

**Function Block Parameters: AWGN Channel**

AWGN Channel (mask) (link)

Add white Gaussian noise to the input signal. The input and output signals can be real or complex. This block supports multichannel input and output signals as well as frame-based processing.

When using either of the variance modes with complex inputs, the variance values are equally divided among the real and imaginary components of the input signal.

**Parameters**

Initial seed:

Mode:

SNR (dB):

Input signal power (watts):

**Function Block Parameters: Rectangular QAM Modulator Base...**

Rectangular QAM Modulator Baseband (mask) (link)

Modulate the input signal using the rectangular quadrature amplitude modulation method.

The M-ary number value must be an integer power of two.

The input can be either bits or integers. In case of sample-based bit input, the input width must equal the number of bits per symbol. In case of frame-based bit input, the input width must be an integer multiple of the number of bits per symbol.

For sample-based integer input, the input must be a scalar. For frame-based integer input, the input must be a column vector.

The input can be either binary-mapped or Gray-mapped into symbols.

**Parameters**

M-ary number:

Input type:

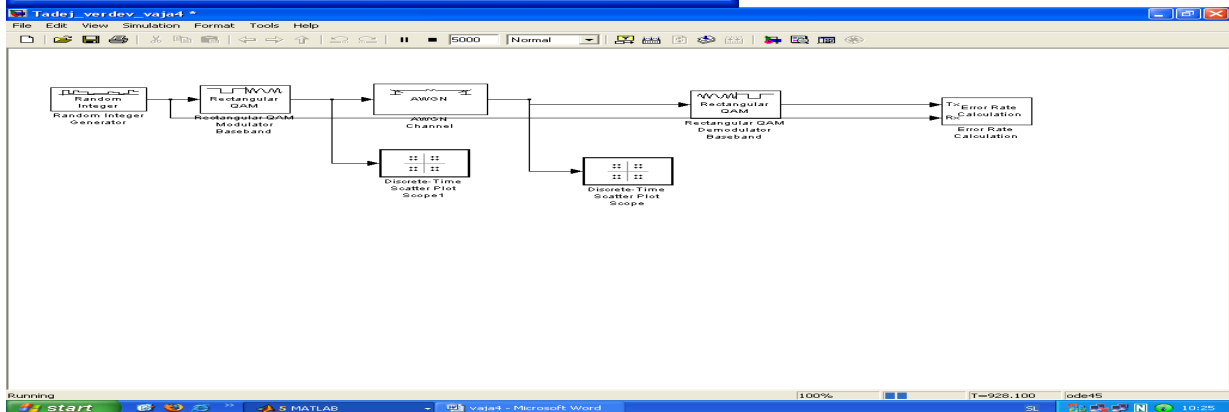
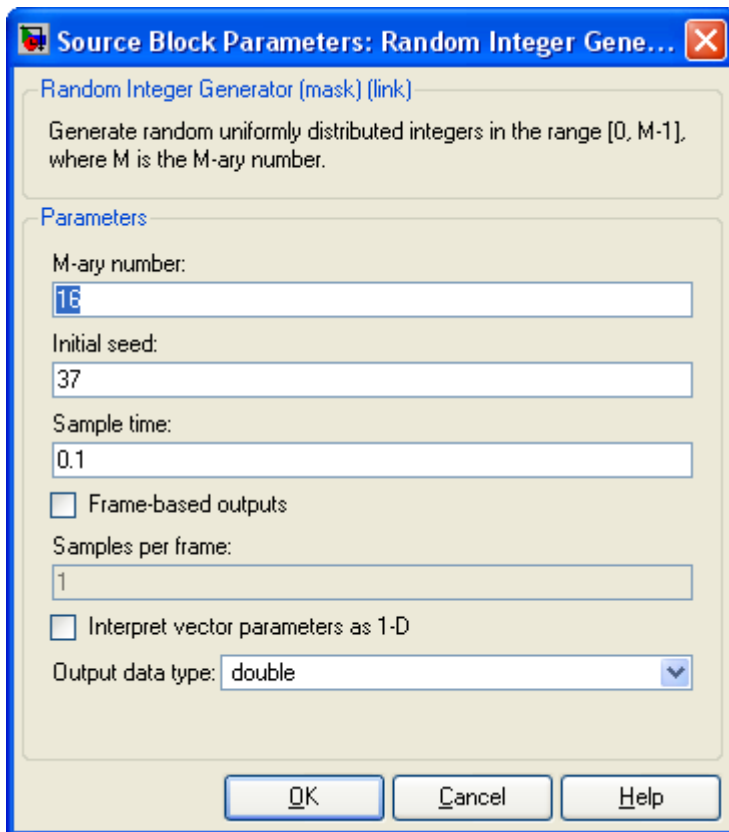
Constellation ordering:

Normalization method:

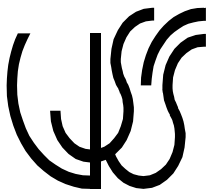
Peak power (watts):

Phase offset (rad):

Output Data type:



**Šolski Center Velenje**



*Višja strokovna šola*  
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**Trg mladosti 3**  
**3320 Velenje**

# ***Prenosna elektronika***

## ***POROČILO LABORATORIJSKIH VAJ***

### ***VAJA 4***

#### ***Digitalni modulacijski postopki***

#### ***( simulink )***

Priimek in ime: D. M.

Skupina: A

Predmet: PRE

2007/08

#### ***Besedilo naloge:***

V Matlabu odprite orodje simulink in z njegovo pomočjo modulirajte proces, ki generira naključni niz podatkov in ga modulira s 16-QAM modulacijo. Signal nato prenesite preko šumnega kanala in ga izrisujte na konstelacijskem diagramu.

#### ***IZGLED DIAGRAMA V SIMULINKU***

***NASTAVITVE***

## **GRAFIČNI PRIKAZ REZULTATOV**

**10 dB**

**20 dB**



**30 dB**

**100 dB**

**Rezultati z vstavljenim demodulatorjem**

**100 dB ( pred kanalom)**

**(po kanalu)**

**10 dB (pred kanalom)**

**(po kanalu)**

Opazimo lahko da večje ko je razmerje med S/N, bolj so točke zgoščene in postajajo manj razpršene.