

# CPC COOPERATIVE PATENT CLASSIFICATION

## H ELECTRICITY

(NOTE omitted)

## H03 ELECTRONIC CIRCUITRY

## H03G CONTROL OF AMPLIFICATION

### NOTES

1. This subclass covers:
  - control of gain of amplifiers or frequency-changers;
  - control of frequency range of amplifiers;
  - limiting amplitude or rate of change of amplitude.
2. Attention is drawn to the Note following the title of subclass [H03F](#).

<b>1/00</b>	<b>Details of arrangements for controlling amplification</b>	3/06	. . . having discharge tubes
1/0005	. {Circuits characterised by the type of controlling devices operated by a controlling current or voltage signal}	3/08	. . . . incorporating negative feedback
1/0011	. . {the device being at least one of the amplifying tube elements}	3/10	. . . having semiconductor devices
1/0017	. . {the device being at least one of the amplifying solid-state elements}	3/12	. . . . incorporating negative feedback
1/0023	. . . {in emitter-coupled or cascode amplifiers ( <a href="#">H03G 1/0029</a> takes precedence)}	3/14	. . in frequency-selective amplifiers
1/0029	. . . {using field-effect transistors [FET]}	3/16	. . . having discharge tubes
1/0035	. . {using continuously variable impedance elements}	3/18	. . . having semiconductor devices
1/0041	. . . {using thermistors}	3/20	. Automatic control ( <a href="#">H03G 3/005</a> takes precedence;) combined with volume compression or expansion <a href="#">H03G 7/00</a> )
1/0047	. . . {using photo-electric elements}	3/22	. . in amplifiers having discharge tubes
1/0052	. . . {using diodes}	3/225	. . . {controlling or controlled by the (local) oscillators of a (super)heterodyne receiver}
1/0058	. . . . {PIN-diodes}	3/24	. . . Control dependent upon ambient noise level or sound level
1/0064	. . . . {Variable capacitance diodes}	3/26	. . . Muting amplifier when no signal is present
1/007	. . . {using field-effect transistors [FET]}	3/28	. . . . in frequency-modulation receivers
1/0076	. . . {using galvanomagnetic elements}	3/30	. . in amplifiers having semiconductor devices
1/0082	. . . {using bipolar transistor-type devices}	3/3005	. . . {in amplifiers suitable for low-frequencies, e.g. audio amplifiers ( <a href="#">H03G 3/32</a> , <a href="#">H03G 3/34</a> take precedence)}
1/0088	. . {using discontinuously variable devices, e.g. switch-operated}	3/301	. . . . {the gain being continuously variable}
1/0094	. . . {using switched capacitors}	3/3015	. . . . . {using diodes or transistors}
1/02	. Remote control of amplification, tone or bandwidth (combined with remote tuning or selection of resonant circuits <a href="#">H03J</a> )	3/3021	. . . . . {by varying the duty cycle}
1/04	. Modifications of control circuit to reduce distortion caused by control (modifications to reduce influence of variations of internal impedance of amplifying elements caused by control <a href="#">H03F 1/08</a> )	3/3026	. . . . {the gain being discontinuously variable, e.g. controlled by switching}
<b>3/00</b>	<b>Gain control in amplifiers or frequency changers</b>	3/3031	. . . . . {using switched capacitors}
3/001	. {Digital control of analog signals}	3/3036	. . . {in high-frequency amplifiers or in frequency-changers ( <a href="#">H03G 3/3052</a> , <a href="#">H03G 3/32</a> , <a href="#">H03G 3/34</a> take precedence)}
3/002	. {Control of digital or coded signals ( <a href="#">H03G 3/3089</a> take precedence)}	3/3042	. . . . {in modulators, frequency-changers, transmitters or power amplifiers}
3/004	. {Control by varying the supply voltage}	3/3047	. . . . . {for intermittent signals, e.g. burst signals}
3/005	. {Control by a pilot signal ( <a href="#">H03G 3/001</a> takes precedence)}	3/3052	. . . {in bandpass amplifiers (H.F. or I.F.) or in frequency-changers used in a (super)heterodyne receiver ( <a href="#">H03G 3/32</a> , <a href="#">H03G 3/34</a> take precedence)}
3/007	. {Control dependent on the supply voltage}	3/3057	. . . . {using at least one diode as controlling device}
3/008	. {Control by switched capacitors}	3/3063	. . . . {using at least one transistor as controlling device, the transistor being used as a variable impedance device}
3/02	. Manually-operated control {( <a href="#">H03G 3/001</a> and <a href="#">H03G 3/002</a> take precedence)}	3/3068	. . . . {Circuits generating control signals for both R.F. and I.F. stages}
3/04	. . in untuned amplifiers		

