

Interface box High ULF-SBX-H

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The functional description describes the ULF-SBX-H interface box High for the following vehicles:

- **E81, E87, E90, E91, E92, E93** (BMW 1 Series, 3 Series)
- **E60, E61, E63, E64** (BMW 5 Series, 6 Series)
- **E70** (BMW X5)
- **R56** (MINI)

The ULF-SBX-H serves to connect the Bluetooth-compatible mobile phone to the vehicle's electrical system. The ULF-SBX-H is connected to the den MOST bus in the vehicle. The ULF-SBX-H contains no transmitter and receiver module for GSM mobile telephony. This function is contained purely within the customer's mobile phone.

The Bluetooth connection between the mobile phone and the ULF-SBX-H is set up automatically. A precondition for this is that the mobile phone has logged on once in the ULF-SBX-H.

The ULF-SBX-H also provides the audio player function (optional extra 6FL).

Brief description of components

The following components are involved in the ULF-SBX-H interface box High:

- **ULF-SBX-H control module**

The control module contains components for the following functions:

- Connection of the mobile phone with Bluetooth interfaces on the vehicle
- Power supply of the mobile phone locked in place in the snap-in adapter
- Communication with the display element in the vehicle
- USB port for communication with connected USB devices

- **Base plate with eject box**

The base plate with eject box sets up the connection from the Bluetooth mobile phone to the vehicle wiring harness. The base plate holds the eject box on which the mobile-phone-specific snap-in adapter is locked in place.

- **Snap-in adapter**

The snap-in adapter is the connecting piece between the base plate with eject box and the Bluetooth mobile phone. The snap-in adapter creates the connection to the GSM antenna and to the vehicle electrical system. The mobile phones are charged in the snap-in adapter.

- **Bluetooth mobile phone**

When it is engaged in the snap-in adapter, the back of the Bluetooth mobile phone is connected to the aerial connector on the GSM aerial cable. The mobile phone is supplied with voltage via the charge contacts.

- **Compensator**

The compensator equalizes losses in the antenna cable between the snap-in adapter and the GSM aerial. The compensator is only installed at the request of the customer.

- **GSM aerial**

The GSM aerial is the transmit/receive antenna for the Bluetooth mobile phone.

- **Bluetooth aerial**

The Bluetooth antenna is the transmit/receive aerial of the ULF-SBX-H control module. This antenna is for communication with Bluetooth-compatible devices.

- **RAD2: Sales code "BMW Professional radio"**

The radio serves as the gateway between the MOST bus and the K-CAN.

- **M-ASK: Multi Audio System Controller**

The M-ASK is installed in the E60, E61, E63, E64 as the basic version.

- **CCC: Car Communication Computer**

The CCC is installed in connection with one of the following optional extras:

- Optional extra 609: "Professional" navigation system

- Optional extra 620: "Voice recognition system"
- Optional extra 601: "Video module"
- **CID: Central Information Display**
The menus of the M-ASK or of the CCC are displayed on the CID.
- **Hands-free microphone and microphone for voice commands**
The hands-free microphone is fitted in the roof function centre and it is for the input of voice information and voice commands in the hands-free speaking system. On vehicles with CCC, optional extra 620 "voice recognition system" is required, as otherwise no voice commands can be processed. With optional extra 620, a second vehicle microphone is installed in the FZD for the input of voice commands. All CCC functions can be operated using voice commands. On the E64 and E93, the microphones are installed in the steering column. Furthermore, as of 09/2006 only 1 vehicle microphone is installed in various model series.
- **MFL: Multifunction steering wheel**
Buttons are installed in the MFL to enable operation of the telephone. When a call is accepted via the MFL, the ULF-SBX-H switches to the hands-free mode.
- **Controller**
The controller is used to control the functions of the CCC and M-ASK on the Control Display. The telephone menu is also operated via the controller.
- **USB port**
The USB port sets up the data interchange and electrical connection of USB devices with the ULF-SBX-H.
- **AUX-IN port**
iPod devices can be connected across the AUX-IN port with the corresponding BMW Y adapter cable.
- **USB hub**
The USB hub is not fitted in all model series. The USB hub co-ordinates the linked USB devices.
- **USB adapter cable**
To relieve the load on the USB port in the vehicle, the use of a USB adapter cable is recommended.
- **iPod adapter cable**
In order to be able to use an iPod without constraints on a ULF-SBX-H, the iPod must be connected with the iPod adapter cable.

System functions

The function for making a phone call with a mobile phone and ULF-SBX-H are based on wireless data transmission using Bluetooth radio standard.

The ULF-SBX-H can assume either only audio player functions (optional extra 6FL) or combined telephone and audio player functions (optional extras 644 and 6FL).

