

- Telemetry System Definition
- Introduction
- Learning Objectives
- Telemetry System Overview
- Data Collection System
- Multiplex System. Modular
- Transmitter and Antenna
- Transmission or Waveform Channel
- Antenna, RF Receiver: RF and IF Amplifiers Carrier. Demultiplex System
- Data Processing and Display
- IRIG Channel Standards
- Analog Frequency Modulation
- Introduction
- Learning Objectives
- Single Channel FM
- FM/FM IRIG Spectrum Utilization
- FM/FM Systems Contaminated with Noise
- FM/FM Multiplex Systems
- Operational Filter Bandwidths
- Development of the FM Noise Model and Signal-to-Noise Ratio
- Effect of Increasing the IF Bandwidth
- Design of FM/FM Systems
- Introduction
- Learning Objectives
- System Parameters
- Design Procedure
- Design Examples
- Threshold IF Bandwidth Utilization
- Hardware Implementation of the Preemphasis Schedule
- IRIG BIF Specifications
- Pulse Code Modulation
- Learning Objectives
- Overview
- Digital Signal Representation
- Baud and Bit Rate
- Quantization and Analog-to-Digital Conversion
- TM Channel Formats
- Learning Objectives
- Line Coding or Transmission Format
- Frame Construction
- IRIG Specifications
- PCM/FM (Binary FSK)
- Introduction
- Learning Objectives
- PCM/FM Waveform
- PCM/FM System Design

- Signal-to-Noise Ratio in a PCM/FM System
- PCM/FM + FM/FM System Design
- PCM/FM/FM
- Signal-to-Noise Ratio for PCM Including Both
- Quantization and Bit Error Noise
- Power/Noise Concepts of BPSK Modulation
- Introduction
- Learning Objectives
- Expanded BPSK
- BPSK Generation
- BPSK Detection by a Correlation Receiver
- Maximum Likelihood Detection
- Bit Errors
- BASK Modulation
- BASK in General
- Actual Receiving Hardware
- Comparison of Bit Error Rates for BASK and PCB/FM
- Q-Function
- BASK Power Spectral Density
- Overall Comparison Between PCB/FM and BASK
- General PM Modulation Comparison of PM and FM Modulation
- FM Modulation Employing a PM Modulator
- Differential Phase Shift Keying. QPSK, (new)
- Introduction. Learning Objectives
- DEQPSK. DQPSK. OKQPSK. MSK. Feher's QPSK
- Enhanced FQPSK, QPSK Schemes Designed to Replace Feher's. Problems
- Bandwidth Efficient Modulation Techniques (new)
- Learning Objectives
- Introduction to M-ary, Signal Constellations
- M-ASK. M-ASK. M-FSK. M-PSK
- Combined Amplitude and Phase Modulation
- QAM