

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
3 November 2005 (03.11.2005)

PCT

(10) International Publication Number
WO 2005/104375 A1

(51) International Patent Classification⁷: **H03K 19/177**

(74) Agents: MALLIE, Michael, J. et al.; Blakley, Sokoloff, Taylor & Zafman, 7th Floor, 12400 Wilshire Boulevard, Los Angeles, CA 90025 (US).

(21) International Application Number:

PCT/US2005/006583

(22) International Filing Date: 28 February 2005 (28.02.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

10/814,943 30 March 2004 (30.03.2004) 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, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, 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, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(71) Applicant (for all designated States except US): ADVANTAGE LOGIC, INC. [US/US]; 20380 Town Center Lane, Suite 250, Cupertino, CA 95014 (US).

(72) Inventors; and

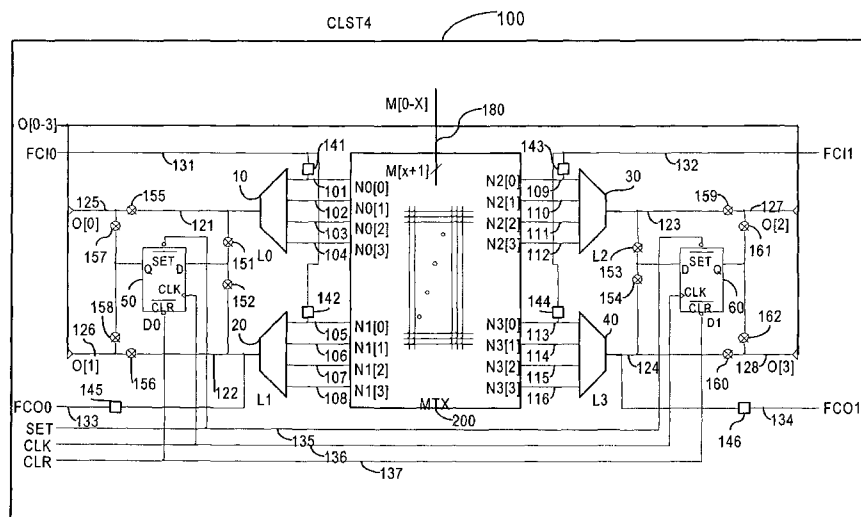
(75) Inventors/Applicants (for US only): PANI, Peter, M. [DE/US]; 1110 Ana Privada, Mountain View, CA 94040 (US). TING, Benjamin, S. [US/US]; 21120 Sullivan Way, Saratoga, CA 95070 (US).

Published:

— with international search report

[Continued on next page]

(54) Title: A SCALABLE NON-BLOCKING SWITCHING NETWORK FOR PROGRAMMABLE LOGIC



(57) Abstract: A scalable non-blocking switching network (SN) having switches (151-160) and intermediate (stages of) conductors that are used to connect a first plurality of conductors to other multiple sets of conductors in a generally unrestricted fashion within respective interconnect resources constraints. The SN (200) can be applied in a wide range of applications, in tandem or hierarchically, to provide a large switch network used in network, routers, and programmable logic circuits. The SN is used to connect a first set of conductors (101-104), through the SN, to multiple sets of conductors in a given logic circuit hierarchy whereby the conductors in each of the multiple sets are equivalent or exchangeable, which in term, by construction, makes the first set of conductors equivalent when used in the next level of circuit hierarchy. The SN is scalable for large sized sets of conductors and can be used hierarchically to enable programmable interconnections among large sized circuits.

WO 2005/104375 A1



— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

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.