Mercedes-Benz

star bulletin

Installation Instructions

Date: August 2004

Order No.: ***PRELIMINARY DRAFT***

Supersedes: May 2004

Group: 82

SUBJECT: **MODEL 203.040/061/064/081/084 (Sedan)**
MODEL YEAR 2005
CELLULAR TELEPHONE INSTALLATION

We are interested in your comments and/or suggestions regarding these installation instructions—please e-mail them to technicalinformation@mbusa.com

WARNING

Do not disconnect the negative battery cable. Extensive reprogramming requirements will otherwise be necessary. Wiring harnesses will be electrically active. It is therefore necessary to exercise extreme caution while executing these installation instructions. Failure to do so could result in severe vehicle damage, personal injury, or death from electrical shock. Keep the ignition and radio powered OFF through the final test.

MOST Notes

- Optical fibers easily damage—handle optical fibers with care to prevent cuts, nicks, abrasions, kinks, and crushing.
- Minimum bend radius for optical fibers is 25 mm.
- Optical fiber “ring configurations” must form a closed loop to function (i.e. couple the input of a component with the output of the preceding component).
- Identify MOST Optical fiber cables by their orange, semi-rigid insulation.
- Electromagnetic interference (EMI) from bundled vehicle electrical harnesses does not affect optical fibers.

This bulletin has been created and maintained in accordance with MBUSA-SLP S423QH001, Document and Data Control, and MBUSA-SLP S424HH001, Control of Records.

A. Installation preparation

1. Read these installation instructions in their entirety before proceeding.
2. Install the following relays and fuses if not installed:
   - N10/1kP relay located in the front SAM (N10/1)
   - N10/2kF relay located in the rear SAM (N10/2)
   - N10/1f44, 5-amp fuse located in the front SAM (N10/1)
   - N10/2f13, 5-amp fuse located in the rear SAM (N10/2)
   - N10/2f16, 7.5-amp fuse located in the rear SAM (N10/2)
   - F34f40, 7.5-amp fuse located in the interior fuse box (F34)
3. Insert the kit-included 7.5-amp fuse in slot #16 (Figure 1) of the fuse box on the left side in the cargo compartment.
4. Unpack and compare the installation kit contents against the Parts Information list—Section M.
5. Place the operating guides and customer accessories in the glove box or appropriate storage compartment.
6. Expose the transmission tunnel area by pulling back the passenger side floor covering where it meets the center console.
7. In the trunk, remove the floor paneling, passenger side paneling, and plastic cover over the electronics compartment at the front.
   - See *WIS* document AR68.30-P-4600P, “Removing and installing paneling in trunk”

Figure 1 P82.70-xxxx-71

B. Mounting the linear compensator and UHI control module to the bracket

1. Mount the linear compensator to the bracket front by sliding the compensator base under the clip (A, Figure 2) and then fastening the opposing side with two M3.5 x 8 self-tapping screws (B, Figure 2).

   Note: Orient the linear compensator with the connector receptacles facing the direction of the bracket mounting arm (Figure 2).

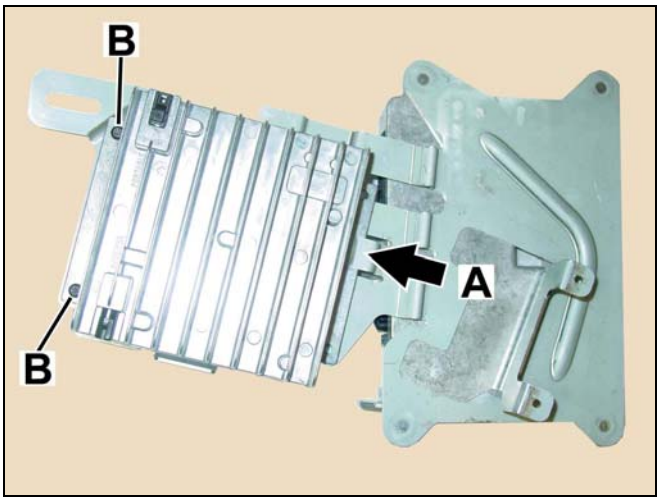

Figure 2 P82-70-xxxx-71

2. Mount the UHI control module to the threaded studs on the bracket backside with four M4 hex nuts (Figure 3).

   Note: The keyed threaded studs fit the UHI control module only one way (i.e. it is not possible to mount the UHI control module to the bracket incorrectly).

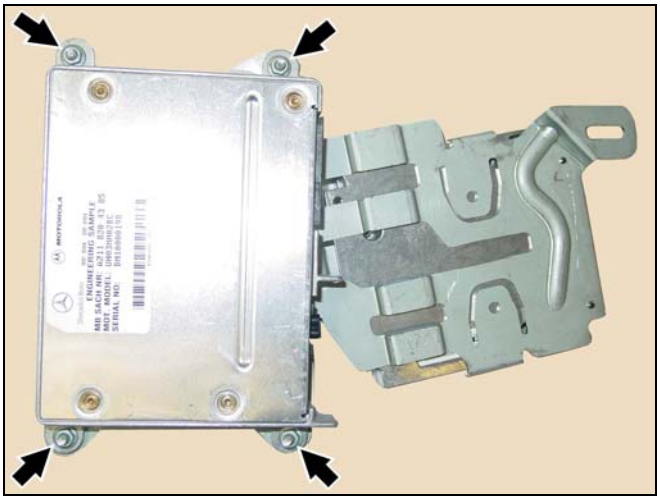

Figure 3 P82-70-xxxx-71

C. Identifying cables

1. In the exposed right side well of the trunk, find the foam-sleeve-covered cable connectors.
2. Fold back the foam sleeves to expose the connectors and identify the:
   - UHI power supply connector (A, Figure 4)
   - Male FAKRA antenna lead (B, Figure 4)
   - Linear compensator power supply connector (C, Figure 4)
   - UHI MOST connector (D, Figure 4)
   - Female FAKRA antenna lead (E, Figure 4)

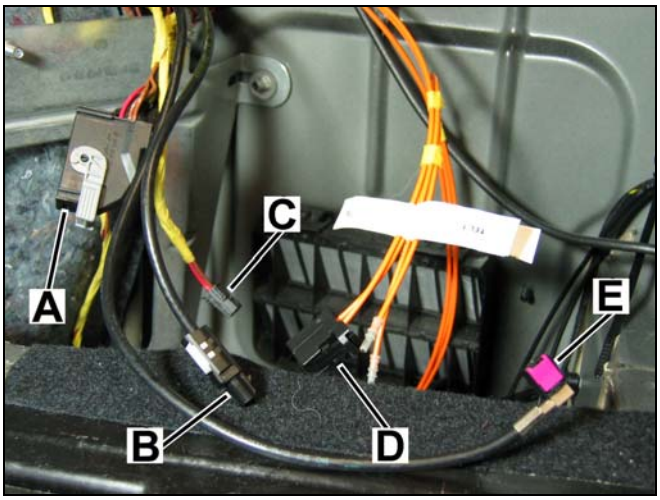

Figure 4 P82.70-xxxx-71

D. Installing the antenna switch

1. Find the mounting area and antenna cable connectors for the antenna switch at the right side of the exposed electronics compartment at the front of the trunk (Figure 5).

