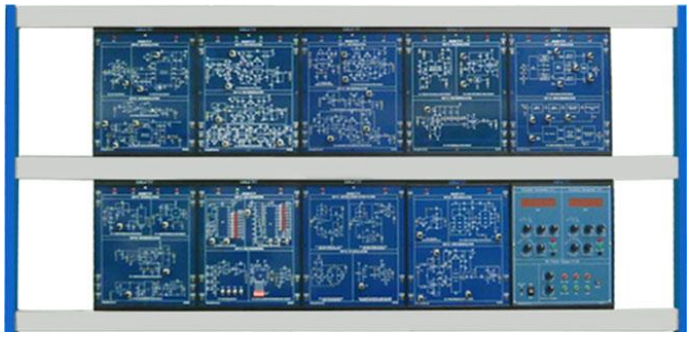
DIGITAL & ANALOG COMMUNICATION TRAINERS

Model Number : GOTT-DAC-100



DESCRIPTION

- Design and implementation of RF oscillators and filters.
- Design and implementation of analog AM and FM modulation and demodulation.
- Design and implementation of digital and analog converter.
- Design and implementation of ASK and FSK modulation and demodulation.
- Design and implementation of PSK and QPSK modulation and demodulation.

FEATURES

- To understand basic theory of digital and analog communication.
- Design and implementation ability training of analog modulator and demodulator.
- Design and implementation ability training of digital modulator and demodulator.
- To understand the applications of balanced modulator circuit.

RF OSCILLATOR & SECOND ORDER FILTER CIRCUITS DESIGN — CODE 100-101

RF Oscillator Circuits Design

- Experiment 1: Colpitts Oscillators Circuit (Oscillation Frequency: 1 MHz ~ 10 MHz)
- Experiment 2: Hartley Oscillators Circuit (Oscillation Frequency: 500 kHz ~ 2 MHz)

Second Order Filter Circuits Design

- Experiment 1: Second Order LPF Circuit (Low-pass -3 dB Frequency: 1 kHz ~ 10 kHz)
- Experiment 2: Second Order HPF Circuit (High-pass -3 dB Frequency: 800 Hz ~ 8 kHz)
- Experiment 3: Second Order BPF Circuit (Center Frequency: 6 kHz; Bandwidth: 10kHz)

AMPLITUDE MODULATION & DEMODULATION CIRCUIT DESIGN — CODE 100-102

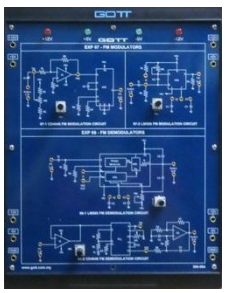
Amplitude Modulation Circuit Design

- Experiment 1: Amplitude Modulation Circuit (Carrier Signal: 500 kHz ~ 3 MHz; Audio Signal Frequency: 1 kHz ~ 3 kHz)

Amplitude Demodulation Circuit Design

- Experiment 1: AM Diode Detection Circuit (Carrier Signal: 200 kHz ~ 300 kHz; Audio Signal Frequency: 1 kHz ~ 3 kHz)
- Experiment 2: AM Product Detection Circuit (Carrier Signal: 500 kHz ~ 3 MHz; Audio Signal Frequency: 1 kHz ~ 3 kHz; Modulation Index: 50 %)

FREQUENCY MODULATION & DEMODULATION CIRCUIT DESIGN — CODE 100-103



Frequency Modulation Circuit Design

- Experiment 1: The Specification Measurement of MC1648 VCO (Oscillation Frequency: 2 MHz ~ 3 MHz)
- Experiment 2: MC1648 FM Circuit (Carrier Signal: 2.8 MHz; Audio Signal Frequency: 3 kHz ~ 8 kHz)
- Experiment 3: The Specification Measurement of LM566 VCO (Oscillation Frequency: 1 kHz ~ 30 kHz)
- Experiment 4: LM566 FM Circuit (Carrier Signal: 20 kHz; Audio Signal Frequency: 1 kHz ~ 5 kHz)

Frequency Demodulation Circuit Design

- Experiment 1: The Specification Measurement of LM565 PLL (Nature Frequency: 0.6 kHz ~ 77 kHz; Phase Locked Range: 1.1 kHz ~ 3.9 kHz; Phase Caught Range: 1.2 kHz ~ 3.8 kHz)
- Experiment 2: The Specification of Voltage and Frequency for LM565 PLL (Input Signal Frequency: 0.5 kHz ~ 23.5 kHz; Output Voltage: 3V ~ 4.5V)
- Experiment 3: LM565 Phase Locked Loop Circuit (Nature Frequency: 20 kHz; Audio Signal Frequency: 1kHz ~ 3 kHz)
- Experiment 4: FM to AM Discriminator Circuit (Nature Frequency: 2 MHz; Audio Signal Frequency: 1 kHz ~ 3 kHz)

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ANALOG TO DIGITAL & DIGITAL TO ANALOG CONVERTER CIRCUIT DESIGN

CODE 100-104

Analog to Digital Converter Circuit Design

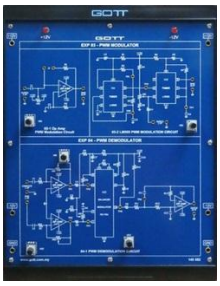
- Experiment 1: ADC0804 ADC Circuit (Resolution: 8 bits; Analog Input Voltage: 0V ~ 5V)
- Experiment 2: ADC0809 ADC Circuit (Resolution: 8 bits; analog Input Voltage: 0V ~ 5V; Clock Frequency: 120 kHz)

