

Title (en)  
HYBRID MODE WAVEGUIDING MEMBER AND HYBRID MODE FEEDHORN ANTENNA

Publication  
**EP 0024685 B1 19840215 (EN)**

Application  
**EP 80104951 A 19800820**

Priority  
• US 6862179 A 19790822  
• US 6872679 A 19790822

Abstract (en)  
[origin: EP0024685A1] The waveguiding member transforming the TE<sub>11</sub> mode into the HE<sub>11</sub> mode, comprises a waveguide body (12), including a tubular section (12) at the TE<sub>11</sub> mode entrance port, and a spiro-helical projection (18) bonded to the interior surface of the waveguide body. In a first arrangement, the spiro-helical projection comprises a closely spaced helically wound wire structure (18) formed of dielectrically coated wires which decrease in gauge size in small adjacent portions thereof as the helix progresses away from the TE<sub>11</sub> mode entrance port and in the remainder of the helical projection, the same or decreasing gauge wire in adjacent portions can be used. In another arrangement, the spiro-helical projection comprises an initially flattened dielectrically coated wire that gradually returns to a rounded configuration in closely spaced helical turns after which the spacings between turns gradually increase linearly in the tubular section. In a further arrangement, multiple layers of closely-wound helically wound dielectrically coated wires, which layers gradually taper down to a single layer, can replace the closely spaced flattened-to-round wire section of other arrangement.

IPC 1-7  
**H01P 1/16**; **H01P 3/127**; **H01Q 13/02**

IPC 8 full level  
**H01P 1/16** (2006.01); **H01P 3/127** (2006.01); **H01Q 13/02** (2006.01)

CPC (source: EP)  
**H01P 1/16** (2013.01); **H01P 3/127** (2013.01); **H01Q 13/0208** (2013.01)

Cited by  
CN112615161A; FR2603425A1; US4971847A; US11289816B2; WO2018157921A1; WO8401472A1; US11613931B2; US11959382B2; WO2023283167A1

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