Audi
Modular Infotainment System (MIB)

The material in this Self Study Program (SSP) may contain technical information or reference vehicle systems and configurations which are not available in the Canadian market.

Please ensure you reference ElsaPro for the most current technical information and repair procedures.

Modular Infotainment System (*MIB**)

The Modular Infotainment System is another milestone achieved by the Volkswagen Group and in future will replace the information and entertainments systems used up to now.

The control unit architecture allows the hardware to be easily and economically updated so that it always incorporates the latest advances. An important component is the fast graphics processor made by market-leader Nvidia, with whom Audi enjoys a very successful business relationship. The latest Nvidia processors will continue to be used in Audi cars in the future.
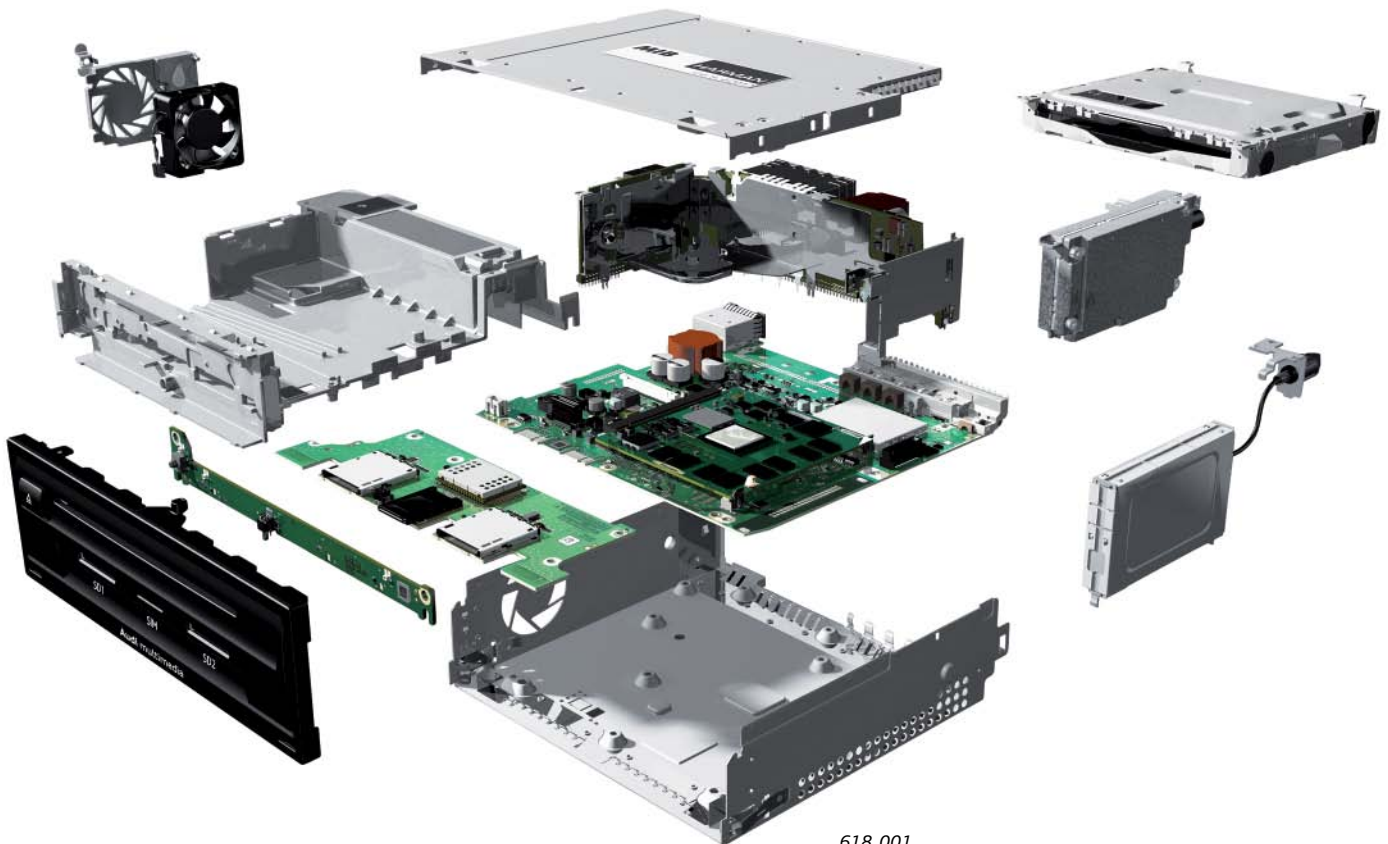
The new platform means that it will be possible to use the same central processing units (electronic information systems control unit 1 J794) across the entire Group. So in future it will be possible to run brand-specific variants on four standardised hardware platforms. For the purposes of differentiation, features such as the user interfaces and controls will be individually adapted for each brand. Customers will thus be able to identify distinctive differences between the systems. And the system used in an Audi will always be recognisable as a genuine Audi MMI.

The Modular Infotainment System (MIB) was first used on the Audi A3 '13.

In all Audi offers three MIB configuration levels:

▸ Entry MIB
▸ Standard MIB
▸ High-spec MIB

One Group brand is responsible for each of those configuration levels. Audi is responsible for developing the High-spec MIB, Volkswagen for the Standard MIB and Skoda for the Entry MIB.

618_001

Contents

▸ The self-study programme provides information on the fundamentals of the design and function of new vehicle models, new automotive components or new technologies.
The self-study programme is not a repair manual! Any figures quoted merely serve the purpose of facilitating understanding and relate to the software version valid at the time the SSP was produced.
For details of servicing and repair operations, it is imperative that you refer to the latest technical literature.
* Terms written in italics and marked with an asterisk are explained in the Glossary at the end of this self-study programme.

! **Note**

Reference

Introduction

Why does Audi use the Modular Infotainment System?

Due to the high pace of development in the field of multimedia applications, keeping up to date with the latest advances is a growing challenge for car makers. One example is that many mobile phone manufacturers update their top-of-the-range products every year while also extending the software functionality. Car owners, in turn, want to be able to connect the latest mobile phones to the in-car entertainment and communication systems.

To keep up with the speed at which requirements are changing, the development cycles for information and entertainment equipment in the automotive industry have to be made shorter as well.
To make that achievable, the electronic information systems control unit 1 J794 has been designed as a modular unit. That means that in future new designs will only need to be produced for some control units while other hardware can be retained.

Thus the components that are not subject to such rapid development, such as radio tuners or audio amplifiers, can remain as they are.
Put simply, that means that only the computer (MMX board) in the electronic information systems control unit 1 is upgraded. The MMX (Multi Media Extension) board itself is equipped with an Nvidia dual-core processor on the Audi A3 '13. Specifically, it is the Tegra T20 unit which has a clock speed of 1.2 GHz.
If the MMX board is upgraded in the future, the changes required can be compared with replacing the motherboard and graphics card in a home PC to make it "faster".

The software for the MIB is also modular in design so that in the future both "old" and "new" software will be used together on a new control unit. The "old" software might then be the CAN data protocol, while applications such as the Bluetooth profiles are likely to frequently require the development of "new" software.

Schematic diagram of MMX board   *618_002*

! **Note**
If the electronic information systems control unit 1 J794 is replaced by an Audi dealer, it is replaced with an identical control unit offering the same features.

Audi offers three configuration levels for the Modular Infotainment System:

▸ Entry MIB
▸ Standard MIB
▸ High-spec MIB

With each version of the MIB, the central control unit fitted is the electronic information systems control unit J794. On the Audi A3 '13, for example, it is fitted in the glove compartment.

The electronic information systems control unit 1, J794, comprises the following control units and functions, depending on version:

▸ Control of information and entertainment systems
▸ System master and diagnostics master for MOST
▸ Radio tuner
▸ Digital radio tuner (DAB or *SDARS**)
▸ *CD** or *DVD** drive
▸ Audio amplifier (up to 180 watts)
▸ Up to two *SD** card readers
▸ Bluetooth interface (*HFP**, *A2DP** and, with Bluetooth car phone, also *SAP**)
▸ Telephone module and *SIM** card reader
▸ Navigation system
▸ *SSD** solid state drive (64 GB)
▸ Voice control
▸ WiFi hotspot

Front panel of J794 for Entry MIB   *618_003*

Front panel of J794 for Entry plus MIB   *618_004*

Front panel of J794 for Standard MIB, radio version   *618_005*

Front panel of J794 for Standard MIB, navigation system version   *618_006*

Front panel of J794 for High-spec MIB   *618_007*

Front panel of J794 for High-spec MIB with Bluetooth car phone (SIM card reader)   *618_008*

Entry MIB

The Entry MIB is intended as the entry-level information and entertainment system.

The Entry MIB is operated by means of control panel E380, which is fitted in the dashboard and also incorporates the display unit. No optional features are offered with the Entry MIB.

The Entry MIB offers the following features:

▸ Radio with phase diversity module for *FM** (frequency modulation) and AM (amplitude modulation)
▸ Single CD drive which supports *MP3** and *WMA** files
▸ Integrated amplifier with 4 x 20 watts max. power
▸ *AUX IN** socket
▸ Car configuration via Setup button
▸ All-in-one display and control panel

The E380 control panel fitted in the dashboard features a 3.4-inch monochrome display. On the Audi A3 '13, the control panel folds in and out mechanically. When folded away, the media and volume control buttons remain accessible.

The PR number for the Entry MIB is "i8A".

Display and control panel E380 for Entry MIB   *618_010*

Front panel of J794 for Entry MIB   *618_003*

Private CAN High (to E380)

Information/entertainment CAN High

Private CAN Low (to E380)   Information/entertainment CAN Low

FM1/AM radio signal input

FM2 radio signal input
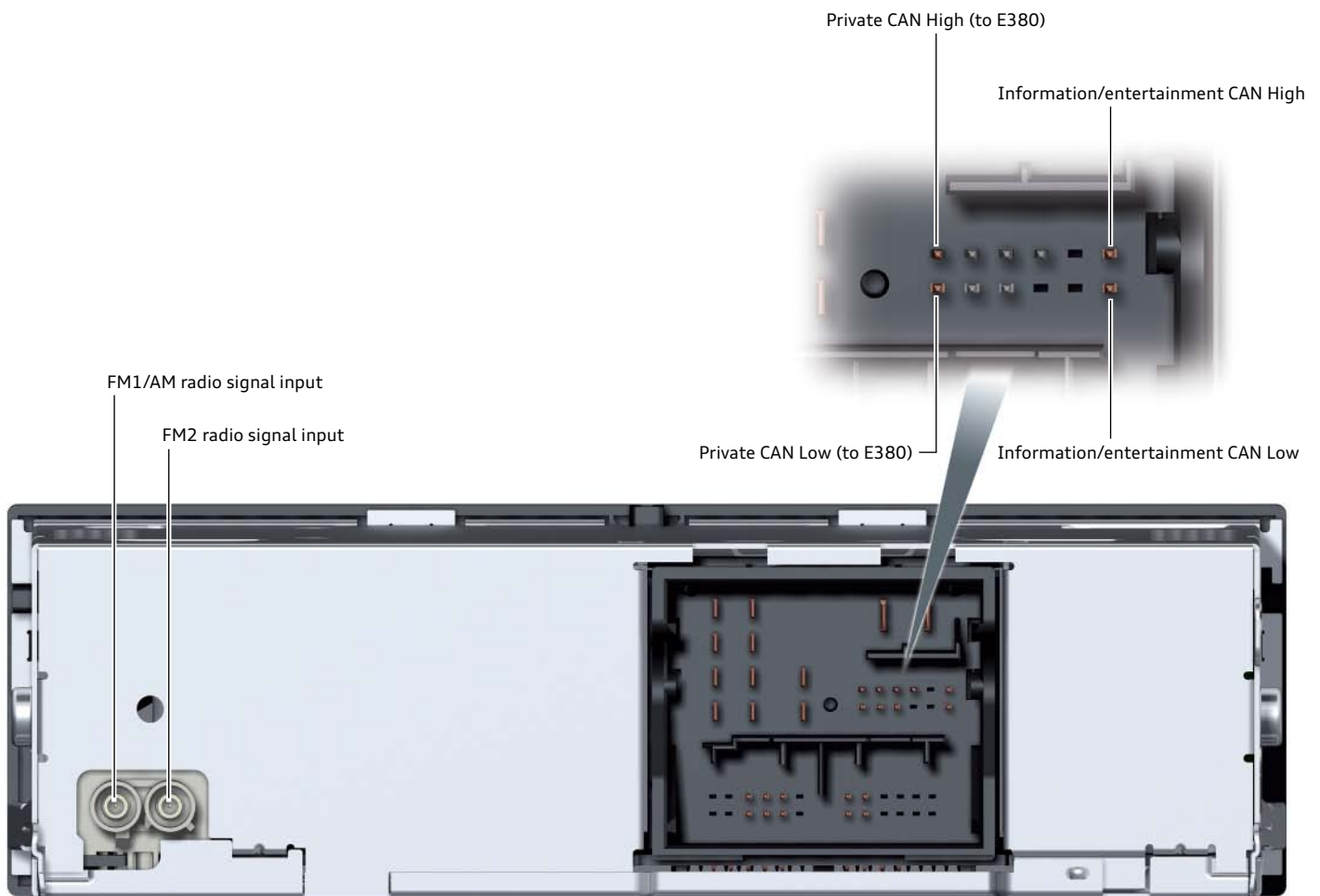
Rear panel of J794 for Entry MIB   *618_012*

Entry plus MIB

The Entry plus MIB differs from the Entry MIB outwardly by virtue of a discrete control panel and separate MMI display. In hardware terms, it is fundamentally an Entry MIB but its outward appearance is the same as the Standard MIB without optional features.

The Entry plus MIB offers the following features in addition to the MIB Entry:

▸ An SD card reader for MP3 and WMA files
▸ Colour TFT display with 400 x 240 pixel resolution
▸ A discrete control panel in the centre console

On the Audi A3 '13, the MMI display has a diagonal screen size of 5.5 inches and folds in and out with the aid of a motorised mechanism.

The radio station list for FM reception is automatically updated.

Optional features are available for the Entry plus MIB. They are:

▸ Monochrome or colour driver information system
▸ Multi-function steering wheel

The PR number for the Entry plus MIB is "i7X".

MMI display for Entry plus MIB on Audi A3 '13   *618_013*

Front panel of J794 for Entry plus MIB   *618_004*

Private CAN High

Information/entertainment CAN High

FM1/AM radio signal input

FM2 radio signal input

Video output for MMI display J685

Private CAN Low   Information/entertainment CAN Low
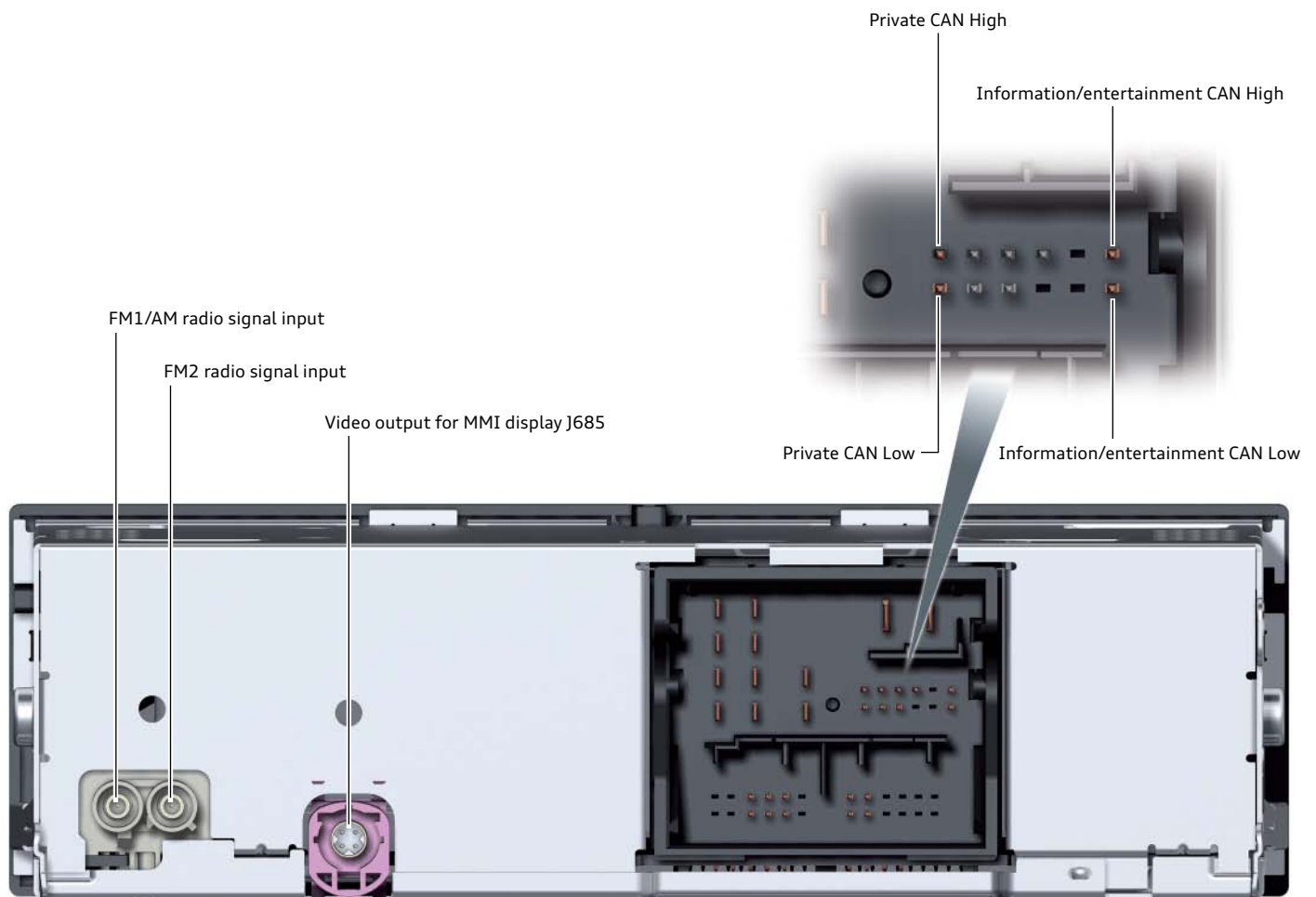
Rear panel of J794 for Entry plus MIB   *618_015*

Standard MIB

In terms of functionality and specifications, the Standard MIB is comparable with the RMC Radio Media Center. There are radio and navigation system versions of the Standard MIB.

