## CPC: COOPERATIVE PATENT CLASSIFICATION

### H ELECTRICITY

**H01 BASIC ELECTRIC ELEMENTS**

**H01P WAVEGUIDES; RESONATORS, LINES, OR OTHER DEVICES OF THE WAVEGUIDE TYPE (operating at optical frequencies G02B)**

**NOTE**

In this subclass, the following expression is used with the meaning indicated:

- "waveguide type" as applied to transmission lines includes only high-frequency coaxial cables or Lecher lines, and as applied to resonators, delay lines, or other devices includes all devices having distributed inductance and capacitance.

**WARNING**

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

### 1/00 Auxiliary devices (coupling devices of the waveguide type H01P 5/00)

- 1/005 [Diode mounting means]
- 1/02 Bends; Corners; Twists
- 1/022 [In waveguides of polygonal section (H01P 1/065 takes precedence)]
- 1/025 [In the E-plane]
- 1/027 [In the H-plane]
- 1/04 Fixed joints
- 1/042 [Hollow waveguide joints]
- 1/045 [Coaxial joints]
- 1/047 [Strip line joints]
- 1/06 Movable joints, e.g., rotating joints
  - 1/061 [The relative movement being a translation along an axis common to at least two rectilinear parts, e.g., expansion joints]
  - 1/062 [The relative movement being a rotation]
  - 1/063 [With a limited angle of rotation]
  - 1/064 [The axis of rotation being perpendicular to the transmission path, e.g., hinge joint]
  - 1/065 [The axis of rotation being parallel to the transmission path, e.g., stepped twist]
  - 1/066 [With an unlimited angle of rotation]
  - 1/067 [The energy being transmitted in only one line located on the axis of rotation]
  - 1/068 [The energy being transmitted in at least one ring-shaped transmission line located around the axis of rotation, e.g., “around the mast” rotary joint (H01P 1/069 takes precedence; coaxial line with solid inner conductor H01P 1/067)]
- 1/069 [The energy being transmitted in at least one ring-shaped transmission line located around an axial transmission line; Concentric coaxial systems]

- 1/08 Dielectric windows
- 1/10 for switching or interrupting [(in systems using reflection or reradiation of radio, acoustic or other waves G01S 7/034)]
- 1/11 by ferromagnetic devices

- 1/12 by mechanical chopper
- 1/122 [Waveguide switches]
- 1/125 [Coaxial switches]
- 1/127 [Strip line switches]
- 1/14 by electric discharge devices (discharge devices H01L 17/64)
- 1/15 by semiconductor devices
- 1/16 for mode selection, e.g., mode suppression or mode promotion; for mode conversion
- 1/161 sustaining two independent orthogonal modes, e.g., orthomode transducer [combining or separating polarisations and frequencies H01P 1/2131]
- 1/162 absorbing spurious or unwanted modes of propagation
- 1/163 specifically adapted for selection or promotion of the TE_{01} circular-electric mode
- 1/165 for rotating the plane of polarisation
- 1/17 for producing a continuously rotating polarisation, e.g., circular polarisation
- 1/171 [Using a corrugated or ridged waveguide section]
- 1/172 [Using a dielectric element]
- 1/173 [Using a conductive element]
- 1/174 [Using a magnetic element (H01P 1/175 takes precedence)]
- 1/175 using Faraday rotators
- 1/18 Phase-shifters (H01P 1/165 takes precedence)
- 1/181 [Using ferroelectric devices]
- 1/182 [Waveguide phase-shifters (H01P 1/181, H01P 1/185, H01P 1/19 take precedence)]
- 1/183 [Coaxial phase-shifters (H01P 1/18, H01P 1/185, H01P 1/19 take precedence)]
- 1/184 [Strip line phase-shifters (H01P 1/181, H01P 1/185, H01P 1/19 take precedence)]
- 1/185 using a diode or a gas filled discharge tube
- 1/19 using a ferromagnetic device
- 1/195 having a toroidal shape
- 1/20 Frequency-selective devices, e.g., filters
Filters for transverse electromagnetic waves (H01P 1/213, H01P 1/215, H01P 1/219 take precedence)

H01P 1/213 and 1/215

H01P 1/215 takes precedence

H01P 1/213 returns

Photonic bandgaps [PBG]

Electromagnetic photonic bandgaps [EPB], or { using ferromagnetic material (H01P 1/212, H01P 1/213, H01P 1/215, H01P 1/219 take precedence) }

