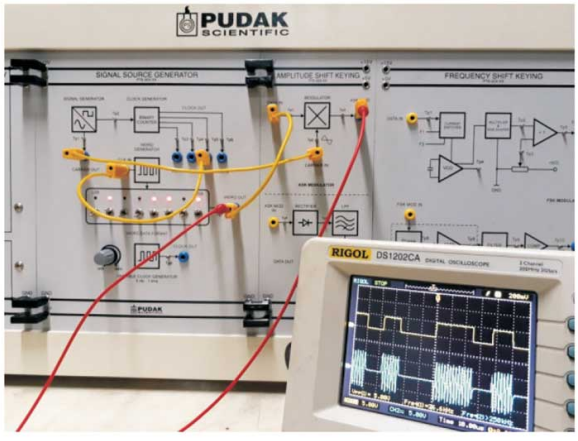
Digital Modulation Techniques Trainer

PT 073229



Covered Topics

- TE011001 Signal Source Generator
- TE011002 Amplitude Shift Keying Modulation & Demodulation
- TE011003 Frequency Shift Keying Modulation & Demodulation
- TE011004 Binary Phase Shift Keying Modulation & Demodulation
- TE011005 Differential Phase Shift Keying Modulation & Demodulation
- TE011006 Quadrature Phase Shift Keying Modulation
- TE011007 Quadrature Phase Shift Keying Demodulation
- TE011008 Pulse Modulation (PAM, PWM & PPM) Modulation & Demodulation
- TE011009 Pulse Code Modulation (PCM) Modulation & Demodulation
- TE011010 Time Division Multiplexer
- TE011011 Frequency Division Multiplexer



ASK Modulation Experiment

Specification

- **Signal Source Generator [PTE-101-01]**
  - This module has several types of signal generator:
    - Sinusoidal : 512 kHz
    - Square : 20 kHz, 40 kHz, 80 kHz and 160 kHz
    - Clock Generator : 5 Hz - 1 kHz
  - Word Generator : 8 bit with toggle switch
  - Display indicators : LED
  - Operational voltage : +15 V, +5 V, and -15 V (DC)
  - Equipped with voltage protection circuit
- **Amplitude Shift Keying (ASK) [PTE-101-02]**
  - Operational voltage: +15 V, +5 V, and -15 V (DC)
  - Consists of the modulator and demodulator blocks
  - Equipped with voltage protection circuit
- **Frequency Shift Keying (FSK) [PTE-101-03]**
  - Operational voltage: +15 V, +5 V, and -15 V (DC)
  - Consists of modulator and demodulator blocks
  - Equipped with voltage protection circuit
- **Phase Shift Keying (PSK) [PTE-101-04]**
  - Operational voltage: +15 V, +5 V, and -15 V (DC)
  - Consists of modulator and demodulator blocks
  - Equipped with voltage protection circuit
- **Differential Phase Shift Keying (DPSK) [PTE-101-05]**
  - Operational voltage: +15 V, +5 V, and -15 V (DC)
  - Consists of modulator and demodulator blocks
  - Equipped with voltage protection circuit
- **Quadrature Phase Shift Keying (QPSK) [PTE-101-06]**
  - Operational voltage: +15 V, +5 V, and -15 V (DC)
  - Consists of modulator and demodulator blocks
  - Equipped with voltage protection circuit
- **Pulse Modulation (PAM, PWM & PPM) [PTE-101-07]**
  - Operational voltage: +15 V, +5 V, and -15 V (DC)
  - Consists of the modulator and demodulator blocks
  - Signal Generator Block
    - Sinusoidal, frequency of 20 Hz - 20 kHz
    - Sawtooth, frequency signal of 1.5 Hz - 10 kHz
    - Clock, frequency of 4 Hz - 40 kHz
  - Equipped with voltage protection circuit

Continue >>

For further detail information, please contact us at
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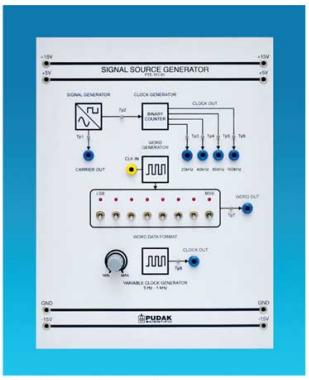
Training Panel System