3/3073	. . . . {Circuits generating control signals when no carrier is present, or in SSB, CW or pulse receivers}	7/007	. {of digital or coded signals}
3/3078	. . . . {Circuits generating control signals for digitally modulated signals}	7/008	. {Control by a pilot signal ( <a href="#">H03G 7/007</a> , <a href="#">H03G 7/02</a> , <a href="#">H03G 7/06</a> take precedence)}
3/3084	. . . {in receivers or transmitters for electromagnetic waves other than radiowaves, e.g. lightwaves ( <a href="#">H03G 3/32</a> , <a href="#">H03G 3/34</a> take precedence)}	7/02	. having discharge tubes
3/3089	. . . {Control of digital or coded signals}	7/04	. . incorporating negative feedback
3/3094	. . . {in parametric amplifiers ( <a href="#">H03G 3/32</a> , <a href="#">H03G 3/34</a> take precedence)}	7/06	. having semiconductor devices
3/32	. . . the control being dependent upon ambient noise level or sound level	7/08	. . incorporating negative feedback
3/34	. . . Muting amplifier when no signal is present	<b>9/00</b>	<b>Combinations of two or more types of control, e.g. gain control and tone control</b>
3/341	. . . . {Muting when no signals or only weak signals are present ( <a href="#">H03G 3/344</a> , <a href="#">H03G 3/345</a> take precedence)}	9/005	. {of digital or coded signals}
3/342	. . . . {Muting when some special characteristic of the signal is sensed which distinguishes it from noise, e.g. using speech detector ( <a href="#">H03G 3/344</a> , <a href="#">H03G 3/345</a> take precedence)}	9/02	. in untuned amplifiers
3/344	. . . . {Muting responsive to the amount of noise (noise squelch) ( <a href="#">H03G 3/345</a> takes precedence)}	9/025	. . {frequency-dependent volume compression or expansion, e.g. multiple-band systems ( <a href="#">H03G 9/10</a> , <a href="#">H03G 9/18</a> take precedence)}
3/345	. . . . {Muting during a short period of time when noise pulses are detected, i.e. blanking ( <a href="#">H03G 3/348</a> takes precedence)}	9/04	. . having discharge tubes
3/347	. . . . . {dependent on the rate of noise pulses}	9/06	. . . for gain control and tone control
3/348	. . . . {Muting in response to a mechanical action or to power supply variations, e.g. during tuning; Click removal circuits}	9/08	. . . . incorporating negative feedback
<b>5/00</b>	<b>Tone control or bandwidth control in amplifiers</b>	9/10	. . . for tone control and volume expansion or compression
5/005	. {of digital signals}	9/12	. . having semiconductor devices
5/02	. Manually-operated control	9/14	. . . for gain control and tone control
5/025	. . {Equalizers; Volume or gain control in limited frequency bands}	9/16	. . . . incorporating negative feedback
5/04	. . in untuned amplifiers	9/18	. . . for tone control and volume expansion or compression
5/06	. . . having discharge tubes	9/20	. in frequency-selective amplifiers
5/08	. . . . incorporating negative feedback	9/22	. . having discharge tubes
5/10	. . . having semiconductor devices	9/24	. . having semiconductor devices
5/12	. . . . incorporating negative feedback	9/26	. in untuned amplifying stages as well as in frequency-selective amplifying stages
5/14	. . in frequency-selective amplifiers	9/28	. . all amplifying stages having discharge tubes
5/16	. Automatic control	9/30	. . all amplifying stages having semiconductor devices
5/165	. . {Equalizers; Volume or gain control in limited frequency bands}	<b>11/00</b>	<b>Limiting amplitude; Limiting rate of change of amplitude</b>