The electronic information systems control unit 1 J794 for the Standard MIB always has a MOST bus connection. If no additional equipment that requires a MOST bus is fitted, the MOST bus connection is unused.

Standard MIB radio version

The radio version of the Standard MIB offers the following features:

▸ Radio with phase diversity module, FM twin tuner (frequency modulation) and AM tuner (amplitude modulation)
▸ Single CD drive which supports MP3, WMA and *AAC** files
▸ An SD card reader for MP3, WMA and AAC files
▸ Integrated amplifier with 4 x 20 watts max. power
▸ Car menu
▸ 5.8-inch colour TFT screen with 400 x 240 pixel resolution
▸ A discrete control panel in the centre console
▸ AUX IN socket (UE3)

On the Audi A3 '13, the MMI display has a diagonal screen size of 5.8 inches and folds in and out with the aid of a motorised mechanism.

The radio version of the Standard MIB can also be equipped with the following optional features:

▸ DAB tuner (digital radio) (QV3)
▸ Internal audio amplifier for Audi sound system with 180 watts power (6 channels, 3 x 20W + 3 x 40W) (9VD)
▸ Audi music interface (UE7)
▸ Bluetooth interface for HFP and A2DP (9ZX)
▸ Universal mobile phone pre-wiring (9ZE)
▸ Interactive voice control

The PR number for the Standard MIB is "i8D" with the suffix "7Q0" for the radio version (7Q0 means "without navigation system").

MMI screen for Standard MIB without navigation system on Audi A3 '13   *618_016*

Front panel of J794 for Standard MIB, radio version   *618_005*

Private CAN High

Information/entertainment CAN High

Private CAN Low

Information/entertainment CAN Low

FM1/AM radio signal input

FM2 radio signal input

DAB radio signal input

Video output for MMI display

USB* connection to AMI

MOST bus connection
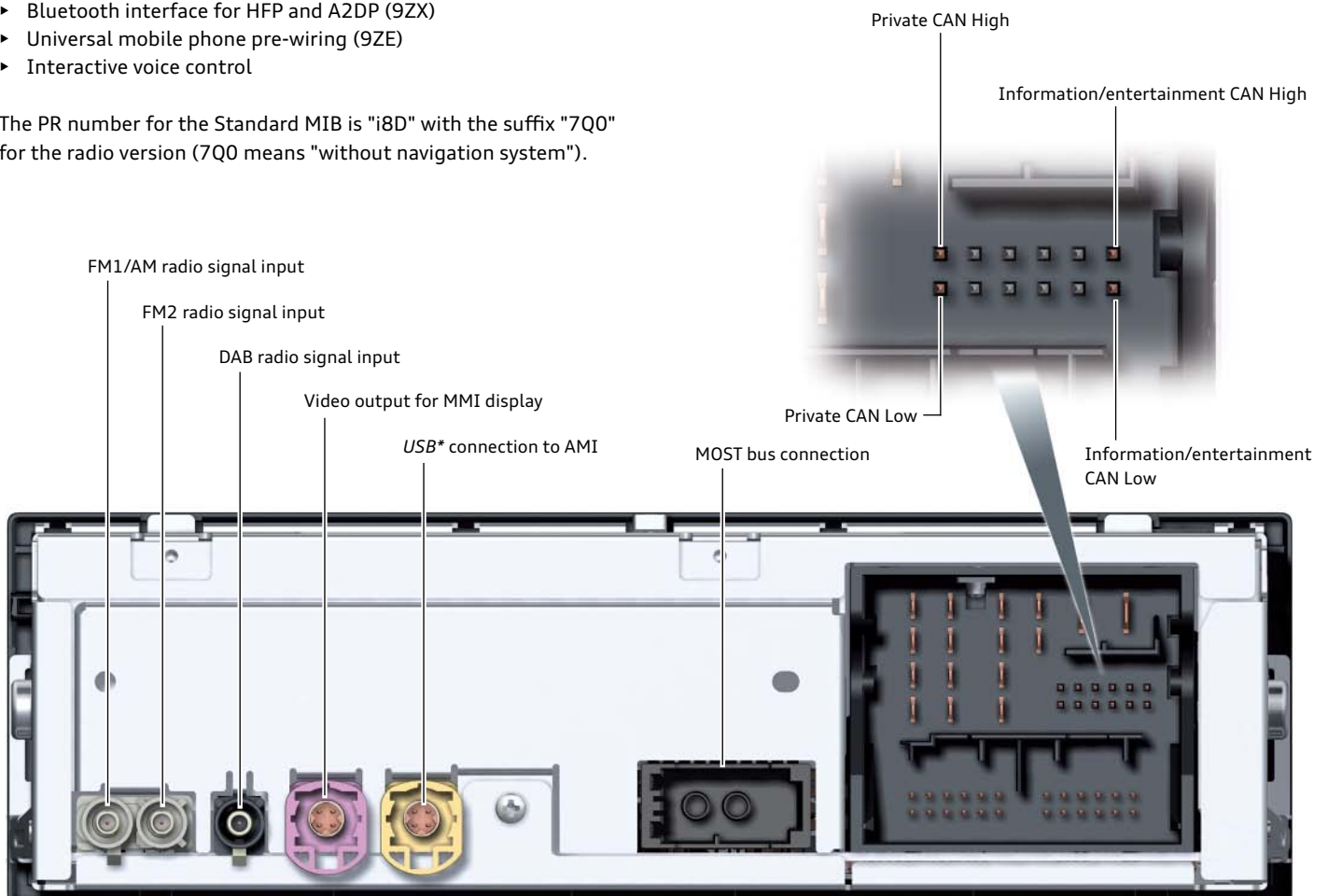
Rear panel of J794 for Standard MIB, radio version

618_018

Standard MIB navigation system version

If the radio-version MMI is set up for the navigation function, it also has the following features:

‣ Second SD card reader
‣ Navigation system hardware

If the navigation function is activated on the radio-version MMI at the factory, the navigation map data is also available in the car on an SD card.
The navigation system data is currently supplied by the company Navteq. For the European version, an 8-GB *SDHC** card is currently used.

The navigation system has a two-dimensional birds-eye view map display.On the Setup menu it is referred to as the 3D map.There is the possibility, depending on sales market, of displaying the currently applicable maximum speed limits or the guideline maximum speeds for the country concerned.

The navigation system uses a real ecological route calculation algorithm and also offers the option of choosing between three alternative routes. In addition, you can create a route with an intermediate destination. If the driver takes a break, the route last used is automatically resumed.

With the Standard MIB, the navigation system now offers the option of entering a destination using the voice control function as well as by manually entering an address. When doing so, the user is assisted by predefined MMI prompts.

The PR numbers below indicate whether the Standard MIB is one that is navigation-ready or with the navigation system pre-activated:

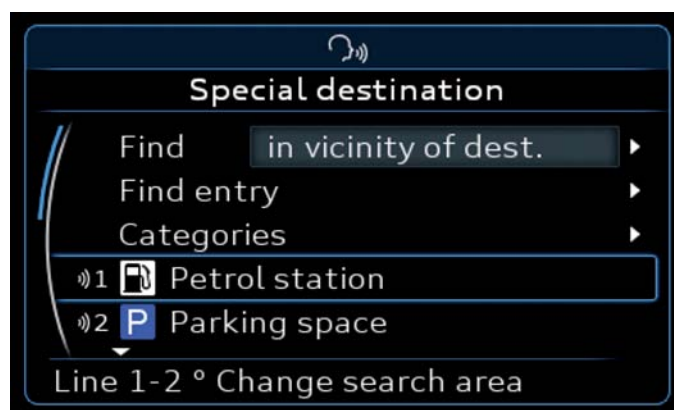‣ Navigation-ready: 7UH
‣ Basic navigation system activated: 7UF

MMI screen for Standard MIB with active navigation system on Audi A3 '13   *618_019*

Front panel of J794 for Standard MIB, navigation system version   *618_006*

Display for specific destination search   *618_021*

Private CAN High

Information/entertainment CAN High

FM1/AM radio signal input

FM2 radio signal input

DAB radio signal input

Video output for MMI display

USB connection to AMI

GPS signal input

MOST bus connection

Private CAN Low

Information/entertainment CAN Low
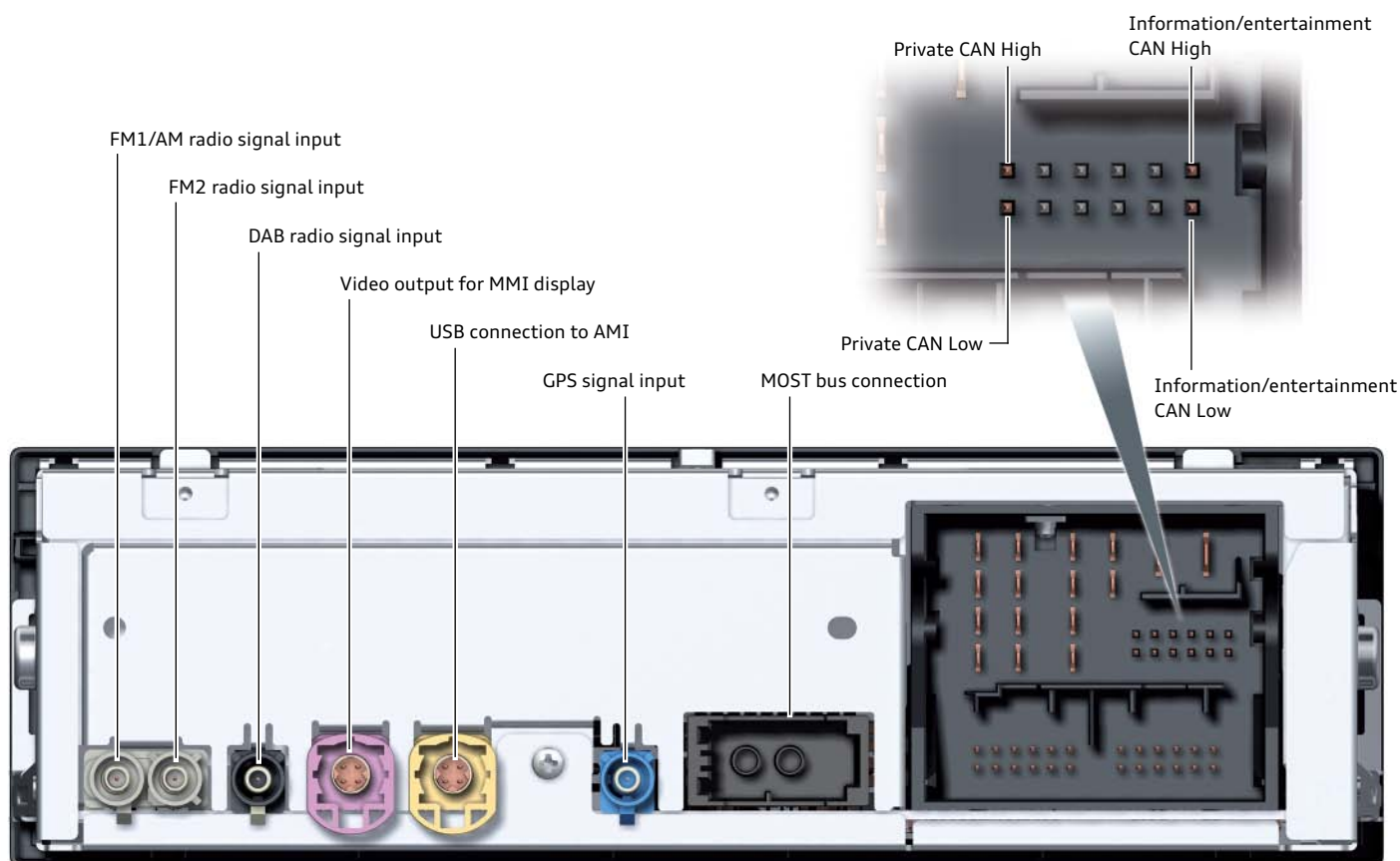
Rear panel of J794 for Standard MIB, navigation system version

618_022

9

Navigation system activation

With the navigation-ready version, all the components required fore the navigation function are already fitted on the vehicle. An Audi dealer can then activate the navigation function on the electronic information systems control unit 1 J794 with the aid of the vehicle diagnostic tester.

After activation of the navigation function, the map data to be used must also be activated. The necessary activation documents for doing so are obtainable from the Audi Genuine Accessories range.

To be able to use the navigation system, two components are therefore required:

▸ An activation document for the navigation function
▸ Up-to-date map data (on SD card) together with activation document allowing licensed use of the navigation map
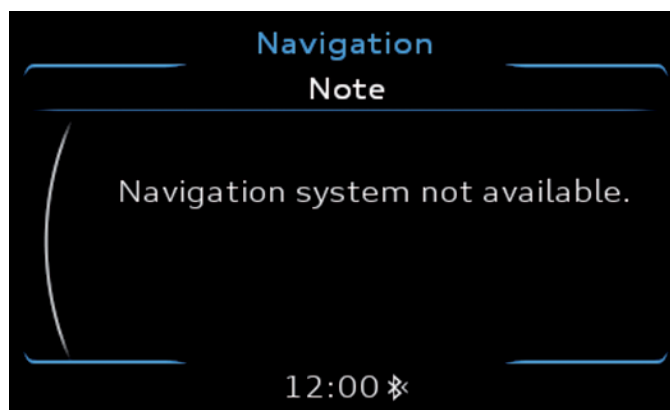
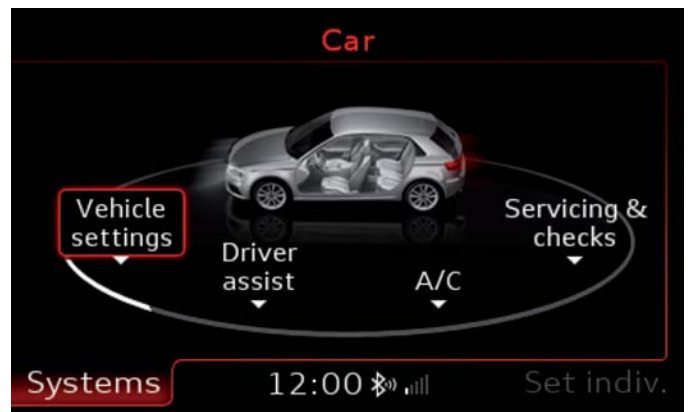**MMI display with unactivated navigation function**   *618_023*

📖 **Reference**
More information on the activation procedure can be obtained from
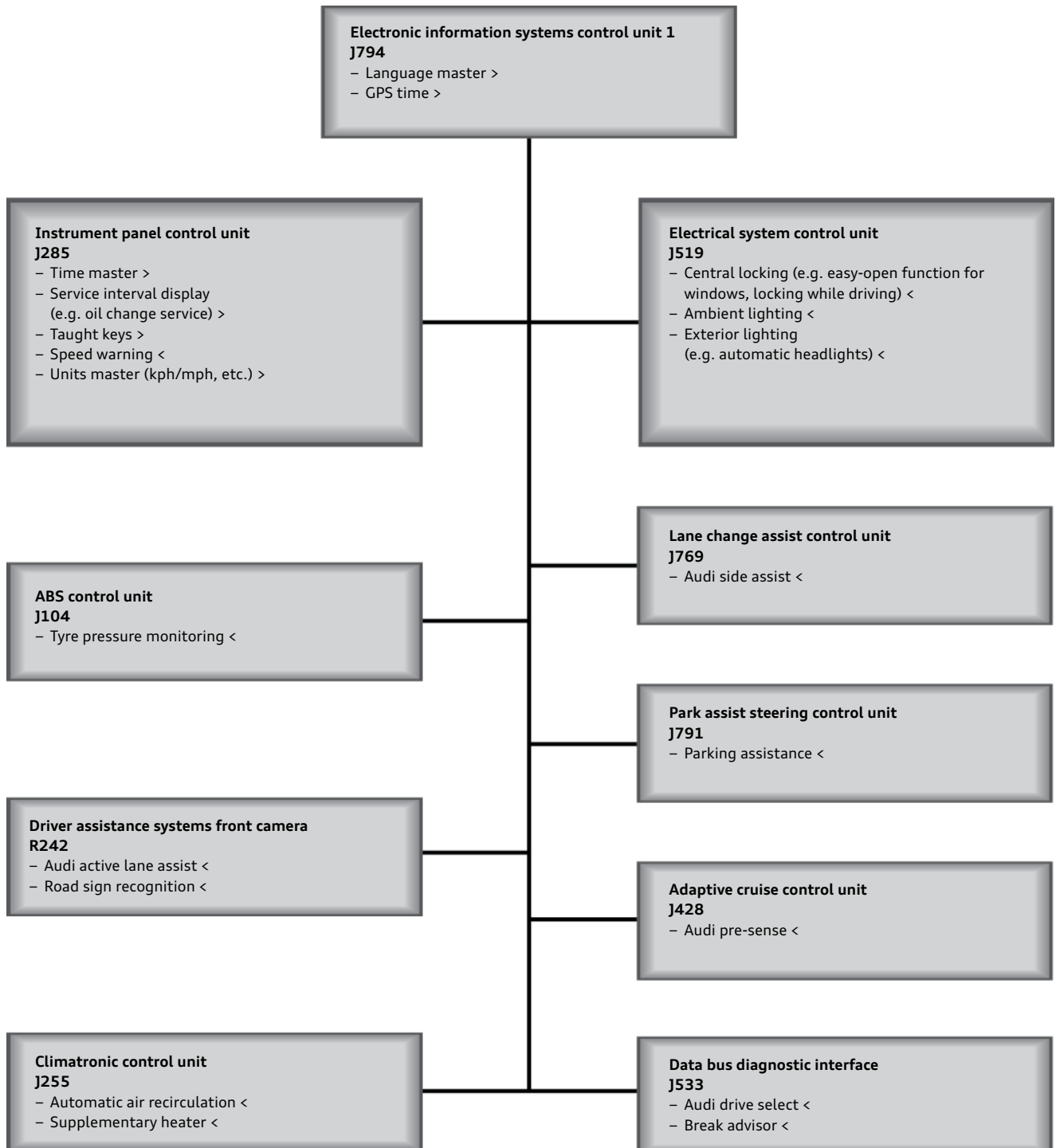

Possible CAR functions

The MIB can be used to enter and view settings on various vehicle systems.
Listed and illustrated below are the systems and functions currently supported on the Audi A3 '13.