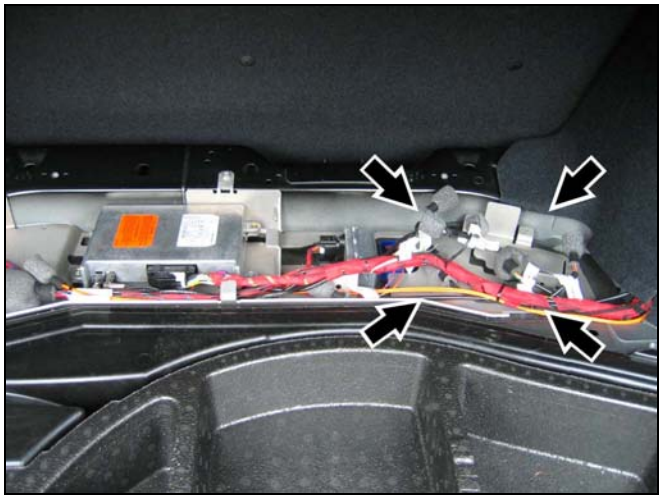

Figure 5 P82.70-xxxx-71

2. At the right side of the electronics compartment, disconnect the Tele Aid antenna lead from the main antenna lead (Figure 6).

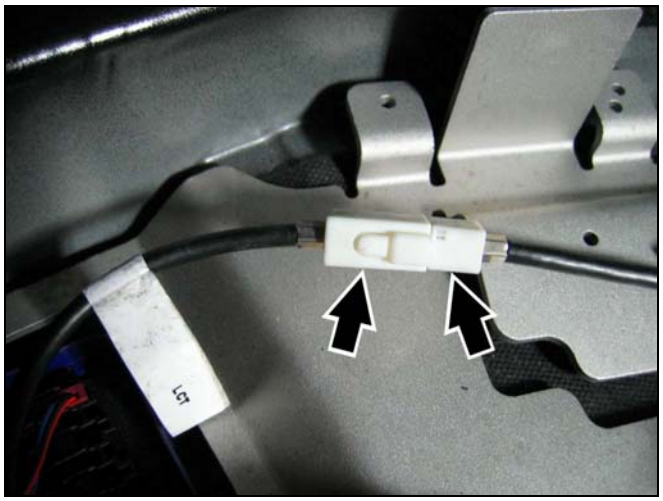

Figure 6 P82.70-xxxx-71

3. At the right side of the electronics compartment, identify the:
   - Tele Aid lead (white, female FAKRA) (A, Figure 7)
   - Telephone lead (black, female FAKRA) (B, Figure 7)
   - 4-pin power supply connector (C, Figure 7)
   - Main antenna lead (white, male FAKRA) (D, Figure 7)

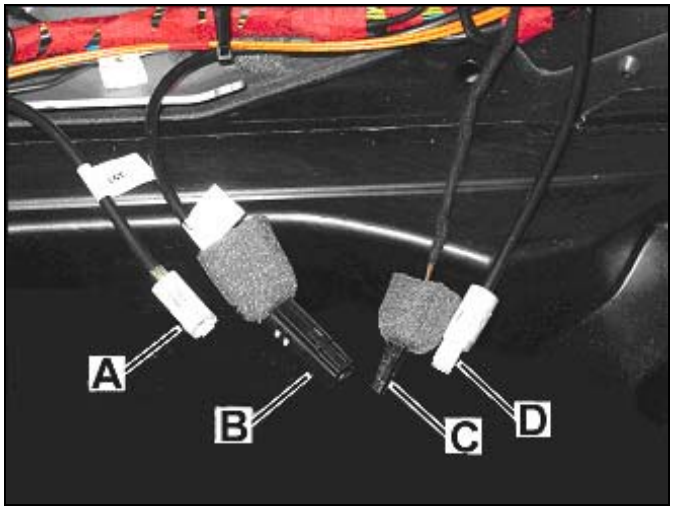

Figure 7 P82.70-xxxx-71

4. At the right side of the electronics compartment, mount the antenna switch to the floor with two self-tapping Phillips screws (Figure 8).

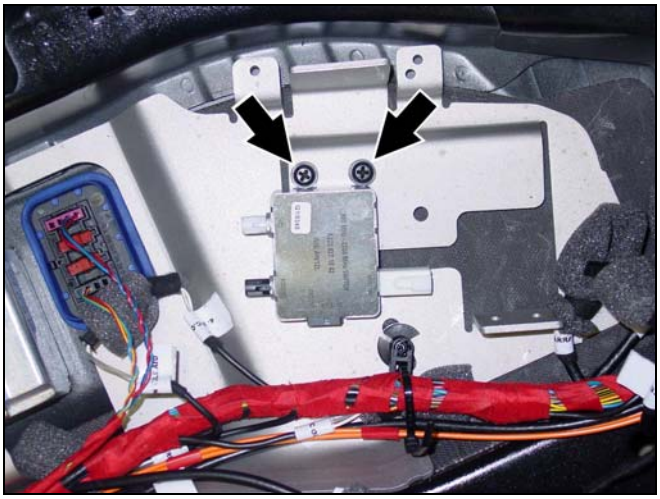

Figure 8 P82.70-xxxx-71

5. Connect the telephone lead (black, female FAKRA) to the antenna switch jack labeled “BOOSTER” (A, Figure 9).
6. Connect the Tele Aid lead (white, female FAKRA) to the antenna switch jack labeled “LCT” (B, Figure 9).
7. Connect the main antenna lead (white, male FAKRA) to the antenna switch jack labeled “ANTENNA” (C, Figure 9).
8. Connect the 4-pin power supply cable to the antenna switch (D, Figure 9).

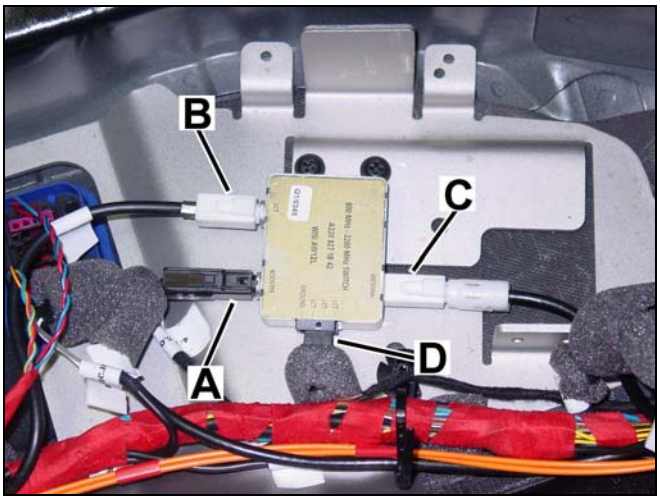

Figure 9 P82.70-xxxx-71

E. Configuring the MOST ring

1. Determine which of four possible component combinations the vehicle has and proceed to the corresponding subsection.
   - **i. satellite radio *and* sound system**
   - **ii. *no* sound system, *no* satellite radio**
   - **iii. satellite radio, *no* sound system**
   - **iv. sound system, *no* satellite radio**

NOTICE

Do not kink optical fibers, route them over sharp edges, or bend them in radii smaller than 25 mm.

i. satellite radio *and* sound system

2. At the SDAR control module (Figure 10) in the right well of the trunk, configure the MOST ring according to Figure 39 (see below).

