CPC COOPERATIVE PATENT CLASSIFICATION

H01P WAVEGUIDES; RESONATORS, LINES, OR OTHER DEVICES OF THE WAVEGUIDE TYPE (operating at optical frequencies G02B; aerials H01Q; {modulating electromagnetic waves in transmission line, waveguide, cavity resonator or radiation field of aerial H03C 7/02}; networks comprising lumped impedance elements H03H)

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.

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

H01P 1/005 . {Diode mounting means}

H01P 1/02 . Bends; Corners; Twists

H01P 1/022 . . {in waveguides of polygonal cross-section (H01P 1/065 takes precedence)}

H01P 1/025 . . . {in the E-plane}

H01P 1/027 . . . {in the H-plane}

H01P 1/04 . Fixed joints ({pipe joints F16L}; line connectors H01R; cable fittings H02G 15/00)

H01P 1/042 . . {Hollow waveguide joints}

H01P 1/045 . . {Coaxial joints}

H01P 1/047 . . {Strip line joints}

H01P 1/06 . Movable joints, e.g. rotating joints

H01P 1/061 . . {the relative movement being a translation along an axis common to at least two rectilinear parts, e.g. expansion joints}

H01P 1/062 . . {the relative movement being a rotation}

H01P 1/063 . . . {with a limited angle of rotation}

H01P 1/064 . . . . {the axis of rotation being perpendicular to the transmission path, e.g. hinge joint}

H01P 1/065 . . . . {the axis of rotation being parallel to the transmission path, e.g. stepped twist}

H01P 1/066 . . . {with an unlimited angle of rotation}

H01P 1/067 . . . . {the energy being transmitted in only one line located on the axis of rotation}

H01P 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)}

H01P 1/069 . . . . {the energy being transmitted in at least one ring-shaped transmission line located around an axial transmission line; Concentric coaxial systems}

H01P 1/08 . Dielectric windows (coupling devices for transit time tubes H01J 23/36)

H01P 1/10 . for switching or interrupting {(in systems using reflection or reradiation of radio, acoustic or other waves G01S 7/034)}

H01P 1/11 . . by ferromagnetic devices

H01P 1/12 . . by mechanical chopper

H01P 1/122 . . . {Waveguide switches}

H01P 1/125 . . . {Coaxial switches}

H01P 1/127 . . . {Strip line switches}

H01P 1/14 . . by electric discharge devices (discharge devices H01J 17/64)

H01P 1/15 . . by semiconductor devices

H01P 1/16 . for mode selection, e.g. mode suppression or mode promotion; for mode conversion (linking dissimilar lines or devices H01P 5/08)

H01P 1/161 . . sustaining two independent orthogonal modes, e.g. orthomode transducer {(combining or separating polarisations and frequencies H01P 1/2131)}

H01P 1/162 . . absorbing spurious or unwanted modes of propagation

H01P 1/163 . . specifically adapted for selection or promotion of the TE_{01} circular-electric mode

H01P 1/165 . for rotating the plane of polarisation

H01P 1/17 . . for producing a continuously rotating polarisation, e.g. circular polarisation

H01P 1/171 . . . {using a corrugated or ridged waveguide section}

H01P 1/172 . . . {using a dielectric element}

H01P 1/173 . . . {using a conductive element}

H01P 1/174 . . . {using a magnetic element (H01P 1/175 takes precedence)}

H01P 1/175 . . using Faraday rotators

H01P 1/18 . Phase-shifters (H01P 1/165 takes precedence; coupling devices with variable coupling factor H01P 5/04)

H01P 1/181 . . {using ferroelectric devices}

H01P 1/182 . . {Waveguide phase-shifters (H01P 1/181, H01P 1/185, H01P 1/19 take precedence)}

H01P 1/183 . . {Coaxial phase-shifters (H01P 1/181, H01P 1/185, H01P 1/19 take precedence)}

H01P 1/184 . . {Strip line phase-shifters (H01P 1/181, H01P 1/185, H01P 1/19 take precedence)}

