Replication Guidelines – Harmonic Nexus Core (HNC)

These replication guidelines provide a clear framework for independent laboratories to replicate the experimental validation of the Harmonic Nexus Core (HNC) system, including the Illumination Chip, A.L.F.I.E. propulsion system, and EPAS shielding. The goal is to ensure transparency, reproducibility, and confidence in results across multiple research facilities.

1. Prerequisites

• Access to a fully assembled HNC prototype or equivalent subsystems (Illumination Chip, ALFIE, EPAS).
• Laboratory environment with EMI shielding, stable temperature control (-40°C to +85°C tolerance), and vibration isolation.
• Calibrated measurement instruments (oscilloscopes ≥ 1GHz bandwidth, spectrum analyzers, high-precision power meters).

2. Setup and Calibration

• Perform a complete system check prior to testing, including DC bus integrity, resonance layer Q-factor verification, and pulse generator timing calibration.
• Verify all grounding and shielding to avoid ghost energy effects.
• Ensure synchronization with Schumann baseline frequency (7.83 Hz) via frequency-locking system.

3. Test Procedure

• Conduct tests in six phases (P1–P6) to capture spark initiation, resonance build-up, DCE photon extraction, amplification, stabilization, and output power delivery.
• Record time-series data for voltage, current, frequency coherence, and photon counts at 1 kHz or higher sampling rate.
• Perform repeated trials (minimum 30) to establish statistical significance.

4. Data Handling

• Store all data in an open-source format (CSV, HDF5) with cryptographic hashes (SHA256) to ensure integrity.
• Share anonymized datasets on a centralized repository (Supabase/GitHub).
• Include calibration metadata and instrument settings with every dataset.

5. Validation Criteria

• Quantum coherence (Γ) must remain ≥ 0.945 across all trials.
• Power output must stay within 350–400 V DC with <2% deviation under nominal load.
• EPAS shielding must maintain ≥ 99% radiation deflection during exposure tests.
• Results must be replicable across ≥ 2 independent laboratories.

6. Reporting

• Submit results in a standardized reporting template, including raw data links, plots of coherence vs. time, energy balance calculations, and stress test outcomes.
• Highlight any deviations, anomalies, or system instabilities observed.