

Title (en)  
Multi-band antenna with variable electrical tilt

Title (de)  
Mehrfachband-Antenne mit variabler elektrischer Inklination

Title (fr)  
Antenne multibande à inclinaison électrique variable

Publication  
**EP 2706613 B1 20171122 (FR)**

Application  
**EP 12306096 A 20120911**

Priority  
EP 12306096 A 20120911

Abstract (en)  
[origin: EP2706613A1] The system has a Butler matrix output (74A) connected to a module (75A) to allow an independent electric tilt for each waveband. The module includes a stage of diplexers for separating a signal according to different wavebands and a stage of fixed delay lines to apply an electric delay to the signal in each frequency band. The module has a stage of variable phase-shifters to introduce an adjusted dephasing of the signal into each frequency band, and a fourth stage of diplexers to regroup the signals in the different frequency bands for transmitting the signals to a radiating element (76A). An independent claim is also included for a method for controlling a variable electric tilt in a vertical plane of networked radiating elements of a multi-band antenna.

IPC 8 full level  
**H01Q 1/24** (2006.01); **H01Q 3/40** (2006.01); **H01Q 5/28** (2015.01); **H01Q 25/00** (2006.01)

CPC (source: EP US)  
**H01Q 1/246** (2013.01 - EP US); **H01Q 3/36** (2013.01 - US); **H01Q 3/40** (2013.01 - EP US); **H01Q 5/28** (2015.01 - EP US);  
**H01Q 21/0006** (2013.01 - US); **H01Q 25/00** (2013.01 - EP US)

Cited by  
CN108028463A; WO2015167607A1; US10243263B2; US10923804B2

Designated contracting state (EPC)  
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

DOCDB simple family (publication)  
**EP 2706613 A1 20140312**; **EP 2706613 B1 20171122**; CN 104756318 A 20150701; CN 104756318 B 20171222; JP 2015530052 A 20151008;  
JP 6012873 B2 20161025; US 10103432 B2 20181016; US 2015244072 A1 20150827; WO 2014040957 A1 20140320

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**EP 12306096 A 20120911**; CN 201380055496 A 20130909; EP 2013068631 W 20130909; JP 2015531528 A 20130909;  
US 201314427085 A 20130909