Satellite Communication Trainer 10203A provides an in-depth look at basic Satellite Communication techniques and concepts. It consists of Uplink Transmitter, Satellite Link and Downlink Receiver, which can be conveniently placed in the laboratory. The Satellite can be placed at an elevated position if needed. The Satellite Transponder receives signal from Uplink Transmitter and retransmit at different frequencies to a Downlink Receiver. The Uplink and Downlink frequencies are selectable and carry three signals- Video, Audio/ Voice/ Tone and Data simultaneously Any Broadband signal or Digital/Analog data or Function Generator waveforms can be communicated through this Satellite link. The students can conduct a large number of experiments very easily on this Trainer. The Operating manual illustrates basic theory and glossary of Satellite Communication terms

## Features

- Simultaneous Communication of 3 different signals.
- 2400 - 2600 MHZ PLL microwave operation.
- Crystal Control Frequencies.
- Communicate Audio, Video, Digital data, Tone, Voice
- waveforms etc.
- Communication of external broad band digital and
- analog data.
- Choice of different transmitting and receiving frequencies.
- High power Low Noise transmission.
- Built-in Microphone and Speaker for Voice link.
- Detachable Dish Antenna at each station.
- Estimation of S/N ratio, Fading etc.
- Facility to attach Analog/Digital
- Communication Trainers.
- Built-in speaker.

## Experiments

01. Understanding concepts of Satellite Communications.
02. To set up Direct link.
03. To set up Active Satellite link.
04. Study Satellite transponder.
05. To set up Satellite communication link.
06. Study Audio-Video transmission through Satellite link.
07. Study Base Band Analog signal(voice) in Satellite link.
08. To transmit and receive function generator waveforms through Satellite link.
09. To transmit Tone through Satellite link.
10. To study Fading of signal.
11. To estimate C/N ratio.
12. To measure the parameters in an Analog FM/FDM TV Satellite link.
13. To estimate S/N ratio.
14. To estimate FM deviation, Bandwidth.

And Many More.....

Note: Specifications are subject to change.

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## Uplink Transmitter

- Transmit three signals simultaneously at each frequency
- 2400 - 2600 MHz transmitting frequencies.
- 4 MHz clock frequency
- Wide band RF amplifier. No manual matching required.
- PIC16F84 - 8 Bit RISC processor based PLL.
- 16 MHz Max. Bandwidth
- Frequency Up-Down switch and LED indication
- FM Modulation of Audio, Video.
- 5 & 5.5 MHz Audio Modulation and Max. 8 MHz Video Modulation
- Detachable Dish Antenna.
- Radiated Power output 25mW (approx.) with power control.
- Transmit Audio, Video, Digital/Analog data, Tone, Voice waveforms etc.
- Separate terminals provided for inputs
- Power Supply - 230 Volts, + 10% , 50Hz.

## Satellite Link

- Transponder with selectable frequency conversion.
- Choice of 4 downlink frequencies 2400 - 2600 MHz
- Rotary Switch and Tuner for selecting Uplink frequency, Link Fail switches
- Detachable Dish Antennas.
- Radiated power 25 mW Approx. with Variable gain control.
- Power Supply 230 Volts, + 10% , 50 Hz.

## Downlink Receiver

- Receives and demodulate three signals simultaneously.
- Based on Eurostar Tuner.
- Intermediate Frequency 479.6 MHZ.
- 2400 - 2600 MHz fix receiving frequencies
- Variable tuner 2400 - 2600 MHz.
- -60 dBm sensitivity at tuner input
- Rotary Switch and Tuner for selecting Downlink frequency.
- Built in speaker
- Detachable Dish Antenna.
- Power Supply - 230 Volts, + 10% , 50Hz.

## Standard Accessories :

- Operating Manual- 1 Nos.
- Mains cords- 3 Nos.
- Audio-Video Cables- 2 Nos.
- Dish Antennas- 4 Nos.
- BNC - Banana Cables- 2 Nos.
- Dynamic Microphone- 1 Nos.

## Optional Accessorie :

- VCD Player
- Portable Color TV Monitor

Note: Specifications are subject to change.

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