618_024

Electronic information systems control unit 1
J794
– Language master >
– GPS time >

Instrument panel control unit
J285
– Time master >
– Service interval display
  (e.g. oil change service) >
– Taught keys >
– Speed warning <
– Units master (kph/mph, etc.) >

Electrical system control unit
J519
– Central locking (e.g. easy-open function for
  windows, locking while driving) <
– Ambient lighting <
– Exterior lighting
  (e.g. automatic headlights) <

Lane change assist control unit
J769
– Audi side assist <

ABS control unit
J104
– Tyre pressure monitoring <

Park assist steering control unit
J791
– Parking assistance <

Driver assistance systems front camera
R242
– Audi active lane assist <
– Road sign recognition <

Adaptive cruise control unit
J428
– Audi pre-sense <

Climatronic control unit
J255
– Automatic air recirculation <
– Supplementary heater <

Data bus diagnostic interface
J533
– Audi drive select <
– Break advisor <

618_025

Key:
<   Settings can be entered on MMI
>   Information is provided

High-spec MIB

The High-spec MIB is the current high-end version of the Modular Infotainment System. The electronic information systems control unit 1 J794 for the High-spec MIB always has a MOST bus connection. If no additional equipment connected via MOST bus is fitted, the MOST bus connection is unused.

The High-spec MIB represents a consistent step forward from the 3rd Generation plus MMI and features a new 3D screen views and SSD* solid state drive.
The electronic information systems control unit 1, J794, for the High-spec MIB incorporates an Nvidia Tegra processor. As a multi-core processor, it generates ultra high-resolution graphics as well as offering faster rendering of current audio and video formats. The Tegra chip requires substantially less energy than previous multimedia processors and so fits perfectly with the Audi efficiency philosophy.

The Tegra chip can display entire cityscapes in three-dimensional views – the driver sees the street that he/she is driving along in photo-realistic quality.

The High-spec MIB is also the only version of the MIB that can play video files directly.

The High-spec MIB offers the following features:

‣ Radio with phase diversity module, FM twin tuner (frequency modulation) and AM tuner (amplitude modulation)
‣ Single DVD drive for audio and video files
‣ Two SD card readers for audio and video files
‣ SSD solid state drive (64 GB)
‣ Jukebox (approx. 11 GB on Audi A3 '13)
‣ 3D navigation system with navigation data on SSD (data supplier: Navteq)
‣ Integrated amplifier with 4 x 20 watts max. power
‣ Audi music interface
‣ Car menu
‣ Bluetooth interface for HFP and A2DP
‣ Premium interactive voice control system
‣ Provision of predictive route data
‣ 7.0-inch motorised TFT display
‣ Discrete control panel with MMI touch in centre console
‣ AUX IN socket (UE3)

Front panel of J794 for High-spec MIB   618_007

Rear panel of J794 for High-spec MIB   618_027

**Front panel of J794 for High-spec MIB
with Bluetooth car phone**   618_008

**Rear panel of J794 for High-spec MIB
with Audi connect inc. car phone**   618_029
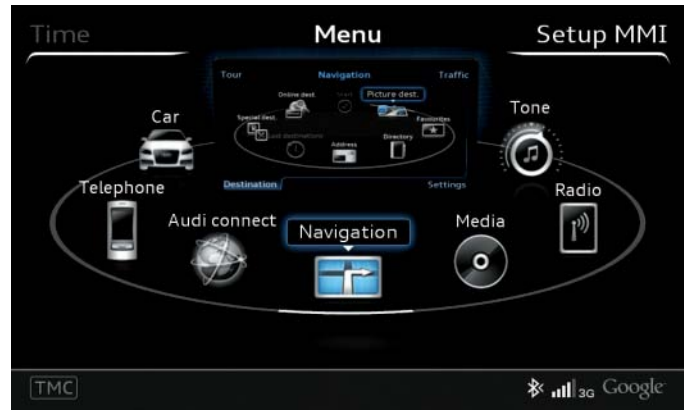
The High-spec MMI can also be equipped with the following optional features:

- Universal mobile phone pre-wiring (9ZE)
- Audi connect including car phone (9ZK)
- DAB tuner (digital radio) (QV3)
- SDARS tuner (NAR spec digital radio) (QV3)
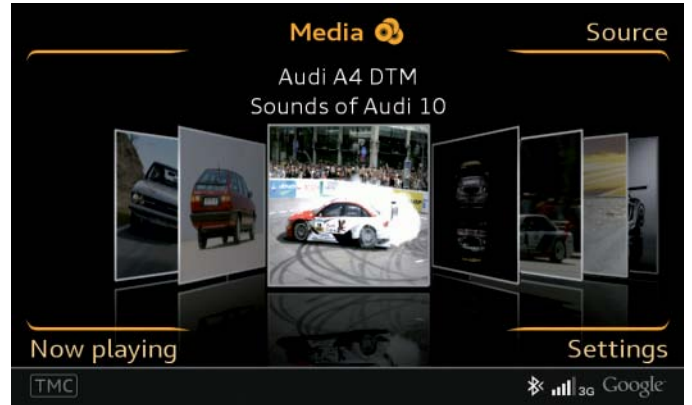- Internal audio amplifier for Audi sound system with 180 watts power (6 channels, 3 x 20W + 3 x 40W) (9VD)

If the High-spec MIB is equipped with the Bluetooth car phone, it also has the Audi connect option. With the introduction of the Modular Infotainment System, the marketing name for "Bluetooth car phone" has been changed to "Audi connect including car phone".

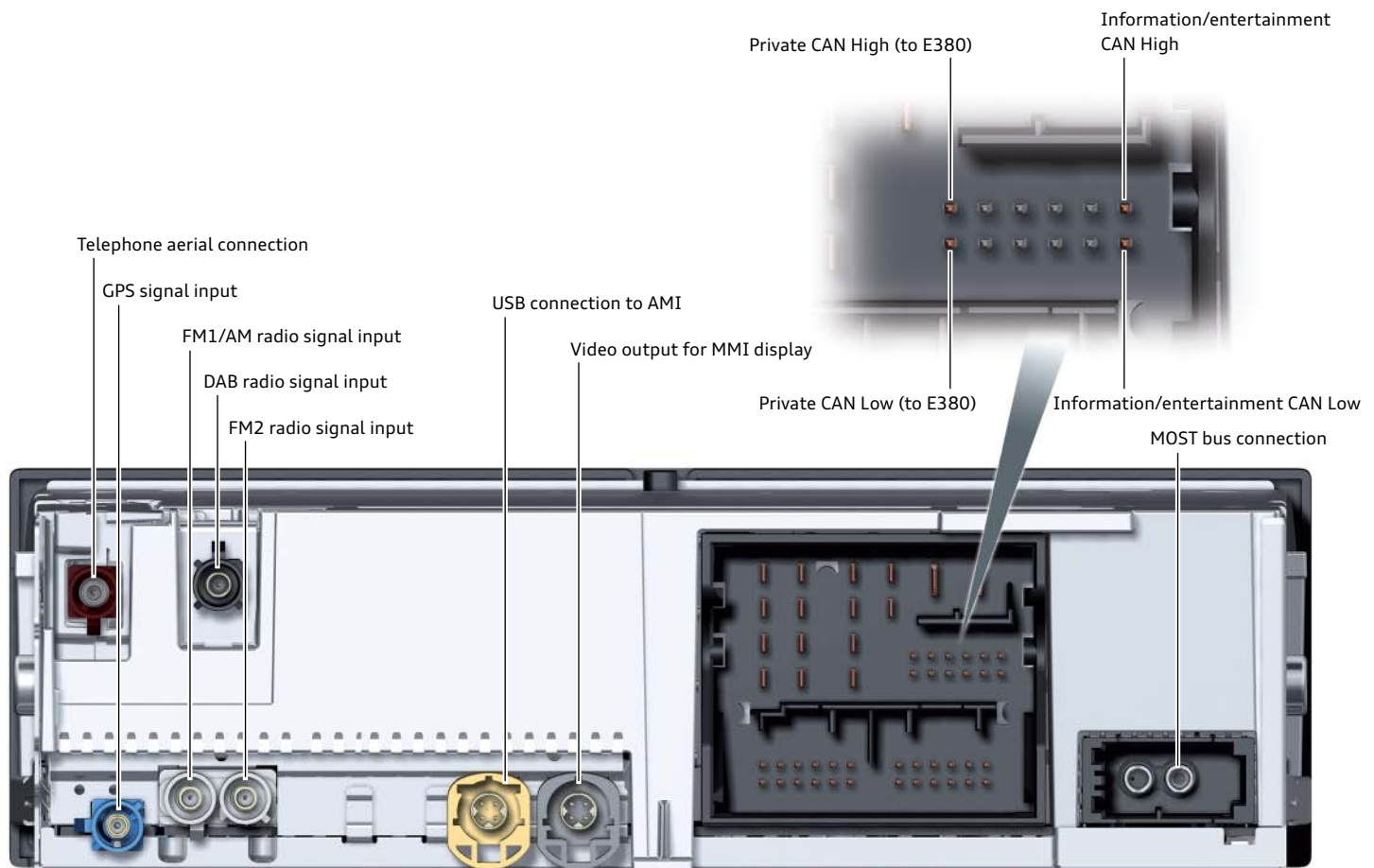The High-spec MIB is identified by the PR numbers "i8G" and "7UG".

Main menu on High-spec MIB 618_030

Jukebox with Coverflow 618_031

Private CAN High (to E380)

Information/entertainment CAN High

Telephone aerial connection

GPS signal input

FM1/AM radio signal input

DAB radio signal input

FM2 radio signal input

USB connection to AMI

Video output for MMI display

Private CAN Low (to E380)

Information/entertainment CAN Low

MOST bus connection

Rear panel of J794 for High-spec MIB 618_034

Navigation system with High-spec MIB

The High-spec MIB features a navigation system with 3D map display. It displays the silhouettes of many city centres as a three-dimensional view. Many places of interest are also shown in 3D.

The navigation map data for the High-spec MIB is stored on the SSD solid state drive. The 2012 map information for Europe, for example, occupies approx. 23 GB of storage space. The current map supplier for the High-spec MIB is Navteq.
The map data also includes predictive route data. This is sent by the electronic information systems control unit 1 J794 via the MOST bus to the data bus diagnostic interface J533. The J533 distributes the data via the various bus systems to the control units that use the predictive route data.

The navigation system has a voice control facility featuring whole-word entry. Depending on the country of sale, the navigation system may also offer whole-sentence destination entry (one-shot entry).

On the High-spec MIB, ten destinations can be entered for each route. In other words, nine intermediate destinations and the final destination. In all, twenty route plans can be created.

Depending on sales market, chargeable traffic information services may be available in addition to the free-of-charge services. If they are available as factory-fit options, the licence fees will be included in the price of the vehicle. As an example, the following traffic information services are available in Germany:

‣ TMC*
‣ TMCpro (requires licence)

The High-spec MIB with the Audi connect option may also offer the following additional services on the navigation system, depending on market:

‣ Google Earth™ map
‣ Google Street View™
‣ Traffic information online
‣ Points-of-interest search online
‣ Picture destinations
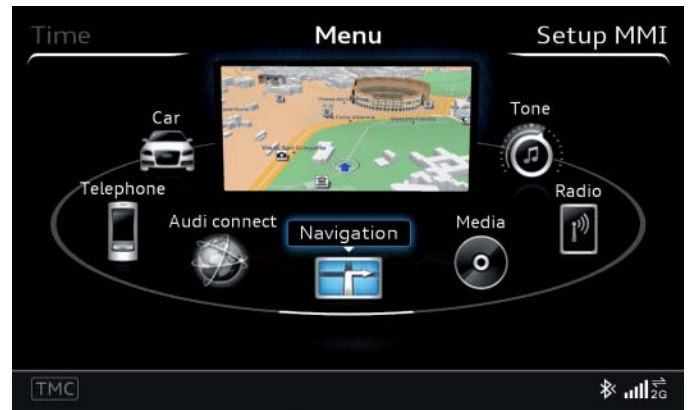
Main menu with navigation map   618_032

Map view on High-spec MIB   618_033

Navigation view with Google Earth map   618_068

Reference
More information on predictive route data can be obtained from SSP 456 on page 92 under the heading "Navigation data based vehicle support".

Radio tuner

The analogue radio receiver unit for the Modular Infotainment System is always integrated in the electronic information systems control unit 1 J794. Depending on the equipment options fitted, the J794 may also include a DAB radio tuner.
The radio tuners support most of the *RDS** services generally available today. Which particular RDS services are actually available in each case depends on the station being received at the time in question.
The basic designs of the radio tuners for the Standard and High-spec MIB versions are explained below.

Analogue tuner reception concept

Standard MIB

The analogue radio receiver (tuner) for the Standard MIB has a two separate receivers in total.

Tuner 1 is an AM/FM tuner (see schematic diagrams on pages 16 and 17).
AM reception is provided exclusively by Tuner 1.
Tuner 2 is an additional FM tuner.

If FM reception is poor, the selected station is received simultaneously by Tuner 1 and Tuner 2. The two signals are then merged to form a combined signal.
If the signal received by one of the tuners is good enough to ensure interference-free reception and playback through the speakers is possible, the other tuner is used for the station search function. The best aerial-tuner path is always used for audio output (role swapping).
Because a station search is carried out at regular intervals, the main screen of the FM radio menu is constantly updated with the FM radio stations currently receivable. The station list is thus kept up to date and unavailable stations removed from the list.

Furthermore, the AM station list is also updated in FM mode if the reception conditions allow – in which case Tuner 2 provides the FM audio signal and Tuner 1 performs the AM station search.

If a navigation system is fitted, a third FM tuner (Tuner 3) is fitted for receiving *TMC** data. That tuner continues to be used for monitoring traffic bulletins if the audio tuner is not tuned to a TP station. It is also used for the station search function if the reception conditions require the use of aerial diversity.

The separate station memory can be used to create a personalised station list. It can store up to 50 stations from any reception area and lists them in the user-defined order.

