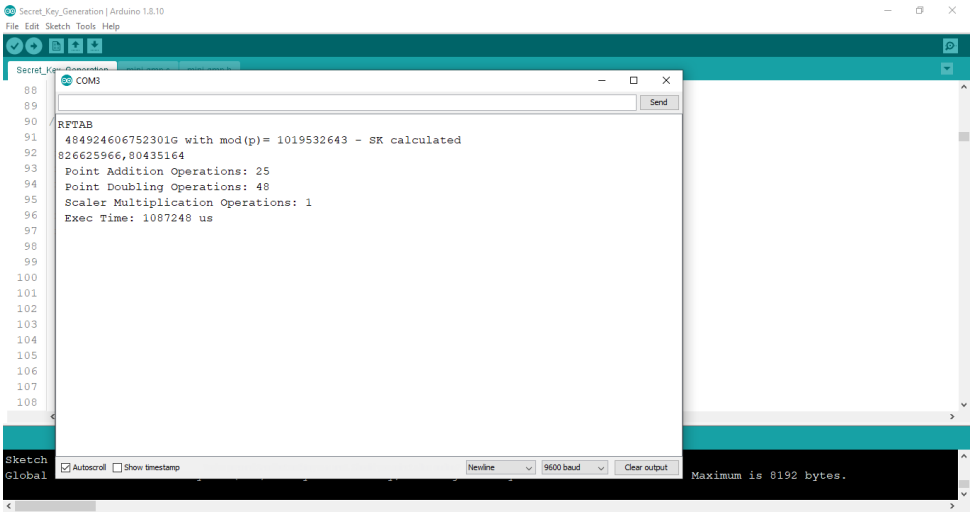
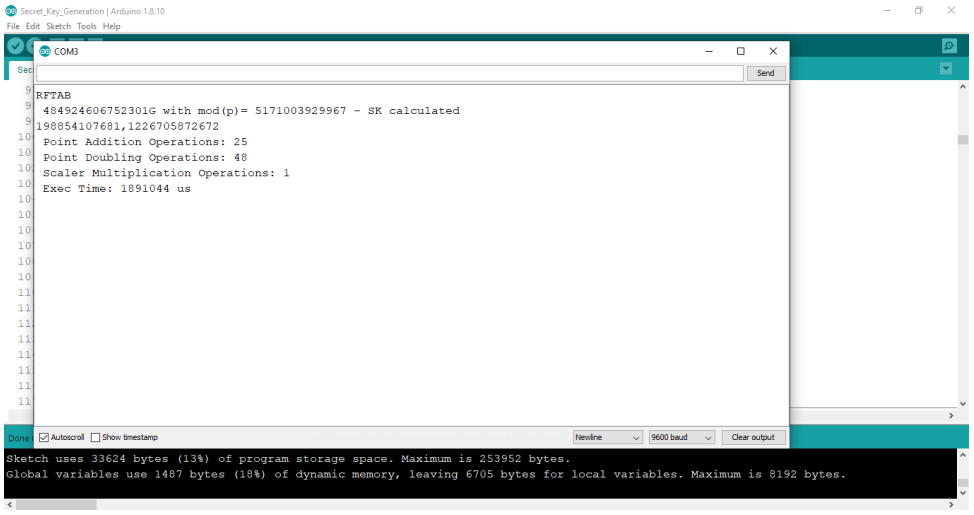
Appendix A

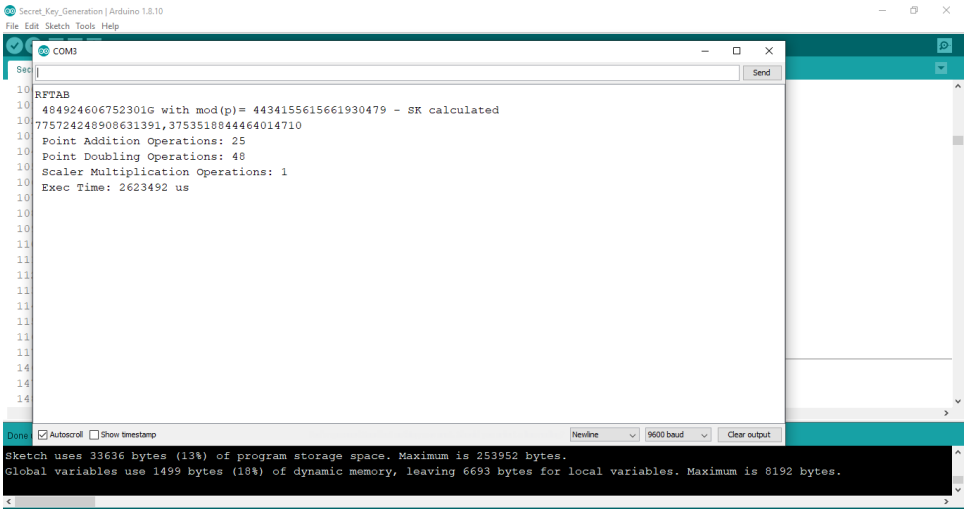
Cryptographic Performance States in the Presented End-To-End Encryption



