**CPC COOPERATIVE PATENT CLASSIFICATION**

**H ELECTRICITY**

**H03 BASIC ELECTRONIC CIRCUITRY**

**H03G CONTROL OF AMPLIFICATION** (impedance networks, e.g. attenuators, H03H; control of transmission in lines H04B 3/04)

**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.

**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.

| 1/00 | Details of arrangements for controlling amplification | 3/001 | [Digital control of analog signals] |
| 1/0005 | (for arrangements combined with means for generating a controlling signal, or these means per se, see the other main groups of H03G) | 3/002 | [Control of digital or coded signals (H03G 3/3089 take precedence)] |
| 1/001 | Circuits characterised by the type of controlling devices operated by a controlling current or voltage signal | 3/004 | [Control by varying the supply voltage] |
| 1/0011 | (the device being at least one of the amplifying tubes of the amplifier) | 3/005 | [Control by a pilot signal (H03G 3/001 takes precedence)] |
| 1/0017 | (the device being at least one of the amplifying solid state elements of the amplifier) | 3/007 | [Control dependent on the supply voltage] |
| 1/0023 | [in emitter-coupled or cascode amplifiers (H03G 1/0029 takes precedence)] | 3/008 | [Control by switched capacitors] |
| 1/0029 | [using FETs] | 3/00 | Manually-operated control ([H03G 3/001 and H03G 3/002 take precedence]) |
| 1/0035 | [using continuously variable impedance elements] | 3/001 | in untuned amplifiers |
| 1/0041 | [using thermistors] | 3/002 | having discharge tubes |
| 1/0047 | [using photo-electric elements] | 3/008 | incorporating negative feedback |
| 1/0052 | [using diodes] | 3/10 | having semiconductor devices |
| 1/0058 | [PIN-diodes] | 3/12 | incorporating negative feedback |
| 1/0064 | [Variable capacitance diodes] | 3/14 | in frequency-selective amplifiers |
| 1/007 | [using FET type devices] | 3/16 | having discharge tubes |
| 1/0076 | [using galvanomagnetic elements] | 3/18 | having semiconductor devices |
| 1/0082 | [using bipolar transistor-type devices] | 3/20 | Automatic control ([H03G 3/005 takes precedence] ; combined with volume compression or expansion H03G 7/00) |
| 1/0088 | [using discontinuously variable devices, e.g. switch-operated] | 3/22 | in amplifiers having discharge tubes |
| 1/0094 | [using switched capacitors] | 3/225 | [controlling or controlled by the (local) oscillators of a (super)heterodyne receiver] |
| 1/02 | Remote control of amplification, tone, or bandwidth (remote control in general G05, G08; combined with remote tuning or selection of resonant circuits H03I) | 3/24 | Control dependent upon ambient noise level or sound level |
| 1/034 | 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 H03F 1/08) | 3/26 | Muting amplifier when no signal is present {or when only weak signals are present, or caused by the presence of noise, e.g. squelch systems} |
| 3/00 | Gain control in amplifiers or frequency changers {without distortion of the input signal} (gated amplifiers H03F 3/72; peculiar to television receivers H04N) | 3/28 | in frequency-modulation receivers {; in angle-modulation receivers} |
| 3/30 | in amplifiers having semiconductor devices | 3/3005 | [in amplifiers suitable for low-frequencies, e.g. audio amplifiers (H03G 3/32, H03G 3/34 take precedence)] |
| 3/301 | [the gain being continuously variable] | 3/3015 | [using diodes or transistors] |
| 3/3021 | [by varying the duty cycle] |
Tone control or bandwidth control in amplifiers

5/00  Tone control or bandwidth control in amplifiers
5/005  (of digital signals  
5/02  Manually-operated control (variable bandpass or bandstop filters  H03H 7/12)
5/025  (Equalizers; Volume or gain control in limited frequency bands)
5/04  in untuned amplifiers
5/06  having discharge tubes
5/08  incorporating negative feedback
5/10  having semiconductor devices
5/12  incorporating negative feedback
5/14  in frequency-selective amplifiers
5/16  Automatic control
5/165  (Equalizers; Volume or gain control in limited frequency bands)
5/18  in untuned amplifiers
5/20  having discharge tubes
5/22  having semiconductor devices
5/24  in frequency-selective amplifiers
5/26  having discharge tubes
5/28  having semiconductor devices