Functions inside the vehicle

- Automatic prioritization for establishing connection according to the list of mobile phones signed on
- Hands-free mode with full-duplex transmission, echo compensation and display of the current operating mode
- Voice processing system
- Transfer of audio data, telephone call information (e.g. GSM signal strength), telephone book and status of the mobile phone
- Automatic charging of the rechargeable battery of the mobile phone if the corresponding snap-in adapter has been installed.
NB: Only recharge the Bluetooth mobile phone for which the snap-in adapter is intended!
- Connecting approved / recommended USB devices to the USB port in the vehicle
- Connecting MP3 players on the USB port or the AUX-IN port
- Display of the data medium structure of the USB device and operation of the player functions of the USB device
- Playback of stored MP3 files of the USB device if there is no digital rights management of the music data

Basic settings

- Logging the mobile phone on to the ULF-SBX-H
 - 4 Bluetooth mobile phones may be logged on to the ULF-SBX-H at the same time. If another mobile phone is logged on, yet another is removed from the ULF-SBX-H.
 - However, the logged on mobile phones can be only be used one at a time. The automatic connection of already logged on mobile phones takes place on the basis of the link list. Mobile phones that are further up in this link list are logged in first and thus connected more quickly than mobile phones that are further down. If a fifth mobile phone is logged on, one of the first four logged on mobile phones is deleted from the link list.

For the ULF-SBX-H to be functional, each mobile phone to be used must be logged on once to the ULF-SBX. To do so, the ULF-SBX-H must be in the "link mode". The linking is supported by the link assistant.

Link assistant:

As of 03/2007, a link assistant is available. Linking consists of 4 steps.

- 1) Activation of Bluetooth on the mobile phone and in the vehicle
- 2) Linking via the settings menu in the vehicle
- 3) Input of passkey on the mobile phone and in the vehicle
- 4) Conclude linking - the Bluetooth connection is set up as soon as the 'Link' menu is closed.

For detailed information on using the link assistant, please consult the Owner's Manual.

- The mobile phone is logged off by deleting the mobile phone from the list in the 'Link' menu.
- Connecting a USB device to the ULF-SBX-H

The first time a USB device is connected, the directory information with tracks, albums and artists is adopted into the ULF-SBX-H. Depending on the data volume, this data interchange can take a few minutes. In extreme cases with large storage media (80 gigabytes, etc.), a duration of up to 30 minutes can be expected. Only the track information is stored in the control module, not the actual MP3 files. The next time the USB device is connected, the data stored in the ULF-SBX-H is displayed first. The data structure is then updated after a short time.

Up to 20,000 items of track information are stored in the control module. If this number is exceeded, track information of the first USB device that was connected is overwritten. The next time this first USB device is connected, the track information must be scanned in once again. Depending on the memory capacity of the USB device, this scanning can once again take a longer period.

Only Latin letters are shown in the CID. Other lettering, e.g. Greek, cannot be recognized.

The USB device can be activated via the CID.

Notes for Service department

The following information is provided for servicing the ULF-SBX-H:

General information

Disabled functions:

The following functions are not possible with the ULF-SBX-H:

- BMW Assist
- Reading SMS on the CID or radio

Installation of snap-in adapter

Replace the cover on the eject box with the snap-in adapter that matches the Bluetooth mobile phone as follows:

- Press the eject button on the eject box.
- Eject the cover and remove it from the eject box.
- Connect up the snap-in adapter matching the mobile phone.
- Insert the snap-in adapter in the eject box and engage.

Important! After replacement of the ULF-SBX-H control module, the Bluetooth mobile phones must be logged on again.

There is a free choice of Bluetooth passkey here.

Requirements for the recognition and playback of music files:

- The MP3 device must be compatible with the control module. ASAP contains product information with a list of recommended devices.
- The USB device must have been formatted with the FAT file system. The MP3 files should preferably be stored on the USB devices using the Windows Explorer. Utility programs of USB device manufacturers can change the formatting of the file system.
- Only certain formats, e.g. MP3 or WMA, can be played. Music files with DRM (Digital Rights Management) can only be displayed and played when an iPod is connected, as on an iPod the processing of rights takes place internally.

Special features of using the iPod

The Y-shaped adapter cable that can be ordered from BMW is recommended for the operation of iPod devices. If this cable is not used, the iPod can be used via the USB port as a so-called "volume". If the iPod is connected without the Y-shaped adapter cable, no directory structure in the form of albums, genre and tracks is available. The music files are displayed in incomprehensible form (e.g.: aghde.mp3). Music files are named automatically in the "iTunes" management software offered by Apple. These names are displayed.

Coding and programming

The ULF-SBX-H control module must be recoded in the following circumstances:

- After exchanging the ULF-SBX-H
- After exchanging the control module, depending on vehicle and equipment
 - BMW radio "Professional"
 - M-ASK
 - CHAMP
 - CCC

For advanced information, see BMW Service Technology:
TIS -> Document -> SI Technology -> Enter SBT number:
SBT number: 8400303045

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