

ECLA EUROPEAN CLASSIFICATION

H03G CONTROL OF AMPLIFICATION (impedance networks, e.g. attenuators, H03H; control of transmission in lines [H04B3/04](#))

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.

H03G1/00 Details of arrangements for controlling amplification [N: for arrangements combined with means for generating a controlling signal, or these means per se, see the other main groups of [H03G](#)]

- H03G1/00B . [N: Circuits characterised by the type of controlling devices operated by a controlling current or voltage signal]
- H03G1/00B2 . . [N: the device being at least one of the amplifying tubes of the amplifier]
- H03G1/00B4 . . [N: the device being at least one of the amplifying solid state elements of the amplifier]
- H03G1/00B4D . . . [N: in emitter-coupled or cascode amplifiers (H03GB4F takes precedence)]
- H03G1/00B4F . . . [N: using FETs]
- H03G1/00B6 . . [N: using continuously variable impedance elements]
- H03G1/00B6B . . . [N: using thermistors]
- H03G1/00B6C . . . [N: using photo-electric elements]
- H03G1/00B6D . . . [N: using diodes]
- H03G1/00B6D1 [N: PIN-diodes]
- H03G1/00B6D2 [N: Variable capacitance diodes]
- H03G1/00B6F . . . [N: using FET type devices]
- H03G1/00B6M . . . [N: using galvanomagnetic elements]
- H03G1/00B6T . . . [N: using bipolar transistor-type devices]
- H03G1/00B8 . . [N: using discontinuously variable devices, e.g. switch-operated] [C9507]
- H03G1/00B8S . . . [N: using switched capacitors] [N9507]
- H03G1/02 . Remote control of amplification, tone, or bandwidth (remote control in general [G05](#), [G08](#); combined with remote tuning or selection of resonant circuits [H03J](#))
- H03G1/04 . 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 [H03F1/08](#))

H03G3/00 Gain control in amplifiers or frequency changers [N: without distortion of the input signal] (gated amplifiers [H03F3/72](#); peculiar to television receivers [H04N](#))

- H03G3/00D . [N: Digital control of analog signals] [C9507]
- H03G3/00N . [N: Control of digital or coded signals ([H03G3/30N](#) take precedence)] [C1205]
- H03G3/00P . [N: Control by varying the supply voltage] [N9507]
- H03G3/00Q . [N: Control by a pilot signal ([H03G3/00D](#) takes precedence)] [C9507]
- H03G3/00R . [N: Control dependent on the supply voltage] [N9507]
- H03G3/00S . [N: Control by switched capacitors] [N9507]
- H03G3/02 . Manually-operated control [N: [H03G3/00D](#) and [H03G3/00N](#) take precedence]
- H03G3/04 . . in untuned amplifiers
- H03G3/06 . . . having discharge tubes
- H03G3/08 incorporating negative feedback
- H03G3/10 . . . having semiconductor devices
- H03G3/12 incorporating negative feedback
- H03G3/14 . . in frequency-selective amplifiers
- H03G3/16 . . . having discharge tubes
- H03G3/18 . . . having semiconductor devices
- H03G3/20 . Automatic control ([N: [H03G3/00Q](#) takes precedence]; combined with volume compression or expansion [H03G7/00](#))
- H03G3/22 . . in amplifiers having discharge tubes
- H03G3/22H . . . [N: controlling or controlled by the (local) oscillators of a (super)heterodyne receiver]
- H03G3/24 . . . Control dependent upon ambient noise level or sound level
- H03G3/26 . . . Muting amplifier when no signal is present [N: or when only weak signals are present, or caused by the presence of noise, e.g. squelch systems]
- H03G3/28 in frequency-modulation receivers; [N: in angle-modulation receivers]
- H03G3/30 . . in amplifiers having semiconductor devices [C9507]
- H03G3/30B . . . [N: in amplifiers suitable for low-frequencies, e.g. audio amplifiers ([H03G3/32](#), [H03G3/34](#) take precedence)]
- H03G3/30B6 [N: the gain being continuously variable] [C9507]
- H03G3/30B6D [N: using diodes or transistors]
- H03G3/30B6E [N: by varying the duty cycle] [N9507]
- H03G3/30B8 [N: the gain being discontinuously variable, e.g. controlled by switching] [C9507]
- H03G3/30B8S [N: using switched capacitors] [N9507]
- H03G3/30D . . . [N: in high-frequency amplifiers or in frequency-changers ([H03G3/30E](#), [H03G3/32](#), [H03G3/34](#) take precedence)] [C9507]
- H03G3/30D2 [N: in modulators, frequency-changers, transmitters or power amplifiers (transmission power control in bidirectional transmission systems [H04W52/04](#))] [C1203]
- H03G3/30D2B [N: for intermittent signals, e.g. burst signals] [N9507]
- H03G3/30E . . . [N: in bandpass amplifiers (H.F. or I.F.) or in frequency-changers used in a

