



The Microwave Optical Oscillator (MICOR) project is a pioneering endeavor aimed at advancing the stability and precision of microwave signals through cutting-edge technologies. The project's primary objective is to develop a stable 10 GHz RF carrier frequency using the MENHIR-1550 laser.

The project encompasses various phases, including housing development, component manufacturing, system assembly, performance testing, and validation.

The 19" housing was meticulously crafted to enable reliable initialization and seamless operation of the system. Front and rear panel modifications were introduced to facilitate essential inputs and outputs. The Desktop Case, measuring 156 x 470.3 x 446 mm, served as the housing for the integrated components. Subsystems, including phase frequency detectors, loop filters, and amplifiers, were interconnected to create a functional and precise Microwave Optical Oscillator system.

Performance testing played a pivotal role in validating the success of the MICOR project. Rigorous testing of amplitude and phase noise was conducted using specialized equipment. Phase noise measurements demonstrated the achievement of stable and precise 1 GHz carrier frequency, showcasing the efficacy of the stabilization methods employed.

The project's commitment to long-term stability was exemplified through extensive testing of the system's performance over an extended period. Parameters such as ambient temperature, atmospheric pressure, and frequency stability were closely monitored to ensure the system's consistent and reliable operation.

The MICOR project represents a significant leap in the field of microwave signal stability. Through innovative approaches in housing design, component manufacturing, and system assembly, the project successfully achieved the stabilization of the MENHIR-1550 1 GHz laser carrier frequency. The results of the project have implications for a wide range of applications that require precise and stable microwave signals, showcasing the project's potential for advancements in various technological domains.