

Diagnostic Instructions for Bluetooth telephone systems (option 644 and 633)

There follows a list of the complaints reported so far, questions for assisting troubleshooting further and measures for remedying the fault. These should be carried out before any replacement of the control unit is considered.

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In addition to this information, the PuMA contains further measures to address complaints concerning option 644/633.

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1. General information concerning the Bluetooth aerial:

The installation location of the Bluetooth aerial on the vehicle concerned is required for some troubleshooting methods:

- E39 Saloon below the roof lining at the rear in the centre,
- E39/2 to model year 9/03 above the rear left wheel housing
- E39/2 from model year 9/03 under the centre armrest,
- E46 (all variants) under the centre armrest,
- E53 under the rear left window,
- E83 rear of the left C-pillar approximately 20 cm below the roof,
- E85 rear centre stowage compartment between the seats (on the right when viewed in the direction of travel without a navigation system, on the left next to the navigation computer when viewed in the direction of travel with a navigation system)

2. Preliminary check:

Before any work is carried out, it is necessary to verify the telephone control unit - mobile phone (model+software) combination using the compatibility matrix (see enclosure).

Download the software version installed in the mobile phone:

Handy	SW-download	Example
Ericsson	>* <<* <* [Service Info] [SW-Info]	R3B006
SonyEricsson		R5B001
Nokia	*#0000#	v5.22
Siemens	*#06# [Info]	16
Motorola	[Menu][Settings][Phone Status][Other Info][SW-Version]	0B.08.9FR

Is compatibility OK (green in matrix)?

Yes: Test the vehicle using the reference mobile phone.

Fault with the mobile phone:

Inform the customer of this fact and advise the customer to call the mobile phone manufacturer's hotline.

Fault with the vehicle:

1. Code the telephone control unit
2. Make sure that the mobile phone is used in the snap-in adapter.
3. Other procedure depending on the fault symptom described below.

No: Incompatibility between the telephone control unit and mobile phone can cause a wide variety of problems. Check whether there may be a

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suitable PuMA measure for your special case. If this does not provide a solution, please contact your subsidiary via PuMA (creating a case report).

3. Fault symptoms:

§ **The telephone cannot be operated:**

Does option 644/633 respond to diagnostics?

Yes: Select the "Activate Bluetooth" function on the DIS tester, then recode option 644/633.

No: See "Option 644/633 does not respond to diagnostics"

§ **Option 644/633 does not respond to diagnostics:**

Is the telephone fuse good?

No: Change the fuse

Is option 644/633 fitted correctly?

No: Connect option 644/633 to the wiring harness

Are the lines OK?

To determine, check lines 30, 31, R and I/K bus.

§ **Option 644/633 does not enter coupling mode:**

Is the PTT button on the base plate (fixture for snap-in adapter) working correctly?

Check using the Test Job on the DIS tester.

No: Replace the base plate for the snap-in adapter

Yes: See "The telephone cannot be operated"

§ **The mobile phone cannot be coupled:**

Has the mobile phone been recommended by BMW for use with option 644/633?

No: Compatibility with option 644/633 cannot be guaranteed.

Does option 644/633 appear in the list of Bluetooth devices in range on the mobile phone after a search?

No: See "No Bluetooth connection established with the mobile phone"

Does the "Connection successful" message appear in the vehicle display and accompanied by beeping tones or does the "Connection

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failed" message appear in the vehicle display?

"Connection successful" with a beeping tone:

The mobile phone should now have been coupled successfully.
Note that the ignition should not be switched off until the three LEDs have started to flash slowly as normal again. This may lead to a more stable connection in conjunction with the Siemens S55 in particular.

"Connection successful" with two beeping tones:

The connection may not have been established successfully. Try again.

"Connection failed":

The connection was unsuccessful. Try again.

The connection process may take up to 30 seconds to connect depending on the mobile phone model. You should wait until option 644/633 provides a visual and audible confirmation.

Nothing has changed after 2-3 attempts.

Yes: Remove the mobile phone battery and reinsert it, then try to connect again. Clear all known Bluetooth devices in the universal charger and hands-free kit and mobile phone, and reset option 644/633 if necessary (power on reset). Try again.
See also "Hands-free mode not possible"

Are there still connection problems?

Yes: Check the function and installation location of the Bluetooth aerial (optimise on E39/E53 if necessary).

If this does not provide a solution, replace the control unit.

See "Poor voice quality"

§ **No Bluetooth connection established with the mobile phone.**

("Activate telephone" appears in the display)

Has a connection attempt been made?

No: Attempt connection, see also "The mobile phone cannot be coupled"

Is the mobile phone switched on and Bluetooth activated on the mobile phone?

No: See the section in the mobile phone user's guide concerning how to set Bluetooth

Is there a confirmation prompt on the mobile phone for establishing the Bluetooth connection?