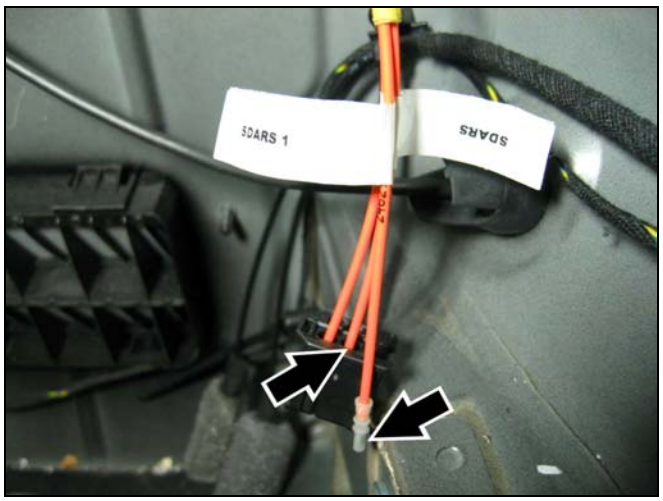

Figure 10 P82.70-xxxx-71

- Remove the fiber labeled “SDARS” from slot 1 (A, Figure 11) of the MOST connector and insert the fiber labeled “SDARS 1” in its place

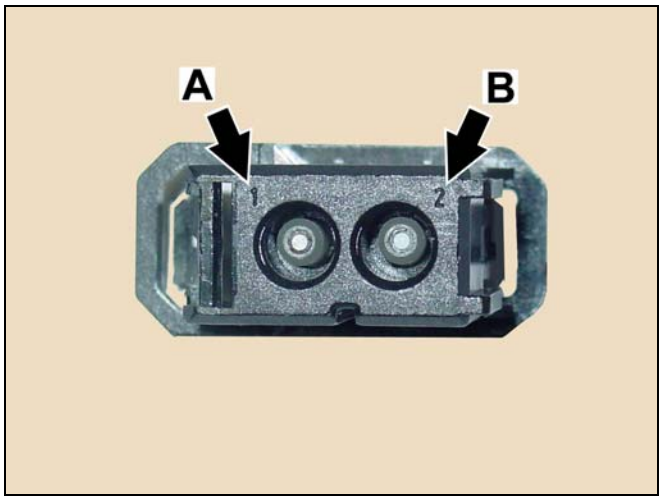

Figure 11 P82.70-xxxx-71

3. At the telephone control module (Figure 12) in the right well of the trunk, configure the MOST ring according to Figure 39.
   - Remove the fiber labeled “TEL” from slot 2 (B, Figure 11) of the MOST connector and insert the fiber labeled “TEL 1” in its place

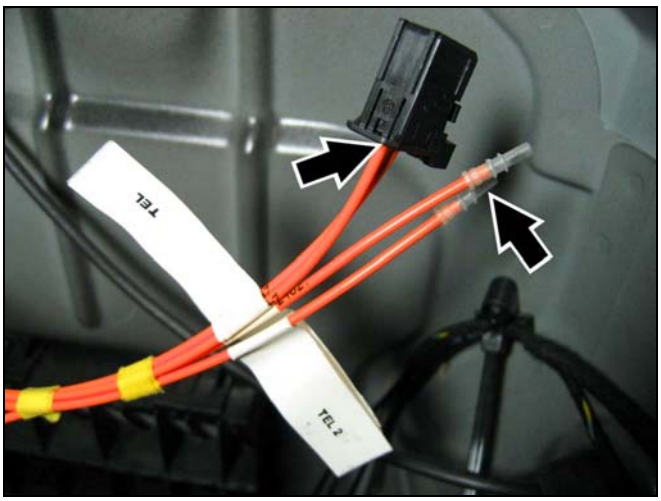

Figure 12 P82.70-xxxx-71

4. At the sound system control module (Figure 13) in the right well of the trunk, configure the MOST ring according to Figure 39.
   - Remove the fiber labeled “SOUND” from slot 2 (B, Figure 11) of the MOST connector and insert the fiber labeled “SOUND 1” in its place

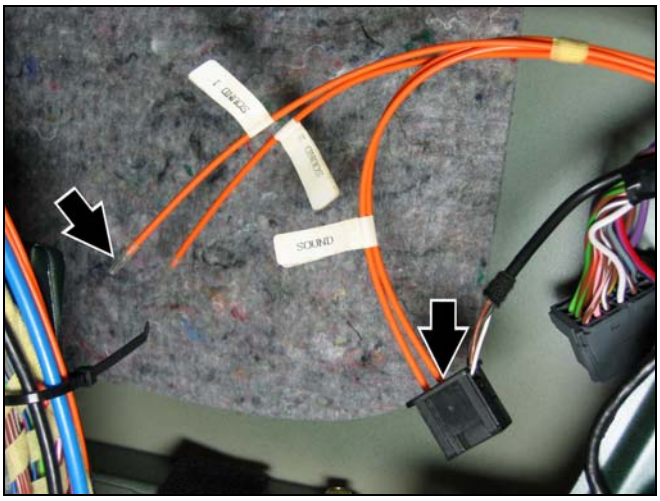

Figure 13 P82.70-xxxx-71

5. At the exposed transmission tunnel area, find the MOST couplings and configure the MOST ring (Figure 14) according to Figure 39.
   - **SDARS OUT > HU/CDC IN**

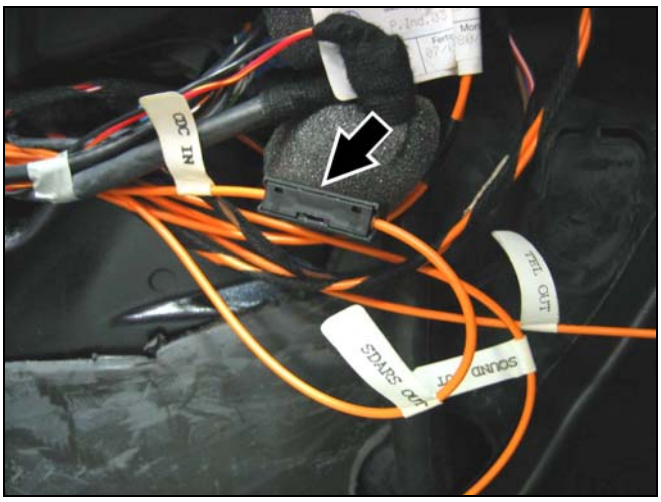

Figure 14 P82.70-xxxx-71

ii. *no* sound system, *no* satellite radio

2. At the exposed transmission tunnel area, find the MOST couplings and configure the MOST ring (Figure 15) according to Figure 39.
   - **HU OUT > TEL IN**
   - **TEL OUT > HU/CDC IN**

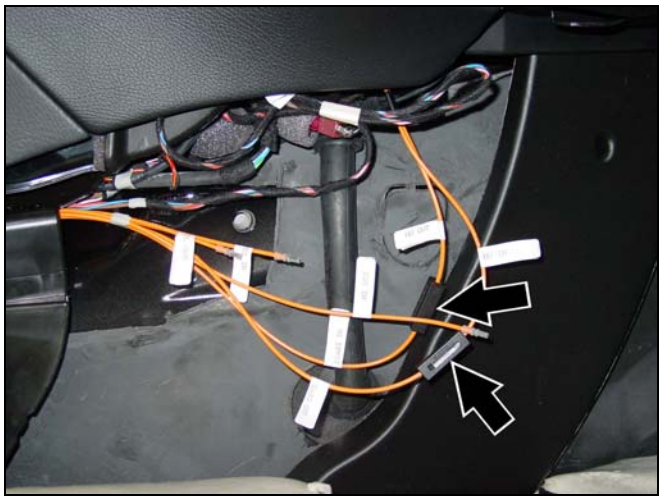

Figure 15 P82.70-xxxx-71

iii. satellite radio, *no* sound system

2. At the SDAR control module (Figure 16) in the right well of the trunk, configure the MOST ring according to Figure 39 (see below).

