

Specifications

<p>Tested and Verifiable on FPGA Altera DE5</p> <ul style="list-style-type: none"> • FPGA 100 MHz • 7 clock cycles • Latency 70 nanoseconds • 14 MHz Throughput • 0.5 Gigabytes per second • SLOC – less than 500 	<p>Next-Generation designed for Application Specific Integrated Circuit (ASIC)</p> <ul style="list-style-type: none"> • 1000 MHz • 4 clock cycles • Latency 4 nanoseconds • 2500 MHz Throughput • 32.768 Gigabytes per second 	<p>To put these performance numbers in perspective:</p> <ul style="list-style-type: none"> • Intel's fastest AES software encryption (using a hardware accelerator chip running at 3.33 GHz) requires 5.7 cycles/BYTE to encrypt at 0.5 GB/sec • Using the same implementation, QwyitChip™ would encrypt at 110 GB/Sec. This is over 200 times faster! • And...Provably Secure (mathematically, not bit-fiddled like AES in CBC mode)
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- **FPGA architecture, demos available**
- **Verilog code available, Amazon AWS Cloud available**
- **QwyitCipher™ is 4 Qwyit™ primitive instructions: MOD16, Combine, Extract, XOR**
- **Each instruction is a *single machine cycle***
- **FPGA space consideration is the only design constraint: key size can vary up to available space**
- **QwyitChip™ can process the 'gate width' in 4 cycles – if this is 1KB, then QC™ encryption/decryption is 4 cycles/KB**
- **QwyitChip™ is the world's fastest Encryption Chip – by several orders of magnitude**
- **Multiple FPGAs on a single 'Encryption Processor/Chip' produce unheard of speed**
 - Based on the new [Achronix Semiconductor 1.5GHz FPGA](#), a 1.5GHz Chip with a key size of 1MB, **would encrypt/decrypt 375TeraBytes per second**
 - 1.5GHz is 1,500,000,000 cycles/second
 - QwyitChip™ takes 4/cycles per key size
 - A 1MB key size would encrypt 375 million times per second (1,500,000,000/4)
 - 1,000,000 Bytes times 375,000,000 times per second is 375,000,000,000,000 bytes/sec
 - *The 15TB Library of Congress would encrypt in Four One Hundredths of a Second (.04 sec)*
- **QwyitChip™ is 100% provably secure and already Quantum Safe!**
- **QwyitSDK™ operates identically in Software – speed constrained only by programming/buffer sizes**
- **Q-ANON™ provides *one-step* programming for QwyitChip™/QwyitSDK™ instant operation: Get A Key, Call QC™!**