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Yes: See the section in the mobile phone user's guide concerning how to set Bluetooth

Is option 644/633 in the list of Bluetooth-connected devices on the mobile phone?

No: Attempt connection, see also "The mobile phone cannot be coupled"

Does the Bluetooth connection symbol appear on the mobile phone?

No: Remove the mobile phone battery and reinsert it

Is the aerial line properly connected to the Bluetooth aerial and the option 644/633 control unit?

The Bluetooth aerial may be disconnected during retrofits, for example. Check that the aerial line is properly connected to both the control unit and the Bluetooth aerial.

Is there a resistance of approximately 0 DC resistance on the Bluetooth aerial line between the connector on the control unit and the connector on the aerial?

Yes: Search for another matching aerial line connector and test this out

Note: This test is used to make sure that no other line is fitted with a matching connector by accident. This could happen during retrofits, for example.

§ **The Bluetooth connection breaks up sporadically**

The problem occurs under different conditions:

- a. By it self
- b. When starting the call
- c. When ending the call
- d. When talking on the phone

Please turn the functionality Bluetooth on and off in the settings menu of the phone.

The root cause of the phone is in analysis. As soon as we have any further informations we will add them to this document.

§ **Bluetooth activated/deactivated intermittently:**

Yes: This problem may be caused by the following:

- High number of SMS messages in the memory
- High number of entries stored in the phonebook (>200...250)
-> Clear unnecessary SMS messages and phonebook entries.
- Frequent Bluetooth synchronisation with the PC

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- High number of other Bluetooth devices registered in the mobile phone

§ Telephone calls cut off intermittently:

Is the aerial line properly connected to the Bluetooth aerial and the option 644/633 control unit?

The Bluetooth aerial may be disconnected during retrofits, for example. Check that the aerial line is properly connected to both the control unit and the Bluetooth aerial.

Is there a resistance of 0 DC resistance on the Bluetooth aerial line between the connector on the control unit and the connector on the aerial?

Yes: Search for another matching aerial line connector and test this out. This test is used to make sure that no other line is fitted with a matching connector by accident. This could happen during retrofits, for example.

Was the mobile phone in the snap-in adapter when the call was cut off?

Yes: Check the connection between the snap-in adapter, base plate and GSM external aerial. Fit an external aerial as a test.

No: Advise the customer to use the snap-in adapter (improves GSM reception).

The transmitter/receiver for required for mobile communication is integrated in the mobile phone. If the mobile phone is not engaged in the snap-in adapter, the radio waves may suffer severe attenuation depending on the vehicle body and window glass fitted. This can cause calls to be cut off in areas of poor GSM coverage.

Was the mobile phone in the snap-in adapter when the call was cut off and was the GSM reception field strength low at this point even though reception is good at other times?

Yes: The reception quality of the hands-free system can only be as good as the reception quality of the mobile phone. Interruptions in the GSM link may be inevitable, depending on the network coverage.

§ The audio entertainment cuts out sporadically or sporadically the phone is not available (only option 644 affected!)

Is the car an E6x or an E87?

Yes: The fault occurs under the following circumstances:

The first entry in the SIM-Card of the mobile phone contains

- A special character ('*', '#', '@') at the first position of the name or the number
- A number without a name

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- Ⓔ Delete the special character in the name or in the number of the first entry. Add a name to the number of the first entry of the phone book.

§ **Poor voice quality:**

Is voice quality poor?

Yes:

- Check the position of the air vents.
 - High blower speeds and open centre air vents directed upwards inevitably interfere with your voice as heard by the other party (due to the position of the vehicle microphone).
- Check the function and installation location of the Bluetooth aerial (optimise on E39/E53 if necessary), see notes under: "Is voice quality dependent on the position of the mobile phone in the vehicle interior?"
- Check reception in the snap-in adapter
- If voice is breaking up: Fit a line compensator
- Fit an external aerial as a test

Is the volume too low?

Yes: Recode the telephone control unit (TCU).

Notes:

- The Siemens S55 is generally somewhat quieter than the Nokia 6310i
- In the case of Sony Ericsson mobile phones, voice quality deteriorates with battery charge.

There is no measure to remedy this that can be carried out on the vehicle itself.

Is voice quality dependent on the position of the mobile phone in the vehicle interior?

Yes: See the notes under "Telephone calls cut off intermittently"

Is the connection between the mobile phone and the Bluetooth aerial in the vehicle being obstructed by part of the body or a metal object?

Yes: Remove the obstruction to the Bluetooth connection where possible. Use the mobile phone in the snap-in adapter.

Is the vehicle an E53/E39?

Yes: The Bluetooth aerial may not be fitted in the optimum position, depending on the period in which these vehicles were manufactured.