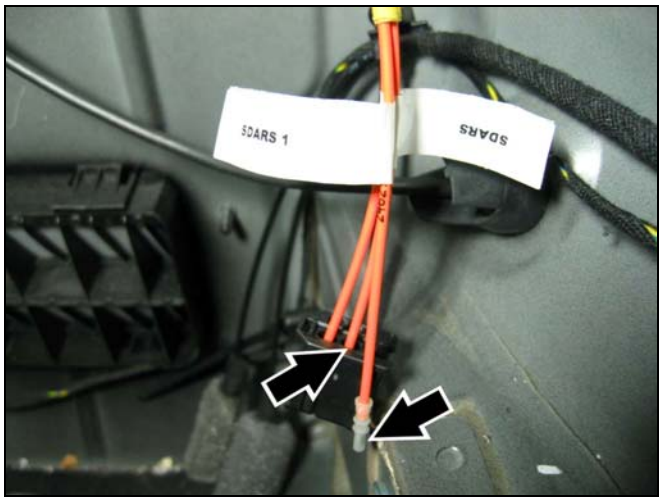

Figure 16 P82.70-xxxx-71

- Remove the fiber labeled “SDARS” from slot 1 (A, Figure 17) of the MOST connector and insert the fiber labeled “SDARS 1” in its place

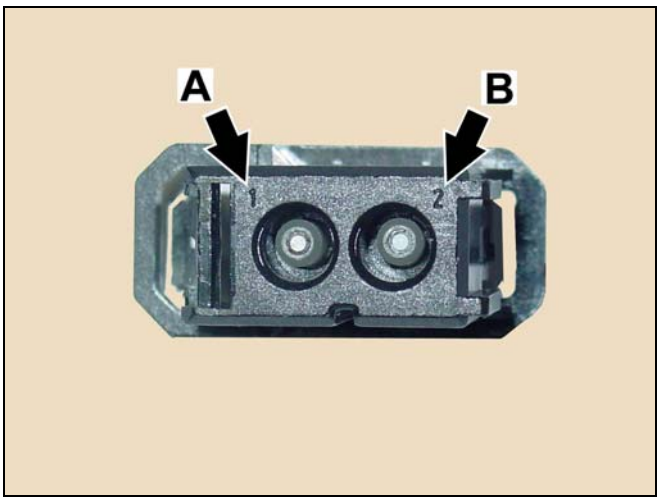

Figure 17 P82.70-xxxx-71

3. At the telephone control module (Figure 18) in the right well of the trunk, configure the MOST ring according to Figure 39.
   - Remove the fiber labeled “TEL” from slot 2 (B, Figure 17) of the MOST connector and insert the fiber labeled “TEL 1” in its place

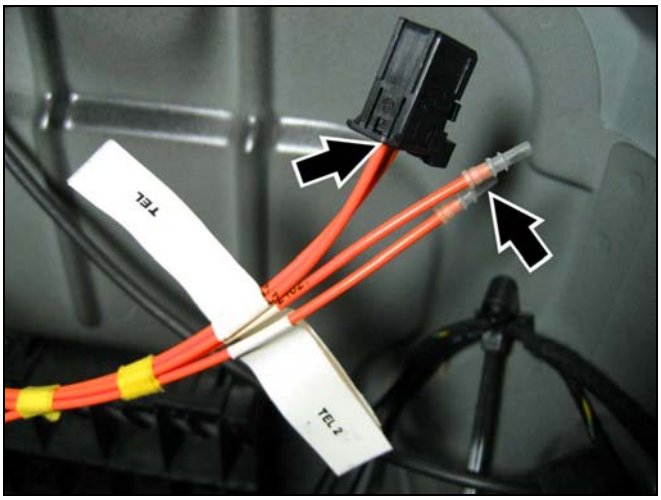

Figure 18 P82.70-xxxx-71

4. At the exposed transmission tunnel area, find the MOST couplings and configure the MOST ring (Figure 19) according to Figure 39.
   - **HU OUT > TEL IN**
   - **SDARS OUT > HU/CDC IN**

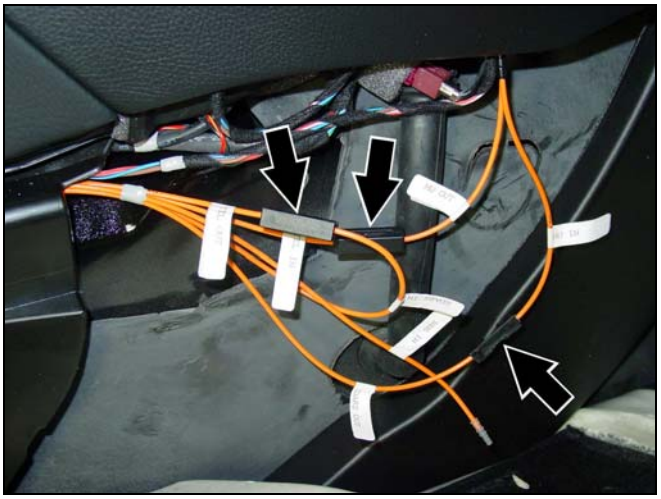

Figure 19 P82.70-xxxx-71

iv. sound system, *no* satellite radio

2. At the sound system control module (Figure 20) in the right well of the trunk, configure the MOST ring according to Figure 39 (see below).

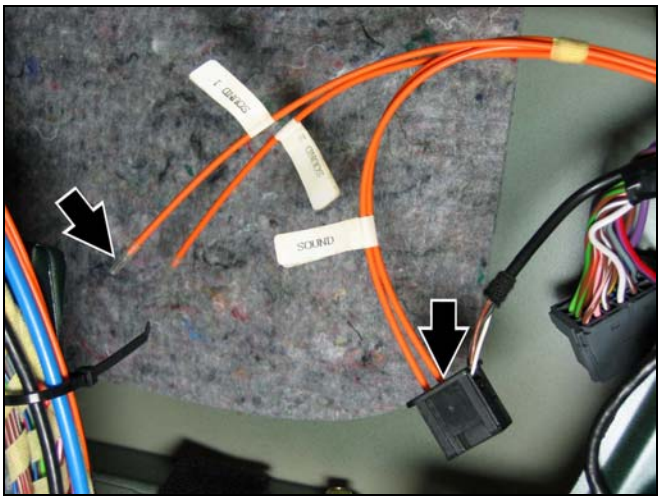

Figure 20 P82.70-xxxx-71

- Remove the fiber labeled “SOUND” from slot 2 (B, Figure 21) of the MOST connector and insert the fiber labeled “SOUND 2” in its place

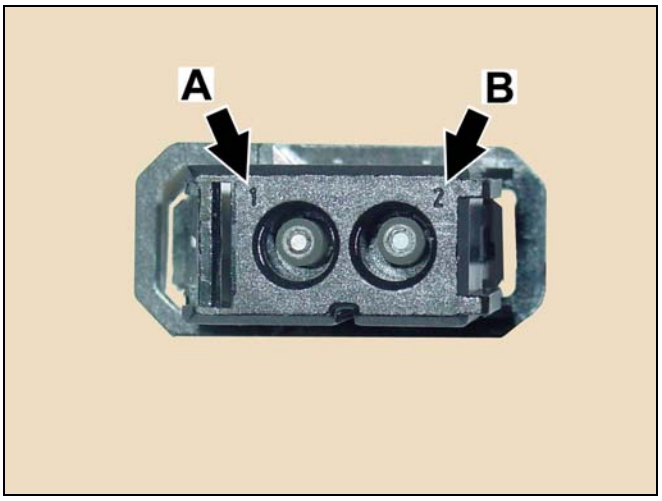

Figure 21 P82.70-xxxx-71

3. At the exposed transmission tunnel area, find the MOST couplings and configure the MOST ring (Figure 22) according to Figure 39.
   - **TEL OUT > HU/CDC IN**

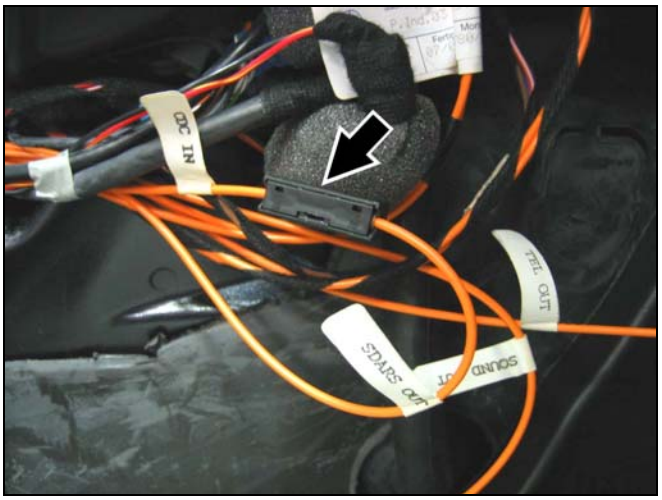

Figure 22 P82.70-xxxx-71

F. Connecting the linear compensator and UHI control module

1. Place the bracket assembly—linear compensator/UHI control module—near its mounting point (Figure 23).
2. Connect the UHI power supply connector to the UHI control module (A, Figure 23).
3. Connect the UHI MOST connector to the UHI control module (B, Figure 23).