H01P 1/213, H01P 1/215, H01P 1/219

{ using hollow waveguide filters (H01P 1/2131 takes precedence) }

Cascaded coaxial cavities (H01P 1/2131 takes precedence)

{ using comb or interdigital filters; using cascaded coaxial cavities (H01P 1/2131 takes precedence) }

{ using strip line filters (H01P 1/2131 takes precedence) }

{ using coaxial filters (H01P 1/2131 takes precedence) }

{ with combining or separating polarisations }

Waffle-iron filters; Corrugated structures

Cascaded cavities; Cascaded resonators inside a hollow waveguide structure (H01P 1/205 takes precedence)

Combi or interdigital filters; Cascaded coaxial cavities (H01P 1/205 takes precedence)

{ with dielectric resonators; using ferromagnetic material acting as a tuning element in resonators }

(ferromagnetic material acting as a frequency selective coupling element, e.g. YIG-filters)

Evanescent mode filters

Attenuating devices (dissipative terminating devices H01P 1/26)

{ using strip line attenuators (H01P 1/23 takes precedence) }

{ using Faraday rotators }

Field displacement isolators

Resonance absorption isolators

Junction circulators, e.g. Y-circulators

Strip line circulators

Hollow waveguide circulators

using Faraday rotators

using non-reciprocal phase shifters (H01P 1/393 takes precedence)

Non-reciprocal transmission devices (H01P 1/02 - H01P 1/30 take precedence)

Isolators

[Edge-guided mode devices]

Resonance absorption isolators

Field displacement isolators

using Faraday rotators

using non-reciprocal phase shifters (H01P 1/393 takes precedence)

Ferromagnetic material

Termining devices

Dissipative terminations

{ the dissipative medium being a liquid or being cooled by a liquid }

Waveguide terminations (H01P 1/262 takes precedence)

Coaxial terminations (H01P 1/262 takes precedence)

Strip line terminations (H01P 1/262 takes precedence)

Short-circuiting plungers

for compensation of, or protection against, temperature or moisture effects [ ; for improving power handling capability (H01P 1/04, H01P 1/08 take precedence) ]

Non-reciprocal transmission devices (H01P 1/02 - H01P 1/30 take precedence)

Microstrips; Strip lines

Circulators

Junction circulators, e.g. Y-circulators

Strip line circulators

Hollow waveguide circulators

using Faraday rotators

using non-reciprocal phase shifters (H01P 1/393 takes precedence)

Waveguides; Transmission lines of the waveguide type

Coplanar lines

Conductor backed coplanar waveguides

with two longitudinal conductors

Fin lines; Slot lines

Coplanar striplines (CPS)

Lines formed as Lecher wire pairs

Coaxial lines

NOTE

This subgroup is only used for documents disclosing typical HF-features of coaxial cables, e.g. propagation of non-TEM-modes, multimoding, oversized coaxial cables, particular cross-section adapted for HF-propagation
Coupling devices of the waveguide type

5/02 . with invariable factor of coupling (H01P 5/12 takes precedence)
5/022 . (Transitions between lines of the same kind and shape, but with different dimensions)
5/024 . [between hollow waveguides]
5/026 . [between coaxial lines]
5/028 . [between strip lines]
5/04 . with variable factor of coupling
5/08 . for linking dissimilar lines or devices (H01P 1/16, H01P 5/04 take precedence; linking lines of the same kind but with different dimensions H01P 5/02)
5/082 . (Transitions between hollow waveguides of different shape, e.g. between a rectangular and a circular waveguide)
5/085 . [Coaxial-line/strip-line transitions]
5/087 . [Transitions to a dielectric waveguide]
5/10 . for coupling balanced with unbalanced lines or devices
5/1007 . [Microstrip transitions to Slotline or finline]
5/1015 . [Coplanar line transitions to Slotline or finline]
5/1022 . [Transitions to dielectric waveguide]
5/103 . Hollow-waveguide/coaxial-line transitions
5/107 . Hollow-waveguide/strip-line transitions
5/12 . Coupling devices having more than two ports (H01P 5/04 takes precedence)
5/16 . Conjugate devices, i.e. devices having at least one port decoupled from one other port
5/18 . consisting of two coupled guides, e.g. directional couplers
5/181 . [the guides being hollow waveguides]
5/182 . [the waveguides being arranged in parallel]
5/183 . [at least one of the guides being a coaxial line]
5/184 . [the guides being strip lines or microstrips]