H01P 1/185 . . using a diode or a gas filled discharge tube

H01P 1/19 . . using a ferromagnetic device

H01P 1/195 . . . having a toroidal shape

H01P 1/20 . Frequency-selective devices, e.g. filters ({variable impedance transformers, e.g. slug tuners or stub tuners H01P 5/04}; resonators H01P 7/00)

H01P 1/2002 . . {Dielectric waveguide filters (H01P 1/212, H01P 1/213, H01P 1/215, H01P 1/219 take precedence)}

H01P 1/2005 . . {Electromagnetic photonic bandgaps [EPB], or photonic bandgaps [PBG]}

H01P 1/2007 . . {Filtering devices for biasing networks or DC returns}

H01P 1/201 . . Filters for transverse electromagnetic waves (H01P 1/212,H01P 1/213,H01P 1/215,H01P 1/219 take precedence)

H01P 1/2013 . . . {Coplanar line filters}

H01P 1/2016 . . . {Slot line filters; Fin line filters}

H01P 1/202 . . . Coaxial filters (cascaded coaxial cavities H01P 1/205)

H01P 1/203 . . . Strip line filters

H01P 1/20309 . . . . {with dielectric resonator}

H01P 1/20318 . . . . . {with dielectric resonators as non-metallised opposite openings in the metallised surfaces of a substrate}

H01P 1/20327 . . . . {Electromagnetic interstage coupling}

H01P 1/20336 . . . . . {Comb or interdigital filters}

H01P 1/20345 . . . . . {Multilayer filters}

H01P 1/20354 . . . . . {Non-comb or non-interdigital filters}

H01P 1/20363 . . . . . {Linear resonators}

H01P 1/20372 . . . . . {Hairpin resonators}

H01P 1/20381 . . . . . {Special shape resonators}

H01P 1/2039 . . . . {Galvanic coupling between Input/Output}

H01P 1/205 . . . Comb or interdigital filters; Cascaded coaxial cavities (H01P 1/203 takes precedence)

H01P 1/2053 . . . . {the coaxial cavity resonators being disposed parall to each other}

H01P 1/2056 . . . . {Comb filters or interdigital filters with metallised resonator holes in a dielectric block}

H01P 1/207 . . Hollow waveguide filters (H01P 1/212, H01P 1/213, H01P 1/215, H01P 1/219 take precedence)

H01P 1/208 . . . Cascaded cavities; Cascaded resonators inside a hollow waveguide structure (H01P 1/205 takes precedence)

H01P 1/2082 . . . . {with multimode resonators (H01P 1/2086 takes precedence)}

H01P 1/2084 . . . . {with dielectric resonators}

H01P 1/2086 . . . . . {multimode}

H01P 1/2088 . . . . {Integrated in a substrate}

H01P 1/209 . . . comprising one or more branching arms or cavities wholly outside the main waveguide

H01P 1/211 . . . Waffle-iron filters; Corrugated structures

H01P 1/212 . . suppressing or attenuating harmonic frequencies (H01P 1/215 takes precedence)

H01P 1/213 . . combining or separating two or more different frequencies (H01P 1/215 takes precedence)

H01P 1/2131 . . . {with combining or separating polarisations}

H01P 1/2133 . . . {using coaxial filters (H01P 1/2131, H01P 1/2136 take precedence)}

H01P 1/2135 . . . {using strip line filters (H01P 1/2131 takes precedence)}

H01P 1/2136 . . . {using comb or interdigital filters; using cascaded coaxial cavities (H01P 1/2131, H01P 1/2135 take precedence)}

H01P 1/2138 . . . {using hollow waveguide filters (H01P 1/2131 takes precedence)}

