CPC COOPERATIVE PATENT CLASSIFICATION

H ELECTRICITY

(NOTE omitted)

H03 ELECTRONIC CIRCUITRY

H03C MODULATION (masers or lasers H01S; coding, decoding or code conversion H03M)

NOTES

1. This subclass covers only modulation, keying, or interruption of sinusoidal oscillations or electromagnetic waves, the modulating signal having any desired waveform.
2. In this subclass, circuits usable both as modulator and demodulator are classified in the group dealing with the type of modulator involved.

WARNING

The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups:

H03C 1/38 - H03C 1/44 covered by H03C 1/36

1/00 **Amplitude modulation** (H03C 5/00, H03C 7/00 take precedence)

1/02 . Details

1/04 . . Means in or combined with modulating stage for reducing angle modulation

1/06 . . Modifications of modulator to reduce distortion, e.g. by feedback, and clearly applicable to more than one type of modulator

1/08 . by means of variable impedance element (H03C 1/28 - H03C 1/34, H03C 1/46 - H03C 1/52, H03C 1/62 take precedence)

1/10 . . the element being a current-dependent inductor

1/12 . . the element being a voltage-dependent capacitor

1/14 . . the element being a diode

1/16 . by means of discharge device having at least three electrodes (H03C 1/28 - H03C 1/34, H03C 1/50, H03C 1/52, H03C 1/62 take precedence)

1/18 . . carrier applied to control grid

1/20 . . . modulating signal applied to anode

1/22 . . . modulating signal applied to same grid

1/24 . . . modulating signal applied to different grid

1/26 . . . modulating signal applied to cathode

1/28 . by means of transit-time tube

1/30 . . by means of a magnetron

1/32 . by deflection of electron beam in discharge tube

1/34 . by means of light-sensitive element

1/36 . by means of semiconductor device having at least three electrodes (H03C 1/34, H03C 1/50, H03C 1/52, H03C 1/62 take precedence)

1/46 . Modulators with mechanically-driven or acoustically-driven parts

1/48 . by means of Hall-effect devices

1/50 . by converting angle modulation to amplitude modulation (H03C 1/28 - H03C 1/34, H03C 1/46, H03C 1/48 take precedence)

1/52 . Modulators in which carrier or one sideband is wholly or partially suppressed (H03C 1/28 - H03C 1/34, H03C 1/46, H03C 1/48 take precedence)

1/54 . . Balanced modulators, e.g. bridge type, ring type or double balanced type

1/542 . . . {comprising semiconductor devices with at least three electrodes}

1/545 . . . . {using bipolar transistors}

1/547 . . . . {using field-effect transistors}

1/56 . . . comprising variable two-pole elements only

1/58 . . . . comprising diodes

1/60 . . with one sideband wholly or partially suppressed

1/62 . Modulators in which amplitude of carrier component in output is dependent upon strength of modulating signal, e.g. no carrier output when no modulating signal is present (H03C 1/28 - H03C 1/34, H03C 1/46, H03C 1/48 take precedence)

3/00 **Angle modulation** (H03C 5/00, H03C 7/00 take precedence)

3/005 . {Circuits for asymmetric modulation}

3/02 . Details

3/04 . . Means in or combined with modulating stage for reducing amplitude modulation

3/06 . . Means for changing frequency deviation

3/08 . . Modifications of modulator to linearise modulation, e.g. by feedback, and clearly applicable to more than one type of modulator

3/09 . . Modifications of modulator for regulating the mean frequency

3/0908 . . . {using a phase locked loop}

3/0916 . . . . {with frequency divider or counter in the loop}

3/0925 . . . . . {applying frequency modulation at the divider in the feedback loop}

3/0933 . . . . . {using fractional frequency division in the feedback loop of the phase locked loop}

3/0941 . . . . {applying frequency modulation at more than one point in the loop}

3/095 . . . . {applying frequency modulation to the loop in front of the voltage controlled oscillator}

