Second Laureate
Research & Development

Project title: Long range high repetition rate laser range finder production

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Abstract:

This system includes three main subsystems: laser resonator, receiver and control sections. Laser part includes solid state laser with flash lamp pumping, high voltage power supply, Q-Switch driver and cooling system.

The receiver part consists of power supply, detector and focusing optical system. Control parts also contain central processing and counter units.

A very short Laser pulse is sent to the long range target and due to atmospheric absorption, only a low percentage of this beam would be received back at the receiver optic after reflection from the target. This received beam is focused on the detector and then amplified by receiver electronic circuits. Receiver input stage has been designed to remove electronic and optical noises from returned signal which is then fed into counter circuits. Main processor will measure the exact duration of flying time of the optical beam. The main achievements of this system are: low noise circuit design, high mechanical stability, adjustable repetition rate, automatic troubleshooting mechanism and the ability of long range measurement.