DEGEM SYSTEMS

Com & Telecom

- Modern Communication
- Fiber Optic Communication
- Antennas
- Radar
- Cellular Communication
- Global Position Systems
- Satellite Communication
- Microwaves
- Telecommunication Networks

MDC-3264

Satellite Communications Training System

The MDC-3264 Satellite Communications Trainer provides an in-depth study of a basic satellite communication system.

It consists of an uplink transmitter, satellite link and a 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 the signal from the uplink transmitter and retransmits at different frequencies to a downlink receiver. The uplink and downlink frequency are selectable and can carry three signals – audio or voice, video and data simultaneously.

Any broadband signal, digital/analog data or function generator waveforms can be communicated through the satellite link. A web camera is also supplied.

The experiment manual illustrates the basic theory, contains a glossary of satellite communication terms in addition to the detailed experiment procedure.

- Self contained training system
- Simultaneous communication of three different signals at each up-linking frequency
- 2414-2468MHz PLL microwave operation
- Crystal controlled frequencies
- Audio, video, digital data, PC data, and tone communication signals
- Voice, function generator waveforms etc
- Communication of external broadband 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
- Experiment manual

Specifications

TECHNICAL CHARACTERISTICS

The MDC-3264 training system comprises an uplink transmitter, a satellite link, a download receiver, accessories and a student manual.

Transmitter

- Transmit three signals simultaneously at each up-linking frequency 2450-2468MHz up-linking frequencies selectable by frequency selection switch and LED indicator
- 4 MHz clock frequency
- Wide band RF amplifier. No manual matching required
- PIC16F84 - 8 Bit RISC processor based PLL
- 16 MHz bandwidth
- Frequency select switch and LED indication
- FM Modulation of audio and video
- 5/5.5MHz audio and 8MHz video modulation
- Detachable dish antenna
- Radiated Power output 25mW (approx.) with power control
- Transmit audio, video, digital/analog data, PC data, tone, voice, function generator waveforms
- Separate terminals provided for different inputs
- Power supply: 220V ±10%, 50Hz or 120V 60Hz

Satellite link

- Transponder with selectable frequency conversion
- Choice of 2 downlink frequencies 2414-2432MHz
- Rotary Switch for selecting Uplink frequency
- Link Fail operation
- Detachable Dish Antennas
- Radiated power 25mW (approx.) with variable gain
- Power supply: 220V ±10%, 50Hz or 120V 60Hz
- Power Consumption: 2.5VA (approximately)

Downlink receiver

- Receives and demodulate three signals simultaneously
- Intermediate frequency 479.6 MHz (approx)
- 2414-2432MHz frequency tuning
- –60 dBm sensitivity at tuner input
- Built in speaker for audio and video output
- Detachable dish antenna
- Power supply: 220V ±10%, 50Hz or 120V 60Hz
- Power consumption: 2.5VA (approx.)
- Dimensions (mm): W 340 × D 241 × H 105

EXPERIMENTS

- Concepts of satellite communications
- Set up direct link
- Set up active satellite link
- Study satellite transponder
- Set up satellite communication link
- Study audio-video transmission through satellite link
- Study baseband analog signal (voice) in a satellite link
- Transmit and receive function generator waveforms through satellite link
- Transmit tone through satellite link
- Establish PC-to-PC communications using satellite
- Communication link

SUPPLIED ACCESSORIES

- BNC to BNC small (4)
- Audio-Video Cable 2 Pin (2)
- BNC to Banana (2)
- Patch Cord 8" (2)
- Microphone
- Mains cord (3)
- Pencil cell microphone
- Dish antenna (4)
- Plastic box for storing antennas
- RS 232 cable (2)
- CD-ROM
- CD box
- Accessories box
- Experiment manual
- Dust cover

REQUIRED ACCESSORIES

Personal computer with MS Windows

INSTRUCTIONAL MATERIALS

The experiment manual was written by pedagogical experts in modern satellite communications technology. The essential theory to understand and perform the experiments is provided. The procedure for each experiment is clearly written to allow the students to easily complete each experiment