(a) - S_k generation at mod(1019532643)



(b) - S_k generation at mod(5171003929967)

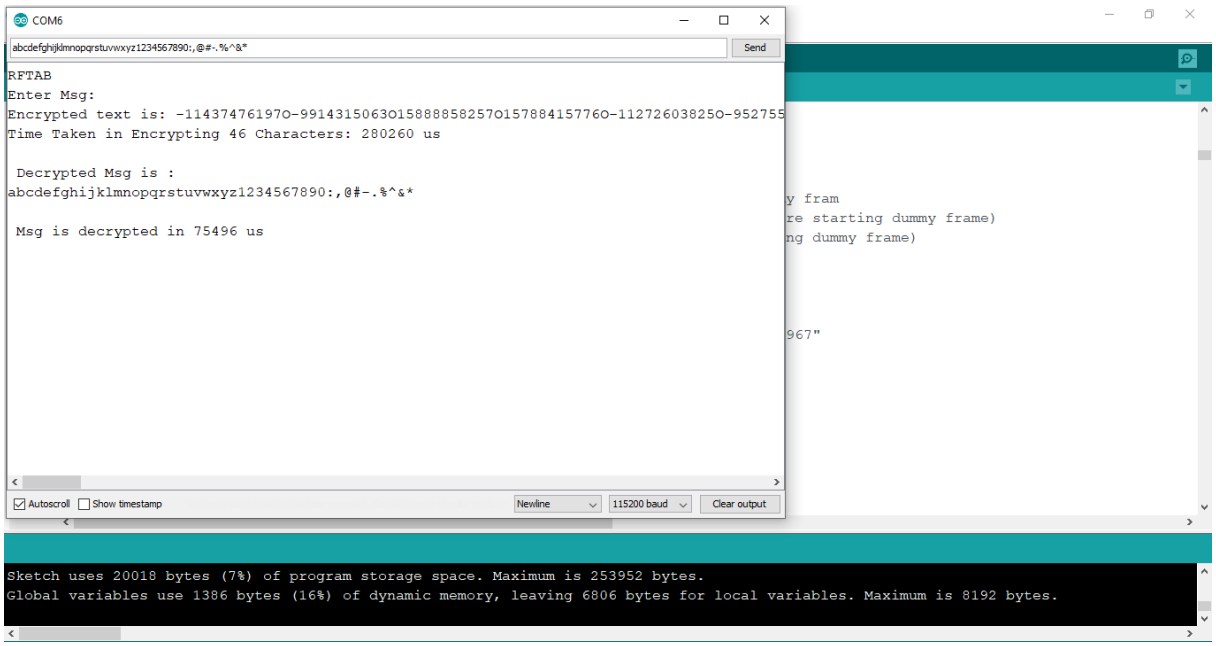


(c) - S_k generation at mod(4434155615661930479)

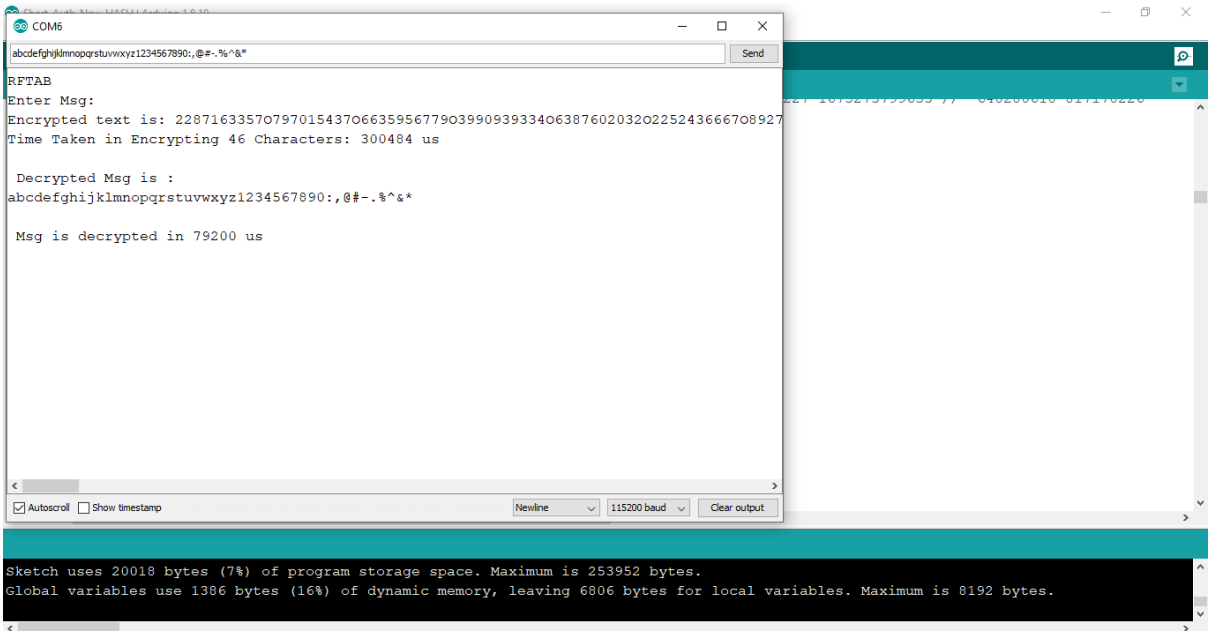
Figure 7.1 : S_k generation during experiments (a), (b) and (c)

