

Experimental Protocol Document

Introduction

This protocol describes the experimental validation procedure for the Illumination Chip integrated with the Harmonic Nexus Core (HNC). It ensures reproducibility, safety, and accurate measurement of energy extraction performance.

Objectives

- Validate stable zero-point energy (ZPE) extraction.
- Record stable DC power output between 350–400 V.
- Confirm coherence factor $\Gamma \geq 0.95$ during operation.

Required Equipment

- Illumination Chip prototype and support frame.
- Power conditioning unit (DC/DC converters).
- Oscilloscopes, spectrum analyzers, photon counters.
- Thermal probes and coherence meters.
- Shielded laboratory bench (Faraday cage).

Bill of Materials (BOM) Cross-Reference

- Quartz substrate (5 mm, AT-cut).
- Gold-plated copper conductor plane (1.5 mm).
- Graphene trace layer with photonic lattice (3 mm).
- Bio-Matrix resonance layer (10 mm).
- I/O manifold with control logic (5.5 mm).

Safety Notes

- Operate strictly within a shielded environment.
- Handle output carefully; system generates up to 400 V DC.
- Follow plasma containment protocols to prevent leakage.
- Monitor thermal conditions to avoid runaway ($>5^{\circ}\text{C}$ rise).

Experimental Procedure

Step 1: Initialize system with P1 spark injection.
Step 2: Establish resonance and confirm frequency stabilization.
Step 3: Record photon generation from DCE (P3).
Step 4: Adjust nonlinear amplification (P4) and monitor gain vs. loss.
Step 5: Validate stabilization (P5) with coherence factor $\Gamma \geq 0.95$.
Step 6: Measure conditioned DC output at 350–400 V (P6).

Data Recording Template

Data table includes time, input conditions, measured output voltage/current, coherence factor, and thermal data.

Validation & Checks

- Confirm output within $\pm 5\%$ of specification.
- Cross-check results with redundant measurement instruments.
- Independent reviewer must sign off for protocol integrity.

Conclusion

The protocol ensures safe, reliable, and reproducible results.
Prepared for multi-lab replication and peer-reviewed verification.

Example Data Recording Template

Time (s)	Input Conditions	Output Voltage (V)	Output Current (A)	Coherence (Γ)	Temperature ($^{\circ}\text{C}$)
0	Init Spark	0	0	—	25
2	Resonance Build	120	0.3	0.93	26
5	Amplification	280	0.7	0.95	27
10	Stabilization	365	0.9	0.97	28
15	Conditioned Output	380	1.0	0.98	29