

FUB-FUB-FB-GZ-B83-F01 Speakers

ISTA system version	3.52.32.15580	Data version	R3.52	Programming data	-
VIN		Vehicle	4/F82/COUPE/M4/S55/MANUAL/USA/LL/2015/06		
Integration level factory	-	Integration level (current)	-	Integration level (target)	-
Mileage	0 km				

Speakers

Because speakers cannot reproduce all frequencies in the audible range with equal levels of efficiency, speakers with optimised frequency response have been installed.

Depending on the vehicle's equipment, the following speakers are installed:

- Tweeters
- Mid-range speakers
- Bass speakers

The number of speakers installed in the vehicle varies according to the installed speaker system.

- Hi-fi system, with the example F01: 12 Speakers
 - 1 Tweeter in the instrument panel
 - 1 Mid-range speaker in the instrument panel
 - 2 Tweeters in the mirror baseplates
 - 2 Mid-range speakers in the front door panels
 - 2 Bass speakers below the front seats
 - 2 Tweeters in rear tray
 - 2 Mid-range speakers in rear tray
- Top Hi-fi system, with the example F01: 16 Speakers:
 - 1 Tweeter in the instrument panel
 - 1 Mid-range speaker in the instrument panel
 - 2 Tweeters in the mirror baseplates
 - 2 Mid-range speakers in the front door panels
 - 2 Bass speakers below the front seats
 - 2 Tweeters in the rear door trim panels
 - 2 Mid-range speakers in the rear door trim panels
 - 2 Tweeters in rear tray
 - 2 Mid-range speakers in rear tray

Functional description

The HiFi System transfers audio signals from the head unit to the HiFi amplifier in analogue form.

When the Top HiFi system is installed, the audio data travel from the head unit to the Top HiFi amplifier (AMPT) on the MOST bus.

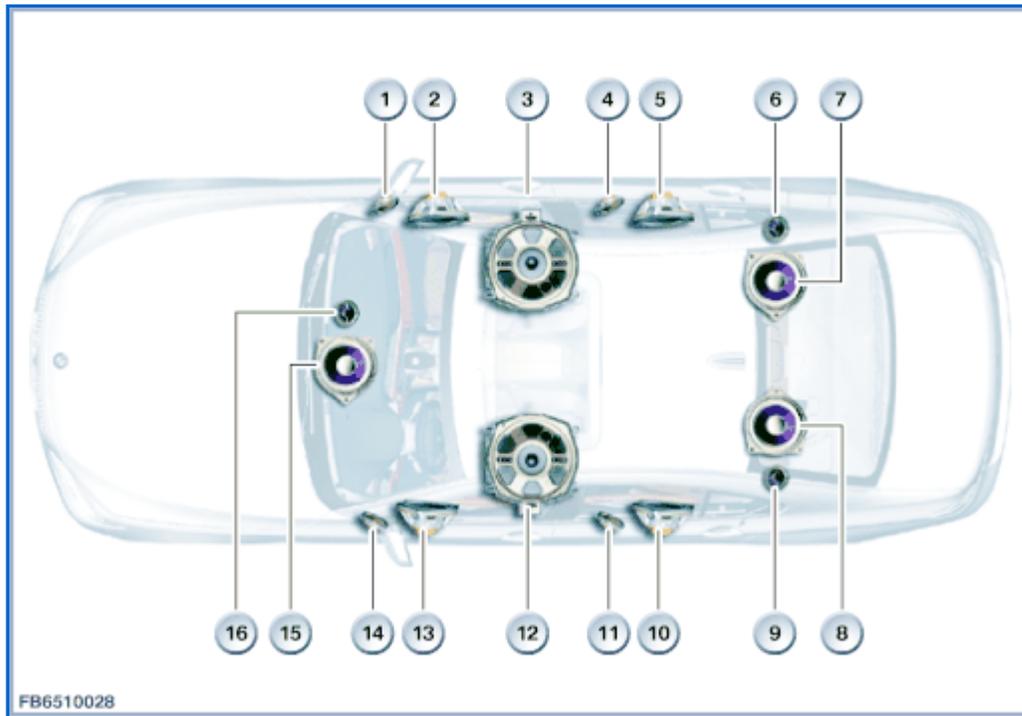
The audio signals travel from the audio amplifier to the speakers in twisted-strand wiring.

The HiFi amplifier transmits audio signals to the speakers through 7 audio driver circuits. The Top HiFi amplifier transmits audio signals through 9 audio driver circuits.

