



40544A The trainer provides a basic understanding of the concepts behind CDMA, and various issues that need to be considered in the design of a DSSS/FHSS system. These include generation of various pseudorandom (PN) codes with programmable tapplings, variable chip rate, and digital modulations with programmable FIR low pass filter. Overall data rate dependency parameters, spreading & despreading with DSSS & so on can be performed on model.

Experiments :

1. Study of Data and PN Sequence Generation.
2. Study of Direct Sequence Spread Spectrum (DSSS) Based Modulation.
3. Study of Demodulation of DSSS Modulation.
4. Study of Generation of PN Sequence.
5. To Study Generation of FHSS Modulation Signal.
6. Demodulation of FHSS Modulation.

Technical Specifications :

1. DSSS system operating with 11 chip spreading sequence.
2. The throughput is about 7Mbps for 11Mbps DSSS, and about 2Mbps for 3Mbps FHSS.
3. Internal generation of pseudorandom bit for test purposes.
4. Two channel CDMA(DSSS and FHSS) Trainer Data Clock:- Clock signal of frequencies 2 KHz is provided on-board for data generation.
5. Pseudorandom Noise Sequence(PRNS) Clock:- Clock signal of frequency 16 KHz is provided for PN sequence generation for DSSS-CDMA system and Clock signal of frequencies 16 KHz is provided for FHSS-CDMA system
6. Direct Sequence Spread-Spectrum(DSSS) Modulator, Demodulator / Frequency Hoping Spread Spectrum (FHSS) Modulator, Demodulator.
7. Carriers for Frequency Synthesizer :- Four different sinusoidal carriers of frequency 128KHz, 64KHz, 32KHz and 16KHz are used.
8. Data Sources : Two data sources are provided on board for both channels.
9. PRN Sequences : Two PRN sequence generators are provided on board for both channels.
10. Threshold Detector : It compares the Integrator and dump filter output to a DC reference.
11. Sampling : The output from threshold detector is sampled with input data rate to recover the desired digital output.
12. Dimension : 300 x 400mm

Other Apparatus Required:

1. Digital Storage Oscilloscope

Note: Specifications are subject to change.