

BJT Hartley and Colpitts (RF) Oscillator

Model : SE-113



SINCOM SE-113 BJT Hartley and Colpitts (RF) Oscillator is a Two-In-One Trainer to study the concept and operation of Hartley and Colpitts Oscillator with LC positive feedback to generate RF Output Frequency using BJT with facility to select multiple radio frequencies in a simple experimental way.

Features

- ❖ Separate modules of Hartley and Colpitts Oscillator
- ❖ BJT Hartley Oscillator consists of a self bias CE Amplifier with two Inductors & one Capacitor as LC Feedback elements.
- ❖ BJT Colpitts Oscillator consists of a self bias CE Amplifier with one Inductor & two Capacitors as LC Feedback elements.
- ❖ Separate Capacitor Bank to provide Two output frequency in RF range.
- ❖ Facility to select the two output frequencies.
- ❖ In-Built Fixed regulated DC Power Supply
- ❖ User friendly Design
- ❖ Very Easy for Operation
- ❖ Multi color Circuit Diagram is printed on the front panel of the white board
- ❖ Enclosed in an attractive, light weight, High Quality, Poly Coated Imported Pine Wooden cabinet
- ❖ Facility to connect external Oscilloscope and Digital Meters.
- ❖ Interconnections by 2mm high quality banana sockets and pins
- ❖ Maximum Test points to explore all the corners of experiment
- ❖ 1 Year Warranty



An ISO 9001:2015 Co.

Technical Specifications

▪ AC Mains Power Supply	: 230V \pm 10%, 50Hz
▪ DC Power Supply	: IC Regulated Fixed +12V/300mA
▪ Oscillator Types	: Hartley and Colpitts Oscillator
▪ Transistor Type and Package	: Two BJT Silicon-NPN BC548, TO-92 Package
▪ Amplifier Type	: Two BJT Single Stage CE Amplifier in a Self Bias mode
▪ Feedback Type	: Positive
▪ Feedback Elements	: Hartley - two Inductors & One Capacitor, Colpitt - one Inductor & two Capacitors
▪ Output Control	: By two capacitors
▪ Output Frequencies	: Two RF O/Ps in MHz
▪ Max. Collector Emitter Voltage	: 12 VDC
▪ Weight	: 3.0 kg (approx)
▪ Dimensions (mm)	: L 245 x W 320 x H 115
▪ Interconnections	: 2mm Banana sockets
▪ Operating Temperature	: 0-50 $^{\circ}$ C, 80% RH

Learning Scope

- To Study operation of Hartley Oscillator Circuit.
- To Study operation of Colipitts Oscillator Circuit.
- To Determine the Quiescent Operating Point of Transistor.
- To Observe & Note Change in Frequency of Oscillation w.r.t. change in feedback elements.
- Compare the Theoretical & Practical values.

Other Instruments Required : Digital Multimeter and Oscilloscope

Accessories Included : Set of Patch Cord and Details Instruction Manual.