

Optical tomography system using microprocessor and ethernet controller-based data acquisition system

Abstract

Purpose: Owing to the high cost of data acquisition (DAQ) card in the market, the purpose of this paper is to develop a high speed, low-cost microprocessor and ethernet controller-based DAQ in optical tomography system. Design/methodology/approach: Microprocessor is the main core to control the sensor circuitry while ethernet controller has the responsibility of transmitting data to PC and thus insuring the reliability of data. Findings: The data transfer rate will be up to megabytes per seconds. In this optical tomography system, projection geometry combining two orthogonal and two rectilinear in one layer is modeled. Originality/value: This paper presents a new application in optical tomography.

Language of Original Document

English

Author Keywords

Controllers; Data collection; Image processing; Infra-red devices; Microcontrollers

Index Keywords

Data acquisition system; Data collection; Design/methodology/approach; Ethernet controllers; High costs; Infra red; New applications; Projection geometry; Sensor circuitry; Transmitting data

Engineering controlled terms: Controllers; Data transfer; Data transfer rates; Ethernet; Image processing; Imaging systems; Microprocessor chips; Optical data processing; Optical tomography

Engineering main heading: Data acquisition