- E39 Touring before 09/03: Left side of the boot
- E39 all Saloons: Shelf (rear shelf)
 - Ⓔ It is possible to convert the Bluetooth aerial location on these vehicles to that on the E39 Touring manufactured after 09/03

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(under the centre console). Use the aerial line with the following part number: 61 12 6 941 697 TCU / Bluetooth aerial line

- E53: Luggage compartment
 - ↳ It is possible to convert the Bluetooth aerial location to the front end of the rear seat pan (new position see attachment "Bluetooth Antenne E53" of the PuMA measure)
For this retrofit use the antenna cable 61 11 6 960 005

In these vehicles manufactured during the model year concerned, there may be an inevitable deterioration in voice quality and, more often, a reduction in volume. Check the function and installation location of the Bluetooth aerial and check the audio lines (low-frequency connections).

See also the notes under "Telephone calls cut off intermittently"

A good Bluetooth connection between the mobile phone and the option 644/633 control unit has a significant effect on the quality of voice connection. It should also be noted that this connection is made via the line between the Bluetooth aerial and the control unit. Continuous, irregular crackling noises and voice distortions during the call are often an indication of interference with this connection. A possible cause is that the Bluetooth aerial may be connected incorrectly or not at all. The troubleshooting methods for this are described under "Telephone calls cut off intermittently".

§ **The other party cannot be heard at all:**

Is the mobile phone a Nokia 6310 or a Siemens S55?

Yes: This phenomenon may occur with older software versions of these mobile phones. It may be possible to update the mobile phone software.

Was the call made on the mobile phone itself and not using the hands-free system?

Yes: Check the Bluetooth connection and attempt to reconnect if necessary
Check the audio lines (low-frequency connections) from option 644/633.
See also "Hands-free mode not possible"

§ **The other party cannot hear a voice signal:**

Is the mobile phone a Nokia 6310 or a Siemens S55?

Yes: This phenomenon may occur with older software versions of these mobile phones. It may be possible to update the mobile phone software.

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Was the call made on the mobile phone itself and not using the hands-free system?

Yes: Check the Bluetooth connection and attempt to reconnect if necessary.
Check that the microphone is connected properly.
See also "Hands-free mode not possible"

§ **Hands-free mode not possible:**

Is the mobile phone a Siemens S55?

Yes: Carry out a power on reset. To do this, deactivate Bluetooth and remove the mobile phone battery with the phone switched on.
Back up the data in the mobile phone (phonebook etc.) beforehand.

§ **Intermittent failure in the operation of option 644/633 from the audio/display unit:**

Is the customer's mobile a Nokia 6310i with software 5.50 or 5.51? And does the fault occur at the precise moment the call is ended by the other party?

Yes: The problem is known. It is caused by a modification to the current Nokia mobile phone compared with earlier versions.

- I-BUS vehicles: Replace the ULF (see compatibility matrix)
- E6x: Flash program with CIP 11.x or a more recent version

§ **The phonebook is not transferred:**

Has the mobile phone been recommended by BMW for use with option 644/633?

No: Full compatibility with option 644/633 cannot be guaranteed.

Is the mobile phone an Ericsson T39m?

Yes: It is not possible to download phonebook entries from the Ericsson T39m automatically. They must be transferred manually during coupling. The method is described in the dealership information.

Is it a Siemens S55?

Yes:

- a. The phonebook stored in the memory of the S55 itself is not transferred. Only the entries stored on the SIM card will be displayed.
- b. If you switch on the mobile phone after the ignition of the car was turned on and the phone has a PIN number the phonebook will not be transferred.

↳ To solve this problem turn the ignition off and on again.

↳ Advise the customer to switch on the phone before turning on the ignition.

↳ Note:

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A bugfix Software is expected to be available in:
 March 2005 for E6x
 September 2005 for E87/E90

Is it possible to use option 644/633 on the vehicle?

No: See "The telephone cannot be used"

Is the car an E46, E39, E53, E85 oder E83 mit SA644?

Yes: The fault occurs under the following circumstances:

The first entry in the SIM-Card of the mobile phone contains

- A special character ('*', '#', '@') at the first position of the name or the number
- A number without a name
 - ↳ Delete the special character in the name or in the number of the first entry. Add a name to the number of the first entry of the phone book.

§ **Phonebook entries are missing:**

Is it a Nokia 6310i with software version 4.80?

Yes: The first entries on the SIM card cannot be downloaded due to an error in the mobile phone software.

Solution: Update the mobile phone software

Were the phonebook entries modified on the mobile phone during connection to option 644/633?

Yes: Switch the ignition off and back on again to enable the phonebook entries in option 644/633 to be updated. (does not work with T39m)

See also the notes under "The phonebook is not transferred"

§ **The mobile phone is not being charged:**

Check the snap-in adapter (connection to the base plate) and try in conjunction with the a defect-free snap-in adapter as a test

Note concerning all MOST vehicles:

The mobile charging function does not currently work if the snap-in adapter is hot-plugged (system already booted) into the eject box.

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