

CPC COOPERATIVE PATENT CLASSIFICATION

H ELECTRICITY

(NOTE omitted)

H03 BASIC ELECTRONIC CIRCUITRY

H03H IMPEDANCE NETWORKS, e.g. RESONANT CIRCUITS; RESONATORS (measuring, testing [G01R](#); arrangements for producing a reverberation or echo sound [G10K 15/08](#); impedance networks or resonators consisting of distributed impedances, e.g. of the waveguide type, [H01P](#); control of amplification, e.g. bandwidth control of amplifiers, [H03G](#); tuning resonant circuits, e.g. tuning coupled resonant circuits, [H03J](#); networks for modifying the frequency characteristics of communication systems [H04B](#))

NOTES

1. This subclass covers :
 - networks comprising lumped impedance elements;
 - networks comprising distributed impedance elements together with lumped impedance elements;
 - networks comprising electromechanical or electro-acoustic elements;
 - networks simulating reactances and comprising discharge tubes or semiconductor devices;
 - constructions of electromechanical resonators.
2. In this subclass, the following expression is used with the meaning indicated:
"passive elements" means resistors, capacitors, inductors, mutual inductors or diodes.
3. Attention is drawn to the Notes following the titles of class [B81](#) and subclass [B81B](#) relating to "microstructural devices" and "microstructural systems".
4. In this subclass, main groups with a higher number take precedence.

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.

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| 1/00 | Constructional details of impedance networks whose electrical mode of operation is not specified or applicable to more than one type of network (constructional details of electromechanical transducers H03H 9/00) | 2/003 | • {comprising optical fibre network elements (optical elements <i>per se</i> G02B , G02F ; transmission systems using light waves H04B 10/00)} |
| 1/0007 | • {of radio frequency interference filters} | 2/005 | • {Coupling circuits between transmission lines or antennas and transmitters, receivers or amplifiers} |
| 2001/0014 | • {Capacitor filters, i.e. capacitors whose parasitic inductance is of relevance to consider it as filter} | 2/006 | • • {Transmitter or amplifier output circuits} |
| 2001/0021 | • {Constructional details} | 2/008 | • • {Receiver or amplifier input circuits} |
| 2001/0028 | • • {RFI filters with housing divided in two bodies} | 3/00 | Apparatus or processes specially adapted for the manufacture of impedance networks, resonating circuits, resonators |
| 2001/0035 | • • {Wound magnetic core} | 3/007 | • for the manufacture of electromechanical resonators or networks |
| 2001/0042 | • • {Wound, ring or feed-through type capacitor} | 2003/0071 | • • {of bulk acoustic wave and surface acoustic wave elements in the same process} |
| 2001/005 | • • {Wound, ring or feed-through type inductor} | 3/0072 | • • {of microelectro-mechanical resonators or networks (micromembranes or microbeams B81B 2203/01 ; manufacture of microstructural devices in general B81C)} |
| 2001/0057 | • • {comprising magnetic material} | 3/0073 | • • • {Integration with other electronic structures} |
| 2001/0064 | • • {comprising semiconductor material} | 3/0075 | • • • {Arrangements or methods specially adapted for testing microelectro-mechanical resonators or networks} |
| 2001/0071 | • • {comprising zig-zag inductor} | 3/0076 | • • • {for obtaining desired frequency or temperature coefficients} |
| 2001/0078 | • • {comprising spiral inductor on a substrate} | 3/0077 | • • • • {by tuning of resonance frequency} |
| 2001/0085 | • • {Multilayer, e.g. LTCC, HTCC, green sheets (inside PCB filters H05K)} | 3/0078 | • • • • {involving adjustment of the transducing gap} |
| 2001/0092 | • {Inductor filters, i.e. inductors whose parasitic capacitance is of relevance to consider it as filter} | | |
| 1/02 | • of RC networks, e.g. integrated networks | | |
| 2/00 | Networks using elements or techniques not provided for in groups H03H 3/00 - H03H 21/00 | | |
| 2/001 | • {comprising magnetostatic wave network elements} | | |

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| 3/013 | . . for obtaining desired frequency or temperature coefficient (H03H 3/0076 H03H 3/04 , H03H 3/10 take precedence) | 7/004 | . {Capacitive coupling circuits not otherwise provided for} |
| 3/02 | . . for the manufacture of piezo-electric or electrostrictive resonators or networks (H03H 3/08 takes precedence) | 2007/006 | . {MEMS} |
| 2003/021 | . . . {the resonators or networks being of the air-gap type} | 2007/008 | . . {the MEMS being trimmable} |
| 2003/022 | . . . {the resonators or networks being of the cantilever type} | 7/01 | . Frequency selective two-port networks |
| 2003/023 | . . . {the resonators or networks being of the membrane type} | 7/0107 | . . {Non-linear filters} |
| 2003/025 | . . . {the resonators or networks comprising an acoustic mirror} | 7/0115 | . . {comprising only inductors and capacitors (H03H 7/075 , H03H 7/09 , H03H 7/12 , H03H 7/13 take precedence)} |
| 2003/026 | . . . {the resonators or networks being of the tuning fork type} | 7/0123 | . . {comprising distributed impedance elements together with lumped impedance elements} |
| 2003/027 | . . . {the resonators or networks being of the microelectro-mechanical [MEMS] type} | 2007/013 | . . {Notch or bandstop filters} |
| 2003/028 | . . . {for obtaining desired values of other parameters} | 7/0138 | . . {Electrical filters or coupling circuits} |
| 3/04 | . . . for obtaining desired frequency or temperature coefficient | 7/0146 | . . . {Coupling circuits between two tubes, not otherwise provided for} |
| 2003/0407 | {Temperature coefficient} | 7/0153 | . . {Electrical filters; Controlling thereof} |
| 2003/0414 | {Resonance frequency} | 7/0161 | . . . {Bandpass filters (H03H 7/12 takes precedence)} |
| 2003/0421 | {Modification of the thickness of an element} | 7/0169 | {Intermediate frequency filters} |
| 2003/0428 | {of an electrode} | 7/0176 | {without magnetic core} |
| 2003/0435 | {of a piezoelectric layer} | 7/0184 | {with ferromagnetic core} |
| 2003/0442 | {of a non-piezoelectric layer} | 2007/0192 | . . {Complex filters} |
| 2003/045 | {Modification of the area of an element} | 7/03 | . . comprising means for compensation of loss |
| 2003/0457 | {of an electrode} | 7/06 | . . including resistors (H03H 7/075 , H03H 7/09 , H03H 7/12 , H03H 7/13 take precedence) |
| 2003/0464 | {operating on an additional circuit element, e.g. a passive circuit element connected to the resonator} | 7/065 | . . . Parallel T-filters |
| 2003/0471 | {of a plurality of resonators at different frequencies} | 7/07 | . . . Bridged T-filters |
| 2003/0478 | {in a process for mass production} | 7/075 | . . Ladder networks, e.g. electric wave filters |
| 2003/0485 | {during the manufacture of a cantilever} | 7/09 | . . Filters comprising mutual inductance |
| 2003/0492 | {during the manufacture of a tuning-fork} | 7/12 | . . Bandpass or bandstop filters with adjustable bandwidth and fixed centre frequency (H03H 7/09 takes precedence; automatic control of bandwidth in amplifiers H03G 5/16) |
| 3/06 | . . for the manufacture of magnetostrictive resonators or networks | 7/13 | . . using electro-optic elements |
| 3/08 | . . for the manufacture of resonators or networks using surface acoustic waves | 7/17 | . . {Structural details of sub-circuits of frequency selective networks} |
| 3/10 | . . . for obtaining desired frequency or temperature coefficient | 7/1708 | . . . {Comprising bridging elements, i.e. elements in a series path without own reference to ground and spanning branching nodes of another series path (H03H 7/07 takes precedence)} |
| 5/00 | One-port networks comprising only passive electrical elements as network components | 7/1716 | . . . {Comprising foot-point elements} |
| 5/003 | . {comprising distributed impedance elements together with lumped impedance elements} | 7/1725 | {Element to ground being common to different shunt paths, i.e. Y-structure} |
| 5/006 | . {comprising simultaneously tunable inductance and capacitance} | 7/1733 | {Element between different shunt or branch paths (H03H 7/425 takes precedence)} |
| 5/02 | . without voltage- or current-dependent elements | 7/1741 | . . . {Comprising typical LC combinations, irrespective of presence and location of additional resistors (when resistors are present, also classify in H03H 7/06 - H03H 7/07)} |
| 5/10 | . . comprising at least one element with prescribed temperature coefficient | 7/175 | {Series LC in series path (H03H 7/1783 takes precedence)} |
| 5/12 | . with at least one voltage- or current-dependent element | 7/1758 | {Series LC in shunt or branch path (H03H 7/1791 takes precedence)} |
| 7/00 | Multiple-port networks comprising only passive electrical elements as network components (receiver input circuits H04B 1/18; networks simulating a length of communication cable H04B 3/40) | 7/1766 | {Parallel LC in series path (H03H 7/1783 takes precedence)} |
| 7/002 | . {Gyrators} | 7/1775 | {Parallel LC in shunt or branch path (H03H 7/1791 takes precedence)} |
| | | 7/1783 | {Combined LC in series path} |
| | | 7/1791 | {Combined LC in shunt or branch path} |
| | | 7/18 | . Networks for phase shifting |
| | | 7/185 | . . {comprising distributed impedance elements together with lumped impedance elements} |

