

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

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
24 January 2002 (24.01.2002)

PCT

(10) International Publication Number
WO 02/07330 A3

(51) International Patent Classification⁷: **H04B 7/26**

(21) International Application Number: PCT/US01/22355

(22) International Filing Date: 17 July 2001 (17.07.2001)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
09/618,400 18 July 2000 (18.07.2000) US

(71) Applicant: **MOTOROLA, INC.** [US/US]; 1303 East Algonquin Road, Schaumburg, IL 60196 (US).

(72) Inventors: **BISHOP, James, W., Jr.**; 4863 West Morelos Street, Chandler, AZ 85226 (US). **FITZGERALD, Mark, R.**; 15856 South 8th Street, Phoenix, AZ 85048 (US).

(74) Agents: **WUAMETT, Jennifer, B.** et al.; Portfolio Design & Acquisition, (on behalf of Motorola), P.O. Box 10219, Scottsdale, AZ 85271-0219 (US).

(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU,

CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW.

(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

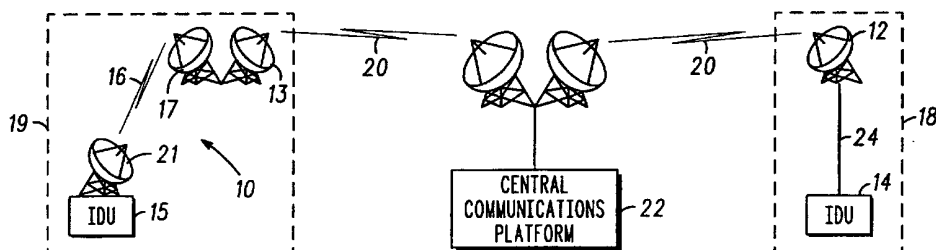
Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(88) Date of publication of the international search report:
11 April 2002

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.

(54) Title: WIRELESS BIDIRECTIONAL INTERFACE



(57) Abstract: A wireless bi-directional interface (10) between an outdoor unit ODV (13) and indoor unit (IDU) (15) using low power radio frequency distribution for a broadband wireless access network. The wireless bi-directional interface (10) includes a remote ODU component (17) linked to a remote IDU component (21) via a wireless access link signal (20). The wireless access link signal (20) comprises low power radio frequency distribution using empty UHF/VHF TV channels. Both the remote ODU (17) and the remote IDU (15) include frequency up/down conversion circuitry for converting the wireless access link signal (20) to the wireless remote signal and vice-versa.

WO 02/07330 A3

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 01/22355

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 H04B7/26

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)

IPC 7 H04B

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

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

EPO-Internal, WPI Data, PAJ, INSPEC

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 756 392 A (AT & T CORP) 29 January 1997 (1997-01-29) column 5, line 20 -column 6, line 9; figures 1,2 ---	1-16
X	EP 0 939 506 A (SHARP KK) 1 September 1999 (1999-09-01) column 4, line 57 -column 7, line 3 column 9, line 6 -column 11, line 15 figures 1,2A,2B,3A,3B,3C,3D,7 ---	1-16
X	US 5 991 599 A (UCHIKAWA SETOMI) 23 November 1999 (1999-11-23) column 2, line 46 -column 3, line 30; figures 2,4 ---	1,9,13
A		2-8, 10-12, 14-16
	-/--	

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in 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 document 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 another 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.

G document member of the same patent family

Date of the actual completion of the international search

8 February 2002

Date of mailing of the international search report

15/02/2002

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Sorrentino, A

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 01/22355

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>US 5 983 070 A (LAU KAM Y ET AL) 9 November 1999 (1999-11-09) column 4, line 37 - line 56 column 11, line 59 -column 12, line 27; figure 9</p> <p>-----</p>	1-16

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 01/22355

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
EP 0756392	A	29-01-1997	US 5890055 A	30-03-1999
			CA 2173283 A1	29-01-1997
			EP 0756392 A2	29-01-1997
			JP 3153130 B2	03-04-2001
			JP 9046284 A	14-02-1997
			NO 963136 A	29-01-1997
EP 0939506	A	01-09-1999	JP 11313020 A	09-11-1999
			EP 0939506 A2	01-09-1999
US 5991599	A	23-11-1999	EP 0724336 A2	31-07-1996
			JP 2867938 B2	10-03-1999
			JP 8265250 A	11-10-1996
			NO 960329 A	29-07-1996
US 5983070	A	09-11-1999	US 6157810 A	05-12-2000
			WO 9845956 A1	15-10-1998
			AU 715343 B2	20-01-2000
			AU 2811297 A	12-11-1997
			CA 2251959 A1	30-10-1997
			EP 0894369 A1	03-02-1999
			JP 2000509224 T	18-07-2000
			WO 9740590 A1	30-10-1997
			US 6014546 A	11-01-2000
			US 5930682 A	27-07-1999
			US 5765099 A	09-06-1998