

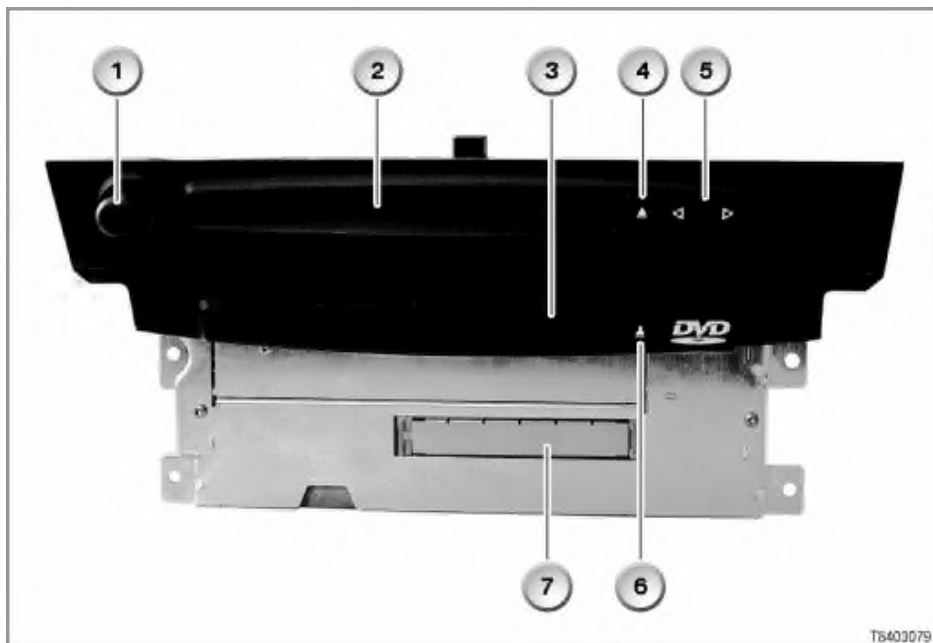
CCC housing: E60, E61, E63, E64, E70, E87, E90, E91, E92, E93, R56

### Installation location

The Car Communication Computer (CCC) is located in the centre console.

### Construction

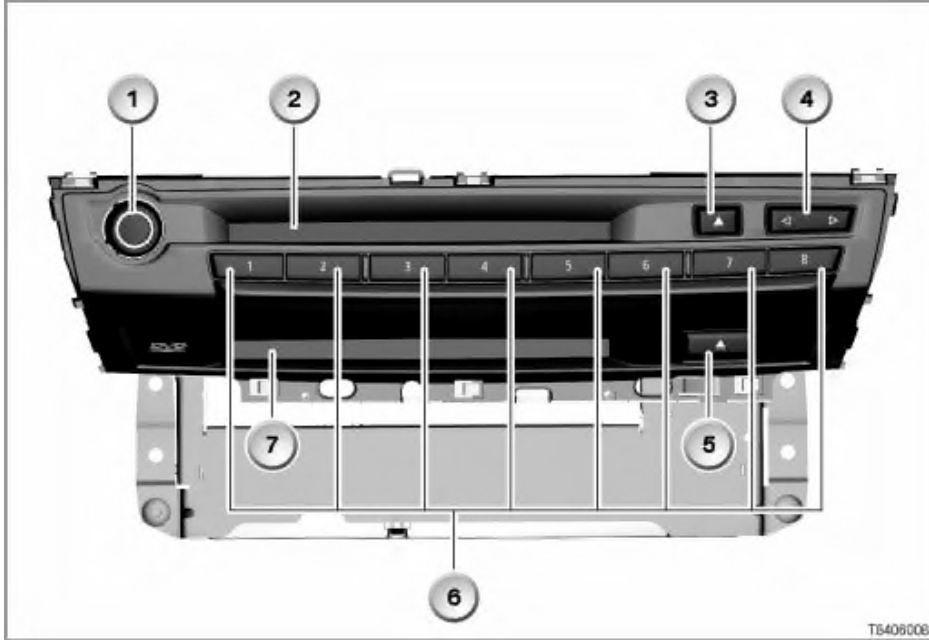
> E60, E61, E63, E64, E87, E90, E91, E92



The illustration shows the example of the CCC on the E60.

