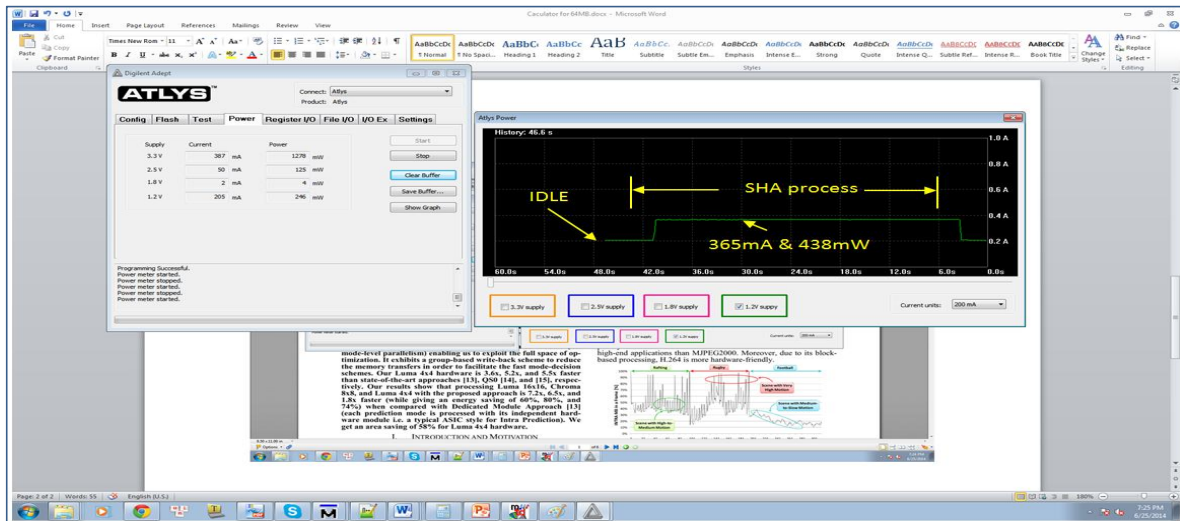Fig 1st : The model of Encryption and Authentication for a Video file in the Embedded System

2 - SHA-512 processing:

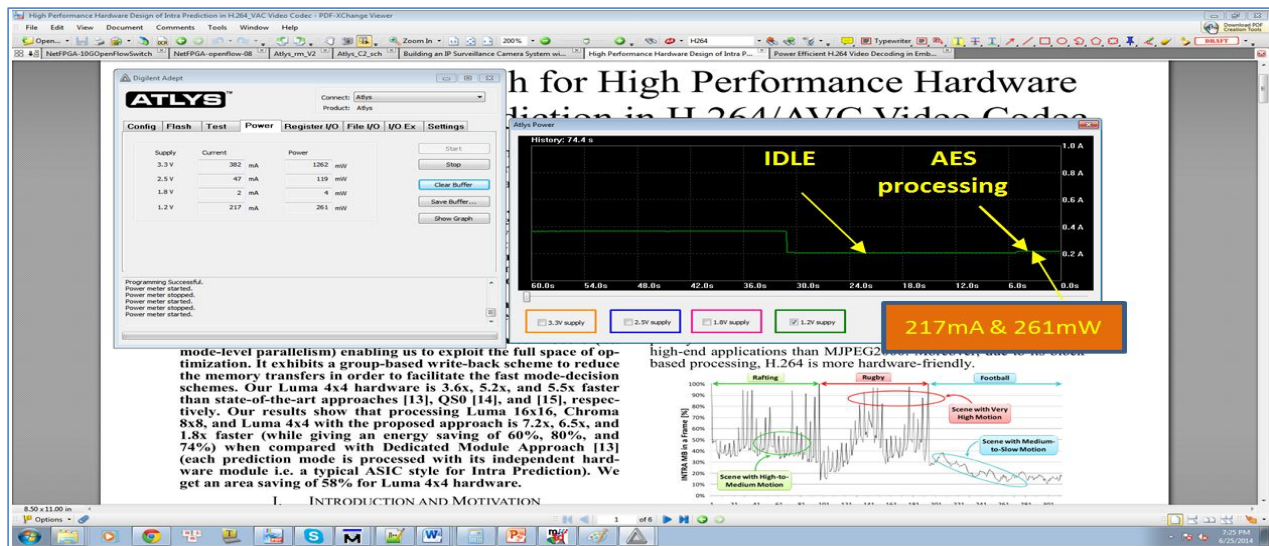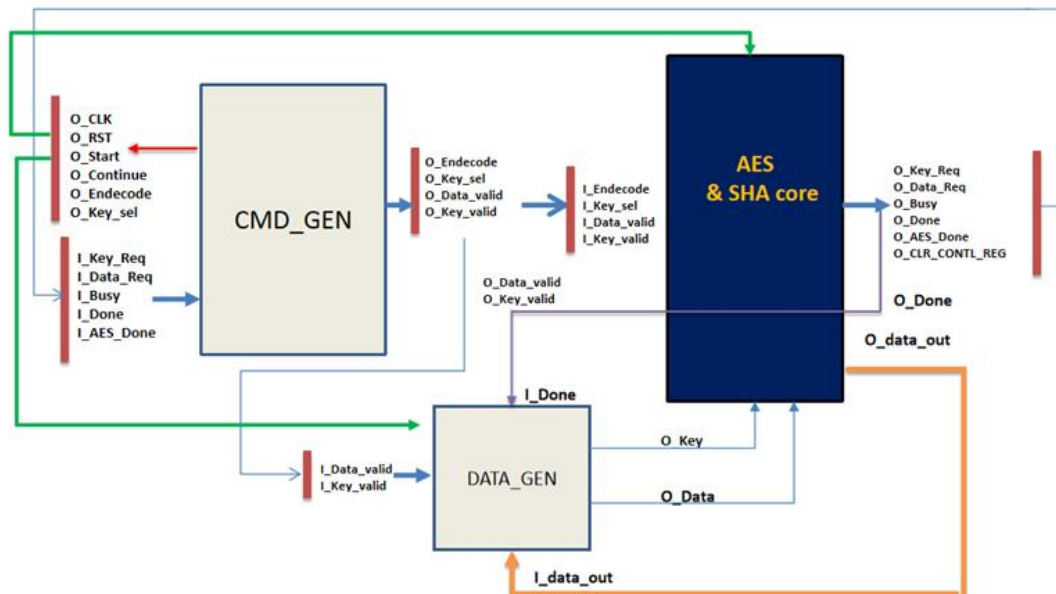Fig 2nd : Amp and Walt Values for SHA-512 processing

3 - AES-256 processing

Fig 3rd : Amp and Walt values for AES – 256 processing

Power consumption for 64 M-Byte = 2.2185 Joule

Chip energy consumption AES & SHA for 64MBs = 2.2185 + 0.01681 = 2.23531 Joule

Required total time = 0.05125s + 8.5s = 8.55125s (with Spantan6 + System Clock 100Mhz)

Testbenh Synthesiable