Each bass speaker receives audio signals from its own audio driver circuit. Each channel for the mid-range speakers and tweeters is powered by a shared audio driver circuit. The tweeters are connected in parallel with the mid-range speakers. Compared to bass speakers, the mid-range speakers and tweeters have a smaller diaphragm. Their lower mass allows them to oscillate at higher rates. This, in turn, allows them to reproduce higher frequencies.

With their higher diaphragm surface areas bass speakers generate higher sound pressure. The audio amplifier must generate adequate power for this output. This is why bass speakers are designed for higher power outputs than mid-range speakers and tweeters.

The following graphic shows the Top HiFi system with the example F01.

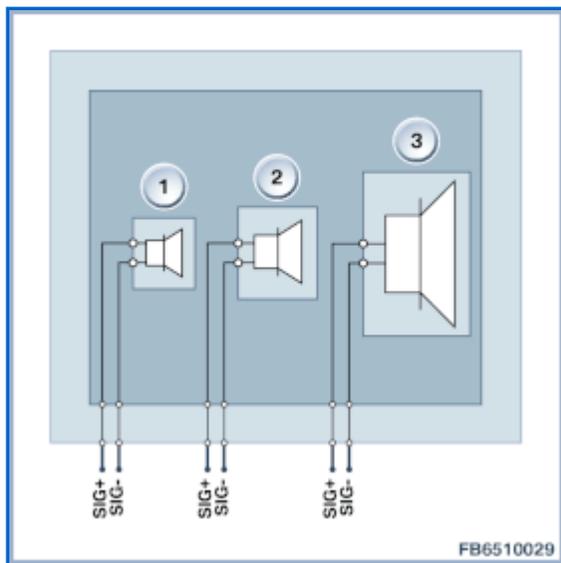


Item	Explanation	Item	Explanation
1	Tweeter, right front, installed in the mirror base in the right front door	2	Mid-range speaker, right front, installed in the right front door
3	Bass speaker, right front, installed beneath the right front seat	4	Tweeter, right rear (Top HiFi system only), installed in the right rear door
5	Mid-range speaker, right rear (Top HiFi system only), installed in the right rear door	6	Tweeter 2 at right rear, installed in the right rear of the rear tray
7	Mid-range speaker 2 at right rear, installed in the right rear of the rear tray	8	Mid-range speaker 2 at left rear, installed in the left rear of the rear tray
9	Tweeter 2 at left rear, installed in the left rear of the rear tray	10	Mid-range speaker, left rear (Top HiFi system only), installed in the left rear door
11	Tweeter, left rear (Top HiFi system only), installed in the left rear door	12	Bass speaker, left front, installed beneath the left front seat
13	Mid-range speaker, left front, installed in the left front door	14	Tweeter, right left, installed in the mirror base in the left front

			door
15	Mid-range speaker, front centre, installed in the instrument panel	16	Tweeter, front centre, installed in the instrument panel

Structure and inner electrical connection

A 2-pin plug connection links the driver in the audio amplifier (HiFi amplifier, Top-HiFi amplifier, etc.) with the speaker. While the speakers in the HiFi system have the same diameters of those in the Top-HiFi system, their levels of performance potential vary. The disparity stems from the application of different materials for the diaphragms, coils and magnets.



Item	Explanation	Item	Explanation
1	Tweeters	2	Mid-range speakers
3	Bass speakers		

Pin assignments

Pin	Explanation
SIG+	Audio wire, plus signal
SIG-	Audio wire, minus signal

Nominal values

Please note the following specification data for the speakers:

Variable	Value
Tweeter frequency range	4.5 to 20 kHz
Mid-range speaker frequency range	150 to 5000 Hz
Bass speaker frequency range (HiFi system)	40 to 250 Hz
Bass speaker frequency range (Top-HiFi system)	30 to 250 Hz

Nominal power rating (HiFi system)	15 W
Nominal power rating (Top HiFi system)	30 W
Nominal power rating, mid-range speaker (HiFi system)	15 W
Nominal power rating, mid-range speaker (Top-HiFi system)	25 W
Nominal power rating, bass speaker (HiFi system)	40 W
Nominal power rating, bass speaker (Top HiFi system)	150 W
Impedance, tweeter	4 Ω
Impedance, mid-range speaker	4 Ω
Impedance, bass speaker (HiFi system)	2 Ω
Impedance, bass speaker (Top-HiFi system)	8 Ω
Temperature range	-40 to 80 deg C

Diagnosis instructions

Function check of the component

The diagnosis system can be used to check operation of the speakers.

Path: Function network > body > audio, video, navigation, phone (MOST ring) > sound output

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