

## Features:

- \* 7 PLL Uplink 5.8 GHz & 4 PLL Downlink 2.4 GHz channels.
- \* Emulation of path loss at uplink and downlink
- \* Emulation of frequency translation
- \* High RF output power and low noise
- \* PLL synthesizer in Transmitter, Receiver and Satellite
- \* Condenser microphone and speaker for audio link
- \* Camera and Video to VGA converter Card for video link
- \* All Gold plated SMA connectors & Silver Teflon Cables.
- \* 2 Dish & 2 Patch Array for linear polarization study
- \* C/N and S/N measurement facility
- \* Transmit Audio, Video, Digital/analog data, Tone, Voice, function generator waveforms etc.
- \* Receives & demodulates 3 Signals Simultaneously



Video to VGA converter card for Video link

## Amitec STC10 Technical Specifications

### Satellite Uplinking Transmitter

Frequency	: 7 channels in 5.8 Ghz band ; PLL with frequency selection switch & LED indication
Spurious output	: -30 dB typical
RF Output Z	: 50 Ohms Unbalanced SMA
RF output level	: +3 dBm nominal with wideband RF amplifier with no manual matching required
Path Loss	: 10dB Typical
Audio 1	: Int. 1KHz sine wave / Ext Mic Ext. Function Generator waveform
Audio 2	: Int. 1KHz sine wave / Ext Mic Ext. Function Generator waveform
Video	: Analog Camera/VCD compatible
Waveform	: upto 5MHz Function Generator
Digital	: Max rate 100KHz typical
Baseband	: Transmits 3 signals simultaneously at each uplink frequency
Processor	: PIC16F4 - 8 bit RISC processor based PLL with 4 Mhz clock
Bandwidth	: 20 Mhz
Modulation	: 5/5.5MHz Audio FM Modulation 8 Mhz Video FM Modulation
Antenna	: Detachable Parabolic dish with mount
Inputs	: separate terminals for different inputs
Power Supply	: 100-240V AC 47-63Hz

### Satellite Downlink Receiver

Frequency	: 4 channels in 2.4 to 2.5 Ghz band PLL Controlled ISM Band
RF Input Z	: 50 Ohms Unbalanced SMA
Sensitivity	: -95dBm
Audio 1out	: Speaker inbuilt/output
Audio 2 out	: Speaker inbuilt/output
Video Out	: 5MHz, 1V p/p
Digital	: Max rate 100KHz typical TTL
RSSI Out	: Received signal strength output for C/N measurement
IF	: 479.5MHz
Antenna	: Detachable Parabolic dish with mount
Demodulation	: receives & demodulates 3 signals simultaneously
Power Supply	: 100-240V AC 47-63Hz

**Dimension : 55X34X36 cms. Weight : 12 Kg**

### Satellite Link Emulator

#### Transponder Uplink

Frequency	: 7 channels in 5.8 Ghz band ; PLL Synthesized ISM Band with select switch
RF Input Z	: 50 Ohms Unbalanced SMA
Sensitivity	: -95dBm

#### Transponder Downlink

Frequency	: 4 channels in 2.4 to 2.5 Ghz band ; PLL Synthesized ISM Band
Spurious output	: -30 dB typical
RF Output Z	: 50 Ohms Unbalanced SMA
RF output level	: 0 dBm nominal
Path Loss	: 10 dB Typical
Band limiting	: 16MHz fixed typical
Antennas	: Patch array antenna X2
Power Supply	: 100-240V AC 47-63Hz
Accessories	: Camera, Video to VGA converter Card, Cables BNC-BNC X2

### E-Manual: Installation Video for ease of Learning

#### Area and Scope of Experimentation:

- \* To set up an active & passive satellite communication link and study their difference. To study the communication satellite link design: process of transmitting a signal to a satellite (UPLINKING), reception of same signal via satellite (DOWN LINKING) and functioning of transponder of a satellite.
- \* To measure the baseband analog signal parameters in a satellite link.
- \* To measure the signal parameters in an analog FM/FDM/TV Satellite link.
- \* To study the functionality of a satellite MODEM.
- \* To study the phenomenon of Linear polarization.
- \* To measure the C/N ratio.
- \* To measure the S/N ratio.
- \* To study the effect of fading and measure the fading margin of a received signal.
- \* To measure the digital baseband signal parameters in a satcom link.
- \* To setup a RS-232 satellite communication link using com ports of PC.
- \* To calculate Bit Error Rate in a satcom link.

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