

GENELEC®

Genelec HT208 and HT206
Active Home Theater Systems

Operating
Manual



1. General description

System

The bi-amplified GENELEC HT206 and HT208 are two way active speakers designed for high quality Home Theater systems.

Designed as an active speakers, these units contain drivers, power amplifiers, active crossover filtering and protection circuitry. The Directivity Control Waveguide (DCW) technology used provides excellent frequency balance even in difficult acoustic environments.

Drivers

The HT208 has a 210 mm (8") bass driver and the low frequency response extends down to 43 Hz (-6dB). The HT206 has a 170 mm (6 1/2") driver with -6dB point at 47 Hz.

The high frequency driver is a 25 mm (1") (HT208) or a 19 mm (3/4") (HT206) metal dome. The uniform dispersion control is achieved with the revolutionary DCW technology pioneered by Genelec. This has also resulted in perfect phase and delay uniformity at the crossover frequency. The bass and treble drivers are magnetically shielded on both models.

Crossover

The amplifier unit contains an active crossover. This is the ideal method for dividing the input signal between the driver units, allowing the overall response of the system to be optimized to an extent impossible with a passive system.

To maintain uniform frequency balance in differing acoustic environments, three special calibrated controls are included in the active crossover network: treble and bass 'tilt' and bass 'roll-off' switches, which make adjustments in 2 dB steps (see Fig. 1).

Amplifiers

The amplifier unit is mounted to the rear of the speaker enclosure. Both the bass and treble amplifiers on the HT208 produce 120 W of short term power. The HT206 has a 80 W amplifier for the bass and 50 W amplifier for the treble driver. Both units incorporate protection circuitry for driver overload protection and amplifier thermal overload protection. Variable input sensitivity allows for accurate level matching to the decoder or preamplifier.

Speaker Mounting Position	Treble Tilt	Bass Tilt	Bass Roll-off
Flat anechoic response	None	None	None
Free standing in a damped room	None	-2 dB	None
Free standing in a reverberant room	None	-4 dB	-2 dB
In a corner	None	-4 dB	-4 dB
In a cabinet	None	-2 dB	-2 dB

Figure 1. Suggested tone control setting for differing acoustic environments

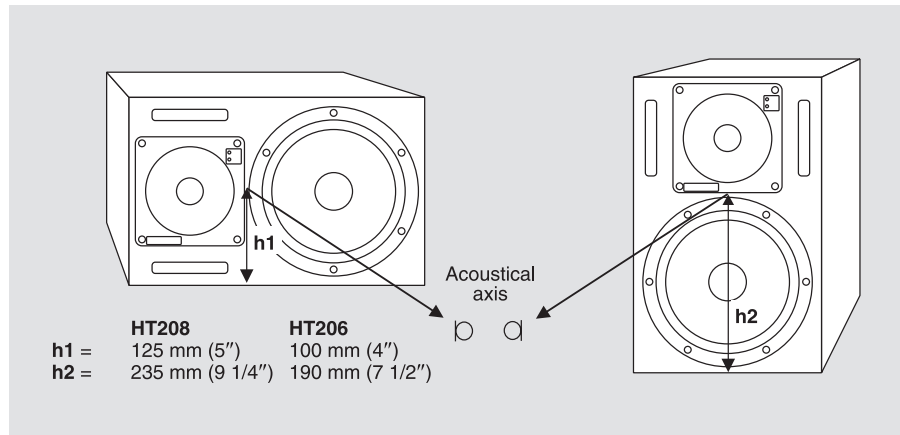


Figure 2. Speaker acoustic axis in horizontal and vertical mounting positions.

HT208 also features an "autostart" function. "Autostart" turns off the amplifier if there is no signal present for about 5 minutes. When the signal returns the amplifier switches on immediately and the speaker functions normally. This function should be enabled when the speaker is left turned on even when not in use; power is saved when the amplifier is switched off. An indicator LED on the DCW plate shows the system status.

"Autostart" can be enabled or disabled as required by using the dip switch on the speaker back panel (see fig. 4).