The radio supports the Radiotext and Radiotext Plus data services. This enables programme-related information to be displayed if broadcast by the station concerned (e.g. artist, title, current programme).
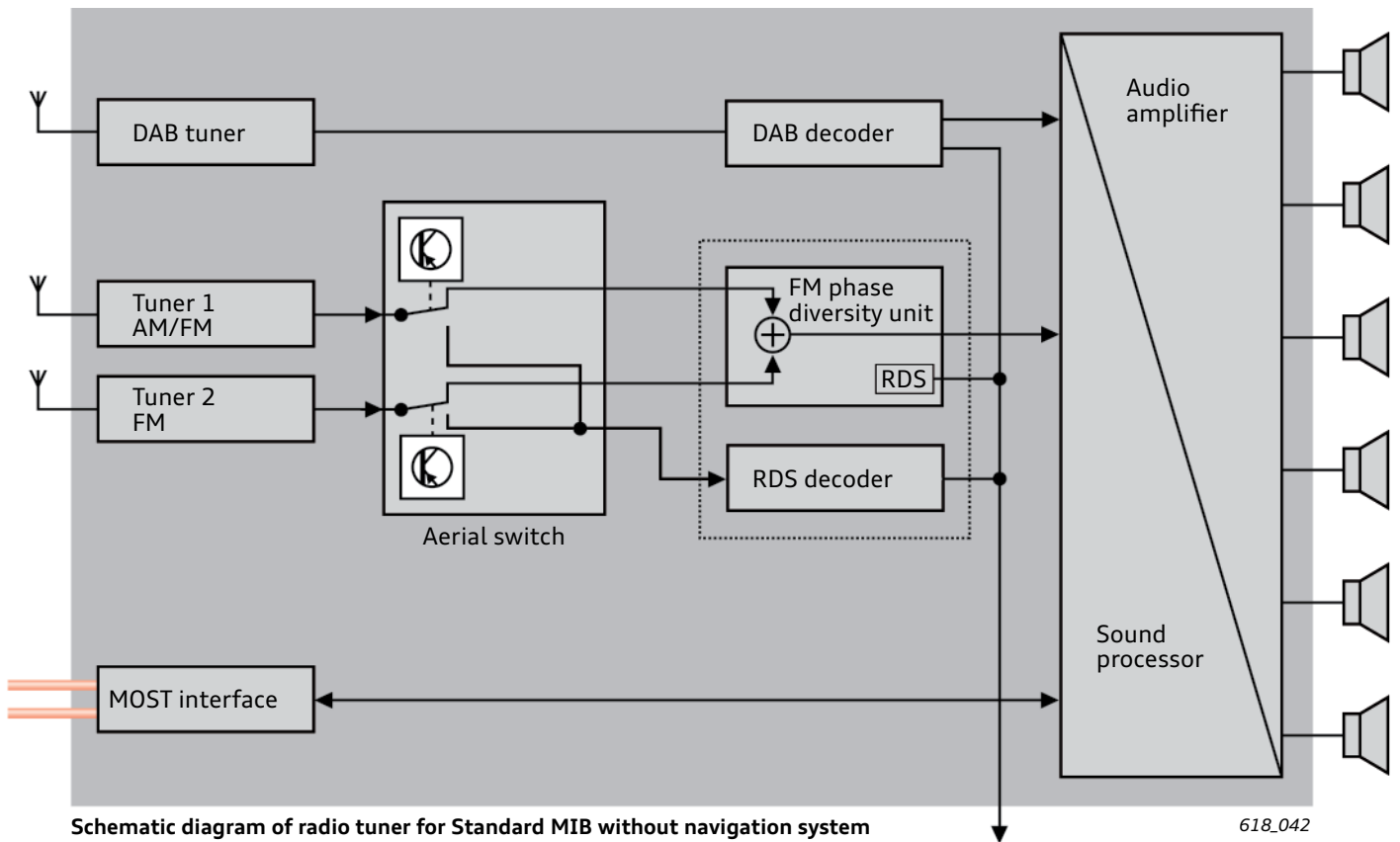

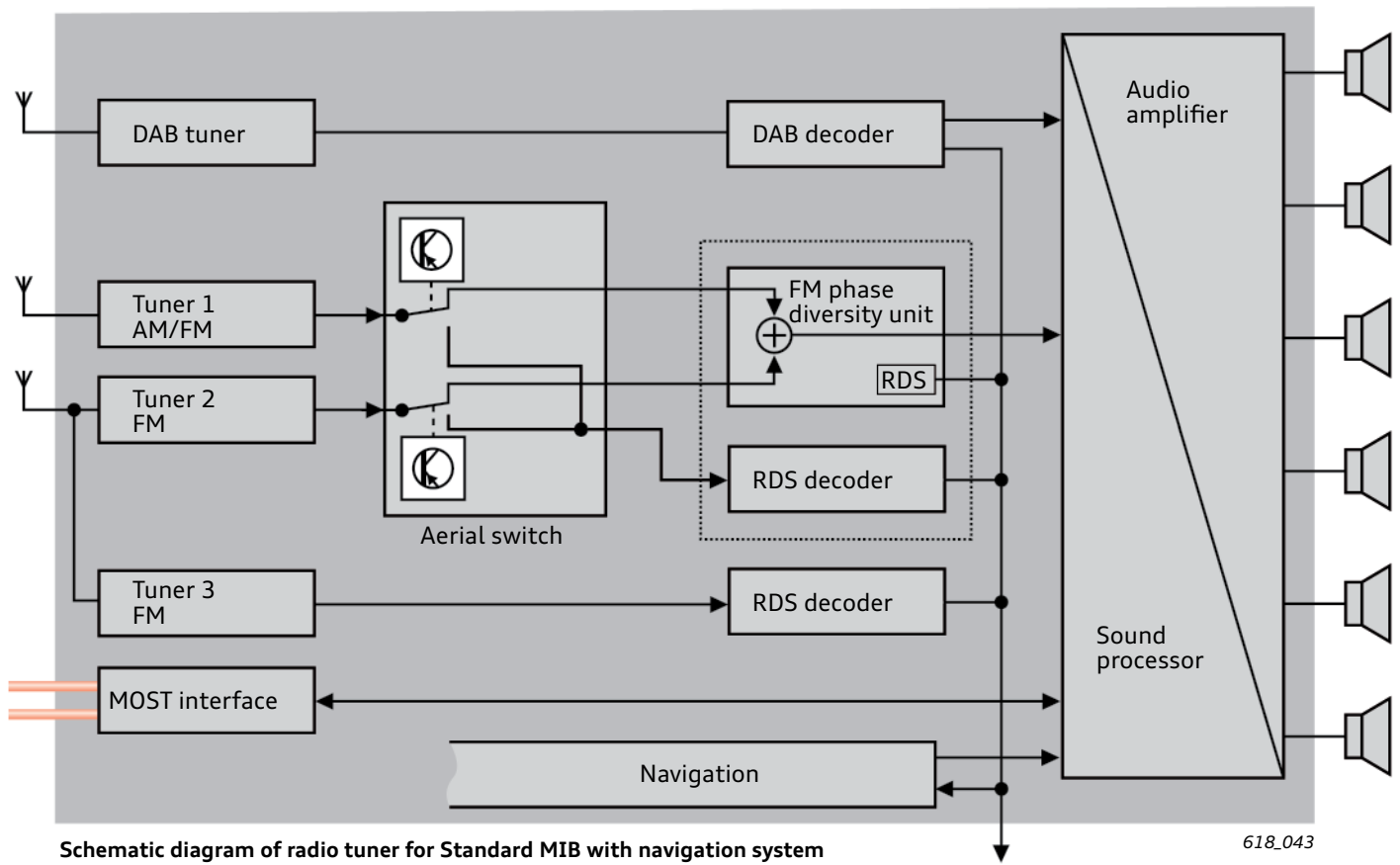| Memory	Radio FM	Waveb.
ANTENNE	Pop	
B 5 AKT	News	
BAYERN 1		
BAYERN 3	Pop	
BR-KLASS	Classical	
BR2 SUED	Culture	
Functions	12:00	Settings

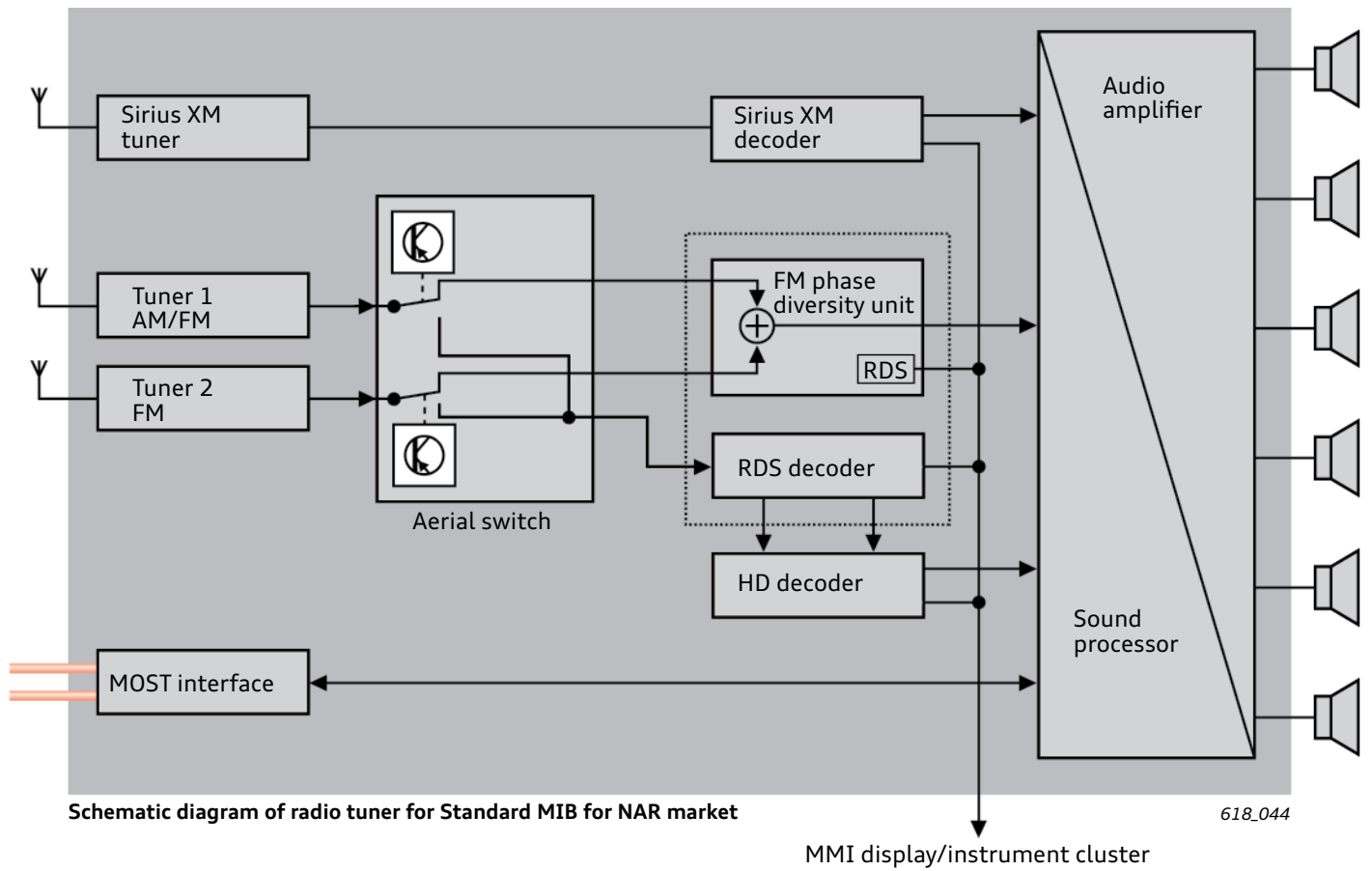**Display of radio menu during FM reception**   *618_041*

📖 **Reference**
Information on the various RDS services can be found on page 34 of Self-study Programme 435 – Audi 3rd Generation MMI.

Schematic diagram of radio tuner for Standard MIB without navigation system

618_042

MMI display/instrument cluster

Schematic diagram of radio tuner for Standard MIB with navigation system

618_043

MMI display/instrument cluster

Schematic diagram of radio tuner for Standard MIB for NAR market

618_044

MMI display/instrument cluster

High-spec MIB

The analogue radio receiver for the High-spec MIB has a three separate receivers (tuners) in total. That means that both the station search and the aerial diversity function take place simultaneously.

During FM reception, the selected station is permanently simultaneously received by Tuners 1a and 1b. The two signals are then merged to form a combined signal. As a result, the best possible reception is obtained.

Tuner 2 functions as a separate tuner for permanent AM/FM station searching and for receiving TMC data and monitoring voice traffic reports. It is not used for audio reception of the radio station currently selected. Because the station search function is constantly active, the main screen of the FM radio menu always shows all FM radio stations currently receivable. The station list is thus kept permanently up to date and unavailable stations removed from the list.

AM reception is provided by Tuner 1a.
Tuner 2 is an additional AM tuner which constantly updates the AM station list in the background.

The separate station memory can be used to create a personalised station list. It can store up to 50 stations from any reception area and lists them in the user-defined order.

The radio supports the Radiotext and Radiotext Plus data services. This enables programme-related information (e.g. artist, title, current programme) to be displayed if broadcast by the station concerned.

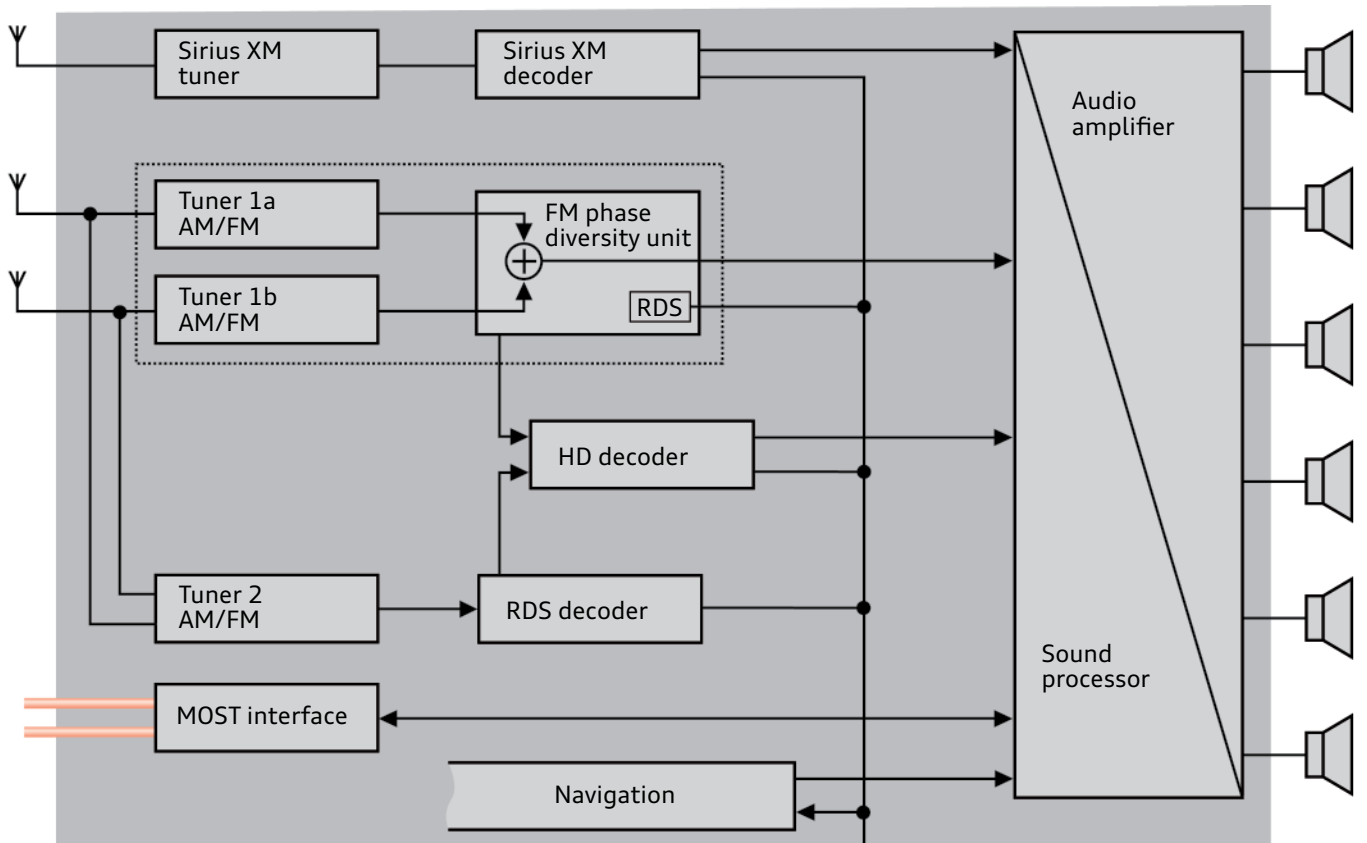**Display of radio menu during FM reception**   *618_045*
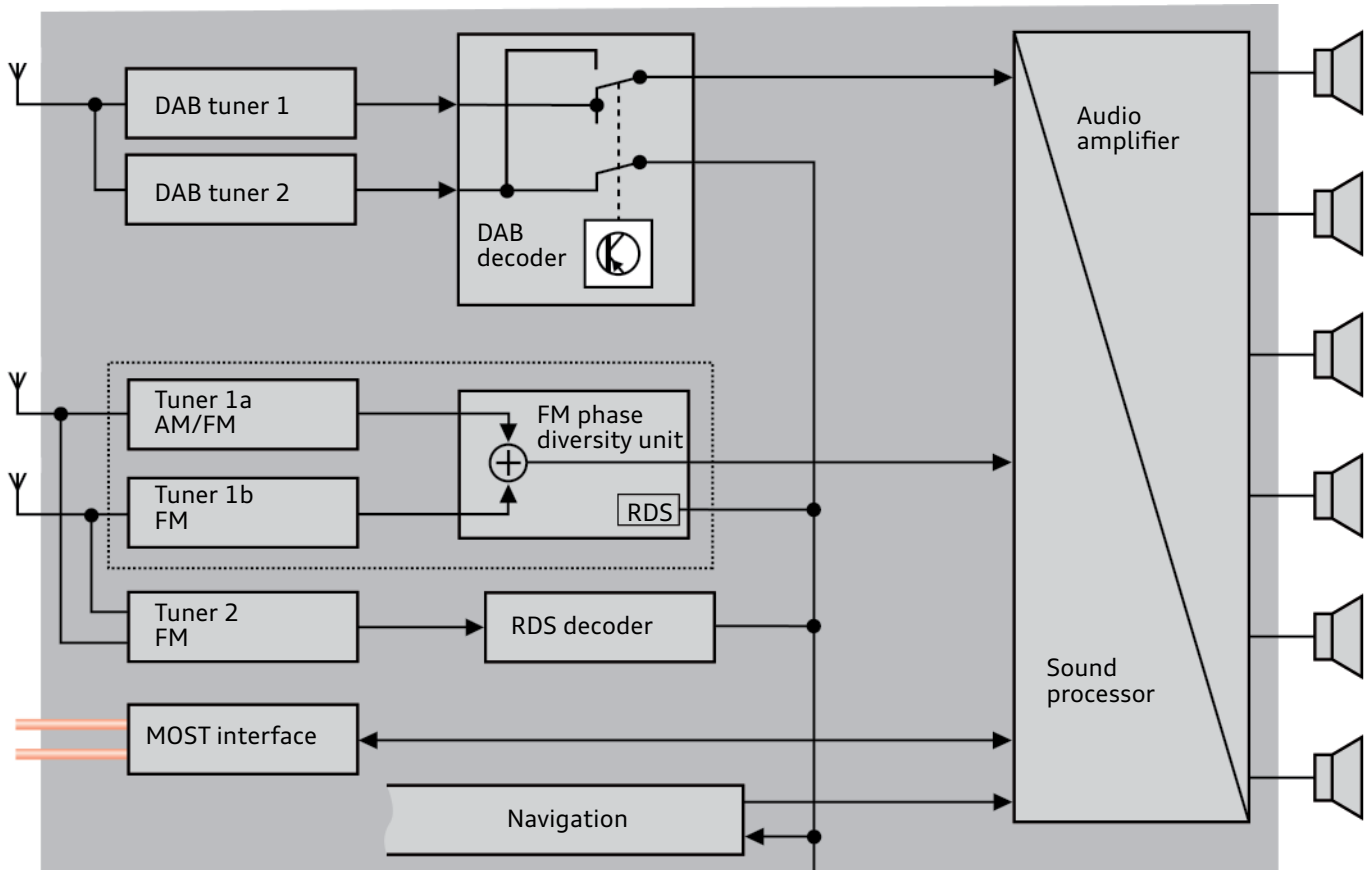
Schematic diagram of radio tuner for High-spec MIB for ECE market

