RF CIRCUIT DESIGN TRAINER

Model Number : GOTT-RFC-339

DESCRIPTION

- Design and implementation of RF front end receiver module.
- Design and implementation of RF front end transmitter module.
- Design and implementation voltage controlled oscillator and phase lock loop.
- Design and implementation of IF demodulator and audio process circuit.
- Design and implementation for wireless transceiver module.

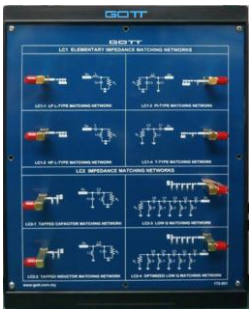
FEATURES

- Training for wireless communication technicians and engineers.
- To understand the applications and measurements of communication instruments and products.
- Design and implementation ability training for RF module circuit.
- To shorten the gap between academic and industrial circles.

PRODUCT MODULES

ELEMENTARY IMPEDANCE MATCHING NETWORK & IMPEDANCE MATCHING NETWORK

CODE 339-001



Elementary Impedance Matching Network

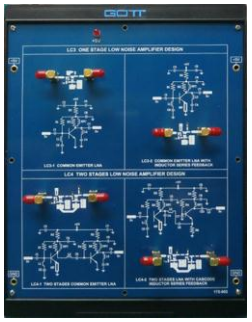
- Experiment 1: L-Type Matching Network (Operational Frequency: 900 MHz)
- Experiment 2: PI-Type Matching Network (Operational Frequency: 900 MHz)
- Experiment 3: T-Type Matching Network (Operational Frequency: 900 MHz)

Impedance Matching Network

- Experiment 1: Tapped Capacitor Matching Network (Operational Frequency: 900 MHz)
- Experiment 2: Tapped Inductor Matching Network (Operational Frequency: 900 MHz)
- Experiment 3: Low Quality Factor Matching Network (Operational Frequency: 900 MHz)

ONE & TWO STAGES LOW NOISE AMPLIFIER

CODE 339-002



One Stages Low Noise Amplifier

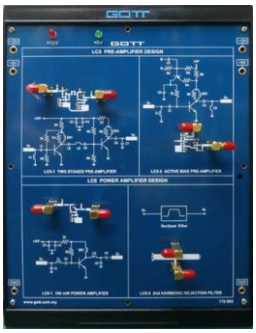
- Experiment 1: Measurement of Frequency Responses (Operational Frequency: 890 ~ 915 MHz)
- Experiment 2: Measurement of Noise Figure (Operational Frequency: 890 ~ 915 MHz; Noise Figure: 2 dB)
- Experiment 3: Measurement of 1-dB Compression Point (Operational Frequency: 890 ~ 915 MHz; P : -10 dBm)

Two Stages Low Noise Amplifier

- Experiment 1: Measurement of Frequency Responses (Operational Frequency: 890 ~ 915 MHz)
- Experiment 2: Measurement of Noise Figure (Operational Frequency: 890 ~ 915 MHz; Noise Figure: 2 dB)
- Experiment 3: Measurement of 1 dB Compression Point (Operational Frequency: 890 ~ 915 MHz; P : -10 dBm)

TWO STAGES PRE-AMPLIFIER & POWER AMPLIFIER

CODE 339-003



Two Stages Pre-amplifier

- Experiment 1: Measurement of Frequency Responses (Operational Frequency: 800 ~ 1000 MHz)
- Experiment 2: Measurement of Noise Figure (Operational Frequency: 800 ~ 1000 MHz; Noise Figure: 3 dB)
- Experiment 3: Measurement of 1 dB Compression Point (Operational Frequency: 800 ~ 1000 MHz; P : -5 dBm)

Power Amplifier

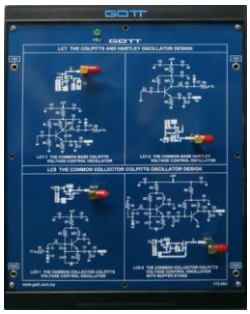
- Experiment 1: Measurement of Gain Flatness (Operational Frequency: 700 ~ 1000 MHz; Gain Flatness: ±2.5 dB)
- Experiment 2: Measurement of 1 dB Compression Point (Operational Frequency: 700 ~ 1000 MHz; P : 15 dBm)
- Experiment 3: Measurement of OIP3 (Operational Frequency: 915 MHz; IP3: 25 dBm)
- Experiment 4: Measurement of Harmonics (Operational Frequency: 915 MHz)

RF CIRCUIT DESIGN TRAINER

Model Number : GOTT-RFC-339

COLPITTS AND HARTLEY OSCILLATORS & COMMON COLLECTOR COLPITTS OSCILLATOR

CODE 339-004



Colpitts and Hartley Oscillators

- Experiment 1: Measurement of Frequency and Output Power (Oscillation Frequency: 800 ~ 900 MHz)
- Experiment 2: Measurement of Phase Noise (Phase Noise: -90 ~ -110 dBc/Hz)
- Experiment 3: Measurement of Gain Factor and Variable Bandwidth (Gain Factor: 10 ~ 14 Mhz/V; Variable Bandwidth: 50 ~ 70 MHz)

