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Accession number:20112914149981 Title: A large orbit electron gun design for a terahertz harmonic gyrotron Authors:Song, H. (1); Mulcahy, T. (1) Author affiliation:(1) Department of Electrical and Computer Engineering, University of Colorado, Colorado Springs, CO 80918, United States Corresponding author:Song, H.(hsong@eas.uccs.edu) Source title: Journal of Electromagnetic Waves and Applications Abbreviated source title: J Electromagn Waves Appl Volume:25 Issue:10 Issue date:2011 Publication year:2011 Pages:1437-1447 Language:English ISSN:09205071 E-ISSN:15693937 CODEN: JEWAE5 Document type: Journal article (JA) Publisher: VSP BV, P.O.Box 9000, Leiden, 2300 PA, Netherlands Abstract:Design of an axis-encircling large-orbit electron gun for a terahertz harmonic gyrotron is

presented. Based on a canonical momentum conservation theory, analytical calculations are carried out to determine critical electron gun parameters. This procedure provides a fast optimization process to determine electron gun parameters. The calculated results are compared with electron gun code.