Design and Analysis of High Gain and Low Noise Amplifier in the Satellite Position Dual Systems

王三農、林漢年

E-mail: 9419815@mail.dyu.edu.tw

ABSTRACT

Europe and China cooperate the Galileo satellite position system, composed of 30 satellites, will start invest transport business in 2008. The position accuracy error will be in 1 meter. The system will compatible with American GPS and Russian GLONASS system, and also can be used in military purpose and for civilian use. Due, to the cost concern in the market, most satellite position systems LNA amplifier is designed only for single satellite system frequency. It is difficult to receive the signal when the satellite signal is blocked for single system configuration. There fore there must have other position system as the assistance. If receiver system changes to the dual receiver systems, it will increase the satellite signal reception capability positioning. This thesis is focused on designing LNA amplifier used in GPS and GLONESS dual positioning systems which frequency band located between 1.575GHz and 1.625GHz. We will use three stages transistor amplifier design, software simulation and physical measurement to obtain the satellite position systems, high gain and low noise amplifier. It will largely increase the product stability. And not become malfunction due to the bad signal reception. The great stability of products, for consumers acceptance. will expand the market of the satellite position system applications, and will be worthy a farther research and development.

Keywords : noise、dual star positioning system、low noise amplifier

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