



**Features:**

- \* 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 Monitor for video link
- \* 4 Dish 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

**Technical Specifications**

**Satellite Uplinking Transmitter**

Frequency	: 4 channels in 5.8 Ghz band ; PLL with frequency selection switch & LED indication
RF output level	: +3 dBm nominal with wideband RF amplifier with no manual matching required
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	: 16 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 5.8 Ghz band PLL Controlled ISM Band
Sensitivity	: -80dBm
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
Antenna	: Detachable Parabolic dish with mount
Demodulation	: Receives & demodulates 3 signals simultaneously
Power Supply	: 100-240V AC 47-63Hz

**Satellite Link Emulator**

**Transponder Uplink**

Frequency	: 4 channels in 5.8 GHz band ; PLL Synthesized ISM Band with select switch
Sensitivity	: -80dBm

**Transponder Downlink**

Frequency	: 4 channels in 5.8 Ghz band; PLL Synthesized ISM Band
RF output level	: 0 dBm nominal
Path Loss	: Variable attenuation
Band limiting	: 16MHz fixed typical
Antennas	: Detachable Parabolic Dish
Power Supply	: 100-240V AC 47-63Hz

**Area and Scope of Experimentation:**

- \* To set up a 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

**Accessories:**

- \* Camera
- \* Monitor
- \* Cables BNC-BNC 2Nos
- \* Serial Communication Software

Note: Specifications are subject to change.

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