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| 7/19 | . . Two-port phase shifters providing a predetermined phase shift, e.g. "all-pass" filters | 9/00 | Networks comprising electromechanical or electro-acoustic devices; Electromechanical resonators (making single crystals C30B; selection of materials thereof H01L; piezo-electric, electrostrictive or magnetostrictive devices <i>per se</i> H01L 41/00; electromechanical transducers H04R) |
| 7/20 | . . Two-port phase shifters providing an adjustable phase shift | 9/0004 | . {Impedance-matching networks (H03H 9/145 takes precedence)} |
| 7/21 | . . providing two or more phase shifted output signals, e.g. n-phase output | 9/0009 | . . {using surface acoustic wave devices} |
| 7/24 | . Frequency-independent attenuators | 9/0014 | . . {using bulk acoustic wave devices} |
| 7/25 | . . comprising an element controlled by an electric or magnetic variable (H03H 7/27 takes precedence) | 2009/0019 | . {Surface acoustic wave multichip} |
| 7/251 | . . . {the element being a thermistor} | 9/0023 | . {Balance-unbalance or balance-balance networks} |
| 7/253 | . . . {the element being a diode} | 9/0028 | . . {using surface acoustic wave devices} |
| 7/255 | {the element being a PIN diode} | 9/0033 | . . . {having one acoustic track only} |
| 7/256 | {the element being a VARACTOR diode} | 9/0038 | {the balanced terminals being on the same side of the track} |
| 7/258 | . . . {using a galvano-magnetic device} | 9/0042 | {the balanced terminals being on opposite sides of the track} |
| 7/27 | . . comprising a photo-electric element | 9/0047 | . . . {having two acoustic tracks (H03H 9/008 , H03H 9/0085 take precedence)} |
| 7/30 | . Time-delay networks ({ analogue shift registers G11C 27/04 }) | 9/0052 | {being electrically cascaded} |
| 7/32 | . . with lumped inductance and capacitance | 9/0057 | {the balanced terminals being on the same side of the tracks} |
| 7/325 | . . . {Adjustable networks} | 9/0061 | {the balanced terminals being on opposite sides of the tracks} |
| 7/34 | . . with lumped and distributed reactance | 9/0066 | {being electrically parallel} |
| 7/345 | . . . {Adjustable networks} | 9/0071 | {the balanced terminals being on the same side of the tracks} |
| 7/38 | . Impedance-matching networks | 9/0076 | {the balanced terminals being on opposite sides of the tracks} |
| 7/383 | . . {comprising distributed impedance elements together with lumped impedance elements} | 9/008 | . . . {having three acoustic tracks (H03H 9/0085 takes precedence)} |
| 2007/386 | . . {Multiple band impedance matching} | 9/0085 | . . . {having four acoustic tracks} |
| 7/40 | . . Automatic matching of load impedance to source impedance | 9/009 | {Lattice filters} |
| 7/42 | . Balance/unbalance networks | 9/0095 | . . {using bulk acoustic wave devices} |
| 7/422 | . . {comprising distributed impedance elements together with lumped impedance elements} | 9/02 | . Details |
| 7/425 | . . {Balance-balance networks} | 9/02007 | . . {of bulk acoustic wave devices} |
| 7/427 | . . . {Common-mode filters (H02J 3/01 and H02M 1/126 takes precedence)} | 9/02015 | . . . {Characteristics of piezoelectric layers, e.g. cutting angles} |
| 7/46 | . Networks for connecting several sources or loads, working on different frequencies or frequency bands, to a common load or source (<i>for use in multiplex transmission systems H04J 1/00</i>) | 9/02023 | {consisting of quartz} |
| 7/461 | . . {particularly adapted for use in common antenna systems} | 9/02031 | {consisting of ceramic} |
| 7/463 | . . {Duplexers} | 9/02039 | {consisting of a material from the crystal group 32, e.g. langasite, langatate, langanite} |
| 7/465 | . . . {having variable circuit topology, e.g. including switches} | 9/02047 | . . . {Treatment of substrates} |
| 7/466 | . . {particularly adapted as input circuit for receivers} | 9/02055 | {of the surface including the back surface} |
| 7/468 | . . {particularly adapted as coupling circuit between transmitters and antennas} | 9/02062 | . . . {Details relating to the vibration mode} |
| 7/48 | . Networks for connecting several sources or loads, working on the same frequency or frequency band, to a common load or source (<i>phase shifters providing two or more output signals H03H 7/21</i>) | 9/0207 | {the vibration mode being harmonic} |
| 7/482 | . . {particularly adapted for use in common antenna systems} | 9/02078 | {the vibration mode being overmoded} |
| 7/485 | . . {particularly adapted as input circuit for receivers} | 9/02086 | . . . {Means for compensation or elimination of undesirable effects} |
| 7/487 | . . {particularly adapted as coupling circuit between transmitters and antennas} | 9/02094 | {of adherence} |
| 7/52 | . One-way transmission networks, i.e. unilines | 9/02102 | {of temperature influence (cutting angles H03H 9/02015)} |
| 7/54 | . Modifications of networks to reduce influence of variations of temperature | 9/0211 | {of reflections} |
| | | 9/02118 | {of lateral leakage between adjacent resonators} |
| | | 9/02125 | {of parasitic elements} |
| | | 9/02133 | {of stress} |
| | | 9/02141 | {of electric discharge due to pyroelectricity} |
| | | 9/02149 | {of ageing changes of characteristics, e.g. electro-acousto-migration} |

