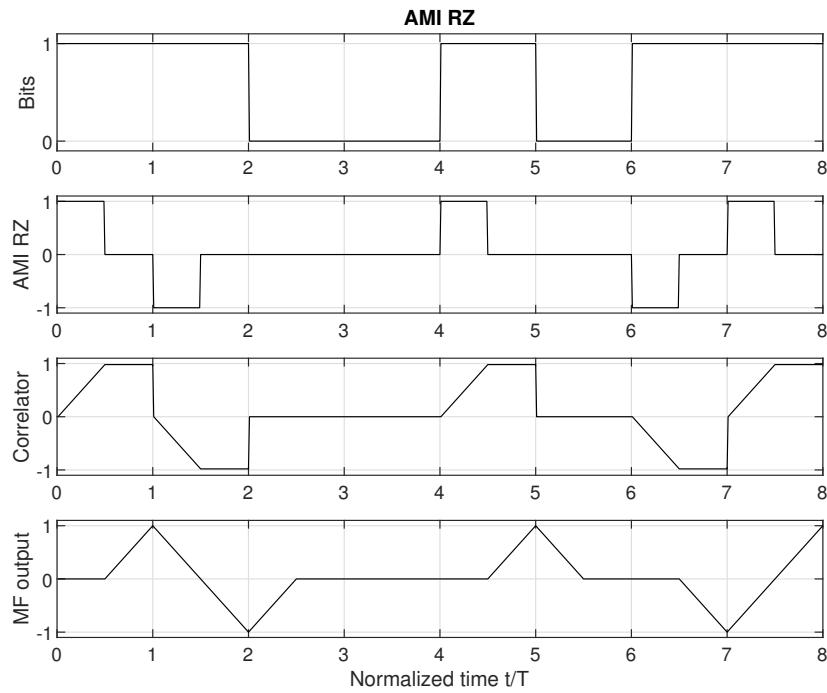
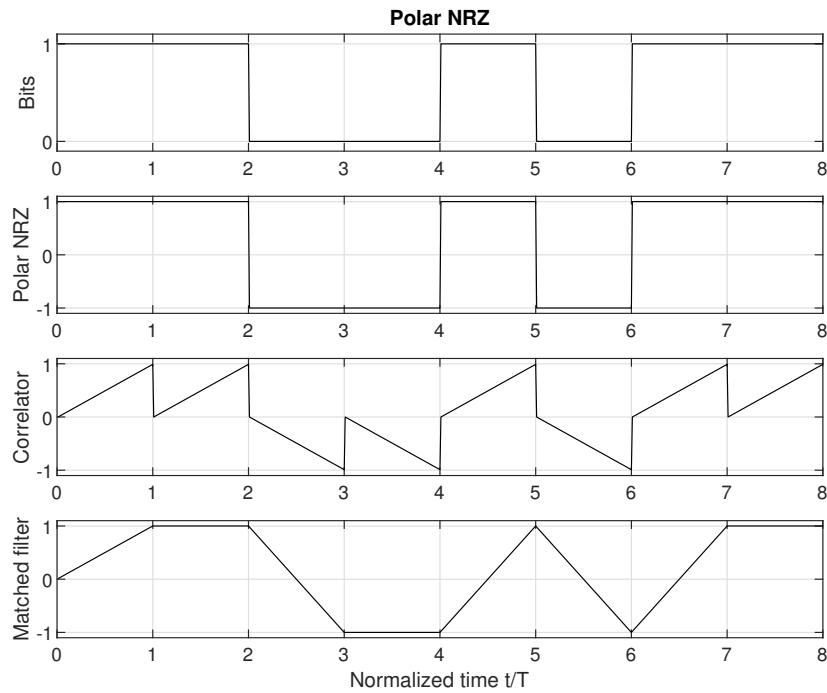
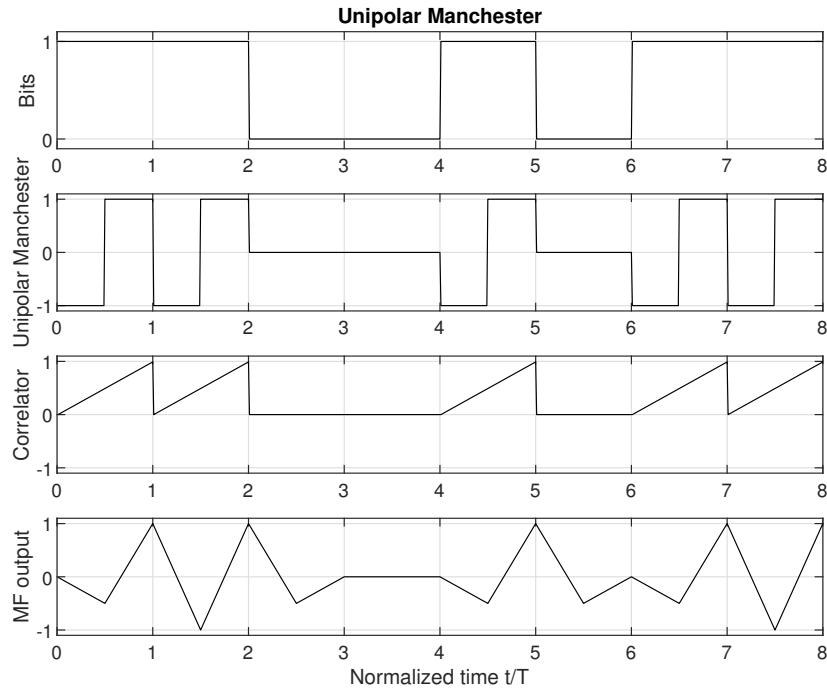