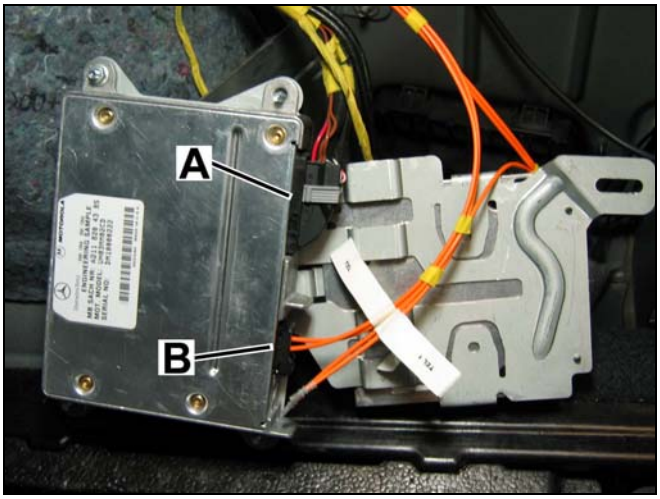

Figure 23 P82-70-xxxx-71

4. Mount the front of the bracket assembly with two M5 x 11 self-tapping screws to the trunk reinforcement panel (B, Figure 24) and one 8-mm flanged nut to the threaded stud on the right quarter panel interior (B, Figure 24).

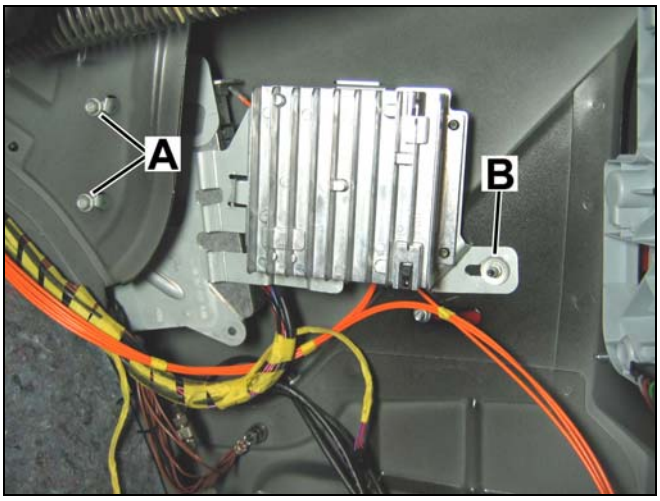

Figure 24 P82-70-xxxx-71

5. Connect the right-angled, female FAKRA connector to the linear compensator jack labeled “ANTENNA” (A, Figure 25).
6. Connect the straight, male FAKRA connector to the linear compensator jack labeled “PORTABLE” (B, Figure 25).
7. Connect the power supply cable to the linear compensator (C, Figure 25).

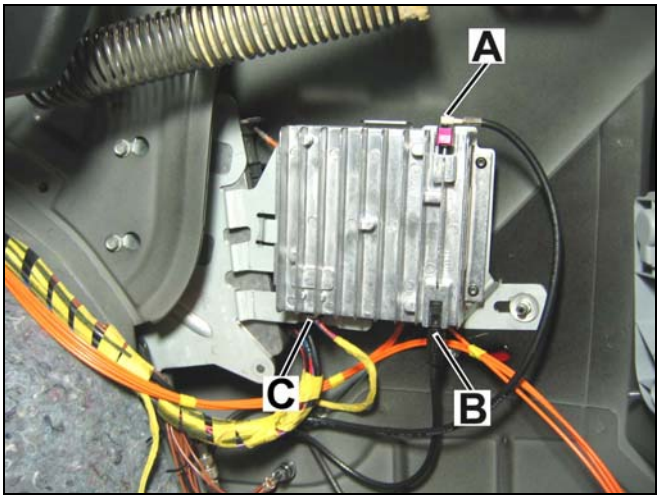

Figure 25 P82-70-xxxx-71

G. Connecting the microphone array

1. At the right side of the exposed electronics compartment at the front of the trunk, locate the connectors for the microphone array cables (Figures 27 and 28).
2. Connect the 6-pin female connector labeled “1 - MIC.ARRAY OUT” to the 6-pin male connector labeled “3 - MIC IN TEL”) (Arrows, Figure 26).

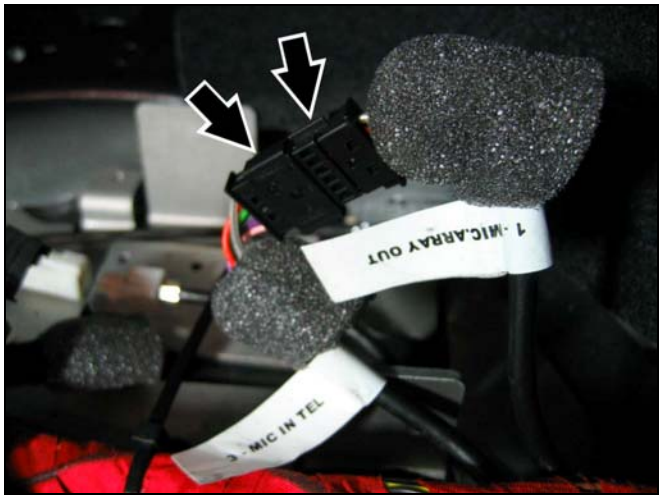

Figure 26 P82-70-xxxx-71

3. Connect the 2-pin female connector labeled “4 - MIC.OUT TEL” to the 2-pin male connector labeled “8 - MIC.IN TELEAID”) (Arrows, Figure 27).

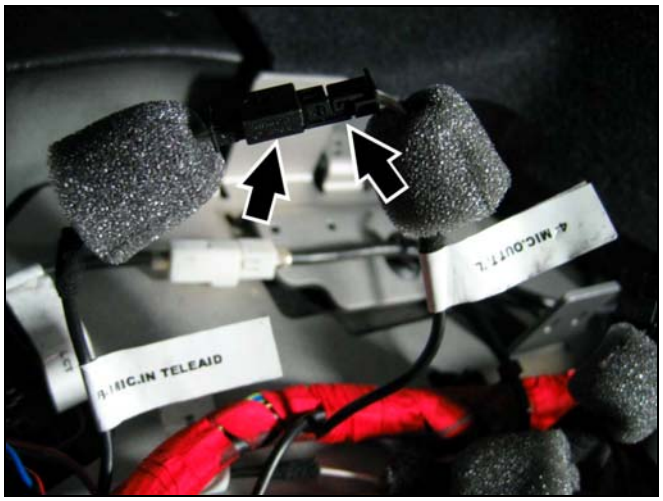

Figure 27 P82-70-xxxx-71

H. Modifying the wiring harness for the Tele Aid control module

1. At the left side of the exposed electronics compartment at the front of the trunk, disconnect the Tele Aid power supply connector from the Tele Aid control module (Figure 28).

