

PQ-NTOR vs Traditional NTOR: Comprehensive Comparison
(Based on 120 Tests Across 12 NOMA Topologies with Real Satellite Orbit)

Metric	Traditional NTOR	PQ-NTOR (Kyber-512)	Difference
Handshake Time	100 μs	147 μs	+47 μs (+47%)
Avg Circuit Setup	55865 ms	55865 ms	~0 ms
Satellite Delay	8.68 ms	8.68 ms	0 ms
Satellite Distance	2602 km	2602 km	0 km
PQ Overhead %	0%	0.0001%	Negligible
Security Level	Classical (ECDH)	Post-Quantum (Kyber)	Quantum-Safe