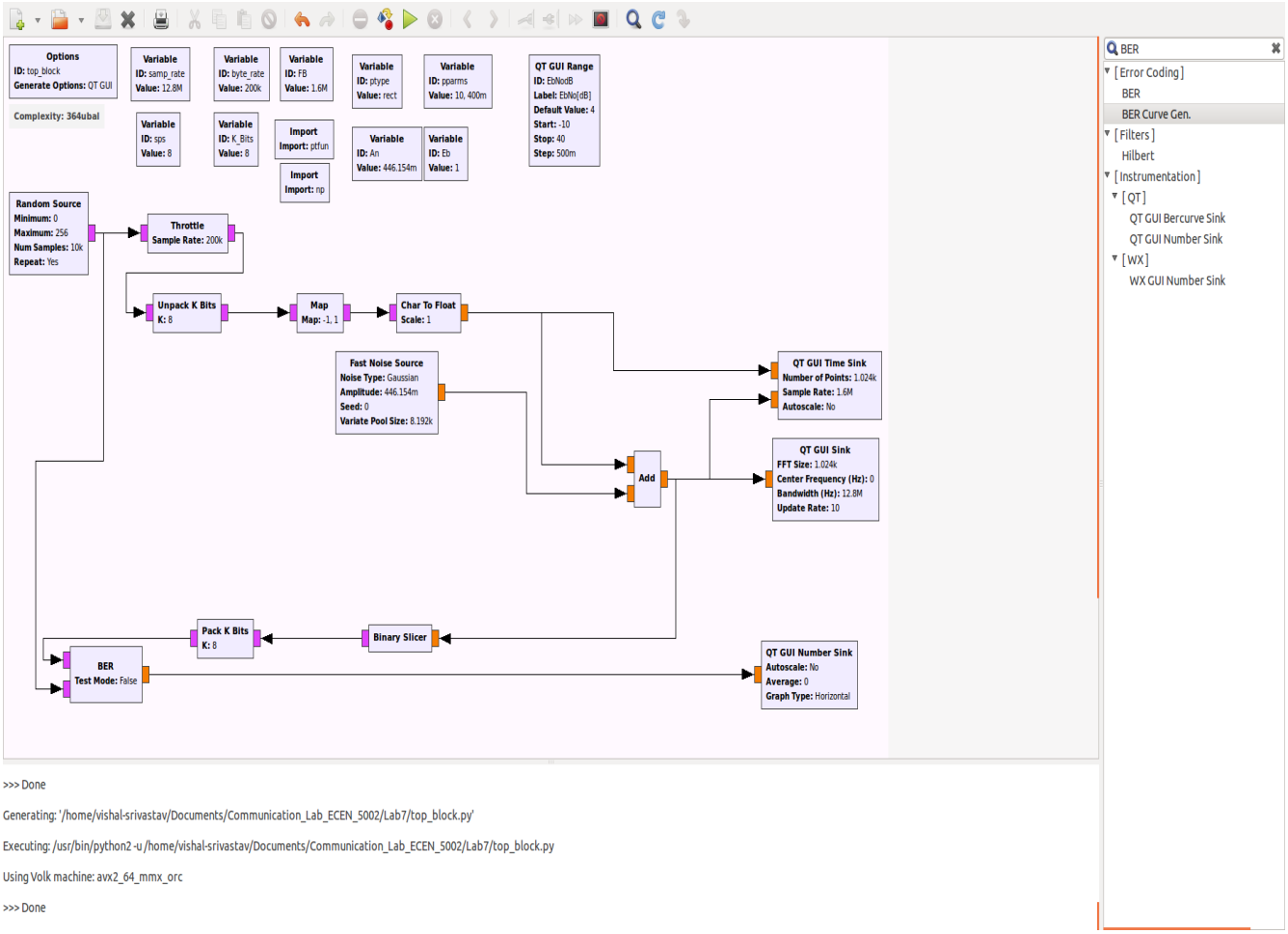
Lab 07, Experiment 1(e)

Faster Bit Error Measurements in GNU Radio.

