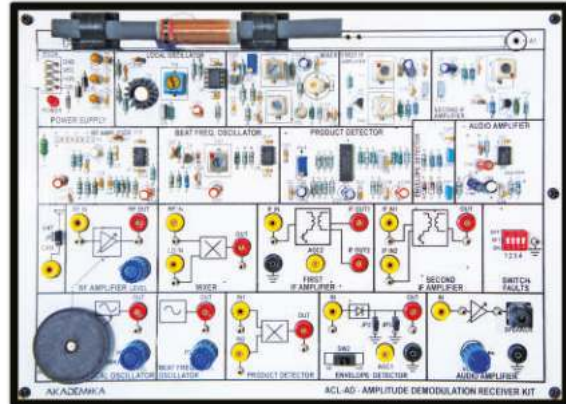


ACL-AD

Amplitude Demodulation Receiver Kit



FEATURES

- Super-heterodyne AM receiver with AGC (400 KHz ~ 1500 KHz)
- RF Amplifier 600 KHz ~ 1650 KHz
- Local oscillator of 900 KHz ~ 1.8 MHz frequency
- Beat frequency oscillator from 400 ~ 500 KHz
- Mixer
- 1st IF and 2nd IF amplifier
- Envelope detector
- Product detector
- Audio amplifier with adjustable gain
- On-board antenna

SPECIFICATIONS

Super heterodyne receiver

- Frequency : 400 KHz ~ 1.5MHz
- Intermediate frequency : 455 KHz
- Inputs : RF signal
- Output IF frequency : 455 KHz adjustable
- IF filter : Dual tune LC
- RF amplifier with variable gain
- Mixer (frequency converter)

Voltage controlled oscillator

- Output signal : Sine wave for local oscillator input
- Frequency : From 900 KHz ~ 1.8 MHz
- Amplitude : Adjustable from 0 ~ 2Vpp
- Output impedance : 50 Ω

1st IF and 2nd IF amplifier

- Central frequency : 455 KHz
- Load impedance : Variable R-L-C
- Gain : 32dB with automatic gain control

Diode envelope detector

- Detection of the positive and negative envelope with variable RC filter DSB

Product detector

- Operating frequency : Adjustable from 400 KHz ~ 500 KHz SSB
- Input amplitude : 1Vp-p

- Envelope Detector : Detection of positive and negative envelope

Beat Frequency Oscillator

- Frequency : Tuned frequency of 457KHz
- Amplitude : 0 to 2V P-P

Frequency Converter (Mixer)

- Dual gate MOSFET IN
- Inputs : Local oscillator and RF Signal
- Output Frequency : 455 KHz adjustable
- Filter : Dual tune LC

Audio output

- Amplifier with Headphone
- Audio amplifier gain : Adjustable

Receiving media

- MW coil antenna and via cable

Switch faults

- 4 switch faults are provided on board to study different effects on circuit

Interconnection

- 2 mm banana socket
- Test Points : Various test points to observe on board signals on oscilloscope

Power supply

- GND, +5V, +12V, -12V

EXPERIMENTS

- Study of double sideband AM reception using envelope diode detector
- Study of single sideband AM reception using product detector
- Study of image frequencies
- Study of adjustment of receiver tuned circuits
- Voice reception using DSB/ SSB AM receiver (super heterodyne receiver)
- Effects of switch faults
- Study of selectivity and sensitivity of receiver using ACL-AM)
- To Study the operation of mixer