

FPGA VARIABLE BASED CHIRP PULSE GENERATOR FOR SYNTHETIC APERTURE RADAR ONBOARD UNMANNED AERIAL VEHICLE SYSTEM

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Abstract: Synthetic Aperture Radar (SAR) is one of active microwave sensor could work all weather and day/night time. This system can observe the objects on ground surface, and obtain microwave image by SAR image processing. SAR needs modulated signal like chirp pulse for high resolution and preciseness. In the case of UAV, some pulse parameter, i.e. bandwidth etc, should be changed to adequate value during flight or mission because of unstable platform posture. This paper discusses the proposed FPGA variable based chirp pulse generator to solve the platform posture effect on our UAV SAR mission.

Key word: SAR, UAV, FPGA, Chirp pulse