Figure 7.1 shows experiments of different mod(p) value used to calculate the secret keys which will further be used to encrypt the current session. These secret keys will be renewed after successful mutual authentication for single session.

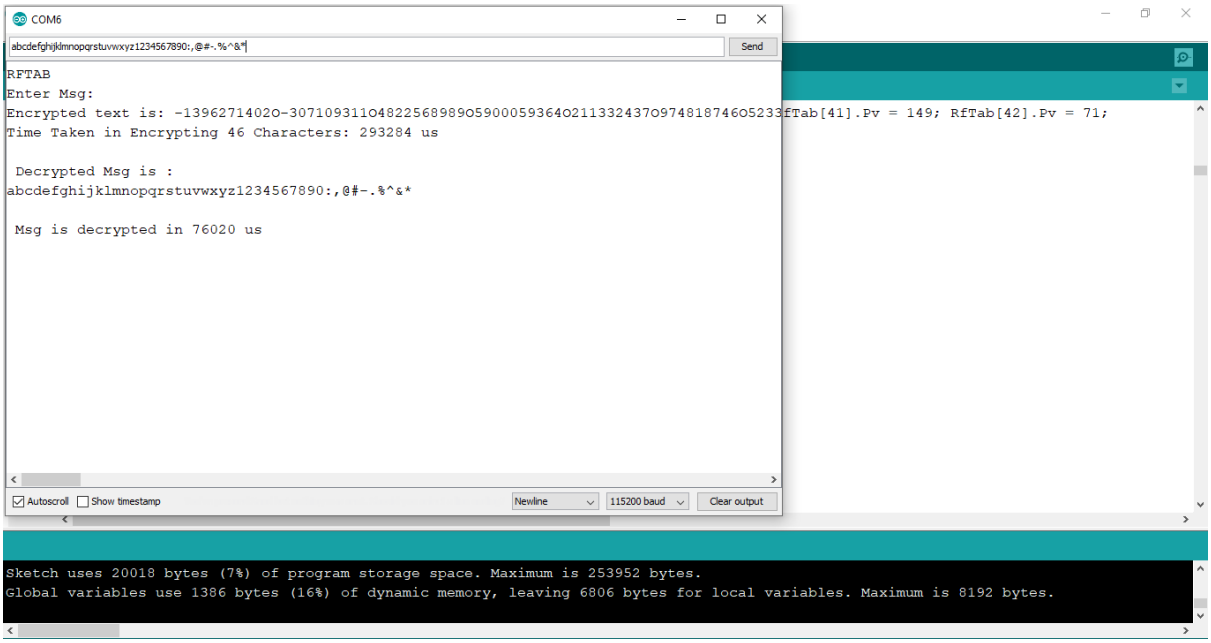
Avalanche Effect Calculation Of 46 ASCII Characters in The Presented Scheme



(a)- Avalanche effect for 32-bit S_k value for mod(1019532643)



(b) - Avalanche effect for 43-bit S_k value for mod(5171003929967)



(c) - Avalanche effect for 62-bit S_k value for mod(4434155615661930479)

Figure 7.2 : Avalanche effect in the presented end-to-end encryption (a),(b) and (c)

Figure 7.2 shows avalanche effect (time taken for encryption and decryption) of 46 ASCII characters in different mod(p) values. These secret keys will be renewed after successful mutual authentication for single session.