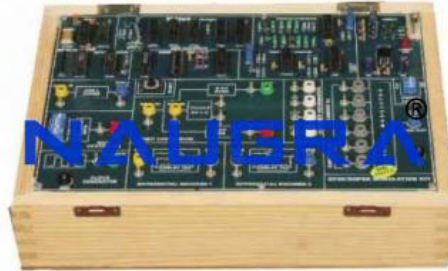


**Product Name :**  
QPSK DQPSK Modulation Trainer

**Product Code :**  
NLAB-ELECTRONICSAB160004



**Description :**

QPSK DQPSK Modulation Trainer

**Technical Specification :**

Advance Digital Communication Trainer System that helps one under stand various Digital Modulation and Demodulation Techniques. Various functional block diagrams are provided on-board as an aid for Teaching/Training. These Kits are provided with various Test Points to visualize the signals on Oscilloscopes.

**FEATURES:**

Onboard synchronized 500 KHz Sine-wave generator.

Dibit Pair, Differential Encoding type Data Format.

On-board crystal controlled Pulse Generator.

On board 8 bit Data Simulator.

Block Description screen printed on PCB.

In-Built Power Supply.

#### LIST OF EXPERIMENTS:

Principles of advance digital modulation and Demodulation techniques.

Dibit pair data coding technique of NRZ-L data format.

Differential Encoding of I & Q Bits.

Observation of constellation diagram.

Quadrature Phase Shift Keying Modulation and Demodulation technique.

Differential Quadrature Phase Shift Keying Modulation and Demodulation technique.

Effect of Switch Faults.

#### SPECIFICATIONS:

Sine Wave Generator

Provides synchronized Sine waveform output of 500KHz (0 deg.), 500KHz(90 d e g.) , 5 0 0 K H z (1 8 0 d e g.),500KHz(270deg.)

Amplitude of 0 - 4Vp-p

Provision for Amplitude adjustments provided.

Data Format (Coding)

Dibit Pair (I & Q), Differential Encoding of I & Q Bits.

Carrier Modulation Techniques

DPSK modulation  
- DQPSK modulation

Pulse Generator.

Clock frequency of 250 KHZ BIT, BIT Clock, Word Clock.

Crystal Controlled Pulse Generator.

On-board features

On board 8 bit variable NRZ-L pattern Data Simulator.

Switch Faults are provided on board to study different effects on circuit

Block Description Screen printed on glassy epoxy PCB

Interconnections

All interconnections are made using 2mm banana Patch cords

Test points are provided to analyze signals at various points.

All ICS are mounted on IC Sockets.

Bare board Tested Glass Epoxy SMOBC PCB is used.

In-Built Power Supply of +5V/1.5A,  $\pm 12V/250mA$  with Power ON indication

Attractive enclosure

Set of 2mm Patch cords for interconnections

User's Manual with sample experiments programs.

## Naugralabequipments

**Website:** [www.naugralabequipments.com](http://www.naugralabequipments.com), **Email:** [sales@naugralabequipments.com](mailto:sales@naugralabequipments.com)

**Address:** 6148/6, Guru Nanak Marg, Ambala Cantt, Haryana, India. **Phone:** +91-9896600003