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| 9/02157 | . . . | {Dimensional parameters, e.g. ratio between two dimension parameters, length, width or thickness} | 2009/02456 | | {Parasitic elements or effects, e.g. parasitic capacitive coupling between input and output} |
| 2009/02165 | . . . | {Tuning} | 2009/02464 | | {Pull-in} |
| 2009/02173 | . . . | {of film bulk acoustic resonators [FBAR]} | 2009/02472 | | {Stiction} |
| 2009/02181 | | {by application of heat from a heat source} | 2009/0248 | | {Strain} |
| 2009/02188 | | {Electrically tuning} | 2009/02488 | | {Vibration modes} |
| 2009/02196 | | {operating on the FBAR element, e.g. by direct application of a tuning DC voltage} | 2009/02496 | | {Horizontal, i.e. parallel to the substrate plane} |
| 2009/02204 | | {operating on an additional circuit element, e.g. applying a tuning DC voltage to a passive circuit element connected to the resonator} | 2009/02503 | | {Breath-like, e.g. Lam? mode, wine-glass mode} |
| 2009/02212 | | {Magnetically tuning} | 2009/02511 | | {Vertical, i.e. perpendicular to the substrate plane} |
| 9/0222 | . . . | {of interface-acoustic, boundary, pseudo-acoustic or Stonely wave devices} | 2009/02519 | | {Torsional} |
| 9/02228 | . . . | {Guided bulk acoustic wave devices or Lamb wave devices having interdigital transducers situated in parallel planes on either side of a piezoelectric layer} | 2009/02527 | | {Combined} |
| 9/02236 | . . . | {of surface skimming bulk wave devices} | 9/02535 | . . . | {of surface acoustic wave devices} |
| 9/02244 | . . . | {of microelectro-mechanical resonators} | 9/02543 | | {Characteristics of substrate, e.g. cutting angles} |
| 2009/02251 | | {Design} | 9/02551 | | {of quartz substrates} |
| 9/02259 | | {Driving or detection means} | 9/02559 | | {of lithium niobate or lithium-tantalate substrates} |
| 2009/02267 | | {having dimensions of atomic scale, e.g. involving electron transfer across vibration gap} | 9/02566 | | {of semiconductor substrates} |
| 9/02275 | | {Comb electrodes} | 9/02574 | | {of combined substrates, multilayered substrates, piezo-electrical layers on not-piezo- electrical substrate} |
| 2009/02283 | | {Vibrating means} | 9/02582 | | {of diamond substrates} |
| 2009/02291 | | {Beams} | 9/0259 | | {of langasite substrates} |
| 2009/02299 | | {Comb-like, i.e. the beam comprising a plurality of fingers or protrusions along its length} | 9/02598 | | {of langatate substrates} |
| 2009/02307 | | {Dog-bone-like structure, i.e. the elongated part of the "bone" is doubly clamped} | 9/02606 | | {of langanite substrates} |
| 2009/02314 | | {forming part of a transistor structure} | 9/02614 | | {Treatment of substrates, e.g. curved, spherical, cylindrical substrates ensuring closed round-about circuits for the acoustical waves} |
| 2009/02322 | | {Material} | 9/02622 | | {of the surface, including back surface} |
| 2009/0233 | | {comprising perforations} | 9/02629 | | {of the edges} |
| 9/02338 | | {Suspension means} | 9/02637 | | {Details concerning reflective or coupling arrays} |
| 2009/02346 | | {Anchors for ring resonators} | 9/02645 | | {Waffle-iron or dot arrays} |
| 2009/02354 | | {applied along the periphery, e.g. at nodal points of the ring} | 9/02653 | | {Grooves or arrays buried in the substrate} |
| 9/02362 | | {Folded-flexure} | 9/02661 | | {being located inside the interdigital transducers} |
| 2009/0237 | | {applied at the center} | 9/02669 | | {Edge reflection structures, i.e. resonating structures without metallic reflectors, e.g. Bleustein-Gulyaev-Shimizu [BGS], shear horizontal [SH], shear transverse [ST], Love waves devices} |
| 9/02377 | | {Symmetric folded-flexure} | 9/02677 | | {having specially shaped edges, e.g. stepped, U-shaped edges} |
| 2009/02385 | | {Anchors for square resonators, i.e. resonators comprising a square vibrating membrane} | 9/02685 | | {Grating lines having particular arrangements} |
| 9/02393 | | {Post-fabrication trimming of parameters, e.g. resonance frequency, Q factor} | 9/02692 | | {Arched grating lines} |
| 9/02401 | | {by annealing} | 9/027 | | {U-shaped grating lines} |
| 9/02409 | | {by application of a DC-bias voltage (H03H 9/02417 takes precedence)} | 9/02708 | | {Shifted grating lines} |
| 9/02417 | | {involving adjustment of the transducing gap} | 9/02716 | | {Tilted, fan shaped or slanted grating lines} |
| 9/02425 | | {by electrostatically pulling the beam} | 9/02724 | | {Comb like grating lines} |
| 9/02433 | | {Means for compensation or elimination of undesired effects} | 9/02732 | | {Bilateral comb like grating lines} |
| 2009/0244 | | {Anchor loss} | 9/0274 | | {Intra-transducers grating lines} |
| 9/02448 | | {of temperature influence} | 9/02748 | | {Dog-legged reflectors} |
| | | | 9/02755 | | {Meandering floating or grounded grating lines} |
| | | | 9/02763 | | {Left and right side electrically coupled reflectors} |
| | | | 9/02771 | | {Reflector banks} |