Item	Description	Item	Description
1	Rotary push button for switching on and off and for adjusting the volume.	2	Slot for audio CD or for CD-ROM (MD on Japanese version)
3	Slot for DVDs	4	Eject button for audio CD or for CD-ROM/MD
5	Search rocker switch	6	Eject button for DVD
7	Cover panel for extension with PCMCIA card		

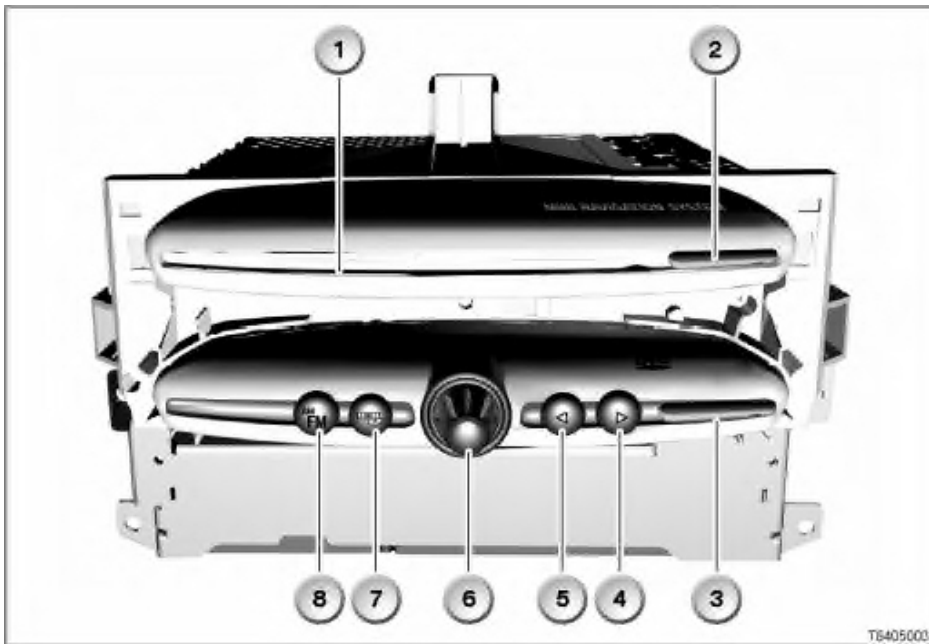
> E70 and E93 from start of series production



The illustration shows the example of the CCC on the E70.

Item	Description	Item	Description
1	Rotary push button for switching on and off and for adjusting the volume.	2	Slot for audio CD or for CD-ROM (MD on Japanese version)
3	Eject button for audio CD or for CD-ROM/MD	4	Search rocker switch
5	Eject button for DVD	6	8 favorites buttons
7	Slot for DVD		

> R56

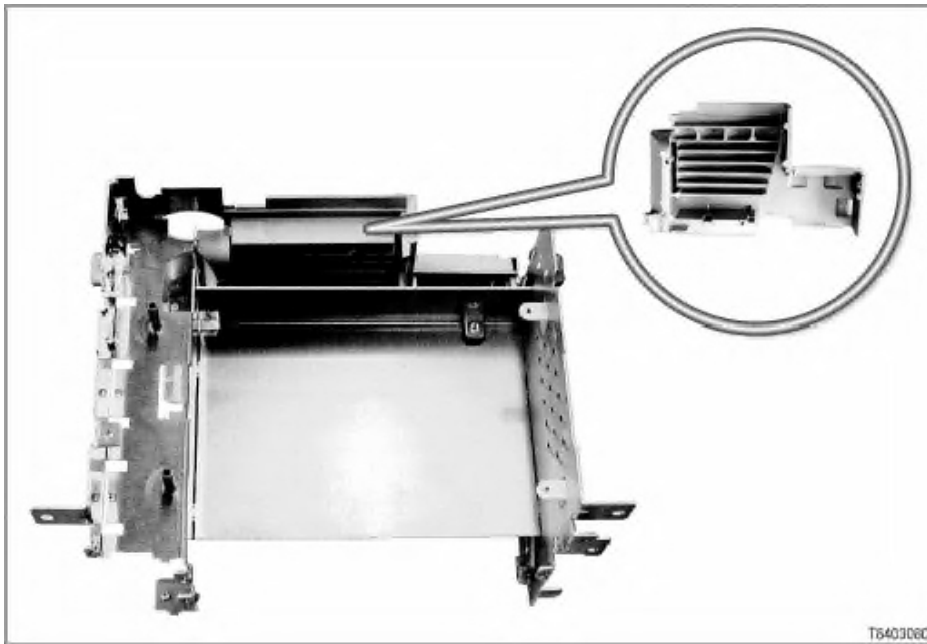


Item	Description	Item	Description
1	Slot for audio CD or for CD-ROM	2	Eject button for audio CD or for CD-ROM
3	Release button for removable control panel	4	

