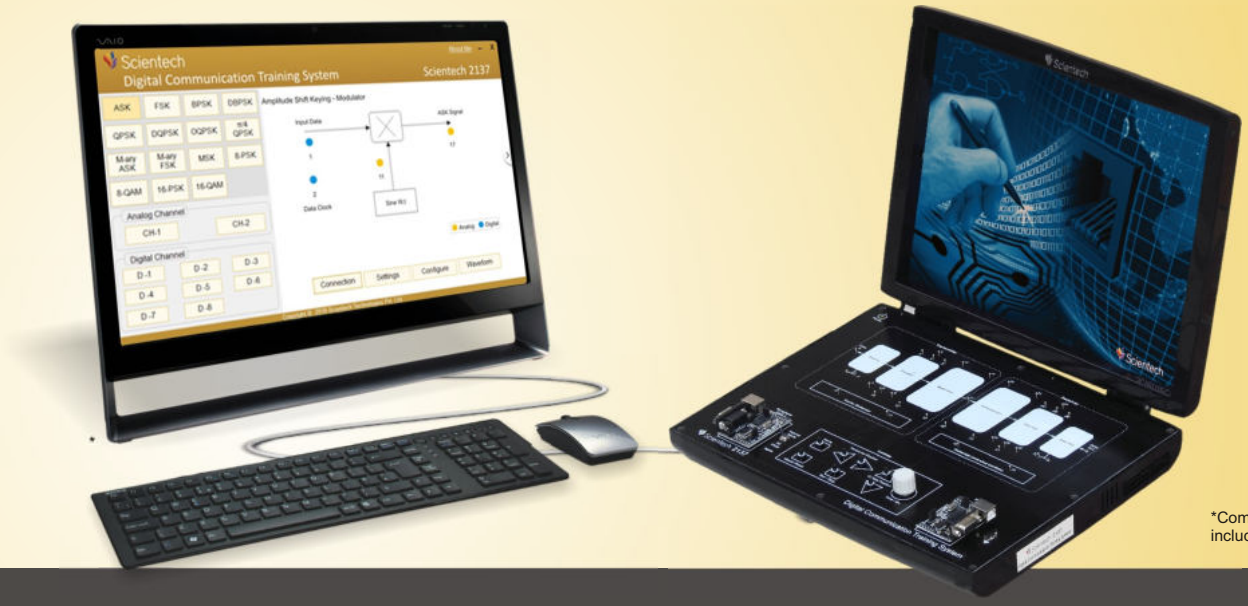
Scientech

Digital Communication Training System

Scientech 2137

TECHBOOK



*Computer is not included in standard setup

Scientech 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.

Scientech 2137 Digital Communication Training System is an ideal solution to bridge the gap between theoretical studies and practical working. Using this training system student will be able to understand step by step journey of communication. All major blocks required in Digital Communication blocks are covered and test points are provided for each step.

Inbuilt Mixed Signal Oscilloscope-MSO [CH1+ CH2 + LA (8CH)] software gives a freedom of test & measurement instrument.

Features

- Digital Communication Training System is based on VLSI and DSP platform
- In-build internal data generator : 256 Bit
- Type of Encoding & Decoding: 1bit, 2bit, 3bit, 4bit
- Type of Modulations & Demodulations: ASK, FSK, BPSK, DBPSK, QPSK, DQPSK, p/4 QPSK, OQPSK, M-ary ASK, M-ary FSK, MSK, 8-PSK, 8-QAM, 16-PSK, 16-QAM
- Constellation (Vector) pattern for respective modulation
- In-build Mixed Signal Oscilloscope (2CH Analog + 8CH Digital) software for real-time signal analysis
- Training System has more than 30 test points which wil help students to observe the signal on Oscilloscope and Logic Analyzer
- PC to PC interface with interactive messaging software
- More than 30 experiments can be performed

Scope of Learning

Study and analysis of

- Bit Clock and serial data
- Symbol Clock
- ASK modulation
- ASK demodulation
- FSK modulation
- FSK demodulation
- BPSK modulation
- BPSK constellation
- BPSK demodulation
- Differential encoding of serial data for modulation
- Differential decoding of serial data after demodulation
- DBPSK modulation
- DBPSK demodulation
- 2-bit encoding and two channel (Inphase and Quadrature) modulation techniques

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- QPSK modulation
- QPSK constellation
- QPSK demodulation
- 2-bit differential encoding of serial data for modulation
- 2-bit differential decoding of serial data after demodulation
- DQPSK modulation
- DQPSK demodulation
- OFFSET QPSK modulation
- OFFSET QPSK constellation
- OFFSET QPSK demodulation
- π/4 QPSK modulation
- π/4 QPSK constellation
- π/4 QPSK demodulation
- M-ary ASK modulation
- M-ary ASK demodulation
- M-ary FSK modulation
- M-ary FSK demodulation
- Half sinusoid wave shaping for MSK modulation
- MSK modulation
- MSK demodulation
- 3-bit encoding of serial data for modulation
- 3-bit decoding of serial data after demodulation
- 8-QAM modulation
- 8-QAM constellation
- 8-QAM demodulation
- 8-PSK modulation
- 8-PSK constellation
- 8-PSK demodulation
- 4-bit encoding of serial data for modulation
- 4-bit decoding of serial data after demodulation
- 16-QAM modulation
- 16-QAM constellation
- 16-QAM demodulation
- 16-PSK modulation
- 16-PSK constellation
- 16-PSK demodulation

Technical Specifications

Digital Synthesized Sine & Cosine wave generation with variable step

Frequencies	: 1.6 KHz and 3.2 KHz for internal test data. 10 KHz and 20 KHz for PC to PC communication.
Test Data Pattern	: 256 bit random serial data
Encoding Techniques	: 1bit, 2bit, 3bit, 4bit
Modulation Techniques	: ASK, FSK, BPSK, DBPSK, QPSK, DQPSK, π/4 QPSK, OQPSK, M-ary ASK, M-ary FSK, MSK, 8-PSK, 8-QAM, 16-PSK, 16-QAM,
Decoding Techniques	: 1bit, 2bit, 3bit, 4bit
De-Modulation Techniques	: ASK, FSK, BPSK, DBPSK, QPSK, DQPSK, π/4 QPSK, OQPSK, M-ary ASK, M-ary FSK, MSK, 8-PSK, 8-QAM, 16-PSK, 16-QAM

Built-in Mixed Signal Oscilloscope-MSO (DSO + 8 Channel Logic Analyzer) software.

Real-time Sampling	: 25MSPS
Memory Depth	: 1K Per Channel
Trigger Sources	: CH1, CH2
Vertical Resolution	: 8bit
Math	: Addition, Subtraction, Multiplication
Waveform Interpolation	: Linear
Dimensions (mm)	: W 326 x D 252 x H 52
Power Supply	: 110-220 V AC ±10%, 50/60Hz
Operating Conditions	: 0-40°C, 80% RH
Weight	: 2 Kg. approximately
Product Tutorial	: Online

Included Accessories

Scientech 2137	: 1 no.
Power Supply	: 1 no.
Mains Cord	: 1 no.
USB Cable	: 2 nos.

Subject to Change

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