

Title (en)  
MODE COUPLER IN AN AUTOMATIC ANGLE TRACKING SYSTEM

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Application  
**EP 80850014 A 19800206**

Priority  
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Abstract (en)  
[origin: EP0014692A2] the invention relates to a mode coupler which, for example is included in an angle tracking system of a satellite to establish a telecommunication between the transmitting and the receiving ground stations. The mode coupler is realized through a circular main wave guide (1) which also can include the feeding horn of the satellite antenna in which a basic mode, for example the TE<sub>11</sub>-mode of the incoming circular polarized wave guide field appears and which procures two communication channels (f<sub>1</sub>-f<sub>2</sub> and f<sub>3</sub>-f<sub>4</sub> respectively), as well as a beacon frequency (fb). To the main wave guide four rectangular wave guide arms (2a-2d) are connected via the associated apertures (3a-3d). The main wave guide is dimensioned as a mode filter for filtering away the non-desired higher modes TE<sub>21</sub> and TM<sub>01</sub> and the wave guide arms are dimensioned as a frequency filter for filtering away the frequency bands of the communication channels. From the higher modes TE<sub>21</sub> and TM<sub>01</sub>, the difference- and the sum signals are created in known way to provide a measure of the angle error of the satellite antenna.

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**H01P 1/16**; **H01Q 25/04**

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**H01P 1/16** (2013.01); **H01Q 13/025** (2013.01); **H01Q 25/04** (2013.01)

Citation (search report)  
• DE 2632606 A1 19771027 - MARCONI CO LTD  
• FR 2302601 A1 19760924 - THOMSON CSF [FR], et al  
• US 3936838 A 19760203 - FOLDES PETER  
• US 3566309 A 19710223 - AJIOKA JAMES S  
• AP-S INTERNATIONAL SYMPOSIUM 1975; IEEE New York US C.C. HAN et al.: "A Split-Mode Horn/Reflector Antenna. A New Concept in Antenna Design", pages 93-96. \* The whole document \*

Cited by  
FR2498336A1; EP1672739A1; CN116581550A; GB2163909A; CN103094718A; EP1369955A3; US2013207859A1; US9843099B2; WO2012172565A1; US9735470B2; WO2013121221A3

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