- 9/02779 {Continuous surface reflective arrays}
- 9/02787 {having wave guide like arrangements}
- 9/02795 {Multi-strip couplers as track changers}
- 9/02803 {Weighted reflective structures}
- 9/02811 {Chirped reflective or coupling arrays}
- 9/02818 . . . {Means for compensation or elimination of undesirable effects}
- 9/02826 {of adherence}
- 9/02834 {of temperature influence (cut angles [H03H 9/02543](#))}
- 9/02842 {of reflections ([H03H 9/6406](#) takes precedence)}
- 9/0285 {of triple transit echo}
- 9/02858 {of wave front distortion}
- 9/02866 {of bulk wave excitation and reflections}
- 9/02874 {of direct coupling between input and output transducers}
- 9/02881 {of diffraction of wave beam}
- 9/02889 {of influence of mass loading}
- 9/02897 {of strain or mechanical damage, e.g. strain due to bending influence}
- 9/02905 {Measures for separating propagation paths on substrate}
- 9/02913 {Measures for shielding against electromagnetic fields (shielding of electrical components in general [H05K 9/00](#))}
- 9/02921 {Measures for preventing electric discharge due to pyroelectricity}
- 9/02929 {of ageing changes of characteristics, e.g. electro-acousto-migration}
- 9/02937 {of chemical damage, e.g. corrosion}
- 9/02944 {of ohmic loss}
- 9/02952 {of parasitic capacitance}
- 9/0296 . . . {Surface acoustic wave [SAW] devices having both acoustic and non-acoustic properties}
- 9/02968 {with optical devices ([mounting in enclosures H03H 9/12](#))}
- 9/02976 {with semiconductor devices}
- 9/02984 . . . {Protection measures against damaging}
- 9/02992 . . . {Details of bus bars, contact pads or other electrical connections for finger electrodes}
- 9/05 . . . Holders; Supports
- 9/0504 . . . {for bulk acoustic wave devices}
- 9/0509 {consisting of adhesive elements}
- 9/0514 {consisting of mounting pads or bumps}
- 9/0519 {for cantilever ([H03H 9/1021](#) takes precedence)}
- 9/0523 {for flip-chip mounting}
- 9/0528 {consisting of clips}
- 9/0533 {consisting of wire}
- 9/0538 . . . {Constructional combinations of supports or holders with electromechanical or other electronic elements}
- 9/0542 {consisting of a lateral arrangement ([H03H 9/0566](#) takes precedence)}
- 9/0547 {consisting of a vertical arrangement ([H03H 9/0566](#) takes precedence)}
- 9/0552 {the device and the other elements being mounted on opposite sides of a common substrate}
- 9/0557 {the other elements being buried in the substrate}
- 9/0561 {consisting of a multilayered structure}
- 9/0566 {for duplexers}
- 9/0571 {including bulk acoustic wave [BAW] devices}
- 9/0576 {including surface acoustic wave [SAW] devices}
- 9/058 . . . {for surface acoustic wave devices}
- 9/0585 {consisting of an adhesive layer}
- 9/059 {consisting of mounting pads or bumps}
- 9/0595 . . . {the holder support and resonator being formed in one body}
- 9/08 . . . Holders with means for regulating temperature
- 9/09 . . . Elastic or damping supports
- 9/10 . . . Mounting in enclosures {(constructional combinations of enclosure with electromechanical and other electronic elements [H03H 9/0538](#))}
- 9/1007 {for bulk acoustic wave [BAW] devices}
- 9/1014 {the enclosure being defined by a frame built on a substrate and a cap, the frame having no mechanical contact with the BAW device}
- 9/1021 {the BAW device being of the cantilever type}
- 9/1028 {the BAW device being held between spring terminals}
- 9/1035 {the enclosure being defined by two sealing substrates sandwiching the piezoelectric layer of the BAW device}
- 9/1042 {the enclosure being defined by a housing formed by a cavity in a resin}
- 9/105 {the enclosure being defined by a cover cap mounted on an element forming part of the BAW device}
- 9/1057 {for microelectro-mechanical devices}
- 9/1064 {for surface acoustic wave [SAW] devices}
- 9/1071 {the enclosure being defined by a frame built on a substrate and a cap, the frame having no mechanical contact with the SAW device}
- 9/1078 {the enclosure being defined by a foil covering the non-active sides of the SAW device}
- 9/1085 {the enclosure being defined by a non-uniform sealing mass covering the non-active sides of the BAW device}
- 9/1092 {the enclosure being defined by a cover cap mounted on an element forming part of the surface acoustic wave [SAW] device on the side of the IDT's}
- 9/12 for networks with interaction of optical and acoustic waves
- 9/125 . . . Driving means, e.g. electrodes, coils
- 9/13 . . . for networks consisting of piezo-electric or electrostrictive materials ([H03H 9/145](#) takes precedence)
- 9/131 {consisting of a multilayered structure}
- 9/132 {characterized by a particular shape}
- 9/133 {for electromechanical delay lines or filters}
- 9/135 . . . for networks consisting of magnetostrictive materials ([H03H 9/145](#) takes precedence)
- 9/145 . . . for networks using surface acoustic waves
- 9/14502 {Surface acoustic wave [SAW] transducers for a particular purpose}
- 9/14505 {Unidirectional SAW transducers}

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| 9/14508 | | {Polyphase SAW transducers} | 9/176 | . . . | {consisting of ceramic material (H03H 9/177 , H03H 9/178 take precedence)} |
| 9/14511 | | {SAW transducers for non-piezoelectric substrates} | 9/177 | . . . | {of the energy-trap type} |
| 9/14514 | | {Broad band transducers} | 9/178 | . . . | {of a laminated structure of multiple piezoelectric layers with inner electrodes} |
| 9/14517 | | {Means for weighting} | 9/19 | . . . | consisting of quartz |
| 9/1452 | | {by finger overlap length, apodisation} | 9/205 | . . | having multiple resonators (crystal tuning forks H03H 9/21) |
| 9/14523 | | {Capacitive tap weighted transducers} | 9/21 | . . | Crystal tuning forks |
| 9/14526 | | {Finger withdrawal} | 9/215 | . . . | consisting of quartz |
| 9/14529 | | {Distributed tap} | 9/22 | . | Constructional features of resonators consisting of magnetostrictive material |
| 9/14532 | | {Series weighting; Transverse weighting} | 9/24 | . | Constructional features of resonators of material which is not piezo-electric, electrostrictive, or magnetostrictive |
| 9/14535 | | {Position weighting} | 9/2405 | . . | {of microelectro-mechanical resonators} |
| 9/14538 | | {Formation} | 2009/241 | . . . | {Bulk-mode MEMS resonators} |
| 9/14541 | | {Multilayer finger or busbar electrode} | 2009/2415 | | {with concave shape [CBAR]} |
| 9/14544 | | {Transducers of particular shape or position (weighting H03H 9/14517)} | 2009/2421 | | {with I shape [IBAR]} |
| 9/14547 | | {Fan shaped; Tilted; Shifted; Slanted; Tapered; Arched; Stepped finger transducers} | 9/2426 | . . . | {in combination with other electronic elements} |
| 9/1455 | | {constituted of N parallel or series transducers} | 9/2431 | . . . | {Ring resonators} |
| 9/14552 | | {comprising split fingers} | 9/2436 | . . . | {Disk resonators} |
| 9/14555 | | {Chirped transducers (H03H 9/6406 takes precedence)} | 2009/2442 | . . . | {Square resonators} |
| 9/14558 | | {Slanted, tapered or fan shaped transducers (H03H 9/14561 , H03H 9/14564 take precedence)} | 9/2447 | . . . | {Beam resonators (H03H 9/2468 takes precedence)} |
| 9/14561 | | {Arched, curved or ring shaped transducers} | 9/2452 | | {Free-free beam resonators} |
| 9/14564 | | {Shifted fingers transducers} | 9/2457 | | {Clamped-free beam resonators} |
| 9/14567 | | {Stepped-fan shaped transducers} | 9/2463 | | {Clamped-clamped beam resonators} |
| 9/1457 | | {Transducers having different finger widths} | 9/2468 | . . . | {Tuning fork resonators} |
| 9/14573 | | {Arrow type transducers} | 9/2473 | | {Double-Ended Tuning Fork [DETF] resonators} |
| 9/14576 | | {Transducers whereby only the last fingers have different characteristics with respect to the other fingers, e.g. different shape, thickness or material, split finger} | 9/2478 | | {Single-Ended Tuning Fork resonators} |
| 9/14579 | | {the last fingers having a different shape} | 9/2484 | | {with two fork tines, e.g. Y-beam cantilever} |
| 9/14582 | | {the last fingers having a different pitch} | 9/2489 | | {with more than two fork tines} |
| 9/14585 | | {the last fingers being split} | 9/2494 | | {H-shaped, i.e. two tuning forks with common base} |
| 9/14588 | | {Horizontally-split transducers} | 9/25 | . | Constructional features of resonators using surface acoustic waves {(devices for manipulating acoustic surface waves in general G10K 11/36)} |
| 9/14591 | | {Vertically-split transducers} | 9/30 | . | Time-delay networks |
| 9/14594 | | {Plan-rotated or plan-tilted transducers} | 9/36 | . . | with non-adjustable delay time (H03H 9/40 , H03H 9/42 take precedence) |
| 9/14597 | | {Matching SAW transducers to external electrical circuits} | 9/38 | . . | with adjustable delay time (H03H 9/40 , H03H 9/42 take precedence) |
| 9/15 | . | Constructional features of resonators consisting of piezo-electric or electrostrictive material (H03H 9/25 takes precedence) | 9/40 | . . | Frequency dependent delay lines, e.g. dispersive delay lines (H03H 9/42 takes precedence) |
| 2009/155 | . . | {using MEMS techniques} | 9/42 | . . | using surface acoustic waves {(devices for manipulating acoustic surface waves in general G10K 11/36)} |
| 9/17 | . . | having a single resonator (crystal tuning forks H03H 9/21) | 9/423 | . . . | {with adjustable delay time} |
| 9/171 | . . . | {implemented with thin-film techniques, i.e. of the film bulk acoustic resonator [FBAR] type} | 9/426 | . . . | {Magneto-elastic surface waves} |
| 9/172 | | {Means for mounting on a substrate, i.e. means constituting the material interface confining the waves to a volume} | 9/44 | . . . | Frequency dependent delay lines, e.g. dispersive delay lines |
| 9/173 | | {Air-gaps} | 9/46 | . | Filters (multiple-port electromechanical filters H03H 9/70) |
| 9/174 | | {Membranes} | 9/462 | . . | {Microelectro-mechanical filters} |
| 9/175 | | {Acoustic mirrors} | 9/465 | . . . | {in combination with other electronic elements} |
| | | | 9/467 | . . . | {Post-fabrication trimming of parameters, e.g. center frequency} |
| | | | 9/48 | . . | Coupling means therefor |