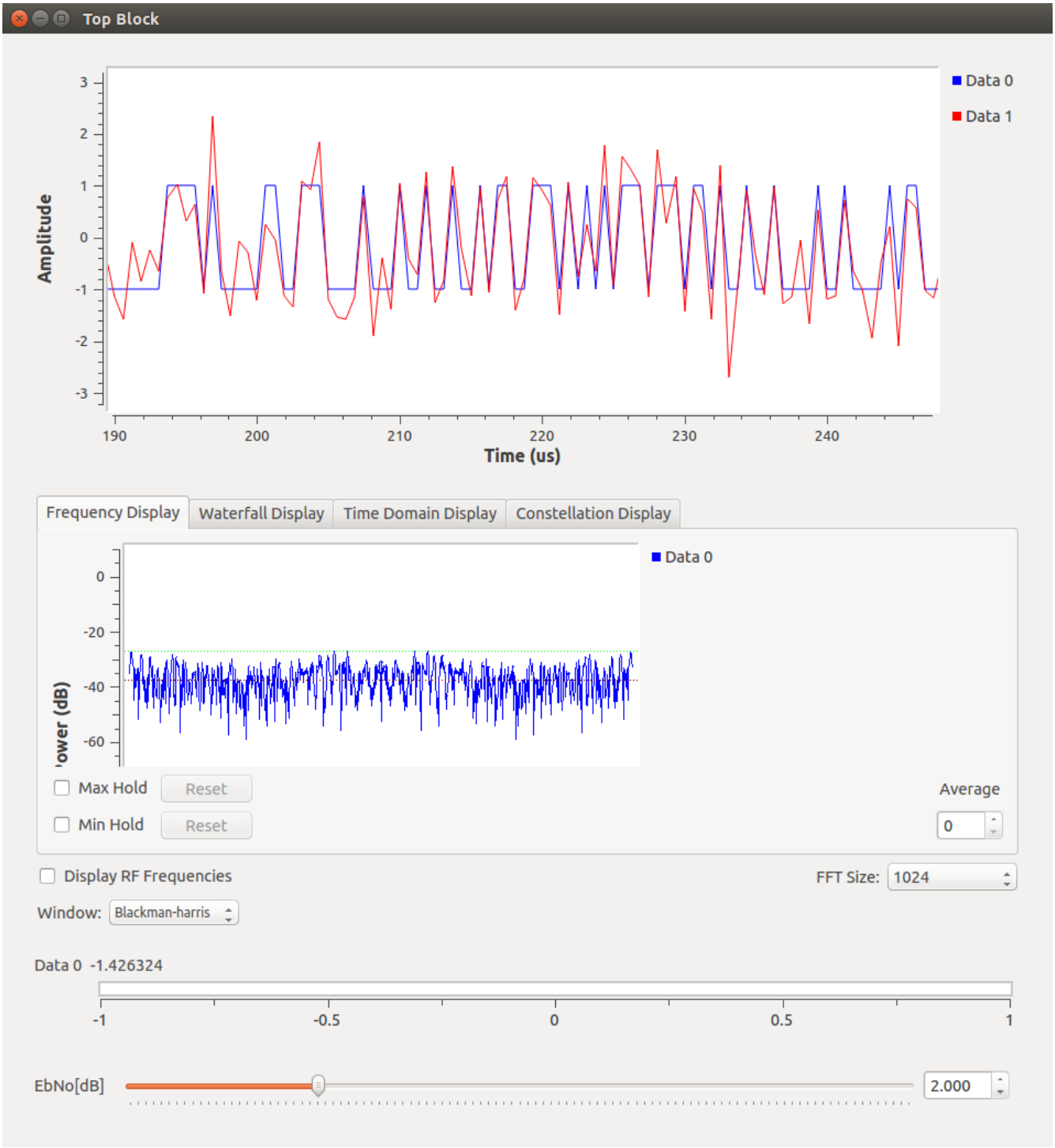
We have to calculate BER for both polar and unipolar signal.
Below is the flow-graph to calculate the CER in faster way as compared to last question.




```
>>> Done

Generating: '/home/vishal-srivastav/Documents/Communication_Lab_ECEN_5002/Lab7/top_block.py'

Executing: /usr/bin/python2 -u /home/vishal-srivastav/Documents/Communication_Lab_ECEN_5002/Lab7/top_block.py

Using Volk machine: avx2_64_mmx_orc

>>> Done
```