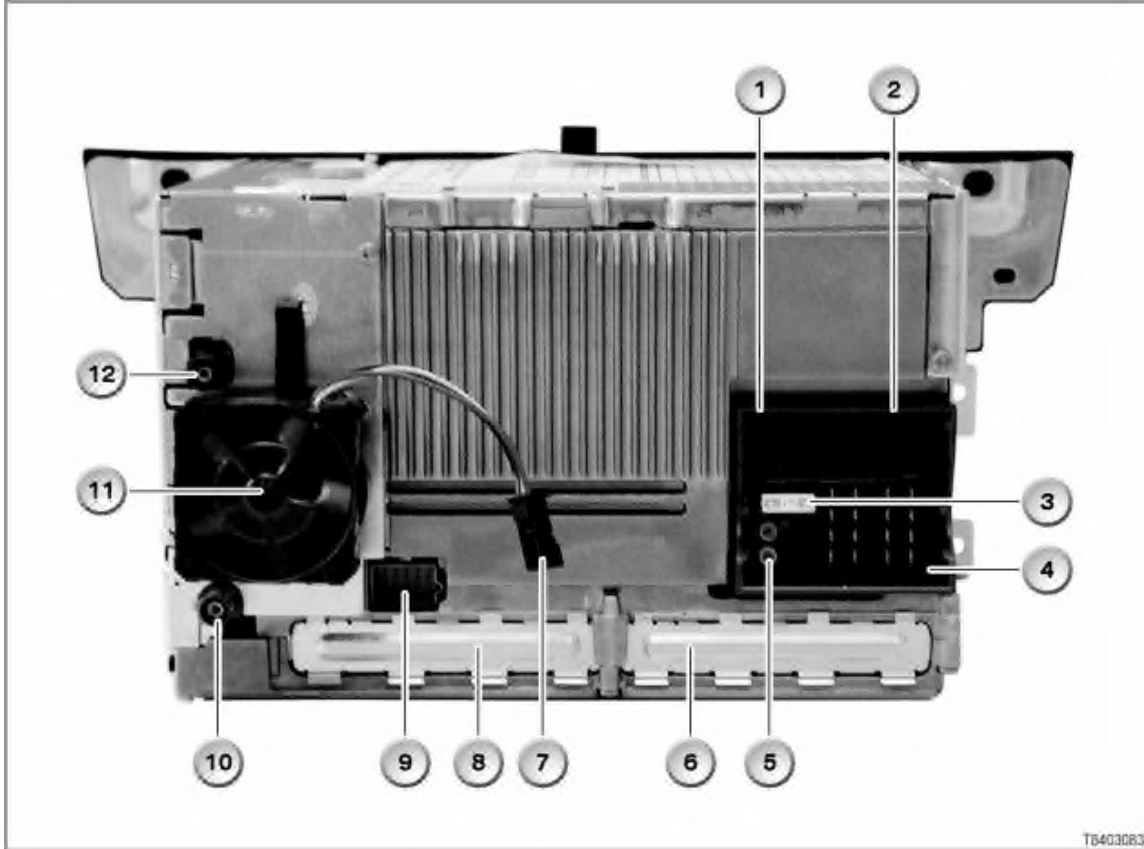
			Change radio station or track, or search "forwards" (function depends on the audio source selected)
5	Change radio station or track, or search "back" (function depends on the audio source selected)	6	Rotary push button for switching on and off and for adjusting the volume.
7	Mode button (to select audio source)	8	FM button and AM button (change frequency)

The Car Communication Computer (CCC) has a pressure-cast aluminium housing. The housing is a combination of pressure-cast aluminium and aluminium plate sheet. In the pressure-cast aluminium sections, there are air ducts for cooling the components.

The following illustration shows the CCC housing with air duct.



- Pin assignment



The illustration shows the example of the CCC on the E60.