- 9/485 . . . {for microelectro-mechanical filters}
- 9/50 . . . Mechanical coupling means
- 9/505 . . . {for microelectro-mechanical filters}
- 9/52 . . . Electric coupling means
- 9/525 . . . {for microelectro-mechanical filters}
- 9/54 . . comprising resonators of piezo-electric or electrostrictive material ([H03H 9/64 takes precedence](#))
- 9/542 . . . {including passive elements ([H03H 9/545 takes precedence](#))}
- 9/545 . . . {including active elements}
- 9/547 . . . {Notch filters, e.g. notch BAW or thin film resonator filters}
- 9/56 . . . Monolithic crystal filters
- 9/562 . . . {comprising a ceramic piezoelectric layer}
- 9/564 . . . {implemented with thin-film techniques}
- 9/566 . . . {Electric coupling means therefor ([H03H 9/0095 takes precedence](#))}
- 9/568 {consisting of a ladder configuration}
- 9/58 . . . Multiple crystal filters
- 9/581 {comprising ceramic piezoelectric layers}
- 9/582 {implemented with thin-film techniques}
- 9/583 {comprising a plurality of piezoelectric layers acoustically coupled}
- 9/584 {Coupled Resonator Filters [CFR]}
- 9/585 {Stacked Crystal Filters [SCF]}
- 9/586 {Means for mounting to a substrate, i.e. means constituting the material interface confining the waves to a volume}
- 9/587 {Air-gaps}
- 9/588 {Membranes}
- 9/589 {Acoustic mirrors}
- 9/60 Electric coupling means therefor ([H03H 9/0095 takes precedence](#))
- 9/605 {consisting of a ladder configuration}
- 9/62 . . comprising resonators of magnetostrictive material ([H03H 9/64 takes precedence](#))
- 9/64 . . using surface acoustic waves
- 9/6403 . . . {Programmable filters}
- 9/6406 . . . {Filters characterised by a particular frequency characteristic}
- 9/6409 {SAW notch filters}
- 9/6413 {SAW comb filters}
- 9/6416 {SAW matched filters, e.g. surface acoustic wave compressors, chirped or coded surface acoustic wave filters}
- 9/642 {SAW transducers details for remote interrogation systems, e.g. surface acoustic wave transducers details for ID-tags ([remote interrogation systems per se G06K 7/10009, G01S 13/74](#))}
- 9/6423 . . . {Means for obtaining a particular transfer characteristic}
- 9/6426 {Combinations of the characteristics of different transducers}
- 9/643 {the transfer characteristic being determined by reflective or coupling array characteristics}
- 9/6433 {Coupled resonator filters}
- 9/6436 {having one acoustic track only}
- 9/644 {having two acoustic tracks}
- 9/6443 {being acoustically coupled}
- 9/6446 {by floating multistrip couplers ([H03H 9/645, H03H 9/6453 take precedence](#))}
- 9/645 {by grating reflectors overlapping both tracks}
- 9/6453 {by at least an interdigital transducer overlapping both tracks}
- 9/6456 {being electrically coupled}
- 9/6459 {via one connecting electrode}
- 9/6463 {the tracks being electrically cascaded}
- 9/6466 {each track containing more than two transducers}
- 9/6469 {via two connecting electrodes}
- 9/6473 {the electrodes being electrically interconnected}
- 9/6476 {the tracks being electrically parallel}
- 9/6479 {Capacitively coupled SAW resonator filters}
- 9/6483 {Ladder SAW filters}
- 9/6486 {having crossing or intersecting acoustic tracks, e.g. intersection in a perpendicular or diagonal orientation}
- 9/6489 . . . {Compensation of undesirable effects}
- 9/6493 {Side lobe suppression}
- 9/6496 {Reducing ripple in transfer characteristic}
- 9/66 . . Phase shifters
- 9/68 . . using surface acoustic waves
- 9/70 . . Multiple-port networks for connecting several sources or loads, working on different frequencies or frequency bands, to a common load or source
- 9/703 . . {Networks using bulk acoustic wave devices}
- 9/706 . . . {Duplexers}
- 9/72 . . Networks using surface acoustic waves
- 9/725 . . . {Duplexers}
- 9/74 . . Multiple-port networks for connecting several sources or loads, working on the same frequency or frequency band, to a common load or source ([networks for phase shifting H03H 9/66](#))
- 9/76 . . Networks using surface acoustic waves
- 11/00 Networks using active elements**
- 11/02 . . Multiple-port networks
- 11/025 . . {using current conveyors}
- 11/04 . . Frequency selective two-port networks
- 11/0405 . . . {Non-linear filters}
- 2011/0411 {Rank order or median filters}
- 11/0416 . . . {using positive impedance converters ([H03H 11/08 takes precedence](#))}
- 11/0422 . . . {using transconductance amplifiers, e.g. gmC filters}
- 11/0427 {Filters using a single transconductance amplifier; Filters derived from a single transconductor filter, e.g. by element substitution, cascading, parallel connection ([H03H 11/0433 - H03H 11/0472 take precedence](#))}
- 11/0433 {Two integrator loop filters ([H03H 11/0455 takes precedence](#))}
- 11/0438 {Tow-Thomas biquad}
- 11/0444 {Simulation of ladder networks}
- 11/045 {Leapfrog structures}
- 11/0455 {Multiple integrator loop feedback filters}