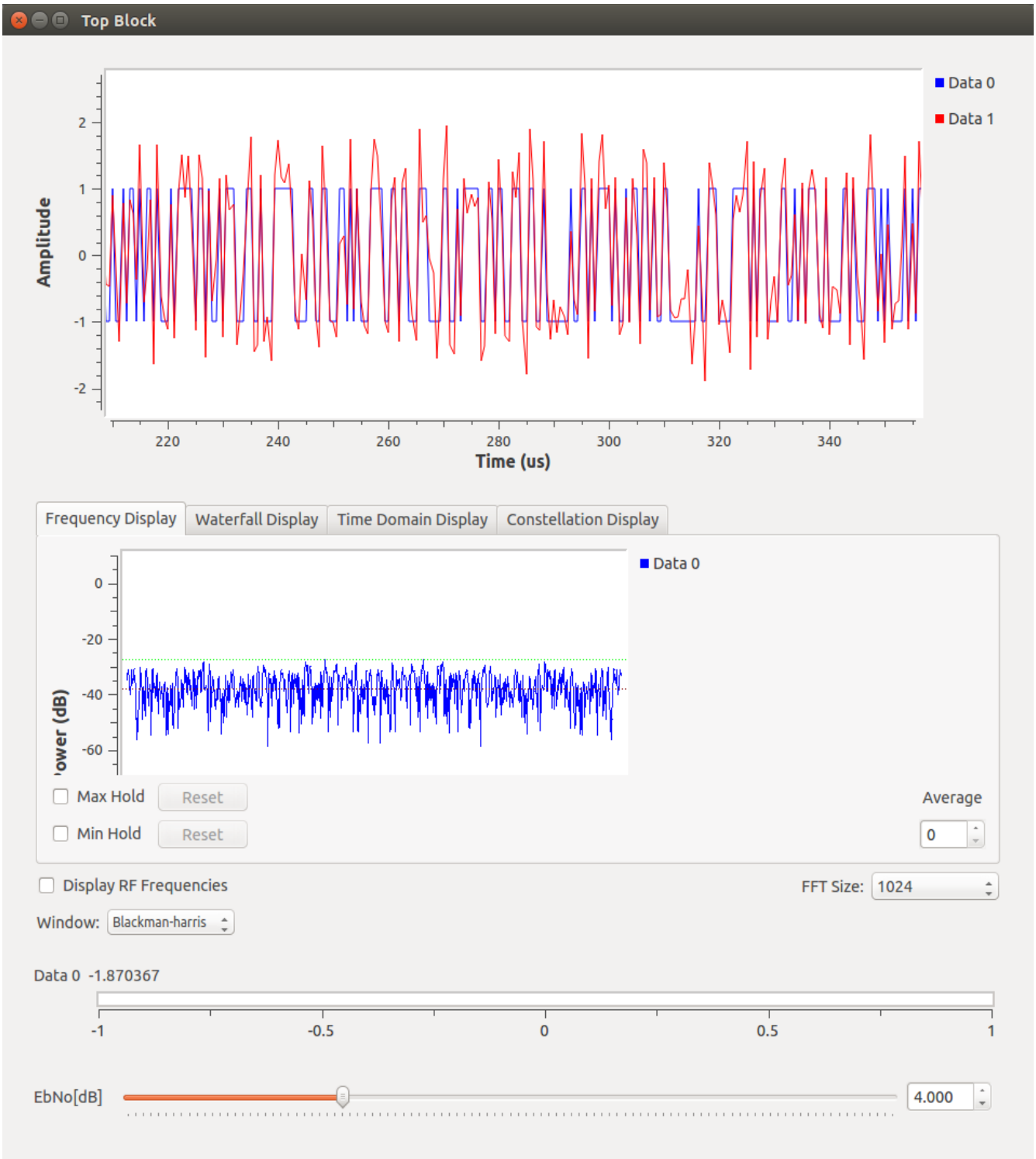
Polar Signal

SNR = 2 dB



