

[illegible]

```
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
```

```
received_Symbols = [];  
N_OFDM_Symbols = N_s/N_c;
```

```
% channel loop
```

```
for OFDM_Symbol = 1:1:N_OFDM_Symbols
```

```
    index = (OFDM_Symbol - 1)*N_c + 1;  
    current_OFDM_Symbol = y(index:1:index+N_c-1);  
  
    rayleighCoefficients = getChannelCoefficients(N_c, BW, channel_profile);  
    faded_OFDM_Symbol = current_OFDM_Symbol.*rayleighCoefficients;  
    noisy_OFDM_Symbol = awgn(faded_OFDM_Symbol, 30);  
    equalized_OFDM_Symbol = noisy_OFDM_Symbol./rayleighCoefficients;  
    received_Symbols = [received_Symbols equalized_OFDM_Symbol];
```

```
end
```

```
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
```

```
% demodulation
```

```
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
```

```
x_s_received = qamdemod(received_Symbols, M);
```

```
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
```

```
% symbols to bits
```

```
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
```

```
binary_received = zeros(1, length(x_b));  
for i=1:1:N_s  
    temp = de2bi(x_s_received(i), bps);  
    binary_received((i-1)*bps+1:1:(i-1)*bps+bps) = temp;
```

```
end
```

```
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
```

```
% results
```

```
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
```

```
BER = sum(xor(binary_received,x_b))/N_b
```

```
color = "yellow";  
colors = repelem(color, N_s);
```

```
scatfig = scatterplot(received_Symbols);  
xlim([-bps bps])  
ylim([-bps bps])  
title("Scatter Plot of Received Symbols")  
grid on;  
ax = gca;  
ax.LineWidth = 2;
```

Index exceeds the number of array elements (359424).

Error in ofdm (line 98)

```
    temp = de2bi(x_s_received(i), bps);
```