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|-----------|-----------|--|----------------|-----------|---|
| 11/0461 | | {Current mode filters} | 11/1278 | | {Modifications to reduce detrimental influences of amplifier imperfections, e.g. limited gain-bandwidth product, limited input impedance} |
| 11/0466 | | {Filters combining transconductance amplifiers with other active elements, e.g. operational amplifiers, transistors, voltage conveyors} | 11/1282 | | {Modifications to reduce influence of variations of temperature} |
| 11/0472 | | {Current or voltage controlled filters} | 11/1286 | | {Sallen-Key biquad} |
| 2011/0477 | | {using current feedback operational amplifiers} | WARNING | | Not complete, pending reorganisation, see provisionally also H03H 11/126 - H03H 11/1282 |
| 2011/0483 | | {using operational transresistance amplifiers [OTRA]} | 11/1291 | | {Current or voltage controlled filters} |
| 2011/0488 | | {Notch or bandstop filters} | 11/1295 | | {Parallel-T filters} |
| 2011/0494 | | {Complex filters} | 11/14 | | using electro-optic devices |
| 11/06 | | comprising means for compensation of loss | 11/16 | | Networks for phase shifting |
| 11/08 | | using gyrators | 11/18 | | Two-port phase shifters providing a predetermined phase shift, e.g. "all-pass" filters |
| 11/10 | | using negative impedance converters (H03H 11/08 takes precedence) | 11/20 | | Two-port phase shifters providing an adjustable phase shift |
| 11/11 | | {using current conveyors} | 11/22 | | providing two or more phase shifted output signals, e.g. n-phase output |
| 11/12 | | using amplifiers with feedback (H03H 11/0422), H03H 11/08 , H03H 11/10 take precedence) | 11/24 | | Frequency-independent attenuators |
| 11/1204 | | {Distributed RC filters} | 11/245 | | {using field-effect transistor} |
| 11/1208 | | {comprising an electromechanical resonator} | 11/26 | | Time-delay networks (analogue shift registers G11C 27/04) |
| 11/1213 | | {using transistor amplifiers (H03H 11/1204 takes precedence; parallel-T filters H03H 11/1295)} | 11/265 | | {with adjustable delay} |
| 11/1217 | | {using a plurality of operational amplifiers (H03H 11/1204 takes precedence; parallel-T filters H03H 11/1295)} | 11/28 | | Impedance matching networks |
| 11/1221 | | {Theory; Synthesis (H03H 11/1226 - H03H 11/1252 take precedence)} | 11/30 | | Automatic matching of source impedance to load impedance |
| 11/1226 | | {Filters using operational amplifier poles} | 11/32 | | Balance-unbalance networks |
| 11/123 | | {Modifications to reduce sensitivity} | 11/34 | | Networks for connecting several sources or loads working on different frequencies or frequency bands, to a common load or source (for use in multiplex transmission systems H04J 1/00) |
| 11/1234 | | {Modifications to reduce detrimental influences of amplifier imperfections, e.g. limited gain-bandwidth product, limited input impedance} | 11/342 | | {particularly adapted for use in common antenna systems} |
| 11/1239 | | {Modifications to reduce influence of variations of temperature} | 11/344 | | {Duplexers} |
| 11/1243 | | {Simulation of ladder networks} | 11/346 | | {particularly adapted as input circuit for receivers} |
| 11/1247 | | {Leapfrog structures} | 11/348 | | {particularly adapted as coupling circuit between transmitters and antenna} |
| | | WARNING | 11/36 | | Networks for connecting several sources or loads, working on the same frequency band, to a common load or source (phase shifters providing two or more output signals H03H 11/22) |
| | | Not complete, pending reorganisation, see provisionally also H03H 11/1217 - H03H 11/1252 | 11/362 | | {particularly adapted for use in common antenna systems} |
| 11/1252 | | {Two integrator-loop-filters} | 11/365 | | {particularly adapted as input circuit for receivers} |
| 11/1256 | | {Tow-Thomas biquad} | 11/367 | | {particularly adapted as coupling circuit between transmitters and antenna} |
| | | WARNING | 11/38 | | One-way transmission networks, i.e. unilines |
| | | Not complete, pending reorganisation, see provisionally also H03H 11/1217 - H03H 11/1252 | 11/40 | | Impedance converters |
| 11/126 | | {using a single operational amplifier (H03H 11/1204 takes precedence; parallel-T filters H03H 11/1295)} | 11/405 | | {Positive impedance converters (H03H 11/42 takes precedence; used in frequency selective networks H03H 11/0416)} |
| 11/1265 | | {Synthesis (H03H 11/1269 - H03H 11/1282 take precedence)} | 11/42 | | Gyrators (used in frequency selective networks H03H 11/08) |
| 11/1269 | | {Filters using the operational amplifier pole} | 11/44 | | Negative impedance converters (H03H 11/42 takes precedence; used in frequency selective networks H03H 11/10) |
| 11/1273 | | {Modifications to reduce sensitivity} | 11/46 | | One-port networks |

