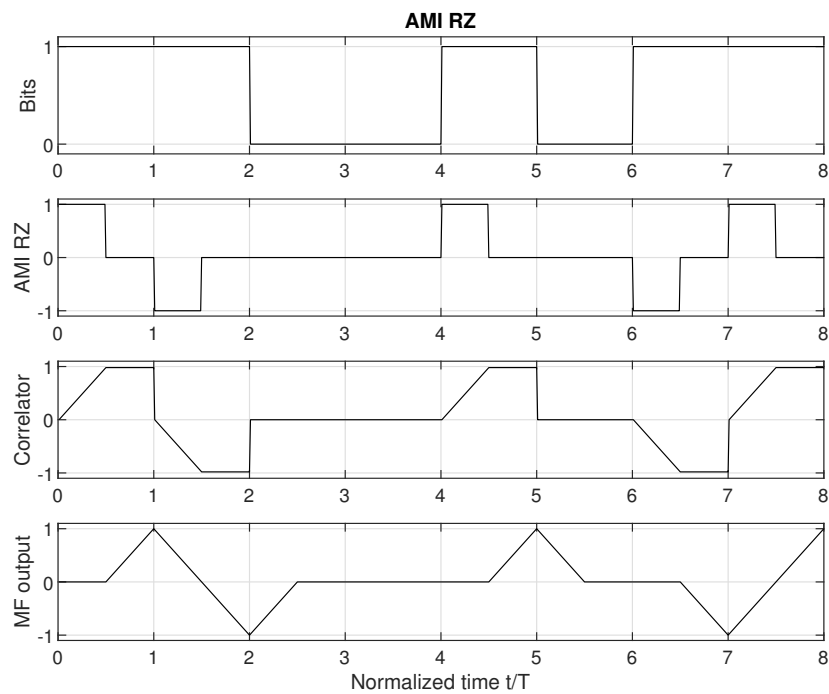
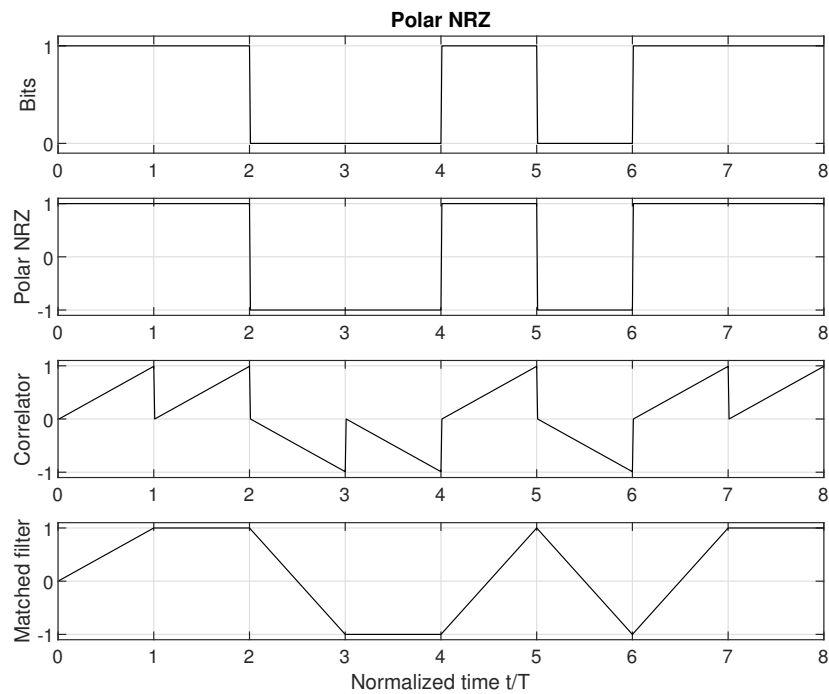
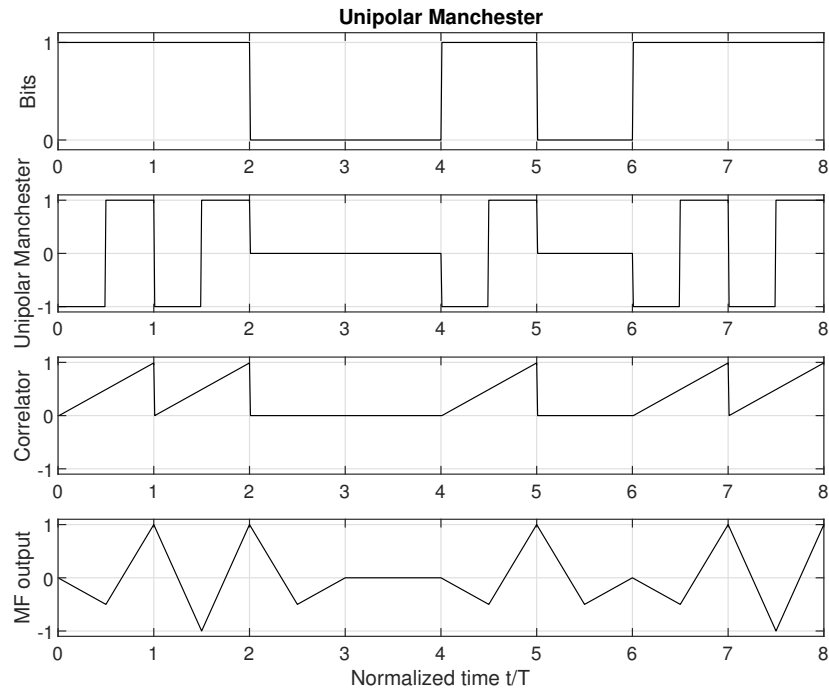