5/18	. . in untuned amplifiers	11/002	. {without controlling loop ( <a href="#">H03G 11/004</a> , <a href="#">H03G 11/006</a> , <a href="#">H03G 11/008</a> , <a href="#">H03G 11/02</a> , <a href="#">H03G 11/04</a> , <a href="#">H03G 11/06</a> , <a href="#">H03G 11/08</a> take precedence)}
5/20	. . . having discharge tubes	11/004	. {using discharge tubes ( <a href="#">H03G 11/008</a> takes precedence)}
5/22	. . . having semiconductor devices	11/006	. {in circuits having distributed constants ( <a href="#">H03G 11/008</a> takes precedence)}
5/24	. . in frequency-selective amplifiers	11/008	. {of digital or coded signals}
5/26	. . . having discharge tubes	11/02	. by means of diodes ( <a href="#">H03G 11/008</a> , <a href="#">H03G 11/04</a> , <a href="#">H03G 11/06</a> , <a href="#">H03G 11/08</a> take precedence)
5/28	. . . having semiconductor devices	11/025	. . {in circuits having distributed constants}
<b>7/00</b>	<b>Volume compression or expansion in amplifiers</b>	11/04	. Limiting level dependent on strength of signal; Limiting level dependent on strength of carrier on which signal is modulated ( <a href="#">H03G 11/008</a> takes precedence)}
	<b>{(frequency dependent <a href="#">H03G 9/025</a>)}</b>	11/06	. Limiters of angle-modulated signals; such limiters combined with discriminators ( <a href="#">discriminators having an inherent limiting action <a href="#">H03D 3/00</a></a> )
7/001	. {without controlling loop ( <a href="#">H03G 7/007</a> , <a href="#">H03G 7/02</a> , <a href="#">H03G 7/06</a> take precedence)}	11/08	. Limiting rate of change of amplitude ( <a href="#">H03G 11/008</a> takes precedence)}
7/002	. {in untuned or low-frequency amplifiers, e.g. audio amplifiers ( <a href="#">H03G 7/007</a> , <a href="#">H03G 7/001</a> , <a href="#">H03G 7/008</a> , <a href="#">H03G 7/02</a> , <a href="#">H03G 7/06</a> take precedence)}	<b>99/00</b>	<b>Subject matter not provided for in other groups of this subclass</b>
7/004	. . {using continuously variable impedance devices}	<b>2201/00</b>	<b>Indexing scheme relating to subclass <a href="#">H03G</a></b>
7/005	. . {using discontinuously variable devices, e.g. switch-operated}	2201/10	. Gain control characterised by the type of controlled element
		2201/103	. . being an amplifying element

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- 2201/106 . . being attenuating element
- 2201/20 . Gain control characterized by the position of the detection
- 2201/202 . . being in baseband
- 2201/204 . . being in intermediate frequency
- 2201/206 . . being in radio frequency
- 2201/208 . . being in power supply of the amplifier
- 2201/30 . Gain control characterized by the type of controlled signal
- 2201/302 . . being baseband signal
- 2201/305 . . being intermediate frequency signal
- 2201/307 . . being radio frequency signal
- 2201/40 . Combined gain and bias control
- 2201/50 . Gain control characterized by the means of gain control
- 2201/502 . . by switching impedance in feedback loop
- 2201/504 . . by summing selected parallel amplifying paths, i.e. more amplifying/attenuating paths summed together
- 2201/506 . . by selecting one parallel amplifying path
- 2201/508 . . by using look-up tables
- 2201/60 . Gain control characterized by varying time constants in control loop
- 2201/603 . . time constant being continuous
- 2201/606 . . time constant being discrete
- 2201/70 . Gain control characterized by the gain control parameter
- 2201/702 . . being frequency, e.g. frequency deviations
- 2201/704 . . being number of multiplexed channels
- 2201/706 . . being quality indicator, e.g. BER,C/I
- 2201/708 . . being temperature