- (super)heterodyne receiver ([H03G3/32](#), [H03G3/34](#) take precedence)]
- H03G3/30E1 [N: using at least one diode as controlling device]
 - H03G3/30E2 [N: using at least one transistor as controlling device, the transistor being used as a variable impedance device]
 - H03G3/30E3 [N: Circuits generating control signals for both R.F. and I.F. stages]
 - H03G3/30E4 [N: Circuits generating control signals when no carrier is present, or in SSB, CW or pulse receivers] [N1108]
 - H03G3/30E5 [N: Circuits generating control signals for digitally modulated signals] [N1108]
 - H03G3/30F [N: in receivers or transmitters for electromagnetic waves other than radiowaves, e.g. lightwaves ([H03G3/32](#), [H03G3/34](#) take precedence)]
 - H03G3/30N [N: Control of digital or coded signals] [N9507]
 - H03G3/30P [N: in parametric amplifiers ([H03G3/32](#), [H03G3/34](#) take precedence)]
 - H03G3/32 the control being dependent upon ambient noise level or sound level
 - H03G3/34 Muting amplifier when no signal is present [N: or when only weak signals are present, or caused by the presence of noise signals, e.g. squelch systems]
 - H03G3/34A [N: Muting when no signals or only weak signals are present ([H03G3/34C](#), [H03G3/34D](#) take precedence)]
 - H03G3/34B [N: Muting when some special characteristic of the signal is sensed which distinguishes it from noise, e.g. using speech detector ([H03G3/34C](#), [H03G3/34D](#) take precedence)]
 - H03G3/34C [N: Muting responsive to the amount of noise (noise squelch) ([H03G3/34D](#) takes precedence)]
 - H03G3/34D [N: Muting during a short period of time when noise pulses are detected, i.e. blanking ([H03G3/34F](#) takes precedence)]
 - H03G3/34D2 [N: dependent on the rate of noise pulses] [N9507]
 - H03G3/34F [N: Muting in response to a mechanical action or to power supply variations, e.g. during tuning; Click removal circuits]

H03G5/00 **Tone control or bandwidth control in amplifiers**

- H03G5/00N . . . [N: of digital signals (see provisionally also [H03G5/00](#))]
- H03G5/02 . . . Manually-operated control (variable bandpass or bandstop filters [H03H7/12](#))
- H03G5/02E . . . [N: Equalizers; Volume or gain control in limited frequency bands]
- H03G5/04 . . . in untuned amplifiers
- H03G5/06 having discharge tubes
- H03G5/08 incorporating negative feedback
- H03G5/10 having semiconductor devices
- H03G5/12 incorporating negative feedback
- H03G5/14 . . . in frequency-selective amplifiers
- H03G5/16 . . . Automatic control
- H03G5/16E . . . [N: Equalizers; Volume or gain control in limited frequency bands]
- H03G5/18 . . . in untuned amplifiers
- H03G5/20 having discharge tubes
- H03G5/22 having semiconductor devices

- H03G5/24 . . . in frequency-selective amplifiers
- H03G5/26 having discharge tubes
- H03G5/28 having semiconductor devices

H03G7/00 **Volume compression or expansion in amplifiers** [N: frequency dependent [H03G9/00](#)]

