



# **SNS COLLEGE OF TECHNOLOGY**

**Coimbatore-35**  
**An Autonomous Institution**



Accredited by NBA – AICTE and Accredited by NAAC – UGC with 'A++' Grade  
Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

## **DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING**

### **OPTICAL AND MICROWAVE ENGINEERING**

III YEAR/ VI SEMESTER  
1

#### **UNIT 3 – MICROWAVE MEASUREMENTS**

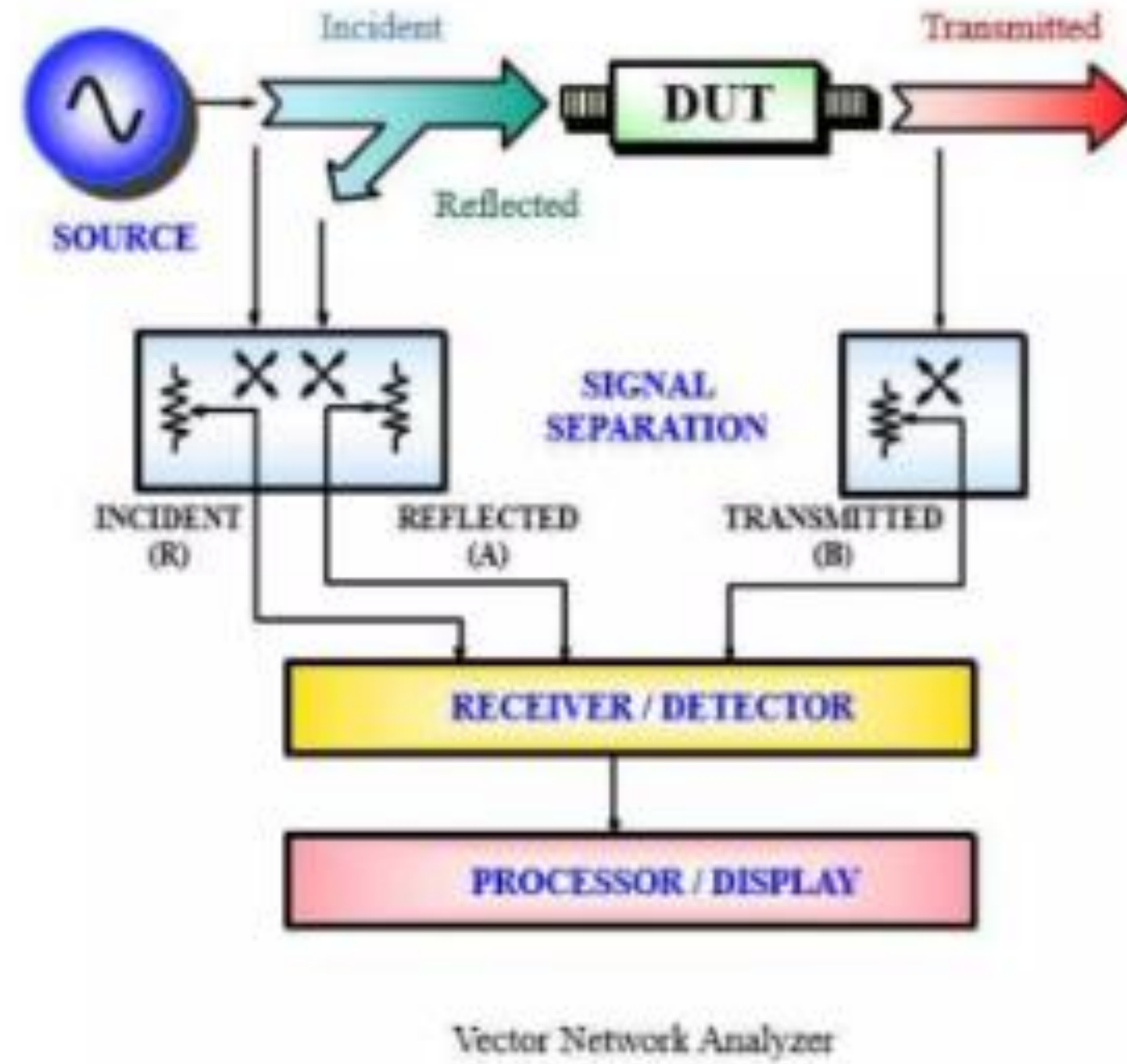
**TOPIC– NETWORK ANALYZER**

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# NETWORK ANALYSIS

1. Used by designers to measure the electrical performance of devices
2. When systems are conveying signals with information content, we need
  1. maximum efficiency
  2. minimum distortion.
3. Vector network analysis is a method of accurately characterizing such components by measuring their effect on the amplitude and phase of swept-frequency and swept-power test signals. [1]





