

In the present work we study comparison of basic public key encryption algorithms – RSA, Rabin and ElGamel method. We derive theoretic complexity of encrypting / decrypting of one block and we derive an expected model of its behavior with the key of double size. We also take practical measurements of speed of each algorithm using keys sized 64 – 4096 bits and we statistically analyze the results. We also mention special cases of some algorithms and discuss the advantages and disadvantages of their practical usage. At the end of this thesis we make a comparison of the speed of algorithms and we also compare the measured data with theoretical hypothesis.