ANTENNA DRIVER AND CONTROL FOR A WEATHER SATELLITE RECEIVER

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ABSTRACT

This paper reports a method of drive and control of an antenna. This antenna is driven and controlled by two (2) units of DC motors complete with electronics circuit control which facilitates the start, forward movement, reverse movement, speed control and step movement. In this project a set of motor and controller is used for azimuth direction and the other set is for elevation direction. The motor torque and its power is much dependent on the antenna weight and gear system design.

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CHAPTER 1

1.0 INTRODUCTION

In previous days there were no satellites in orbit other than the moon. Satellites then existed only in the realms of speculative science-fiction. It was October 1957 when Doug Mallett and Pat Gowen became involved in tracking the 20MHz beacon of the very first man made orbiter, the Soviet Sputnik-1 on 20MHz. It is found that the orbiting period to be 41 minutes.

When the USA began to put up its first small exploratory satellites, an American amateur half jokingly wrote to one column of magazine, extolling the wonders that could result if an amateur radio 'repeater' could be placed into orbit. This was picked up by a group of amateurs, working for the early NASA organisation, who pointed out that this idea could be in fact be brought to fruition on the strict proviso that the amateur satellite could be made to replace the weight, size and dimension limitations imposed by equating the spare payload balance requirements.

1.1 Orbiting satellite

The orbiting satellite can be divided into two:-

i) Geostationary orbits

ii) Polar orbits