MMI display/instrument cluster

618_046

Schematic diagram of radio tuner for High-spec MIB for NAR market

MMI display/instrument cluster

618_047

DAB tuner reception concept

Standard MIB

On the Standard MIB, the DAB tuner is a single tuner.
That means that automatic station list updating as on the analogue tuner is not possible.

The DAB tuner is designed for receiving stations broadcasting according to the following standards:
- *DAB**
- *DAB+**
- *DMB** Audio

If reception of the DAB station is lost while the vehicle is moving but it can still be received on FM, the radio switches over automatically to the same station on FM.
This "station tracking" function can be activated or deactivated on the Radio Setup menu. The "Station tracking" option activates/deactivates automatic switching not only from DAB to FM but also from DAB to DAB.

The DAB tuner supports the following data services:
- Radiotext (Dynamic Label)
- Radiotext Plus (Dynamic Label Plus)
- Traffic Announcement
- Slide Show

The Slide Show feature allows studio images, photos of artists or album covers, for example, to be displayed if broadcast by the station concerned.

The DAB tuner supports the frequencies in Band III (174-230 MHz) and in the L-Band range of 1452-1492 MHz. As the L-Band is only available in local regions, it is deactivated on the "Settings" menu by default.
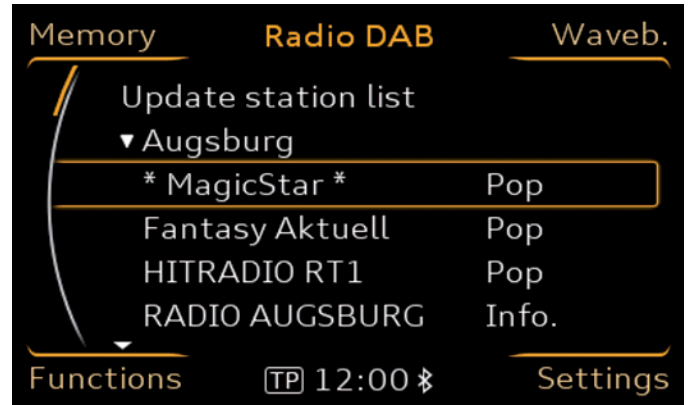
Display during DAB reception 618_048
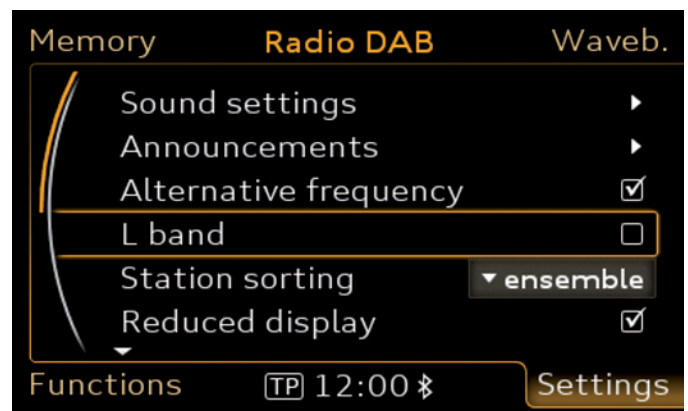
DAB Settings menu 618_051

! **Note**
The DAB tuner is coded for the country of sale as each country uses different frequency gaps between the individual channels. If it is incorrectly coded, reception quality will suffer.

20

High-spec MIB

On the High-spec MIB, the DAB tuner is a twin tuner. That means that the DAB tuner can constantly automatically update the list of receivable stations. Consequently, manual updating is not necessary. The stations on the station list can be sorted by "ensemble" or in alphabetical order. The desired setting is entered on the DAB menu under "Settings" and "Arrangement of stations".
The two tuners of the DAB receiver have equal priority and can swap roles. If the selected station is being received by Tuner 1, then Tuner 2 acts as the station search tuner.

If the DAB twin tuner automatically switches to a different channel, Tuner 2 becomes the receiving tuner and Tuner 1 the station search tuner. That enables continuous reception of the selected station while on the move.

If reception of the DAB station is lost while the vehicle is moving but it can still be received on FM, the radio switches over automatically to the same station on FM. This "station tracking" function can be activated or deactivated on the Radio Setup menu. The "Station tracking" option activates/deactivates automatic switching from DAB to FM.

The DAB tuner is designed for receiving stations broadcasting according to the following standards:
▸ DAB
▸ DAB+
▸ DMB Audio

It supports the following data services:
▸ Radiotext (Dynamic Label)
▸ Radiotext Plus (Dynamic Label Plus)
▸ Traffic Announcement
▸ DAB Announcement
▸ EPG (Electronic Programme Guide)
▸ Slide Show

EPG provides the facility for showing information about the current and next programme on various stations, if the stations concerned support the function.
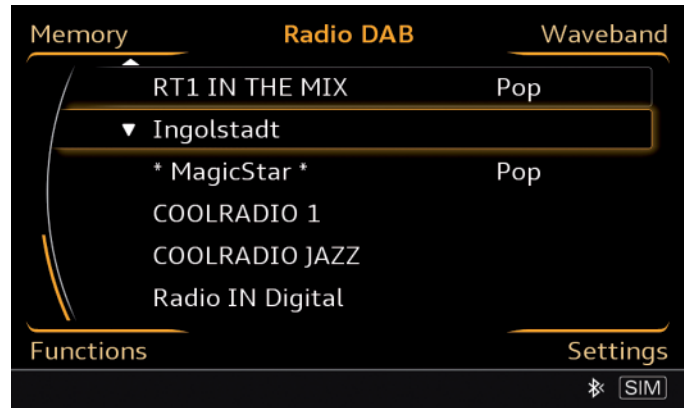
Display during DAB reception

618_049
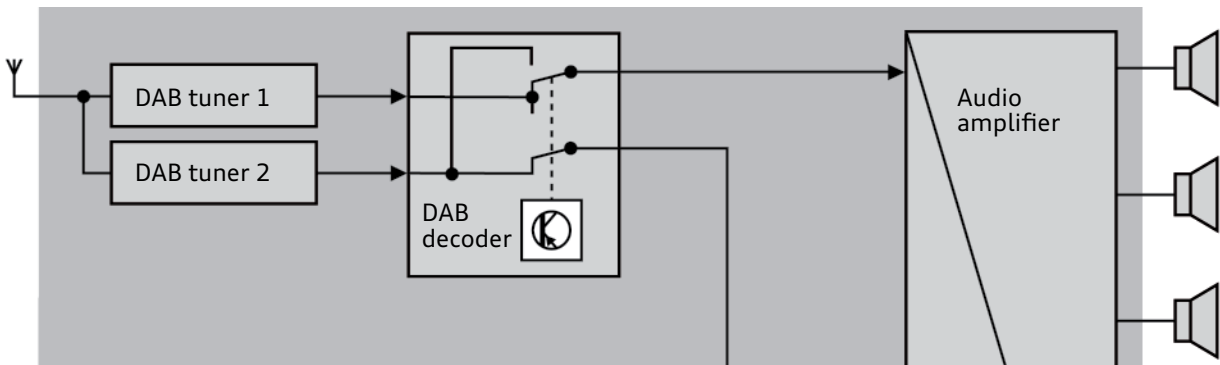
Schematic diagram of DAB tuner

618_050

! **Note**
The DAB tuner is coded for the country of sale as each country uses different frequency gaps between the individual channels. If it is incorrectly coded, reception quality will suffer.

Disk drives and storage media

The electronic information systems control unit 1, J794, incorporates the following drives and storage media, depending on version:

- ► Optical drive (CD/DVD)
- ► Memory card reader
- ► SSD solid state drive
- ► SIM card reader

In addition, optional features available on the Standard MIB and High-spec MIB allow various USB storage media (e.g. USB stick) to be used via the Audi music interface.

Drives on J794

618_008

Media playback

Audio and video files in the most commonly used formats can be played back via the various drives and the Audi music interface.

The list below details the properties of the audio and video files supported.

Audio files								
Format	*MPEG*-1/-2 Layer-3	Windows Media Audio 8 and 9	Windows Media Audio 9 Lossless, WMA 9 pro & WMA 10		AAC-LC, HE-AAC, HE-AACv2	*OGG* Vorbis	*FLAC*	*WAVE*
File extension	.mp3	.wma	*.asf*	.wma	.aac, *m4a*, *m4b*	.ogg	.flac	.wav
Entry/Entry plus MIB	✓	✓	✓					
Standard MIB	✓	✓	✓		✓			✓
High-spec MIB	✓	✓		✓	✓	✓	✓	✓

Video files							
Format	*MPEG-1*, *MPEG-2*	MPEG-4 (ISO)	*DivX* 4, DivX 5	*Xvid*	*MPEG-4*-AVC (H.264)	*WMV*9*	MJPEG
File extension	.mpg, mpeg	.mp4, m4v, *.avi*	.avi, divx	.avi	*.mp4*, *.m4v*, .mov	.wmf, .asf	.avi, .mov
MIP Entry/Entry plus							
Standard MIB							
High-spec MIB	✓	✓	✓	✓	✓	✓	✓

Audi music interface

With the Audi music interface, a video source can be connected directly to the Standard MIB or High-spec MIB. That means that video playback on the MMI display is also possible on the Standard MIB. There are two adaptors available for this purpose:

▸ AV adaptor cable
▸ iPod adapter cable plus

AV adaptor cable 4F0.051.510.N   *618_053*

iPod adaptor cable plus 4F0.051.510.R   *618_085*

! **Note**
DRM* (Digital Rights Management) protected files cannot be played back.

Reference
More information on the iPod adaptor cable plus can be obtained from SSP 602, on page 77.

Optical drive

The optical drive is either a CD drive or a DVD drive, depending on the MIB version.
A CD drive can only play audio files. The CD drives support both single-session and multi-session rewritable CDs.
A DVD drive can play both audio and video files. They also support both single-session and multi-session rewritable CDs. Only single-session recordable DVDs are supported.
The list below details the formats supported.

Optical drive   618_054

	Audio CD	CD-ROM	Audio DVD	Video DVD	DVD-ROM
Supported media	Up to 80 min	*CD-R*; CD-RW** Up to 700 MB capacity	"DVD-Video compatible DVD-Audio"		*DVD±R*;* *DVD±RW**
MIP Entry/Entry plus	✓	✓			
Standard MIB	✓	✓			
High-spec MIB	✓	✓	✓	✓	✓

Memory card reader

The memory card readers support memory cards of the types *SD**, *SDHC** and *SDXC**, depending on the MIB version. Theoretically memory card capacities up to 2 TB (terabytes; 1 TB = 1,000 GB).

Memory card reader   618_055

! **Note**
Only SDXC memory cards formatted with the *exFAT** file system are supported.

Solid state drive

The High-spec MIB is equipped with a solid state drive (SSD). SSDs are the type of memory used in a USB stick contains, for example.

The solid state drive in the High-spec MIB has a theoretical capacity of 64 GB.

The data stored on it includes the following:

▸ Music and video files on the Jukebox
▸ Navigation maps
▸ Voice control files
▸ Google Earth™ image data (TM = Trademark)

Jukebox

The Jukebox is provided for storing music and video files. A maximum of 3,000 files can be stored in the Jukebox.
The actual number of files depends on the compression. The capacity of the Jukebox on the Audi A3 '13 is approx. 11 GB.

The files can be read and imported into the Jukebox via the following interfaces:
▸ DVD drive in J794
▸ Memory card reader in J794
▸ Medium connected to USB connection of Audi music interface (USB stick, USB external hard drive. etc.)

Music on audio CDs and videos on video DVDs is not imported. DRM-protected files cannot be read.

Jukebox menu   *618_057*

Album browser   *618_031*

SIM card reader

The SIM card reader is only fitted in conjunction with the optional Bluetooth car phone. It is for manual insertion of a mini SIM card.
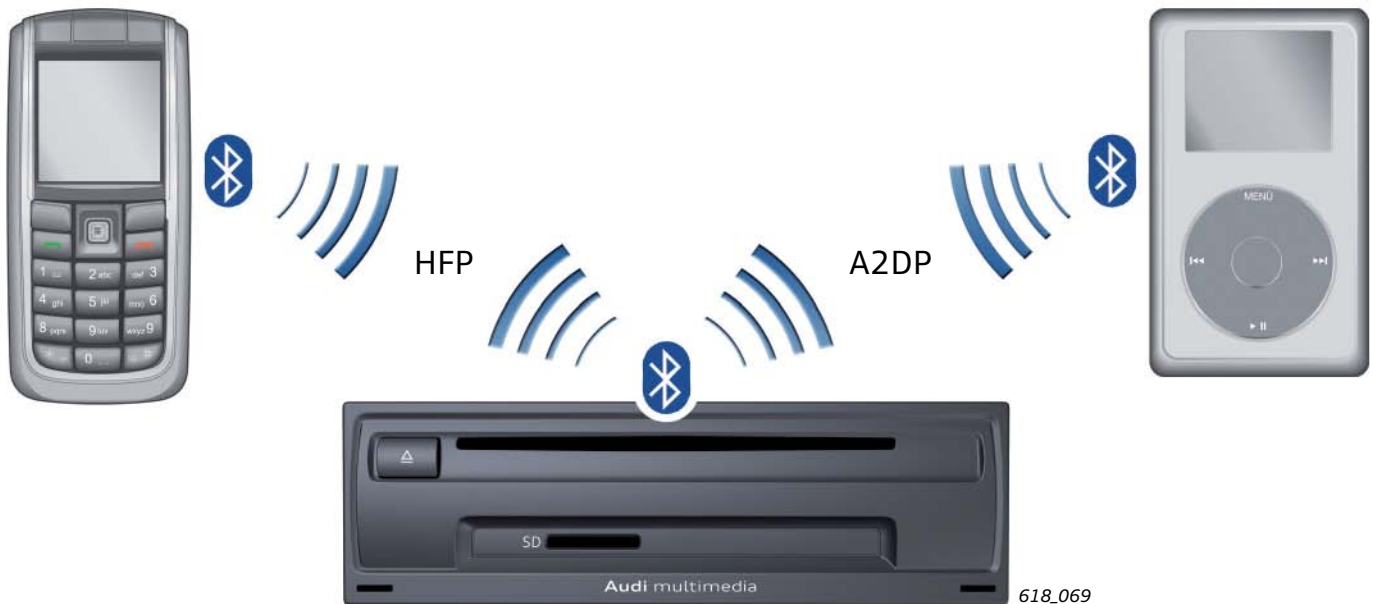

SIM card reader   *618_059*

Telephone options

The Modular Infotainment System offers three different ways of using a phone in the car. They are:

- Bluetooth interface
- Universal mobile phone pre-wiring (Audi Phone Box)
- Bluetooth car phone online (Audi connect inc. car phone)

618_069

Simultaneous connection of two devices to MMI using Bluetooth

Bluetooth interface

Using the Bluetooth interface, a mobile phone can be associated with the MMI by means of the Hands-Free Profile (HFP). With this connection method, the mobile phone's address book is also imported using the Phonebook Access Profile (*PbAP**). Using the voice control facility, the driver can then make a phone call without taking his/her hands off the wheel.