- H03G7/00A . [N: without controlling loop ([H03G7/00N](#), [H03G7/02](#), [H03G7/06](#) take precedence)]
- H03G7/00B . [N: in untuned or low-frequency amplifiers e.g. audio amplifiers ([H03G7/00N](#), [H03G7/00A](#), [H03G7/00Q](#), [H03G7/02](#), [H03G7/06](#) take precedence)]
- H03G7/00B6 . . [N: using continuously variable impedance devices]
- H03G7/00B8 . . [N: using discontinuously variable devices, e.g. switch-operated]
- H03G7/00N . [N: of digital or coded signals (see provis. also [H03G7/00](#))]
- H03G7/00Q . [N: Control by a pilot signal ([H03G7/00N](#), [H03G7/02](#), [H03G7/06](#) take precedence)]
- H03G7/02 . having discharge tubes
- H03G7/04 . . incorporating negative feedback
- H03G7/06 . having semiconductor devices
- H03G7/08 . . incorporating negative feedback

H03G9/00 **Combinations of two or more types of control, e.g. gain control and tone control**

- H03G9/00N . [N: of digital or coded signals] [N1108]
 [N: **WARNING**
 [N1108] Not complete pending reclassification; see provisionally also group
 [H03G9/00](#)
]
- H03G9/02 . in untuned amplifiers (combined tone controls for low and high frequencies [H03G5/00](#))
 [N: compression or expansion combined with volume control [H03G7/00](#)]
- H03G9/02B . . [N: frequency-dependent volume compression or expansion, e.g. multiple-band
 systems ([H03G9/10](#), [H03G9/18](#) take precedence)]
- H03G9/04 . . having discharge tubes
- H03G9/06 . . . for gain control and tone control
- H03G9/08 incorporating negative feedback
- H03G9/10 . . . for tone control and volume expansion or compression
- H03G9/12 . . having semiconductor devices
- H03G9/14 . . . for gain control and tone control
- H03G9/16 incorporating negative feedback
- H03G9/18 . . . for tone control and volume expansion or compression
- H03G9/20 . in frequency-selective amplifiers
- H03G9/22 . . having discharge tubes

- H03G9/24 . . . having semiconductor devices
- H03G9/26 . in untuned amplifying stages as well as in frequency-selective amplifying stages (gain control in both stages [H03G3/00](#); tone control or bandwidth control [H03G5/00](#)) [N: compression or expansion combined with volume control [H03G7/00](#)]
- H03G9/28 . . . all amplifying stages having discharge tubes
- H03G9/30 . . . all amplifying stages having semiconductor devices

- H03G11/00** **Limiting amplitude; Limiting rate of change of amplitude;** [N: Clipping in general]

- H03G11/00A . [N: without controlling loop ([H03G11/00B](#), [H03G11/00M](#), [H03G11/00N](#), [H03G11/02](#), [H03G11/04](#), [H03G11/06](#), [H03G11/08](#) take precedence; see provisional also [H03G11/00](#))]
- H03G11/00B . [N: using discharge tubes ([H03G11/00N](#) takes precedence)]
- H03G11/00M . [N: in circuits having distributed constants ([H03G11/00N](#) takes precedence)]
- H03G11/00N . [N: of digital or coded signals (see provis. also [H03G11/00](#), [H03G11/02](#))]
- H03G11/02 . by means of diodes ([N: [H03G11/00N](#),] [H03G11/04](#), [H03G11/06](#), [H03G11/08](#) take precedence)
- H03G11/02M . . [N: in circuits having distributed constants]
- H03G11/04 . Limiting level dependent on strength of signal; Limiting level dependent on strength of carrier on which signal is modulated [N: [H03G11/00N](#) takes precedence]
- H03G11/06 . Limiters of angle-modulated signals; such limiters combined with discriminators ([N: [H03G11/00](#) takes precedence; discriminators having an inherent limiting action [H03D3/00](#)])
- H03G11/08 . Limiting rate of change of amplitude [N: [H03G11/00N](#) takes precedence]

- H03G99/00** **Subject matter not provided for in other groups of this subclass** [N0704]