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Author: Dr. Jianyong Kou

North Carolina Central University, United States, jkou@nccu.edu

Dr. Yongan Tang

North Carolina Central University, United States, tangy@nccu.edu

Prof. Branislav Vlahovic

North Carolina Central University, United States, vlahovic@nccu.edu

Mr. Yuansheng Su

Beijing Vacuum Electronics Research Institute, China, mark-1288@sohu.com

DEVELOPMENT OF A L-BAND TWT FOR SPACE APPLICATION

Abstract

Travelling wave tube(TWT) for space application require high reliability, high efficiency, light weight and small size. An L-band TWT with 150 watts power has been devolved in laboratory. It is designed for space application, and it would be equipped in navigation satellite. A TWT composes of an electron gun, slow wave structure (SWS), input-output system, and multistage depressed collector (MDC). And a lot of research on these parts have been done. In the course of design some simulations for TWT were done. After some manufactures and testing, the development of the TWT was completed. The TWT could provide continuous wave power of 155-160 watts over bandwidth of 600M GHz. The efficiency of the TWT is greater than 60 %, and the gain of it is greater than 50dB. The length of the TWT is 584mm, and the weight of it is less than 2.3Kg. The RF input and output connectors are SMA and TNC respectively. Key Word: Travelling Wave Tube (TWT), Space Application, Navigation Satellite.