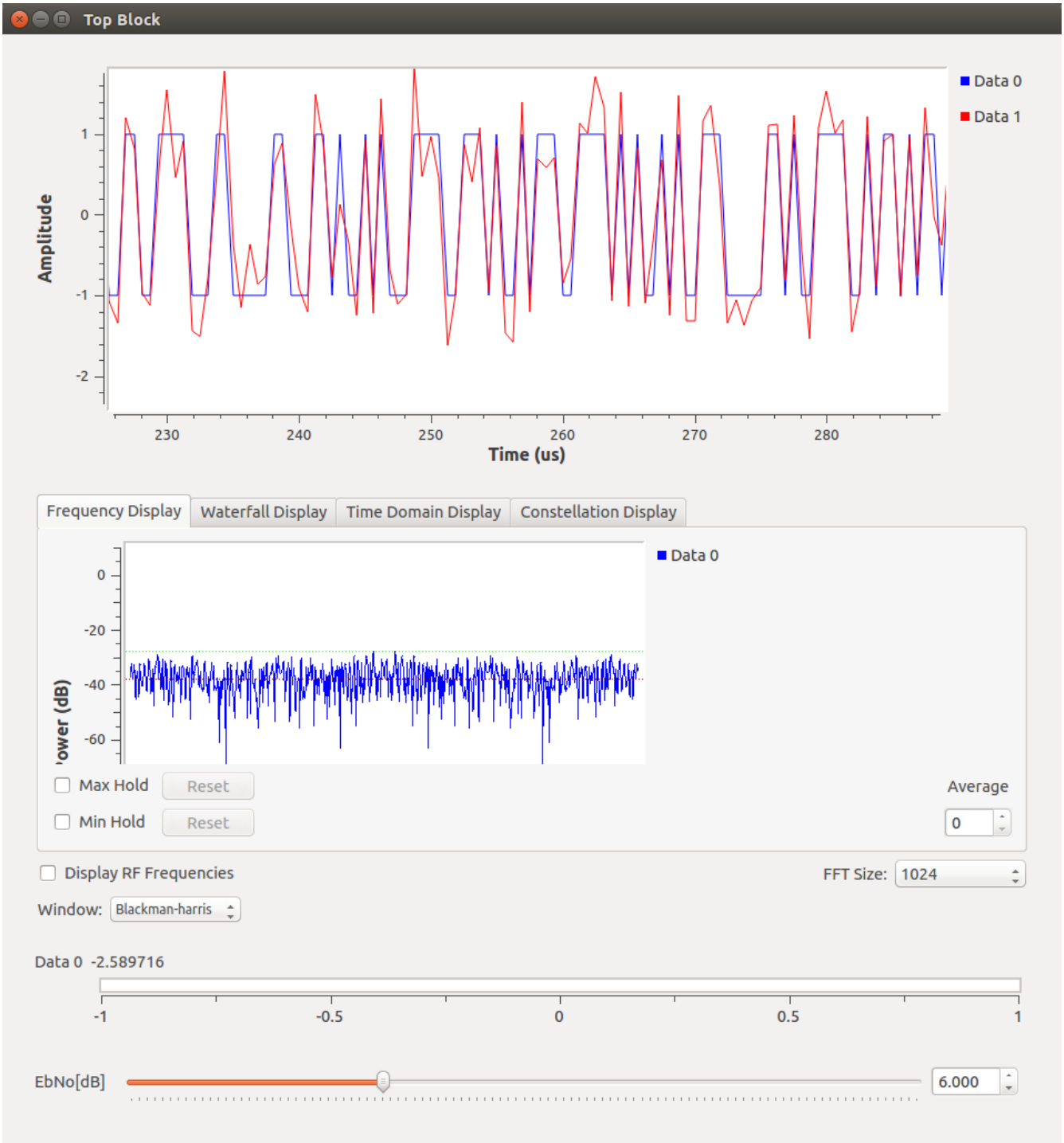
The BER for SNR = 2dB is (10)^(-1.4263) = 0.037471