3/0958 . . . . {applying frequency modulation by varying the characteristics of the voltage controlled oscillator}
3/0966 . . . . {modulating the reference clock}
3/0975 . . . . {applying frequency modulation in the phase locked loop at components other than the divider, the voltage controlled oscillator or the reference clock}
3/0983 . . . . {containing in the loop a mixer other than for phase detection}
3/0991 . . . . {including calibration means or calibration methods}
3/10 . by means of variable impedance (H03C 3/30 - H03C 3/38 take precedence)
3/12 . . by means of a variable reactive element
3/14 . . . simulated by circuit comprising active element with at least three electrodes, e.g. reactance-tube circuit
3/145 . . . . {by using semiconductor elements}
3/16 . . . . in which the active element simultaneously serves as the active element of an oscillator
3/18 . . . the element being a current-dependent inductor
3/20 . . . the element being a voltage-dependent capacitor
3/22 . . . the element being a semiconductor diode, e.g. varicap diode
3/222 . . . . {using bipolar transistors (H03C 3/227 takes precedence)}
3/225 . . . . {using field effect transistors (H03C 3/227 takes precedence)}
3/227 . . . . {using a combination of bipolar transistors and field effect transistors}
3/24 . . by means of a variable resistive element, e.g. tube
3/245 . . . {by using semiconductor elements}
3/26 . . . comprising two elements controlled in push-pull by modulating signal
3/28 . . using variable impedance driven mechanically or acoustically
3/30 . by means of transit-time tube
3/32 . . the tube being a magnetron
3/34 . by deflection of electron beam in discharge tube
3/36 . by means of light-sensitive element
3/38 . by converting amplitude modulation to angle modulation
3/40 . . using two signal paths the outputs of which have a predetermined phase difference and at least one output being amplitude-modulated
3/403 . . . {using two quadrature frequency conversion stages in cascade}
3/406 . . . {using a feedback loop containing mixers or demodulators}
3/42 . by means of electromechanical devices (H03C 3/28 takes precedence)

5/00 Amplitude modulation and angle modulation produced simultaneously or at will by the same modulating signal (H03C 7/00 takes precedence)
5/02 . by means of transit-time tube
5/04 . . the tube being a magnetron
5/06 . by deflection of electron beam in discharge tube

7/00 Modulating electromagnetic waves (devices or arrangements for the modulation of light G02F 1/00)
7/02 . in transmission lines, waveguides, cavity resonators or radiation fields of antennas
7/022 . . {using ferromagnetic devices, e.g. ferrites}
7/025 . . {using semiconductor devices}
7/027 . . . {using diodes}
7/04 . . Polarisation of transmitted wave being modulated {(H03C 7/022 takes precedence)}

99/00 Subject matter not provided for in other groups of this subclass

2200/00 Indexing scheme relating to details of modulators or modulation methods covered by H03C
2200/0004 . Circuit elements of modulators
2200/0008 . . Variable capacitors, e.g. a varicap, a varactor or a variable capacitance of a diode or transistor
2200/0012 . . Emitter or source coupled transistor pairs or long tail pairs
2200/0016 . . Pre-emphasis or de-emphasis circuits
2200/002 . . Filters with particular characteristics
2200/0025 . . Gilbert multipliers
2200/0029 . . Memory circuits, e.g. ROMs, RAMs, EPROMs, latches, shift registers
2200/0033 . . Transmission lines, e.g. striplines, microstrips or coplanar lines
2200/0037 . Functional aspects of modulators
2200/0041 . . Calibration of modulators
2200/0045 . . Pulse width, duty cycle or on/off ratio
2200/005 . . Modulation sensitivity
2200/0054 . . . Filtering of the input modulating signal for obtaining a constant sensitivity of frequency modulation
2200/0058 . . Quadrature arrangements
2200/0062 . . Lowering the supply voltage and saving power
2200/0066 . . Reduction of carrier leakage or the suppression of the carrier
2200/007 . . with one sideband wholly or partially suppressed
2200/0075 . . FM modulation down to DC
2200/0079 . . Measures to linearise modulation or reduce distortion of modulation characteristics
2200/0083 . . . Predistortion of input modulating signal to obtain a linear modulation characteristic
2200/0087 . . Measures to address temperature induced variations of modulation
2200/0091 . . . by stabilising the temperature
2200/0095 . . . by compensating temperature induced variations