

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
13 April 2006 (13.04.2006)

PCT

(10) International Publication Number
WO 2006/039649 A2

(51) International Patent Classification:

H03G 1/00 (2006.01) **H03F 3/45** (2006.01)
H03M 1/12 (2006.01)

(74) Agents: **KAMINSKI, Michael, D.** et al.; Foley & Lardner LLP, Washington Harbour, 3000 K Street, N.W., Suite 500, Washington, DC 20007-5143 (US).

(21) International Application Number:

PCT/US2005/035483

(22) International Filing Date:

30 September 2005 (30.09.2005)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

10/954,485 1 October 2004 (01.10.2004) US

(71) Applicant (for all designated States except US): **SMITHS AEROSPACE LLC** [US/US]; 3290 Patterson Avenue, SE, Grand Rapids, MI 49512-1991 (US).

(72) Inventors; and

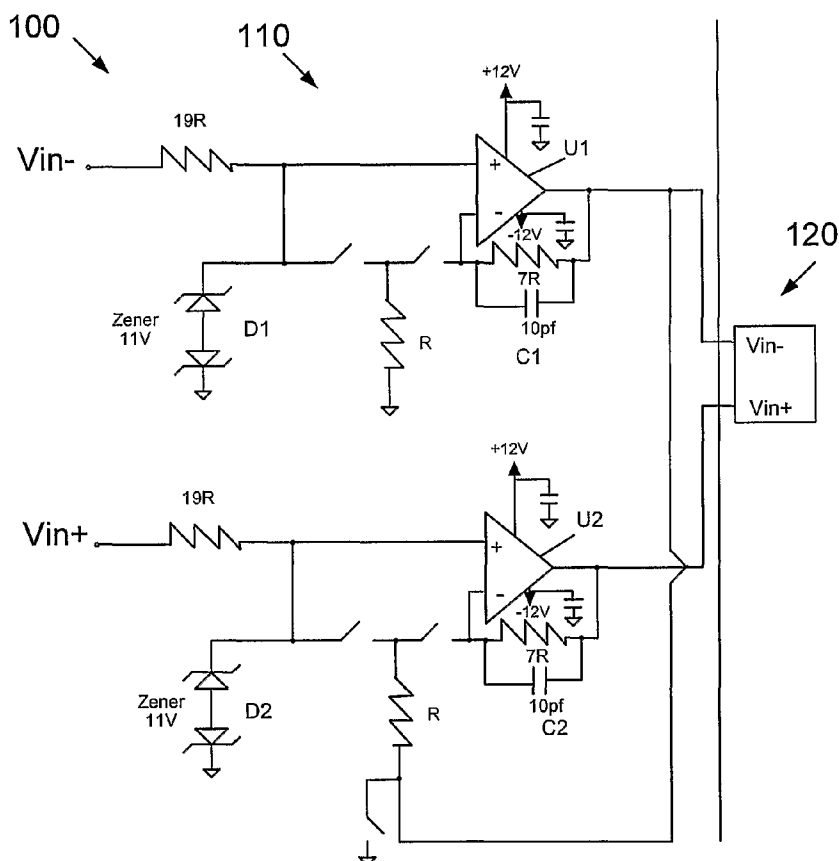
(75) Inventors/Applicants (for US only): **RUNALS, Andrew, W.** [US/US]; 11453 David Road, Middleville, MI 49333 (US). **NEIS, Samuel, C.** [US/US]; 6276 Archtrave St., Grand Rapids, MI 49546 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT,

[Continued on next page]

(54) Title: UNIFIED ANALOG INPUT FRONT END APPARATUS AND METHOD



(57) Abstract: An analog input front end includes a configurable gain stage and an analog-to-digital converter. The configurable gain stage receives an analog input signal, such as a differential analog input signal, and provides a gain value to the analog input signal so as to output a gain-adjusted analog input signal that is within a particular voltage range between a maximum and a minimum value. The analog-to-digital converter receives the gain-adjusted analog input signal and performs analog-to-digital conversion on the gain-adjusted analog input signal, so as to output a digital signal that is indicative of the analog input signal.

WO 2006/039649 A2



RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Published:

— *without international search report and to be republished upon receipt of that report*