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| 11/48 | . . . simulating reactances | 17/0009 | . . . {Time-delay networks} |
| 11/481 | . . . {Simulating capacitances} | 17/0018 | . . . {Realizing a fractional delay} |
| | WARNING | 17/0027 | . . . {by means of a non-recursive filter} |
| | Not complete, pending | 17/0036 | . . . {by means of a recursive filter} |
| | reorganisation, see provisionally also | 17/0045 | . . . {Impedance matching networks} |
| | H03H 11/48 - H03H 11/52 | 17/0054 | . . . {Attenuators} |
| 11/483 | . . . {Simulating capacitance multipliers} | 17/0063 | . . . {R, L, C, simulating networks} |
| | WARNING | 2017/0072 | . . . {Theoretical filter design} |
| | Not complete, pending | 2017/0081 | . . . {of FIR filters} |
| | reorganisation, see provisionally also | 2017/009 | . . . {of IIR filters} |
| | H03H 11/48 - H03H 11/52 | 17/02 | . . . Frequency selective networks {(digital computers for complex mathematical operations G06F 17/10)} |
| 11/485 | . . . {Simulating inductances using operational amplifiers} | 17/0201 | . . . {Wave digital filters} |
| | WARNING | 17/0202 | . . . {Two or more dimensional filters; Filters for complex signals (multidimensional convolutions G06F 17/153)} |
| | Not complete, pending | 2017/0204 | . . . {Comb filters} |
| | reorganisation, see provisionally also | 2017/0205 | . . . {Kalman filters} |
| | H03H 11/48 - H03H 11/52 | 2017/0207 | . . . {Median filters} |
| 11/486 | . . . {Simulating inductances using transconductance amplifiers} | 2017/0208 | . . . {using neural networks} |
| | WARNING | 2017/021 | . . . {Wave digital filters} |
| | Not complete, pending | 17/0211 | . . . {using specific transformation algorithms, e.g. WALSH functions, Fermat transforms, Mersenne transforms, polynomial transforms, Hilbert transforms (correlation computation G06F 17/156)} |
| | reorganisation, see provisionally also | 17/0213 | . . . {Frequency domain filters using Fourier transforms} |
| | H03H 11/48 - H03H 11/52 | 2017/0214 | . . . {with input-sampling frequency and output-delivery frequency which differ, e.g. interpolation, extrapolation; anti-aliasing} |
| 11/488 | . . . {Simulating inductances using current conveyors} | 17/0216 | . . . {Quefrency domain filters} |
| | WARNING | 17/0217 | . . . {Number theoretic transforms} |
| | Not complete, pending | 17/0219 | . . . {Compensation of undesirable effects, e.g. quantisation noise, overflow (stability problems H03H 17/0461)} |
| | reorganisation, see provisionally also | 2017/022 | . . . {Rounding error} |
| | H03H 11/48 - H03H 11/52 | 2017/0222 | . . . {Phase error} |
| 11/50 | . . . using gyrators | 17/0223 | . . . {Computation saving measures; Accelerating measures (computations per se G06F)} |
| 11/52 | . . . simulating negative resistances | 17/0225 | . . . {Measures concerning the multipliers} |
| 11/525 | . . . {Simulating frequency dependent negative resistance [FDNR]} | 17/0226 | . . . {comprising look-up tables} |
| | WARNING | 17/0227 | . . . {Measures concerning the coefficients} |
| | Not complete, pending reorganisation, see | 17/0229 | . . . {reducing the number of taps} |
| | provisionally also H03H 11/52 | 17/023 | . . . {reducing the wordlength, the possible values of coefficients} |
| 11/53 | . . . {simulating resistances; simulating resistance multipliers} | 2017/0232 | . . . {Canonical signed digit [CSD] or power of 2 coefficients} |
| | WARNING | 17/0233 | . . . {Measures concerning the signal representation} |
| | Not complete, pending reorganisation, see | 17/0235 | . . . {reducing the wordlength of signals} |
| | provisionally also H03H 11/48 - H03H 11/52 | 17/0236 | . . . {using codes} |
| 11/54 | . . . Modifications of networks to reduce influence of variations of temperature | 17/0238 | . . . {Measures concerning the arithmetic used (performing computations G06F 7/60)} |
| 15/00 | Transversal filters (electromechanical filters H03H 9/46 , H03H 9/70) | 17/0239 | . . . {Signed digit arithmetic} |
| 2015/002 | . . . {Computation saving measures} | 17/0241 | . . . {Distributed arithmetic} |
| 2015/005 | . . . {comprising capacitors implemented with MEMS technology} | 17/0242 | . . . {Residue number arithmetic} |
| 2015/007 | . . . {Programmable filters} | 2017/0244 | . . . {Measures to reduce settling time} |
| 15/02 | . . . using analogue shift registers | 2017/0245 | . . . {Measures to reduce power consumption (H03H 17/0223 takes precedence)} |
| 15/023 | . . . {with parallel-input configuration} | 2017/0247 | . . . {Parallel structures using a slower clock} |
| 2015/026 | . . . {Matched filters in charge domain} | 17/0248 | . . . {Filters characterised by a particular frequency response or filtering method} |
| 17/00 | Networks using digital techniques | | |

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| 17/025 | . . . {Notch filters} | 17/0461 | . . . {Quantisation; Rounding; Truncation; Overflow oscillations or limit cycles eliminating measures} |
| 17/0251 | . . . {Comb filters} | 2017/0466 | . . . {Reduction of limit cycle oscillation} |
| 17/0252 | . . . {Elliptic filters} | 2017/0472 | . . . {based on allpass structures} |
| 17/0254 | . . . {Matched filters} | 2017/0477 | . . . {Direct form I} |
| 17/0255 | . . . {Filters based on statistics (adaptive filters H03H 21/0029)} | 2017/0483 | . . . {Transposed} |
| 17/0257 | . . . {KALMAN filters} | 2017/0488 | . . . {Direct form II} |
| 17/0258 | . . . {ARMA filters} | 2017/0494 | . . . {Transposed} |
| 17/026 | . . . {Averaging filters} | 17/06 | . . Non-recursive filters |
| 17/0261 | . . . {Non linear filters} | 17/0607 | . . . {comprising a ROM addressed by the input data signals} |
| 17/0263 | . . . {Rank order filters} | 17/0614 | . . . {using Delta-modulation} |
| 17/0264 | . . . {Filter sets with mutual related characteristics} | 17/0621 | . . . {with input-sampling frequency and output-delivery frequency which differ, e.g. extrapolation; Anti-aliasing} |
| 17/0266 | . . . {Filter banks} | 17/0628 | . . . {the input and output signals being derived from two separate clocks, i.e. asynchronous sample rate conversion} |
| 17/0267 | . . . {comprising non-recursive filters} | 17/0635 | . . . {characterized by the ratio between the input-sampling and output-delivery frequencies} |
| 17/0269 | . . . {comprising recursive filters} | 17/0642 | . . . {the ratio being arbitrary or irrational} |
| 17/027 | . . . {Complementary filters; Phase complementary filters} | 17/065 | . . . {the ratio being integer} |
| 17/0272 | . . . {Quadrature mirror filters} | 17/0657 | . . . {where the output-delivery frequency is higher than the input sampling frequency, i.e. interpolation} |
| 17/0273 | . . . {Polyphase filters} | 17/0664 | . . . {where the output-delivery frequency is lower than the input sampling frequency, i.e. decimation} |
| 17/0275 | . . . {comprising non-recursive filters} | 17/0671 | . . . {Cascaded integrator-comb [CIC] filters} |
| 17/0276 | . . . {having two phases} | 2017/0678 | . . . {with parallel structure, i.e. parallel CIC [PCIC]} |
| 17/0277 | . . . {comprising recursive filters} | 17/0685 | . . . {the ratio being rational} |
| 17/0279 | . . . {having two phases} | 2017/0692 | . . . {Transposed} |
| 17/028 | . . . {Polynomial filters} | 17/08 | . Networks for phase shifting |
| 17/0282 | . . . {Sinc or gaussian filters (H03H 17/0671 takes precedence)} | 19/00 | Networks using time-varying elements, e.g. N-path filters |
| 17/0283 | . . {Filters characterised by the filter structure (H03H 17/0202 , H03H 17/0219 - H03H 17/0248 take precedence)} | 19/002 | . {N-path filters} |
| 17/0285 | . . . {Ladder or lattice filters} | 19/004 | . {Switched capacitor networks} |
| 17/0286 | . . . {Combinations of filter structures} | 19/006 | . . {simulating one-port networks} |
| 17/0288 | . . . {Recursive, non-recursive, ladder, lattice structures} | 19/008 | . {with variable switch closing time} |
| 17/0289 | . . . {Digital and active filter structures} | 21/00 | Adaptive networks |
| 17/0291 | . . . {Digital and sampled data filters} | 21/0001 | . {Analogue adaptive filters} |
| 17/0292 | . . . {Time multiplexed filters; Time sharing filters} | 21/0003 | . . {comprising CCD devices} |
| 17/0294 | . . {Variable filters; Programmable filters} | 21/0005 | . . {comprising SAW devices} |
| 2017/0295 | . . . {Changing between two filter characteristics} | 21/0007 | . . {comprising switched capacitor [SC] devices} |
| 2017/0297 | . . . {Coefficients derived from input parameters} | 2021/0009 | . . {Details} |
| 2017/0298 | . . {DSP implementation} | 2021/001 | . . . {Analog multipliers} |
| 17/04 | . . Recursive filters | 21/0012 | . {Digital adaptive filters} |
| 17/0405 | . . . {comprising a ROM addressed by the input and output data signals} | 21/0014 | . . {Lattice filters} |
| 17/0411 | . . . {using DELTA modulation} | 21/0016 | . . {Non linear filters} |
| 17/0416 | . . . {with input-sampling frequency and output-delivery frequency which differ, e.g. extrapolation; Anti-aliasing} | 21/0018 | . . {Matched filters} |
| 17/0422 | . . . {the input and output signals being derived from two separate clocks, i.e. asynchronous sample rate conversion} | 21/002 | . . {Filters with a particular frequency response (H03H 21/0014 - H03H 21/0018 take precedence)} |
| 17/0427 | . . . {characterized by the ratio between the input-sampling and output-delivery frequencies} | 21/0021 | . . . {Notch filters} |
| 17/0433 | . . . {the ratio being arbitrary or irrational} | 21/0023 | . . . {Comb filters} |
| 17/0438 | . . . {the ratio being integer} | 21/0025 | . . {Particular filtering methods} |
| 17/0444 | . . . {where the output-delivery frequency is higher than the input sampling frequency, i.e. interpolation} | 21/0027 | . . . {filtering in the frequency domain} |
| 17/045 | . . . {where the output-delivery frequency is lower than the input sampling frequency, i.e. decimation} | 21/0029 | . . . {based on statistics} |
| 17/0455 | . . . {the ratio being rational} | 21/003 | . . . {KALMAN filters} |