H01P 1/215 . . using ferromagnetic material
H01P 1/217 . . . the ferromagnetic material acting as a tuning element in resonators
H01P 1/218 . . . the ferromagnetic material acting as a frequency selective coupling element, e.g. YIG-filters
H01P 1/219 . . Evanescent mode filters
H01P 1/22 . Attenuating devices (dissipative terminating devices H01P 1/26)
H01P 1/222 . . {Waveguide attenuators (H01P 1/23 takes precedence)}
H01P 1/225 . . {Coaxial attenuators (H01P 1/23 takes precedence)}
H01P 1/227 . . {Strip line attenuators (H01P 1/23 takes precedence)}
H01P 1/23 . . using ferromagnetic material
H01P 1/24 . Terminating devices
H01P 1/26 . . Dissipative terminations
H01P 1/262 . . . {the dissipative medium being a liquid or being cooled by a liquid}
H01P 1/264 . . . {Waveguide terminations (H01P 1/262 takes precedence)}
H01P 1/266 . . . {Coaxial terminations (H01P 1/262 takes precedence)}
H01P 1/268 . . . {Strip line terminations (H01P 1/262 takes precedence)}
H01P 1/28 . . Short-circuiting plungers (coupling devices with variable coupling factor H01P 5/04)
H01P 1/30 . for compensation of, or protection against, temperature or moisture effects; {for improving power handling capability (H01P 1/04, H01P 1/08 take precedence)}
H01P 1/32 . Non-reciprocal transmission devices (H01P 1/02 to H01P 1/30 take precedence)
H01P 1/36 . . Isolators
H01P 1/362 . . . {Edge-guided mode devices}
H01P 1/365 . . . Resonance absorption isolators
H01P 1/37 . . . Field displacement isolators
H01P 1/375 . . . using Faraday rotators
H01P 1/38 . . Circulators
H01P 1/383 . . . Junction circulators, e.g. Y-circulators
H01P 1/387 . . . . Strip line circulators
H01P 1/39 . . . . Hollow waveguide circulators
H01P 1/393 . . . using Faraday rotators
H01P 1/397 . . . using non- reciprocal phase shifters (H01P 1/393 takes precedence)

H01P 3/00 Waveguides; Transmission lines of the waveguide type

H01P 3/003 . {Coplanar lines}
H01P 3/006 . . {Conductor backed coplanar waveguides}
H01P 3/02 . with two longitudinal conductors
H01P 3/023 . . {Fin lines; Slot lines}
H01P 3/026 . . {Coplanar striplines [CPS]}
H01P 3/04 . . Lines formed as Lecher wire pairs

H01P 3/06 . . Coaxial lines (not suitable for handling frequencies considerably beyond the audio range, {coaxial cables in general} H01B 11/18)

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

H01P 3/08 . . Microstrips; Strip lines

H01P 3/081 . . . {Micro-striplines}

H01P 3/082 . . . . {Multilayer dielectric}

H01P 3/084 . . . . {Suspended micro-striplines}

H01P 3/085 . . . {Triplate lines}

H01P 3/087 . . . . {Suspended triplate lines}

H01P 3/088 . . . {Stacked transmission lines}

H01P 3/10 . Wire waveguides, i.e. with a single solid longitudinal conductor

H01P 3/12 . Hollow waveguides (H01P 3/20 takes precedence)

H01P 3/121 . . {integrated in a substrate}

H01P 3/122 . . {Dielectric loaded (not air)}

H01P 3/123 . . with a complex or stepped cross-section, e.g. ridged or grooved waveguides (H01P 3/14 takes precedence)

H01P 3/127 . . with a circular, elliptic, or parabolic cross-section

H01P 3/13 . . specially adapted for transmission of the TE_{01} circular-electric mode {(selection, promotion H01P 1/163)}

H01P 3/14 . . flexible

H01P 3/16 . Dielectric waveguides, i.e. without a longitudinal conductor

H01P 3/165 . . {Non-radiating dielectric waveguides}

H01P 3/18 . built-up from several layers to increase operating surface, i.e. alternately conductive and dielectric layers

H01P 3/20 . Quasi-optical arrangements for guiding a wave, e.g. focusing by dielectric lenses (quasi-optical devices in general H01Q 15/00)

H01P 5/00 **Coupling devices of the waveguide type** (non-reciprocal devices H01P 1/32; for introducing or removing wave energy to or from the discharge in transit-time tubes H01J 23/36)

H01P 5/02 . with invariable factor of coupling (H01P 5/12 takes precedence {choke joints H01P 1/04, H01P 1/06})

H01P 5/022 . . {Transitions between lines of the same kind and shape, but with different dimensions}