7/00  Volume compression or expansion in amplifiers
7/001  (frequency dependent H03G 9/00)
7/002  (frequency dependent H03G 10/00)
7/003  (frequency dependent H03G 11/00)
7/004  (frequency dependent H03G 12/00)
7/005  (frequency dependent H03G 13/00)
7/006  (frequency dependent H03G 14/00)
7/007  (frequency dependent H03G 15/00)
7/008  (frequency dependent H03G 16/00)
7/009  (frequency dependent H03G 17/00)
7/010  (frequency dependent H03G 18/00)
7/011  (frequency dependent H03G 19/00)
7/012  (frequency dependent H03G 20/00)
7/013  (frequency dependent H03G 21/00)
7/014  (frequency dependent H03G 22/00)
7/015  (frequency dependent H03G 23/00)
7/016  (frequency dependent H03G 24/00)
7/017  (frequency dependent H03G 25/00)
7/018  (frequency dependent H03G 26/00)
7/019  (frequency dependent H03G 27/00)
7/020  (frequency dependent H03G 28/00)
7/021  (frequency dependent H03G 29/00)
7/022  (frequency dependent H03G 30/00)
7/023  (frequency dependent H03G 31/00)
7/024  (frequency dependent H03G 32/00)
7/025  (frequency dependent H03G 33/00)
7/026  (frequency dependent H03G 34/00)
7/027  (frequency dependent H03G 35/00)
7/028  (frequency dependent H03G 36/00)
7/029  (frequency dependent H03G 37/00)
7/030  (frequency dependent H03G 38/00)
7/031  (frequency dependent H03G 39/00)
7/032  (frequency dependent H03G 40/00)
7/033  (frequency dependent H03G 41/00)
7/034  (frequency dependent H03G 42/00)
7/035  (frequency dependent H03G 43/00)
7/036  (frequency dependent H03G 44/00)
7/037  (frequency dependent H03G 45/00)
7/038  (frequency dependent H03G 46/00)
7/039  (frequency dependent H03G 47/00)
7/040  (frequency dependent H03G 48/00)
7/041  (frequency dependent H03G 49/00)
7/042  (frequency dependent H03G 50/00)
7/043  (frequency dependent H03G 51/00)
7/044  (frequency dependent H03G 52/00)
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7/078  (frequency dependent H03G 86/00)
7/079  (frequency dependent H03G 87/00)
7/080  (frequency dependent H03G 88/00)
7/081  (frequency dependent H03G 89/00)
7/082  (frequency dependent H03G 90/00)
7/083  (frequency dependent H03G 91/00)
7/084  (frequency dependent H03G 92/00)
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7/086  (frequency dependent H03G 94/00)
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7/094  (frequency dependent H03G 102/00)
7/095  (frequency dependent H03G 103/00)
7/096  (frequency dependent H03G 104/00)
7/097  (frequency dependent H03G 105/00)
7/098  (frequency dependent H03G 106/00)
7/099  (frequency dependent H03G 107/00)
8/00  Combining two or more types of control, e.g. gain control and tone control
8/001  (of digital or coded signals)
8/002  in untuned amplifiers (combined tone controls for low and high frequencies H03G 5001 [] compression or expansion combined with volume control H03G 7001)
8/003  (of digital or coded signals)
8/004  having discharge tubes
8/005  for gain control and tone control
8/006  incorporating negative feedback
8/007  for tone control and volume expansion or compression
8/008  having semiconductor devices
8/009  for gain control and tone control
8/010  incorporating negative feedback
8/011  for tone control and volume expansion or compression
8/012  having semiconductor devices
8/013  for gain control and tone control
8/014  incorporating negative feedback
8/015  for tone control and volume expansion or compression
8/016  having semiconductor devices
8/017  having semiconductor devices
8/018  having semiconductor devices
8/019  having semiconductor devices
8/020  in frequency-selective amplifiers
8/021  having discharge tubes
8/022  having discharge tubes
8/023  having discharge tubes
8/024  having discharge tubes
all amplifying stages having discharge tubes
all amplifying stages having semiconductor devices

11/00 Limiting amplitude; Limiting rate of change of amplitude [; Clipping in general]

11/002 . . without controlling loop (H03G 11/004, H03G 11/006, H03G 11/008, H03G 11/02, H03G 11/04, H03G 11/06, H03G 11/08 take precedence; see provisional also H03G 11/00)

11/004 . . {using discharge tubes (H03G 11/008 takes precedence)}

11/006 . . {in circuits having distributed constants (H03G 11/008 takes precedence)}

11/008 . . {of digital or coded signals (see provis. also H03G 11/00, H03G 11/02)}

11/02 . . by means of diodes (H03G 11/008 takes precedence; H03G 11/04, H03G 11/06, H03G 11/08 take precedence)

11/025 . . . . {in circuits having distributed constants}

11/04 . . Limiting level dependent on strength of signal; Limiting level dependent on strength of carrier on which signal is modulated (H03G 11/008 takes precedence)

11/06 . . {Limiters of angle-modulated signals}; such limiters combined with discriminators (H03G 11/00 takes precedence; discriminators having an inherent limiting action H03D 3/00)

11/08 . . Limiting rate of change of amplitude (H03G 11/008 takes precedence)

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

2201/00 Indexing scheme relating to subclass H03G

2201/10 . . Gain control characterised by the type of controlled element

2201/103 . . . . being an amplifying element

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