Claims

1. An audio device adapted to be installed in a vehicle, the device comprising:

~~At~~ at least one internal speaker driver enclosed in a housing, the housing having a walled chamber and at least one outlet,

~~A~~ a processor adapted to receive and process a signal from at least one audio source, and adapted to at least transmit and play the processed signal through the at least one internal speaker driver, and

~~An~~ an amplifier adapted to amplify the processed signal transmitted by the processor,

wherein the at least one internal speaker driver, the processor and the amplifier are all contained in a single unit, and wherein the device is configured to fit substantially within a vehicle head unit mounting location~~.~~,

wherein the at least one internal speaker driver has a first central plane which forms an angle with a second plane extending from the front to the back of the audio device,

wherein the angle ranges from 45° to 55° for enabling sound waves from the at least one internal speaker driver to be directed by the walls of the chamber towards the at least one outlet of the housing.

2. The audio device of claim 1 wherein the vehicle head unit mounting location is a single DIN or double DIN slot.

3. The audio device according to any one of the preceding claims, wherein the processor is configurable, and adapted to analyze the signal in real-time and optimize the signal to within desired parameters.

4. The audio device according to claim 3, wherein the desired parameters include frequency optimization, gain normalization and frequency band splits.

5. The audio device according to any one of the preceding claims, wherein the audio device is connectable to at least one external speaker driver located in the vehicle, and wherein the processor is adapted to at least transmit and play the processed signal through the at least one external speaker driver.

6. The audio device according to any one of the preceding claims, wherein the amplifier is a two-channel, four-channel or six-channel amplifier.

~~7. The audio device according to any one of the preceding claims, wherein the at least one internal speaker driver has a central plane which forms an angle with a plane extending from the front to the back of the audio device.~~

~~8. The audio device according claim 7, wherein the angle is less than 60°.~~

~~9. The audio device according to claim 8, wherein the angle ranges from 45° to 55°.~~

~~10~~7. The audio device according to any one of the preceding claims, wherein the audio device includes a front panel with the at least one outlet corresponding to the at least one internal speaker driver.

~~11~~8. The audio device according to claim ~~10~~ 7, wherein ~~a~~ the chamber is provided in front of the at least one internal speaker driver for directing sound waves produced by the at least one internal speaker driver toward the at least one outlet.

~~12~~9. The audio device according to claim ~~11~~ 8, wherein the chamber is a resonance chamber.

~~13~~10. The audio device according to any one of the preceding claims, wherein the processor is a digital signal processor.

~~14~~11. The audio device according to any one of the preceding claims, the audio device having two internal speaker drivers.

~~15~~12. The audio device according to any one of the preceding claims, wherein the at least one audio source communicates wirelessly with the audio device.

~~16~~13. A method for providing a car audio system in a vehicle, the method comprising:

~~Installing~~ installing an audio device to fit substantially within a vehicle head unit mounting location, the audio device having:

~~At~~ at least one internal speaker driver enclosed in a housing, the housing having a walled chamber and at least one outlet, ~~A~~ a processor; and ~~An~~ an amplifier,

connecting the audio device to at least one external speaker driver located in the vehicle,

wherein the processor is adapted to receive and process a signal from at least one audio source, and adapted to transmit and play the processed signal through the at least one internal and external speaker drivers, and wherein the amplifier is adapted to amplify the processed signal transmitted by the processor.

wherein the at least one internal speaker driver has a first central plane which forms an angle with a second plane extending from the front to the back of the audio device,

wherein the angle ranges from 45° to 55° for enabling sound waves from the at least one internal speaker driver to be directed by the walls of the chamber towards the at least one outlet of the housing.

~~17~~14. The method of claim ~~16~~ 13, wherein the vehicle head unit mounting location is a single DIN or double DIN slot.

~~18~~15. The method according to claim ~~16~~13 or ~~17~~14, wherein the processor is configurable, and adapted to analyze the signal in real-time and optimize the signal to within desired parameters.

~~19~~16. The method according to claim ~~18~~ 15, wherein the desired parameters include frequency optimization, gain normalization and frequency band splits.

~~20~~17. The method according to any one of claims ~~16~~ 13 to ~~19~~ 16, wherein the amplifier is a two-channel, four-channel or six-channel amplifier.

~~21. The method according to any one of claims 16 to 20, wherein the at least one internal speaker driver has a central plane which forms an angle with a plane extending from the front to the back of the audio device~~

~~22. The method according to claim 21, wherein the angle is less than 60°.~~

~~23. The method according to claim 22, wherein the angle ranges from 45° to 55°.~~

~~24~~18. The method according to ~~any one of~~ claim~~s~~ ~~16~~ 13 ~~to 23~~, further providing a front panel with the at least one outlet corresponding to the at least one internal speaker driver.

~~25~~19. The method according to claim ~~24~~18, further ~~providing a~~ placing the chamber in front of the at least one internal speaker driver for directing sound waves

produced by the at least one internal speaker driver toward the at least one outlet.

~~26~~20. The method according to claim ~~25~~19, wherein the chamber is a resonance chamber.

~~27~~21. The method according to any one of claims ~~16~~13 to ~~26~~20, wherein the processor is a digital signal processor.

~~28~~22. The method according to any one of claims ~~16~~13 to ~~27~~21, the audio device having two internal speaker drivers.

~~29~~23. The method according to any one of claims ~~16~~13 to ~~28~~22, wherein the at least one audio source communicates wirelessly with the audio device.