Circular polarity elliptical horn antenna

A relatively low cost, easy to install and aesthetically pleasing digital video broadcast from satellite (DVBS) elliptical horn antenna designed as part of a reflector antenna system (300) to receive satellite television broadcast signals with circular polarity. This type antenna may be implemented with a single antenna feed horn with multiple feed horns that may be arranged separately or in one or more integral feed horn blocks (304, 306). The antennas may be designed to achieve acceptable circular polarity performance over broad and multiple frequency bands through the use of oppositely sloped differential phase differential sections.
## DOCS CONSIDERED TO BE RELEVANT

<table>
<thead>
<tr>
<th>Category</th>
<th>Citation of document with indication, where appropriate, of relevant passages</th>
<th>Relevant to claim</th>
<th>CLASSIFICATION OF THE APPLICATION (IPC)</th>
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<tbody>
<tr>
<td>X</td>
<td>DE 32 03 901 A1 (SIEMENS AG [DE]; AEG TELEFUNKEN NACHRICHTEN [DE]) 25 August 1983 (1983-08-25) * page 3, line 31 - page 5, line 21 * * figures 1,2 * * abstract *</td>
<td>1,4-6, 12,13</td>
<td>INV. H01Q13/02</td>
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### TECHNICAL FIELDS SEARCHED (IPC)

- H01Q
### CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing claims for which payment was due.

- [ ] Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due and for those claims for which claims fees have been paid, namely claim(s):

- [ ] No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due.

### LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

- see sheet B

- [ ] All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.

- [ ] As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.

- [ ] Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:

- [x] None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:

  See annex

- [ ] The present supplementary European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims (Rule 164 (1) EPC).
The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. claims: 1-6,12-15
   Antenna feed horn having a phase adjustment structure extending from an input to an output aperture and providing a differential phase shift of 90°
   ---

2. claims: 7-9
   Antenna feed horn having a transition section and a compensating additive phase differential section
   ---

3. claims: 10,11
   Antenna feed horn having a non-corrugated or smooth-wallet phase adjustment structure
   ---
ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on. The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

27-11-2009

<table>
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<th>Patent document cited in search report</th>
<th>Publication date</th>
<th>Patent family member(s)</th>
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<tbody>
<tr>
<td>DE 3203901 A1</td>
<td>25-08-1983</td>
<td>NONE</td>
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For more details about this annex: see Official Journal of the European Patent Office, No. 12/82