SNR = 4 dB



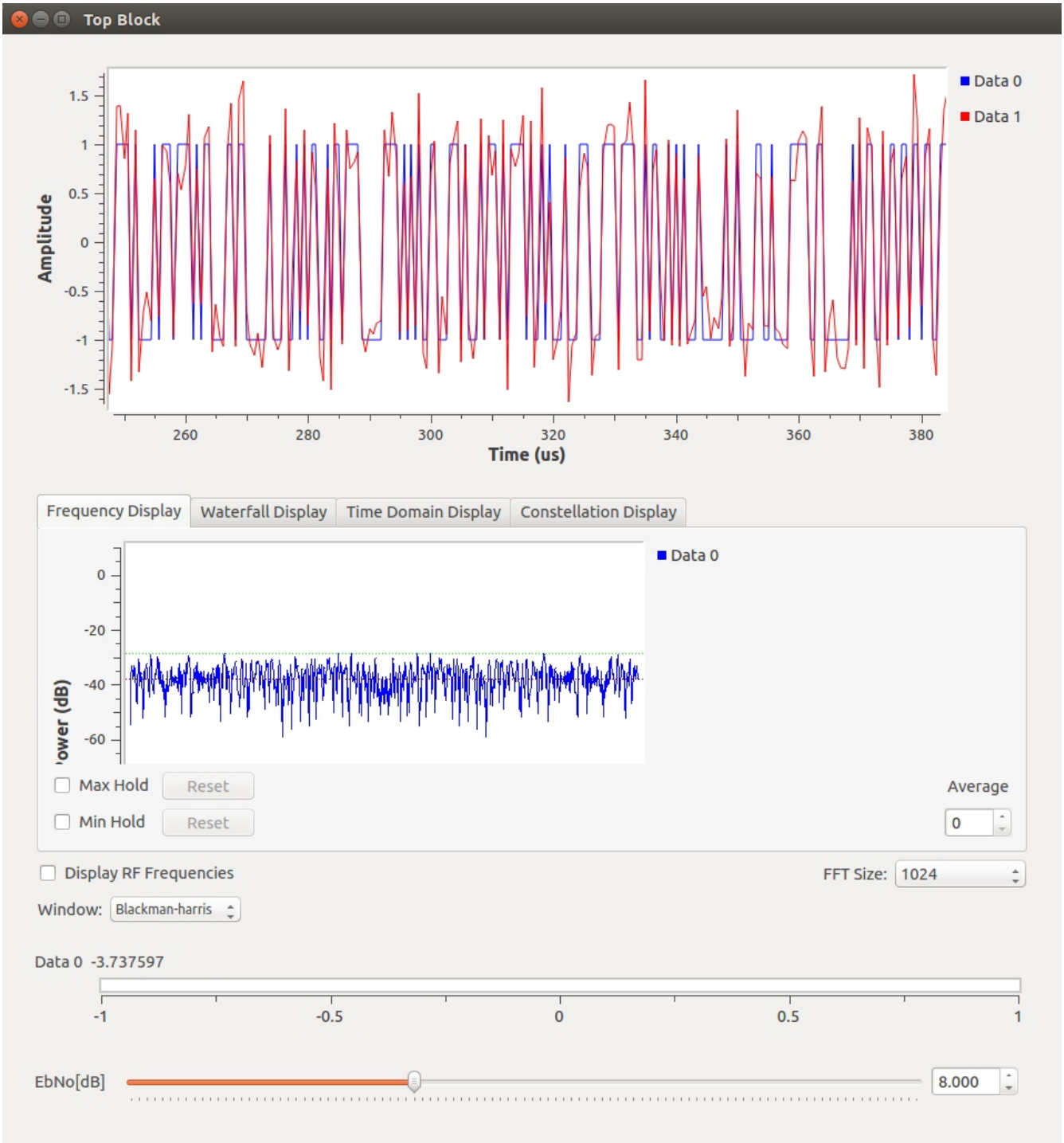
The BER for SNR = 4 dB is (10)^(-1.87036) = 0.013478

