H01P 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; 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.

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 cross-section (H01P 1/065 takes precedence)}
1/025 .. {in the E-plane}
1/027 .. {in the H-plane}
1/04 .. Fixed joints {(pipe joints F16L); line connectors H01R; cable fittings H02G 15/00}
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 (coupling devices for transit time tubes H01J 23/36)

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 H01J 17/64)
1/15 .. by semiconductor devices
1/16 .. for mode selection, e.g. mode suppression or mode promotion; for mode conversion (linking dissimilar lines or devices H01P 5/08)
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; coupling devices with variable coupling factor H01P 5/04)
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 1/181,
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 ((variable
impedance transformers, e.g. slug tuners or stub
tuners H01P 5/04); resonators H01P 7/00)

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

1/2005 . . . (Electromagnetic photonic bandgaps [EPB], or
photonic bandgaps [PBG])

1/2007 . . . (Filtering devices for biasing networks or DC
returns)

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

1/2013 . . . (Coplanar line filters)

1/2016 . . . (Slot line filters; Fin line filters)

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

1/203 . . . Strip line filters

1/20309 . . . . . . . with dielectric resonator

1/20318 . . . . . . . (with dielectric resonators as non-
metallised opposite openings in the
metallised surfaces of a substrate)

1/20327 . . . . . . . (Electromagnetic interstage coupling)

1/20336 . . . . . . . (Comb or interdigital filters)

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

1/20354 . . . . . . . (Non-comb or non-interdigital filters)

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

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

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

1/2039 . . . . . . . (Galvanic coupling between Input/Output)

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

1/2053 . . . . . . . (the coaxial cavity resonators being disposed
parallel to each other)

1/2056 . . . . . . . (Comb filters or interdigital filters with
metallised resonator holes in a dielectric
block)

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

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

1/2082 . . . . . . . (with multimode resonators (H01P 1/206
takes precedence))

1/2084 . . . . . . . (with dielectric resonators)

1/2086 . . . . . . . (multimode)

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

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

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

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

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

1/2131 . . . . . . (with combining or separating polarisations)

1/2133 . . . . . . (using coaxial filters (H01P 1/2131,
H01P 1/2136 takes precedence))

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

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

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

1/215 . . . . . . . using ferromagnetic material

1/217 . . . . . . . the ferromagnetic material acting as a tuning
element in resonators

1/218 . . . . . . . the ferromagnetic material acting as a
frequency selective coupling element, e.g.
YIG-filters

1/219 . . . . . . . Evanescent mode filters

1/22 . . . . . . . Attenuating devices (dissipative terminating devices
H01P 1/26)

1/222 . . . . . . . (Waveguide attenuators (H01P 1/23 takes
precedence)

1/225 . . . . . . . (Coaxial attenuators (H01P 1/23 takes
precedence)

1/227 . . . . . . . (Strip line attenuators (H01P 1/23 takes
precedence)

1/23 . . . . . . . using ferromagnetic material

1/24 . . . . . . . Terminating devices

1/26 . . . . . . . Dissipative terminations

1/262 . . . . . . . (the dissipative medium being a liquid or being
cooled by a liquid)

1/264 . . . . . . . (Waveguide terminations (H01P 1/262 takes
precedence)

1/266 . . . . . . . (Coaxial terminations (H01P 1/262 takes
precedence)

1/268 . . . . . . . (Strip line terminations (H01P 1/262 takes
precedence)

1/28 . . . . . . . Short-circuiting plungers (coupling devices with
variable coupling factor H01P 5/04)

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)

1/32 . . . . . . . Non-reciprocal transmission devices
(H01P 1/02, H01P 1/30 take precedence)

1/36 . . . . . . . Isolators

1/362 . . . . . . . (Edge-guided mode devices)

1/365 . . . . . . . Resonance absorption isolators

1/37 . . . . . . . Field displacement isolators

1/375 . . . . . . . using Faraday rotators

1/38 . . . . . . . Circulators

1/383 . . . . . . . Junction circulators, e.g. Y-circulators

1/387 . . . . . . . Strip line circulators

1/39 . . . . . . . Hollow waveguide circulators

1/393 . . . . . . . using Faraday rotators

1/397 . . . . . . . using non-reciprocal phase shifters
(H01P 1/393 takes precedence)

3/00 Waveguides; Transmission lines of the waveguide
type

3/003 . . . (Coplanar lines)

3/006 . . . (Conductor backed coplanar waveguides)

3/02 . . . with two longitudinal conductors
transit-time tubes H01J 23/36
removing wave energy to or from the discharge in Coupling devices of the waveguide type

same kind but with different dimensions H01P 5/02

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)

6/00 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)

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

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 guides 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]

5/185 [Edge coupled lines]

5/186 [Lange couplers]

5/187 [Broadside coupled lines]

5/188 [the guides being dielectric waveguides]

5/19 of the junction type

5/20 Magic-T junctions

5/22 Hybrid ring junctions

5/222 [180° rat race hybrid rings]

5/225 [180° reversed phase hybrid rings]

5/227 [90° branch line couplers]

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)

7/005 Helical resonators; Spiral resonators

7/02 Lecher resonators

7/04 Coaxial resonators

7/06 Cavity resonators

7/065 [integrated in a substrate]

7/08 Strip line resonators

7/082 [Microstrip line resonators (H01P 7/088 takes precedence)]

7/084 [Triplate line resonators (H01P 7/088 takes precedence)]

7/086 [Coplanar waveguide resonators (H01P 7/088 takes precedence)]

7/088 Tunable resonators

7/10 Dielectric resonators

7/105 Multimode resonators

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

9/003 Delay equalizers

9/006 Meander lines

9/02 Helical lines

9/04 Interdigital lines
<table>
<thead>
<tr>
<th>11/00</th>
<th>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)</th>
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<tr>
<td>11/001</td>
<td>[Manufacturing waveguides or transmission lines of the waveguide type]</td>
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<td>11/002</td>
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<tr>
<td>11/003</td>
<td>[Manufacturing lines with conductors on a substrate, e.g. strip lines, slot lines]</td>
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