

# Title

TDM Multiplexing and Demultiplexing.

## Objective / Aim of the Experiment

To study and analyse the process of Time Division Multiplexing and Demultiplexing.

## Equipment Required

TDM Multiplexing and Demultiplexing Trainer Kit

Digital Storage Oscilloscope (100MHz,1GSa/S)

Power supply

Probes

Patch cord

Connecting wires

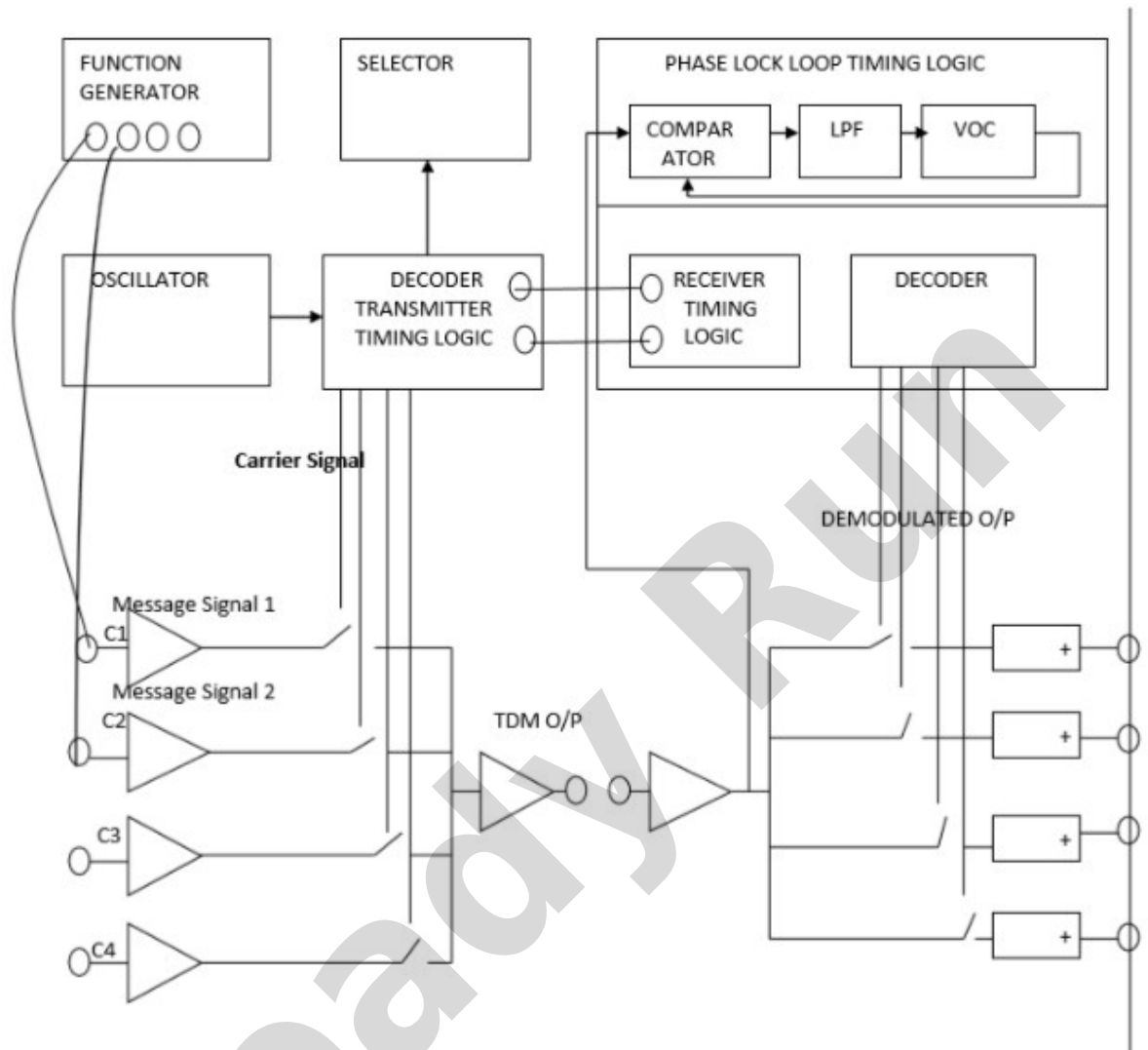
## Theory

Time Division is a technique of transmitting more than one information on the same channel. The samples consist of short pulses followed by another pulse after a long time intervals. This no-activity time intervals can be used to include samples from the other channels as well. This means that several informations can be transmitted over a single channel by sending samples from different information sources at different moments in time. This technique is known as Time Division Multiplexing or TDM. TDM is widely used in digital communication systems to increase the efficiency of the transmitting medium. TDM can be achieved by electronically switching the samples such that they interleave sequentially at correct instant in time without mutual interference.

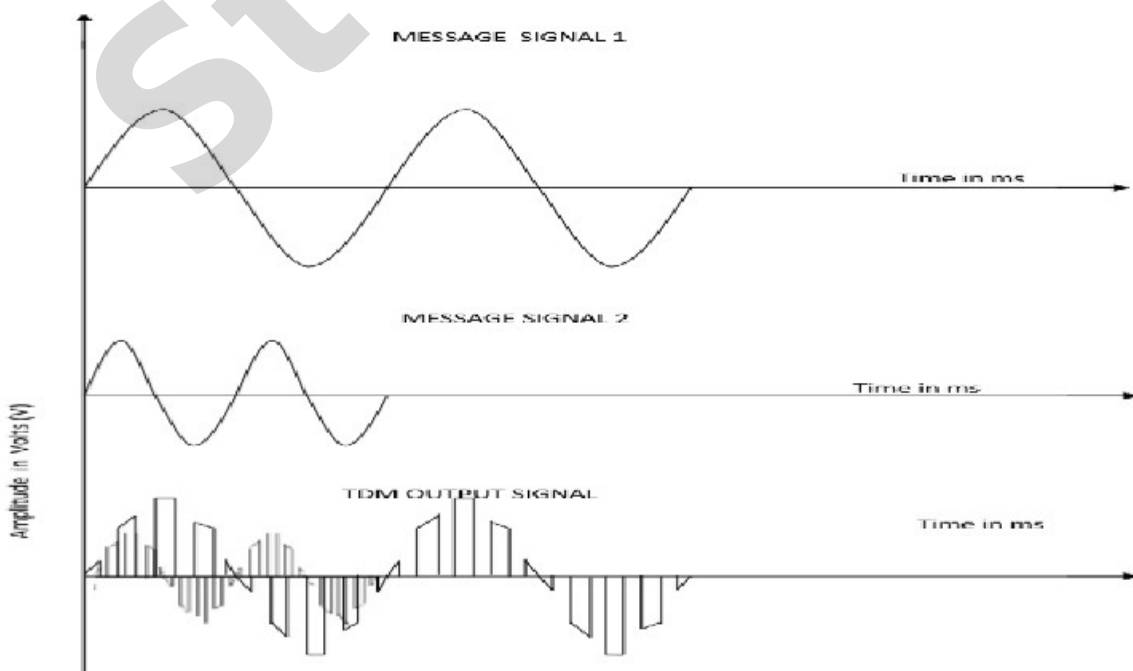
## Procedure

1. Connections are made as per the block diagram.
2. The message signal1 is connected to the channel 0 and note down the amplitude and time period of the signal.
3. The message signal 2 is connected to the channel 1 and note down the amplitude and time period of the signal.
4. Observe the TDM waveform in the DSO
5. Plot the TDM waveform for the obtained readings.

## Block Diagram / Circuit Diagram



### Graph



## Observation Table

| Signal | Amplitude | Time period | Frequency |
|--------|-----------|-------------|-----------|
|        |           |             |           |
|        |           |             |           |
|        |           |             |           |
|        |           |             |           |

## Result

TDM multiplexing and demultiplexing are verified in the hardware kit and its waveforms are studied.

## Conclusion

From the above experiment, we conclude that using TDM more than one signal can be transmitted through single channel.

## Precautions

- 1) Do not use open ended wires to connect 230V, 50Hz power supply.
- 2) Connections should be done properly.
- 3) Check the connection before giving the power supply.
- 4) Observations should be done carefully.
- 5) Disconnect the circuit after switched off the power supply