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A Truncated Waveguide Phase Shifter

N.P. Lourie^{1,2}, D. T. Chuss^{2*}, R. Henry², and E.J. Wollack²

1 Adnet Systems, Greenbelt, MD

2 NASA Goddard Space Flight Center, Greenbelt, MD 20771

* Contact: Nathan.P.Lourie@nasa.gov, phone 301.580.9962

Abstract—The design, fabrication and performance of a simple phase shifter based upon truncated circular and square waveguides is presented. An emphasis is placed upon validation of simple analytical formulae that describe the propagation properties of the structure. A test device is prototyped at ~40GHz; however, the concepts explored can be directly extended to millimeter and submillimeter applications.