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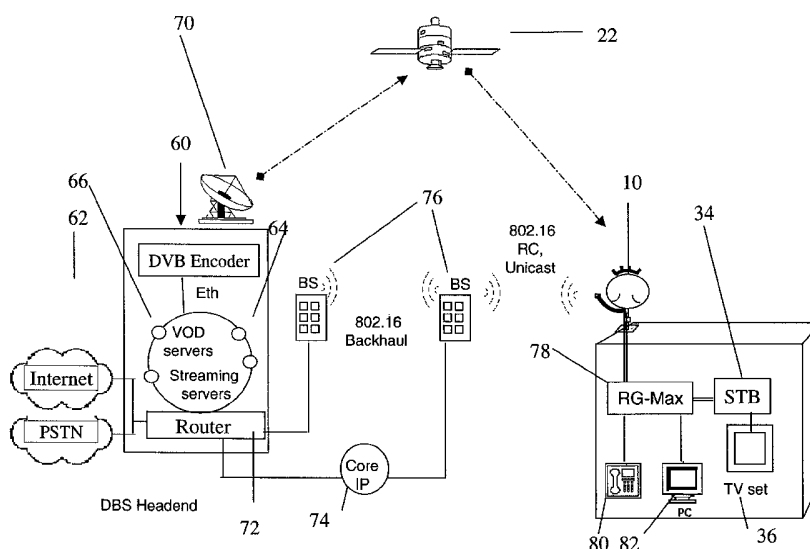
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European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,

[Continued on next page]

(54) Title: BROADCASTING SYSTEM WITH RETURN CHANNEL



(57) Abstract: A satellite TV broadcasting system comprises: an outward broadcast link to reach each of a plurality of user receiver installations via satellite, and a return link from each of said plurality of users, said return channel being a terrestrial channel via a wide area network (WAN) of which WAN said user receiver installations form a node. The WAN may also support an uplink. A satellite receiver installation is modified with an extra terrestrial antenna for the WAN and a splitter combiner allows the already installed cable link to the satellite receiver to be retained. A residential gateway allows a household LAN and communication enabled devices to be supported via the satellite/LAN infrastructure.



FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI,
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INTERNATIONAL SEARCH REPORT

International Application No
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A. CLASSIFICATION OF SUBJECT MATTER IPC 7 H04H1/00 H04B7/15 H04L12/28 H04L12/56				
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 H04H H04B H04L				
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.		
	-/---			
☒ Further documents are listed in the continuation of box C. ☒ Patent family members are listed in annex.				
° Special categories of cited documents : <table border="0"> <tr> <td> *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 </td> <td> *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. *&* document member of the same patent family </td> </tr> </table>			*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. *&* document member of the same patent family
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. *&* document member of the same patent family			
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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 Pantelakis, P		

INTERNATIONAL SEARCH REPORT

International application No.
PCT/IL2004/000816

Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this International application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:
1-4, 8, 9, 11-15, 19, 20, 22-24, 27, 30-32, 35, 38, 69, 72-75, 80, 81, 84-91

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims:

1-4,8,9,11-15,19,20,22-24,27,30-32,35,
38,69,72-75,80,81,84-91

System and method for reducing the complexity of the outward broadcast link of a TV broadcasting system.

2. claims: 5,16,26,34,76,77,82,83

System and method for enabling interoperability among devices of different manufacturers at the link connecting the plurality of users and the central base station.

3. claims: 6,7,17,18,28,29,36,37,70,71,78,79

System and method for providing a wireless bidirectional connection between the rooftop antennas and the equipment inside the user's home.

4. claims: 10,21,57-68

System and method for providing a high-speed and cost-effective way of communication between the head end unit and the central base stations.

5. claims: 25,33,39-56,84-91

System and method for providing a bidirectional link using the existing in-home cable infrastructure.

INTERNATIONAL SEARCH REPORT

Int'l Application No
PCT/IL2004/000816

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 282 347 A (SUITE 12 GROUP) 14 September 1988 (1988-09-14)	1,3,4,8, 9,11,12, 14,15, 19,20, 22,31, 32,35, 38,69, 73-75,81
Y	page 2, line 2 page 3, lines 6-14 page 5, lines 57-63 page 6, lines 14-24 page 7, lines 1-3 page 8, lines 40-47 page 9, lines 7-14 page 9, lines 47-64 page 10, lines 5-28 page 10, lines 42-46; figures 1A,2,5A,5B	2,13,27, 30,72,80
X	US 5 812 931 A (YUEN HENRY C) 22 September 1998 (1998-09-22)	23,24
Y	column 3, line 49 - column 4, line 33; figure 3	2,13,27, 30,72,80

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No
PCT/IL2004/000816

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
EP 0282347	A	14-09-1988	US 4747160 A	24-05-1988
			AT 122837 T	15-06-1995
			AU 602064 B2	27-09-1990
			AU 1303288 A	15-09-1988
			CA 1333089 C	15-11-1994
			DE 3853790 D1	22-06-1995
			DE 3853790 T2	08-02-1996
			EP 0282347 A2	14-09-1988
			ES 2074438 T3	16-09-1995
			GR 3017045 T3	30-11-1995
			JP 2064813 C	24-06-1996
			JP 7095815 B	11-10-1995
			JP 63283288 A	21-11-1988
			MX 164756 B	22-09-1992
US 5812931	A	22-09-1998	US 2003192051 A1	09-10-2003
			AU 2132197 A	10-09-1997
			CA 2247456 A1	28-08-1997
			EP 0886967 A1	30-12-1998
			JP 2000503829 T	28-03-2000
			CN 1290106 A	04-04-2001
			CN 1214837 A ,C	21-04-1999
			WO 9731479 A1	28-08-1997