The Bluetooth interface also supports Bluetooth audio streaming. This requires connection of a Bluetooth-enabled device to the MMI via the A2DP Bluetooth profile.

The Bluetooth-enabled device can also be controlled via the *AVRCP** Bluetooth profile. The AVRCP specification supported by the MIB is 1.3.

If a mobile phone is connected using HFP, a second device can be simultaneously connected using A2DP.

The PR number for the Bluetooth interface is "9ZX".

! **Note**
The functions of the telephone option "9ZX" are also supported by options "9ZE" and 9ZK".

Reference
Information on which functions of various mobile terminal devices are supported by Audi vehicles can be found in the data-base for mobile terminal devices at www.audi.com/bluetooth


Universal mobile phone pre-wiring (Audi Phone Box)

The universal mobile phone pre-wiring option (*UHV**) provides the facility for linking a mobile phone to the car's external aerial and charging the phone in addition to the Bluetooth interface functions.

The Modular Infotainment System on the Audi A3 '13 sees the introduction of the Audi Phone Box as the universal mobile phone pre-wiring option (UHV). It enables mobile phones to be connected to the car's external aerial via a link aerial without the need for a specific adaptor. In the Audi Phone Box there is a 5V USB socket for charging the mobile phone and, depending on equipment level, the AMI interface as well.

To ensure good reception by the mobile phone, the mobile phone signal is conditioned by the mobile phone aerial amplifier R86 (compensator). It is fitted in the signal lead between the link aerial and the roof aerial. On the Audi A3 '13, for example, it is located behind the luggage compartment trim on the right-hand side.

The PR number for the universal mobile phone pre-wiring is "9ZE" (the internal designation for "9ZE" is "Convenience telephony").

5V USB socket

AMI interface

Connection to roof aerial   Link aerial
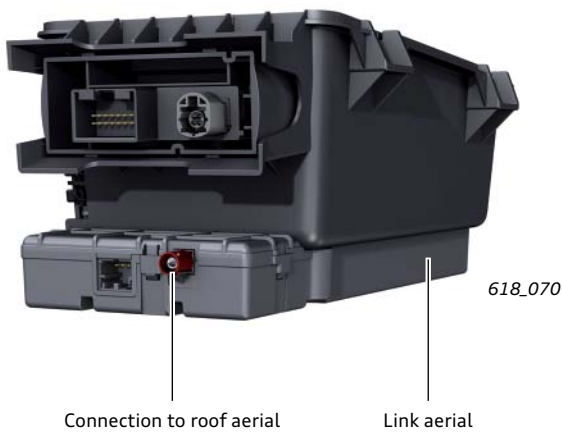
Audi Phone Box front panel

618_070

Audi Phone Box   *618_086*

Coupling aerial

mobile phone aerial amplifier R86

618_071
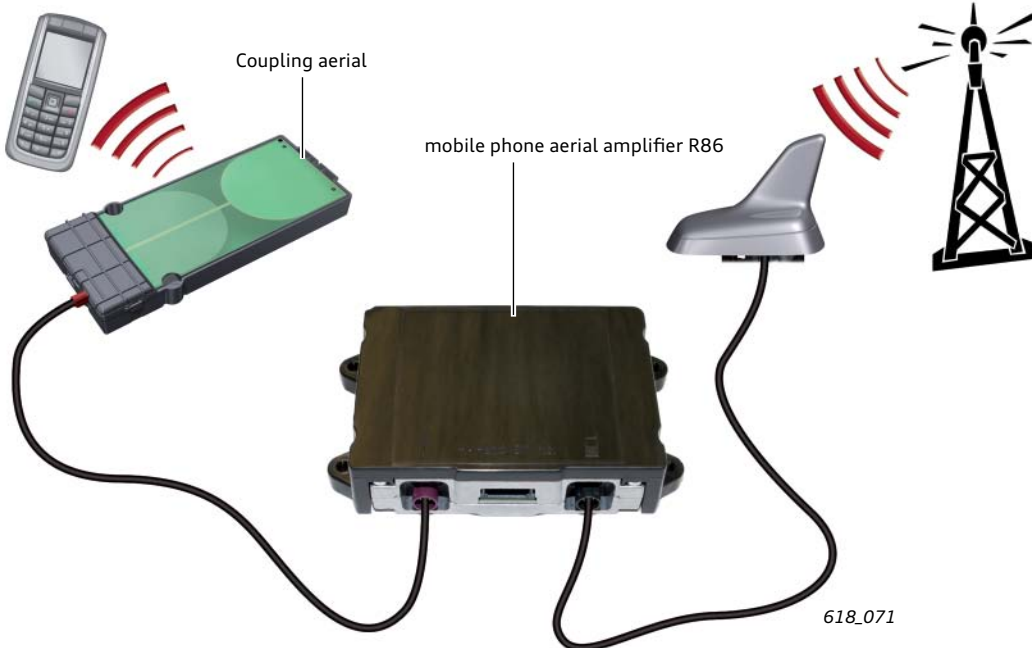
Transmission of mobile phone signal

📖 **Reference**
More information on the Audi Phone Box can be obtained from Self-study Programme 609, on page 86.

Bluetooth car phone online (Audi connect inc. car phone)

The option previously called "Bluetooth car phone online" has changed to "Audi connect inc. car phone" as of the introduction of the Audi A3 '13. For the sake of simplicity, it is simply referred to as "car phone" in the remainder of this self-study programme.

If the Modular Infotainment System is fitted with the optional "car phone", the electronic information systems control unit 1 J794 is equipped with a telephone module and a SIM card reader.

The "car phone" option also incorporates all the Bluetooth interface functions. For example, a mobile phone can be connected by means of the Hands-Free Profile (*HFP**). In that case, the telephone module in the electronic information systems control unit 1, J794, is not used.

The telephone module fitted in the J794 is designed for *GSM** and *UMTS** networks. There are two possible ways of activating the telephone module:
▸ With a SIM card in the SIM card reader
▸ With the aid of a mobile phone associated using the *SAP** (SIM Access Profile)

The mobile network standard that the "car phone" is currently using to connect is shown at the bottom right of the MMI screen. For the GSM network it shows 2G and for the UMTS network it shows 3G. If a data connection is also active, a two-headed arrow also appears.

Audi connect including car phone is assigned the primary feature number "9ZK" (the internal designation for "9ZK" is "Telephony (eSAP)").

Telephone module in J794   *618_072*

J794 with SIM card reader   *618_059*
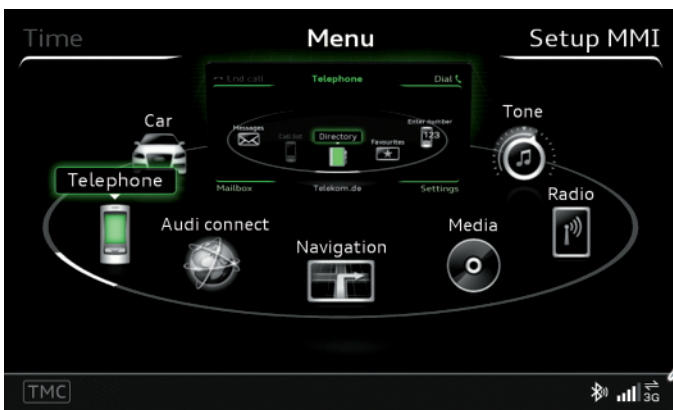
Indication of mobile phone network   *618_074*
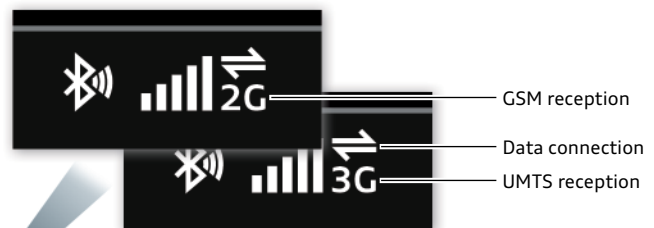
GSM reception
Data connection
UMTS reception

!   **Note**
To be able to receive data from the internet for Audi connect services, the telephone module in the J794 must be activated.

📖   **Reference**
Information on which mobile phones support the SIM Access Profile can be found in the database for mobile terminal devices at www.audi.com/bluetooth

Audi connect (market dependent)

Audi connect is a collective title for applications and developments that make it possible to use the world of multimedia in the vehicle and to connect with the outside world.

Audi connect also includes Audi Online services that were first introduced on the Audi A8 '10.

Audi connect is available if the vehicle is equipped with Audi Navigation plus and Bluetooth car phone online. Audi connect services and applications can vary from market to market.

With the High-spec MIB, new services have been added to the Audi connect services previously available.
The previous services and functions include, for example:

▸ Audi traffic information online
▸ Google Earth™
▸ *WiFi** hotspot

The new services include:

▸ Facebook
▸ Twitter
▸ Flight Information

Some services, such as "Flight Information" for example, are already activated when the vehicle is delivered and so can be used straightaway. Other service, such as "Facebook" for example, cannot be used until activated by the customer on the "myAudi" website. To do so, the customer has to register online with "myAudi". Customers can then configure their vehicle there. If the configured vehicle meets the requirements for Audi connect, the services available for that vehicle can be activated.

Audi connect also includes smartphone applications such as "Audi music stream", for example.

Audi connect Google Earth™ service　　　　*618_075*

Audi connect menu　　　　*618_076*

! **Note**
Information on the previous Audi connect services (previously called "Audi Online services") can be obtained from SSP 456, "Audi A8 '10", SSP 484, "Audi A7 Sportback – Occupant Safety/Information and Entertainment Systems/Air Conditioning", and SSP 603, "Audi A6 Avant '12".
Various Service TV programmes on the subject of Audi connect have also been published on Audi Training Online (ATO), for example the programme "Audi connect – New services for 2012" and "Audi connect 2012 and myAudi".

List of Bluetooth profiles supported

Bluetooth profile	Hands-Free Profile HFP	Phonebook Access Profile PbAP	SIM Access Profile SAP	Advanced Audio Distribution Profile A2DP	Message Access Profile for *SMS* MAP	Message Access Profile for e-mail MAP
Telephone option						
Bluetooth interface (9ZX)	✓	✓		✓		
Audi Phone Box (9ZE)	✓	✓		✓		
Audi connect including car phone (9ZK)	✓	✓	✓	✓	✓ 1)	✓ 1)

1) = only with High-spec MIB

Bluetooth profile:
- SAP
- HFP
- A2DP
- MAP
- PbAP
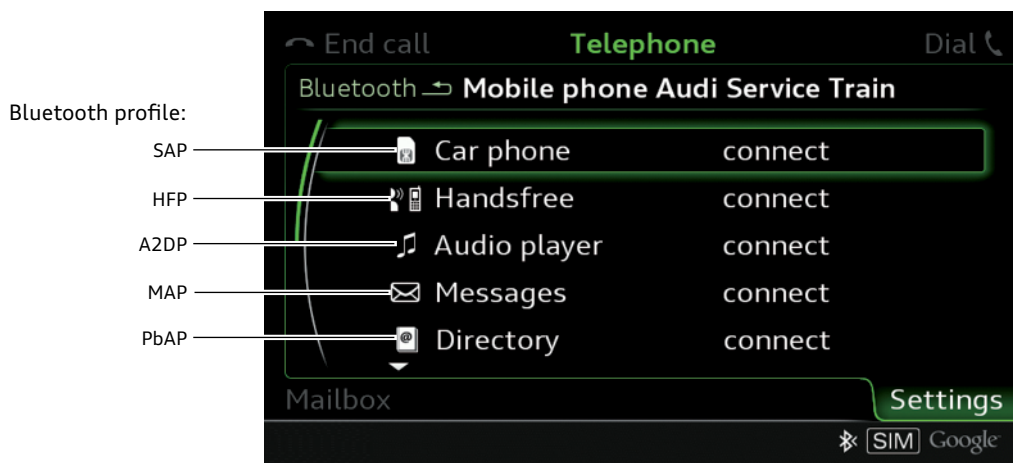
Bluetooth profile symbols on Telephone menu   *618_077*

! **Note**
The MMI only shows the Bluetooth profiles (connections) supported by the mobile phone.

Address book

With the Modular Infotainment System there is always an address book available on the MMI if a telephone option or navigation system is fitted. The address book entries are used for telephoning or navigating.

The address book function distinguishes between:

▸ the mobile phone address book; this is imported directly from the mobile phone
▸ the personal address book; this is entered directly on the MMI and is assigned to a specific user profile
▸ the public address book; this is entered directly on the MMI and can be used by all users

A mobile phone address book entry cannot be edited from the MMI. If necessary, this must be done directly on the mobile phone.

With the MIB, a total of 500 entries per user profile can be stored on the MMI. In addition, up to 2,000 address book entries from an associated mobile phone can be managed. Consequently a user has a maximum of 2,500 address book entries available.

The public address book can also hold up to 500 entries.

The MIB provides the facility for creating up to four user profiles. If another mobile phone is associated when there are already four user profiles stored, one of the following options can be chosen:

▸ "Replace contacts": i.e. delete one device
▸ Restricted use of phone: use of the address book on the MMI is limited (thus no personal local address book entries can be created)

With restricted use, no personal entries can be created. The general entries can still be used.

Address book on Telephone menu   618_078
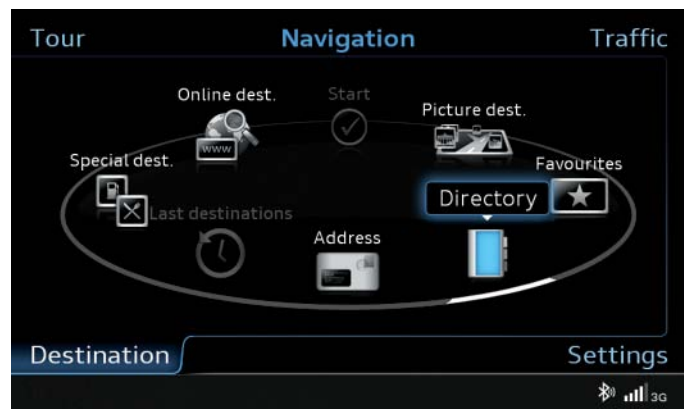
Address book on Navigation menu   618_079

Message when associating a fifth user   618_080

Indication of storage capacity   618_081

User profile

The user profile stores address book entries for a specific user. A user profile is automatically created when
- a mobile phone is associated with the MMI via Bluetooth or
- a SIM card is inserted in the SIM card reader in the J794.

In all, four user profiles can be created alongside one another. The data that is stored for a user profile is only shown on the MMI when there is an active connection to the device concerned. That is the case when, for example, the mobile phone concerned is reconnected via Bluetooth.

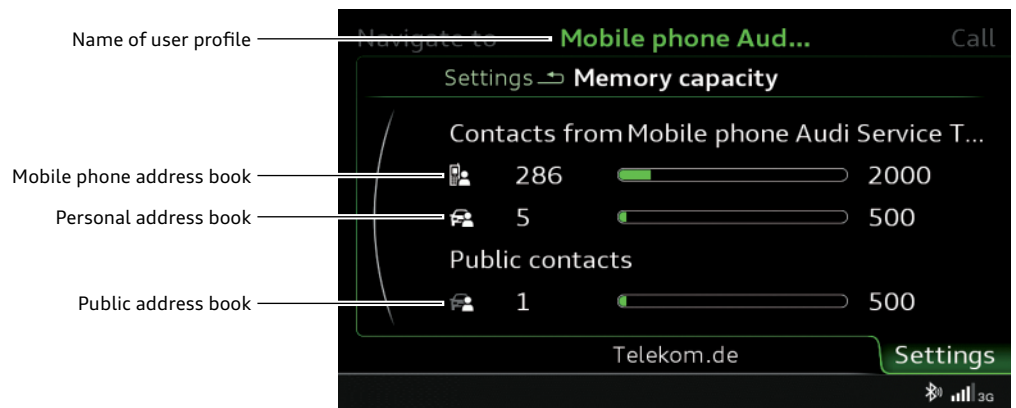If the vehicle has the Audi connect including car phone option (9ZK), a mobile phone can be associated via Phonebook Access Profile (PbAP) at the same time as having a SIM card in the J794. A different user profile is then created and a different address book used for the associated mobile phone. This is the case even with a multi-*SIM** card.

"Settings" menu for address book   618_082

Entry saved to:

SIM card

Mobile phone

Personal local entry

Public local entry

Symbols in address book   618_083

MMI display J685

Display unit for front information display and control panel control unit

On the Modular Infotainment System, an *LVDS** signal is used for video transmission from the electronic information systems control unit 1, J794, to the MMI display, J685.

With the Entry plus and Standard MIB, the video output resolution is 400 x 240 pixels, and on the High-spec MIB 800 x 480 pixels.

