RADAR DATA MONITORING IMPROVEMENT

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ABSTRACT

Radar equipment operates by radiating electromagnetic energy and detecting the presence and character of the echo returned from reflecting objects. It is an active device that utilizes its own controlled illumination to detect the target and to probe the target characteristics. It does not depend on the energy radiated by the target itself.

The radar signal is usually in the form of repetitive train of short pulses, generated by a transmitter and radiated into space by an antenna. A single antenna is used for both transmission and reception. Reflecting objects or targets intercept and reradiate a portion of the radar signal; a small amount returns in the direction of the radar. This signal is processed and the output is used to monitor the condition of the radar system.

The purpose of this project is to design the hardware for improving the radar data monitoring system in the primary radar display and data handling system at Subang Airport.

CONTENTS

1.0 INTRODUCTION

1.1 Introduction to Radar Data Monitoring at Subang Airport

The primary radar together with the display and backup equipment at the control centre form a long range surveillance system to give airways surveillance in Malaysian air space. The radar system provides two channels of information which are passed to the control centre via a microwave link. All remote control and return path monitoring indications are passed to the telemetry equipment prior to transmission over the microwave link.

The radar transmits a data which is continuously travelling along the microwave link into the computer. It is impossible to monitor the type of the message received without interrupting the computer.

Therefore this project is designed as an aid to fault monitoring without interfering the running system. It detects parity error (transmit and receive data error), plot message (target information) and north mark (aerial information).

The block diagram of the Radar Data Monitoring Improvement circuit is shown in Figure 1.1