

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
02 November 2017 (02.11.2017)



(10) International Publication Number
WO 2017/186887 A1

(51) International Patent Classification:
H01L 23/00 (2006.01)

(21) International Application Number:
PCT/EP2017/060139

(22) International Filing Date:
27 April 2017 (27.04.2017)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
1607589.7 29 April 2016 (29.04.2016) GB

(71) Applicant: **NAGRAVISION SA** [CH/CH]; 22-24 Route de Geneve, 1033 Cheseaux-sur-Lausanne (CH).

(72) Inventors: **JULLIAN, Stéphane**; c/o Nagravision SA, 22-24 Route de Geneve, 1033 Cheseaux-sur-Lausanne

(CH). **AUBRY, Pascal**; c/o Nagravision SA, 22-24 Route de Geneve, 1033 Cheseaux-sur-Lausanne (CH).

(74) Agent: **KILBURN & STRODE LLP**; 20 Red Lion Street, London London WC1R 4PJ (GB).

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

(54) Title: INTEGRATED CIRCUIT DEVICE WITH A PROTECTIVE LAYER FOR ABSORBING LASER RADIATION

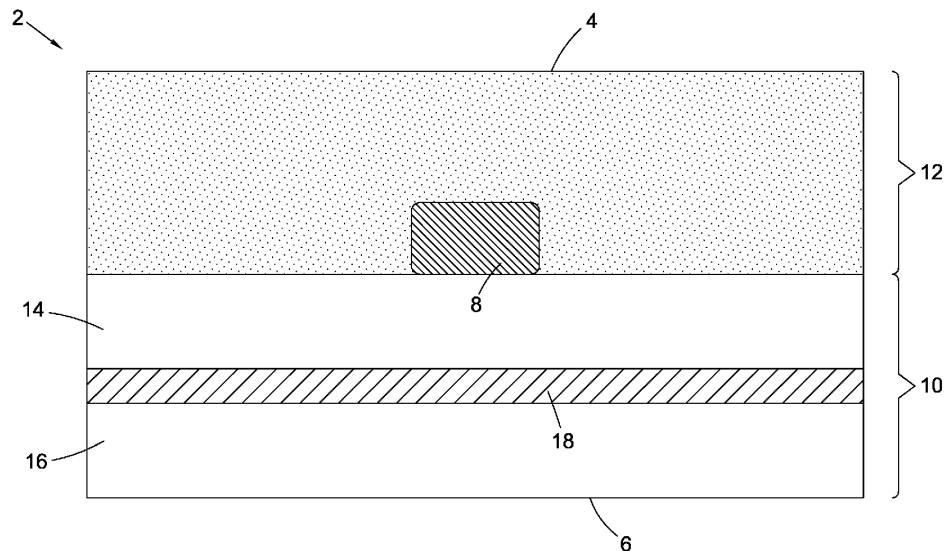


Fig. 1

(57) Abstract: An integrated circuit device is disclosed, the device comprising a protective layer and a protected circuit on a substrate, the protective layer being configured to protect the protected circuit by absorbing laser radiation targeted at the protected circuit through the substrate. The device may be configured such that removal of the protective layer causes physical damage that disables the protected circuit. The device may comprise intermediate circuitry protruding into the substrate between the protective layer and the protected circuit, wherein the physical damage that disables the protected circuit is physical damage to the intermediate circuitry. The device may comprise detection circuitry configured to detect a change in an electrical property of the device indicative of removal of the protective layer, and, in response to detecting the change in the electrical property, cause the protected circuit to be disabled.

[Continued on next page]

(84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

Published:

— with international search report (Art. 21(3))