The electronic information systems control unit 1, J794, is connected to the MMI display, J685, via a sub-bus system (private CAN bus). This is a CAN bus with a data transmission rate of 500 kbit/s. The electronic information systems control unit 1, J794, uses it to control and monitor system statuses on the MMI display (on or off, temperature, error status, etc.), for example.
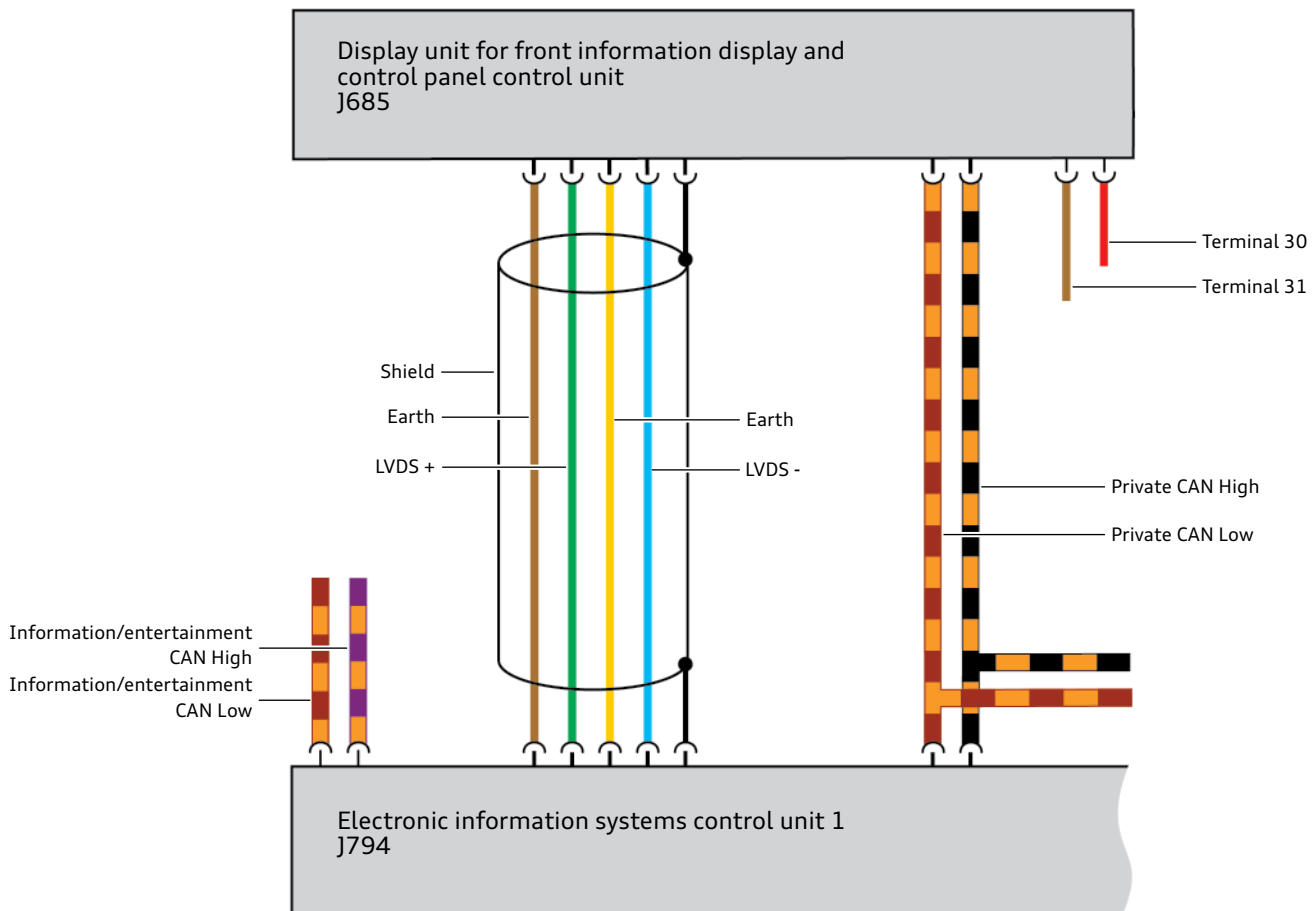

5.8" display for Standard MIB on Audi A3 '13   *618_019*

7.0" display for High-spec MIB on Audi A3 '13   *618_036*

Connection concept for MMI display J685   *618_037*

33

Video transmissions to J794

Video signals from up to four different sources for can be viewed on the MMI display.

- TV tuner R78 (High-spec MIB only)
- DVD changer R161 (High-spec MIB only)
- A terminal device (e.g. iPod) connected to the Audi music interface (AMI)
- Reversing camera control unit J772

The images from the various sources are transmitted to the electronic information systems control unit 1 J794 via different routes.

TV tuner R78 and DVD changer R161

The TV tuner R78 and the DVD changer R161 send the video signal to the electronic information systems control unit 1 J794 via the MOST bus.
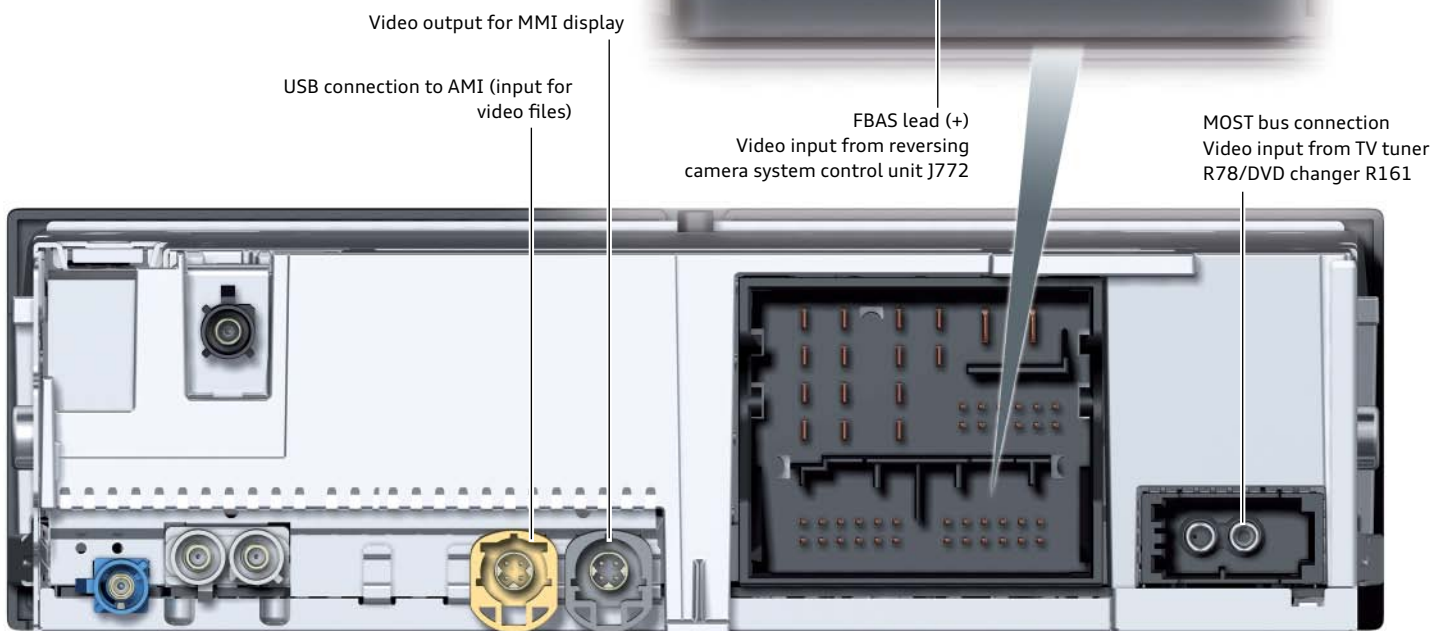
Reversing camera system control unit J772

The images from the reversing camera system control unit J772 are sent to the J794 as finished images via a dedicated FBAS lead.

Terminal device on Audi music interface (AMI)

With the AMI, a distinction is made between two possible video sources. They transmit the video signal by two different routes:

1. Video sources that provide finished images as an *FBAS** signal. Example: an image transferred from an iPod using the iPod adaptor plus (red kink preventer) to the J794 via the FBAS connection on the AMI connector.

2. Video sources that provide a video file. Example: a video file on a USB stick is transferred to the J794 using the USB adaptor connected to the USB socket on the AMI. The J794 then converts the file into a video.

FBAS lead (-)
Video input from reversing camera system control unit J772

FBAS lead (+) from AMI connector

FBAS lead (-) from AMI connector

Video output for MMI display

USB connection to AMI (input for video files)

FBAS lead (+)
Video input from reversing camera system control unit J772

MOST bus connection
Video input from TV tuner R78/DVD changer R161
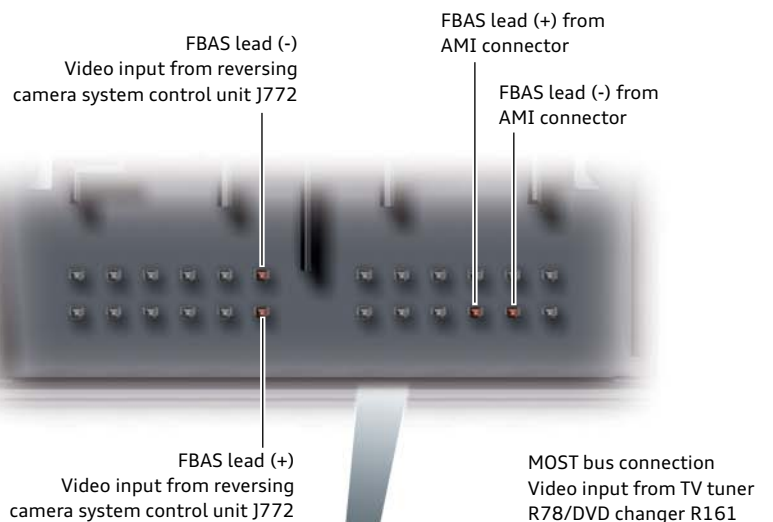
Video inputs on J794

618_038

!

Note
The internal video sources on the J794 such as SD cards, Jukebox and DVD drive are not described in this section.

Reference
More detailed information on the iPhone adaptor plus can be obtained from "Self-study Programme 477, Audi Q3" (page 77).

MMI display
Display unit for front information display and
control panel control unit
J685

MOST bus

LVDS lead

TV tuner
R78

Electronic information systems control unit 1
J794

FBAS+

FBAS lead

FBAS-

USB lead

FBAS lead

AMI connector

Reversing camera system control unit
J772
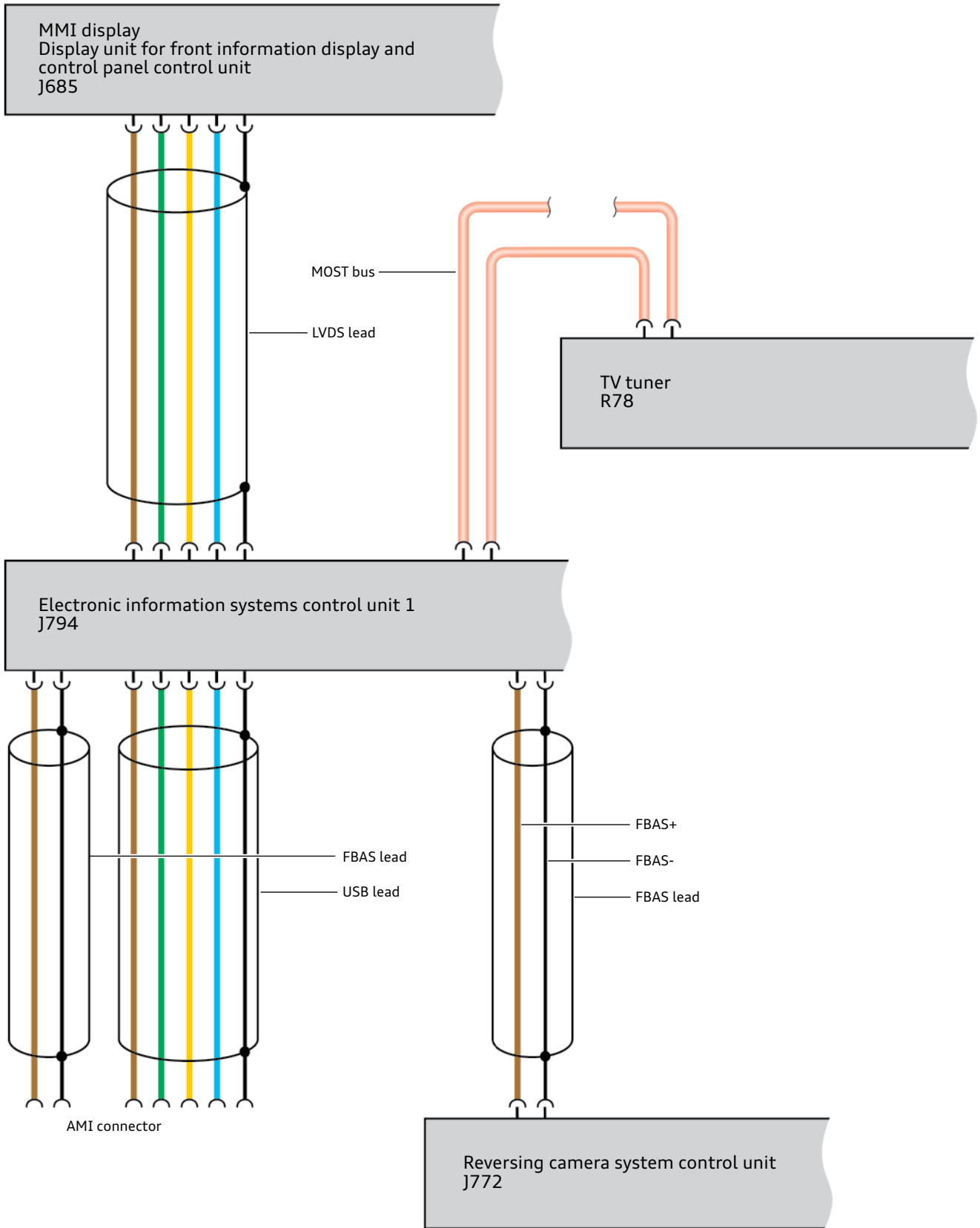
618_039

Schematic diagram of video transmission to J794

Control panel
(multimedia system control panel E380)

There are three different versions of the multimedia system control panel fitted on the Audi A3 '13 with the Modular Infotainment System. To allow even more intuitive operation, the number of buttons on the control units has been optimised compared to the previous systems. There are now two new rocker buttons which can be used to choose between two menus in each case.

The volume control also has a right/left rocker action. It can be used to skip backwards or forwards to the previous/next track on the Music menu, for example.

The control panels are connected to electronic information systems control unit 1, J794, via a private CAN bus

Two versions are fitted for the Entry plus MIB and the Standard MIB. Technically, they are identical and differ only in terms of the menu options available with the left rocker button. The third version features the MMI touch in addition.

On the basic version, the left rocker button can be used to activate the following menus:
▸ Tone
▸ Car

The next version is used if a Standard MIB (MMI Radio) with a hands-free, telephone or navigation function is fitted. The following menus can be activated with the left rocker button:
▸ Phone
▸ Navigation

The third version with the MMI touch is fitted in conjunction with the High-spec MIB (MMI Navigation plus). In this case too, the left rocker button is used to choose between Telephone and Navigation. In this case, however, the rotary push-button is slightly larger than on the other versions.
Integrated in the rotary push-button is the touch-sensitive input zone. This can be used to control the following functions:

▸ Entry of letters, numbers and characters using automatic handwriting recognition
▸ Scrolling through album covers
▸ Operating DVD main menu
▸ Moving the navigation map

The combination of rotary push-button and MMI touch is also referred to as the "touchwheel".

618_060

Control panel with TONE/CAR switch

618_061

Control panel with NAV/TEL switch

618_062

Control panel with MMI touch

Key combination for Service on E380

System reset

To restart (reset), the following buttons must be briefly pressed simultaneously:

▸ Rotary pushbutton
▸ Top right soft key
▸ MENU

618_063

Button combination for system reset

Engineering menu

The Engineering menu is required, for example, to install a software update. To access the menu, the following buttons must be pressed one after the other and held down:

▸ BACK
▸ Top left softkey

618_064

Button combinations for the Engineering menu

Screenshot

A screenshot is a snapshot of the current display on the MMI screen. To save it, an SD card has to be inserted in the SDF card reader and the following buttons pressed and held one after the other:

▸ Bottom left softkey
▸ Bottom right softkey

To indicate that the screenshot is being saved, the current screen display disappears momentarily (white screen).
Screenshots cannot be created on the Entry MIB and Entry plus MIB.