Figure 28 P82.70-xxxx-71

2. Remove the locking cover from the Tele Aid power supply connector to expose the pin housing (Figure 29).
3. If pin slot #14 is vacant (Arrow, Figure 29), proceed to step 6.

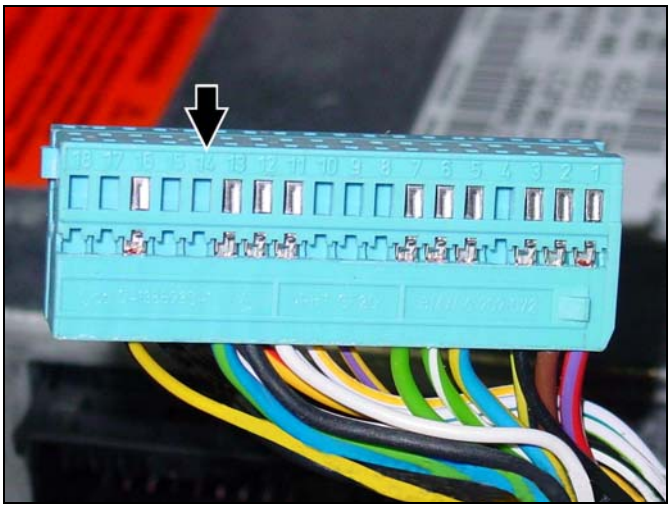

Figure 29 P82.70-xxxx-71

4. If occupied (Arrows, Figure 30), verify the violet-color wire coming from pin slot #14 goes to:
   - Pin slot #3 of the power supply connector for the linear compensator
   - Pin slot #28 of the power supply connector for the UHI control module
5. If so, proceed to step 19.

   Note: If the violet-color wire coming from pin slot #14 does not go to pin slot #3 and pin slot #28 of the power supply connectors for the linear compensator and UHI control module respectively, contact *TAC/EDAC* for diagnostic assistance.

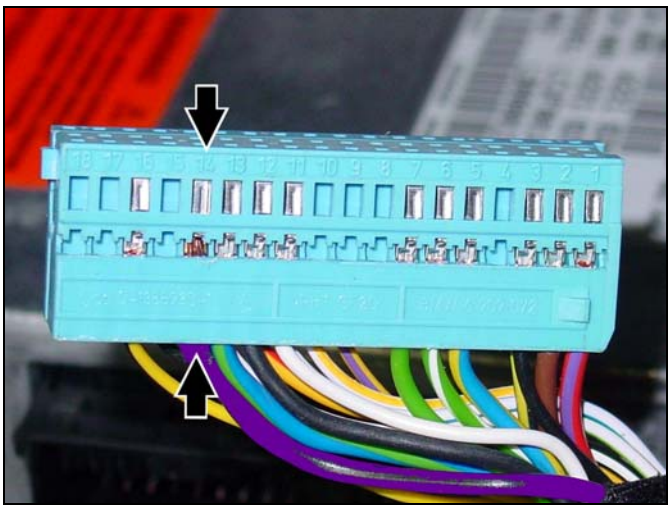

Figure 30 P82.70-xxxx-71

6. Crimp the pin onto an end of the 6-foot section of 20-gauge, violet-color wire.

   Note: Refer to Section M—Parts Information—for pin distinction information.

7. Insert the pin into slot #14 of the pin housing of the power supply connector for the Tele Aid control module (Arrows, Figure 30).
8. Reinstall the locking cover on the pin housing of the power supply connector for the Tele Aid control module.
9. Route the 20-gauge, violet-color wire from pin #14 of the power supply connector for the Tele Aid control module along the main wiring harness leading to the linear compensator (Figure 31).

   Note: Secure the 20-gauge, violet-color wire to the main wiring harness with wire ties and electrical tape.

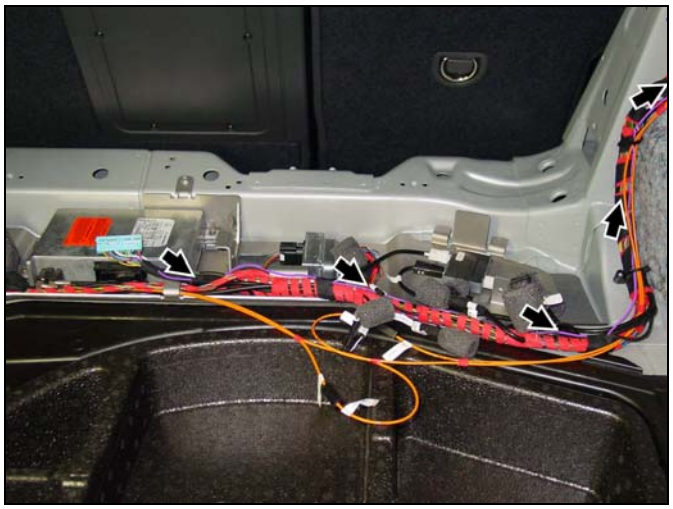

Figure 31 P82.70-xxxx-71

10. Disconnect the power supply connector from the linear compensator (A, Figure 32).
11. Remove the tape from the power supply wiring harness for the linear compensator from the connector to the point where it branches off the main wiring harness (Figure 32).
12. Separate the violet-color wire of the power supply wiring harness for the linear compensator from the other wires (Figure 32).
13. Cut the violet-color wire of the power supply wiring harness for the linear compensator half way between the connector and the point where it branches off the main wiring harness (B, Figure 32).

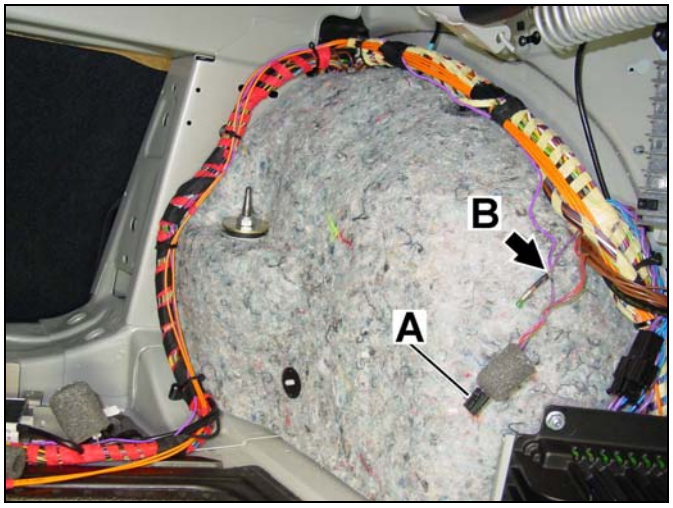

Figure 32 P82.70-xxxx-71

14. Strip ¼-inch insulation off both ends of the violet color wire cut in step 12.
15. Strip ¼-inch insulation off the 20-gauge, violet-color wire routed to the linear compensator.

16. Solder splice the two cut ends of the violet color wire of the power supply wiring harness for the linear compensator to the end of the 20-gauge, violet color wire routed from Tele Aid control module (Figure 33).
    - Twist the solder splice into the three wire ends
    - Use a heat gun at high setting to melt the solder over the twisted together wire ends and the glue over the wire insulation
17. Reapply tape to the power supply wiring harness for the linear compensator including the solder spice.
18. Reconnect the power supply connector to the linear compensator.