Item	Description	Item	Description
1	Connector X13813, 12-pin	2	Connector X13814, 12-pin
3	Fuse	4	Connector X13812, 16-pin
5	MOST bus connection, connector X13815, 2-pin	6	Cover panel for PMC 1 extension card
7	Connection for electric fan	8	Cover panel for PMC 2 extension card
9	LVDS (Low Voltage Differential Signalling) connection, connector X13820, 10-pin > E70:connector X10772	10	GPS aerial connection (Global Positioning System), connector X13817, 2-pin
11	Electric fan	12	Radio aerial connection, connector X13816, 2-pin

#### Pin assignment for connector X13812, 16-pin black

Pin	Type	Description
1	A	Positive wire to loudspeaker, rear right
2	A	Positive wire to loudspeaker, front right
3	A	Positive wire to loudspeaker, front left
4	A	Positive wire to loudspeaker, rear left
5	A	Negative wire to loudspeaker, rear right
6	A	Negative wire to loudspeaker, front right
7	A	Negative wire to loudspeaker, front left

8	A	Negative wire for loudspeaker, rear left
9	E/A	K-CAN Low
10	E	Radio mute
11	E/A	K-CAN High
12	M	Terminal 31
13	A	Switch signal for TOP-HiFi amplifier and aerial diversity ON
14	E	Terminal 58g, locating light
15	V	Power supply, terminal 30g-f > E60, E61, E63, E65 until 09/2005: Terminal 30g
16	---	---
<p>A = Output E = Input E/A = Input and output M = Earth V = Supply For current specifications regarding pin assignments, please refer to BMW diagnosis system</p>		

#### Pin assignment for connector X13813, 12-pin

Pin	Type	Description
1	A	Power supply for fan
2	E	Positive wire for additional audio input, left
3	A	Positive wire for bass loudspeaker, left
4	A	Positive wire for bass loudspeaker, right
5	A	Earth connection for fan
6	E	Positive wire for voice signal
7	E	Positive wire for additional audio input, right
8	A	Negative wire for additional audio input
9	A	Negative wire for bass loudspeaker, right
10	A	Negative wire for bass loudspeaker, left
11	E	Signal wire for fan (for diagnosis)
12	A	Negative wire for voice signal
<p>E = Input A = Output For current specifications regarding pin assignments, please refer to BMW diagnosis system</p>		

#### Pin assignment for connector X13814, 12-pin

Pin	Type	Description
1	A	Positive wire for microphone (discontinued from 09/2005)
2	E	Negative wire for RGB signal
3	E	Signal wire for RGB red

4	E	Signal wire for RGB green
5	E	Signal wire for RGB blue
6	A	Negative wire for microphone (discontinued from 09/2005)
7	E	Signal wire
8	A	Signal wire
9	E	Signal wire
10	A	Signal wire
11	E	Signal wire
12	E	> E60 until 09/04: Speed signal for acoustic warning, depending on national version > E60 from 00/04 and E61, E63, E64, E87, E70, E90, E91, E92, E93, R56 Speed signal via K-CAN. This PIN is no longer used.
E = Input A = Output For current specifications regarding pin assignments, please refer to BMW diagnosis system		

#### Pin assignment for connector X13815, 2-pin

Pin	Type	Description
1	E	MOST bus
2	A	MOST bus
A = Output E = Input For current specifications regarding pin assignment, please refer to BMW diagnosis system		