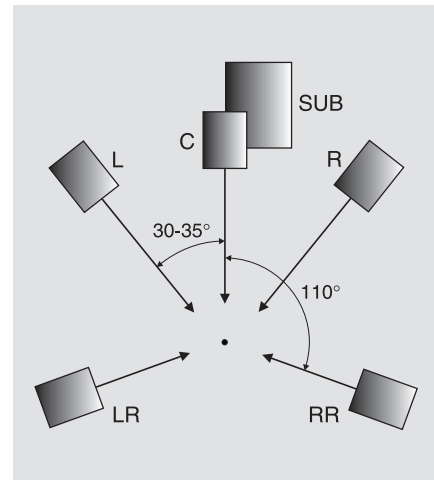


Figure 3. Recommended speaker alignment in a 5.1-channel Surround Sound System.

2. Installation

Place the loudspeaker in its required position, taking note of the line of the listening axis (see figures 2 and 3). To ensure cooling, there should be a clearance of more than 4" (10 cm) between speaker backplate and any solid surface. Before connecting up, ensure that the mains switch is off (see figure 4). Check that the mains voltage selector is correctly set and that the appropriate fuse is fitted.

Audio input is made via a 10 kOhm balanced (XLR) OR unbalanced (RCA) connector (see fig. 4). If the signal source has suitable balanced outputs, we recommend the use the XLR connector and balanced interconnect cables due to their better resistance to interference. Once connection has been made, the speakers are ready to be powered-up.

Setting the input sensitivity

Adjustment of the input sensitivity of each speaker can be made to match that of the decoder or other source, by use of the input sensitivity control on the rear panel (see figure 4). A small screwdriver is needed for the adjustment. The manufacturer default setting for this control is -6 dBu (fully clockwise) which gives SPL of 100 dB @1m with -6 dBu input level. Note that to get the full output level of 110 dB SPL, an input level of +4 dBu is needed in this setting.

Setting the tone controls

The acoustic response of the system may also have to be adjusted to match the acoustic environment. The adjustment is done by setting the three tone control switches 'treble tilt', 'bass tilt' and 'bass roll-off' on the rear panel of the amplifier. The manufacturers default settings for these controls are 'All Off' to give a flat anechoic response. See Figure 1 for suggested tone control settings in differing acoustic environments. Figures 5 and 6 show

the effect of the controls on the anechoic response. Always start adjustment by setting all switches to the 'OFF' position. Then set only one switch to the 'ON' position to select response curve needed. If more than one switch is set to 'ON' (within one switch group) the attenuation value is not accurate.

Vertical / horizontal mounting

The speakers are normally delivered for vertical mounting. If horizontal mounting is needed the DCW plate can be rotated so that the GENELEC logo is located at the bottom left corner of the DCW. Remove the four corner screws of the DCW and pull the plate carefully out without stressing the wires and the gasket. Rotate the plate 90 degrees to the appropriate direction and remount the screws. Note that to obtain a mirror image pair the DCW's must be rotated 90° in opposite directions on both speakers. In horizontal mounting position the bass drivers should point inwards to get better low frequency summing.

Status indicator LED

The status indicator LED on the HT208 changes colour to indicate amplifier status. If the LED is yellow, it indicates that the "autostart" function has turned the amplifier off. The amplifier returns to "ON" mode and the LED changes to green colour automatically when the signal returns. If the LED turns red, it indicates that the amplifier thermal protection circuit has been activated. Let the amplifier cool down and check that there is sufficient clearance around the amplifier for cooling.

The HT206 does not have the autostart function, so it has only a green "ON"-LED to indicate that the power has been switched on.

3. Maintenance

There are no user serviceable parts within the loudspeaker. Any maintenance or repair should only be undertaken by qualified service personnel. Ensure that if fuse replacement is required, only fuses of the appropriate voltage and current ratings are used. REMEMBER to disconnect the power supply by removal of the mains cable before fuse replacement.

4. Safety Considerations

1. Servicing and adjustment must only be performed by qualified service personnel. Opening the amplifier's rear panel is strictly prohibited.
2. It is forbidden to use this product with an unearthed mains cable, which may lead to personal injury.
3. To prevent fire or electric shock, do not expose the unit to water or moisture.

