

ABSTRACT

This search consists of three parts as follow:

Part I: The theoretical study of the radar systems (basic principles of the radar system, how to determine the range to a target and the maximum unambiguous range, how an object is detectable with a radar “Radar cross section” and the factors that determine how much energy return to the source, explains the develop of radar equation which is worth deriving rather than quoting, because the insight it gives to the way radar works. Radar bands and the frequency allocations assigned by the International Telecommunications Unions for Radar, explains the Doppler Effect, Radar types classified by waveform and by the technique the radar employs, the configurations and applications of radars, then introduces the characteristics of ultrasonic waves. Also since the program used in this project is a C language program, the search also introduces an overview of computers and C language and the control by computer).

Part II: Interfacing of ultrasonic radar to a computer (main idea of the implementation and why the detection is possible, the components used in implementation, method of work of ultrasonic radar, and the way to interconnect between the components of the electronic circuit).

Part III: The software: (to manage the system using C language, and to carry out the simulation of the operation of the radar. A scheme that illustrates the flow of data through a system of information processing, and processes that take place with the system).

The program used to carry out the simulation is a program (C).