SNR = 6 dB



The BER for SNR = 6 dB is (10)^(-2.5897) = 0.002572

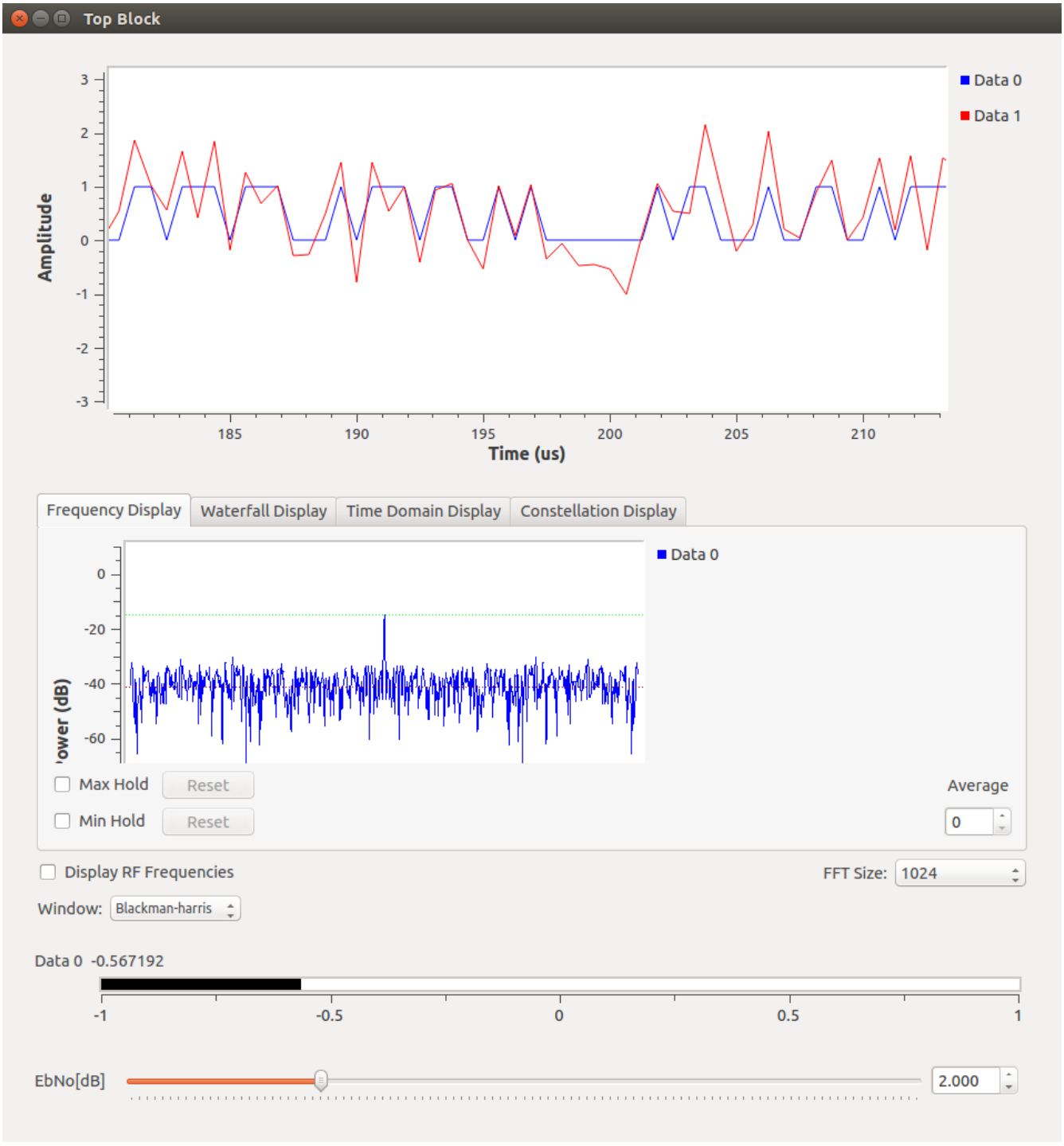
SNR = 8 dB



The BER for SNR = 6 dB is (10)^(-3.737597) = 0.00018298