618_065

Key combination for screenshot

System reset on Entry MIB

To restart the system on the Entry MIB, the following buttons must be pressed simultaneously and held for at least five seconds:

▸ ON/OFF switch
▸ Forward button

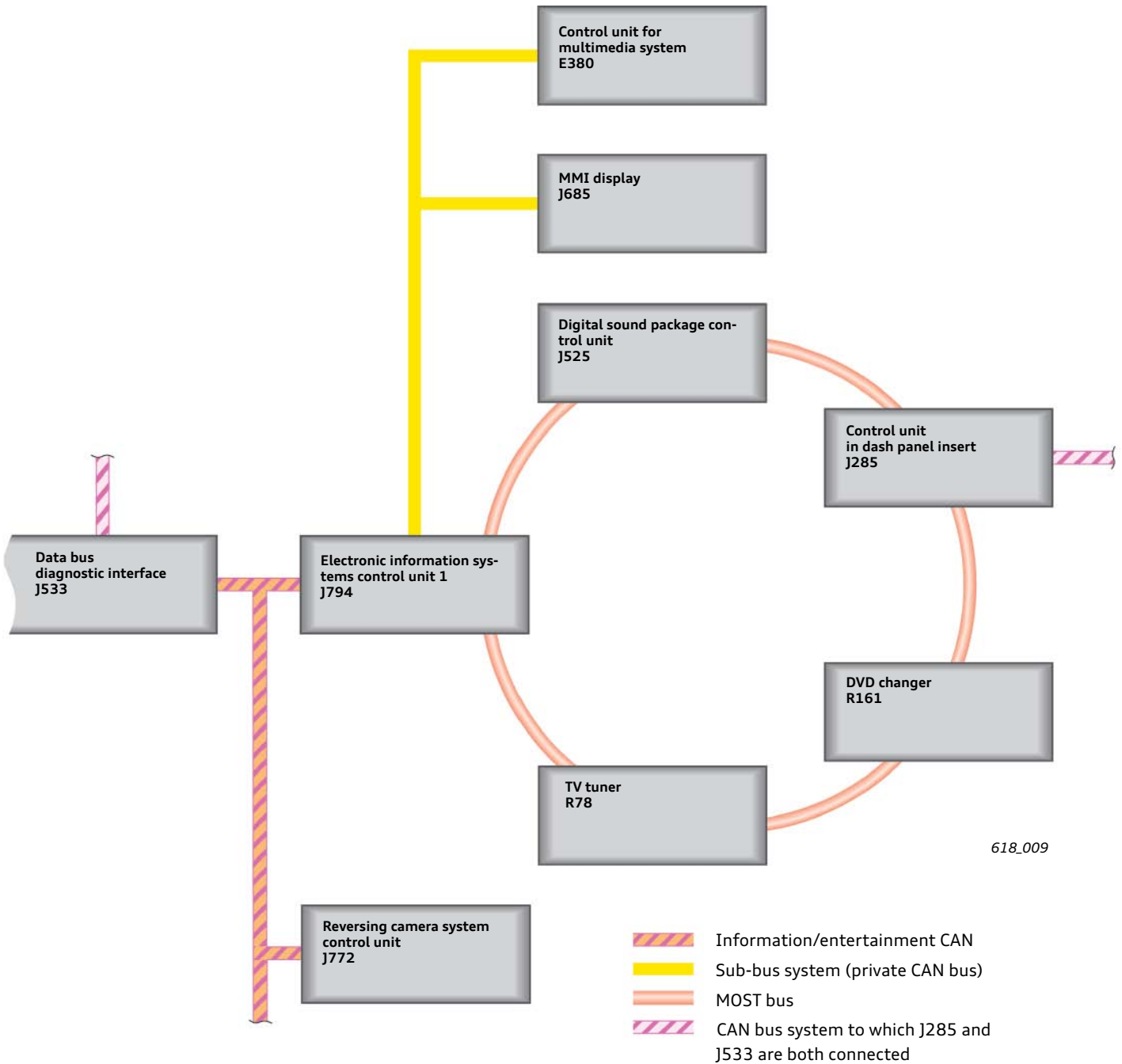**Key combination for reset**

618_066

Network systems

The electronic information systems control unit 1 J794 is connected to the data bus diagnostic interface J533 via the information/entertainment CAN on all versions of the MIB. The information/entertainment CAN is a high-speed bus with a data transfer rate of 500 kbit/s.

The MMI display J685 and the control panel E380 are, for the first time, connected to the electronic information systems control unit 1 J794 via a private CAN bus. This is also a high-speed bus with a data rate of 500 kbit/s.

If a vehicle is also fitted with an additional information/entertainment control unit (e.g. the digital sound package control unit J525), the system is also equipped with a MOST bus. Consequently it is possible for the first time for an Audi vehicle to be fitted with both the information/entertainment CAN and the MOST bus.

Due to the combination of the information/entertainment CAN and the MOST bus, a break on the MOST bus does not result in complete failure of the MMI. Thus all functions which are carried out directly on the J794 remain available. However, audio signal output via an external amplifier would not be possible.

618_009

Control unit for multimedia system E380

MMI display J685

Digital sound package control unit J525

Control unit in dash panel insert J285

Data bus diagnostic interface J533

Electronic information systems control unit 1 J794

DVD changer R161

TV tuner R78

Reversing camera system control unit J772

Information/entertainment CAN
Sub-bus system (private CAN bus)
MOST bus
CAN bus system to which J285 and J533 are both connected

Note
The topology illustrated shows one possible configuration of the network system for the Modular Infotainment System.

Optical data bus system MOST150

History

The Audi A8 '03 saw the introduction of the first optical data bus system, the MOST bus. To be precise, the MOST25. The data bus system was named after a group known as the "Media Oriented Systems Transport (MOST) Cooperation". This group is made up of various automobile manufacturers, their components suppliers and software companies, who joined forces to create a standardised high-speed data transfer system.

The term "Media Oriented Systems Transport" refers to a network designed for transmission of media-based data. This means that, unlike in the CAN data bus, address-oriented messages are sent to a specific recipient.
This technology is used in Audi vehicles to transfer data within the infotainment system.The data transfer rate on the MOST25 bus is approx. 25 Mbit/s.

MOST150

With the arrival of the Modular Infotainment System, the MOST150 is being used on an Audi for the first time.
This developmental stage in MOST technology is six times faster than the MOST25 bus.The development process necessitated various modifications to MOST components. The transmitter and receiver units had to be adapted, for example. Other components such as the optical connectors, the fibre-optic cables or the electrical connectors for the control units are identical to those for the MOST25.

With the advent of the MOST150, the video signal from the TV tuner R78 or the DVD changer R161 is transmitted directly via the optical data bus for the first time. A separate FBAS connection on the J794 as with the MOST25 is no longer fitted.

System and diagnostics manager

With the Modular Infotainment System, a maximum of five control units are connected to the MOST bus:

▸ Electronic information systems control unit 1, J794
▸ Digital sound package control unit J525
▸ TV tuner R78
▸ DVD changer R161
▸ Instrument panel control unit J285

With the MIB, the electronic information systems control unit 1, J794, performs the function of the system manager for the MOST bus as well as being the diagnostics manager. That was previously the job of the data bus diagnostic interface J533.

Diagnosis

The diagnosis address code for the electronic information systems control unit 1, J794 is the same on all MIB versions. It is: "5F – Electronic Information Systems"

With the Modular Infotainment System the electronic information systems control unit 1 J794 is also the diagnostics manager for ring break diagnosis.

Ring break diagnostics

The procedure for ring break diagnosis is the same as with the previous MOST bus system. However, with the MIB, the testing program for ring break diagnosis has to be invoked on the vehicle diagnostic tester using the address code 5F.

Although the ring break diagnosis sequence has remained the same, a different tool has to be used for an optical fault on the MOST150 – the optical substitute control unit VAS 6778. This is because of the different transmitter and receiver units.

Optical substitute control unit VAS 6778

618_067

Overview of PR numbers for MIB

Radio	Navigation	Speakers	Phone	Electrical interfaces	TV/Digital radio reception
i7X Entry Plus radio (GEN1)	**7Q0** w/o navigation unit	**8RE** 4 speakers (passive)	**9W0** w/o car phone pre-wiring/fitted	**UE3** AUX-In (w/o AMI)	**QV0** w/o TV/Digital radio reception
i8A Entry radio (GEN1)	**7UF** Standard navigation unit	**8RM** 8 speakers (passive)	**9ZE** Convenience telephony (with ext. aerial)	**UE7** AMI (AUX-IN, USB and iPod)	**QV1** TV reception
i8D Standard radio (GEN1)	**7UG** High-spec navigation unit	**9VD** Speakers (active)	**9ZK** Telephony (rSAP)		**QV3** Digital radio reception
i8G High-spec radio (GEN1)	**7UH** Pre-wiring for navigation system	**9VS** Sound package 1 "branded" [1]	**9ZX** Pre-wiring for mobile phone (BT interface)		**QU1** TV and digital radio reception
		8RF "High-end sound", "branded" [2]			**QU8** SAT radio reception

[1]   "Branded" = Bang & Olufsen Sound System on Audi A3 '13 for example

[2]   "Branded" = Bang & Olufsen Advanced Sound System on Audi Q7 for example

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!   **Note**
PR numbers are referred to as production numbers or production control numbers. The correct term is primary feature number.

General overview of MIB on Audi A3 '13

The following overview shows the versions of the Modular Infotainment System used and their marketing names for the Audi A3 '13.

Audio Radio

MMI

without other options

with

Entry MIB

Entry Plus MIB

Standard

Radio

MMI Navigation plus

MIB   Standard MIB with navigation system

High-spec MIB

618_040

Appendix

Glossary

In this glossary you can find explanations of all the terms written in italics and marked with an asterisk in this self-study programme. It also lists other abbreviations used in the field of information and entertainment systems.

(ID3) tag
Additional information (e.g. title, artist) in an MP3 file.

A2DP (Advanced Audio Distribution Profile)
Bluetooth profile for transmission (streaming) of hi-fi audio signals via a Bluetooth channel.

AAC (Advanced Audio Codec)
Compression standard for audio files used, for example, by online music stores (e.g. iTunes) or internet radios.

asf (ASF = Advanced Streaming Format)
A digital audio and video format developed by Microsoft and designed specially for streaming.

ASX (Advanced Stream Redirecting)
Enables playback and combination of WMV or WMA files in Windows Media Player.

Aux-In
Signal input on audio amplifiers to which any device with line output can be connected.

AV input (audio/video input)
Signal input on video players.

avi (AVI = Audio Video Interleave)
A video format defined by Microsoft that stores audio and video files in interleaved format.

AVRCP (Audio Video Remote Control Profile)
Bluetooth profile for controlling audio and video devices.

CD (Compact Disc)
Optical storage medium consisting of a metal-coated plastic disc onto which data is written using a laser.

CD-R (Compact Disc Recordable)
CD onto which data can be written once only.

CD-RW (Compact Disc ReWritable)
Rewritable CD.

DAB (Digital Audio Broadcasting)
Digital transmission standard for terrestrial reception of radio stations.

DAB+
Advanced version of DAB which enables more radio stations per frequency.

DivX
A form of video compression that is used primarily to highly compress large files without loss of quality.

DMB (Digital Multimedia Broadcasting)
Digital transmission standard for terrestrial reception of video and audio transmissions.

DRM (Digital Rights Management)
Means of protecting or charging for media (e.g. Napster on the internet).

DVBT (Digital Video Broadcasting – Terrestrial)
Digital transmission standard for terrestrial TV signals (i.e. signals transmitted on the ground).

DVD (Digital Versatile Disc)
Advanced version of the CD with a capacity of 4.7 GB in the case of DVDs single-coated on one side.

DVD±R
DVD-R and DVD+R are once-only recordable versions of the DVD.

DVD±RW
DVD-R and DVD+R are rewritable versions of the DVD.

EDGE (Enhanced Data Rates for GSM Evolution) Extended GSM standard for data transmission. Data rate of up to 220 kbit/s.

exFAT (Extended File Allocation Table)
File system developed especially for SSD solid state drives.

FAT (File Allocation Table)
File system developed by Microsoft. FAT16 is used for most types of portable data media up to a capacity of 2 GB.

FAT32 (File Allocation Table)
File system developed by Microsoft. FAT32 is used for portable data media with a capacity of between 2 GB and 32 GB.

FBAS (Farb-Bild-Austast-Synchron-Signal)
Video transmission format in which all signals are transmitted via a single cable.

FLAC (Free Lossless Audio Codec)
Refers to a codec for lossless compression of data.

FM (Frequency Modulation)
Modulation method in which the carrier frequency is modulated by the signal to be transmitted. The frequency is in the range of 30 kHz to 300 kHz.

GIF (Graphics Interchange Format)
Special graphics format for compressing images with low colour depth.

Gracenote
Database owned by the company Gracenote. It contains details of the audio CDs currently on the market (e.g. title, artist, genre, playback time).

GSM (Global System for Mobile Communications)
International standard for digital mobile phone networks that is used mainly for telephony but also for data transmission and text messages.

HFP (Hands Free Profile)
Bluetooth profile that allows a mobile phone to be associated with the vehicle's hands-free system.

HSDPA (High Speed Downlink Packet Access)
Extended UMTS standard with data transmission rates of up to 7.2 Mbit/s.

HSP (Headset Profile)
Bluetooth profile that enables communication with a headset.

JPEG (Joint Photographic Expert Group)
Special image data format used for compressing image files.

LVDS (Low Voltage Differential Signaling)
File transmission format in which the signals are transmitted via two low-voltage cables.

M3U
Open-source playlist file format used for saving playlists.

m4a (MPEG-4 audio)
MPEG-4 file for audio content

m4b (MPEG-4 audio book)
MPEG-4 file format for audio books

m4v (MPEG-4 video)
MPEG-4 file for video content

Modular Infotainment System (MIB)
Name of a cross-marque and cross-platform modular system for information and entertainment system components.

MMC (Multi Media Card)
Digital memory card

MPEG (Moving Pictures Expert Group)
Expert group concerned with the standardisation of video compression methods.

MPEG-1/-2 Layer 3
File format for compression of audio files with minimal impairment of sound quality. The commonly used file extension is ".mp3".

MPEG-2/-4
MPEG-2/-4 formats are used for video and audio compression for applications such as DVDs (MPEG-2) and mobile phones (MPEG-4).

MPEG-4 H.264 (AVC)
Standard for highly efficient video compression that can be used for numerous applications such as HDTV, digicams or portable video (e.g. mobile phones, iPod).

MW (medium wave)
Electromagnetic waves in which the signal to be transmitted produces amplitude modulation (AM). The frequency is in the range of 300 kHz to 3000 kHz.

NTFS (New Technology File System)
File system developed by Microsoft.

OGG
(Also known as OGG Vorbis) File format for multimedia files.

OPP (Object Push Profile)
Bluetooth profile for sending individual files (e.g. address cards or images).

PAL (Phase Alternation Line)
Method of analogue transmission for colour TVs. For every second screen line the red colour difference signal is transmitted with a 180° phase shift from the previous line. This makes transmission errors less noticeable to the viewer.

PBAP (Phone Book Access Profile)
Bluetooth profile that enables transmission of phone book/contact entries.

PIN (Personal Identification Number)
The numerical code used, for example, on mobile phones as a password for enabling association and access to the phone data.

Podcast (made-up word from "iPod" and "broadcast")
A podcast is a downloadable internet media file (audio or video) which users can also subscribe to.

PR. no. (primary feature number)
Number used to identify the individual equipment features of a vehicle.

IMEI (International Mobile Station Equipment Identity)
The IMEI is a unique 15-digit serial number by which every GSM or UMTS terminal device can be uniquely identified.

PLS (playlist)
File format used for saving playlists.

PNG (Portable Network Graphics)
Special graphics format developed for lossless compression.

RDS (Radio Data System)
Radio data system

RSS (Rich Site Summary or Really Simple Syndication)
Format for broadcasting information and changes to it on the internet.

RSS feed
Refers to RSS pages on the internet.

SAP (SIM Access Profile)
Bluetooth profile that directly accesses the data on the mobile phone's SIM card. Also known as rSAP (remote SIM Access Profile).

SD (Secure Digital Memory Card)
Secure digital memory card, e.g. used for MP3 players, digital cameras

SDARS (Satellite Digital Audio Radio Services)
Digital radio standard for commercial satellite radio in North America.

SDHC (SD High Capacity)
Special SD cards with capacities up to 32 GB based on an extension of the standard. The performance class stated on the card provides an indication of the storage speed.

SDXC (SD eXtended Capacity)
Special SD cards with capacities up to 2 TB (2,048 GB) based on an extension of the standard and a storage rate of up to 104 MB/s.

Secam (Séquentiel couleur à mémoire)
(English: Sequential Colour with Memory) Television standard for analogue transmissions used mainly in France an eastern Europe.

SIM card (Subscriber Identity Module card)
Chip card for mobile phones. Identifies the user on the network.

Multi-SIM
Refers to SIM cards that use the same telephone number and phone contract. In Germany, for example, this allows up to three devices to be used on one phone number (e.g. mobile phone, Audi connect and laptop).

SMS (Short Message Service)
Service for sending and receiving text messages.

SSD (Solid State Drive)
Digital memory module which supersedes the hard disks so far used.

SSID (Service Set Identifier)
User-definable name for a wireless network.

TFT (Thin Film Transistor)
Technology used for TFT screens, on which three transistors are used to represent each pixel.

TMC (Traffic Message Channel)
Channel for reception of radio traffic data for dynamic navigation.

UDF (Universal Disk Format)
File system for disks.

Universal mobile phone preparation (UHV)
On the MIB also called the Audi Phone Box, has the PR number "9ZE".

UMTS (Universal Mobile Telecommunications System)
Third-generation mobile telecommunications standard (3G) which enables data transmission rates of up to 384 kbit/s.

UPnP (Universal Plug and Play)
The UPnP data protocol is used for controlling devices in a network.

USB (Universal Serial Bus)
Universal serial interface for data communication between a computer and another device.

vCard (electronic address card)
File format used for address cards so that they can be copied directly to an e-mail program. The usual file extension is ".vcf".

WAVE
Compression standard for digital storage of audio files.

WLAN (Wireless Local Area Network)
Wireless local computer network.

wma (Windows Media Audio)

Special audio format for Microsoft Windows.

wmv (Windows Media Video)
Method of video file compression developed by Microsoft. Usual file extensions are ".asf" and ".wmv".

WPL (Windows Media Player Playlist)
Audio file playlist for Windows Media Player.

XviD
A freeware video file compression method based on the MPEG-4 format.