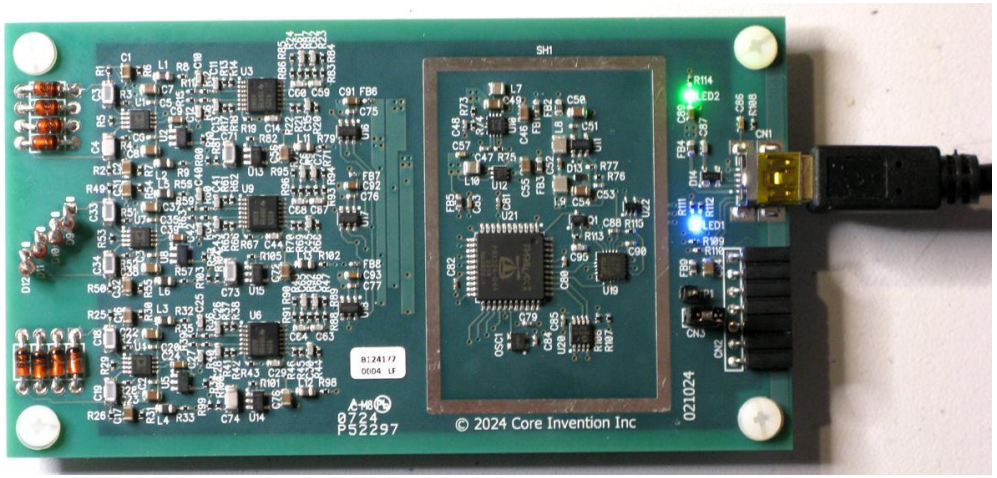
Quantum Field Detector



Prototype Array using Zener diodes as Detectors (left end of board)

Operational Capabilities

Variations in the universal background Quantum Field (QF) modulate the current in quantum tunneling detectors. These interactions are used to search for coherent waves in the QF. Zener diodes and Tunneling capacitors are example detectors.

- Detection is measured as persistent correlated signals from multiple detectors.
- Signal-to-noise ratio increases with the square-root of the number of detectors.
- Can be used for directional detection.

Technical Approach

- The principle of operation is based on interactions of QF with tunneling current in special tunneling detectors.
- Tunneling detectors have to be fundamentally quantum mechanical to interact as needed.
- Ambient fields from Terrestrial sources will be a significant unwanted signal source. Signal-to-noise will be a problem.
- These issues will be overcome by using a large number of detectors, perhaps in a highly-directional array.

Development

- The Principle Investigator is Scott A. Wilber, serial entrepreneur, 12 issued patents, multiple published peer-reviewed papers.
- The prototype system indicates a differential frontend can reject enough ambient noise to build a large array of detectors.
- Significant analog and digital signal processing development is required to perform a viable test.
- It is unknown whether coherent QF waves exist. Their detection would be a radical new way of observing the universe.

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