**ChaCha20 High-Level Block Diagram and Flow Chart**

**High-Level Block Diagram (Architecture View)**

+----------------+ +----------------------+ +-------------------+

| User Input | --> | Key/Nonce/Counter | --> | Initial State |

| (text/key) | | Preparation | | Preparation |

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| ChaCha20 Core Block |

| +----------------+ +-----------------------------+ |

| | Column Rounds |--> | Diagonal Rounds | |

| | (Quarter Rounds)| | (Quarter Rounds) | |

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| Generate | --> | Key Stream |

| Final State | | (Add initial+final)|

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| Cipher Text using XOR | --> | Output Formatter |

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**High-Level Flow Chart**

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| Start Program |

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| Display Menu Options |

| (Cipher Message, etc.) |

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| Get User Inputs |

| (Text, Key, Nonce, etc.) |

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| Convert Key/Counter/Nonce |

| to Correct Hex Format |

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| Build Initial State Array |

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| Perform ChaCha20 Block Function |

| (10 Rounds of Quarter-Rounds) |

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| Generate Key Stream |

| (Initial + Final State Addition)|

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| Encrypt/Decrypt the Input Text |

| (XOR Text with Key Stream) |

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| Format Output Text |

| (ASCII/Hex) |

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| Display Output |

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| End or Repeat |

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