

Simple Amplitude and Phase Detector for Accelerator Instrumentation

K. H. Hu, Jenny Chen, C. H. Kuo, Demi Lee, K. T. Hsu

Synchrotron Radiation Research Center

No. 1 R&D Road VI, Hsinchu Science-Based Industrial Park, Hsinchu, Taiwan

Abstract

Amplitude and phase are important parameters of RF system and beam properties. Using commercial RF/IF gain and phase detector chip to extract amplitude and phase information are promising from simplicity point of view. This detector can measure amplitude log ratio and phase difference of two RF signals simultaneously. Very simple implementation can be achieved compare with the other methods. Design consideration and implementation details will be described. Preliminary tests results and possible applications will be discussed in this report.