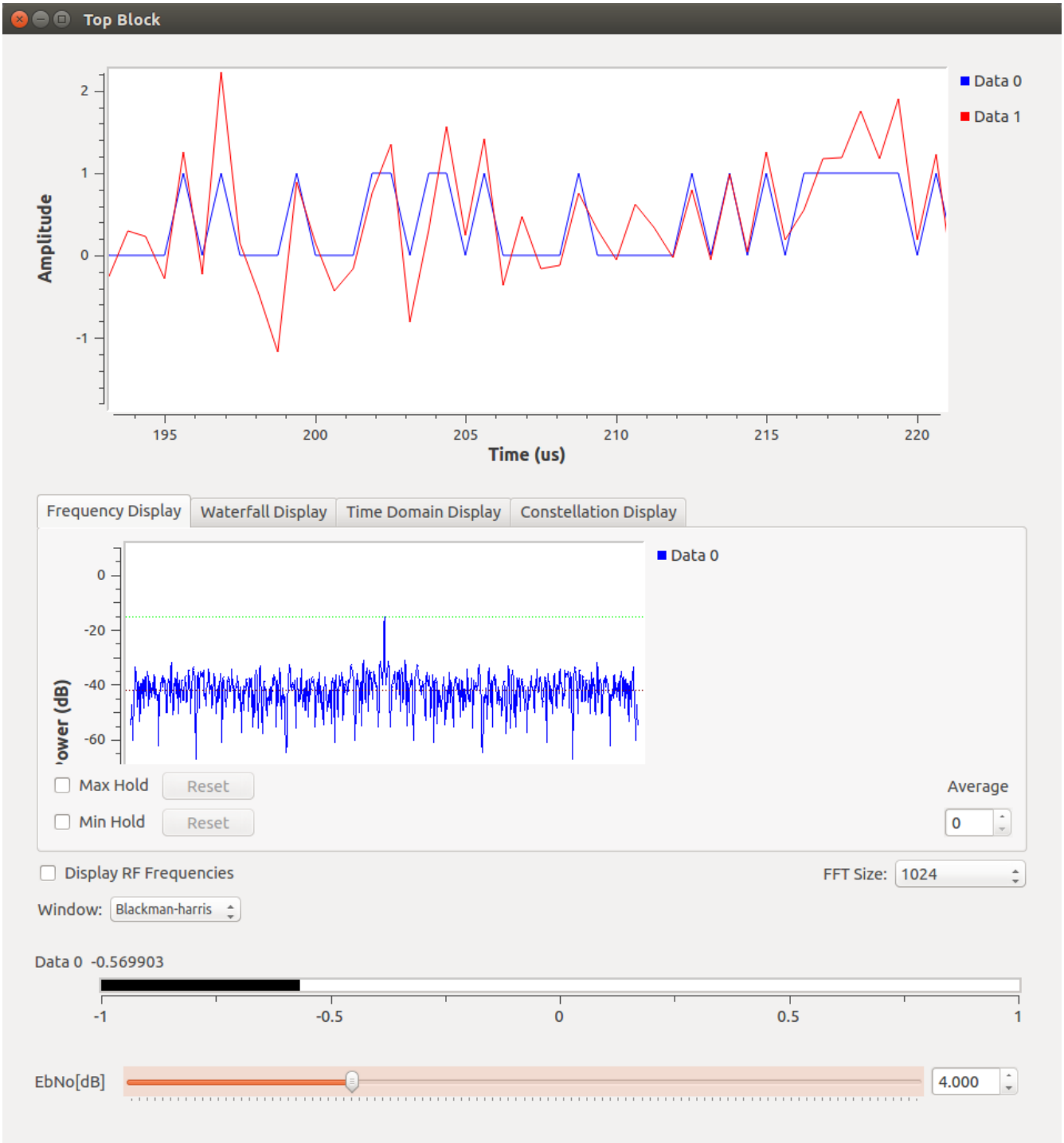
Unipolar

SNR = 2 dB



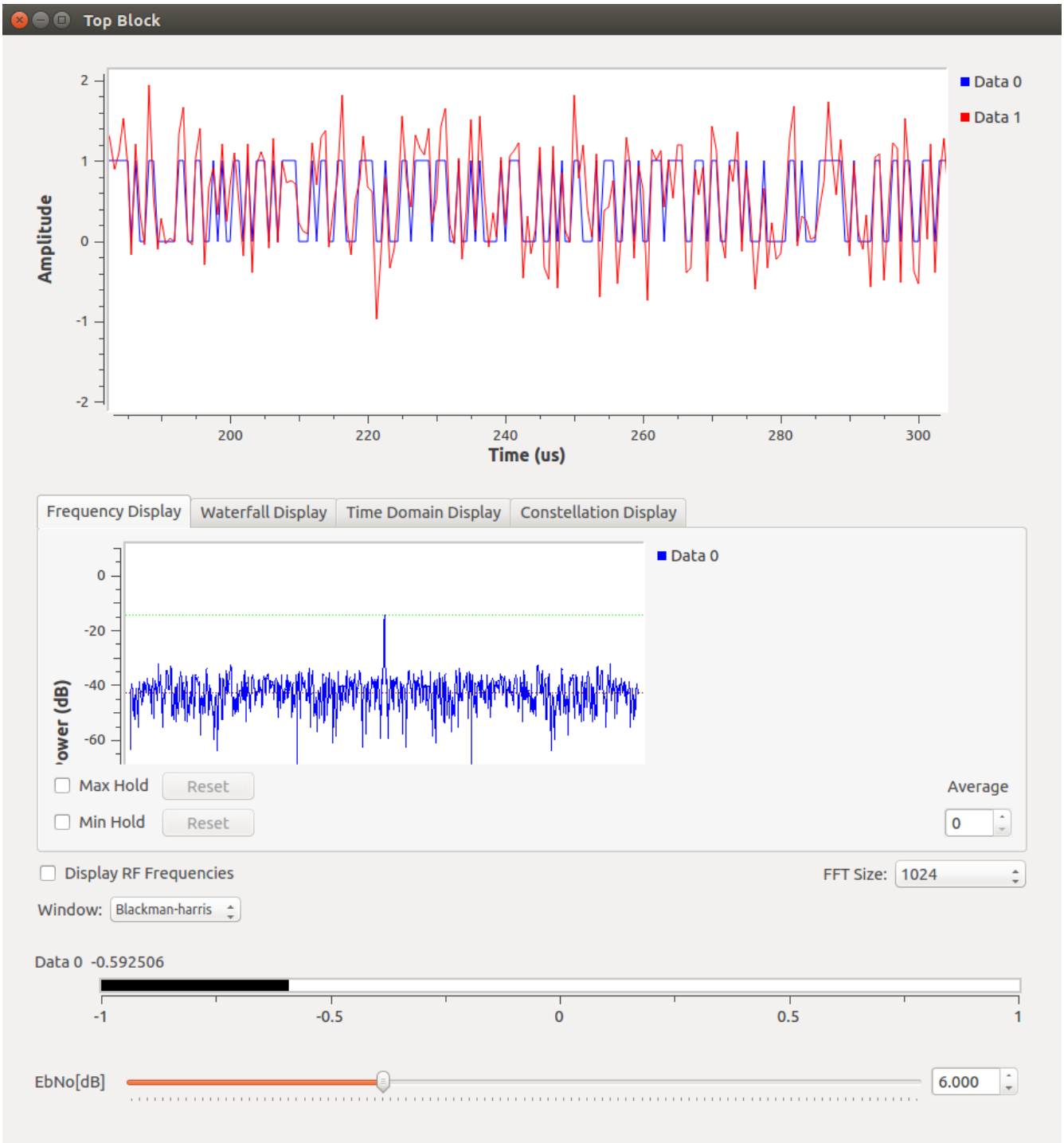
The BER for SNR = 2 dB is (10)^(-0.567192) = 0.270899373