WARNING!

This equipment is capable of delivering Sound Pressure Levels in excess of 85 dB, which may cause permanent hearing damage.

5. Guarantee

This product is supplied with a two year guarantee against manufacturing faults or defects that might alter the performance of the unit. Refer to supplier for full sales and guarantee terms.

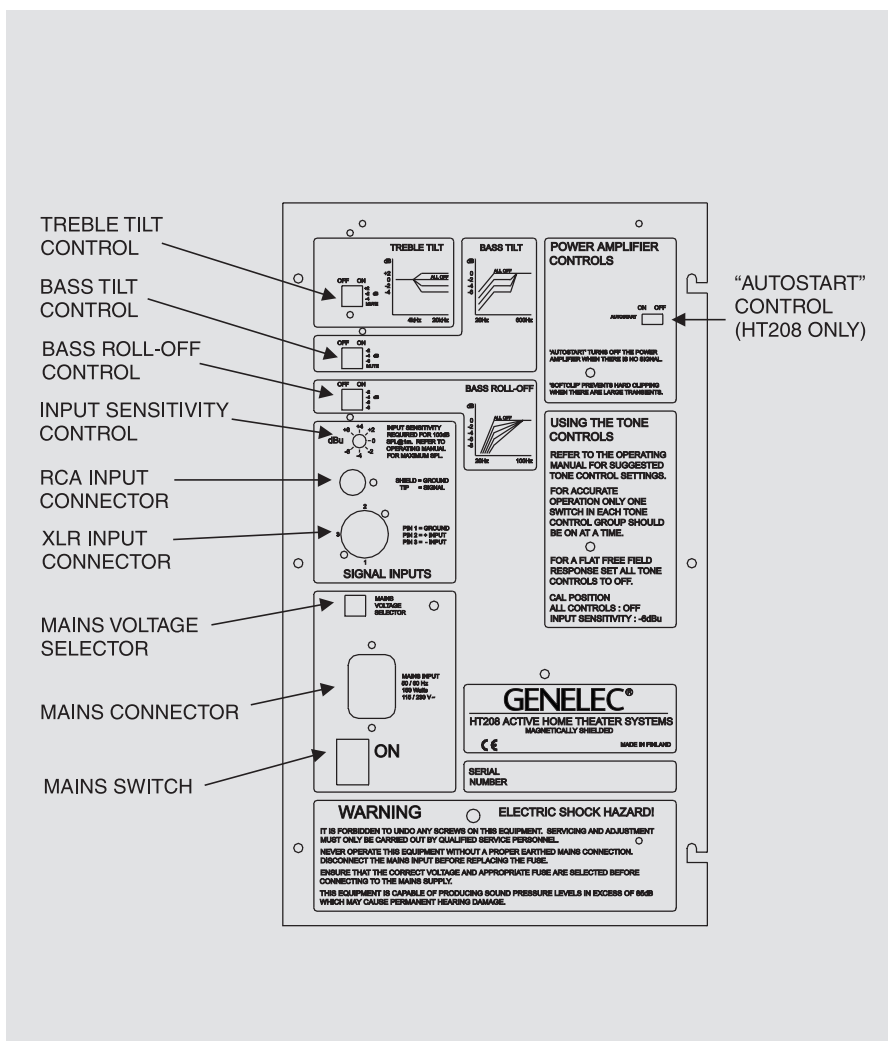


Figure 4. HT208 rear panel layout.

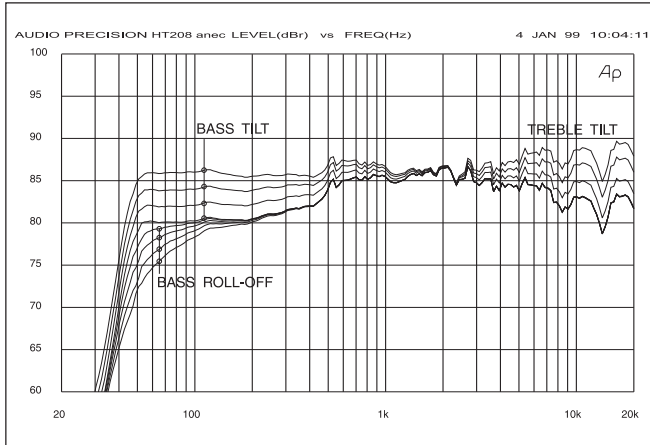


Figure 5. The effect of the 'treble tilt', 'bass tilt' and 'bass roll-off' controls on the free field response of the HT208.

