



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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