Solution of Homework # 3

1. Correlator and matched filter

(a) Results with ID 4321

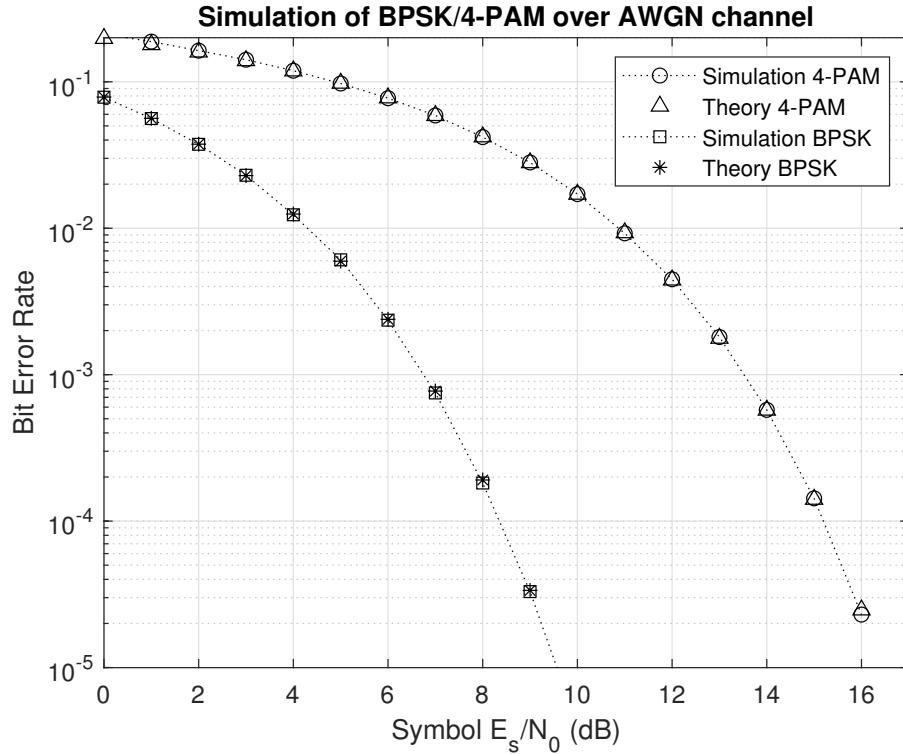




- (b) We see that indeed correlator and matched filter outputs yield the same result when sampled at multiples of the pulse duration.

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

