

H03 BASIC ELECTRONIC CIRCUITRY

H03B GENERATION OF OSCILLATIONS, DIRECTLY OR BY FREQUENCY-CHANGING, BY CIRCUITS EMPLOYING ACTIVE ELEMENTS WHICH OPERATE IN A NON-SWITCHING MANNER; GENERATION OF NOISE BY SUCH CIRCUITS (measuring, testing G01R; generators adapted for electrophonic musical instruments G10H; speech synthesis G10L 13/00; masers, lasers H01S; dynamo-electric machines H02K; power inverter circuits H02M; by using pulse techniques H03K; automatic control of generators H03L; starting, synchronisation or stabilisation of generators where the type of generator is irrelevant or unspecified H03L; generation of oscillations in plasma H05H)

GENERATION WITHOUT FREQUENCY-CHANGING

By means of amplification and feedback; negative resistance 5/00; 7/00
 By means of transit-time tubes; electron-beam tubes 9/00; 13/00
 By shock-exciting; Hall effect; radiation source and detectors 11/00; 15/00; 17/00

GENERATION WITH FREQUENCY-CHANGING

By multiplication or division of a signal 19/00
 By combining unmodulated signals 21/00

PARTICULARITIES OF GENERATED OSCILLATIONS

Swept-over frequency range; multi-frequency; multiphase; noise 23/00; 25/00; 27/00; 29/00

OTHER METHODS OF GENERATION 28/00
 DETAILS 1/00

1/00 Details

- 1/02 . Structural details of power oscillators, e.g. for heating
- 1/04 . Reducing undesired oscillations, e.g. harmonics

5/00 Generation of oscillations using amplifier with regenerative feedback from output to input (H03B 9/00, H03B 15/00 take precedence)

- 5/02 . Details
- 5/04 . . Modifications of generator to compensate for variations in physical values, e.g. power supply, load, temperature
- 5/06 . . Modifications of generator to ensure starting of oscillations
- 5/08 . with frequency-determining element comprising lumped inductance and capacitance
- 5/10 . . active element in amplifier being vacuum tube (H03B 5/14 takes precedence)
- 5/12 . . active element in amplifier being semiconductor device (H03B 5/14 takes precedence)
- 5/14 . . frequency-determining element connected via bridge circuit to closed ring around which signal is transmitted
- 5/16 . . . active element in amplifier being vacuum tube
- 5/18 . with frequency-determining element comprising distributed inductance and capacitance
- 5/20 . with frequency-determining element comprising resistance and either capacitance or inductance, e.g. phase-shift oscillator
- 5/22 . . active element in amplifier being vacuum tube (H03B 5/26 takes precedence)
- 5/24 . . active element in amplifier being semiconductor device (H03B 5/26 takes precedence)
- 5/26 . . frequency-determining element being part of bridge circuit in closed ring around which signal is transmitted; frequency-determining element being connected via a bridge circuit to such a closed ring, e.g. Wien-Bridge oscillator, parallel-T oscillator
- 5/28 . . . active element in amplifier being vacuum tube

- 5/30 . with frequency-determining element being electromechanical resonator
- 5/32 . . being a piezo-electric resonator (piezo-electric elements in general H01L 41/00)
- 5/34 . . . active element in amplifier being vacuum tube (H03B 5/38 takes precedence)
- 5/36 . . . active element in amplifier being semiconductor device (H03B 5/38 takes precedence)
- 5/38 . . . frequency-determining element being connected via bridge circuit to closed ring around which signal is transmitted
- 5/40 . . being a magnetostrictive resonator (H03B 5/42 takes precedence; magnetostrictive elements in general H01L 41/00)
- 5/42 . . frequency-determining element connected via bridge circuit to closed ring around which signal is transmitted

7/00 Generation of oscillations using active element having a negative resistance between two of its electrodes (H03B 9/00 takes precedence)

- 7/02 . with frequency-determining element comprising lumped inductance and capacitance
- 7/04 . . active element being vacuum tube
- 7/06 . . active element being semiconductor device
- 7/08 . . . being a tunnel diode
- 7/10 . . active element being gas-discharge or arc-discharge tube
- 7/12 . with frequency-determining element comprising distributed inductance and capacitance
- 7/14 . . active element being semiconductor device

9/00 Generation of oscillations using transit-time effects [2]

- 9/01 . using discharge tubes [2]
- 9/02 . . using a retarding-field tube (using klystrons H03B 9/04) [2]
- 9/04 . . using a klystron [2]
- 9/06 . . . using a reflex klystron [2]
- 9/08 . . using a travelling-wave tube [2]

H03B

- 9/10 . . using a magnetron [2]
- 9/12 . using solid state devices, e.g. Gunn-effect devices [2]
- 9/14 . . and elements comprising distributed inductance and capacitance [3]
- 11/00 Generation of oscillations using a shock-excited tuned circuit** (with feedback H03B 5/00)
 - 11/02 . excited by spark (spark gaps therefor H01T 9/00)
 - 11/04 . excited by interrupter
 - 11/06 . . by mechanical interrupter
 - 11/08 . . interrupter being discharge tube
 - 11/10 . . interrupter being semiconductor device
- 13/00 Generation of oscillations using deflection of electron beam in a cathode-ray tube**
- 15/00 Generation of oscillations using galvano-magnetic devices, e.g. Hall-effect devices, or using super-conductivity effects** (galvano-magnetic devices per se H01L 43/00)
- 17/00 Generation of oscillations using radiation source and detector, e.g. with interposed variable obturator**
- 19/00 Generation of oscillations by non-regenerative frequency multiplication or division of a signal from a separate source** (transference of modulation from one carrier to another H03D 7/00)
 - 19/03 . using non-linear inductance [3]
 - 19/05 . using non-linear capacitance, e.g. varactor diodes [3]
 - 19/06 . by means of discharge device or semiconductor device with more than two electrodes
 - 19/08 . . by means of a discharge device
 - 19/10 . . . using multiplication only
 - 19/12 . . . using division only
 - 19/14 . . by means of a semiconductor device
- 19/16 . using uncontrolled rectifying devices, e.g. rectifying diodes or Schottky diodes [3]
- 19/18 . . and elements comprising distributed inductance and capacitance [3]
- 19/20 . . being diodes exhibiting charge storage or enhancement effects [3]
- 21/00 Generation of oscillations by combining unmodulated signals of different frequencies** (H03B 19/00 takes precedence; frequency changing circuits in general H03D) [3]
 - 21/01 . by beating unmodulated signals of different frequencies [3]
 - 21/02 . . by plural beating, i.e. for frequency synthesis [3]
 - 21/04 . . using several similar stages [3]
- 23/00 Generation of oscillations periodically swept over a predetermined frequency range** (angle-modulating circuits in general H03C 3/00)
- 25/00 Simultaneous generation by a free-running oscillator of oscillations having different frequencies**
- 27/00 Generation of oscillations providing a plurality of outputs of the same frequency but differing in phase, other than merely two anti-phase outputs**
- 28/00 Generation of oscillations by methods not covered by groups H03B 5/00 H03B 27/00, including modification of the waveform to produce sinusoidal oscillations** (analogue function generators for performing computing operations G06G 7/26; use of transformers for conversion of waveform in **ac-ac** converters H02M 5/18) [4]
- 29/00 Generation of noise currents and voltages**