

The first commands of the code reset the command window. It does this by clearing the screen and memory while also closing any other open MATLAB windows. After the command window is reset, the user will receive a prompt in a dialog box requesting a binary bit sequence. The maximum number of bits that can be entered by the user is 52. After the user enter this input it will be saved, and another random bit sequence will be generated. It should be noted that this random bit sequence is the same length as the user's input. This random sequence will also be the Pseudo Random Noise (PSN) code. The PSN code and the user's input will then undergo the exclusive-or process. The result of this will generate a bit sequence that will be used to modulate the BPSK wave. At every point in the X-OR bit sequence where there is a change in bits, it changes the phase of the BPSK signal. When there is a HIGH to LOW (1 to 0) bit change, the BPSK signal will change to a positive sine wave until the next bit change. When there is a LOW to HIGH (0 to 1) bit change, The BPSK signal will change to a negative sine wave until the next bit change. The subplot function was used to display four different graphs in the same window. One plot displays the bit sequence entered by the user while another other shows the randomly generated PSN code. The remaining two graphs display the X-OR results and the changes to the BPSK signal with respect to time.