>> *Specification Continued*

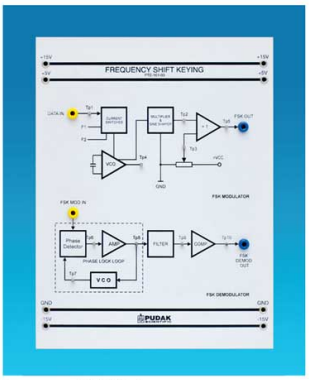
- Pulse Code Modulation (PCM) [PTE-101-08]
  - Operational voltage: +15 V, +5 V, and -15 V (DC)
  - Consists of encoder and decoder blocks
  - Equipped with voltage protection circuit
- Time Division Multiplexer (TDM) [PTE-101-09]
  - Operational voltage: +15 V, +5 V, and -15 V (DC)
  - Consists of multiplexer, demultiplexer & clock
  - Equipped with voltage protection circuit
- Frequency Division Multiplexer (FDM) [PTE-101-10]
  - Operational voltage: +15 V, +5 V, and -15 V (DC)
  - Consists of multiplexer and demultiplexer blocks
  - 2 channels of information signal generator (sinusoid): Freq. of 20 Hz - 20 kHz, 8 Vp-p
  - 2 channels of carrier signal generator (sinusoid): Freq. of 200 Hz - 200 kHz, 8 Vp-p
  - Equipped with voltage protection circuit
- Power Supply Unit [PTE-101-11]
  - Operational voltage: 220 V / 50 Hz (AC)
  - Output voltage: +15 V, +5 V, and -15 V (DC)
  - Output current (withoutload): 2 A
  - Equipped with fuse and connector cable (IEC type)

PT 073229 Digital Modulation Techniques Trainer consists of

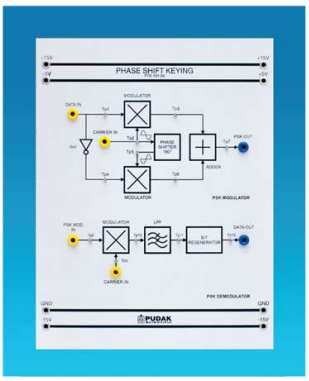
Cat. No.	Description	Qty.
PTE-101-01	Signal Source Generator	1 pc
PTE-101-02	Amplitudo Shift Keying	1 pc
PTE-101-03	Frequency Shift Keying	1 pc
PTE-101-04	Phase Shift Keying	1 pc
PTE-101-05	Differential Phase Shift Keying	1 pc
PTE-101-06	Quadrature Phase Shift Keying	1 pc
PTE-101-07	Pulse Modulation	1 pc
PTE-101-08	Pulse Code Modulation	1 pc
PTE-101-09	Time Division Multiplexer	1 pc
PTE-101-10	Frequency Division Multiplexer	1 pc
PTE-101-11	Power Supply Unit	1 pc
FLS 20.02/097	Connecting Cross	40 pcs
KAL 99/40-030	Connecting Lead 30 cm, Yellow	20 pcs
KAL 99/10-050	Connecting Lead 50 cm, Black	2 pc
KAL 99.20-050	Connecting Lead, 50 cm, Red	2 pc
KAL 99.30-075	Connecting lead, 75 cm, Yellow	10 pcs
T011S-01E	Experiment Manual Book	1 pc
GSN 245	TPS Frame 1200 mm	1 set



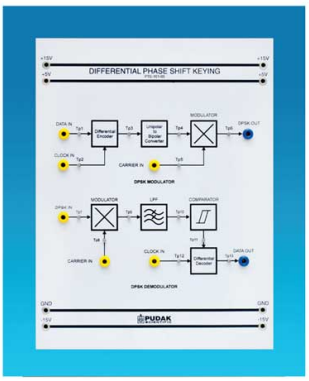
Signal Source Generator
PTE-101-01



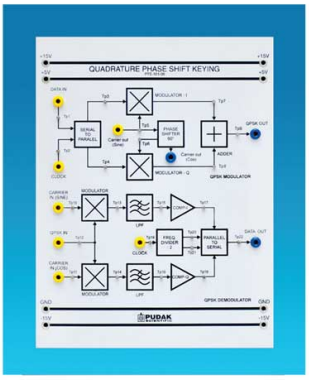
Frequency Shift Keying
PTE-101-03



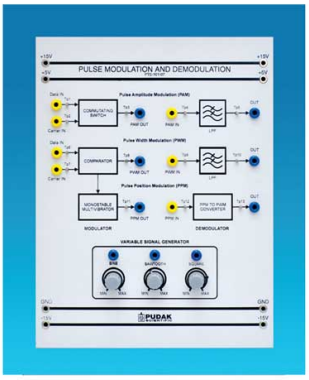
Phase Shift Keying
PTE-101-04



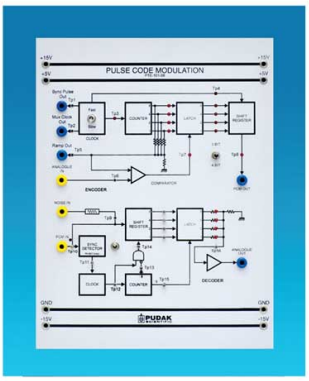
Differential Phase Shift Keying
PTE-101-05



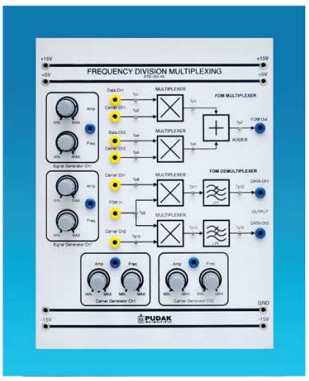
Quadrature Phase Shift Keying
PTE-101-06



Pulse Modulation & Demodulation
PTE-101-07



Pulse Code Modulation
PTE-101-08



Frequency Division Multiplexer
PTE-101-10

Specifications and illustrations are subject to change without prior notice