



Satellite Communication Trainer ST2271 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 transmitted through this Satellite link. A large number of experiments can be conducted very easily on this Trainer.

### Technical Specifications

#### Uplink Transmitter

- Transmit 3 signals simultaneously at each up-linking frequency
- 1200/1250/1300 MHz up-linking frequencies selectable by Frequency selection switch and LED indication
- 4 MHz clock frequency
- Wide band RF amplifier. No manual matching required
- PIC16F84 - 8 Bit RISC processor based PLL
- 16 MHz Bandwidth
- Frequency UP- Down switch and LED indication
- FM Modulation of Audio and Video
- 5/5.5 MHz Audio and 8 MHz Video Modulation
- Detachable Dish Antenna
- Radiated Power output 25 mW (approx.) with power control
- Transmit Audio, Video, Digital / Analog data, PC data, Tone, Voice, function generator waveforms etc.
- Separate terminals provided for different inputs
- **Power Supply** : 220 V  $\pm$ 10 %, 50 Hz / 60 Hz on request

#### Satellite Link :

- Transponder with selectable frequency conversion
- Choice of 3 uplink receiver frequencies 1200/1250/1300 MHz and downlink transmitter frequencies 1100/1150/1200 MHz selectable
- Rotary Switch and Tuner for selecting Uplink frequency
- Link Fail operation
- Detachable Dish Antennas
- Radiated power 25 mW (approx.) with Variable gain control
- **Power Supply** : 220 V  $\pm$ 10 %, 50 Hz / 60 Hz on request

#### Downlink Receiver :

- Receives and demodulate three signals simultaneously
- Based on Eurostar Tuner
- Intermediate Frequency 479.6 MHz (approx.)
- 1100 / 1150 / 1200 MHz fix frequency tuning
- -60 dBm sensitivity at tuner input
- Built in speaker for audio and video output
- Detachable Dish Antenna
- **Power Supply** : 220 V  $\pm$ 10 %, 50 Hz / 60 Hz on request
- **Power Consumption** : 2.5 VA (approx.)
- **Dimensions (mm.)** : W 340  $\times$  D 241  $\times$  H 105

- Simultaneous communication of three different signals at each up-linking frequency
- 1100 - 1300 MHz PLL microwave operation
- Crystal Control Frequencies
- Communicate Audio, Video, Digital data, PC data, Tone, Voice, function generator waveforms etc.
- Communication of external broad band digital and analog data and base band signals
- Choice of different transmitting and receiving frequencies
- Built-in microphone and speaker for Voice and Audio link
- Detachable Dish Antenna at each station
- Facility to attach SCIENTECH Analog / Digital Communication Kits

#### Experiments that can be performed

- Understanding concepts of Satellite Communication
- To set up Direct link
- To set up Active Satellite link
- Study Satellite transponder
- To set up Satellite communication link
- Study Audio-Video transmission through Satellite link
- Study Base Band Analog signal(voice) in Satellite link
- To transmit and receive function generator waveforms through Satellite link
- To transmit Tone through Satellite link
- To establish PC-to-PC Communication using Satellite Communication link

#### Included Accessories

1. BNC to BNC small	4 no.	9. Plastic Box of Antenna	1 no.
2. Audio-Video Cable 2 Pin	2 no.	10. Cable RS 232	2 no.
3. BNC to Banana	2 no.	11. Cable RS 232 (2m-1fm)	1 no.
4. Patch Cord 8"	2 no.	12. CD-ROM	1 no.
5. Microphone (Ahuja)	1 no.	13. CD-BOX	1 no.
6. Mains Cord	3 no.	14. Accessories Box	1 no.
7. Pencil Cell (Microphone)	1 no.	15. Operating Manual	1 no.
8. Dish Antenna	4 no.	16. Dust Cover	1 no.