Common Collector Colpitts Oscillator

- Experiment 1: Measurement of Frequency and Output Power (Oscillation Frequency: 750 ~ 850 MHz)
- Experiment 2: Measurement of Phase Noise (Phase Noise: -90 ~ -110 dBc/Hz)
- Experiment 3: Measurement of Gain Factor and Variable Bandwidth (Gain Factor: 8 ~ 10 MHz/V; Variable Bandwidth: 40 ~ 50 MHz)

MICROCONTROLLER FOR PHASE LOCK LOOP & PHASE LOCKED LOOP

CODE 339-005

Microcontroller For Phase Lock Loop

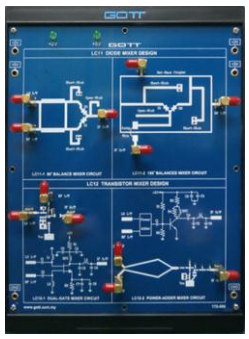
- Experiment 1: LCD and Keypad Testing (Locked Frequency Display; Locked Status Detection)
- Experiment 2: MB15E03L Control Signal Testing (Locked Frequency: 812 MHz; 825 MHz; 850 MHz)

Phase Locked Loop

- Experiment 1: Measurement of Frequency Responses for Loop Filter (-3 dB Frequency: 600 Hz)
- Experiment 2: Measurement of PLL (Locked Frequency: 812 MHz; 825 MHz; 850 MHz)
- Experiment 3: Measurement of FM Signal (Audio Signal: 1 kHz; Modulation Bandwidth: 100 ~ 150 kHz)

DIODE & TRANSISTOR MIXER

CODE 339-006



Diode Mixer

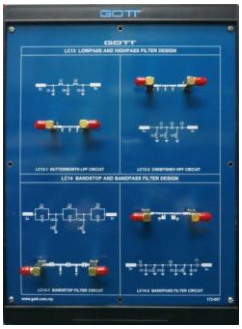
- Experiment 1: Measurement of Conversion Gain (Radio Signal: 795 ~ 895 MHz or 1800 ~ 1900 MHz; Local Signal: 915 MHz or 1780 MHz; Intermediate Signal: 20 ~ 100 MHz)
- Experiment 2: Measurement of 1 dB Compression Point (Radio Signal: 845 MHz or 1850 MHz; Local Signal: 915 MHz or 1780 MHz; Intermediate Signal: 70 MHz)
- Experiment 3: Measurement of Isolation (Local Signal: 840 ~ 990 MHz or 1705 ~ 1855 MHz)

Transistor Mixer

- Experiment 1: Measurement of Conversion Gain (Radio Signal: 877 ~ 977 MHz or 910 ~ 1010 MHz; Local Signal: 857 MHz or 850 MHz; Intermediate Signal: 20 ~ 100 MHz or 60 ~ 160 MHz)
- Experiment 2: Measurement of 1 dB Compression Point (Radio Signal: 927 MHz or 910 MHz; Local Signal: 857 MHz or 850 MHz: Intermediate Signal: 70 MHz or 60 MHz)
- Experiment 3: Measurement of Isolation (Local Signal: 782 ~ 932 MHz or 840 ~ 990 MHz)

LOW-PASS AND HIGH-PASS FILTERS & BAND-STOP AND BAND-PASS FILTERS

CODE 339-007



Low-pass and High-pass Filters

- Experiment 1: Measurement of Frequency Responses (Operational Frequency: 500 ~ 1500 MHz; Low-pass -3 dB Frequency: 900 MHz; High-pass -3 dB Frequency: 900 MHz)

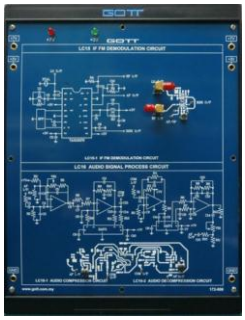
Band-stop and Band-pass filters

- Experiment 1: Measurement of Frequency Response (Operational Frequency: 500 ~ 1500 MHz; Band-stop Center Frequency: 900 MHz; Bandwidth: 200 MHz; Band-pass Center Frequency: 70 MHz; Bandwidth: 20 MHz)'xzxz

RF CIRCUIT DESIGN TRAINER

Model Number : GOTT-RFC-339

IF FM DEMODULATION CIRCUIT & AUDIO SIGNAL PROCESS CIRCUIT — CODE 339-008



If FM Demodulation Circuit

- Experiment 1: Measurement of IF FM Demodulation Circuit (Intermediate Signal: 70.7 MHz, Modulation Bandwidth: 20 kHz)

Audio Signal Process Circuit

- Experiment 1: Measurement of Pre-emphasis and Compression for Audio Signal (Audio Signal: 20 Hz ~ 50 kHz)
- Experiment 2: Measurement of De-emphasis

DC POWER SUPPLY & FUNCTION GENERATOR (OPTIONAL ITEM) — CODE 500-107

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
RF CIRCUIT DESIGN TRAINER	GOTT-RFC-339	339-000
DC POWER SUPPLY & FUNCTION GENERATOR	GOTT-DC POWER SUPPLY & FUNCTION GENERATOR	500-107

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