

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)	1/54	. . . . . Balanced modulators, e.g. bridge type, ring type or double balanced type
1/02	. Details	1/542	. . . . . {comprising semiconductor devices with at least three electrodes}
1/04	. . Means in or combined with modulating stage for reducing angle modulation	1/545	. . . . . {using bipolar transistors}
1/06	. . Modifications of modulator to reduce distortion, e.g. by feedback, and clearly applicable to more than one type of modulator	1/547	. . . . . {using field-effect transistors}
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)	1/56	. . . . . comprising variable two-pole elements only
1/10	. . the element being a current-dependent inductor	1/58	. . . . . comprising diodes
1/12	. . the element being a voltage-dependent capacitor	1/60	. . with one sideband wholly or partially suppressed
1/14	. . the element being a diode	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)
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)	3/00	Angle modulation (H03C 5/00 , H03C 7/00 take precedence)
1/18	. . carrier applied to control grid	3/005	. {Circuits for asymmetric modulation}
1/20	. . . modulating signal applied to anode	3/02	. Details
1/22	. . . modulating signal applied to same grid	3/04	. . Means in or combined with modulating stage for reducing amplitude modulation
1/24	. . . modulating signal applied to different grid	3/06	. . Means for changing frequency deviation
1/26	. . . modulating signal applied to cathode	3/08	. . Modifications of modulator to linearise modulation, e.g. by feedback, and clearly applicable to more than one type of modulator
1/28	. by means of transit-time tube	3/09	. . Modifications of modulator for regulating the mean frequency
1/30	. . by means of a magnetron	3/0908	. . . . . {using a phase locked loop}
1/32	. by deflection of electron beam in discharge tube	3/0916	. . . . . {with frequency divider or counter in the loop}
1/34	. by means of light-sensitive element	3/0925	. . . . . {applying frequency modulation at the divider in the feedback loop}
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)	3/0933	. . . . . {using fractional frequency division in the feedback loop of the phase locked loop}
1/46	. Modulators with mechanically-driven or acoustically-driven parts	3/0941	. . . . . {applying frequency modulation at more than one point in the loop}
1/48	. by means of Hall-effect devices	3/095	. . . . . {applying frequency modulation to the loop in front of the voltage controlled oscillator}
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)		

3/0958	. . . . {applying frequency modulation by varying the characteristics of the voltage controlled oscillator}	7/022	. . {using ferromagnetic devices, e.g. ferrites}
3/0966	. . . . {modulating the reference clock}	7/025	. . {using semiconductor devices}
3/0975	. . . . {applying frequency modulation in the phase locked loop at components other than the divider, the voltage controlled oscillator or the reference clock}	7/027	. . . {using diodes}
		7/04	. . Polarisation of transmitted wave being modulated {(H03C 7/022 takes precedence)}
3/0983	. . . . {containing in the loop a mixer other than for phase detection}	99/00	Subject matter not provided for in other groups of this subclass
3/0991	. . . . {including calibration means or calibration methods}	2200/00	Indexing scheme relating to details of modulators or modulation methods covered by H03C
3/10	. by means of variable impedance (H03C 3/30 - H03C 3/38 take precedence)	2200/0004	. Circuit elements of modulators
3/12	. . by means of a variable reactive element	2200/0008	. . Variable capacitors, e.g. a varicap, a varactor or a variable capacitance of a diode or transistor
3/14	. . . simulated by circuit comprising active element with at least three electrodes, e.g. reactance-tube circuit	2200/0012	. . Emitter or source coupled transistor pairs or long tail pairs
3/145	. . . . {by using semiconductor elements}	2200/0016	. . Pre-emphasis or de-emphasis circuits
3/16	. . . . in which the active element simultaneously serves as the active element of an oscillator	2200/002	. . Filters with particular characteristics
3/18	. . . the element being a current-dependent inductor	2200/0025	. . Gilbert multipliers
3/20	. . . the element being a voltage-dependent capacitor	2200/0029	. . Memory circuits, e.g. ROMs, RAMs, EPROMs, latches, shift registers
3/22	. . . the element being a semiconductor diode, e.g. varicap diode	2200/0033	. . Transmission lines, e.g. striplines, microstrips or coplanar lines
3/222	. . . . {using bipolar transistors (H03C 3/227 takes precedence)}	2200/0037	. Functional aspects of modulators
3/225	. . . . {using field effect transistors (H03C 3/227 takes precedence)}	2200/0041	. . Calibration of modulators
3/227	. . . . {using a combination of bipolar transistors and field effect transistors}	2200/0045	. . Pulse width, duty cycle or on/off ratio
3/24	. . by means of a variable resistive element, e.g. tube	2200/005	. . Modulation sensitivity
3/245	. . . {by using semiconductor elements}	2200/0054	. . . Filtering of the input modulating signal for obtaining a constant sensitivity of frequency modulation
3/26	. . . comprising two elements controlled in push-pull by modulating signal	2200/0058	. . Quadrature arrangements
3/28	. . using variable impedance driven mechanically or acoustically	2200/0062	. . Lowering the supply voltage and saving power
3/30	. by means of transit-time tube	2200/0066	. . Reduction of carrier leakage or the suppression of the carrier
3/32	. . the tube being a magnetron	2200/007	. . with one sideband wholly or partially suppressed
3/34	. by deflection of electron beam in discharge tube	2200/0075	. . FM modulation down to DC
3/36	. by means of light-sensitive element	2200/0079	. . Measures to linearise modulation or reduce distortion of modulation characteristics
3/38	. by converting amplitude modulation to angle modulation	2200/0083	. . . Predistortion of input modulating signal to obtain a linear modulation characteristic
3/40	. . using two signal paths the outputs of which have a predetermined phase difference and at least one output being amplitude-modulated	2200/0087	. . Measures to address temperature induced variations of modulation
3/403	. . . {using two quadrature frequency conversion stages in cascade}	2200/0091	. . . by stabilising the temperature
3/406	. . . {using a feedback loop containing mixers or demodulators}	2200/0095	. . . by compensating temperature induced variations
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		