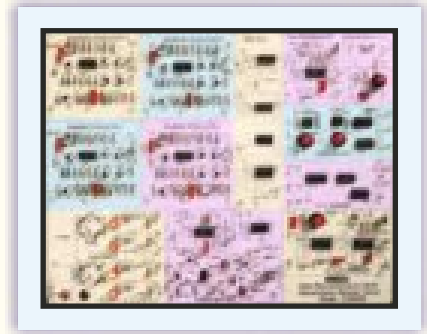




DIGITAL COMMUNICATION TRAINER

MODEL -DCS100

This trainer has been designed with a view to provide practical and experimental knowledge of Digital Communication technique on a SINGLE P.C.B.



SPECIFICATIONS

(A) Main

1. Power supply requirement : 230V AC, 50 Hz.
2. Built in IC based power supply.
3. On Board AF Modulating signal generator - Sine wave
Frequency Range : 1KHz, 2KHz Synchronized
Amplitude : 0 to 2 Vpp.
4. On Board RF carrier signal generator.
Frequency Range : 200 KHz to 1 MHz.
Amplitude : 0 to 10 Vpp.
5. On Board variable DC power supply to see the effect of DC on the
Output waveform : 5 to + 5 VDC
6. On Board Input Audio amplifier with Volume control for modulating external signal from Mike or
Tape recorder.
7. On Board Output Audio amplifier with speaker & Volume Control.

(B) Pulse Amplitude Modulation/Demodulation

1. On Board Sampling Pulse signal generator.
Frequency Range : 2 KHz to 32 KHz.
Pulse width : Variable.
2. Modulator Sections : Sample and Hold using multiplexer.
3. Demodulator Sections : Low Pass Filter

(C) Pulse Code Modulation/Demodulation

1. On Board Sampling Pulse signal generator.
Frequency Range - Fast Mode : 1.2 Mhz Slow Mode -1 Hz
2. LED indicators for PCM output bits.
4. PCM Bit : 3 or 4 bit selectable by switch.
5. Modulator Sections : Counter & Comparator, Encoder
6. Demodulator Sections : Decoder and Low Pass Filter.

Sigma Trainers
(Formerly Best Electronics)
E-103, Jai Ambe Nagar,
Near Udgam School, Thaltej,
AHMEDABAD - 380054.

Phone : 079-26852427 / 26767512
Fax : 079-26840290 / 26759661
ISDN : 079-26859162 / 26853758
Email : sales@sigmatrainers.com
: sigmatrainers@sify.com
Web : www.sigmatrainers.com

Dealer:-

(D) Delta Modulation/Demodulation

1. On Board Output Audio amplifier with speaker & Volume Control.
2. Step size : 2 mV to 72 mV-switch selectable.
3. Modulator Sections : Comparator, S/H and Integrator.
4. Demodulator Sections : Integrator, Low Pass Filter - Cut off fre. - 3.4 KHz.

(E) ASK / FSK / PSK Modulation/Demodulation

1. On Board Modulating Digital Data signal generator to generate any binary input word with Bit clock & Word clock.

Word Length : 8 Bits.
Word Clock Frequency : 8 KHz to 12 KHz.
Data Format : NRZ & Bipolar NRZ.

2. On Board RF carrier signal generator.

Frequency Range : 200 KHz to 1 MHz.
Amplitude : 0 to 10 Vpp.

1. ASK

3. Modulator Type : Balanced modulator.
4. Demodulator Type : Diode detector., Product detector & Square law demodulator.

1. FSK

1. FSK frequencies :
 1. 640KHz for 1 level
 2. 320kHz for 0 level
2. Modulator Type : Using Two ASK
3. Demodulator Type : PLL

1. PSK

1. Modulator Type : Balanced Modulator as Phase Modulator.
2. Demodulator Type : Balanced Modulator as Phase detector. Bit clock recovery section.

(F) Line Coding & Decoding

3. On Board Modulating Digital Data signal generator to generate any binary input word with Bit clock & Word clock.

Word Length : 8 Bits.
Word Clock Frequency : 8 KHz

4. Data Format Generator :
 1. NRZ (Unipolar)
 2. Bipolar NRZ
 3. RZ (Unipolar)
 4. Bipolar RZ

EXPERIMENTS

1. Introduction to Digital Communication
2. Pulse Amplitude Modulation
3. PAM - Time Division Multiplexing
4. Pulse Time Modulation
5. Pulse Code Modulation
6. Delta Modulation
7. Channels effects
8. Line Coding
9. Frequency Shift Keying
10. Phase Shift Keying
11. Amplitude Shift Keying
12. Noise Effect
13. Modem