

# CUDA Polynomial Evalutation

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## 1 Modeling

### 1.1 Question: Measure PCI-express latency. (That is the time for an array of size 1.)

**Answer:** The latency is approximately 0.1 seconds, or 100 milliseconds

### 1.2 Measure PCI-express Bandwidth. (The initial memory copy for different size of the array.)

**Answer:** The code is able to move roughly 32 gigabytes per second, using 8 streams. Using more then 8 streams had no effect on my performance.

### 1.3 Measure GPU memory bandwidth. (Exclude memory copies and use a low degree polynomial.)?

**Answer:** By using a 4 Gigabyte input array, I am able to evaluate the polynomial in 0.0135 seconds for an approximate bandwidth of: 294.18 GB/s

### 1.4 Measure GPU flops rating. (Exclude memory copies and use a high degree polynomial.)

**Answer:** By using an input array of 14 GB, and a polynomial of size 30,000, I am able to achieve approximately 6,500 GFlops