

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
11 March 2010 (11.03.2010)

(10) International Publication Number  
**WO 2010/027409 A3**

- (51) **International Patent Classification:**  
*H04N 5/913* (2006.01)
- (21) **International Application Number:**  
PCT/US2009/004730
- (22) **International Filing Date:**  
19 August 2009 (19.08.2009)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (30) **Priority Data:**  
61/190,254 27 August 2008 (27.08.2008) US  
12/322,004 28 January 2009 (28.01.2009) US
- (71) **Applicant (for all designated States except US):** **ROVI SOLUTIONS CORPORATION** [US/US]; 2830 De La Cruz Boulevard, Santa Clara, CA 95050 (US).
- (72) **Inventor; and**
- (75) **Inventor/Applicant (for US only):** **QUAN, Ronald** [US/US]; 10910 Wunderlich Drive, Cupertino, CA 95014 (US).
- (74) **Agent:** **ALMEIDA, George, B.;** ROVI SOLUTIONS CORPORATION, Patent Department, 2830 De La Cruz Boulevard, Santa Clara, CA 95050 (US).
- (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, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, 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, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

**Published:**

- with international search report (Art. 21(3))
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))

(88) **Date of publication of the international search report:**  
17 June 2010

(54) **Title:** METHOD AND APPARATUS FOR SYNTHESIZING COPY PROTECTION FOR REDUCING/DEFEATING THE EFFECTIVENESS OR CAPABILITY OF A CIRCUMVENTION DEVICE

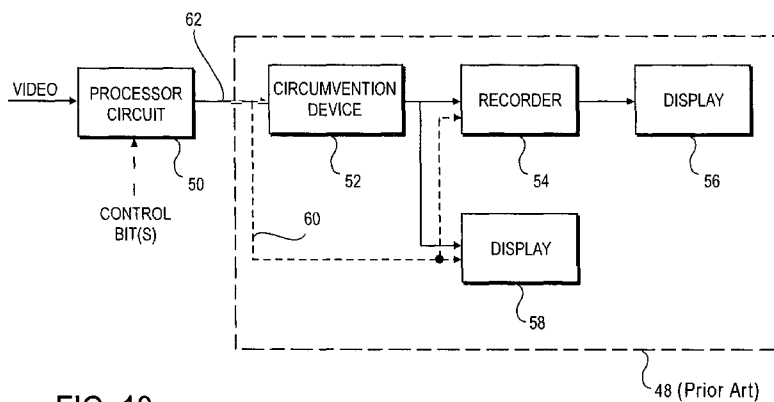


FIG. 10

(57) **Abstract:** A new copy protection signal includes resistance to certain circumvention devices and includes improved playability. The new copy protection signal causes the certain circumvention devices to pass substantially the copy protection effects to a video recorder or to allow for content control effectiveness on a compliant device. The new copy protection signal also causes the circumvention device to add or enhance copy protection effectiveness, which is contrary to the circumvention device's original intent of removing or reducing copy protection effectiveness. The new copy protection signal is provided by inserting or adding one or more pseudo sync pulses or one or more pseudo sync/AGC pulse pairs immediately after, or one line after, a vertical sync signal in at least one television line.

WO 2010/027409 A3

**A. CLASSIFICATION OF SUBJECT MATTER***H04N 5/913(2006.01)i*

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

H04N 5/913

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

(Chinese Patents and application for patent)

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS(KIPO internal) &amp; Keywords COPY PROTECTION ,CIRCUMVENTION ,PSEUDO SYNC PULSE

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No
X	KR 2002/0078344 A (OH HEUNG CHEOL) 18 October 2002 See abstract; see page 2, line 2-page 2, line 59; claims 1-3 and figures 1-2.	1, 9, 10, 12
A	US 2004/0174798 A1 (RIGUIDEL et al) 09 September 2004 See abstract ;see paragraph [0001]-paragraph [0019]; claims 1,7,12,15,20 and figures 2-4.	1-20
A	US 2006/0056809 A1 (QUAN) 16 March 2006 See abstract ;see paragraph [0010]-paragraph [0026]; claims 1,15,19,23,39,47 and figures 5-9.	1-20

 Further documents are listed in the continuation of Box C See patent family annex

\* Special categories of cited documents

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance, the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance, the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&amp;" document member of the same patent family

Date of the actual completion of the international search

08 APRIL 2010 (08.04.2010)

Date of mailing of the international search report

12 APRIL 2010 (12.04.2010)

Name and mailing address of the ISA/KR

Korean Intellectual Property Office  
Government Complex-Daejeon, 139 Seonsa-ro, Seo-  
gu, Daejeon 302-701, Republic of Korea

Facsimile No 82-42-472-7140

Authorized officer

KU, Dae Sung

Telephone No 82-42-481-8192



## INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2009/004730

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
KR 2002/0078344 A (OH HEUNG CHEOL)	18.10.2002	None	
US 2004/0174798 A1 (RIGUIDEL et al) 1491413 A	21.04.2004	09.09.2004	CN
		CN 1491413 CO	21.04.2004
		EP 1360689 A1	12.11.2003
		FR 2820843 A1	16.08.2002
		FR 2820843 B1	30.05.2003
		JP 2004-527031 A	02.09.2004
		JP 2004-527031 T	02.09.2004
		KR 10-2004-0077435 A	04.09.2004
		US 2004-0174798 A1	09.09.2004
		WO 0206-5467A8	03.06.2004
		WO 2002-065467 A1	22.08.2002
US 2006/0056809 A1 (QUAN)	16.03.2006	AU 7803201 A	25.02.2002
		EP 1310093 A2	14.05.2003
		JP 1650-7170nu II	04.03.2004
		JP 2004-507170 A	04.03.2004
		JP 2004-507170 T	04.03.2004
		JP 3803638 B2	02.08.2006
		US 07050698 B1	23.05.2006
		US 2006-0056809 A1	16.03.2006
		WO 02-15557 A3	04.07.2002
		WO 2002-015557 A2	21.02.2002
		WO 2002-015557 A3	21.02.2002