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(72) Inventors: BUGAJSKI, Mark; Norcross, GA (US). GILLFILLAN, Dana; Alpharetta, GA (US). BIONE, Angelo; Lawrenceville, GA (US).


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(54) Title: EXTERNAL MID-SPLIT CONVERTER FOR STANDARD CABLE MODEM

(57) Abstract: A direct broadcast satellite system delivers video content to a subscriber and a CATV network is used to simultaneously provide data services to the same subscriber. Since the CATV system is not used to deliver video/television programming channels, these same channels can be used to transport downstream and upstream data signals. To provide upstream performance and immunity to noise, upstream data traffic signals from a subscriber's cable modem are upconverted for transmission by channels having center frequencies higher than 42 MHz. Circuitry combines the original output signal from the cable modem (52) with the output of a local oscillator (62) to raise the carrier frequency of upstream traffic before being introduced to the CATV network. Thus, upstream traffic is carried by channels higher than 42 MHz. This upstream signal is received by a block converter that lowers the carrier frequency back to a conventional channel frequency before processing by a standard CMTS.
**INTERNATIONAL SEARCH REPORT**

A. **CLASSIFICATION OF SUBJECT MATTER**
   - IPC(7) : H04J 1/00
   - US CL : 370/480; 725/149,111
   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)
   - U.S.: 370/480; 725/149,111

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
None

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

C. **DOCUMENTS CONSIDERED TO BE RELEVANT**

<table>
<thead>
<tr>
<th>Category</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
</tr>
</thead>
</table>

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

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Date of the actual completion of the international search
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Name and mailing address of the ISA/US
Mail Stop PCT, Attn: ISA/US
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
Facsimile No. (571) 273-3201

Authorized officer
Duc Ho
Telephone No. 571-272-1130

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