# WORKING

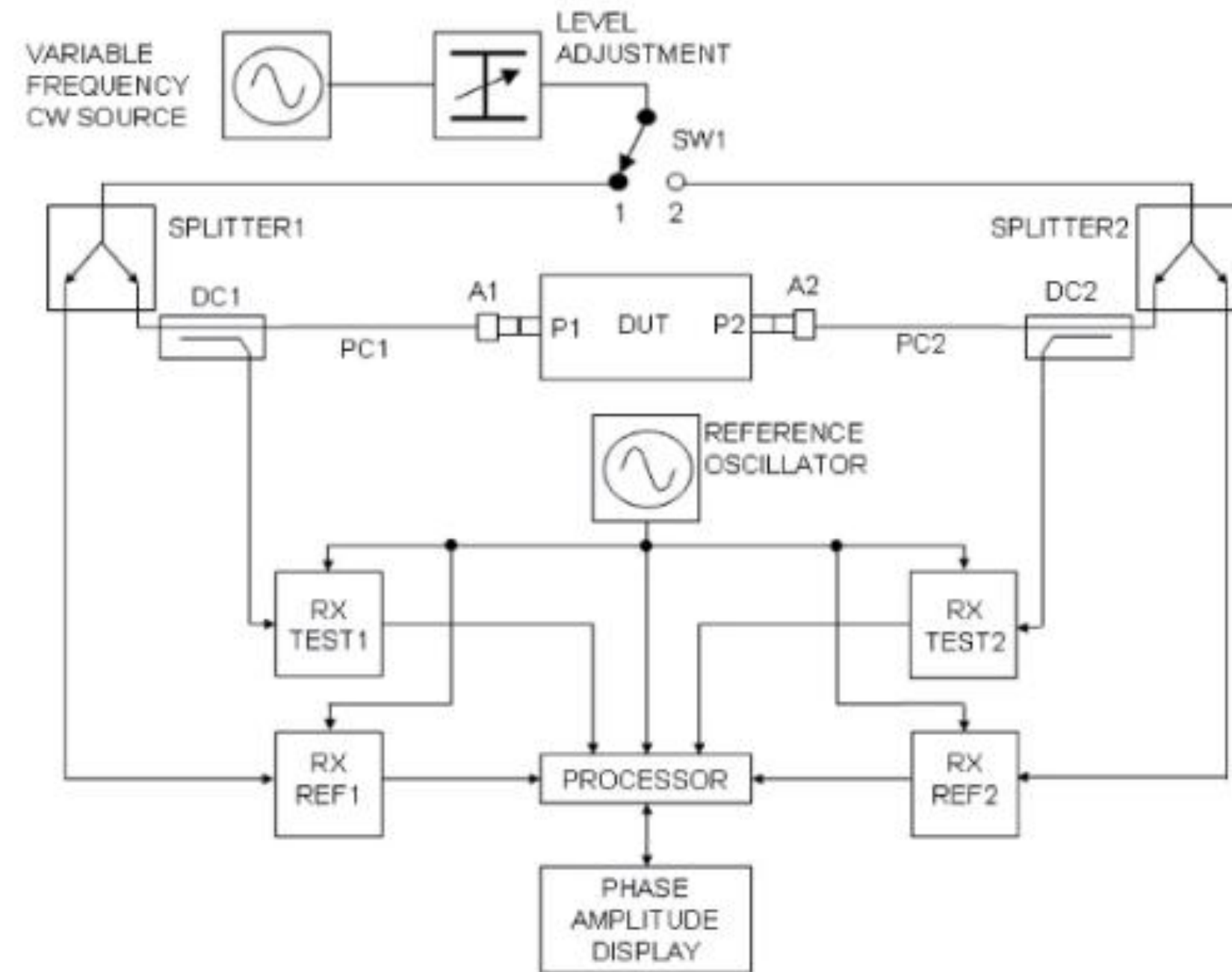
VNA Working can be understood in four phases:

- VNA Stimulus
- Signal Separation
- Receiver & Signal Detection
- Processor & Display



# WORKING: VNA ANALYSER STIMULUS

1. VNA is an active instrument
2. Generates test signal and then measures the response
3. Sources can be
  1. Open Loop VCO
    1. Good Phase Noise Performance
    2. Low Frequency Accuracy and Flexibility
  2. Digitally synthesized
    1. More Expensive than VCO
    2. Provide exact Frequency signal





**THANK YOU**