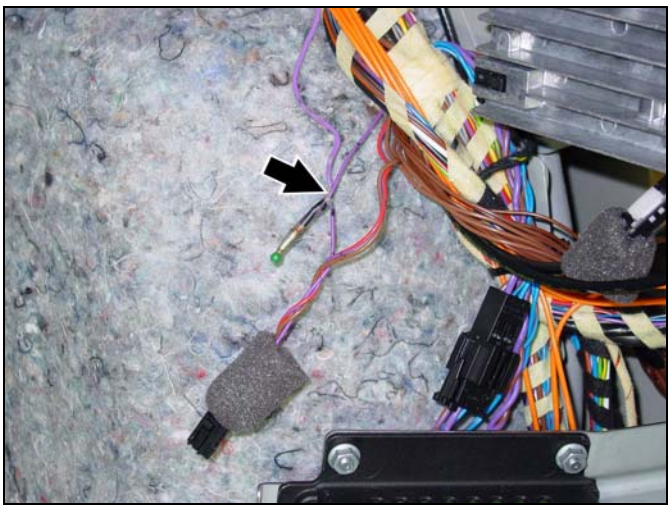

Figure 33 P82.70-xxxx-71

19. Test the modification.
    a) With the Tele Aid control module unplugged and the telephone in the cradle, set COMAND, or the Audio 20 head unit, to “TEL” mode. Notice the signal strength bars on the display.
    b) Turn off COMAND or the Audio 20 head unit.
    c) Connect the power supply connector to the Tele Aid control module.
    d) Turn on COMAND, or the Audio 20 head unit, and select “TEL” mode. Notice the level increase in the signal strength bars on the display.

    Note: There may be no increase in the signal strength bars on the display if too close to a cell tower.

I. Installing the telephone cradle

1. Open the lower compartment of the center console and remove the T8 Torx screw at the lower, right corner of the upper compartment underside (Figure 34).
2. Remove the cover by sliding it down and then pulling it out.

Figure 34 P82.70-xxxx-71

3. Remove the three T8 Torx screws from the exposed compartment underside (Figure 35).

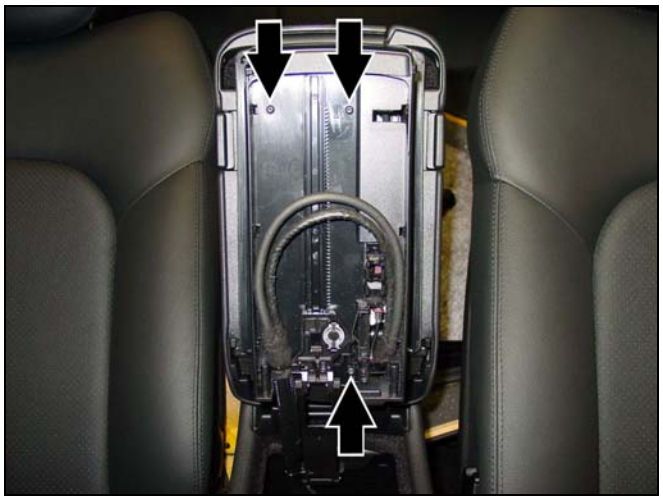

Figure 35 P82.70-xxxx-71

4. Open the upper compartment and lift out the false floor (Figure 36).
5. Remove the knockout from the false floor by applying pressure from underneath (Arrows, Figure 36).

   Note: Be careful not to crack or break the false floor by applying excessive force while removing the knockout.

Figure 36 P82.70-xxxx-71

6. Find the kit-included contact plate (A, Figure 37) and identify the male FAKRA antenna lead (B, Figure 37) and the power supply male connector (C, Figure 37).

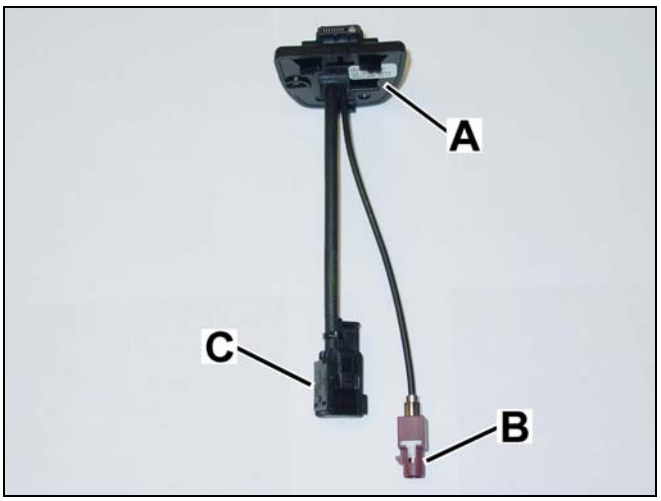

Figure 37 P82.70-xxxx-71

7. Feed the power supply cable and FAKRA cable through the knockout hole from the top side of the false floor (Figure 38).

Figure 38 P82.70-xxxx-71

8. Carefully snap the contact plate into the false floor knockout hole (Figure 39).

   Note: Be careful not to crack or break the false floor by applying excessive force while snapping in the contact plate.

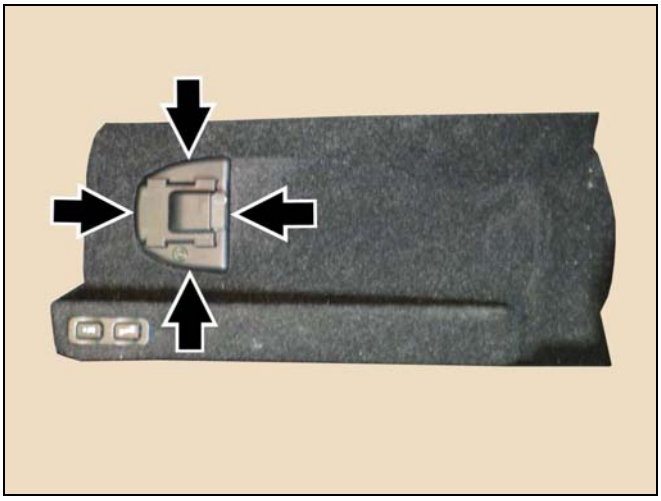

Figure 39 P82.70-xxxx-71

9. Find the female power supply connector (A, Figure 40) and female FAKRA connector (B, Figure 40) within the console harness.

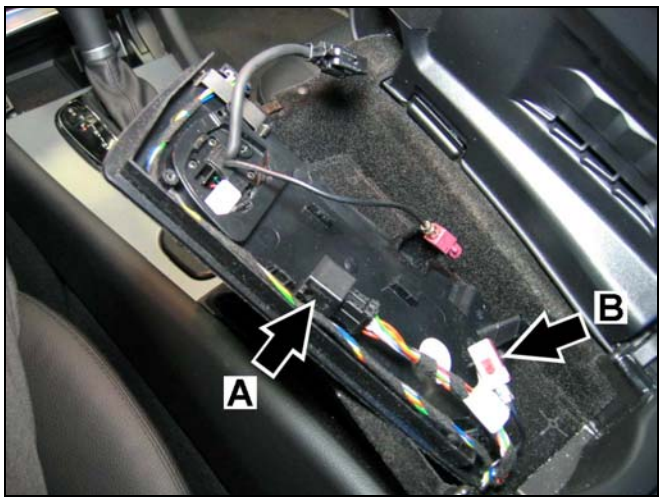

Figure 40 P82.70-xxxx-71

10. Connect the male FAKRA antenna lead from the contact plate to the female FAKRA connector from the console harness (A, Figure 41).
11. Connect the power supply male connector from the contact plate to the female power supply connector from the console harness (B, Figure 41).
12. Snap the coupled connectors into the channel clips (A and B, Figure 41), route the harness through the channel and under the existing clip (C, Figure 41).
13. Use the two kit-included clips (Arrows, Figure 41) to secure the remaining loose harness.