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|----------------|---|----------------|---|
| 21/0032 | {ARMA filters} | 2210/033 | . . Continuous |
| 2021/0034 | . . . {Blind source separation} | 2210/036 | . . Stepwise |
| 2021/0036 | {of convolutive mixtures} | 2210/04 | . Filter calibration method |
| 2021/0038 | {of instantaneous mixtures} | 2210/043 | . . by measuring time constant |
| 2021/004 | {using state space representation} | 2210/046 | . . Master -slave |
| 2021/0041 | . . . {Subband decomposition} | 2218/00 | Indexing scheme relating to details of digital filters |
| 21/0043 | . . {Adaptive algorithms} | 2218/02 | . Coefficients |
| 2021/0045 | . . . {Equation error} | 2218/025 | . . updated selectively, e.g. by, in the presence of noise, temporally cancelling the update and outputting a predetermined value |
| 2021/0047 | {Combined output and equation error} | 2218/04 | . In-phase and quadrature [I/Q] signals |
| 2021/0049 | . . . {Recursive least squares algorithm} | 2218/06 | . Multiple-input, multiple-output [MIMO]; Multiple-input, single-output [MISO] |
| 2021/005 | {with forgetting factor} | 2218/08 | . Resource sharing |
| 2021/0052 | {combined with stochastic gradient algorithm} | 2218/085 | . . Multipliers |
| 2021/0054 | {Affine projection} | 2218/10 | . Multiplier and or accumulator units |
| 2021/0056 | . . . {Non-recursive least squares algorithm [LMS]} | 2218/12 | . Signal conditioning |
| 2021/0058 | {Block LMS, i.e. in frequency domain} | 2218/14 | . Non-uniform sampling |
| 2021/0059 | {Delayed LMS} | 2220/00 | Indexing scheme relating to structures of digital filters |
| 2021/0061 | {Normalized LMS [NLMS]} | 2220/02 | . Modular, e.g. cells connected in cascade |
| 2021/0063 | {Proportionate NLMS} | 2220/04 | . Pipelined |
| 2021/0065 | {Sign-sign LMS} | 2220/06 | . Systolic |
| 21/0067 | . . {Means or methods for compensation of undesirable effects} | 2220/08 | . Variable filter length |
| 2021/0069 | . . . {Finite wordlength} | 2222/00 | Indexing scheme relating to digital filtering methods |
| 2021/007 | . . {Computation saving measures; Accelerating measures} | 2222/02 | . using fuzzy logic |
| 2021/0072 | . . . {Measures relating to the coefficients} | 2222/04 | . using neural networks |
| 2021/0074 | {Reduction of the update frequency} | 2222/06 | . using wavelets |
| 2021/0076 | . . . {Measures relating to the convergence time (H03H 2021/0072 takes precedence) } | 2240/00 | Indexing scheme relating to filter banks |
| 2021/0078 | {varying the step size} | 2250/00 | Indexing scheme relating to dual- or multi-band filters |
| 2021/0079 | . . . {using look-up tables} | 2260/00 | Theory relating to impedance networks |
| 2021/0081 | . . {Details} | | |
| 2021/0083 | . . . {Shadow filter, i.e. one of two filters which are simultaneously adapted, wherein the results of adapting the shadow filter are used for adapting the other filter} | | |
| 2021/0085 | . . {Applications} | | |
| 2021/0087 | . . . {Prediction} | | |
| 2021/0089 | . . . {System identification, i.e. modeling} | | |
| 2021/009 | {with recursive filters} | | |
| 2021/0092 | . . . {Equalization, i.e. inverse modeling} | | |
| 2021/0094 | . . . {Interference Cancelling} | | |
| 2021/0096 | . . {with input-sampling frequency and output-delivery frequency which differ, e.g. extrapolation; anti-aliasing} | | |
| 2021/0098 | . {Adaptive filters comprising analog and digital structures} | | |
| 2210/00 | Indexing scheme relating to details of tunable filters | | |
| 2210/01 | . Tuned parameter of filter characteristics | | |
| 2210/012 | . . Centre frequency; Cut-off frequency | | |
| 2210/015 | . . Quality factor or bandwidth | | |
| 2210/017 | . . Amplitude, gain or attenuation | | |
| 2210/02 | . Variable filter component | | |
| 2210/021 | . . Amplifier, e.g. transconductance amplifier | | |
| 2210/023 | . . . Tuning of transconductance via tail current source | | |
| 2210/025 | . . Capacitor | | |
| 2210/026 | . . Inductor | | |
| 2210/028 | . . Resistor | | |
| 2210/03 | . Type of tuning | | |