Digital to Analog Converter Circuit Design

- Experiment 1: Unipolar DAC 0800 DAC Circuit (Digital Input: 8 bits; Analog Output: 0V ~ 5V; Step Value: 0.019V)
- Experiment 2: Bipolar DAC 0800 DAC Circuit (Digital Input: 8 bits; Analog Output: -5V ~ 5V; Step Value: 0.038V)

PULSE WIDTH MODULATION & DEMODULATION CIRCUIT DESIGN

CODE 100-105



Pulse Width Modulation Circuit Design

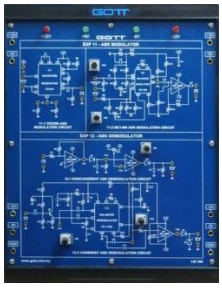
- Experiment 1: UA741 PWM Circuit (Carrier Signal: 1.5 kHz ~ 2 kHz; Audio Signal Frequency: 500Hz)
- Experiment 2: LM566 PWM Circuit (Carrier Signal: 5 kHz ~ 10 kHz; Audio Signal Frequency: 1 kHz)

Pulse Width Demodulation Circuit Design

- Experiment 1: PWM Demodulation Circuit (Carrier Signal: 5 kHz ~ 6 kHz; Audio Signal Frequency: 500 Hz ~ 700 Hz)

AMPLITUDE-SHIFT KEYING MODULATION & DEMODULATION CIRCUIT DESIGN

CODE 100-106



Amplitude-Shift Keying Modulation Circuit Design

- Experiment 1: ASK Modulation Circuit (Carrier Signal: 20 kHz ~ 100 kHz; Modulation Signal Frequency: 1 kHz ~ 10 kHz)

Amplitude-Shift Keying Demodulation Circuit Design

- Experiment 1: ASK Non-coherent Detection Circuit (Carrier Signal: 20 kHz ~ 100 kHz; Modulation Signal Frequency: 1 kHz ~ 10 kHz)
- Experiment 2: ASK Coherent Detection Circuit (Carrier Signal: 20 kHz ~ 100 kHz; Modulation Signal Frequency: 1 kHz ~ 10 kHz)

FREQUENCY-SHIFT KEYING MODULATION & DEMODULATION CIRCUIT DESIGN

CODE 100-107

Frequency-Shift Keying Modulation Circuit Design

- Experiment 1: FSK Modulation Circuit (Space Signal: 1370 Hz; Mark Signal: 870 Hz; Data Signal: 200 Hz ~ 5 kHz)

Frequency-Shift Keying Demodulation Circuit Design

- Experiment 1: FSK Demodulation Circuit (Space Signal: 1370 Hz; Mark Signal: 870 Hz; Data Signal: 200 Hz ~ 5 kHz)

PHASE-SHIFT KEYING MODULATION & DEMODULATION CIRCUIT DESIGN

CODE 100-108

Phase-Shift Keying Modulation Circuit Design

- Experiment 1: PSK Modulation Circuit (Carrier Signal: 100 kHz; Data Rate: 200 bps; Data Signal: 100 Hz ~ 1kHz)

Phase-Shift Keying Demodulation Circuit Design

- Experiment 1: PSK Demodulation Circuit (Carrier Signal: 100 kHz; Data Rate: 400 bps ~ 1000 bps; Data Signal: 100 Hz ~ 1kHz)

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QPSK MODULATION & DEMODULATION CIRCUIT DESIGN — CODE 100-109

QPSK Modulation Circuit Design

- Experiment 1: Bit-splitter Circuit (Data Rate: 100 bps ~ 1000 bps)
- Experiment 2: QPSK Modulation Circuit (Carrier Signal: 20 kHz; Data Rate: 1000bps)

QPSK Demodulation Circuit Design

- Experiment 1: Signal-square and PLL Circuit (Carrier Signal: 20 kHz; Data Rate: 1000 bps)
- Experiment 2: QPSK Demodulation Circuit (Carrier Signal: 20 kHz; Data Rate: 1000 bps)

DC POWER SUPPLY & FUNCTION GENERATOR (OPTIONAL ITEM) — CODE 507-107

DC Power Supply

- Tripple Bipolar Voltage Outputs
  - DC 0 – +/-15V
  - DC +/-5V
  - DC +/-12V
- Constant & variable Voltage Operation
- Low Ripple and Noise

Function Generator

- Two Signals Output Ports
- Frequency Range :

FG (I): 0 – 10Hz	FG (II): 0 – 100Hz
0 – 100kHz	0 – 1kHz
0 – 1kHz	0 – 10kHz
0 – 10kHz	0 – 100kHz
0 – 100kHz	0 – 1MHz

- Waveform : Sine, Triangle, Square, TTL Pulse
- Amplitude : 10Vpp
- Built-in-6-Digit Frequency Counter
- Two Large 0.5” LED Display Overload Protection

Manuals:

(1) All manuals are written in English
(2) Model Answer
(3) Teaching Manuals

General Terms:

(1) Accessories will be provided where applicable.
(2) Manuals & Training will be provided where applicable.
(3) Designs & Specifications are subject to change without notice.
(4) We reserve the right to discontinue the manufacturing of any product.

Warranty:

2 Years

ORDERING INFORMATION :

ITEM	MODEL NUMBER	CODE
DIGITAL & ANALOG COMMUNICATION TRAINER	GOTT-DAC-100	100-100
DC POWER SUPPLY & FUNCTION GENERATOR	GOTT-DC POWER SUPPLY & FUNCTION GENERATOR	500-107

* Proposed design only, subject to changes without any notice.