#### Pin assignment for connector X13820, 10-pin; (E70:connector X10772)

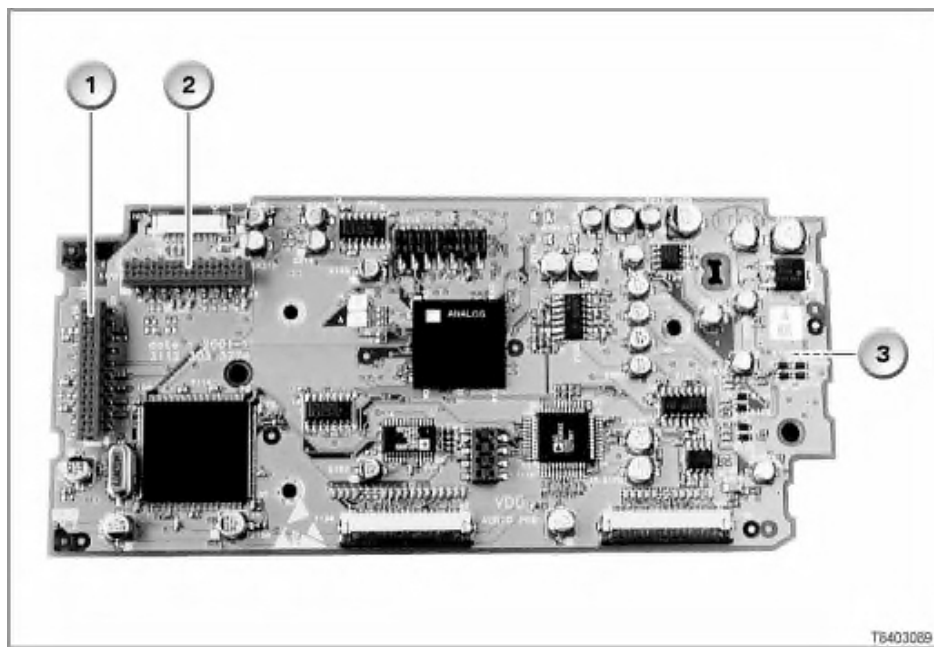
Pin	Type	Description
1	A	Positive wire for RGB blue signal
2	A	Negative wire for RGB blue signal
3	---	---
4	A	Positive wire for RGB green signal, including synchronous pulse
5	A	Negative wire RGB green signal, including synchronous pulse
6	A	Positive wire for timing signal
7	A	Negative wire for timing signal
8	---	---
9	A	Positive wire for RGB red signal
10	A	Negative wire for RGB red signal
A = Output For current specifications regarding pin assignments, please refer to BMW diagnosis system		

### Installation location

The audio board is fitted on the right-hand side of the Car Communication Computer.

### Construction

The audio board is connected to the motherboard and the power board via plug-in contacts. 2 additional plug-in contacts provide a connection to the two-tuner radio and to the CD-ROM drive.



The illustration shows the example of the CCC on the E60.

Item	Description	Item	Description
1	Plug-in contact for connection to the two-tuner radio	2	Plug-in contact for connection to the CD-ROM drive
3	Plug-in contact for connection to the power board		

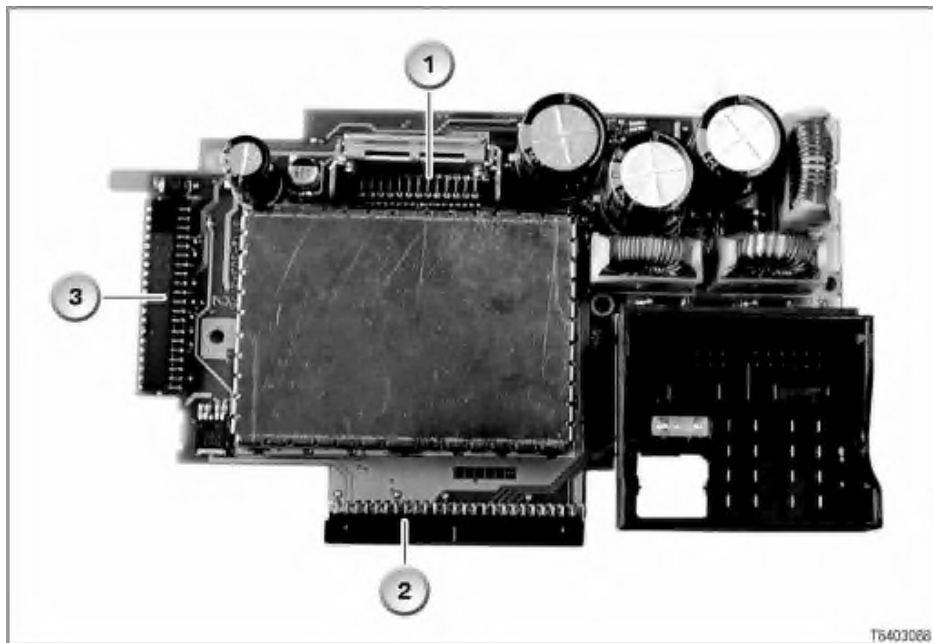
### Installation location

The power board is located on the back of the Car Communication Computer (CCC).

### Construction

The FAKRA connector for the power supply is mounted on the power board. The FAKRA connector is the interface to the vehicle electrical system and to the MOST network.

On the power board, there are 4 audio output stages for the loudspeakers and the power supply to the CCC.



The illustration shows the example of the CCC on the E60.

Item	Description	Item	Description
1	Audio output stage	2	Plug-in contact to motherboard
3	Plug-in contact to audio board		