



Sciencetech TechBooks are compact and user friendly learning platforms to provide a modern, portable, comprehensive and practical way to learn Technology. Each TechBook is provided with detailed Multimedia learning material which covers basic theory, step by step procedure to conduct the experiment and other useful information. Sciencetech TechBooks 2122A and 2122B Convolution encoder and decoder are designed to provide Conceptual and Step by Step understanding of Convolution codes. Block wise modular organization of circuit functions with Code tree, State and Trellis Diagram makes it easy to understand, the process of encoding and decoding. Additional on board redundant bit generator is provided so that user can insert error to generated code and decode error free data.

Features

Convolutional encoder

- Selectable rate:
N=3, rates $\frac{1}{2}$; N = 7, rate $\frac{3}{4}$.
- Manual and Continuous mode operation
- Encoder Code tree
- On-board data and clock generation
- On board error generation

Convolutional decoder

- Selectable rate:
N=3, rates $\frac{1}{2}$; N = 7, rate $\frac{3}{4}$.
- State and trellis diagram
- Support Hard decision and soft decision decoding
- Decoded data bit display
- Single supply

Scope of Learning

- Study of Convolution Encoding and Code tree of Encoder for N = 3 with Rate = $\frac{1}{2}$
- Study of Decoder with State and Trellis Diagram for N = 3 with Rate = $\frac{1}{2}$
- Study of Convolution Encoding and Decoding with error
- Study of Convolution Encoding using Puncturing for N= 7 and Rate = $\frac{3}{4}$
- Study of Soft decision Viterbi Decoding using Depuncturing for N= 7 and Rate = $\frac{3}{4}$

Technical Specifications

| | |
|-----------------------|---|
| Word Length | : 4 bits |
| Selectable rate | : $\frac{1}{2}$ and $\frac{3}{4}$ |
| Data Format | : NRZ (Not Return to Zero) |
| Interconnection | : 2 mm sockets & Sufficient Nos of stackable patch cords |
| Power Supply | : 100-240V AC, 50/60 Hz |
| Operating Condition | : 0-40°C, 85% RH |
| Internal Power supply | : +5V DC |
| Dimensions (mm) | : 326W x 252 x 52H |
| Weight | : 1.5 Kgs. (approximately) |
| Learning Material | : Online (Theory, procedure, reference results, etc) |
| Included Accessories | : Patch Cord 16"10 Nos. Power Supply for Sciencetech 2122A & 2122B.-1 No each. Mains Cord -2 Nos. |