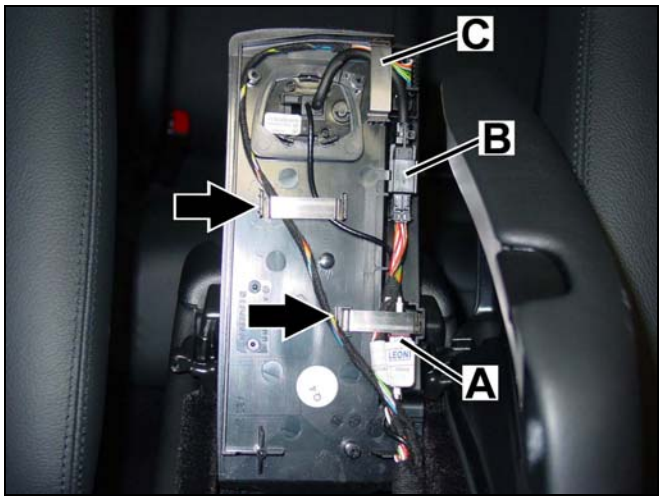

Figure 41 P82.70-xxxx-71

14. Reinstall the false floor and the underside cover of the console upper compartment (Figure 42).

Figure 42 P82.70-xxxx-71

15. Attach the cradle—according to telephone type—to the contact plate by placing it atop and slightly behind the contact plate and then sliding it forward until an audible click is heard (Figure 43).

Figure 43 P82.70-xxxx-71

16. Insert the telephone into the cradle (Figure 44).

Figure 44 P82.70-xxxx-71

J. Version coding

1. Connect the Star Diagnosis System to the vehicle and perform the version coding outlined below.
2. Set the MOST ring configuration to match that of Figure 45 by using the path:

   Control units > Information and communication > Audio, video, navigation and telematics > COMAND with integrated Audio Gateway > Retrofitting of MOST components > F2: Restart of optical ring > F2: Actual configuration > Verify that "Telecommunications" is listed under Actual Value and configuration of the MOST components matches that of Figure 45 > F2: To continue > F3: Yes, to write the current actual configuration to MOST master > F2: Erase fault memory

   Note: The MOST ring configuration in Figure 45 is an example of a configuration including every component. Some installations will not include all the components shown in the example. If a component is not present, connect the preceding component to the component following the one not present.

   NOTICE
   DO NOT alter the configuration in Figure 45 to match the vehicle configuration. Failure to have the configuration match Figure 45 will result in erroneous system operation and/or intermittent malfunctioning of some or all components.

3. Set the Tele Aid control unit to recognize the presence of the telephone by using the path:

   Control units > Information and communication > Audio, video, navigation and telematics > TELE-AID > Control unit adaptations > Model series, telephone adapter for portable CTEL (UHI) > Set "Model series" to W203, Set "Telephone adapter" to FITTED, press F5 > F3: Yes/Coding > F2 to confirm the coding has been carried out

4. Set the instrument cluster to recognize the presence of the telephone by using the path:

   Control units > Information and communication > ICM > Control unit adaptations > Version coding > Optional equipment > Select "CTEL cellular telephone" > Set "CTEL cellular telephone" to PRESENT, then press F3 > F5: To save changes > F3: To transfer coding to control unit

5. Check the DTC memory of all installed components and the head unit. Investigate and identify any present DTC(s). Once identified, correct the source of the DTC(s) and clear the DTC memory.

   Note: Powering up the newly installed system prior to version coding will set errors in the MOST ring configuration. Ignore these errors during the initial DTC check. If, after clearing the DTC(s), they return in the next step, a configuration error is present. Locate and correct the error.

6. Confirm no new DTC(s) are present in the MOST system group.

K. MOST ring configuration

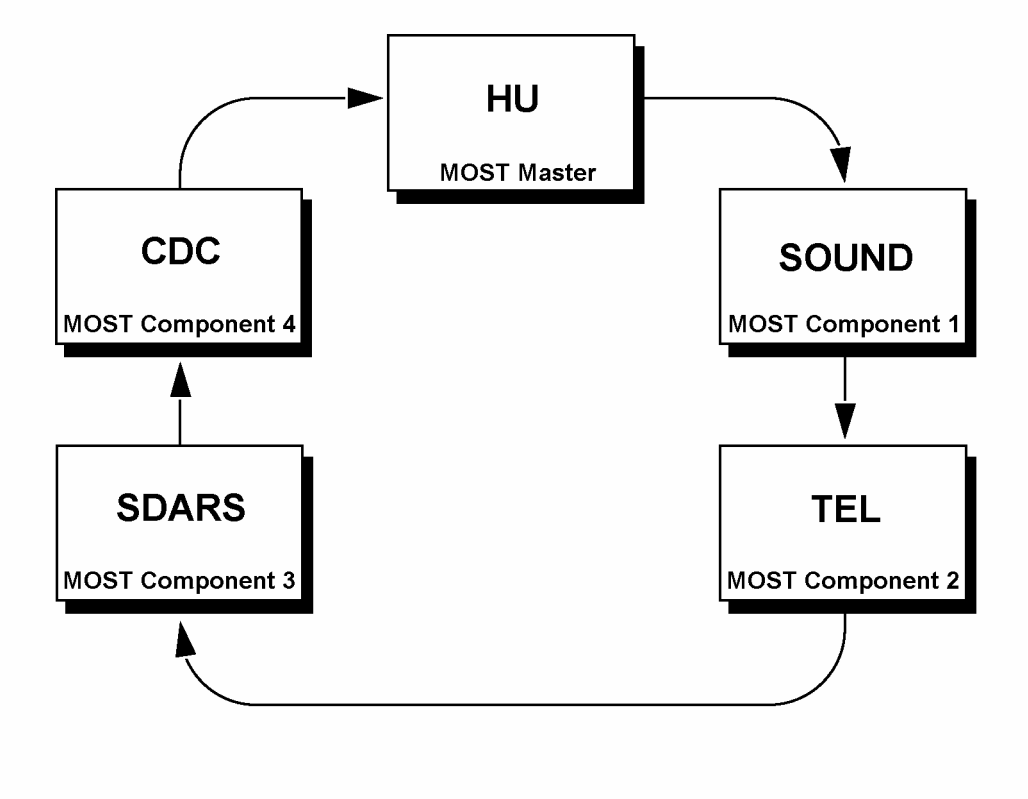

Figure 45 P82.70-xxxx-11

L. Final assembly and function test

1. In the trunk, reinstall the plastic cover over the electronics compartment at the front, passenger side paneling, and floor paneling.
   - See *WIS* document AR68.30-P-4600P, “Removing and installing paneling in trunk”
2. Reinstall the floor covering at the transmission tunnel area on the passenger side.
3. Verify proper telephone operation per the following checklist:
   - ✓ Handset dialing is functioning
   - ✓ Head unit dialing is functioning
   - ✓ Handset incoming/outgoing call audio is clear
   - ✓ Hands-free incoming/outgoing audio is clear
   - ✓ Automatic memory download is functioning[1)]

   [1)] It may be necessary to store a test number in the telephone handset for this feature to operate. Stored numbers should be available for dialing from the head unit after automatic download.

M. Parts Information

Qty.	Part Name	Part Number/Exchange
1	**Vehicle core installation kit**	BQ 682 0906
1	**C-Class sedan vehicle completer kit**	BQ 682 0907
Wiring harness modification, Tele Aid control module		
1	Solder splice	A 001 546 99 41
1	Crimp pin, black pin housing	A 008 545 55 26
1	Crimp pin, blue pin housing	A 016 545 41 26
1	Tape	006 989 84 85 10
	20-gauge, violet-color wire	Local purchase

Note: This installation cannot be claimed under warranty.