Solution of Homework # 3

1. Correlator and matched filter

(a) Results with ID 4321

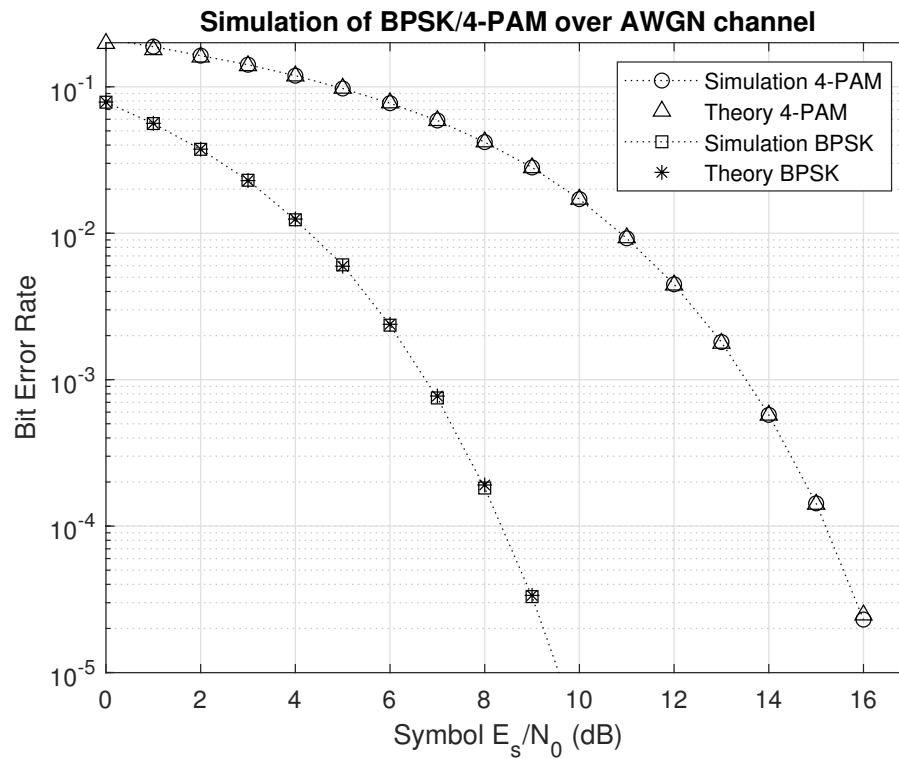




(b) We see that indeed correlator and matched filter outputs yield the same result when sampled at multiples of the pulse duration.

2. Simulation of BPSK and 4-PAM

(a) Simulation results:



- (b) The simulation results match remarkably close the theoretical expressions. While 4-PAM mapping does require 7 dB more energy than BPSK to achieve the same error performance, It carries twice the number of bits per signal.

3. Performance of M -PAM in terms of signal energy

