Thesis Title Design and Prototype Development of a Cable Fault Detector and Locator Using Pulse-Echo Method

Author Mr. Pichit Pratumtip

M. Eng Electrical Engineering

Examining committee

Assoc. Prof. Dr. Tawanwong Krairojananan	Chairman
Assoc. Prof. Kajornsak Kantapanit	Member
Assist. Prof. Akachai Saeng-In	Member

ABSTRACT

The Merrary Loop test and other bridge methods have been widely used for fault prelocation, but these methods are difficult and time-consuming. This thesis describes the design and development of a fault detector and locator based on the principle of reflected traveling wave. The system consists mainly of a pulse generator, a detector, a display panel and a controller all packaged into a small size handheld case for portibility. A newly added feature is a calibration mode for cable with unknown permittivity. The performance test of the prototype on fault location and detection in the test cable revealed the measured results with a slight error of about 2.8 percent . This error was caused partly by the propagation delay time of the electronic device and the value of constants obtained from experimental results.