HIGHER TECHNICAL INSTITUTE

ELECTRICAL ENGINEERING DEPARTMENT

DIPLOMA PROJECT

SATELLITE ANTENNA POSITIONING SYSTEM

E.1307

THEOCHARIS N. PETRIDES

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Introduction to Satellite Antenna Positioning System

Satellite Antenna Positioning System combines software design and a small P.C.B construction, so the project is divided into two main parts.

As software concerned it is written in Delphi language. Delphi combines Pascal with windows. The program executes the following procedures. First it will check if the angle is valid. If not valid it will display invalid number error. On the other hand if angle is valid then it will follow the next procedure that verifies if the angle is in range. If the angle is out of range it will display out of range error. If angle is in range it will follow again the next procedure which is the determination of the rotation that motor will execute, clockwise or anti-clockwise. For example if the needed angle is greater than the current angle, motor will rotate clockwise. If now the needed angle is less than the current one, motor will rotate anti-clockwise. So the program will start rotating the motor in proportion to the given angle until it reach the needed one. Then it will save the present position of the antenna (save angle).

On the other hand as P.C.B construction concerned or else the interface card, will be taking the data through the printer port and close relays in proportion with the rotation of the motor (right or left). Also at the same time our antenna will rotate at the same direction. The data address of the printer board is 378h-37Ah.

To eliminate the noise that card may gain we put capacitors that would be used as filters. Also to stabilize the voltage we put a voltage regulator (8250). We will give to it a voltage approximately 9v in the input with an adapter, and it will give us in the output a constant voltage 5v. So in this way we will be able to supply the card with the needed voltage.

Moreover the card employ the following IC's which their use will be explain later. The IC's are 74HCT574, ULN2803A, 74HCT244 and 74HCT139.

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