H01P 5/024 . . . {between hollow waveguides}

H01P 5/026 . . . {between coaxial lines}

H01P 5/028 . . . {between strip lines}

H01P 5/04 . with variable factor of coupling

H01P 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)

H01P 5/082 . . {Transitions between hollow waveguides of different shape, e.g. between a rectangular and a circular waveguide}

H01P 5/085 . . {Coaxial-line/strip-line transitions}

H01P 5/087 . . {Transitions to a dielectric waveguide}

H01P 5/10 . . for coupling balanced with unbalanced lines or devices

H01P 5/1007 . . . {Microstrip transitions to Slotline or finline}

H01P 5/1015 . . . {Coplanar line transitions to Slotline or finline}

H01P 5/1022 . . . {Transitions to dielectric waveguide}

H01P 5/103 . . . Hollow-waveguide/coaxial-line transitions

H01P 5/107 . . . Hollow-waveguide/strip-line transitions

H01P 5/12 . Coupling devices having more than two ports (H01P 5/04 takes precedence)

H01P 5/16 . . Conjugate devices, i.e. devices having at least one port decoupled from one other port

H01P 5/18 . . . consisting of two coupled guides, e.g. directional couplers

H01P 5/181 . . . . {the guides being hollow waveguides}

H01P 5/182 . . . . . {the waveguides being arranged in parallel}

H01P 5/183 . . . . {at least one of the guides being a coaxial line}

H01P 5/184 . . . . {the guides being strip lines or microstrips}

H01P 5/185 . . . . . {Edge coupled lines}

H01P 5/186 . . . . . {Lange couplers}

H01P 5/187 . . . . . {Broadside coupled lines}

H01P 5/188 . . . . {the guides being dielectric waveguides}

H01P 5/19 . . . of the junction type

H01P 5/20 . . . . Magic-T junctions

H01P 5/22 . . . . Hybrid ring junctions

H01P 5/222 . . . . . {180° rat race hybrid rings}

H01P 5/225 . . . . . {180° reversed phase hybrid rings}

H01P 5/227 . . . . . {90° branch line couplers}

H01P 7/00 **Resonators of the waveguide type** ({variable impedance transformers H01P 5/04}; structurally associated with transit-time tubes and interacting with the discharge therein H01J 23/18; {generators of electronic oscillations using resonators of this type H03B 5/18, H03B 7/14, H03B 9/14; electronic amplifiers using resonators of this type H03F 3/54}; microwave heating devices H05B 6/64)

H01P 7/005 . {Helical resonators; Spiral resonators}

H01P 7/02 . Lecher resonators

H01P 7/04 . Coaxial resonators

H01P 7/06 . Cavity resonators

H01P 7/065 . . {integrated in a substrate}

H01P 7/08 . Strip line resonators

H01P 7/082 . . {Microstripline resonators (H01P 7/088 takes precedence)}

H01P 7/084 . . {Triplate line resonators (H01P 7/088 takes precedence)}

H01P 7/086 . . {Coplanar waveguide resonators (H01P 7/088 takes precedence)}

H01P 7/088 . . {Tunable resonators}

H01P 7/10 . Dielectric resonators

H01P 7/105 . . {Multimode resonators}

H01P 9/00 **Delay lines of the waveguide type** (structurally associated with transit-time tubes and interacting with the discharge therein H01J 23/24)

H01P 9/003 . {Delay equalizers}

H01P 9/006 . {Meander lines}

H01P 9/02 . Helical lines

H01P 9/04 . Interdigital lines

H01P 11/00 **Apparatus or processes specially adapted for manufacturing waveguides or resonators, lines, or other devices of the waveguide type** (manufacture of coaxial cables H01B 13/00)

H01P 11/001 . {Manufacturing waveguides or transmission lines of the waveguide type}

H01P 11/002 . . {Manufacturing hollow waveguides}

H01P 11/003 . . {Manufacturing lines with conductors on a substrate, e.g. strip lines, slot lines}

H01P 11/005 . . {Manufacturing coaxial lines}

H01P 11/006 . . {Manufacturing dielectric waveguides}

H01P 11/007 . {Manufacturing frequency-selective devices (resonators H01P 11/008)}

H01P 11/008 . {Manufacturing resonators}