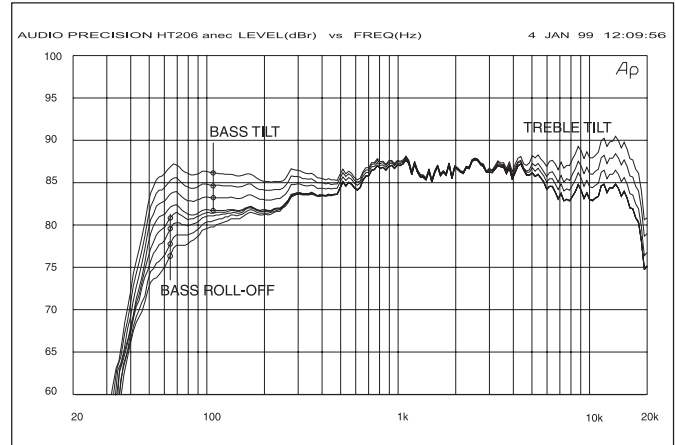


Figure 6. The effect of the 'treble tilt', 'bass tilt' and 'bass roll-off' controls on the free field response of the HT206.

SYSTEM SPECIFICATIONS

	HT206	HT208
Free field frequency response of system:	55 Hz - 18 kHz ($\pm 2,5$ dB)	48 Hz - 22 kHz (± 2 dB)
Maximum peak acoustic output per pair @ 1m measuring distance with music material:	≥ 115 dB SPL	≥ 120 dB SPL
Self generated noise level in free field @ 1m on axis:	≤ 10 dB (A-weighted)	≤ 10 dB (A-weighted)
Drivers	Bass: 170 mm (6 1/2") Treble: 19 mm (3/4") metal dome Magnetic shielding: Standard	210 mm (8") 25 mm (1") metal dome Standard
Bass amplifier output power:	Short term 80 W	Short term 120 W
Treble amplifier output power:	Short term 50 W	Short term 120 W
Amplifier system distortion at nominal output		
THD:	$\leq 0.08\%$	$\leq 0.05\%$
SMPTE-IM:	$\leq 0.08\%$	$\leq 0.05\%$
CCIF-IM:	$\leq 0.08\%$	$\leq 0.05\%$
DIM 100:	$\leq 0.08\%$	$\leq 0.05\%$
Harmonic distortion at 90 dB SPL @ 1 m on axis:	< 3% (60...150 Hz) < 0,5% (> 150 Hz)	< 1% (50...100 Hz) < 0,5% (> 100 Hz)
Input impedance:	10 kOhm	10 kOhm
Crossover frequency:	3.5 kHz	2.2 kHz
Treble tilt control in 2dB steps from +2 to -4dB & MUTE:	@15 kHz	@15 kHz
Bass roll-off control in 2 dB steps from 0 to -8 dB:	@50 Hz	@40 Hz
Bass tilt control in 2 dB steps from 0 to -6 dB & MUTE:	@100 Hz	@80 Hz
Mains voltage:	100/200V or 115/230V	100/200V or 115/230V
Power consumption (Idle / Full output):	20 / 100 W	30 / 160 W
Weight:	7,6 kg (17 lb.)	12,7 kg (28 lb.)
Dimensions	Height: 312 mm (12 1/4") Width: 200 mm (7 7/8") Depth: 240 mm (9 7/16")	395 mm (15 9/16") 250 mm (9 7/8") 290 mm (11 7/16")

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Note! All frequency response curves were measured in a calibrated, 12 m cube, anechoic chamber at 1 m using grade 1 measuring equipment. Input signal levels were set at -20 dBu. The anechoic chamber error in the free field response is less than 0.5 dB down to 60 Hz.

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