SNR = 4 dB



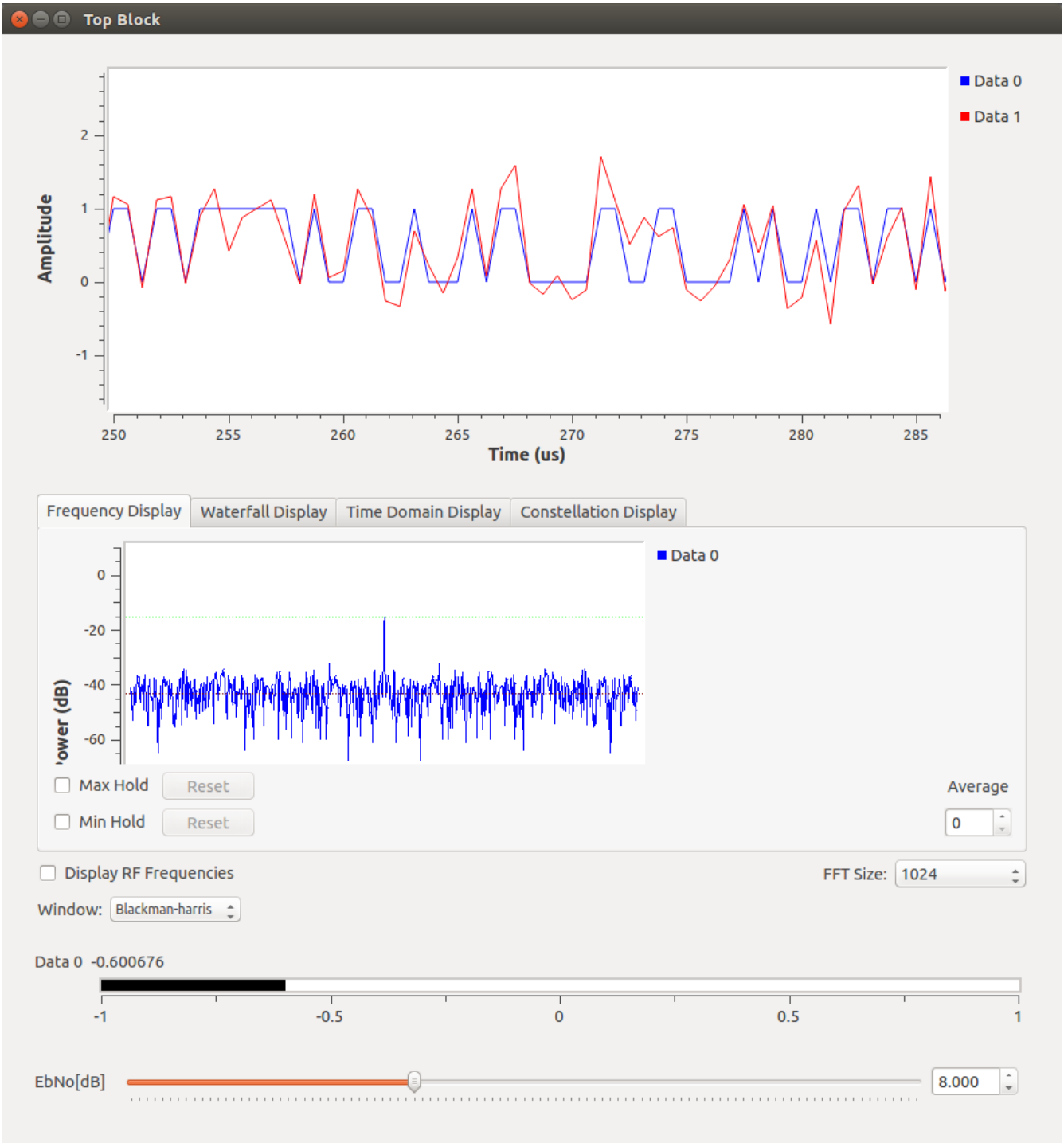
The BER for SNR = 6 dB is (10)^(-0.58782) = 0.258333067

SNR = 6 dB



The BER for SNR = 6 dB is (10)^(-0.592506) = 0.255560659

SNR = 8 dB



The BER for SNR = 6 dB is (10)^(-0.600676) = 0.25079796